

GE Healthcare

Managing Interfaces with Centricity® Practice Solution

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About this guide

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Data import and export features of Centricity Practice Solution reduce the amount of information that must be manually entered into the application and other computer systems. With software interfaces you can share patient clinical and billing information with other systems such as laboratories, insurance companies, transcription agencies, and hospitals. This guide includes detailed resources that support effective implementation and management of software interfaces with Centricity Practice Solution.

- **Part I: Managing Interfaces** introduces software interfaces and how they work and the role of the Interfaces/LinkLogic Manager.
- **Part II: LinkLogic interface specifications** includes all LinkLogic interface specifications with a guide to their interpretation and in-depth explanations of concepts such as interpreting HL7 data types, data-matching algorithms, and cross-referencing field values.
- **Part III: MIK interface specifications** includes all Millbrook Integration Kit (MIK) interface specifications with detailed descriptions of the HL7 messages and data fields they support.
- **Appendices: Interface planning and implementation resources** offers important resources, including
 - Setting up communication via sockets
 - Using document overlay (how documents are updated via imported lab results/transcriptions)
 - Converting Microsoft Word transcription documents to HL7 messages (NotesLink Macro)
 - LinkLogic Activity Log notes, warnings, and error messages
 - Standard .IXP files included in the application

Getting the latest information

GE documentation is often updated after general release of the product. The publication date is listed on the title page of all documents. To get the latest version of this guide and other documentation in the documentation library go to http://centricitypractice.gehealthcare.com/centricity_library/.



If you open this guide from the Centricity Document Library folder copied to your network or a local machine, you can click links to other guides to open them. These links will not work if you copy a PDF to a location outside the library folder.

Documentation conventions

Centricity Practice Solution documentation uses the following conventions to represent different types of information:

This convention...	Means this...
<code>monospaced type</code>	Type this text exactly as it appears.
Chart > Clinical Lists	Open the Chart folder and select the Clinical Lists item.
Ctrl + U	Hold down the Ctrl key while you press U, then release both keys.
<i>italic type</i>	A term that is being defined. When used in a path or command line, it is a variable that should be replaced with your specific site value.
	Information that is important and should not be overlooked.
✓	Information about a shortcut or other convenient or optional information.
!!!	Information with an impact on software implementation or performance.

Other resources

GE offers a variety of other resources to help you get up and running with Centricity Practice Solution on a daily basis.

Online help (F1)

When you need a quick answer about using a particular feature in Centricity Practice Solution, online help is your fastest route. Wherever you are in the application, simply press F1 for relevant help about the task at hand.

- Find conceptual information in help glossaries
- Follow task procedures
- Use process maps to locate key tasks in a workflow

Online help feedback

While using the online help, you can rate each topic's effectiveness and provide specific feedback to the GE documentation team. The online help also passively transmits data for which topics users view.



All ratings, feedback, and aggregated usage data are anonymous.

Rating help topics

Each help topic includes a 5-star rating system. One star represents an unhelpful topic, and five stars represent a very helpful topic.

To rate a topic, click the stars, then from the window, select a star rating, and click Submit.


In rated topics, yellow stars indicate the average rating.



Submitting feedback

You can also submit feedback to the GE documentation team, via online help topics. Please submit feedback only for the online help. If you need assistance with the application, please contact Centricity Services at 888.436.8491 option 1, or your Value Added Reseller.

Submit feedback

- 1 In the Feedback section of a topic, click  **(Add Topic Feedback)**.
- 2 In the Submit Feedback window, enter a name, the subject for your feedback, and your comments.
- 3 Click **Submit**.

All submitted feedback is anonymous unless you choose to use your real name. If you would like follow-up from the GE documentation team regarding your feedback, please e-mail the GE documentation team at CentricityDocs@ge.com.

Disabling rating and feedback

The online help transmits user's feedback data to a secure server within the GE network. The GE documentation team uses this data to make improvements for future releases and determine usage patterns in the online help.

If you don't want application users to transmit online help usage data, block the Web address <https://onlinehelp.gehealthcare.com> in your security configuration. Blocking this Web address does not affect the functionality of the online help.

Documentation on the Centricity Practice Web site

The Centricity Practice Web site contains the latest versions of all documentation for Centricity Practice Solution, Formulary Editor, Encounter Form Editor, CCC forms, EDI plug-ins, and other related applications (with the exception of the Online Help system.)

You need a logon ID and password to access the documentation area. Contact your clinic's Centricity Practice Solution manager for your organization's logon credentials.

While at the site you also can

- Review known issues.
- Search for clinical content in the KnowledgeBank—a repository of encounter forms and other clinical content ready-made by other users.
- Join the product mailing list and receive email newsletters on topics related to clinical content, service packs, and technical alerts.

Training databases

The Centricity Practice Solution **Demo Database** helps you get up to speed. The database contains patient charts, typical users in several locations of care, and scheduling, and billing information you can practice on without affecting your clinic's patient records.

If you encounter a problem

If you run into a problem while using Centricity Practice Solution, first try the following:

- In the application, press **F1** and read the online help for your current location in the program and the task you're trying to perform.
- Consult relevant user guides (Adobe PDF format) available on the Centricity Practice Web site and in your documentation library.
- Ask your clinic's Centricity Practice Solution Manager or Interfaces/LinkLogic Manager for help.

If you're still having trouble, please contact Centricity Services or your Value-Added Reseller.

- **Centricity Services phone: call 888.436.8491**

Call from a phone next to the workstation where the problem is occurring so it's easier to answer questions from the Services Engineer. Centricity Services hours are 7 a.m. to 7 p.m. Central Time.

- **Centricity Services email:** For non-urgent issues related to Centricity Practice Solution, send email to
 - centricitypmservices@ge.com(Practice Management)
 - centricityediservices@ge.com (EDI plug-ins)

If you have an urgent question and need immediate help, contact us by phone.

Report a defect or an enhancement idea

To report a defect or drop us a line about an enhancement idea, use the **Product Feedback Form** on the Centricity Practice Web site.

Documentation survey

Help us improve our customer documentation. All responses are confidential. A brief documentation survey is available at:

<http://supportcentral.ge.com/esurvey/takesurvey.asp?p=17778&d=2692378>.

Part I: Managing interfaces

This section introduces software interfaces and how they work to support the exchange of data between Centricity Practice Solution and external systems such as practice management applications, laboratories, transcription services, and hospitals. It also provides an overview of the Interfaces/LinkLogic Manager's responsibilities and describes some basic tasks.

This section introduces Centricity Practice Solution software interfaces and how they work to support the exchange of data between the application and external systems such as laboratories, transcription services, insurance companies, hospitals, and other non-GE practice management applications. It also provides an overview of the LinkLogic Manager's responsibilities and describes some basic tasks.

Understanding interfaces

[Interfaces enable computers to exchange data](#) 4

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This chapter introduces software interfaces to new Interfaces Managers and others data transfers between Centricity Practice Solution and other information systems. This chapter includes

- An introduction to using software interfaces
- Centricity Practice Solution interfaces, features, and tools
- How Centricity Practice Solution imports and exports patient data from other computer systems
- How Data Transfer Station (DTS) automates data transfers in large environments
- How Cloverleaf interface engine is used to support data sharing with external systems.

For information about planning, designing, and setting up interfaces for your organization, see the following resources:

Electronic Medical Record interfaces with external systems: To set up LinkLogic, in Centricity Practice Solution Online Help, click **F1** and open the help module *Setting up LinkLogic*. See the process map “Setting up LinkLogic” for step-by-step instructions. For help with day to day LinkLogic tasks, see the help module *Using LinkLogic*. Get started by reviewing the process map “Using LinkLogic.”

Practice Management interfaces with external systems: In Server Setup Online Help, click **F1** and open the help module *Setting up MIK*.

To schedule on-site training, contact Centricity Services or your Value-Added Reseller.

Interfaces enable computers to exchange data

Centricity Practice Solution uses interfaces (LinkLogic and Millbrook Integration Kit) to share patient information with other computer systems. Your clinic receives information from many sources:

- Laboratories send lab results; hospitals send discharge summaries, and other types of patient-related information.
- If providers dictate their notes, you may receive transcriptions from a transcription agency.
- Patient demographics information (name, address, phone number, and so on), is entered into a non-GE practice management information or scheduling system.
- Insurance companies send eligibility information.

Import: Transfer data from another computer system into the application

Software interfaces electronically *import* information from these computer systems into Centricity Practice Solution.

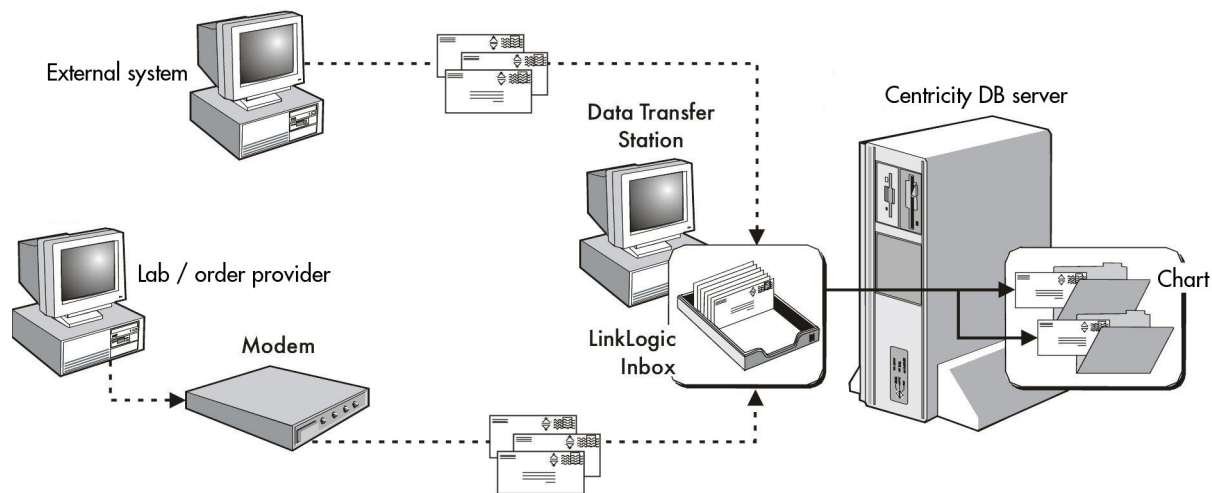
Your clinic also sends information to many places:

- Orders to laboratories and other service providers
- Prescriptions to pharmacies
- Patient information to insurance companies
- Service and procedure information to a non-GE billing system

Export: Transfer data from Centricity Practice Solution to another computer system

Centricity Practice Solution electronically *exports* these types of information to other computer systems. Its import and export features help reduce the amount of information that must be manually entered into the application and to other computer systems.

When you send data from one computer system to another, it's like mailing a letter to a person in a large office building. This diagram shows information being imported from an external system such as a hospital or practice management application and from a lab.

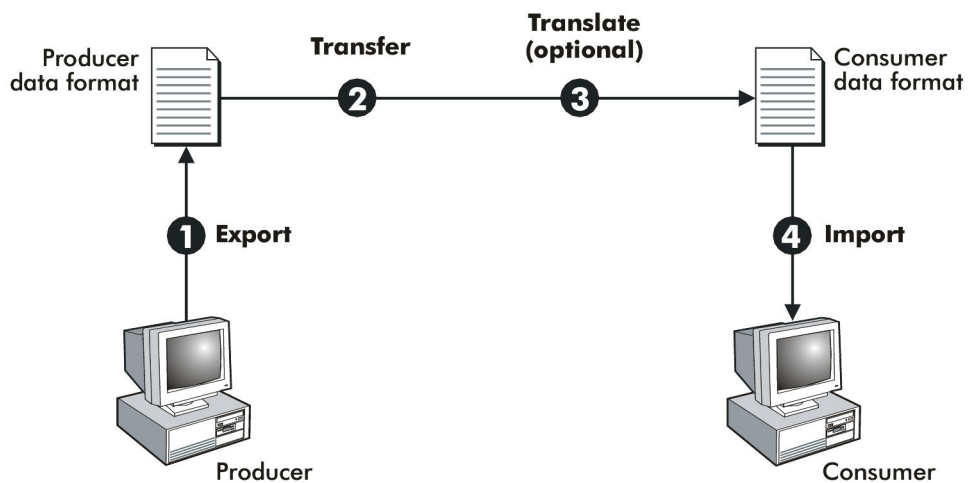


Interfaces import and export data

Centricity Practice Solution imports and exports data using interfaces. An interface is a set of rules agreed upon between the application and an outside computer system, such as a lab information system (LIS) or hospital. For Centricity Practice Solution and the external system to communicate, they need to speak the same language. This common language is the software interface.

Components of an interface

Although every interface is unique, all have some common components. The following picture illustrates these components.



Producer: computer system that generates data for another system to use

Consumer: system that uses data generated by a producer

In every interface, there is a producer and a consumer of data. The *producer* may be a separate practice management information system, an off-site transcription service, a lab information system, or Centricity Practice Solution.

The *consumer* may be Centricity Practice Solution or the external system such as a hospital or lab.

The interface between the producer and the consumer is four-step communication process:

- 1 **Export from the producer.** The producer, in response to some trigger event, extracts data from its database and formats it in an agreed-upon format.
- 2 **Transfer.** The data moves from the producer to the consumer. For example, the data moves from a laboratory to LinkLogic's *Inbox*. Either the producer or the consumer can perform the transfer.
- 3 **Translate (optional).** If the producer can't produce the data in a format that the consumer can accept, you need a tool to translate the data. Translation is usually accomplished with an *interface engine*. For more information, see ["Using an interface engine" on page 17](#). For a sample scenario, see ["Planning for interfaces" on page 21](#).

Inbox: The IN directory where LinkLogic looks for new files to import

Interface engine: Software that helps move data from one computer system to another

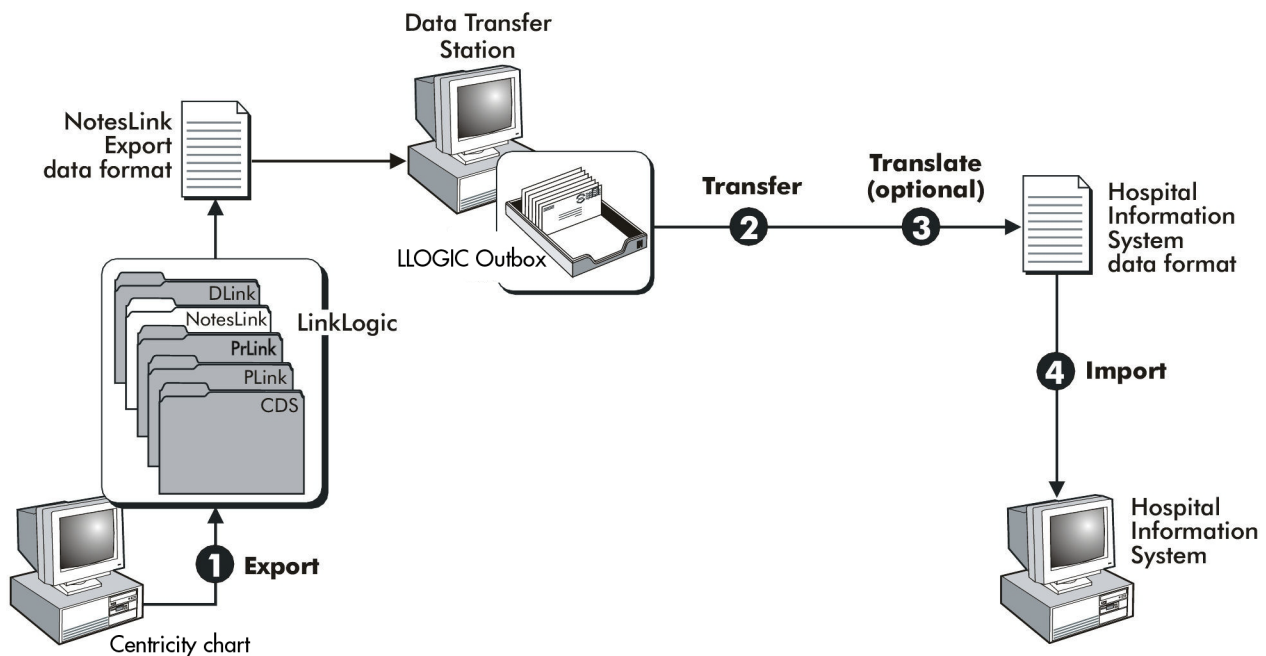
- 4 **Import to the consumer.** The consumer, in response to some trigger event, collects the formatted data and imports it.

The trigger event recurs at set intervals. For example, LinkLogic might look in its Inbox every few minutes for new data files to import. For information about setting the import frequency, see [“Set up automatic INBOX scan” on page 32.](#)

Cross-reference files:
translate incoming information into Centricity Practice Solution equivalents

If the consumer is Centricity Practice Solution, LinkLogic verifies that the incoming data meets the standards set up for that interface before importing it into the application. In this verification process, LinkLogic might use *cross-reference files* to help match data. See [“Cross-reference files act as translators” on page 13,](#) for details. For detailed instructions for setting up and using these files, see Chapter 16, [“Cross-referencing field values” on page 461.](#)

In the following example, a patient’s chart note is exported to a hospital information system. LinkLogic first converts the document to the NotesLink Export HL7 format and puts it in the Outbox (LLOGIC/OUT folder). The next time DTS checks the Outbox for files, it sends the note to the hospital system. Depending on the relationship Centricity Practice Solution has with the hospital system, the note either goes directly to the system or is first translated by an interface engine into a format the hospital’s system can read. See also [“Using an interface engine” on page 17.](#)



Centricity Practice Solution interfaces

Interfaces for Centricity Practice Solution - Electronic Medical Record are provided LinkLogic. Interfaces for Centricity Practice Solution - Practice Management are provided by Millbrook Integration Kit (MIK).

These applications...	Use these interfaces...	To do this....	
Centricity Practice Solution - Electronic Medical Record (Chart)	LinkLogic only	Import: Lab results, immunization data, appointments Import/export: Demographics, documents	Export: Observations, allergies, problems, procedures, clinical summaries, immunization data
Centricity Practice Solution - Practice Management (PM)	MIK only	Import/export: Appointments (import only), patient demographics, billing, insurance eligibility, master file changes (adding/changing doctors)	
Centricity Practice Solution (Chart/PM)	LinkLogic	Import: Documents, lab results, demographics	Export: All information except procedures
Centricity Practice Solution (Chart/PM)	MIK	Import: Demographics, billing data (systems other than CPS)	Export: Demographics, appointments, master file information (adding/changing doctors)
<p>Note: MIK demographics query/response and insurance eligibility request/response interfaces are not used in Centricity Practice Solution when both Chart/PM modules are enabled.</p>			

Data formats

Data format: The way information is structured in an import or export file

Data that's imported or exported by Centricity Practice Solution must follow a certain *data format*. If the producer and consumer don't use the same data format, they can't exchange information. Centricity Practice Solution interfaces for importing and exporting different types of information support two standard data formats:

- HL7 (Health Level 7).** A standard for electronic data exchange in healthcare environments. It defines data formats for clinical and financial information that will be exchanged between healthcare computing systems.

How Centricity Practice Solution interfaces use of this format is defined in the interface specifications for each interface type. See [“Part II: LinkLogic interface specifications” on page 45](#).

- **ASTM 1238 (LinkLogic only)**. A format based on the ASTM E1238-94 standard (Standard Specification for Transferring Clinical Observations Between Independent Computer Systems), version 2 or later. LinkLogic's use of this format is defined in [“LabLink Import ASTM interface specification” on page 225](#).

LinkLogic import interfaces

LinkLogic interfaces import information from external information systems such as practice management applications, transcription services, laboratories, immunization registries, and other systems. For example, Centricity Practice Solution can be set up to receive:

- Patient demographics information from a practice management information system (name, address, phone number, and so on)
- Transcribed chart notes dictated by providers
- Patient immunizations from a state registry
- Pointers to image files
- Laboratory test results, discharge summaries, and other patient-related reports
- Patient scheduling (appointments) information

LinkLogic relationship:
Specifies how Centricity Practice Solution and another system will exchange data

There is a LinkLogic interface and configurable *relationship* for each data type. This section lists LinkLogic's import relationships and describes the interfaces that support them. It also provides links to the technical specification for each interface. For more about how LinkLogic relationships work, see [“Configuring LinkLogic relationships” on page 12](#).

Demographics Import

The DemographicsLink Import HL7 interface is typically used with a practice management information system or a hospital information system. It imports patient demographic information, such as name, address, telephone number, date of birth, contacts, hospital discharge summaries, and insurance information. For details, see [“DemographicsLink Import /Export HL7 interface specification” on page 87](#).

Documents Import

The NotesLink Import HL7 interface imports patient-related reports from external sources. These reports can include transcribed notes, radiology reports, hospital discharge summaries, and pathology reports. Documents Import can import any type of text information if it is properly formatted. For details, see [“NotesLink Import/Export HL7 interface specification” on page 341](#).

The Documents Import relationship can also be configured in the application to import immunization documents from a state immunization registry translated by the Cloverleaf interface engine. See [“Immunization Registry Import/Export HL7 interface specification” on page 181](#).

Images Import

The ImageLink Import HL7 interface imports references to externally stored image files, such as radiology images, drawings, or other graphical material. When such graphical files are not stored in the Centricity Practice Solution database, ImageLink Import can be used with an external database, such as an imaging storage system. For details, see [“ImageLink Import/Export HL7 interface specification” on page 135](#).

Lab Import

Observation: A quantitative or semi-quantitative fact about a patient

LabLink Import HL7 and ASTM interfaces import laboratory information from a regional or local lab information system. The interfaces import each laboratory test result document into a patient’s chart as an external report that includes both structured *observations* and a text summary.

A cross-reference file is required to map lab test codes correctly so the individual test results go to the patient’s flowsheet when the note is signed. For details, see [“LabLink Import/Export HL7 interface specification” on page 253](#) and [“LabLink Import ASTM interface specification” on page 225](#).

Appointments Import

The ScheduLink Import HL7 interface imports appointment information from another scheduling program into the Centricity Practice Solution scheduling module. For interface details, see [“ScheduLink Import HL7 interface specification” on page 425](#).

MIK import interfaces

MIK (Millbrook Integration Kit) interfaces import the following types of information to the practice management application:

- Patient demographics, information about providers, and billing data from external (non-GE) electronic medical records software
- Requests for patient eligibility information from insurance carriers.

MIK imports the following HL7-compliant messages:

- **ADT (Admissions, Discharges, Transfers) messages:** Includes messages for triggers A04, A08, A18, A28, A29, A31, A46, and A47. The ADT message is imported whenever a referring physician is added or modified. It contains information on staff and personnel and practitioner information on personnel who are also health practitioners.
- **QRY (query from an external system) message:** Includes messages for Q01 trigger. The QRY message is received whenever an external system requests for demographics for a specific patient ID.

- **DFT (Detailed Financial Transaction) message:** Includes messages for trigger P03. The DFT message is imported whenever information about a patient visit, diagnoses, and procedures are documented in an external application.
- **MFN (Master File Notification) message:** Includes messages for trigger M02. The MFN message is imported whenever a referring physician is added or modified. It contains information on staff and personnel and practitioner information on personnel who are also health practitioners.

LinkLogic export interfaces

LinkLogic interfaces also *export* information to other applications and computer systems, such as your practice management application, a hospital or managed care information system, or a clinical data repository. For example, Centricity Practice Solution can be set up to send:

- Demographics information
- Patient-related notes
- Patient observations
- Procedures provided or performed for the patient
- Orders
- Immunization information
- Problems or diagnosis information
- Allergy information
- Clinical summary information

There is a LinkLogic interface and a configurable LinkLogic *relationship* for each data type. This section lists LinkLogic's export relationships and describes the interfaces that support them. It also provides links to the technical specification for each interface. For more about how LinkLogic relationships work, see ["Configuring LinkLogic relationships" on page 12](#).

Demographics Export

The DemographicsLink Export HL7 interface sends demographics information to a practice management information system, hospital information system, or clinical data repository. You can automatically send new or changed demographics information, such as patient name, address, telephone number, date of birth, contacts, and insurance information. For details, see ["DemographicsLink Import /Export HL7 interface specification" on page 87](#).

The Demographics Export relationship can be configured to export patient demographics information with immunization data for translation and routing to a state immunization registry via Cloverleaf interface engine. See ["Immunization Registry Import/Export HL7 interface specification" on page 181](#).

Documents Export

The NotesLink Export HL7 interface sends chart notes. It enables you to send notes to external computer systems, such as a clinical data repository or hospital information system. For details, see [“NotesLink Import/Export HL7 interface specification” on page 341](#).

Images Export

The ImageLink Export HL7 interface sends references to image files such as radiology images, drawings, or other graphical material stored in external files or other systems. For details, see [“ImageLink Import/Export HL7 interface specification” on page 135](#).

Observations Export

The LabLink Export HL7 interface sends documented observations from the patient’s flowsheet. For details, see [“LabLink Import/Export HL7 interface specification” on page 253](#) and [“LabLink Import ASTM interface specification” on page 225](#).

The Observations Export relationship can be configured to export patient immunization information to a state immunization registry via the Cloverleaf interface engine. For details, see [“Immunization Registry Import/Export HL7 interface specification” on page 181](#).

Orders Export

The Orders Export HL7 interface sends order information created in Centricity Practice Solution in an ORM^O01 message directly to external systems and labs or through the Cloverleaf interface engine, if translation or routing is required. See [“Orders Export HL7 interface specification” on page 301](#).

Procedures Export

Procedure: A test, therapy, or other intervention provided or performed for a patient

ProceduresLink Export HL7 interface sends billing information for *procedures* documented as orders in Centricity Practice Solution to an external computer system such as a practice management information system or a managed care system. For details, see [“ProceduresLink Export HL7 interface specification” on page 401](#).

Problems Export

ProblemsLink Export HL7 interface sends coded and uncoded problems information to an external computer system such as a clinical data repository. For details, see [“ProblemsLink Export HL7 interface specification” on page 381](#).

Allergies Export

AllergiesLink Export HL7 interface sends coded and uncoded allergy information to an external computer system such as a clinical data repository. For details, see [“AllergiesLink Export HL7 interface specification” on page 47](#).

Clinical Summary Export

Clinical lists: sets of clinical data in Centricity Practice Solution structured for easy viewing and analysis

Clinical Data Summary Export HL7 interface sends a text summary of the patient's *clinical lists*: problems and assessments, medications and prescriptions, allergies, directives, observations, and orders. This data is not exported in structured format but as text. For details, see "[Clinical Data Summary Export HL7 interface specification](#)" on page 65.

MIK export interfaces

MIK (Millbrook Integration Kit) interfaces exports the following types of information to non-GE electronic medical records applications and insurance carriers:

- Patient demographics, appointments, and information about providers to external (non-GE) electronic medical records software
- Patient eligibility information from insurance carriers

MIK exports the following HL7-compliant messages:

- **ADT (Admissions, Discharges, Transfers) messages:** Includes messages for triggers A01, A03, A04, A08, A09, A10, A18, A19, A28, A29, A31, A46, A47. The ADT message is exported whenever a referring physician is added or modified. It contains information on staff and personnel and practitioner information on personnel who are also health practitioners.
- **SIU (Schedule Information Unsolicited) message:** Includes messages for triggers S12, S13, S14, S5, and S22. The SIU message is exported by MIK whenever a patient appointment is created, updated, rescheduled, cancelled, or removed.
- **MFN (Master File Notification) message:** Includes messages for triggers M01, M02. The MFN message is exported whenever a referring physician is added or modified. It contains information on staff and personnel and practitioner information on personnel who are also health practitioners.

Configuring LinkLogic relationships

Before you import or export information, you must define the relationships between Centricity Practice Solution and other computer systems. A *relationship* in LinkLogic specifies

- Interface type (demographics, documents, and so on)
- Direction (import or export)
- Data format to use (HL7 or ASTM (LabLink only))
- The unique ID for the external computer system
- Whether to identify patients by an external *ID set* (used by the external system) or by the Centricity Practice Solution patient ID.

ID set: patient ID numbers from a computer system

For detailed information about setting up interface relationships, in Centricity Practice Solution, click F1 to access online help. In the help module *Setting up LinkLogic*, see the topic “Setting up LinkLogic relationships”.

LinkLogic task options

Task options: define LinkLogic behavior when importing or exporting data

When you set up a relationship, LinkLogic creates a corresponding task. The task tells LinkLogic what to do when data is imported or exported using a particular interface.

In Centricity Practice Solution, click F1 to access online help. See the help topic “Set up LinkLogic task options.”

Some task options include:

- **Locations of care.** Specifies locations of care for which a relationship applies on import and export.
For information about enterprise planning for LinkLogic in the context of multiple locations of care, see “LinkLogic and locations of care” in *System Planning and Requirements for Centricity Practice Solution*, in your documentation library and on the Centricity Practice Web site.
- **Constraints and recurring tasks (export).** Set which types of information will you export, how often, and from which locations of care or providers, for example.
- **Patient matching.** Sets criteria LinkLogic will use in matching data to Centricity Practice Solution patients. See [“Data-to-Patient matching” on page 469](#).
- **Confidentiality.** Sets certain import and export requirements based on your patient privacy policies.
- **External attachments.** Enables import of links to images stored outside Centricity Practice Solution. See [“Using external attachments” on page 176](#).
- **Signing.** Configures automatic signing (for imported documents and lab results)
- **Document overlay.** Sets up how LinkLogic will replace preliminary documents or reports with subsequent or final versions in a patient’s chart. See [“Using document overlay” on page 577](#).
- **Routing abnormal results.** Designates certain results as Abnormal and specifies how they’ll be routed to responsible providers.
- **Appointments.** Sets up how you’ll handle appointments information.

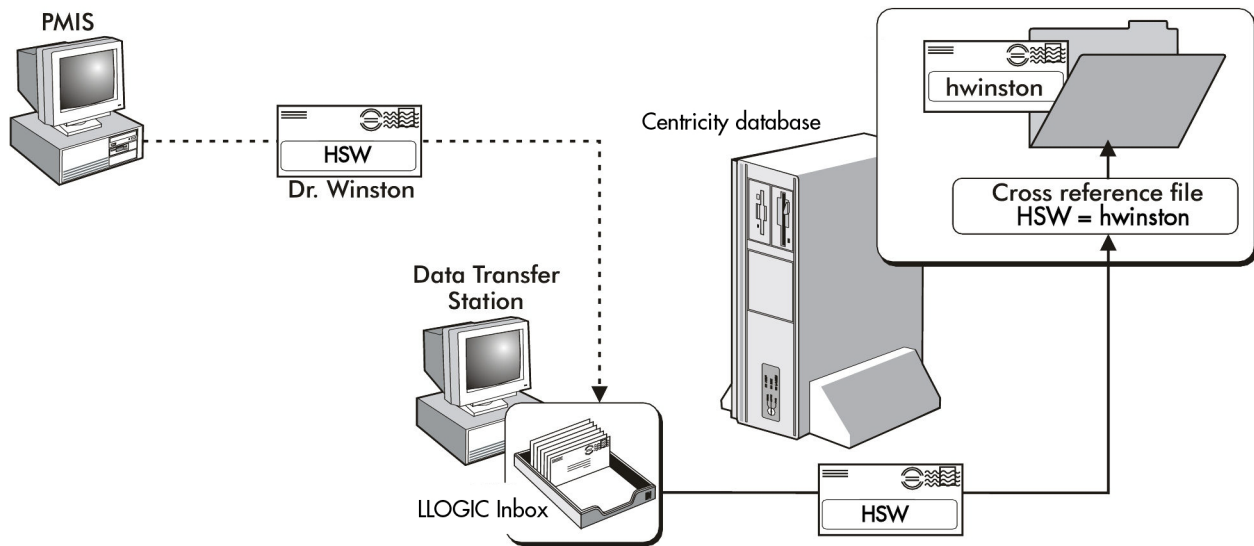
Cross-reference files act as translators

Cross-reference files: translate incoming information into Centricity Practice Solution equivalents.

LinkLogic uses *cross-reference files* to translate names and identifiers used in other computer systems to Centricity Practice Solution names and identifiers. For example, if you import lab results, you’ll need a cross-reference file to

translate Laboratory Information System (LIS) result codes to Centricity Practice Solution observation terms.

Many external systems use initials to designate care providers. If Centricity Practice Solution is not set up to use initials as the application user ID, you'll need a cross-reference file to map the external IDs to Centricity Practice Solution user IDs, as illustrated below.



The following table shows the type of information a cross-reference file can translate.

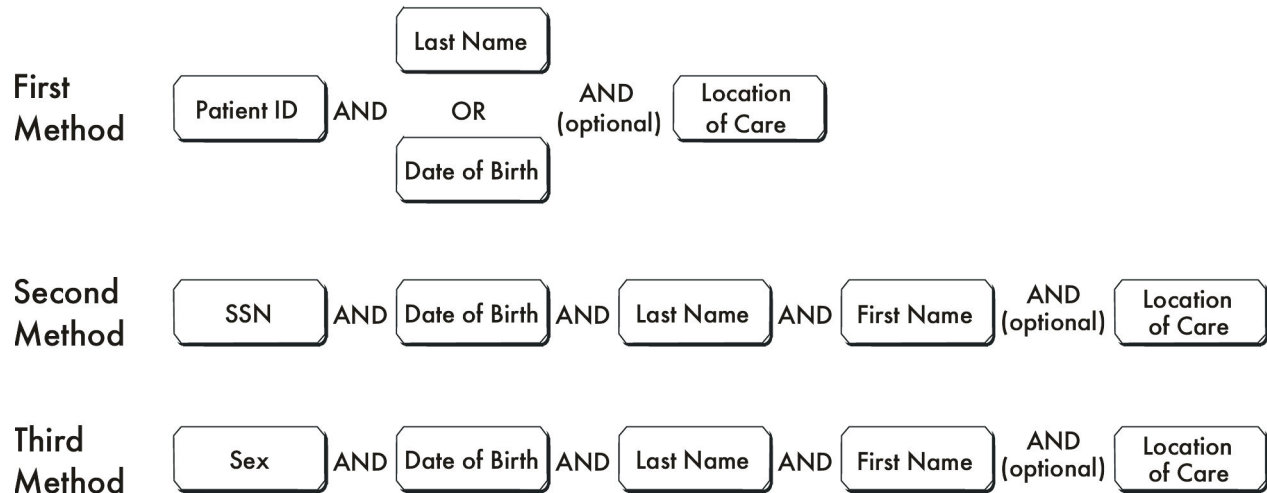
Cross-reference files translate....	To these Centricity values...
Provider name codes, such as 001	User IDs, for example <i>hwinston</i>
Lab codes, such as <i>chol</i>	Observation terms, for example <i>Cholesterol</i>
Clinic codes, such as <i>MandS</i>	Locations of care, such as <i>Main</i> and <i>South</i>
Appointment book codes, such as <i>HW001</i>	Appointment book names, like <i>hwinston</i>
Appointment type codes, such as <i>OV431</i>	Appointment types, such as <i>Ofc Visit Limited</i>

For more information about creating and using cross-reference files, see ["Cross-referencing field values" on page 461](#).

LinkLogic matches data to patients

Correctly matching imported data to Centricity Practice Solution is a critical task of an interface. The relationships and cross-reference files you've established help the application match data with patient records. The producer of the data must provide an adequate set of patient identifiers to ensure a consistent match to Centricity Practice Solution patients.

LinkLogic typically makes three attempts to match imported data with a Centricity Practice Solution chart:



If no match is found, LinkLogic may generate a data mismatch error or create a new chart (depending on how LinkLogic is configured).

External ID: patient ID from another computer system

You can also match by the patient’s external ID. However, make certain that each patient has a unique external ID. For more information about how LinkLogic matches patient data, see [“Matching algorithms” on page 469](#).

Replacing preliminary documents (document overlay)

As documents, lab results, and other reports are imported into Centricity Practice Solution, a document is created and filed in the patient’s chart, and often routed to the provider’s desktop. These reports may be preliminary or incomplete. If final or complete reports will follow, you’ll want to consider using LinkLogic’s document overlay feature to replace the original report with the new report. The earlier report is hidden and the new report appears on the desktop and in the patient’s chart.

- ✓ Users can view the replaced documents by selecting the Replaced document type in the Organize Documents window.

To successfully replace a report, key data fields in the import file must match. For more information on which data fields in the report must contain data and match previous reports, see [“Using document overlay” on page 577](#).

Configuring MIK interfaces

MIK interfaces are configured entirely in the Server Setup application, usually located on the database server. To configure MIK to exchange data with other systems, in Server Setup online Help, see the help module *Set up MIK*. To configure what MIK does on import and export to other systems, see the help module *Configure MIK* and in this guide, "[Part III: MIK interface specifications](#)" on page 481.

Mapping field values

Instead of cross-reference files, MIK uses mapping tables to match unique ID values of objects in the external system with the same data objects in Centricity Practice Solution.

You can configure many list values in MIK (in Server Setup). MIK can be configured to map an ID by either:

- Not transmitting
- Use the Centricity Practice Solution ID
- Use a manually configured mapping table
- Dynamically create a mapping table based on specific information contained in the object

In the Server Setup Online Help module *Configure MIK*, see the topic "Map MIK destinations."

Using an interface engine

Interface engine:
Software that helps move data from one computer system to another

Some clinics require an *interface engine* to aid in importing and exporting data from other applications and systems. An interface engine is a software product that can do the following:

- Transfer data between multiple computer systems
- Translate file formats and content
- Monitor data transfer activities

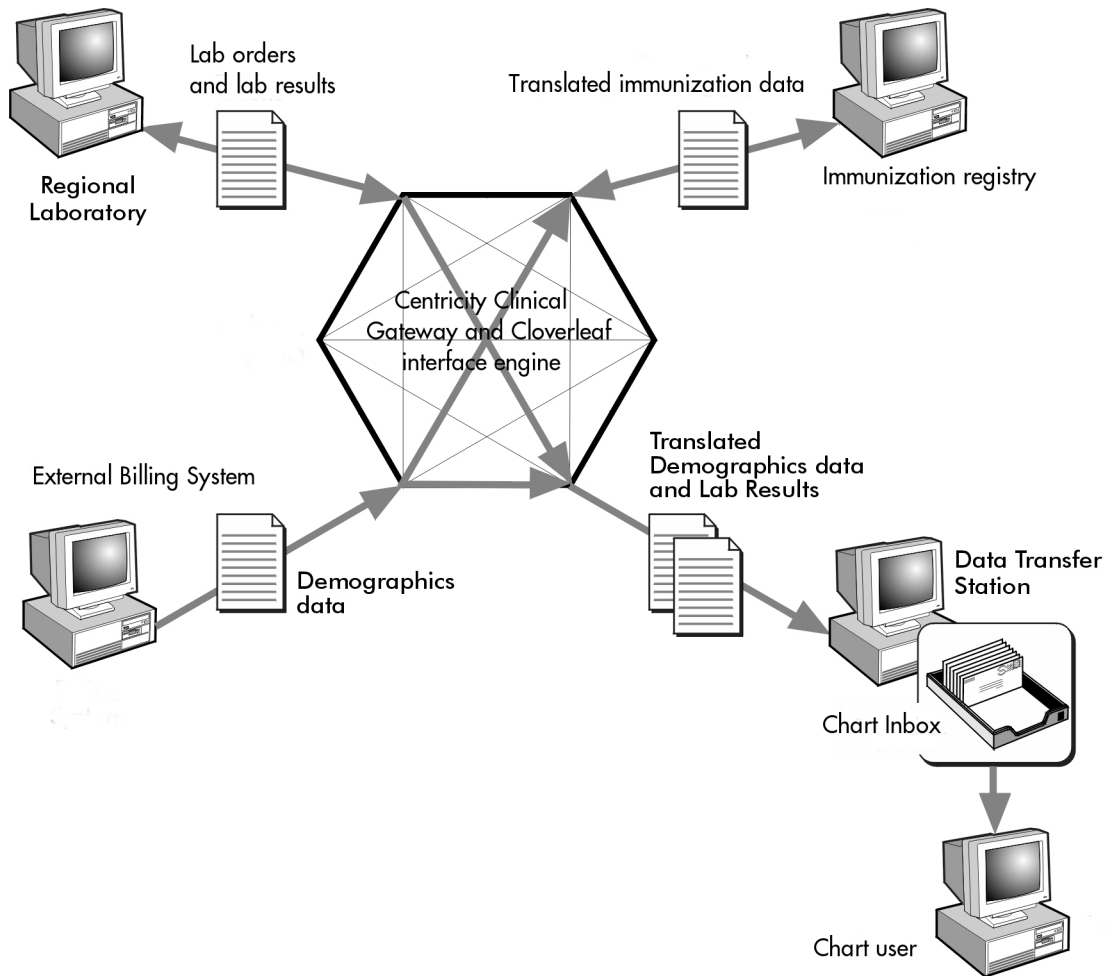
Supported interface engines

Kryptiq's Centricity Bridge interface engine (previously LMIK/Rosetta Stone) supports the data integration of Centricity Electronic Medical Record on Oracle with Centricity Practice Solution (Practice Management only) on Microsoft SQL Server.

Centricity Clinical Gateway and the **Cloverleaf 5.5 MB interface engine** support data exchange with other GE applications and medical equipment systems and state immunization registries and orders export to labs and other orders service providers.

In the following example, Centricity Practice Solution sends lab orders and immunization updates to the interface engine which translates and sends them to the laboratory and the state registry. It receives patient demographic data imported from an external billing system and test results imported from the laboratory. The demographics data are imported directly via Demographics Import to display in the application.

Immunization data from the registry is imported to Centricity Practice Solution as a document via Documents Import.



Implementing Centricity Clinical Gateway and Cloverleaf interface engine

Centricity Clinical Gateway (CCG) with Cloverleaf interface engine is capable of receiving messages from a variety of internal and external sources in a variety of protocols, including other GE applications.

In Centricity Practice Solution, CCG and Cloverleaf support data sharing with external information systems such as hospital information systems (HIS), radiology information systems (RIS), Centricity Imaging solutions, laboratories

and other service providers, state immunization registries, and other GE Healthcare systems.



Implementing CCG to support data export to immunization registries and labs involves separate licenses, unique configurations, and potentially customization of interfaces and encounter forms.

Contact your GE Sales representative or Value-Added Reseller for help planning and configuring Centricity Practice Solution for your implementation. All licensing, configuration, and customization of CCG/Cloverleaf must be done by GE.

For detailed installation and configuration steps for Centricity Clinical Gateway and Cloverleaf interfaces, see [Installing and Maintaining the Centricity Clinical Gateway](#) available in your documentation library folder and the Centricity Practice Web site.

Automating and managing data transfers

Many clinics add optional hardware and software to make the import and export processes easier to manage. A Data Transfer Station (DTS) is often used in clinics that import and export large amounts of data.

Data Transfer Station automates import and export tasks

Clinics that import and export large amounts of data use one or more Data Transfer Stations (DTS) to automate LinkLogic import and export jobs and to balance the transfer load. You can set up DTS to do the following tasks:

- Automatically import data from the IN folder to Centricity Practice Solution or export data from Centricity Practice Solution to the OUT folder to be retrieved by another application. See “Automating import jobs” below, and [“Automating export jobs” on page 20](#).
- Transfer data using TCP/IP sockets. See also [“Guide to socket implementation” on page 613](#).

For information about planning for Data Transfer Stations, see “Software interfaces,” in [System Planning and Requirements for Centricity Practice Solution](#), in your documentation library and on the Centricity Practice Web site at <http://centricitypractice.gehealthcare.com>.

For detailed installation and configuration instructions for the DTS, see your workstation installation instructions, and in online help, see “Set up LinkLogic and DTS workstations.”

The DTS is installed on a dedicated workstation that is not running Centricity Practice Solution or other programs that might conflict with its operations or slow processing. A LinkLogic Manager monitors DTS and controls which tasks DTS processes and how often it processes them.

For more about how the LinkLogic Manager works with Data Transfer Station, see [“Managing LinkLogic” on page 27](#).

Automating import jobs

You control how frequently DTS scans the Inbox for new jobs. This depends on how frequently other computer systems send data to your system.

Typically, you'll set up DTS to scan the Inbox as often as your most frequent import interface sends data. For example, if your practice management system sends updated demographics information every minute, and your transcription service sends reports once a day, you'll want DTS to look in the Inbox every minute for new jobs.

However, every time DTS processes jobs in the Inbox, it is using network resources. If you see a significant reduction in network performance, consider reducing how often DTS scans the Inbox for new jobs.

To set how frequently DTS scans the Inbox, in Centricity Practice Solution, go to **Administration** and select **System > LinkLogic > Defaults**. In the **Queue Jobs** field, enter how often DTS should scan the Inbox

Automating export jobs

When the DTS exports data from Centricity Practice Solution, it scans charts in the database for changes since the last export. If changes exist, the data is formatted into an appropriate HL7 data file and placed in the LinkLogic Outbox (LLOGIC/OUT file on the database server). You set an interval—a recurring task—for how often you want the DTS to send data to the Outbox.

Unlike import relationships, where you set up DTS once to import jobs for all types of import files, you control how frequently DTS exports information for each relationship. You do this by setting up DTS and setting the recurring task options for each relationship. In Centricity Practice Solution, go to **Administration** and select **System > LinkLogic > Task Options**, select the export relationship and click **Recurring Tasks**.

Using TCP/IP sockets-based communication on DTS

TCP/IP sockets are a fast and efficient way to exchange data with other computer systems. Sockets send and receive continuous streams of information, rather than storing and transferring information in a file.

For detailed instructions for setting up DTS to use sockets to send or receive data from remote systems, see [“Setting up LinkLogic”](#) in the online help.

For information about planning, configuring, and testing socket-based communications, see [“Guide to socket implementation” on page 613](#).

LinkLogic enables TCP/IP sockets for LinkLogic relationships that use the HL7 or ASTM format to transfer data to and from Centricity Practice Solution. See [“Configuring LinkLogic relationships” on page 12](#), for a detailed description of LinkLogic relationships.

LinkLogic converts the stream of information it receives into a file before importing the data into Centricity Practice Solution. To use TCP/IP sockets, you must install and use Data Transfer Station.

Example: Eastside Clinic uses TCP/IP sockets to receive demographics information from PracticeMgr. They use Data Transfer Station (DTS) to bridge the gap between streams of data and the data file LinkLogic requires. DTS receives the stream of data, creates a file, and puts the file in the LLOGIC/DATA/ IN folder.

Planning for interfaces

To effectively plan for interfaces, you should be familiar with Centricity Practice Solution and the interfaces it supports.



Contact your GE Sales representative or Value-Added Reseller for help planning how you will use Centricity Practice Solution interfaces or implementing custom interfaces.

Initial planning involves three activities:

- analyzing your operations
- assessing your needs
- creating a project plan

Analyze your operations

Knowing your current operations and workflows helps you to plan for what you'll need and from Centricity Practice Solution. Begin by reviewing how you share information between healthcare computer systems.

- Do you use an external practice management system to enter demographics and billing information
- Do you use an external scheduling program?
- How do you place laboratory test or other service orders?
- How do you receive laboratory tests and other service order results?
- Do your care providers use a transcription service?
- Do you want to store information in a clinical data repository?
- Do you send copies of patient charts as part of a referral?

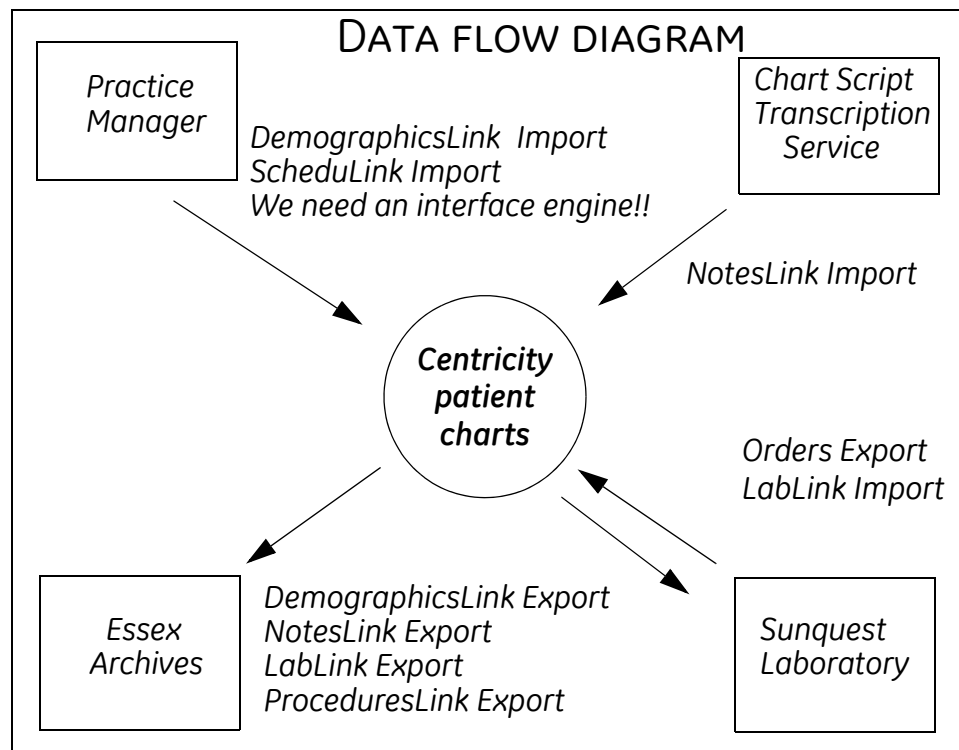
Sample analysis

Here are the computer systems used by the Eastside Clinic in its day-to-day operations:

This system...	Is used by...	To do this...
Centricity Practice Solution-Chart module	Clinic staff	Maintain electronic medical records; import and export information from other systems
Practice Manager (an external PM application)	Front desk staff	Register patients and schedule appointments
Chart Script (a remote transcription service)	Providers	Transcribe dictated chart notes
Sunquest Laboratory	Clinic staff	Process laboratory tests and return results
State immunization registry	Clinic staff	Access/upload to patient immunization data stored in the state registry
Essex Archives (a clinical data repository)	Clinic staff, hospital staff, and administration staff	Store demographics, chart notes, and other clinical information

To help understand the flow of information in and out of the Eastside Clinic, the planning team drew a simple data flow diagram showing where information comes from, where information goes, and the different computer systems the Eastside Clinic uses.

On the diagram, they drew arrows to indicate the directions of information flows.



Assess your needs

Use the information you have gathered from diagramming information flows to assess your needs and identify the processes you want to re-engineer. Review your current workflows with Centricity Practice Solution and its interfaces' capabilities in mind and determine which interfaces you want to use in your clinic. Then do the following:

- 1 **Identify the data producer and consumer for each interface.**
For help identifying systems that successfully exchange information with Centricity Practice Solution, contact your GE Sales representative or Value-Added Reseller.
- 2 **Determine whether existing interfaces will support the data exchange you require.** For systems that don't yet exchange information with Centricity Practice Solution, contact your vendor and determine whether they are willing and able to develop the interface. This can be expensive. Before you begin, determine the feasibility of the project.
- 3 **Consider how you will transfer the data.** Centricity Practice Solution supports socket-based communications.
 - **Consider how often you'll want to import, export, and transfer information.** This depends on how often the producer can export data and how often the consumer can import the information. This may also depend on the transfer method and whether it can handle the volume of data.

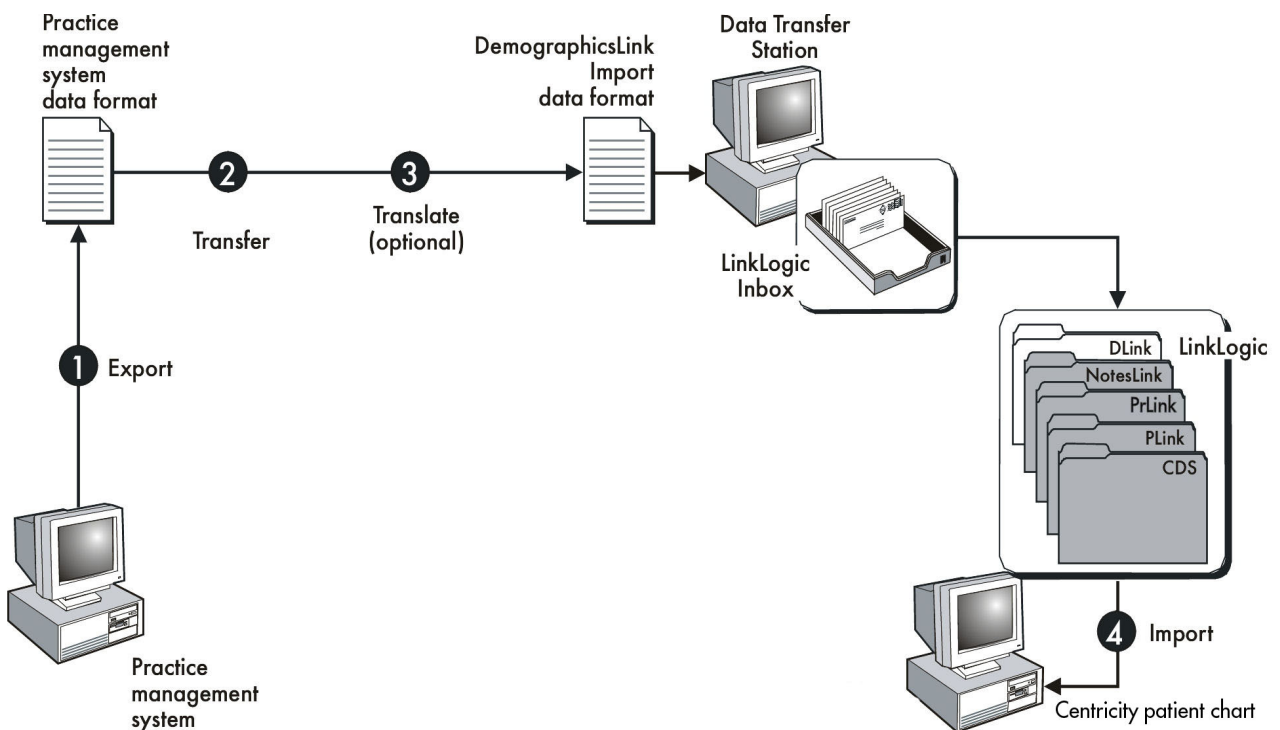
- **Will you need to automate data transfers?** If you transfer a large amount of data daily, you'll want to use Data Transfer Station, which automates data import and export.

Sample assessment

The Eastside Clinic interfaces team reviewed how Centricity Practice Solution will import demographics information. Based on their analysis, they determined that Centricity Practice Solution will be the consumer of demographics information and LinkLogic will be the import component of the interface.

Here's what the team discovered (see diagram below):

- 1 **Export.** The external system, Practice Manager, exports demographics data every 30 seconds.
- 2 **Transfer.** The Eastside Clinic can use an interface engine to transfer the data from Practice Manager to LinkLogic's Inbox. The Information Systems (IS) staff will program and monitor the interface engine.
- 3 **Translate.** Practice Manager doesn't export all the information in the format LinkLogic understands. The IS staff must program the interface engine to translate from Practice Manager's data format to LinkLogic's format.
- 4 **Import.** LinkLogic's DemographicsLink Import interface can import the demographics data into Centricity Practice Solution. The clinic will use a Data Transfer Station to automate the transfers.



Create a project plan

The project plan includes the roles, responsibilities, schedules, and resources for the project. Allow adequate time for developing and testing each interface, and for validating each interface in each clinic.

Identify one or more people to fill the interfaces manager role. You may need an interfaces manager for the enterprise as well as one for each clinic.

Develop interfaces

In this phase, the vendor for the application you want to exchange data with builds an interface based on Centricity Practice Solution interface specifications. The custom interface must conform to the data format, data content, and communication methodology, and frequency.

Before developing an interface—which can be a costly endeavor—contact Centricity Services for a list of systems that successfully exchange information with Centricity Practice Solution. You may not need to develop the interface.

For detailed interface specifications see [“Part II: LinkLogic interface specifications” on page 45](#), and [“Part III: MIK interface specifications” on page 481](#).

Testing interfaces

If you develop custom interfaces, plan to begin testing each interface at least 10 weeks before using it in production. Plan for the testing to last six weeks.

In this phase, you confirm that the data format and content are correct. Errors in these areas can cause serious and long-lasting problems if they are not found before using the interface.

Prepare to test

Identify who'll conduct the tests. If you've chosen an interfaces manager, involve them in the testing. Have your data flow diagram and the appropriate interface specification available. Define and document the test process, what types of data to test, what results you expect, and the criteria for when you are done testing.

Set up a test environment

Do not test interfaces in your production environment. If you don't have the resources for a separate test server, use the training database to test the interface. Set up Centricity Practice Solution and LinkLogic or MIK so it matches your production environment with a few providers and patients. Use the same cross-reference files and /or settings you plan to use in your production environment.

See online Help for detailed instructions for setting up and configuring LinkLogic or MIK within Centricity Practice Solution.

Collect sample data

For import interfaces, collect sample data. The sample files should include every type of patient data you'll receive. Verify that the files are in ASCII format, have the proper delimiters between fields, and that all required data fields contain data. If something appears incorrect, contact your interface developer.

Make sure your test plan includes testing any cross-reference files and settings you plan to use and your transfer mechanism.

Test the interface

If you are using LinkLogic, begin by importing or exporting data manually. Carefully review the LinkLogic Activity Log for warnings and errors. These messages help you identify problems with the data format, missing data, or with LinkLogic settings.

When you have resolved or identified data format and content problems, begin to test your transfer mechanism.

Validate that imported data is accurately showing in Centricity Practice Solution. For each patient record you import, look at the chart to see that the information was imported correctly into the chart.

Validate and implement interfaces

Plan to begin validating each interface at least four weeks before using it in production.

In this phase, you confirm that the interface works in each clinic and that your workflows and data flows are successful using the new interface.

You may want to repeat the tests you conducted in the previous test phase. In addition to these tests, work with the interfaces manager and the clinical staff to make sure that the data is accurate and matches the clinic's workflows.

CHAPTER 2

Managing LinkLogic

Recommended skills for LinkLogic Managers	27
The LinkLogic Manager monitors the process	28
LinkLogic Manager's daily tasks	30
Using the Errors tab to resolve data transfer errors	31
DTS settings and configuration options	32

This chapter describes the requirements and jobs responsibilities of the LinkLogic Manager, who manages data exchanges between Centricity Practice Solution's Chart module and external systems such as laboratories, other healthcare facilities, non-GE practice management and scheduling applications, and transcription services.

This chapter focuses on configuring and running Data Transfer Station. For detailed information about setting up LinkLogic in your clinic, in Online Help, see the help module *Setting up LinkLogic*.

Recommended skills for LinkLogic Managers

A successful LinkLogic Manager has these skills:

- **Navigates using Windows Explorer** to find files, follow a Windows path, and navigate in a directory structure.
- **Uses Microsoft Excel.** This application is used in creating cross-reference files.
- **Can create/use drive mappings** and remap a network drive using Windows Explorer.
- **Understands LinkLogic data formats and specifications.** You need a basic understanding of interfaces and HL7 data formats so you can refer to the interface specifications for information about data fields and interface behavior to resolve certain errors.
- **Solve problems independently.** Be sufficiently comfortable with the skills listed above that you can solve problems and troubleshoot errors independently.

The LinkLogic Manager monitors the process

The LinkLogic Manager is responsible for the day-to-day monitoring of LinkLogic. The LinkLogic Manager resolves any mismatches or errors that occur when LinkLogic attempts to import data into Centricity Practice Solution. If there is no Data Transfer Station, the LinkLogic Manager manually imports and exports data within Centricity Practice Solution.

Time commitment

Depending on the size of your organization, the level of data import and export activity, and the quality of your interfaces, this job may require a significant amount of time.

This table lists some of the tasks the LinkLogic Manager performs.

Task	Frequency
Work with the Clinic Team to test and validate interfaces in the clinic	During implementation process
If necessary, manually initiate import and export tasks	As needed
Monitor Data Transfer Station activity	Hourly or as needed
Resolve errors	Hourly or as needed
Reconcile records that do not match and assign to appropriate charts	As needed
Work with Centricity Services to resolve LinkLogic-related errors and problems; track resolution	As needed
Work with vendors to resolve data transfer and format errors and problems; track resolution	As needed

To learn more about setting up and managing LinkLogic activity, see the following resources:

- **Extensive online help:** Online help provides detailed help topics for every aspect of LinkLogic setup and management, See the following topics:
 - In the help module *Setting up LinkLogic*, “Process Map: Planning LinkLogic” and “Process Map: Setting up LinkLogic”
 - In the help module *Managing LinkLogic*, “Process Map: Using LinkLogic”
- **In this guide:** This guide contains many helpful resources, including
 - [“Understanding interfaces” on page 3](#)
 - [“Part II: LinkLogic interface specifications” on page 45](#)
 - [“Appendices: Interface planning and implementation resources” on page 565](#)
- **On site training:** LinkLogic Manager training can be scheduled at your site. Contact your GE Sales representative or Value-Added Reseller for more information.

LinkLogic Manager's daily tasks

Print this page as a handy reference for LinkLogic Manager's daily tasks.

Task	Steps	Notes
Start and stop DTS (and required interface engines)	Stop and start the DTS daily.	See "DTS settings and configuration options" on page 32.
Import / export data using DTS	<ol style="list-style-type: none"> 1 Ensure DTS is operational. 2 Check the Activity Log, Error log, and exception files for problems with data. 3 Resolve errors (see below). 	Import/export occurs automatically; frequency determined by LinkLogic settings.
Import data manually	<ol style="list-style-type: none"> 1 Go to LinkLogic > Jobs. 2 Click Import. 3 Select file(s) to import. 4 Click Open. 5 Click OK. 	Import data manually as needed. File extensions for HL7 data files: <ul style="list-style-type: none"> • Demographics – .HD • Documents – .HT • Lab results – .HR • Appointments – .SL
Export data manually	<ol style="list-style-type: none"> 1 Go to LinkLogic > Jobs. 2 Click Export. 3 Select a type of information to export. 4 Follow the steps for the type of export. 	Export data manually as needed.
Resolve errors	<ol style="list-style-type: none"> 1 Go to LinkLogic > Errors. 2 In the Pending Errors List, double-click the exception file. 3 Update invalid data in the exception file using Microsoft WordPad or another text editor. 4 Click Resolve in LinkLogic. 5 Reconcile mismatched data (see below). 	Orphan errors (no provider match) do not generate exception files. For help resolving specific errors, click F1 on the Errors tab.
Reconcile mismatched data	<ol style="list-style-type: none"> 1 Go to LinkLogic > Errors. 2 Select the mismatch error. 3 Click Resolve. 4 Select the patient name that needs to be matched. 5 Click Set Patient. 6 Click Search. 7 Select the patient record you're trying to match. 8 Click OK twice. 	Mismatches occur when the patient record being imported does not match an existing patient record. If the patient can't be found by searching on last name, try adding SSN, date of birth, and first name to the search criteria.

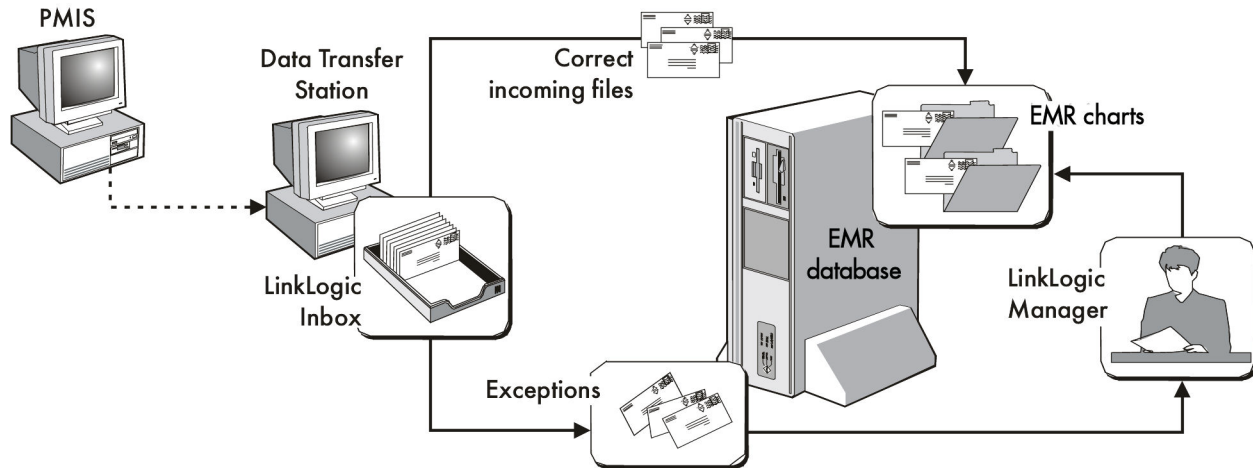
Using the Errors tab to resolve data transfer errors

An important part of the LinkLogic Manager's role is resolving errors that occur during data transfers.

Sometimes LinkLogic doesn't have enough information to match incoming information to a patient's chart in Centricity Practice Solution. This results in a LinkLogic error. LinkLogic errors also occur when the format of imported data is invalid.

Exception file: contains data LinkLogic couldn't import

The following illustration shows how Centricity Practice Solution imports correct data from a practice management information system and places invalid data in an exception file.



To resolve errors, you'll use the LinkLogic Errors tab in the LinkLogic module. The Errors tab tells you the type of error that occurred and the record that generated it.

To access the Errors tab, in Centricity Practice Solution go to **LinkLogic > Errors**. Click **F1** for detailed help topics. For help resolving individual errors, see the help modules "Resolve LinkLogic Errors" and "LinkLogic Activity Log Message Codes." A complete description of all LinkLogic messages, warnings, and errors is also included in this guide. See ["Resolving LinkLogic errors" on page 639](#).

DTS settings and configuration options



This section assumes you have set up LinkLogic import and export relationships on one or more Data Transfer Stations to handle data exchange between Centricity Practice Solution and external systems.

For an overview of the interfaces planning process, see [“Planning for interfaces” on page 21](#). See application online help for detailed instructions for setting up LinkLogic relationships and Data Transfer Stations.

The DTS automatically processes files that are transferred from other systems. For example, when a laboratory returns results or a new patient is added or updated in an external system, the system sends a file to the LinkLogic Inbox (IN directory) usually located on the Data Transfer Station. How often this occurs depends on the external system and the file transfer method your clinic uses.

Set up automatic INBOX scan

The DTS can be set to scan the IN directory at an interval you set to see if new files have arrived. If new files are present, they are queued and processed immediately.

To set how often the DTS scans the IN directory, go to **Administration > System > LinkLogic > Defaults** and check **Automatically Queue Jobs**. Then enter a desired interval in seconds, minutes or hours.

Determining the interval

GE recommends you set up each DTS to scan the inbox according to the real time need of the data being imported. For example, lab results from external labs come in sporadically. Because it's difficult to predict when the lab will be finished with the lab order, scanning for lab imports can be done a few times a day.

On the other hand, appointment updates are needed often throughout the day. Because updates from the scheduling application note when each patient arrives, the inbox should be scanned every minute or so to display this information in Centricity Practice Solution Scheduling.

Set up automatic Activity Log cleanup

You'll want to set up the DTS to automatically remove Activity Log warnings and notes or error messages after a set period. The Activity Log lists all messages LinkLogic generates when processing jobs coming in or going out of Centricity Practice Solution. In a dynamic environment, the log can get very long very fast and cause performance problems if not properly maintained.

Go to **Administration > System > LinkLogic > Defaults** and check **Automatically remove error entries** or **Automatically remove notes and warnings**. Then set the desired number of days.

These options are checked by default with default periods. In a dynamic environment, the log can get very long very quickly and cause performance problems if not properly maintained. GE recommends you do not uncheck these options.

For **DTS sends system warning flag when activity log has more than [count] messages**, enter a maximum number of messages. (50000 is the default value). When reached the system sends a reminder once daily to reduce Activity Log entries. This flag is sent to the user configured to receive system warning flags (in Administration on System > Alerts/Flags).



You can also configure the DTS to exclude frequently generated messages and warnings from the Activity Log. See [“Excluding messages and warnings from the Activity Log” on page 640](#).

Set the DTS Monitor threshold

In LinkLogic, the DTS Monitor tab displays information about each DTS, showing whether it is running or stopped for some reason. The DTS keeps track of the last time the DTS updated the database. This tab is handy if the DTS workstation is located in a remote room or building.

The DTS Monitor threshold is the amount of time that DTS can be inactive before the monitor indicates a problem. DTS may appear to be inactive while transferring a large file, such as large exports. If this happens often in your system, you may need to increase the DTS Monitor Threshold.

Go to **Administration > System > LinkLogic > Defaults** and for **DTS Monitor Threshold**, enter a number of seconds, minutes, or hours. The default is 5 seconds.

Starting and stopping the DTS

The LinkLogic Manager is usually responsible for running and managing the Data Transfer Station. You should start up the DTS first thing in the morning and shut it down last thing in the evening.



On some networks, leaving the DTS running overnight may interfere with your system’s nightly cold backup.

In some environments it is helpful to configure DTS to run as a service, so that it restarts automatically after crash. See [“Setting Data Transfer Station to run as a Windows Service” on page 35](#).

Manually start the DTS

- 1 Turn on the DTS workstation.
- 2 Log in to your clinic’s network.

- 3 Double-click the DTS icon on the workstation Desktop.
- 4 Log in to the DTS.

The DTS starts processing files as they are sent to the database server.



When you configure DTS to run as a Windows service, it will restart automatically if the workstation/server crashes. See [“Setting Data Transfer Station to run as a Windows Service”](#) on page 35.

Manually stop the DTS

- 1 Click **Exit** on the DTS tool bar.
- 2 Click **Yes** when asked if you want to shut down the DTS.
- 3 Shut down the DTS workstation.

You can set the DTS to scan LinkLogic’s Inbox at periodic intervals and process the jobs found there. You can also select the frequency with which the DTS removes entries from the Activity Log.

Set the frequency of DTS tasks

- 1 In the application, go to **Administration > System > LinkLogic**.
- 2 Select **Defaults**.
- 3 Select the setting you wish to change.
- 4 Specify the desired time interval.

Configure automatic task tracing for troubleshooting

You can configure DTS in the **emr.ini** file to launch a full trace automatically when specified LinkLogic tasks are run.

Whenever DTS runs a configured task, it turns on full tracing (as if ctrl+shift+T were pressed on the keyboard) at the start of the task and turns off tracing when the task has completed.

- 1 On the DTS workstation, open the **emr.ini** file in Notepad.
- 2 Find the **DTSTraceTasks** line in the [CPS_HOSTNAME DTS 1] the file.

- 3 Add a comma-separated list of task values for the task you want to trace automatically whenever tasks are run.

Value	Task	Value	Task
8	Demographics Import	18	Appointments Import
9	Demographics Export	24	Lab Orders Export
10	Documents Import	25	Problems Export
11	Documents Export	27	Allergies Export
12	Lab Results Import	28	Clinical Summary Export
13	Lab Results Export	32	eRx Eligibility Requests Export
15	Procedures Export	33	XML Import of eRx Responses

Example: "DTSTraceTasks=8,9,15" tells DTS to automatically do tracing during demographics import, demographics export, and procedures export tasks.

Setting Data Transfer Station to run as a Windows Service

You can configure Data Transfer Station to run as a Windows Service, allowing the LinkLogic Manager to start, stop, and check the status of the DTS from the Administrative Tools > Services control panel. If the DTS crashes, the new service restarts it automatically.

!!! You can only run one instance of DTS as a service per machine. GE recommends you install each DTS to a separate qualified workstation or server.

Services running on Vista and Windows 7 operating systems require the Microsoft Interactive Services Detection service to be started to support running the DTS user interface. The DTS must be started BEFORE starting the Interactive Services Detection service.

Install and start the LinkLogicDTS service

- 1 In the **Centricity Practice Solution/Client** program folder, double-click the **dts_install.cmd** file. To uninstall, double-click the **dts_uninstall.cmd** file.



If the workstation is running on an operating system with User Access Control such as Vista, Windows 7, or Server 2008, right-click the file and select **Run as Administrator**. Then click **Continue** on the User Access Control (UAC) screen. The service is automatically installed/uninstalled.

- 2 To start the service, from the Start menu, go to **Control Panel | Administrative Tools > Computer Management > Services and Applications > Services**.
- 3 Right-click on the **LinkLogicDTS** service and select **Start**.

By default, LinkLogicDTS service starts Data Transfer Station automatically when you reboot the machine.



When you have the DTS configured to start and run as a Windows service, never start the DTS manually from the command prompt.

- 4 Start the Microsoft Interactive Services Detection service. The LinkLogicDTS service must be running prior to starting this service.

Configure the service to run under a user account

For processes created by the service to access a specific user's settings such as mapped network drives, you must configure the service to run under a user account. After starting the LinkLogicDTS Windows Service, perform the following steps:

- 1 Go to **Start > Control Panel | Administrative Tools > Services**.
- 2 In the installed services list, double-click **LinkLogicDTS**.
- 3 In the Services Properties window, select the **Log On** tab.
- 4 Check **Local System Account** and **Allow service to interact with Desktop**.

Disable LinkLogic/DTS startup dialogs

To permit a fully automatic restart, you must disable all LinkLogic / DTS startup dialogs that force the launch of the Logon/Password dialog and require user intervention.

- 1 Go to **Administration > System > LinkLogic > Defaults**.
- 2 Check **Disable all LinkLogic / DTS Startup Dialogs**.

The DTS now restarts automatically in the event of a crash. If the DTS does not restart successfully, temporarily uncheck this option so you can see an error or warning that may be preventing restart.



The DTS will not restart if it encounters a "process hang." If the DTS process is active but stops processing, you must stop it manually in the Windows Task Manager, or use the stop service feature in the Windows Services control panel.

Changing DTS service settings

The default settings for the service do not need to be changed for most implementations. The following path and process settings can be changed if necessary:

Edit working directory path

When you set up DTS to run as a service you might need to edit the **XYNTService.ini** file on the DTS workstation if the DTS executable is not in the default location in the program folder (C:\Program Files\Centricity Practice Solution 90\Client\).

- 1 On the workstation where DTS is installed, navigate to the **Centricity Practice Solution 90\Client** folder and open **XYNTService.ini** in a text editor.
- 2 For **CommandLine** and **WorkingDir**, edit the path to point to the location of the Centricity Practice Solution 9.0 program folder and the application Web site.

```
CommandLine = C:\[your_path]\Centricity Practice  
Solution 95\Client\ml3dts.exe -u "http://<CPS DB  
Server>:9080/<CPS Database Name>/cps/" Instance=1
```

Where <CPS DB Server> and <CPS Database Name> refer to the name or IP address of the database server where the Centricity Practice Solution 9.0 database resides and the name of the database to be connected.

With the new GE Service Layer supporting the application web site, this path must include the port number, e.g., "9080" and "/CPS" after the database name.

```
WorkingDir= C:\[your_path]\Centricity Practice  
Solution 90\Client\
```

The "-u" switch sets the application to auto-restart mode.

Change process settings

- 1 To set how often the service checks the DTS, change the **CheckProcessSeconds** value. Default is 30 seconds.
- 2 For **PauseStart**, set how long the service waits after starting the current process (and before starting the next process). Default is 1000 milliseconds.

This is useful when the next process depends on the previous process. For example, the second process has to "connect" to the first process in such a way that it does not run until the first process is finished with initialization
- 3 For **PauseEnd**, set how long the service waits before it terminates the process it started. This gives the process a chance to clean up and shut itself down. Default is 1000 milliseconds.
- 4 To display the DTS user interface, set **UserInterface** to **Yes**.
- 5 Confirm that **Restart** is set to **Yes**. This tells the service to restart the DTS in the event of a crash.

Configuring Internet proxy to run DTS as a service

If you run Data Transfer Station (DTS) as a service and use a proxy server, configure the workstation to connect to the Internet using Microsoft Windows HTTP Services (WinHTTP) proxy configuration tool - **proxycfg.exe**.

When you run DTS as a service it doesn't recognize your Internet Explorer settings, so you must configure the proxy server information at the operating system level with this tool.

If Internet Explorer is automatically detecting proxy settings, or if it is using an automatic configuration URL to set proxy information, do the following:

- 1 Confirm that you have local administrator privileges on the DTS machine. This enables **proxycfg.exe** to update the Registry.
- 2 Launch **Internet Explorer** and select **Tools > Internet Options** on the main menu.
- 3 On the Connections tab, click **LAN Settings**.
- 4 Copy your proxy server settings (**Address** and **Port**).
- 5 Open a command prompt and enter

```
proxycfg.exe -p "http://<your-proxy-server>"
```

where *your-proxy-server* is the address you copied from Internet Explorer.

Example: `proxycfg -p "http=3.34.222.68:80"`



WinHTTP proxy settings are set on a machine not a user. If you change proxy settings in Internet Explorer, you must copy the new proxy server settings to proxycfg.exe.

Using interface specifications

[About LinkLogic HL7 and ASTM interface specifications](#) 40

[About LinkLogic message segments](#) 41

[How LinkLogic uses message segments](#) 42

[About MIK HL7 interface specifications](#) 42

[MIK mapping architecture](#) 43

[Reading MIK interface specifications](#) 43

Interface: A set of rules or a common language agreed upon between Centricity Practice Solution and another system, such as a hospital or laboratory

Parts II and III of this guide provide detailed information about LinkLogic and MIK (Millbrook Integration Kit) software interfaces that permit Centricity Practice Solution to exchange data, including patient information, with other applications and computer systems.



Contact your GE sales representative or Value-Added Reseller to discuss how your organization will use interfaces.

We assume that you are familiar with HL7 and ASTM message standards. The interface specifications included in this guide should be read together with HL7 version 2.3.1 (LinkLogic), version 2.x (MIK), and ASTM E1238. While HL7 is designed to allow integration between a wide variety of applications, these specifications describe only the subset of the HL7 messages specifically used by Centricity Practice Solution.



HL7 standards committee members can acquire a free copy of the current HL7 specification from the Internet via the HL7 Web page at <http://www.HL7.org>.

Non-members can order a copy from the same location or by contacting Health Level Seven, 3300 Washtenaw Ave., Suite 227, Ann Arbor, MI 48104-4250; Phone: (313) 677-7777; Fax: (313) 677-6622.

ASTM standards are available at <http://www.astm.org>, or by writing to ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

Check for updates to this and other released documentation on the Centricity Practice Web site at <http://centricitypractice.gehealthcare.com>.

About LinkLogic HL7 and ASTM interface specifications

Each LinkLogic specification includes detailed descriptions of the following:

- HL7 (or ASTM) messages supported by the interface
- Events that trigger data export or import
- Individual message segments supported for import and export of specified data.



The abstract message definition syntax used to describe HL7 messages supported by LinkLogic is consistent with the syntax used in the HL7 specification, version 2.3.

Here's how information about a supported HL7 message is displayed in the interface specifications. This is the MDM - Medical Document Management message supported by the LinkLogic HL7 Clinical Data Summary Export interface (see "[MDM message - Medical Document Management](#)" on page 65):

This column displays the segments included in the message in the order they appear.

Message segment	Name	T02 Export
MSH	Msg Header	Required
EVN	Event Type	Required
PID	Patient ID	Required
PV1	Patient visit	Optional
TXA	Transcription Document Header	Optional
{OBX} ...	Observation/ Result	Required
MSH	Msg Header	Conditional
MSA	Msg Ack	Conditional
[ERR]	Error	Ignored

Curly brackets indicate a repeating segment.

Square brackets indicate an optional segment.

This column indicates the event that triggers the message (T02) and whether its supports data import or export.

See [page 42](#) for more about terms used to describe how LinkLogic uses a message segment in transferring data.

About LinkLogic message segments

Each line or *segment* in an HL7/ASTM message contains a specific type of information in a particular sequence of fields or elements delimited by pipes (|). Each field has a unique purpose defined by the HL7/ASTM standard for the message segment.

In this example, the bold codes indicate the beginning of a message segments; text between pipes indicate segment components--in this case, patient demographic information you might see in Centricity Practice Solution data fields:

```

MSH|^~\&|ChartScript|TEST000^EIM|EssexArchives|EIM|19981229133055||MDM^T02|123055745
5001100|P|2.3|||NE|NE
EVN|T02|19981229133055
PID|1||80-TEST011|MR-000-002|Bassett^Don^C.||19420723|M||W|12155 SW
Broadway^^Beaverton^OR^97005^USA||503-629-5541|503-692-8955|English|M||543-34-5621
PV1|1|O|^^^EIM|||kstarr
TXA|1|CS|TX|19981229133056|||19981229133056|||DO||AV
.....
    
```

!!! On import (for patient demographic information, chart documents, image references, and lab reports), LinkLogic limits any given file or batch transmission of messages to 4096 MSH (Message Header) and 4096 PID (Patient ID) message segments.

LinkLogic message segment tables

Each message segment table lists the segment elements or fields in sequence order (MSH-1, MSH-2, MSH-3, and so on) with the following information:

Element or field name and code in sequence order	Maximum field length	Data type	Source table in HL7 specification	LinkLogic usage on import and export and links to detailed notes				
SEQ	Lnth	Data type	HL7 table	Element name	Import	See page	Export	See page
MSH-1	1			Field separator	Required		Used	
MSH-2	4	ST		Encoding characters	Required		Used	
MSH-3	40	HD		Sending application	Conditional	50	Used	50
...	
MSH-9	7	CM	0076	Message type	Required	51	Used	51

Data type abbreviations are explained in a **Legend** above the message segment table.

Click a blue page number link to jump to a detail note (when viewing the Adobe PDF version of this guide) or look for notes under the element code and

name listed after the table. Notes explain how LinkLogic interprets fields and what values it includes on import and export. If an option is configurable in Centricity Practice Solution, instructions for this setup are included in the notes.

How LinkLogic uses message segments

The following terms are used to describe how HL7/ASTM message segments and fields are used by LinkLogic and Cloverleaf interface engine when exporting data in messages:

This term...	Means this...
Required	The field must include valid data.
Optional	The field is not required to have data. If Centricity Practice Solution provides data, LinkLogic exports it.
Conditional	Data might be required or optional in the field, depending on certain conditions. For clarification, read the notes associated with the segment.
Used	LinkLogic/Cloverleaf exports data in this field when Centricity Practice Solution provides it.
Not used	LinkLogic and Cloverleaf do not export data in this field. GE recommends you do not use Not Used segments in a supported message.
Adjustable	If Cloverleaf interface engine translates a LinkLogic message, it might adjust the data value for this field based on the receiving systems requirements.
Ignored	Data is not required and it is not used in Centricity Practice Solution. GE recommends you do not use Ignored segments in a supported message.

About MIK HL7 interface specifications

Each MIK specification includes detailed descriptions of the following:

- HL7 messages supported by the interface
- Events that trigger data export or import
- Message segments supported for import and export of specified data.



The abstract message definition syntax used to describe HL7 messages supported by MIK is consistent with the syntax used in the HL7 specification, version 2 or higher.

MIK mapping architecture

Whenever MIK sends or receives a message that contains an object obtained from a list it also expects a unique identification number. This identification number should uniquely identify the object in the external system. MIK can be configured by the System Administrator to map the identification number in the following ways:

- Not transmitting
- Using the Centricity Practice Solution identification number
- Using a manually-configured mapping table
- Dynamically creating a mapping table based on information contained in the object

This allows MIK to connect to multiple external systems and always use identification numbers recognized by each system. The mapping types are shown for each message in the *MIK Mapping* column of the table.

Reading MIK interface specifications

Here's how information about a supported HL7 message is displayed in the MIK interface specifications. Each specification lists supported trigger event messages with the segments included in each message. Detailed segment tables include notes about expected values and relevant mappings.

The following examples are from the MIK demographics interface based on the ADT - Admissions, Discharges, Transfers message. See ["Demographics Import/Export \(ADT\)" on page 483](#).

Supported trigger events table

Msg	Event code	See page	Export	Import	Trigger event
ADT	A01	44	X		In Scheduling, Patient is marked checked-in
ADT	A03	44	X		Visit is logged in Billing, signifying that the patient checked out
ADT	A04	44	X	X	<ul style="list-style-type: none"> • In Scheduling, Patient is marked checked-in • New patient is added to the system. When received, message is interpreted as a new patient.
ADT	A08	74	X	X	Patient is updated in the system
ADT	A09	75	X		Visit is logged in Billing, signifying that the patient checked out
Etc, etc....					

Event message summaries

The segments in each trigger event message are summarized with links to detailed segment tables. Here's an example of the ADT- A01 message:

For information about this segment...	See page...
MSH - Message Header	80
EVN - Event Type	81
PID - Patient Identification	81
PD1 - Patient Additional Demographics	86
Etc, etc...	

Detailed message segment tables

Each segment table includes the following information:

- **Element name** - the name of the field. Items related to a composite field are indented beneath the field name. Only fields used by MIK are listed in the table in sequence order.
- **Value/notes** - required values, repeating fields, how MIK handles the field.
- **Mapping** - Configurable MIK mapping type if used. When blank, the value is not configurable in the application.
- **Data type** - the data type for the field, such as ST for string data or TS for time stamp. A legend above the table explains data type abbreviations.
- **HL7 table** - the user-defined table number recommended by the HL7 specification for values in this field

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
GT1-1	Set ID - GT1	1		SI	
GT1-2	Guarantor Number • ID	Repeating field; MIK uses only the first repeating element. The ID for the guarantor based on the Guarantor ID	Uses Patient if guarantor is same as patient otherwise Guarantor	CX ST	
GT1-9	Sex	Guarantor's sex M = Male F = Female		IS	0001

Element or field name and code in sequence order

How MIK interprets fields and what values it includes on import and export

If the value is configurable in the application, mapping values appear here

Items related to a composite field are indented under the composite field.

Part II: LinkLogic interface specifications

This section includes the following LinkLogic resources:

- All LinkLogic HL7 and ASTM import / export interfaces
- Detailed explanations of concepts such as interpreting HL7 data types, patient-matching algorithms, and cross-referencing field values



For an introduction to reading and interpreting Centricity Practice Solution interface specifications, see [“About LinkLogic HL7 and ASTM interface specifications”](#) on page 40.

AllergiesLink Export HL7 interface specification

[ADT message – Admission, discharge, and transfer](#) 47

[MSH – Message Header](#) 50

[EVN – Event Type](#) 52

[PID – Patient Identification](#) 53

[PV1 – Patient Visit](#) 58

[AL1 – Patient Allergy Information](#) 61

[MSA – Message Acknowledgement](#) 63

This HL7-based interface supports the export of structured allergy data. It uses a subset of the complete HL7 message set for Patient Administration and only supports for the ADT message.

ADT message – Admission, discharge, and transfer

This section describes how LinkLogic uses message segments in the ADT messages when exporting data. Page references in the table link to detailed message segment tables and notes. For information about how to use the tables in this specification, see [“About LinkLogic HL7 and ASTM interface specifications” on page 40](#).

ADT trigger events

Trigger event: an event in a healthcare workflow that triggers the transfer of information, identified in HL7 by a unique 3-character code

HL7 assumes that certain *trigger events* in the healthcare environment create the need for data to flow among systems.

LinkLogic supports these message trigger event for export:

- **A04** – register a patient
- **A08** – update patient information

ADT message structure

The following table shows how LinkLogic uses the message segments in this message when exporting data. For definitions of LinkLogic usage terms used in the table, see [“How LinkLogic uses message segments” on page 42](#).

Legend	
[...]	Optional
{...}	Repeating
[[...]]	Optional and repeating

Message segment	Name	A04 Export	A08 Export
MSH	Msg Header	Required	Required
EVN	Event Type	Required	Required
PID	Patient ID	Required	Required
[PD1]		Not used	Not used
[[NK1]]	Next of kin	Not used	Not used
PV1	Patient Visit	Required	Required
[PV2]		Not used	Not used
[[DB1]]		Not used	Not used
[[OBX]]	Observation	Not used	Not used
{ALI}	Allergy Info	Required	Required
[[DG1]]	Diagnosis	Not used	Not used
[[PR1]]	Procedures	Not used	Not used
[[ROL]]	Role	Not used	Not used

Message segment	Name	A04 Export	A08 Export
[[GT1]]	Guarantor	Not used	Not used
[
{IN1	Insurance	Not used	Not used
[IN2]		Not used	Not used
[IN3]		Not used	Not used
}			
]			
[ACC]	Accident	Not used	Not used
[UB1]	Uniform bill	Not used	Not used
[UB2]		Not used	Not used
MSH	Msg Header	Conditional	Conditional
MSA	Msg Ack	Conditional	Conditional
[ERR]	Error	Ignored	Ignored

ADT message segments

This section provides detailed specifications for the following HL7 message segments used in the ADT message:

For information about this segment...	See page...
MSH - Message Header	50
EVN - Event type	52
PID - Patient Identification	53
PV1 - Patient Visit	58
AL1 - Patient Allergy Information	61
MSA - Message Acknowledgement	63

Each message segment table lists the segment elements or fields in sequence order (MSH-1, MSH-2, MSH-3, and so on) with the following information:

- **Element name**
- **Maximum length** in LinkLogic
- **Data type**
- **Source table** in the HL7 specification where applicable
- **LinkLogic usage on export or import** (Required, Optional, and so on)
For definitions of LinkLogic usage terms used in the tables, see [“How LinkLogic uses message segments” on page 42](#).



Click blue page number links in the tables to jump to detail notes (when viewing the Adobe PDF version of this guide) or look for notes under the element code and name listed after the table.

MSH – Message Header

The Message Header segment (MSH) should always be in the first segment in each HL7 message. MSH defines the intent, source, destination, and some specifics of the syntax of a message.

Legend

CE	Coded element	NM	Numeric
CM	Order sequencing component	PT	Processing type
HD	Hierarchic designator	ST	Character string
ID	Coded value	TS	Time stamp

SEQ	Lnth	Data type	HL7 table	Element name	Export	See page
MSH-1	1	ST		Field separator	Required	
MSH-2	4	ST		Encoding characters	Required	
MSH-3	40	HD		Sending Application	Used	51
MSH-4	20	HD		Sending Facility	Used	51
MSH-5	40	HD		Receiving application	Used	51
MSH-6	30	HD		Receiving Facility	Used	51
MSH-7	26	TS		Date/time of Message	Used	
MSH-8	40	ST		Security	Not used	
MSH-9	7	CM	0076	Message type	Required	51
MSH-10	20	ST		Message control ID	Required	
MSH-11	3	PT	0103	Processing ID	Required	51
MSH-12	8	ID	0104	Version ID	Required	51
MSH-13	15	NM		Sequence Number	Not used	
MSH-14	180	ST		Continuation Pointer	Not used	
MSH-15	2	ID	0155	Accept Ack type	Optional	51
MSH-16	2	ID	0155	Application Ack type	Optional	52
MSH-17	2	ID		Country code	Not used	
MSH-18	6	ID	0211	Character set	Not used	
MSH-19	60	CE		Principal Language of message	Not used	

MSH-3 Sending Application

On export, LinkLogic identifies itself with a string value for MSH-3 derived by concatenating the string *LinkLogic-* with the unique Centricity Practice Solution Enterprise ID for the organization (for example, *LinkLogic-ABCD*). The Enterprise ID can be up to four alphanumeric characters.

MSH-4 Sending Facility

MSH-4 contains the patient's (not a document's) server-specific location of care in the form of *DatabaseID^LOC*.

MSH-5 Receiving Application

MSH-5 Receiving Application contains the name of the LinkLogic relationship that created the output file.

MSH-6 Receiving Facility

MSH-6 Receiving Facility contains the patient's (not a document's) location of care. Unlike MSH-4 Sending Facility, this field contains the location of care without the database ID.

MSH-9 Message Type

The supported values for MSH-9 Message Type include:

This value...	Means this...
ADT	Admission, discharge, and transfer message
ACK	General acknowledgement message

On export, the second component is populated with a value identical to EVN-1 Event Type Code.

MSH-11 Processing ID

MSH-11, Processing ID, is set to P (Production) or D (Debugging), if test mode is enabled in Centricity Practice Solution.

MSH-12 Version ID

MSH-12, Version ID, is set to 2.3.1 (for Release 2.3.1, April 1999).

MSH-15 Accept Ack Type

The supported values for MSH-15 Accept Ack Type include:

This value...	Means this...
AL	Always
NE	Never (default)

MSH-16 Application Ack Type

MSH-16 Application Acknowledgment is optional. On export, the Accept Ack Type value NE is used.

EVN – Event Type

The Event Type segment (EVN) defines the trigger event for the message, such as patient discharge or an update to the patient chart, and when it occurred.

Legend	
ID	Coded value for HL7-defined tables
IS	Coded value for user-defined tables
XCN	Extended composite ID number and name
TS	Time stamp

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
EVN-1	3	ID	0003	Event Type Code	Required	52
EVN-2	26	TS		Recorded Date/Time	Required	53
EVN-3	26	TS		Date/Time of Planned Event	Not used	
EVN-4	3	IS	0062	Event Reason Code	Not used	
EVN-5	60	XCN	0188	Operator ID	Not used	
EVN-6	26	TS		Event Occurred	Not used	

EVN-1 Event Type Code

EVN-1 matches the second component of MSH-9. See [“MSH-9 Message Type” on page 51](#).

The supported values for Event Type Code include:

This value...	Means this...
A04	Register a patient
A08	Update patient information

When an allergy is added or changed in Centricity Practice Solution, A04 indicates a new allergy was added, and A08 indicates an existing allergy was changed. When an allergy is removed, nothing is exported because the ADT message does not provide a mechanism for such information.

EVN-2 Date/Time of Event

On export...

EVN-2 Date/Time of Event is populated with a date/time that is typically milliseconds later than the date/time exported in MSH-7, Date/Time of Message.

!!! EVN-2 is NOT the time the event occurred.

PID – Patient Identification

The PID Patient Identification segment contains demographic information about the patient such as name, ID codes, address, phone numbers, and so on.

In Centricity Practice Solution, PID refers to the unique, system-generated identification number that the application assigns to a patient when a new chart is created.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric		

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PID-1	4	SI		Set ID - Patient ID	Not used	
PID-2	20	CX		Patient ID (External ID)	Conditional	55
PID-3	20	CX		Patient ID (Internal ID)	Required	55
PID-4	16	CX		Alternate Patient ID-PID	Optional	55
PID-5	48	XPN		Patient Name	Required	
PID-6	48	XPN		Mother's Maiden Name	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PID-7	26	TS		Date/Time of Birth	Used	
PID-8	1	IS	0001	Sex	Used	55
PID-9	48	XPN		Patient Alias	Not used	
PID-10	1	IS	0005	Race	Optional	55
PID-11	106	XAD		Patient Address	Optional	
PID-12	4	IS		Country Code	Not used	
PID-13	250	XTN		Phone Number - Home	Optional	56
PID-14	250	XTN		Phone Number - Work	Optional	56
PID-15	60	CE	0296	Primary Language	Optional	
PID-16	1	IS	0002	Marital Status	Optional	56
PID-17	3	IS	0006	Religion	Not used	
PID-18	20	CX		Patient Account Number	Not used	
PID-19	11	ST		SSN Number - Patient	Optional	
PID-20	25	DLN		Driver's License No-Patient	Not used	
PID-21	20	CX		Mother's Identifier	Not used	
PID-22	3	IS	0189	Ethnic Group	Used	
PID-23	60	ST		Birth Place	Not used	
PID-24	2	ID	0136	Multiple Birth Indicator	Not used	
PID-25	2	NM		Birth Order	Not used	
PID-26	4	IS	0171	Citizenship	Not used	
PID-27	60	CE	0172	Veterans Military Status	Not used	
PID-28	80	CE		Nationality	Not used	
PID-29	26	TS		Patient Death Date /Time	Optional	57
PID-30	1	ID	0136	Patient Death Indicator	Optional	57
PID-40	1	ST	0185	Patient Preferred Contact Method	Optional	57

PID-2 Patient ID (External ID) / PID-3 Patient ID (Internal ID)

On export, PID-3, Patient ID (Internal ID), always contains the unique Centricity Practice Solution Patient ID for the patient. If available, PID-2, Patient ID (External ID), contains the external identifier for the relationship-specific external ID set.

Global unique Identifier

The Centricity Practice Solution Patient ID is a globally unique identifier represented as a string value in the form *123456789012-XXXX123* where:

- **Prefix.** *123456789012* is a number with a maximum of 12 digits that is unique within the Centricity Practice Solution database where the patient's chart was created.
- **Suffix.** *XXXX123* concatenates the customer's unique Enterprise ID (*XXXX*) and the Centricity Practice Solution database ID (*123*). Database IDs are allocated and specified by the system administrator performing the installation.

PID-4 Alternate Patient ID - PID

PID-4, Alternate Patient ID, is the patient's medical record number.

PID-8 Sex

The supported values for Sex include:

This value...	Means this...
F	Female
M	Male
O	Other (treated as Unknown)
U	Unknown

PID-10 Race

The supported values for Race include:

This value...	Means this...
B	Black
C	Chinese
F	Filipino
H	Hispanic
J	Japanese
N	Native American
I	Native Hawaiian

This value...	Means this...
M	Multiracial
O	Oriental/Asian
P	Pacific Islander
W	White
T	Other
U	Undetermined (default)

In Centricity Practice Solution, race values can be configured in Administration. If a value is changed in Administration, you must configure MIK (in the Server Setup application) to map to the value to one of the values in this table.

See "Configure MIK interfaces" in Server Setup Online Help.

PID-13 Phone Number - Home / PID-14 Phone Number - Work

LinkLogic exports the patient's home phone number, cell phone, fax phone, and/or pager (if present) as multiple repeating items in PID-13, Phone Number - Home. The phone number value is sent in the first component of each item and the phone type is sent in the third component of each item.

The fourth component of the first repeating item in PID-13 is populated with the patient's email address.

The patient's work phone (if present) is exported in PID-14.1. LinkLogic exports only one repeating item in PID-14 and does not export any phone type in PID-14.3.

PID-16 Marital Status

In Centricity Practice Solution, this value can be configured in Administration. If you change a Marital Status value, you must configure MIK (in the Server Setup application) to map the new value to one of the values in this table.

The supported values for Marital Status include:

This value...	Means this...
A	Separated
D	Divorced
M	Married
S	Single
W	Widowed
O	Other
U	Undetermined (default)

In Centricity Practice Solution, this value can be configured in Administration. If you change a Marital Status value, you must configure MIK (in the Server Setup application) to map the new value to one of the values in this table.

See “Configure MIK interfaces” in Server Setup Online Help.

PID-29 Patient Death Date and Time / PID-30 Patient Death Indicator

PID-30, Patient Death Indicator, is set to Y for deceased patients. PID-29, Patient Death Date and Time is populated with the patient's date of death.

PID-40 Patient Preferred Contact Method

LinkLogic can import and export a 1-character value for patient preferred contact method in the optional field PID-40 at the end of the PID segment in ADT and BAR messages.

To send or receive patient contact method using this field you must associate the optional Add-On IXP file **pid40contactby.ixp** with the LinkLogic interface. This IXP file maps the HL7 values to EMR values to store to or export from the database in the PERSON.CONTACTBY field. For detailed information about using IXP files, see [“Using .IXP configuration files” on page 597](#).

The following supported values for patient preferred contact method are based on HL7 table 0185. Note that starred items are not in Table 0185 but were created for this implementation.

HL7 value...	Means this...	Mapped EMR value
B	Pager	P
C	Cell Phone	C
D	Durable Power of Attorney*	D
E	Email	E
F	Fax	F
H	Home Phone	H
L	Letter*	L
N	Nursing Home*	N
O	Work phone	W
P	Paper*	A
T	Other*	O

PV1 – Patient Visit

The Patient Visit segment (PV1) is used by Registration and ADT (Admission, Discharge, and Transfer) applications to communicate information about a specific visit.

Legend	
ID	Coded value for HL7-defined tables
IS	Coded value for user-defined tables
XCN	Extended composite ID number and name
TS	Time stamp
XTN	Extended telecomm number
ST	String data
NM	Numeric
JCC	Job Code / Class
PL	Person location
SI	Sequence ID
CX	Extended composite ID with check digit
XPN	Extended person name
XAD	Extended address
CE	Coded element
DLN	Driver's license number
DT	Date
XON	Extended composite name and ID for organizations

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PV1-1	4	SI		Set ID - PV1	Optional	
PV1-2	1	IS	0004	Patient Class	Not used	
PV1-3	80	PL		Assigned Patient Location	Optional	60
PV1-4	2	IS	0007	Admission Type	Not used	
PV1-5	20	CX		Pre-admit Number	Not used	
PV1-6	80	PL		Prior Patient Location	Not used	
PV1-7	60	XCN	0010	Attending Doctor	Optional	60
PV1-8	60	XCN	0010	Referring Doctor	Optional	60
PV1-9	60	XCN	0010	Consulting Doctor	Not used	
PV1-10	3	IS	0069	Hospital Service	Not used	
PV1-11	80	PL		Temporary Location	Not used	
PV1-12	2	IS	0087	Pre-admit Test Indicator	Not used	
PV1-13	2	IS	0092	Readmission Indicator	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PV1-14	3	IS	0023	Admit Source	Not used	
PV1-15	2	IS	0009	Ambulatory Status	Not used	
PV1-16	2	IS	0099	VIP Indicator	Not used	
PV1-17	60	XCN	0010	Admitting Doctor	Not used	
PV1-18	2	IS	0018	Patient Type	Not used	
PV1-19	20	CX		Visit Number	Optional	60
PV1-20	50	FC	0064	Financial Class	Not used	
PV1-21	2	IS	0032	Charge Price Indicator	Not used	
PV1-22	2	IS	0045	Courtesy Code	Not used	
PV1-23	2	IS	0046	Credit Rating	Not used	
PV1-24	2	IS	0044	Contract Code	Not used	
PV1-25	8	DT		Contract Effective Date	Not used	
PV1-26	12	NM		Contract Amount	Not used	
PV1-27	3	NM		Contract Period	Not used	
PV1-28	2	IS	0073	Interest Code	Not used	
PV1-29	1	IS	0110	Transfer to Bad Dept Code	Not used	
PV1-30	8	DT		Transfer to Bad Dept Date	Not used	
PV1-31	10	IS	0021	Bad Debt Agency Code	Not used	
PV1-32	12	NM		Bad Debt Transfer Amount	Not used	
PV1-33	12	NM		Bad Debt Recovery Amount	Not used	
PV1-34	1	IS	0111	Delete Account Indicator	Not used	
PV1-35	8	DT		Delete Account Date	Not used	
PV1-36	3	IS	0112	Discharge Disposition	Not used	
PV1-37	25	CM	0113	Discharged to Location	Not used	
PV1-38	2	IS	0114	Diet Type	Not used	
PV1-39	2	IS	0115	Servicing Facility	Not used	
PV1-40	1	IS	0116	Bed Status	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PV1-41	2	IS	0117	Account Status	Not used	
PV1-42	80	PL		Pending Location	Not used	
PV1-43	80	PL		Prior Temporary Location	Not used	
PV1-44	26	TS		Admit Date/Time	Not used	
PV1-45	26	TS		Discharge Date/Time	Not used	
PV1-46	12	NM		Current Patient Balance	Not used	
PV1-47	12	NM		Total Charges	Not used	
PV1-48	12	NM		Total Adjustments	Not used	
PV1-49	12	NM		Total Payments	Not used	
PV1-50	20	CX	0192	Alternate Visit ID	Optional	60
PV1-51	1	IS	0326	Visit Indicator	Not used	
PV1-52	60	XCN	0010	Other Healthcare Provider	Not used	

PV1-3 Assigned Patient Location

The fourth component of PV1-3, Assigned Patient Location is populated with the eight-character abbreviation for the patient's home location of care.

PV1-7 Attending Doctor

PV1-7, Attending Doctor, is populated with the patient's responsible provider, if one has been specified.

PV1-8 Referring Doctor

PV1-8, Referring Doctor, is populated with the patient's referring physician if one has been specified. To display referring physician in a document, LinkLogic interprets only the second and third components as the referring doctor's last name and first name, respectively.

PV1-19 Visit Number / PV1-50 Alternate Visit ID

All allergies are entered in the context of a Chart document. If the Chart document has been assigned a Visit ID, the value is exported in both PV1-19 and PV1-50.

AL1 – Patient Allergy Information

If no allergy information is entered in the Allergies section of a patient's chart, no data is exported. This doesn't necessarily mean that the patient has no allergies. When exporting allergies, LinkLogic doesn't look for the observation term NKA, No Known Allergies. To make certain this observation is exported, providers can enter an uncoded allergy with the description No Known Allergies.

While Centricity Practice Solution distinguishes between allergies and adverse reactions, LinkLogic does not. LinkLogic simply exports information stored in the Allergy table of the application database.

Legend

ID	Coded value for HL7-defined tables
ST	String data
CE	Coded element
NM	Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
AL1-1	4	SI		Set ID - AL1	Required	
AL1-2	2	IS	0127	Allergy Type	Optional	61
AL1-3	76	CE		Allergy Code/Mnemonic/Description	Required	62
AL1-4	2	IS	0128	Allergy Severity	Optional	62
AL1-5	286	ST		Allergy Reaction	Optional	63
AL1-6	8	DT		Identification Date	Optional	63

AL1-2 Allergy Type

The supported values for Allergy Type include:

This value...	Means this...
DA	Drug Allergy
FA	Food Allergy
MA	Miscellaneous Allergy
MC	Miscellaneous Contraindication (treated as Miscellaneous Allergy)



Centricity Practice Solution allergies with an environmental classification have AL1-2 set to MA.

AL1-3 Allergy Code/Mnemonic/Description

AL1-3, Allergy Description, contains the following:

- First component, *identifier*, is the coded allergy. This component is blank for uncoded allergies.
- Second component, *text*, is either the medication trade name if coded or the name of the allergy (up to 60 characters) from the Centricity Practice Solution database.
- Third component, *name of coding system*, is either NDC or GPI. This component is blank for uncoded allergies.

Length limits

Although the HL7 specification limits this field to 60 characters, LinkLogic can export up to 76 characters:

11-character NDC code^maximum 60-character name^3-character coding system

Whether LinkLogic exports coded allergies using the National Drug Council (NDC) number or the Generic Product Index (GPI) number depends on which option is set for the relationship in LinkLogic Task Options Change Allergies Constraint window.

The NDC code is a unique 11-character code that is the concatenation of the 9-character NDC product identification code and the 2-character NDC package code. The GPI code is the first 10 characters of the 14-character GPI code. The last 4 characters are not exported because these indicate dosage and medication type.



AL1-3 can be aliased to accommodate identification spaces used by the external system. For more information, see [“Cross-referencing field values” on page 461](#).

AL1-4 Allergy Severity

The supported values for Allergy Severity include:

This value...	Means this...
SV	Severe
MO	Moderate (treated as Unknown)
MI	Mild (treated as Unknown)
U	Unknown



If Centricity Practice Solution indicates an allergy has a critical reaction, Allergy Severity is set to SV (Severe). Otherwise, LinkLogic exports U (Unknown).

AL1-5 Allergy Reaction

AL1-5, Allergy Reaction, contains a space-separated list of six possible problems caused by the allergy and a description of symptoms associated with the allergy. The possible problems are Derm, Shock, Resp, GI, Heme, and Other.

Length limits

Although the HL7 specification limits this field to 15 characters, LinkLogic can export up to 286 characters: 30 characters (if all problems are included) followed by a maximum of 256 characters of symptom description.

AL1-6 Identification Date

AL1-6, Identification Date, is the onset date associated with the allergy.

MSA – Message Acknowledgement

The MSA segment is used to acknowledge a previously received message. It triggers a resend if the acknowledgement code indicates the message was rejected or generated an error.

Legend

ID	Coded value for HL7-defined tables
ST	String data
CE	Coded element
NM	Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
MSA-1	2	ID	0008	Acknowledgement Code	Required	64
MSA-2	20	ST		Message Control ID	Required	
MSA-3	80	ST		Text Message	Optional	
MSA-4	15	NM		Expected Sequence Number	Not used	
MSA-5	1	ID	0102	Delayed Ack Type	Not used	
MSA-6	100	CE		Error Condition	Not used	

MSA-1 Acknowledgement Code

The supported values for Acknowledgment Code include:

This value...	Means this...
AA	Original mode: Application Accept Enhanced Mode: Application Acknowledgement: Accept
AR	Original mode: Application Reject Enhanced mode: Application Acknowledgement: Reject This code triggers a message resend event.
AE	Original mode: Application Error Enhanced mode: Application Acknowledgement: Error This code triggers a message resend event.

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This HL7-based interface supports the export of summarized patient clinical data from Centricity Practice Solution. It uses the HL7 MDM - Medical Document Management message, described in the next section. Support for the MDM message is constrained to the T02 trigger events.

Clinical summary documents can be imported into Centricity Practice Solution using the NotesLink HL7 interface, on which this interface is based. This specification focuses on export issues related to clinical summary documents.

For more information about creating an interface to import documents, see [“NotesLink Import/Export HL7 interface specification” on page 341](#).

MDM message – Medical Document Management

An MDM message includes:

- Message header (MSH), trigger event type (EVN)
 - Patient information (PID, PV1)
 - Document header (TXA)
 - One or more observation/result (OBX) segments defining, quantifying and qualifying the document content
-

MDM trigger events

Trigger event: an event in a healthcare workflow that triggers the transfer of information, identified in HL7 by a unique 3-character code.

HL7 assumes that certain *trigger events* in the healthcare environment create the need for data to flow among systems.

LinkLogic supports this MDM message trigger event for export:

- **T02**—Original document notification and content.

MDM message structure

The following table shows how LinkLogic uses the message segments in this message when exporting data. For definitions of LinkLogic usage terms, see [“How LinkLogic uses message segments” on page 42](#).

Legend			
R	Required	[...]	Optional
O	Optional	{...}	Repeating
C	Conditional	[[...]]	Optional and repeating
I	Ignored		

Message segment	Name	T02 Export
MSH	Msg Header	Required
EVN	Event Type	Required
PID	Patient ID	Required
PV1	Patient visit	Optional
TXA	Transcription Document Header	Optional
{OBX}	Observation/ Result	Required
...		
MSH	Msg Header	Conditional
MSA	Msg Ack	Conditional
[ERR]	Error	Ignored

HL7 message segments

This section provides detailed specifications for the following HL7 message segments used in the MDM message:

For information about this segment...	See page...
MSH - Message Header	68
EVN - Event type	70
PID - Patient Identification	71
PV1 - Patient Visit	71
TXA - Transcription Document Header	79
OBX - Observation/Result	81
MSA - Message Acknowledgement	82

Each message segment table lists the segment elements or fields in sequence order (MSH-1, MSH-2, MSH-3, and so on) with the following information:

- **Element name**
- **Maximum length** in LinkLogic
- **Data type**
- **Source table** in the HL7 specification where applicable
- **LinkLogic usage on export or import** (Required, Optional, and so on)
For definitions of LinkLogic usage terms used in the tables, see [“How LinkLogic uses message segments” on page 42](#).



Click blue page number links in the following tables to jump to detail notes (when viewing the Adobe PDF version of this guide) or look for notes under the element code and name listed after the table.

MSH – Message Header

The Message Header segment (MSH) should always be in the first segment in each HL7 message. MSH defines the intent, source, destination, and some specifics of the syntax of a message.

Legend			
CE	Coded element	NM	Numeric
CM	Order sequencing component	PT	Processing type
HD	Hierarchic designator	ST	Character string
ID	Coded value	TS	Time stamp

SEQ	Lnth	Data type	HL7 table	Element name	Export	See page
MSH-1	1	ST		Field Separator	Required	
MSH-2	4	ST		Encoding Characters	Required	
MSH-3	40	HD		Sending Application	Used	68
MSH-4	20	HD		Sending Facility	Used	69
MSH-5	40	HD		Receiving Application	Used	69
MSH-6	30	HD		Receiving Facility	Used	69
MSH-7	26	TS		Date/Time of Message	Used	69
MSH-8	40	ST		Security	Not used	
MSH-9	7	CM	0076	Message Type	Required	69
MSH-10	20	ST		Message Control ID	Required	
MSH-11	3	PT	0103	Processing ID	Required	69
MSH-12	8	ID	0104	Version ID	Required	69
MSH-13	15	NM		Sequence Number	Not used	
MSH-14	180	ST		Continuation Pointer	Not used	
MSH-15	2	ID	0155	Accept Ack type	Optional	69
MSH-16	2	ID	0155	Application Ack type	Optional	69
MSH-17	2	ID		Country Code	Not used	
MSH-18	6	ID	0211	Character Set	Not used	
MSH-19	60	CE		Principal Language of Message	Not used	

MSH-3 Sending Application

On export, LinkLogic identifies itself with a string value for MSH-3 derived by concatenating the string *LinkLogic-* with the unique Centricity Practice

Solution Enterprise ID for the organization (for example, *LinkLogic-ABCD*). The Enterprise ID can be up to four alphanumeric characters.

MSH-4 Sending Facility

MSH-4, Sending Facility contains the patient's (not a document's) server-specific location of care in the form of *DatabaseID^LOC*.

MSH-5 Receiving Application

MSH-5 Receiving Application contains the name of the LinkLogic relationship that created the output file.

MSH-6 Receiving Facility

MSH-6 Receiving Facility contains the patient's (not a document's) location of care. Unlike MSH-4 Sending Facility, this field contains the location of care without the database ID.

MSH-7 Date/Time of Message

MSH-7, Date/Time of Message, is the date/time that the clinical summary data is exported.

MSH-9 Message Type

On export, MSH-9, Message Type contains *MDM^T02*.

MSH-11 Processing ID

MSH-11, Processing ID, is set to P (Production) or D (Debugging), if test mode is enabled in Centricity Practice Solution.

MSH-12 Version ID

MSH-12, Version ID, is set to 2.3.1 (for Release 2.3.1, April 1999).

MSH-15 Accept Ack Type

The supported values for MSH-15 Accept Ack Type include:

This value...	Means this...
AL	Always
NE	Never (default)

MSH-16 Application Ack Type

MSH-16 Application Acknowledgment is optional. On export, the value NE is used.

EVN – Event Type

The Event Type segment (EVN) defines the trigger event for the message, such as patient discharge or an update to the patient chart, and when it occurred.

Legend

ID Coded value for HL7-defined tables

IS Coded value for user-defined tables

XCN Extended composite ID number and name

TS Time stamp

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
EVN-1	3	ID	0003	Event Type Code	Required	70
EVN-2	26	TS		Recorded Date/Time	Required	70
EVN-3	26	TS		Date/Time of Planned Event	Not used	
EVN-4	3	IS	0062	Event Reason Code	Not used	
EVN-5	60	XCN	0188	Operator ID	Not used	
EVN-6	26	TS		Event Occurred	Not used	

EVN-1 Event Type Code

The Event Type Code is T02: Original document notification and content.

EVN-2 Recorded Date/Time

EVN-2, Date/Time of Event, is populated with a date/time that is typically milliseconds later than the date/time exported in MSH-7, Date/Time of Message.

!!! EVN-2 is NOT the time the event occurred.

PID – Patient Identification

The Patient Identification (PID) is a unique, system-generated identification number that Centricity Practice Solution assigns to each patient during registration.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric		

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PID-1	4	SI		Set ID - Patient ID	Not used	
PID-2	20	CX		Patient ID (External ID)	Conditional	72
PID-3	20	CX		Patient ID (Internal ID)	Required	72
PID-4	16	CX		Alternate Patient ID-PID	Optional	73
PID-5	48	XPN		Patient Name	Required	
PID-6	48	XPN		Mother's Maiden Name	Not used	
PID-7	26	TS		Date/Time of Birth	Used	
PID-8	1	IS	0001	Sex	Used	73
PID-9	48	XPN		Patient Alias	Not used	
PID-10	1	IS	0005	Race	Optional	73
PID-11	106	XAD		Patient Address	Optional	
PID-12	4	IS		Country Code	Not used	
PID-13	250	XTN		Phone Number - Home	Optional	73
PID-14	250	XTN		Phone Number - Work	Optional	73

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PID-15	60	CE	0296	Primary Language	Optional	
PID-16	1	IS	0002	Marital Status	Optional	74
PID-17	3	IS	0006	Religion	Not used	
PID-18	20	CX		Patient Account Number	Not used	
PID-19	11	ST		SSN # - Patient	Optional	
PID-20	25	DLN		Driver's License # - Patient	Not used	
PID-21	20	CX		Mother's Identifier	Not used	
PID-22	3	IS	0189	Ethnic Group	Used	
PID-23	60	S T		Birth Place	Not used	
PID-24	2	ID	0136	Multiple Birth Indicator	Not used	
PID-25	2	NM		Birth Order	Not used	
PID-26	4	IS	0171	Citizenship	Not used	
PID-27	60	CE	0172	Veterans Military Status	Not used	
PID-28	80	CE		Nationality	Not used	
PID-29	26	TS		Patient Death Date /Time	Optional	74
PID-30	1	ID	0136	Patient Death Indicator	Optional	74
PID-40	1	ST	0185	Patient Preferred Contact Method	Optional	74

PID-2 Patient ID (External ID) / PID-3 Patient ID (Internal ID)

PID-3, Patient ID (Internal ID), always contains the unique Centricity Practice Solution Patient ID for the patient. If available, PID-2, Patient ID (External ID), contains the external identifier for the relationship-specific external ID set.

Global unique Identifier

The Centricity Practice Solution Patient ID is a globally unique identifier represented as a string value in the form *123456789012-XXXX123* where:

- **Prefix.** *123456789012* is a number with a maximum of 12 digits that is unique within the Centricity Practice Solution database where the patient's chart was created.
- **Suffix.** *XXXX123* concatenates the customer's unique Enterprise ID (*XXXX*) and the database ID (*123*). Centricity Practice Solution database IDs are allocated and specified by the system administrator performing the installation.

PID-4 Alternate Patient ID - PID

PID-4, Alternate Patient ID, is the patient's medical record number.

PID-8 Sex

The supported values for Sex include:

This value...	Means this...
F	Female
M	Male
O	Other (treated as Unknown)
U	Unknown

PID-10 Race

The supported values for Race include:

This value...	Means this...
B	Black
C	Chinese
F	Filipino
H	Hispanic
J	Japanese
N	Native American
I	Native Hawaiian
M	Multiracial
O	Oriental/Asian
P	Pacific Islander
W	White
T	Other
U	Undetermined (default)

In Centricity Practice Solution, race values can be configured in Administration. If a value is changed in Administration, you must configure MIK (in the Server Setup application) to map to the value to one of the values in this table. See "Configure MIK interfaces" in Server Setup Online Help.

PID-13 Phone Number - Home / PID-14 Phone Number - Work

LinkLogic exports the patient's home phone number, cell phone, fax phone, and/or pager (if present) as multiple repeating items in PID-13, Phone Number

- Home. The phone number value is sent in the first component of each item and the phone type is sent in the third component of each item.

The fourth component of the first repeating item in PID-13 is populated with the patient's email address.

The patient's work phone (if present) is exported in PID-14.1. LinkLogic exports only one repeating item in PID-14 and does not export any phone type in PID-14.3.

PID-16 Marital Status

The supported values for Marital Status include:

This value...	Means this...
A	Separated
D	Divorced
M	Married
S	Single
W	Widowed
O	Other
U	Undetermined (default)

In Centricity Practice Solution, this value can be configured in Administration. If you change a Marital Status value, you must configure MIK (in the Server Setup application) to map the new value to one of the values in this table.

See "Configure MIK interfaces" in Server Setup Online Help.

PID-29 Patient Death Date and Time / PID-30 Patient Death Indicator

PID-30, Patient Death Indicator, is set to Y for deceased patients. PID-29, Patient Death Date and Time, is populated with the patient's date of death.

PID-40 Patient Preferred Contact Method

LinkLogic can import and export a 1-character value for patient preferred contact method in the optional field PID-40 at the end of the PID segment in ADT and BAR messages.

To send or receive patient contact method using this field you must associate the optional Add-On IXP file **pid40contactby.ixp** with the LinkLogic interface. This IXP file maps the HL7 values to EMR values to store to or export from the database in the PERSON.CONTACTBY field. For detailed information about using IXP files, see ["Using .IXP configuration files" on page 597](#).

The following supported values for patient preferred contact method are based on HL7 table 0185. Note that starred items are not in Table 0185 but were created for this implementation.

HL7 value...	Means this...	Mapped EMR value
B	Pager	P
C	Cell Phone	C
D	Durable Power of Attorney*	D
E	Email	E
F	Fax	F
H	Home Phone	H
L	Letter*	L
N	Nursing Home*	N
O	Work phone	W
P	Paper*	A
T	Other*	O

PV1 – Patient Visit

The Patient Visit segment (PV1) is used by Registration and ADT (Admission, Discharge, and Transfer) applications to communicate information about a specific visit.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric	DT	Date
JCC	Job Code / Class	XON	Extended composite name and ID number for organizations
PL	Person location	FC	Financial class

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PV1-1	4	SI		Set ID - PV1	Optional	
PV1-2	1	IS	0004	Patient Class	Not used	
PV1-3	80	PL		Assigned Patient Location	Optional	78
PV1-4	2	IS	0007	Admission Type	Not used	
PV1-5	20	CX		Pre-admit Number	Not used	
PV1-6	80	PL		Prior Patient Location	Not used	
PV1-7	60	XCN	0010	Attending Doctor	Optional	78
PV1-8	60255	XCN	0010	Referring Doctor	Optional	78
PV1-9	60	XCN	0010	Consulting Doctor	Not used	
PV1-10	3	IS	0069	Hospital Service	Not used	
PV1-11	80	PL		Temporary Location	Not used	
PV1-12	2	IS	0087	Pre-admit Test Indicator	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PV1-13	2	IS	0092	Readmission Indicator	Not used	
PV1-14	3	IS	0023	Admit Source	Not used	
PV1-15	2	IS	0009	Ambulatory Status	Not used	
PV1-16	2	IS	0099	VIP Indicator	Not used	
PV1-17	60	XCN	0010	Admitting Doctor	Not used	
PV1-18	2	IS	0018	Patient Type	Not used	
PV1-19	20	CX		Visit Number	Optional	
PV1-20	50	FC	0064	Financial Class	Not used	
PV1-21	2	IS	0032	Charge Price Indicator	Not used	
PV1-22	2	IS	0045	Courtesy Code	Not used	
PV1-23	2	IS	0046	Credit Rating	Not used	
PV1-24	2	IS	0044	Contract Code	Not used	
PV1-25	8	DT		Contract Effective Date	Not used	
PV1-26	12	NM		Contract Amount	Not used	
PV1-27	3	NM		Contract Period	Not used	
PV1-28	2	IS	0073	Interest Code	Not used	
PV1-29	1	IS	0110	Transfer to Bad Dept Code	Not used	
PV1-30	8	DT		Transfer to Bad Dept Date	Not used	
PV1-31	10	IS	0021	Bad Debt Agency Code	Not used	
PV1-32	12	NM		Bad Debt Transfer Amount	Not used	
PV1-33	12	NM		Bad Debt Recovery Amount	Not used	
PV1-34	1	IS	0111	Delete Account Indicator	Not used	
PV1-35	8	DT		Delete Account Date	Not used	
PV1-36	3	IS	0112	Discharge Disposition	Not used	
PV1-37	25	CM	0113	Discharged to Location	Not used	
PV1-38	2	IS	0114	Diet Type	Not used	
PV1-39	2	IS	0115	Servicing Facility	Not used	
PV1-40	1	IS	0116	Bed Status	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PV1-41	2	IS	0117	Account Status	Not used	
PV1-42	80	PL		Pending Location	Not used	
PV1-43	80	PL		Prior Temporary Location	Not used	
PV1-44	26	TS		Admit Date/Time	Not used	
PV1-45	26	TS		Discharge Date/Time	Not used	
PV1-46	12	NM		Current Patient Balance	Not used	
PV1-47	12	NM		Total Charges	Not used	
PV1-48	12	NM		Total Adjustments	Not used	
PV1-49	12	NM		Total Payments	Not used	
PV1-50	20	CX	0192	Alternate Visit ID	Not used	
PV1-51	1	IS	0326	Visit Indicator	Not used	
PV1-52	60	XCN	0010	Other Healthcare Provider	Not used	

PV1-3 Assigned Patient Location

The fourth component of PV1-3, Assigned Patient Location is populated with the eight-character abbreviation for the patient's home location of care.

PV1-7 Attending Doctor

PV1-7, Attending Doctor field is populated with the patient's responsible provider, if specified.

PV1-8 Referring Doctor

PV1-8, Referring Doctor field is populated with the patient's referring physician if specified. To display referring physician in a document, LinkLogic interprets only the second and third components as the referring doctor's last name and first name, respectively.

TXA Transcription Document Header

The TXA segment contains information about a transcribed document but does not include the text of the document.

Legend

ID	Coded value HL7-defined tables	SI	Sequence ID
IS	Coded value user-defined tables	EI	Entity Identifier
XCN	Extended composite ID and name	PPN	Performing person
TS	Time stamp	ST	String data

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
TXA-1	4	SI		Set ID - Document	Optional	
TXA-2	30	IS	0270	Document Type	Required	80
TXA-3	2	ID	0191	Document Content Presentation	Conditional	80
TXA-4	26	TS		Activity Date/Time	Optional	80
TXA-5	60	XCN		Primary Activity Provider Code/Name	Conditional	80
TXA-6	26	TS		Origination Date/Time	Not used	
TXA-7	26	TS		Transcription Date/Time	Not used	
TXA-8	26	TS		Edit Date/Time	Optional	80
TXA-9	60	XCN		Originator Code/Name	Not used	
TXA-10	60	XCN		Assigned Document Authenticator	Not used	
TXA-11	48	XCN		Transcriptionist Code/Name	Not used	
TXA-12	30	EI		Unique Document Number	Not used	
TXA-13	16	ST		Parent Document Number	Not used	
TXA-14	22	EI		Placer Order Number	Not used	
TXA-15	8	EI		Filler Order Number	Not used	
TXA-16	30	ST		Unique Document File Name	Not used	
TXA-17	2	ID	0271	Document Completion Status	Required	80
TXA-18	2	ID	0272	Document Confidentiality Status	Not used	
TXA-19	2	ID	0273	Document Availability Status	Used	80
TXA-20	2	ID	0275	Document Storage Status	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
TXA-21	30	ST		Document Change Reason	Not used	
TXA-22	60	PPN		Authentication Person, Time Stamp	Used	80
TXA-23	60	XCN		Distributed Copies (Code and Name of Recipients)	Optional	

TXA-2 Document Type

TXA-2, Document Type field is populated with the value CS (Clinical Summary). Document types in Centricity Practice Solution can be cross-referenced with a value in this field. For more information, see [“Cross-referencing field values” on page 461](#).

TXA-3 Document Content Presentation

TXA-3, Document Content Presentation is always TX, machine-readable text.

TXA-4 Activity Date/Time

TXA-4 is populated with the clinical date/time of the exported document.

TXA-5 Primary Activity Provider Code/Name

TXA-5, Primary Activity Provider Code/Name, is populated with the name of the document provider, not necessarily the person authenticating (signing) the document. See also [“TXA-22 Authentication Person, Time Stamp” on page 80](#).

TXA-8 Edit Date/Time

TXA-8, Edit Date/Time, is populated with the document's signature date/time.

TXA-17 Document Completion Status

The supported values for Document Completion Status are shown below. Any other value generates an error.

This value...	Means this...
AU	Authenticated (signed)
DO	Documented (complete but not signed)

TXA-19 Document Availability Status

TXA-19, Document Availability Status field is always set to AV (Available for Patient Care). Only signed documents can be exported.

TXA-22 Authentication Person, Time Stamp

TXA-22 is populated with the authentication person's name and the date/time it was authenticated in the following format:
name^^^^^^^^^^^^^^^^^^ *yyyymmddhhmmss*

OBX – Observation/Result

The Observation/Result segment (OBX) contains is a clinical fact or other information about a patient’s mental or physical status, such as a lab result, a vital sign, or the answer to a medical history question. Observations can be numeric or text.

Legend

ID	Coded value for HL7-defined tables	CI	Extended composite ID with check digit
ST	String data	SI	Sequence ID
XCN	Extended composite ID # / name	CE	Coded element
TS	Time stamp	NM	Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
OBX-1	10	SI		Set ID - Observation Simple	Not used	
OBX-2	2	ID	0125	Value Type	Used	82
OBX-3	590	CE		Observation Identifier	Not used	
OBX-4	20	ST		Observation Sub-ID	Not used	
OBX-5	65536	ST		Observation Value	Required	82
OBX-6	60	CE		Units	Not used	
OBX-7	60	ST		Reference Range	Not used	
OBX-8	10	ID	0078	Abnormal Flags	Not used	
OBX-9	5	NM		Probability	Not used	
OBX-10	5	ID	0080	Nature of Abnormal Test	Not used	
OBX-11	2	ID	0085	Observation Result Status	Not used	
OBX-12	26	TS		Date Last Obs Normal Values	Not used	
OBX-13	20	ST		User Defined Access Checks	Not used	
OBX-14	26	TS		Date/Time of the Observation	Optional	
OBX-15	200	CE		Producer’s ID	Not used	
OBX-16	80	XCN		Responsible Observer	Not used	
OBX-17	60	CE		Observation method	Not used	

OBX-2 Value Type

OBX-2, Value Type, is always populated with the value ST (string data).

OBX-5 Observation Value

OBX-5, Observation Value is populated with the content of the clinical summary data. The information in the summary depends on the options set in Centricity Practice Solution for the Clinical Summary Export Task as well as the clinical data in the patient's chart. For non-active patients, the patient status is included at the beginning of the summary data.

MSA – Message Acknowledgement

The MSA segment is used to acknowledge a previously received message. It triggers a resend if the acknowledgement code indicates the message was rejected or generated an error.

Legend

- ID** Coded value for HL7-defined tables
- ST** String data
- CE** Coded element
- NM** Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
MSA-1	2	ID	0008	Acknowledgement Code	Required	83
MSA-2	20	ST		Message Control ID	Required	
MSA-3	80	ST		Text Message	Optional	
MSA-4	15	NM		Expected Sequence Number	Not used	
MSA-5	1	ID	0102	Delayed Ack Type	Not used	
MSA-6	100	CE		Error Condition	Not used	

MSA-1 Acknowledgement Code

The supported values for Acknowledgment Code include:

This value...	Means this...
AA	Original mode: Application Accept Enhanced Mode: Application Acknowledgement: Accept
AR	Original mode: Application Reject Enhanced mode: Application Acknowledgement: Reject This code triggers a message resend event.
AE	Original mode: Application Error Enhanced mode: Application Acknowledgement: Error This code triggers a message resend event.

Clinical Summary examples

Sample Clinical Summary Document

This is an example of the document created when a Clinical Summary data file is imported.

```
Date: 01/17/2012 4:53 PM
  Patient Name: Caldwell, Walter S.
  DOB: 03/02/1944 Sex: M
  Patient ID: 234-TEST011
  External ID: MR-846-624
  SSN: 822-84-6624
  MRN: MR-846-624
  Responsible Provider: Harry Winston MD

Problems:
  <Problem (* = uncoded), Codes, Onset Date-End Date>
  ARTHRITIS, ICD-716.90 (ICD10-M12.9), 03/02/2000-<No End Date>
    10/10/2001 - Unchanged - Harry S. Winston MD
    09/17/2000 - Unchanged - Harry S. Winston MD
  Risk of CORONARY ARTERY DISEASE, ICD-414.00, 03/02/2000-12/11/2011
  HYPERCHOLESTEROLEMIA, ICD-272.0 (ICD10-E78.0), 03/17/2000-<No End Date>
    10/10/2001 - Unchanged - Harry S. Winston MD
    09/30/2000 - Improved - Harry S. Winston MD
  CHRONIC AIRWAY OBSTRUCTION (COPD), ICD10-J44.9 (SNO-13645005), 09/17/2000-<No End Date>
    10/10/2001 - Deteriorated - Harry S. Winston MD
  ANGINA, FUNCTIONAL CLASS III, ICD-413.9 (ICD10-I20.9), 09/30/2000-<No End Date>
    10/10/2001 - Unchanged - Harry S. Winston MD
  Minor dx of UPPER RESPIRATORY INFECTION, ICD-465.9 (ICD10-J06.9), 11/30/2000-12/14/2000
  PROSTATIC HYPERTROPHY, ICD-600 <Uncoded>, 04/05/2001-12/11/2011

Medications:
  <Medication (* = uncoded), Refills, Start Date-End Date, DDID, SIG>
  MEVACOR TAB 40MG (LOVASTATIN), 3, 03/17/2000-<No Stop Date>, 13470, 1 po qd
  MEVACOR TAB 40MG (LOVASTATIN), 3, 03/17/2000-<No Stop Date>, 13470, 1 po qd
  MEVACOR TAB 40MG (LOVASTATIN), 3, 03/17/2000-<No Stop Date>, 13470, 1 po qd
  NITROSTAT SUB 0.4MG (NITROGLYCERIN), 1, 09/17/2000-<No Stop Date>, 15050, 1 sl prn c/p,
  max of 3 in 15 min
  NITROSTAT SUB 0.4MG (NITROGLYCERIN), 1, 09/17/2000-<No Stop Date>, 15050, 1 sl prn c/p,
  max of 3 in 15 min
  ROBITUSSIN SYP 100/5ML (GUAIFENESIN), , 12/05/2000-12/12/2000, 18685, 2 tsp q 4-6 h prn
  cough
  DILTIAZEM TAB 60MG (DILTIAZEM HCL), 3, 02/23/2004-03/24/2004, 6672, 1 po bid

Allergies and Adverse Reactions:
  <Allergy (* = uncoded), [Symptoms ] Description Onset Date-Stop Date, DDID>
  PERCOCET, [] Gastrointestinal problems, e.g., nausea, vomiting, diarrheaNausea <No Onset
  Date>-<No Stop Date>, 0

Note: This document was created by the LinkLogic Clinical Summary Export Document
interface capability.
```


Sample HL7-formatted Clinical Summary file

The following file was used to create the Clinical Summary document shown above. The beginning of each message segment is highlighted to improve readability.

The content of the data file depends on

- Options set in Centricity Practice Solution for the Clinical Summary Export Task
- Clinical data in the patient's chart

In this example the task options were set to include only problems, medications, and allergies. As a result, the summary document has no Directives, Flowsheet, or Orders sections.

```

MSH|^~\&|LinkLogic-TEST|TEST000^SOUTH|EssexArchives|SOUTH|20120319153510||MDM^T02|16
47790570021970|P|2.3.1|||NE|NE

EVN|T02|20120319153510

PID|1||234-TEST011|MR-846-624|Caldwell^Walter^S.||19440302|M|W|4839 NW Montgomery
St.^Portland^OR^97434^USA||503-555-6054^^PH^caldwells@uswest.com~503-434-0091^^FX|5
03-434-0090|English|M|||822-84-6624|||N

PV1|1|O|^SOUTH|||hwinston

TXA|1|CS|TX|20120319153510|||20120319153510|||DO|AV

OBX|1|ST|||Date: 03/19/2012 3:35 PM~Patient Name: Caldwell, Walter S.~ DOB:
03/02/1944 Sex: M~ Patient ID: 234-TEST011~ External ID: MR-846-624~ SSN:
822-84-6624~ MRN: MR-846-624~ Responsible Provider: Harry Winston MD~
Problems:~ <Problem (* = uncoded), Codes, Onset Date-End Date>~
ARTHRITIS, ICD-716.90 (ICD10-M12.9), 03/02/2000-<No End Date>~ 10/10/2001 -
Unchanged - Harry S. Winston MD~ 09/17/2000 - Unchanged - Harry S. Winston
MD~ Risk of CORONARY ARTERY DISEASE, ICD-414.00, 03/02/2000-12/11/2011~
HYPERCHOLESTEROLEMIA, ICD-272.0 (ICD10-E78.0), 03/17/2000-<No End Date>~
10/10/2001 - Unchanged - Harry S. Winston MD~ 09/30/2000 - Improved - Harry
S. Winston MD~ CHRONIC AIRWAY OBSTRUCTION (COPD), ICD10-J44.9 (SNO-13645005),
09/17/2000-<No End Date>~ 10/10/2001 - Deteriorated - Harry S. Winston MD~
ANGINA, FUNCTIONAL CLASS III, ICD-413.9 (ICD10-I20.9), 09/30/2000-<No End Date>~
10/10/2001 - Unchanged - Harry S. Winston MD~ Minor dx of UPPER RESPIRATORY
INFECTION, ICD-465.9 (ICD10-J06.9), 11/30/2000-12/14/2000~ * PROSTATIC
HYPERTROPHY, ICD-600 <Uncoded>, 04/05/2001-12/11/2011~~
Medications:~ <Medication (* = uncoded), Refills, Start Date-End Date, DDID, SIG>~
MEVACOR TAB 40MG (LOVASTATIN), 3, 03/17/2000-<No Stop Date>, 13470, 1 po qd~ MEVACOR
TAB 40MG (LOVASTATIN), 3, 03/17/2000-<No Stop Date>, 13470, 1 po qd~ MEVACOR TAB 40MG
(LOVASTATIN), 3, 03/17/2000-<No Stop Date>, 13470, 1 po qd~ NITROSTAT SUB 0.4MG
(NITROGLYCERIN), 1, 09/17/2000-<No Stop Date>, 15050, 1 sl prn c/p, max of 3 in 15
min~ NITROSTAT SUB 0.4MG (NITROGLYCERIN), 1, 09/17/2000-<No Stop Date>, 15050, 1 sl
prn c/p, max of 3 in 15 min~ ROBITUSSIN SYP 100/5ML (GUAIFENESIN), ,
12/05/2000-12/12/2000, 18685, 2 tsp q 4-6 h prn cough~ DILTIAZEM TAB 60MG (DILTIAZEM
HCL), 3, 02/23/2004-03/24/2004, 6672, 1 po bid~~Allergies and Adverse Reactions:~
<Allergy (* = uncoded), [Symptoms ] Description Onset Date-Stop Date, DDID>~
PERCOET, [ ] Gastrointestinal problems, e.g., nausea, vomiting, diarrheaNausea <No
Onset Date>-<No Stop Date>, 0~~~Note: This document was created by the LinkLogic
Clinical Summary Export Document interface capability.|||||||20120319153510

```


DemographicsLink Import /Export HL7 interface specification

[ADT message - Admission, discharge, and transfer](#) 87

[BAR message - Add/change billing account](#) 89

[MSH - Message Header](#) 92

[EVN - Event Type](#) 96

[PID - Patient Identification](#) 98

[PD1 - Patient additional demographic](#) 106

[NK1 - Next of kin / associated parties](#) 108

[PV1 - Patient Visit](#) 113

[OBX - Observation/Result](#) 119

[GT1 - Guarantor](#) 122

[IN1 - Insurance](#) 128

[MSA - Message Acknowledgement](#) 134

This HL7-based interface supports the import and export of demographics data. It uses a subset of the complete HL7 message set for Patient Administration and supports these two HL7 messages:

- ADT – Admission, discharge, and transfer (import and export).
See [“ADT message - Admission, discharge, and transfer” on page 87](#).
- BAR – Add/change billing account (import only).
See [“BAR message - Add/change billing account” on page 89](#).

ADT message - Admission, discharge, and transfer

This section describes how LinkLogic uses message segments in the ADT messages when importing and exporting data.

ADT trigger events

Trigger event: an event in a healthcare workflow that triggers the transfer of information, identified in HL7 by a unique 3-character code

Events that trigger import. LinkLogic supports these ADT message *trigger events* for the import of demographics data:

- **A03**—discharge a patient/end a visit
- **A04**—register a patient
- **A08**—update patient information
- **A23**—delete a patient record
- **A28**—add personal information
- **A29**—delete personal information
- **A31**—update personal information

Events that trigger export. LinkLogic supports only the following trigger events for the export of demographics data:

- **A04**—register a patient
- **A08**—update patient information

ADT message structure

Page references in the following table link to detailed message segment tables and notes. For definitions of LinkLogic usage terms, see [“How LinkLogic uses message segments” on page 42.](#)

Legend			
R	Required	[...]	Optional
O	Optional	{...}	Repeating
C	Conditional	[{...}]	Optional and repeating
I	Ignored		

Message segment	Name	See page	A03 Import	A04 Import Export		A08 Import Export		A23 Import	A24 Import	A29 Import	A31 Import
MSH	Msg Header	92	R	R	R	R	R	R	R	R	R
EVN	Event Type	96	R	R	R	R	R	R	R	R	R
PID	Patient ID	98	R	R	R	R	R	R	R	R	R
[{NK1}]	Next of Kin	108	O	O	O	O	O	O	I	O	I
PV1	Patient Visit	113	O	O	O	O	O	O	I	O	I
[PV2]	Patient Visit		I	I	I	I	I	I	I	I	I
[{OBX}]	Observation	119	O	I	I	I	I	I	I	I	I
[{ALI}]	Allergy Info		I	I	I	I	I	I	I	I	I

Message segment	Name	See page	A03 Import	A04 Import Export		A08 Import Export		A23 Import	A24 Import	A29 Import	A31 Import
[[DG1]]	Diagnosis		I	I	I	I	I	I	I	I	I
[[PR1]]	Procedures		I	I	I	I	I	I	I	I	I
[[GT1]] [	Guarantor	122	O	O	O	O	O	O	I	O	I
{IN1	Insurance	128	O	O	O	O	O	O	I	O	I
[IN2]	Insurance		I	I	I	I	I	I	I	I	I
{IN3} }]	Insurance		I	I	I	I	I	I	I	I	I
[ACC]	Accident		I	I	I	I	I	I	I	I	I
[UB1]	Uniform bill		I	I	I	I	I	I	I	I	I
[UB2]	Uniform bill		I	I	I	I	I	I	I	I	I
MSH	Msg Header	92	C	C	C	C	C	C	C	C	C
MSA	Msg Ack	134	C	C	C	C	C	C	C	C	C
[ERR]	Error		I	I	I	I	I	I	I	I	I

BAR message - Add/change billing account

LinkLogic supports these BAR message trigger events for the import of demographics:

- P01—add patient account
- P02—purge patient account

!!! LinkLogic DOES NOT support the BAR message for the export of demographics data.

BAR message structure

Page references in the following table link to detailed message segment tables and notes. For definitions of LinkLogic usage terms, see [“How LinkLogic uses message segments” on page 42.](#)

Legend	
R	Required
O	Optional
C	Conditional
I	Ignored
[...]	Optional
{...}	Repeating
{{...}}	Optional and repeating

Message segment	Name	See page...	P01 Import	P02 Import
MSH	Msg Header	92	R	R
EVN	Event Type	96	R	R
PID	Patient ID	98	R	R
{				
[PV1]	Patient Visit	113	O	O
[PV2]	Patient Visit		I	I
{{OBX}}	Observation	119	I	I
{{ALI}}	Allergy Info		I	I
{{DG1}}	Diagnosis		I	I
{{PR1}}	Procedures		I	I
{{GT1}}	Guarantor	122	O	O
[[NK1}}	Next of Kin	108	O	O
[

Message segment	Name	See page...	P01 Import	P02 Import
{IN1}	Insurance	128	O	O
[IN2]	Insurance		I	I
[IN3]	Insurance		I	I
}				
]				
[ACC]	Accident		I	I
[UB1]	Uniform bill		I	I
[UB2]	Uniform bill		I	I
}				
MSH	Msg Header	92	C	C
MSA	Msg Ack	134	C	C
[ERR]	Error		I	I

HL7 message segments

This section provides detailed specifications for the following HL7 message segments used in the ADT and BAR messages:

For information about this segment...	See page...
MSH - Message Header	92
EVN - Event type	96
PID - Patient Identification	98
NK1 - Next of kin / associated parties	105
PV1 - Patient Visit	113
OBX - Observation/Result	119
GT1 - Guarantor	122
IN1 - Insurance	128
MSA - Message Acknowledgement	134

Each message segment table lists the segment elements or fields in sequence order (MSH-1, MSH-2, MSH-3, and so on) with the following information:

- **Element name**
 - **Maximum length** in LinkLogic
 - **Data type**
 - **Source table** in the HL7 specification where applicable
 - **LinkLogic usage on export or import** (Required, Optional, and so on)
- For definitions of LinkLogic usage terms used in the tables, see [“How LinkLogic uses message segments” on page 42](#).



Click blue page number links in the following tables to jump to detail notes (when viewing the Adobe PDF version of this guide) or look for notes under the element code and name listed after the table.

MSH – Message Header

The Message Header segment (MSH) should always be in the first segment in each HL7 message. MSH defines the intent, source, destination, and some specifics of the syntax of a message.

Legend

CE	Coded element	NM	Numeric
CM	Order sequencing component	PT	Processing type
HD	Hierarchic designator	ST	Character string
ID	Coded value	TS	Time stamp

SEQ	Lnth	Data type	HL7 table	Element name	Import	See page	Export	See page
MSH-1	1	ST		Field Separator	Required		Used	
MSH-2	4	ST		Encoding Characters	Required		Used	
MSH-3	40	HD		Sending Application	Conditional	93	Used	93
MSH-4	20	HD		Sending Facility	Optional	93	Used	93
MSH-5	40	HD		Receiving Application	Not used		Used	94
MSH-6	30	HD		Receiving Facility	Not used		Conditional	94
MSH-7	26	TS		Date/Time of Message	Required	94	Used	
MSH-8	40	ST		Security	Not used		Not used	
MSH-9	7	CM	0076	Message Type	Required	94	Used	94
MSH-10	20	ST		Message Control ID	Required		Used	
MSH-11	3	PT	0103	Processing ID	Required	95	Used	
MSH-12	8	ID	0104	Version ID	Required	95	Used	
MSH-13	15	NM		Sequence Number	Not used		Not used	
MSH-14	180	ST		Continuation Pointer	Not used		Not used	
MSH-15	2	ID	0155	Accept Ack Type	Optional	95	Not used	
MSH-16	2	ID	0155	Application Ack Type	Optional	95	Optional	95
MSH-17	2	ID		Country Code	Not used		Not used	
MSH-18	6	ID	0211	Character Set	Not used		Not used	
MSH-19	60	CE		Language of Message	Not used		Not used	

MSH-3 Sending Application / MSH-4 Sending Facility

On import...

Relationship: In LinkLogic, this describes an interface between Centricity Practice Solution and another computer system

MSH-3 Sending Application is considered optional in the HL7 specification, however, LinkLogic requires a value in either MSH-3 or MSH-4 Sending Facility. LinkLogic identifies the data source for an interface (known in Centricity Practice Solution as a LinkLogic *relationship*) by using the contents of MSH-3, MSH-4, or a combination of both separated by a hyphen. The Unique Name/ID field in the LinkLogic setup New Relationship window must match this data source.

For example, if MSH-3 contains `PracticeMgr` and MSH-4 contains `East`, the data file would match against a LinkLogic relationship named *PracticeMgr, East, or PracticeMgr-East*. If either MSH-3 or MSH-4 contains more than the first component, the delimiters are converted to spaces and the contents of the entire field are used.

LinkLogic interface relationship matching

LinkLogic uses the following logic to determine the correct relationship:

IF MSH-3 or MSH-4 or the concatenation of MSH-3 and MSH-4 separated by a hyphen uniquely matches exactly one defined LinkLogic relationship name

THEN import the file using the matched relationship

ELSE IF multiple matching relationship names were found

THEN issue an error indicating that multiple relationships were found (ambiguous match)

ELSE, no matching relationship name was found

THEN issue an error indicating that no relationship exists to import the data file

Length limits

Although the HL7 specification sets the maximum length for MSH-3 and MSH-4 at 180, LinkLogic supports a total of 40 characters for MSH-3 and MSH-4 combined.

On export...

On export, LinkLogic identifies itself with a string value for MSH-3 derived by concatenating the string *LinkLogic-* with the unique Centricity Practice Solution Enterprise ID for the organization (for example, *LinkLogic-ABCD*). The Enterprise ID can be up to four alphanumeric characters.

MSH-4 contains the patient's (not a document's) server-specific location of care in the form of *DatabaseID^LOC*.

MSH-5 Receiving Application / MSH-6 Receiving Facility

On export...

MSH-5 Receiving Application contains the name of the LinkLogic relationship that created the output file.

MSH-6 Receiving Facility contains the patient's (not a document's) location of care. Unlike MSH-4 Sending Facility, this field contains the location of care without the database ID.

MSH-7 Date/time of Message

On Import...

Although MSH-7 Date/time of Message is not required in the HL7 specification, LinkLogic requires it on import. See ["OBX-14 Date/Time of the Observation" on page 120](#) to understand how this field is used to determine the clinical date for imported discharge summary documents.

On export...

MSH-7 is populated with the date/time the export is performed.

MSH-9 Message Type

On import and export...

The supported values for MSH-9 Message Type include:

This value...	Means this...
ADT	Admission, discharge, and transfer message
ACK	Add/change billing account message
ACK	General acknowledgement message

On import, the second component, *trigger event*, is ignored. Use the EVN message segment to identify trigger event types.

On export, the second component is populated with a value identical to EVN-1 Event Type Code.

MSH-11 Processing ID

On import...

The supported values for MSH-11 Processing ID include:

This value...	Means this...
D	Debugging
P	Production
T	Training (treated the same as Debugging)

On import, only messages with a Processing ID of P (Production) affect Centricity Practice Solution database.

MSH-12 Version ID

On import...

The supported values for MSH-12 Version ID include:

This value...	Means this...
2.1	Release 2.1, March 1990
2.2	Release 2.2, December 1994
2.3	Release 2.3, April 1997
2.3.1	Release 2.3.1, April 1999

MSH-15 Accept Ack Type

On import...

The supported values for MSH-15 Accept Ack Type include:

This value...	Means this...
AL	Always
NE	Never (default)

MSH-16 Application Ack Type

On import and export...

MSH-16 Application Acknowledgment is optional on import and export. On export, the value NE is used. The supported Ack types are still validated for import. On import the value AL in MSH-16 overrides NE in MSH-15 and an acknowledgement is sent.

EVN – Event Type

The Event Type segment (EVN) defines the trigger event for the message, such as patient discharge or an update to the patient chart, and when it occurred.

Legend

- ID** Coded value for HL7-defined tables
- IS** Coded value for user-defined tables
- XCN** Extended composite ID number and name
- TS** Time stamp

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
EVN-1	3	ID	0003	Event Type Code	Required	97	Used	97
EVN-2	26	TS		Recorded Date/Time	Required		Used	97
EVN-3	26	TS		Date/Time of Planned Event	Not used		Not used	
EVN-4	3	IS	0062	Event Reason Code	Not used		Not used	
EVN-5	60	XCN	0188	Operator ID	Not used		Not used	
EVN-6	26	TS		Event Occurred	Not used		Not used	

EVN-1 Event Type Code

On import and export...

EVN-1 should match the second component of MSH-9. See [“MSH-9 Message Type” on page 94](#). LinkLogic supports the following trigger events for EVN-1 Event Type Code:

This value...	Means this...	And does this...
A03	Discharge/end visit	Updates the patient's demographics data, in addition to importing discharge summary documents and/or updating patient status as appropriate. A discharge summary document is only created if MSH1-9 is ADT, EVN-1 is A03, and one or more valid OBX segments are present to provide the document content.
A04	Register a patient	A04 and A08 treated identically when updating an existing patient's demographics.
A08	Update patient information	
A23	Delete a patient	Updates the patient's demographics data, in addition to importing discharge summary documents and/or updating patient status as appropriate. Changes the patient status to Inactive and issues a warning to LinkLogic Managers that this event occurred in the external system.
A28	Add person information	See A04
A29	Delete person information	See A23
A31	Update person information	See A08
P01	Add patient account	See A04
P02	Delete patient account	See A23

EVN-2 Date/Time of Event

On export...

EVN-2 Date/Time of Event is populated with a date/time that is typically milliseconds later than the date/time exported in MSH-7, Date/Time of Message.

!!! EVN-2 is NOT the time the event occurred.

PID – Patient Identification

The PID Patient Identification segment contains demographic information about the patient such as name, ID codes, address, phone numbers, and so on.

In Centricity Practice Solution, PID refers to the unique, system-generated identification number that the application assigns to a patient when a new chart is created.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric		

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PID-1	4	S I		Set ID - Patient ID	Not used		Not used	
PID-2	20	CX		Patient ID (External ID)	Conditional	99	Optional	99
PID-3	20	CX		Patient ID (Internal ID)	Required	99	Used	99
PID-4	16	CX		Alternate Patient ID-PID	Optional	100	Not used	
PID-5	48	XPN		Patient Name	Required	100	Used	100
PID-6	48	XPN		Mother's Maiden Name	Not used		Not used	
PID-7	26	TS		Date/Time of Birth	Required	101	Used	
PID-8	1	IS	0001	Sex	Required	101	Used	
PID-9	48	XPN		Patient Alias	Not used		Not used	
PID-10	1	IS	0005	Race	Optional	101	Optional	
PID-11	106	XAD		Patient Address	Optional	102	Optional	
PID-12	4	IS		Country Code	Not used		Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PID-13	250	XTN		Phone Number - Home	Optional	102	Optional	102
PID-14	250	XTN		Phone Number - Work	Optional	102	Optional	
PID-15	60	CE	0296	Primary Language	Optional	103	Optional	103
PID-16	1	IS	0002	Marital Status	Optional	104	Optional	
PID-17	3	IS	0006	Religion	Not used		Not used	
PID-18	20	CX		Patient Account Number	Not used		Not used	
PID-19	11			SSN Number - Patient	Optional	104	Optional	
PID-20	25	DLN		Driver's License Number-Patient	Not used		Not used	
PID-21	20	CX		Mother's Identifier	Not used		Not used	
PID-22	3	IS	0189	Ethnic Group	Optional		Used	
PID-23	60	ST		Birth Place	Not used		Not used	
PID-24	2	ID	0136	Multiple Birth Indicator	Not used		Not used	
PID-25	2	NM		Birth Order	Not used		Not used	
PID-26	4	IS	0171	Citizenship	Not used		Not used	
PID-27	60	CE	0172	Veterans Military Status	Not used		Not used	
PID-28	80	CE		Nationality	Not used		Not used	
PID-29	26	TS		Patient Death Date /Time	Optional	104	Not used	104
PID-30	1	ID	0136	Patient Death Indicator	Conditional	104	Optional	104
PID-40	1	ST	0185	Patient Preferred Contact Method	Optional	105	Optional	105

PID-2 Patient ID (External ID) / PID-3 Patient ID (Internal ID)

On import...

By default, PID-3, Patient ID (Internal ID), is assumed to contain the patient identifier used to match the import data with a patient.

If you need to use identifiers from another system, select PID-2 in the Match Options window in the LinkLogic Setup (in Administration) to use the Patient ID (External ID) instead of PID-3. See ["Data-to-Patient matching" on page 469](#) for details.

On export...

PID-3, Patient ID (Internal ID), always contains the unique Centricity Practice Solution Patient ID for the patient. If available, PID-2, Patient ID (External ID), contains the external identifier for the relationship-specific external ID set associated with the export interface relationship.

Global unique Identifier

The Centricity Practice Solution Patient ID is a globally unique identifier represented as a string value in the form *123456789012-XXXX123* where:

- **Prefix.** *123456789012* is a number with a maximum of 12 digits that is unique within the Centricity Practice Solution database where the patient's chart was created.
- **Suffix.** *XXXX123* concatenates the customer's unique Enterprise ID (*XXXX*) and the Centricity Practice Solution database ID (*123*). Database IDs are allocated and specified by the system administrator performing the installation.

PID-4 Alternate Patient ID - PID

On import...

PID-4, Alternate Patient ID, is the patient's medical record number. Although the HL7 specification sets the maximum length of this field at 20, LinkLogic and Centricity Practice Solution only support a maximum of 16 alphanumeric characters to describe Alternate Patient ID. If no data is available, then no medical record number is assigned.

PID-5 Patient Name

On import...

The components of PID-5, Patient Name, follow the HL7 XPN format:

last name^first name^middle name^suffix^title^degree

except for the fourth and sixth components, *suffix* and *degree*.

Since Centricity Practice Solution stores only the suffix, when the degree is present, it is concatenated to the suffix after a comma. For more information on the data type for person names, see ["PN or XPN – Person name" on page 457](#).

On export...

PID-5, Patient Name, is populated with the patient's name information according to the HL7 XPN format:

last name^first name^middle name^suffix^title

 PID-7 Date/Time of Birth and PID-8 Sex
On import...

Although Date/ Time of Birth and Sex are considered optional in the HL7 specification, LinkLogic requires both for chart matching and creation.

The supported values for Sex include:

This value...	Means this...
F	Female
M	Male
O	Other (treated as Unknown)
U	Unknown

PID-10 Race

On import...

The supported values for Race include:

This value...	Means this...
B	Black
C	Chinese
F	Filipino
H	Hispanic
J	Japanese
N	Native American
I	Native Hawaiian
M	Multiracial
O	Oriental/Asian
P	Pacific Islander
W	White
T	Other
U	Undetermined (default)

In Centricity Practice Solution, race values can be configured in Administration. If a value is changed in Administration, you must configure MIK (in Server Setup) to map to the value to one of the values in this table.

See "Configure MIK interfaces" in Server Setup Online Help.

PID-11 Patient Address

On import...

Currently, LinkLogic supports the following maximum characters for patient address sub-components determined by limits for these values set in the Centricity Practice Solution database. Characters beyond these limits are truncated:

- **Address Line 1, Address Line 2:** accepts a string up to 50 characters
- **City name:** accepts a string up to 25 characters
- **Country name:** accepts a string up to 50 characters
- **State or province:** accepts a two-character state code or a string up to 50 characters
- **Zip/postal code:** accepts up to 15 alphabetic characters to support 15-digit zip codes and foreign addresses

PID-13 Phone Number - Home / PID-14 Phone Number - Work

On import...

Although the HL7 2.3 specification defines the maximum length of this field as 250, Centricity Practice Solution and LinkLogic support a maximum of 20 characters for phone numbers and 50 characters for email addresses. Characters beyond these limits are truncated.

The HL7 specification permits phone number fields to contain multiple items separated by repeat delimiters. The first component of each item has the phone number value, and the third component indicates the phone type. LinkLogic reads values for home phone, fax phone, cell phone, and pager from PID-13.

LinkLogic reads only the work phone number from PID-14.1, where PID-14.3 component is either not specified or is PH. All other phone values from PID-14 are ignored.

The following phone type values are supported:

This phone type...	Means this...	Stored here....
PH	Home phone (PID-13)	PERSON.ALTPHONE
PH	Work phone (PID-14.1)	PERSON.WORKPHONE
CP	Cell phone	PERSON.CELLPHONE
FX	Fax phone	PERSON.FAXPHONE
BP	Pager (beeper) number	PERSON.PAGERPHONE

For additional details, see [“XTN - Phone number format” on page 459](#).

Backward compatibility

If the phone type value in the third component of the first repeating item in PID-13 is blank or not specified, LinkLogic imports the phone number value from the first component of this item as the patient's home phone number. This maintains backward compatibility with systems that do not send phone type values and with systems that do not send multiple repeating items in PID-13.

Email address

The fourth component of PID-13, Phone Number - Home, is used for the patient's email address. If PID-13 is blank, the fourth component of PID-14, Phone Number - Work, is used. If both PID-13 and PID-14 are blank, the patient will have no email address in Centricity Practice Solution.

On export...

LinkLogic exports the patient's home phone number, cell phone, fax phone, and/or pager (if present) as multiple repeating items in PID-13, Phone Number - Home. The phone number value is sent in the first component of each item and the phone type is sent in the third component of each item.

The fourth component of the first repeating item in PID-13 is populated with the patient's email address.

The patient's work phone (if present) is exported in PID-14.1. LinkLogic exports only one repeating item in PID-14 and does not export any phone type in PID-14.3.

PID-15 Primary Language

In Centricity Practice Solution, LinkLogic uses MIK interface mappings to import the patient's language. For this field, LinkLogic looks in MIK mappings for an External ID. If it finds a match, the language is set. If not, a value for language is not set.

This value can be configured in Administration. If you change a Language value, you must configure MIK (in Server Setup) to map the new value.

See "Configure MIK interfaces" in Server Setup Online Help.

On import...

Although the HL7 specification sets a maximum of 60 characters for this field, LinkLogic and Centricity Practice Solution only support a maximum of 20 characters. Language characters beyond the 20-character limit are truncated.

On export...

Language is exported if a language preference has been specified for the patient in Centricity Practice Solution.

PID-16 Marital Status

On import...

The supported values for Marital Status include:

This value...	Means this...
A	Separated
D	Divorced
M	Married
S	Single
W	Widowed
O	Other
U	Undetermined (default)

In Centricity Practice Solution, this value can be configured in Administration. If you change a Marital Status value, you must configure MIK (in Server Setup) to map the new value to one of the values in this table.

See "Configure MIK interfaces" in Server Setup Online Help.

PID-19 SSN Number - Patient

On import...

Although the HL7 specification sets a maximum length of 16 characters for PID-19, LinkLogic only interprets the first 11 characters and ignores embedded dashes (-).

PID-29 Patient Death Date and Time / PID-30 Patient Death Indicator

On import...

The supported values for Patient Death Indicator include:

This value...	Means this...
Y	Patient has died
N	Patient is still living

If PID-30, Patient Death Indicator, is Y and PID-29 has a valid date and time, LinkLogic changes the patient's status to deceased and sets the date of death in to the value from PID-29. If PID-30 is blank, it is interpreted as N.

On export...

PID-30, Patient Death Indicator, is set to Y for deceased patients. PID-29, Patient Death Date and Time is populated with the patient's date of death.

If PID-30, Patient Death Indicator, is Y and PID-29 has a valid date and time, LinkLogic changes the patient's status to deceased and sets the date of death in to the value from PID-29. If PID-30 is blank, it is interpreted as N.

PID-40 Patient Preferred Contact Method

LinkLogic can import and export a 1-character value for patient preferred contact method in the optional field PID-40 at the end of the PID segment in ADT and BAR messages.

To send or receive patient contact method using this field you must associate the optional Add-On IXP file **pid40contactby.ixp** with the LinkLogic interface. This IXP file maps the HL7 values to EMR values to store to or export from the database in the PERSON.CONTACTBY field. For detailed information about using IXP files, see ["Using .IXP configuration files" on page 597](#).

On import...

LinkLogic interprets a blank value as if no value were specified. To remove an existing value, enclose the contact method value in double quotes in the import message.

The following supported values for patient preferred contact method are based on HL7 table 0185. Note that starred items are not in Table 0185 but were created for this implementation.

HL7 value...	Means this...	Mapped EMR value
B	Pager	P
C	Cell Phone	C
D	Durable Power of Attorney*	D
E	Email	E
F	Fax	F
H	Home Phone	H
L	Letter*	L
N	Nursing Home*	N
O	Work phone	W
P	Paper*	A
T	Other*	O

PD1 – Patient additional demographic

The Patient additional demographic segment contains demographic information about a patient that is likely to change. LinkLogic uses this segment to import and export a primary care physician as part of patient demographics, if one is specified.

Legend			
ID	Coded value for HL7-defined tables	CE	Coded element
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XON	Extended composite name and ID for organizations

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PD1-1	2	IS	0223	Living Dependency	Not used		Not used	
PD1-2	2	IS	0220	Living Arrangement	Not used		Not used	
PD1-3	90	XON		Patient Primary Facility	Not used		Not used	
PD1-4	90	XCN		Patient Primary Care Provider Name & ID No.	Required		Required	100
PD1-5	2	IS	0231	Student Indicator	Not used		Not used	
PD1-6	2	IS	0295	Handicap	Not used		Not used	
PD1-7	2	IS	0315	Living Will	Not used		Not used	
PD1-8	2	IS	0316	Organ Donor	Not used		Not used	
PD1-9	2	ID	0136	Separate Bill	Not used		Not used	
PD1-10	2	CX	0005	Duplicate Patient	Not used		Not used	
PD1-11	1	CE	0125	Publicity Indicator	Not used		Not used	
PD1-12	1	ID	0129	Protection Indicator	Not used		Not used	

PD1-4 Patient Primary Care Provider Name & ID No.

On import...

If importing this message creates a new patient in Centricity Practice Solution, a new contact is created for the Primary Care Provider, if specified. LinkLogic interprets the first component as the Primary Care Provider's UPIN and requires the second component, *family name*.

To display Primary Care Provider in a document, LinkLogic interprets only the second and third components as the primary care doctor's last name and first name, respectively.

On export...

The Primary Care Provider field is populated with the patient's most recent primary care doctor if one has been specified.

NK1 – Next of kin / associated parties

The Next of Kin / associated parties segment (NK1) contains contact information about patient family members and other business contacts, such as an employer or a pharmacy. Updates to an existing contact will not occur if the contact is a patient in Centricity Practice Solution.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric	DT	Date
JCC	Job Code / Class	XON	Extended composite name and ID for organizations

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
NK1-1	4	SI		Set ID - NK1	Optional	110	Not used	
NK1-2	48	XPN		Name	Required	110	Used	110
NK1-3	60	CE	0063	Relationship	Optional	111	Used	111
NK1-4	104	XAD		Address	Optional		Optional	
NK1-5	250	XTN		Home Phone Number	Optional	112	Optional	112
NK1-6	250	XTN		Business Phone Number	Optional	112	Optional	
NK1-7	60	CE	0131	Contact Role	Not used		Not used	
NK1-8	8	DT		Start Date	Not used		Not used	
NK1-9	8	DT		End Date	Not used		Not used	
NK1-10	60	ST		Next of Kin / Associated Parties Job Title	Not used		Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
NK1-11	20	J CC		Next of Kin / Associated Parties Job Code / Class	Not used		Not used	
NK1-12	20	CX		Next of Kin / Associated Parties Employee Number	Not used		Not used	
NK1-13	45	XON		Organization Name	Conditional	113	Optional	
NK1-14	2	IS	0002	Marital Status	Optional		Optional	
NK1-15	1	IS	0001	Sex	Optional		Optional	
NK1-16	26	TS		Date/Time of Birth	Not used		Not used	
NK1-17	2	IS	0223	Living Dependency	Not used		Not used	
NK1-18	2	IS	0009	Ambulatory Status	Not used		Not used	
NK1-19	4	IS	0171	Citizenship	Not used		Not used	
NK1-20	60	CE	0296	Primary Language	Not used		Not used	
NK1-21	2	IS	0220	Living Arrangement	Not used		Not used	
NK1-22	1	CE	0215	Publicity Indicator	Not used		Not used	
NK1-23	1	ID	0136	Protection Indicator	Not used		Not used	
NK1-24	2	IS	0231	Student Indicator	Not used		Not used	
NK1-25	3	IS	0006	Religion	Not used		Not used	
NK1-26	48	XPN		Mother's Maiden Name	Not used		Not used	
NK1-27	80	CE	0212	Nationality	Not used		Not used	
NK1-28	3	IS	0189	Ethnic Group	Not used		Not used	
NK1-29	80	CE	0222	Contact Reason	Not used		Not used	
NK1-30	48	XPN		Contact Person's Name	Not used		Not used	
NK1-31	40	XTN		Contact Person's Phone Number	Not used		Not used	
NK1-32	106	XAD		Contact Person's Address	Not used		Not used	
NK1-33	32	CX		Next of Kin / Associated Party's Identifiers	Not used		Not used	
NK1-34	2	IS	0311	Job Status	Not used		Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
NK1-35	1	IS	0005	Race	Not used		Not used	
NK1-36	2	IS	0295	Handicap	Not used		Not used	
NK1-37	16	ST		Contact Person Social Security Number	Not used		Not used	

NK1-1 Set ID - NK1

On import...

Although this field is required in the HL7 specification, LinkLogic treats it as optional.

NK1-2 Name

On import...

The components of NK1-2, Name, follow the HL7 XPN format:

last name^first name^middle name^suffix^title^degree

except the fourth and sixth components, *suffix* and *degree*.

Since Centricity Practice Solution stores only the suffix, when the degree is present, it is concatenated to the suffix after a comma. For more information on the data type for person names, see [“PN or XPN – Person name” on page 457](#).

Name and Relationship

Contact type. If the value for Relationship (NK1-3) is E (Employer) or P (Pharmacy), then the contact being defined is considered a business contact, and Name (NK1-2), is interpreted as a contact person for the business. The name may be NULL (""), if unknown. Organization Name (NK1-13) is interpreted as the name of the business contact.

If the value for Relationship is other than E or P, then the contact being defined is considered a personal contact and Name (NK1-2) is interpreted as the contact name.

Business contact suffix and prefix. If the value for Relationship is R (see next section NK1-3 Relationship) and an existing referring doctor can be found, LinkLogic associates it as a referring physician contact for the patient and the referring doctor in the Registration module. LinkLogic will create a new referring doctor if an existing one cannot be found.

LinkLogic includes *suffix*, *degree*, and *prefix* from NK1-2 for business contacts in the contact name if they fit in the 52-character field for business contact person in Centricity Practice Solution. LinkLogic includes suffix and/or degree (Jr./Sr.) first, before including a prefix (Mr./Mrs./Dr.), since that is more likely to be used to distinguish two people with the same name.

On export...

For personal contacts, NK1-2, Name, is populated with the patient's name information according to the HL7 XPN format:

last name^first name^middle name^suffix^title

For business contacts with the value E (Employer) or P (Pharmacy) for NK1-3, Relationship), LinkLogic exports the name of the contact person for the business in NK1-2, Name. Since Centricity Practice Solution stores only a single string for the business contact person and does not store structured data for that person's prefix or suffix, NK1-2 will contain a single string in the first component whenever a contact person is identified for a business contact in Centricity Practice Solution.

NK1-3 Relationship

The supported values for Relationship include:

This value...	Means this...
A	Acquaintance
B	Brother
C	Primary Care Provider (PCP)
D	Daughter
E	Employer
F	Father
G	Guarantor
H	Husband
M	Mother
O	Other (default)
P	Pharmacy
R	Referring Physician
S	Son
T	Emergency Contact
U	Unknown/Undisclosed
W	Wife
X	Sister

In prior product versions, relationship values included G for Guarantor. In Centricity Practice Solution, LinkLogic only imports a guarantor value from GT1 message segment.

In Centricity Practice Solution, this value can be configured in Administration. If you change a Relationship value, you must configure MIK (in Server Setup) to map the new value to one of the values in this table.

See “Configure MIK interfaces” in Server Setup Online Help.

On import and export...

Unknown/Undisclosed is ignored on import. On export, it's used when patient identification information is marked as restricted.



Import and export non-user PCP contacts using NK1-3 value “C”, and for patient emergency contact use NK1-3value “T”. For patient PCP, see [“PD1-4 Patient Primary Care Provider Name & ID No.” on page 107](#).

If an existing contact matches according to the Data-to-Contact matching algorithm, but the relationship code is different, then a new relationship to the same contact is created. For information, see [“Data-to-Contact matching” on page 471](#).

NK1-5 Home Phone Number / NK1-6 Business Phone Number

On import...

Although the HL7 2.3 specification defines the maximum length of this field as 250, LinkLogic supports a maximum of 20 characters for phone numbers and 50 characters for email addresses. Characters beyond these limits are truncated.



Centricity Practice Solution does not include a field for personal contact email address.

LinkLogic only imports email addresses for patients and guarantors.

Although the HL7 specification permits phone number fields to contain multiple values separated by repeat delimiters, LinkLogic uses only the first repeated value and ignores all others. For details, see [“XTN - Phone number format” on page 459](#).

Email address

The fourth component of NK1-5, Phone Number - Home, is used for the patient's email address. If NK1-5 is blank, the fourth component of NK1-6, Phone Number - Work, is used. If both NK1-5 and NK1-6 are blank, the patient will have no email address in Centricity Practice Solution.

On export...

The first component of NK1-5, Home Phone Number, is populated with the contact's home phone number.

NK1-13 Organization Name

On import...

Although the HL7 specification sets a maximum of 60 characters for NK1-13, LinkLogic uses only the first 45 characters.

Although this field is considered optional in the HL7 specification, LinkLogic requires it if NK1-3 is E (Employer) or P (Pharmacy). For referring physician contacts, NK1-13 is imported as the organization name.

PV1 – Patient Visit

The Patient Visit segment (PV1) is used by Registration and ADT (Admission, Discharge, and Transfer) applications to communicate information about a specific visit.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric	DT	Date
JCC	Job Code / Class	XON	Extended composite name and ID for organizations

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PV1-1	4	SI		Set ID - PV1	Not used		Not used	
PV1-2	1	IS	0004	Patient Class	Not used		Not used	
PV1-3	80	PL		Assigned Patient Location	Conditional	115	Optional	115
PV1-4	2	IS	0007	Admission Type	Not used		Not used	
PV1-5	20	CX		Pre-admit Number	Not used		Not used	
PV1-6	80	PL		Prior Patient Location	Not used		Not used	
PV1-7	60	XCN	0010	Attending Doctor	Conditional	116	Optional	116

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PV1-8	60	XCN	0010	Referring Doctor	Conditional	117	Optional	117
PV1-9	60	XCN	0010	Consulting Doctor	Not used		Not used	
PV1-10	3	IS	0069	Hospital Service	Not used		Not used	
PV1-11	80	P L		Temporary Location	Not used		Not used	
PV1-12	2	IS	0087	Pre-admit Test Indicator	Not used		Not used	
PV1-13	2	IS	0092	Readmission Indicator	Not used		Not used	
PV1-14	3	IS	0023	Admit Source	Not used		Not used	
PV1-15	2	IS	0009	Ambulatory Status	Not used		Not used	
PV1-16	2	IS	0099	VIP Indicator	Not used		Not used	
PV1-17	60	XCN	0010	Admitting Doctor	Not used		Not used	
PV1-18	2	IS	0018	Patient Type	Not used		Not used	
PV1-19	20	CX		Visit Number	Optional	117	Optional	
PV1-20	50	FC	0064	Financial Class	Not used		Not used	
PV1-21	2	IS	0032	Charge Price Indicator	Not used		Not used	
PV1-22	2	IS	0045	Courtesy Code	Not used		Not used	
PV1-23	2	IS	0046	Credit Rating	Not used		Not used	
PV1-24	2	IS	0044	Contract Code	Not used		Not used	
PV1-25	8	DT		Contract Effective Date	Not used		Not used	
PV1-26	12	NM		Contract Amount	Not used		Not used	
PV1-27	3	NM		Contract Period	Not used		Not used	
PV1-28	2	IS	0073	Interest Code	Not used		Not used	
PV1-29	1	IS	0110	Transfer to Bad Dept Code	Not used		Not used	
PV1-30	8	DT		Transfer to Bad Dept Date	Not used		Not used	
PV1-31	10	IS	0021	Bad Debt Agency Code	Not used		Not used	
PV1-32	12	NM		Bad Debt Transfer Amount	Not used		Not used	
PV1-33	12	NM		Bad Debt Recovery Amount	Not used		Not used	
PV1-34	1	IS	0111	Delete Account Indicator	Not used		Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PV1-35	8	DT		Delete Account Date	Not used		Not used	
PV1-36	3	IS	0112	Discharge Disposition	Not used		Not used	
PV1-37	25	CM	0113	Discharged to Location	Not used		Not used	
PV1-38	2	IS	0114	Diet Type	Not used		Not used	
PV1-39	2	IS	0115	Servicing Facility	Not used		Not used	
PV1-40	1	IS	0116	Bed Status	Not used		Not used	
PV1-41	2	IS	0117	Account Status	Not used		Not used	
PV1-42	80	P L		Pending Location	Not used		Not used	
PV1-43	80	P L		Prior Temporary Location	Not used		Not used	
PV1-44	26	TS		Admit Date/Time	Not used		Not used	
PV1-45	26	TS		Discharge Date/Time	Conditional	118	Not used	
PV1-46	12	NM		Current Patient Balance	Not used		Not used	
PV1-47	12	NM		Total Charges	Not used		Not used	
PV1-48	12	NM		Total Adjustments	Not used		Not used	
PV1-49	12	NM		Total Payments	Not used		Not used	
PV1-50	20	CX	0192	Alternate Visit ID	Conditional	118	Not used	
PV1-51	1	IS	0326	Visit Indicator	Not used		Not used	
PV1-52	60	XCN	0010	Other Healthcare Provider	Not used		Not used	

PV1-3 Assigned Patient Location

On import...

If this message creates a new patient in Centricity Practice Solution, LinkLogic interprets the fourth component (facility ID) as the patient's home location of care and ignores all other components. This field can contain a maximum of 8 characters.

This field should contain the abbreviation for the patient's location of care, as defined in Centricity Practice Solution. You can cross-reference the value in this field with location of care values in the application. For more information, see ["Cross-referencing field values" on page 461](#). If no value is supplied, LinkLogic uses the default value set for the relationship in **LinkLogic > Task Options > Change Location of Care Options**.

By default, the location of care is only set when a new patient is created. This can be changed in LinkLogic Setup (Administration) for the specific LinkLogic relationship.

Logic for determining Location of Care

LinkLogic uses the following logic to determine the location of care for the patient. To configure this logic, use the Change Locations of Care Options window.

In **Administration**, go to **LinkLogic > Task Options**, select the task and relationship and click **Locations of Care**.

IF PV1-3 component 4 (Assigned Patient Location) contains a value

THEN Location of care = PV1-3 component 4

ELSE IF PV1-7 component 1 (Attending Doctor) contains a value

THEN Location of care = Home location associated with Attending Doctor from PV1-7

ELSE

Location of care = the default location of care specified in the Change Location of Care Options window

!!! This logic only determines which field to use. It does not validate the data.

If the selected field value is invalid, LinkLogic does not try to use the next field in the sequence shown above. It generates an exception file and the LinkLogic user must correct and resolve the error manually.

However, if the location of care value has been made obsolete in Centricity Practice Solution, LinkLogic uses the root location of care and issues a warning.

On export...

The fourth component is populated with the eight-character abbreviation for the patient's home location of care.

PV1-7 Attending Doctor

On import...

If the import of this message results in the creation of a new patient in Centricity Practice Solution, the Attending Doctor, if specified, is assumed to be the patient's responsible provider.



If the value for Attending Doctor is visit-specific, then you may not want to populate this field on import. The Attending doctor will become the patient's responsible provider (Doctor) in Centricity Practice Solution.

See [“OBX-16 Responsible Observer” on page 121](#), to understand how this field is used to determine the responsible provider for an associated discharge summary document Trigger Event A03 only).

If PV1-3, Assigned Patient Location, does not contain a value for location, LinkLogic uses the Home Location associated with the Attending Doctor. See [“Logic for determining Location of Care” on page 116](#).

On export...

The Attending Doctor field is populated with the patient's responsible provider, if one has been specified.

PV1-8 Referring Doctor

On import...

If importing this message creates a new patient in Centricity Practice Solution, a new contact is created for the Referring Doctor, if specified. LinkLogic interprets the first component as the referring doctor's UPIN and requires the second component, *family name*.

To display referring physician in a document, LinkLogic interprets only the second and third components as the referring doctor's last name and first name, respectively.

On export...

The Referring Doctor field is populated with the patient's referring physician if one has been specified.

PV1-19 Visit Number

This value is an external visit identifier. It is a string field that is not related to visits identified within the Centricity Practice Solution Billing module.

On import...

If you're using the A03 trigger event, Discharge a Patient, LinkLogic uses the following logic to determine the visit identifier for the discharge summary document.

IF PV1-19 (Visit Number) contains a value

THEN Visit ID = PV1-19

ELSE IF PV1-50 (Alternate Visit ID) contains a value

THEN Visit ID = PV1-50

ELSE

The document in Centricity Practice Solution is NOT assigned a Visit ID



The discharge summary document is created from information in the OBX segment, if one or more OBX segments are present.

PV1-45 Discharge Date/Time

On import...

If you're using the A03 trigger event, Discharge a Patient, PV1-45, Discharge Date/Time, is assumed to be the clinically relevant date unless a date is specified in OBX-14, Date/Time of the Observation.

If OBX-14 contains a value, it supersedes PV1-45. See ["OBX-14 Date/Time of the Observation" on page 120](#).

PV1-50 Alternate Visit ID

This value is an external visit identifier. It is a string field that is not related to visits identified within the Centricity Practice Solution Billing module.

If you're using the A03 trigger event, Discharge a Patient, LinkLogic may use this value to determine the visit identifier for the discharge summary document if PV1-19, Visit Number, is not specified. See ["PV1-19 Visit Number" on page 117](#).

OBX – Observation/Result

The Observation/Result segment (OBX) contains clinical facts or other information about a patient’s mental or physical status, such as a lab result, a vital sign, or the answer to a medical history question. Observations can be numeric or text.



This segment is optional for the A03 trigger event (Discharge a patient). It is ignored by all other trigger events.

Legend

ID	Coded value for HL7-defined tables	SI	Sequence ID
ST	String data	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	CE	Coded element
TS	Time stamp	NM	Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page
OBX-1	10	S I		Set-ID - Observation Simple	Optional	
OBX-2	2	ID	0125	Value Type	Optional	120
OBX-3	590	CE		Observation Identifier	Not used	
OBX-4	20	S T		Observation Sub-ID	Not used	
OBX-5	2000	S T		Observation Value	Required	120
OBX-6	60	CE		Units	Not used	
OBX-7	60	ST		Reference Page	Not used	
OBX-8	10	ID	0078	Abnormal Flags	Conditional	120
OBX-9	5	NM		Probability	Not used	
OBX-10	5	ID	0080	Nature of Abnormal Test	Not used	
OBX-11	2	ID	0085	Observation Result Status	Not used	
OBX-12	26	TS		Date Last Obs Normal Values	Not used	
OBX-13	20	S T		User Defined Access Checks	Not used	
OBX-14	26	TS		Date/Time of the Observation	Optional	120

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page
OBX-15	200	CE		Producer's ID	Not used	121
OBX-16	80	XCN		Responsible Observer	Optional	121
OBX-17	60	CE		Observation Method	Not used	

OBX-2 Value Type

On import...

Although this field is required in the HL7 specification, LinkLogic treats it as optional.

The supported values for Value Type are shown below. Any other value type generates an error.

This value...	Means this...
ST	String data
TX	Text data
FT	Formatted data

OBX-5 Observation Value

On import...

Although this field is considered conditional in the HL7 specification, LinkLogic requires it. A document is only created for the A03 trigger event (Discharge a patient).

OBX-8 Abnormal Flags

On import...

If the value of OBX-8, Abnormal Flags, is A, then the discharge summary is routed to the responsible provider with an urgent status. All other values are ignored.

OBX-14 Date/Time of the Observation

On import...

OBX-14, Date/Time of the Observation, is assumed to be the clinically relevant date of the document. If unspecified, MSH-7, Date/Time of Message, is assumed to be the document's date, except for trigger event A03 (Discharge a Patient). See "[PV1-45 Discharge Date/Time](#)" on page 118.

LinkLogic uses the following logic to assign the date/time:

IF OBX-14 has a value

THEN document date = OBX-14
ELSE IF PV1-45 has a value
 THEN use PV1-45
ELSE
 Use MSH-7

OBX-15 Producer's ID

On import...

OBX-15, Producer's ID, is assumed to be the Transcriptionist Code/Name. This field is ignored because Centricity Practice Solution doesn't support Transcriptionist Code/Name.

OBX-16 Responsible Observer

On import...

LinkLogic uses the following logic to assign the correct provider for the document:

IF OBX-16 (Responsible Observer) contains a value
 IF provider defined in OBX-16 is NOT obsolete
 THEN route document to provider defined in OBX-16
 ELSE IF Registration specifies a responsible provider
 AND that provider is NOT an obsolete user
 THEN route document to the patient's responsible provider
 ELSE
 Issue an error indicating the document is orphaned and require a user to specify a responsible provider
ELSE IF PV1-7 (Attending Doctor) contains a value
 IF provider defined in PV1-7 is NOT obsolete
 THEN route document to provider defined in PV1-7
 ELSE IF Registration specifies a responsible provider
 AND that provider is NOT an obsolete user
 THEN route document to the patient's responsible provider
 ELSE
 Issue an error indicating the document is orphaned and require a user to specify a responsible provider
ELSE IF Registration specifies a responsible provider
 AND that provider is NOT an obsolete user
 THEN route document to the patient's responsible provider

ELSE

Issue an error indicating the document is orphaned and require a user to specify a responsible provider

!!! This logic only determines which field to use. It does not validate the data. If the value is found to be invalid LinkLogic does not try to use the next field in the sequence shown above.

GT1 – Guarantor

The Guarantor message segment (GT1) contains demographic and contact information about the person who is responsible for a patient's medical expenses, also known as the insured party. If a patient is covered by another person's insurance, such as that of a parent or a spouse, the person who holds the insurance is the guarantor.

!!! LinkLogic only imports one guarantor.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric	DT	Date
JCC	Job Code / Class	XON	Extended composite name and ID for organizations
FC	Financial class	CP	Composite price

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
GT1-1	4	SI		Set ID - GT1	Optional	125	Not used	
GT1-2	59	CX		Guarantor Number	Not used		Not used	
GT1-3	48	XPN		Guarantor Name	Required	125	Used	125
GT1-4	48	XPN		Guarantor Spouse Name	Not used		Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
GT1-5	106	XAD		Guarantor Address	Optional		Optional	
GT1-6	250	XTN		Guarantor Home Phone #	Optional	125	Optional	126
GT1-7	250	XTN		Guarantor Business Phone #	Optional	125	Optional	
GT1-8	26	TS		Guarantor Date/Time Birth	Not used		Not used	
GT1-9	1	IS	0001	Guarantor Sex	Optional	126	Optional	
GT1-10	2	IS	0068	Guarantor Type	Optional	126	Optional	
GT1-11	2	IS	0063	Guarantor Relationship	Optional	126	Optional	
GT1-12	11	ST		Guarantor SSN	Optional		Optional	
GT1-13	8	DT		Guarantor Date - Begin	Not used		Not used	
GT1-14	8	DT		Guarantor Date - End	Not used		Not used	
GT1-15	2	NM		Guarantor Priority	Not used		Not used	
GT1-16	130	XPN		Guarantor Employer Name	Optional	127	Not used	
GT1-17	106	XAD		Guarantor Employer Address	Not used		Not used	
GT1-18	40	XTN		Guarantor Employer Phone #	Not used		Not used	
GT1-19	20	CX		Guarantor Employer ID #	Not used		Not used	
GT1-20	2	IS	0066	Guarantor Employment Status	Optional	127	Optional	
GT1-21	130	XON		Guarantor Organization Name	Not used		Not used	
GT1-22	1	ID	0136	Guarantor Billing Hold Flag	Not used		Not used	
GT1-23	80	CE		Guarantor Credit Rating Code	Not used		Not used	
GT1-24	26	TS		Guarantor Death Date /Time	Not used		Not used	
GT1-25	1	ID	0136	Guarantor Death Flag	Not used		Not used	
GT1-26	80	CE	0218	Guarantor Charge Adjust. Code	Not used		Not used	
GT1-27	10	CP		Guarantor Ann. Income	Not used		Not used	
GT1-28	3	NM		Guarantor Household Size	Not used		Not used	
GT1-29	20	CX		Guarantor Employer ID #	Not used		Not used	
GT1-30	1	IS	0002	Guarantor Marital Status Code	Not used		Not used	
GT1-31	8	DT		Guarantor Hire Effective Date	Not used		Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
GT1-32	8	DT		Employment Stop Date	Not used		Not used	
GT1-33	2	IS	0223	Living Dependency	Not used		Not used	
GT1-34	2	IS	0009	Ambulatory Status	Not used		Not used	
GT1-35	4	IS	0171	Citizenship	Not used		Not used	
GT1-36	60	CE	0296	Primary Language	Not used		Not used	
GT1-37	2	IS	0220	Living Arrangement	Not used		Not used	
GT1-38	80	CE	0215	Publicity Indicator	Not used		Not used	
GT1-39	1	ID	0136	Protection Indicator	Not used		Not used	
GT1-40	2	IS	0231	Student Indicator	Not used		Not used	
GT1-41	3	IS	0006	Religion	Not used		Not used	
GT1-42	48	XPN		Mother's Maiden Name	Not used		Not used	
GT1-43	80	CE	0212	Nationality	Not used		Not used	
GT1-44	3	IS	0189	Ethnic Group	Not used		Not used	
GT1-45	48	XPN		Contact Person's Name	Not used		Not used	
GT1-46	40	XTN		Contact Person's Phone #	Not used		Not used	
GT1-47	80	CE	0222	Contact Reason	Not used		Not used	
GT1-48	2	IS	0063	Contact Relationship	Not used		Not used	
GT1-49	20	S T		Job Title	Not used		Not used	
GT1-50	20	J C C	0327 0328	Job Code/Class	Not used		Not used	
GT1-51	130	XON		Guarantor Employer's Organization Name	Not used		Not used	
GT1-52	2	IS	0310	Handicap	Not used		Not used	
GT1-53	2	IS	0311	Job Status	Not used		Not used	
GT1-54	50	FC	0064	Guarantor Financial Class	Not used		Not used	
GT1-55	250	IS	0005	Guarantor Race	Not used		Not used	

GT1-1 Set ID - GT1

On import...

Although this field is required in the HL7 specification, LinkLogic treats it as optional.

GT1-3 Guarantor Name

On import...

The components of GT1-3, Guarantor Name, follow the HL7 XPN format:

last name^first name^middle name^suffix^title^degree

except the fourth and sixth components, *suffix* and *degree*.

Since Centricity Practice Solution stores only the suffix, when the degree is present, it is concatenated to the suffix after a comma. For more information on the data type for person names, see [“PN or XPN – Person name” on page 457](#).

On export...

GT1-3, Guarantor Name, is populated with the guarantor's name information according to the HL7 XPN format:

last name^first name^middle name^suffix^title

For more information on the data type for person names, see [“PN or XPN – Person name” on page 457](#).

GT1-6 Guarantor Home Phone Number / GT1-7 Guarantor Business Phone Number

On import...

Although the HL7 2.3 specification defines the maximum length of this field as 250, LinkLogic supports a maximum of 20 characters for phone numbers and 50 characters for email addresses. Characters beyond these limits are truncated.

Although the HL7 specification permits phone number fields to contain multiple values separated by repeat delimiters, LinkLogic uses only the first repeated value and ignores all others.

Email address

The fourth component of GT1-6, Guarantor Home Phone Number, is used for the guarantor contact's email address. If GT1-6 is blank, the fourth component of GT1-7, Guarantor Business Phone Number, is used. If both GT1-6 and GT1-7 are blank, the guarantor contact will have no email address in Centricity Practice Solution.

GT1-6 Guarantor Home Phone Number

On export...

The first component of GT1-6, Home Phone Number, is populated with the guarantor's home phone number. The fourth component is populated with the guarantor's email address.

GT1-9 Guarantor Sex

On import...

The supported values for Sex include:

This value...	Means this...
F	Female
M	Male
O	Other (treated as Unknown)
U	Unknown

GT1-10 Guarantor Type

On import...

The supported values for Guarantor Type include:

This value...	Means this...
B	Business
P	Personal (default)



Centricity Practice Solution only supports Personal guarantor types. Therefore, all business guarantor types are represented as Personal guarantor types within the application.

GT1-11 Guarantor Relationship

On import...

The supported values for Guarantor Relationship include:

This value...	Means this...
S	Self
M	Marriage
P	Parent
O	Other



S (Self) is the only value that has meaning to Centricity Practice Solution. All other values are ignored.

Including S (self guarantor relationship) checks “Patient Same as Guarantor” on the Patient Registration window. Any other value will leave this option unchecked. In all cases, a Guarantor will be imported into the application database. You can edit Guarantors in Administration by selecting **Edit > Guarantors** from the menu.



If you change a Guarantor Relationship value, you must configure MIK (in Server Setup) to map the new value to one of the values in this table. See “Configure MIK interfaces” in Server Setup Online Help.

GT1-16 Guarantor Employer Name

On import...

Although HL7 specifies the maximum length of GT1-16, Guarantor Employer Name, to be 130 characters, LinkLogic only reads the first 45 characters. Any additional characters are ignored.

GT1-20 Guarantor Employment Status

On import...

The supported values for Guarantor Employment Status include:

This value...	Means this...
F	Full-time
P	Part-time
I	Self-employed
R	Retired
S	Student
C	Child
U	Unemployed
O	Other (default)

In Centricity Practice Solution, this value can be configured in Administration. If you change a Guarantor Employment Status value, you must configure MIK (in the Server Setup application) to map the new value to one of the values in this table.

See “Configure MIK interfaces” in Server Setup Online Help.

IN1 – Insurance

The Insurance message segment (IN1) contains information about a patient’s insurance policy coverage required for generating correct patient and insurance bills.

In Centricity Practice Solution, a patient can have only one primary and secondary insurance carrier. Insurance relationships (Primary, Secondary, or Other) are demoted if there is a conflict during import. Existing businesses may be promoted to insurance carriers if a match is found during the import of an IN1 segment.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver’s license number
NM	Numeric	DT	Date
JCC	Job Code / Class	XON	Extended composite name and identification number for organizations

SEQ	Lnth	Data Type	HL7 Type	Element name	Import	See page	Export	See page
IN1-1	4	S I		Set ID - IN1	Optional	130	Optional	
IN1-2	12	CE	0072	Insurance Plan ID	Conditional	130	Used	
IN1-3	59	CX		Insurance Company ID	Conditional	132	Used	132
IN1-4	130	XON		Insurance Company Name	Required	131	Used	
IN1-5	106	XAD		Insurance Company Address	Optional		Optional	
IN1-6	48	XPN		Insurance Plan Contact Person	Optional	131	Optional	131
IN1-7	250	XTN		Insurance Co. Phone #	Optional	131	Optional	131
IN1-8	25	S T		Group #	Optional	132	Optional	132

SEQ	Lnth	Data Type	HL7 Type	Element name	Import	See page	Export	See page
IN1-9	130	XON		Group Name	Not used		Not used	
IN1-10	20	CX		Insured's Group Emp ID	Not used		Not used	
IN1-11	130	XON		Insured's Group Emp Name	Not used		Not used	
IN1-12	8	DT		Plan Effective Date	Optional		Optional	
IN1-13	8	DT		Plan Expiration Date	Optional	132	Optional	
IN1-14	55	CM		Authorization Information	Not used		Not used	
IN1-15	3	IS	0086	Plan Type	Optional	132	Optional	
IN1-16	48	XPN		Name of Insured	Not used		Not used	
IN1-17	2	IS	0063	Insured Relationship to Patient	Optional	132	Optional	
IN1-18	26	TS		Insured Date of Birth	Not used		Not used	
IN1-19	106	XAD		Insured Address	Not used		Not used	
IN1-20	2	IS	0135	Assignment of Benefits	Not used		Not used	
IN1-21	2	IS	0173	Coordination of Benefits	Not used		Not used	
IN1-22	2	ST		Coordination of Benefits Priority	Not used		Not used	
IN1-23	2	ID	0136	Notice of Admission Flag	Not used		Not used	
IN1-24	8	DT		Notice of Admission Date	Not used		Not used	
IN1-25	2	ID	0136	Report of Eligibility Flag	Not used		Not used	
IN1-26	8	DT		Report of Eligibility Date	Not used		Not used	
IN1-27	2	IS	0093	Release Information Code	Not used		Not used	
IN1-28	15	ST		Pre-Admit Cert (PAC)	Not used		Not used	
IN1-29	26	TS		Verification Date/Time	Not used		Not used	
IN1-30	60	XCN		Verification By	Not used		Not used	
IN1-31	2	IS	0098	Type of Agreement Code	Not used		Not used	
IN1-32	2	IS	0022	Billing Status	Not used		Not used	
IN1-33	4	NM		Lifetime Reserve Days	Not used		Not used	
IN1-34	4	NM		Delay Before L.R. Day	Not used		Not used	

SEQ	Lnth	Data Type	HL7 Type	Element name	Import	See page	Export	See page
IN1-35	12	IS	0042	Company Plan Code	Not used	133	Not used	
IN1-36	20	ST		Policy Number	Optional	133	Optional	133
IN1-37	12	CP		Policy Deductible	Not used		Not used	
IN1-38	12	CP		Policy Limit - Amount	Not used		Not used	
IN1-39	4	NM		Policy Limit - Days	Not used		Not used	
IN1-40	12	CP		Room Rate - Semi-Private	Not used		Not used	
IN1-41	12	CP		Room Rate - Private	Not used		Not used	
IN1-42	60	CE	0066	Insured's Employment Status	Optional	133	Optional	
IN1-43	1	IS	0001	Insured's Sex	Not used		Optional	133
IN1-44	106	XAD		Insured's Employer Address	Not used		Not used	
IN1-45	2	ST		Verification Status	Not used		Not used	
IN1-46	8	IS	0072	Prior Insurance Plan ID	Not used	133	Not used	
IN1-47	3	IS	0309	Coverage Type	Optional		Optional	
IN1-48	2	IS	0310	Handicap	Optional		Optional	
IN1-49	12	CX		Insured's ID Number	Optional		Optional	

IN1-1 Set ID - IN1

On import and export...

Although this field is required in the HL7 specification, LinkLogic treats it as optional.

IN1-2 Insurance Plan ID / IN1-3 Insurance Company ID

By default, IN1-3, Insurance Company ID, is assumed to contain the external insurance identifier used to match the import insurance data with an insurance carrier. Alternatively, to use IN1-2, Insurance Plan ID, select it in the Match Options window in **Administration > System > LinkLogic** settings. For more information, see ["Data-to-Insurance matching" on page 473](#).

External insurance identifier values (IN1-2 or IN1-3) are assumed to be unique for each insurance carrier.

IN1-4 Insurance Company Name

On import...

Although HL7 specifies the maximum length of IN1-4, Insurance Company Name, to be 130 characters, LinkLogic only reads the first 45 characters. Any additional characters are ignored.

IN1-6 Insurance Plan Contact Person

On import...

The first three components of IN1-6, Insurance Plan Contact Person, are interpreted as a contact person for designated insurance carriers. This is done according to the HL7 XPN format:

last name^first name^middle name^suffix^title^degree

The last three components are ignored. For more information on the data type for person names, see [“PN or XPN – Person name” on page 457](#).

On export...

LinkLogic exports the name of the contact person for the insurance carrier in IN1-6, Insurance Plan Contact Person. Since Centricity Practice Solution stores only a single string for the plan contact, IN1-6 will contain a single string in the first component whenever a contact person is identified for an insurance plan in the application.

IN1-7 Insurance Co. Phone Number

On import...

Although the HL7 specification defines the maximum length of this field as 250, LinkLogic only supports a maximum of 15 characters for insurance carrier phone numbers. Characters beyond these limits are truncated.

Although the HL7 specification permits phone number fields to contain multiple values separated by repeat delimiters, LinkLogic uses only the first repeated value and ignores all others. For details, see [“XTN - Phone number format” on page 459](#).



Centricity Practice Solution does not include a field for insurance carrier email address.

LinkLogic only imports email addresses for patients and guarantors.

On export...

The first component of IN1-7, Insurance Co. Phone Number, is populated with the insurance carrier contact's home phone number.

IN1-8 Group Number

On import and export...

Although the HL7 specification limits IN1-8 to a maximum length of 12 characters, LinkLogic allows 25.

IN1-13 Plan Expiration Date

On import...

Specifying a current or prior date indicates that the insurance policy for the patient is in active. If unspecified, no expiration date is assigned for the policy for the patient.

IN1-15 Plan Type

On import...

The supported values for Plan Type include:

This value...	Means this...
P	Primary
S	Secondary
O	Other (default)

On import, LinkLogic maps Primary, Secondary, and Other to the order for claims value that controls the display order (and potentially the billing order) of patient insurance information.

On export...

On export, LinkLogic reverses the mapping with order for claims 1 mapped to P, 2 mapped to S, and 3 or greater mapped to O.

IN1-17 Insured's Relationship to Patient

On import...

The supported values for IN1-17, Insured's Relationship to Patient, include:

This value...	Means this...
S	Self
M	Marriage
P	Parent
O	Other

When IN1-17 has the value 'S', the insured party in Centricity Practice Solution is set to the patient. All other values are ignored.

In Centricity Practice Solution, this value can be configured in Administration. If you change a relationship value, you must configure MIK (in Server Setup) to map the new value to one of the values in this table.

See "Configure MIK interfaces" in Server Setup Online Help.

IN1-36 Policy Number

On import and export...

Although the HL7 specification defines the maximum length of IN1-36 as 15 characters, LinkLogic supports 20 alphanumeric characters. On export, supplied values may exceed the maximum length defined within the HL7 specification.

IN1-42 Insured's Employment Status

On import...

The supported values for Insured's Employment Status include:

In Centricity Practice Solution, this value can be configured in Administration. If

This value...	Means this...
F	Full-time
R	Retired
U	Unemployed
O	Other (default)

you change an Insured's Employment Status value, you must configure MIK (in Server Setup) to map the new value to one of the values in this table.

See "Configure MIK interfaces" in Server Setup Online Help.

IN1-43 Insured's Sex

On export...

If the insured party is different from both the patient and guarantor, then IN1-43 indicates the sex of the insured party.

IN1-46 Prior Insurance Plan ID

On import...

Specifying changes to insurance policy ID numbers through field IN1-46 is not supported. You must delete the policy information and re-associate a new one with a patient to perform this kind of update. For more information see

information about matching patient insurance policies in [“Data-to-Insurance matching” on page 473](#).

MSA – Message Acknowledgement

The MSA segment is used to acknowledge a previously received message. It triggers a resend if the acknowledgement code indicates the message was rejected or generated an error.

Legend

- ID** Coded value for HL7-defined tables
- ST** String data
- CE** Coded element
- NM** Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
MSA-1	2	ID	0008	Acknowledgement Code	Required	134	Used	
MSA-2	20	ST		Message Control ID	Required		Used	
MSA-3	80	ST		Text Message	Optional		Not used	
MSA-4	15	NM		Expected Sequence Number	Not used		Not used	
MSA-5	1	ID	0102	Delayed Ack Type	Not used		Not used	
MSA-6	100	CE		Error Condition	Not used		Not used	

MSA-1 Acknowledgement Code (Import)

The supported values for Acknowledgment Code include:

This value...	Means this...
AA	Original mode: Application Accept Enhanced Mode: Application Acknowledgement: Accept
AR	Original mode: Application Reject Enhanced mode: Application Acknowledgement: Reject This code triggers a message resend event.
AE	Original mode: Application Error Enhanced mode: Application Acknowledgement: Error This code triggers a message resend event.

CHAPTER 7

ImageLink Import/Export HL7 interface specification

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[MSH – Message Header 139](#)

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[TXA – Transcription Document Header 156](#)

[OBX – Observation/Result 170](#)

[MSA – Message Acknowledgement 175](#)

[Using external attachments 176](#)

This specification is based on the NotesLink HL7 interface and supports the import and export of documents. It contains extensions in the OBX record to accommodate the import of external references, of particular use in transferring references to images stored outside Centricity Practice Solution.



For more information about the NotesLink HL7 interface, see [“NotesLink Import/Export HL7 interface specification” on page 341.](#)

The interface uses the HL7 message MDM - Medical Document Management.

MDM message – Medical Document Management

An MDM message includes:

- Message header (MSH), trigger event type (EVN)
 - Patient information (PID, PV1)
 - Document header (TXA)
 - One or more observation result (OBX) segments defining, quantifying and qualifying the document content
-

MDM trigger events

Trigger event: an event in a healthcare workflow that triggers the transfer of information, identified in HL7 by a unique 3-character code.

HL7 assumes that certain *trigger events* in the healthcare environment create the need for data to flow among systems.

LinkLogic supports these MDM message trigger events for BOTH import and export of data:

- **T02** – Original document notification and content
- **T04** – Document status change notification and content

LinkLogic supports this message trigger event ONLY for import:

- **T06** – Document addendum notification and content

MDM message structure

The following table shows how LinkLogic uses the message segments in this message when importing and exporting data. Page references in the table link to detailed notes following the table and to detailed message segment tables.

For definitions of LinkLogic usage terms, see [“How LinkLogic uses message segments” on page 42](#).

Legend	
[...]	Optional
{...}	Repeating
[[...]]	Optional and repeating

Message Segment	Name	See page...	T02 Import	T02 Export	T04 Import	T04 Export	T06 Import
MSH	Msg Header	139	Required	Required	Required	Required	Required
EVN	Event Type	143	Required	Required	Required	Required	Required
PID	Patient ID	144	Required	Required	Required	Required	Required
PV1	Patient visit	137, 151	Optional	Optional	Optional	Optional	Optional
TXA	Transcription Document Header	137, 156	Optional	Used	Optional	Used	Optional
{OBX}	Observation/ Result	137, 170	Required	Required	Required	Required	Required
MSH	Msg Header	139	Conditional	Conditional	Conditional	Conditional	Conditional
MSA	Msg Ack	175	Conditional	Conditional	Conditional	Conditional	Conditional
[ERR]	Error		Ignored	Ignored	Ignored	Ignored	Ignored

PV1 segment

On import...

Although the HL7 specification requires the PV1 segment, LinkLogic considers it optional.

TXA segment

On import...

Although the HL7 specification requires the TXA (Transcription Document Header) segment, LinkLogic considers it optional.

On export...

LinkLogic always exports the TXA message segment as part of an MDM message. When LinkLogic sends an *master* chart document (a document with appended sections), the relevant master document properties populate the TXA fields and the appended sections are included in the OBX segment. For details, see [“OBX segment” on page 137](#).

OBX segment

On import...

Multiple OBX message segments can be imported as individual documents, or concatenated to produce a single document, depending on how the relationship is configured in Administration.

On export...

LinkLogic recognizes master documents that may have appended sections. Centricity Practice Solution stores appended sections as separate documents in the database. On export, however, LinkLogic treats them as part of the master document with which they are associated. Because an appended section is not complete when separated from its master document, when the master document is exported, LinkLogic

- Filters out the appended document headers
- Populates the TXA segment fields with properties of the master document
- Includes signed appended sections in the document content exported in the OBX segment.

When an appended section is signed, automated documents export tasks performed by the Data Transfer Station (DTS) re-export the complete master document with the new appended content in the OBX segment.

ImageLink exports all external attachments to the master document and to all signed appended sections. For details, see [“Using external attachments” on page 176](#).

HL7 message segments

This section provides detailed specifications for the following HL7 message segments used in the MDM message:

For information about this segment...	See page...
MSH - Message Header	139
EVN - Event type	143
PID - Patient Identification	144
PV1 - Patient Visit	144
TXA - Transcription Document Header	156
OBX - Observation/Result	170
MSA - Message Acknowledgement	175

Each message segment table lists the segment elements or fields in sequence order (MSH-1, MSH-2, MSH-3, and so on) with the following information:

- **Element name**
- **Maximum length** in LinkLogic
- **Data type**
- **Source table** in the HL7 specification where applicable
- **LinkLogic usage on export or import** (Required, Optional, and so on)
For definitions of LinkLogic usage terms used in the tables, see [“How LinkLogic uses message segments” on page 42](#).



Click blue page number links in the following tables to jump to detail notes (when viewing the Adobe PDF version of this guide) or look for notes under the element code and name listed after the table.

MSH – Message Header

The Message Header segment (MSH) should always be in the first segment in each HL7 message. MSH defines the intent, source, destination, and some specifics of the syntax of a message.

Legend

CE	Coded element	NM	Numeric
CM	Order sequencing component	PT	Processing type
HD	Hierarchic designator	ST	Character string
ID	Coded value	TS	Time stamp

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
MSH-1	1	ST		Field Separator	Required		Used	
MSH-2	4	ST		Encoding Characters	Required		Used	
MSH-3	40	HD		Sending Application	Conditional	140	Used	140
MSH-4	20	HD		Sending Facility	Optional	140	Used	140
MSH-5	40	HD		Receiving Application	Not used		Used	141
MSH-6	30	HD		Receiving Facility	Not used		Conditional	141
MSH-7	26	TS		Date/time of Message	Required	141	Used	
MSH-8	40	ST		Security	Not used		Not used	
MSH-9	7	CM	0076	Message Type	Required	141	Used	141
MSH-10	20	ST		Message Control ID	Required		Used	
MSH-11	3	PT	0103	Processing ID	Required	142	Used	
MSH-12	8	ID	0104	Version ID	Required	142	Used	
MSH-13	15	NM		Sequence Number	Not used		Not used	
MSH-14	180	ST		Continuation Pointer	Not used		Not used	
MSH-15	2	ID	0155	Accept Ack Type	Optional	142	Not used	
MSH-16	2	ID	0155	Application Ack Type	Optional	142	Optional	142

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
MSH-17	2	ID		Country Code	Not used		Not used	
MSH-18	6	ID	0211	Character Set	Not used		Not used	
MSH-19	60	CE		Principal Language of Message	Not used		Not used	

MSH-3 / MSH-4 Sending Application/Facility

On import...

relationship: In LinkLogic, this describes an interface between Centricity Practice Solution and another computer system.

MSH-3 Sending Application is considered optional in the HL7 specification, however, LinkLogic requires a value in either MSH-3 or MSH-4 Sending Facility. LinkLogic identifies the data source for an interface (known in Centricity Practice Solution as a LinkLogic *relationship*) by using the contents of MSH-3, MSH-4, or a combination of both separated by a hyphen. The Unique Name/ID field in the LinkLogic setup New Relationship window must match this data source.

For example, if MSH-3 contains `PracticeMgr` and MSH-4 contains `East`, the data file would match against a LinkLogic relationship named `PracticeMgr`, `East`, or `PracticeMgr-East`. If either MSH-3 or MSH-4 contains more than the first component, the delimiters are converted to spaces and the contents of the entire field are used.

LinkLogic interface relationship matching

LinkLogic uses the following logic to determine the correct relationship:

IF MSH-3 or MSH-4 or the concatenation of MSH-3 and MSH-4 separated by a hyphen uniquely matches exactly one defined LinkLogic relationship name

THEN import the file using the matched relationship

ELSE IF multiple matching relationship names were found

THEN issue an error indicating that multiple relationships were found (ambiguous match)

ELSE, no matching relationship name was found

THEN issue an error indicating that no relationship exists to import the data file

Length limits

Although the HL7 specification sets the maximum length for MSH-3 and MSH-4 at 180, LinkLogic supports a total of 40 characters for MSH-3 and MSH-4 combined.

On export...

On export, LinkLogic identifies itself with a string value for MSH-3 derived by concatenating the string *LinkLogic-* with the unique Centricity Practice Solution Enterprise ID for the organization (for example, *LinkLogic-ABCD*). The Enterprise ID can be up to four alphanumeric characters.

MSH-4 contains the patient's (not a document's) server-specific location of care in the form of *DatabaseID^LOC*.

MSH-5 / MSH-6 Receiving Application/Facility

On export...

MSH-5 Receiving Application contains the name of the LinkLogic relationship that created the output file.

MSH-6 Receiving Facility contains the patient's (not a document's) location of care. Unlike MSH-4 Sending Facility, this field contains the location of care without the database ID.

MSH-7 Date/time of Message

On import...

Although MSH-7 Date/Time of Message is not required in the HL7 specification, LinkLogic requires it on import. See ["OBX-14 Date/Time of the Observation" on page 174](#), to understand how this field is used to determine the clinical date for imported discharge summary documents.

On export...

MSH-7 is populated with the date/time the export is performed.

MSH-9 Message Type

On import and export...

The supported values for MSH-9 Message Type include:

This value...	Means this...
MDM	Medical document management message
ACK	General acknowledgement message

On import, the second component, *trigger event*, is ignored. Use the EVN message segment to identify trigger event types.

On export, the second component is populated with a value identical to EVN-1 Event Type Code.

MSH-11 Processing ID

On import...

The supported values for MSH-11 Processing ID include:

This value...	Means this...
D	Debugging
P	Production
T	Training (treated the same as Debugging)

On import, only messages with a Processing ID of P (Production) affect Centricity Practice Solution database.

MSH-12 Version ID

On import...

The supported values for MSH-12 Version ID include:

This value...	Means this...
2.1	Release 2.1, March 1990
2.2	Release 2.2, December 1994
2.3	Release 2.3, April 1997
2.3.1	Release 2.3.1, April 1999

MSH-15 Accept Ack Type

On import...

The supported values for MSH-15 Accept Ack Type include:

This value...	Means this...
AL	Always
NE	Never (default)

MSH-16 Application Ack Type

On import and export...

MSH-16 Application Acknowledgment is optional on import and export. On export, the value NE is used. The supported Ack types are still validated for import. On import the value AL in MSH-16 overrides NE in MSH-15 and an acknowledgement is sent.

EVN – Event Type

The Event Type segment (EVN) defines the trigger event for the message, such as patient discharge or an update to the patient chart, and when it occurred.

Legend

- ID** Coded value for HL7-defined tables
- IS** Coded value for user-defined tables
- XCN** Extended composite ID number and name
- TS** Time stamp

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
EVN-1	3	ID	0003	Event Type Code	Required	143	Used	143
EVN-2	26	TS		Recorded Date/Time	Ignored		Used	144
EVN-3	26	TS		Date/Time of Planned Event	Not used		Not used	
EVN-4	3	IS	0062	Event Reason Code	Not used		Not used	
EVN-5	60	XCN	0188	Operator ID	Not used		Not used	
EVN-6	26	TS		Event Occurred	Not used		Not used	

EVN-1 Event Type Code

On import and export...

Trigger event: an event in a healthcare workflow that triggers the transfer of information, identified in HL7 by a unique 3-character code.

EVN-1 should match the second component of MSH-9. See [“MSH-9 Message Type” on page 141](#). LinkLogic supports the following *trigger events* for EVN-1 Event Type Code.

This value...	Means this...
T02	Original document notification and content
T04	Document status change notification and content
T06	Document addendum notification and content



On export, trigger event T02 is specified only if the document being exported has a creation date/timestamp equal to its last updated date/timestamp. Otherwise, trigger event T04 is specified.

EVN-2 Recorded Date/Time

On export...

EVN-2, Date/Time of Event, is populated with a date/time that is typically milliseconds later than the date/time exported in MSH-7, Date/Time of Message.

!!! EVN-2 is NOT the time the event occurred.

PID – Patient Identification

The Patient Identification (PID) is a unique, system-generated identification number that Centricity Practice Solution assigns to each patient during registration.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric		

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PID-1	4	SI		Set ID - Patient ID	Optional		Optional	
PID-2	20	CX		Patient ID (External ID)	Conditional	145	Conditional	145
PID-3	20	CX		Patient ID (Internal ID)	Required	145	Used	145
PID-4	16	CX		Alternate Patient ID-PID	Conditional	146	Not used	
PID-5	4825 0	XPN		Patient Name	Required		Used	
PID-6	48	XPN		Mother's Maiden Name	Not used		Not used	
PID-7	26	TS		Date/Time of Birth	Optional		Optional	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PID-8	1	IS	0001	Sex	Optional	146	Optional	
PID-9	48	XPN		Patient Alias	Not used		Not used	
PID-10	1	IS	0005	Race	Optional	147	Optional	
PID-11	106	XAD		Patient Address	Optional	147	Optional	
PID-12	4	IS		Country Code	Not used		Not used	
PID-13	250	XTN		Phone Number - Home	Optional	148	Optional	148
PID-14	250	XTN		Phone Number - Work	Optional	148	Optional	
PID-15	60	CE	0296	Primary Language	Not used		Not used	
PID-16	1	IS	0002	Marital Status	Optional	149	Optional	
PID-17	3	IS	0006	Religion	Not used		Not used	
PID-18	20	CX		Patient Account Number	Not used		Not used	
PID-19	11	ST		SSN # - Patient	Optional	149	Optional	
PID-20	25	DLN		Driver's License # - Patient	Not used		Not used	
PID-21	20	CX		Mother's Identifier	Not used		Not used	
PID-22	3	IS	0189	Ethnic Group	Optional		Used	
PID-23	60	ST		Birth Place	Not used		Not used	
PID-24	2	ID	0136	Multiple Birth Indicator	Not used		Not used	
PID-25	2	NM		Birth Order	Not used		Not used	
PID-26	4	IS	0171	Citizenship	Not used		Not used	
PID-27	60	CE	0172	Veterans Military Status	Not used		Not used	
PID-28	80	CE		Nationality	Not used		Not used	
PID-29	26	TS		Patient Death Date /Time	Optional		Optional	149
PID-30	1	ID	0136	Patient Death Indicator	Optional		Optional	149
PID-40	1	ST	0185	Patient Preferred Contact Method	Optional	150	Optional	150

PID-2 Patient ID (External ID) / PID-3 Patient ID (Internal ID)

On import...

By default, PID-3, Patient ID (Internal ID), is assumed to contain the patient identifier used to match the import data with a patient.

If you need to use identifiers from another system, select PID-2 in the Match Options window in LinkLogic Setup (in Administration) to use the Patient ID (External ID) instead of PID-3. See [“Data-to-Patient matching” on page 469](#), for details.

On export...

PID-3, Patient ID (Internal ID), always contains the unique Centricity Practice Solution Patient ID for the patient. If available, PID-2, Patient ID (External ID), contains the external identifier for the relationship-specific external ID set.

Global unique Identifier

The Centricity Practice Solution Patient ID is a globally unique identifier represented as a string value in the form *123456789012-XXXX123* where:

- **Prefix.** *123456789012* is a number with a maximum of 12 digits that is unique within the Centricity Practice Solution database where the patient's chart was created.
- **Suffix.** *XXXX123* concatenates the customer's unique Enterprise ID (*XXXX*) and the Centricity Practice Solution database ID (*123*). Database IDs are allocated and specified by the system administrator performing the installation.

PID-4 Alternate Patient ID - PID

On import...

PID-4, Alternate Patient ID, is the patient's medical record number. Although the HL7 specification defines the maximum length of this field to be 20, however, LinkLogic only supports a maximum of 16 alphanumeric characters to describe Alternate Patient ID.

PID-8 Sex

On import...

The supported values for Sex include:

This value...	Means this...
F	Female
M	Male
O	Other (treated as Unknown)
U	Unknown

PID-10 Race

On import...

The supported values for Race include:

This value...	Means this...
B	Black
C	Chinese
F	Filipino
H	Hispanic
J	Japanese
N	Native American
I	Native Hawaiian
M	Multiracial
O	Oriental/Asian
P	Pacific Islander
W	White
T	Other
U	Undetermined (default)

In Centricity Practice Solution, race values can be configured in Administration. If a value is changed in Administration, you must configure MIK (in Server Setup) to map to the value to one of the values in this table.

See “Configure MIK interfaces” in Server Setup Online Help.

PID-11 Patient Address

On import...

Currently, LinkLogic supports the following maximum characters for patient address sub-components determined by limits for these values set in the Centricity Practice Solution database. Characters beyond these limits are truncated:

- **Address Line 1, Address Line 2:** accepts a string up to 50 characters
- **City name:** accepts a string up to 25 characters
- **Country name:** accepts a string up to 50 characters
- **State or province:** accepts a two-character state code or a string up to 50 characters
- **Zip/postal code:** accepts up to 15 alphabetic characters to support 15-digit zip codes and foreign addresses

PID-13 Phone Number - Home / PID-14 Phone Number - Work

On import...

Although the HL7 2.4 specification defines the maximum length of this field as 250, Centricity Practice Solution and LinkLogic support a maximum of 20 characters for phone numbers and 50 characters for email addresses. Characters beyond these limits are truncated.

The HL7 specification permits phone number fields to contain multiple items separated by repeat delimiters. The first component of each item has the phone number value, and the third component indicates the phone type. LinkLogic reads values for home phone, fax phone, cell phone, and pager from PID-13.

LinkLogic reads only the work phone number from PID-14.1, where PID-14.3 component is either not specified or is PH. All other phone values from PID-14 are ignored.

The following phone type values are supported:

This phone type...	Means this...	Stored here...
PH	Home phone (PID-13)	PERSON.ALTPHONE
PH	Work phone (PID-14.1)	PERSON.WORKPHONE
CP	Cell phone	PERSON.CELLPHONE
FX	Fax phone	PERSON.FAXPHONE
BP	Pager (beeper) number	PERSON.PAGERPHONE

For additional details, see [“XTN - Phone number format” on page 459](#).

Backward compatibility

If the phone type value in the third component of the first repeating item in PID-13 is blank or not specified, LinkLogic imports the phone number value from the first component of this item as the patient's home phone number. This maintains backward compatibility with systems that do not send phone type values and with systems that do not send multiple repeating items in PID-13.

Email address

The fourth component of PID-13, Phone Number - Home, is used for the patient's email address. If PID-13 is blank, the fourth component of PID-14, Phone Number - Work, is used. If both PID-13 and PID-14 are blank, the patient will have no email address in Centricity Practice Solution.

On export...

LinkLogic exports the patient's home phone number, cell phone, fax phone, and/or pager (if present) as multiple repeating items in PID-13, Phone Number - Home. The phone number value is sent in the first component of each item and the phone type is sent in the third component of each item.

The fourth component of the first repeating item in PID-13 is populated with the patient's email address.

The patient's work phone (if present) is exported in PID-14.1. LinkLogic exports only one repeating item in PID-14 and does not export any phone type in PID-14.3.

PID-16 Marital Status

On import...

The supported values for Marital Status include:

This value...	Means this...
A	Separated
D	Divorced
M	Married
S	Single
W	Widowed
O	Other
U	Undetermined (default)

In Centricity Practice Solution, this value can be configured in Administration. If you change a Marital Status value, you must configure MIK (in Server Setup) to map the new value to one of the values in this table.

See "Configure MIK interfaces" in Server Setup Online Help.

PID-19 SSN Number - Patient

On import...

Although the HL7 specification sets a maximum length of 16 characters for PID-19, LinkLogic only interprets the first 11 characters and ignores embedded dashes (-).

PID-29 Patient Death Date and Time / PID-30 Patient Death Indicator

On export...

PID-30, Patient Death Indicator, is set to Y for deceased patients. PID-29, Patient Death Date and Time, is populated with the patient's date of death.

PID-40 Patient Preferred Contact Method

LinkLogic can import and export a 1-character value for patient preferred contact method in the optional field PID-40 at the end of the PID segment in ADT and BAR messages.

To send or receive patient contact method using this field you must associate the optional Add-On IXP file **pid40contactby.ixp** with the LinkLogic interface. A This IXP file maps the HL7 values to EMR values to store to or export from the database in the PERSON.CONTACTBY field.

On import...

LinkLogic interprets a blank value as if no value were specified. To remove an existing value, enclose the contact method value in double quotes in the import message.

The following supported values for patient preferred contact method are based on HL7 table 0185. Note that starred items are not in Table 0185 but were created for this implementation.

HL7 value...	Means this...	Mapped EMR value
B	Pager	P
C	Cell Phone	C
D	Durable Power of Attorney*	D
E	Email	E
F	Fax	F
H	Home Phone	H
L	Letter*	L
N	Nursing Home*	N
O	Work phone	W
P	Paper*	A
T	Other*	O

PV1 – Patient Visit

The Patient Visit segment (PV1) is used by Registration and ADT (Admission, Discharge, and Transfer) applications to communicate information about a specific visit.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric	DT	Date
JCC	Job Code / Class	XON	Extended composite name and ID number for organizations

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PV1-1	4	SI		Set ID - PV1	Optional		Optional	
PV1-2	1	IS	0004	Patient Class	Not used		Not used	
PV1-3	80	PL		Assigned Patient Location	Conditional	153	Optional	153
PV1-4	2	IS	0007	Admission Type	Not used		Not used	
PV1-5	20	CX		Preadmit Number	Not used		Not used	
PV1-6	80	PL		Prior Patient Location	Not used		Not used	
PV1-7	60	XCN	0010	Attending Doctor	Conditional	154	Optional	154
PV1-8	60255	XCN	0010	Referring Doctor	Conditional	155	Optional	155
PV1-9	60	XCN	0010	Consulting Doctor	Not used		Not used	
PV1-10	3	IS	0069	Hospital Service	Not used		Not used	
PV1-11	80	PL		Temporary Location	Not used		Not used	
PV1-12	2	IS	0087	Pre-admit Test Indicator	Not used		Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PV1-13	2	IS	0092	Readmission Indicator	Not used		Not used	
PV1-14	3	IS	0023	Admit Source	Not used		Not used	
PV1-15	2	IS	0009	Ambulatory Status	Not used		Not used	
PV1-16	2	IS	0099	VIP Indicator	Not used		Not used	
PV1-17	60	XCN	0010	Admitting Doctor	Not used		Not used	
PV1-18	2	IS	0018	Patient Type	Not used		Not used	
PV1-19	20	CX		Visit Number	Optional	155	Optional	
PV1-20	50	FC	0064	Financial Class	Not used		Not used	
PV1-21	2	IS	0032	Charge Price Indicator	Not used		Not used	
PV1-22	2	IS	0045	Courtesy Code	Not used		Not used	
PV1-23	2	IS	0046	Credit Rating	Not used		Not used	
PV1-24	2	IS	0044	Contract Code	Not used		Not used	
PV1-25	8	DT		Contract Effective Date	Not used		Not used	
PV1-26	12	NM		Contract Amount	Not used		Not used	
PV1-27	3	NM		Contract Period	Not used		Not used	
PV1-28	2	IS	0073	Interest Code	Not used		Not used	
PV1-29	1	IS	0110	Transfer to Bad Dept Code	Not used		Not used	
PV1-30	8	DT		Transfer to Bad Dept Date	Not used		Not used	
PV1-31	10	IS	0021	Bad Debt Agency Code	Not used		Not used	
PV1-32	12	NM		Bad Debt Transfer Amt	Not used		Not used	
PV1-33	12	NM		Bad Debt Recovery Amt	Not used		Not used	
PV1-34	1	IS	0111	Delete Account Indicator	Not used		Not used	
PV1-35	8	DT		Delete Account Date	Not used		Not used	
PV1-36	3	IS	0112	Discharge Disposition	Not used		Not used	
PV1-37	25	CM	0113	Discharged to Location	Not used		Not used	
PV1-38	2	IS	0114	Diet Type	Not used		Not used	
PV1-39	2	IS	0115	Servicing Facility	Not used		Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PV1-40	1	IS	0116	Bed Status	Not used		Not used	
PV1-41	2	IS	0117	Account Status	Not used		Not used	
PV1-42	80	P L		Pending Location	Not used		Not used	
PV1-43	80	P L		Prior Temporary Location	Not used		Not used	
PV1-44	26	TS		Admit Date/Time	Not used		Not used	
PV1-45	26	TS		Discharge Date/Time	Not used		Not used	
PV1-46	12	NM		Current Patient Balance	Not used		Not used	
PV1-47	12	NM		Total Charges	Not used		Not used	
PV1-48	12	NM		Total Adjustments	Not used		Not used	
PV1-49	12	NM		Total Payments	Not used		Not used	
PV1-50	20	CX	0192	Alternate Visit ID	Conditional	155	Optional	155
PV1-51	1	IS	0326	Visit Indicator	Not used		Not used	
PV1-52	60	XCN	0010	Other Healthcare Provider	Not used		Not used	

PV1-3 Assigned Patient Location

On import...

This field should contain the abbreviation for the patient's home location (maximum 8 characters), as defined in Centricity Practice Solution. You can cross-reference the imported value in this field with location of care values in the application. For more information, see ["Cross-referencing field values" on page 461](#).

If no value is supplied, LinkLogic uses the default location of care value for the document set for the LinkLogic relationship in **LinkLogic > Task Options**.

Logic for determining Location of Care

LinkLogic uses the following logic to determine the location of care for the document. To configure this logic go to **Administration** and select **System > LinkLogic > Task Options**, then select the task and relationship and click **Locations of Care**.

IF PV1-3 component 4 (Assigned Patient Location) contains a value

THEN Location of care = PV1-3 component 4

ELSE IF PV1-7 component 1 (Attending Doctor) contains a value

THEN Location of care = Home location associated with Attending Doctor from PV1-7

ELSE

Location of care = the default location of care specified in the Change Location of Care Options window

!!! This logic only determines which field to use. It does not validate the data.

If the selected field value is invalid, LinkLogic does not try to use the next field in the sequence shown above. It generates an exception file and the LinkLogic user must correct and resolve the error manually.

However, if the location of care value has been made obsolete in Centricity Practice Solution, LinkLogic uses the root location of care and issues a warning.

Patient Location of Care set when message creates a new patient

.By default, a patient must exist in the database before documents can be imported for them. If LinkLogic cannot match to an existing patient, it issues an error and creates an exception file.

However, you can create new patients when resolving patient mismatch errors on the LinkLogic Errors tab. When you see the **Find Patient** window, search to confirm that the patient is not in the database. If the patient is not found, click **New Patient**, create a new chart, and then re-import the data.

If this message creates a new patient in Centricity Practice Solution through error resolution or manual import, LinkLogic interprets the fourth component (facility ID) as the patient's home location of care and ignores all other components.

On export...

If a location of care is specified for the document then this value is used in the fourth component, otherwise it is left blank.

PV1-7 Attending Doctor

On import...

If the import of this message results in the creation of a new patient in Centricity Practice Solution, the Attending Doctor, if specified, is assumed to be the patient's responsible provider (Doctor).



If the value for Attending Doctor is visit-specific, then you may not want to populate this field on import. The Attending doctor will become the patient's responsible provider in Centricity Practice Solution.

If PV1-3, Assigned Patient Location, does not contain a value for location, LinkLogic uses the Home Location associated with the Attending Doctor. See [“Logic for determining Location of Care” on page 153](#).

To understand how this field is used to route the document to the correct provider's desktop, see [“TXA-5 Primary Activity Provider Code/Name” on page 161](#).

On export...

The Attending Doctor field is populated with the provider identified for the document, not the patient's responsible provider.

PV1-8 Referring Doctor

On import...

If the import of this message results in the creation of a new patient in Centricity Practice Solution, a new contact is created for the referring doctor, if specified. LinkLogic interprets the first component as the referring doctor's UPIN and requires that the second component, *Family Name*, be specified. To display referring physician in a document, LinkLogic interprets only the second and third components as the referring doctor's last name and first name, respectively.

On export...

The Referring Doctor field is populated with the patient's referring physician if one has been specified.

PV1-19 Visit Number / PV1-50 Alternate Visit ID

These values are external visit identifiers. Each is a string field that is not related to visits identified within the application Billing module.

On import...

LinkLogic uses the following logic to determine the visit identifier for the imported document.

IF PV1-19 (Visit Number) contains a value

THEN Visit ID = PV1-19

ELSE IF PV1-50 (Alternate Visit ID) contains a value

THEN Visit ID = PV1-50

ELSE

 The document in Centricity Practice Solution is NOT assigned a Visit ID

On export...

If the Centricity Practice Solution document has been assigned a Visit ID, the value is exported in both PV1-19 and PV1-50.

TXA – Transcription Document Header

The TXA segment contains information about a transcribed document but does not include the text of the document.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	EI	Entity Identifier
XCN	Extended composite ID number and name	PPN	Performing person
TS	Time stamp	ST	String data

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
TXA-1	4	SI		Set ID - Document	Optional	157	Optional	
TXA-2	30	IS	0270	Document Type	Required	157	Used	157
TXA-3	2	ID	0191	Doc Content Presentation	Conditional	161	Conditional	
TXA-4	26	TS		Activity Date/Time	Optional	161	Optional	161
TXA-5	60	XCN		Primary Activity Provider Code/Name	Conditional	161	Conditional	161
TXA-6	26	TS		Origination Date/Time	Optional	163	Not used	
TXA-7	26	TS		Transcription Date/Time	Conditional	163	Optional	
TXA-8	26	TS		Edit Date/Time	Not used		Used	163
TXA-9	60	XCN		Originator Code/Name	Optional	163	Not used	
TXA-10	60	XCN		Assigned Doc Authenticator	Optional	163	Not used	
TXA-11	48	XCN		Transcriptionist Code/Name	Not used		Not used	
TXA-12	30	EI		Unique Document Number	Optional	164	Used	164
TXA-13	16	ST		Parent Document Number	Conditional	164	Not used	
TXA-14	22	EI		Placer Order Number	Optional	165	Used	165
TXA-15	8	EI		Filler Order Number	Conditional	166	Not used	
TXA-16	30	ST		Unique DocFile Name	Optional	166	Optional	166

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
TXA-17	2	ID	0271	Doc Completion Status	Required	166	Used	
TXA-18	2	ID	0272	Doc Confidentiality Status	Optional	167	Used	167
TXA-19	2	ID	0273	Document Availability Status	Not used	168	Used	168
TXA-20	2	ID	0275	Document Storage Status	Not used		Not used	
TXA-21	30	ST		Document Change Reason	Optional	168	Optional	
TXA-22	60	PPN		Authentication Person, Time Stamp	Optional	168	Used	168
TXA-23	60	XCN		Distributed Copies (Code and Name of Recipients)	Optional	168	Optional	

TXA-1 Set ID - Document

On import...

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats this field as optional.

TXA-2 Document Type

On import...**Mapping HL7 document codes to Centricity Practice Solution document types**

LinkLogic uses the following mappings from HL7 document codes to Centricity Practice Solution document types for lab result documents.

Standard cross-reference files map TXA-2, Document Type, values to document type abbreviations defined in Centricity Practice Solution. If you choose to use values other than those suggested in HL7 table 270 (for TXA-2, Document Type), this field should contain the abbreviation for the document type defined in the application. You can cross-reference the value in this field with document types in Centricity Practice Solution. See also ["Cross-referencing field values" on page 461](#)

This HL7 code	With this description...	Maps to this document type...
AP	Anatomic Pathology	Pathology Report
AR	Autopsy Report	External Other
AS	Admission Summary	Hospital Admission
BB	Blood Bank	Lab Report

This HL7 code	With this description...	Maps to this document type...
CC	CardioDiagnostics	Diagnostic Report Other
CL	Clinic Letter	Letter
CM	Case Management	Clinical Lists Update
CN	Consult	Consultation Report
CO	Clinic Note	Internal Other
CR	Correction	External Other
CS	Clinical Summary	Clinical Summary
CU	Clinical Ultrasound	Imaging Report
DH	Discharge Instructions	External Other
DI	Diagnostic Imaging	Imaging Report
DN	Diagnostic Neurology	Diagnostic Report other
DR	Diagnostic Report Other	Diagnostic Report Other
DS	Discharge Summary	Hospital Discharge Summary
ED	ER Discharge Summary	Emergency Report
EK	EKG Report	EKG Report
ER	Emergency Report	Emergency Report
FE	Filed in Error	Filed in Error
GC	General Correspondence	External Correspondence
HC	Home care Report	Home care Report
HP	History and Physical Exam	Hospital History & Physical
HS	Heart Station	Diagnostic Report Other
LD	Labor and Delivery Report	Hospital Procedure Report
LR	Lab Report	Lab Report
OP	Operative Report	Operative Report
OT	Occupational Therapy	Rehab Report
OV	Office Visit	Office Visit
PA	Pathology Report	Pathology Report
PC	Psychiatric Consultation	Consultation Report

This HL7 code	With this description...	Maps to this document type...
PE	Phone Encounter	Phone Note
PH	Psychiatric History	External Other
PN	Procedure Note	External Other
PR	Progress Note	External Other
RA	Radiology	Imaging Report
RR	Rehab Report	Rehab Report
RX	Rx Refill	Rx Refill
SP	Surgical Pathology	Pathology Report
SR	Social Worker Report	Social Worker Report
SS	Special Studies	Diagnostic Report Other
TH	Physical Therapy	Rehab Report
TN	Transcribed Note	Transcription
TS	Transfer Summary	External Other
ZZ	Other	External Other

On export...

Mapping application document types to HL7 document codes

LinkLogic uses the following mappings from Centricity Practice Solution document types to HL7 document codes.

A standard cross-reference file maps Centricity Practice Solution document types to values suggested in HL7 table 270 (for TXA-2, Document Type). You can cross-reference document types in Centricity Practice Solution with the value in this field. For more information, see [“Cross-referencing field values” on page 461](#).

CPS Document Type	HL7 Code	HL7 Description
Clinical Lists Update	ZZ	Other
Clinical Summary	CS	Clinical Summary
Consultation Report	CN	Consult
Diagnostic Report Other	DR	Diagnostic Report Other
EKG Report	EK	EKG Report
Emergency Report	ER	Emergency Report

CPS Document Type	HL7 Code	HL7 Description
External Correspondence	GC	General Correspondence
External Other	ZZ	Other
Filed in Error	FE	Filed in Error
Home Care Report	HC	Home Care Report
Hospital Admission	AS	Admission Summary
Hospital Discharge Summary	DS	Discharge Summary
Hospital History & Physical	HP	History & Physical Exam
Hospital Procedure Report	PN	Procedure Note
Imaging Report	DI	Diagnostic Imaging
Internal Correspondence	GC	General Correspondence
Internal Other	ZZ	Other
Lab Report	LR	Lab Report
Letter	CL	Clinic Letter
Office Procedure	PN	Procedure Report
Office Visit	OV	Office Visit
Operative Report	OP	Operative Report
Pathology Report	PA	Pathology Report
Phone Note	PE	Phone Encounter
Registration Update	ZZ	Other
Rehab Report	RR	Rehab Report
Rx Refill	RX	Rx Refill
Social Work Report	SR	Social Work Report
Transcription	TN	Transcribed Note

TXA-3 Document Content Presentation

On import...

The supported values for Document Content Presentation are shown below. Any other value generates an error.

This value...	Means this...
TX	Machine readable text document (default)
FT	Formatted text

TXA-4 Activity Date/Time

On import...

Determining clinical date/time. For details, see [“OBX-14 Date/Time of the Observation” on page 174](#), to understand how this field is used to determine the clinical date for the imported document.

Document overlay replaces an imported document with a later version, so only the most recent information displays on the provider's desktop and in the chart

TXA-4 or TXA-12 required for document overlay. When document overlay is enabled in LinkLogic Task Options, TXA-4, Activity Date/Time and TXA-12, Unique Document Number are required. If either field does not contain a value, the imported document is processed as if document overlay was not enabled.

For more information about document overlay, see [“Using document overlay” on page 577](#). In the online help module *Using Documents*, see “Overlay (replace) documents.”

On export...

TXA-4 is populated with the clinical date/time of the exported document.

TXA-5 Primary Activity Provider Code/Name

On import...

LinkLogic uses the following logic to assign the correct provider for the document.

IF TXA-5 (Primary Activity Provider Code/Name) contains a value

IF provider defined in TXA-5 is NOT obsolete

THEN route document to provider defined in TXA-5

ELSE IF Registration specifies a responsible provider

AND that provider is NOT an obsolete user

THEN route document to the patient's responsible provider

ELSE

Issue an error indicating that the document is orphaned and require a user to specify a responsible provider

Else If TXA-9 (Originator Code/Name) contains a value

IF provider defined in TXA-9 is NOT obsolete
 THEN route document to provider defined in TXA-9
ELSE IF Registration specifies a responsible provider
 AND that provider is NOT an obsolete user
 THEN route document to the patient's responsible provider
ELSE
 Issue an error indicating that the document is orphaned and require a user to specify a responsible provider
ELSE IF TXA-10 (Assigned Document Authenticator) contains a value
 IF provider defined in TXA-10 is NOT obsolete
 THEN route document to provider defined in TXA-10
 ELSE IF Registration specifies a responsible provider
 AND that provider is NOT an obsolete user
 THEN route document to the patient's responsible provider
 ELSE
 Issue an error indicating that the document is orphaned and require a user to specify a responsible provider
ELSE IF TXA-22 (Authenticating Person/Time Stamp) contains a value
 IF provider defined in TXA-22 is NOT obsolete
 THEN route document to provider defined in TXA-22
 ELSE IF Registration specifies a responsible provider
 AND that provider is NOT an obsolete user
 THEN route document to the patient's responsible provider
 ELSE
 Issue an error indicating that the document is orphaned and require a user to specify a responsible provider
ELSE IF OBX-16 (Responsible Observer) contains a value
 IF provider defined in OBX-16 is NOT obsolete
 THEN route document to provider defined in OBX-16
 ELSE IF Registration specifies a responsible provider
 AND that provider is NOT an obsolete user
 THEN route document to the patient's responsible provider
 ELSE
 Issue an error indicating that the document is orphaned and require a user to specify a responsible provider
ELSE IF PV1-7 (Attending Doctor) contains a value
 IF provider defined in PV1-7 is NOT obsolete
 THEN route document to provider defined in PV1-7

ELSE IF Registration specifies a responsible provider

AND that provider is NOT an obsolete user

THEN route document to the patient's responsible provider

ELSE

Issue an error indicating that the document is orphaned and require a user to specify a responsible provider

ELSE IF Registration specifies a responsible provider

AND that provider is NOT an obsolete user

THEN route document to the patient's responsible provider

ELSE

Issue an error indicating that the document is orphaned and require a user to specify a responsible provider.

ELSE IF none of TXA-5, TXA-9, TXA-22, OBX-16, or PV1-7 has a value.

Issue error; document is orphaned.

The document is routed to the desktop of the assigned provider. For authenticated (signed) documents, the document is also routed to the desktop of the Authenticating Person from TXA-22.

This logic is only used to determine which field to use. It does not validate the data. If the value is found to be invalid LinkLogic does not try to use the next field in the sequence shown above.

On export...

TXA-5, Primary Activity Provider Code/Name, is populated with the name of the document provider, not necessarily the person authenticating (signing) the document. See also ["TXA-22 Authentication Person, Time Stamp" on page 168](#).

TXA-6 Origination Date/Time / TXA-7 Transcription Date/Time

On import...

See ["OBX-14 Date/Time of the Observation" on page 174](#), for OBX-14 to understand how this field is used to determine the clinical date for the imported document.

TXA-8 Edit Date/Time

On export...

TXA-8, Edit Date/Time, is populated with the document's signature date/time.

TXA-9 Originator Code/Name / TXA-10 Assigned Document Authenticator

On import...

See ["TXA-5 Primary Activity Provider Code/Name" on page 161](#), to understand how this field is used in determining the primary activity provider code/name.

TXA-12 Unique Document Number

On import...

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats this field as optional.

TXA-4 or TXA-12 required for document overlay. When document overlay is enabled in LinkLogic Task Options, TXA-4, Activity Date/Time and TXA-12, Unique Document Number are required. If either field does not contain a value, the imported document is processed as if document overlay were not enabled.

For more information about document overlay, see [“Using document overlay” on page 577](#), or in online help, see “Using Documents” and “Overlay (replace) documents.”

On export...

TXA-12, Unique Document Number, is populated with the internal Centricity Practice Solution document identifier (SDID).

TXA-13 Parent Document Number

On import...

TXA-13, Parent Document Number, is interpreted as the internal Centricity Practice Solution document identifier (SDID) assigned to the document.

Length limits

Although the HL7 specification permits up to 30 characters for this field, if a supplied value exceeds 16 characters LinkLogic ignores it.

Filler order number takes precedence

If TXA-13, Parent Document Number, and TXA-15, Filler Order Number, are both specified and both values are valid, then TXA-15 takes precedence over TXA-13.

Matching transcription to a document

If TXA-15 or TXA-13 has a valid document ID that matches an existing Centricity Practice Solution document, then the imported (child) document is associated with the existing (parent) document.



This feature is only supported for transcribed notes and external attachments where the value of TXA-2 is TN (Transcribed Note), otherwise a warning is issued and TXA-13 is ignored.

If an imported document is successfully associated with a parent document, it is either appended to the parent or embedded in it at a specific placeholder

when document is signed in Centricity Practice Solution. Prior to signing, the imported child document is listed as a separate document in the Centricity Practice Solution document list.

Embedding transcription in a document

Embedding the document requires a Dictation Placeholder ID in OBX-4 (see [“OBX-4 Observation Sub-ID” on page 172](#)). If OBX-4 is not specified or does not match the ID in the parent document, the child document is appended to the parent document identified by TXA-13 or TXA-15.

Documents to be embedded are not automatically signed on import. This is the case even when

- TXA-17 (Document Completion Status) is AU (Authenticated).
- The **Import Authenticated documents as Signed** option in LinkLogic Task Options is checked for the relationship

Instead, LinkLogic issues a warning message and imports the document as unsigned.

TXA-14 Placer Order Number

On import...

When an order is marked To Be Completed

A Centricity Practice Solution order specified by the first component of TXA-14 is marked To Be Completed if all the following are true:

- TXA-14, Placer Order Number, and TXA-17, Document Completion Status, are both specified.
- TXA-17 is either DO (Documented) or AU (Authenticated).



Use commas to separate multiple order numbers in the first component of TXA-14, Placer Order Number. LinkLogic ignores all other components.

If TXA-17 is AU (Authentication) and TXA-22, Authentication Person and Time Stamp, contains valid values, then the order is automatically completed and the document is automatically signed. If the document is not automatically signed, then the orders are marked complete when the document is signed.

On export...

TXA-14, Placer Order Number, is populated with the externally visible Doc ID assigned to the document. The visible Doc ID assigned by Centricity Practice Solution is only guaranteed to be unique for the set of documents associated with a specific patient.

TXA-15 Filler Order Number

On import...

TXA-15 component 1, *Entity Identifier*, is interpreted as the externally visible Doc ID assigned by Centricity Practice Solution.

Length limits

Although the HL7 specification permits up to 22 characters for this field, if a supplied value exceeds 8 characters, LinkLogic ignores the field.

Filler order number takes precedence

If TXA-13, Parent Document Number, and TXA-15, Filler Order Number, are both specified and both values are valid, then TXA-15 takes precedence over TXA-13. For information on how this field is used in matching transcriptions to Centricity Practice Solution documents, see [“Matching transcription to a document”](#) and [“Embedding transcription in a document”](#) on page 164.

TXA-16 Unique Document File Name

On import and export...

On import the value in TXA-16, Unique Document File Name, is stored in Centricity Practice Solution as an external document identifier. On export, TXA-16 contains the document's external identifier, if one exists. See [“Matching transcription to a document”](#) and [“Embedding transcription in a document”](#) on page 164.

When importing attachments, TXA-16 has a valid external document identifier that matches an existing Centricity Practice Solution document, and all of the OBX segments are for external attachments, then the attachments are linked to the document identified by TXA-16. For more information, see [“Using external attachments”](#) on page 176.

TXA-17 Document Completion Status

On import...

See [“When an order is marked To Be Completed”](#) on page 165.

Supported values for Document Completion Status are shown below. Any other value generates an error.

This value...	Means this...
AU	Authenticated (signed) TXA-22, Authentication Person and Time Stamp, must have a valid value for a document to be considered authenticated on import.
DO	Documented (complete but not signed)
IP	Preliminary When Document Overlay is enabled, this value is used to indicate that the document is preliminary. Otherwise it is ignored. If Document Overlay is enabled and TXA-17 is IP (Preliminary), the document is considered preliminary. A preliminary document can not replace an existing final document in the Centricity Practice Solution database. For more information about document overlay, see “Using document overlay” on page 577 .

TXA-18 Document Confidentiality Status

On import...

Supported values for Document Confidentiality Status include:

This value...	Means this...
V / VR	Very restricted
R / RE	Restricted
U / UC	Usual Control (not sensitive or confidential)

Important. Use the single-character code. Two-character codes are accepted for backward compatibility only.

Imported document's confidentiality status

If TXA-18 is V or R, the imported document's status is set to the confidentiality type configured for the LinkLogic relationship in **LinkLogic > Task Options > Change Confidentiality Import Options** window. (Click **Confidentiality** to access.) If TXA-18 is U, the confidentiality type is Normal.

If the imported document is a transcription that specifies a parent document (see [“Matching transcription to a document”](#) and [“Embedding transcription in a document” on page 165](#), the transcription inherits the confidentiality type of the parent when it is signed and merged.

On export...

TXA-18 is set to one of the following confidentiality codes:

This value...	Means this...
V	Confidential documents (regardless of chart sensitivity)
R	Non-confidential documents from sensitive chart
U	Non-confidential documents from non-sensitive chart

TXA-19 Document Availability Status

On import...

TXA-19, Document Availability Status is ignored. It is assumed that an imported document's Availability Status is AV, Available for Patient Care. If the document is not authenticated (signed) on import, its content can change.

On export...

TXA-19 is always set to AV, Available for Patient Care. Only signed documents can be exported.

TXA-21 Document Change Reason

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats TXA-21 as optional.

TXA-22 Authentication Person, Time Stamp

On import...

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats this TXA-22 as optional.

See ["TXA-5 Primary Activity Provider Code/Name" on page 161](#), to understand how this field is used in determining the primary activity provider code/name.

On export...

TXA-22 is populated with the authentication person's name and the date/time it was authenticated in the following format:

name^^^^^^^^^^^^^^ yyyymmddhhmmss

TXA-23 Distributed Copies (Code and Name of Recipients)

On import...

The imported document is routed to the desktops of all Centricity Practice Solution users specified in TXA-23, Distributed Copies.

To use this field with a cross-reference file, use the repeat delimiter to separate multiple user names/IDs. (Default is the tilde (~). For more information, see [“Cross-referencing field values” on page 461](#). Otherwise, use commas to separate Centricity Practice Solution user IDs.

When the repeat delimiter is used to separate multiple values, each value can be specified in either of these forms:

- *lastname firstname*
- Centricity Practice Solution user name (can be obtained through cross-referencing)

OBX – Observation/Result

The Observation/Result segment (OBX) contains is a clinical fact or other information about a patient’s mental or physical status, such as a lab result, a vital sign, or the answer to a medical history question. Observations can be numeric or text.

Legend			
ID	Coded value for HL7-defined tables	CI	Extended composite ID with check digit
ST	String data	SI	Sequence ID
XCN	Extended composite ID # / name	CE	Coded element
TS	Time stamp	NM	Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
OBX-1	10	SI		Set ID - Observation Simple	Optional	171	Not used	
OBX-2	2	ID	0125	Value Type	Required	171	Used	171
OBX-3	590	CE		Observation Identifier	Optional	171	Optional	
OBX-4	20	ST		Observation Sub-ID	Optional	172	Not used	
OBX-5	65536	ST		Observation Value	Required	172	Used	
OBX-6	60	CE		Units	Not used		Not used	
OBX-7	60	ST		Reference Range	Not used		Not used	
OBX-8	10	ID	0078	Abnormal Flags	Optional	174	Optional	
OBX-9	5	NM		Probability	Not used		Not used	
OBX-10	5	ID	0080	Nature of Abnormal Test	Not used		Not used	
OBX-11	2	ID	0085	Observation Result Status	Not used		Not used	
OBX-12	26	TS		Date Last Obs Normal Values	Not used		Not used	
OBX-13	20	ST		User Defined Access Checks	Not used		Not used	
OBX-14	26	TS		Date/Time of the Observation	Optional	174	Optional	174
OBX-15	200	CE		Producer’s ID	Not used	175	Not used	
OBX-16	80	XCN		Responsible Observer	Optional	175	Optional	
OBX-17	60	CE		Observation Method	Not used		Not used	

OBX-1 Set ID - Observation Simple

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats OBX-1 as optional on import.

OBX-2 Value Type

On import...

The supported values for Value Type are shown in the table. Any other value generates an error.

This value...	Means this...
ST	String Data
TX	Text Data
FT	Formatted Data

On export...

OBX-2, Value Type, is always populated with the value ST (string data).

OBX-3 Observation Identifier

On import and export...

The supported values for Observation Identifier include:

This value...	Means this...
NO_REF	OBX-5 contains text (not a reference to an external attachment)
IMAGE_REF	OBX-5 contains a reference to an image
TEXT_REF	OBX-5 contains a reference to an external document
OTHER_REF	OBX-5 contains a reference to externally managed data of unknown type

If the relationship is set up to allow external attachments and OBX-3 is not one of the values listed above, then LinkLogic issues an error and the import fails. If OBX-3 is any value except NO_REF, then OBX-5 must contain the external attachment (see [“OBX-5 Observation Value” on page 172](#)).

See also [“Using external attachments” on page 176](#).



If the relationship is not set up to allow external attachments, then OBX-3 can only have NO_REF or be blank.

To set up an import relationship

For detailed instructions, click F1 in the application.

Go to **Administration > System**, and on the **LinkLogic | Task Options** tab select an import relationship. Check the **Import External Attachments** option.

To set up an export relationship

Go to **Administration > System**, and on the **LinkLogic | Task Options** tab select an export relationship. Check the **Import External Attachments** option.

Click **Constraints** and on **Change Documents Constraints Options** window, check **Export External Attachments**.

OBX-4 Observation Sub-ID

On import...

OBX-4, Observation Sub-ID, must be 8 characters or less.

If OBX-4 has a value, LinkLogic assumes it contains the Dictation Placeholder ID for embedded transcription or an external attachment. The placeholder is a location in the parent document where the embedded text or external attachment from one or more OBX-5 segments is placed when the document is signed.

The parent document ID must be in either TXA-13 or TXA-15. For embedded transcription, TXA-2 must be TN. The value in OBX-4 must match the Dictation Placeholder ID in the parent document, otherwise LinkLogic appends the imported (child) document to the parent document rather than embedding it. The imported child document appears in the Centricity Practice Solution document list as a separate document until it is signed.

If OBX-4 has a value when OBX-5 is interpreted as a moniker that contains the reference to the external attachment, an error is generated and the import fails. (See the next section for details.) This happens because Centricity Practice Solution does not support external attachments to imbedded objects.

OBX-5 Observation Value

On import and export...

Although OBX-5, Observation Value, is considered conditional in the HL7 specification, LinkLogic requires it in the ImageLink interface.

Use multiple OBX segments to create larger documents (up to 256K). Multiple OBX message segments can be imported as individual documents or concatenated to produce a single document, depending on how the relationship is configured in the LinkLogic Task Options.



LinkLogic and Centricity Practice Solution support fewer characters than the maximum of 65536 (64 kilobytes) specified in the HL7 2.3.1 standard. The precise number of characters less than the maximum varies for each message depending on its OBX-5 contents and conversion to RTF format to display in the application.

If OBX-3 has an appropriate value (see “[OBX-3 Observation Identifier](#)” on [page 171](#)), then OBX-5 is assumed to be a formatted string limited to a length of 2129 characters. The format is as follows:

moniker^*comment*

Moniker is a required component that contains the reference to the external attachment. If the moniker is more than 2048 characters, LinkLogic generates an error and the import fails.

Comment is an optional component that contains a short description of the external attachment. If the comment exceeds 80 characters, it is truncated and LinkLogic issues a warning. If there is no comment, LinkLogic generates a comment based on the type of external attachment identified in OBX-3.

On import...

Some external attachments use external programs that require parameters to locate and view attachments. LinkLogic translates triple colon (:::) from the first component of OBX-5 into the special sequence of characters used by the client application to parse external attachment paths. This separates the path to an application executable from the arguments or parameters passed to that application.



This feature is used by interfaces with CardioSoft and DocuTrak.

The ::: characters from OBX-5.1 are translated to [^!^]. The application uses that 5-character sequence to separate the application from the parameters. This character sequence is less likely to conflict with anything else that might appear on a command line.

Here is a sample OBX segment pointing to *Wordpad* as the application followed by a path to the file to be opened and an optional text description:

```
OBX|1|TX|IMAGE_REF||C:\Program Files\Windows
NT\Accessories\wordpad.exe:::c:\image.txt^Test to import
external attachment with triple-colon separator.
```

Here is what the application displays in the New/Change External Attachment window:

Type: Image

Path: C:\Program Files\Windows

NT\Accessories\wordpad.exe|^!^|c:\image.txt

Description: Test to import external attachment with triple-colon separator.

Including MEL in external attachment URL

The client application uses the MEL parser to evaluate anything enclosed in curly braces in the attachment path before displaying external attachments. This lets you pass patient context, user context, or other run-time information to external viewers that open attachments.

The text between the curly braces is modified to become the result of the MEL expression. The curly braces are removed in the MEL translation process. Here's an example:

`http://www.images.com/viewer.asp?patid={PATIENT.PATIENTID}&img=12345`

The MEL parser evaluates the expression {PATIENT.PATIENTID} and substitutes the actual PatientID value in the URL before passing it to Windows Explorer to pass to the default browser registered to open URLs.

!!! If the path to an attachment is a URL with curly braces and the bracketed text is not a MEL expression, the braces are removed. This might prevent the attachment from displaying properly.

OBX-8 Abnormal Flags

On import...

If OBX-8, Abnormal Flags has the value A, the document is directed to the appropriate responsible provider with an urgent status. All other values are ignored.

OBX-14 Date/Time of the Observation

On import...

LinkLogic uses the following logic to determine the document's clinical date:

IF OBX-14 (Observation Date/Time) contains a value

The document's clinical date = OBX-14

ELSE IF TXA-4 (Activity Date/Time) contains a value

The document's clinical date = TXA-4

ELSE IF TXA-6 (Origination Date/Time) contains a value

The document's clinical date = TXA-6

ELSE IF TXA-7 (Transcription Date/Time) contains a value

The document's clinical date = TXA-7

ELSE

The document's clinical date = MSH-7 (Message Date/Time)

On export...

OBX-14, Observation Date/Time, is populated with the clinical date/time of the document.

OBX-15 Producer's ID

On import...

If specified OBX-15, Producer's ID, is assumed to be the Transcriptionist Code/Name, and the value overrides the value specified in the TXA-11 (Transcriptionist Code).

This field is ignored because Centricity Practice Solution does not currently store this information.

OBX-16 Responsible Observer

On import...

See ["TXA-5 Primary Activity Provider Code/Name" on page 161](#) to understand how this field is used to determine the responsible provider for the document.

MSA – Message Acknowledgement

The MSA segment is used to acknowledge a previously received message. It triggers a resend if the acknowledgement code indicates the message was rejected or generated an error.

Legend

ID Coded value for HL7-defined tables

ST String data

CE Coded element

NM Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
MSA-1	2	ID	0008	Acknowledgement Code	Required	176	Used	
MSA-2	20	ST		Message Control ID	Required		Used	
MSA-3	80	ST		Text Message	Optional		Not used	
MSA-4	15	NM		Expected Sequence Number	Not used		Not used	
MSA-5	1	ID	0102	Delayed Ack Type	Not used		Not used	
MSA-6	100	CE		Error Condition	Not used		Not used	

MSA-1 Acknowledgement Code

On import...

The supported values for Acknowledgment Code include:

This value...	Means this...
AA	Original mode: Application Accept Enhanced Mode: Application Acknowledgement: Accept
AR	Original mode: Application Reject Enhanced mode: Application Acknowledgement: Reject This code triggers a message resend event.
AE	Original mode: Application Error Enhanced mode: Application Acknowledgement: Error This code triggers a message resend event.

Using external attachments

You can associate externally managed objects with documents in Centricity Practice Solution by using external attachments. For example, you can attach a reference to a chart document to a radiology image for a patient stored and managed by another system. Then when you view documents for that patient, you can select the image from a list of the attachments and view it directly from Centricity Practice Solution. The image reference contains enough information for the application to launch a viewer that can access and display the image.

Opting to import external attachments

To import external attachments through a Documents import relationship, you must check the **Import External Attachments** option for the relationship on the **LinkLogic | Task Options** tab in LinkLogic setup.

An external attachment is identified by the value in OBX-3, Observation Identifier (see [“OBX-3 Observation Identifier” on page 171](#)). The reference to the attachment is in OBX-5, Observation Value (see [“OBX-5 Observation Value” on page 172](#)).

To embed an external attachment in a document, the placeholder ID must be in OBX-4, Observation Sub-ID (see [“OBX-4 Observation Sub-ID” on page 172](#)).

You can add or modify attachments in Centricity Practice Solution from any documents list.

About external reference monikers

Moniker: a component that contains a reference to an external attachment

The external attachment is expected to be an ActiveX *moniker* that identifies an object managed by an external system. The attachment may identify the object in any fashion appropriate for the viewing application. For example, the attachment could be a file pathname or a URL. Centricity Practice Solution does not associate a specific application with an attachment or attachment type. It relies on the Windows operating system to find an appropriate mapping and launch the correct viewer. For file path names, LinkLogic uses Windows Explorer to associate a mapping between the file extension and an application. No attempt is made to verify the correctness of an external attachment. It is imported as is and stored in the Centricity Practice Solution database.

Modifying monikers

To modify an invalid or broken moniker for an attachment in Centricity Practice Solution, use the **Change Document Properties** window.

An *invalid* moniker can result from an error in the attachment's import file.

A *broken* moniker no longer points to the correct location on the network. For example, if the moniker was a file pathname and the location of the file changed, the attachment is broken. Modifications to invalid and broken monikers are made on a document-by-document basis. You cannot modify multiple monikers in a single operation.

Import processing

When ALL OBX segments are external documents AND...

- **No parent document is identified in TXA-13, TXA-15, or TXA-16...**
THEN a new document is created and all of the attachments are linked to it.
- **A signed / unsigned parent document is specified in TXA-13, TXA-15, or TXA-16...**
THEN the attachments are linked to the parent document.
- **A parent document is identified in TXA-13, TXA-15, or TXA-16, but not found...**
THEN LinkLogic issues a warning message and creates a new document with the external attachments linked to it.
- **A signed / unsigned parent document is identified in TXA-13, TXA-15, or TXA-16, and has an external attachment...**
THEN if task option Import External Attachments is enabled, and the document can be matched to the specified parent document, the signed document and attachment are imported and routed to the desktop of the responsible provider for the document.

Matching attachments to parent documents...

- **IF TXA-13 is specified**
THEN it is used to identify the parent document by searching for a matching Centricity Practice Solution SDID.
- **IF TXA-13 is not specified, but TXA-15 is specified**
THEN TXA-15 is used to identify the parent document by searching for a matching Centricity Practice Solution Visible Document ID.
- **IF neither TXA-13 and TXA-15 are specified, but TXA-16 is specified**
THEN TXA-16 is used to identify the parent document by searching for a matching Centricity Practice Solution External Document ID.

If some but not all OBX segments are external attachments...

THEN the external attachments are linked to the new document created for OBX segments that do not contain external attachments. The order of OBX segments containing external attachments does not matter, they can be included among other segments without attachments.

If the LinkLogic relationship is configured to create a document for each OBX segment...

THEN a new document is created for each external attachment encountered and the attachment is linked to the new document.

Document descriptions on import...

A description of each imported attachment is included in the document. The description is the attachment's type from OBX-3, Observation Identifier, and the comment from the second component of OBX-5, Observation Value, (see ["OBX-5 Observation Value" on page 172](#)).

For documents created specifically for an external attachment, the description is the only content of the document. For all other documents, the description is appended to the end of the document's text following the Centricity Practice Solution Append banner.

- **If OBX-5 doesn't have a comment**
THEN depending on OBX-3, the description is one of the following:
 - Scanned Image
 - Textual Document
 - Unknown Attachment Type.
- **If a document is created specifically for one or more external attachments and no OBX segments contain document text**
THEN the document type is either
 - Imaging Report (if OBX-3 is IMAGE_REF)
 - External Other (if OBX-3 is anything other than IMAGE_REF)

The document's summary line is either Scanned Image, Textual Document, or Unknown Attachment Type, depending on the value of OBX-3.

Export processing

On export, a document with external attachments contains

- One OBX segment describing the document, followed by
- An OBX segment for each external attachment

The OBX segment for the external attachment is formatted as described in the notes for OBX-3 (page [171](#)), OBX-4 (page [172](#)), and OBX-5 (page [172](#)). The order of the external attachments is the same as the order in which they were imported.

No external attachments to embedded objects

External attachments to imbedded objects are not yet supported in Centricity Practice Solution. If encountered, an error is recorded and the import fails (see [“OBX-4 Observation Sub-ID” on page 172](#)).

Immunization Registry Import/Export HL7 interface specification

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This HL7 interface supports the export of immunization observations documented in Centricity Practice Solution when patient immunizations are given or historical details available at the time of administration. It also supports the import of immunization information from a registry to Centricity Practice Solution.

Overview

LinkLogic export: LinkLogic exports immunization observations as an ORU^R01 (Observation Reporting) message and patient demographics as an ADT^A04 message (Register a Patient) to Centricity Clinical Gateway (Cloverleaf interface engine) for translation.

Cloverleaf translation to registry: Centricity Clinical Gateway's Cloverleaf interface engine translates the ORU and ADT messages exported from LinkLogic to an HL7 VXU (Unsolicited Vaccination Record Update) message. CCG then sends the VXU message to an immunization registry.

Registry to Cloverleaf for translation: Cloverleaf translates a VXU immunization history received from a registry to an MDM message (Medical Document Management).

LinkLogic import: LinkLogic imports the MDM message to the Centricity Practice Solution chart.

About the ORU message

An ORU message is exported for each patient for whom immunization observations exist. The ORU message contains an OBR (Observation Request) message segment for observation terms contained in the *Immunizations-Master_Flowsheet* as documented in the patient's chart.

The *Immunizations-Master-Flowsheet* can be found in the application in Administration under Chart > Flowsheet Views > Enterprise / Immunizations.

Nested under each OBR message segment are one or more OBX (Observation Result) message segments, one for each documented observation.

LinkLogic exports these vaccination observations as ORU messages and supports one trigger event: R01 (Unsolicited Transmission of an Observation Message).

About immunization registries

An immunization registry is a regional (usually statewide) repository of immunization records and other immunization information. Immunization registries combine and reconcile historical immunization data from multiple sources such as clinical practices, schools, pharmacies and other immunization providers. Each immunization registry provides interfaces for accessing and updating the information.

Before you send immunization messages...



Your Centricity Services technical consultant or Value-Added Reseller will help you assess your registry's requirements and determine what customization is needed to support data and transport requirements. They will also set up the interfaces to meet registry requirements and assist through the testing phase with the registry.

Before you can send immunization messages, you must do the following:

- 1 Meet with GE or VAR to review and assess local registry requirements.
- 2 Obtain and configure an account with your state immunization registry according to their specifications.
- 3 Import the latest Factory Observation Terms Kit available on the Centricity Services web site.
- 4 Import and configure required flowsheets and encounter forms for your registry:
 - *Immunization-Master-Flowsheet*
 - *Immunization Management GE* encounter form (replaces legacy form *Immunization Management-GE* form)
- 5 Set up LinkLogic export/import relationships:
 - **Import Documents** - handles import of immunization messages from a registry to patient charts.

- **Export Demographics** - handles export of patient demographic (registration) information
- **Export Observations**
 - Check **Immunization Registry** when you create the relationship).
 - In Export Task options, set **llink2nk1.ixp** (llogic\config\standard folder) as a **Root** Import/Export Protocol file (IXP).

While NK1 is not a standard segment generated for the ORU message, it must be added because some registries require at least one NK1 segment in a VXU message. Patient contacts information is used to generate NK1 segments.

- Click **Constraints** and select the *Immunization-Master-Flowsheet* for **Filter Observations by Flowsheet View**.



The *Immunization-Master-Flowsheet* must be imported into the application and set as a constraint for Observations Export. Immunization observation terms are grouped and sorted for each of the vaccines. LinkLogic uses this flowsheet to sort observation terms on export.

- 6 Install and configure Centricity Clinical Gateway and Cloverleaf interface engine and interfaces to communicate with your registry.



Setup to exchange data with an immunization registry varies from state to state and each clinic will require a customized configuration.

Contact your GE Sales representative or Value-Added Reseller for help planning and implementing data exchange with your state immunization registry.

Communication protocols for immunization registries

Meaningful Use Phase 1

GE supports the following communication protocols for immunization registries for Meaningful Use Phase 1 demonstration:

- **HTTP (Hyper Text Transfer Protocol)** is used by many registries to send and receive messages, including STC registries. Centricity can send an HTTPS POST command to the registry, using the assigned user ID and password. HTTPS (secure version of HTTP) can support real-time interfacing (where the sending application waits for an immediate response from the registry) or batch, where a set of records are sent, using HL7 batch protocol.

HTTP Client is often required to use a proxy server for requesting documents. When a proxy server is employed, then the client sends all HTTP requests directly to the proxy server. The proxy server then forwards the requests to the appropriate HTTP server.

To configure the proxy server, an administrator can set the following in Cloverleaf:

- The host name or IP address of the proxy server
- The port number on which the proxy server is listening
- A username and password to support proxy authentication (optional)
- **CDC PHINMS client.** About half of all WIR-based registries use the shareware PHINMS client (Public Health Information Network Messaging System) created by CDC to securely send and receive sensitive data over the Internet to public health information systems. This involves a common approach to security and encryption, a method for dealing with various firewalls and Internet protection schemes, a standard way for addressing and routing content, a customary and consistent way for information systems to “shake hands” and confirm that an exchange was successful. File-based polling method is implemented to send and receive HL7 messages to and from many WIR-compliant immunization registries. For more information about PHINMS client, see <http://www.cdc.gov/phinf/activities/applications-services/phinfms/index.html>.

Meaningful Use Phases 2-3

GE plans to support the following communication protocols for Meaningful Use Phases 2-3:

- **Web services.** Web services use standardized language and protocols to integrate web-based applications and support secure, real-time exchange of information via the Internet. A Web Services Description Language (WSDL) service provides access to supported Web service operations, such as submitting immunization data or querying a patient’s immunization record. Security is provided via a variety of models.
- **State or Regional Health Information Exchange (HIE).** Some registries obtain immunization data from an HIE, which reduces the number of provider interfaces to the registry. Providers send their data to the HIE, which sends it on to the registry.

ORU to VXU messages

The following HL7 ORU message is exported from LinkLogic, translated to an HL7 VXU message by Cloverleaf interface engine, which then sends the VXU message to the state registries to report vaccination information.

Most of the ORU and MDM message segments like Message Header (MSH), patient identification (PID) and patient visit (PV1), Next of kin (NK1) map directly to corresponding VXU message segments. However some fields (noted in the specification) must be customized.

Legend	
[...]	Optional
{...}	Repeating
{{...}}	Optional and repeating

Segment name	See page	LinkLogic exports	Trigger R01	Cloverleaf exports	Trigger V04	See page
Message Header	187	MSH {	Required	MSH {	Required	
Patient ID	189	PID	Required	PID	Required	
Patient, Add'l		[PD1]	Optional	[PD1]	Optional	
Next of Kin	203	{{NK1}}	Optional	{{NK1}}	Optional	
Notes/Comments		{{NTE}}	Not used		Not used	
Patient Visit	196	[PV1	Optional	[PV1	Optional	
Patient Visit, Add'l		[PV2]]]	Optional	[PV2]]	Optional	
Insurance	200		VXU messages contain no insurance information because observation values are not associated with insurance information.	IN1	Not used	
Insurance, Add'l				[IN2]	Not used	
Insurance, Cert.		{		[IN3] }]	Not used	
Common Order		[ORC]	Not used	[ORC]	Not used	
Observation Request/Pharm Treatment Admin	206	OBR	Required	RXA	Required	209
Pharm Treatment Route		{{NTE}}	Not used	[RXR]	Optional	213
		{		[[
Observation Result	207	[OBX	Optional	OBX	Optional	
		[[NTE]] }	Not used	[[NTE]] }}	Not used	

Segment name	See page	LinkLogic exports	Trigger R01	Cloverleaf exports	Trigger V04	See page
Clinical Trial ID		[[CT1]] } } }	Not used	}		
Continuation Pointer		DSC	Not used			
Message Header		MSH	Conditional			
Message Ack		MSA	Conditional			
Error		[ERR]	Not used			

NK1 segment requires llink2nk1.IXP

NK1 is not a standard segment for the ORU message exported from LinkLogic. Since registries expects the NK1 segment in the VXU message, you must configure the Observations Export relationship for immunization registries and use a configuration file that tells LinkLogic to include an NK1 message segment.

In LinkLogic Task Options, select the Observations Export relationship, check Immunization Registry and under Configuration Files, select the **Root** Import/Export protocol (IXP) file **llink2nk1.ixp** from the llogic/config/standard folder.

ORU HL7 message segments

This section provides detailed specifications for the HL7 message segments used in the ORU message.

Each message segment table lists the segment elements or fields in sequence order (MSH-1, MSH-2, MSH-3, and so on) with the following information:

- **Element name**
- **Maximum length** in LinkLogic
- **Data type**
- **Source table** in the HL7 specification where applicable
- **LinkLogic/Cloverleaf usage on export** (Required, Optional, Ignored, and so on)

For definitions of usage terms, see ["How LinkLogic uses message segments" on page 42](#).



Click blue page number links in the following tables to jump to detail notes (when viewing the Adobe PDF version of this guide) or look for notes under the element code and name listed after the table.

MSH – Message Header

The Message Header segment (MSH) should always be in the first segment in each HL7 message. MSH defines the intent, source, destination, and some specifics of the syntax of a message.

Legend					
CE	Coded element	ID	Coded value	ST	Character string
CM	Order sequencing component	NM	Numeric	TS	Time stamp
HD	Hierarchic designator	PT	Processing type		

SEQ	Lnth	Data type	HL7 table	Element name	LinkLogic	See page
MSH-1	1	ST		Field Separator	Required	
MSH-2	4	ST		Encoding Characters	Required	
MSH-3	40	HD		Sending Application	Used	188
MSH-4	20	HD		Sending Facility	Used	188
MSH-5	40	HD		Receiving Application	Used	188
MSH-6	30	HD		Receiving Facility	Used	188
MSH-7	26	TS		Message Date/Time	Used	
MSH-8	40	ST		Security	Not used	
MSH-9	7	CM	0076	Message Type	Required	188
MSH-10	20	ST		Message Control ID	Required	
MSH-11	3	PT	0103	Processing ID	Required	188
MSH-12	8	ID	0104	Version ID	Required	188
MSH-13	15	NM		Sequence Number	Not used	
MSH-14	180	ST		Continuation Pointer	Not used	
MSH-15	2	ID	0155	Accept Ack Type	Optional	188
MSH-16	2	ID	0155	Application Ack type	Optional	
MSH-17	2	ID		Country Code	Not used	
MSH-18	6	ID	0211	Character Set	Not used	
MSH-19	60	CE		Principal Language	Not used	

MSH-3 Sending Application

In MSH-3 LinkLogic identifies itself as Sending Application with a string value derived by concatenating the string LinkLogic- with the unique Centricity Practice Solution Enterprise ID for the organization (for example, LinkLogic-ABCD). The Enterprise ID can be up to four alphanumeric characters.

STC registry: Cloverleaf sends the value provided by LinkLogic.

WIR registry: Cloverleaf sets this field to **VAR** by default. Your WIR registry might specify another value.

MSH-4 Sending Facility

MSH-4 contains the patient's (not a document's) server-specific home location of care in the form of *DatabaseID^LOC*. (Example: TEST000^SOUTH)

This field is customized for each state registry.

STC registry: Cloverleaf sends Facility ID, the value in MSH-5.

WIR registry: Cloverleaf sends the application name, **General^1235** by default. This value may need to be customized to meet your state registry requirements.

MSH-5 Receiving Application

MSH-5 Receiving Application contains the name of the LinkLogic relationship that created the output file.

WIR registry: Cloverleaf sets this field to null.

MSH-6 Receiving Facility

MSH-6 Receiving Facility contains the patient's (not a document's) location of care. This differs from MSH-4 in that this field contains the location of care without the database ID.

WIR registry: Cloverleaf sets this field to **WIR** by default. This value may need to be customized to meet your state registry requirements.

MSH-9 Message Type

Message Type is limited to **V04 - General Unsolicited Vaccination Record Update**.

WIR and STC registries: Cloverleaf sets this field to **VXU^V04** by default.

MSH-11 Processing ID, MSH-12 Version ID

MSH-11 Processing ID, is set to **P** (Production) or **D** (Debugging), if test mode is enabled in the application.

MSH-12 Version, is set to **2.4** for WIR or to **2.3.1** for STC.

MSH-15 Accept Ack Type

The ACK message indicates the message has been transmitted to or accepted by the state registry. It is always set to AL (Always).

PID – Patient Identification

The Patient Identification (PID) is a unique, system-generated identification number that Centricity Practice Solution assigns to each patient during registration.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric		

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PID-1	4	SI		Set ID - Patient ID	Used	
PID-2	20	CX		Patient ID (External ID)	Conditional	
PID-3	20	CX		Patient ID (Internal ID)	Required	190
PID-4	16	CX		Alternate Patient ID-PID	Optional	191
PID-5	4825 0	XPN		Patient Name	Required	
PID-6	48	XPN		Mother's Maiden Name	Not used	
PID-7	26	TS		Date/Time of Birth	Used	
PID-8	1	IS	0001	Sex	Used	191
PID-9	48	XPN		Patient Alias	Not used	
PID-10	1	IS	0005	Race	Optional	191
PID-11	106	XAD		Patient Address	Optional	
PID-12	4	IS		Country Code	Not used	
PID-13	250	XTN		Phone Number - Home	Optional	192

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PID-14	250	XTN		Phone Number - Work	Optional	192
PID-15	60	CE	0296	Primary Language	Optional	193
PID-16	1	IS	0002	Marital Status	Optional	194
PID-17	3	IS	0006	Religion	Not used	
PID-18	20	CX		Patient Account #	Optional	194
PID-19	11			SSN # - Patient	Optional	194
PID-20	25	DLN		Driver's License # - Patient	Not used	
PID-21	20	CX		Mother's Identifier	Not used	
PID-22	3	IS	0189	Ethnic Group	Used	195
PID-23	60	ST		Birth Place	Not used	
PID-24	2	ID	0136	Multiple Birth Indicator	Not used	
PID-25	2	NM		Birth Order	Not used	
PID-26	4	IS	0171	Citizenship	Not used	
PID-27	60	CE	0172	Veterans Military Status	Not used	
PID-28	80	CE		Nationality	Not used	
PID-29	26	TS		Patient Death Date /Time	Optional	195
PID-30	1	ID	0136	Patient Death Indicator	Optional	195
PID-40	1	ST	0185	Patient Preferred Contact Method	Optional	195

PID-3 Patient ID (Internal ID)

HL7 recommends this field be used to record all patient identifiers. For that reason Type Code should always be used to identify what type of identifier is being listed. Values for the identifier type code are found in HL7 table 0203.

PID-3, Patient ID (Internal ID) is always populated with the unique Centricity Practice Solution Patient ID for the patient. Cloverleaf formats the field by adding **MR** (Medical Record) for the type identifier code. Since the field is repeatable, the formatted SSN value is used as an additional identifier and sent to immunization registries.

Example: If Centricity Practice Solution exports 715 for field PID-3 and 106-58-7576 for PID-19 then Cloverleaf maps the PID-3 field to 715^^^MR~106587576^^^SS.

Global unique identifier

The Centricity Practice Solution Patient ID is a globally unique identifier represented as a string value in the form 123456789012-XXXX123 where:

- **Prefix.** 123456789012 is a number with a maximum of 12 digits that is unique within Centricity Practice Solution database where the patient's chart was created.
- **Suffix.** XXXX123 concatenates the customer's unique Enterprise ID (XXXX) and the Centricity Practice Solution database ID (123). Database IDs are allocated and specified by the system administrator performing the installation.

PID-4 Alternate Patient ID - PID

PID-4, Alternate Patient ID, is the patient's medical record number. Although the HL7 specification defines the maximum length of this field to be 20, however, LinkLogic only supports a maximum of 16 alphanumeric characters to describe Alternate Patient ID.

PID-8 Sex

The supported values for Sex include:

This value...	Means this...
F	Female
M	Male
O	Other (treated as Unknown)
U	Unknown

PID-10 Race

These supported values for Race exported from Centricity Practice Solution are mapped as follows in Cloverleaf:

This value...	Refers to this race...	And is mapped like this...
B	Black	2054-5^Black or African-American^HL70005
C	Chinese	2028-9^Asian^HL70005
F	Filipino	2076-8^Native Hawaiian or Other Pacific Islander^HL70005
J	Japanese	2028-9^Asian^HL70005
N	Native American	1002-5^American Indian or Alaska Native^HL70005
I	Native Hawaiian	2076-8^Native Hawaiian or Other Pacific Islander^HL70005

This value...	Refers to this race...	And is mapped like this...
M	Multiracial	2131-1^Other Race^HL70005
O	Oriental/Asian	2028-9^Asian^HL70005
P	Pacific Islander	2076-8^Native Hawaiian or Other Pacific Islander^HL70005
W	White	2106-3^White^HL70005
T	Other	2186-5^not Hispanic or Latino^HL70005
U	Undetermined (default)	^Unknown^HL70005

PID-11 Patient Address

The state or province component accepts a two-character state code or any string up to 50 characters in length. The zip code component accepts alphabetic characters to support foreign addresses with a maximum of 15 characters.

PID-13 Phone Number - Home / PID-14 Phone Number - Work

On import...

Although the HL7 2.4 specification defines the maximum length of this field as 250, Centricity Practice Solution and LinkLogic support a maximum of 20 characters for phone numbers and 50 characters for email addresses. Characters beyond these limits are truncated.

The HL7 specification permits phone number fields to contain multiple items separated by repeat delimiters. The first component of each item has the phone number value, and the third component indicates the phone type. LinkLogic reads values for home phone, fax phone, cell phone, and pager from PID-13.

LinkLogic reads only the work phone number from PID-14.1, where PID-14.3 component is either not specified or is PH. All other phone values from PID-14 are ignored.

The following phone type values are supported:

This phone type...	Means this...	Stored here....
PH	Home phone (PID-13)	PERSON.ALTPHONE
PH	Work phone (PID-14.1)	PERSON.WORKPHONE
CP	Cell phone	PERSON.CELLPHONE
FX	Fax phone	PERSON.FAXPHONE
BP	Pager (beeper) number	PERSON.PAGERPHONE

For additional details, see [“XTN - Phone number format” on page 459](#).

Backward compatibility

If the phone type value in the third component of the first repeating item in PID-13 is blank or not specified, LinkLogic imports the phone number value from the first component of this item as the patient's home phone number. This maintains backward compatibility with systems that do not send phone type values and with systems that do not send multiple repeating items in PID-13.

Email address

The fourth component of PID-13, Phone Number - Home, is used for the patient's email address. If PID-13 is blank, the fourth component of PID-14, Phone Number - Work, is used. If both PID-13 and PID-14 are blank, the patient will have no email address in Centricity Practice Solution.

On export...

LinkLogic exports the patient's home phone number, cell phone, fax phone, and/or pager (if present) as multiple repeating items in PID-13, Phone Number - Home. The phone number value is sent in the first component of each item and the phone type is sent in the third component of each item.

The fourth component of the first repeating item in PID-13 is populated with the patient's email address.

The patient's work phone (if present) is exported in PID-14.1. LinkLogic exports only one repeating item in PID-14 and does not export any phone type in PID-14.3.

PID-15 Primary Language

These supported descriptions for patient's primary language exported from are mapped as follows in Cloverleaf:

This language...	Is mapped like this...	This language...	Is mapped like this...
English	en^English^HL70296	Japanese	ja^Japanese^HL70296
French	fr^French^HL70296	Korean	ko^Korean^HL70296
German	de^German^HL70296	Laotian	lo^Laotian^HL70296
Vietnamese	vi^Vietnamese^HL70296	Polish	pl^Polish^HL70296
Italian	it^Italian^HL70296	Portuguese	pt^Portuguese^HL70296
Mandarin	zh^Mandarin^HL70296	Romanian	ro^Romanian^HL70296
Spanish	es^Spanish^HL70296	Russian	ru^Russian^HL70296
American Sign Language	ASE^American Sign Language^HL70296	Samoan	sm^Samoan^HL70296
Arabic	Ar^Arabic^HL70296	Serbian	sr^Serbian^HL70296
Armenian	Hy^Armenian^HL70296	Slovak	sk^Slovak^HL70296
Bengali	Bn^Bengali^HL70296	Somali	so^Somali^HL70296

This language...	Is mapped like this...	This language...	Is mapped like this...
Cambodian	Km^Cambodian^HL70296	Tagalog	tl^Tagalog^HL70296
Chamorro	CJD^Chamorro^HL70296	Thai	th^Thai^HL70296
Cantonese	YUH^Cantonese^HL70296	Tongan	to^Tongan^HL70296
Croatian	hr^Croatian^HL70296	Ukrainian	uk^Ukrainian^HL70296
Czech	cs^Czech^HL70296	Urdu	ur^Urdu^HL70296
Dutch	nl^Dutch^HL70296	Yiddish	yi^Yiddish^HL70296
Farsi	fa^Farsi^HL70296	Indonesian	id^Indonesian^HL70296
Persian	fa^Persian^HL70296	Ilocano	ILO^Ilocano^HL70296
Greek	el^Greek^HL70296	Chinese, Cantonese	YUH^Chinese, Cantonese^HL70296
Hindi	hi^Hindi^HL70296	Chinese, Mandarin	Zh^Chinese, Mandarin^HL70296
Hmong	BLU^Hmong^HL70296	Other	OTH^Other^HL70296
Hungarian	hu^Hungarian^HL70296		

PID-16 Marital Status

The supported values for Marital Status include:

This value...	Means this...
A	Separated
D	Divorced
M	Married
S	Single
W	Widowed
O	Other
U	Undetermined (default)

PID-19 SSN Number - Patient

Cloverleaf reformats the social security number to handle differences between LinkLogic and the system receiving the message.

This value in LinkLogic...	Will be sent like this by Cloverleaf...
543-34-5621	543345621

PID-22 Ethnic Group

This field further defines patient ancestry. Suggested values are listed in HL7 User-Defined Table 0189. Field is repeating, so several ethnic groups may be reported for one patient.

The value...	Means this...	And is mapped like this...
H	Hispanic or Latino	2135-2^Hispanic or Latino^HL70189
N	Not Hispanic or Latino	2186-5^not Hispanic or Latino^HL70189
U	Unknown	^Unknown^HL70189

PID-29 Patient Death Date and Time / PID-30 Patient Death Indicator

PID-30, Patient Death Indicator is set to **Y** for deceased patients. PID-29, Patient Death Date and Time, is populated with the patient's date of death.

PID-40 Patient Preferred Contact Method

LinkLogic can import and export a 1-character value for patient preferred contact method in the optional field PID-40 at the end of the PID segment in ADT and BAR messages.

To send or receive patient contact method using this field you must associate the optional Add-On IXP file **pid40contactby.ixp** with the LinkLogic interface. A This IXP file maps the HL7 values to EMR values to store to or export from the database in the PERSON.CONTACTBY field.

On import...

LinkLogic interprets a blank value as if no value were specified. To remove an existing value, enclose the contact method value in double quotes in the import message.

The following supported values for patient preferred contact method are based on HL7 table 0185. Note that starred items are not in Table 0185 but were created for this implementation

.PV1 – Patient Visit

HL7 value...	Means this...	Mapped EMR value
B	Pager	P
C	Cell Phone	C
D	Durable Power of Attorney*	D
E	Email	E
F	Fax	F
H	Home Phone	H
L	Letter*	L
N	Nursing Home*	N
O	Work phone	W
P	Paper*	A
T	Other*	O

The Patient Visit segment (PV1) is used by Registration and ADT (Admission, Discharge, and Transfer) applications to communicate information about a specific visit.

Legend

ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric	DT	Date
JCC	Job Code / Class	XON	Extended composite name and ID number for organizations

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PV1-1	4	SI		Set ID - PV1	Used	
PV1-2	1	IS	0004	Patient Class	Optional	199
PV1-3	80	PL		Assigned Patient Location	Conditional	199
PV1-4	2	IS	0007	Admission Type	Not used	
PV1-5	20	CX		Pre-admit Number	Not used	
PV1-6	80	PL		Prior Patient Location	Not used	
PV1-7	60	XCN	0010	Attending Doctor	Optional	199
PV1-8	60255	XCN	0010	Referring Doctor	Optional	199
PV1-9	60	XCN	0010	Consulting Doctor	Not used	
PV1-10	3	IS	0069	Hospital Service	Not used	
PV1-11	80	PL		Temporary Location	Not used	
PV1-12	2	IS	0087	Pre-admit Test Indicator	Not used	
PV1-13	2	IS	0092	Readmission Indicator	Not used	
PV1-14	3	IS	0023	Admit Source	Not used	
PV1-15	2	IS	0009	Ambulatory Status	Not used	
PV1-16	2	IS	0099	VIP Indicator	Not used	
PV1-17	60	XCN	0010	Admitting Doctor	Not used	
PV1-18	2	IS	0018	Patient Type	Not used	
PV1-19	20	CX		Visit Number	Optional	
PV1-20	50	FC	0064	Financial Class	Used	199
PV1-21	2	IS	0032	Charge Price Indicator	Not used	
PV1-22	2	IS	0045	Courtesy Code	Not used	
PV1-23	2	IS	0046	Credit Rating	Not used	
PV1-24	2	IS	0044	Contract Code	Not used	
PV1-25	8	DT		Contract Effective Date	Not used	
PV1-26	12	NM		Contract Amount	Not used	
PV1-27	3	NM		Contract Period	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PV1-28	2	IS	0073	Interest Code	Not used	
PV1-29	1	IS	0110	Transfer to Bad Dept Code	Not used	
PV1-30	8	DT		Transfer to Bad Dept Date	Not used	
PV1-31	10	IS	0021	Bad Debt Agency Code	Not used	
PV1-32	12	NM		Bad Debt Transfer Amount	Not used	
PV1-33	12	NM		Bad Debt Recovery Amount	Not used	
PV1-34	1	IS	0111	Delete Account Indicator	Not used	
PV1-35	8	DT		Delete Account Date	Not used	
PV1-36	3	IS	0112	Discharge Disposition	Not used	
PV1-37	25	CM	0113	Discharged to Location	Not used	
PV1-38	2	IS	0114	Diet Type	Not used	
PV1-39	2	IS	0115	Servicing Facility	Not used	
PV1-40	1	IS	0116	Bed Status	Not used	
PV1-41	2	IS	0117	Account Status	Not used	
PV1-42	80	P L		Pending Location	Not used	
PV1-43	80	P L		Prior Temporary Location	Not used	
PV1-44	26	TS		Admit Date/Time	Not used	
PV1-45	26	TS		Discharge Date/Time	Not used	
PV1-46	12	NM		Current Patient Balance	Not used	
PV1-47	12	NM		Total Charges	Not used	
PV1-48	12	NM		Total Adjustments	Not used	
PV1-49	12	NM		Total Payments	Not used	
PV1-50	20	CX	0192	Alternate Visit ID	Not used	
PV1-51	1	IS	0326	Visit Indicator	Not used	
PV1-52	60	XCN	0010	Other Healthcare Provider	Not used	

PV1-2 Patient Class

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats this field as optional and sends the value **O** for Outpatient by default. Cloverleaf sends the value sent by LinkLogic.

PV1-3 Assigned Patient Location

The fourth component of PV1-3 is populated with the eight-character abbreviation for the patient's home location of care.

PV1-7 Attending Doctor, PV1-8 Referring Doctor

PV1-7 is populated with the patient's responsible provider, if one has been specified. PV1-8 Referring Doctor is populated with the patient's referring physician if one has been specified.

PV1-20 Financial Class

This field contains the financial class assigned to the patient on the day of the immunization for the purpose of identifying sources of reimbursement. PV1-20 Financial Class is set to the patient's VFC eligibility code and the date assigned. The *Immunization Management GE* form provides an option to the user to select a VFC code.

Immunization registries may use this field to indicate several items:

- Eligibility for the Vaccines For Children (VFC) program
- Eligibility for state or local reimbursement programs
- Type of insurance plan (e.g., Medicaid, HMO, self pay, etc.).

Refer to HL7 User-defined Table 0064 - Financial class for a complete list of suggested values. The following table lists frequently-used VFC eligibility codes. Your implementation might require a state-specific code.

This code...	Means this...
V00	VFC eligibility not determined/unknown
V01	Not VFC eligible
V02	VFC eligible - Medicaid/Medicaid Managed Care
V03	VFC eligible - Uninsured
V04	VFC eligible - American Indian/Alaskan Native
V05	VFC eligible - Federally Qualified Health Center Patient (under-insured)
V06	VFC eligible - State-specific eligibility (e.g., S-CHIP plan)
V07	VFC eligible - Local-specific eligibility

VFC: Vaccine For Children is based on the patient financial condition for the day. The immunization encounter form provides an option to the user to select and VFC code. PV1-20 mapped to the VFC code and the date

IN1 – Insurance

The Insurance message segment (IN1) contains information about a patient’s insurance policy coverage required for generating correct patient and insurance bills.

In Centricity Practice Solution, a patient can have only one primary and secondary insurance company. Cloverleaf copies both segments directly to the VXU message.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver’s license number
NM	Numeric	DT	Date
JCC	Job Code / Class	XON	Extended composite name and identification number for organizations

SEQ	Lnth	Data Type	HL7 Type	Element name	Export	See page
IN1-1	4	SI		Set ID - IN1	Optional	
IN1-2	12	CE	0072	Insurance Plan ID	Used	
IN1-3	59	CX		Insurance Company ID	Not used	202
IN1-4	130	XON		Insurance Company Name	Used	
IN1-5	1062 55	XAD		Insurance Company Address	Optional	
IN1-6	4825 0	XPN		Insurance Plan Contact Person	Optional	202
IN1-7	250	XTN		Insurance Co. Phone #	Optional	202
IN1-8	25	ST		Group #	Optional	202
IN1-9	130	XON		Group Name	Not used	
IN1-10	20	CX		Insured’s Group Emp ID	Not used	

SEQ	Lnth	Data Type	HL7 Type	Element name	Export	See page
IN1-11	130	XON		Insured's Group Emp Name	Not used	
IN1-12	8	DT		Plan Effective Date	Optional	
IN1-13	8	DT		Plan Expiration Date	Optional	
IN1-14	55	CM		Authorization Information	Not used	
IN1-15	3	IS	0086	Plan Type	Optional	
IN1-16	4825 0	XPN		Name of Insured	Not used	
IN1-17	2	IS	0063	Insured Relationship to Patient	Optional	
IN1-18	26	TS		Insured Date of Birth	Not used	
IN1-19	1062 55	XAD		Insured Address	Not used	
IN1-20	2	IS	0135	Assignment of Benefits	Not used	
IN1-21	2	IS	0173	Coordination of Benefits	Not used	
IN1-22	2	ST		Coordination of Benefits Priority	Not used	
IN1-23	2	ID	0136	Notice of Admission Flag	Not used	
IN1-24	8	DT		Notice of Admission Date	Not used	
IN1-25	2	ID	0136	Report of Eligibility Flag	Not used	
IN1-26	8	DT		Report of Eligibility Date	Not used	
IN1-27	2	IS	0093	Release Information Code	Not used	
IN1-28	15	ST		Pre-Admit Cert (PAC)	Not used	
IN1-29	26	TS		Verification Date/Time	Not used	
IN1-30	60	XCN		Verification By	Not used	
IN1-31	2	IS	0098	Type of Agreement Code	Not used	
IN1-32	2	IS	0022	Billing Status	Not used	
IN1-33	4	NM		Lifetime Reserve Days	Not used	
IN1-34	4	NM		Delay Before L.R. Day	Not used	
IN1-35	12	IS	0042	Company Plan Code	Conditional	
IN1-36	2050	ST		Policy Number	Optional	

SEQ	Lnth	Data Type	HL7 Type	Element name	Export	See page
IN1-37	12	CP		Policy Deductible	Not used	
IN1-38	12	CP		Policy Limit - Amount	Not used	
IN1-39	4	NM		Policy Limit - Days	Not used	
IN1-40	12	CP		Room Rate - Semi-Private	Not used	
IN1-41	12	CP		Room Rate - Private	Not used	
IN1-42	60	CE	0066	Insured's Employment Status	Optional	
IN1-43	1	IS	0001	Insured's Sex	Not used	
IN1-44	1062 55	XAD		Insured's Employer Address	Not used	
IN1-45	2	ST		Verification Status	Not used	
IN1-46	8	IS	0072	Prior Insurance Plan ID	Not used	
IN1-47	3	IS	0309	Coverage Type	Optional	
IN1-48	2	IS	0310	Handicap	Optional	
IN1-49	12	CX		Insured's ID Number	Optional	

IN1-3 Insurance Company ID

Although this field is required in the HL7 specification, LinkLogic treats it as optional.

IN1-6 Insurance Plan Contact Person

LinkLogic exports the name of the contact person for the insurance plan in IN1-6, Insurance Plan Contact Person. Since Centricity Practice Solution stores only a single string for the plan contact, IN1-6 will contain a single string in the first component whenever a contact person is identified for an insurance plan in the application.

IN1-7 Insurance Co. Phone Number

The first component of IN1-7, Insurance Co. Phone Number, is populated with the insurance company contact's home phone number. The fourth component is populated with the insurance company contact's email address.

IN1-8 Group Number

Although the HL7 specification limits IN1-8 to a maximum length of 12 characters, LinkLogic allows 25.

NK1 – Next of kin / associated parties

The Next of Kin / associated parties segment (NK1) contains contact information about patient family members and other business contacts, such as an employer or a pharmacy. Updates to an existing contact will not occur if the contact is a patient in Centricity Practice Solution.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric	DT	Date
JCC	Job Code / Class	XON	Extended composite name and ID for organizations

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
NK1-1	4	SI		Set ID - NK1	Used	
NK1-2	48	XPN		Name	Used	205
NK1-3	60	CE	0063	Relationship	Used	205
NK1-4	104	XAD		Address	Optional	
NK1-5	250	XTN		Home Phone Number	Optional	206
NK1-6	250	XTN		Business Phone Number	Optional	
NK1-7	60	CE	0131	Contact Role	Not used	
NK1-8	8	DT		Start Date	Not used	
NK1-9	8	DT		End Date	Not used	
NK1-10	60	ST		Next of Kin / Associated Parties Job Title	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
NK1-11	20	JCC		Next of Kin / Associated Parties Job Code / Class	Not used	
NK1-12	20	CX		Next of Kin / Associated Parties Employee Number	Not used	
NK1-13	45	XON		Organization Name	Optional	
NK1-14	2	IS	0002	Marital Status	Optional	
NK1-15	1	IS	0001	Sex	Optional	
NK1-16	26	TS		Date/Time of Birth	Not used	
NK1-17	2	IS	0223	Living Dependency	Optional	
NK1-18	2	IS	0009	Ambulatory Status	Optional	
NK1-19	4	IS	0171	Citizenship	Optional	
NK1-20	60	CE	0296	Primary Language	Optional	
NK1-21	2	IS	0220	Living Arrangement	Optional	
NK1-22	1	CE	0215	Publicity Indicator	Optional	
NK1-23	1	ID	0136	Protection Indicator	Optional	
NK1-24	2	IS	0231	Student Indicator	Optional	
NK1-25	3	IS	0006	Religion	Optional	
NK1-26	48	XPN		Mother's Maiden Name	Optional	
NK1-27	80	CE	0212	Nationality	Optional	
NK1-28	3	IS	0189	Ethnic Group	Optional	
NK1-29	80	CE	0222	Contact Reason	Optional	
NK1-30	48	XPN		Contact Person's Name	Optional	
NK1-31	40	XTN		Contact Person's Phone Number	Optional	
NK1-32	106	XAD		Contact Person's Address	Optional	
NK1-33	32	CX		Next of Kin / Associated Party's Identifiers	Optional	
NK1-34	2	IS	0311	Job Status	Optional	

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
NK1-35	1	IS	0005	Race		Optional
NK1-36	2	IS	0295	Handicap		Optional
NK1-37	16	ST		Contact Person Social Security Number		Optional

NK1-2 Name

For personal contacts, NK1-2, Name, is populated with the patient's name information according to the HL7 XPN format:

last name^first name^middle name^suffix^title

For business contacts with the value E (Employer) or P (Pharmacy) for NK1-3, Relationship), LinkLogic exports the name of the contact person for the business in NK1-2, Name. Since Centricity Practice Solution stores only a single string for the business contact person and does not store structured data for that person's prefix or suffix, NK1-2 will contain a single string in the first component whenever a contact person is identified for a business contact in the application.

NK1-3 Relationship

LinkLogic exports a single-character code for Relationship in the NK1-3 field. The supported values for Relationship include:

This value...	Means this...
A	Acquaintance
B	Brother
C	Primary Care Provider (PCP)
D	Daughter
E	Employer
F	Father
G	Guarantor
H	Husband
M	Mother
O	Other (default)
P	Pharmacy
R	Referring Physician
S	Son
T	Emergency Contact

This value...	Means this...
U	Unknown/Undisclosed
W	Wife
X	Sister

Unknown/Undisclosed is used when patient identification information is marked as restricted.

Cloverleaf maps the single character code to corresponding matching codes defined in the HL7 table 0063. Cloverleaf maps the relationships as follows:

This relationship...	Is mapped as...
Husband	H SPO^Spouse^HL70063
Wife	W SPO^Spouse^HL70063
Son	S CHD^Child^HL70063
Daughter	D CHD^Child^HL7006
Father	F FTH^Father^HL70063
Mother	M MTH^Mother^HL7006
Brother	B BRO^Brother^HL70063
Caregiver	C CGV^Care Giver^HL70063
Self	SEL SEL^SELF^HL70063
Sister	X SIS^Sister^HL70063
Other (default)	O OTH^Other^HL70063
Employer	E EMR^Employer^HL70063
Unknown/Undisclosed	U UNK^Unknown^HL70063

NK1-5 Home Phone Number

The first component of NK1-5, Home Phone Number, is populated with the contact's home phone number. The fourth component is populated with the contact's email address.

OBR – Observation Request

In reporting clinical data, the OBR generally serves as the report header. It identifies the observation set represented by the following observations. It includes the relevant ordering information when that applies. It contains attributes that usually apply to all of the included observations.

For immunizations, the OBR segment is sent by LinkLogic, but only OBR-7 Observation Date/Time is used by Cloverleaf in the VXU message sent to the registry.

OBR-7 Observation Date/Time contains the clinically relevant date associated with the Centricity Practice Solution order represented by this OBR message segment.

OBX - Observation/Result

The OBX segment is used to transmit a single observation or observation fragment. It represents the smallest indivisible unit of a report.

An OBX segment contains information about observations in report messages. But the OBX can also be part of an observation order, carrying clinical information needed by the filler to interpret the observation the filler makes.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
ST	String data	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	CE	Coded element
TS	Time stamp	NM	Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
OBX-1	10	SI		Set ID - Observation Simple	Not used	
OBX-2	2	ID	0125	Value Type	Used	
OBX-3	590	CE		Observation Identifier	Used	208
OBX-4	20	ST		Observation Sub-ID	Optional	
OBX-5	2000	ST		Observation Value	Used	208
OBX-6	60	CE		Units	Conditional	
OBX-7	60	ST		Reference Range	Not used	
OBX-8	10	ID	0078	Abnormal Flags	Optional	
OBX-9	5	NM		Probability	Not used	
OBX-10	5	ID	0080	Nature of Abnormal Test	Not used	
OBX-11	2	ID	0085	Observation Result Status	Used	
OBX-12	26	TS		Date Last Obs Normal Values	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
OBX-13	20	ST		User Defined Access Checks	Not used	
OBX-14	26	TS		Date/Time of Observation	Optional	208
OBX-15	200	CE		Producer's ID	Not used	
OBX-16	80	XCN		Responsible Observer	Not used	
OBX-17	60	CE		Observation Method	Not used	

OBX-3 Observation Identifier

OBX-3.1, *Identifier*, contains the unique Centricity Practice Solution Observation Identifier for the observation represented by this OBX message segment.

OBX-3.2, *Text*, contains the short Centricity Practice Solution description for the observation represented by this OBX message segment.

OBX-3, Observation Identifier, may be cross-referenced on export to accommodate identification spaces used by external information systems. For more information, see ["Cross-referencing field values" on page 461](#).

Cloverleaf maps the observation term in OBX-3 to a CVX code value and exports it to a registry in RXA-5. For details, see ["RXA-5 Administered Code" on page 210](#).

OBX-5 Observation Value

Cloverleaf exports a value found in OBX-5 for DOSE if specified and exports it to a registry in RXA-6. See ["RXA-6 Administered Amount" on page 211](#).

OBX-14 Date/Time of the Observation

OBX-14 is populated with the clinical date/time associated with the observation. Cloverleaf exports this value in RXA-3. See ["RXA-3 Date/Time Start of Administration" on page 210](#).

RXA – Pharmacy/Treatment Administration

The RXA segment carries pharmacy administration data. It is a repeating segment in the VXU message and can record an unlimited number of immunization observations.

Legend			
XCN	Extended composite ID number and name	CE	Coded element
TS	Time stamp	ST	String data
NM	Numeric	ID	Coded value for HL7-defined tables

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
RXA-1	4	NM		Give sub-ID Counter	Required	210
RXA-2	4	NM		Administration sub-ID Counter	Required	210
RXA-3	26	TS		Date/Time Start of Administration	Required	210
RXA-4	26	TS		Date/Time End of Administration	Optional	
RXA-5	100	CE	0292	Administered Code	Required	210
RXA-6	20	NM		Administered Amount	Required	211
RXA-7	60	CE		Administered Units	Not used	
RXA-8	60	CE		Administered Dosage Form	Not used	
RXA-9	200	CE		Administration Notes	Conditional	211
RXA-10	200	XCN		Administering Provider	Optional	211
RXA-11	200	CM		Administered-at Location	Optional	211
RXA-12	20	ST		Administered Per (time unit)	Not used	
RXA-13	20	NM		Administered Strength	Not used	
RXA-14	60	CE		Administered Strength Units	Not used	
RXA-15	20	ST		Substance Lot Number	Optional	212
RXA-16	26	TS		Substance Expiration Date	Optional	212

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
RXA-17	60	CE	0227	Substance Manufacturer Name	Optional	212
RXA-18	200	CE		Substance Refusal Reason	Optional	212
RXA-19	200	CE		Indication	Optional	
RXA-20	2	ID	0322	Completion Status	Optional	212
RXA-21	2	ID	0323	Action Code - RXA	Optional	
RXA-22	26	TS		System Entry Date/Time	Optional	

RXA-1 Give sub-ID Counter

Cloverleaf exports the value **0**.

RXA-2 Administration sub-ID Counter

Cloverleaf exports the value **999**.

RXA-3 Date/Time Start of Administration

If the ORU message includes date and time of administration data then Cloverleaf uses that data and RXA-3 is mapped to YYYYMMDDHHMMSS format. Otherwise it uses the value from OBX-14 - Date/Time of the Observation.

RXA-5 Administered Code

Administered Code identifies the medical substance administered. In this field Cloverleaf exports the CVX code value mapped to the vaccine observation term found in OBX-3.1.



The most up-to-date version of the CVX code set and a mapping between the CVX and CPT codes are available on the CDC - NIP (National Immunization Program) Web site at <http://www.cdc.gov/nip/registry/cpt.htm>. This mapping forms the basis of the translation text file associated with Cloverleaf: **cpt_to_cvx.tbl**.

If the substance administered is a vaccine, CVX codes are used in the first triplet to code this field:

identifier^text^name of coding system.

See HL7 Table 0292 - Codes for vaccines administered.

The second set of three components could be used to represent the same vaccine using a different coding system, such as Current Procedural Terminology (CPT):

alternate identifier^alternate text^alternate name of coding system

RXA-6 Administered Amount

Cloverleaf exports the value found in OBX-5 for *Dose* if specified. Cloverleaf looks for an OBX-5 with a Centricity Practice Solution code for Immunization Dose. If found, Cloverleaf copies the value to RXA-6. Otherwise, Cloverleaf sends the following default values:

STC registry: Cloverleaf sets to **999**

WIR registry: Cloverleaf sets to **1**

For an example of this translation see [“Sample ORU to VXU messages” on page 214.](#)

RXA-9 Administration Notes

Cloverleaf leaves this field blank if any OBX segments in the ORU message from Centricity Practice Solution contain information about an administered immunization. However, if no data is sent related to *Dose, Given By, Lot Number, Manufacturer, Route, Site*, and so on, this is interpreted as historical information. In this field, Cloverleaf exports one of the following

01^Historical information - source unspecified^NIP0001.

RXA-9 will include one of the following values depending on the user selection on the immunization form for historical vaccination indicator, or the presence of data for dose, lot number and so on.

- 00^New immunization record^NIP0001
- 01^Historical information - source unspecified^NIP0001
- 02^Historical information - from other provider^ NIP0001
- 03^Historical information - from parent's written record^NIP0001
- 04^Historical information - from parent's recall^ NIP0001
- 05^Historical information - source unspecified^NIP0001
- 06^Historical information - from birth certificate^ NIP0001
- 07^Historical information - from school record^ NIP0001
- 08^Historical information - from public agency^NIP0001

RXA-10 Administering Provider

Cloverleaf exports the name and provider ID of the person physically administering the vaccination. Cloverleaf looks for an OBX segment where OBX-5 contains the Centricity Practice Solution code for Immunization Provider Name and, if found, copies the value in the OBX-5 field for that segment to RXA-10.

RXA-11 Administered-At Location

STC registry: Cloverleaf substitutes the Facility ID provided by your state registry.

RXA-15 Substance Lot Number

Cloverleaf exports the lot number of the medical substance administered. Cloverleaf looks for an OBX segment where OBX-3 contains the Centricity Practice Solution code for Immunization Lot Number and if found, copies the value in the OBX-5 field for that segment to RXA-15.

RXA-16 Substance Expiration Date

Cloverleaf exports the expiration date of the medical substance administered. Cloverleaf looks for an OBX segment where OBX-3 contains the Centricity Practice Solution code for Immunization Expiration Date. If found, Cloverleaf formats the date as *yyyymmdd* and copies the value in the OBX-5 field for that segment to RXA-16.

RXA-17 Substance Manufacturer Name

Cloverleaf looks for an OBX segment where OBX-5 contains the Centricity Practice Solution code for Immunization Manufacturer Name. If found, Cloverleaf copies the value to RXA-17. See HL7 table 0227.

Example: Abbot is mapped to AB^Abbott^MVX.

RXA-18 Substance Refusal Reason, RXA-20 Completion Status

Providers can document and send immunizations that are not given to the patient to state registries. The vaccine refusal code is set to RXA-18 and the code RE is set to the RXA-20 field. No data is reported for RXA-9, RXA-10 and RXA-11 fields. Cloverleaf maps RXA-18 field to 01^PARENTAL REFUSAL^NIP0002.

RXR – Pharmacy/Treatment Route

This segment is only present if the immunization observation message has route and/or site fields.

Legend	
XCN	Extended composite ID number and name
TS	Time stamp
NM	Numeric
CE	Coded element
ST	String data
ID	Coded value for HL7-defined tables

SEQ	Lnth	Data Type	HL7 Type	Element name	Export	See page
RXR-1	60	CE	0162	Route	Optional	213
RXR-2	60	CE	0163	Site	Optional	213
RXR-3	60	CE	0164	Administration Device	Not used	
RXR-4	60	CE	0165	Administration Method	Not used	
RXR-5	60	CE		Routing Instruction	Not used	

RXR-1 Route

This field contains the manner of administration, such as intramuscular or oral. See HL7 Table 0162 for valid values. Cloverleaf looks for an OBX segment where OBX-5 contains the Centricity Practice Solution code for Immunization Route and, if found, copies the value to RXR-1.

Example: Route code *im* is mapped as *IM^Intramuscular^HL70162*.

RXR-2 Site

This field contains the site where the immunization was administered, such as left arm or right leg. See HL7 Table 0163 for valid values. Cloverleaf looks for an OBX segment where OBX-5 contains the Centricity Practice Solution code for Immunization Site, and, if found, copies the value to RXR-2.

Example: If the vaccine is given to the right arm, the mapping value is *RA^Right Arm^HL70163*.

Sample ORU to VXU messages

Sample ORU message exported by LinkLogic

```
MSH|^~\&|LinkLogic-TEST|TEST000^SOUTH|EssexArchives|SOUTH|20081106140024||ORU^R01|1541599224256110|P|2.3|||NE|NE
PID|1||70-TEST001||Murthy^Sachin^S||20040802|M||U|6860 N Dallas Pkwy^Plano^TX^75093^usa||9728018080|English|U
PV1|1|O|^SOUTH|||hwinston
OBR|1||3^DTAP-IPV||20081106134540|||hwinston||ZZ
OBX|1|ST|MLI-172627^DTAPIPV1|DTap - IPV|||R||20081106134540
OBX|2|ST|MLI-177407^DTAPIPV1BY|Harry S. Winston
MD|||R||20081106134540
OBX|3|ST|MLI-177403^DTAPIPV1DSE||0.5 ml|||R||20081106134540
OBX|4|ST|MLI-172630^DTAPIPV1EXP||11/13/2009|||R||20081106134540
OBX|5|ST|MLI-172632^DTAPIPV1LOT||L100|||R||20081106134540
OBX|6|ST|MLI-172631^DTAPIPV1MFR||Aventis Pasteur|||R||20081106134540
OBX|7|ST|MLI-172628^DTAPIPV1RTE||IM|||R||20081106134540
OBX|8|ST|MLI-172629^DTAPIPV1SITE||left deltoid|||R||20081106134540
OBX|9|ST|MLI-177405^DTAPIPV1VIS||given November 6, 2008.|||R||20081106134540
```

ORU message translated to VXU by Cloverleaf

```
MSH|^~\&|LinkLogic-TEST|SIISCLIENT521|EssexArchives|SOUTH|20081106140024||VXU^V04|1541599224256110|P|2.3.1|||NE|AL
PID|1|70-TEST001^MR|70-TEST001^^^MR||Murthy^Sachin^S||20040802|M|^Unknown^HL70005|6860 N Dallas Pkwy^Plano^TX^75093^usa||9728018080|en^English^HL70296|U|||Unknown^HL70189
PV1|1|O|^SOUTH|||hwinston
RXA|0|999|20081106134540||130^DTaP-IPV (Kinrix)^CVX|0.5|||00^new immunization record^NIP0001|Harry S. Winston
MD|SOUTH|||L100|20091113|PMC^Aventis Pasteur^MVX
RXR|IM^Intramuscular^HL70162|LD^Left Deltoid^HL70163
```

ADT to VXU messages

When a new patient is registered in Centricity Practice Solution, an HL7 ADT^A04 message is exported from LinkLogic (Demographics Export). Cloverleaf translates the message to an HL7 VXU^V04 message with no RXA segment and sends it to the registry.

WIR registries do not accept an ADT message (unsolicited demographic update) for a new patient unless at least ONE immunization already exists for that patient in the WIR registry. When a VXU^V04 (Unsolicited Vaccination Record Update) message type is sent with no RXA segment, if the patient exists in WIR, the demographic update will occur. However, if the patient is new to WIR the message is not accepted. When you send a subsequent VXU message for the patient with immunization information, the WIR registry adds the patient.

Legend

[...]	Optional
{...}	Repeating
{{...}}	Optional and repeating

Segment name	LinkLogic exports ADT...	Trigger A04	Cloverleaf exports VXU...	Trigger V04
Message Header	MSH	Required	MSH	Required
Event Type	EVN	Required	{	
Patient ID	PID	Required	PID	Required
Patient, Add'l	[PD1] {	Optional	[PD1]	Optional
Next of Kin	{{NK1}}	Optional	{{NK1}} [	Optional
Patient Visit	PV1	Optional	PV1	Optional
Patient Visit, Add'l	[PV2]]	Optional	[PV2]]	Optional
Disability	{{DB1}}	Not used	[[
Observation Result/Insurance	{{OBX}}	Not used	IN1	Optional
Allergy /Insurance, Add'l	{{AL1}}	Not used	[IN2]	Optional
Diagnosis/Insurance, Cert.	[DG1]	Not used	[IN3]	Not used
Diagnosis Related Group/	[DRG]	Not used]]	
Procedures	PR1	Not used	{	
Role/Common Order	{{ROL}}	Not used	[ORC]	Not used
Guarantor/Pharm Treatment Administration	GT1 [	Optional	RXA	Not used

Segment name	LinkLogic exports ADT...	Trigger A04	Cloverleaf exports VXU...	Trigger V04
Insurance/Pharm Treatment Route	{IN1	Optional	[RXR]	Not used
Insurance, Add'l	[IN2]	Not used	{[
Insurance, Cert.	[IN3]}]	Not used	OBX	Not used
Accident/Notes - Comments	[ACC]	Not used	[{NTE}]	Not used
UB 82	[UB1]	Not used	}}	
UB 92 Data	[UB2] }	Not used	}	

ADT HL7 message segments

The following message segments and fields are sent by LinkLogic for translation by Cloverleaf to VXU message:

GT1- Guarantor

Cloverleaf does not send any guarantor information included in the ADT message to the immunization registry.

MSH - Message Header

For detailed information about what LinkLogic includes in this segment, see [“MSH – Message Header” on page 187](#).

PID - Patient Visit

For detailed information about what LinkLogic includes in this segment, see [“PID – Patient Identification” on page 189](#).

PD1 - Patient Additional Demographics

Cloverleaf exports the Facility ID provided by an STC registry in PD1-3.7, Patient Primary Facility - Assigning Authority Identifier.

NK1 - Next of Kin

All NK1 segments are copied directly to the VXU message, For detailed information about what LinkLogic includes in this segment, see [“NK1 – Next of kin / associated parties” on page 203](#).

For PV1 - Patient Identification

For detailed information about what LinkLogic includes in this segment, see [“.PV1 – Patient Visit” on page 196](#).

IN1 - Insurance

For detailed information about what LinkLogic includes in this segment, see [“IN1 – Insurance” on page 200](#).

Sample ADT to VXU messages

Sample ADT message exported by LinkLogic

```

MSH|^~\&|LinkLogic-TEST|TEST000^SOUTH|STC-IWEB|SOUTH|200804240246
17||ADT^A04|1524624378356140|P|2.3|||NE|NE
EVN|A04|20080424024617
PID|1||715|MR-587-576|Peterson^Benjamin^S.||19040313|M||O|8775 SW
Commercial^^Tigard^IL^60223^USA|||English|U||_EXPORTPATACCOUNT_|
106-58-7576
NK1|1|Peterson^Joshua|F|8775 SW
Commercial^^Tigard^OR^97223^USA|5034996762|5037776565
NK1|1|""|P|737 SW
185th^^Aloha^OR^97007^USA|5036425647|||||||24-Hour Pharmacy
PV1|1|O|^^^SOUTH|||hwinston
GT1|1||Benson^Robert||4590 Winston
Blvd^^Carrollton^TX^75006|9726358913||19631114000000|M|P||379-00-
1472
IN1|1||Consolidated Health Care|Consolidated Health Care|1239 NW
Brocke Ave.^Ste 390^Portland^OR^23498|| (503)
234-9506|CHC8322|||20040313||P|O|||||||||||||||106-58-7576

```

Sample VXU message sent by Cloverleaf

```

MSH|^~\&|LinkLogic-TEST|SIISCLIENT521|STC-IWEB|SOUTH|20080424024
617.0000-0500||VXU^V04|1524624378356140|P|2.4|||NE|AL
PID|1||715^^^MR~106587576^^^SS|MR-587-576|Peterson^Benjamin^S.
||19040313|M||2028-9^Asian^HL70005|8775 SW
Commercial^^Tigard^IL^60223^USA|||en^English^HL70296|U||_EXPORT
PATACCOUNT_|106587576
PD1|||^^^SIISCLIENT521
NK1|1|Peterson^Joshua|F|8775 SW
Commercial^^Tigard^OR^97223^USA|5034996762|5037776565
NK1|1|""|P|737 SW
185th^^Aloha^OR^97007^USA|5036425647|||||||24-Hour Pharmacy
PV1|1|O|^^^SOUTH|||hwinston

```

VXU to MDM messages

VXU (Unsolicited Vaccination Update Import to MDM (Medical Document Management) message.

State registries send VXU messages to Cloverleaf for reciprocal updates for the Centricity Practice Solution clinic. Cloverleaf translates the VXU message to an MDM^T02 (Medical Document Management) message; LinkLogic imports the message to the patient chart. LinkLogic supports the trigger event T02 – Original Document Notification and Content.

Legend	
[...]	Optional
{...}	Repeating
[[...]]	Optional and repeating

Segment name	VXU message from registry...		MDM message from Cloverleaf	Trigger T02	See page...
Message Header	MSH {	Required	MSH {	Required	218
Patient ID	PID	Required	EVN	Required	220
Patient, Add'l, Patient ID	[PD1]	Optional	PID	Required	219
Next of Kin	[[NK1]]	Optional	[[NK1]]	Not used	
Patient Visit	PV1	Optional	PV1	Optional	219
Transcription Doc Header	[		TXA	Optional	
	{		{		
Pharm Treatment Admin	RXA	Required	OBX	Required	
Pharm Treatment Route	[RXR]	Optional	}		
Observation/Result	[[OBX]] }] }	Optional	}		

The following message segment fields are set by Cloverleaf in the MDM message imported by LinkLogic:

MSH - Message Header

For detailed information about this segment, see [“MSH – Message Header” on page 187](#).

MSH-3 Sending Application

Cloverleaf sets this value to the LinkLogic relationship name i.e. **STC-IWEB** or **WIR**.

MSH-9 Message Type

Cloverleaf sets this value to **MDM^T02**.

MSH-12 Version ID

Cloverleaf sets this value to **2.3** for both STC and WIR sites.

PID - Patient Identification

For detailed information about this segment, see [“PID – Patient Identification” on page 189](#).

PID-5 Patient Name

The message is rejected or suppressed if patient last name is null.

PID-10 Race

Cloverleaf maps race fields to Centricity Practice Solution codes following HL7 table 0005:

Mapped value...	Description	HL7 code
B	Black	2054-5
F	Filipino	2076-8
N	Native American	1002-5
M	Multiracial	2131-1
O	Oriental/Asian	2028-9
W	White	2106-3
T	Other	2186-5

The application exports the ANSI value for the race code as specified in the Administration > Registration module.

PV1- Patient Visit

For detailed information about this segment, see [“.PV1 – Patient Visit” on page 196](#).

PV1-7 Attending Doctor

PV1-7 is populated with the patient's responsible provider, if one has been specified. This field determines the provider for the imported document.

EVN – Event Type

The Event Type segment (EVN) defines the trigger event for the message, such as patient discharge or an update to the patient chart, and when it occurred.

Legend	
ID	Coded value for HL7-defined tables
IS	Coded value for user-defined tables
XCN	Extended composite ID number and name
TS	Time stamp

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
EVN-1	3	ID	0003	Event Type Code	Required	220
EVN-2	26	TS		Recorded Date/Time	Required	220
EVN-3	26	TS		Date/Time of Planned Event	Not used	
EVN-4	3	IS	0062	Event Reason Code	Not used	
EVN-5	60	XCN	0188	Operator ID	Not used	
EVN-6	26	TS		Event Occurred	Not used	

EVN-1 Event Type Code

Cloverleaf sets this value to **T02** (Original document notification and content).

EVN-2 Recorded Date/Time

Cloverleaf sets this value to the value in MSH-7 Date and Time of the message.

TXA Segment - Transcription Document Header

The TXA segment contains information specific to a transcribed document but does not include the text of the document. The message is created as a result of a document status change. This information is used to update other healthcare systems to identify reports that are available in the transcription system. By maintaining the TXA message information in these systems, the information is available when constructing queries to the transcription system requesting the full document text.

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
TXA-1	4	SI		Set ID - TXA	Required	220
TXA-2	30	IS	0270	Document Type	Required	220
TXA-3	2	ID	0191	Document Content Presentation	Conditional	222
TXA-4	26	TS		Activity Date/Time	Optional	
TXA-5	250	XCN		Primary Activity Provider Code/Name	Conditional	
TXA-6	26	TS		Origination Date/Time	Optional	
TXA-7	26	TS		Transcription Date/Time	Conditional	
TXA-8	26	TS		Edit Date/Time	Optional	
TXA-9	250	XCN		Originator Code/Name	Optional	
TXA-10	250	XCN		Assigned Document Authenticator	Optional	
TXA-11	250	XCN		Transcriptionist Code/Name	Conditional	
TXA-12	30	EI		Unique Document Number	Optional	
TXA-13	30	EI		Parent Document Number	Conditional	
TXA-14	22	EI		Placer Order Number	Optional	
TXA-15	22	EI		Filler Order Number	Optional	
TXA-16	30	ST		Unique Document File Name	Optional	
TXA-17	2	ID	0271	Document Completion Status	Required	222
TXA-18	2	ID	0272	Document Confidentiality Status	Optional	222
TXA-19	2	ID	0273	Document Availability Status	Optional	222
TXA-20	2	ID	0275	Document Storage Status	Optional	

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
TXA-21	30	ST		Document Change Reason	Conditional	
TXA-22	250	PPN		Authentication Person, Time Stamp	Conditional	
TXA-23	250	XCN		Distributed Copes (Code and Name of Recipients)	Optional	

TXA-1 Set ID - Document

Cloverleaf sets this value to **1**.

TXA-2 Document Type

Cloverleaf sets this value to **ZZ** for Other which maps to the Clinical Lists Update document in Centricity Practice Solution. See also [“TXA-2 Document Type” on page 363](#), for a complete list of HL7 document codes and how they are mapped to Centricity Practice Solution document types.

TXA-3 Document Content Presentation

Cloverleaf sets this value to the default **TX** for machine-readable text document. Supported values for Document Content Presentation include:

This value...	Means this...
TX	Machine readable text document (default)
FT	Formatted text

TXA-17 Document Completion Status

Cloverleaf sets this value to **DO** for Documented.

TXA-18 Document Confidentiality Status

Cloverleaf sets this value to **UC** for Usual Control (not sensitive or confidential). Supported values for Document Confidentiality Status include:

This value...	Means this...
V / VR	Very restricted
R / RE	Restricted
U / UC	Usual Control (not sensitive or confidential)
Important. Use the single-character code. Two-character codes are accepted for backward compatibility only.	

TXA-19 Document Availability Status

Cloverleaf sets this value to **AV** (Available for patient care).

OBX - Observation/Result

For detailed information about this segment, see ["OBX - Observation/Result" on page 207](#).

OBX -2 Value Type

This field is always populated with the value ST (string data).

OBX-5 Observation Value

Cloverleaf sets the following values:

Line 1 - Immunization Report For <Patient Name>

Line 2 - Date(yyyy-mm-dd) Vaccine

Line 3 - Vaccination date in column 1, Vaccine name and its CPT code

Line 4 - Facility name and address (if included in the registry message)

Line 5 - Manufacturer name and/or Lot Number (if included in the registry message)

Line 6 - Administration route and/or Site (if included in the registry message)

Sample VXU message from STC registry translated into MDM message

```

MSH|^~\&|STC-IWeb|||20080324145155.0000-0600||MDM^T02|120639911
5375.10001|P|2.3
EVN|T02|20080324145155
PID|1||35338^^^^SR~~106-58-7576^^^^SS~715^^^^MR|PETERSON^BENJ
AMIN^S^^^^S|20040313165700.0000-0600|M|O|8775 SW
COMMERCIAL^^TIGARD^ILLINOIS^60223^United
States^M||||EN^English^HL70296||||106-58-7576|||||||N
PV1||R
TXA|1|ZZ|TX|20080324145155|||||||DO|UC|AV
OBX|1|ST|||TESTGEHL7CPIR IMMUNIZATION REPORT FOR BENJAMIN
PETERSON
OBX|2|ST|||~Date (yyyy-mm-dd)      VACCINE
OBX|3|ST|||~ -----
OBX|4|ST|||~ 2006-06-19              DTaP (CPT-90700)
OBX|5|ST|||~ 2006-07-17              DTaP (CPT-90700)
OBX|6|ST|||~ 2007-09-20              DTaP (CPT-90700)
OBX|7|ST|||~ FACILITY: FACILITY1
OBX|8|ST|||~ 2007-10-15              MMRV (CPT-90710)

```


CHAPTER 9

LabLink Import ASTM interface specification

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We assume you are familiar with ASTM E1238. This document is intended to be read together with the relevant ASTM specification.

This specification has been updated to be consistent with LinkLogic version 6.0. The information in this document may not apply to older or newer releases.



You can get a copy of the ASTM E1238 specification from the Internet via the ASTM Web page (<http://www.astm.org>), or you can order a copy by writing to: ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

Overview

This ASTM based interface supports the import of observation data. It uses the ASTM E1238-94 standard (Standard Specification for Transferring Clinical Observations Between Independent Computer Systems), version 2 or later.



Only observations with a corresponding observation term in Centricity Practice Solution are displayed in a patient's flowsheet. For a complete list of observation terms, run the Observation Terms report in Chart Reports/Inquiries module.

New observation terms are added frequently. For the latest observation terms, visit the KnowledgeBank at <http://centricitypractice.gehealthcare.com>.

The tables in the following sections identify the ASTM E1238 records and fields supported by LinkLogic. For each record, the table shows those fields that are required for correct interface operation. Field mnemonics conform to the ASTM E1238-94 specification.

ASTM message segments

This section provides detailed specifications for the following ASTM message segments used:

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P - Patient	229
OBR - Observation Order	233
OBX - Result Observation	242
C - Comment	247
L - Message Terminator	247
E - Error Checking	247
A - Addendum	248
Q - Request Results	248
S - Scientific	248

Each message segment table lists the segment elements or fields in sequence order with the following information:

- **Field name**
- **Maximum length** in LinkLogic
- **LinkLogic usage on import** (Required, Not used, and so on)

For definitions of LinkLogic usage terms, see [“How LinkLogic uses message segments” on page 42.](#)



For additional information about message segment fields, click the blue page number links in the following table to jump to notes (when viewing the Adobe PDF version of this guide) or look for notes under the element code and name listed after the table.

H – Message Header

The Message Header (H) should always be in the first segment in each ASTM message. H defines the intent, source, destination, and some specifics of the syntax of a message.

Field	Length	Field Name	Import	See page...
H-1	3	Segment Type ID	Required	227
H-2	5	Delimiter Definition	Required	227
H-3	12	Message Control ID	Not used	228
H-4	12	Security	Not used	228
H-5	40	Sender Name	Required	228
H-6	100	Sender Address	Not used	
H-7	7	Message Type	Not used	
H-8	40	Sender Telephone	Not used	
H-9	40	Sender Characteristics	Not used	
H-10	40	Receiver ID	Not used	
H-11	80	Comment	Not used	
H-12	20	Processing ID	Required	228
H-13	5	Version	Required	228
H-14	26	Date/time Of Message	Required	228

H-1 Segment Type ID

The value for this field is always H.

H-2 Delimiter Definition

Delimiters recommended by the ASTM 1238-94 specification are:

| ^ ~ \ &

H-3 Message control ID / H-4 Security / H-10 Receiver ID

Although these fields are considered conditional in the ASTM specification, they are not used by LinkLogic and Centricity Practice Solution.

H-5 Sender Name

This field contains the sending application name, which must be unique for each data producer.

H-12 Processing ID

This field identifies the use of the data file. Acceptable values include

- Production
- Test
- Debug

H-13 Version

Versions 1, 2, A.1, A.2 are supported.

H-14 Date/time of message

See [“OBX-15 Physiologic Date/Time of Observation” on page 246](#), to understand how this field is used to determine the clinical date for the imported lab results.

P – Patient

Patient (P) segment includes required and optional patient demographic information used to match patient records.

Field	Length	Field Name	Import	See page
P-1	3	Segment Type ID	Required	230
P-2	4	Transmission Sequence Number	Not used	230
P-3	16	Practice Assigned Patient Identifier	Conditional	230
P-4	16	External System Patient Identifier	Conditional	230
P-5	16	Alternative Patient Identifier	Conditional	230
P-6	48	Patient Name	Optional	
P-7	24	Mother's Maiden Name	Not used	231
P-8	26	Birth Date/time	Optional	231
P-9	1	Sex	Optional	
P-10	40	Patient Race	Optional	
P-11	200	Patient Street Address	Optional	
P-12		Not Used	Not used	
P-13	60	Patient Phone	Optional	
P-14	60	Attending Physician	Optional	231
P-15	60	Special Field 1	Not used	
P-16	60	Special Field 2	Not used	
P-17	10	Patient Height	Not used	
P-18	10	Patient Weight	Not used	
P-19	200	Suspected Diagnosis	Not used	
P-20	200	Patient's Medications	Not used	
P-21	200	Patient's Diet	Not used	
P-22	60	Practice Field 1	Not used	
P-23	60	Practice Field 2	Not used	
P-24	53	Admission Date/time Or Discharge Date/time	Not used	

Field	Length	Field Name	Import	See page
P-25	2	Admission Status	Not used	
P-26	25	Location	Optional	232
P-27	100	Diagnostic Classification	Not used	
P-28	30	Patient Religion	Not used	
P-29	2	Marital Status	Optional	232
P-30	20	Isolation Status	Not used	
P-31	20	Language	Not used	
P-32	20	Confidentiality Status	Not used	
P-33	26	Date/time Registered	Not used	
P-34	26	Death Date/time	Not used	

P-1 Segment ID

The value for this field is always P.

P-2 Transmission Sequence Number

Although this field is considered conditional in the ASTM specification, LinkLogic treats this field as optional.

P-3 Practice Assigned Patient Identifier / P-4 External System Patient Identifier

P-3, Practice Assigned Patient Identifier contains the patient identifier used to match the import data with a patient. To configure this logic, use the **Match Options** window in LinkLogic setup (Administration) and select P-3 to match on the practice-assigned identifier or P-4 to match on the external system patient identifier.

In **Administration > System**, go to **LinkLogic > Task Options**, select the task and relationship and click **Patient Matching**.

P-5 Alternative Patient Identifier

By default, P-5 is ignored. You can use the **Match Options** window to configure LinkLogic to interpret the alternate patient identifier as the patient's Social Security number and use it for patient matching.

In **Administration > System**, go to **LinkLogic > Task Options**, select the task and relationship and click **Patient Matching**.

P-6 Patient Name

This field is used for patient matching. Separate components using the component delimiter specified in the header record H-2 (for example, Smith^Josephine^C). See "[H-2 Delimiter Definition](#)" on page 227.

P-7 Mother's Maiden Name

Although this field is considered conditional in the ASTM specification, LinkLogic treats this field as optional.

P-8 Birth Date/time

This field is used for patient matching.

Format: YYYYMMDD[HHMM(SS)]

Although the hours, minutes and seconds are optional in a birth date/time field, they cannot be substituted with zeros.

P-9 Sex

This field is used for patient matching. Acceptable values are Male, Female, and Undetermined.

P-14 Attending Physician

See ["OBR-11 Collector ID" on page 236](#), for OBR-17 to understand how this field is used to determine the ordering provider for the imported lab results.

Logic for determining Location of Care

LinkLogic uses the following logic to determine the location of care for the lab result document. To configure this logic, use the Change Locations of Care Options window.

In **Administration > System**, go to **LinkLogic > Task Options**, select the task and relationship and click **Locations of Care**.

If P-26 (Location) contains a value then

THEN Location of care = P-26

Else If P-14 (Attending Physician) contains a value

THEN Location of care = Home location associated with Attending Physician from P-14

Else

THEN Location of care = Default location of care specified in the Change Location of Care Options window

!!! This logic only determines which field to use. It does not validate the data. If the selected field value is invalid, LinkLogic does not try to use the next field in the sequence shown above. It generates an exception file and the LinkLogic user must correct and resolve the error manually.

However, if the location of care value has been made obsolete in Centricity Practice Solution, LinkLogic uses the root location of care and issues a warning.

P-26 Location

This is the patient's location of care. See [“Logic for determining Location of Care” on page 231](#), to understand how this field is used to determine the location of care for the imported lab results.

P-29 Marital status

The supported values for Marital Status include:

This value...	Means this...
A	Separated
D	Divorced
M	Married
S	Single
W	Widowed
O	Other
U	Undetermined (default)



Only the first character of this field is interpreted.

OBR – Observation Order

The Observation Request (OBR) segment is used to transmit information specific to an order for a diagnostic study or observation, physical exam, or assessment. The segment defines the attributes of a particular request for diagnostic services such as EKG or laboratory, or clinical observations, such as vital signs or physical exam.

Field	Length	Field Name	Import	See page
OBR-1	3	Segment Type ID	Required	234
OBR-2	4	Sequence Number	Not used	234
OBR-3	75	Requester Specimen ID	Optional	234
OBR-4	75	Producer Accession ID	Optional	235
OBR-5	200	Observation Battery ID	Optional	235
OBR-6		Not Used	Not used	
OBR-7	26	Requested Date/Time	Optional	236
OBR-8	26	Collection/Observation Date/Time	Optional	236
OBR-9	26	Collection/observation End Time	Not used	
OBR-10	20	Collection Volume	Not used	
OBR-11	60	Collector ID	Not used	236
OBR-12	1	Action Code	Not used	
OBR-13	60	Danger Code	Not used	
OBR-14	300	Relevant Clinical Information	Not used	
OBR-15	26	Date/Time Of Specimen Receipt	Optional	236
OBR-16	300	Source Of Specimen	Optional	
OBR-17	60	Ordering Provider	Optional	236
OBR-18	40	Order Callback Phone Number	Not used	
OBR-19	60	Requestor Field 1	Optional	237
OBR-20	60	Requestor Field 2	Not used	240
OBR-21	500	Producer's Field 1	Optional	240
OBR-22	60	Producer's Field 2	Not used	
OBR-23	26	Reported Date/Time	Optional	240

Field	Length	Field Name	Import	See page
OBR-24	60	Producer's Charge	Not used	
OBR-25	10	Producer's Section ID	Not used	
OBR-26	1	Order Results Status Code	Optional	241
OBR-27	200	Link To Parent Result	Not used	
OBR-28	200	Quantity Timing	Not used	
OBR-29	150	Send Copies To	Optional	241
OBR-30	150	Link To Parent Result	Not used	
OBR-31	20	Transportation Mode	Not used	
OBR-32	300	Reason For Study	Not used	
OBR-33	60	Principle Interpreter	Not used	
OBR-34	60	Assisting Interpreter	Not used	
OBR-35	60	Technical Identity	Not used	
OBR-36	60	Transcriptionist Identity	Not used	
OBR-37	26	Date/time Scheduled	Not used	

OBR-1 Segment Type ID

The value for this field is always OBR.

OBR-2 Sequence Number

Although this field is conditional in the ASTM specification, LinkLogic treats it as optional.

OBR-3 Requester Specimen ID

A unique ID per specimen or order request. Although this field is conditional in the ASTM specification, LinkLogic treats it as optional.

When an order is marked To Be Completed

A Centricity Practice Solution order specified by the first component of OBR-3 is marked To Be Completed if all the following are true:

- OBR-3, Requester Specimen ID, and OBR-26, Order Result Status code, are both specified.
- OBR-26 is either F (Final), C (Correction), or X (Deleted).

- All corresponding OBX-12 values (Observation Result Status) are either F, C, X, or U (Changed to Final without Retransmitting Results Already Sent as Preliminary)



Use commas to separate multiple order numbers in the first component of OBR-3. LinkLogic ignores all other components.

Also, if the LabLink relationship has been configured to automatically sign imported lab report documents, then the Centricity Practice Solution order is automatically completed.

OBR-4 Producer Accession ID

OBR-4 contains a unique ID for a battery of observations.

When document overlay is enabled...

Document overlay replaces an imported document with a later version of the same document, so that only the most recent information displays on the provider's desktop and in the chart.

When *document overlay* is enabled in LinkLogic Task Options, the following fields are required:

- OBR-4
- OBR-5
- Either OBR-8 or OBR-15

If these fields don't have values, then the imported document is processed as if document overlay was not enabled. A valid date/time value is required: either OBR-8 Collection/observation Date/time or OBR-15 Date/time of Specimen Receipt. See ["OBR-8 Collection/Observation Date/Time" on page 236](#), for details.



The date/time field is used to match documents for overlay. The date/time in OBR-7 or OBR-14 must match the date/time of the document to be overlaid.

Although OBX-15 is not required for document overlay, when included its value must be the same in all documents for overlay to occur.

For more information about document overlay, see ["Using document overlay" on page 577](#). In the online help module *Using Documents*, see "Overlay (replace) documents."

OBR-5 Observation Battery ID

An identifier code for the requested observation battery. Although this field is conditional in the ASTM specification, LinkLogic treats it as optional.

See ["When document overlay is enabled..."](#) above to understand how this field is used.

Only the first component of OBR-5, Observation Battery ID, is used by the overlay matching algorithm.

The Centricity Practice Solution document summary for lab report documents contains as many OBR-5 values as will fit in the application's 64-character

limit for document summaries. By default, LinkLogic includes OBR-5 values from up to 6 OBR segments.

OBR-7 Requested Date/Time

This field contains the date and time the order was placed. Date must be in format *YYYYMMDD[HHMM(SS)]*. Although the hours, minutes and seconds are optional, they cannot be substituted with zeros.

LinkLogic uses the following logic to determine the clinical date/time for the lab report document.

IF OBR-8 (Observation Date/Time) contains a value

THEN Clinical Date for the Lab Report Document = OBR-8

ELSE IF OBR-7 (Requested Date/Time) contains a value

THEN Clinical Date for the Lab Report Document = OBR-7

ELSE IF OBR-15 (Specimen Received Date/Time) contains a value

THEN Clinical Date for the Lab Report Document = OBR-15

ELSE IF OBR-23 (Results Rpt/Status Chng - Date/Time) contains a value

THEN Clinical Date for the Lab Report Document = OBR-23

ELSE

THEN Clinical Date for the Lab Report Document = H-14 (Date/Time of Message)



This logic is also used to determine the clinical date/time of an observation within the report (see [“OBX-15 Physiologic Date/Time of Observation” on page 246](#)), however OBX-15 is not used in determining the date for the document.

OBR-8 Collection/Observation Date/Time

When used, OBR-8 contains the physiologically relevant date stamp. It is shown on the clinical record.

See [“OBR-7 Requested Date/Time” on page 236](#) and [“When document overlay is enabled...” on page 235](#), to understand how this field is used in determining the requested date/time for the associated document.

OBR-11 Collector ID

Although this field is conditional in the ASTM specification, LinkLogic treats it as optional.

OBR-15 Date/Time of Specimen Receipt

When used, OBR-15 contains the date/time that the specimen was received at the laboratory.

See “OBR-7 Requested Date/Time” on page 236 and “When document overlay is enabled...” on page 235, to understand how this field is used in determining the requested date/time for the associated document.

OBR-17 Ordering Provider

This field contains the name of the physician ordering the test. LinkLogic uses the following logic to determine the correct name of the ordering provider and to route the lab report to their desktop.

IF OBR-17 (Ordering Provider) contains a value

IF provider defined in OBR-17 is NOT obsolete

THEN Ordering Provider = Provider defined in OBR-17

ELSE IF Registration specifies a responsible provider

AND that provider is NOT an obsolete user

THEN Ordering Provider = Patient's Responsible Provider

ELSE

Issue an error indicating that the document is orphaned and require a user to specify a responsible provider

ELSE IF P-14 (Attending Physician) contains a value

IF provider defined in P-14 is NOT obsolete

THEN Ordering Provider = Provider defined in P-14

ELSE IF Registration specifies a responsible provider

AND that provider is NOT an obsolete user

THEN Ordering Provider = Patient's Responsible Provider

ELSE

Issue an error indicating that the document is orphaned and require a user to specify a responsible provider

ELSE IF Registration specifies a responsible provider

AND that provider is NOT an obsolete user

THEN Ordering Provider = Patient's Responsible Provider

ELSE

Issue an error indicating that the document is orphaned and require a user to specify a responsible provider

!!! This logic only determines which field to use. It does not validate the data. If the value is invalid, LinkLogic does not try to use the next field in the sequence shown above.

OBR-19 Requestor Field 1

If OBR-19, Requestor Field 1, is not blank, it is interpreted as an alternate document type to be used instead of the Centricity Practice Solution Lab

Report document type. The ASTM Document Code TN is interpreted as a Lab Report document that is not editable in Centricity Practice Solution.

Mapping ASTM document codes to application document types

LinkLogic uses the following mappings from document codes to the Centricity Practice Solution document types for lab result documents.

Standard cross-reference files map OBR-19, Requestor Field 1 values to document type abbreviations defined in the application. If you use values other than those suggested in the following table, this field should contain the abbreviation for the document type defined in Centricity Practice Solution. You can cross-reference the value in this field with document types in application. See also [“Cross-referencing field values” on page 461](#).

ASTM code	Description	CPS document type
AP	Anatomic Pathology	Pathology Report
AR	Autopsy Report	External Other
AS	Admission Summary	Hospital Admission
BB	Blood Bank	Lab Report
CC	CardioDiagnostics	Diagnostic Report Other
CL	Clinic Letter	Letter
CM	Case Management	Clinical Lists Update
CN	Consult	Consultation Report
CO	Clinic Note	Internal Other
CR	Correction	External Other
CS	Clinical Summary	Clinical Summary
CU	Clinical Ultrasound	Imaging Report
DH	Discharge Instructions	External Other
DI	Diagnostic Imaging	Imaging Report
DN	Diagnostic Neurology	Diagnostic Report other
DR	Diagnostic Report Other	Diagnostic Report Other
DS	Discharge Summary	Hospital Discharge Summary
ED	ER Discharge Summary	Emergency Report
EK	EKG Report	EKG Report
ER	Emergency Report	Emergency Report

ASTM code	Description	CPS document type
FE	Filed in Error	Filed in Error
GC	General Correspondence	External Correspondence
HC	Home care Report	Home care Report
HP	History and Physical Exam	Hospital History & Physical
HS	Heart Station	Diagnostic Report Other
LD	Labor and Delivery Report	Hospital Procedure Report
LR	Lab Report	Lab Report
OP	Operative Report	Operative Report
OT	Occupational Therapy	Rehab Report
OV	Office Visit	Office Visit
PA	Pathology Report	Pathology Report
PC	Psychiatric Consultation	Consultation Report
PE	Phone Encounter	Phone Note
PH	Psychiatric History	External Other
PN	Procedure Note	External Other
PR	Progress Note	External Other
RA	Radiology	Imaging Report
RR	Rehab Report	Rehab Report
RX	Rx Refill	Rx Refill
SP	Surgical Pathology	Pathology Report
SR	Social Worker Report	Social Worker Report
SS	Special Studies	Diagnostic Report Other
TH	Physical Therapy	Rehab Report
TN	Transcribed Note	Lab Report
TS	Transfer Summary	External Other
ZZ	Other	External Other

OBR-20 Requestor Field 2

If OBR-20, Requestor Field 2, is not blank, then it is stored in Centricity Practice Solution as an external document identifier. This same value can be imported in ImageLink in TXA-16, Unique Document File Name, to attach external images to lab report documents. For more information, see the ImageLink Interface Specification. "[ImageLink Import/Export HL7 interface specification](#)" on page 135.

OBR-21 Producer's Field 1

OBR-21, Producer's Field 1, is used to identify the lab site producing the results. This satisfies CLIA regulations in the United States regarding the identification of the responsible producing service.

Although the ASTM specification constrains the maximum length of this field's value to 60 characters, LinkLogic supports a maximum length of 500 characters. LinkLogic interprets this field as a coded element with up to 6 optional components:

Component: <Abbreviated name> ^ <Full name> ^ <Address> ^ <City> ^ <State> ^ <Zip code>

This lab site identification is written into the lab report in the footnotes associated with the OBR segment.

OBR-23 Reported Date/Time

This field contains the date and time the order was placed. Date must be in format *YYYYMMDD[HHMM(SS)]*. Although the hours, minutes and seconds are optional, they cannot be substituted with zeros.

LinkLogic uses the following logic to determine the clinical date/time for the lab report document.

```
IF OBR-8 (Observation Date/Time) contains a value
    THEN Clinical Date for the Lab Report Document = OBR-8
ELSE IF OBR-7 (Requested Date/Time) contains a value
    THEN Clinical Date for the Lab Report Document = OBR-7
ELSE IF OBR-15 (Specimen Received Date/Time) contains a value
    THEN Clinical Date for the Lab Report Document = OBR-15
ELSE IF OBR-23 (Results Rpt/Status Chng - Date/Time) contains a value
    THEN Clinical Date for the Lab Report Document = OBR-23
ELSE
    THEN Clinical Date for the Lab Report Document = H-14 (Date/Time
    of Message)
```



This logic is also used to determine the clinical date/time of an observation within the report (see "[OBX-15 Physiologic Date/Time of Observation](#)" on page 246), however OBX-15 is not used in determining the date for the document.

OBR-26 Order Results Status Code

Document overlay replaces an imported document with a later version of the same document, so that only the most recent information displays on the provider's desktop and in the chart

OBR-26 identifies the status of provided results. If this field contains anything other than F (Final), C (Correction), or X (Deleted), the document is considered preliminary. Preliminary documents show (P) on the document summary line in Centricity Practice Solution.

When *document overlay* is enabled, a preliminary document cannot replace an existing final document in the Centricity Practice Solution database.

For more information about document overlay, see ["Using document overlay" on page 577](#), or in online help "Using Documents" and "Overlay (replace) documents."

See also ["When an order is marked To Be Completed" on page 234](#).

Supported values for Order Result Status Code include:

This value...	Means this...
P	Preliminary—some verified results are available, additional reports may be expected
F	Verified final results are all available, order is complete
C	Correction of a previously transmitted result
Z	No record of this patient
Y	No order on record for this procedure
X	Procedure cannot be done, cancelled
D	Order deleted by requester
S	Procedure scheduled, not complete
O	Order received, specimen received, procedure incomplete
I	Order an all applicable specimens received, procedure incomplete
R	Results stored, not verified
M	Some of the verified final results are missing

OBR-29 Send Copies To

The imported document is routed to the Centricity Practice Solution Desktops of all users specified in this field. To use this field with a cross-reference file, use the repeat delimiter to separate multiple user names/IDs. (Default is the tilde (~) character.)

Otherwise, you can use commas to separate Centricity Practice Solution user IDs. For more information, see ["Cross-referencing field values" on page 461](#).

When the repeat delimiter is used to separate multiple values, each value can be specified in one of two possible forms: "*lastname firstname*" or the Centricity Practice Solution login name (which can be obtained through cross-referencing).

OBX – Result Observation

The Result Observation (OBX) contains the clinical fact or other information about a patient’s mental or physical status, such as a lab result, a vital sign, or the answer to a medical history question. Observations can be numeric or text.

Field	Length	Field Name	Import	See page
OBX-1	3	Segment Type ID	Required	242
OBX-2	10	Sequence Number	Not used	
OBX-3	2	Value Type	Optional	242
OBX-4	80	Observation Identifier	Required	242
OBX-5	20	Observation Sub-ID	Not used	
OBX-6	2k	Observation Value	Optional	243
OBX-7	20	Units	Not used	243
OBX-8	60	Reference Range	Optional	244
OBX-9	10	Abnormal Flags	Optional	244
OBX-10	5	Probability	Not used	
OBX-11	5	Nature of Abnormal Checking	Not used	
OBX-12	2	Observation Result Status	Optional	244
OBX-13	26	Date/Time of Last Change in Normal Values or Units	Not used	
OBX-14	20	User-defined Access Checks	Not used	
OBX-15	26	Physiological Date/Time of Observation	Optional	246
OBX-16	200	Producer ID	Optional	246
OBX-17	60	Responsible Observer	Not used	

OBX-1 Segment Type ID

The value for this field is always OBX.

OBX-3 Value Type

This field defines the structure of the observation results field (for example, ST-String). Although Value Type is conditional in the ASTM specification, LinkLogic treats it as optional.

OBX-4 Observation Identifier

OBX-4, Observation Identifier, is defined by the laboratory to identify a specific test result. Although this field is conditional in the ASTM specification, LinkLogic requires it.

LinkLogic uses the first component of OBX-4 to identify the Centricity Practice Solution observation term. Observation Identifier values must be referenced in a LinkLogic cross-reference file to map the results to an observation term in Centricity Practice Solution flowsheet.

This value may be cross-referenced on import and export to accommodate identification spaces used by external information systems. For more information, see ["Cross-referencing field values" on page 461](#).

Displaying longer values in tabular format

LinkLogic attempts to include information from each OBX segment on a single line in Centricity Practice Solution lab report documents. It uses a fixed-width font and appropriate space characters to display a table of data that includes *test name, abnormal flags, result value, units, preliminary indicator, reference range, and possibly, producing lab*. This limits column widths for each field.

If the second component of OBX-4, Observation identifier exceeds 21 characters, LinkLogic displays the remaining data on a separate line following the text description

OBX-6 Observation Value

Contains the value of observations identified in OBX-4. Some labs set the observation value to DNR to indicate no test was performed. If OBX-6 contains the string DNR, the lab report shows `Did Not Report` and nothing is dispersed to the flowsheet.

If Observation Value exceeds 17 characters, LinkLogic includes `Result Below...` with the other data fields, and displays the observation value on a separate line prefaced by `RESULT: .` See ["Displaying longer values in tabular format"](#) in OBX-4 above.

For long OBX-6 values, the OBX-12, Observation Result Status, value will appear at the end of this separate line rather than following the `Result Below...` text.

OBX-7 Units

If OBX-4, Observation Identifier, identifies an Centricity Practice Solution observation term that has expected units, and no unit is specified in OBX-7, LinkLogic displays the observation value with a question mark in the flowsheet. Information about the affected observation values and the expected units is written into the lab report in the footnotes associated with the corresponding OBR segment.

OBX-8 Reference Range

Reference Range is typically reported in the following form: <low-high> .

If this value exceeds 16 characters, LinkLogic includes Range Below... with the other data fields, and displays the reference range value on a separate line prefaced by RANGE : .

See [“Displaying longer values in tabular format” on page 243.](#)

OBX-9 Abnormal Flags

This field contains the normalcy status of the results. Supported values for Abnormal Flags include:

This value...	Means this...
A	Abnormal-applies to non-numeric results
L	Below low normal
H	Above high normal
LL	Below lower panic limits
HH	Above high panic limits
<	Below absolute low, that is, off low scale on an instrument
>	Above absolute high, off high scale on an instrument
AA	Very Abnormal – applies to non-numeric results
U	Significant change up
D	Significant change down
B	Better, use when direction not relevant or not defined
W	Worse, use when direction not relevant or not defined
R	The given organism is resistant to the antibiotic
I	The sensitivity is intermediate
S	The organism is sensitive to the antibiotic
MS	Moderately sensitive
VS	Very sensitive

OBX-12 Observation Result Status

If OBX-12 contains a value other than F (Final), C (Correction), U (Changed to Final without Retransmitting Results Already Sent as Preliminary), or X (Deleted), the document is considered preliminary and displays **P** on the document summary line in Centricity Practice Solution.

Document overlay replaces an imported document with a later version of the same document, so that only the most recent information displays on the provider's desktop and in the chart.

When *document overlay* is enabled, a preliminary document cannot replace an existing final document in the Centricity Practice Solution database, nor can a preliminary lab value replace an existing final value.

For more information about document overlay, see ["Using document overlay" on page 577](#), or in online help "Using Documents" and "Overlay (replace) documents."

The supported values for Observation Result Status include:

This value...	Means this...
C	Corrected: Reported final result is superseded by a verified, modified result
U	Previously transmitted result status changed to final – results unchanged
F	Result complete and verified (final)
P	Preliminary: A verified early result is available, final result is not yet obtained
R	Result entered, not verified
S	Partial results
X	Procedure cannot be done, order cancelled
D	Previous preliminary or final result/observation is deleted
I	Specimen received, procedure incomplete

LinkLogic uses OBX-12 to determine whether to accept or reject the corresponding observation value from OBX-6. If accepted, LinkLogic replaces the current observation value in Centricity Practice Solution with the incoming value. The following precedence order is used, starting with the highest:

- **C** – Correction
- **U** – Changed to final without retransmitting results already sent as preliminary
- **F** – Final results
- **P** – Preliminary
- **R** – Results entered, not verified
- **S** – Partial results
- **I** – Specimen in lab, results pending
- **D** – Deletes the OBX record
- **X** – Results cannot be obtained for this observation

Result values are accepted only when the incoming result status values that have the same or higher precedence. If OBX-12 is not specified, then the default value of **R** is used.

OBX-15 Physiologic Date/Time of Observation

Format: YYYYMMDD [MMDD(SS)]

LinkLogic uses the following logic to determine a lab results clinically relevant date/time:

IF OBX-15 (Date/Time of the Observation) contains a value

THEN Clinical Date for the Result = OBX-15

ELSE IF OBR-8 (Observation Date/Time) contains a value

THEN Clinical Date for the Result = OBR-8

ELSE IF OBR-7 (Requested Date/Time) contains a value

THEN Clinical Date for the Result = OBR-7

ELSE IF OBR-15 (Specimen Received Date/Time) contains a value

THEN Clinical Date for the Result = OBR-15

ELSE IF OBR-23 (Results Rpt/Status Chng - Date/Time) contains a value

THEN Clinical Date for the Result = OBR-23

ELSE

THEN Clinical Date for the Result = H-14 (Date/Time of Message)

OBX-16 Producer ID

OBX-16, Producer ID, identifies the responsible producing service within the external lab report document to satisfy CLIA regulations in the United States.

Correlating Producer ID with observation result data

Since a lab report may have multiple OBX segments per OBR, LinkLogic displays all non-blank OBX-16 values in the Producer ID information in the lab report in footnotes associated with the corresponding OBR segment.

To correlate OBX-16 values and items listed in the Producer ID information in the footnotes, LinkLogic assigns each non-blank OBX-16 value a number that appears with an asterisk at the end of the line containing the observation result data from that OBX segment. An asterisk and the corresponding number precede the Producer ID information in the footnotes of the lab report. For an example, see ["Lab report document layout" on page 251](#).

C – Comment

Field	Length	Field Name	Length	Import	See page
C-1	3	Segment Type ID	3	Required	247
C-2	4	Sequence Number	4	Not used	
C-3	8	Comment Source	8	Not used	
C-4	64k	Comment Text	64k	Optional	247

C-1 Segment Type ID

The value for this field is always C.

C-4 Comment Text

Although this field is conditional in the ASTM specification, LinkLogic treats it as optional.

Length limits

Although the ASTM specification has a line limit of 220 characters, LinkLogic accepts a comment of up to 64k in length.

Use Addendum segments to continue the comment text. See [“A - Addendum” on page 248](#). The comment and addendum lines are concatenated.

L – Message Terminator

Field	Length	Field Name	Import	See page...
L-1	3	Segment Type ID	Required	247
L-2	1	Sequence Number	Not used	
L-3		Not Used	Not used	
L-4	4	Patient Count	Optional	247
L-5	10	Line Count	Not used	
L-6	12	Batch Number	Not used	

L-1 Segment type ID

This field always contains the value L.

L-4 Patient Count

This field optionally contains the total number of patients transmitted in the message.

E - Error checking

Field	Field Name	Length	Import	See page
E-1	Segment Type ID	3	Required	248
E-2	Sequence Number	4	Not used	
E-3	Error Check/Byte Count	10	Required	248
E-4	Check Code	3	Required	

E-1 Segment type ID

This field always contains the value E.

E-3 Error Check/Byte Count

This field contains the value of all the bytes within the scope of the error checking

A - Addendum

Field	Length	Field Name	Import	See page
A-1	3	Segment Type ID	Required	248
A-2	64k	Continuation Text	Optional	248

A-1 Segment type ID

A-1, Segment type ID, which contains the value A.

A-2 Continuation Text

This field can be used to carry the overflow of an immediately preceding segment, with the exception of the Header segment.

Length limits. Although the ASTM specification has a line limit of 220 characters, LinkLogic accepts an addendum length of up to 64k. Addendum segments are concatenated to the preceding comment segment. See also "[C - Comment](#)" on page 247.

Q - Request Results, S - Scientific

The Request Results (Q) segment and the Scientific segment (S) are not used.

Rules for creating records

Identifying the sender

The Sender Name (H-5) must be unique within a particular Centricity Practice Solution installation. LinkLogic uses the Sender Name to identify interface-specific information. This name appears in a patient's chart in the document summary identifying a set of test results. For example, use a name that identifies the lab and its regional location. For an LIS product, the name should uniquely represent both the LIS product and the site where it is installed.

Fields required for matching data to patients

Centricity Practice Solution generally requires at least two patient identifying characteristics to automatically match a patient's test results to the patient's chart. The fields used for this matching include patient name, date-of-birth, the Centricity Practice Solution Patient Identifier, External System Patient Identifier, or Alternative Patient Identifier (for example, SSN). To use only the patient's external ID, change the patient matching options in **Administration > System > LinkLogic > Task Options**. Select the LinkLogic relationship and then click **Patient Matching**.

!!! Only use this option if the ID set coming from the producer is reliable and guaranteed to be unique for each patient. For more information on patient matching, see ["Lab report document layout" on page 251](#).

The more identifiers provided, the more likely a successful automatic match will occur. If an automatic match is not possible, the segment containing the unmatched patient and all related patient data is placed in an exception file which can be found in the LinkLogic Errors subdirectory. To resolve the error, the LinkLogic Manager must process the exception file and performing a manual match.

Patients per file limit

Although ASTM 1238 does not restrict the number of patients whose results can appear in a single file, Centricity Practice Solution has a system restriction of 4,096 patients per file. If the application receives a file containing more than 4,096 patients it will halt processing until the file is separated into smaller chunks.

Care provider notification

When lab results are imported to a patient's chart, they are stored in their entirety within a chart note and routed to the first care provider associated with a patient to inform the provider that the lab results are available for review. If a physician other than that patient's responsible provider orders the test, the lab report can be routed to the ordering provider—if that person is identified in OBR-17. See ["OBR-17 Ordering Provider" on page 237](#), for details.

The value in OBR-17 field must match a Centricity Practice Solution user ID. Otherwise, use a cross-reference file to map the ordering provider name/ID to the correct the user ID. For more information, see [“Cross-referencing field values” on page 461.](#)

Sample ASTM formatted laboratory results file

```
H|^~`&|||LISNAME|||P|A.2|19960725083725|
P|1|999999999|X0705950||TURNBOW^WILLIAM||19290404|M|||HWINSTON||
OBR|1|629089||5200^ACP||199607230940|||HWINSTON|||F
OBX|1|ST|2652^SODIUM|HIT^1|139|mEq/L|135-148|||F|
OBX|2|ST|2507^POTASSIUM|HIT^2|5.5|mEq/L|3.5-5.3|H||F|
OBX|3|ST|2082^CHLORIDE|HIT^3|107|mEq/L|95-112|||F|
OBX|4|ST|2230^GLUCOSE|HIT^6|107|mg/dL|65-105|H||F|
OBX|5|ST|2040^BUN|HIT^7|14|mg/dL|7-32|||F|
OBX|6|ST|2096^CREATININE|HIT^8|1.2|mg/dL|0.8-1.6|||F|
OBX|7|ST|2041^BUN/CREAT RATIO|HIT^9|12|RATIO|7-23|||F|
OBR|2|629089||20027^RISK||199607230940|||HWINSTON|||F
OBX|1|ST|2274^CHOL/HDL RATIO|HDL^5|6.5|||F|
OBX|2|ST|20027^RELATIVE RISK FACTOR|HDL^6|1.4||H||F|
C|1|L| TOTAL CHOL/HDL RATIO|
C|2|L| RELATIVE RISK          MEN          WOMEN|
C|3|L| 0.5 (HALF AVERAGE) 3.43          3.27|
C|4|L| 1.0 (AVERAGE)      4.97          4.44|
C|5|L| 2.0 (2 X AVERAGE) 9.55          7.05|
C|6|L| 3.0 (3 X AVERAGE) 23.40         11.04|
C|7|L| IF THE TOTAL CHOLESTEROL IS LESS THAN 200 mg/dL,|
C|8|L| CARDIAC RISK FACTORS MAY NOT APPLY.|
C|9|L| THE RELATIVE RISK FACTOR IS FURNISHED AT CLIENT REQUEST|
C|10|L| AND IS NOT AN ABSOLUTE MEASURE OF RISK. |
C|11|L|Clinical Laboratories - 51 Grey St. Salmon City, UT 84123 |
C|12|L|Dr. Gary L. Maynard M.D. |
```

Lab report document layout

LinkLogic creates a lab report document in Centricity Practice Solution for each ASTM lab result message. A standard lab report format is used.

The following example illustrates where values from the ASTM message appear in lab report documents.

Sample ASTM message

```
H|^~\&|||ABCLABS|||||LAB REPORT MAPPING|R|P|2|200206181300
P|1|MR-000-086||541-99-4230|Prosper^Alicia^||19511218|F|
OBR|1||9876|BloodTest4A^Red Blood Test
ASTM|OBR-6|200107070707|200108080808|200109090909|OBR-10|OBR-11|N
|OBR-13|OBR-14|200105151515|BLDA|lchoong^Choong MD^Lynn
|OBR-18|LR|OBR-20|BLDWRKS^Blood Works^123 Main
Street^Portland^OR^97223|OBR-22|200105232323|OBR-24|OBR-25|P
|OBX|1|ST|30000100^RED BLOOD COUNT
|OBX-5| 6.77| MILL/MCL| 4.40-5.80| HH| | |P |200103131313| |200105151515|
LabsRUs| |
C|1| | This is a note that corresponds to the red blood count above
C|2| | This is the second line of the red blood count note
```

ASTM message displayed in lab report document

Here is how the sample ASTM message displays in the Centricity Practice Solution lab report document. The message segment fields and detailed notes are listed to the right.

This part of the Centricity Practice Solution lab report document...	Comes from...
<p>Patient: Alicia Prosper</p> <p>Note: All result statuses are Final unless otherwise noted.</p> <p>Tests: (1) Red Blood Test ASTM (BloodTest4A)</p> <p>! RED BLOOD COUNT [HH] 6.77 MILL/MCL (P) 4.40-5.80 *1</p> <p><i>LinkLogic attempts to include information from each OBX segment on a single line of the lab report document. Extra lines are generated when OBX-4, OBX-6, and/or OBX-8 values exceed certain widths. See "Displaying longer values in tabular format" on page 243 for more information.</i></p> <p>This is a note concerning the red blood count above This is the second line of the red blood count note</p> <p>Note: An exclamation mark (!) indicates a result that was not dispersed into the flowsheet.</p> <p>Document Creation Date: 04/02/2005 05:29 PM</p>	<p>P-6.2, P-6.1</p> <p>OBR-4.2 (OBR-4.1)</p> <p>OBR-4, OBX-6 and OBX-7, and OBX-8 [HH] = abnormal flag data. See "OBX-9 Abnormal Flags" on page 244.</p> <p>*1 links results with Producer ID listed below. See "Correlating Producer ID with observation result data" on page 246.</p> <p>C-4a C-4b</p> <p>! appears if OBX-4 value does not match an observation term in the application. See "OBX-3 Value Type" on page 242.</p> <p>Date/time is LinkLogic import time.</p>
<hr/> <p>(1) Order result status: Preliminary</p> <p>Collection or observation date-time: 08/08/2001 08:08</p> <p>Requested date-time: 07/07/2001 07:07</p> <p>Receipt date-time: 05/15/2001 15:15</p> <p>Reported date-time: 05/23/2001 23:23</p> <p>Ordering Physician: Choong MD (lchoong)</p> <p>Specimen Source: BLDA</p> <p>Source: ABCLABS</p> <p>Filler Order Number: 9876</p> <p>Lab site: BLDWRKS, Blood Works 123 Main Street Portland OR 97223</p> <p>Producer ID *1:LabsRUs</p>	<p>OBR-26</p> <p>OBR-8</p> <p>OBR-7</p> <p>OBR-15</p> <p>OBR-23</p> <p>OBR-17.2 (OBR-17.1)</p> <p>OBR-16</p> <p>MSH-3, MSH-4</p> <p>OBR-4</p> <p>OBR-21.1, OBR-21.2</p> <p>OBR-21.3</p> <p>OBR-21.4, OBR-21.5, OBR- 21.6</p> <p>OBX-16</p>

CHAPTER 10

LabLink Import/Export HL7 interface specification

[ORU message – Observation results reporting 254](#)

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[Lab Report Document Layout 296](#)

This HL7-based interface supports the import and export of observation data. It uses a subset of the complete HL7 message set for Observation Reporting and only supports the ORU (Observation Result) message.

For an interface supporting the Order Message (ORM) for exporting orders documented during a patient encounter to labs and other service providers, see [“Orders Export HL7 interface specification” on page 301](#).



Observation data includes observation terms and values. An *observation term* is a type of observation, while the *observation* is the value. For example, WEIGHT is an observation term and “147” is the observation.

On import...

LinkLogic is optimized to receive lab reports that contain many lab results in each ORU message. LinkLogic expects lab results to be bundled as they would be if reported by a Laboratory Information System (LIS) in a paper lab report. It is not optimized to receive multiple lab results sent individually in separate ORU messages.

Each ORU message received for a patient generates an external lab report document associated with the patient's chart. Imported lab results do not

display in a patient's flowsheet until the document is signed by an appropriate care provider or automatically by LinkLogic.

On export...

An ORU message is exported for each selected patient for whom observations exist. The ORU message contains an OBR (Observation Request) message segment for each Centricity Practice Solution document with observations that were documented and displayed in a patient's flowsheet. Nested under each OBR message segment are one or more OBX (Observation Result) message segments, one for each documented observation.



Only observations with a corresponding observation term in Centricity Practice Solution are displayed in a patient's flowsheet. For a complete list of observation terms, run the Observation Terms report in the Chart Reports/Inquiries module.

New observation terms are added frequently. For the latest observation terms, visit the KnowledgeBank at <http://centricitypractice.gehealthcare.com>.

ORU message – Observation results reporting

An ORU message includes:

- Message header (MSH) and patient information (PID, PV1).
- Optional notes (NTE) and common order (ORC) segments
- One or more observation request (OBR) segments defining observation type and request specifics.
- One or more observation/result (OBX) segments defining, quantifying and qualifying the results.

ORU message structure

The following table shows how LinkLogic uses the message segments in this message when importing and exporting data. Page references in the table link to detailed notes following the table and to detailed message segment tables.

For definitions of LinkLogic usage terms, see [“How LinkLogic uses message segments” on page 42.](#)

Legend			
R	Required	[...]	Optional
O	Optional	{...}	Repeating
C	Conditional	{{...}}	Optional and repeating
I	Ignored		

Segment	Name	See page	Import	Export
MSH { [	Message Header	257	Required	Required
PID	Patient ID.	255, 261	Required	Required
{{NTE}}	Notes & Comments	267	Optional	Ignored
[PV1]] {	Patient Visit	268	Optional	Optional
[ORC]	Common Order	273	Optional	Ignored
OBR	Observation Request	275, 256	Required	Required
{[NTE]} {	Notes & Comments	267	Optional	Ignored
{[OBX]}	Observation/Result	288	Optional	Optional
{[NTE]} } } }	Notes & Comments	267	Optional	Ignored
[DSC]	Continuation Pointer	256	Ignored	Ignored
MSH	Message Header	257	Conditional	Conditional
MSA	Msg Ack	294	Conditional	Conditional
[ERR]	Error		Ignored	Ignored

PID segment

Although the HL7 specification considers the Patient ID segment optional, LinkLogic requires it.

OBR segment

One OBR (Observation/Result) segment is exported per Centricity Practice Solution document with observations that were documented *and* displayed in the flowsheet.

DSC segment

LinkLogic does not support the application-specific HL7 message continuation protocol.

HL7 message segments

This section provides detailed specifications for the following HL7 message segments used in the ORU message:

For information about this segment...	See page...
MSH - Message Header	257
PID - Patient Identification	261
NTE - Notes and Comments	267
PV1 - Patient Visit	268
ORC - Common Order	273
OBR - Observation Request	275
OBX - Observation/Result	288
MSA - Message Acknowledgement	294

Each message segment table lists the segment elements or fields in sequence order (MSH-1, MSH-2, MSH-3, and so on) with the following information:

- **Element name**
- **Maximum length** in LinkLogic
- **Data type**
- **Source table** in the HL7 specification where applicable
- **LinkLogic usage on export or import** (Required, Optional, and so on)
For definitions of LinkLogic usage terms, see [“How LinkLogic uses message segments” on page 42.](#)



Click blue page number links in the following tables to jump to detail notes (when viewing the Adobe PDF version of this guide) or look for notes under the element code and name listed after the table.

MSH – Message Header

The Message Header segment (MSH) should always be in the first segment in each HL7 message. MSH defines the intent, source, destination, and some specifics of the syntax of a message.

Legend

CE	Coded element	NM	Numeric
CM	Order sequencing component	PT	Processing type
HD	Hierarchic designator	ST	Character string
ID	Coded value	TS	Time stamp

SEQ	Lnth	Data type	HL7 table	Element name	Import	See page	Export	See page
MSH-1	1	ST		Field Separator	Required		Used	
MSH-2	4	ST		Encoding Characters	Required		Used	
MSH-3	40	HD		Sending Application	Conditional	258	Used	258
MSH-4	20	HD		Sending Facility	Optional	258	Used	258
MSH-5	40	HD		Receiving Application	Not used		Used	259
MSH-6	30	HD		Receiving Facility	Not used		Conditional	259
MSH-7	26	TS		Date/time of Message	Required	259	Used	
MSH-8	40	ST		Security	Not used		Not used	
MSH-9	7	CM	0076	Message Type	Required	259	Used	259
MSH-10	20	ST		Message Control ID	Required		Used	
MSH-11	3	PT	0103	Processing ID	Required	259	Used	
MSH-12	8	ID	0104	Version ID	Required	260	Used	
MSH-13	15	NM		Sequence Number	Not used		Not used	
MSH-14	180	ST		Continuation Pointer	Not used		Not used	
MSH-15	2	ID	0155	Accept Ack Type	Optional	260	Not used	
MSH-16	2	ID	0155	Application Ack type	Optional	260	Optional	260
MSH-17	2	ID		Country Code	Not used		Not used	
MSH-18	6	ID	0211	Character Set	Not used		Not used	
MSH-19	60	CE		Principal Language of message	Not used		Not used	

MSH-3 / MSH-4 Sending Application/Facility

On import...

relationship: In LinkLogic, this describes an interface between Centricity Practice Solution and another computer system.

MSH-3 Sending Application is considered optional in the HL7 specification, however, LinkLogic requires a value in either MSH-3 or MSH-4 Sending Facility. LinkLogic identifies the data source for an interface (known in Centricity Practice Solution as a LinkLogic *relationship*) by using the contents of MSH-3, MSH-4, or a combination of both separated by a hyphen. The Unique Name/ID field in the LinkLogic setup New Relationship window must match this data source.

For example, if MSH-3 contains `PracticeMgr` and MSH-4 contains `East`, the data file would match against a LinkLogic relationship named *PracticeMgr*, *East*, or *PracticeMgr-East*. If either MSH-3 or MSH-4 contains more than the first component, the delimiters are converted to spaces and the contents of the entire field are used.

LinkLogic interface relationship matching

LinkLogic uses the following logic to determine the correct relationship:

IF MSH-3 or MSH-4 or the concatenation of MSH-3 and MSH-4 separated by a hyphen uniquely matches exactly one defined LinkLogic relationship name

THEN import the file using the matched relationship

ELSE IF multiple matching relationship names were found

THEN issue an error indicating that multiple relationships were found (ambiguous match)

ELSE, no matching relationship name was found

THEN issue an error indicating that no relationship exists to import the data file

Length limits

Although the HL7 specification sets the maximum length for MSH-3 and MSH-4 at 180, LinkLogic supports a total of 40 characters for MSH-3 and MSH-4 combined.

On export...

On export, LinkLogic identifies itself with a string value for MSH-3 derived by concatenating the string *LinkLogic-* with the unique Centricity Practice Solution Enterprise ID for the organization (for example, *LinkLogic-ABCD*). The Enterprise ID can be up to four alphanumeric characters.

MSH-4 contains the patient's (not a document's) server-specific location of care in the form of *DatabaseID^LOC*.

MSH-5 / MSH-6 Receiving Application/Facility

On export...

MSH-5 Receiving Application contains the name of the LinkLogic relationship that created the output file.

MSH-6 Receiving Facility contains the patient's (not a document's) location of care. Unlike MSH-4 Sending Facility, this field contains the location of care without the database ID.

MSH-7 Date/time of Message

On import...

Although MSH-7 Date/time of Message is not required in the HL7 specification, LinkLogic requires it on import. See ["OBX-14 Date/Time of the Observation" on page 293](#), to understand how this field is used to determine the clinical date for imported lab results.

MSH-9 Message Type

On import and export...

The supported values for MSH-9 Message Type include:

This value...	Means this...
ORU	Unsolicited transmission of an observation
ACK	General acknowledgement message

On import, the second component, *trigger event*, is ignored and always populated with a value of R01.

MSH-11 Processing ID

On import...

The supported values for MSH-11 Processing ID include:

This value...	Means this...
D	Debugging
P	Production
T	Training (treated the same as Debugging)

On import, only messages with a Processing ID of P (Production) affect the Centricity Practice Solution database.

MSH-12 Version ID

On import...

The supported values for MSH-12 Version ID include:

This value...	Means this...
2.1	Release 2.1, March 1990
2.2	Release 2.2, December 1994
2.3	Release 2.3, April 1997
2.3.1	Release 2.3.1, April 1999

MSH-15 Accept Ack Type

On import...

The supported values for MSH-15 Accept Ack Type include:

This value...	Means this...
AL	Always
NE	Never (default)

MSH-16 Application Ack Type

On import and export...

MSH-16 Application Acknowledgment is optional on import and export. On export, the value NE is used. The supported Ack types are still validated for import. On import the value AL in MSH-16 overrides NE in MSH-15 and an acknowledgement is sent.

PID – Patient Identification

The Patient Identification (PID) is a unique, system-generated identification number that Centricity Practice Solution assigns to each patient during registration.

Legend

ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric		

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PID-1	4	SI		Set ID - Patient ID	Not used		Not used	
PID-2	20	CX		Patient ID (External ID)	Conditional	261	Optional	261
PID-3	20	CX		Patient ID (Internal ID)	Required	261	Used	261
PID-4	16	CX		Alternate Patient ID-PID	Optional	263	Not used	
PID-5	48	XPN		Patient Name	Required		Used	
PID-6	48	XPN		Mother's Maiden Name	Not used		Not used	
PID-7	26	TS		Date/Time of Birth	Required		Used	
PID-8	1	IS	0001	Sex	Required	263	Used	
PID-9	48	XPN		Patient Alias	Not used		Not used	
PID-10	1	IS	0005	Race	Optional	263	Optional	
PID-11	106	XAD		Patient Address	Optional	264	Optional	
PID-12	4	IS		Country Code	Not used		Not used	
PID-13	250	XTN		Phone Number - Home	Optional	264	Optional	264
PID-14	250	XTN		Phone Number - Work	Optional	264	Optional	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PID-15	60	CE	0296	Primary Language	Optional		Optional	
PID-16	1	IS	0002	Marital Status	Optional	266	Optional	
PID-17	3	IS	0006	Religion	Not used		Not used	
PID-18	20	CX		Patient Account #	Not used		Not used	
PID-19	11			SSN # - Patient	Optional	266	Optional	
PID-20	25	DLN		Driver's License # - Patient	Not used		Not used	
PID-21	20	CX		Mother's Identifier	Not used		Not used	
PID-22	3	IS	0189	Ethnic Group	Optional		Used	
PID-23	60	S T		Birth Place	Not used		Not used	
PID-24	2	ID	0136	Multiple Birth Indicator	Not used		Not used	
PID-25	2	NM		Birth Order	Not used		Not used	
PID-26	4	IS	0171	Citizenship	Not used		Not used	
PID-27	60	CE	0172	Veterans Military Status	Not used		Not used	
PID-28	80	CE		Nationality	Not used		Not used	
PID-29	26	TS		Patient Death Date /Time	Optional		Not used	266
PID-30	1	ID	0136	Patient Death Indicator	Conditional		Optional	266
PID-40	1	ST	0185	Patient Preferred Contact Method	Optional	266	Optional	266

PID-2 Patient ID (External ID) / PID-3 Patient ID (Internal ID)

On import...

By default, PID-3, Patient ID (Internal ID), is assumed to contain the patient identifier used to match the import data with a patient.

If you need to use identifiers from another system, in **Administration > System > LinkLogic**, select PID-2 in the **Match Options** window to use the Patient ID (External ID) instead of PID-3. See ["Data-to-Patient matching" on page 469](#), for details.

On export...

PID-3, Patient ID (Internal ID), always contains the unique Centricity Practice Solution Patient ID for the patient. If available, PID-2, Patient ID (External ID), contains the external identifier for the relationship-specific external ID set.

Global unique Identifier

The Centricity Practice Solution Patient ID is a globally unique identifier represented as a string value in the form *123456789012-XXXX123* where:

- **Prefix.** *123456789012* is a number with a maximum of 12 digits that is unique within the Centricity Practice Solution database where the patient's chart was created.
- **Suffix.** *XXXX123* concatenates the customer's unique Enterprise ID (*XXXX*) and database ID (*123*). Centricity Practice Solution database IDs are allocated and specified by the system administrator performing the installation.

PID-4 Alternate Patient ID - PID

On import...

PID-4, Alternate Patient ID, is the patient's medical record number. Although the HL7 specification defines the maximum length of this field to be 20, however, LinkLogic only supports a maximum of 16 alphanumeric characters to describe Alternate Patient ID.

PID-8 Sex

On import...

The supported values for Sex include:

This value...	Means this...
F	Female
M	Male
O	Other (treated as Unknown)
U	Unknown

PID-10 Race

On import...

The supported values for Race include:

This value...	Means this...
B	Black
C	Chinese
F	Filipino
H	Hispanic
J	Japanese
N	Native American

This value...	Means this...
I	Native Hawaiian
M	Multiracial
O	Oriental/Asian
P	Pacific Islander
W	White
T	Other
U	Undetermined (default)

In Centricity Practice Solution, race values can be configured in Administration. If a value is changed in Administration, you must configure MIK (in Server Setup) to map to the value to one of the values in this table.

See “Configure MIK interfaces” in Server Setup Online Help.

PID-11 Patient Address

On import...

Currently, LinkLogic supports the following maximum characters for patient address sub-components determined by limits for these values set in the Centricity Practice Solution database. Characters beyond these limits are truncated:

- **Address Line 1, Address Line 2:** accepts a string up to 50 characters
- **City name:** accepts a string up to 25 characters
- **Country name:** accepts a string up to 50 characters
- **State or province:** accepts a two-character state code or a string up to 50 characters
- **Zip/postal code:** accepts up to 15 alphabetic characters to support 15-digit zip codes and foreign addresses

PID-13 Phone Number - Home / PID-14 Phone Number - Work

On import...

Although the HL7 2.3 specification defines the maximum length of this field as 250, Centricity Practice Solution and LinkLogic support a maximum of 20 characters for phone numbers and 50 characters for email addresses. Characters beyond these limits are truncated.

“[XTN - Phone number format](#)” on page 459The HL7 specification permits phone number fields to contain multiple items separated by repeat delimiters. The first component of each item has the phone number value, and the third component indicates the phone type. LinkLogic reads values for home phone, fax phone, cell phone, and pager from PID-13.

LinkLogic reads only the work phone number from PID-14.1, where PID-14.3 component is either not specified or is PH. All other phone values from PID-14 are ignored.

The following phone type values are supported:

This phone type...	Means this...	Stored here...
PH	Home phone (PID-13)	PERSON.ALTPHONE
PH	Work phone (PID-14.1)	PERSON.WORKPHONE
CP	Cell phone	PERSON.CELLPHONE
FX	Fax phone	PERSON.FAXPHONE
BP	Pager (beeper) number	PERSON.PAGERPHONE

For additional details, see [“XTN - Phone number format” on page 459](#).

Backward compatibility

If the phone type value in the third component of the first repeating item in PID-13 is blank or not specified, LinkLogic imports the phone number value from the first component of this item as the patient's home phone number. This maintains backward compatibility with systems that do not send phone type values and with systems that do not send multiple repeating items in PID-13.

Email address

The fourth component of PID-13, Phone Number - Home, is used for the patient's email address. If PID-13 is blank, the fourth component of PID-14, Phone Number - Work, is used. If both PID-13 and PID-14 are blank, the patient will have no email address in Centricity Practice Solution.

On export...

LinkLogic exports the patient's home phone number, cell phone, fax phone, and/or pager (if present) as multiple repeating items in PID-13, Phone Number - Home. The phone number value is sent in the first component of each item and the phone type is sent in the third component of each item.

The fourth component of the first repeating item in PID-13 is populated with the patient's email address.

The patient's work phone (if present) is exported in PID-14.1. LinkLogic exports only one repeating item in PID-14 and does not export any phone type in PID-14.3.

PID-16 Marital Status

On import...

The supported values for Marital Status include:

This value...	Means this...
A	Separated
D	Divorced
M	Married
S	Single
W	Widowed
O	Other
U	Undetermined (default)

In Centricity Practice Solution, this value can be configured in Administration. If you change a Marital Status value, you must configure MIK (in Server Setup) to map the new value to one of the values in this table.

See "Configure MIK interfaces" in Server Setup Online Help.

PID-19 SSN Number - Patient

On import...

Although the HL7 specification sets a maximum length of 16 characters for PID-19, LinkLogic only interprets the first 11 characters and ignores embedded dashes (-).

PID-29 Patient Death Date and Time / PID-30 Patient Death Indicator

On export...

PID-30, Patient Death Indicator, is set to Y for deceased patients. PID-29, Patient Death Date and Time, is populated with the patient's date of death.

PID-40 Patient Preferred Contact Method

LinkLogic can import and export a 1-character value for patient preferred contact method in the optional field PID-40 at the end of the PID segment in ADT and BAR messages.

To send or receive patient contact method using this field you must associate the optional Add-On IXP file **pid40contactby.ixp** with the LinkLogic interface. This IXP file maps the HL7 values to EMR values to store to or export from the database in the PERSON.CONTACTBY field. For detailed information about using IXP files, see ["Using .IXP configuration files" on page 597](#).

On import...

LinkLogic interprets a blank value as if no value were specified. To remove an existing value, enclose the contact method value in double quotes in the import message.

The following supported values for patient preferred contact method are based on HL7 table 0185. Note that starred items are not in Table 0185 but were created for this implementation.

HL7 value...	Means this...	Mapped EMR value
B	Pager	P
C	Cell Phone	C
D	Durable Power of Attorney*	D
E	Email	E
F	Fax	F
H	Home Phone	H
L	Letter*	L
N	Nursing Home*	N
O	Work phone	W
P	Paper*	A
T	Other*	O

NTE – Notes and Comments

Comments may be attached to individual lab results by including an NTE segment immediately after the OBX segment. For details, see [“OBX – Observation/Result” on page 288](#).

The comment is written into the lab report. The Observation Details window in the flowsheet contains the following note: “See lab report for comments”.

Legend	
ID	Coded value for HL7-defined tables
SI	Sequence ID
FT	Formatted text

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
NTE-1	4	SI		Set ID - NTE	Optional		Not used	
NTE-2	8	ID		Source of Comment	Optional		Not used	
NTE-3	64k	FT		Comment	Optional		Not used	

PV1 – Patient Visit

The Patient Visit segment (PV1) is used by Registration and ADT (Admission, Discharge, and Transfer) applications to communicate information about a specific visit.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric	DT	Date
JCC	Job Code / Class	XON	Extended composite name and ID number for organizations

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PV1-1	4	SI		Set ID - PV1	Not used		Not used	
PV1-2	1	IS	0004	Patient Class	Not used		Not used	
PV1-3	80	PL		Assigned Patient Location	Conditional	270	Optional	270
PV1-4	2	IS	0007	Admission Type	Not used		Not used	
PV1-5	20	CX		Pre-admit Number	Not used		Not used	
PV1-6	80	PL		Prior Patient Location	Not used		Not used	
PV1-7	60	XCN	0010	Attending Doctor	Conditional	271	Optional	271
PV1-8	60255	XCN	0010	Referring Doctor	Conditional	272	Optional	272
PV1-9	60	XCN	0010	Consulting Doctor	Not used		Not used	
PV1-10	3	IS	0069	Hospital Service	Not used		Not used	
PV1-11	80	PL		Temporary Location	Not used		Not used	
PV1-12	2	IS	0087	Pre-admit Test Indicator	Not used		Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PV1-13	2	IS	0092	Readmission Indicator	Not used		Not used	
PV1-14	3	IS	0023	Admit Source	Not used		Not used	
PV1-15	2	IS	0009	Ambulatory Status	Not used		Not used	
PV1-16	2	IS	0099	VIP Indicator	Not used		Not used	
PV1-17	60	XCN	0010	Admitting Doctor	Not used		Not used	
PV1-18	2	IS	0018	Patient Type	Not used		Not used	
PV1-19	20	CX		Visit Number	Optional	272	Optional	272
PV1-20	50	FC	0064	Financial Class	Not used		Not used	
PV1-21	2	IS	0032	Charge Price Indicator	Not used		Not used	
PV1-22	2	IS	0045	Courtesy Code	Not used		Not used	
PV1-23	2	IS	0046	Credit Rating	Not used		Not used	
PV1-24	2	IS	0044	Contract Code	Not used		Not used	
PV1-25	8	DT		Contract Effective Date	Not used		Not used	
PV1-26	12	NM		Contract Amount	Not used		Not used	
PV1-27	3	NM		Contract Period	Not used		Not used	
PV1-28	2	IS	0073	Interest Code	Not used		Not used	
PV1-29	1	IS	0110	Transfer to Bad Dept Code	Not used		Not used	
PV1-30	8	DT		Transfer to Bad Dept Date	Not used		Not used	
PV1-31	10	IS	0021	Bad Debt Agency Code	Not used		Not used	
PV1-32	12	NM		Bad Debt Transfer Amount	Not used		Not used	
PV1-33	12	NM		Bad Debt Recovery Amount	Not used		Not used	
PV1-34	1	IS	0111	Delete Account Indicator	Not used		Not used	
PV1-35	8	DT		Delete Account Date	Not used		Not used	
PV1-36	3	IS	0112	Discharge Disposition	Not used		Not used	
PV1-37	25	CM	0113	Discharged to Location	Not used		Not used	
PV1-38	2	IS	0114	Diet Type	Not used		Not used	
PV1-39	2	IS	0115	Servicing Facility	Not used		Not used	
PV1-40	1	IS	0116	Bed Status	Not used		Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PV1-41	2	IS	0117	Account Status	Not used		Not used	
PV1-42	80	P L		Pending Location	Not used		Not used	
PV1-43	80	P L		Prior Temporary Location	Not used		Not used	
PV1-44	26	TS		Admit Date/Time	Not used		Not used	
PV1-45	26	TS		Discharge Date/Time	Conditional		Not used	
PV1-46	12	NM		Current Patient Balance	Not used		Not used	
PV1-47	12	NM		Total Charges	Not used		Not used	
PV1-48	12	NM		Total Adjustments	Not used		Not used	
PV1-49	12	NM		Total Payments	Not used		Not used	
PV1-50	20	CX	0192	Alternate Visit ID	Conditional	272	Optional	272
PV1-51	1	IS	0326	Visit Indicator	Not used		Not used	
PV1-52	60	XCN	0010	Other Healthcare Provider	Not used		Not used	

PV1-3 Assigned Patient Location

On import...

This field should contain the abbreviation for the patient's home location (maximum 8 characters), as defined in Centricity Practice Solution. You can cross-reference the value in this field with location of care values in the application. For more information, see ["Cross-referencing field values" on page 461](#).

If no value is supplied, LinkLogic uses the default location of care value for the lab report document set for the relationship in **Administration > System > LinkLogic > Task Options > Change Location of Care Options**.

Logic for determining Location of Care

LinkLogic uses the following logic to determine the location of care for the lab report document. To configure this logic go to **Administration > System** and select **LinkLogic > Task Options**, then select the task and relationship and click **Locations of Care**.

IF PV1-3 component 4 (Assigned Patient Location) contains a value

THEN Location of care = PV1-3 component 4

ELSE IF PV1-7 component 1 (Attending Doctor) contains a value

THEN Location of care = Home location associated with Attending Doctor from PV1-7

ELSE

Location of care = the default location of care specified in the Change Location of Care Options window

!!! This logic only determines which field to use. It does not validate the data.

If the selected field value is invalid, LinkLogic does not try to use the next field in the sequence shown above. It generates an exception file and the LinkLogic user must correct and resolve the error manually.

However, if the location of care value has been made obsolete in Centricity Practice Solution, LinkLogic uses the root location of care and issues a warning.

Patient Location of Care set when message creates a new patient

.By default, a patient must exist in the database before lab results can be imported for them. If LinkLogic cannot match to an existing patient, it issues an error and creates an exception file.

However, you can create new patients when resolving patient mismatch errors on the LinkLogic Errors tab. When you see the **Find Patient** window, search to confirm that the patient is not in the database. If the patient is not found, click **New Patient**, create a new chart, and then re-import the data.

If this message creates a new patient in Centricity Practice Solution through error resolution or manual import, LinkLogic interprets the fourth component (facility ID) as the patient's home location of care and ignores all other components.

On export...

The fourth component is populated with the eight-character abbreviation for the patient's home location of care.

PV1-7 Attending Doctor

On import...

If the import of this message results in the creation of a new patient in Centricity Practice Solution, the Attending Doctor, if specified, is assumed to be the patient's responsible provider (Doctor).



If the value for Attending Doctor is visit-specific, you may not want to populate this field on import. The Attending doctor will become the patient's responsible provider in Centricity Practice Solution.

If PV1-3, Assigned Patient Location, does not contain a value for location, LinkLogic uses the Home Location associated with the Attending Doctor. See [“Logic for determining Location of Care” on page 270](#).

See [“PV1-19 Visit Number / PV1-50 Alternate Visit ID” on page 272](#) to understand how PV1-7, Attending Doctor is used to route the lab report to the ordering provider’s Centricity Practice Solution desktop.

On export...

The Attending Doctor field is populated with the patient's responsible provider, if one has been specified.

PV1-8 Referring Doctor

On import...

If the import of this message results in the creation of a new patient in Centricity Practice Solution, a new contact is created for the referring doctor, if specified. LinkLogic interprets the first component as the referring doctor's UPIN and requires that the second component, *Family Name*, be specified. To display referring physician in a document, LinkLogic interprets only the second and third components as the referring doctor's last name and first name, respectively.

On export...

The Referring Doctor field is populated with the patient's referring physician if one has been specified.

PV1-19 Visit Number / PV1-50 Alternate Visit ID

These values are external visit identifiers. Each is a string field that is not related to visits identified within the Billing module.

On import...

LinkLogic uses the following logic to determine the visit identifier for the lab result document.

IF PV1-19 (Visit Number) contains a value **THEN**

 Visit ID = PV1-19

ELSE IF PV1-50 (Alternate Visit ID) contains a value

 Visit ID = PV1-50

ELSE

 The document in Centricity Practice Solution is NOT assigned a Visit ID

On export...

If the Chart document for the observation(s) has been assigned a Visit ID, the value is exported in both PV1-19 and PV1-50.

ORC – Common Order

The ORC segment, optional on import, is used to transmit order data that is common to all orders (all types of services that are requested).

Legend

ID	Coded value for HL7-defined tables	CE	Coded element
XCN	Extended composite ID # and name	EI	Entity Identifier
TS	Time stamp	TQ	Timing / Quantity
XTN	Extended telecomm number	CM	Composite
PL	Person Location		

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
ORC-1	2	ID	0119	Order Control	Required	274	Used	
ORC-2	22	EI		Placer Order Number	Optional	274	Optional	
ORC-3	22	EI		Filler Order Number	Optional	274	Optional	
ORC-4	22	EI		Placer Group Number	Not used		Not used	
ORC-5	2	ID	0038	Order Status	Not used		Not used	
ORC-6	1	ID	0121	Response Flag	Not used		Not used	
ORC-7	200	TQ		Quantity/Timing	Not used		Not used	
ORC-8	200	CM		Parent	Not used		Not used	
ORC-9	26	TS		Date/Time of Transaction	Not used		Not used	
ORC-10	120	XCN		Entered By	Not used		Not used	
ORC-11	120	XCN		Verified By	Not used		Not used	
ORC-12	120	XCN		Ordering Provider	Not used		Not used	
ORC-13	80	PL		Enterer's Location	Not used		Not used	
ORC-14	40	XTN		Call Back Phone Number	Not used		Not used	
ORC-15	26	TS		Order Effective Date/Time	Not used		Not used	
ORC-16	200	CE		Order Control Code Reason	Not used		Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
ORC-17	60	CE		Entering Organization	Not used		Not used	
ORC-18	60	CE		Entering Device	Not used		Not used	
ORC-19	120	XCN		Action by	Not used		Not used	

ORC-1 Order Control

On import...

RE (Observations to Follow) is the only Order Control code supported.

ORC-2 Placer Order Number / ORC-3 Filler Order Number

On import...

Although this field is considered conditional in the HL7 specification, LinkLogic treats it as optional.

OBR – Observation Request

The Observation Request (OBR) segment is used to transmit information specific to an order for a diagnostic study or observation, physical exam, or assessment. The Observation Request segment defines the attributes of a particular request for diagnostic services such as EKG or laboratory, or clinical observations, such as vital signs or physical exam.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
EI	Entity Identifier	CQ	Composite Quantity with units
XCN	Extended composite ID number and name	CM	Composite
TS	Time stamp	TQ	Timing/Quantity
XTN	Extended telecomm number	CE	Coded element
ST	String data	NM	Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
OBR-1	4	SI		Set ID - OBR	Optional	277	Optional	
OBR-2	75	EI		Placer Order Number	Optional	277	Optional	
OBR-3	75	EI		Filler Order Number	Optional	278	Optional	
OBR-4	200	CE		Universal Service ID	Optional	278	Optional	278
OBR-5	2	ID		Priority	Not used		Not used	
OBR-6	26	TS		Requested Date/Time	Conditional	279	Not used	279
OBR-7	26	TS		Observation Date/Time	Conditional	279	Used	279
OBR-8	26	TS		Observation End Date/Time	Optional		Optional	
OBR-9	20	CQ		Collection Volume	Not used		Not used	
OBR-10	60	XCN		Collection Identifier	No used		Not used	
OBR-11	1	ID	0065	Specimen Action Code	Not used		Not used	
OBR-12	60	CE		Danger Code	Not used		Not used	
OBR-13	300	ST		Relevant Clinical Information	Not used		Not used	
OBR-14	26	TS		Specimen Received Date/Time	Conditional	280	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
OBR-15	300	CM	0070	Specimen Source	Optional		Not used	
OBR-16	80	XCN		Ordering Provider	Optional	280	Optional	280
OBR-17	40	XTN		Order Callback Phone Number	Not used		Not used	
OBR-18	60	ST		Placer Field 1	Optional	282	Optional	282
OBR-19	60	ST		Placer Field 2	Optional	286	Not used	
OBR-20	500	ST		Filler Field 1	Optional	286	Not used	
OBR-21	60	ST		Filler Field 2	Not used		Not used	
OBR-22	26	TS		Results Rpt/Status Chng - Date/Time	Conditional	287	Optional	
OBR-23	40	CM		Charge to Practice	Not used		Not used	
OBR-24	10	ID	0074	Diagnostic Service Sect ID	Not used		Not used	
OBR-25	1	ID	0123	Result Status	Optional	287	Not used	
OBR-26	400	CM		Parent Result	Not used		Not used	
OBR-27	200	TQ		Quantity/Timing	Conditional	287	Not used	
OBR-28	150	XCN		Result Copies To	Optional	287	Optional	
OBR-29	150	CM		Parent	Not used		Not used	
OBR-30	20	ID	0124	Transportation Mode	Not used		Not used	
OBR-31	300	CE		Reason for Study	Not used		Not used	
OBR-32	200	CM		Principal Result Interpreter	Not used		Not used	
OBR-33	200	CM		Assistant Result Interpreter	Not used		Not used	
OBR-34	200	CM		Technician	Not used		Not used	
OBR-35	200	CM		Transcriptionist	Not used		Not used	
OBR-36	26	TS		Scheduled Date/Time	Not used		Not used	
OBR-37	4	NM		Number of Sample Containers	Not used		Not used	
OBR-38	60	CE		Transport Logistics of Collected Sample	Not used		Not used	
OBR-39	200	CE		Collector's Comment	Not used		Not used	
OBR-40	60	CE		Transport Arrangement Responsibility	Not used		Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
OBR-41	30	ID	0224	Transport Arranged	Not used		Not used	
OBR-42	1	ID	0225	Escort Required	Not used		Not used	
OBR-43	200	CE		Planned Patient Transport Comment	Not used		Not used	

OBR-1 Set ID - OBR

On import...

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats it as optional.

OBR-2 Placer Order Number

On import...

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats it as optional.

When an order is marked To Be Completed

A Centricity Practice Solution order specified by the first component of OBR-2 is marked To Be Completed if all the following are true:

- OBR-2, Placer Order Number, and OBR-25, Result Status, are both specified.
- OBR-25, Result Status, is either F (Final), C (Correction), or X (Deleted).
- All corresponding OBX-11 values (Observation Result Status) are either F, C, X, or U (Changed to Final without Retransmitting Results Already Sent as Preliminary)



Use commas to separate multiple order numbers in the first component of OBR-2, Placer Order Number. LinkLogic ignores all other components.

Imported lab reports automatically signed. You can set up LinkLogic to sign imported lab reports automatically (select the LinkLogic relationship in **LinkLogic > Task Options**). The signature line displays Filed Automatically (Without Signature).

A provider must still review the results, but setting this option immediately displays the results on import in the patient's flowsheet. When lab documents are signed, all orders marked for completion are set to Completed status.

OBR-3 Filler Order Number / OBR-4 Universal Service ID

On import...

Although these fields are considered required or conditional in the HL7 specification, LinkLogic treats this field as optional.

When document overlay is enabled...

Document overlay replaces an imported document with a later version of the same document, so that only the most recent information displays on the provider's Centricity Practice Solution desktop and in the chart.

When *document overlay* is enabled in LinkLogic Task Options, the following fields are required:

- OBR-3
- OBR-4 (only the first component is used in document overlay matching)
- Either OBR-7 or OBR-14

If these fields don't have values, then the imported document is processed as if document overlay was not enabled. A valid date/time value is required: either OBR-7 Observation Date/time or OBR-14 Specimen Date/Time. See also ["OBR-25 Result Status" on page 287](#).



The date/time field is used to match documents for overlay. The date/time in OBR-7 or OBR-14 must match the date/time of the document to be overlaid.

OBR-14 is not required for document overlay, but when included its value must remain the same in all documents for overlay to occur.

For more information about document overlay, see ["Using document overlay" on page 577](#), or in online help module *Using Documents*, see "Overlay (replace) documents."

Impact of document summary length limit

The Centricity Practice Solution document summary for lab report documents contains as many OBR-4, Universal Service ID, values as will fit in its 64-character limit. By default, LinkLogic includes OBR-4 values from up to 6 OBR segments. If one or more ORC segments are present, LinkLogic takes OBR-4 values only from OBR segments associated with the first ORC.

Configuration file. A cross-reference or protocol (IXP) file that tells LinkLogic how to import or export information between Centricity Practice Solution and an external system.

For lab vendors that send one ORC segment per OBR segment, select the standard Add-On Configuration file **summary2.ixp** in LinkLogic Task Options to change this behavior to include the first OBR-4 value from each of up to six ORC segments. Contact Centricity Services or your Value-Added Reseller for more information.



The default or initial location for browsing is **LLOGIC/CONFIG/LOCAL**. To find **summary2.ixp**, navigate to **LLOGIC/CONFIG/STANDARD**.

On export...

OBR-4, Universal Service ID, is populated with the following values:

- The first component, *Identifier*, contains the Centricity Practice Solution document ID that this OBR message segment represents.
- The second component, *Text*, contains the summary text associated with the document this OBR message segment represents.

OBR-6 Requested Date/Time, OBR-7 Observation Date/Time, OBR-8 Observation End Date/Time



OBR-7 and OBR-8 are physiologically relevant times.

On import...

Based on the following logic, LinkLogic may use OBR-6, OBR-7, or another value as the clinical date/time of the lab report document:

IF OBR-7 (Observation Date/Time) contains a value

THEN Lab report document's clinical date = OBR-7

ELSE IF OBR-27, component 4 (Quantity/Timing Start date/time) contains a value

THEN Lab report document's clinical date = OBR-27, component 4

ELSE IF OBR-6 (Requested Date/Time) contains a value

THEN Lab report document's clinical date = OBR-6

ELSE IF OBR-14 (Specimen Received Date/Time) contains a value

THEN Lab report document's clinical date = OBR-14

ELSE IF OBR-22 (Results Rpt/Status Chng - Date/Time) contains a value

THEN Lab report document's clinical date = OBR-22

ELSE

Lab report document's clinical date = MSH-7 (Date/Time of Message)



This logic is also used to determine the clinical date/time of an observation within the report (see ["OBX-14 Date/Time of the Observation" on page 293](#)), however OBX-14 is not used in determining the date for the document.

OBR-7 or OBR-14 required for document overlay

When document overlay is enabled in LinkLogic Task Options, either OBR- 7, Observation Date/Time, or OBR-14, Specimen Received Date/Time, is required. If either field does not contain a value, the imported document is processed as

if document overlay was not enabled. For details, see [“When document overlay is enabled...”](#) on page 278.

On export...

OBR-7, Observation Date/Time, is populated with the clinically relevant date associated with the Centricity Practice Solution document that this OBR message segment represents. No other date/time fields are populated.

OBR-14 Specimen Received Date/Time



When an observation is associated with a specimen, the order placer may send the following items:

- OBR-9 Collection Volume
- OBR-10 Collector Identifier
- OBR-11 Specimen Action Code
- OBR-14 Specimen Received Date/Time

LinkLogic uses only OBR-14 and ignores the other items.

On import...

Determining clinical date/time

In some circumstances, LinkLogic may use a value supplied for OBR-14, Specimen Received Date/Time as the clinical date/time for the lab report document. For details, see [“OBR-6 Requested Date/Time, OBR-7 Observation Date/Time, OBR-8 Observation End Date/Time”](#) on page 279.

OBR-7 or OBR-14 required for document overlay

When document overlay is enabled in LinkLogic Task Options, either OBR- 7, Observation Date/Time, or OBR-14, Specimen Received Date/Time, is required. If either field does not contain a value, the imported document is processed as if document overlay was not enabled. For details, see [“When document overlay is enabled...”](#) on page 278.

OBR-16 Ordering Provider

On import...

Length limits

Although the HL7 specification sets a maximum length of 80 characters, LinkLogic limits this field to a maximum of 32 characters.

Determining ordering provider

LinkLogic uses the following logic to determine the correct name of the ordering provider and to route the lab report to their Centricity Practice Solution desktop.

IF OBR-16 (Ordering Provider) contains a value

IF provider defined in OBR-16 is NOT obsolete

THEN Ordering Provider = Provider defined in OBR-16

ELSE IF Registration specifies a responsible provider

AND that provider is NOT an obsolete user

THEN Ordering Provider = Patient's Responsible Provider in Centricity Practice Solution

ELSE

Issue an error indicating that the document is orphaned and require a user to specify a responsible provider

ELSE IF PV1-7 (Attending Doctor) contains a value

IF provider defined in PV1-7 is NOT obsolete

THEN Ordering Provider = Provider defined in PV1-7

ELSE IF EMR Registration specifies a responsible provider

AND that provider is NOT an obsolete user

THEN Ordering Provider = Patient's Responsible Provider in the application

ELSE

Issue an error indicating that the document is orphaned and require a user to specify a responsible provider

ELSE IF Registration specifies a responsible provider

AND that provider is not an obsolete user

THEN Ordering Provider = Patient's Responsible Provider in Centricity Practice Solution

ELSE

Issue an error indicating that the document is orphaned and require a user to specify a responsible provider



This logic only determines which field to use. It does not validate the data. If the value is invalid, LinkLogic does not try to use the next field in the sequence shown above.

Avoid routing lab documents to wrong provider

If LinkLogic cannot determine the ordering provider, it will send the results to the patient's responsible provider by default. To avoid this, configure LinkLogic

to generate an error and create an orphaned document when ordering provider is not found. Then manually select the correct provider to route to.

To set LinkLogic to generate an error when imported lab reports have no Ordering Provider, do the following:

- 1 In **Administration** go to **System > LinkLogic > Task Options**.
- 1 In the Import Tasks folder, select your Lab Results Import task.
- 2 Select **Document Signature and Routing** and then check **Create orphan document when ordering provider is not found**.

Keep User Name/IDs cross-reference file up to date

Avoid manually correcting the provider route by maintaining your user name/IDs cross-reference file that maps lab order provider IDs to your application order provider IDs. When an ordering provider cannot be found, it may indicate that the cross-reference file has not been updated to include new or changed provider IDs. For more information, see [“What’s in a cross-reference file?” on page 463](#).

On export...

OBR-16, Ordering Provider, is populated with the responsible provider identified for the Centricity Practice Solution document that this OBR segment represents.

OBR-18 Placer Field 1

On import...

If OBR-18, Placer Field 1, is not blank, it is interpreted as an alternate document type to be used instead of the Centricity Practice Solution “Lab Report” document type. The HL7 Document Code TN is interpreted as a “Lab Report” document that is not editable in Centricity Practice Solution.

Mapping HL7 document codes to application document types

LinkLogic uses the following mappings from HL7 document codes to Centricity Practice Solution document types created for lab results.

Standard cross-reference files map OBR-18, Placer Field 1, values to document type abbreviations defined in Centricity Practice Solution. If you choose to use values other than those suggested in HL7 table 270 (for TXA-2, Document Type), this field should contain the abbreviation for the document type defined in the application. You can cross-reference the value in this field

with document types in Centricity Practice Solution. See also ["Cross-referencing field values" on page 461.](#)

This HL7 code...	With this description...	Maps to this document type...
AP	Anatomic Pathology	Pathology Report
AR	Autopsy Report	External Other
AS	Admission Summary	Hospital Admission
BB	Blood Bank	Lab Report
CC	CardioDiagnostics	Diagnostic Report Other
CL	Clinic Letter	Letter
CM	Case Management	Clinical Lists Update
CN	Consult	Consultation Report
CO	Clinic Note	Internal Other
CR	Correction	External Other
CS	Clinical Summary	Clinical Summary
CU	Clinical Ultrasound	Imaging Report
DH	Discharge Instructions	External Other
DI	Diagnostic Imaging	Imaging Report
DN	Diagnostic Neurology	Diagnostic Report other
DR	Diagnostic Report Other	Diagnostic Report Other
DS	Discharge Summary	Hospital Discharge Summary
ED	ER Discharge Summary	Emergency Report
EK	EKG Report	EKG Report
ER	Emergency Report	Emergency Report
FE	Filed in Error	Filed in Error
GC	General Correspondence	External Correspondence
HC	Home care Report	Home care Report
HP	History and Physical Exam	Hospital History & Physical
HS	Heart Station	Diagnostic Report Other
LD	Labor and Delivery Report	Hospital Procedure Report
LR	Lab Report	Lab Report

This HL7 code...	With this description....	Maps to this document type...
OP	Operative Report	Operative Report
OT	Occupational Therapy	Rehab Report
OV	Office Visit	Office Visit
PA	Pathology Report	Pathology Report
PC	Psychiatric Consultation	Consultation Report
PE	Phone Encounter	Phone Note
PH	Psychiatric History	External Other
PN	Procedure Note	External Other
PR	Progress Note	External Other
RA	Radiology	Imaging Report
RR	Rehab Report	Rehab Report
RX	Rx Refill	Rx Refill
SP	Surgical Pathology	Pathology Report
SR	Social Worker Report	Social Worker Report
SS	Special Studies	Diagnostic Report Other
TH	Physical Therapy	Rehab Report
TN	Transcribed Note	Lab Report
TS	Transfer Summary	External Other
ZZ	Other	External Other

On export...

Mapping Centricity Practice Solution document types to HL7 document codes

LinkLogic uses the following mappings from Centricity Practice Solution document types to HL7 document codes.

A standard cross-reference file maps Centricity Practice Solution document types to values suggested in HL7 table 270 (for TXA-2, Document Type). You

can cross-reference document types with the value in this field. For more information, see ["Cross-referencing field values" on page 461](#).

This document type maps to...	HL7 code...	With this HL7 description...
Clinical Lists Update	ZZ	Other
Clinical Summary	CS	Clinical Summary
Consultation Report	CN	Consult
Diagnostic Report Other	DR	Diagnostic Report Other
EKG Report	EK	EKG Report
Emergency Report	ER	Emergency Report
External Correspondence	GC	General Correspondence
External Other	ZZ	Other
Filed in Error	FE	Filed in Error
Home Care Report	HC	Home Care Report
Hospital Admission	AS	Admission Summary
Hospital Discharge Summary	DS	Discharge Summary
Hospital History & Physical	HP	History & Physical Exam
Hospital Procedure Report	PN	Procedure Note
Imaging Report	DI	Diagnostic Imaging
Internal Correspondence	GC	General Correspondence
Internal Other	ZZ	Other
Lab Report	LR	Lab Report
Letter	CL	Clinic Letter
Office Procedure	PN	Procedure Report
Office Visit	OV	Office Visit
Operative Report	OP	Operative Report
Pathology Report	PA	Pathology Report
Phone Note	PE	Phone Encounter
Registration Update	ZZ	Other
Rehab Report	RR	Rehab Report

This document type maps to...	HL7 code...	With this HL7 description...
Rx Refill	RX	Rx Refill
Social Work Report	SR	Social Work Report
Transcription	LR	Lab Report

OBR-19 Placer Field 2

If OBR-19, Placer Field 2, is not blank, then it is stored in Centricity Practice Solution as an external document identifier. This same value can be imported in ImageLink in TXA-16, Unique Document File Name, to attach external images to lab report documents. For more information, see ["ImageLink Import/Export HL7 interface specification" on page 135](#).

OBR-20 Filler Field 1

The order filler sends the following items, however, LinkLogic does not use all of them:

- OBR-20 Filler Field 1
- OBR-21 Filler field 2
- OBR-22 Results Rpt/Status Change Date/Time
- OBR-23 Charge to Practice
- OBR-25 Results Status
- OBR-26 Parent Result
- OBR-32 Principal Result Interpreter
- OBR-33 Assistant Result Interpreter
- OBR-34 Technician
- OBR-35 Transcriptionist
- OBR-36 Scheduled Data/Time

OBR-20, Filler Field 1, is used to identify the lab site. This satisfies CLIA regulations in the United States regarding the identification of the responsible producing service.

Length limit

Although the HL7 specification constrains the maximum length of this field's value to be 60 characters, LinkLogic supports a maximum length of 500 characters. LinkLogic interprets this field as a coded element with up to 6 optional components:

component: <Abbreviated name> ^ <Full name> ^ <Address> ^ <City> ^ <State> ^ <Zip code>

This lab site identification is written into the lab report document in the footnotes associated with the OBR segment.

OBR-22 Results Rpt/Status Chng - Date/Time

This is information that the order filler sends. Although this field is considered required or conditional in the HL7 specification, LinkLogic treats it as optional.

See [“OBR-6 Requested Date/Time, OBR-7 Observation Date/Time, OBR-8 Observation End Date/Time” on page 279](#), to understand how this field is used in determining the clinical date/time for the associated document.

OBR-25 Result Status

This is information that the order filler sends. Although this field is considered required or conditional in the HL7 specification, LinkLogic treats it as optional.

All result status values in Table 0123 of the HL7 specification are supported. However, only P (Preliminary), C (Correction), and F (Final) are considered meaningful.

Document result status

If OBR-25 is either F (Final), C (Correction), or X (Deleted), see [“When an order is marked To Be Completed” on page 277](#), for how these values are used.

If OBR-25, Result Status, is anything other than F (Final), C (Correction), or X (Deleted), the document is considered preliminary. Preliminary documents show (P) on the document summary line in Centricity Practice Solution. When document overlay is enabled, a preliminary document can not replace an existing final document in the database. Likewise, a preliminary lab value can not replace an existing final value. See [“OBR-3 Filler Order Number / OBR-4 Universal Service ID” on page 278](#) for more about document overlay.

OBR-27 Quantity/Timing

See [“OBR-6 Requested Date/Time, OBR-7 Observation Date/Time, OBR-8 Observation End Date/Time” on page 279](#) to understand how this field is used to determine the clinical date/time for the associated document.

OBR-28 Result Copies To

The imported lab report document is routed to the desktops of all Centricity Practice Solution users specified in OBR-28, Result Copies To. To use this field with a cross-reference file, use the repeat delimiter (tilde (~) character is the default) to separate multiple user names/IDs.

If you use commas in this field without any repeat delimiters, LinkLogic interprets the values between commas as login names of Centricity Practice Solution users. The document is routed only to those that correctly match actual login names. For more information, see [“Cross-referencing field values” on page 461](#).

When the repeat delimiter is used to separate multiple values, each value can be specified in one of two possible forms: *“lastname firstname”* or Centricity Practice Solution login name (which can be obtained through cross-referencing).

OBX – Observation/Result

The Observation/Result segment (OBX) contains is a clinical fact or other information about a patient’s mental or physical status, such as a lab result, a vital sign, or the answer to a medical history question. Observations can be numeric or text.

You can attach comments to individual lab results by including an NTE segment immediately after the OBX segment. See [“NTE – Notes and Comments” on page 267](#). The comment is written into the lab report. The Observation Details window in the flowsheet contains the following note: “See lab report for comments”.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
ST	String data	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	CE	Coded element
TS	Time stamp	NM	Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
OBX-1	10	SI		Set ID - Observation Simple	Optional		Not used	
OBX-2	2	ID	0125	Value Type	Optional	289	Used	289
OBX-3	590	CE		Observation Identifier	Required	289	Used	289
OBX-4	20	ST		Observation Sub-ID	Optional	290	Optional	
OBX-5	2000	ST		Observation Value	Optional	290	Used	290
OBX-6	60	CE		Units	Optional	290	Conditional	290
OBX-7	60	ST		Reference Range	Optional	291	Not used	
OBX-8	10	ID	0078	Abnormal Flags	Optional	291	Optional	
OBX-9	5	NM		Probability	Not used		Not used	
OBX-10	5	ID	0080	Nature of Abnormal Test	Not used		Not used	
OBX-11	2	ID	0085	Observation Result Status	Optional	291	Used	291
OBX-12	26	TS		Date Last Obs Normal Values	Not used		Not used	
OBX-13	20	ST		User Defined Access Checks	Not used		Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
OBX-14	26	TS		Date/Time of the Observation	Optional	293	Optional	293
OBX-15	200	CE		Producer's ID	Optional	293	Not used	
OBX-16	80	XCN		Responsible Observer	Not used		Not used	
OBX-17	60	CE		Observation Method	Not used		Not used	

OBX-2 Value Type

On import...

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats it as optional.

LinkLogic ignores value types, because all values are treated as text strings.

On export...

OBX-2, Value Type, is always populated with the value ST (string data).

OBX-3 Observation Identifier

On import...

LinkLogic uses the first component of OBX-3 to identify the Centricity Practice Solution observation term. This value may be cross-referenced on import to accommodate identification spaces used by external information systems. For more information, see ["Cross-referencing field values" on page 461](#).

Displaying longer values in tabular format

LinkLogic attempts to include information from each OBX segment on a single line in Centricity Practice Solution lab report documents. It uses a fixed-width font and appropriate space characters to display a table of data that includes *test name, abnormal flags, result value, units, preliminary indicator, reference range, and possibly producing lab*. This limits column widths for each field.

If the second component of OBX-3 exceeds 21 characters, LinkLogic displays the remaining data on a separate line following the test description.

On export...

OBX-3 component 1, *Identifier*, contains the unique Centricity Practice Solution Observation Identifier for the observation represented by this OBX message segment.

OBX-3 component 2, *Text*, contains the short Centricity Practice Solution description for the observation represented by this OBX message segment.

OBX-3, Observation Identifier, may be cross-referenced on export to accommodate identification spaces used by external information systems. For more information, see [“Cross-referencing field values” on page 461](#).

OBX-4 Observation Sub-ID

On import...

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats it as optional.

OBX-5 Observation Value

On import...

Although this field is required or conditional in the HL7 specification, LinkLogic treats it as optional.

Some labs set the observation value to DNR (Did Not Report) to indicate no test was performed. If OBX-5 contains the string DNR, the lab report shows “Did Not Report” and nothing is dispersed to the flowsheet.

Displaying longer values in tabular format

LinkLogic attempts to include information from each OBX segment on a single line in Centricity Practice Solution lab report documents. A fixed-width font and appropriate space characters produce a table of data that includes *test name, abnormal flags, result value, units, preliminary indicator, reference range*, and possibly *producing lab*. This limits column widths for each field.

If Observation Value exceeds 17 characters, LinkLogic includes “Result Below...” with the other data fields, and displays the observation value on a separate line prefaced with “RESULT:”. When this happens, LinkLogic displays non-final results status on the second line after the observation value.

On export...

OBX-5, Observation Value, may contain a string that includes both the lab result value and the unit of measurement in which the value was initially reported. If no appropriate unit conversion is available during import, LinkLogic stores the value and the unit together in the flowsheet.

OBX-6 Units

On import...

If OBX-3, Observation Identifier, identifies a Centricity Practice Solution observation term that has expected units, and no unit is specified in OBX-6, LinkLogic displays the observation value with a question mark in the flowsheet. Information about the affected observation values and the

expected units are written into the lab report in the footnotes associated with the corresponding OBR segment.

Centricity Practice Solution can graph only numeric observation values. If the OBX-6 units match application observation term units, or if LinkLogic can convert the value from OBX-6 units, then LinkLogic will store numeric observation values. Otherwise LinkLogic stores textual observation values.

On export...

OBX-6 contains the unit of measurement applicable to the observation if the units are known and not included in the same text string with the observation.

OBX-7 Reference Range

On import...

LinkLogic attempts to include information from each OBX segment on a single line in Centricity Practice Solution lab report documents. A fixed-width font and appropriate space characters produce a table of data that includes *test name, abnormal flags, result value, units, preliminary indicator, reference range,* and possibly *producing lab*. This limits column widths for each field.

If OBX-7 Reference Range exceeds 16 characters, LinkLogic includes "Range Below..." with the other data fields, and displays the reference range value on a separate line prefaced with "RANGE:".

OBX-8 Abnormal Flags

On import...

LinkLogic supports all abnormal flag values in HL7 Table 0078. If the abnormal flag value is not N (Normal), then the Centricity Practice Solution lab report document sent to the ordering provider is usually marked urgent. You can select which abnormal flags result in an urgent priority document in **LinkLogic > Task Options**. Select the **Lab Results** relationship, click **Abnormal Results**, and then check the abnormal values to include.

OBX-11 Observation Result Status

On import...

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats this field as optional.

LinkLogic supports all observation result status codes in HL7 Table 0085 except **W** (Post original as wrong, such as transmitted for wrong patient). If unspecified, a default value of R (Results Entered - Not Verified) is assumed on import and export. See ["Results order of precedence" on page 292](#), for descriptions of all supported values.

Overriding final results

The HL7 standard specifies that final results (F) can only be changed with corrected results (C). However, LinkLogic permits a final result (F) to override a previously entered final result (F). When an existing final result is overridden with a different value, a note is appended to the lab report highlighting the override action and noting the original and current values.

Results order of precedence

LinkLogic uses OBX-11, Observation Result Status, to determine whether to accept or reject the corresponding Observation Value from OBX-5. If accepted, LinkLogic replaces the current observation value in Centricity Practice Solution with the incoming value. Result values are accepted only when the incoming result status values have the same or higher precedence. The following precedence order is used, starting with the highest:

- **C** – Correction
- **U** – Changed to final without retransmitting results already sent as preliminary
- **F** – Final results
- **P** – Preliminary
- **R** – Results entered, not verified
- **S** – Partial results
- **I** – Specimen in lab, results pending
- **D** – Deletes the OBX record
- **X** – Results cannot be obtained for this observation

Preliminary Result Status values

If OBX-11 contains a value other than F (Final), C (Correction), U (Changed to Final without Retransmitting Results Already Sent as Preliminary), or X (Deleted), the document is considered preliminary and Centricity Practice Solution displays "(P)" on the document summary line.

When *document overlay* is enabled, a preliminary document cannot replace an existing final document in Centricity Practice Solution, nor can a preliminary lab value replace an existing final value.

For more information about document overlay, see ["Using document overlay" on page 577](#), or in the online help module *Using Documents*, see "Overlay (replace) documents."

On export...

LinkLogic supports all observation result status codes in HL7 Table 0085. If unspecified, a default value of R (Results Entered - Not Verified) is assumed on import and export. See also ["Overriding final results" on page 292](#), and ["Results order of precedence" on page 292](#).

Document overlay
replaces an imported document with a later version of the same document, so that only the most recent information displays on the provider's desktop and in the chart.

OBX-14 Date/Time of the Observation

On import...

LinkLogic uses the following logic to determine a lab result's clinically relevant date/time:

IF OBX-14 (Date/Time of the Observation) contains a value

THEN Result's clinical date = OBX-14

ELSE IF OBR-7 (Observation Date/Time) contains a value

THEN Result's clinical date = OBR-7

ELSE IF OBR-27, component 4 (Quantity/Timing Start date/time) contains a value

THEN Result's clinical date = OBR-27, component 4

ELSE IF OBR-6 (Requested Date/Time) contains a value

THEN Result's clinical date = OBR-6

ELSE IF OBR-14 (Specimen Received Date/Time) contains a value

THEN Result's clinical date = OBR-14

ELSE IF OBR-22 (Results Rpt/Status Chng - Date/Time) contains a value

THEN Result's clinical date = OBR-22

ELSE

THEN Result's clinical date = MSH-7 (Date/Time of Message)

On export...

OBX-14 is populated with the clinical date/time associated with the observation.

OBX-15 Producer's ID

On import...

OBX-15, Producer's ID, identifies the responsible producing service within the external lab report document to satisfy CLIA regulations in the United States.

Length limits

Although the HL7 specification constrains this field's value to a maximum of 60 characters, LinkLogic supports a maximum 200 characters.

Correlating Producer's ID with observation result data

Since a lab report may have multiple OBX segments per OBR, LinkLogic displays all non-blank OBX-15 values in the Producer ID information in the lab report in footnotes associated with the corresponding OBR segment.

To correlate OBX-15 values and items listed in the Producer ID information in the footnotes, LinkLogic assigns each non-blank OBX-15 value a number that appears with an asterisk at the end of the line containing the observation result data from that OBX segment. An asterisk and the corresponding number precede the Producer ID information in the footnotes of the lab report. See an example in [“HL7 data displayed in lab report document” on page 297](#).

MSA – Message Acknowledgement

The MSA segment is used to acknowledge a previously received message. It triggers a resend if the acknowledgement code indicates the message was rejected or generated an error.

Legend	
ID	Coded value for HL7-defined tables
ST	String data
CE	Coded element
NM	Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
MSA-1	2	ID	0008	Acknowledgement Code	Required	295	Used	
MSA-2	20	ST		Message Control ID	Required		Used	
MSA-3	80	ST		Text Message	Optional		Not used	
MSA-4	15	NM		Expected Sequence Number	Not used		Not used	
MSA-5	1	ID	0102	Delayed Ack Type	Not used		Not used	
MSA-6	100	CE		Error Condition	Not used		Not used	

MSA-1 Acknowledgement Code (Import)

The supported values for Acknowledgment Code include:

This value...	Means this...
AA	Original mode: Application Accept Enhanced Mode: Application Acknowledgement: Accept
AR	Original mode: Application Reject Enhanced mode: Application Acknowledgement: Reject This code triggers a message resend event.
AE	Original mode: Application Error Enhanced mode: Application Acknowledgement: Error This code triggers a message resend event.

Lab Report Document Layout

LinkLogic creates a lab report document in Centricity Practice Solution for each HL7 lab result message. A standard lab report format is used.

The following example illustrates where values from the HL7 message appear in lab report documents.

Sample HL7 message

```
MSH|^~\&|LabQuest|||20010520130000||ORU|1|P|2.2||NE||
PID|1||MR-000-086||Prosper^Alicia^||19511218|F||W|^^^^^|||English|S|||541-99-4230
PV1|1|R|E IM|||smitchell^Mitchell MD^Sam^A.|bcasey^Casey^Ben
OBR|1|PlacerOrder1234|9876|BloodTest4A^Red Blood Test
4A||200106060606|200107070707|200108080808|||200105141414|BLDA|lchoong^Choong
MD^Lynn||LR
||BLDWRKS^Blood Works^123 Main Street^Portland^OR^97223||200105222222||P|||||||
OBX|1||RBC^RED BLOOD COUNT||6.77|MILL/MCL|4.40-5.80|HH|N||P||||LabsRUs
NTE|1||This is a note that corresponds to the red blood count above
NTE|2||This is the second line of the red blood count note
```

HL7 data displayed in lab report document

Here is how the sample HL7 message displays in a Centricity Practice Solution lab report document. The message segment fields and detailed notes are listed to the right. The document summary for this report (appearing in the document list) would be "Lab Rpt: (P) Red Blood Test 4A". For details, see ["OBX-11 Observation Result Status" on page 291](#), and ["Impact of document summary length limit" on page 278](#). By default, clinical date/time of application observation values are taken from OBX-14 and are displayed in the flowsheet, not the document. See ["OBX-14 Date/Time of the Observation" on page 293](#).

This part of the lab report document...	Comes from...
<p>Patient: Alicia Prosper ID: LabQuest MR-000-086 Note: All result statuses are Final unless otherwise noted. Tests: (1) Red Blood Test 4A (BloodTest4A) ! RED BLOOD COUNT [HH] 6.77 MILL/MCL (P) 4.40-5.80 *1</p> <p><i>Note: LinkLogic attempts to include information from each OBX segment on a single line of the lab report document. Extra lines are generated when OBX-3, OBX-5, and/or OBX-7 values exceed certain widths. See "Displaying longer values in tabular format" on page 289 for more information.</i></p> <p>This is a note concerning the red blood count above This is the second line of the red blood count note</p> <p>Note: An exclamation mark (!) indicates a result that was not dispersed into the flowsheet.</p> <p>Document Creation Date: 03/30/2005 12:55 PM</p> <hr/> <p>(1) Order result status: Preliminary Collection or observation date-time: 07/07/2001 07:07 Requested date-time: 06/06/2001 06:06 Receipt date-time: 05/14/2001 14:14 Reported date-time: 05/22/2001 22:22 Referring Physician: Ben Casey Ordering Physician: Lynn Choong MD (lchoong) Specimen Source: BLDA Source: LabQuest Filler Order Number: 9876 Lab site: BLDWRKS, Blood Works</p>	<p>PID-5.2, PID-5.1 MSH-3, PID-3 (Lab patient ID)</p> <p>OBR-4.2 (OBR-4.1) OBX-3, OBX-5 and OBX-6, OBX-7, and OBX-15 [HH] = abnormal flag data. See "OBX-8 Abnormal Flags" on page 291. (P) = OBX-11 non-final result status *1 links results with Producer ID listed below. See "Correlating Producer's ID with observation result data" on page 293.</p> <p>NTE-3 NTE-3</p> <p>! appears if OBX-3 value does not match an observation term in the application. See "OBX-3 Observation Identifier" on page 289. Date/time is LinkLogic import time.</p> <p>OBR-25 OBR-7 OBR-6 OBR-14 OBR-22 PV1-8.3, PV1-8.2 OBR-16.3, OBR-16.2 (OBR-16.1) OBR-15 MSH-3, MSH-4 OBR-3 OBR-20.1, OBR-20.2</p>

123 Main Street
Portland OR 97223
Producer ID *1:LabsRUs

OBR-20.3
OBR-20.4, OBR-20.5, OBR- 20.6
OBX-15

Importing unit conversions

The application includes conversion ratios that convert values specified in LinkLogic Lab Results data to values for Centricity Practice Solution observation terms. This conversion is required to support graphing in the Chart Flowsheet.

When you set up Lab Results import options, check **Allow non-equivalent unit conversions** to tell the application to convert non-equivalent units to the application's standard units for display in the Flowsheet. If you do not check this option, units are not converted and the value and unit are imported to the flowsheet as text.

You can also create custom ratios for a laboratory to add to conversions performed by the application. A lab unit conversion extension file specifies a list of lab result unit conversion ratios to add to the conversion ratio table for lab observations that go into the flowsheet.

Create a lab conversion extension file (.cnv)

- 1 Open a text file and save it with a .cnv file extension such as **xyzlab.cnv**.
- 2 In the first non-blank line, list version information for the conversion file. for example "Unit Conversions v1.0".
- 3 In each non-blank line after the version information enter a comma-separated list with exactly three values:

Unit1, Ratio, Unit2



Unit1 is a measurement unit (maximum 20 characters) representing the unit supplied by the laboratory in the lab results file.

Ratio is a double-precision floating point number for the conversion factor.

Unit2 is a measurement unit (maximum 20 characters) representing the value to be displayed in the Flowsheet.

- 4 When finished, save the file

Example - xyzlab.cnv:

```
Unit Conversions v1.0
FT, 12, IN
YD, 3, FT
MILE, 5280, FT
IN, 2.54, CM
```

LB, 0.454, KG

WK, 7, DAY

YR, 52, WK

How lab unit conversion extension files are used

When you import a lab unit conversion file, the application handles its entries as follows:

- If the lab unit conversion extension file cannot be read, an error is displayed and the file is ignored and no entries are appended. If this occurs check the format of your entries, correct errors, and try again.
- New ratios from the file are appended to the conversion ratio table in the Centricity Practice Solution database.

If a unit conversion entry in the file duplicates one already in the database, the file entry is ignored and the existing conversion ratio in the database is preserved.

CHAPTER 11

Orders Export HL7 interface specification

[ORM message – Order Message 302](#)

[MSH – Message Header 304](#)

[EVN – Event Type 307](#)

[PID – Patient Identification 308](#)

[PV1 – Patient Visit 312](#)

[IN1 – Insurance 315](#)

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[OBR – Observation Request 328](#)

[NTE – Notes and Comments 332](#)

[DG1 – Diagnosis 333](#)

[MSA – Message Acknowledgement 337](#)

This HL7 based interface supports the export of orders of Test and Referral type documented during a patient encounter. (Service type orders are not sent.)

It is based upon the HL7 standard ORM message and supports one trigger event: O01, General Order Message.

See “[ORM message – Order Message](#)” on page 302.



We assume you are familiar with HL7. This document should be read together with the HL7 specification, version 2.3.

For details, visit the HL7 Web site at <http://www.HL7.org>, or contact Health Level Seven, 3300 Washtenaw Ave., Suite 227, Ann Arbor, MI 48104-4250; Phone: (313) 677-7777; Fax: (313) 677-6622.

ORM message – Order Message

An ORM message includes:

- Message header (MSH) and patient information (PID, PV1, GT1, IN1).
- Common order (ORC) segments and optional clinical notes (NTE).
- One or more diagnoses (DG1)
- One or more observation request (OBR) segments defining observation type and request specifics.

Legend	
[...]	Optional
{...}	Repeating
{{...}}	Optional and repeating

ORM Message Segments

Export from LinkLogic	Segment name	Trigger O01	See page...
MSH	Message Header	Required	
EVN	Event Type	Required	
PID	Patient ID	Required	
[PV1	Patient Visit	Optional	
[PV2]	Patient Visit, additional	Ignored	
{{IN1	Insurance	Optional	303
[IN2]	Insurance	Ignored	
[IN3] }	Insurance, Guarantor	Optional	303
{{GT1}	Guarantor, Insurance	Optional	303
{ORC	Common Order	Required	303
OBR	Observation Request	Required	
[{NTE}	Notes & Comments	Optional	
[{DG1}	Diagnosis	Optional	
}			
MSH	Message Header	Conditional	
MSA	Msg Ack	Conditional	
[ERR]	Error	Ignored	

IN1 - Insurance and GT1 - Guarantor segments

By default, LinkLogic includes insurance and guarantor data in the ORM message. This is optional behavior that can be disabled in LinkLogic task options setup so that insurance and guarantor data are not included.

ORC - Common Order segment

Orders are grouped based on the associated chart document. If multiple pairs of ORC and OBR segments are included with a single MSH, the orders were added in a single chart update. When pairs of ORC and OBR segments are grouped under separate MSH records, the associated orders were created in separate chart updates.

The HL7 specification expect to receive diagnoses following and at the same level as OBR segments. Centricity Practice Solution associates diagnoses with individual orders, and so LinkLogic follows the HL7 specification.

Detailed ORM HL7 message segments

This section provides detailed specifications for the following HL7 message segments used in the ORM message:

For information about this segment...	See page...
MSH - Message Header	304
EVN - Event Type	307
PID - Patient Identification	308
PV1 - Patient Visit	312
IN1 - Insurance	325
GT1 - Guarantor	315
ORC - Common Order	333
OBR - Observation Request	333
NTE - Notes and Comments	325
DG1-Diagnosis	333
MSA - Message Acknowledgement	337

Each message segment table lists the segment elements or fields in sequence order (MSH-1, MSH-2, MSH-3, and so on) with the following information:

- **Element name**
- **Maximum length** in LinkLogic
- **Data type**
- **Source table** in the HL7 specification where applicable
- **LinkLogic usage on export** (Required, Optional, Ignored, and so on)

For definitions of usage terms, see [“How LinkLogic uses message segments” on page 42](#)



Click blue page number links in the following tables to jump to detail notes (when viewing the Adobe PDF version of this guide) or look for notes under the element code and name listed after the table.

MSH – Message Header

The Message Header segment (MSH) should always be in the first segment in each HL7 message. MSH defines the intent, source, destination, and some specifics of the syntax of a message.

Legend

CE	Coded element	ID	Coded value for HL7-defined tables	ST	Character string
CM	Order sequencing component	NM	Numeric	TS	Time stamp
HD	Hierarchic designator	PT	Processing type		

SEQ	Lnth	Data type	HL7 table	Element name	This field is...	See page
MSH-1	1	ST		Field Separator	Required	
MSH-2	4	ST		Encoding Characters	Required	
MSH-3	40	HD		Sending Application	Used	305
MSH-4	20	HD		Sending Facility	Used	305
MSH-5	40	HD		Receiving Application	Used	305
MSH-6	30	HD		Receiving Facility	Used	305
MSH-7	26	TS		Date/time of Message	Used	305
MSH-8	40	ST		Security	Not used	
MSH-9	7	CM	0076	Message Type	Required	306
MSH-10	20	ST		Message Control ID	Required	
MSH-11	3	PT	0103	Processing ID	Required	306
MSH-12	8	ID	0104	Version ID	Required	306

SEQ	Lnth	Data type	HL7 table	Element name	This field is...	See page...
MSH-13	15	NM		Sequence Number	Not used	
MSH-14	180	ST		Continuation Pointer	Not used	
MSH-15	2	ID	0155	Accept Ack Type	Optional	306
MSH-16	2	ID	0155	Application Ack type	Optional	306
MSH-17	2	ID		Country Code	Not used	
MSH-18	6	ID	0211	Character Set	Not used	
MSH-19	60	CE		Principal Language of message	Not used	

MSH-3 / MSH-4 Sending Application/Facility

LinkLogic identifies itself as Sending Application in MSH-3 with a string value derived by concatenating the string LinkLogic- with the unique Centricity Practice Solution Enterprise ID for the organization (for example, LinkLogic-ABCD). The Enterprise ID can be up to four alphanumeric characters.

MSH-4 contains the server-specific location of care for the document in the form of DatabaseID^LOC (for example, TEST000^SOUTH).

MSH-5 / MSH-6 Receiving Application/Facility

MSH-5 Receiving Application contains the name of the LinkLogic relationship that created the output file.

MSH-6 Receiving Facility contains the document's location of care. This differs from MSH-4 in that this field contains the location of care without the database ID.

MSH-7 Date/Time of Message

If the receiving system requires greater precision in the date/time format, CCG/Cloverleaf interface engine can be customized to translate the LinkLogic formatted message to a required format. See [“Using optional Cloverleaf translation” on page 338](#).



Contact your GE Sales representative or Value-Added Reseller for help with required customization. All licensing, configuration, and customization of CCG/Cloverleaf must be done by GE.

MSH-9 Message Type

Supported values for MSH-9 Message Type include:

This value...	Means this...
O01	General order message
ACK	General acknowledgement message

The second component, trigger event, (MSH-9.2) is populated with a value identical to the Event Type Code's (EVN-1) field 1.

MSH-11 Processing ID, MSH-12 Version ID

MSH-11 Processing ID, is set to P (Production) or D (Debugging), if test mode is enabled in the application.

MSH-12 Version, is set to **2.3.1** (for Release 2.3.1, April 1999).

MSH-15 Accept Ack Type

The supported values for MSH-15 Accept Ack Type include:

This value...	Means this...
AL	Always
NE	Never (default)

MSH-16 Application Ack Type

Application acknowledgment is optional. On export, the value **NE** is used.

Sample export from LinkLogic:

```
MSH|^~\&|LinkLogic-TEST|TEST000^SOUTH|LabDaq|SOUTH|  
20080325103324||ORM^O01|1522060405156110|P|2.3|||NE|NE
```

EVN – Event Type

The Event Type segment (EVN) defines the trigger event for the message, such as patient discharge or an update to the patient chart, and when it occurred.

Legend			
ID	Coded value for HL7-defined tables	IS	Coded value for user-defined tables
TS	Time stamp	XCN	Extended composite ID number and name

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page...
EVN-1	3	ID	0003	Event Type Code	Required	307
EVN-2	26	TS		Recorded Date/Time	Required	307
EVN-3	26	TS		Date/Time of Planned Event	Not used	
EVN-4	3	IS	0062	Event Reason Code	Not used	
EVN-5	60	XCN	0188	Operator ID	Not used	
EVN-6	26	TS		Event Occurred	Not used	

EVN-1 Event Type Code

EVN-1 is **001** (post general order message).

EVN-2 Date/Time of Event

EVN-2 is populated with a date/time that is typically milliseconds later than the date/time exported in MSH-7, Date/Time of Message. EVN-2 is not the time the event occurred.

Sample export from LinkLogic:

```
EVN|001|20080325103324
```

PID – Patient Identification

The Patient Identification (PID) is a unique, system-generated identification number that Centricity Practice Solution assigns to each patient during registration.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric		

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
PID-1	4	SI		Set ID - Patient ID	Used	
PID-2	20	CX		Patient ID (External ID)	Conditional	309
PID-3	20	CX		Patient ID (Internal ID)	Required	309
PID-4	16	CX		Alternate Patient ID-PID	Optional	310
PID-5	4825 0	XPN		Patient Name	Required	
PID-6	48	XPN		Mother's Maiden Name	Not used	
PID-7	26	TS		Date/Time of Birth	Used	
PID-8	1	IS	0001	Sex	Used	310
PID-9	48	XPN		Patient Alias	Not used	
PID-10	1	IS	0005	Race	Optional	310
PID-11	106	XAD		Patient Address	Optional	
PID-12	4	IS		Country Code	Not used	
PID-13	250	XTN		Phone Number - Home	Optional	310

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
PID-14	250	XTN		Phone Number - Work	Optional	310
PID-15	60	CE	0296	Primary Language	Optional	
PID-16	1	IS	0002	Marital Status	Optional	311
PID-17	3	IS	0006	Religion	Not used	
PID-18	20	CX		Patient Account #	Optional	311
PID-19	11			SSN # - Patient	Optional	311
PID-20	25	DLN		Driver's License # - Patient	Not used	
PID-21	20	CX		Mother's Identifier	Not used	
PID-22	3	IS	0189	Ethnic Group	Used	
PID-23	60	ST		Birth Place	Not used	
PID-24	2	ID	0136	Multiple Birth Indicator	Not used	
PID-25	2	NM		Birth Order	Not used	
PID-26	4	IS	0171	Citizenship	Not used	
PID-27	60	CE	0172	Veterans Military Status	Not used	
PID-28	80	CE		Nationality	Not used	
PID-29	26	TS		Patient Death Date /Time	Optional	312
PID-30	1	ID	0136	Patient Death Indicator	Optional	312

PID-2 Patient ID (External ID) / PID-3 Patient ID (Internal ID)

PID-3, the internal ID, is always populated with the unique Centricity Practice Solution Patient ID for the patient and, if available, PID-2, the external ID, is populated with the external identifier for the relationship-specific external ID set.

Global unique identifier

The Centricity Practice Solution Patient ID is a globally unique identifier represented as a string value in the form *123456789012-XXXX123* where:

- Prefix.** *123456789012* is a number with a maximum of 12 digits that is unique within Centricity Practice Solution database where the patient's chart was created.

- **Suffix.** XXXX123 concatenates the customer's unique Enterprise ID (XXXX) and Centricity Practice Solution database ID (123). Database IDs are allocated and specified by the system administrator performing the installation.

PID-4 Alternate Patient ID - PID

PID-4, Alternate Patient ID, is the patient's medical record number.

PID-8 Sex

The supported values for Sex include:

This value...	Means this...
F	Female
M	Male
O	Other (treated as Unknown)
U	Unknown

PID-10 Race

The supported values for Race include:

This value...	Means this...
B	Black
C	Chinese
F	Filipino
H	Hispanic
J	Japanese
N	Native American
I	Native Hawaiian
M	Multiracial
O	Oriental/Asian
P	Pacific Islander
W	White
T	Other
U	Undetermined (default)

PID-13 Phone Number - Home / PID-14 Phone Number - Work

LinkLogic exports the patient's home phone number, cell phone, fax phone, and/or pager (if present) as multiple repeating items in PID-13, Phone Number - Home. The phone number value is sent in the first component of each item and the phone type is sent in the third component of each item.

The fourth component of the first repeating item in PID-13 is populated with the patient's email address.

The patient's work phone (if present) is exported in PID-14.1. LinkLogic exports only one repeating item in PID-14 and does not export any phone type in PID-14.3.

If Cloverleaf interface engine is required to translate the LinkLogic message, this field can be adjusted to meet the requirements of the receiving system. See ["Message segment manipulation" on page 338](#).

PID-16 Marital Status

The supported values for Marital Status include:

This value...	Means this...
A	Separated
D	Divorced
M	Married
S	Single
W	Widowed
O	Other
U	Undetermined (default)

PID-18 Patient Account Number

PID-18 contains an optional lab customer identifier that can be specified as a setup task option for orders export interfaces.

The first sub-component of PID-18 is populated with the lab customer ID.

Sample export from LinkLogic:

```
PID|1||80-TEST011|MR-000-002|Bassett^Don^C.||19470612|M|W|12155 SW Broadway^^Beaverton^OR^97005^USA||503-629-5541^^^dbassett@aol.com|503-692-8955|English|M||12345678^^^T|543-34-5621
```

PID-19 Patient SSN Number

If Cloverleaf interface engine is required to translate the LinkLogic message, this field can be adjusted to meet the requirements of the receiving system, for example, to remove hyphens. See ["Message segment translation" on page 339](#).

PV1 – Patient Visit

The Patient Visit segment (PV1) is used by Registration and ADT (Admission, Discharge, and Transfer) applications to communicate information about a specific visit.

Legend					
ID	Coded value for HL7-defined tables	SI	Sequence ID	ST	String data
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit	NM	Numeric
XCN	Extended composite name / ID	XPN	Extended person name	JCC	Job Code/Class
TS	Time stamp	XAD	Extended address	DLN	Driver license number
XTN	Extended telecomm number	CE	Coded element	DT	Date
XON	Extended composite org name / ID				

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
PV1-1	4	SI		Set ID - PV1	Used	
PV1-2	1	IS	0004	Patient Class	Optional	314
PV1-3	80	PL		Assigned Patient Location	Optional	314
PV1-4	2	IS	0007	Admission Type	Not used	
PV1-5	20	CX		Pre-admit Number	Not used	
PV1-6	80	PL		Prior Patient Location	Not used	
PV1-7	60	XCN	0010	Attending Doctor	Optional	314
PV1-8	60255	XCN	0010	Referring Doctor	Optional	314
PV1-9	60	XCN	0010	Consulting Doctor	Not used	
PV1-10	3	IS	0069	Hospital Service	Not used	
PV1-11	80	PL		Temporary Location	Not used	
PV1-12	2	IS	0087	Pre-admit Test Indicator	Not used	
PV1-13	2	IS	0092	Readmission Indicator	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
PV1-14	3	IS	0023	Admit Source	Not used	
PV1-15	2	IS	0009	Ambulatory Status	Not used	
PV1-16	2	IS	0099	VIP Indicator	Not used	
PV1-17	60	XCN	0010	Admitting Doctor	Not used	
PV1-18	2	IS	0018	Patient Type	Not used	
PV1-19	20	CX		Visit Number	Optional	
PV1-20	50	FC	0064	Financial Class	Not used	
PV1-21	2	IS	0032	Charge Price Indicator	Not used	
PV1-22	2	IS	0045	Courtesy Code	Not used	
PV1-23	2	IS	0046	Credit Rating	Not used	
PV1-24	2	IS	0044	Contract Code	Not used	
PV1-25	8	DT		Contract Effective Date	Not used	
PV1-26	12	NM		Contract Amount	Not used	
PV1-27	3	NM		Contract Period	Not used	
PV1-28	2	IS	0073	Interest Code	Not used	
PV1-29	1	IS	0110	Transfer to Bad Dept Code	Not used	
PV1-30	8	DT		Transfer to Bad Dept Date	Not used	
PV1-31	10	IS	0021	Bad Debt Agency Code	Not used	
PV1-32	12	NM		Bad Debt Transfer Amount	Not used	
PV1-33	12	NM		Bad Debt Recovery Amount	Not used	
PV1-34	1	IS	0111	Delete Account Indicator	Not used	
PV1-35	8	DT		Delete Account Date	Not used	
PV1-36	3	IS	0112	Discharge Disposition	Not used	
PV1-37	25	CM	0113	Discharged to Location	Not used	
PV1-38	2	IS	0114	Diet Type	Not used	
PV1-39	2	IS	0115	Servicing Facility	Not used	
PV1-40	1	IS	0116	Bed Status	Not used	
PV1-41	2	IS	0117	Account Status	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
PV1-42	80	P L		Pending Location	Not used	
PV1-43	80	P L		Prior Temporary Location	Not used	
PV1-44	26	TS		Admit Date/Time	Not used	
PV1-45	26	TS		Discharge Date/Time	Not used	
PV1-46	12	NM		Current Patient Balance	Not used	
PV1-47	12	NM		Total Charges	Not used	
PV1-48	12	NM		Total Adjustments	Not used	
PV1-49	12	NM		Total Payments	Not used	
PV1-50	20	CX	0192	Alternate Visit ID	Not used	
PV1-51	1	IS	0326	Visit Indicator	Not used	
PV1-52	60	XCN	0010	Other Healthcare Provider	Not used	

PV1-2 Patient Class

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats this field as optional and sends the value **O** for Outpatient by default.

PV1-3 Assigned Patient Location

The fourth component of PV1-3 is populated with the eight-character abbreviation for the location of care for the document.

PV1-7 Attending Doctor

PV1-7 is populated with the patient's responsible provider, if one has been specified. This field is not necessarily the provider who authorized the order.

For PV1-7, ORC-12, and OBR-16, LinkLogic exports only the first sub-component with the login name of a Centricity Practice Solution user. This data can be optionally cross-referenced.

PV1-8 Referring Doctor

PV1-8 is populated with the patient's referring physician who may not necessarily be the physician who referred the patient for the *current episode of care* from which the order was generated. To display referring physician in a document, LinkLogic interprets only the second and third components as the referring doctor's last name and first name, respectively.

Sample export from LinkLogic:

```
PV1|1|O|^|^SOUTH|||kstarr
```

IN1 – Insurance

The Insurance message segment (IN1) contains information about a patient's insurance policy coverage required for generating correct patient and insurance bills.

In Centricity Practice Solution, a patient can have only one primary and secondary insurance carrier. All others are categorized as insurance type **Other**.

This segment is only exported when the Insurance export option has been set for the relationship.

Legend					
ID	Coded value for HL7-defined tables	SI	Sequence ID	ST	String data
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit	NM	Numeric
XCN	Extended composite name / ID	XPN	Extended person name	JCC	Job Code/Class
TS	Time stamp	XAD	Extended address	DLN	Driver license number
XTN	Extended telecomm number	CE	Coded element	DT	Date
XON	Extended composite org name / ID				

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
IN1-1	4	SI		Set ID - IN1	Used	
IN1-2	12	CE	0072	Insurance Plan ID	Optional	317
IN1-3	59	CX		Insurance Company ID	Used	317
IN1-4	130	XON		Insurance Company Name	Used	
IN1-5	1062 55	XAD		Insurance Company Address	Optional	
IN1-6	4825 0	XPN		Insurance Plan Contact Person	Optional	318
IN1-7	250	XTN		Insurance Co. Phone #'	Optional	318
IN1-8	25	ST		Group #	Optional	318
IN1-9	130	XON		Group Name	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
IN1-10	20	CX		Insured's Group Emp ID	Not used	
IN1-11	130	XON		Insured's Group Emp Name	Not used	
IN1-12	8	DT		Plan Effective Date	Optional	
IN1-13	8	DT		Plan Expiration Date	Optional	
IN1-14	55	CM		Authorization Information	Not used	
IN1-15	3	IS	0086	Plan Type	Optional	318
IN1-16	4825 0	XPN		Name of Insured	Used	318
IN1-17	2	IS	0063	Insured Relationship to Patient	Optional	318
IN1-18	26	TS		Insured Date of Birth	Not used	
IN1-19	1062 55	XAD		Insured Address	Optional	318
IN1-20	2	IS	0135	Assignment of Benefits	Not used	
IN1-21	2	IS	0173	Coordination of Benefits	Not used	
IN1-22	2	ST		Coordination of Benefits Priority	Used	319
IN1-23	2	ID	0136	Notice of Admission Flag	Not used	
IN1-24	8	DT		Notice of Admission Date	Not used	
IN1-25	2	ID	0136	Report of Eligibility Flag	Not used	
IN1-26	8	DT		Report of Eligibility Date	Not used	
IN1-27	2	IS	0093	Release Information Code	Not used	
IN1-28	15	ST		Pre-Admit Cert (PAC)	Not used	
IN1-29	26	TS		Verification Date/Time	Not used	
IN1-30	60	XCN		Verification By	Not used	
IN1-31	2	IS	0098	Type of Agreement Code	Not used	319
IN1-32	2	IS	0022	Billing Status	Not used	
IN1-33	4	NM		Lifetime Reserve Days	Not used	
IN1-34	4	NM		Delay Before L.R. Day	Not used	
IN1-35	12	IS	0042	Company Plan Code	Conditional	

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
IN1-36	2050	ST		Policy Number	Optional	319
IN1-37	12	CP		Policy Deductible	Not used	
IN1-38	12	CP		Policy Limit - Amount	Not used	
IN1-39	4	NM		Policy Limit - Days	Not used	
IN1-40	12	CP		Room Rate - Semi-Private	Not used	
IN1-41	12	CP		Room Rate - Private	Not used	
IN1-42	60	CE	0066	Insured's Employment Status	Optional	319
IN1-43	1	IS	0001	Insured's Sex	Optional	320
IN1-44	1062 55	XAD		Insured's Employer Address	Not used	
IN1-45	2	ST		Verification Status	Not used	
IN1-46	8	IS	0072	Prior Insurance Plan ID	Not used	
IN1-47	3	IS	0309	Coverage Type	Not used	
IN1-48	2	IS	0310	Handicap	Not used	
IN1-49	12	CX		Insured's ID Number	Not used	

IN1-2 Insurance Plan ID

Although this field is considered required in the HL7 specification, LinkLogic treats this field as optional. By default, nothing is sent in this field.

However, you can use the standard Add-On IXP configuration file **ordlabcorp.ixp** to include the insurance carrier's ID and name in the field. See "[ordlabcorp.ixp](#)" on page 607, for a description of other fields that are sent when this configuration file is used.

IN1-3 Insurance Company ID

The first component of IN1-3 is populated with the insurance carrier ID. Insurance carrier ID values are unique for each insurance carrier in Centricity Practice Solution.

The second component of IN1-3 is populated with the name of the insurance carrier.

The first component of IN1-3 is populated with the insurance plan code.

IN1-6 Insurance Plan Contact Person

LinkLogic exports the name of the contact person for the insurance plan in IN1-6, Insurance Plan Contact Person. Since Centricity Practice Solution stores only a single string for the plan contact, IN1-6 will contain a single string in the first component whenever a contact person is identified for an insurance plan in the application.

IN1-7 Insurance Co. Phone Number

The first component of IN1-7, Insurance Co. Phone Number, is populated with the insurance company contact's home phone number.

IN1-8 Group Number

Although the HL7 specification limits IN1-8 to a maximum length of 12 characters, LinkLogic allows 25. On export, supplied values may exceed the maximum length defined in the HL7 specification.

IN1-15 Plan Type

IN1-15 is always exported as PI. The value PI is interpreted as private insurance carrier by systems that receive the ORM message.

IN1-16 Name of Insured

IN1-16 is populated with the name of the insured person according to the HL7 XPN format:

last name^first name^middle name^suffix^title

For more information on the data type for person names, see [“PN or XPN – Person name” on page 457](#).

IN1-17 Insured's Relationship to Patient

When IN1-17 has the value 'S', the insured party in Centricity Practice Solution is set to the patient. All other values are ignored.

The supported values for IN1-17, Insured's Relationship to Patient, include:

This value...	Means this...
S	Self
M	Marriage
P	Parent
O	Other

IN1-19 Insured's Address

IN1-19, Insured's Address, is populated with the insured person's address information according to the HL7 XAD format:

address line 1^address line 2^city^state^zip^country

If Cloverleaf interface engine is required to translate the LinkLogic message, this field can be adjusted to meet the requirements of the receiving system. See [“Using optional Cloverleaf translation” on page 338](#).

IN1-22 Coordination of Benefits Priority

Supported values include:

This value...	Means this...
P	Primary
S	Secondary
O	Other (default)

IN1-31 Type of Agreement Code

No value is exported for IN1-31, because Centricity Practice Solution does not store information about worker's compensation.

IN1-36 Policy Number

Although the HL7 specification defines the maximum length of IN1-36 as 15 characters, LinkLogic supports 20 alphanumeric characters. On export, supplied values may exceed the maximum length defined within the HL7 specification.

IN1-42 Insured's Employment Status

Supported values for IN1-42 include:

This value...	Means this...
F	Full-time
P	Part-time
I	Self-employed
R	Retired
S	Student
C	Child
U	Unemployed
O	Other (default)

IN1-43 Insured's Sex

The supported values for IN1-43 include:

This value...	Means this...
F	Female
M	Male
O	Other (treated as Unknown)
U	Unknown

Sample export from LinkLogic:

```
IN1|1||Futura|Best Health Insurance Company|825 NE  
Roosevelt^^Portland^OR^97213|Betty Hill|503-239-5800  
^^betty_hill@bhi.com|BHI8654||||19990416||||Bassett^D  
on^C.|S|19470612|12155 SWBroadway^^Beaverton^  
OR^97005^USA||||P|||||||543-34-5621|||||F|M
```

GT1 – Guarantor

The Guarantor message segment contains demographic and contact information about the person responsible for a patient's medical expenses, also known as the insured party. If a patient is covered by another person's insurance, such as a parent or a spouse, the person holding the insurance is the guarantor.

This segment is only exported when the patient has guarantor information, and the Guarantor export option has been set for the relationship.

Legend					
ID	Coded value for HL7-defined tables	SI	Sequence ID	ST	String data
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit	NM	Numeric
XCN	Extended composite name / ID	XPN	Extended person name	JCC	Job Code/Class
TS	Time stamp	XAD	Extended address	DLN	Driver license number
XTN	Extended telecomm number	CE	Coded element	DT	Date
XON	Extended composite org name / ID	CP	Composite price	FC	Financial class

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
GT1-1	4	SI		Set ID - GT1	Used	
GT1-2	59	CX		Guarantor Number	Not used	
GT1-3	48250	XPN		Guarantor Name	Used	324
GT1-4	48250	XPN		Guarantor Spouse Name	Not used	
GT1-5	106255	XAD		Guarantor Address	Optional	324
GT1-6	250	XTN		Guarantor Home Phone #	Optional	324
GT1-7	250	XTN		Guarantor Business Phone #	Optional	324
GT1-8	26	TS		Guarantor Date/Time Birth	Not used	
GT1-9	1	IS	0001	Guarantor Sex	Optional	324
GT1-10	2	IS	0068	Guarantor Type	Optional	324
GT1-11	2	IS	0063	Guarantor Relationship	Optional	324
GT1-12	11	ST		Guarantor SSN	Optional	
GT1-13	8	DT		Guarantor Date - Begin	Not used	
GT1-14	8	DT		Guarantor Date - End	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
GT1-15	2	NM		Guarantor Priority	Not used	
GT1-16	130	XPN		Guarantor Employer Name	Not used	
GT1-17	1062 55	XAD		Guarantor Employer Address	Not used	
GT1-18	40	XTN		Guarantor Employer Phone #	Not used	
GT1-19	20	CX		Guarantor Employer ID #	Not used	
GT1-20	2	IS	0066	Guarantor Employment Status	Optional	
GT1-21	130	XON		Guarantor Organization Name	Not used	
GT1-22	1	ID	0136	Guarantor Billing Hold Flag	Optional	
GT1-23	80	CE		Guarantor Credit Rating Code	Optional	
GT1-24	26	TS		Guarantor Death Date /Time	Optional	
GT1-25	1	ID	0136	Guarantor Death Flag	Optional	
GT1-26	80	CE	0218	Guarantor Charge Adjust. Code	Optional	
GT1-27	10	CP		Guarantor Ann. Income	Optional	
GT1-28	3	NM		Guarantor Household Size	Optional	
GT1-29	20	CX		Guarantor Employer ID #	Optional	
GT1-30	1	IS	0002	Guarantor Marital Status Code	Optional	
GT1-31	8	DT		Guarantor Hire Effective Date	Optional	
GT1-32	8	DT		Employment Stop Date	Optional	
GT1-33	2	IS	0223	Living Dependency	Optional	
GT1-34	2	IS	0009	Ambulatory Status	Optional	
GT1-35	4	IS	0171	Citizenship	Optional	
GT1-36	60	CE	0296	Primary Language	Optional	
GT1-37	2	IS	0220	Living Arrangement	Optional	
GT1-38	80	CE	0215	Publicity Indicator	Optional	
GT1-39	1	ID	0136	Protection Indicator	Optional	

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
GT1-40	2	IS	0231	Student Indicator	Optional	
GT1-41	3	IS	0006	Religion	Optional	
GT1-42	48	XPN		Mother's Maiden Name	Optional	
GT1-43	80	CE	0212	Nationality	Optional	
GT1-44	3	IS	0189	Ethnic Group	Optional	
GT1-45	4825 0	XPN		Contact Person's Name	Optional	
GT1-46	40	XTN		Contact Person's Phone #	Optional	
GT1-47	80	CE	0222	Contact Reason	Optional	
GT1-48	2	IS	0063	Contact Relationship	Optional	
GT1-49	20	ST		Job Title	Optional	
GT1-50	20	JCC	0327 0328	Job Code/Class	Optional	
GT1-51	130	XON		Guarantor Employer's Organization Name	Optional	
GT1-52	2	IS	0310	Handicap	Optional	
GT1-53	2	IS	0311	Job Status	Optional	
GT1-54	50	FC	0064	Guarantor Financial Class	Optional	
GT1-55	1	IS	0005	Guarantor Race	Optional	

GT1-3 Guarantor Name

GT1-3, Guarantor Name, is populated with the guarantor's name information according to the HL7 XPN format:

last name^first name^middle name^suffix^title

For more information on the data type for person names, see [“PN or XPN – Person name” on page 457](#).

GT1-5 Guarantor Address

GT1-5 is populated with the guarantor's address information according to the HL7 XAD format:

address line 1^address line 2^city^state^zip^country

GT1-6 Guarantor Home Phone Number, GT1-7 Guarantor Business Phone Number

The first component of GT1-6 is populated with the guarantor's home phone number. The fourth component is populated with the guarantor's email address.

The first component of GT1-7 is populated with the guarantor's work phone number. If Cloverleaf interface engine is required to translate the LinkLogic message, this field can be adjusted to meet the requirements of the receiving system. See [“Message segment manipulation” on page 338](#), for details of how the standard Cloverleaf interface reformats these values.

GT1-9 Guarantor Sex

The supported values for Sex include:

This value...	Means this...
F	Female
M	Male
O	Other (treated as Unknown)
U	Unknown

GT1-10 Guarantor Type

For GT1-10, LinkLogic sends **P** by default to indicate a personal guarantor.

GT1-11 Guarantor Relationship

LinkLogic only exports two relationship types:

This value...	Means this...
S	Self
O	Other



S (Self) is the only value that has meaning to Centricity Practice Solution. All other values are ignored.

Sample export from LinkLogic:

```
GT1|1||Bassett^Don^C.||12155 SW Broadway^^Beaverton^
OR^97005^USA|503-629-5541^^^dbassett@aol.com|503-692-8
955|19470612|M|P|S|543-34-5621|||||F
```

ORC – Common Order

The ORC segment, optional on import, is used to transmit order data that is common to all orders.

Legend			
ID	Coded value for HL7-defined tables	CE	Coded element
XCN	Extended composite ID # and name	EI	Entity Identifier
TS	Time stamp	TQ	Timing / Quantity
XTN	Extended telecomm number	CM	Composite
PL	Person Location		

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
ORC-1	2	ID	0119	Order Control	Used	326
ORC-2	22	EI		Placer Order Number	Used	326
ORC-3	22	EI		Filler Order Number	Optional	326
ORC-4	22	EI		Placer Group Number	Not used	
ORC-5	2	ID	0038	Order Status	Not used	
ORC-6	1	ID	0121	Response Flag	Not used	
ORC-7	200	TQ		Quantity/Timing	Not used	
ORC-8	200	CM		Parent	Not used	
ORC-9	26	TS		Date/Time of Transaction	Used	326
ORC-10	120	XCN		Entered By	Not used	
ORC-11	120	XCN		Verified By	Not used	
ORC-12	120	XCN		Ordering Provider	Used	326

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
ORC-13	80	PL		Enterer's Location	Not used	
ORC-14	40	XTN		Call Back Phone Number	Not used	
ORC-15	26	TS		Order Effective Date/Time	Not used	
ORC-16	200	CE		Order Control Code Reason	Not used	
ORC-17	60	CE		Entering Organization	Not used	
ORC-18	60	CE		Entering Device	Not used	
ORC-19	120	XCN		Action by	Not used	

ORC-1 Order Control

For ORC-1, LinkLogic sends **NW** for new order and **CA** for canceled existing order.

ORC-2 Place Order Number / ORC-3 Filler Order Number

ORC-2 contains the unique order number that Centricity Practice Solution assigns when the order is entered. This number is a combination of a Centricity Practice Solution order entry session number and a sequence number that is unique within the session.

Although ORC-3 is considered required or conditional in the HL7 specification, LinkLogic treats this field as optional.

ORC-9 Date/Time of Transaction

ORC-9 contains the clinical date for the order. If the receiving system requires greater precision in the date/time format, CCG/Cloverleaf interface engine can be customized to translate the LinkLogic formatted to a required format. See ["Using optional Cloverleaf translation" on page 338](#).



Contact your GE Sales representative or Value-Added Reseller for help with required customization. All licensing, configuration, and customization of CCG/Cloverleaf must be done by GE.

ORC-12 Ordering Provider

ORC-12 contains the Centricity Practice Solution user who authorized the order. This person is not necessarily the provider who actually entered the order.

LinkLogic exports only the first sub-component with the login name of a Centricity Practice Solution user. This data can be optionally cross-referenced.

Sample export from LinkLogic:

ORC|NW|1-1|||||||20080317|||hwinston

OBR – Observation Request

The Observation Request (OBR) segment is used to transmit information specific to an order for a diagnostic study or observation, physical exam, or assessment. The Observation Request segment defines the attributes of a particular request for diagnostic services such as EKG or laboratory, or clinical observations, such as vital signs or physical exam.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
EI	Entity Identifier	CQ	Composite Quantity with units
XCN	Extended composite ID number and name	CM	Composite
TS	Time stamp	TQ	Timing/Quantity
XTN	Extended telecomm number	CE	Coded element
ST	String data	NM	Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
OBR-1	4	SI		Set ID - OBR	Used	
OBR-2	75	EI		Placer Order Number	Optional	330
OBR-3	75	EI		Filler Order Number	Optional	330
OBR-4	200	CE		Universal Service ID	Optional	330
OBR-5	2	ID		Priority	Not used	
OBR-6	26	TS		Requested Date/Time	Conditional	
OBR-7	26	TS		Observation Date/Time	Conditional	330
OBR-8	26	TS		Observation End Date/Time	Optional	
OBR-9	20	CQ		Collection Volume	Conditional	331
OBR-10	60	XCN		Collection Identifier	Not used	
OBR-11	1	ID	0065	Specimen Action Code	Used	331
OBR-12	60	CE		Danger Code	Not used	
OBR-13	300	ST		Relevant Clinical Information	Optional	
OBR-14	26	TS		Specimen Received Date/Time	Conditional	
OBR-15	300	CM	0070	Specimen Source	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
OBR-16	80	XCN		Ordering Provider	Optional	331
OBR-17	40	XTN		Order Callback Phone Number	Not used	
OBR-18	60	ST		Placer Field 1	Optional	
OBR-19	60	ST		Placer Field 2	Not used	
OBR-20	500	ST		Filler Field 1	Optional	
OBR-21	60	ST		Filler Field 2	Not used	
OBR-22	26	TS		Results Rpt/Status Chng - Date/Time	Conditional	
OBR-23	40	CM		Charge to Practice	Not used	
OBR-24	10	ID	0074	Diagnostic Service Sect ID	Not used	
OBR-25	1	ID	0123	Result Status	Optional	
OBR-26	400	CM		Parent Result	Not used	
OBR-27	200	TQ		Quantity/Timing	Conditional	331
OBR-28	150	XCN		Result Copies To	Optional	
OBR-29	150	CM		Parent	Not used	
OBR-30	20	ID	0124	Transportation Mode	Not used	
OBR-31	300	CE		Reason for Study	Not used	
OBR-32	200	CM		Principal Result Interpreter	Not used	
OBR-33	200	CM		Assistant Result Interpreter	Not used	
OBR-34	200	CM		Technician	Not used	
OBR-35	200	CM		Transcriptionist	Not used	
OBR-36	26	TS		Scheduled Date/Time	Not used	
OBR-37	4	NM		Number of Sample Containers	Not used	
OBR-38	60	CE		Transport Logistics of Collected Sample	Not used	
OBR-39	200	CE		Collector's Comment	Not used	
OBR-40	60	CE		Transport Arrangement Responsibility	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
OBR-41	30	ID	0224	Transport Arranged	Not used	
OBR-42	1	ID	0225	Escort Required	Not used	
OBR-43	200	CE		Planned Patient Transport Comment	Not used	

OBR-2 Placer Order Number

OBR-2 contains the unique order number assigned by Centricity Practice Solution when the order is entered. This number is a combination of a Centricity Practice Solution order entry session number and a sequence number that is unique within the session. Although this field is considered required or conditional in the HL7 specification, LinkLogic treats it as optional. This can be used for automatic completion of orders during lab results import using the proper data in the OBR segment. See [“LabLink Import/Export HL7 interface specification” on page 253](#).

If Cloverleaf interface engine is required to translate the LinkLogic message, this field can be adjusted to meet the requirements of the receiving system, for example, to add additional identifying information. See [“Using optional Cloverleaf translation” on page 338](#).

OBR-3 Filler Order Number

Although OBR-3 is required or conditional in the HL7 specification, LinkLogic treats this field as optional.

OBR-4 Universal Service ID

OBR-4 is populated as follows:

`<order code> ^ <order description>`

The first component, Identifier, contains the code for the Centricity Practice Solution order that this OBR message segment represents. By default, the application includes the **CPT-** prefix in order codes.

OBR-7 Observation Date/Time, OBR-8 Observation End Date/Time



OBR-7 and OBR-8 are physiologically relevant times.

OBR-7 contains the clinically relevant date associated with the Centricity Practice Solution order represented by this OBR message segment.

If the receiving system requires greater precision in the date/time format, CCG/Cloverleaf interface engine can be customized to translate the LinkLogic

formatted to a required format. See ["Using optional Cloverleaf translation" on page 338](#).



Contact your GE Sales representative or Value-Added Reseller for help with required customization. All licensing, configuration, and customization of CCG/Cloverleaf must be done by GE.

OBR-9 Collection Volume

OBR-9 contains the quantity for Centricity Practice Solution test orders and the units for Centricity Practice Solution service orders. This is a value the placer sends. It is only relevant when an observation is associated with a specimen.

OBR-11 Specimen Action Code

For OBR-11, LinkLogic sends **N** for a new order.

OBR-16 Ordering Provider

OBR-16, Ordering Provider, contains the Centricity Practice Solution user who authorized the order. This person is not necessarily the provider who actually entered the order.

LinkLogic exports only the first sub-component with the login name of a Centricity Practice Solution user. This data can be optionally cross-referenced.

OBR-27 Quantity/Timing

The sixth sub-component of OBR-27 contains the priority of the Centricity Practice Solution order represented by this OBR segment. The following table lists the translation from Centricity Practice Solution order priority values to HL7 values.

This application priority...	Is translated to this in HL7 value...
N (Normal)	R (Routine)
U (Urgent)	A (As soon as possible)
S (Stat)	S (Stat)

Sample export from LinkLogic:

```
ORC|CA|1-1|||||||20080317|||hwinston
OBR|1|1-1||CPT-84478^Assay, blood
triglycerides|||20080317||1||N|||||hwinston|||||||
^^^^^R
```

NTE – Notes and Comments

This segment is included in a message if the order has clinical or administrative comments. If both are present, separate NTE segments are used.

Legend

ID Coded value for HL7-defined tables **SI** Sequence ID
FT Formatted text

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...
NTE-1	4	SI		Set ID - NTE	Used
NTE-2	8	ID		Source of Comment	Not used
NTE-3	64k	FT		Comment	Optional

DG1 - Diagnosis

DG1 segments are only included in a message if the order has one or more associated diagnoses. Cloverleaf copies the data from LinkLogic to send without modification, however, any field can be customized if required. See [“Using optional Cloverleaf translation” on page 338](#).

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CP	Composite price
XCN	Extended composite ID number and name	CE	Coded element
TS	Time stamp	NM	Numeric
ST	String data		

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
DG1-1	4	SI		Set ID - OBR	Used	
DG1-2	3	ID	0053	Diagnosis Coding Method	Required	334
DG1-3	255	CE	0051	Diagnosis Code	Used	334
DG1-4	100	ST		Diagnosis Description	Required	336
DG1-5	26	TS		Diagnosis Date/Time	Not used	
DG1-6	2	IS	0052	Diagnosis Type	Not used	
DG1-7	250	CE	0118	Major Diagnostic Category	Not used	
DG1-8	250	CE	0055	Diagnostic Related Group	Not used	
DG1-9	1	ID	0136	Approval Indicator	Not used	
DG1-10	2	IS	0056	Group Review Code	Not used	
DG1-11	250	CE	0083	Outlier Type	Not used	
DG1-12	3	NM		Outlier Days	Not used	
DG1-13	12	CP		Outlier Cost	Not used	
DG1-14	4	ST		Group Version and Type	Not used	
DG1-15	2	ID	0359	Diagnosis Priority	Not used	
DG1-16	250	XCN		Diagnosing Clinician	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
DG1-17	3	IS	0228	Diagnosis Classification	Not used	
DG1-18	1	ID	0136	Confidential Indicator	Not used	
DG1-19	26	TS		Attestation Date/Time	Not used	

DG1-2 Diagnosis Coding Method

DG1-2 has been a deprecated field in the HL7 standard since version 2.3. Detail about this field was removed from the HL7 v2.6 specification. By default, LinkLogic does not export any value in DG1-2.

For systems that still need this field, however, you can use optional Add-On IXP file **dg12and4.ixp** to have LinkLogic export the value from DG1-3.3 in DG1-2.

When you use this Add-On IXP file, DG1-2 includes one of the following coding system HL7 mnemonic names with the Centricity Practice Solution problem (diagnosis) associated with the order:

Coding system	HL7 mnemonic used
ICD-9	I9
ICD-10	I10
SNOMED or	SNM
SNOMED-CT	SCT

If other values are needed, you must use a cross-reference file.

Although the HL7 specification indicates the length of this field as 2 characters, LinkLogic allows up to 3 characters for the longer I10 and SNM, SCT mnemonics, and for systems that prefer to cross-reference **I9** or **I10** to **ICD**.

DG1-3 Diagnosis Code

For the diagnosis associated with the order identified by the preceding OBR segment, DG1-3 is populated with the HL7 coded element *data type*, which includes a set of three components (a “triplet”) separated by sub-component delimiter (^):

<diagnosis code> ^ <optional diagnosis description> ^ <name of coding system>

Coding system	Value template
ICD-9	xxx.xx^description^I9
ICD-10	xxx.xxxx^description^I10
SNOMED or	xx-xxxxx^description^SNM
SNOMED-CT	xxxxxxxxx^description^SCT

Each repeating element in the Diagnosis Code field uses the HL7 coded element *data type*, which has at most two triplets (up to 6 sub-components) from the value template. Each triplet can have the *diagnosis code*, *diagnosis description*, and *name of coding system* values. The sub-component delimiter (^) separates triplets if two codes are exported.



The primary diagnosis for the order is always exported in the first DG1 segment associated with an OBR segment

LinkLogic uses the following rules to determine which of the three possible codes (ICD-9, ICD-10, and/or SNOMED-CT) are exported in the two possible HL7 triplets.



Note that until destination systems are ready to receive ICD-10 codes, Orders Export constraint option **Export diagnoses with only ICD-9 codes** is checked by default. This should be unchecked when you are ready to send ICD-10 codes.

IF (Not in ICD-9 Only Mode AND ICD-10 code is available)

THEN Export ICD-10 code in first triplet

IF ICD-9 code is also available in addition to ICD-10 code

THEN export ICD-9 code in second triplet

ELSE IF SNOMED-CT code is also available in addition to ICD-10 code

THEN export SNOMED-CT code in second triplet

ELSE IF ICD-9 code is available (but ICD-10 code is not OR in ICD-9 Only Mode)

THEN export ICD-9 code in first triplet but nothing in the second triplet

(When ICD-10 is not available or ICD-9 Only Mode nothing is sent in second triplet)

ELSE (neither ICD-9 nor ICD-10 codes are available)

Export user-entered *problem/diagnosis description* in first triplet but nothing in second triplet

(First and third components will be blank if the problem is uncoded)

Length limit

Although the HL7 2.3 standard specifies DG1-3 with a field length of 250 characters, LinkLogic exports data in this field with a maximum length of 255 characters. This ensures that diagnosis descriptions are not truncated when exporting two codes for a diagnosis associated with an order.

Sample LinkLogic exports

Default behavior:

```
DG1|1||E78.0^HYPERCHOLESTEROLEMIA^I10^272.0^HYPERCHOLESTEROLEMIA^I9
```

```
DG1|2||J44.9^CHRONIC AIRWAY OBSTRUCTION  
(COPD)^I10^13645005^CHRONIC AIRWAY OBSTRUCTION  
(COPD)^SCT
```

With optional Add-On IXP dg12and4.ixp:

```
DG1|1|I10|E78.0^HYPERCHOLESTEROLEMIA^I10^272.0^HYPERCHOLESTEROLEMIA^I9|HYPERCHOLESTEROLEMIA
```

```
DG1|2|I10|J44.9^CHRONIC AIRWAY OBSTRUCTION  
(COPD)^I10^13645005^CHRONIC AIRWAY OBSTRUCTION  
(COPD)^SCT|CHRONIC AIRWAY OBSTRUCTION (COPD)
```



Having any of these diagnoses linked to an actual order/charge may not be clinically meaningful or valid. These codes are used only for the purposes of illustrating different possible code combinations of ICD-9, ICD-10, and SNOMED-CT.

DG1-4 Diagnosis Description

DG1-4 has been a deprecated field in the HL7 standard since version 2.3. Detail about this field was removed from the HL7 v2.6 specification. By default, LinkLogic does not export any value in DG1-4.

For systems that still need this field, however, you can use optional Add-On IXP file **dg12and4.ixp** to have LinkLogic export the value from DG1-3.2 in DG1-4.

When you use this Add-On IXP file, DG1-2 contains the description for the diagnosis associated with the order identified by the preceding OBR segment.

MSA – Message Acknowledgement

The MSA segment is used to acknowledge a previously received message. It triggers a resend if the acknowledgement code indicates the message was rejected or generated an error.

If you configure an orders export relationship for socket transfer and send “AL” in MSH-15, the Data Transfer Station expects the HL7 acknowledgement message with MSH and MSA.

Legend	
ID	Coded value for HL7-defined tables
ST	String data
CE	Coded element
NM	Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	This field is...	See page
MSA-1	2	ID	0008	Acknowledgement Code	Required	337
MSA-2	20	ST		Message Control ID	Required	
MSA-3	80	ST		Text Message	Optional	
MSA-4	15	NM		Expected Sequence Number	Not used	
MSA-5	1	ID	0102	Delayed Ack Type	Not used	
MSA-6	100	CE		Error Condition	Not used	

MSA-1 Acknowledgement Code (Import)

The supported values for Acknowledgment Code include:

This value...	Means this...
AA	Original mode: Application Accept Enhanced Mode: Application Acknowledgement: Accept
AR	Original mode: Application Reject Enhanced mode: Application Acknowledgement: Reject This code triggers a message resend event.
AE	Original mode: Application Error Enhanced mode: Application Acknowledgement: Error This code triggers a message resend event.

Using optional Cloverleaf translation

Centricity Clinical Gateway (CCG) with Cloverleaf interfaces engine can be used for mapping, translating or routing LinkLogic messages when required by the external system.

Cloverleaf is highly customizable. Gaps between data and data formats provided by Centricity Practice Solution and required by a lab or other provider can be addressed by adjusting the Cloverleaf translation. For default translations, see [“Message segment translation” on page 339](#), and field notes for the relevant message segments, starting at [“Detailed ORM HL7 message segments” on page 303](#).



Contact your GE Sales representative or Value-Added Reseller for help with any required customization. All licensing, configuration, and customization of CCG/Cloverleaf must be done by GE.

Cloverleaf’s *standard_export* site (interface)

This standard site handles basic message mapping and translation and is not vendor specific. It can be used as a template to which a specific provider’s requirements can be added as customizations.

Standard_export site components

The interface includes the following components

- **Input Message Format:** 2.3-GE_STANDARD_HL7_ORM is compliant with HL7 v2.3.
- **Output Message Format:** 2.3-STANDARD_HL7_ORM is compliant with HL7 v2.3.
- **HandleInboundFromDts.tcl** - manages messages sent by LinkLogic via the Data Transfer Station
- **adjustPhoneFormat.tcl** - manipulates phone number formats as needed
- **killinboundReplyHL7ACK.tcl** - prevents inbound ACK messages not supported by Cloverleaf from generating errors.
- **hl723_orm_standard.xlt** - includes all data translation operations

Message segment manipulation

Cloverleaf reformats home and work phone numbers as follows:

LinkLogic input format	Cloverleaf output format
XXX-XXX-XXXX	(XXX)XXX-XXXX
XXXXXXXX	XXX-XXXX
XXXXXXXXXXXX	(XXX)XXX-XXXX

Message segment translation

This table shows how LinkLogic ORM messages are translated by Cloverleaf with same output.

Segment	Operation	Notes and examples
MSH	All fields copied	MSH|^~\&|LinkLogic-TEST|TEST000^SOUTH|LabDaq|SOUTH|20080325103324||ORM^O01|1522060405156110|P|2.3|||NE|NE
EVN	All fields copied	EVN|O01|20080325103324
PID	Phone numbers reformatted Other fields copied	PID-13 Home Phone Number, PID-14 Business Phone Number reformatted. PID|1|80-TEST011||MR-000-002|Bassett^Don^C.||19470612|M||W|12155 SW Broadway^^Beaverton^OR^97005^USA|| (503) 629-5541^^^dbassett@aol.com| (503) 692-8955|English|M||12345678^^^T|543-34-5621
PV1	All fields copied	PV1|1|O|^SOUTH|||kstarr
IN1	Phone number reformatted Other fields copied	IN1-7 Insurance Co. Phone Number reformatted. IN1|1||Futura|Best Health Insurance Company|825 NE Roosevelt^^Portland^OR^97213|Betty Hill|(503)239-5800^^^betty_hill@bhi.com|BHI8654|||19990416|||Bassett^Don^C.|S|19470612|12155 SW Broadway^^Beaverton^OR^97005^USA|||P|||||||543-34-5621|||||F|M
GT1	Phone numbers reformatted Other fields copied	GT1-6 Guarantor Home Phone, GT1-7 Guarantor Business Phone reformatted. GT1|1||Bassett^Don^C.||12155 SW Broadway^^Beaverton^OR^97005^USA|(503) 629-5541^^^dbassett@aol.com|(503) 692-8955|19470612|M|P|S|543-34-5621|||||F
ORC	All fields copied	ORC|NW|1-1||||||20080317||hwinston
OBR	All fields copied, OBR-11 changed	OBR-11 set to C if ORC-1 is CA . ORC|CA|1-1||||||20080317||hwinston OBR|1|1-1||CPT-84478^Assay, blood triglycerides|||20080317||1||C||||hwinston|||||||^^^R
NTE	All fields copied	
DG1	All fields copied	DG1|1|I9|428.0^CONGESTIVE HEART FAILURE^I9|CONGESTIVE HEART FAILURE SDG1|2|I9|511.9^EFFUSION, PLEURAL^I9|EFFUSION, PLEURAL

CHAPTER 12

NotesLink Import/Export HL7 interface specification

[MDM message – Medical Document Management 341](#)

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[TXA – Transcription Document Header 362](#)

[OBX – Observation/Result 376](#)

[MSA – Message Acknowledgement 379](#)

This HL7-based interface supports the import and export of documents. It uses the HL7 message **MDM - Medical Document Management** message.

MDM message – Medical Document Management

An MDM message includes:

- Message header (MSH), trigger event type (EVN)
- Patient information (PID, PV1)
- Document header (TXA)
- One or more observation / result (OBX) segments defining, quantifying and qualifying the document content

MDM trigger events

Trigger event: an event in a healthcare workflow that triggers the transfer of information, identified in HL7 by a unique 3-character code.

HL7 assumes that certain *trigger events* in the healthcare environment create the need for data to flow among systems.

LinkLogic supports these MDM message trigger events for BOTH import and export of data:

- **T02** – Original document notification and content
- **T04** – Document status change notification and content

LinkLogic supports this message trigger event ONLY for import:

- **T06** – Document addendum notification and content
-

MDM message structure

The following table shows how LinkLogic uses the message segments in this message when importing and exporting data. Page references in the table link to notes following the table and to detailed message segment tables.

For definitions of LinkLogic usage terms, see [“How LinkLogic uses message segments” on page 42](#).

Legend	
[...]	Optional
{...}	Repeating
[[...]]	Optional and repeating

Message Segment	Name	See page...	T02 Import	T02 Export	T04 Import	T04 Export	T06 Import
MSH	Msg Header	345	Required	Required	Required	Required	Required
EVN	Event Type	349	Required	Required	Required	Required	Required
PID	Patient ID	350	Required	Required	Required	Required	Required
PV1	Patient Visit	342, 357	Optional	Optional	Optional	Optional	Optional
TXA	Transcription Document Header	342, 362	Optional	Used	Optional	Used	Optional
{OBX}	Observation/ Result	343, 376	Required	Required	Required	Required	Required
MSH	Msg Header	345	Conditional	Conditional	Conditional	Conditional	Conditional
MSA	Msg Ack	379	Conditional	Conditional	Conditional	Conditional	Conditional
[ERR]	Error		Ignored	Ignored	Ignored	Ignored	Ignored

PV1 segment

On import...

Although the HL7 specification requires the Patient Visit segment, LinkLogic considers it optional.

TXA segment

On import...

Although the HL7 specification requires the Transcription Document Header segment, LinkLogic considers it optional.

On export...

LinkLogic always exports the TXA message segment as part of an MDM message. When LinkLogic sends a Centricity Practice Solution *master* document (a document with appended sections), the relevant master document properties populate the TXA fields and the appended sections are included in the OBX segment. For details, see the next section.

OBX segment

On import...

Multiple Observation/Result message segments can be imported as individual documents, or concatenated together to produce a single document, depending on how the relationship is configured in LinkLogic setup.

On export...

LinkLogic recognizes Centricity Practice Solution master documents that may have appended sections. The application stores appended sections as separate documents in the database. On export, however, LinkLogic treats them as part of the master document with which they are associated. Because an appended section is not complete when separated from its master document, when the master document is exported, LinkLogic

- Filters out the appended document headers
- Populates the TXA segment fields with properties of the master document
- Includes signed appended sections in the document content exported in the OBX segment.

When an appended section is signed, automated documents export tasks performed by the Data Transfer Station (DTS) re-export the complete master document with the new appended content in the OBX segment.

HL7 message segments

This section provides detailed specifications for the following HL7 message segments used in the MDM message:

For information about this segment...	See page...
MSH - Message Header	345
EVN - Event type	349
PID - Patient Identification	350
PV1 - Patient Visit	350
TXA - Transcription Document Header	362
OBX - Observation/Result	376
MSA - Message Acknowledgement	379

Each message segment table lists the segment elements or fields in sequence order (MSH-1, MSH-2, MSH-3, and so on) with the following information:

- **Element name**
- **Maximum length** in LinkLogic
- **Data type**
- **Source table** in the HL7 specification where applicable
- **LinkLogic usage on export or import** (Required, Optional, and so on)
For definitions of LinkLogic usage terms, see [“How LinkLogic uses message segments” on page 42](#).



Click blue page number links in the following tables to jump to detail notes (when viewing the Adobe PDF version of this guide) or look for notes under the element code and name listed after the table.

MSH – Message Header

The Message Header segment (MSH) should always be in the first segment in each HL7 message. MSH defines the intent, source, destination, and some specifics of the syntax of a message.

Legend

CE	Coded element	NM	Numeric
CM	Order sequencing component	PT	Processing type
HD	Hierarchic designator	ST	Character string
ID	Coded value	TS	Time stamp

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
MSH-1	1	ST		Field separator	Required		Used	
MSH-2	4	ST		Encoding characters	Required		Used	
MSH-3	40	HD		Sending application	Conditional	346	Used	346
MSH-4	20	HD		Sending facility	Optional	346	Used	346
MSH-5	40	HD		Receiving application	Not used		Used	347
MSH-6	30	HD		Receiving facility	Not used		Conditional	347
MSH-7	26	TS		Date/time of message	Required	347	Used	
MSH-8	40	ST		Security	Not used		Not used	
MSH-9	7	CM	0076	Message type	Required	347	Used	347
MSH-10	20	ST		Message control ID	Required		Used	
MSH-11	3	PT	0103	Processing ID	Required	348	Used	
MSH-12	8	ID	0104	Version ID	Required	348	Used	
MSH-13	15	NM		Sequence Number	Not used		Not used	
MSH-14	180	ST		Continuation Pointer	Not used		Not used	
MSH-15	2	ID	0155	Accept Ack type	Optional	348	Not used	
MSH-16	2	ID	0155	Application Ack type	Optional	348	Optional	348

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
MSH-17	2	ID		Country code	Not used		Not used	
MSH-18	6	ID	0211	Character set	Not used		Not used	
MSH-19	60	CE		Principal Language of message	Not used		Not used	

MSH-3 / MSH-4 Sending Application/Facility

On import...

Relationship: In LinkLogic, this describes an interface between Centricity Practice Solution and another computer system.

MSH-3 Sending Application is considered optional in the HL7 specification, however, LinkLogic requires a value in either MSH-3 or MSH-4 Sending Facility. LinkLogic identifies the data source for an interface (known in Centricity Practice Solution as a LinkLogic *relationship*) by using the contents of MSH-3, MSH-4, or a combination of both separated by a hyphen. The Unique Name/ID field in the LinkLogic setup New Relationship window must match this data source.

For example, if MSH-3 contains `PracticeMgr` and MSH-4 contains `East`, the data file would match against a LinkLogic relationship named `PracticeMgr`, `East`, or `PracticeMgr-East`. If either MSH-3 or MSH-4 contains more than the first component, the delimiters are converted to spaces and the contents of the entire field are used.

LinkLogic interface relationship matching

LinkLogic uses the following logic to determine the correct relationship:

IF MSH-3 or MSH-4 or the concatenation of MSH-3 and MSH-4 separated by a hyphen uniquely matches exactly one defined LinkLogic relationship name

THEN import the file using the matched relationship

ELSE IF multiple matching relationship names were found

THEN issue an error indicating that multiple relationships were found (ambiguous match)

ELSE, no matching relationship name was found

THEN issue an error indicating that no relationship exists to import the data file

Length limits

Although the HL7 specification sets the maximum length for MSH-3 and MSH-4 at 180, LinkLogic supports a total of 40 characters for MSH-3 and MSH-4 combined.

On export...

On export, LinkLogic identifies itself with a string value for MSH-3 derived by concatenating the string *LinkLogic-* with the unique Centricity Practice Solution Enterprise ID for the organization (for example, *LinkLogic-ABCD*). The Enterprise ID can be up to four alphanumeric characters.

MSH-4 contains the server-specific location of care for the document in the form of DatabaseID^LOC (for example, TEST000^SOUTH).

MSH-5 / MSH-6 Receiving Application/Facility

On export...

MSH-5 Receiving Application contains the name of the LinkLogic relationship that created the output file.

MSH-6 Receiving Facility contains the document's location of care. Unlike MSH-4 Sending Facility, this field contains the location of care without the database ID.

MSH-7 Date/time of Message

On import...

Although MSH-7 Date/Time of Message is not required in the HL7 specification, LinkLogic requires it on import. See ["OBX-14 Date/Time of the Observation" on page 378](#), to understand how this field is used to determine the clinical date for imported discharge summary documents.

On export...

MSH-7 is populated with the date/time the export is performed.

MSH-9 Message Type

On import and export...

The supported values for MSH-9 Message Type include:

This value...	Means this...
MDM	Medical document management message
ACK	General acknowledgement message

On import, the second component, *trigger event*, is ignored. Use the EVN message segment to identify trigger event types.

On export, the second component is populated with a value identical to EVN-1 Event Type Code.

MSH-11 Processing ID

On import...

The supported values for MSH-11 Processing ID include:

This value...	Means this...
D	Debugging
P	Production
T	Training (treated the same as Debugging)

On import, only messages with a Processing ID of P (Production) affect the Centricity Practice Solution database.

MSH-12 Version ID

On import...

The supported values for MSH-12 Version ID include:

This value...	Means this...
2.1	Release 2.1, March 1990
2.2	Release 2.2, December 1994
2.3	Release 2.3, April 1997
2.3.1	Release 2.3.1, April 1999

MSH-15 Accept Ack Type

On import...

The supported values for MSH-15 Accept Ack Type include:

This value...	Means this...
AL	Always
NE	Never (default)

MSH-16 Application Ack Type

On import and export...

MSH-16 Application Acknowledgment is optional on import and export. On export, the value NE is used. The supported Ack types are still validated for import. On import the value AL in MSH-16 overrides NE in MSH-15 and an acknowledgement is sent.

EVN – Event Type

The Event Type segment (EVN) defines the trigger event for the message, such as patient discharge or an update to the patient chart, and when it occurred.

Legend

- ID** Coded value for HL7-defined tables
- IS** Coded value for user-defined tables
- XCN** Extended composite ID number and name
- TS** Time stamp

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
EVN-1	3	ID	0003	Event Type Code	Required	349	Used	349
EVN-2	26	TS		Recorded Date/Time	Ignored		Used	350
EVN-3	26	TS		Date/Time of Planned Event	Not used		Not used	
EVN-4	3	IS	0062	Event Reason Code	Not used		Not used	
EVN-5	60	XCN	0188	Operator ID	Not used		Not used	
EVN-6	26	TS		Event Occurred	Not used		Not used	

EVN-1 Event Type Code

On import and export...

Trigger event: an event in a healthcare workflow that triggers the transfer of information, identified in HL7 by a unique 3-character code.

EVN-1 should match the second component of MSH-9. See [“MSH-9 Message Type” on page 347](#). LinkLogic supports the following *trigger events* for EVN-1 Event Type Code

This value...	Means this...
T02	Original document notification and content
T04	Document status change notification and content
T06	Document addendum notification and content



On export, trigger event T02 is specified only if the document being exported has a creation date/timestamp equal to its last updated date/timestamp. Otherwise, trigger event T04 is specified.

EVN-2 Recorded Date/Time

On export...

EVN-2, Date/Time of Event, is populated with a date/time that is typically milliseconds later than the date/time exported in MSH-7, Date/Time of Message.

!!! EVN-2 is NOT the time the event occurred.

PID – Patient Identification

The Patient Identification (PID) is a unique, system-generated identification number that Centricity Practice Solution assigns to each patient during registration.

Legend	
ID	Coded value for HL7-defined tables
IS	Coded value for user-defined tables
XCN	Extended composite ID number and name
TS	Time stamp
XTN	Extended telecomm number
ST	String data
NM	Numeric
SI	Sequence ID
CX	Extended composite ID with check digit
XPN	Extended person name
XAD	Extended address
CE	Coded element
DLN	Driver's license number

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PID-1	4	SI		Set ID - Patient ID	Optional		Optional	
PID-2	20	CX		Patient ID (External ID)	Conditional	352	Conditional	352
PID-3	20	CX		Patient ID (Internal ID)	Required	352	Used	352
PID-4	16	CX		Alternate Patient ID-PID	Conditional	352	Not used	
PID-5	48250	XPN		Patient Name	Required		Used	
PID-6	48	XPN		Mother's Maiden Name	Not used		Not used	
PID-7	26	TS		Date/Time of Birth	Optional		Optional	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PID-8	1	IS	0001	Sex	Optional	352	Optional	
PID-9	48	XPN		Patient Alias	Not used		Not used	
PID-10	1	IS	0005	Race	Optional	353	Optional	
PID-11	106	XAD		Patient Address	Optional	353	Optional	
PID-12	4	IS		Country Code	Not used		Not used	
PID-13	250	XTN		Phone Number - Home	Optional	354	Optional	354
PID-14	250	XTN		Phone Number - Work	Optional	354	Optional	
PID-15	60	CE	0296	Primary Language	Not used		Not used	
PID-16	1	IS	0002	Marital Status	Optional	355	Optional	
PID-17	3	IS	0006	Religion	Not used		Not used	
PID-18	20	CX		Patient Account Number	Not used		Not used	
PID-19	11	ST		SSN # - Patient	Optional	355	Optional	
PID-20	25	DLN		Driver's License # - Patient	Not used		Not used	
PID-21	20	CX		Mother's Identifier	Not used		Not used	
PID-22	3	IS	0189	Ethnic Group	Optional		Used	
PID-23	60	ST		Birth Place	Not used		Not used	
PID-24	2	ID	0136	Multiple Birth Indicator	Not used		Not used	
PID-25	2	NM		Birth Order	Not used		Not used	
PID-26	4	IS	0171	Citizenship	Not used		Not used	
PID-27	60	CE	0172	Veterans Military Status	Not used		Not used	
PID-28	80	CE		Nationality	Not used		Not used	
PID-29	26	TS		Patient Death Date /Time	Optional		Optional	355
PID-30	1	ID	0136	Patient Death Indicator	Optional		Optional	355
PID-40	1	ST	0185	Patient Preferred Contact Method	Optional	356	Optional	356

PID-2 Patient ID (External ID) / PID-3 Patient ID (Internal ID)

On import...

By default, PID-3, Patient ID (Internal ID), is assumed to contain the patient identifier used to match the import data with a patient.

If you need to use identifiers from another system, go to **Administration > System > LinkLogic** and select PID-2 in the **Match Options** window to use the Patient ID (External ID) instead of PID-3. See [“Data-to-Patient matching” on page 469](#), for details.

On export...

PID-3, Patient ID (Internal ID), always contains the unique Centricity Practice Solution Patient ID for the patient. If available, PID-2, Patient ID (External ID), contains the external identifier for the relationship-specific external ID set.

Global unique Identifier

The application's Patient ID is a globally unique identifier represented as a string value in the form *123456789012-XXXX123* where:

- **Prefix.** *123456789012* is a number with a maximum of 12 digits that is unique in the Centricity Practice Solution database where the patient's chart was created.
- **Suffix.** *XXXX123* concatenates the customer's unique Enterprise ID (*XXXX*) and Centricity Practice Solution database ID (*123*). Database IDs are allocated and specified by the system administrator performing the installation.

PID-4 Alternate Patient ID - PID

On import...

PID-4, Alternate Patient ID, is the patient's medical record number. Although the HL7 specification sets the maximum length of this field at 20, LinkLogic only supports a maximum of 16 alphanumeric characters to describe Alternate Patient ID.

PID-8 Sex

On import...

The supported values for Sex include:

This value...	Means this...
F	Female
M	Male
O	Other (treated as Unknown)
U	Unknown

PID-10 Race

On import...

The supported values for Race include:

This value...	Means this...
B	Black
C	Chinese
F	Filipino
H	Hispanic
J	Japanese
N	Native American
I	Native Hawaiian
M	Multiracial
O	Oriental/Asian
P	Pacific Islander
W	White
T	Other
U	Undetermined (default)

In Centricity Practice Solution, race values can be configured in Administration. If a value is changed in Administration, you must configure MIK (in Server Setup) to map to the value to one of the values in this table.

See “Configure MIK interfaces” in Server Setup Online Help.

PID-11 Patient Address

On import...

Currently, LinkLogic supports the following maximum characters for patient address sub-components determined by limits for these values set in the Centricity Practice Solution database. Characters beyond these limits are truncated:

- **Address Line 1, Address Line 2:** accepts a string up to 50 characters
- **City name:** accepts a string up to 25 characters
- **Country name:** accepts a string up to 50 characters
- **State or province:** accepts a two-character state code or a string up to 50 characters
- **Zip/postal code:** accepts up to 15 alphabetic characters to support 15-digit zip codes and foreign addresses

PID-13 Phone Number - Home / PID-14 Phone Number - Work

On import...

Although the HL7 2.3 specification defines the maximum length of this field as 250, Centricity Practice Solution and LinkLogic support a maximum of 20 characters for phone numbers and 50 characters for email addresses. Characters beyond these limits are truncated.

The HL7 specification permits phone number fields to contain multiple items separated by repeat delimiters. The first component of each item has the phone number value, and the third component indicates the phone type. LinkLogic reads values for home phone, fax phone, cell phone, and pager from PID-13.

LinkLogic reads only the work phone number from PID-14.1, where PID-14.3 component is either not specified or is PH. All other phone values from PID-14 are ignored.

The following phone type values are supported:

This phone type...	Means this...	Stored here...
PH	Home phone (PID-13)	PERSON.ALTPHONE
PH	Work phone (PID-14.1)	PERSON.WORKPHONE
CP	Cell phone	PERSON.CELLPHONE
FX	Fax phone	PERSON.FAXPHONE
BP	Pager (beeper) number	PERSON.PAGERPHONE

For additional details, see [“XTN - Phone number format” on page 459](#).

Backward compatibility

If the phone type value in the third component of the first repeating item in PID-13 is blank or not specified, LinkLogic imports the phone number value from the first component of this item as the patient's home phone number. This maintains backward compatibility with systems that do not send phone type values and with systems that do not send multiple repeating items in PID-13.

Email address

The fourth component of PID-13, Phone Number - Home, is used for the patient's email address. If PID-13 is blank, the fourth component of PID-14, Phone Number - Work, is used. If both PID-13 and PID-14 are blank, the patient will have no email address in Centricity Practice Solution.

On export...

LinkLogic exports the patient's home phone number, cell phone, fax phone, and/or pager (if present) as multiple repeating items in PID-13, Phone Number

- Home. The phone number value is sent in the first component of each item and the phone type is sent in the third component of each item.

The fourth component of the first repeating item in PID-13 is populated with the patient's email address.

The patient's work phone (if present) is exported in PID-14.1. LinkLogic exports only one repeating item in PID-14 and does not export any phone type in PID-14.3.

PID-16 Marital Status

On import...

The supported values for Marital Status include:

This value...	Means this...
A	Separated
D	Divorced
M	Married
S	Single
W	Widowed
O	Other
U	Undetermined (default)

In Centricity Practice Solution, this value can be configured in Administration. If you change a Marital Status value, you must configure MIK (in Server Setup) to map the new value to one of the values in this table.

See "Configure MIK interfaces" in Server Setup Online Help.

PID-19 SSN Number - Patient

On import...

Although the HL7 specification sets a maximum length of 16 characters for PID-19, LinkLogic only interprets the first 11 characters and ignores embedded dashes (-).

PID-29 Patient Death Date and Time / PID-30 Patient Death Indicator

On export...

PID-30, Patient Death Indicator, is set to Y for deceased patients. PID-29, Patient Death Date and Time, is populated with the patient's date of death.

PID-40 Patient Preferred Contact Method

LinkLogic can import and export a 1-character value for patient preferred contact method in the optional field PID-40 at the end of the PID segment in ADT and BAR messages.

To send or receive patient contact method using this field you must associate the optional Add-On IXP file **pid40contactby.ixp** with the LinkLogic interface. This IXP file maps the HL7 values to EMR values to store to or export from the database in the PERSON.CONTACTBY field. For detailed information about using IXP files, see [“Using .IXP configuration files” on page 597](#).

On import...

LinkLogic interprets a blank value as if no value were specified. To remove an existing value, enclose the contact method value in double quotes in the import message.

The following supported values for patient preferred contact method are based on HL7 table 0185. Note that starred items are not in Table 0185 but were created for this implementation.

HL7 value...	Means this...	Mapped EMR value
B	Pager	P
C	Cell Phone	C
D	Durable Power of Attorney*	D
E	Email	E
F	Fax	F
H	Home Phone	H
L	Letter*	L
N	Nursing Home*	N
O	Work phone	W
P	Paper*	A
T	Other*	O

PV1 – Patient Visit

The Patient Visit segment (PV1) is used by Registration and ADT (Admission, Discharge, and Transfer) applications to communicate information about a specific visit.

Legend

ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric	DT	Date
JCC	Job Code / Class	XON	Extended composite name and ID number for organizations

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PV1-1	4	SI		Set ID - PV1	Optional		Optional	
PV1-2	1	IS	0004	Patient Class	Not used		Not used	
PV1-3	80	PL		Assigned Patient Location	Conditional	359	Optional	359
PV1-4	2	IS	0007	Admission Type	Not used		Not used	
PV1-5	20	CX		Preadmit Number	Not used		Not used	
PV1-6	80	PL		Prior Patient Location	Not used		Not used	
PV1-7	60	XCN	0010	Attending Doctor	Conditional	360	Optional	360
PV1-8	60255	XCN	0010	Referring Doctor	Conditional	361	Optional	361
PV1-9	60	XCN	0010	Consulting Doctor	Not used		Not used	
PV1-10	3	IS	0069	Hospital Service	Not used		Not used	
PV1-11	80	PL		Temporary Location	Not used		Not used	
PV1-12	2	IS	0087	Pre-admit Test Indicator	Not used		Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PV1-13	2	IS	0092	Readmission Indicator	Not used		Not used	
PV1-14	3	IS	0023	Admit Source	Not used		Not used	
PV1-15	2	IS	0009	Ambulatory Status	Not used		Not used	
PV1-16	2	IS	0099	VIP Indicator	Not used		Not used	
PV1-17	60	XCN	0010	Admitting Doctor	Not used		Not used	
PV1-18	2	IS	0018	Patient Type	Not used		Not used	
PV1-19	20	CX		Visit Number	Optional	361	Optional	
PV1-20	50	FC	0064	Financial Class	Not used		Not used	
PV1-21	2	IS	0032	Charge Price Indicator	Not used		Not used	
PV1-22	2	IS	0045	Courtesy Code	Not used		Not used	
PV1-23	2	IS	0046	Credit Rating	Not used		Not used	
PV1-24	2	IS	0044	Contract Code	Not used		Not used	
PV1-25	8	DT		Contract Effective Date	Not used		Not used	
PV1-26	12	NM		Contract Amount	Not used		Not used	
PV1-27	3	NM		Contract Period	Not used		Not used	
PV1-28	2	IS	0073	Interest Code	Not used		Not used	
PV1-29	1	IS	0110	Transfer to Bad Dept Code	Not used		Not used	
PV1-30	8	DT		Transfer to Bad Dept Date	Not used		Not used	
PV1-31	10	IS	0021	Bad Debt Agency Code	Not used		Not used	
PV1-32	12	NM		Bad Debt Transfer Amt	Not used		Not used	
PV1-33	12	NM		Bad Debt Recovery Amt	Not used		Not used	
PV1-34	1	IS	0111	Delete Account Indicator	Not used		Not used	
PV1-35	8	DT		Delete Account Date	Not used		Not used	
PV1-36	3	IS	0112	Discharge Disposition	Not used		Not used	
PV1-37	25	CM	0113	Discharged to Location	Not used		Not used	
PV1-38	2	IS	0114	Diet Type	Not used		Not used	
PV1-39	2	IS	0115	Servicing Facility	Not used		Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
PV1-40	1	IS	0116	Bed Status	Not used		Not used	
PV1-41	2	IS	0117	Account Status	Not used		Not used	
PV1-42	80	P L		Pending Location	Not used		Not used	
PV1-43	80	P L		Prior Temporary Location	Not used		Not used	
PV1-44	26	TS		Admit Date/Time	Not used		Not used	
PV1-45	26	TS		Discharge Date/Time	Not used		Not used	
PV1-46	12	NM		Current Patient Balance	Not used		Not used	
PV1-47	12	NM		Total Charges	Not used		Not used	
PV1-48	12	NM		Total Adjustments	Not used		Not used	
PV1-49	12	NM		Total Payments	Not used		Not used	
PV1-50	20	CX	0192	Alternate Visit ID	Conditional	361	Optional	
PV1-51	1	IS	0326	Visit Indicator	Not used		Not used	
PV1-52	60	XCN	0010	Other Healthcare Provider	Not used		Not used	

PV1-3 Assigned Patient Location

On import...

This field should contain the abbreviation for the patient's home location (maximum 8 characters), as defined in Centricity Practice Solution. You can cross-reference the value in this field with location of care values in the application. For more information, see ["Cross-referencing field values" on page 461](#).

If no value is supplied, LinkLogic uses the default location of care value for the document set for the relationship in **LinkLogic > Task Options**.

Logic for determining Location of Care

LinkLogic uses the following logic to determine the location of care for the document. To configure this logic go to **Administration > System** and select **LinkLogic > Task Options**, then select the task and relationship and click **Locations of Care**.

If PV1-3 component 4 (Assigned Patient Location) contains a value

THEN Location of care = PV1-3 component 4

ELSE IF PV1-7 component 1 (Attending Doctor) contains a value

THEN Location of care = Home location associated with Attending Doctor from PV1-7

ELSE

Location of care = the default location of care specified in the Change Location of Care Options window

!!! This logic only determines which field to use. It does not validate the data.

If the selected field value is invalid, LinkLogic does not try to use the next field in the sequence shown above. It generates an exception file and the LinkLogic user must correct and resolve the error manually.

However, if the location of care value has been made obsolete in Centricity Practice Solution, LinkLogic uses the root location of care and issues a warning.

Patient Location of Care set when message creates a new patient

.By default, a patient must exist in the database before documents can be imported for them. If LinkLogic cannot match to an existing patient, it issues an error and creates an exception file.

However, you can create new patients when resolving patient mismatch errors on the LinkLogic Errors tab. When you see the **Find Patient** window, search to confirm that the patient is not in the database. If the patient is not found, click **New Patient**, create a new chart, and then re-import the data.

If this message creates a new patient in Centricity Practice Solution through error resolution or manual import, LinkLogic interprets the fourth component (facility ID) as the patient's home location of care and ignores all other components.

On export...

If a location of care is specified for the document then this value is used in the fourth component, otherwise it is left blank.

PV1-7 Attending Doctor

On import...

If the import of this message results in the creation of a new patient in Centricity Practice Solution, the Attending Doctor, if specified, is assumed to be the patient's responsible provider.



If the value for Attending Doctor is visit-specific, then you may not want to populate this field on import. The Attending doctor will become the patient's responsible provider in Centricity Practice Solution.

If PV1-3, Assigned Patient Location, does not contain a value for location, LinkLogic uses the Home Location associated with the Attending Doctor. See [“Logic for determining Location of Care” on page 359](#).

To understand how this field is used to route the document to the correct provider's desktop, see [“TXA-5 Primary Activity Provider Code/Name” on page 367](#).

On export...

The Attending Doctor field is populated with the provider identified for the document, not the patient's responsible provider.

PV1-8 Referring Doctor

On import...

If the import of this message results in the creation of a new patient in Centricity Practice Solution, a new contact is created for the referring doctor, if specified. LinkLogic interprets the first component as the referring doctor's UPIN and requires that the second component, *Family Name*, be specified. To display referring physician in a document, LinkLogic interprets only the second and third components as the referring doctor's last name and first name, respectively.

On export...

The Referring Doctor field is populated with the patient's referring physician if one has been specified.

PV1-19 Visit Number / PV1-50 Alternate Visit ID

On import...

LinkLogic uses the following logic to determine the visit identifier for the imported document.

IF PV1-19 (Visit Number) contains a value

THEN Visit ID = PV1-19

ELSE IF PV1-50 (Alternate Visit ID) contains a value

THEN Visit ID = PV1-50

ELSE

 The document in Centricity Practice Solution is
 NOT assigned a Visit ID

On export...

If the Centricity Practice Solution document has been assigned a Visit ID, the value is exported in both PV1-19 and PV1-50.

TXA – Transcription Document Header

The TXA segment contains information about a transcribed document but does not include the text of the document.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	EI	Entity Identifier
XCN	Extended composite ID number and name	PPN	Performing person
TS	Time stamp	ST	String data

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
TXA-1	4	SI		Set ID - Document	Optional	363	Optional	
TXA-2	30	IS	0270	Document Type	Required	363	Used	363
TXA-3	2	ID	0191	Doc Content Presentation	Conditional	366	Conditional	
TXA-4	26	TS		Activity Date/Time	Optional	367	Optional	367
TXA-5	60	XCN		Primary Activity Provider Code/Name	Conditional	367	Conditional	367
TXA-6	26	TS		Origination Date/Time	Optional	370	Not used	
TXA-7	26	TS		Transcription Date/Time	Conditional	370	Optional	
TXA-8	26	TS		Edit Date/Time	Not used		Used	370
TXA-9	60	XCN		Originator Code/Name	Optional	370	Not used	
TXA-10	60	XCN		Assigned Doc Authenticator	Optional	370	Not used	
TXA-11	48	XCN		Transcriptionist Code/Name	Not used	370	Not used	
TXA-12	30	EI		Unique Document Number	Optional	370	Used	370
TXA-13	16	ST		Parent Document Number	Conditional	371	Not used	
TXA-14	22	EI		Placer Order Number	Optional	372	Used	372
TXA-15	8	EI		Filler Order Number	Conditional	372	Not used	
TXA-16	30	ST		Unique DocFile Name	Optional	373	Optional	373

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
TXA-17	2	ID	0271	Doc Completion Status	Required	373	Used	
TXA-18	2	ID	0272	Doc Confidentiality Status	Optional	373	Used	373
TXA-19	2	ID	0273	Document Availability Status	Not used	374	Used	374
TXA-20	2	ID	0275	Document Storage Status	Not used		Not used	
TXA-21	30	ST		Document Change Reason	Optional	374	Optional	
TXA-22	60	PPN		Authentication Person, Time Stamp	Optional	374	Used	374
TXA-23	60	XCN		Distributed Copies (Code and Name of Recipients)	Optional	375	Optional	

TXA-1 Set ID - Document

On import...

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats this field as optional.

TXA-2 Document Type

On import...

Mapping HL7 document codes to Centricity Practice Solution document types

LinkLogic uses the following mappings from HL7 document codes to Centricity Practice Solution document types for lab result documents.

Standard cross-reference files map TXA-2, Document Type, values to document type abbreviations defined in Centricity Practice Solution. If you choose to use values other than those suggested in HL7 table 270 (for TXA-2, Document Type), this field should contain the abbreviation for the document type defined in the application. You can cross-reference the value in this field with Centricity Practice Solution document types. For details, see ["Cross-referencing field values" on page 461](#).

This HL7 code	With this description...	Maps to this document type...
AP	Anatomic Pathology	Pathology Report
AR	Autopsy Report	External Other
AS	Admission Summary	Hospital Admission
BB	Blood Bank	Lab Report

This HL7 code	With this description...	Maps to this document type...
CC	CardioDiagnostics	Diagnostic Report Other
CL	Clinic Letter	Letter
CM	Case Management	Clinical Lists Update
CN	Consult	Consultation Report
CO	Clinic Note	Internal Other
CR	Correction	External Other
CS	Clinical Summary	Clinical Summary
CU	Clinical Ultrasound	Imaging Report
DH	Discharge Instructions	External Other
DI	Diagnostic Imaging	Imaging Report
DN	Diagnostic Neurology	Diagnostic Report other
DR	Diagnostic Report Other	Diagnostic Report Other
DS	Discharge Summary	Hospital Discharge Summary
ED	ER Discharge Summary	Emergency Report
EK	EKG Report	EKG Report
ER	Emergency Report	Emergency Report
FE	Filed in Error	Filed in Error
GC	General Correspondence	External Correspondence
HC	Home care Report	Home care Report
HP	History and Physical Exam	Hospital History & Physical
HS	Heart Station	Diagnostic Report Other
LD	Labor and Delivery Report	Hospital Procedure Report
LR	Lab Report	Lab Report
OP	Operative Report	Operative Report
OT	Occupational Therapy	Rehab Report
OV	Office Visit	Office Visit
PA	Pathology Report	Pathology Report
PC	Psychiatric Consultation	Consultation Report

This HL7 code	With this description...	Maps to this document type...
PE	Phone Encounter	Phone Note
PH	Psychiatric History	External Other
PN	Procedure Note	External Other
PR	Progress Note	External Other
RA	Radiology	Imaging Report
RR	Rehab Report	Rehab Report
RX	Rx Refill	Rx Refill
SP	Surgical Pathology	Pathology Report
SR	Social Worker Report	Social Worker Report
SS	Special Studies	Diagnostic Report Other
TH	Physical Therapy	Rehab Report
TN	Transcribed Note	Transcription
TS	Transfer Summary	External Other
ZZ	Other	External Other

On export...

Mapping Centricity Practice Solution document types to HL7 document codes

LinkLogic uses the following mappings from Centricity Practice Solution document types to HL7 document codes.

A standard cross-reference file maps Centricity Practice Solution document types to values suggested in HL7 table 270 (for TXA-2, Document Type). You can cross-reference document types in the application with the value in this field. For details, see [“Cross-referencing field values” on page 461](#).

This document type maps to...	This HL7 Code...	With this HL7 Description
Clinical Lists Update	ZZ	Other
Clinical Summary	CS	Clinical Summary
Consultation Report	CN	Consult
Diagnostic Report Other	DR	Diagnostic Report Other
EKG Report	EK	EKG Report
Emergency Report	ER	Emergency Report

This document type maps to...	This HL7 Code...	With this HL7 Description
External Correspondence	GC	General Correspondence
External Other	ZZ	Other
Filed in Error	FE	Filed in Error
Home Care Report	HC	Home Care Report
Hospital Admission	AS	Admission Summary
Hospital Discharge Summary	DS	Discharge Summary
Hospital History & Physical	HP	History & Physical Exam
Hospital Procedure Report	PN	Procedure Note
Imaging Report	DI	Diagnostic Imaging
Internal Correspondence	GC	General Correspondence
Internal Other	ZZ	Other
Lab Report	LR	Lab Report
Letter	CL	Clinic Letter
Office Procedure	PN	Procedure Report
Office Visit	OV	Office Visit
Operative Report	OP	Operative Report
Pathology Report	PA	Pathology Report
Phone Note	PE	Phone Encounter
Registration Update	ZZ	Other
Rehab Report	RR	Rehab Report
Rx Refill	RX	Rx Refill
Social Work Report	SR	Social Work Report
Transcription	TN	Transcribed Note

TXA-3 Document Content Presentation

On import...

The supported values for Document Content Presentation are shown below. Any other value generates an error.

This value...	Means this...
TX	Machine readable text document (default)
FT	Formatted text

TXA-4 Activity Date/Time

On import...**Determining clinical date/time.**

For details, see [“OBX-14 Date/Time of the Observation” on page 378](#), to understand how this field is used to determine the clinical date for the imported document.

TXA-4 or TXA-12 required for document overlay

Document overlay replaces an imported document with a later version of the same document, so that only the most recent information displays on the provider's desktop and in the chart

When *document overlay* is enabled in LinkLogic Task Options, TXA-4 and TXA-12 are required. If either field does not contain a value, the imported document is processed as if document overlay were not enabled.

For more information about document overlay, see [“Using document overlay” on page 577](#), or in the online help module *Using Documents*, see “Overlay (replace) documents.”

On export...

TXA-4 is populated with the clinical date/time of the exported document.

TXA-5 Primary Activity Provider Code/Name

On import...

LinkLogic uses the following logic to assign the correct provider for the document.

IF TXA-5 (Primary Activity Provider Code/Name) contains a value

IF provider defined in TXA-5 is NOT obsolete

THEN route document to provider defined in TXA-5

ELSE IF Registration specifies a responsible provider

AND that provider is NOT an obsolete user

THEN route document to the patient's responsible provider

ELSE

Issue an error indicating that the document is orphaned and require a user to specify a responsible provider

ELSE IF TXA-9 (Originator Code/Name) contains a value

IF provider defined in TXA-9 is NOT obsolete

THEN route document to provider defined in TXA-9

ELSE IF Registration specifies a responsible provider

AND that provider is NOT an obsolete user

THEN route document to the patient's responsible provider

ELSE

Issue an error indicating that the document is orphaned and require a user to specify a responsible provider

ELSE IF TXA-10 (Assigned Document Authenticator) contains a value

IF provider defined in TXA-10 is NOT obsolete

THEN route document to provider defined in TXA-10

ELSE IF Registration specifies a responsible provider

AND that provider is NOT an obsolete user

THEN route document to the patient's responsible provider

ELSE

 Issue an error indicating that the document is orphaned and require a user to specify a responsible provider

ELSE IF TXA-22 (Authenticating Person/Time Stamp) contains a value

IF provider defined in TXA-22 is NOT obsolete

THEN route document to provider defined in TXA-22

ELSE IF Registration specifies a responsible provider

AND that provider is NOT an obsolete user

THEN route document to the patient's responsible provider

ELSE

 Issue an error indicating that the document is orphaned and require a user to specify a responsible provider

ELSE IF OBX-16 (Responsible Observer) contains a value

IF provider defined in OBX-16 is NOT obsolete

THEN route document to provider defined in OBX-16

ELSE IF Registration specifies a responsible provider

AND that provider is NOT an obsolete user

THEN route document to the patient's responsible provider

ELSE

 Issue an error indicating that the document is orphaned and require a user to specify a responsible provider

ELSE IF PV1-7 (Attending Doctor) contains a value

IF provider defined in PV1-7 is NOT obsolete

THEN route document to provider defined in PV1-7

ELSE IF Registration specifies a responsible provider

AND that provider is NOT an obsolete user

THEN route document to the patient's responsible provider

ELSE

Issue an error indicating that the document is orphaned and require a user to specify a responsible provider

ELSE IF Registration specifies a responsible provider

AND that provider is NOT an obsolete user

THEN route document to the patient's responsible provider

ELSE

Issue an error indicating that the document is orphaned and require a user to specify a responsible provider

ELSE IF none of TXA-5, TXA-9, TXA-22, OBX-16, or PV1-7 has a value.

Issue error; document is orphaned.

The document is routed to the desktop of the assigned (responsible) provider in Centricity Practice Solution. For authenticated (signed) documents, the document is also routed to the desktop of the Authenticating Person from TXA-22.



This logic only determines which field to use. It does not validate the data. If the value is invalid, LinkLogic does not try to use the next field in the sequence shown above.

Avoid routing documents to wrong provider

If LinkLogic cannot find a document provider in TXA-5, TXA-9, TXA-22, OBX-16, or PV1-7, it will send the results by default to the patient's responsible provider specified in Registration. To avoid this, configure LinkLogic to generate an error and create an orphaned document when no recognized document provider is found. Then manually select the correct provider to route to.

To set LinkLogic to generate an error when imported documents have no recognized document provider, do the following:

- 1 In **Administration** go to **System > LinkLogic > Task Options**.
- 1 In the Import Tasks folder, select your **Documents Import** task.
- 2 Select **Document Signature and Routing** and then check **Create orphan document for unrecognized provider**.

Keep User Name/IDs cross-reference file up to date

Avoid manually correcting the provider route by maintaining your user name/IDs cross-reference file that maps transcription service provider IDs to your application provider IDs. When a provider ID is not recognized, it may indicate that the cross-reference file has not been updated to include new or changed provider IDs. For more information, see ["What's in a cross-reference file?" on page 463](#).

On export...

TXA-5, Primary Activity Provider Code/Name, is populated with the name of the document provider, not necessarily the person authenticating (signing) the

document. See also [“TXA-22 Authentication Person, Time Stamp” on page 374](#).

TXA-6 Origination Date/Time / TXA-7 Transcription Date/Time

On import...

See [“OBX-14 Date/Time of the Observation” on page 378](#), for OBX-14 to understand how this field is used to determine the clinical date for the imported document.

TXA-8 Edit Date/Time

On export...

TXA-8, Edit Date/Time, is populated with the document's signature date/time.

TXA-9 Originator Code/Name / TXA-10 Assigned Document Authenticator

On import...

See [“TXA-5 Primary Activity Provider Code/Name” on page 367](#), to understand how this field is used in determining the primary activity provider code/name.

TXA-11 Transcriptionist Code/Name

On import...

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats this field as optional.

TXA-11, Transcriptionist Code/Name, is ignored because Centricity Practice Solution does not currently store this information.

TXA-12 Unique Document Number

On import...

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats this field as optional.

TXA-4 or TXA-12 required for document overlay

When document overlay is enabled in LinkLogic Task Options, TXA-4, Activity Date/Time and TXA-12, Unique Document Number are required. If either field does not contain a value, the imported document is processed as if document overlay was not enabled.

For more information about document overlay, see [“Using document overlay” on page 577](#), or in the online help module *Using Documents*, see “Overlay (replace) documents.”

On export...

TXA-12, Unique Document Number, is populated with the internal Centricity Practice Solution document identifier (SDID).

TXA-13 Parent Document Number

On import...

TXA-13, Parent Document Number, is interpreted as the internal Centricity Practice Solution document identifier (SDID) assigned to the document.

Length limits

Although the HL7 specification allows up to 30 characters for this field, if a supplied value exceeds 16 characters LinkLogic ignores it.

Filler order number takes precedence

If TXA-13, Parent Document Number, and TXA-15, Filler Order Number, are both specified and both values are valid, then TXA-15 takes precedence over TXA-13.

Matching transcription to a document

If TXA-15 or TXA-13 has a valid document ID that matches an existing Centricity Practice Solution document, then the imported (child) document is associated with the existing (parent) document.

!!! This feature is only supported for transcribed notes and external attachments where the value of TXA-2 is TN (Transcribed Note), otherwise a warning is issued and TXA-13 is ignored.

If an imported document is successfully associated with a parent document, it is either appended to the parent or embedded in it at a specific placeholder when document is signed in Centricity Practice Solution. Prior to signing, the imported child document is listed as a separate document in the Centricity Practice Solution document list.

Embedding transcription in a document

Embedding the document requires a Dictation Placeholder ID in OBX-4 (see ["OBX-4 Observation Sub-ID" on page 377](#)). If OBX-4 is not specified or does not match the ID in the parent document, the child document is appended to the parent document identified by TXA-13 or TXA-15.

Documents to be embedded are not automatically signed on import. This is the case even when

- TXA-17 (Document Completion Status) is AU (Authenticated).
- The **Import Authenticated documents as Signed** option in LinkLogic Task Options is checked for the relationship.

Instead, LinkLogic issues a warning message and imports the document as unsigned.

TXA-14 Placer Order Number

On import...

When an order is marked To Be Completed

A Centricity Practice Solution order specified by the first component of TXA-14 is marked To Be Completed if all the following are true:

- TXA-14, Placer Order Number, and TXA-17, Document Completion Status, are both specified.
- TXA-17 is either DO (Documented) or AU (Authenticated).



Use commas to separate multiple order numbers in the first component of TXA-14, Placer Order Number. LinkLogic ignores all other components.

If TXA-17 is AU (Authentication) and TXA-22, Authentication Person and Time Stamp, contains valid values, then the Centricity Practice Solution order is automatically completed and the document is automatically signed. If the document is not automatically signed, then the orders are marked complete when the document is signed.

On export...

TXA-14, Placer Order Number, is populated with the externally visible Doc ID assigned to the document. The visible Doc ID assigned by Centricity Practice Solution is only guaranteed to be unique for the set of documents associated with a specific patient.

TXA-15 Filler Order Number

On import...

TXA-15 component 1, *Entity Identifier*, is interpreted as the externally visible Doc ID assigned by Centricity Practice Solution.

Length limits

Although the HL7 specification allows up to 22 characters, if a supplied value exceeds 8 characters, LinkLogic ignores this field.

Filler order number takes precedence

If TXA-13, Parent Document Number, and TXA-15, Filler Order Number, are both specified and both values are valid, then TXA-15 takes precedence over TXA-13. For information on how this field is used in matching transcriptions to application documents, see [“Matching transcription to a document”](#) and [“Embedding transcription in a document”](#) on [page 371](#).

TXA-16 Unique Document File Name

On import and export...

On import the value in TXA-16, Unique Document File Name, is stored in the application as an external document identifier. On export, TXA-16 contains the document's external identifier, if one exists.

TXA-17 Document Completion Status

On import...

See [“When an order is marked To Be Completed” on page 372.](#)

Supported values for Document Completion Status are shown below. Any other value generates an error.

This value...	Means this...
AU	Authenticated (signed) TXA-22, Authentication Person and Time Stamp, must have a valid value for a document to be considered authenticated on import.
DO	Documented (complete but not signed)
IP	Preliminary When Document Overlay is enabled, this value is used to indicate that the document is preliminary. Otherwise it is ignored. If Document Overlay is enabled and TXA-17 is IP (Preliminary), the document is considered preliminary. A preliminary document can not replace an existing final document in Centricity Practice Solution database. For more information about document overlay, see “Using document overlay” on page 577.

TXA-18 Document Confidentiality Status

On import...

Supported values for Document Confidentiality Status include:

This value...	Means this...
V / VR	Very restricted
R / RE	Restricted
U / UC	Usual Control (not sensitive or confidential)
Important. Use the single-character code. Two-character codes are accepted for backward compatibility only.	

Imported document's confidentiality status

If TXA-18 is V or R, the imported document's status is set to the confidentiality type configured for the relationship in **LinkLogic > Task Options Change Confidentiality Import Options** window. (Click **Confidentiality** to access.)
If TXA-18 is U, the confidentiality type is Normal.

If the imported document is a transcription that specifies a parent document, the transcription inherits the confidentiality type of the parent when it is signed and merged. See ["Matching transcription to a document" on page 371](#), and ["Embedding transcription in a document" on page 371](#).

On export...

TXA-18 is set to one of the following confidentiality codes:

This value...	Means this...
V	Confidential documents (regardless of chart sensitivity)
R	Non-confidential documents from sensitive chart
U	Non-confidential documents from non-sensitive chart

TXA-19 Document Availability Status

On import...

TXA-19, Document Availability Status is ignored. It is assumed that an imported document's Availability Status is AV, Available for Patient Care. If the document is not authenticated (signed) on import, its content can change.

On export...

TXA-19 is always set to AV. Only signed documents can be exported.

TXA-21 Document Change Reason

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats TXA-21 as optional.

TXA-22 Authentication Person, Time Stamp

On import...

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats this TXA-22 as optional.

See ["TXA-5 Primary Activity Provider Code/Name" on page 367](#), to understand how this field is used in determining the primary activity provider code/name.

On export...

TXA-22 is populated with the authentication person's name and the date/time it was authenticated in the following format:

name^^^^^^^^^^^^^^^^^ *yyyymmddhhmmss*

TXA-23 Distributed Copies (Code and Name of Recipients)

On import...

The imported document is routed to the desktops of all Centricity Practice Solution users specified in TXA-23, Distributed Copies.

To use this field with a cross-reference file, use the repeat delimiter to separate multiple user names/IDs. (Default is the tilde (~)). Otherwise, use commas to separate the user IDs. For more information, see [“Cross-referencing field values” on page 461](#).

When the repeat delimiter is used to separate multiple values, each value can be specified in either of these forms:

- *lastname firstname*
- Centricity Practice Solution user name (can be obtained through cross-referencing)

OBX – Observation/Result

The Observation/Result segment (OBX) contains is a clinical fact or other information about a patient’s mental or physical status, such as a lab result, a vital sign, or the answer to a medical history question. Observations can be numeric or text.

Legend			
ID	Coded value for HL7-defined tables	CI	Extended composite ID with check digit
ST	String data	SI	Sequence ID
XCN	Extended composite ID # / name	CE	Coded element
TS	Time stamp	NM	Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
OBX-1	10	SI		Set ID - Observation Simple	Optional	377	Not used	
OBX-2	2	ID	0125	Value Type	Required	377	Used	377
OBX-3	590	CE		Observation Identifier	Not used	377	Not used	
OBX-4	20	ST		Observation Sub-ID	Optional	377	Not used	
OBX-5	65536	ST		Observation Value	Required	378	Used	
OBX-6	60	CE		Units	Not used		Not used	
OBX-7	60	ST		Reference Range	Not used		Not used	
OBX-8	10	ID	0078	Abnormal Flags	Optional	378	Optional	
OBX-9	5	NM		Probability	Not used		Not used	
OBX-10	5	ID	0080	Nature of Abnormal Test	Not used		Not used	
OBX-11	2	ID	0085	Observation Result Status	Not used		Not used	
OBX-12	26	TS		Date Last Obs Normal Values	Not used		Not used	
OBX-13	20	ST		User Defined Access Checks	Not used		Not used	
OBX-14	26	TS		Date/Time of the Observation	Optional	378	Optional	378
OBX-15	200	CE		Producer’s ID	Not used	379	Not used	
OBX-16	80	XCN		Responsible Observer	Optional	379	Optional	
OBX-17	60	CE		Observation Method	Not used		Not used	

OBX-1 Set ID - Observation Simple

Although this field is considered required or conditional in the HL7 specification, LinkLogic treats OBX-1 as optional.

OBX-2 Value Type

On import...

The supported values for Value Type are shown in the table. Any other value generates an error.

This value...	Means this...
ST	String Data
TX	Text Data
FT	Formatted Data

On export...

OBX-2, Value Type, is always populated with the value ST (string data).

OBX-3 Observation Identifier

On import...

OBX-3, Observation Identifier, is only used if the documents interface is configured to allow external attachments. See ["ImageLink Import/Export HL7 interface specification" on page 135](#), for more about using this field.

OBX-4 Observation Sub-ID

On import...

OBX-4, Observation Sub-ID, must be 8 characters or less.

If OBX-4 has a value, LinkLogic assumes it contains the Dictation Placeholder ID for embedded transcription. The placeholder is a location in the parent document where the embedded text from one or more OBX-5 segments is placed when the document is signed.

The parent document ID must be in either TXA-13 or TXA-15. For embedded transcription, TXA-2 must be TN. The value in OBX-4 must match the Dictation Placeholder ID in the parent document, otherwise LinkLogic appends the imported (child) document to the parent document rather than embedding it. The imported child document appears in the Centricity Practice Solution document list as a separate document until it is signed. See ["TXA-13 Parent Document Number" on page 371](#), or ["TXA-15 Filler Order Number" on page 372](#), for details.

OBX-5 Observation Value

On import...

Although OBX-5, Observation Value, is considered conditional in the HL7 specification, LinkLogic requires it in the NotesLink interface.

Use multiple OBX segments to create larger documents (up to 256K). Multiple OBX message segments can be imported as individual documents, or concatenated to produce a single document, depending on how the relationship is configured in LinkLogic Task Options.



LinkLogic and Centricity Practice Solution support fewer characters than the maximum of 65536 (64 kilobytes) specified in the HL7 2.3.1 standard. The precise number of characters less than the maximum varies for each message depending on its OBX-5 contents and conversion to RTF format to display in the application.

See ["ImageLink Import/Export HL7 interface specification" on page 135](#), for information about using this field for external attachments.

OBX-8 Abnormal Flags

On import...

If OBX-8, Abnormal Flags has the value A, the document is directed to the appropriate responsible provider with an urgent status. All other values are ignored.

OBX-14 Date/Time of the Observation

On import...

LinkLogic uses the following logic to determine the document's clinical date:

IF OBX-14 (Observation Date/Time) contains a value

The document's clinical date = OBX-14

ELSE IF TXA-4 (Activity Date/Time) contains a value

The document's clinical date = TXA-4

ELSE IF TXA-6 (Origination Date/Time) contains a value

The document's clinical date = TXA-6

ELSE IF TXA-7 (Transcription Date/Time) contains a value

The document's clinical date = TXA-7

ELSE

The document's clinical date = MSH-7 (Message Date/Time)

On export...

OBX-14, Observation Date/Time is populated with the clinical date/time of the document.

OBX-15 Producer's ID

On import...

If specified OBX-15, Producer's ID, is assumed to be the Transcriptionist Code/Name, and the value overrides the value specified in the TXA-11 (Transcriptionist Code).

This field is ignored because Centricity Practice Solution does not currently store this information.

OBX-16 Responsible Observer

On import...

See "[TXA-5 Primary Activity Provider Code/Name](#)" on page 367, to understand how this field is used to determine the responsible provider for the document.

MSA – Message Acknowledgement

The MSA segment is used to acknowledge a previously received message. It triggers a resend if the acknowledgement code indicates the message was rejected or generated an error.

Legend

ID	Coded value for HL7-defined tables
ST	String data
CE	Coded element
NM	Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page	Export	See page
MSA-1	2	ID	0008	Acknowledgement Code	Required	380	Used	
MSA-2	20	ST		Message Control ID	Required		Used	
MSA-3	80	ST		Text Message	Optional		Not used	
MSA-4	15	NM		Expected Sequence Number	Not used		Not used	
MSA-5	1	ID	0102	Delayed Ack Type	Not used		Not used	
MSA-6	100	CE		Error Condition	Not used		Not used	

MSA-1 Acknowledgement Code (Import)

The supported values for Acknowledgment Code include:

This value...	Means this...
AA	Original mode: Application Accept Enhanced Mode: Application Acknowledgement: Accept
AR	Original mode: Application Reject Enhanced mode: Application Acknowledgement: Reject This code triggers a message resend event.
AE	Original mode: Application Error Enhanced mode: Application Acknowledgement: Error This code triggers a message resend event.

CHAPTER 13

ProblemsLink Export HL7 interface specification

[PPR – Patient problem message 381](#)

[MSH – Message Header 384](#)

[PID – Patient Identification 386](#)

[PV1 – Patient Visit 391](#)

[PRB – Problem detail 394](#)

[NTE – Notes and Comments 398](#)

[MSA – Message Acknowledgement 398](#)

This HL7-based interface supports the export of structured problem data. It uses the HL7 message **PPR - Patient Problem** message.

PPR – Patient problem message

A PPR message includes:

- Message header (MSH) and patient information (PID, PV1).
- Problem details (PRB)
- Optional notes (NTE)

PPR trigger events

Trigger event: an event in a healthcare workflow that triggers the transfer of information, identified in HL7 by a unique 3-character code.

HL7 assumes that certain *trigger events* in the healthcare environment create the need for data to flow among systems.

LinkLogic supports these PPR message triggers for the export of problem data:

- **PC1—Problem Add**
 - **PC2—Problem Update**
-

PPR message structure

The following table shows the message segments included in this message and how LinkLogic uses them when exporting data. Page references in the table link to detailed message segment tables.

For definitions of LinkLogic usage terms, see [“How LinkLogic uses message segments” on page 42](#).

Legend	
[...]	Optional
{...}	Repeating
[[...]]	Optional and repeating

Message	Name	See page	PC1 Export	PC2 Export
MSH	Message Header	384	Required	Required
PID	Patient ID	386	Required	Required
PV1	Patient Visit	391	Required	Required
[PV2] {	Patient Visit		Not used	Not used
PRB	Problem Detail	394	Required	Required
[[NTE]]	Notes and Comments	398	Conditional	Conditional
[[VAR]]	Variance Segment		Not used	Not used
[[ROL*]]	Role		Not used	Not used
[[PTH*]]	Pathway Segment		Not used	Not used
[[OBX*]]	Observation Segment		Not used	Not used
[[GOL*]]	Goal Segment		Not used	Not used
[[ORC*]] }	Common Order Segment		Not used	Not used
MSH	Message Header	384	Conditional	Conditional
MSA	Msg Ack	398	Conditional	Conditional
[ERR]	Error		Not used	Not used
*LinkLogic does not export any of these segments.				

HL7 message segments

This section provides detailed specifications for the following HL7 message segments used in the PPR message:

For information about this segment...	See page...
MSH - Message Header	384
PID - Patient Identification	386
PV1 - Patient Visit	391
PRB - Problem Detail	394
NTE - Notes and Comments	398
MSA - Message Acknowledgement	398

Each message segment table lists the segment elements or fields in sequence order (MSH-1, MSH-2, MSH-3, and so on) with the following information:

- **Element name**
- **Maximum length** in LinkLogic
- **Data type**
- **Source table** in the HL7 specification where applicable
- **LinkLogic usage on export or import** (Required, Optional, and so on)
For definitions of LinkLogic usage terms, see [“How LinkLogic uses message segments” on page 42](#).



Click blue page number links in the following tables to jump to detail notes (when viewing the Adobe PDF version of this guide) or look for notes under the element code and name listed after the table.

MSH – Message Header

The Message Header segment (MSH) should always be in the first segment in each HL7 message. MSH defines the intent, source, destination, and some specifics of the syntax of a message.

Legend			
CE	Coded element	NM	Numeric
CM	Order sequencing component	PT	Processing type
HD	Hierarchic designator	ST	Character string
ID	Coded value	TS	Time stamp

SEQ	Lnth	Data type	HL7 table	Element name	Export	See page
MSH-1	1	ST		Field Separator	Required	
MSH-2	4	ST		Encoding Characters	Required	
MSH-3	40	HD		Sending Application	Used	385
MSH-4	20	HD		Sending Facility	Used	385
MSH-5	40	HD		Receiving Application	Used	385
MSH-6	30	HD		Receiving Facility	Used	385
MSH-7	26	TS		Date/Time of Message	Used	
MSH-8	40	ST		Security	Not used	
MSH-9	7	CM	0076	Message Type	Required	385
MSH-10	20	ST		Message Control ID	Required	
MSH-11	3	PT	0103	Processing ID	Required	385
MSH-12	8	ID	0104	Version ID	Required	385
MSH-13	15	NM		Sequence Number	Not used	
MSH-14	180	ST		Continuation Pointer	Not used	
MSH-15	2	ID	0155	Accept Ack Type	Optional	386
MSH-16	2	ID	0155	Application Ack Type	Optional	386

SEQ	Lnth	Data type	HL7 table	Element name	Export	See page
MSH-17	2	ID		Country Code	Not used	
MSH-18	6	ID	0211	Character Set	Not used	
MSH-19	60	CE		Primary Language of Message	Not used	

MSH-3 Sending Application

LinkLogic identifies itself with a string value derived by concatenating the string *LinkLogic-* with the unique Centricity Practice Solution Enterprise ID for the organization (for example, *LinkLogic-ABCD*). The Enterprise ID can be up to four alphanumeric characters.

MSH-4 Sending Facility

MSH-4 contains the patient's (not a document's) server-specific location of care in the form of *DatabaseID^LOC*.

MSH-5 Receiving Application

MSH-5 contains the name of the LinkLogic relationship that created the output file.

MSH-6 Receiving Facility

MSH-6 contains the location of care of the patient (not of the document). Unlike MSH-4, Sending Facility, this field contains the location of care without the database ID.

MSH-9 Message Type

The supported values for MSH-9, Message Type, include:

This value...	Means this...
PPR^PC1	Patient problem, add
PPR^PC2	Patient problem, update
ACK	General acknowledgement message

On export, the second component, *trigger event*, is populated with either PC1 (Problem Add) or PC2 (Problem Update).

MSH-11 Processing ID

MSH-11, Processing ID, is set to P (Production) or D (Debugging), if test mode is enabled in Centricity Practice Solution.

MSH-12 Version ID

MSH-12, Version ID, is set to 2.3.1 (for Release 2.3.1, April 1999).

MSH-15 Accept Ack Type

The supported values for Accept Ack Type include:

This value...	Means this...
AL	Always
NE	Never (default)

MSH-16 Application Ack Type

MSH-16 Application Acknowledgment is optional. On export the value NE is used.

PID – Patient Identification

The Patient Identification (PID) is a unique, system-generated identification number that Centricity Practice Solution assigns to each patient during registration.

Legend	
ID	Coded value for HL7-defined tables
IS	Coded value for user-defined tables
XCN	Extended composite ID number and name
TS	Time stamp
XTN	Extended telecomm number
ST	String data
NM	Numeric
SI	Sequence ID
CX	Extended composite ID with check digit
XPN	Extended person name
XAD	Extended address
CE	Coded element
DLN	Driver's license number

SEQ	Lnth	Data type	HL7 table	Element name	Export	See page
PID-1	4	SI		Set ID - Patient ID	Not used	
PID-2	20	CX		Patient ID (External ID)	Conditional	387
PID-3	20	CX		Patient ID (Internal ID)	Required	387
PID-4	16	CX		Alternate Patient ID-PID	Optional	388
PID-5	48	XPN		Patient Name	Required	
PID-6	48	XPN		Mother's Maiden Name	Not used	
PID-7	26	TS		Date/Time of Birth	Used	

SEQ	Lnth	Data type	HL7 table	Element name	Export	See page
PID-8	1	IS	0001	Sex	Used	388
PID-9	48	XPN		Patient Alias	Not used	
PID-10	1	IS	0005	Race	Optional	388
PID-11	106	XAD		Patient Address	Optional	
PID-12	4	IS		Country Code	Not used	
PID-13	250	XTN		Phone Number - Home	Optional	389
PID-14	250	XTN		Phone Number - Work	Optional	
PID-15	60	CE	0296	Primary Language	Optional	
PID-16	1	IS	0092	Marital Status	Optional	389
PID-17	3	IS	0006	Religion	Not used	
PID-18	20	CX		Patient Account Number	Not used	
PID-19	11	ST		SSN Number - Patient	Optional	
PID-20	25	DLN		Driver's License Number-Patient	Not used	
PID-21	20	CX		Mother's Identifier	Not used	
PID-22	3	IS	0189	Ethnic Group	Used	
PID-23	60	ST		Birth Place	Not used	
PID-24	2	ID	0136	Multiple Birth Indicator	Not used	
PID-25	2	NM		Birth Order	Not used	
PID-26	4	IS	0171	Citizenship	Not used	
PID-27	60	CE	0172	Veterans Military Status	Not used	
PID-28	80	CE		Nationality	Not used	
PID-29	26	TS		Patient Death Date /Time	Optional	389
PID-30	1	ID	0136	Patient Death Indicator	Optional	389
PID-40	1	ST	0185	Patient Preferred Contact Method	Optional	389

PID-2 Patient ID (External ID) / PID-3 Patient ID (Internal ID)

On export, PID-3, Patient ID (Internal ID), always contains the unique Centricity Practice Solution Patient ID for the patient. If available, PID-2, Patient ID (External ID), contains the external identifier for the relationship-specific external ID set.

Global unique Identifier

The Centricity Practice Solution Patient ID is a globally unique identifier represented as a string value in the form *123456789012-XXXX123* where:

- **Prefix.** *123456789012* is a number with a maximum of 12 digits that is unique within the Centricity Practice Solution database where the patient's chart was created.
- **Suffix.** *XXXX123* concatenates the customer's unique Enterprise ID (*XXXX*) and the Centricity Practice Solution database ID (*123*). Database IDs are allocated and specified by the system administrator performing the installation.

PID-4 Alternate Patient ID-PID

PID-4, Alternate Patient ID, is the patient's medical record number.

PID-8 Sex

The supported values for Sex include:

This value...	Means this...
F	Female
M	Male
O	Other (treated as Unknown)
U	Unknown

PID-10 Race

The supported values for Race include:

This value...	Means this...
B	Black
C	Chinese
F	Filipino
H	Hispanic
J	Japanese
N	Native American
I	Native Hawaiian
M	Multiracial
O	Oriental/Asian
P	Pacific Islander
W	White
T	Other
U	Undetermined (default)

In Centricity Practice Solution, race values can be configured in Administration. If a value is changed in Administration, you must configure MIK (in Server Setup) to map to the value to one of the values in this table. See “Configure MIK interfaces” in Server Setup Online Help.

PID-13 Phone Number - Home / PID-14 Phone Number - Work

LinkLogic exports the patient's home phone number, cell phone, fax phone, and/or pager (if present) as multiple repeating items in PID-13, Phone Number - Home. The phone number value is sent in the first component of each item and the phone type is sent in the third component of each item.

The fourth component of the first repeating item in PID-13 is populated with the patient's email address.

The patient's work phone (if present) is exported in PID-14.1. LinkLogic exports only one repeating item in PID-14 and does not export any phone type in PID-14.3.

PID-16 Marital Status

The supported values for Marital Status include:

This value...	Means this...
A	Separated
D	Divorced
M	Married
S	Single
W	Widowed
O	Other
U	Undetermined (default)

In Centricity Practice Solution, this value can be configured in Administration. If you change a Marital Status value, you must configure MIK (in Server Setup) to map the new value to one of the values in this table.

See “Configure MIK interfaces” in Server Setup Online Help.

PID-29 Patient Death Date and Time / PID-30 Patient Death Indicator

PID-30, Patient Death Indicator, is set to Y for deceased patients. PID-29, Patient Death Date and Time, is populated with the patient's date of death.

PID-40 Patient Preferred Contact Method

LinkLogic can import and export a 1-character value for patient preferred contact method in the optional field PID-40 at the end of the PID segment in ADT and BAR messages.

To send or receive patient contact method using this field you must associate the optional Add-On IXP file **pid40contactby.ixp** with the LinkLogic interface.

This IXP file maps the HL7 values to EMR values to store to or export from the database in the PERSON.CONTACTBY field. For detailed information about using IXP files, see [“Using .IXP configuration files” on page 597](#).

The following supported values for patient preferred contact method are based on HL7 table 0185. Note that starred items are not in Table 0185 but were created for this implementation.

HL7 value...	Means this...	Mapped EMR value
B	Pager	P
C	Cell Phone	C
D	Durable Power of Attorney*	D
E	Email	E
F	Fax	F
H	Home Phone	H
L	Letter*	L
N	Nursing Home*	N
O	Work phone	W
P	Paper*	A
T	Other*	O

PV1 – Patient Visit

The Patient Visit segment (PV1) is used by Registration and ADT (Admission, Discharge, and Transfer) applications to communicate information about a specific visit.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric	DT	Date
JCC	Job Code / Class	XON	Extended composite name and ID number for organizations

SEQ	Lnth	Data type	HL7 table	Element name	Export	See page
PV1-1	4	SI		Set ID - PV1	Optional	
PV1-2	1	IS	0004	Patient Class	Not used	
PV1-3	80	PL		Assigned Patient Location	Optional	393
PV1-4	2	IS	0007	Admission Type	Not used	
PV1-5	20	CX		Pre-admit Number	Not used	
PV1-6	80	PL		Prior Patient Location	Not used	
PV1-7	60	XCN	0010	Attending Doctor	Optional	393
PV1-8	60	XCN	0010	Referring Doctor	Optional	393
PV1-9	60	XCN	0010	Consulting Doctor	Not used	
PV1-10	3	IS	0069	Hospital Service	Not used	
PV1-11	80	PL		Temporary Location	Not used	
PV1-12	2	IS	0087	Pre-admit Test Indicator	Not used	

SEQ	Lnth	Data type	HL7 table	Element name	Export	See page
PV1-13	2	IS	0092	Readmission Indicator	Not used	
PV1-14	3	IS	0023	Admit Source	Not used	
PV1-15	2	IS	0009	Ambulatory Status	Not used	
PV1-16	2	IS	0099	VIP Indicator	Not used	
PV1-17	60	XCN	0010	Admitting Doctor	Not used	
PV1-18	2	IS	0018	Patient Type	Not used	
PV1-19	20	CX		Visit Number	Optional	393
PV1-20	50	FC	0064	Financial Class	Not used	
PV1-21	2	IS	0032	Charge Price Indicator	Not used	
PV1-22	2	IS	0045	Courtesy Code	Not used	
PV1-23	2	IS	0046	Credit Rating	Not used	
PV1-24	2	IS	0044	Contract Code	Not used	
PV1-25	8	DT		Contract Effective Date	Not used	
PV1-26	12	NM		Contract Amount	Not used	
PV1-27	3	NM		Contract Period	Not used	
PV1-28	2	IS	0073	Interest Code	Not used	
PV1-29	1	IS	0110	Transfer to Bad Dept Code	Not used	
PV1-30	8	DT		Transfer to Bad Dept Date	Not used	
PV1-31	10	IS	0021	Bad Debt Agency Code	Not used	
PV1-32	12	NM		Bad Debt Transfer Amount	Not used	
PV1-33	12	NM		Bad Debt Recovery Amount	Not used	
PV1-34	1	IS	0111	Delete Account Indicator	Not used	
PV1-35	8	DT		Delete Account Date	Not used	
PV1-36	3	IS	0112	Discharge Disposition	Not used	
PV1-37	25	CM	0113	Discharged to Location	Not used	
PV1-38	2	IS	0114	Diet Type	Not used	
PV1-39	2	IS	0115	Servicing Facility	Not used	
PV1-40	1	IS	0116	Bed Status	Not used	

SEQ	Lnth	Data type	HL7 table	Element name	Export	See page
PV1-41	2	IS	0117	Account Status	Not used	
PV1-42	80	P L		Pending Location	Not used	
PV1-43	80	P L		Prior Temporary Location	Not used	
PV1-44	26	TS		Admit Date/Time	Not used	
PV1-45	26	TS		Discharge Date/Time	Not used	
PV1-46	12	NM		Current Patient Balance	Not used	
PV1-47	12	NM		Total Charges	Not used	
PV1-48	12	NM		Total Adjustments	Not used	
PV1-49	12	NM		Total Payments	Not used	
PV1-50	20	CX	0192	Alternate Visit ID	Optional	393
PV1-51	1	IS	0326	Visit Indicator	Not used	
PV1-52	60	XCN	0010	Other Healthcare Provider	Not used	

PV1-2 Patient Class

Although this field is required or conditional in the HL7 specification, LinkLogic treats it as optional.

PV1-3 Assigned Patient Location

The fourth component of PV1-3 is populated with the eight-character abbreviation for the patient's home location of care.

PV1-7 Attending Doctor

PV1-7, Attending Doctor, is populated with the patient's responsible provider, if specified.

PV1-8 Referring Doctor

PV1-8, Referring Doctor, is populated with the patient's referring physician if specified. To display referring physician in a document, LinkLogic interprets only the second and third components as the referring doctor's last name and first name, respectively.

PV1-19 Visit Number / PV1-50 Alternate Visit ID

If the Chart document for the patient problem(s) has been assigned a Visit ID, the value is exported in both PV1-19 and PV1-50.

PRB – Problem detail

The problem detail segment contains information about patient problems in Centricity Practice Solution. You can choose to include only active or all problems when you set up the Problems Export Task. If you include inactive problems, the problem stop date will be exported for problems that have been removed and marked as inactive in the chart.

Legend			
ID	Coded value for HL7-defined tables	TS	Time stamp
CE	Coded element	ST	String data
NM	Numeric	EI	Entity Identifier

SEQ	Lnth	Data type	HL7 table	Element name	Export	See page
PRB-1	2	ID	0287	Action Code	Required	395
PRB-2	26	TS		Action Date/Time	Required	395
PRB-3	80	CE		Problem ID	Required	395
PRB-4	60	EI		Problem Instance ID	Required	396
PRB-5	60	EI		Episode of Care ID	Not used	
PRB-6	60	NM		Problem List Priority	Not used	
PRB-7	26	TS		Problem Established Date/Time	Not used	
PRB-8	26	TS		Anticipated Problem Resolution Date/Time	Not used	
PRB-9	26	TS		Actual Problem Resolution Date/Time	Optional	396
PRB-10	80	CE		Problem Classification	Not used	
PRB-11	80	CE		Problem Management Discipline	Not used	
PRB-12	80	CE		Problem Persistence	Not used	
PRB-13	80	CE		Problem Confirmation Status	Not used	
PRB-14	80	CE		Problem Life Cycle Status	Optional	396
PRB-15	26	TS		Problem Life Cycle Status Date/Time	Conditional	397
PRB-16	26	TS		Problem Date of Onset	Optional	397
PRB-17	80	ST		Problem Onset Text	Not used	
PRB-18	80	CE		Problem Ranking	Optional	397

SEQ	Lnth	Data type	HL7 table	Element name	Export	See page
PRB-19	60	CE		Certainty of Problem	Optional	397
PRB-20	5	NM		Probability of Problem (0-1)	Not used	
PRB-21	80	CE		Individual Awareness of Problem	Not used	
PRB-22	80	CE		Problem Prognosis	Not used	
PRB-23	80	CE		Individual Awareness of Prognosis	Not used	
PRB-24	200	ST		Family/Significant Other Awareness of Problem/Prognosis	Not used	
PRB-25	80	CE		Security/Sensitivity	Not used	

PRB-1 Action Code

Supported values for Action Code include:

This value...	Means this...	Trigger event in MSH
AD	Add Problem	PC1
UP	Update Problem	PC2

PRB-2 Action Date/Time

PRB-2, Action Date/Time, contains the date and time the problem was signed in Centricity Practice Solution.

PRB-3 Problem ID

PRB-3, Problem ID, is populated with the HL7 coded element *data type*, which includes a set of three components (a “triplet”) separated by carets (sub-component delimiter):

Coding system	Value template
ICD-9	xxx.xx^description^I9
ICD-10	xxx.xxxx^description^I10
SNOMED or	xx-xxxxx^description^SNM
SNOMED-CT	xxxxxxxx^description^SCT

Value template components include:

<problem code> ^ <problem description> ^ <name of coding system>

The HL7 coded element *data type* has at most two triplets from the value template. Each triplet can have the *problem code*, *problem description*, and *name of coding system* values. (For uncoded problems only *problem*

description is sent.) The sub-component delimiter (^) separates triplets if two codes are exported.



PRB-3 is not a repeating field in HL7 v2.x. PRB-3 will have at most 6 sub-components—three for each triplet.

LinkLogic uses the following rules to determine which of the three possible codes (ICD-9, ICD-10, and/or SNOMED-CT) are exported in the two possible HL7 triplets.



Note that until destination systems are ready to receive ICD-10 codes, Problem Export constraint option **Export diagnoses with only ICD-9 codes** is checked by default. This should be unchecked when you are ready to send ICD-10 codes.

IF (Not in ICD-9 Only Mode AND ICD-10 code is available)

THEN Export ICD-10 code in first triplet

IF ICD-9 code is also available in addition to ICD-10 code

THEN export ICD-9 code in second triplet

ELSE IF SNOMED-CT code is also available in addition to ICD-10 code

THEN export SNOMED-CT code in second triplet

ELSE IF ICD-9 code is available (but ICD-10 code is not OR in ICD-9 Only Mode)

THEN export ICD-9 code in first triplet but nothing in the second triplet

 (When ICD-10 is not available or ICD-9 Only Mode nothing is sent in second triplet)

ELSE (neither ICD-9 nor ICD-10 codes are available)

 Export *problem description* in first triplet but nothing in second triplet

 (First and third components will be blank if the problem is uncoded)

PRB-4 Problem Instance ID

PRB-4, Problem Instance ID, is the unique internal Centricity Practice Solution ID for this problem. This ID is not visible in the application.

PRB-9 Actual Problem Resolution Date/Time

PRB-9, Actual Problem Resolution Date/Time, is the stop date for the problem, if specified, in Centricity Practice Solution.

PRB-14 Problem Life Cycle Status

PRB-14, Problem Life Cycle Status, is the most recent Centricity Practice Solution assessment of the problem. The field is blank if there's no assessment. The values are New, Improved, Deteriorated, Unchanged, or Comment Only.

PRB-15 Problem Life Cycle Status Date/Time

PRB-15, Problem Life Cycle Status Date/Time, is the clinical date the assessment was made. This field is only populated if PRB-14 has a value.

PRB-16 Problem Date of Onset

PRB-16, Problem Date of Onset, is the onset date for the problem in Centricity Practice Solution.

PRB-18 Problem Ranking

PRB-18, Problem Ranking, optionally contains the value assigned by Centricity Practice Solution to a problem type (for example, Diagnosis of) which is used to sort the patient's problem list.



This is not the provider's custom ordering of the problem list, but the default order set by the application.

PRB-19 Certainty of Problem

PRB-19, Certainty of Problem, optionally contains the Centricity Practice Solution problem type (for example, Diagnosis of, Minor diagnosis of, and so on).

NTE – Notes and Comments

Notes and Comments segment is only present if a problem has been annotated with comments in Centricity Practice Solution.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
FT	Formatted Text		

SEQ	Lnth	Data type	HL7 table	Element name	Export	See page
NTE-1	4	SI		Set ID - NTE	Optional	
NTE-2	8	ID		Source of Comment	Not used	
NTE-3	64K	FT		Comment	Optional	

MSA – Message Acknowledgement

The MSA segment is used to acknowledge a previously received message. It triggers a resend if the acknowledgement code indicates the message was rejected or generated an error.

Legend			
ID	Coded value for HL7-defined tables		
ST	String data		
CE	Coded element		
NM	Numeric		

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
MSA-1	2	ID	0008	Acknowledgement Code	Used	399
MSA-2	20	ST		Message Control ID	Used	
MSA-3	80	ST		Text Message	Not used	
MSA-4	15	NM		Expected Sequence Number	Not used	
MSA-5	1	ID	0102	Delayed Ack Type	Not used	
MSA-6	100	CE		Error Condition	Not used	

MSA-1 Acknowledgement Code

The supported values for Acknowledgment Code include:

This value...	Means this...
AA	Original mode: Application Accept Enhanced Mode: Application Acknowledgement: Accept
AR	Original mode: Application Reject Enhanced mode: Application Acknowledgement: Reject This code triggers a message resend event.
AE	Original mode: Application Error Enhanced mode: Application Acknowledgement: Error This code triggers a message resend event.

CHAPTER 14

ProceduresLink Export HL7 interface specification

[DFT message – Detail Financial Transaction 401](#)

[FT1 - Financial transaction 402](#)

[MSH – Message Header 404](#)

[EVN – Event Type 406](#)

[PID – Patient Identification 407](#)

[PV1 – Patient Visit 412](#)

[FT1 – Financial transaction 415](#)

[OBX – Observation/Result 421](#)

[MSA – Message Acknowledgement 423](#)

This HL7-based interface supports the export of procedures documented during a patient encounter. It uses the HL7 DFT - Detail Financial Transaction message. Support for the DFT message is constrained to the P03 trigger event: Post Detailed Financial Transaction. See [“DFT message – Detail Financial Transaction” on page 401](#).

DFT message – Detail Financial Transaction

The Detail Financial Transaction (DFT) message is used to describe a financial transaction transmitted between systems, that is, to the billing system for ancillary charges, ADT to billing system for patient deposits, and so on.

A DFT message includes:

- Message header (MSH), trigger event type (EVN)
- Patient information (PID, PV1)
- Financial transaction information (FT1)
- One or more observation / result (OBX) segments defining, quantifying and qualifying the results

DFT trigger events

Trigger event: an event in a healthcare workflow that triggers the transfer of information, identified in HL7 by a unique 3-character code.

HL7 assumes that certain *trigger events* in the healthcare environment create the need for data to flow among systems.

LinkLogic supports this DFT message trigger event for export:

- **P03—Post Detailed Financial Transaction**

DFT message structure

The following table shows how LinkLogic uses the message segments in this message when exporting data. For definitions of LinkLogic usage terms, see [“How LinkLogic uses message segments” on page 42.](#)

Legend	
[...]	Optional
{...}	Repeating
[[...]]	Optional and repeating

Message Segments	Name	See page...	P03 Export
MSH	Msg Header	404	Required
EVN	Event Type	406	Required
PID	Patient ID	407	Required
[PV1]	Patient Visit	412	Optional
[PV2]	Patient Visit		Ignored
{FT1}		401, 415	Required
[[OBX]]	Observation/Result	421	Optional
MSH	Msg Header		Conditional
MSA	Msg Ack	423	Conditional
[ERR]	Error		Ignored

FT1 - Financial transaction

Orders are grouped based on the associated document in Centricity Practice Solution. If multiple FT1 segments exist with a single MSH, they were ordered as part of the same update. If the FT1 segments are grouped under separate MSH records, the associated orders were created using separate chart updates.

HL7 message segments

This section provides detailed specifications for the following HL7 message segments used in the DFT message:

For information about this segment...	See page...
MSH - Message Header	404
EVN - Event type	406
PID - Patient Identification	407
PV1 - Patient Visit	412
FT1 - Financial transaction	415
OBX - Observation/Result	421
MSA - Message Acknowledgement	423

Each message segment table lists the segment elements or fields in sequence order (MSH-1, MSH-2, MSH-3, and so on) with the following information:

- **Element name**
 - **Maximum length** in LinkLogic
 - **Data type**
 - **Source table** in the HL7 specification where applicable
 - **LinkLogic usage on export or import** (Required, Optional, and so on)
- For definitions of LinkLogic usage terms, see [“How LinkLogic uses message segments” on page 42](#).



Click blue page number links in the following tables to jump to detail notes (when viewing the Adobe PDF version of this guide) or look for notes under the element code and name listed after the table.

MSH – Message Header

The Message Header segment (MSH) should always be in the first segment in each HL7 message. MSH defines the intent, source, destination, and some specifics of the syntax of a message.

Legend			
CE	Coded element	NM	Numeric
CM	Order sequencing component	PT	Processing type
HD	Hierarchic designator	ST	Character string
ID	Coded value	TS	Time stamp

SEQ	Lnth	Data type	HL7 table	Element name	Export	See page...
MSH-1	1	ST		Field Separator	Required	
MSH-2	4	ST		Encoding Characters	Required	
MSH-3	40	HD		Sending Application	Used	405
MSH-4	20	HD		Sending Facility	Used	405
MSH-5	40	HD		Receiving Application	Used	405
MSH-6	30	HD		Receiving Facility	Used	405
MSH-7	26	TS		Date/Time of Message	Used	
MSH-8	40	ST		Security	Not used	
MSH-9	7	CM	0076	Message Type	Required	405
MSH-10	20	ST		Message Control ID	Required	
MSH-11	3	PT	0103	Processing ID	Required	405
MSH-12	8	ID	0104	Version ID	Required	405
MSH-13	15	NM		Sequence Number	Not used	
MSH-14	180	ST		Continuation Pointer	Not used	
MSH-15	2	ID	0155	Accept Ack type	Optional	405
MSH-16	2	ID	0155	Application Ack type	Optional	406
MSH-17	2	ID		Country Code	Not used	
MSH-18	6	ID	0211	Character Set	Not used	
MSH-19	60	CE		Principal Language of Message	Not used	

MSH-3 Sending Application

On export, LinkLogic identifies itself with a string value for MSH-3 derived by concatenating the string *LinkLogic-* with the unique Centricity Practice Solution Enterprise ID for the organization (for example, *LinkLogic-ABCD*). The Enterprise ID can be up to four alphanumeric characters.

MSH-4 Sending Facility

MSH-4 contains the server-specific location of care for the document in the form of DatabaseID^LOC (for example, TEST000^SOUTH).

MSH-5 Receiving Application

MSH-5 Receiving Application contains the name of the LinkLogic relationship that created the output file.

MSH-6 Receiving Facility

MSH-6 Receiving Facility contains the document's location of care. Unlike MSH-4 Sending Facility, this field contains the location of care without the database ID.

MSH-9 Message Type

The supported values for Message Type include:

This value...	Means this...
DFT	Detailed financial transaction
ACK	General acknowledgement message

The second component, *trigger event*, is populated with a value identical to the Event Type Code's (EVN-1) field 1.

MSH-11 Processing ID

MSH-11, Processing ID, is set to P (Production) or D (Debugging), if test mode is enabled in Centricity Practice Solution.

MSH-12 Version ID

On export, MSH-12, Version ID, is set to 2.3.1 (for Release 2.3.1, April 1999).

MSH-15 Accept Ack Type

The supported values for MSH-15 Accept Ack Type include:

This value...	Means this...
AL	Always
NE	Never (default)

MSH-16 Application Ack Type

MSH-16 Application Acknowledgment is optional. On export the value NE is used.

EVN – Event Type

The Event Type segment (EVN) defines the trigger event for the message, such as patient discharge or an update to the patient chart, and when it occurred.

Legend

- ID** Coded value for HL7-defined tables
- IS** Coded value for user-defined tables
- XCN** Extended composite ID number and name
- TS** Time stamp

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page...
EVN-1	3	ID	0003	Event Type Code	Required	406
EVN-2	26	TS		Recorded Date/Time	Required	406
EVN-3	26	TS		Date/Time of Planned Event	Not used	
EVN-4	3	IS	0062	Event Reason Code	Not used	
EVN-5	60	XCN	0188	Operator ID	Not used	
EVN-6	26	TS		Event Occurred	Not used	

EVN-1 Event Type Code

The Event Type Code is P03 (Post detailed financial transaction)

EVN-2 Recorded Date/Time

EVN-2, Date/Time of Event, is populated with a date/time that is typically milliseconds later than the date/time exported in MSH-7, Date/Time of Message.

!!! EVN-2 is NOT the time the event occurred.

PID – Patient Identification

The Patient Identification (PID) is a unique, system-generated identification number that the Centricity Practice Solution assigns to each patient during registration.

Legend

ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric		

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page...
PID-1	4	SI		Set ID - Patient ID	Not used	
PID-2	20	CX		Patient ID (External ID)	Conditional	408
PID-3	20	CX		Patient ID (Internal ID)	Required	408
PID-4	16	CX		Alternate Patient ID-PID	Optional	409
PID-5	48	XPN		Patient Name	Required	
PID-6	48	XPN		Mother's Maiden Name	Not used	
PID-7	26	TS		Date/Time of Birth	Used	
PID-8	1	IS	0001	Sex	Used	409
PID-9	48	XPN		Patient Alias	Not used	
PID-10	1	IS	0005	Race	Optional	409
PID-11	106	XAD		Patient Address	Optional	
PID-12	4	IS		Country Code	Not used	
PID-13	250	XTN		Phone Number - Home	Optional	409
PID-14	250	XTN		Phone Number - Work	Optional	

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page...
PID-15	60	CE	0296	Primary Language	Optional	
PID-16	1	IS	0002	Marital Status	Optional	410
PID-17	3	IS	0006	Religion	Not used	
PID-18	20	CX		Patient Account Number	Not used	
PID-19	11	ST		SSN # - Patient	Optional	
PID-20	25	DLN		Driver's License # - Patient	Not used	
PID-21	20	CX		Mother's Identifier	Not used	
PID-22	3	IS	0189	Ethnic Group	Used	
PID-23	60	ST		Birth Place	Not used	
PID-24	2	ID	0136	Multiple Birth Indicator	Not used	
PID-25	2	NM		Birth Order	Not used	
PID-26	4	IS	0171	Citizenship	Not used	
PID-27	60	CE	0172	Veterans Military Status	Not used	
PID-28	80	CE		Nationality	Not used	
PID-29	26	TS		Patient Death Date /Time	Optional	410
PID-30	1	ID	0136	Patient Death Indicator	Optional	410
PID-40	1	ST	0185	Patient Preferred Contact Method	Optional	410

PID-2 Patient ID (External ID) / PID-3 Patient ID (Internal ID)

PID-3, Patient ID (Internal ID), always contains the unique Centricity Practice Solution Patient ID for the patient. If available, PID-2, Patient ID (External ID), contains the external identifier for the relationship-specific external ID set.

Global unique Identifier

The application's Patient ID is a globally unique identifier represented as a string value in the form 123456789012-XXXX123 where:

- **Prefix.** 123456789012 is a number with a maximum of 12 digits that is unique within Centricity Practice Solution database where the patient's chart was created.
- **Suffix.** XXXX123 concatenates the customer's unique Enterprise ID (XXXX) and the Centricity Practice Solution database ID (123). Database IDs are allocated and specified by the system administrator performing the installation.

PID-4 Alternate Patient ID - PID

PID-4, Alternate Patient ID, is the patient's medical record number.

PID-8 Sex

The supported values for Sex include:

This value...	Means this...
F	Female
M	Male
O	Other (treated as Unknown)
U	Unknown

PID-10 Race

The supported values for Race include:

This value...	Means this...
B	Black
C	Chinese
F	Filipino
H	Hispanic
J	Japanese
N	Native American
I	Native Hawaiian
M	Multiracial
O	Oriental/Asian
P	Pacific Islander
W	White
T	Other
U	Undetermined (default)

In Centricity Practice Solution, race values can be configured in Administration. If a value is changed in Administration, you must configure MIK (in Server Setup) to map to the value to one of the values in this table. See "Configure MIK interfaces" in Server Setup Online Help.

PID-13 Phone Number - Home / PID-14 Phone Number - Work

LinkLogic exports the patient's home phone number, cell phone, fax phone, and/or pager (if present) as multiple repeating items in PID-13, Phone Number

- Home. The phone number value is sent in the first component of each item and the phone type is sent in the third component of each item.

The fourth component of the first repeating item in PID-13 is populated with the patient's email address.

The patient's work phone (if present) is exported in PID-14.1. LinkLogic exports only one repeating item in PID-14 and does not export any phone type in PID-14.3.

PID-16 Marital Status

The supported values for Marital Status include:

This value...	Means this...
A	Separated
D	Divorced
M	Married
S	Single
W	Widowed
O	Other
U	Undetermined (default)

In Centricity Practice Solution, this value can be configured in Administration. If you change a Marital Status value, you must configure MIK (in Server Setup) to map the new value to one of the values in this table.

See "Configure MIK interfaces" in Server Setup Online Help.

PID-29 Patient Death Date and Time / PID-30 Patient Death Indicator

PID-30, Patient Death Indicator, is set to Y for deceased patients. PID-29, Patient Death Date and Time, is populated with the patient's date of death.

PID-40 Patient Preferred Contact Method

LinkLogic can import and export a 1-character value for patient preferred contact method in the optional field PID-40 at the end of the PID segment in ADT and BAR messages.

To send or receive patient contact method using this field you must associate the optional Add-On IXP file **pid40contactby.ixp** with the LinkLogic interface. This IXP file maps the HL7 values to EMR values to store to or export from the database in the PERSON.CONTACTBY field. For detailed information about using IXP files, see ["Using .IXP configuration files" on page 597](#).

The following supported values for patient preferred contact method are based on HL7 table 0185. Note that starred items are not in Table 0185 but were created for this implementation.

HL7 value...	Means this...	Mapped EMR value
B	Pager	P
C	Cell Phone	C
D	Durable Power of Attorney*	D
E	Email	E
F	Fax	F
H	Home Phone	H
L	Letter*	L
N	Nursing Home*	N
O	Work phone	W
P	Paper*	A
T	Other*	O

PV1 – Patient Visit

The Patient Visit segment (PV1) is used by Registration and ADT (Admission, Discharge, and Transfer) applications to communicate information about a specific visit.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric	DT	Date
JCC	Job Code / Class	XON	Extended composite name and ID number for organizations

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PV1-1	4	S I		Set ID - PV1	Optional	
PV1-2	1	IS	0004	Patient Class	Not used	
PV1-3	80	P L		Assigned Patient Location	Optional	414
PV1-4	2	IS	0007	Admission Type	Not used	
PV1-5	20	CX		Pre-admit Number	Not used	
PV1-6	80	P L		Prior Patient Location	Not used	
PV1-7	60	XCN	0010	Attending Doctor	Optional	414
PV1-8	60255	XCN	0010	Referring Doctor	Optional	414
PV1-9	60	XCN	0010	Consulting Doctor	Not used	
PV1-10	3	IS	0069	Hospital Service	Not used	
PV1-11	80	P L		Temporary Location	Not used	
PV1-12	2	IS	0087	Pre-admit Test Indicator	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PV1-13	2	IS	0092	Readmission Indicator	Not used	
PV1-14	3	IS	0023	Admit Source	Not used	
PV1-15	2	IS	0009	Ambulatory Status	Not used	
PV1-16	2	IS	0099	VIP Indicator	Not used	
PV1-17	60	XCN	0010	Admitting Doctor	Not used	
PV1-18	2	IS	0018	Patient Type	Not used	
PV1-19	20	CX		Visit Number	Optional	414
PV1-20	50	FC	0064	Financial Class	Not used	
PV1-21	2	IS	0032	Charge Price Indicator	Not used	
PV1-22	2	IS	0045	Courtesy Code	Not used	
PV1-23	2	IS	0046	Credit Rating	Not used	
PV1-24	2	IS	0044	Contract Code	Not used	
PV1-25	8	DT		Contract Effective Date	Not used	
PV1-26	12	NM		Contract Amount	Not used	
PV1-27	3	NM		Contract Period	Not used	
PV1-28	2	IS	0073	Interest Code	Not used	
PV1-29	1	IS	0110	Transfer to Bad Dept Code	Not used	
PV1-30	8	DT		Transfer to Bad Dept Date	Not used	
PV1-31	10	IS	0021	Bad Debt Agency Code	Not used	
PV1-32	12	NM		Bad Debt Transfer Amount	Not used	
PV1-33	12	NM		Bad Debt Recovery Amount	Not used	
PV1-34	1	IS	0111	Delete Account Indicator	Not used	
PV1-35	8	DT		Delete Account Date	Not used	
PV1-36	3	IS	0112	Discharge Disposition	Not used	
PV1-37	25	CM	0113	Discharged to Location	Not used	
PV1-38	2	IS	0114	Diet Type	Not used	
PV1-39	2	IS	0115	Servicing Facility	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
PV1-40	1	IS	0116	Bed Status	Not used	
PV1-41	2	IS	0117	Account Status	Not used	
PV1-42	80	P L		Pending Location	Not used	
PV1-43	80	P L		Prior Temporary Location	Not used	
PV1-44	26	TS		Admit Date/Time	Not used	
PV1-45	26	TS		Discharge Date/Time	Not used	
PV1-46	12	NM		Current Patient Balance	Not used	
PV1-47	12	NM		Total Charges	Not used	
PV1-48	12	NM		Total Adjustments	Not used	
PV1-49	12	NM		Total Payments	Not used	
PV1-50	20	CX	0192	Alternate Visit ID	Optional	414
PV1-51	1	IS	0326	Visit Indicator	Not used	
PV1-52	60	XCN	0010	Other Healthcare Provider	Not used	

PV1-3 Assigned Patient Location

The fourth component of PV1-3, Assigned Patient Location is populated with the eight-character abbreviation for the Patient's home location of care. The location of care is not necessarily the location in which the documented procedure was performed. See ["FT1-16 Assigned Patient Location" on page 417](#), for details.

PV1-7 Attending Doctor

PV1-7, Attending Doctor field is populated with the patient's responsible provider, if one has been specified. The field is not necessarily the provider who performed the procedure or the user who signed or otherwise indicated that the documented procedure was complete. See ["FT1-20 Performed By Code" on page 419](#) and ["FT1-21 Ordered By Code" on page 420](#), for details.

PV1-8 Referring Doctor

PV1-8, Referring Doctor field is populated with the patient's referring physician if one has been specified. This field is not necessarily the provider to whom the documented order or referral was directed. To display referring physician in a document, LinkLogic interprets only the second and third components as the referring doctor's last name and first name, respectively.

PV1-19 Visit Number / PV1-50 Alternate Visit ID

If the Chart document for the procedure(s) has been assigned a Visit ID, the value is exported in both PV1-19 and PV1-50.

FT1 – Financial transaction

The FT1 segment contains the detail data necessary to post charges, payments, adjustments, and so on, to patient accounting records.

Legend

ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	EI	Entity Identifier
XCN	Extended composite ID number and name	PPN	Performing person
TS	Time stamp	ST	String data

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
FT1-1	4	SI		Set ID - FT1	Optional	
FT1-2	12	ST		Transaction ID	Not used	416
FT1-3	10	ST		Transaction Batch ID	Not used	416
FT1-4	26	TS		Transaction Date	Required	416
FT1-5	26	ST		Transaction Posting Date	Optional	416
FT1-6	8	IS	0017	Transaction Type	Required	416
FT1-7	80	CE	0132	Transaction Code	Required	416
FT1-8	40	ST		Transaction Description	Optional	417
FT1-9	40	ST		Transaction Description - Alt	Not used	
FT1-10	6	NM		Transaction Quantity	Optional	417
FT1-11	12	CP		Transaction Amount - Extended	Not used	
FT1-12	12	CP		Transaction Amount - Unit	Not used	
FT1-13	60	CE	0049	Department Code	Not used	
FT1-14	58	CN	0072	Insurance Plan Id	Optional	417
FT1-15	12	CP		Insurance Amount	Not used	
FT1-16	80	PL	0079	Assigned Patient Location	Optional	417
FT1-17	1	IS	0024	Fee Schedule	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
FT1-18	2	IS	0018	Patient Type	Not used	
FT1-19	250	CE	0051	Diagnosis Code	Optional	417
FT1-20	120	XCN	0084	Performed By Code	Optional	419
FT1-21	120	XCN		Ordered By Code	Optional	420
FT1-22	12	CP		Unit Cost	Not used	
FT1-23	22	EI		Filler Order Number	Optional	420
FT1-24	120	XCN		Entered By Code	Optional	420
FT1-25	80	CE	0088	Procedure Code	Optional	416
FT1-26	250	CE	0340	Procedure Code Modifier	Optional	420

FT1-2 Transaction ID / FT1-3 Transaction Batch ID

The Centricity Practice Solution Orders module does not commit or report documented procedures for transactions. As a result, LinkLogic doesn't export documented procedures for transactions.

FT1-4 Transaction Date

FT1-4, Transaction Date, is the date the documented procedure was performed.

FT1-5 Transaction Posting Date

FT1-5, Transaction Posting Date, is the date the documented procedure was signed in Centricity Practice Solution.

FT1-6 Transaction Type

The supported values for Transaction Type include:

This value...	Means this...	For this Order Type...
DP	Documented Procedure	Service
DO	Documented Order	Test
DR	Documented Referral	Referral

FT1-7 Transaction Code / FT1-25 Procedure Code

FT1-25, Procedure Code, contains the Centricity Practice Solution Order Code ID for the procedure. For purposes of backward compatibility with HL7, this information is provided in FT1-7.

FT1-8 Transaction Description

FT1-8, Transaction Description, contains the first 40 characters of the procedure description. Because Centricity Practice Solution permits 80 characters, the description may be truncated.

FT1-10 Transaction Quantity

FT1-10, Transaction Quantity, is the quantity for Centricity Practice Solution test orders or units for Centricity Practice Solution service orders.

FT1-14 Insurance Plan ID

Although the HL7 standard specifies FT1-14 to be type CE (Coded Element) with a field length of 60 characters, LinkLogic exports information of the type CN (Composite ID Number and Name) with a maximum length of 58 characters. This field has two components:

Insurance Plan ID^Insurance Company Name

This LinkLogic specification deviates from the HL7 standard because Insurance Plan IDs are not globally unique in Centricity Practice Solution. They're only guaranteed to be unique for a defined insurance company.

This change is an alternative to sending an IN1 message segment for each FT1 message segment. DFT messages in the context of P03 trigger events aren't defined to include IN1 message segments.

FT1-16 Assigned Patient Location

The fourth component of FT1-16 is populated with the eight-character abbreviation for the location of care in which the procedure was performed (for example, the location of care defined for the Centricity Practice Solution document in which the procedure was documented).

FT1-19 Diagnosis Code

FT1-19, Diagnosis Code, is populated with the HL7 coded element *data type*, which includes a set of three components (a "triplet") separated by sub-component delimiter (carets):

<diagnosis code> ^ <optional diagnosis description> ^ <name of coding system>

Coding system	Value template
ICD-9	xxx.xx^description^I9
ICD-10	xxx.xxxx^description^I10
SNOMED or	xx-xxxxx^description^SNM
SNOMED-CT	xxxxxxxx^description^SCT

Each repeating element in the Diagnosis Code field uses the HL7 coded element *data type*, which has at most two triplets (up to 6 sub-components) from the value template. Each triplet can have the *diagnosis code*, *diagnosis description*, and *name of coding system* values. The sub-component delimiter (^) separates triplets if two codes are exported.



The first diagnosis code is always considered the primary diagnosis for the procedure.

LinkLogic uses the following rules to determine which of the three possible codes (ICD-9, ICD-10, and/or SNOMED-CT) are exported in the two possible HL7 triplets.



Note that until destination systems are ready to receive ICD-10 codes, Procedures Export constraint option **Export diagnoses with only ICD-9 codes** is checked by default. This should be unchecked when you are ready to send ICD-10 codes.

IF (Not in ICD-9 Only Mode AND ICD-10 code is available)

THEN Export ICD-10 code in first triplet

IF ICD-9 code is also available in addition to ICD-10 code

THEN export ICD-9 code in second triplet

ELSE IF SNOMED-CT code is also available in addition to ICD-10 code

THEN export SNOMED-CT code in second triplet

ELSE IF ICD-9 code is available (but ICD-10 code is not OR in ICD-9 Only Mode)

THEN export ICD-9 code in first triplet but nothing in the second triplet

(When ICD-10 is not available or ICD-9 Only Mode nothing is sent in second triplet)

ELSE (neither ICD-9 nor ICD-10 codes are available)

Export user-entered *problem/diagnosis description* in first triplet but nothing in second triplet

(First and third components will be blank if the problem is uncoded)

Example with actual values

This example shows FT1-19 for an order/charge with four diagnoses 1, 2, 3, and 4:

```
600^^I9~M12.9^^I10^716.90^^I9~E78.0^^I10~J44.9^^I10^13645005^^SCT
```



Because this field is defined as repeatable, note that the *repeat delimiter* (~) is used to separate each repeated element (the multiple diagnosis codes). Each repeated element in FT1-19 corresponds to one of the diagnoses linked to the order. The *sub-component delimiter* (^) separates the individual diagnosis triplets.

In this example-

- Diagnosis 1 has only ICD-9 code “600” and no other codes.
- Diagnosis 2 has ICD-10 code “M12.9” and ICD-9 code “716.90”.
- Diagnosis 3 has only ICD-10 code “E78.0” and no other codes.
- Diagnosis 4 has ICD-10 code “J44.9” and SNOMED-CT code “13645005”, but no ICD-9 code.



Having any or all of these diagnoses linked to an actual order/charge may not be clinically meaningful or valid. These codes are used only for the purposes of illustrating different possible code combinations of ICD-9, ICD-10, and SNOMED-CT.

Example with descriptions in second component

By default, diagnosis descriptions are not included in FT1-19 because it could limit the number of diagnosis codes that could be exported. An optional configuration file can be used to include the descriptions in data exported in FT1-19. For more information contact Centricity Services or your Value-Added Reseller.

Here’s how the same diagnoses display when the task is configured to use Add-On IXP file llogic\config\standard\ft119enh.ixp which includes descriptions in the second component of each triplet.

```
600^PROSTATIC
HYPERTROPHY^I9~M12.9^ARTHRITIS^I10^716.90^ARTHRITIS^I9~E78.0^HYPER
CHOLESTEROLEMIA^I10~J44.9^CHRONIC AIRWAY OBSTRUCTION
(COPD)^I10^13645005^CHRONIC AIRWAY OBSTRUCTION (COPD)^SCT
```

Length limits

Although the HL7 standard specifies FT1-19 with a field length of 60 characters, LinkLogic exports data in this field with a maximum length of 250 characters.

This provides sufficient repeated values to enable listing all diagnosis codes that might be associated with a particular Order Code ID.

FT1-20 Performed By Code

FT1-20, Performed By Code, is the service provider associated with the procedure for test and referral orders in Centricity Practice Solution. If an actual provider is associated with the service provider organization, then this person’s name is included. Otherwise, only the business name is included. This provider is not necessarily the provider who performed or ordered the procedure.



For service orders in Centricity Practice Solution, this field is blank.

FT1-21 Ordered By Code

FT1-21, Ordered By Code, is the Centricity Practice Solution user who authorized the documented procedure. This person is not necessarily the provider who actually performed or ordered the procedure.

FT1-23 Filler Order Number

FT1-23, Filler Order Number, is the order number of the documented procedure. This can be used for automatic completion of orders during lab results import using the proper data in the OBR segment.

FT1-24 Entered By Code

FT1-24, Entered By Code, is Centricity Practice Solution user who signed the documented procedure. Since this provider is not necessarily the provider who performed or ordered the procedure, the authorizing provider is exported in FT1-21, Ordered By Code.

Although the HL7 standard defines FT1-24 as the person who entered insurance information, LinkLogic deviates from this definition and instead exports the person who signed the order in Centricity Practice Solution.

FT1-26 Procedure code modifier

FT1-26, Procedure Code Modifier, contains the Centricity Practice Solution order modifiers for the procedure. This field uses a value template that includes three components: *code*, *description*, and "CPT" for name of coding system.

Because this field is defined as repeatable, the repeat separator (~) is used to separate multiple modifiers. The following example shows modifiers X and Y:

```
xxxx^^CPT~yyyy^^CPT
```

By default, diagnosis descriptions are not included in FT1-26 because doing so could limit the number of modifiers that could be exported. An optional configuration file can be used to have the descriptions included in data exported in FT1-26. For more information contact Centricity Services or your Value-Added Reseller.

OBX – Observation/Result

The Observation/Result segment (OBX) segment is only present if the Centricity Practice Solution order includes a value for one of the following:

- Clinical comments
- Administrative comments
- Order priority

Legend

ID	Coded value for HL7-defined tables	CI	Extended composite ID with check digit
ST	String data	SI	Sequence ID
XCN	Extended composite ID # / name	CE	Coded element
TS	Time stamp	NM	Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
OBX-1	10	SI		Set ID - Observation Simple	Not used	422
OBX-2	2	ID	0125	Value Type	Used	422
OBX-3	590	CE		Observation Identifier	Not used	422
OBX-4	20	ST		Observation Sub-ID	Not used	
OBX-5	65536	ST		Observation Value	Required	422
OBX-6	60	CE		Units	Not used	
OBX-7	60	ST		Reference Range	Not used	
OBX-8	10	ID	0078	Abnormal Flags	Not used	
OBX-9	5	NM		Probability	Not used	
OBX-10	5	ID	0080	Nature of Abnormal Test	Not used	
OBX-11	2	ID	0085	Observation Result Status	Not used	
OBX-12	26	TS		Date Last Obs Normal Values	Not used	
OBX-13	20	ST		User Defined Access Checks	Not used	
OBX-14	26	TS		Date/Time of the Observation	Optional	

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
OBX-15	200	CE		Producer's ID	Not used	
OBX-16	80	XCN		Responsible Observer	Not used	
OBX-17	60	CE		Observation method	Not used	

OBX-1 Set ID - Observation Simple

Although this field is required or conditional in the HL7 specification, LinkLogic treats it as optional.

OBX-2 Value Type

OBX-2, Value Type, is always populated with the value ST (string data).

OBX-3 Observation Identifier

The supported values for the first component of OBX-3, Observation Identifier, include:

This value...	Means this...
CC	Clinical comment
AC	Administrative comment
LP	Laboratory priority

OBX-5 Observation Value

Although OBX-5, Observation Value, is conditional in the HL7 specification, LinkLogic requires this field.

If OBX-3 is CC, then OBX-5 contains the clinical comment about the procedure. See online help to learn how clinical comments are entered for orders.

If OBX-3 is AC, then OBX-5 contains the administrative comment about the procedure. See online help to learn how administrative comments are entered for orders.

If OBX-3 is LP, then supported values for OBX-5 include:

This value...	Means this...
S	Stat for order priority Stat
A	ASAP for order priority Urgent
R	Routine for order priority Normal

MSA – Message Acknowledgement

The MSA segment is used to acknowledge a previously received message. It triggers a resend if the acknowledgement code indicates the message was rejected or generated an error.

Legend

ID	Coded value for HL7-defined tables
ST	String data
CE	Coded element
NM	Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
MSA-1	2	ID	0008	Acknowledgement Code	Required	423
MSA-2	20	ST		Message Control ID	Required	
MSA-3	80	ST		Text Message	Optional	
MSA-4	15	NM		Expected Sequence Number	Not used	
MSA-5	1	ID	0102	Delayed Ack Type	Not used	
MSA-6	100	CE		Error Condition	Not used	

MSA-1 Acknowledgement Code

The supported values for Acknowledgment Code include:

This value...	Means this...
AA	Original mode: Application Accept Enhanced Mode: Application Acknowledgement: Accept
AR	Original mode: Application Reject Enhanced mode: Application Acknowledgement: Reject This code triggers a message resend event.
AE	Original mode: Application Error Enhanced mode: Application Acknowledgement: Error This code triggers a message resend event.

CHAPTER 15

ScheduLink Import HL7 interface specification

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This HL7 based interface supports the import of schedule-related information. It uses a subset of the complete HL7 message set for Scheduling and only includes support for the SIU message. See [“SIU message – Schedule Information Unsolicited”](#) on page 426.

ScheduLink Import supports the following [Centricity Practice Solution Chart Desktop](#) activities:

- View appointment information for the day
- View appointment details
- Switch to a patient’s chart from a displayed appointment

In addition, users with the appropriate privileges can use the Scheduling module to do the following tasks:

- View appointment information from the past and into the future
- Print encounter forms for scheduled appointments
- Change the status of an appointment

Although there are many other uses for this information, the recommended usage models for scheduling are:

- Send all appointments for the following day in a batch to ensure that the calendars are synchronized at the beginning of the day.
- Immediately send all appointment changes for the current day.
- Immediately send notification of a patient’s arrival.
- Optionally send appointments as they are made or modified.

Centricity Practice Solution must be correctly set up for scheduling data to be imported. For the Chart-only licensed version, LinkLogic automatically creates schedule templates so no setup is required in Administration before LinkLogic can import scheduling messages.

Changes made in the Scheduling module are not reflected in an external scheduling program because LinkLogic does not export scheduling information. However, you can use MIK Scheduling Export if you want Scheduling module changes to be reflected in the external scheduling program.

SIU message – Schedule Information Unsolicited

Within an SIU message, message segments do the following:

- Identify the patient
- Describe visit information
- Describe observations and diagnosis
- Describe scheduling information

SIU message structure

Here’s how LinkLogic uses the message segments in this message when importing data. Page references refer to SIU message notes and detailed message segment information. For definitions of LinkLogic usage terms, see [“How LinkLogic uses message segments” on page 42](#).

Legend	
[...]	Optional
{...}	Repeating
[[...]]	Optional and repeating

Message segment	Name	See page...	Change Schedule	Patient Arrival
MSH	Message Header	429	Required	Required
SCH	Schedule Activity Info	432	Required	Required
[[NTE]]	Notes & Comments	427, 436	Optional	Optional
PID	Patient Identification	427, 436	Required	Required
[PV1]	Patient Visit	443	Optional	Optional

Message segment	Name	See page...	Change Schedule	Patient Arrival
[PV2]	Patient Visit		Ignored	Ignored
[[OBX]]	Observation/ Result	447	Ignored	Ignored
[[DG1]]	Diagnosis Information		Ignored	Ignored
{RGS	Resource Group	427, 447	Optional	Optional
[[AIS	Appt Info-Service	427, 448	Conditional	Conditional
[[NTE]]	Notes & Comments		Optional	Optional
[[AIG	Appt Info - General Resource	427, 449	Conditional	Conditional
[[NTE]]]]	Notes & Comments		Optional	Optional
[[AIL	Appt Info - Location Resource	427, 450	Optional	Optional
[[NTE]]]]	Notes & Comments		Optional	Optional
[[AIP	Appt Info - Personnel Resource	427, 452	Conditional	Conditional
[[NTE]]]] }	Notes & Comments		Optional	Optional
MSH	Message Header		Conditional	Conditional
MSA	Msg Ack	453	Conditional	Conditional
[ERR]	Error		Ignored	Ignored

NTE segment

Notes are concatenated into one appointment-related note.

PID segment

Although the HL7 specification considers the Patient ID (PID) message segment optional, LinkLogic requires a single instance of the PID message segment per SIU message.

RGS segment

Although the HL7 specification requires the Resource Group (RGS) message segment, LinkLogic considers it optional and ignores it if specified.

AIS / AIG / AIL / AIP segments

Although the HL7 specification does not require any of the AI* segments, LinkLogic requires both the AIG (doctor/resource) and AIL (facility) segments.

For the Chart-only licensed version, LinkLogic requires at least one AIS, AIG, or AIP message segment per SIU message, because the doctor/resource is required to create an appointment. The AIL segment is optional. If AIL is not specified, LinkLogic will determine the facility associated with the home location of care doctor/resource specified for the appointment.

HL7 message segments

This section provides detailed specifications for the following HL7 message segments used in the SIU message:

For information about this segment...	See page...
MSH - Message Header	429
SCH - Schedule Activity Information	432
NTE - Notes and Comments	436
PID - Patient Identification	436
PV1 - Patient Visit	443
OBX - Observation/Result	447
RGS - Resource Group	447
AIS - Appointment Information-Service	448
AIG - Appointment Information-General Resource	449
AIL - Appointment Information-Location Resource	450
AIP - Appointment Information-Personnel Resource	452
MSA - Message Acknowledgement	453

Each message segment table lists the segment elements or fields in sequence order with the following information:

- **Element name**
- **Maximum length** in LinkLogic
- **Data type**
- **Source table** in the HL7 specification where applicable
- **LinkLogic usage on export or import** (Required, Optional, and so on)
For definitions of LinkLogic usage terms, see [“How LinkLogic uses message segments” on page 42.](#)



Click blue page number links in the following tables to jump to detail notes (when viewing the Adobe PDF version of this guide) or look for notes under the element code and name listed after the table.

MSH – Message Header

The Message Header segment (MSH) should always be in the first segment in each HL7 message. MSH defines the intent, source, destination, and some specifics of the syntax of a message.

Legend

CE	Coded element	NM	Numeric
CM	Order sequencing component	PT	Processing type
HD	Hierarchic designator	ST	Character string
ID	Coded value	TS	Time stamp

SEQ	Lnth	Data type	HL7 table	Element name	Import	See page
MSH-1	1	ST		Field separator	Required	
MSH-2	4	ST		Encoding characters	Required	
MSH-3	40	HD		Sending Application	Conditional	430
MSH-4	20	HD		Sending Facility	Optional	430
MSH-5	40	HD		Receiving application	Not used	
MSH-6	30	HD		Receiving Facility	Not used	
MSH-7	26	TS		Date/time of Message	Required	430
MSH-8	40	ST		Security	Not used	
MSH-9	7	CM	0076	Message type	Required	431
MSH-10	20	ST		Message control ID	Required	
MSH-11	3	PT	0103	Processing ID	Required	431
MSH-12	8	ID	0104	Version ID	Required	431
MSH-13	15	NM		Sequence Number	Not used	
MSH-14	180	ST		Continuation Pointer	Not used	
MSH-15	2	ID	0155	Accept Ack type	Optional	431
MSH-16	2	ID	0155	Application Ack type	Optional	
MSH-17	2	ID		Country code	Not used	
MSH-18	6	ID	0211	Character set	Not used	
MSH-19	60	CE		Principal Language of message	Not used	

MSH-3 Sending Application / MSH-4 Sending Facility

Although MSH-3 is considered optional in the HL7 specification, LinkLogic requires a value in either MSH-3 or MSH-4. LinkLogic identifies the data source for an interface (known in Centricity Practice Solution as a LinkLogic *relationship*) by using the contents of MSH-3, MSH-4, or a combination of both separated by a hyphen. The Unique Name/ID in the LinkLogic setup New Relationship window must match this data source.

For example, if MSH-3 contains `PracticeMgr` and MSH-4 contains `East`, the data file would match against a LinkLogic relationship named *PracticeMgr*, *East*, or *PracticeMgr-East*. If either MSH-3 or MSH-4 contains more than the first component, the delimiters are converted to spaces and the contents of the entire field are used.

LinkLogic interface relationship matching

LinkLogic uses the following logic to determine the correct relationship:

IF MSH-3 or MSH-4 or the concatenation of MSH-3 and MSH-4, separated by a hyphen uniquely matches exactly one defined LinkLogic relationship name

THEN import the file using the matched relationship

ELSE IF multiple matching relationship names were found

THEN issue an error indicating that multiple relationships were found (ambiguous match)

ELSE, no matching relationship name was found

THEN issue an error indicating that no relationship exists to import the data file

Length limits

Although the HL7 specification sets a maximum length of 180 characters for MSH-3 and MSH-4, LinkLogic supports a total of 40 characters for MSH-3 and MSH-4 combined.

MSH-7 Date/Time of Message

Although this field is not required in the HL7 specification, LinkLogic requires it.

MSH-9 Message Type

The supported values for MSH-9 Message Type include:

This value...	Means this...
SIU	Schedule Information Unsolicited
ACK	General acknowledgement message

On import, the second component, *trigger event*, is ignored. It is assumed that trigger event types are identified with appropriate values in SCH-25, Filler Status Code. See [“SCH-25 Filler Status Code” on page 434](#).

MSH-11 Processing ID

The supported values for Processing ID include:

This value...	Means this...
D	Debugging
P	Production
T	Training (treated same as Debugging)

Only messages with a Processing ID of P (Production) affect the Centricity Practice Solution database.

MSH-12 Version ID

The supported values for Version ID include:

This value...	Means this...
2.3	Release 2.3, April 1997
2.3.1	Release 2.3.1, April 1999

MSH-15 Accept Ack Type

The supported values for MSH-15 Accept Ack Type include:

This value...	Means this...
AL	Always
NE	Never (default)

SCH – Schedule Activity Information

Legend			
CE	Coded element	NM	Numeric
EI	Entity Identifier	TQ	Timing/quantity
XCN	Extended composite ID number and name	XTN	Extended telecommunications number
XAD	Extended address	PL	Person location

SEQ	Lnth	Data type	HL7 table	Element name	Import	See page
SCH-1	75	EI		Placer Appointment ID	Optional	433
SCH-2	75	EI		Filler Appointment ID	Optional	433
SCH-3	5	NM		Occurrence Number	Not used	
SCH-4	75	EI		Placer Group Number	Not used	
SCH-5	200	CE		Schedule ID	Not used	
SCH-6	64	CE		Event Reason	Not used	433
SCH-7	200	CE	0276	Appointment Reason	Optional	
SCH-8	64	CE	0277	Appointment Type	Optional	433
SCH-9	20	NM		Appointment Duration	Optional	433
SCH-10	200	CE		Appointment Duration Units	Optional	433
SCH-11	200	TQ		Appointment Timing/Quantity	Required	433
SCH-12	48	XCN		Placer Contact Person	Not used	
SCH-13	40	XTN		Placer Contact Phone Number	Not used	
SCH-14	106	XAD		Placer Contact Address	Not used	
SCH-15	80	PL		Placer Contact Location	Not used	
SCH-16	38	XCN		Filler Contact Person	Not used	
SCH-17	40	XTN		Filler Contact Phone Number	Not used	
SCH-18	106	XAD		Filler Contact Address	Not used	
SCH-19	80	PL		Filler Contact Location	Not used	
SCH-20	48	XCN		Entered by Person	Not used	
SCH-21	40	XTN		Entered by Phone Number	Not used	
SCH-22	80	PL		Entered by Location	Not used	

SEQ	Lnth	Data type	HL7 table	Element name	Import	See page
SCH-23	75	EI		Parent Placer Appointment ID	Not used	
SCH-24	75	EI		Parent Filler Appointment ID	Not used	
SCH-25	200	CE	0278	Filler Status Code	Optional	434

SCH-1 Placer Appointment ID / SCH-2 Filler Appointment ID

By default, SCH-2, Filler Appointment ID, is assumed to contain the external appointment identifier used to match the import scheduling data with an appointment. Alternatively, in **Administration > System > LinkLogic**, you can select SCH-1, Placer Appointment ID on the Match Options window. For more information, see [“Data-to-Patient matching” on page 469](#).

SCH-6 Event Reason

Although the HL7 specification sets the maximum length for SCH-3 at 200, LinkLogic only interprets the first 64 characters.

SCH-8 Appointment Type

Although the HL7 specification sets the maximum length for SCH-3 at 200, LinkLogic only interprets the first 64 characters.

Appointment Type is optional. If SCH-8 is unspecified, the appointment will be created without any appointment type. The value specified in SCH-8 should match an appointment type defined in Administration. You can cross-reference this value with Centricity Practice Solution appointment types. For more information, see [“Cross-referencing field values” on page 461](#).

SCH-9 Appointment Duration / SCH-10 Appointment Duration Units / SCH-11 Appointment Timing/Quantity

SCH-11, Appointment Timing/Quantity, contains both the numeric duration (SCH-9) and appointment duration units (SCH-10). This field must contain the date/time of the appointment in the fourth component of the field as shown below.

```
^30^minutes^199812151400
```

Rules for using other data

Other data in SCH-11 must be broken into components using the component delimiter specified in the message header as follows:

- The first component of this field is not used.
- **Date format:** date must be formatted according to HL7 specification: `YYMMDDHHMM(SS)`.
- **Time format:** appointment time must be formatted using military units (for example, 1400 for 2 PM).

- **Numeric duration** must be at or above the minimum duration given for that appointment type, otherwise LinkLogic generates a warning and defaults to the minimum duration specified in Administration in LinkLogic Setup.
- **Duration units** must be specified as hours, minutes, or seconds. All durations are converted to minutes because the Scheduling module only defines appointment durations in minutes. LinkLogic examines only the first character to determine the units. The supported values for duration units include:

This value...	Means this...
H or h	hours; duration used is numeric duration * 60 minutes per hour
M or m	minutes; numeric duration is used without modification
S or s	seconds; duration used is numeric duration / 60 seconds per minute

- Numeric duration in SCH-9 takes precedence over numeric duration in SCH-11, component 1.
- A duration unit in SCH-10 takes precedence over duration units in SCH-11, component 2.

SCH-25 Filler Status Code

The appointment status value is taken from the first component of SCH-25, Filler Status Code. The supported values for Filler Status Code include:

This value...	Means this...
BOOKED	Create or modify an appointment (default)
STARTED	Show the patient has arrived
COMPLETE	Show the patient has left (This status is ignored)
DELETED	Delete an appointment
CANCELLED	Cancel an appointment before starting
NOSHOW	Show the patient failed to show up for the scheduled appointment

Booked status

Information for an existing appointment can only be modified using a message with a Filler Status Code of BOOKED. Other codes only change the appointment status.

If a Filler Status Code of BOOKED arrives for an appointment that has already changed status, the new appointment data is ignored.

Started status

If a status of STARTED (indicating patient has arrived) is received for the Centricity Practice Solution appointment type linked to an encounter type with an associated document type, an On Hold document is created. Otherwise, an arrival document is NOT created.

To configure Appointment types, select **Edit > Appointment Types** in Administration.

If a status of STARTED is received for a future appointment, the appointment status is not changed and the appointment data is ignored.

Cancelled and Noshow statuses

If a status of NOSHOW is received for a future appointment, the appointment status is not changed and the appointment data is ignored.

LinkLogic maps HL7 filler status codes from SCH-25 to Centricity Practice Solution appointment status or Cancel values assigned to appointments displayed in Scheduling. You can define HL7 mappings for appointment status and cancel reasons lists in Administration.

Deleted status

When a status of DELETED is received for an existing appointment, the appointment is removed from the doctor/resource identified by the AIG, AIP, or AIS segment. If a status of DELETED is received for a non-existent appointment, the appointment is not created and the appointment data is ignored.

Any patient information (for example, demographics data in the PID segment) updates the database for any Filler Status Code that is not ignored. If the patient does not exist, a new chart is created. To configure whether a new patient chart is created, in **Administration > System**, select the scheduling relationship on **LinkLogic >Task Options** and click **Patient Matching**.

NTE – Notes and Comments

Text imported in the Notes and Comments segment appears in the Appointments Details Comments field.

Legend	
ID	Coded value for HL7-defined tables
FT	Formatted Text
SI	Sequence ID

SEQ	Lnth	Data type	HL7 table	Element name	Import	See page
NTE-1	4	SI		Set ID - NTE	Optional	
NTE-2	8	ID		Source of Comment	Optional	
NTE-3	255	FT		Comment	Required	436

NTE-3 Comment

Length limits

Although the HL7 specification sets a maximum length of 64 k for this field, LinkLogic only interprets the first 255 characters.

In addition, if multiple NTE message segments are provided within the SIU message, then the comments embedded within each are concatenated in the order received and only the first 255 characters of the resulting string is associated with the appointment.

PID – Patient Identification

The PID Patient Identification segment contains demographic information about the patient such as name, ID codes, address, phone numbers, and so on.

In Centricity Practice Solution, PID refers to the unique, system-generated identification number that the application assigns to a patient when a new chart is created.

Legend

ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric		

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page
PID-1	4	SI		Set ID - Patient ID	Not used	
PID-2	20	CX		Patient ID (External ID)	Conditional	438
PID-3	20	CX		Patient ID (Internal ID)	Required	438
PID-4	16	CX		Alternate Patient ID-PID	Optional	438
PID-5	48	XPN		Patient Name	Required	
PID-6	48	XPN		Mother's Maiden Name	Not used	
PID-7	26	TS		Date/Time of Birth	Required	438
PID-8	1	IS	0001	Sex	Required	439
PID-9	48	XPN		Patient Alias	Not used	
PID-10	1	IS	0005	Race	Optional	439
PID-11	106	XAD		Patient Address	Optional	440
PID-12	4	IS		Country Code	Not used	
PID-13	250	XTN		Phone Number - Home	Optional	440
PID-14	250	XTN		Phone Number - Work	Optional	440
PID-15	60	CE	0296	Primary Language	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page
PID-16	1	IS	0002	Marital Status	Optional	441
PID-17	3	IS	0006	Religion	Not used	
PID-18	20	CX		Patient Account Number	Not used	
PID-19	11	ST		SSN Number - Patient	Optional	441
PID-20	25	DLN		Driver's License Number-Patient	Not used	
PID-21	20	CX		Mother's Identifier	Not used	
PID-22	3	IS	0189	Ethnic Group	Optional	
PID-23	60	ST		Birth Place	Not used	
PID-24	2	ID	0136	Multiple Birth Indicator	Not used	
PID-25	2	NM		Birth Order	Not used	
PID-26	4	IS	0171	Citizenship	Not used	
PID-27	60	CE	0172	Veterans Military Status	Not used	
PID-28	80	CE		Nationality	Not used	
PID-29	26	TS		Patient Death Date /Time	Not used	441
PID-30	1	ID	0136	Patient Death Indicator	Not used	441
PID-40	1	ST	0185	Patient Preferred Contact Method	Optional	442

PID-2 Patient ID (External ID) / PID-3 Patient ID (Internal ID)

On import...

By default, PID-3, Patient ID (Internal ID), is assumed to contain the patient identifier used to match imported data with a patient.

To use identifiers from another system, in **Administration > System > LinkLogic**, select PID-2 in the Match Options window to use the Patient ID (External ID). See ["Data-to-Patient matching" on page 469](#) for details.

PID-4 Alternate Patient ID - PID

PID-4, Alternate Patient ID, is the patient's medical record number.

Although the HL7 specification sets the maximum length of this field at 20, LinkLogic and Centricity Practice Solution only support a maximum of 16 alphanumeric characters to describe Alternate Patient ID.

PID-7 Date/Time of Birth

Although this field is considered optional in the HL7 specification, LinkLogic requires it.

PID-8 Sex

Although this field is considered optional in the HL7 specification, LinkLogic requires it.

The supported values for Sex include:

This value...	Means this...
F	Female
M	Male
O	Other (treated as Unknown)
U	Unknown

PID-10 Race

The supported values for Race include:

This value...	Means this...
B	Black
C	Chinese
F	Filipino
H	Hispanic
J	Japanese
N	Native American
I	Native Hawaiian
M	Multiracial
O	Oriental/Asian
P	Pacific Islander
W	White
T	Other
U	Undetermined (default)

In Centricity Practice Solution, race values can be configured in Administration. If a value is changed in Administration, you must configure MIK (in Server Setup) to map to the value to one of the values in this table.

See "Configure MIK interfaces" in Server Setup Online Help.

PID-11 Patient Address

Currently, LinkLogic supports the following maximum characters for patient address sub-components determined by limits for these values set in the Centricity Practice Solution database. Characters beyond these limits are truncated:

- **Address Line 1, Address Line 2:** accepts a string up to 50 characters
- **City name:** accepts a string up to 25 characters
- **Country name:** accepts a string up to 50 characters
- **State or province:** accepts a two-character state code or a string up to 50 characters
- **Zip/postal code:** accepts up to 15 alphabetic characters to support 15-digit zip codes and foreign addresses

PID-13 Phone Number - Home / PID-14 Phone Number - Work

On import...

Although the HL7 2.3 specification defines the maximum length of this field as 250, Centricity Practice Solution and LinkLogic support a maximum of 20 characters for phone numbers and 50 characters for email addresses. Characters beyond these limits are truncated.

The HL7 specification permits phone number fields to contain multiple items separated by repeat delimiters. The first component of each item has the phone number value, and the third component indicates the phone type. LinkLogic reads values for home phone, fax phone, cell phone, and pager from PID-13.

LinkLogic reads only the work phone number from PID-14.1, where PID-14.3 component is either not specified or is PH. All other phone values from PID-14 are ignored.

The following phone type values are supported:

This phone type...	Means this...	Stored here....
PH	Home phone (PID-13)	PERSON.ALTPHONE
PH	Work phone (PID-14.1)	PERSON.WORKPHONE
CP	Cell phone	PERSON.CELLPHONE
FX	Fax phone	PERSON.FAXPHONE
BP	Pager (beeper) number	PERSON.PAGERPHONE

For additional details, see [“XTN - Phone number format” on page 459](#).

Backward compatibility

If the phone type value in the third component of the first repeating item in PID-13 is blank or not specified, LinkLogic imports the phone number value

from the first component of this item as the patient's home phone number. This maintains backward compatibility with systems that do not send phone type values and with systems that do not send multiple repeating items in PID-13.

Email address

The fourth component of PID-13, Phone Number - Home, is used for the patient's email address. If PID-13 is blank, the fourth component of PID-14, Phone Number - Work, is used. If both PID-13 and PID-14 are blank, the patient will have no email address in Centricity Practice Solution.

PID-16 Marital Status

The supported values for Marital Status include:

This value...	Means this...
A	Separated
D	Divorced
M	Married
S	Single
W	Widowed
O	Other
U	Undetermined (default)

In Centricity Practice Solution, this value can be configured in Administration. If you change a Marital Status value, you must configure MIK (in Server Setup) to map the new value to one of the values in this table.

See "Configure MIK interfaces" in Server Setup Online Help.

PID-19 SSN Number - Patient

Although the HL7 specification defines the maximum length of PID-19 to be 16 characters, LinkLogic only interprets the first 11 characters. Embedded dashes (-) are ignored.

PID-29 Patient Death Date and Time / PID-30 Patient Death Indicator

The supported values for Patient Death Indicator include:

This value...	Means this...
Y	Patient has died
N	Patient is still living

PID-30, Patient Death Indicator, is set to Y and PID-29 has a valid date and time, LinkLogic changes the patient's status to deceased, and sets the date of

death in Centricity Practice Solution to the value from PID-29. If PID-30 is blank, it is interpreted as N.

PID-40 Patient Preferred Contact Method

LinkLogic can import and export a 1-character value for patient preferred contact method in the optional field PID-40 at the end of the PID segment in ADT and BAR messages.

To send or receive patient contact method using this field you must associate the optional Add-On IXP file **pid40contactby.ixp** with the LinkLogic interface. This IXP file maps the HL7 values to EMR values to store to or export from the database in the PERSON.CONTACTBY field. For detailed information about using IXP files, see [“Using .IXP configuration files” on page 597](#).

On import...

LinkLogic interprets a blank value as if no value were specified. To remove an existing value, enclose the contact method value in double quotes in the import message.

The following supported values for patient preferred contact method are based on HL7 table 0185. Note that starred items are not in Table 0185 but were created for this implementation.

HL7 value...	Means this...	Mapped EMR value
B	Pager	P
C	Cell Phone	C
D	Durable Power of Attorney*	D
E	Email	E
F	Fax	F
H	Home Phone	H
L	Letter*	L
N	Nursing Home*	N
O	Work phone	W
P	Paper*	A
T	Other*	O

PV1 – Patient Visit

The Patient Visit segment (PV1) is used by Registration and ADT (Admission, Discharge, and Transfer) applications to communicate information about a specific visit.

Legend

ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	DLN	Driver's license number
NM	Numeric	DT	Date
JCC	Job Code / Class	XON	Extended composite name and ID for organizations

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page
PV1-1	4	SI		Set ID - PV1	Optional	
PV1-2	1	IS	0004	Patient Class	Not used	
PV1-3	80	PL		Assigned Patient Location	Optional	445
PV1-4	2	IS	0007	Admission Type	Not used	
PV1-5	20	CX		Pre-admit Number	Not used	
PV1-6	80	PL		Prior Patient Location	Not used	
PV1-7	60	XCN	0010	Attending Doctor	Conditional	446
PV1-8	60255	XCN	0010	Referring Doctor	Conditional	446
PV1-9	60	XCN	0010	Consulting Doctor	Not used	
PV1-10	3	IS	0069	Hospital Service	Not used	
PV1-11	80	PL		Temporary Location	Not used	
PV1-12	2	IS	0087	Pre-admit Test Indicator	Not used	
PV1-13	2	IS	0092	Readmission Indicator	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page
PV1-14	3	IS	0023	Admit Source	Not used	
PV1-15	2	IS	0009	Ambulatory Status	Not used	
PV1-16	2	IS	0099	VIP Indicator	Not used	
PV1-17	60	XCN	0010	Admitting Doctor	Not used	
PV1-18	2	IS	0018	Patient Type	Not used	
PV1-19	20	CX		Visit Number	Optional	446
PV1-20	50	FC	0064	Financial Class	Not used	
PV1-21	2	IS	0032	Charge Price Indicator	Not used	
PV1-22	2	IS	0045	Courtesy Code	Not used	
PV1-23	2	IS	0046	Credit Rating	Not used	
PV1-24	2	IS	0044	Contract Code	Not used	
PV1-25	8	DT		Contract Effective Date	Not used	
PV1-26	12	NM		Contract Amount	Not used	
PV1-27	3	NM		Contract Period	Not used	
PV1-28	2	IS	0073	Interest Code	Not used	
PV1-29	1	IS	0110	Transfer to Bad Dept Code	Not used	
PV1-30	8	DT		Transfer to Bad Dept Date	Not used	
PV1-31	10	IS	0021	Bad Debt Agency Code	Not used	
PV1-32	12	NM		Bad Debt Transfer Amount	Not used	
PV1-33	12	NM		Bad Debt Recovery Amount	Not used	
PV1-34	1	IS	0111	Delete Account Indicator	Not used	
PV1-35	8	DT		Delete Account Date	Not used	
PV1-36	3	IS	0112	Discharge Disposition	Not used	
PV1-37	25	CM	0113	Discharged to Location	Not used	
PV1-38	2	IS	0114	Diet Type	Not used	
PV1-39	2	IS	0115	Servicing Facility	Not used	
PV1-40	1	IS	0116	Bed Status	Not used	
PV1-41	2	IS	0117	Account Status	Not used	

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page
PV1-42	80	PL		Pending Location	Not used	
PV1-43	80	PL		Prior Temporary Location	Not used	
PV1-44	26	TS		Admit Date/Time	Not used	
PV1-45	26	TS		Discharge Date/Time	Not used	
PV1-46	12	NM		Current Patient Balance	Not used	
PV1-47	12	NM		Total Charges	Not used	
PV1-48	12	NM		Total Adjustments	Not used	
PV1-49	12	NM		Total Payments	Not used	
PV1-50	20	CX	0192	Alternate Visit ID	Conditional	446
PV1-51	1	IS	0326	Visit Indicator	Not used	
PV1-52	60	XCN	0010	Other Healthcare Provider	Not used	

PV1-3 Assigned Patient Location

On import...

This field should contain the abbreviation for the patient's home location (maximum 8 characters), as defined in Centricity Practice Solution. You can cross-reference the value in this field with location of care values in the application. For more information, see ["Cross-referencing field values" on page 461](#). If no value is supplied, LinkLogic uses the default value set for the relationship in **LinkLogic > Task Options > Change Location of Care Options**.

If this message creates a new patient in Centricity Practice Solution, LinkLogic interprets the fourth component (facility ID) as the patient's home location of care and ignores all other components.

Logic for determining Location of Care

LinkLogic uses the following logic to determine the location of care for new patients. To configure this logic, in **Administration > System**, go to **LinkLogic > Task Options**, select the task and relationship and click **Locations of Care**.

If PV1-3 component 4 (Assigned Patient Location) contains a value

THEN Location of care = PV1-3 component 4

ELSE IF PV1-7 component 1 (Attending Doctor) contains a value

THEN Location of care = Home location associated with
Attending Doctor from PV1-7

ELSE

Location of care = the default location of care specified in the Change Location of Care Options window.

!!! This logic only determines which field to use. It does not validate the data.

If the selected field value is invalid, LinkLogic does not try to use the next field in the sequence shown above. It generates an exception file and the LinkLogic user must correct and resolve the error manually.

However, if the location of care value has been made obsolete in Centricity Practice Solution, LinkLogic uses the root location of care and issues a warning.

PV1-7 Attending Doctor

If the import of this message results in the creation of a new patient in Centricity Practice Solution, the Attending Doctor, if specified, is assumed to be the patient's responsible provider.

!!! If the value for Attending Doctor is visit specific, you may not want to populate this field on import. The Attending doctor will become the patient's responsible provider in Centricity Practice Solution.

PV1-8 Referring Doctor

If this message creates a new patient in Centricity Practice Solution, a new contact is created for the referring doctor, if specified. LinkLogic interprets the first component as the referring doctor's UPIN and requires that the second component, *Family Name*, be specified. To display referring physician in a document, LinkLogic interprets only the second and third components as the referring doctor's last name and first name, respectively.

PV1-19 Visit Number / PV1-50 Alternate Visit ID

This value is an external visit identifier. It is a string field that is not related to visits identified within the Centricity Practice Solution Billing module.

The following logic is used to determine the visit identifier for the appointment and for any documents that are created as a result of changes to the appointment's status:

IF PV1-19 (Visit Number) contains a value

THEN Visit ID = PV1-19

ELSE IF PV1-50 (Alternate Visit ID) contains a value

THEN Visit ID = PV1-50

ELSE

 The imported document in Centricity Practice Solution is NOT assigned a Visit ID

RGS – Resource Group

Legend

- ID** Coded value for HL7-defined tables
- CE** Coded Element
- SI** Sequence ID

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page
RGS-1	4	SI		Set ID - RGS	Not used	447
RGS-2	3	ID	0206	Segment Action Code	Optional	
RGS-3	200	CE		Resource Group ID	Not used	

RGS-1 Set ID - RGS

Although this field and the entire RGS message segment are required in the HL7 specification, LinkLogic expects the message segment to exist, but ignores it.

AIS – Appointment Information–Service

In the Chart-only licensed version, LinkLogic requires at least one of the AIG, AIP, or AIS segments to identify the doctor/resource for Scheduling.

In the Chart-only licensed version LinkLogic ignores the AIS segment if any of the following conditions are true--

- Doctor/resource is included in AIG-3 or AIP-3
- The associated SCH-25, Filler Status Code, is ignored (see [“SCH-25 Filler Status Code” on page 434](#))
- SCH-25 has the value DELETED

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
TS	Time stamp	IS	Coded value for user-defined tables
NM	Numeric	CE	Coded element

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page
AIS-1	4	SI		Set ID - AIS	Not used	
AIS-2	3	ID	0206	Segment Action Code	Not used	
AIS-3	200	CE		Universal Service ID	Optional	
AIS-4	26	TS		Start Date/Time	Not used	
AIS-5	20	NM		Start Date/Time Offset	Not used	
AIS-6	200	CE		Start Date/Time Units	Not used	
AIS-7	20	NM		Duration	Not used	
AIS-8	200	CE		Duration Units	Not used	
AIS-9	10	IS	0279	Allow Substitution Code	Not used	
AIS-10	200	CE	0278	Filler Status Code	Not used	

AIS-3 Universal Service ID

For the Chart-only licensed version, the value in AIS-3 (and AIG-3 or AIP-3) is assumed to identify a Centricity Practice Solution doctor or resource, otherwise AIS-3 is not used. The first component of AIS-3 is matched to an External ID value for MIK resource mapping.

AIG – Appointment Information-General Resource

In the Chart-only licensed version LinkLogic requires at least one of the AIG, AIP, or AIS segments to identify the doctor/resource for Scheduling.

In the Chart-only licensed version LinkLogic ignores the AIG segment if any of the following conditions are true--

- The associated SCH-25, Filler Status Code, is ignored (see [“SCH-25 Filler Status Code”](#) on page 434)
- SCH-25 has the value DELETED.

Legend

ID	Coded value for HL7-defined tables	SI	Sequence ID
CE	Coded Element	TS	Timestamp
NM	Numeric		

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page
AIG-1	4	SI		Set ID - AIG	Not used	
AIG-2	3	ID	0206	Segment Action Code	Not used	
AIG-3	200	CE		Resource ID	Required	449
AIG-4	200	CE		Resource Type	Not used	
AIG-5	200	CE		Resource Group	Not used	
AIG-6	5	NM		Resource Quantity	Not used	
AIG-7	200	CE		Resource Quantity Units	Not used	
AIG-8	26	TS		Start Date/Time	Not used	
AIG-9	20	NM		Start Date/Time Offset	Not used	
AIG-10	200	CE		Start Date/Time Units	Not used	
AIG-11	20	NM		Duration	Not used	
AIG-12	200	CE		Duration Units	Not used	
AIG-13	10	ID		Allow Substitution Code	Not used	
AIG-14	200	ID		Filler Status Code	Not used	

AIG-3 Resource ID

Although this field is conditional in the HL7 specification, LinkLogic requires it. The value in AIG-3 (or in AIS-3 or AIP-3 for Chart-only licensed version) is assumed to be Centricity Practice Solution doctor/resource. The first component of AIG-3 is matched to an External ID value for MIK resource mapping.

AIL – Appointment Information-Location Resource

In the Chart-only version, LinkLogic uses the AIL segment to identify the facility for Scheduling. When an imported HL7 Scheduling message does not contain the Facility or does not match any facility in the database, the Facility associated with the home location of care of the scheduled doctor/resource is used to create the appointment, and a warning appears in the Activity Log.

The AIL segment is optional in the Chart-only version and is ignored if any of the following conditions are true--

- The associated SCH-25, Filler Status Code, is ignored (see [“SCH-25 Filler Status Code” on page 434](#))
- SCH-25 has the value DELETED.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
CE	Coded Element	TS	Timestamp
NM	Numeric	PL	Person Location

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page
AIL-1	4	SI		Set ID - AIL	Not used	
AIL-2	3	ID	0206	Segment Action Code	Conditional	
AIL-3	80	PL		Location Resource ID	Optional	450
AIL-4	200	CE		Location Type	Not used	
AIL-5	200	CE		Location Group	Not used	
AIL-6	26	TS		Start Date/Time	Not used	
AIL-7	20	NM		Start Date/Time Offset	Not used	
AIL-8	200	CE		Start Date/Time Units	Not used	
AIL-9	20	NM		Duration	Not used	
AIL-10	200	CE		Duration units	Not used	
AIL-11	10	IS		Allow Substitution Code	Not used	
AIL-12	200	CE		Filler Status Code	Not used	

AIL-3 Location Resource ID

The value in AIL-3 is assumed to be Centricity Practice Solution facility. The first component of AIL-3 is matched to an External ID value for MIK facility mapping.

In the Chart-only version, when an imported HL7 Scheduling message does not contain the Facility or does not match any facility in the database, the Facility associated with the home location of care of the scheduled doctor/resource is used to create the appointment, and a warning appears in the Activity Log.

AIP – Appointment Information-Personnel Resource

In the Chart-only version LinkLogic requires at least one of the AIG, AIP, or AIS segments to identify the doctor/resource for Scheduling. In the Chart-only version LinkLogic ignores the AIP segment if any of the following conditions are true--

- Doctor/resource is included in AIG-3
- The associated SCH-25, Filler Status Code, is ignored (see [“SCH-25 Filler Status Code” on page 434](#))
- SCH-25 has the value DELETED

Legend	
ID	Coded value for HL7-defined tables
CE	Coded Element
NM	Numeric
XCN	Extended composite ID number and name
SI	Sequence ID
TS	Timestamp
IS	Coded value for user-defined tables

SEQ	Lnth	Data Type	HL7 Table	Element name	Import	See page
AIP-1	4	SI		Set ID - AIP	Not used	
AIP-2	3	ID	0206	Segment Action Code	Not used	
AIP-3	80	XCN		Personnel Resource ID	Optional	
AIP-4	200	CE		Resource Role	Not used	
AIP-5	200	CE		Resource Group	Not used	
AIP-6	26	TS		Start Date/Time	Not used	
AIP-7	20	NM		Start Date/Time Offset	Not used	
AIP-8	200	CE		Start Date/Time Units	Not used	
AIP-9	20	NM		Duration	Not used	
AIP-10	200	CE		Duration units	Not used	
AIP-11	10	IS		Allow Substitution Code	Not used	
AIP-12	200	CE		Filler Status Code	Not used	

AIP-3 Personnel Resource ID

In the Chart-only version, the value in AIS-3, AIG-3, or AIP-3 is assumed to identify a Centricity Practice Solution doctor or resource. The first component of AIP-3 is matched to an External ID value for MIK resource mapping.

MSA – Message Acknowledgement

The MSA segment is used to acknowledge a previously received message. It triggers a resend if the acknowledgement code indicates the message was rejected or generated an error.

Legend

ID	Coded value for HL7-defined tables
ST	String data
CE	Coded element
NM	Numeric

SEQ	Lnth	Data Type	HL7 Table	Element name	Export	See page
MSA-1	2	ID	0008	Acknowledgement Code	Required	453
MSA-2	20	ST		Message Control ID	Required	
MSA-3	80	ST		Text Message	Optional	
MSA-4	15	NM		Expected Sequence Number	Not used	
MSA-5	1	ID	0102	Delayed Ack Type	Not used	
MSA-6	100	CE		Error Condition	Not used	

MSA-1 Acknowledgement Code

The supported values for Acknowledgment Code include:

This value...	Means this...
AA	Original mode: Application Accept Enhanced Mode: Application Acknowledgement: Accept
AR	Original mode: Application Reject Enhanced mode: Application Acknowledgement: Reject This code triggers a message resend event.
AE	Original mode: Application Error Enhanced mode: Application Acknowledgement: Error This code triggers a message resend event.

Interpretation of HL7 data types

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ST (string), TX (text) and FT (formatted text) 456

Escape sequences 456

DT (date) and TS (timestamp /date and time) 457

PN or XPN – Person name 457

CN or XCN – Composite ID number and name 457

PPN – Performing person timestamp 458

AD or XAD – Address 458

XTN - Phone number format 459

When LinkLogic interprets HL7 data types, the following conditions apply:

- LinkLogic doesn't interpret or support check digit schemes used in compound data types.
- LinkLogic only interprets the first 20 characters of applicable XTN (telephone number) data type fields.
- On export, LinkLogic may truncate values to abide by the HL7 specification, for example, Person Name.
- Regardless of length limits specified in HL7 v2.3.1, LinkLogic field length limits are generally determined by limits for related values in the Centricity Practice Solution database. To confirm the latest values, check the Centricity Practice Solution data dictionary, an easy-to-use HTML application accessible on the Centricity Practice Web site at <http://centricitypractice.gehealthcare.com>. Log in to the Web site and navigate to the Documentation page for your version of Centricity Practice Solution and click the Data Dictionary link.

NULL strings vs. quoted white space strings

On import, if you intend to replace an existing value with a NULL value, use the NULL string ("") This removes the current value.

A string containing quoted space (" ") works very differently from the NULL string. Fields containing quoted white space are treated as if they were blank and ignored. This leaves a current value for the field in place.

!!! Only use the NULL string and the quoted space string to update optional fields. Required fields treat both strings as invalid data and generate an error.

ST (string), TX (text) and FT (formatted text)

LinkLogic treats these data types identically:

- Leading and trailing spaces are removed from each field.
- On import, Centricity Practice Solution wraps text enclosed in repeat delimiters (~) to fit the display window.
- A line beginning with a repeat delimiter is displayed on a new line.

Escape sequences

You can use an escape sequence to change how text is processed for display. The following escape sequences are defined, where \ represents the escape delimiter defined in MSH:

Use this...	To do this...
<code>\H\</code>	Remove "start highlighting" code from the data. Text is not highlighted in the resulting document.
<code>\N\</code>	End highlighting (display normal text)
<code>\F\</code>	Field separator
<code>\S\</code>	Component separator
<code>\T\</code>	Subcomponent separator
<code>\R\</code>	Repetition separator
<code>\E\</code>	Escape character
<code>\.br\</code>	Line break

DT (date) and TS (timestamp /date and time)

Although *month* and *day* are considered optional in the HL7 specification, LinkLogic requires them. Unless otherwise specified, format date and timestamp fields as follows:

Date format: YYYYMMDD

Timestamp: YYYYMMDD [HHMM [SS]] .

Bracketed portions of the timestamp fields are optional.

PN or XPN – Person name

Components:

```
<family name (ST)> ^ <given name (ST)> ^ <middle initial
or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix
(e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)>
```

Centricity Practice Solution uses *middle initial or name* for both patient and contact data. It interprets *prefix* as the application Title and *suffix* or *degree* as the application Suffix. If both *suffix* and *degree* are specified, Centricity Practice Solution displays the suffix first, followed by a comma and a space, then the degree.

For example, this name field data

```
Somerfield^Robin^^II^Dr.^MD
```

displays like this in Centricity Practice Solution:

```
Dr. Robin Somerfield II, MD.
```

CN or XCN – Composite ID number and name

Components:

```
<ID number (ST)> ^ <family name (ST)> ^ <given name
(ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g.,
JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^
<degree (e.g., MD) (ST)> ^ <source table (IS)> ^
<assigning authority (HD)>
```

Centricity Practice Solution only uses *ID number*, *family name*, *given name*, and *middle initial or name*, and ignores all other components.



When this field refers to a Centricity Practice Solution user (for example, **PV1**: Attending Doctor, **OBX**: Responsible Observer, or **SCH**: Filler Contact Person), then the application uses only the *ID* field and ignores all other components.

ID number may be cross-referenced to a valid Centricity Practice Solution login name (for example, *hwinston*). If *ID number* is not supplied, the entire field may

be cross-referenced to a valid user ID. For more information on cross-references, see [“Cross-referencing field values” on page 461.](#)

PPN – Performing person timestamp

Components:

```
<ID number (ST)> ^ <family name (ST)> ^ <given name (ST)>  
^ <middle initial or name (ST)> ^ <suffix (e.g., JR or  
III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD)  
(ST)> ^ <source table (IS)> ^ <assigning authority (HD)>  
^ <name type code (ID)> ^ <identifier check digit (ST)>  
^ <code identifying the check digit scheme employed (ID)>  
^ <identifier type code (IS)> ^ <assigning facility (HD)>  
^ <date/time action performed (TS)>
```

Centricity Practice Solution uses only *ID number* and *date/time action performed* and ignores all the others. This data type is the equivalent of XCN (extended composite ID) joined with TS (time stamp).

AD or XAD – Address

Components:

```
<street address (ST)> ^ < other designation (ST)> ^ <city  
(ST)> ^ <state or province (ST)> ^ <zip or postal code  
(ST)> ^ <country (ID)> ^ < address type (ID)> ^ <other  
geographic designation (ST)> ^ <county/parish code (IS)>  
^ <census tract (IS)>
```

Centricity Practice Solution uses *street address*, *other designation* (optional second address line), *state or province*, *zip or postal code*, and *country*. and ignores all others.

Currently, LinkLogic supports the following maximum characters for patient address sub-components determined by limits for these values set in the Centricity Practice Solution database. Characters beyond these limits are truncated:

- **Address Line 1, Address Line 2:** accepts a string up to 50 characters
- **City name:** accepts a string up to 25 characters
- **Country name:** accepts a string up to 50 characters
- **State or province:** accepts a two-character state code or a string up to 50 characters
- **Zip/postal code:** accepts up to 15 alphabetic characters to support 15-digit zip codes and foreign addresses

CHAPTER 17

Cross-referencing field values

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Two types of configuration files tell LinkLogic how to import or export information between Centricity Practice Solution and an external system:

- **Protocol (.IXP) files** (Import EXport Protocol files) alter the behavior of one or more interfaces or fields within interfaces. Some files customize behaviors that deviate from the standards documented in the LinkLogic interface specifications. Other files maintain previous behavior. For more information about using .IXP files, see [“Using .IXP configuration files” on page 597](#).
- **Cross-reference (.XRF) files** translate data field values to values that can be recognized by Centricity Practice Solution (on import) or the external system (on export).

You'll add or change configuration files when developing and testing a new interface to Centricity Practice Solution. For setup instructions, go to **Administration > System**, open the **LinkLogic** folder, and select **Task Options**. Click F1 to access LinkLogic Setup help.

About cross-reference (.XRF) files

LinkLogic uses cross-reference files to do the following:

- **Translate data values in import file to values Centricity Practice Solution recognizes.** For example, if you import laboratory results, you need a cross-reference file to translate laboratory test result codes to Centricity Practice Solution observation terms.
- **Translate Centricity Practice Solution data values in the export file to values the external system can recognize.** For example, many practice management systems use initials to designate care providers. If your organization does not use initials to identify application users, you'll need a cross-reference file to map Centricity Practice Solution user IDs to the external system user initials. Similarly, if you import laboratory results,

you'll need a cross-reference file to translate laboratory information system (LIS) result codes to Centricity Practice Solution observations.

!!! Cross-referencing values that can be customized in Centricity Practice Solution is not required. These values (including race, marital status, insured relation to patient, employment status, contact relation to patient, and preferred language) must be mapped in the application to internal database IDs via MIK (Millbrook Integration Kit).

For example, while you could create a .XRF file to map *white* to *W* for race, you would still need to map External ID *W* to the *white* entry in the database race list. Creating the cross-reference file is duplicative. MIK configuration and mapping is done in Server Setup. See “Configuring MIK interfaces” in Server Setup Online Help.

Types of cross-reference files

Standard cross-reference files can be created from a list of comma-separated values, for example:

- **User names/IDs.** Used for mapping application provider names/IDs with external IDs for lab results, transcription (documents), orders, procedures—any interface using segments with provider fields, such as PV1, OBR, OBX, TXA, and FT1.
- **Locations of care**
- **Document types.** Document types cross-reference files must map to document type abbreviations defined in the application.
- **Appointment types.** The contents of Appointment and Appointment Type cross-reference files are case-sensitive. All other cross-reference file contents are case-insensitive. For example, LinkLogic treats HWinston, HWINSTON, and hwinston the same. However, for appointment books and appointment types, the capitalization must match exactly.
- **Allergy codes**
- **Lab result codes**
- **Other data fields.** You can cross-reference many other HL7 data fields, except those in the MSH segment. If you know the LinkLogic field name for a data field, you can cross-reference it. Consult with your technical systems consultant to see if cross-referencing for a particular data field is available for your version of Centricity Practice Solution.

!!! Patient status, prescribing method, and pharmacy type cannot be cross-referenced.

What's in a cross-reference file?

For detailed online instructions on creating, configuring, and using cross-reference files, see "Create a cross-reference file" in online help.

Syntax

Create a source cross-reference file as an ASCII text file with a list of comma-separated values in the following format:

```
other_value,centricity_value
```

For example, for a cross-reference file that translates user IDs from another external system to Centricity Practice Solution user IDs, your source file might look like this:

```
EIN,eng  
HSW,hwinston  
RCJ,rjanoff
```



You must include a comma between values, with no space before or after it. If either value contains a comma, use double quotes around the value:

```
"other, value",centricity_value
```

Cross-reference file location

Save cross-reference source files with the .XRS file extension to the network LLOGIC\CONFIG\LOCAL directory.

When you configure the source file in Centricity Practice Solution, a cross-reference file is created with an .XRF extension.

Sample cross-reference source file (provider IDs)

The following example is applicable for mapping provider names/IDs for lab results, transcription (documents), orders, procedures, and for any interface using segments with provider fields, such as PV1, OBR, OBX, TXA, and FT1.

Here's a sample user cross-reference source (.XRS) file:

```
upin123,wklink  
Bartlett Carla,cbartlett
```

The following cross-reference (.XRF) file would be created for the example data above:

<p>Note: When you generate the .XRF file in LinkLogic Setup, you'll select the type of values you are mapping. This tells LinkLogic what fields to cross-reference and includes all relevant fields on the second line (see below). In this example, cross-reference type User names/IDs was selected.</p>	
This part of the .XRF text...	Means this...
<pre>H, xrf, Care Provider ID Conversion Cross Reference, 3.0, 2002062514151 0 F, provider, CareProvider, OrderingProvider, AttendingDoctor, FillerContactPerson, PrimActivityProvider, Originator, AuthenticationPersonTimeStamp, transcriptionist, ResponsibleObserver, DocAuthenticator, DistributedCopies, SendCopiesTo, OrderByCode, EnteredByCode</pre>	<p>This is the header defining cross-reference type.</p> <p>This line defines fields. In this case, values in these fields are sent in these message segment fields:</p> <ul style="list-style-type: none"> - OrderingProvider: OBR-16 - AttendingDoctor: PV1-7 - PrimActivityProvider: TXA-5 - OrderedByCode: FT1-21 - EnteredByCode: FT1-24
<pre>I, upin123, wklink I, Bartlett Carla, cbartlett</pre>	<p>These are mapping lines.</p> <p>"I" at the beginning indicates that the mapping should be used for import. "I" or "X" (for export) is assigned based on the relationship or task selected when the cross-reference file is added.</p>
<p>Here's how this file works...</p> <p>When the source data in a user ID field looks like this:</p> <pre>upin123^Klink^Wilhelm^C.</pre> <p>The data maps to <code>wklink</code>.</p> <p>When the source data in a user ID field looks like this:</p> <pre>^Bartlett^Carla</pre> <p>The data maps to <code>cbartlett</code></p>	

Tips for cross-referencing

To add or change entries in the cross-reference file, change the source text file (the file with the .XRS extension). Then remove the old configuration and reconfigure the new cross-reference file.

For more information, see “Change a configuration file” in online help.

Many-to-one and one-to-many mappings

When .XRS files are converted to .XRF files, depending on the relationship selected, all mapping lines are prefaced with “I,” or “X,” indicating that the mapping should be used for import or export. A valid cross-reference (.XRF) file must have unique mappings for both import and export.

If there are multiple mappings for a single value in the cross-reference source (.XRS) file, when you attempt to add the file in LinkLogic Task Options setup, you’ll get either a warning (when added to an import relationship) or an error (when added to an export relationship).

Examples

These many-to-one mappings in a user cross-reference file will generate a warning:

```
I, FamPr007, hwinston
```

```
I, IntMed123, hwinston
```

These one-to-many mappings in a lab code cross-reference file will cause an error to be generated in the Activity Log:

```
X, 30005600, LOI-5767-9
```

```
X, 30005600, LOI-5778-6
```

When 30005600 is mapped to the first value, LOI-5767-9, the second value cannot be determined. LinkLogic does not know which value to put in the export file because 30005600 is listed more than once. LinkLogic uses the first value it finds in the cross-reference file and will export LOI-5767-9. However, that may not be correct for the system receiving the lab export data.

Creating error-free cross-reference source files

In this example, a user ID cross-reference source (.XRS) file has several entries for the Centricity Practice Solution user ID `hwinston`.

<code>RCJ,rjanoff</code>	
<code>CAR,credfern</code>	
<code>HSW,hwinston</code>	This line maps <code>hwinston</code> to the external ID <code>HSW</code> and could be used on both import and export.
<code>Harry Winston,hwinston</code> <code>Harry S.</code> <code>Winston,hwinston</code>	These additional lines for mapping to <code>hwinston</code> can only be used to match imported data from external sources to the Centricity Practice Solution ID. When associated with an export relationship, their presence will generate an error, because LinkLogic will not know which of the 3 possible values to use for <code>hwinston</code> .

When you associate this file with an import relationship, all three external IDs can be matched to `hwinston`. If you associate this file with an export relationship, because `hwinston` is mapped to three different values for export, when the .XRF file is generated LinkLogic cannot determine which mapping to use when exporting data with `hwinston`.

To solve this problem, you'll need to create separate files to associate with export and import relationships. For an import relationship create this file that includes a many-to-one mapping:

<code>RCJ,rjanoff</code>	
<code>CAR,credfern</code>	
<code>HSW,hwinston</code> <code>Harry Winston,hwinston</code> <code>Harry S.</code> <code>Winston,hwinston</code>	These lines map the three external IDs to a single Centricity Practice Solution ID, <code>hwinston</code> . When any one of them is included in imported data, it will map to <code>hwinston</code> .

For an export relationship, create this file which avoids the one-to-many mapping that generates an error:

<code>RCJ,rjanoff</code>
<code>CAR,credfern</code>
<code>HSW,hwinston</code>

Modifying cross-reference files successfully

If you modify an existing cross-reference file by either creating a new .XRS or editing the .XRF, you may get an error the next time the job is run, because the old .XRF file has not been cleared out of the LinkLogic cache. You must clear this cache to ensure that LinkLogic recognizes your changes.

Change cross-reference file and clear the LinkLogic cache

- 1 If you change the .XRS file, go to **Administration > System > LinkLogic > Task Options** and remove the .XRF file as a configuration file for the desired relationship.
- 2 Generate a new .XRF file. You can edit the .XRF file directly if you are careful.
- 3 After making any cross-reference changes, go to **LinkLogic > Jobs** or the **Activity Log** on the DTS.
- 4 Press **Ctrl + Shift + D** to clear the LinkLogic cache.
- 5 You see this message

```
The LinkLogic cache will be destroyed the next time
a job is run.
```

Document type cross-referencing

HL7 suggests more possible values for document types than there are predefined Centricity Practice Solution document types. Two cross-reference files provide the standard mappings:

- **HL7NTEIN.XRF** provides the mapping for the predefined application document types.
- **HL7EXTRANOTETYPES.XRF** provides import mappings for the additional HL7 document types.

To change the standard mappings provided, you must copy the appropriate file into LLOGIC\CONFIG\LOCAL and edit the mappings from there.

If you create custom Centricity Practice Solution document types, you must create a cross-reference file to map appropriate TXA-2 values to the document type abbreviations you define. Here's what such a cross-reference (.XRS) source file might look like:

```
FC,Fam Conslt
IC,Insur Corr
PRE,Preload
```


CHAPTER 18

Matching algorithms

[Data-to-Patient matching](#) 469

[Data-to-Contact matching](#) 471

[Data-to-Insurance matching](#) 473

[Data-to-Appointments matching](#) 475

This section includes the matching algorithms used by LinkLogic to determine how data is imported into Centricity Practice Solution.

Data-to-Patient matching

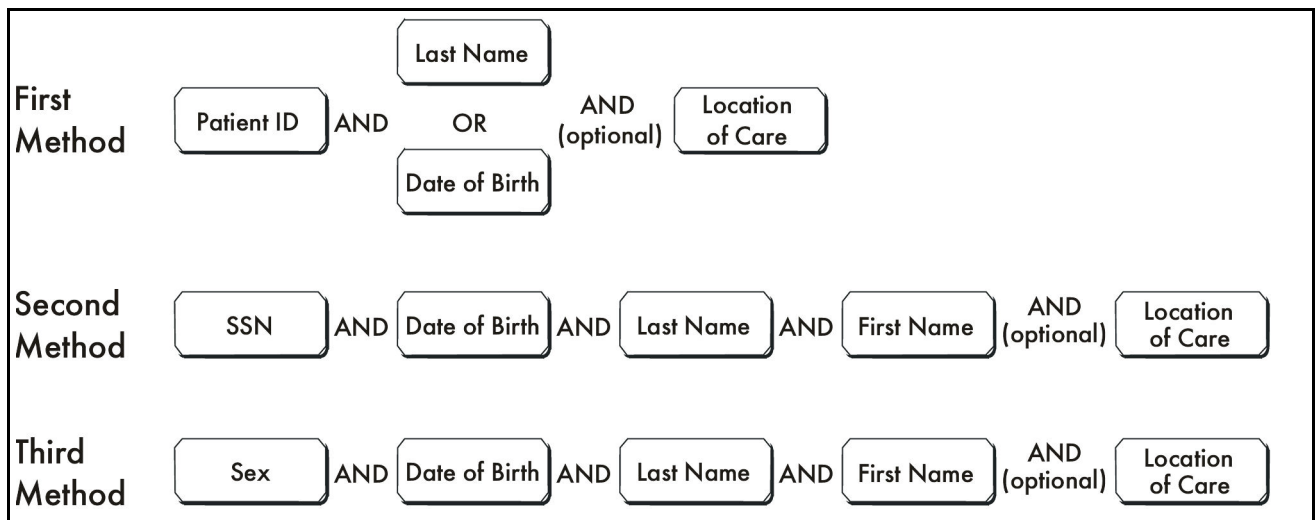
LinkLogic uses the following algorithm to determine to which existing patient chart (if any) imported data should be associated. Name matches are case insensitive.

Based on options set in Centricity Practice Solution, LinkLogic tries to match source data in the HL7 message to patient data in the database, such as EXTERNALID, DATEOFBIRTH, LASTNAME, and so on.

This matching logic uses...	These LinkLogic settings...
<p>IF ExternalID-only matching is enabled</p> <p>IF there's exactly one match where source data Patient ID MATCHES an existing patient's EXTERNALID</p> <p>THEN A UNIQUE MATCH EXISTS</p> <p>Update the patient's information with the information in the import file</p> <p>ELSE IF the First Match Attempt for Selective Matching is enabled</p> <p>IF there's exactly one match where source data Patient ID MATCHES an existing patient's EXTERNALID</p> <p>AND (source data birth date [PID-7] MATCHES that patient's DATEOFBIRTH OR source data Last Name [PID-5] MATCHES that patient's LASTNAME AND source data Location of Care MATCHES that patient's HOMELOCATION</p> <p>THEN A UNIQUE MATCH EXISTS</p> <p>Update the patient's information with the information in the import file</p>	<p>In LinkLogic Task Options, select a relationship and click Patient Matching.</p> <p>On the Match Options Criteria tab, select Use External ID only.</p> <p>On the Field Matching tab, select PID-2 for External Patient ID or PID-3 for Internal Patient ID.</p> <p>On the Match Options Criteria tab, select Selective Matching and check First Match Attempt. To also match by location of care, check Use Location of Care in Matching Algorithm. To define a patient location of care to match to, in LinkLogic Task Options, select a relationship and click Locations of Care and then check Assigned patient location (PV1-3) or Location of Care for Provider identified in PV1-7 and specify a default location.</p>

This matching logic uses...	These LinkLogic settings...
<p>ELSE IF the Second Match Attempt for Selective Matching is enabled</p> <p>IF there's exactly one match where</p> <ul style="list-style-type: none"> source data SSN [PID-19] MATCHES an existing patient's SOCSECNO AND source data Birth Date [PID-7] MATCHES that patient's DATEOFBIRTH AND source data Last Name [PID-5, component 1] MATCHES that patient's LASTNAME AND source data First Name [PID-5, component 2] MATCHES that patient's FIRSTNAME AND source data Location of Care MATCHES that patient's HOMELOCATION <p>THEN A UNIQUE MATCH EXISTS</p> <p>Update the patient's information with the information in the import file</p> <p>ELSE IF the Third Match Attempt for selective matching is enabled</p> <p>IF there's exactly one match where</p> <ul style="list-style-type: none"> source data Last Name [PID-5, component 1] MATCHES an existing patient's LASTNAME AND source data First Name [PID-5, component 2] MATCHES that patient's FIRSTNAME AND source data Birth Date [PID-7] MATCHES that patient's DATEOFBIRTH AND source data Sex [PID-8] MATCHES that patient's SEX AND source data Location of Care MATCHES that patient's HOMELOCATION <p>THEN A UNIQUE MATCH EXISTS</p> <p>Update the patient's information with the information in the import file</p> <p>ELSE NOT MATCHED</p> <p>Generate an error or create a new patient.</p>	<p>On the Match Options Criteria tab, select Selective Matching and check Second Match Attempt.</p> <p>To also match by location of care, check Use Location of Care in Matching Algorithm.</p> <p>To define a patient location of care to match to, see notes for First Match Attempt on page 469.</p> <p>On the Match Options Criteria tab, select Selective Matching and check Third Match Attempt.</p> <p>To also match by location of care, check Use Location of Care in Matching Algorithm.</p> <p>To define a patient location of care to match to, see notes for First Match Attempt on page 469.</p> <p>Because the Sex field is not required, the match against Sex is only performed if the source data sex field is not NULL.</p> <p>When no patient is found for the data, LinkLogic does either of the following:</p> <ul style="list-style-type: none"> • Issues an error in the LinkLogic Activity Log and creates an exception file • Creates a new patient (only for a DemographicsLink or ScheduLink interface)

This diagram represents Data-to-Patient matching when selective matching is enabled.



Data-to-Contact matching

The following logic is used to match patient personal and business contacts.

Data-to-Personal Contact matching

The following algorithm is used by LinkLogic to match and update a patient's personal contact information. Name matches are case insensitive.

IF there's exactly one match where
 source data Last Name [NK1-2, component 1 or GT1-3, component 1]
 MATCHES an existing person's LASTNAME
 AND source data First Name [NK1-2, component 2 or GT1-3,
 component 2] MATCHES that person's FIRSTNAME
 AND source data Suffix [NK1-2, component 4 or GT1-3, component 4]
 MATCHES that person's Suffix
 AND person identified by source data MATCHES one of the patient's
 existing personal contacts

THEN A UNIQUE MATCH EXISTS

Update the existing personal contact record for the patient

ELSE NOT MATCHED

Create a new personal contact record

Centricity Practice Solution Billing requires that guarantors be stored separately from other personal contacts. LinkLogic uses personal contact information when importing NK1 segments and guarantor information when importing GT1 segments.

Matching suffix and degree

Since suffix is not a required field in Centricity Practice Solution, it is not used in matching contacts if the source data field is NULL or blank, or contains quoted white space. See ["NULL strings vs. quoted white space strings" on page 456](#).

Importing Suffix is complicated because LinkLogic maps two HL7 fields (suffix or degree) into a single suffix field in the application. If either suffix or degree (or both) have the NULL string (""), the application suffix will not be used in the database query for contact matching. If first and last name (and possibly relationship) identify a unique contact, the suffix will be cleared, because on import, the NULL string ("") replaces an existing field with a NULL value.

Match based on suffix

If a patient has brother and father contacts with the same first and last names but different suffixes, an import file matching first and last names and a suffix value could result in a unique contact match.

Match based on relationship

If no suffix or degree components is specified and "NK1-3 Relationship" is specified, the relationship value can be used to uniquely match a contact. If a patient has brother and father contacts with the same first and last names, an import file matching first and last names and specifying the brother relationship will update the brother's contact data.

Data-to-Business Contact matching

LinkLogic uses the following algorithm to match and update a patient's business contact information. This algorithm is used when the source data in NK1-3 is E (employer) or P (pharmacy). Name matches are case insensitive.

For employer contacts, *business* refers to employers. For pharmacy contacts, *business* refers to pharmacies. Substitute the appropriate term for the word business in the algorithm:

IF there's exactly one match where

source data Organization Name [NK1-13] MATCHES a Business Name
AND source data Address1 [NK1-4, component 1] MATCHES the
business's Address1

THEN A UNIQUE MATCH EXISTS

Update existing business contact record and use it as
the contact

ELSE NOT MATCHED

Create a new business contact record and use it as the
contact



Since *Address1* is not required, it is only used in the matching algorithm if the source data field is not NULL and not blank.

Data-to-Insurance matching

LinkLogic uses the following algorithm to match and update insurance-related information. Name matches are case insensitive. LinkLogic first attempts to find a matching insurance carrier and creates a new one if necessary. Then LinkLogic attempts to find an association between the patient and the matched (or created) insurance carrier. If no association exists, one is created.

This matching logic uses...	These LinkLogic settings...
<p>IF there is exactly one match where source data Insurance ID MATCHES the Insurance Carrier's External ID</p> <p>THEN A UNIQUE MATCH for the insurance carrier EXISTS update Insurance Carrier Address [all available components of INI-5], Contact [INI-6], and Phone Number [INI-7]</p> <p>ELSE IF there is exactly one match where source data Insurance Company Name [INI-4] MATCHES an Insurance Carrier Name</p> <p>AND source data Address1 [INI-5, component 1] MATCHES the carrier's Address1</p> <p>AND source data Zip code [INI-5 component 5] MATCHES the carrier's Zip code</p> <p>THEN A UNIQUE MATCH for the insurance carrier EXISTS update Insurance Carrier Contact [INI-6] and Phone Number [INI-7]</p> <p>ELSE the insurance carrier is NOT MATCHED Create a new insurance carrier and store all available data. NOTE: Only the Insurance ID [INI-2 or INI-3] and company name [INI-4] are required.</p> <p>IF there is exactly one match where source data Group Number [INI-8] MATCHES the patient insurance Group ID for the matched carrier</p> <p>AND source data Policy Number [INI-36] MATCHES the patient insurance Insured ID</p> <p>THEN A UNIQUE MATCH for the patient's insurance policy EXISTS update the patient's insurance policy data for the matched carrier: Order for claims [INI-15] (converted from P, S, O, to 1, 2, 3, 4, etc.) Effective date [INI-12] Expiration date [INI-13] Relationship [INI-17]</p> <p>ELSE the patient's insurance policy is NOT MATCHED Create a new insurance policy for the patient and the matched insurance carrier</p>	<p>The insurance ID field is optional; if not specified, insurance matching uses only name and address.</p> <p>You can use the Match Options window to set the field LinkLogic uses to match the Insurance external ID: INI-2 or INI-3. INI-3 is used by default.</p> <p>You must define external identifiers for MIK (Millbrook Integration Kit) Configuration in Server Setup:</p> <ul style="list-style-type: none"> For INI-3, select the MIK Mapping type InsuranceCompanyID For INI-2 select MIK mapping type InsurancePlanID <p>Because Group Number [INI-8] and Policy Number [INI-36] are optional fields, matching depends on which fields are present.</p> <ul style="list-style-type: none"> INI-8 and INI-36: Match is performed against both. Neither field has data: No match is attempted. One field has data: Match is performed against the available field.

This matching logic uses...	These LinkLogic settings...
<p>IF there's exactly one match where source data Insurance ID MATCHES the Insurance ID</p> <p>THEN A UNIQUE MATCH EXISTS for the insurance policy Update the Insurance Plan Contact [INI-6]</p> <p>IF there's exactly one match where source data Group Number [INI-8] MATCHES the company's Group Number AND source data Policy Number [INI-36] MATCHES the company's Policy Number</p> <p>THEN A UNIQUE MATCH EXISTS for the patient's insurance policy</p> <p>Update the patient's insurance policy data for the matched company and policy: Plan type [INI-15] Effective date [INI -12] Expiration date [INI-13] Relationship [INI-17]</p> <p>ELSE the patient's insurance policy is NOT MATCHED Create a new insurance policy for the patient and the insurance policy</p> <p>ELSE the insurance policy is NOT MATCHED Create a new insurance policy for the matched insurance company</p> <p>ELSE the insurance company is NOT MATCHED Create a new insurance company</p>	<p>To set how LinkLogic matches the Insurance ID, in LinkLogic Task Options, select a relationship and click Patient Matching. On the Field Matching tab, select either Insurance Plan ID (INI-2) or Company Plan Code (INI-35).</p> <p>Since Group Number [INI-8] and Policy Number [INI-36] are optional fields, matching depends on which fields are present.</p> <ul style="list-style-type: none">• INI-8 and INI-36: match performed against both• Neither field has data: no match attempted• One field has data: match performed against the available field <p>Only the Company Name (INI-4) and Insurance ID (INI-2 or INI-35) are required.</p>

Data-to-Appointments matching

LinkLogic uses the following algorithm to determine whether or not to update existing appointments or to create new appointments.

If Visit ID is specified **AND** there's exactly one match where
source data Visit ID [either PV1-19 or PV1-50] MATCHES
a patient appointment's Visit ID
AND source data Patient ID MATCHES that patient's Patient ID
THEN A UNIQUE MATCH EXISTS
Update existing appointment
Else NOT MATCHED
Create a new appointment

ELSE IF there's exactly one match where
source data Start Date/Time [SCH-11, component 4] MATCHES
a patient appointment's Start Date/Time
AND source data Patient ID MATCHES that patient's Patient ID
THEN A UNIQUE MATCH EXISTS
Update existing appointment
ELSE NOT MATCHED
Create a new appointment

The Data-to-Patient matching algorithm determines the patient for whom a scheduled appointment is applicable.

If appointment IDs are not used and instead the start time is used as one of the appointment match fields, it is not possible to use the booked filler status code to change the event start time. Instead the appointment must be deleted and rebooked. You can modify other details of the appointment, such as resources, reason, and so on, by issuing a second booked schedule event for the same time.

Data exchange protocols

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Data is exchanged between Centricity Practice Solution and an external system using the local file system and the LinkLogic directory structure.

LinkLogic directory structure

The network LLOGIC directory is typically located on the network as a shared resource and is defined during Centricity Practice Solution installation and setup. Although the LinkLogic directory can reside anywhere on the network, GE recommends you put it on the Data Transfer Station's disk.

!!! For performance reasons, DO NOT locate the LLOGIC directory on the Centricity Practice Solution database server.

Each workstation that runs LinkLogic also has a local LLOGIC directory. This local directory should only be used for testing local interfaces.

This LLOGIC folder...	Contains this...
KITS	Default location for laboratory results interface kits to be imported into Centricity Practice Solution.
SAVE	Import and export files that LinkLogic optionally saves after transfer if you've set up LinkLogic to Move files to this directory. The files are used for technical troubleshooting.
CONFIG	Protocol (.IXP) or cross-reference files for configuring and upgrading LinkLogic.
LOCAL	Default location for files unique to your site.
STANDARD	Configuration files and optional add-on files standard for all customers. These files, updated with each release, tell LinkLogic how to import or export information.

This LLOGIC folder...	Contains this...
UPGRADE	Files and directories used to upgrade custom protocol (.IXP) files at each release.
DATA	Transfer data files.
IN	This is where incoming files from interfaced systems arrive. LinkLogic and Data Transfer Station look here for files to import. This folder is referred to as the LinkLogic Inbox.
OUT	LinkLogic and Data Transfer Station put export files here. This folder is referred to as the LinkLogic Outbox.
DEMO TUTORIAL	Sample data files used for demonstration and testing purposes that you can import into the training database.
MACROS	Word macros used by transcriptionists to generate files in HL7 NotesLink format.
ERROR	Error and exception files (data that cannot be processed during a transfer).



For information about using multiple Data Transfer Stations and changing the directory structure, see [System Planning and Requirements for Centricity Practice Solution](#) on your documentation CD and also available on the Centricity Practice Web site at <http://centricitypractice.gehealthcare.com>.

Importing and exporting data

Data files to be imported into the Centricity Practice Solution database must be placed in the inbox sub-directory \LLOGIC\DATA\IN. When exporting information, LinkLogic creates files of appropriate types in the outbox sub-directory \LLOGIC\DATA\OUT.

Data files in these sub-directories are typed by their filename extensions as shown in the following table. A data file's full filename must be unique among all files found within the directory.

Interface	Format	Import	Export
DemographicsLink	HL7	.hd	.hd
	MLI*	.ad	
NotesLink	HL7	.ht	.ht
	MLI*	.ot	
LabLink	HL7	.hr	.hr
	ASTM	.lr	
Orders Export	HL7		.ho
ScheduLink	HL7	.st	

Interface	Format	Import	Export
ImageLink	HL7	.ht	
AllergiesLink	HL7		.ha
Clinical Summary	HL7		.hc
ProceduresLink	HL7		.hp
ProblemsLink	HL7		.hb
* This format is no longer supported.			

Information about errors

Exception files produced by LinkLogic as a by-product of import or export activities are located in the sub-directory \LLOGIC\ERROR. These files are created when LinkLogic or the Data Transfer Station cannot successfully import or export data to or from Centricity Practice Solution. Although the job being imported may contain data for many patients, an exception file contains the whole patient segment that could not be processed.

LinkLogic generates an error message when an exception file is created. Use the Errors tab in LinkLogic to resolve errors and to reprocess exception files.

See [“Resolving LinkLogic errors” on page 639](#), for descriptions of all Activity Log messages, warnings, and errors. This resource is also available in the application online help module *LinkLogic Activity Log Message Codes*. See also help modules *Resolve LinkLogic errors*, and *Manage Activity Log, jobs, and errors*.

Configuration files

Configuration files in the LLOGIC/CONFIG folder tell LinkLogic how to import or export information between Centricity Practice Solution and an external system:

- **Cross-reference (.XRF) files** translate data field values to values that can be recognized by Centricity Practice Solution (on import) or the external system (on export). For more about creating and using cross-reference files, see [“Cross-referencing field values” on page 461](#).
- **Protocol (.IXP) files** (I**mp**ort **E**xport **P**rotocol files) alter the behavior of one or more interfaces or fields within interfaces. Some files customize behaviors that deviate from the standards documented in the LinkLogic interface specifications. Other files maintain previous behavior. For detailed information about .IXP files, see [“Using .IXP configuration files” on page 597](#).

Data transfer and reporting

LinkLogic’s Data Transfer Station (DTS) regularly polls the inbox for new files. LinkLogic interprets the content of each file based upon its file extension, and imports it into the database. Files with a “q” at the end of the file extension have been queued by the DTS and are waiting for LinkLogic to process the file.

If an error is encountered while attempting to import the data, LinkLogic creates an exception file in the ERROR directory. Enterprise or clinic staff must address these exceptions. You can view the list of pending exceptions at any time in the LinkLogic module's Errors tab.

LinkLogic logs entries in an Activity Log as it attempts to import, export, and/or transfer information. The activity log is not a file; it is contained in the Centricity Practice Solution database and can be viewed at any time in the LinkLogic module's Activity Log tab. The log shows what import, export, and/or transfer operations were performed during any given time period and the success or failure status of each attempted operation.

Part III: MIK interface specifications

This section includes a complete set of MIK HL7 import and export interfaces.



For an introduction to reading and interpreting Centricity Practice Solution interface specifications, see [“About MIK HL7 interface specifications” on page 42.](#)

Demographics Import/Export (ADT)

[Supported ADT trigger event messages 484](#)

[MSH - Message Header 492](#)

[EVN - Event Type 493](#)

[PID - Patient Identification 494](#)

[PD1 - Patient Additional Demographics 499](#)

[PV1 - Patient Visit 500](#)

[PV2 - Patient Visit Additional Information 503](#)

[GT1 - Guarantor 504](#)

[IN1 - Insurance Information 509](#)

[IN2 - Insurance Additional Information 516](#)

[QRD - Query Definition 518](#)

[MRG - Merge Patient Information 520](#)

[MSA - Message Acknowledgement 521](#)

This HL7-based interface supports the import and export of patient demographics information. It uses a subset of the complete HL7 message set for Patient Administration and supports the Admission, Discharge, and Transfer (ADT) message.

The ADT message is imported and exported by MIK whenever a referring physician is added or modified. It contains information on staff and personnel and practitioner information on personnel who are also health practitioners.

This specification describes how MIK uses message segments in the ADT message when importing and exporting data.



For an introduction to reading and interpreting Centricity Practice Solution interface specifications, see [“About MIK HL7 interface specifications” on page 42.](#)

Supported ADT trigger event messages

MIK supports these ADT message trigger events for importing and exporting messages. Each trigger event message is described in detail in the following sections. A *trigger event* is an event in a healthcare workflow that triggers the transfer of information, identified in HL7 by a unique 3-character code.

Msg	Event code	See page	Export	Import	Trigger event
ADT	A01	485	X		Patient is marked checked-in in Scheduling
ADT	A03	485	X		Visit is logged in Billing, signifying that the patient checked out
ADT	A04	486	X	X	<ul style="list-style-type: none"> • Patient is marked checked-in in Scheduling • New patient is added to the system. When received, message is interpreted as a new patient.
ADT	A08	486	X	X	Patient is updated in the system
ADT	A09	487	X		Visit is logged in Billing, signifying that the patient checked out
ADT	A10	487	X		Patient is marked checked-in in Scheduling
ADT	A18	488	X	X	Patient information is merged
ADT	A19	488	X		The response containing patient information for a QRY^Q01 message
ADT	A28	489	X	X	New patient is added to the system
ADT	A29	489	X	X	Patient is deleted from the system
ADT	A31	489	X	X	Patient is updated in the system
ADT	A46	490	X	X	Patient's external ID is updated
ADT	A47	490	X	X	Patient's internal ID is updated
QRY	Q01	490		X	An external system queries MIK for a specific patient by Patient ID

ADT - A01 (Admit a patient)

This message is sent from the Scheduling module whenever a patient is marked checked in using **Patient Check In**. The following message segments are included in the ADT-A01 message:

For information about this segment...	See page...
MSH - Message Header	492
EVN - Event Type	493
PID - Patient Identification	494
PD1 - Patient Additional Demographics	499
PV1 - Patient Visit	500
PV2 - Patient Visit Additional Info	503
GT1 - Guarantor Information	504
IN1 - Insurance Information	509
IN2 - Insurance Information - Addit. Info.	516

ADT - A03 (Discharge patient/Add visit to billing)

This message is sent whenever a visit is created in the billing component and denotes that a patient has checked-out. The following message segments are included in the ADT-A03 message:

For more about this segment...	See page...
MSH - Message Header	492
EVN - Event Type	493
PID - Patient Identification	494
PD1 - Patient Additional Demographics	499
PV1 - Patient Visit	500
PV2 - Patient Visit Additional Info	503

ADT - A04 (Register a patient)

This message is sent from the Scheduling module whenever a patient is marked checked in using **Patient Check In**. It can also be sent whenever a new patient is added. When this message is received, it is assumed that a new patient is to be added. The following message segments are included in the ADT-A04 message:

For more about this segment...	See page...
MSH - Message Header	492
EVN - Event Type	493
PID - Patient Identification	494
PD1 - Patient Additional Demographics	499
PV1 - Patient Visit	500
PV2 - Patient Visit Additional Info	503
GT1 - Guarantor Information	504
IN1 - Insurance Information	509
IN2 - Insurance Information - Addit. Info.	516

ADT - A08 (Update patient information)

This message is sent from Registration whenever a patient's information is updated. It can also be sent from Scheduling when a patient's phone number or notes about a patient are changed. The following message segments are included in the ADT-A08 message:

For more about this segment...	See page...
MSH - Message Header	492
EVN - Event Type	493
PID - Patient Identification	494
PD1 - Patient Additional Demographics	499
PV1 - Patient Visit	500
GT1 - Guarantor Information	504
IN1 - Insurance Information	509
IN2 - Insurance Information - Addit. Info.	516

ADT - A09 (Update patient information)

This message is sent from Billing whenever a visit is created. It denotes that a patient has checked-out. The following message segments are included in the ADT-A09 message:

For more about this segment...	See page...
MSH - Message Header	492
EVN - Event Type	493
PID - Patient Identification	494
PD1 - Patient Additional Demographics	499
PV1 - Patient Visit	500
PV2 - Patient Visit Additional Info	503

ADT - A10 (Admit a patient)

This message is sent from Scheduling whenever a patient is marked checked in using **Patient Check In**. The following message segments are included in the ADT-A10 message:

For more about this segment...	See page...
MSH - Message Header	492
EVN - Event Type	493
PID - Patient Identification	494
PD1 - Patient Additional Demographics	499
PV1 - Patient Visit	500
PV2 - Patient Visit Additional Info	503
GT1 - Guarantor Information	504
IN1 - Insurance Information	509
IN2 - Insurance Information - Addit. Info.	516

ADT - A18 (Merge Patient Information)

This message is sent whenever current and previous patient IDs are merged (deleted and reassigned).

For more about this segment...	See page...
MSH - Message Header	492
EVN - Event Type	493
PID - Patient Identification	494
PD1 - Patient Additional Demographics	499
MRG - Merge Information	520
PV1 - Patient Visit	500
MSH - Message Header	492
MSA - Message Acknowledgement	521

ADT - A19 (Response to a QRY^Q01 message)

This message is sent whenever a QRY^Q01 request is received from an external system. The following message segments are included in the ADT-A19 message:

For more about this segment...	See page...
MSH - Message Header	492
MSA - Message Acknowledgement	521
QRD - Query Definition	518
EVN - Event Type	493
PID - Patient Identification	494
PD1 - Patient Additional Demographics	499
PV1 - Patient Visit	500
GT1 - Guarantor Information	504
IN1 - Insurance Information	509
IN2 - Insurance Information - Addit. Info.	516

ADT - A28 (Create a patient)

This message is sent whenever a new patient is created. The following message segments are included in the ADT-A28 message:

For more about this segment...	See page...
MSH - Message Header	492
EVN - Event Type	493
PID - Patient Identification	494
PD1 - Patient Additional Demographics	499
PV1 - Patient Visit	500
GT1 - Guarantor Information	504
IN1 - Insurance Information	509
IN2 - Insurance Information - Addit. Info.	516

ADT - A29 (Delete a patient)

This message is sent from the Registration module whenever a patient is deleted using **Delete Patient**. The following message segments are included in the ADT-A29 message:

For more about this segment...	See page...
MSH - Message Header	492
EVN - Event Type	493
PID - Patient Identification	494

ADT - A31 (Update patient information)

This message is sent from the Registration module whenever a patient's information is updated. It can also be sent from the Scheduling module when a patient's phone number or notes about a patient are changed. The following message segments are included in the ADT-A31 message:

For more about this segment...	See page...
MSH - Message Header	492
EVN - Event Type	493
PID - Patient Identification	494
PD1 - Patient Additional Demographics	499
PV1 - Patient Visit	500

For more about this segment...	See page...
GT1 - Guarantor Information	504
IN1 - Insurance Information	509
IN2 - Insurance Information - Addit. Info.	516

ADT - A46 (Update patient's external ID)

This message is sent whenever a patient's external ID is changed. The following message segments are included in the ADT-A46 message:

For more about this segment...	See page...
MSH - Message Header	492
EVN - Event Type	493
PID - Patient Identification	494
MRG - Merge Information	520

ADT - A47 (Update patient's internal ID)

This message is sent whenever a patient's internal id is changed. The following message segments are included in the ADT-A47 message:

For more about this segment...	See page...
MSH - Message Header	492
EVN - Event Type	493
PID - Patient Identification	494
MRG - Merge Information	520

QRY - Q01 (query from an external system)

This message is received whenever an external system requests for demographics for a specific patient ID. The following message segments are included in the QRY-Q01 message:

For more about this segment...	See page...
MSH - Message Header	492
QRD - Query Definition	518

ADT message segments

This section provides detailed specifications for the following HL7 message segments used in the ADT message in response to the ADT trigger events.

For more about this segment...	See page...
MSH - Message Header	492
EVN - Event Type	493
PID - Patient Identification	494
PD1 - Patient Additional Demographics	499
PV1 - Patient Visit	500
PV2 - Patient Visit Additional Info	503
GT1 - Guarantor Information	504
IN1 - Insurance Information	509
IN2 - Insurance Information - Addit. Info.	516
QRD - Query Definition	518
MRG - Merge Patient Information	520
MSA - Message Acknowledgement	521

MSH - Message Header

The Message Header segment (MSH) should always be in the first segment in each HL7 message. MSH defines the intent, source, destination, and some specifics of the syntax of a message.

Legend

HD	Hierarchic designator	PT	Processing type
ID	Coded value	ST	Character string
TS	Time Stamp		

SEQ	Element name	Value/notes	Data type	HL7 table
MSH-1	Field Separator	| (pipes)	ST	
MSH-2	Encoding Characters	^ ~ \ &	ST	
MSH-3	Sending Application	AHCApplicationName from the registry or MIK-ComputerName.	HD	
MSH-5	Receiving Application	Destination application name	HD	
MSH-7	Date/Time of Message	Date/time the message was created	TS	
MSH-9	Message Type, Trigger Events	ADT A03, A08	ID ID	0076
MSH-10	Message Control ID	<ul style="list-style-type: none"> Unique GUID (default) Unique integer that represents the sent instance of this message 	ST	
MSH-11	Processing ID	P	PT ID	0103
MSH-12	Version ID	HL7 2.3	ID	0104
MSH-16	Application Ack Type	AL or NE depending on whether ACK are requested from this destination	ID	0155

EVN - Event Type

The Event Type segment (EVN) defines the trigger event for the message.

Legend

IS Coded value for user-defined tables **TS** Time stamp

SEQ	Element Name	Value/notes	Data type	HL7 table
EVN-1	Event Type Code	Trigger event code, such as A01	TS	0003
EVN-2	Recorded Date/Time	Date / time the message created by MIK	TS	
EVN-3	Event Reason Code	01	IS	

PID - Patient Identification

The PID Patient Identification segment contains demographic information about the patient such as name, ID codes, address, phone numbers, and so on.

In Centricity Practice Solution, PID refers to the unique, system-generated identification number that the application assigns to a patient when a new chart is created.

Legend			
ID	Coded value for HL7- defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
NM	Numeric	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	ST	String data

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
PID-1	Set ID - Patient ID	1		SI	
PID-2	Patient ID (External)			CX	
	• ID	Patient ID for this patient	<i>ExternalPatientId (PatientId), ExternalPatientId (PatientProfileId)</i>	ST	
PID-3	Patient ID (Internal)			CX	
	• ID	Internal ID for this patient	<i>InternalPatientId (PatientId), InternalPatientId (PatientProfileId)</i>	ST	
PID-4	Alternate Patient ID-PID	Used to import MRN (Medical Record Number) when needed		CX	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
PID-5	Patient Name	Repeating field; MIK uses only the first repeating element.		XPN	
	• Family Name	Patient last name		ST	
	• Given Name	Patient first name		ST	
	• Middle Name	Patient middle initial or name		ST	
	• Suffix	Patient suffix		ST	
	• Prefix	Patient prefix		ST	
PID-7	Date/time of Birth	Patient birth date		TS	
PID-8	Sex	Patient sex (M = Male, F = Female)		IS	0001
PID-10	Race	Patient race	<i>Race</i> (Uses description if no map entry) On import, if PID-10 is null, default Race code "U" (Unknown) is used	IS	0005
PID-11	Patient Address	Repeating field; MIK uses only the first repeating element.		XAD	
	• Street Address	First line of patient address (Address1)		ST	
	• Other Designation	Second line of patient address (Address2)		ST	
	• City	City of patient address		ST	
	• State	State of patient address		ST	
	• Zip	Zip code of patient address (99999-9999)		ST	
PID-12	County Code	County of patient		IS	0005
PID-13	Phone Number - Home	Repeating field; MIK uses only the first repeating element.		XTN	
	• Telephone Number	Used when sending number as a string. Format: [(999)]999-9999[X99999][B99999][CAnyText]. Example: (555)555-5555CHome	<i>PhoneTypes</i> (Uses description if no map entry)	TN	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
	<ul style="list-style-type: none"> Telecommunication Use Code 	<p>Used when sending number in a numeric format. The phone type from the patient's first phone number (Phone1).</p> <p>If this field is blank, MIK uses 'Home.'</p>	<i>PhoneTypes</i> (Uses description if no map entry)	ID	
	<ul style="list-style-type: none"> Email Address 	The patient email		ST	
	<ul style="list-style-type: none"> Area Code 	Used when sending number in a numeric format. The area code from patient's first phone number (Phone1).		NM	
	<ul style="list-style-type: none"> Phone Number 	Used when sending number in a numeric format. The local 7-digit number from patient's first phone number (Phone1).		NM	
	<ul style="list-style-type: none"> Extension 	Used when sending number in a numeric format. Up to 5-digit extension from patient's first phone number (Phone1).		NM	
	<ul style="list-style-type: none"> AnyText 	<p>Used when sending number in a numeric format. The phone type from the patient's first phone number (Phone1).</p> <p>If this field is blank, then MIK uses 'Home'</p>	<i>PhoneTypes</i> (Uses description if no map entry)	ST	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
PID-14	Phone Number - Business	Repeating field; MIK uses only the first repeating element.		XTN	
	• Telephone Number	Used when sending the number as a string. Format: [(999)]999-9999[X99999][B99999][CAnyText]. Example: (555)555-5555CHome	<i>PhoneTypes</i> (Uses description if no map entry)	TN	
	• Telecommunication Use Code	Used when sending number in a numeric format. The phone type from the patient's second phone number (Phone2). If this field is blank, then MIK uses 'Work'.	<i>PhoneTypes</i> (Uses description if no map entry)	ID	
	• Area Code	Used when sending number in a numeric format. The area code from patient's second phone number (Phone2).		NM	
	• Phone Number	Used when sending number in a numeric format. The local 7-digit number from patient's second phone number (Phone2).		NM	
	• Extension	Used when sending number in a numeric format. Up to 5-digit extension from patient's second phone number (Phone2).		NM	
	• Anytext	Used when sending number in a numeric format. The phone type from the patient's second phone number (Phone2). If this field is blank, MIK uses 'Work'	<i>PhoneTypes</i> (Uses description if no map entry)	ST	
PID-15	Primary Language	Patient primary language	On import, if PID-15 is null, field is ignored	IS	0296
PID-16	Marital Status	Patient marital status	<i>MaritalStatus</i> (Uses description if no map entry)	IS	0002
PID-19	SSN	Patient Social Security number (999-99-9999).		ST	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
PID-22	Ethnic Group	Patient's ethnicity	On import, if PID-22 is null then default Ethnicity Group code "U" (Unknown) is used	IS	0189
PID-29	Patient Death Date and Time	Patient death date		TS	
PID-30	Patient Death Indicator	Y - If patient has a death date N - Default		ID	0136
PID-40	Patient Preferred Contact Method	Patient's preferred Contact By method. Since no standard HL7 field available for <i>ContactBy</i> , MIK uses PID-40 to import/export this value.	<i>ContactBy</i> (Uses description if no map entry)	ST	0185

PD1 - Patient Additional Demographics

The Patient Additional Demographics segment contains the patient's demographics information that is likely to change.

Legend

ID	Coded value for HL7-defined tables	ST	String Data
HD	Hierarchic designator	XCN	Extended composite ID number and name

SEQ	Element name	Value/Notes	Mapping	Data type	HL7 table
PD1-4	Patient Primary Care Provider Name	Repeating field; MIK uses only the first repeating element.		XCN	
	• ID Number	ID of the patient's primary care provider	<i>ReferringDoctorId</i>	ST	
	• Family Name	Last name of patient's primary care provider		ST	
	• Given Name	First name of patient's primary care provider		ST	
	• Middle Name	Middle initial or name of patient's primary care provider		ST	
	• Suffix	Suffix of patient's primary care provider		ST	
	• Prefix	Prefix of patient's primary care provider		ST	
	• Assigning Authority			HD	
	• Universal ID	UPIN of patient's primary care provider		ST	
	• Universal ID Type	UPIN		ID	

PV1 - Patient Visit

The Patient Visit segment (PV1) is used by Centricity Practice Solution Registration module and ADT (Admission, Discharge, and Transfer) applications to communicate information about a specific visit. It can contain information on multiple-visit records of the same patient account or single-visit records of more than one patient account. The use of this segment is determined by individual locations of care.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
NM	Numeric	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	ST	String Data

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
PV1-1	Set ID - PV1	1		SI	
PV1-2	Patient Class			IS	0004
PV1-3	Assigned Patient Location	O		PL	
	• Facility			HD	
	• Namespace ID	Facility ID for this appointment	<i>Facility</i>	IS	
PV1-7	Attending Doctor	Repeating field; MIK uses only the first repeating element.		XCN	0010
	• ID Number	ID of patient's default Responsible Provider	<i>Responsible Provider</i>	ST	
	• Family Name	Last name of patient's default Responsible Provider		ST	
	• Given Name	First name of patient's default Responsible Provider		ST	
	• Middle Name	Middle initial or name of patient's default Responsible Provider		ST	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
	<ul style="list-style-type: none"> Suffix 	Suffix of patient's default Responsible Provider		ST	
	<ul style="list-style-type: none"> Prefix 	Prefix of patient's default Responsible Provider		ST	
	<ul style="list-style-type: none"> Assigning Authority 			HD	
	<ul style="list-style-type: none"> Universal ID 	UPIN patient's default Responsible Provider		ST	
	<ul style="list-style-type: none"> Universal ID Type 	UPIN		ID	
PV1-8	Referring Doctor	Repeating field; MIK uses only the first repeating element.		XCN	0010
	<ul style="list-style-type: none"> ID Number 	ID of patient's default referring provider	<i>ReferringDoctorId</i>	XCN	
	<ul style="list-style-type: none"> Family Name 	Last name of patient's default referring provider		ST	
	<ul style="list-style-type: none"> Given Name 	First name of patient's default referring provider		ST	
	<ul style="list-style-type: none"> Middle Name 	Middle initial or name of patient's default referring provider		ST	
	<ul style="list-style-type: none"> Suffix 	Suffix of patient's default referring provider		ST	
	<ul style="list-style-type: none"> Prefix 	Prefix of patient's default referring provider		ST	
	<ul style="list-style-type: none"> Assigning Authority 			HD	
	<ul style="list-style-type: none"> Universal ID 	UPIN of the default referring provider for the patient		ST	
	<ul style="list-style-type: none"> Universal ID Type 	UPIN		ID	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
PV1-20	Financial Class	Repeating field; MIK uses only the first repeating element.		FC	0064
	<ul style="list-style-type: none"> Financial Class 	Patient's default financial class	<i>FinancialClass</i> (Uses description if no map entry)	IS	
PV1-50	Alternate Visit ID			CX	0192
	<ul style="list-style-type: none"> ID 	ID of the subappointment (<i>ApptResourceId</i>)	<i>AlternateVisitID</i>	ST	

PV2 - Patient Visit Additional Information

The Patient Visit Additional Information segment contains information that is a continuation of the visit-specific information contained in the PV1 segment.

Legend

TS Time stamp

SEQ	Element name	Value/notes	Data type	HL7 table
PV2-8	Expected Admit Date/Time	Start date/time for the sub-appointment	TS	
PV2-9	Expected Discharge Date/Time	Stop date/time for the sub-appointment	TS	

GT1 - Guarantor

The Guarantor message segment (GT1) contains demographic and contact information about the person who is responsible for a patient's medical expenses, also known as the insured party. If a patient is covered by another person's insurance, such as that of a parent or a spouse, the person who holds the insurance is the guarantor.



Only the first guarantor segment is used.

Legend

ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
NM	Numeric	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XON	Extended composite name and ID for organizations	TN	Telephone Number
XTN	Extended telecomm number	ST	String Data
HD	Hierarchic designator		

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
GT1-1	Set ID - GT1	1		SI	
GT1-2	Guarantor Number	Repeating field; MIK uses only the first repeating element.		CX	
	• ID	The ID for the guarantor based on the Guarantor ID	Uses <i>Patient</i> if guarantor same as patient, otherwise <i>Guarantor</i>	ST	
GT1-3	Guarantor Name	Repeating field; MIK uses only the first repeating element.		XPN	
	• Family Name	Guarantor's last name		ST	
	• Given Name	Guarantor's first name		ST	
	• Middle Name	Guarantor's middle initial or name		ST	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
	<ul style="list-style-type: none"> Suffix 	Guarantor's suffix		ST	
	<ul style="list-style-type: none"> Prefix 	Guarantor's prefix		ST	
GT1-5	Guarantor Address	Repeating field; MIK uses only the first repeating element.		XAD	
	<ul style="list-style-type: none"> Street Address 	First line of guarantor's address (Address1)		ST	
	<ul style="list-style-type: none"> Other Designation 	The second line of guarantor's address (Address2)		ST	
	<ul style="list-style-type: none"> City 	City of guarantor's address		ST	
	<ul style="list-style-type: none"> State 	State of guarantor's address		ST	
	<ul style="list-style-type: none"> Zip 	Zip for guarantor's address (99999-9999)		ST	
GT1-6	Guarantor Ph Num - Home	Repeating field; MIK uses only the first repeating element.		XTN	
	<ul style="list-style-type: none"> Telephone Number 	Used when sending number as a string. Format: [(999)]999-9999[X99999] [B99999][CAAnyText]. Example: (555)555-5555CHome	<i>PhoneTypes</i> (Uses description if no map entry)	TN	
	<ul style="list-style-type: none"> Telecommunication Use Code 	Used when sending number in a numeric format. The phone type from the guarantor's first phone number (Phone1). If this field is blank, then MIK uses 'Home'	<i>PhoneTypes</i> (Uses description if no map entry)	ID	
	<ul style="list-style-type: none"> Area Code 	Used when sending number in a numeric format. The area code from guarantor's first phone number (Phone1).		NM	
	<ul style="list-style-type: none"> Phone Number 	Used when sending number in a numeric format. The local 7-digit number from guarantor's first phone number (Phone1).		NM	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
	<ul style="list-style-type: none"> Extension 	Used when sending number in a numeric format. Up to 5-digit extension from guarantor's first phone number (Phone1).		NM	
	<ul style="list-style-type: none"> AnyText 	Used when sending number in a numeric format. The phone type from the guarantor's first phone number (Phone1). If this field is blank, MIK uses 'Home'	<i>PhoneTypes</i> (Uses description if no map entry)	ST	
GT1-7	Guarantor Ph Num - Business	Repeating field; MIK uses only the first repeating element.		XTN	
	<ul style="list-style-type: none"> Telephone Number 	Used when sending number as a string. Format: [(999)]999-9999[X99999][B99999][CAnyText]. Example: (555)555-5555CHome	<i>PhoneTypes</i> (Uses description if no map entry)	TN	
	<ul style="list-style-type: none"> Telecommunication Use Code 	Used when sending number in a numeric format. The phone type from the guarantor's second phone number (Phone2). If this field is blank, MIK uses 'Work'	<i>PhoneTypes</i> (Uses description if no map entry)	ID	
	<ul style="list-style-type: none"> Area Code 	Used when sending number in a numeric format. The area code from guarantor's second phone number (Phone2).		NM	
	<ul style="list-style-type: none"> Phone Number 	Used when sending the telephone number in a numeric format. The local 7-digit number from guarantor's second phone number (Phone2).		NM	
	<ul style="list-style-type: none"> Extension 	Used when sending number in a numeric format. Up to 5-digit extension from guarantor's second phone number (Phone2).		NM	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
	<ul style="list-style-type: none"> AnyText 	<p>Used when sending number in a numeric format. The phone type from the guarantor's second phone number (Phone2).</p> <p>If this field is blank, then MIK uses 'Work'</p>	<i>PhoneTypes</i> (Uses description if no map entry)	ST	
GT1-8	Guarantor Date/Time of Birth	Guarantor's birth date		TS	
GT1-9	Sex	<p>Guarantor's sex</p> <p>M = Male, F = Female</p>		IS	0001
GT1-11	Guarantor Relationship	<p>Guarantor's relationship to patient to the guarantor.</p> <p>If Responsible Same As Patient is selected, then relationship with HCFA marked as 'Self' is used.</p> <p>If 'Self' is received then Responsible Same As Patient is selected.</p>	<i>PatientRelations</i> (Uses description if no map entry)	IS	0063
GT1-12	Guarantor SSN	Guarantor's SSN (999-99-9999).		ST	
GT1-17	Guarantor Employer Address	Repeating field; MIK uses only the first repeating element.		XAD	
	<ul style="list-style-type: none"> Street Address 	First line of guarantor's employer address (Address1).		ST	
	<ul style="list-style-type: none"> Other Designation 	Second line of guarantor's employer address (Address2).		ST	
	<ul style="list-style-type: none"> City 	City of guarantor's employer address		ST	
	<ul style="list-style-type: none"> State 	State of guarantor's employer address		ST	
	<ul style="list-style-type: none"> Zip 	Zip of guarantor's employer address (99999-9999).		ST	
GT1-18	Guarantor Employer Phone Number	Repeating field; MIK uses only the first repeating element.		XTN	
	<ul style="list-style-type: none"> Telephone Number 	<p>Used when sending number as a string. Format: [(999)]999-9999[X99999] [B99999][CAnyText].</p> <p>Example: (555)555-5555CHome</p>	<i>PhoneTypes</i> (Uses description if no map entry)	TN	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
	<ul style="list-style-type: none"> Telecommunication Use Code 	N/A	<i>PhoneTypes</i> (Uses description if no map entry)	ID	
	<ul style="list-style-type: none"> Area Code 	Used when sending number in a numeric format. The area code from guarantor's employer's phone number (Phone).		NM	
	<ul style="list-style-type: none"> Phone Number 	Used when sending number in a numeric format. The local 7-digit number from guarantor's employer's phone number (Phone).		NM	
	<ul style="list-style-type: none"> Extension 	Used when sending number in a numeric format. Up to 5-digit extension from guarantor's employer's phone number (Phone).		NM	
	<ul style="list-style-type: none"> AnyText 	N/A	<i>PhoneTypes</i> (Uses description if no map entry)	ST	
GT1-20	Guarantor Employment Status	Guarantor's employment status	<i>EmploymentStatus</i> (Uses description if no map entry)	IS	0066
GT1-29	Guarantor Employer ID Number			CX	
	<ul style="list-style-type: none"> ID 	ID of guarantor's employer (<i>EmployerId</i>)	<i>Employer</i>	ST	
GT1-51	Guarantor Employer's Organization Name	Repeating field; MIK uses only the first repeating element.		XON	
	<ul style="list-style-type: none"> Organization Name 	Name of the guarantor's employer		ST	
	<ul style="list-style-type: none"> Assigning Authority 			HD	
	<ul style="list-style-type: none"> Universal ID 	ID of the guarantor's employer	<i>Employer</i>	ST	

IN1 - Insurance Information

The Insurance message segment (IN1) contains information about a patient's insurance policy coverage required for generating properly pro-rated patient and insurance bills.



IN1 and IN2 information is repeated for every active insurance carrier for the patient.

Legend

ID	Coded value for HL7-defined tables	DT	Date
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
XCN	Extended composite ID number and name	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	CE	Coded element
ST	String data	MO	Moderate (treated as Unknown)
NM	Numeric	TN	Telephone Number
HD	Hierarchic designator	CP	Composite price
XON	Extended composite name and identification number for organizations		

SEQ	Element Name	Value/notes	Mapping	Data type	HL7 table
IN1-1	Set ID - IN1	Relative position of this insurance policy (primary carrier = 1, secondary carrier = 2, and so on)		SI	
IN1-2	Insurance Plan ID			CE	0072
	• Identifier	ID of the insurance policy	<i>InsurancePlanID</i>	ST	
IN1-3	Insurance Company ID	Repeating field; MIK uses only the first repeating element.		CX	
	• ID	ID of the insurance company. Only insurance policies are stored, so two policies from the same company will have different IDs.	<i>InsuranceCompanyID</i>	ST	

SEQ	Element Name	Value/notes	Mapping	Data type	HL7 table
IN1-4	Insurance Company Name	Repeating field; MIK uses only the first repeating element.		XON	
	• Organization Name	Name of the patient's insurance policy		ST	
	• Assigning Authority			HD	
	• Universal ID	ID of the patient's insurance policy	<i>InsuranceCompany ID</i>	ST	
IN1-5	Insurance Company Address	Repeating field; MIK uses only the first repeating element.		XAD	
	• Street Address	First line of the address of the patient's insurance policy (Address1).		ST	
	• Other Designation	Second line of the address of the patient's insurance policy (Address2).		ST	
	• City	City of the patient's insurance policy		ST	
	• State	State of the patient's insurance policy		ST	
	• Zip	Zip code of patient's insurance policy (99999-9999).		ST	
IN1-6	Insurance Company Contact Person	Repeating field; MIK uses only the first repeating element.		XPN	
	• Family Name	Last name of the patient's insurance policy contact person		ST	
	• Given Name	First name of the patient's insurance policy contact person		ST	
	• Middle Name	Middle initial or name of the patient's insurance policy contact person		ST	
	• Suffix	Suffix of the patient's insurance policy contact person		ST	
	• Prefix	Prefix of the patient's insurance policy contact person		ST	
IN1-7	Insurance Company Phone Number	Repeating field; MIK uses only the first repeating element.		XTN	

SEQ	Element Name	Value/notes	Mapping	Data type	HL7 table
	<ul style="list-style-type: none"> Telephone Number 	Used when sending number as a string. Format: [(999)]999-9999[X99999][B99999][CAnyText]. Example: (555)555-5555CHome	<i>PhoneTypes</i> (Uses description if no map entry)	TN	
	<ul style="list-style-type: none"> Telecommunication Use Code 	Used when sending number in a numeric format. The phone type from the guarantor's second phone number (Phone2). If this field is blank, then MIK uses 'Work'	<i>PhoneTypes</i> (Uses description if no map entry)	ID	
	<ul style="list-style-type: none"> Area Code 	Used when sending number in a numeric format. The area code from guarantor's second phone number (Phone2).		NM	
	<ul style="list-style-type: none"> Phone Number 	Used when sending number in a numeric format. The local 7-digit number from guarantor's second phone number (Phone2).		NM	
	<ul style="list-style-type: none"> Extension 	Used when sending number in a numeric format. Up to 5-digit extension from the patient's insurance carrier's phone number		NM	
	<ul style="list-style-type: none"> AnyText 	N/A	<i>PhoneTypes</i> (Uses description if no map entry)	ST	
IN1-8	Group Number	Group number for the patient for this insurance policy.		ST	
IN1-10	Insured's Group Emp ID			CX	
	<ul style="list-style-type: none"> ID 	ID of employer for the insured party for the patient for this insurance policy (<i>EmployerId</i>)	<i>Employer</i>	ST	
IN1-11	Insured's Group Emp Name	Repeating field; MIK uses only the first repeating element.		XON	
	<ul style="list-style-type: none"> Organization Name 	Name of employer for the insured party for the patient for this insurance policy		ST	
	<ul style="list-style-type: none"> Assigning Authority 			HD	

SEQ	Element Name	Value/notes	Mapping	Data type	HL7 table
	<ul style="list-style-type: none"> Universal ID 	ID of employer for the insured party for the patient for this insurance policy	<i>Employer</i>	ST	
IN1-12	Plan Effective Date	Date this insurance policy became effective for the patient		DT	
IN1-13	Plan Expiration Date	Date this insurance policy expired for the patient		DT	
IN1-15	Plan Type	<p>Policy type (string description) for the patient's insurance policy.</p> <p>When receiving an IN1 segment, the first policy type that begins with the value of this field is used.</p>		IS	0086
IN1-16	Name Of Insured	Repeating field; MIK uses only the first repeating element.		XPN	
	<ul style="list-style-type: none"> Family Name Given Name Middle Name Suffix Prefix 	<p>Last name of insured party for the patient for this insurance policy</p> <p>First name of insured party for the patient for this insurance policy</p> <p>Middle initial or name of insured party for the patient for this insurance policy</p> <p>Suffix of insured party for the patient for this insurance policy</p> <p>Prefix of insured party for the patient for this insurance policy</p>		ST	
IN1-17	Insured's Relationship To Patient	<p>Relationship of the patient to the insured party.</p> <p>If Insured Same As Patient is selected, then relationship with HCFA marked as 'Self' is used. If 'Self' is received then Insured Same As Patient is selected.</p>	<i>PatientRelations</i>	IS	0063
IN1-18	Insured's Date Of Birth	Birth date of the insured party for this insurance policy.		TS	
IN1-19	Insured's Address	Repeating field; MIK uses only the first repeating element.		XAD	
	<ul style="list-style-type: none"> Street Address 	First line of address for insured party for the patient for this insurance policy (Address1)		NM	

SEQ	Element Name	Value/notes	Mapping	Data type	HL7 table
	<ul style="list-style-type: none"> Other Designation City State Zip 	<p>Second line of address for insured party for the patient for this insurance policy (Address2)</p> <p>City of insured party for the patient for this insurance policy</p> <p>State of insured party for the patient for this insurance policy</p> <p>Zip of insured party for the patient for this insurance carrier (99999-9999).</p>		ST	
IN1-20	Assignment of Benefits	<p>If insured has agreed to accept assignment of benefits</p> <p>Y = Yes N = No M = Yes, Clinical Lab Only)</p> <p>Not used when receiving a message.</p>		IS	0135
IN1-21	Coordination of Benefits	<p>If insured has more than one active insurance carrier providing coverage</p> <p>CO = Coordination IN = Independent</p>		IS	0173
IN1-22	Coordination of Benefits Priority	<p>Relative position of this insurance policy</p> <p>1=primary carrier 2=secondary carrier, etc.</p> <p>Not used when receiving a message.</p>		ST	
IN1-25	Report Of Eligibility Flag	<p>If patient's eligibility has been verified for this insurance policy, then 'Y' otherwise 'N'.</p>		ID	0136
IN1-26	Report Of Eligibility Date	<p>If patient's eligibility has been verified for this insurance policy, then the date eligibility was reported.</p>		DT	
IN1-29	Verification Date/Time	<p>If patient's eligibility has been verified for this insurance policy, then the date eligibility was verified.</p>		TS	

SEQ	Element Name	Value/notes	Mapping	Data type	HL7 table
IN1-30	Verification By			XCN	
	• Family Name	Last name of person who verified the eligibility for this insurance policy		ST	
	• Given Name	First name of the person who verified the eligibility for this insurance policy		ST	
	• Middle Name	Middle initial or name of the person who verified the eligibility for this insurance policy		ST	
	• Suffix	Suffix of the person who verified the eligibility for this insurance policy		ST	
	• Prefix	Prefix of the person who verified the eligibility for this insurance policy		ST	
IN1-36	Policy Number	Insured ID for the patient for this insurance policy		TS	
IN1-37	Policy Deductible			CP	
	• Price			MO	
	• Quantity	Amount of the deductible for this insurance policy		NM	
IN1-42	Insured's Employment Status			CE	0066
	• Identifier	Employment status of the insured	<i>EmploymentStatus</i> (Uses description if no map entry)	ST	
IN1-43	Insured's Sex	Sex of insured party for the patient for this insurance policy M = Male F = Female		IS	0001
IN1-44	Insured's Employer Address	Repeating field; MIK uses only the first repeating element.		XAD	
	• Street Address	First line of the address for the employer for the insured party for the patient for this insurance policy (Address1).		ST	

SEQ	Element Name	Value/notes	Mapping	Data type	HL7 table
	<ul style="list-style-type: none"> Other Designation 	Second line of the address for the employer for the insured party for the patient for this insurance policy (Address2).		ST	
	<ul style="list-style-type: none"> City 	City of the employer for the insured party for the patient for this insurance carrier.		ST	
	<ul style="list-style-type: none"> State 	State of the employer for the insured party for the patient for this insurance carrier.		ST	
	<ul style="list-style-type: none"> Zip 	Zip of the employer for the insured party for the patient for this insurance carrier (99999-9999).		ST	
IN1-45	Verification Status	Current verification status for this insurance policy NV = Not Verified AC = Active Coverage IC = Inactive Coverage PV = Pending Verification		ST	
IN1-49	Insured's ID Number	Repeating field; MIK uses only the first repeating element.			
	<ul style="list-style-type: none"> ID 	Unique ID of the insurance information for the patient for this insurance policy	<i>InsuredsIDNumber</i>	ST	

IN2 - Insurance Additional Information

The Insurance Additional Information segment contains additional information about the insurance policy coverage and benefit information needed to produce proper insurance bills and reimbursement forms.



IN1 and IN2 information is repeated for every active insurance carrier for the patient.

Legend

ID	Coded value for HL7-defined tables	CM	Order sequencing component
XTN	Extended telecomm number	HD	Extended address
ST	String data	XON	Extended composite name and identification number for organizations
TN	Telephone Number	NM	Numeric

SEQ	Element name	Value/notes	Data type	HL7 table
IN2-2	Insured's Social Security Number	Social security number of insured for this insurance policy	ST	
IN2-30	Daily Deductible		CM	
	• Daily Deductible Delay Days	0	NM	
	• Daily Deductible Amount	Amount of copay for this insurance policy	NM	
	• Daily Deductible Number Of Days	365	NM	
IN2-63	Insured's Telephone Number - Home	Repeating field; MIK uses only the first repeating element.	XTN	
	• Telephone Number	Used when sending number as a string. Format: [(999)]999-9999[X99999][B99999][CAny Text]. Example: (555)555-5555CHome	TN	
	• Telecommunication Use Code	N/A	ID	
	• Area Code	Used when sending number in a numeric format. Area code from insured's employer number	NM	

SEQ	Element name	Value/notes	Data type	HL7 table
	<ul style="list-style-type: none"> Phone Number 	Used when sending number in a numeric format. Local 7-digit number from insured's employer number	NM	
	<ul style="list-style-type: none"> Extension 	Used when sending number in a numeric format. Up to 5-digit extension from insured's employer number	NM	
	<ul style="list-style-type: none"> AnyText 	N/A	ST	
IN2-64	Insured's Employer Telephone Number - Home	Repeating field; MIK uses only the first repeating element.	XTN	
	<ul style="list-style-type: none"> Telephone Number 	Used when sending number as a string. Format: [(999)]999-9999[X99999][B99999][CAnyText]. Example: (555)555-5555CHome	TN	
	<ul style="list-style-type: none"> Telecommunication Use Code 	N/A	ID	
	<ul style="list-style-type: none"> Area Code 	Used when sending number in a numeric format. Area code from insured's employer number	NM	
	<ul style="list-style-type: none"> Phone Number 	Used when sending number in a numeric format. Local 7-digit number from insured's employer number	NM	
	<ul style="list-style-type: none"> Extension 	Used when sending number in a numeric format. Up to 5-digit extension from insured's employer number	NM	
	<ul style="list-style-type: none"> AnyText 	N/A	ST	
IN2-70	Insured's Employer's Organization Name And ID	Repeating field; MIK uses only the first repeating element.	XON	
	<ul style="list-style-type: none"> Organization Name 	Name of the insured's employer	ST	
	<ul style="list-style-type: none"> Assigning Authority 		HD	
	<ul style="list-style-type: none"> Universal ID 	ID of the insured's employer	ST	

QRD - Query Definition

The Query Definition segment contains the definition of a query.

Legend			
ID	Coded value for HL7-defined tables	CM	Order sequencing component
CE	Coded element	CQ	Composite Quantity with units
ST	String data	XCN	Extended composite ID number and name
TS	Time Stamp	NM	Numeric

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
QRD-1	Query Date/Time	Date/time the message was created		TS	
QRD-2	Query Format Code	R (for record)		ID	0106
QRD-3	Query Priority	I		ID	0091
QRD-4	Query ID	Unique identifier for the query		ST	
QRD-6	Query Limited Requested			CQ	
	• Quantity Limit	1 - only one patient will be returned		NM	
	• Quantity Type	RD - Records (Data sets)		CE	
QRD-8	Who Subject Filter			XCN	
	• ID Number	ID of the Patient ID to retrieve	<i>ExternalPatientId (PatientId) or ExternalPatientId (PatientProfileId)</i>	ST	
	• Family Name	Last name of the Patient ID to retrieve		ST	
	• Given Name	First name of the Patient ID to retrieve		ST	
	• Middle Name	Middle initial or name of the Patient ID to retrieve		ST	
	• Suffix	Suffix of the Patient ID to retrieve		ST	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
	<ul style="list-style-type: none">Prefix	Prefix of the Patient ID to retrieve		ST	
QRD-9	What Subject Filter	DEM (demographic response)		CE	
QRD-12	Query Results Level	T (Full Results)		ID	0108

MRG - Merge Patient Information

The Merge Patient Information Segment information necessary to initiated the merging of patient information and groups of records. This segment facilitates the merging of registration, accounting, and clinical records within specific applications.

Legend

ST String data

CX Extended composite ID with check digit

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
MRG-1	Prior Patient ID - Internal	Repeating field; MIK uses only the first repeating element.		CX	
	• ID	Patient's previous internal ID	<i>InternalPatientId (PatientId)</i>	ST	
MRG-4	Prior Patient ID - External			CX	
	• ID	Patient's previous external ID	<i>ExternalPatientId (PatientId)</i>	ST	

MSA - Message Acknowledgement

The Message Acknowledgement segment contains the information that is sent while acknowledging another message.

Legend

ST String data

ID Coded value for
HL7-defined tables

SEQ	Element name	Value/notes	Data type	HL7 table
MSA-1	Acknowledgment Code	AA - successful AE - an error occurred AR - rejected	ID	0008
MSA-2	Message Control ID	Unique GUID that represents the instance of this message	ID	
MSA-3	Text Message	A string describing the reason for the error or reject. Empty if the Acknowledgment code is AA (message successful)	ST	

CHAPTER 21

Scheduling Export (SIU)

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This HL7-based interface supports the export of schedule-related information. It uses a subset of the complete HL7 message set for Scheduling and supports the Schedule Information Unsolicited (SIU) message.

The SIU message is exported by MIK whenever a patient appointment is created, updated, rescheduled, cancelled, or removed.

This specification describes how MIK uses message segments in the SIU message when exporting data



For an introduction to reading and interpreting Centricity Practice Solution interface specifications, see [“About MIK HL7 interface specifications” on page 42.](#)

SIU trigger event messages

MIK supports these trigger events for exporting messages. Each trigger event message is described in detail in the following sections. A *trigger event* is an event in a healthcare workflow that triggers the transfer of information, identified in HL7 by a unique 3-character code.

Msg	Event code	Trigger event
SIU	S12	A patient appointment is added to the system (one message for each subappointment is sent). Also sent when a patient is marked checked-in.
SIU	S13	A patient appointment is rescheduled with a change in either start date or time.
SIU	S14	A patient appointment is updated in the system (one message for each subappointment that is modified)
SIU	S15	A patient appointment is cancelled or deleted (one message for each subappointment of the cancelled appointment)
SIU	S22	A patient appointment is cancelled (one message for each subappointment of the cancelled appointment)

SIU message segments

This section provides detailed specifications for the following HL7 message segments used in the SIU message:

For information about this segment...	See page...
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SCH - Scheduling Activity Information	526
PID - Patient Identification	529
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AIL - Appointment Information - Location Resource	537
AIP - Appointment Information - Personnel Resource	538
NTE - Notes & Comments	539

MSH - Message Header

The Message Header segment (MSH) should always be in the first segment in each HL7 message. MSH defines the intent, source, destination, and some specifics of the syntax of a message.

Legend

HD	Hierarchic designator	PT	Processing type
ID	Coded value	ST	Character string
TS	Time Stamp		

SEQ	Element name	Value/notes	Data type	HL7 table
MSH-1	Field Separator	| (pipes)	ST	
MSH-2	Encoding Characters	^ ~ \ &	ST	
MSH-3	Sending Application	AHCApplicationName from the registry or MIK-ComputerName.	HD	
MSH-5	Receiving Application	Destination application name	HD	
MSH-7	Date/time of Message	Date/time the message was created	TS	
MSH-9	Message Type	SIU	ID	0076
	• Trigger Event	Trigger event code, such as S12, S13	ID	
MSH-10	Message Control ID	<ul style="list-style-type: none"> Unique GUID (default) Unique integer that represents the sent instance of this message 	ST	
MSH-11	Processing ID		PT	0103
	• Processing ID	P	ID	
MSH-12	Version ID	2.3	ID	0104
MSH-16	Application Ack Type	AL or NE depending on whether ACK are requested from this destination	ID	0155

SCH - Scheduling Activity Information

The Scheduling Activity Information segment contains general information about the scheduled appointment.

Legend

EI Entity Identifier	ST String
CE Coded Element	NM Numeric
TQ Timing/quantity	XCN Extended composite ID number and name
IS Coded value for user-defined tables	TS Time stamp

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
SCH-1	Placer Appointment ID			EI	
	• Entity Identifier	Appointment ID (<i>ApptResourceId</i>)	<i>ApptResource</i>	ST	
	• Namespace ID	Appointment ID (<i>ApptResourceId</i>)	<i>ApptResource</i>	IS	
SCH-2	Filler Appointment ID			EI	
	• Entity Identifier	Appointment ID (<i>ApptResourceId</i>)	<i>ApptResource</i>	ST	
	• Namespace ID	Appointment ID (<i>ApptResourceId</i>)	<i>ApptResource</i>	IS	
SCH-6	Event Reason	Not used but set to Null since this is a required field		CE	
SCH-7	Appointment Reason			CE	0276
	• Identifier	Appointment type	<i>AppointmentTypes</i> (Uses description if no map entry)	ST	
SCH-8	Appointment Type			CE	0277
	• Identifier	Appointment type	<i>AppointmentTypes</i> (Uses description if no map entry)	ST	
SCH-9	Appointment Duration	Appointment duration in minutes		NM	
SCH-10	Appointment Duration Units			CE	
	• Identifier	M		ST	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
SCH-11	Appointment Timing Quantity	Repeating field; MIK uses only the first repeating element.		TQ	
	• Duration	Appointment duration in seconds		ST	
	• Start Date/Time	Appointment start date/time		TS	
	• Stop Date/Time	Appointment stop date/time		TS	
SCH-16	Filler Contact Person			XCN	
	• Family Name	Last name of person who created this appointment		ST	
	• Given Name	First name of person who created this appointment		ST	
	• Middle Name	Middle initial or name of person who created this appointment		ST	
	• Suffix	Suffix of person who created this appointment		ST	
	• Prefix	Prefix of person who created this appointment		ST	
SCH-20	Entered By Person			XCN	
	• Family Name	Last name of person who created this appointment		ST	
	• Given Name	First name of person who created this appointment		ST	
	• Middle Name	Middle initial or name of person who created this appointment		ST	
	• Suffix	Suffix of the person who created this appointment		ST	
	• Prefix	Prefix of the person who created this appointment		ST	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
SCH-25	Filler Status Code			CE	0278
	<ul style="list-style-type: none"> Identifier 	Booked - when scheduling or rescheduling an appointment Arrived - when using this message to signify patient check-in		ST	
	<ul style="list-style-type: none"> Text 	Appointment status field		ST	

PID - Patient Identification

The PID Patient Identification segment contains demographic information about the patient such as name, ID codes, address, phone numbers, and so on. In Centricity Practice Solution, PID refers to the unique, system-generated identification number that the application assigns to a patient when a new chart is created.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
NM	Numeric	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	ST	String data

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
PID-1	Set ID - Patient ID	1		SI	
PID-2	Patient ID (External)			CX	
	• ID	Patient ID for this patient	<ul style="list-style-type: none"> <i>ExternalPatientId (PatientId)</i> <i>ExternalPatientId (PatientProfileId)</i> 	ST	
PID-3	Patient ID (Internal)			CX	
	• ID	Internal ID for this patient	<ul style="list-style-type: none"> <i>InternalPatientId (PatientId)</i> <i>InternalPatientId (PatientProfileId)</i> 	ST	
PID-5	Patient Name	Repeating field; MIK uses only the first repeating element.		XPN	
	• Family Name	Patient last name		ST	
	• Given Name	Patient first name		ST	
	• Middle Name	Patient middle initial or name		ST	
	• Suffix	Patient suffix		ST	
	• Prefix	Patient prefix		ST	
PID-7	Date/time of Birth	Patient birth date		TS	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
PID-8	Sex	Patient sex (M = Male, F = Female)		IS	0001
PID-10	Race	Patient race	<i>Race</i> (Uses description if no map entry) On import, if PID-10 is null, default Race code "U" (Unknown) is used	IS	0005
PID-11	Patient Address	Repeating field; MIK uses only the first repeating element.		XAD	
	• Street Address	First line of patient address (Address1)		ST	
	• Other Designation	Second line of patient address (Address2)		ST	
	• City	City of patient address		ST	
	• State	State of patient address		ST	
	• Zip	Zip code of patient address (99999-9999)		ST	
PID-12	County Code	County of patient		IS	0005
PID-13	Phone Number - Home	Repeating field; MIK uses only the first repeating element.		XTN	
	• Telephone Number	Used when sending number as a string. Format: [(999)]999-9999[X99999] [B99999][CAnyText]. Example: (555)555-5555CHome	<i>PhoneTypes</i> (Uses description if no map entry)	TN	
	• Telecommunication Use Code	Used when sending number in a numeric format. The phone type from the patient's first phone number (Phone1). If this field is blank, MIK uses 'Home.'	<i>PhoneTypes</i> (Uses description if no map entry)	ID	
	• Email Address	The patient email		ST	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
	<ul style="list-style-type: none"> Area Code 	Used when sending number in a numeric format. The area code from patient's first phone number (Phone1).		NM	
	<ul style="list-style-type: none"> Phone Number 	Used when sending number in a numeric format. The local 7-digit number from patient's first phone number (Phone1).		NM	
	<ul style="list-style-type: none"> Extension 	Used when sending number in a numeric format. Up to 5-digit extension from patient's first phone number (Phone1).		NM	
	<ul style="list-style-type: none"> AnyText 	Used when sending number in a numeric format. The phone type from the patient's first phone number (Phone1). If this field is blank, then MIK uses 'Home'	<i>PhoneTypes</i> (Uses description if no map entry)	ST	
PID-14	Phone Number - Business	Repeating field; MIK uses only the first repeating element.		XTN	
	<ul style="list-style-type: none"> Telephone Number 	Used when sending the number as a string. Format: [(999)]999-9999[X99999][B99999][CAnyText]. Example: (555)555-5555CHome	<i>PhoneTypes</i> (Uses description if no map entry)	TN	
	<ul style="list-style-type: none"> Telecommunication Use Code 	Used when sending number in a numeric format. The phone type from the patient's second phone number (Phone2). If this field is blank, then MIK uses 'Work'.	<i>PhoneTypes</i> (Uses description if no map entry)	ID	
	<ul style="list-style-type: none"> Area Code 	Used when sending number in a numeric format. The area code from patient's second phone number (Phone2).		NM	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
	<ul style="list-style-type: none"> Phone Number 	Used when sending number in a numeric format. The local 7-digit number from patient's second phone number (Phone2).		NM	
	<ul style="list-style-type: none"> Extension 	Used when sending number in a numeric format. Up to 5-digit extension from patient's second phone number (Phone2).		NM	
	<ul style="list-style-type: none"> Anytext 	Used when sending number in a numeric format. The phone type from the patient's second phone number (Phone2). If this field is blank, MIK uses 'Work'	<i>PhoneTypes</i> (Uses description if no map entry)	ST	
PID-15	Primary Language	Patient primary language	On import, if PID-15 is null, field is ignored	IS	0296
PID-16	Marital Status	Patient marital status	<i>MaritalStatus</i> (Uses description if no map entry)	IS	0002
PID-19	SSN	Patient Social Security number (999-99-9999).		ST	
PID-22	Ethnic Group	Patient's ethnicity	On import, if PID-22 is null then default Ethnicity Group code "U" (Unknown) is used	IS	0189
PID-29	Patient Death Date and Time	Patient death date		TS	
PID-30	Patient Death Indicator	Y - If patient has a death date N - Default		ID	0136
PID-40	Patient Preferred Contact Method	Patient's preferred Contact By method. Since no standard HL7 field available for <i>ContactBy</i> , MIK uses PID-40 to import/export this value.	<i>ContactBy</i> (Uses description if no map entry)	ST	0185

PV1 - Patient Visit

The Patient Visit segment (PV1) is used by Centricity Practice Solution Registration module and ADT (Admission, Discharge, and Transfer) applications to communicate information about a specific visit. It can contain information on multiple-visit records of the same patient account or single-visit records of more than one patient account. The use of this segment is determined by individual locations of care.

Legend

ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
NM	Numeric	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	ST	String Data

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
PV1-1	Set ID - PV1	1		SI	
PV1-2	Patient Class			IS	0004
PV1-3	Assigned Patient Location	0		PL	
	• Facility			HD	
	• Namespace ID	Facility ID for this appointment	<i>Facility</i>	IS	
PV1-7	Attending Doctor[0]			XCN	0010
	• ID Number	ID of patient's default Responsible Provider	<i>Responsible Provider</i>	ST	
	• Family Name	Last name of patient's default Responsible Provider		ST	
	• Given Name	First name of patient's default Responsible Provider		ST	
	• Middle Name	Middle initial or name of patient's default Responsible Provider		ST	
	• Suffix	Suffix of patient's default Responsible Provider		ST	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
	<ul style="list-style-type: none"> Prefix 	Prefix of patient's default Responsible Provider		ST	
	<ul style="list-style-type: none"> Assigning Authority 			HD	
	<ul style="list-style-type: none"> Universal ID 	UPIN of patient's default Responsible Provider		ST	
	<ul style="list-style-type: none"> Universal ID Type 	UPIN		ID	
PV1-8	Referring Doctor	Repeating field; MIK uses only the first repeating element.			0010
	<ul style="list-style-type: none"> ID Number 	ID of patient's default referring provider	<i>ReferringDoctorId</i>	XCN	
	<ul style="list-style-type: none"> Family Name 	Last name of patient's default referring provider		ST	
	<ul style="list-style-type: none"> Given Name 	First name of patient's default referring provider		ST	
	<ul style="list-style-type: none"> Middle Name 	Middle initial or name of patient's default referring provider		ST	
	<ul style="list-style-type: none"> Suffix 	Suffix of patient's default referring provider		ST	
	<ul style="list-style-type: none"> Prefix 	Prefix of patient's default referring provider		ST	
	<ul style="list-style-type: none"> Assigning Authority 			HD	
	<ul style="list-style-type: none"> Universal ID 	UPIN of the default referring provider for the patient		ST	
	<ul style="list-style-type: none"> Universal ID Type 	UPIN		ID	
PV1-50	Alternate Visit ID				CX
	<ul style="list-style-type: none"> ID 	ID of the sub-appointment (<i>ApptResourceId</i>)	<i>AlternateVisitID</i>	ST	

RSG - Resource Group

The Resource Group Segment contains information that helps determine the relationships between resources identified for a scheduled event. This segment can be used to identify groups of resources that are used together within a scheduled event for a specific location of care, or to describe some other relationship between resources.

To specify related groups of resources within a message, begin each group with an RGS segment, and then follow that RGS with one or more of the Appointment Information segments (AIG, AIL, AIS, or AIP). If a message does not require any grouping of resources, then specify a single RGS in the message, and follow it with all of the Appointment Information segments for the scheduled event. Even if no grouping of resources is required, at least one RGS segment is required in each message to allow parsers to properly understand the message.

Legend

ID	Coded value for HL7-defined tables	SI	Sequence ID
CE	Coded element	ST	String Data

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
RSG-1	Set ID - RGS	1		SI	
RSG-2	Segment Action Code	A		ID	0206
RSG-3	Resource Group ID			CE	
	• Identifier	Appointment ID (<i>ApptResourceId</i>)	<i>ApptResource</i>	ST	

AIG - Appointment Information - General Resource

The Appointment Information - General Resource segment contains information about general resources that can be scheduled. This segment has information on only those resources that are assumed to be controlled by a schedule on a schedule filler application.

Legend	
CE	Coded element
SI	Sequence ID
NM	Numeric
ST	String Data
TS	Time stamp

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
AIG-1	Set ID	1		SI	
AIG-3	Resource ID			CE	
	• Identifier	Resource ID for this appointment	<i>Resources</i>	ST	
	• Text	Resource name for this appointment		ST	
AIG-4	Resource Type			CE	
	• Identifier	Resource type for this appointment		ST	
AIG-8	Start Date/Time	Appointment start date/time		TS	
AIG-11	Duration	Appointment duration in minutes		NM	
AIG-12	Duration Units			CE	
	• Identifier	minutes		ST	

AIL - Appointment Information - Location Resource

The Appointment Information Location Resource segment contains information on location resources that can be scheduled. The location resources include meeting rooms, operating rooms, examination rooms, or other locations. This segment has information on only those location resources that are assumed to be controlled by a schedule on a schedule filler application.

Legend

SI	Sequence ID	PL	Person location
HD	Hierarchic designator	IS	Coded value for user-defined tables
CE	Coded element	ST	String data

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
AIL-1	Set ID	1		SI	
AIL-3	Location Resource ID			PL	
	• Facility			HD	
	• Namespace ID	Facility ID for this appointment	<i>Facility</i>	IS	
AIL-4	Location Type			CE	
	• Identifier	'Place of Service		ST	

AIP - Appointment Information - Personnel Resource

The Appointment Information - Personnel Resource segment contains information about personnel resources that can be scheduled. Personnel resources include any healthcare provider in the institution controlled by a schedule as well as technicians, physicians, nurses, surgeons, and anesthesiologists. This segment has information on only those personnel resources that are assumed to be controlled by a schedule on a schedule filler application.

Legend

SI	Sequence ID	TS	Time Stamp
CE	Coded element	XCN	Extended composite ID number and name
ST	String data	NM	Numeric

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
AIP-1	Set ID	1		SI	
AIP-3	Personnel Resource ID			XCN	
	• ID Number	Doctor ID for the appointment	<i>Doctor</i>	ST	
	• Family Name	Doctor's last name for the appointment		ST	
	• Given Name	Doctor's first name for the appointment		ST	
	• Middle Name	Doctor's middle initial or name for the appointment		ST	
	• Suffix	Doctor's suffix for the appointment		ST	
	• Prefix	Doctor's prefix for the appointment		ST	
AIP-4	Resource Role			CE	
	• Identifier	Doctor		ST	
AIP-6	Start Date/Time	Appointment start date/time		TS	
AIP-9	Duration	Appointment duration in minutes		NM	
AIP-10	Duration Units			CE	
	• Identifier	minutes		ST	

NTE - Notes and Comments

The Notes and Comments segment is used for sending notes and comments for inclusion in messages defined in other chapters.

Legend

ID Coded value for HL7-defined tables **FT** Formatted Text

SEQ	Element name	Value/notes	Data type	HI7 table
NTE-2	Source of Comment	Patient Appointment Notes	ID	
NTE-3	Comment	Appointment notes from Registration	FT	

Master Files Import/Export (MFN)

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MSH - Message Header	543
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STF - Staff Identification	545
PRA - Practitioner Detail	548

This HL7-based interface supports the import and export of master files information. It supports the Master File Notification (MFN) HL7 message.

The MFN message is imported and exported by MIK whenever a referring physician is added or modified. It contains information on staff and personnel and practitioner information on personnel who are also health practitioners

This specification describes how MIK uses message segments in the MFN message when importing and exporting data.



For an introduction to reading and interpreting Centricity Practice Solution interface specifications, see [“About MIK HL7 interface specifications” on page 42.](#)

MFN trigger events

Trigger event: an event in a healthcare workflow that triggers the transfer of information, identified in HL7 by a unique 3-character code

Events that trigger import. MIK supports these MFN message trigger events for importing messages:

- **M02**—A referring physician is added or modified in the system

Events that trigger export. MIK supports these MFN message trigger events for exporting messages:

- **M02**—A referring physician is added or modified in the system
- **M02**—A doctor is added or modified in the system

MFN message structure

Legend			
R	Required	[...]	Optional
{...}	Optional and repeating	{...}	Repeating
}			

Message segment	Name	Import /Export
MSH	Msg Header	R
MFI	Master File Identification	R
{ MFE	Master File Entry	R
STF	Staff Identification	R
[PRA]	Practitioner Detail	R
}		

M02 message segments

This section provides detailed specifications for the following HL7 message segments used in the MFN message in response to the M02 trigger event.

For information about this segment...	See page...
MSH - Message Header	543
MFI - Master File Identification	544
MFE - Master File Entry	544
STF - Staff Identification	545
PRA - Practitioner Detail	548

MSH - Message Header

The Message Header segment (MSH) should always be in the first segment in each HL7 message. MSH defines the intent, source, destination, and some specifics of the syntax of a message.

Legend

HD	Hierarchic designator	PT	Processing type
ID	Coded value	ST	Character string
TS	Time Stamp		

SEQ	Element name	Value/Notes	Data type	HL7 table
MSH-1	Field Separator	| (pipes)	ST	
MSH-2	Encoding Characters	^ ~ \ &	ST	
MSH-3	Sending Application	AHCApplicationName from the registry or MIK-ComputerName.	HD	
MSH-5	Receiving Application	Destination application name	HD	
MSH-7	Date/Time of Message	Date/time the message was created	TS	
MSH-9	Message Type	MFN	ID	0076
	• Trigger Event	M02	ID	
MSH-10	Message Control ID	<ul style="list-style-type: none"> Unique GUID (default) Unique integer that represents the sent instance of this message 	ST	
MSH-11	Processing ID		PT	0103
	• Processing ID	P	ID	
MSH-12	Version ID	2.3	ID	0104
MSH-16	Application Ack Type	AL or NE depending on whether ACK are requested from this destination	ID	0155

STF - Staff Identification

The Staff Identification segment contains general information about personnel/staff referred to by information systems. In a network environment, this segment can be used to define personnel to other applications; for example, order entry clerks, insurance verification clerks, admission clerks, and provider demographics. Other segments may follow the Staff Identification segment to provide information for a particular type of personnel.

Legend

ID	Coded value for HL7-defined tables	NM	Numeric
CX	Extended composite ID with check digit	XTN	Extended telecomm number
ST	String data	XPN	Extended person name
CE	Coded element	XAD	Extended address
TN	Telephone number		

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
STF-1	Primary Key Value - STF	Internal unique ID of the doctor or physician		CE	
STF-2	Staff ID Code	Repeating field; MIK uses only the first repeating element.		CX	
	• ID	ID for the physician based on the value in the <i>DoctorFacilityId</i> table		ST	
STF-3	Staff Name	Repeating field; MIK uses only the first repeating element.		XPN	
	• Family Name	Physician's last name		ST	
	• Given Name	Physician's first name		ST	
	• Middle Name	Physician's middle initial		ST	
	• Suffix	Physician's suffix (MD, Jr,)		ST	
	• Prefix	Physician's prefix		ST	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
STF-4	Staff Type	Repeating field; MIK uses only the first repeating element. D - message represents a doctor R - message represents a referring physician U - default, if unspecified		CX	0182
STF-7	Active/inactive Flag	I - physician is inactive A - physician is active		ID	0183
STF-10	Phone	Repeating field. MIK uses as many repeating elements as necessary, starting at 0.		XTN	
	• Telephone Number	Used when sending the number as a string. The format is [(999)]999-9999[X99999][B99999][CAny Text]. Example: (555)555-5555CHome	<i>PhoneTypes</i> (Uses description if no map entry)	TN	
	• Telecomm Use Code	N/A	<i>PhoneTypes</i> (Uses description if no map entry)	ID	
	• Area Code	Used when sending the number in a numeric format. The area code from MIK will accept two phone numbers.		NM	
	• Phone Number	Used when sending the number in a numeric format. The local 7-digit number from MIK will accept two phone numbers.		NM	
	• Extension	Used when sending the number in a numeric format. The 5-digit extension from MIK will accept two phone numbers.		NM	
	• Any Text	N/A	<i>PhoneTypes</i> (Uses description if no map entry)	ST	
STF-11	Physician Address	Repeating field; MIK uses only the first repeating element.		XAD	
	• Street Address	First line of the physician address (Address1).		ST	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
	<ul style="list-style-type: none">Other Designation	Second line of the physician address (Address2).		ST	
	<ul style="list-style-type: none">City	City of the address		ST	
	<ul style="list-style-type: none">State	State of the address		ST	
	<ul style="list-style-type: none">Zip	Zip code of the address (99999-9999).		ST	

PRA - Practitioner Detail

The Practitioner Detail segment contains detailed medical practitioner information about a staff member who is also a health practitioner. This segment can also be used to carry information on staff who work in healthcare who are not practitioners, but need to be certified, e.g., “medical records staff”. A Staff Identification segment, which contains general information on the staff, will always precede the Practitioner Detail segment.

Legend	
ST	String Data
IS	Coded value for HL7-defined tables
CM	Order sequencing component

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
PRA-1	Primary Key Value - PRA	Internal unique identifier of the doctor or physician		ST	
PRA-5	Specialty	Repeating field; MIK uses only the first repeating element.		CM	0337
	<ul style="list-style-type: none"> Specialty Name 	Specialty of the physician	<i>Specialty</i> (Uses description if no map entry)	ST	
PRA-6	Practitioner ID Numbers	Repeating field. MIK uses as many repeating elements as necessary, starting at 0.		CM	0338
	<ul style="list-style-type: none"> ID Number 	ID of the physician specified in the type		ST	
	<ul style="list-style-type: none"> Type of ID Number 	SL - state license number UPIN - UPIN number		IS	

CHAPTER 23

Finance Import (DFT)

[DFT trigger event messages](#) 550

[DFT message segments](#) 550

[MSH - Message Header](#) 551

[EVN - Event Type](#) 552

[PID - Patient Identification](#) 553

[PV1 - Patient Visit](#) 554

[FT1 - Financial Transaction](#) 556

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[DG1 - Diagnosis](#) 560

This HL7-based interface supports the import of financial and billing information. It uses a subset of the complete HL7 message set and supports the Detailed Financial Transaction (DFT) message.

The DFT message is imported by MIK whenever information about a patient visit, diagnoses, and procedures are documented in an external application. If the information can be associated with a patient appointment or an already existing patient visit that is yet to be approved, then the information will be linked to that appointment or visit. If not, then a new visit will be created.

When a Centricity Practice Solution user opens a new or existing visit that has been associated, they'll be asked whether they want to retrieve the diagnosis and procedure information. If the user selects yes, then the information is loaded. If the user selects no, they can continue, but the visit cannot be approved until the information has been retrieved.

This specification describes how MIK uses message segments in the DFT message when importing data.



For an introduction to reading and interpreting Centricity Practice Solution interface specifications, see [“About MIK HL7 interface specifications”](#) on page 42.

DFT trigger event messages

MIK supports the P03 - Post Detailed Financial Transactions trigger event for importing messages. A *trigger event* is an event in a healthcare workflow that triggers the transfer of information, identified in HL7 by a unique 3-character code. Trigger event messages are described in detail in the following sections.

Msg	Event code	Trigger event
DFT	P03	Associates the information with an appointment or already existing billing in the system. If this information cannot be associated, then a new bill is created

DFT message segments

This section provides detailed specifications for the following HL7 message segments used in the DFT message:

For information about this segment...	See page...
MSH - Message Header	551
EVN - Event Type	552
PID - Patient Identification	553
PV1 - Patient Visit	554
FT1 - Financial Transaction	556
PR1 - Procedures	559
DR1 - Diagnoses	560

MSH - Message Header

The Message Header segment (MSH) should always be in the first segment in each HL7 message. MSH defines the intent, source, destination, and some specifics of the syntax of a message.

Legend

HD	Hierarchic designator	PT	Processing type
ID	Coded value	ST	Character string
TS	Time stamp		

SEQ	Element name	Value/notes	Data type	HL7 table
MSH-1	Field Separator	| (pipes)	ST	
MSH-2	Encoding Characters	^ ~ \ &	ST	
MSH-3	Sending Application	AHCApplicationName from the registry or MIK-ComputerName.	HD	
MSH-5	Receiving Application	Destination application name	HD	
MSH-7	Date/time of Message	Date/time the message was created	TS	
MSH-9	Message Type	DFT	ID	0076
	• Trigger Event	P03	ID	
MSH-10	Message Control ID	<ul style="list-style-type: none"> Unique GUID (default) Unique integer that represents the sent instance of this message 	ST	
MSH-11	Processing ID		PT	0103
	• Processing ID	P	ID	
MSH-12	Version ID	2.3	ID	0104
MSH-16	Application Ack Type	AL or NE depending on whether ACK are requested from this destination	ID	0155

EVN - Event Type

The Event Type segment (EVN) defines the trigger event for the message.

Legend

IS Coded value for
user-defined tables

TS Time stamp

SEQ	Element Name	Value/notes	Data type	HL7 table
EVN-1	Event Type Code	Trigger event code, such as P03	TS	0003
EVN-2	Recorded Date/Time	Date and time the message was created by MIK	TS	
EVN-3	Event Reason Code	01	IS	

PID - Patient Identification

The PID Patient Identification segment contains demographic information about the patient such as name, ID codes, address, phone numbers, and so on. In the DFT message only the patient ID is used to identify the patient.

In Centricity Practice Solution, PID refers to the unique, system-generated identification number that the application assigns to a patient when a new chart is created.

Legend

CX	Extended composite ID with check digit	SI	Sequence ID
ST	String data		

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
PID-1	Set ID - Patient ID	1		SI	
PID-2	Patient ID (External)			CX	
	<ul style="list-style-type: none"> ID 	Patient ID for this patient	<ul style="list-style-type: none"> <i>ExternalPatientId (PatientId)</i> <i>ExternalPatientId (PatientProfileId)</i> 	ST	
PID-3	Patient ID (Internal)			CX	
	<ul style="list-style-type: none"> 	Internal ID for this patient	<ul style="list-style-type: none"> <i>InternalPatientId (PatientId)</i> <i>InternalPatientId (PatientProfileId)</i> 	ST	

PV1 - Patient Visit

The Patient Visit segment (PV1) is used by Centricity Practice Solution Registration module and ADT (Admission, Discharge, and Transfer) applications to communicate information about a specific visit. It can contain information on multiple-visit records of the same patient account or single-visit records of more than one patient account. The use of this segment is determined by individual locations of care.

Legend			
ID	Coded value for HL7-defined tables	SI	Sequence ID
IS	Coded value for user-defined tables	CX	Extended composite ID with check digit
NM	Numeric	XPN	Extended person name
TS	Time stamp	XAD	Extended address
XTN	Extended telecomm number	ST	String data

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
PV1-1	Set ID - PV1	1		SI	
PV1-2	Patient Class			IS	0004
PV1-3	<ul style="list-style-type: none"> Assigned Patient Location Facility Namespace ID 	0		PL	
				HD	
		Facility ID for this appointment	<i>Facility</i>	IS	
PV1-7	Attending Doctor	Repeating field; MIK uses only the first repeating element.		XCN	0010
	<ul style="list-style-type: none"> ID Number Family Name Given Name Middle Name Suffix Prefix Assigning Authority Universal ID 	<ul style="list-style-type: none"> ID of patient's default doctor Last name of patient's default doctor First name of patient's default doctor Middle initial or name of patient's default doctor Suffix of patient's default doctor Prefix of patient's default doctor UPIN of patient's default doctor 	<ul style="list-style-type: none"> <i>Doctor</i> 	<ul style="list-style-type: none"> ST ST ST ST ST ST HD ST 	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
	• Universal ID Type	UPIN		ID	
PV1-8	Referring Doctor	Repeating field; MIK uses only the first repeating element.			0010
	• ID Number	ID of patient's default referring provider	<i>ReferringDoctorId</i>	XCN	
	• Family Name	Last name of patient's default referring provider		ST	
	• Given Name	First name of patient's default referring provider		ST	
	• Middle Name	Middle initial or name of patient's default referring provider		ST	
	• Suffix	Suffix of patient's default referring provider		ST	
	• Prefix	Prefix of patient's default referring provider		ST	
	• Assigning Authority			HD	
	• Universal ID	UPIN of the default referring provider for the patient		ST	
	• Universal ID Type	UPIN		ID	
PV1-19	Visit Number				CX
	• ID	Visit ID	<i>VisitNumber</i>	ST	
PV-44	Admit Date/Time	The date/time of the service for this visit.		TS	
PV1-50	Alternate Visit ID				CX 0192
	• ID	ID of the subappointment (<i>ApptResourceId</i>)	<i>AlternateVisitID</i>	ST	

FT1 - Financial Transaction

The Financial Transaction segment contains the detailed information required to post charges, payments, adjustments, and other financial data to patient accounting records.

Legend			
NM	Numeric	MO	Moderate (treated as Unknown)
CP	Composite price	TS	Time stamp
IS	Coded value for user-defined tables	CE	Coded element
XCN	Extended composite ID number and name	PL	Person location
HD	Hierarchic designator	SI	Sequence ID
ID	Coded value for HL7-defined tables	ST	String data
CE	Coded element		

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
FT1-2	Transaction ID	Unique ID for the procedure associated with this transaction When present, only one procedure repeat of the Financial Transaction Group should be sent.		ST	
FT1-4	Transaction Date	Date of service for the transaction		TS	
FT1-5	Transaction Posting Date	Date of entry for the transaction		TS	
FT1-6	Transaction Type	CG		IS	0017
FT1-10	Transaction Quantity	Units for this procedure		NM	
FT1-11	Transaction Amount Extended			CP	
	• Price			MO	
	• Quantity	Total fee to charge for this procedure, independent of transaction quantity		NM	
FT1-12	Transaction Amount Unit			CP	
	• Price			MO	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
	• Quantity	Fee for this procedure for each transaction quantity		NM	
FT1-16	Assigned Patient Location			PL	0079
	• Facility			HD	
	• Namespace ID	Facility ID for this visit This field is only used if the PV1 segment is not present.	<i>Facility</i>	IS	
FT1-19	Diagnosis Code	Repeating field. Lists diagnosis codes associated with the procedure. MIK can accept up to 12 unique diagnosis codes for procedures associated with this message. Diagnosis codes are sent with the primary diagnosis code first; alternate codes for the same diagnosis are accepted. Code template <code value > ^ <optional description> ^ <coding system name ><alternate code ><optional alternate description><alternate coding system name> Recognized code systems I10 ICD-10 I9 ICD-9 I9C ICD-9CM I9CDX CD-9CM Diagnosis codes SCT SNOMED-CT (Clinical Terms) SNM SNOMED MIK processes an ICD-10 or ICD-9 code in the first or second triplet, but ignores SNOMED codes wherever sent, because they are not used for billing. If only a SNOMED code is sent and there are no other FT1 segments in the message, MIK ignores the message. Note. If a coding system name or a code ID is not recognized, the message is not rejected but errors are noted on the Visit Note tab. Unrecognized and duplicate codes are noted and should be corrected manually. If MIK cannot determine the code type, unrecognized or invalid codes are stored as ICD-9 ??? in the database. For a detailed HL7 example, see “Example with actual values” on page 418.		CE	0051

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
	• Identifier	ICD-9 or ICD-10 diagnosis code		ST	
FT1-21	Ordered by Code			XCN	
	• ID Number	Doctor ID for the visit. This field is only used if the PV1 segment is not present.	Doctor	ST	
	• Family Name	Doctor's last name for the visit. This field is only used if the PV1 segment is not present.		ST	
	• Given Name	Doctor's first name for the visit. This field is only used if the PV1 segment is not present.		ST	
	• Middle Name	Doctor's middle initial or name for the visit. This field is only used if the PV1 segment is not present.		ST	
	• Suffix	Doctor's suffix for the visit. This field is only used if the PV1 segment is not present.		ST	
	• Prefix	Doctor's prefix for the visit. This field is only used if the PV1 segment is not present.		ST	
	• Assigning Authority			HD	
	• Universal ID	UPIN of the doctor for the visit. This field is only used if the PV1 segment is not present.		ST	
	• Universal ID Type	UPIN		ID	
FT1-22	Unit Cost			CP	
	• Price			MO	
	• Quantity	Cost of this procedure for each transaction quantity		NM	
FT1-25	Procedure Code			CE	0088
	• Identifier	Procedure code for this charge		ST	

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
FT1-26	Procedure Code Modifier[]	List of modifiers associated with this procedure. MIK can accept up to four modifier codes for each procedure.		CE	0340
	Identifier	Modifier code		ST	

PR1 - Procedures

The Procedures segment contains information about procedures that can be performed on a patient. This segment can contain information on procedures such as surgical, nuclear medicine, X-ray with contrast, and so on.

Legend

CE Coded element **ST** String data
TS Time stamp

SEQ	Element name	Value/notes	Mapping	Data type	HL7 table
PR1-3	Procedure Code			CE	
	• Identifier	Procedure code for this procedure		ST	0088
PR1-5	Procedure Date/Time	Date of Service for this procedure		TS	
PR1-15	Associated Diagnosis Code			CE	
	• Identifier	Primary diagnosis code for this procedure. If this field is left empty, then all diagnosis codes (up to 4) that are passed in this DFT P03 message will be associated with this procedure.		ST	

DG1 - Diagnosis

The DG1 Diagnosis segment contains patient diagnosis information of various types, for example, admitting, primary, and so on. The DG1 segment is used to send multiple diagnoses (for example, for medical records encoding). It is also used when the FT1-19-diagnosis does not provide sufficient information for a billing system.

Legend

CE Coded element **ST** String data
TS Time stamp

SEQ	Element name	Value/notes	Data type	HL7 table
DG1-3	Diagnosis Code	<p>Contains one diagnosis code. Where there are multiple diagnoses, each is included in a separate DG1 segment.</p> <p>Code template</p> <p><i><code value > ^ <optional description> ^ <optional coding system name ><optional alternate code ><optional alternate description><optional alternate coding system name></i></p> <p>Example:</p> <p>DG1|1||E61.1^IronDefi^I10^280.0^Iron Defi ^I9|</p> <p>DG1|2||E78.0^Pure Hyper^I10^272.1^Pure hyper^I9|</p>	CE	0053
	<ul style="list-style-type: none"> Identifier 	<p>Diagnosis code for this visit.</p> <p>The diagnosis codes are associated with the visit in the order they are listed.</p>	ST	0088

Control/Query Import/Export

[ACK trigger event messages](#) 561

[ACK message structure](#) 562

[MSH - Message Header](#) 562

[MSA - Message Acknowledgement](#) 563

This HL7-based interface supports the import and export of acknowledgements. It uses a subset of the complete HL7 message set and supports the General Acknowledgment (ACK) message. The ACK Message contains a general acknowledgement for a message that is sent or received by MIK.

This specification describes how MIK uses message segments in the ACK message when importing and exporting data.



For an introduction to reading and interpreting Centricity Practice Solution interface specifications, see [“About MIK HL7 interface specifications”](#) on page 42.

ACK trigger event messages

The ACK message is triggered when the application does not define a special application-level acknowledgment message or when there has been an error that precludes application processing. It is also used for accept level acknowledgements.

- MIK processes messages it receives fully and sends an ACK only if requested by the sending application.
 - MIK expects to receive an ACK only if the message it sent requests.
 - If the Acknowledgement Type of the received ACK is AA, then the message is deleted from MIK's queue.
 - If the Acknowledgement Type is AE, then the Text Message value is written to MIK's queue but the message is not resent.
 - If no ACK is received then MIK will try to resend the message based on its configuration.
-

ACK message structure

The ACK message uses these message segments:

MSG Header - see [page 562](#)

Event Type - see [page 563](#)

MSH - Message Header

The Message Header segment (MSH) should always be in the first segment in each HL7 message. MSH defines the intent, source, destination, and some specifics of the syntax of a message.

Legend

HD	Hierarchic designator	PT	Processing type
ID	Coded value	ST	Character string
TS	Time stamp		

SEQ	Element name	Value/notes	Data Type	HL7 Table
MSH-1	Field Separator	'|' (pipes)	ST	
MSH-2	Encoding Characters	' ^ ~ \ &	ST	
MSH-3	Sending Application	AHCApplicationName from the registry or MIK-ComputerName.	HD	
MSH-5	Receiving Application	Destination application name	HD	
MSH-7	Date/Time of Message	Date/time the message was created	TS	
MSH-9	Message Type	ACK	ID	
	• Trigger Event	trigger event code	ID	
MSH-10	Message Control ID	Either unique GUID or unique integer that represents the sent instance of this message A GUID is sent by default.	ST	
MSH-11	Processing ID		PT	
	• Processing ID	P	ID	
MSH-12	Version ID	2.3	ID	0104
MSH-16	Application Ack Type	AL or NE depending on whether ACK is requested from this destination	ID	0155

MSA - Message Acknowledgement

The Message Acknowledgement segment contains the information that is sent while acknowledging another message.

Legend

ST String data

ID Coded value for
HL7-defined tables

SEQ	Element name	Value/notes	Data Type	HL7 Table
MSA-1	Acknowledgment Code	AA - successful AE - an error occurred AR - rejected	ID	0008
MSA-2	Message Control ID	Unique GUID that represents the instance of this message	ID	
MSA-3	Text Message	A string describing the reason for the error or reject. Empty if the Acknowledgment code is AA (message successful)	ST	

Appendices: Interface planning and implementation resources

This section includes a variety of useful resources for planning, setting up, and managing interfaces with Centricity Practice Solution, including:

- guide to socket implementation
 - guide to document overlay
 - HL7 NotesLink Macro for Microsoft Word (used by transcriptionists)
 - LinkLogic Activity Log notes, warnings, and error messages
 - Standard .IXP files included in the application
-

HL7 NotesLink Macro for Microsoft Word

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You can import transcribed notes from a remote transcriptionist to a patient's chart via LinkLogic. The HL7 NotesLink Macro generates fields in Microsoft® Word that the transcriptionist can use to enter patient data and other identifying information. When the document is saved, the macro generates an HL7 NotesLink file. The HL7 file can be imported into Centricity Practice Solution using LinkLogic's NotesLink interface (Documents Import relationship).

The following instructions are for individuals helping a clinic set up the HL7 NotesLink Macro for their transcriptionists and for transcriptionists who want to customize the macro after the initial setup is complete.

The macro is located in the Centricity Practice Solution program directory in the **client\llogic\macros\HL7** folder.



The macro is also available from Centricity Services or your Value-Added Reseller.

What you should know

If you are setting up the macros for the first time, you need to know what information is required for the NotesLink interface to Centricity Practice Solution. This includes

- Information in the HL7 NotesLink data file
- HL7 fields that hold the information

You should also be familiar with editing and saving .ini text files.

Compatibility

This macro works with Microsoft Word 97 and later versions. It does not work with Microsoft Word 6 or 7 versions included in Microsoft Office 95.

The macro creates NotesLink files compatible with all supported versions of Centricity Practice Solution and the LinkLogic NotesLink HL7 interface specification. For a detailed description of the interface, see [“NotesLink Import/Export HL7 interface specification” on page 341](#).

Compatibility with Microsoft Word 2007

Because RTF specifications changed significantly in Microsoft Word 2007, the HL7 file created by the NotesLink macro causes LinkLogic errors when the “Save Text Formatting” option selected. If Word 2007 is installed on the workstation, this option is disabled on the NotesLink Macro Export NotesLink File window.

Compatibility with Microsoft Windows Vista operating system

Users who use NotesLink macro to create and save HL7 files must have Administrative rights on the workstation if it is running the Vista operating system.

Install the macro

All the files you need are located in the Centricity Practice Solution client program directory in the **client\llogic\macros\HL7** folder:

This folder contains three files:

- **notelink.ini** contains all the default values used in the macro.
- **nlinkhl7.dot** is the document template that contains the Microsoft Word macro.
- **infohl7.pdf** contains the information in this chapter.

Install the macro

- 1 Copy **notelink.ini** to your Windows directory.
Typically, this directory is on your C drive (C:\Windows or C:\WINNT).
- 2 Locate your Microsoft Word Templates directory.
Typically, this directory is C:\Program Files\Office\Templates. If you're not sure where this directory is located, do this:
 - a Start Microsoft Word.
 - b From the Tools menu, select **Options**.
 - c In the Options window, click the **File Locations** tab.
 - d In the list of file locations, look for **User Templates**.

- 3 Copy **nlinkhl7.dot** to your Microsoft Word templates directory.

Customize the macro

The **notelink.ini** file contains values used by the macro to create the HL7 data file:

- **Values used in each HL7 file created**

For example, information identifying the sender is usually the same in every HL7 file created by the transcriptionist.

Some values, like the patient's sex, can be seeded with a default value in the notelink.ini file and changed when filling in the macro's fields.

- **Placeholders for the fields that store information in the HL7 file**

For example, the patient's ID is different for every document, but the information is always stored in the same field in the HL7 file.

- **True or False values that indicate required macro fields**

You may want to change some of these values and options to make your work easier and more efficient.



Work with your LinkLogic Manager to decide which fields should change and who should change them. Before you change notelink.ini, store the original file in a safe place.

Edit the notelink.ini file

Notelink.ini is a text file. Use Notepad or another text editor to change the file. Here are a few tips to keep in mind as you edit the file:

- **Do not add extra spaces between words or characters.**
- **Do not add extra spaces at the end of a line.**
- **Do not remove items you do not need.**

The following sections describe each section in the notelink.ini file.

Column explanations

Value column

An empty column indicates that there is no value in the notelink.ini file. If there are multiple entries in the column, the first entry is the default value in the file.

Explanation column

If the notelink.ini value changes which field is used in the HL7 file or if the value is included in the HL7 file, this column includes the corresponding HL7 data field.

For information on which HL7 data fields the macro fields enter information into, see [“Macro field reference” on page 576](#).

Header record values

These items are used in creating the message header (MSH) record of the HL7 file. The LinkLogic Manager or the person who set up the NotesLink interface to Centricity Practice Solution should provide this information to the transcriptionist

This field....	Has this value...	Refers to this....
DefaultSenderID	NotesImport	The name of the LinkLogic document import relationship. This value corresponds to MSH-3 and MSH-4 in the HL7 data file.
DefaultIDMatch	ACCOUNT EID	The ID used to identify a patient. Use <i>ACCOUNT</i> to match the account and subaccount values to the Centricity Practice Solution patient ID. This corresponds to PID-3 in the HL7 data file. Use <i>EID</i> to match the external ID from another system, such as a practice management system. This corresponds to PID-2 in the HL7 data file. The provider dictates this information for each patient. Note. When you change the value to <i>EID</i> , in the Patient ID Record window, <i>Account Number</i> changes to <i>External ID</i> and the <i>Sub Account Number</i> is disabled.

Patient ID record values

These items are used in creating the Patient ID (PID) record of the HL7 file. They correspond to the fields in the Patient ID Record window.

This field....	Has this value...	And means this....
RequireFirstName	F T	Indicates whether the patient's first name is optional or required in the macro's Add a Patient window.
RequireSSN	F T	Indicates whether the patient's Social Security number is optional or required in the macro's Add a Patient window.
RequireBirthDate	F T	Indicates whether the patient's birth date is optional or required in the macro's Add a Patient window.
RequireAccountN	F T	Indicates whether the patient's account number is optional or required in the macro's Add a Patient window.
RequireSubAccountN	F T	Indicates whether the patient's subaccount number is optional or required in the macro's Add a Patient window.
IDefaultSubAccountN		If there is a common subaccount number, enter it here. Otherwise, leave the value blank. The subaccount number is used in component 2 of PID-3 in the data file.
DefaultCareLocation		If there is a frequently used location of care, enter it here. Otherwise leave the value blank. The value is limited to eight characters and should match the location of care values in Centricity Practice Solution. This value corresponds to PV1-3 in the HL7 data file.
DefaultSex	U F M	Enter the most commonly used value for the sex field, if any. This value corresponds to PID-8 in the HL7 data file.

Note record values

These items are used in creating the Patient Visit (PV1) and records of the Transcription Document Header (TXA) HL7 file. They correspond to the fields in the Note Information window.

This field....	Has this value...	And means this....
DefaultAttnName	HWINSTON	Enter a name or user ID for the attending physician. This value corresponds to PV1-7 in the HL7 data file.
DefaultProvName	HWINSTON	Enter a name or user ID for the provider value corresponding to TXA-5 in the HL7 data file.
DefaultOrgnName		Enter a name or user ID if you often enter the same originator. This value corresponds to TXA-9 in the HL7 data file.
DefaultAuthName		Enter a name or user ID if you often enter the same authenticator. This value corresponds to TXA-10 and TXA-22 in the HL7 data file. The macro also puts AU in TXA-17.
DefaultCCNames		Enter a list of names or user IDs, separated by commas, for Centricity Practice Solution users to receive copies of the transcribed note. This value corresponds to TXA-23 in the HL7 data file.
DefaultTranName		Enter the transcriptionist's name or user ID. This value corresponds to TXA-11 in the HL7 data file.
DefaultNoteTypeHL7	TN Any valid type	Indicates the document type. For a complete list of document types, see "NotesLink Import/Export HL7 interface specification" on page 341 . This value corresponds to TXA-2 in the HL7 data file.
DefaultUrgent	F T	Indicates whether the document's status is Normal or Urgent in the macro's Add a Patient field. This value corresponds to OBX-8 in the HL7 data file.

NotesLink file values

These items indicate where and how you want to save files.

This field...	Has this value...	Means this...
DefaultNotesLinkPath	C:\Program Files\ <i><Centricity Practice Solution 9x\client\llogic\data\in\</i>	The location for the HL7 file (*.ht). Note. This is the default location.
DefaultWordFilePath	C:\	The location for the Microsoft Word file (*.doc).
SaveTextFormatting	F T	Indicate whether to discard or save any text formatting, such as italics or bold text.
ExportFileNameRoot		If there is a commonly used filename, enter it here. Otherwise leave the value blank. For more information, see "Name your files" on page 573 .

Using the macro

This section describes how to start and save a transcription report using the HL7 Microsoft Word macro.

Name your files

The macro creates a Microsoft Word document and an HL7 data file for each transcription report. You cannot use the macro to combine multiple transcription reports into a single HL7 file. As a result, you should consider developing a naming convention to create unique and identifiable filenames.

Use *ExportFileNameRoot* in the notelink.ini file to prepopulate the filename in the Save Export NotesLink File window.

If you leave *ExportFileNameRoot* blank in notelink.ini, the macro suggests a filename when you close the transcription report. The suggested name is the transcriptionist's name or user ID, patient last name, document number, dictation number.

There are many combinations of transcriptionist's name, provider name, patient name, and date that you can use to create unique and identifiable filenames.

Start a transcription report

Start a transcription report

- 1 From Microsoft Word's File menu, select **New**.
- 2 In the New window, select **nlinkhl7.dot** and click **OK**.

You see the **Patient ID Record** window.



If you use the New document toolbar button and attach the nlinkhl7.dot template, then the Patient ID Record window may not automatically open. Press **Alt+Insert** to open the Patient ID Record window.

- 1 Complete the **Patient ID Record** fields, then click **Next**.
Use **Tab** to move between fields in the dialog box. Press **Return** to save your entries and close the window.
- 2 Complete the **Note Information** window fields, then click **Finish**.
The dialog box closes. You're now in an empty Microsoft Word document.
- 3 Type the transcription report, or press **Alt+Del** to insert an existing document at the cursor's position.

Save your work

The HL7 macro saves both a Microsoft Word version and an HL7 formatted data file when you close the Microsoft Word file.

Save your work

- 1 From the File menu, select **Close**, or click the close button in the upper-right corner.
- 2 In the **Export NotesLink File** window, enter a filename.
If you use text formatting such as italics that you want to appear in the note in the application, check **Save Text Formatting**.



If your Word file is created in Microsoft Word 2007, this feature is disabled to prevent errors in your HL7 file caused by incompatible RTF tags.

- 3 To save your work, do one of the following
 - To transcribe another note, click **Save & Continue**.
 - To save your work and quit Microsoft Word, click **Save**.
- 4 To cancel the HL7 data file, click **Cancel**.

- 5 When Microsoft Word asks if you want to save the changes to the document, do one of the following:
 - To save the Microsoft Word document, click **Yes**.
 - To discard the Microsoft Word document, click **No**.
 - To return to Microsoft Word and continue editing the transcription report, click **Cancel**.

Edit a transcription report

You can open the saved document file and edit it, if necessary. The macro creates a new HL7 data file and saves a new version of the Word document.

Edit the transcription report

- 1 Open a Microsoft Word document created using the macro.
- 2 Edit the report, if necessary.
- 3 To change patient information, press **Alt+Insert** to open the **Patient ID Record** window.
- 4 From the File menu, select **Close**, or click the close button in the upper-right corner.
- 5 In the **Export NotesLink File** window, enter a new filename.
You can't save the file again using the same filename. You must change it in some slight way.
- 6 If you use text formatting such as italics that you want to appear in the note in Centricity Practice Solution, check **Save Text Formatting**.

!!! If your Word file is created in Microsoft Word 2007, this feature is disabled to prevent errors in your HL7 file caused by incompatible RTF tags.

- 1 To save your work, do one of the following
 - To transcribe another note, click **Save & Continue**.
 - To save your work and quit Microsoft Word, click **Save**.

Macro field reference

This section maps each field in the macro's windows to the HL7 data file.



For more information about the NotesLink interface, see [“NotesLink Import/Export HL7 interface specification” on page 341.](#)

Patient ID Record window

This window field....	Maps to this HL7 data file record...
Last name	PID-5, component 1
First name	PID-5, component 2
Social Security number	PID-19
Birthdate	PID-7
Sex	PID-8
Account number or External ID	PID-3 or PID-2
Sub account number	PID-3, component 2
Medical record number	PID-4
Location of care	PID-3

Note Information window

This window field....	Maps to this HL7 data file record...
Patient encounter date	TXA-4
Attending doctor	PV1-7
Primary activity provider	TXA-5
Originator	TXA-9
Authenticator	TXA-10 or TXA-22 When TXA-22 has a value, the macro puts AU in TXA-17.
CC	TXA-23
Note type	TXA-2
Urgent	OBX-8
Dictation number	TXA-15 or OBX-4
Unique document number	TXA-12
Order number	TXA-14

Using document overlay

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This guide describes how documents imported to charts such as lab results and transcriptions are replaced by subsequent updated versions using Document Overlay.

About document overlay

It is common to receive a lab report or transcription document with preliminary results. Later, an updated version with the final results arrives. Occasionally, you may receive a corrected report.

In Centricity Practice Solution, you can overlay (or replace) an imported document with another imported version of the same document. This is particularly useful when multiple versions of the same lab results or transcription document are imported via Data Transfer Station:

- **Preliminary document:** usually the first version received with the expectation that updated versions will be received. A preliminary document appears on the Documents tab with a (P) in the Summary column.
- **Final document:** the definitive version of a document.
- **Corrected document:** contains adjustments or updates to the preliminary or final versions, correcting errors or adding more detail.

If document overlay is set up, only the most recent information displays on the provider's desktop and in the chart. Final results replace preliminary results; which are then replaced by corrected results, eliminating multiple documents. When the provider signs the lab report, only the most recent result appears in the flowsheet.

If document overlay is NOT set up, each report appears as a unique document in the chart and on the provider's desktop. Successful overlaying

(replacement) of documents requires that Centricity Practice Solution can unambiguously identify the original document.

This feature is available for imported documents using the HL7 data format and for laboratory results reports using the HL7 and ASTM data formats.



You should be familiar with the data format you are using. For more information, see the LabLink HL7 interface on [page 253](#), LabLink ASTM interface on [page 225](#), and NotesLink HL7 interface on [page 341](#).

An overlay document must be replaced within 30 days

An imported preliminary document from an order provider or lab cannot be replaced by a subsequent overlay document after 30 days. The Clean_Printing_Temps job process clears out tracking information in the DOCOVERLAY table for documents that are more than 30 days old. Once the SDID of the preliminary document has been removed, the document cannot be matched and replaced. An overlay document that cannot be matched is imported as a new, separate document, which tends to clutter up the chart.

If providers at your clinic routinely create orders for tests or services that take longer than 30 days to return results, contact Centricity Services or your Value-Added Reseller for assistance in customizing your Clean_PrintingTemp job to extend the cleanup process beyond 30 days.

Requirements for document overlay

When all of the following conditions are met, the LinkLogic DTS can import a document and overlay an older version. If LinkLogic can't match the document to an existing document, it is imported as a new document.

- Data files for documents can be imported automatically (by the DTS) or manually (in the LinkLogic module) and matched with an existing patient in the database.
- The document overlay option is enabled in Centricity Practice Solution. See ["Set up document overlay" on page 581](#).
- Documents have not been edited or appended after they were imported.
- Key data fields in the new import file match the data in the original document. See the following sections for details.
- To replace documents successfully, key data fields must match between old and new versions of the import messages:
 - For lab result overlay, Filler Order Number (OBR-3), Universal Service ID (OBR-4), and Observation Date/Time (OBR-7) must match, or Specimen Date/Time (OBR-14) if OBR-7 is empty.
 - For transcription overlay, Unique Document Number (TXA-12) and Activity Date/Time (TXA-4) must match.

Although these fields are normally optional, they are required for LinkLogic to correctly match documents.

The following sections identify the fields in the import data file that must match in order for a new document to replace a previously imported document.

Match criteria for HL7 lab results files

There can be many tests in a lab document. For a successful replacement, the individual lab tests within the new and the original documents must match.

The new document can include additional tests as long as it also includes the same tests as the original document it is replacing.

A preliminary lab report can be overlaid and cannot cause an order to be auto-completed upon signing.

OBR segment

Each test has an OBR segment that is uniquely identified by these three data fields:

- **Filler Order Number (OBR-3)**
- **Universal Service ID (OBR-4)**
- **Observation Date/Time (OBR-7) or Specimen Received Date/Time (OBR-14)** if OBR-7 is empty.
- **Result Status (OBR-25) value of F | C | X** (Final, Correction, or Deleted)

OBX segment

- **Observation Identifier (OBX-3) matches original document**

The new document can include additional observation codes as long as it also includes the same codes as the original document it is replacing. The values for the codes, or the results, can be different.

For an example, see [“Incrementally importing test results” on page 593](#).

- **Date/Time of the Observation (OBX-14)**

If provided, OBX-14 must be the same in each subsequent version of the document.

For additional information about these requirements, see [“LabLink Import/Export HL7 interface specification” on page 253](#).

Match criteria for ASTM lab result files

OBR segment

Each test has an OBR segment that is uniquely identified by these three data fields:

- **Producer Accession ID (OBR-4)**
- **Observation Battery ID (OBR-5)**

- **Collection/Observation Date/Time (OBR-8) or OBR-15, Specimen Received Date/Time** if OBR-8 is empty.
- **Order Results Status Code (OBR-26) with value of F | C | X | D** (Final, Correction, Cancelled, or Deleted)

OBX segment

- **Observation Identifier (OBX-4) matches original document**

The new document can include additional observation codes as long as it also includes the same codes as the original document it is replacing. The values for the codes, or the results, can be different.

For an example, see [“Incrementally importing test results” on page 593](#).

- **Physiological Date/Time of Observation (OBX-15)**

If provided, OBX-15 must be the same in each subsequent version of the document.

For additional information about these requirements, see [“LabLink Import ASTM interface specification” on page 225](#).

Match criteria for HL7 document files

For a successful replacement, these fields must match in HL7 documents:

- **Unique Document Number (TXA-12)**
- **Activity Date/Time (TXA-4)**

Although these fields are normally optional, they are required for Centricity Practice Solution to correctly match documents.

NotesLink macros and document overlay

In the NotesLink macro for Microsoft® Word, the following fields in the Note Information window correspond to the required HL7 overlay fields:

- **Unique Document Number field – TXA-12 (Unique Document Number)**
- **Patient Encounter Date field – TXA -4 (Activity Date/Time)**

Import signed transcriptions

- 1 Start Microsoft Word and the NotesLink macro.
- 2 In the **Note Information** window, for **Authenticator**, enter the **provider’s name**.

When the macro creates the HL7 data file, it puts the Authenticator’s name in TXA-22, Authentication Person, and includes the value AU (authenticated, or complete and signed) in TXA-17, Document Completion Status.

If you leave Authenticator blank in the Note Information window, the macro leaves TXA-22 blank and puts the value DO (documented, or complete and unsigned) in TXA-17.

Don't use dictation placeholders with document overlay

When you import and sign the first transcription, the transcription merges into the document, replacing the dictation placeholder. Subsequent transcriptions with that placeholder ID cannot find it in the document. When you sign a subsequent transcription, the application appends it to the end of the document.

For more information about the HL7 data file, see [“NotesLink Import/Export HL7 interface specification” on page 341](#).

Set up document overlay

To enable document overlay do the following:

- 1 Go to **Administration** and select **System > LinkLogic > Task Options > Import Tasks**.
- 2 In the **Documents** or **Lab Results** folder, select the relevant relationship.
- 3 Check **Enable Document Overlay**.

To disable document overlay, simply uncheck the option.

For detailed instructions on configuring LinkLogic relationships, press F1 on the Task options or look in the Help menu under setting up LinkLogic for **Set up LinkLogic task options**.


Working with replaced documents


Replaced (overlaid) documents are not removed from the database. Centricity Practice Solution assigns these documents the Replaced document type and excludes them from default document views.


!!! Documents with the Replaced document type are not exported.

Viewing replaced documents

Documents participating in document overlay are indicated with the following icons in the Chart module on the Desktop > Documents tab or Chart > Documents tab:

 A document that has overlaid one or more replaced documents

 A single document (not appended to). If a final or corrected document has not yet been imported, this may indicate a preliminary document. In an overlay chain, this indicates a replaced (overlaid) document.

 An overlay document that has been appended to.
This appears only if someone has appended to the most recent document in an overlay chain after older versions of the document are replaced (by import of the last document in the overlay chain).

View replaced documents in a documents list

Replaced documents in an overlay chain only appear in a documents list if the Replaced document type is set to display. On the Chart Documents tab click **Organize**, and in **View Name**, select **Replaced**. This view shows only documents that have the Replaced document type in the document list.

View replaced documents in the View Contributors list

You can also see the document replaced by a current document when you view a document's contributors. When you look at a replaced document, you'll see which document replaced it. To view contributors, from the Chart Documents tab, right-click the document and select **View Contributors List**.

View replaced documents from flowsheets

You can view related documents by double-clicking a flowsheet cell. If the observation is part of a document overlay, Centricity Practice Solution displays all documents in the overlay chain in the **Related Documents** grid. You can also select any document in the chain to review its details.

View replaced documents in the Full Document Viewer

Document groups (including those that comprise a document overlay chain) appear in the **Full Document Viewer** as composite documents in a single view with a document navigation pane. Documents are separated in the viewer by double lines

=====DOCUMENT BREAK=====

Appended documents are separated by signature line.

Replacing the correct document version

There is always a possibility that an older version of a document is imported after a newer version. An older version doesn't replace a more current version, but it is associated with the current document. LinkLogic imports such documents with the Replaced document type. For more information about the Replaced type, see ["Working with replaced documents" on page 581](#).

LinkLogic uses the document status indicated in the import data file, to determine whether the document being imported is newer or older than the current version of the document.

If document overlay is enabled and an imported document doesn't have the required fields for overlay to occur, LinkLogic issues a warning message that it could not match the imported document with an existing document. The warning message indicates that not all of the required fields had data. The document is imported as a new document.

Determining document status

The following sections specify the fields in the import data file that LinkLogic uses to determine the document's status.

HL7 and ASTM lab result files

HL7 lab results document status is determined by the most preliminary value in OBR-25 (Result Status) for all OBR segments.

ASTM lab results document status is determined by the most preliminary value in OBR-26 (Order Results Status Code) for all OBR segments.

Three values are accepted and recognized as meaningful for OBR-25 and OBR-26:

- **P - preliminary**
- **F - final**
- **C - corrected**



A document is considered Preliminary, and (P) will appear on the Document tab's Summary column when OBR-25 is F (Final), C (Corrected), or X (results cannot be obtained for the observation).

Replacement hierarchy. The following hierarchy for replacing lab results ensures that only the most recent data replaces an existing document.

- **Preliminary (P) status** document replaces only a document with a preliminary (P) status.
- **Final (F) status** document replaces a document with a final (F) status or a preliminary (P) status.
- **Corrected (C) status** document replaces a document with ANY status.

Determining final status. If a document contains many tests, and therefore many OBR segments, LinkLogic looks at each OBR-25 (Result Status) value and uses the most preliminary status.

For example, a provider orders a cholesterol test, a blood test, and a thyroid test. If the lab result document shows the cholesterol and blood tests as final, but the thyroid test as preliminary, Centricity Practice Solution considers the document preliminary. Document status is considered final ONLY when every test (OBR segment) is final.

HL7 document files

The HL7 document status is determined by the value in TXA-17 (Document Completion Status).

Three values are accepted for TXA-17:


- **IP - preliminary**
- **DO - documented, or complete and unsigned**
- **AU - authenticated, or complete and signed**


Replacement hierarchy. The following hierarchy for replacing imported documents ensures that only the most recent data replaces an existing document.


- **Preliminary (IP) status** document replaces only a document with a preliminary (IP) status.
- **Documented (DO) status** document replaces a document with a (DO) status or a preliminary (IP) status.
- **Authenticated (AU) status** document replaces a document with ANY status.


Replacing appended documents is not permitted

When a document is appended to or changed in any way, LinkLogic cannot replace it. Subsequent versions of the document are imported as new documents. This applies to overlay of both lab results and transcriptions.

 A single document (not appended to). If a final or corrected document has not yet been imported, this may indicate a preliminary document. In an overlay chain, this indicates a replaced (overlaid) document. Replaced documents in an overlay chain will only appear if replaced documents are being displayed, see [“Viewing replaced documents” on page 581](#).

 A (master) document that has been appended to. If this document was originally imported by LinkLogic, it cannot be replaced.

 A document that has overlaid one or more replaced documents

 An overlay document that has been appended to. This appears only if someone has appended to the most recent document in an overlay chain after older versions of the document are replaced (by import of the last document in the overlay chain).

Signing replaced documents/lab results

You can sign a lab report when it arrives, even though you're waiting for more results. Signing or not signing a lab report does not affect document overlay. You can also sign a replaced document like any other document. Signing or not signing a document does not affect document overlay.

!!! Only signed observations appear in flowsheets. When an unsigned document replaces a signed one, the signed document's values continue to show in the flowsheet. The new values don't appear until the new document is signed.

Document overlay does not affect what you see in the flowsheet, so you can see preliminary results in the flowsheet after final results are imported. Changed values show a yellow plus sign.

Sample workflows

Workflows for replacing documents or lab reports are very similar. The most significant difference is that lab results also have clinical results that appear in the flowsheet. The following sample workflows use lab results because they are the more complex, but documents behave similarly.

Scenario 1: Importing unsigned lab results

Clinic requirements

Clinic A receives preliminary results on labs that are ordered. Later, the lab sends final results. Often, if more than one set of tests was ordered for a patient, the lab sends a preliminary report for each test, as the results become available. In this situation, the clinic receives multiple reports with preliminary, final, and sometimes corrected results.

Clinic A providers want to see only the latest lab results in the chart and on their desktop. In the flowsheet they want to see only reviewed results.

Setup

To support this workflow, document overlay is enabled and imported reports are not automatically signed. See [“Set up document overlay” on page 581](#).

The LinkLogic manager and the laboratory agree on the information that must be sent in the data file to support document overlay. The laboratory agrees to resend all the test results each time it sends an updated report, rather than just the latest results.

For detailed instructions on configuring relationships, press F1 on the Task options or look in the Help- menu under **Administration > System > LinkLogic > Set up LinkLogic task options**.

Workflow

Dr. Sarah Jones orders a blood test and a cholesterol test for Ian Brown. When Dr. Jones arrives the next morning, she sees a lab results report with the preliminary results of the cholesterol test on her Chart Desktop. She knows it's a preliminary result because in the document summary is a (P). She's too busy to review the document, and leaves her office.

Later Dr. Jones briefly looks at her Chart Desktop and responds to the urgent flags. She now opens the preliminary lab results report, reviews it, and then leaves to see patients. While she was seeing patients, another report arrived. This one shows the final cholesterol test results and preliminary blood test results.

At the end of the day, Dr. Jones reviews the flags and documents on her Chart Desktop. A final lab report for Ian Brown is in her Documents list. She reviews the results and signs the report. This removes the report from her desktop and shows the final test results in Ian Brown's flowsheet.

Summary

Dr. Jones saw each lab result report on her desktop. She was able to determine when to review and sign the reports. Because document overlay was enabled, there was never more than one report for the same set of lab results on her Desktop.

Without document overlay, she would have at least three reports to sign.

Scenario 2: Importing signed lab results

Clinic requirements

Like Clinic A, Clinic B receives preliminary results on labs that are ordered. Later, the lab sends final results. Often, when more than one set of tests is ordered for a patient, the lab sends a preliminary report for each test as the results become available. The clinic receives multiple reports with preliminary, final, and sometimes corrected results.

Providers want to see only the latest lab results in the chart and in the flowsheet. They want to review lab result reports only when the results are abnormal.

Setup

To support this workflow, document overlay is enabled, imported reports are automatically signed, and signed documents are only routed if the lab results are abnormal. See ["Set up document overlay" on page 581](#).

The LinkLogic manager and the laboratory agree on the information that must be sent in the data file to support document overlay. The laboratory agrees to resend all the test results each time it sends an updated report, rather than just the latest results.

For detailed instructions on configuring relationships, press F1 on the Task options or look in the Help- menu under **Administration > System > LinkLogic > Set up LinkLogic task options**.

Workflow

Dr. William Gregor orders a cholesterol and metabolic panel for Martha Clancy. When Dr. Gregor arrives the next morning, he reviews the new documents and flags on his Chart Desktop. He doesn't see any reports for Martha Clancy.

At noon, Dr. Gregor sees a flag indicating that Ms. Clancy called asking for her cholesterol results. John Stemons, his nurse, returned Ms. Clancy's call and told her the preliminary results were normal.

At the end of the day, Dr. Gregor sees that an urgent lab report for Martha Clancy is in his Documents list. He reviews the report and sees that her cholesterol results have been corrected. He goes to her flowsheet and examines the cholesterol values over the past few years. He's pleased to see that although the values are still high, they are decreasing. He customizes the clinic's lab results letter, advising Ms. Clancy of the final lab results.

Summary

Dr. Gregor did not see any lab result reports on his Chart Desktop until there was an abnormal result. His nurse, John Stemons, was able to answer Ms. Clancy's inquiry without Dr. Gregor's intervention.

If Dr. Gregor had viewed Replaced reports, he would have seen that there were two preliminary reports before the final report with the abnormal result. The preliminary reports had indicated the results were within normal ranges. The reports were automatically signed when imported and filed in the patient's chart.

Scenario 3: Routing and document overlay

Clinic requirements

At Clinic C, Dr. Robin Janoff orders a coagulation panel for Mary Yoshida. When Dr. Janoff reviews the preliminary results, she signs and routes the document to her nurse, Rita Kesler, with instructions to call and make an appointment for Ms. Yoshida. While Ms. Kesler has the document on her Chart Desktop, a final laboratory report is imported, overlaying the original document that Dr. Janoff routed.

Setup

Document overlay is enabled and lab results are imported as unsigned documents. The provider reviews and signs the document. The laboratory sends lab results as soon as they are available. As a result, Clinic C providers often see both preliminary and final result reports on their Chart Desktop.

Workflow

Ms. Yoshida's preliminary lab result report is imported into the application and Dr. Janoff sees it on her Desktop. She signs and routes the document to her nurse, Ms. Kesler. Because Dr. Janoff signed the document, it no longer is on her Chart Desktop. The document now appears on Ms. Kesler's Desktop as a signed document requiring action.

Ms. Yoshida's final lab result report is imported into the application. Dr. Janoff sees it on her Chart Desktop because lab reports are imported as unsigned documents at Clinic C. Ms. Kesler also sees the document on her Chart

Desktop. But now, instead of a signed document, she also has the most recent, unsigned document on her Desktop.

Dr. Janoff reviews and signs the final result report. The document is removed from her Chart Desktop. Ms. Kesler continues to see the document on her Chart Desktop, but now she sees the signed document.

Ms. Kesler calls Ms. Yoshida and schedules an appointment for her and removes the document from her Chart Desktop.

Summary

When LinkLogic replaces an older version of a document with a newer version of the document, the newest version appears everywhere the document is visible: in the patient's chart and on the Chart Desktop.

Frequently asked questions

For answers to these common questions about document overlay, click a question link or turn to the pages indicated.

Frequently asked questions...

General

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[Will document overlay make receiving lab results more difficult?](#)

[Will document overlay make resolving errors more difficult?](#)

[Can I disable document overlay?](#)

[We have unsigned, replaced documents. Can we upgrade?](#)

Import requirements

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[Can the replacement document contain only a partial update?](#)

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[If I append to a preliminary document, will subsequent reports replace the original?](#)

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Documents

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[Can I manually change the document type to Replaced?](#)

[Can I tell when a replacement document was imported?](#)

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Frequently asked questions...

General

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Routing

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[To whose Desktop are lab results routed?](#)

[How do I import and route a document to more than one Desktop?](#)

[What happens if I route a document to someone and then the document is overlaid?](#)

Signing

page 592

[Can I sign a lab report when it arrives, even though I'm waiting for more results?](#)

[How do I sign a Replaced document?](#)

[Will signing a document cause problems for subsequent overlays?](#)

[What if we need to upgrade and we have unsigned, replaced documents?](#)

Flowsheets

page 592

[What displays in the flowsheet when an unsigned document replaces a signed document?](#)

[Can I still see preliminary results in the flowsheet after final results are imported?](#)

Will document overlay make receiving lab results more difficult?

For lab reports to overlay, otherwise optional OBR fields are required.

In addition, the laboratory must send the same observations (OBX) each time that they update the document. If the laboratory only sends a subset of the original information, the documents cannot be replaced.

For details, see ["Requirements for document overlay" on page 578](#).

Will document overlay make resolving errors more difficult?

No. You may see more warning messages, however, document overlay does not add new error conditions.

Can I disable document overlay?

Yes. Go to **Administration** and select **LinkLogic > Task Options**. Select the relationship in the **Documents** or **Lab Results** folder, then uncheck **Enable Document Overlay**.

We have unsigned, replaced documents. Can we upgrade?

Yes. You can upgrade to the latest release without signing unsigned documents. If you want to merge databases, you must sign all documents.

Import requirements

Can the replacement document contain only a partial update?

No. The replacement document must contain at least the same observations as the original. The new document can have additional observations. For details, see [“Match criteria for HL7 lab results files” on page 579](#).

If I append to a preliminary document, will subsequent reports replace the original?

No. When a document is appended to or changed in any way, LinkLogic cannot replace it. Subsequent versions of the document are imported as new documents. This applies to overlay of both lab results and transcriptions.

Can I replace a portion of a transcription inside a note?

No. And if you use dictation placeholders, document overlay won't work. For more information, see [“Don't use dictation placeholders with document overlay” on page 581](#).

What happens when document overlay is enabled and an imported lab report doesn't have the required fields for overlay to occur?

The application issues a warning message that it could not match the imported document with an existing document. The warning message indicates that not all of the required fields had data. The document is imported as a new document.

Documents

Can I manually change the document type to Replaced?

Yes. The Replaced type is like any other document type in Centricity Practice Solution. You can assign the Replaced type to a document. You can also change a document with Replaced to another type. To change the document's type, from the Chart Documents tab, select the document and press **Ctrl+D**.


To learn more about changing document types, press **F1** in the Chart Documents tab to open online Help. Click **Menu** in the Help window and go to **Using Documents > Change document properties**.

Can I tell when a replacement document was imported?

Yes. From the Chart Documents tab, right-click the document and select **View Contributors List**.

Can I tell when a document has been replaced?

Yes. A special document icon is displayed when a document has overlaid one or more replaced documents.

 Document has been replaced

 Appended document has been replaced

The summary line of a preliminary document includes (P). There are no indicators in the summary line for final or corrected documents.

If I run the *Unsigned Documents by User* report, will the replaced documents be on the report?

Yes. The report does not filter out Replaced documents.

Routing

To whose Desktop are lab results routed?

Centricity Practice Solution looks for a provider in the following order:

1 **Ordering provider**

In the import data file, the ordering provider is in the following field:

- **HL7 – OBR-16 (Ordering Provider)**
- **ASTM – OBR-17 (Ordering Provider)**

2 **Attending doctor**

In the import data file, the attending doctor is in the following field:

- **HL7 – PV1-7 (Attending Doctor)**
- **ASTM – P14 (Attending Physician)**

3 **Responsible provider** (as entered in the patient's registration information)

Centricity Practice Solution uses the first name it finds. If it is not a valid username, then the application generates an error indicating it could not route the document.

How do I import and route a document to more than one Desktop?

HL7 lab reports: list additional Chart users in OBR-28, Result Copies To.

ASTM lab reports: list users in OBR 29, Send Copies To.

HL7 documents: list users in TXA-23, Distributed Copies.

 Separate user names or IDs with the tilde (~) repeat delimiter.

These additional copies show on the Chart Desktop with a Review status. Only the responsible provider sees the document with a Signature status.

!!! After importing and routing the document, Centricity Practice Solution does not preserve routing information.

What happens if I route a document to someone and then the document is overlaid?

The original document's type is changed to Replaced. A user who has the document on their Chart Desktop sees the new document with the comments and instructions from the original routing slip. For an example, see ["Scenario 3: Routing and document overlay" on page 587](#).

Signing

Can I sign a lab report when it arrives, even though I'm waiting for more results?

Yes. Whether or not you sign a lab report does not affect document overlay.

How do I sign a Replaced document?

You sign the document like any other document. For more information on viewing replaced documents so you can sign them, see ["Viewing replaced documents" on page 581](#).

Will signing a document cause problems for subsequent overlays?

No. Whether or not you sign a document does not affect document overlay.

What if we need to upgrade and we have unsigned, replaced documents?

You can upgrade with unsigned documents. To merge databases, all documents must be signed. You have two options:

- You can sign the replaced documents.
- You can choose to delete these documents before the merge.

Flowsheet

What displays in the flowsheet when an unsigned document replaces a signed document?

Only signed observations appear in the flowsheet. When an unsigned document replaces a signed document, the values from the signed document continue to show in the flowsheet. The new values don't appear until the new document is signed.

Can I still see preliminary results in the flowsheet after final results are imported?

Yes. Document overlay does not affect what you see in the flowsheet. Observation values that have changed show a yellow plus sign. Select the observation value, and then select a date from the list.

Sample overlay data formats

The following examples use the HL7 data format. For details, see [“LabLink Import/Export HL7 interface specification” on page 253](#).

Incrementally importing test results

Overlay occurs if the additional result report also includes the results from all earlier reports. If only the most recent results are included in the report, the application considers it a unique document and overlay doesn't occur.

For documents to overlay, the report must contain the same OBR and OBX segments as the previous version of the report plus any additional OBR and OBX segments.

Additional OBX segments

In the following series of reports, the second report overlays the first report. The third report does not overlay the second report, because it does not include all the information from the previous report.

First report returned from the laboratory, showing initial cholesterol results

First OBX segments (cholesterol)

```
MSH|^~\&|LabQuest|||20000415122134||ORU|200004151221340075|P|2.2||AL||
PID|1||2568-TEST001||Patient^Test||19680825|F||U|^Portland^OR^97200|||
|S||123-45-9876
PV1|1|O|^MHS|||testmd
ORC|RE
OBR|1|L6097684-0^MLI|J24078^LabQuest|FLP^add-ons FASTING LIPID
PANEL^L||20000415122134|||20000415122134||TESTMD|||200004151
22134||P
OBX||ST|CHOLESTEROL^CHOLESTEROL||265.8|MG/DL|<200|HH||P
OBX||ST|HDL^HDL||44.5|MG/DL|>35|||P
```

Second report showing additional cholesterol results

This report overlays the previous report because the original OBX segments are in the report as well as the new OBX results.

New OBX segments (triglyceride, LDL) follow first

```
MSH|^~\&|LabQuest|||20000415122134||ORU|200004151221340075|P|2.2||AL||
PID|1||2568-TEST001||Patient^Test||19680825|F||U|^Portland^OR^97200|||
|S||123-45-9876
PV1|1|O|^MHS|||testmd
ORC|RE
OBR|1|L6097684-0^MLI|J24078^LabQuest|FLP^add-ons FASTING LIPID
PANEL^L||20000415122134|||20000415122134||TESTMD|||200004151
22134||P
OBX||ST|CHOLESTEROL^CHOLESTEROL||265.8|MG/DL|<200|HH||P
OBX||ST|HDL^HDL||44.5|MG/DL|>35|||P
OBX||ST|TRIGLYCERIDE^TRIGLYCERIDE||148.0|MG/DL|30-220|||P
OBX||ST|LDL^LDL||191.7|MG/DL|||P
```

Third report showing additional cholesterol results

This report will not overlay the previous report, because it does not include all the previous OBX segments. It is missing the triglyceride and LDL results. Centricity Practice Solution imports this report as a unique document.

New OBX result; previous segments missing (triglyceride, LDL), so results imported as new document

```
MSH|^~\&|LabQuest|||20000415122134||ORU|200004151221340075|P|2.2||AL||
PID|1||2568-TEST001||Patient^Test||19680825|F||U|^Portland^OR^97200|||
|S||123-45-9876PV1|1|O|^MHS|||testmd
ORC|RE
OBR|1|L6097684-0^MLI|J24078^LabQuest|FLP^add-ons FASTING LIPID
PANEL^L||20000415122134|||20000415122134||TESTMD|||200004151
22134||P
OBX||ST|CHOLESTEROL^CHOLESTEROL||265.8|MG/DL|<200|HH||P
OBX||ST|HDL^HDL||44.5|MG/DL|>35|||P
OBX||ST|CHOL/HDL^RATIO||6.0|||P
```

Additional OBR segments

In the following series of reports, the second report overlays the first report. The third report does not overlay the second report because it does not include all the information from the previous report.

First report returned from the laboratory

First OBR and
OBX segments
(albumin)

```
MSH|^~\&|LABQUEST|LABQUEST|MLI|PX000001|20000614022359||ORU|58239.001|P|
2.2
PID|1||2568-TEST001||Patient^Test||19680825|F||U|^Portland^OR^97200|||
|S|||123-45-9876
PV1|1|O|^MHS|||testmd
ORC|RE|P0187365-2^MLI|5146052-0^LLS|||20000614022359|||testmd
OBR|1|P0187365-2^MLI|5146052-0^LLS|001081^Albumin,
Serum^L|||20000612072400|||20000612201159||testmd|||LabCorp||20
000614022402||F|||303755
OBX|1|NM|109^ALBUMIN^L||4.8|G/DL|3.5-5.5|N||S|F|||PX
```

Second report with added OBR segment

This report overlays the first because it includes the OBR and OBX segments from the first report as well as additional information.

New OBR and OBX
segments (bilirubin)
follow previous
segments

```
MSH|^~\&|LABQUEST|LABQUEST|MLI|PX000001|20000614022359||ORU|58239.001|P|
2.2
PID|1||2568-TEST001||Patient^Test||19680825|F||U|^Portland^OR^97200|||
|S|||123-45-9876
PV1|1|O|^MHS|||testmd
ORC|RE|P0187365-2^MLI|5146052-0^LLS|||20000614022359|||testmd
OBR|1|P0187365-2^MLI|5146052-0^LLS|001081^Albumin,
Serum^L|||20000612072400|||20000612201159||testmd|||LabCorp||20
000614022402||F|||303755
OBX|1|NM|109^ALBUMIN^L||4.8|G/DL|3.5-5.5|N||S|F|||PX
ORC|RE|P0187365-2^MLI|5146052-0^LLS|||20000614022359|||testmd
OBR|2|P0187365-2^MLI|5146052-0^LLS|001099^Bilirubin,
Total^L|||20000612072400|||20000612201159||testmd|||LabCorp||20
000614022402||F|||303755
OBX|1|NM|119^TOTAL BILIRUBIN^L||0.5|MG/DL|0.1-1.2|N||S|F|||PX
```

Third report with added OBR segment

This third report will not overlay the previous report because it does not include the Bilirubin OBR segments. Centricity Practice Solution imports this report as a unique document.

```
MSH|^~\&|LABQUEST|LABQUEST|MLI|PX000001|20000614022359||ORU|58239.001|P|
2.2
PID|1||2568-TEST001||Patient^Test||19680825|F||U|^Portland^OR^97200|||
|S|||123-45-9876
PV1|1|O|^MHS|||testmd
ORC|RE|P0187365-2^MLI|5146052-0^LLS|||20000614022359|||testmd
OBR|1|P0187365-2^MLI|5146052-0^LLS|001081^Albumin,
Serum^L||20000612072400|||20000612201159||testmd|||LabCorp||20
000614022402||F|||303755
OBX|1|NM|109^ALBUMIN^L||4.8|G/DL|3.5-5.5|N||S|F|||PX
ORC|RE|P0187365-2^MLI|5146052-0^LLS|||20000614022359|||Testmd
OBR|3|P0 187365-2^MLI|5146052-0^LLS|001107^Alkaline Phosphatase,
Serum^L||20000612072400|||20000612201159||test
md^DOCTOR^TEST^R|||LabCorp||20000614022402||F|||303755
OBX|1|NM|114^ALKALINE PHOS.^L||116|U/L|40-150|N||S|F|||PX
```

New segments;
previous bilirubin
set missing, so
results imported as
new document

Using .IXP configuration files

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Two types of configuration files tell LinkLogic how to import or export information between Centricity Practice Solution and an external system:

- **Cross-reference (.XRF) files** translate data field values to values that can be recognized by Centricity Practice Solution (on import) or the external system (on export). For more about creating and using cross-reference files, see [“Cross-referencing field values” on page 461](#).
- **Protocol (.IXP) files (Import eXport Protocol files)** alter the behavior of one or more interfaces or fields within interfaces. Some files customize behaviors that deviate from the standards documented in the LinkLogic interface specifications. Other files maintain previous behavior.

You'll add or change configuration files when developing and testing a new interface to Centricity Practice Solution. For setup instructions, go to **Administration > System**, open the **LinkLogic** folder, and select **Task Options**. Click F1 for LinkLogic setup online help.

About .IXP files

LinkLogic includes various standard *Add-On* and *Root* IXP files you can use to alter the behavior of one or more interfaces. If your site needs any of the following modifications, add the appropriate configuration file as an Add-On or Root IXP file in Task Options setup for each relationship that needs to use it.

The default location for these standard configuration files is the **/llogic/config/standard** folder.



Add-On IXP files redefine the behavior for one or more data fields in one or more interfaces.

Root IXP files define the behavior of an entire interface including all segments and all fields.

Files that modify multiple HL7 interfaces

ethnicity.ixp

Gets ethnicity from field PID-10, Patient Race, if field PID-22, Ethnic Group, is not specified.

- If PID-22 is blank and PID-10 = H, sets ethnicity to Hispanic.
- If PID-22 is blank and PID-10 = U, sets ethnicity to Undetermined.
- If PID-22 is blank and PID-10 is not blank and anything other than H or U, then sets ethnicity to Non-Hispanic.

exdegree.ixp

Changes data exported in PID-5 (Patient Name) to put information in the 6th component for *degree* instead of in the 4th component for *suffix*.

export.2.3.ixp

Changes LinkLogic to export 2.3 in MSH-12.

In versions 9.5 or later, LinkLogic exports 2.3.1 in MSH-12. This file is for backward compatibility, if necessary, in case any destination systems still need LinkLogic to send 2.3 as the HL7 version instead of 2.3.1.

exprcvappmsh3.ixp

Changes data exported in MSH-3 to match what is exported by default in MSH-5. Some interfaces interchange the sending and receiving application fields in the MSH header segment, and need LinkLogic to put the receiving application name in MSH-3.

locpid18.ixp

Uses field PID-18 (Patient Account Number) as the Location of Care instead of field PV1-3 (Assigned Patient Location).

pid2emrid.ixp

Exports the GE internal patient ID in PID-2 (Patient ID (External ID)) instead of the external patient ID.

pid3exportpid.ixp

Exports internal database PID in PID-3.1.

pid3.4exportoid.ixp

Exports the visible patient ID in PID-3.1 and OID (Object Identifier) in PID-3.4 when Confidentiality Task Option Export Patient Identity is selected (default setting).

OID is exported in PID-3.4 automatically when Export Patient Identity is NOT selected.

pid40contactby.ixp

Imports and exports a 1-character value for patient preferred contact method in the optional field PID-40 at the end of the PID segment in ADT and BAR messages.

To send or receive patient contact method using this field you must associate this optional Add-On IXP file with the LinkLogic interface. This IXP file maps the HL7 values to EMR values to store to or export from the database in the PERSON.CONTACTBY field.

pidopt.ixp

Permits both fields PID-2 and PID-3 to be optional instead of requiring at least one of these fields. This replaces a previous customization of hl7pid.ixp for LabCorp interfaces.

pv13off.ixp

Deactivates all use of field PV1-3 (Assigned Patient Location) as Location of Care data.

pv150noexp.ixp

Exports no value for PV1-50 (Visit ID). This is used for interfaces with practice management (PM) or billing systems that have a different interpretation of visit identifiers than the meaning in the Centricity application.



Upgrade removes the previously customized hl7pid.ixp for earlier versions.

pv18off.ixp

Deactivates the use of field PV1-8 (Referring Doctor) during import. This is necessary for some HBOC interfaces which send data in only component 1 of PV1-8 for *UPIN*, even though HL7 and LinkLogic required component 2 (*family name*) if the first component is specified.

DemographicsLink.IXP files

hl7locrq.ixp

Requires Location of Care data in *facility ID*, component 4 of field PV1-3 (Assigned Patient Location).

in2deflt.ixp

Permits field IN1-2 (Insurance Plan ID) to be the default plan ID (the value defined in the defaults file *dlink2.dft*).

ingponly.ixp

Excludes IN1-36 (Policy Number) from insurance policy matching and instead uses only IN1-8 (Group Number).

inspri.ixp

Ignores IN1-15 (Plan type) and uses IN1-22 (Coordination of Benefits Priority) instead for application insurance plan type (known as "insurance priority").

medicins.ixp

Uses IN1-1 (Set ID - IN1) for insurance priority rather than the standard practice of using IN1-15 (Plan Type).

This is used for demographics interfaces to the Medic practice management system.

megawest_msh.ixp

Changes the data exported in MSH-3, MSH-5, and MSH-6:

- Sends "LOGICIAN" for MSH-3 (Sending Application)
- Sends Location of care for MSH-5 (Receiving Application)
- Sends LinkLogic relationship name for MSH-6 (Receiving Facility)

This is used for demographics interfaces to the Megawest billing system.

xchinadr.ixp

Switches the interpretation of the first two components of field IN1-5 (Insurance Address). This is useful for interfaces to the IDX GPMS practice

management system, which leaves the *Address1* component blank and uses only the *Address2* component.

LabLink HL7.IXP files

abbrevlabfooter.ixp

Imports an abbreviated form of footer lines at the end of lab report documents for each OBR segment. This formats lab report documents to look like test results previously received on paper from Sunquest.

abbrevlabheader.ixp

On import, moves OBR lines from lab footer to an abbreviated form beneath each OBR-sub-heading in lab report documents. This formats lab report documents to look like test results previously received on paper from Sunquest.

hl722rdt.ixp

Substitutes HL7 2.2 for HL7 2.3 behavior on import of requested date/time. Uses OBR-6 (Requested Date/Time) and ignores OBR-27 (Quantity/Timing).

labrpheaders.ixp

Adds header lines with the words OBSERVATION, VALUE, and EXPECTED above the test result lines in imported lab report documents. The words are added in appropriate character positions (assuming Courier fixed-width font) for the virtual columns for result name, value, and expected result or range. A line with hyphens is included to make these column headers appear underlined.

These lines appear for each OBR in an ORU import message.

Example:

```

Tests: (1) Lipids (ML-11LIPID)
OBSERVATION          VALUE          EXPECTED
-----
    CHOLESTEROL      [H]  210 MG/DL      130-200      *1
    HDL              34 MG/DL      30-75        *2
    LDL              128 mg/dL    L      0-129        *3
    TRIGLYCERIDE     170 MG/L      30-250      *4

Tests: (2) Hematology (ML-05HEME)
OBSERVATION          VALUE          EXPECTED
-----
    HGB              13.2 g/dL      11.4-15.2    *5
    HCT              36 %          34.0-46.0    *6
    MCV              92 fL          81-95        *7
    MCH              35 pg          32.5-35.5    *8
    WBC              8.6 10*3/mm3  4.1-10.3     *9
    PLATELETS        340 /mm3      150-415     *10

```

latitude.ixp

!!! For import of lab results data from Latitude Transfer Station (LTS) for interfaces to Boston Scientific Latitude Patient Management System.

Use this IXP file only when the lab results data has no values in any of the following fields: OBX-7 (Reference Range), OBX-8 (Abnormal Flags), and OBX-15 (Producer ID). This file increases the amount of space allocated for OBX-3 (Observation Identifier) and OBX-5 (Observation Value) and shifts all other data to the right.

llink2.pv1.docloc.ixp

Changes PV1-3.4 in ORU Observations Export to include document location of care instead of patient location of care. The location of care for PV1-3.4 is taken from the first document found with observation values to export.

!!! This is a Root IXP file! Be careful to select **Root Import/Export Protocol file (IXP)** as the File type in the New Configuration File window when configuring a task to use this file.

locobr16.ixp

Uses field OBR-16 (Ordering Provider) instead of field PV1-7 (Attending Doctor).

llink2nk1.ixp

Customized version of **Root IXP** file for observations export that will include NK1 segments for personal contacts. This is needed for sending data to immunization registries. CCG translates the LinkLogic ORU message into the VXU message that is sent to the immunization registries. LinkLogic must include the NK1 so the CCG translation can send the patient's mother, for instance, in the VXU message.

!!! This is a Root IXP file! Be careful to select **Root Import/Export Protocol file (IXP)** as the File type in the New Configuration File window when configuring a task to use this file.

noalttyp.ixp

Does not attempt to use an alternate document type other than "lab report". Ignores field OBR-18 (Placer Field 1).

nofooter.ixp

Used for importing electronic prescription (eRx) renewal requests from Kryptiq eScriptMessenger (eSM). These requests are imported as lab report

documents. This file suppresses footer lines at the end of lab report documents for each OBR segment.

This is useful when lab import is used to import custom observation terms to drive custom workflows, where there a lab vendor is not really providing lab results.

noobxline.ixp

Used for importing electronic prescription (eRx) renewal requests from Kryptiq eScriptMessenger (eSM). These requests are imported as lab report documents. This file completely suppresses lines added for each OBX segment in lab report documents. Observation values are still dispersed into the flowsheet, but no information from OBX segments appears in the lab report. Information included in NTE segments underneath OBX segments do appear.

This is useful when lab import is used to import custom observation terms to drive custom encounter forms.

noperflab.ixp

Ignores data from OBX-15 (Producer's ID) field. Does not show information from this field next to each lab result value or include Producer ID information in footnotes at end of imported lab report documents.

!!! This IXP file should only be used when the lab results data does not have any value in the OBX-15 field for Producer ID.

nrf.ixp

Does not output "*Result Below...*" before values in lab reports when OBX-5 (Observation Value) exceeds 17 characters. Also does not output "*Range Below...*" when OBX-7 (Reference Range) exceeds 16 characters.

nrf2.ixp

In addition to what nrf.ixp does, also prevents "*Order Note:*" from appearing in lab reports before the content of NTE segments.

nrwoff.ixp

On import removes "<No Reported Value>" from lab report documents when OBX-5 is blank. Replaces previous versions of this customization in llinkshr.blank.obx.5.ixp.

obr4num2.ixp

Include numbers in addition to commas to separate items in summaries of lab report documents. This replaces the previous customization of llink2r.ixp for Invision lab interfaces. This is useful when data in field OBR-4 (Universal Service ID) contains commas.

obr10nobx15.ixp

Ignores OBX-15 (Producer's ID) and uses OBR-10 (Collection Identifier) for information about who performed the test.

Also ignores OBX-14 (Date/Time of Observation) and uses OBR-7 (Observation Time/Date) for flowsheet dates.

This is useful when lab vendors send a reported timestamp in OBX-14 and OBR-22 (Results Rpt/Status Chng - Date/Time) instead of the collection time reported in OBR-7.

obr7nobx14.ixp

Ignores OBX-14 (Date/Time of Observation) and uses OBR-7 (Observation Time/Date) for flowsheet dates.

obx3cs.ixp

Displays the *coding system* component in addition to the *description* component of OBX Result ID fields in lab report documents only when the *description* component exceeds 20 characters.

obx3cs2.ixp

Always displays the *coding system* component in addition to the *description* component of OBX Result ID fields in lab report documents. This is done whenever both components are present, regardless of the length of the *description* component.

obx3extcode.ixp

Changes export of OBX-3 (Observation Identifier) field in Observations Export of HL7 ORU messages. Exports external codes that came in from previously imported lab results

obx6ucum.ixp

Changes export of OBX-6 (Units) field in Observations Export of HL7 ORU messages. Exports UCUM units instead of units from internal factory observation terms.

only1stobxinlabrpt.ixp

Includes the OBX segment header line in the lab report document for only the first OBX segment. This assumes that OBX-1 (Segment ID) is always present and follows a numeric, monotonically increasing sequence starting with 1.

perflab.ixp

Display the first two characters of the OBR-15 (Producer ID) field next to each lab result value. This replaces a previous customization of llinkshr.ixp for SoftLab interfaces.

summary2.ixp

Displays OBR-4 (Universal Service ID) from each of up to six OBR segments in the summary line of lab report documents. This works for only one OBR per ORC and when every OBR has a parent ORC. This also works when no ORC segments are present at all.

xnorptws.ixp

Eliminates the leading white space characters that usually indent the contents of NTE segments that appear after OBX segments in lab report documents. This replaces the previous customization of llink2r.ixp for Cerner lab interfaces.

This is useful when a lab vendor uses white space for formatting of textual information pertinent to some observation result values.

LabLink ASTM.IXP files

labasp22.ixp

Ensures that the value of field P-22 (Practice1) appears in lab report documents even if there is no comment segment that is a child of the patient segment.

ll1roche.ixp

Uses only field P-14 (Attending Physician) as the ordering provider for the lab report and ignores field OBR-17 (Ordering Provider).

noalttyp.ixp

Does not attempt to use an alternate document type other than "lab report". Ignores field OBR-19 (Requestor Field 1).

obr4num1.ixp

Includes numbers in addition to commas to separate items in summaries of lab report documents. This replaces the previous customization of llink1r.ixp for Invision lab interfaces.

This is useful when data in field OBR-4 (Battery ID) contains commas.

p26off.ixp

Deactivates all use of field P-26 (Assigned Patient Location) as Location of Care data.

NotesLink HL7.IXP files

nl223b3.ixp

Restores prior HL7 2.3 ballot 3 behavior for authenticating provider and timestamp. This affects sites using LinkLogic's automatic document signing feature. This is NOT valid behavior based on the 2.3 final release.

nlink2pn.ixp

Restores previous behavior of placing the patient name at the top of the note.

noteprovpv117.ixp

Uses PV1-17 (Admitting Doctor) before PV1-7 (Attending Doctor).

Note: This version makes unnecessary a requirement in earlier product versions to also use a custom version of hl7txobx.ixp.

pv119apptid2.ixp

Populates PV1-19 (Visit Number) with the Appointments ID from an appointment linked to the chart document.

tx14old.ixp

Uses field TXA-14 (Placer Order Number) instead of field TXA-15 (Filler Order Number) to associate imported documents with an existing Centricity Practice Solution (parent) document.

Orders Export HL7 .IXP files

obr16sign.ixp

Exports the order's signing provider in OBR-16 instead of the order's authorizing provider.

pv17sign.ixp

Exports the order's signing provider in PV1-7 instead of the patient's responsible provider.

ordinspri.ixp

Translates the Centricity Practice Solution Insurance order for claims into primary, secondary, or other for IN1-22.

ordlabcorp.ixp

Creates an ORM message for lab orders export to meet LabCorp requirements. Ordlabcorp.ixp changes the following fields in the ORM export message to comply with LabCorp requirements.

This message field...	Includes this value (with IXP file enabled)...
MSH-5, Receiving Application	1100 Default value: Name of LinkLogic relationship that created the output file
MSH-6, Receiving Facility	Receiving Facility Code set in LinkLogic for Orders Export on Task Options > Change Identifiers screen. Default value: Document location of care
PV1-7, Attending Doctor	Ordering Provider (value in ORC-12 and OBR-16) <i>Provider ID^Last Name^First Name^Middle Name^^^^Source of Provider ID</i> Provider ID is exported as NPI if available, or else as UPIN if available, or as login name if neither NPI nor UPIN are available. Provider ID: N - NP U - UPIN L - login name Default value: patient's responsible provider, if specified, not necessarily the provider who authorized the order. For PV1-7, ORC-12, and OBR-16, LinkLogic exports only the first sub-component with the login name of the application user.
IN1-2, Insurance Plan ID	<i>Insurance Carrier Id^InsuranceCarrier Name</i> Default value: Nothing is sent. Although this field is considered required in the HL7 specification, LinkLogic treats this field as optional.
IN1-31, Type of Agreement Code	N Default value: No value is exported for IN1-31, because the application does not store information about worker's compensation.

This message field...	Includes this value (with IXP file enabled)...
OBR-4, Universal Service ID	<p>The coding system component (OBR-4.3) is set to L (Local).</p> <p>Default value: By default the 3rd component, coding system, of OBR-4 is not set.</p>
GT1-5, Guarantor Address	<p>Required field. At least one component of guarantor's address must be set.</p> <p><i>address line 1^address line 2^city^state^zip^country</i></p> <p>Default value: Optional</p>
GT1-6, Guarantor Home Phone Number	<p>Guarantor's email address is blank (not exported).</p> <p>Default value: guarantor's email address is exported in 4th component of GT1-6.</p>

ProceduresLink HL7.IXP files

ft113loc.ixp

Exports the location of care abbreviation in field FT1-13 (Department Code) in addition to the 4th component of field FT1-16 (assigned Patient Location).

ft113loc.ixp

Exports location of care abbreviation in field FT1-13 (Department Code) in addition to exporting it in the 4th sub-component of field FT1-16 (Assigned Patient Location).

ft119enh.ixp

Exports a *description* in component 2 of field FT1-19 (Diagnosis Code) and a diagnosis code *identifier* in component 1. This makes the format of procedures data exported in FT1-19 consistent with problems data exported in field PRB-3 (Problem ID).

By default, descriptions are NOT included in FT1-19 because doing so could limit the number of problems that could be exported in the field.

ft120d0cprov.ixp

For service orders, exports the responsible provider for the document associated with the order instead of no value. The service provider is already exported in FT1-20 (Performed by Code) for test and referral orders.

ft126enh.ixp

Exports a *description* in component 2 of field FT1-26 (Procedure Code Modifier) and a *modifier* code in component 1.

By default, descriptions are NOT included in FT1-26 because doing so could limit the number of modifiers that could be exported in the field.

ft1provmik.ixp

Exports the signing provider for the order in FT1-20, leaves FT1-24 blank, and exports authorizing provider in FT1-21. This is helpful when the MIK interface imports data to Centricity PM 2004 or Centricity Practice Solution (PM) from Centricity EMR. This file tells the MIK interface to import the authorizing provider as the supervising physician in PM and the signing provider as the billing doctor in PM.

!!! Use either ft1provmik.ixp or ft1provmik2.ixp. DO NOT use both.

ft1provmik2.ixp

Exports both the signing provider and authorizing provider for the order in FT1-20, separated by a hyphen, leave FT1-24 blank, and also exports authorizing provider in FT1-21. This is a variation of changes for supervising physician in the PM application.

!!! Use either ft1provmik.ixp or ft1provmik2.ixp. DO NOT use both.

-
-

pv119apptid.ixp

Populates PV1-19 (Visit Number) with Appointments Id from appointment linked to a document holding orders.

pv144mik.ixp

Exports the clinical date of the document associated with orders in PV1-44 (Admit Date/Time). This enables the Centricity PM application's MIK interface to import the Centricity EMR Visit ID.

pv17ordauth.ixp

Changes FT1-20 (Performed By Code) and FT1-21 (Ordered By Code) to have the authorizing provider for the order. This IXP file also changes PV1-7 (Attending Doctor) to be the authorizing provider of the first order instead of the patient's responsible provider. This is used to send data to a NextGen practice management system.

plinknte.ixp

This **Root .IXP** file exports NTE segments instead of OBX segments. This is useful for interfaces to Centricity Physician Office – PM 2004 or Centricity Practice Solution (PM) practice management systems.

This IXP file obviates the need in earlier product versions to have a customized version of plink1.ixp.

!!! This is a Root IXP file! Be careful to select **Root Import/Export Protocol file (IXP)** as the File type in the New Configuration File window when configuring a task to use this file.

plnknobx.ixp

This **Root .IXP** file prevents the output of OBX segments. This is useful for interfaces to Centricity Physician Office – PM 2004 or Centricity Practice Solution (PM) systems.

!!! This is a Root IXP file! Be careful to select **Root Import/Export Protocol file (IXP)** as the File type in the New Configuration File window when configuring a task to use this file.

ScheduLink HL7.IXP files

aisacoff.ixp

Deactivates all use of the AI* Segment Action Code fields. This is for backward compatibility only. Use of segment action codes was added in Logician 5.2. This files tells LinkLogic to ignore the second field (Segment Action Code) of the AIS, AIG, AIL, and AIG segments in ScheduLink data.

apptreasonnte.ixp

Changes ScheduLink to read appointment reason from NTE-3 instead of SCH-7.

slinkpcn.ixp

Uses AIS-3 (Universal Service ID) for appointment type rather than the standard which uses field SCH-8 (Appointment Type). This is used for interfaces with the PCN billing system.

Guide to socket implementation

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This guide explains how to use the XSock application to implement and test socket connections between the LinkLogic Data Transfer Station (DTS) and other systems.

TCP/IP: a language that allows two computers to communicate over a network connection.

It does not provide detailed information about *TCP/IP* communications or local area networks. It assumes that basic network setup has been accomplished. It also does not provide detailed LinkLogic setup instructions, but refers the reader to the appropriate setup screens in Centricity Practice Solution. You should be familiar with use of networks, and with LinkLogic setup and daily operations.

For an overview of socket transmissions, setup and answers to common questions about using sockets, see [“Sockets FAQ” on page 628](#).

What are TCP/IP sockets?

TCP/IP sockets are a fast and efficient way to send and receive data to and from other computer systems.

Sockets: connections between applications created using TCP/IP, allowing systems to exchange data without special transfer programs.

Sockets send and receive information in continuous streams of information, rather than storing and transferring the information in a file. You can use TCP/IP sockets for interfaces using the HL7 data format to transfer data to and from Centricity Practice Solution.

LinkLogic’s support for TCP/IP sockets is based on the Windows Winsock API. Because LinkLogic is a file-based system, it converts the stream of information it receives into a file before importing the data into Centricity Practice Solution. To use TCP/IP sockets, you must install Data Transfer Station.

Introduction to XSock

XSock runs on a workstation configured for the Centricity Practice Solution client or DTS and simulates most of the behavior of a socket-based application. XSock can be used to

- Simulate a third party system, to verify that it can talk to the DTS.
- Simulate the DTS in a controllable way, to debug communications with another system.

XSock and DTS use the same socket library (ml3sock.dll), so their behavior is consistent. With XSock you can create connections, listen for connections, and send and receive files.

How to run XSock

XSock is located in the Centricity Practice Solution directory. It can take command line arguments, but normally these are not needed.

XSock has two tabs:

- **Socket Interface** is a control panel where commands can be issued.
- **Current Channels** is a read-only display panel that lists all defined socket channels and their connection status.

Socket Interface tab

The interactive commands are issued by first filling in command arguments, then pressing one of the command buttons. For example, in Set Directories at the top you can set the directories for the inbox, outbox, and error log locations. Fill in directory names in the three edit fields, and then press **SetDirs**. The field to the right of the button shows the return code from the Set Directories command (zero if successful).

Figure 1: XSock main screen

The screenshot shows the XSock main screen with two tabs: "Socket Interface" and "Current Channels". The "Current Channels" tab is active.

Set Directories: Includes input fields for "Inbox:" (containing "in"), "Outbox:" (containing "out"), and "Error dir:" (containing "err"). A "SetDirs" button is to the right of the "Error dir:" field, and a "0" is displayed to the right of the "SetDirs" button.

Create/Delete Channel: Includes a "Set Args/Create ..." button, a "Channel Name:" dropdown menu, a "Type:" dropdown menu (set to "Accept"), and a "Format:" dropdown menu (set to "HL7"). A "Create" button is to the right of the "Format:" field, and a "0" is displayed to the right of the "Create" button. Below these is an "Arguments:" input field. At the bottom of this section is a "Channel Name:" dropdown menu and a "Delete" button, with a "0" displayed to the right of the "Delete" button.

Send/Receive Files: Includes a "Channel Name:" dropdown menu, a "File to Send:" input field with a browse button "...", and a "Send" button. A "0" is displayed to the right of the "Send" button. Below this is another "Channel Name:" dropdown menu and a "Receive" button, with a "0" displayed to the right of the "Receive" button.

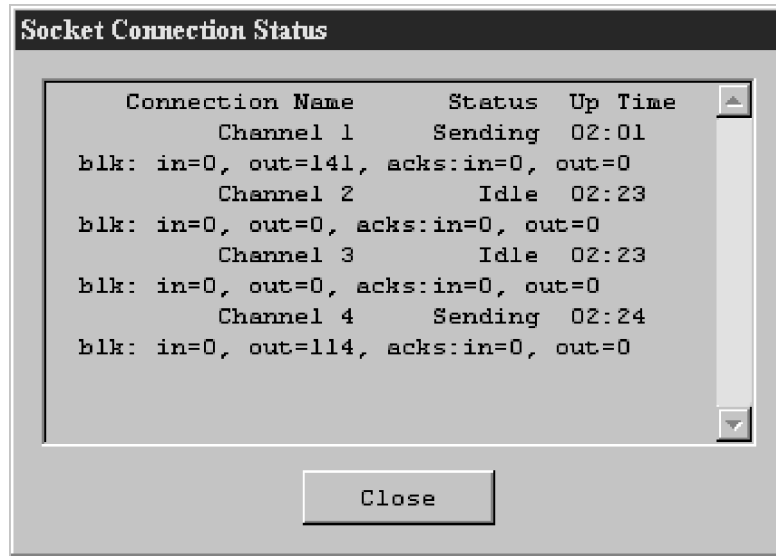
Control Buttons and Status: Includes buttons for "Initial Connect", "Final Disconnect", "Run Script", and "Status ...". To the right of these buttons are "Listeners: 0" and "Connections: 0". At the bottom right of this section are "Clear Fields" and "Quit" buttons.

Channel Activity Log: A large text area at the bottom with the text "Messages from socket interactions appear here." and a vertical scrollbar on the right side.

At the bottom of the XSock control panel is **Channel Activity Log**, where messages from socket interactions appear. You also see the number of **Listeners** (ports where incoming connections can be accepted) and the number of **Connections**.

Clicking **Status** on XSock brings up a separate window that displays all connections to XSock and their status. During normal operation, **Up time** values should update continuously. This status window is also available in DTS, from the **Actions** menu.

Figure 2: Socket Connection Status window



Run an test XSock session

To get acquainted with XSock, run two sessions of XSock and have them to talk to each other on a single machine or on two machines.

First create three directories for session 1 (for example, *in1*, *out1*, and *err1*). Then, create three directories for the session 2, (for example, *in2*, *out2*, and *err2*).

Now you are ready to start two instances of XSock.

Set up the first session to accept incoming connections

- 1 In **Set Directories**, enter the full paths for each of the directories you created.
- 2 In **Create/Delete Channel**, create a channel (relationship):
 - a Type or select **Channel Name** (for example, *Channel 1*).
 - b Set **Type** to **Accept** since this channel will accept incoming connections.
 - c Set **Format** to **Raw**.
 - d In **Arguments**, type the string
`LocalHost,1001,,, \011, \028\013`
 The details of this argument are described later.
- 3 Press **Create**.

-
- ✓ To let XSock generate the arguments for you, click **SetArgs/Create**, enter your options in the fields shown below, and click **OK** to generate the script. See [“Creating channel arguments” on page 619](#) for details.
-

- 4 In **Send/Receive Files**, click **Initial Connect**.

The message “Listener started” should appear in the Channel Activity Log, and the number of listeners should increment to 1. You have now created a listener on port 1001.

Set up a second session to establish a permanent connection


- 1 In **Set Directories**, use the directories you created for session 2.
- 2 In **Create/Delete Channel**, create a channel (relationship):
 - a Select the **Channel Name** (for example, *Channel 2*).
 - b Set **Type** to **Perm**, since this channel will accept incoming connections.
 - c Set **Format** to **Raw**.
 - d In **Arguments**, do one of the following:
 - If both sessions are running on the same machine, type the string `"LocalHost,1001,,, \011, \028\013"`
 - If you are using two machines, substitute for “LocalHost” the actual *host name* where session 1 is running.
- 3 Press **Create**.
- 4 In **Send/Receive Files**, click **Initial Connect**.

host name: the name given to each computer in Windows, usually set at installation time and changed via the Network control panel.

The message windows for both sessions should show that a connection has been made. The number of Connections should be 1 in both sessions.

Send a file

When the sessions are connected, you can click **Send** from either session to send data to the other.

- 1 In the **Send/Receive Files** section, select from the **Channel Name** list (*Channel 1* in this case).
- 2 In **File to Send**, enter a file name or click  to browse and select a file.
- 3 Click **Send**.

A message appears in both windows indicating the transfer has occurred.

What happens in the XSock transfer?

Transfer to sending outbox. When you click Send, XSock copies the file to the outbox directory of the sending session.

Transfer to receiving inbox. Next, the file contents are sent over the socket connection to the inbox of the receiving session. The beginning and end of the

file is marked with header and trailer sequences—the “\011” and “\028\013” characters in the channel arguments. These are decimal representations of non-printing characters used to ensure that the header and trailer strings don't appear in the transferred data.

Rename file. If the receiving session recognizes the file type, it renames it with a LinkLogic 2-letter suffix, for example

- .HD for demographics
- .HT for documents
- .LR for ASTM lab results
- .HR for HL7 lab results
- .SL for appointments

Otherwise, the suffix is .TMP.

Continue or close. Since the connection type for the second session is **Perm**, the connection is not closed, and you can make further transfers in either direction. To close the connection, either close one of the sessions or click **Final Disconnect**.

Format selection

When you select the format **Raw**, files are transferred as a single block, and communication is in one direction only, from sender to receiver. If you select the format **HL7**, the receiver may return an acknowledgement when the files are sent (depending on the *acktype* field of the HL7 message header). The file type assigned by the receiver is based on the HL7 message type, rather than on pattern recognition of the first few characters.

Both sender and receiver must agree on the connection type (Raw or HL7). The header and trailer strings must match.

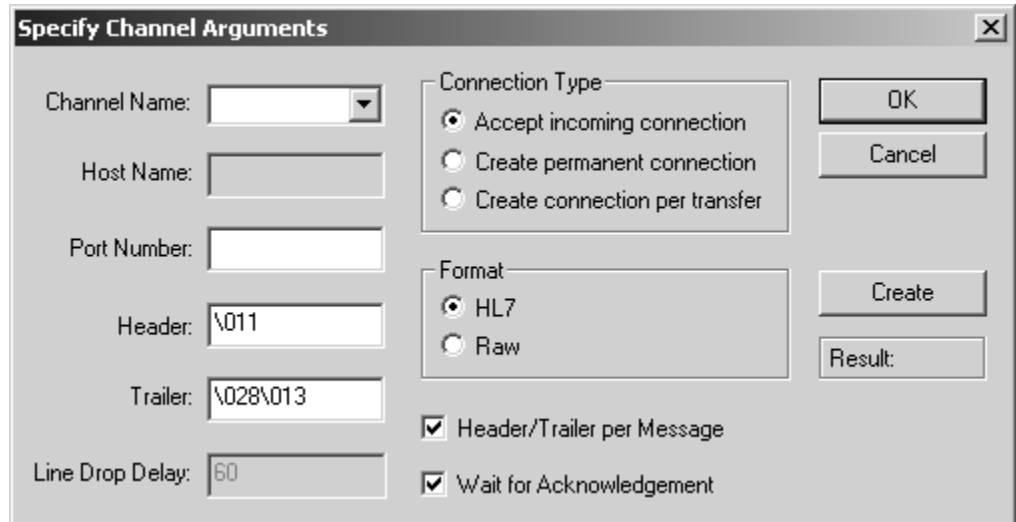
Multiple channels

You can create multiple channels in a single session of XSock and have more than two sessions communicating. Just repeat the steps to create a channel as often as you need before clicking **Initial Connect**. Then, select the connection to send on by selecting a channel name before you click **Send**.

Creating channel arguments

When you create a channel, you must enter a sequence of arguments, separated by commas. To use defaults, omit the trailing arguments; to omit other arguments, don't put anything between the commas.

Figure 3: Specify Channel Arguments window



This table lists scripting options:

Use this field...	To script this...
Host name	The host to connect to. This is required for channels with <i>Perm</i> and <i>Temp</i> connection types. It is optional for channels with <i>Accept</i> connection type (usually LocalHost is used).
Port number	The port number to accept connections on or connect to. These must be different for each channel. Use 1024 or higher, since lower numbers are reserved for system connections such as FTP, TCP, and so on.
Header	The sequence of characters sent before the actual data to initiate data transfer. Specify printable characters directly. To specify non-printable characters, use the <code>\nnn</code> notation. HL7 systems will generally expect “\011” for this.
Trailer	Sequence of characters sent after the actual data to indicate the end of data transfer. This is similar to the header sequence. HL7 systems generally expect “\028\013”.

Use this field...	To script this...
Header/Trailer per Message (for HL7 only)	<p>B or empty</p> <p>When unchecked, XSock sender sends all HL7 messages in the file with a single header/trailer.</p> <p>M</p> <p>When checked, Each HL7 message has its own header and trailer. This field only affects the sender; the receiver can handle either multiple or single messages in a batch.</p>
Line dropout delay	<p>Gives the number of seconds to wait before closing an inactive connection. This only affects channels with the Temp connection type.</p>
Wait for Acknowledgement	<p>S or empty</p> <p>When unchecked, XSock sender sends HL7 message batches before acknowledgements for previous batches are received.</p> <p>W</p> <p>When checked, sender waits after each batch until all acknowledgements have been received and processed before sending any more data. The "S" option is faster, but some external systems cannot operate this way.</p>

XSock scripts

To save time, you can put XSock commands in a script, to execute repeated sequences of commands easily. An XSock command script consists of a single character command code, followed by a sequence of arguments. Because some of the arguments themselves contain commas, the script argument separator is semicolon.

To include this command...	Use these arguments...
Set Directories	E;c:\temp\in1;c:\temp\out1;c:\temp\err1
Create Channel	C;Accept;HL7;ch1;LocalHost,1001,,, \011, \028\013,M
Delete Channel	D;Channel 1
Initial Connect	I
Final Disconnect	F
Get Status	?
Get Log Messages	L
Send	S;Channel 1;C:\temp\file
Transmit	T;Channel 1;C:\temp\file

To include this command...	Use these arguments...
Receive	R; ch1
Wait (seconds)	w; 30
Quit	Q
Comment	// Comments are ignored but can make a script more readable

✓ **Transmit** and **Send** commands are the same, except that **Transmit** does not first copy the specified file to the XSock outbox. Instead, it sends the file directly from the location specified.

To execute a script, click **Run Script** and navigate to the script file to execute. You can also execute a script at startup by typing the script file name on the XSock command line.

Sample script: Channel with Accept connection type

```
// Set directories
E; c:\xsock1\in; c:\xsock1\out; c:\xsock1\error
// Define channels and initialize
C;Accept;HL7;Channel
1234;LocalHost,1234,,, \011, \028\013
// Initial Connect
I
```

Sample script: Channel with Perm connection type

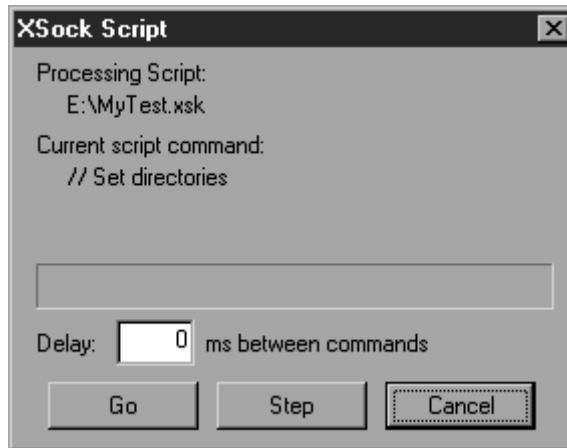
```
// Set directories
E; c:\xsock2\in; c:\xsock2\out; c:\xsock2\error
// Define channels and initialize
// The '\124' escape maps to '|'
C;Perm;HL7;Channel
1234;SomeComputer,1234,,, \011, \028\013
// Initial Connect
I
```

Processing scripts

- 1 To run a script, press **Run Script** on the main XSock window and select a script file.

XSock displays a script processing progress window you'll use to manage the processing flow.

Figure 4: Processing script progress window



- 2 To begin processing, do the following:
 - **To process the script with a brief delay between lines**, in **Delay**, set the number of milliseconds to pause between lines, then click **Go**.
If you adjust the **Delay** value during processing, the effect is immediate. This can be useful in debugging specific throughput related problems. Press **Pause** to pause script processing at the current line.
 - **To process one script line at a time**, click **Step**. Click again to process the next line.
- 3 Click **Resume** to resume processing at the current line in the file. Click **Go** to start over at the beginning of the script.
- 4 To stop script processing and start over, do the following:
 - If you have paused processing, click **Cancel**.
 - If the script is running, click **Abort**.

Setting XSock options

Several additional XSock options can help in certain situations.

Command line options

The full command line syntax of XSock is as follows (square brackets [] indicate optional items)

```
XSock [-[v][s][n][o logfile]] [script]
```

This option...	Does this...
-s	Slow mode. The socket library (ml3sock.dll) introduces a delay around socket activities to allow simulation of slower hosts or to help diagnose timing problems.
-v	Verbose mode. The socket library logs additional messages (such as sending/receiving data, beginning transfer, file type recognized, and so on) that can help diagnose connection and/or data transmission problems. Under normal, proper operating conditions, these messages are not necessary.
-n	Force NAK mode. The socket library responds with a NAK for every HL7 message it receives. This is a test mode that can be used to verify proper DTS operation when an external system indicates an error in the acknowledgement message that it sends.
-o	Output file mode. All output to the XSock message window is captured in a file you designate [<i>logfile</i>]. This is useful for comparing results or for very long test runs, because the XSock window is truncated after 50,000 characters.
script	You can place a script file on the command line to automate the execution of XSock tests. Some users name XSock scripts with the file extension .xsk.

Environment variables

Both XSock and the DTS use the environment variables described below. To use a variable, add it to the environment as a string with the value "TRUE". To prevent the use, set the environment variable to the string "FALSE" or remove it from the environment.

ML3SOCK_KEEP

When this environment variable is set, acknowledgements received by the socket library (ML3SOCK.DLL) from another system are not deleted after processing but left in the inbox with the suffix .ACK. This can be useful when you need to see what the ACKs or NAKs look like (for example, if they include a status code).

ML3SOCK_VERBOSE

When this environment variable is set, the socket library logs additional messages that are unnecessary during normal, proper operation. Messages such as sending/receiving data, beginning transfer, file type recognized, and so on, can be used to help diagnose connection and/or data transmission problems. For XSock, this accomplishes the same thing as the `-v` command-line option.

ML3SOCK_SAVE_DATA

When this environment variable is set, the socket library tracks all data sent and/or received in a file named RAWDATA.TXT located in the error directory. The data in this file is shown in both hexadecimal and ASCII formats. This data can be helpful in situations when a socket system does not send acknowledgements or process data as expected. It can be used to verify that the header and trailer sequences are received and sent properly.

Registry settings

XSock saves data entered on the Socket Interface tab window in the registry in HKEY_CURRENT_USER\SOFTWARE\MEDICALOGIC\LOGICIAN\XSOCK. This is done to save time configuring XSock between invocations. At program startup, the registry is read, the window controls are initialized, and, if one or more of the directory names contain text, then it tries to set the directories to those values, as if **SetDirs** had been pressed.

System tools

XSock can be used in conjunction with system tools of various kinds to make debugging socket connections easier. The following system tools are standard on some Windows operating systems:

- **PING:** This program takes a host name (or IP address) as an argument, and sends it special ping messages. If the other machine responds, the responses are printed in the shell window. This is the most basic way to confirm that two machines can see each other on the network.
- **NETSTAT:** This program lists the currently connected sockets. Other programs use a few sockets, but when DTS or XSock is connected to something, those sockets should show up in this list. If you provide a numeric argument, NETSTAT will treat that as a number of seconds, and will repeatedly poll the list of connected sockets and print it.
- **TELNET:** This program connects your keyboard and display as a terminal to a socket. You can see exactly what someone is sending you, and you can send simple responses, although it might be tedious to do too much of that. Unfortunately TELNET always assumes it initiates the connection, so the other program must be set up to accept connections. But being able to create a TELNET connection shows that the basic socket machinery is working in the other program.

Debugging socket connections

Assume that someone set up a third party tool to be able to talk to the DTS, and your job is to configure the DTS to talk to this application. Here is one approach that has been used successfully.

Gathering required information

Whoever implements the interface on the other end needs to know the following items of information, which also help you configure the arguments to **Create Channel** in XSock and set **Transfer Options** in LinkLogic setup.

- **Host name or IP address** of the machine the other application will run on.
- **Number of connections.** There may be a single connection, or one each for incoming and outgoing data; or there may be one connection per data type or LinkLogic relationship.
- **Socket numbers** used for each connection.
- **Who will establish each connection.** Generally, the system which is up the longest should accept connections, and systems that are up intermittently should initiate them. It makes no difference to the DTS.
- **If the DTS originates connections, whether it should close the connection after each transfer.** This determines the choice between Perm and Temp connection types.
- **Whether the header and trailer sequence will be the HL7 defaults.**
- Whether the other system can **receive more than one message in a batch.**
- **Whether the DTS must wait for acknowledgment** after each batch before sending the next.

Can we talk?

The first step in actual testing is to confirm that communication exists between the two systems. Depending on the setup, it may be possible to simply look for one system in the other system's Network Neighborhood, or attempt to map a network drive. If file sharing is not enabled between the systems, however, or if they have different operating systems, you can use ping to look for the other system.

Next, start up whichever application will be accepting connections and use TELNET to attempt to connect to the host and port number. TELNET should be able to connect, and you may be able to send some data to TELNET, which will display on the screen.

Basic data transfer

XSock is useful for confirming that data can be sent to and received from another system. The first step is to configure XSock the way DTS will be configured, with the correct channel type, host name, port numbers, and so on. You might want to create a script to do this.

Testing export

To test export to the external system, you'll need a data file in the appropriate format (for example, HL7). Try exporting a file manually from Logician, then copy the file from the LinkLogic outbox to another location.

Launch XSock and verify that it connects properly to the external system (based on messages in the "Channel Activity Log" list). Click **Send** to send your test file. If it is received properly (for HL7, you should not get a NAK back), the XSock transaction ends with the job number followed by transmission completion status of "complete". If the transmission completion status is "error", check the socket library messages to determine the problem.

In some cases, XSock appears to "hang", waiting for the program on the other end to do something. Or, XSock may think the transfer is completed, while the other program is expecting more data. Depending on the external system, it may be possible to view what was transferred to see where the error is. Confirm that the header and trailer strings match between the two systems, and that other option settings are compatible.

Testing import

To test import of data from an external system, start XSock and verify that it connects properly. Then trigger the external system to generate a transfer to XSock. Check the messages in the **Channel Activity Log** list to verify that the transaction proceeded as expected. If the socket library is operating in verbose mode ("XSock -v" or ML3SOCK_VERBOSE) the name of the resulting file in the inbox will appear in the "file renamed" message. You can inspect this file using a text editor, and import it into the application to verify that it is processed correctly.

Once problems have been worked out in these areas, you should be ready to configure the DTS and perform live data transfer.

Troubleshooting XSock

When setting up socket communications, you can expect that things will not work correctly the first time, particularly if you are working with a new interface program on the external system. Here are some tips on diagnosing common problems.

"Cannot connect to host"

The socket library cannot connect properly to the external system. Verify that hostname or IP address and port number are correct and that the external program is running.

External system cannot connect to XSock

This is probably a port number mismatch. Use NETSTAT to confirm that the port is not in use by another program.

"Connection closed abnormally"

This indicates a fault in the external system, probably a program crash, or problems in the network connection. Verify that other network programs between the two systems can operate reliably.

"Connection closed by peer"

This is not necessarily an error, but indicates that the socket was closed by the external system. The program may have terminated normally, or it may be opening and closing the connection on each transfer. However, if the external program was set to keep the connection open permanently, this could indicate a problem.

"No ACK received for five minutes"

When data is sent to the external system and acknowledgements are required, the socket library expects acknowledgements to be received within five minutes; otherwise it assumes the transfer was unsuccessful. Generally this should be enough time. If this problem occurs during large export jobs, turn on "Header/Trailer per message" and "Wait before acknowledgement" options in LinkLogic transfer options setup.

"NAK sent"

The socket library sends a NAK back to the external system when the basic format of an HL7 message segment is incorrect. The first segment must start with "MSH" and must have a valid HL7 version number and processing type. Other segments must start with three alphanumeric characters and the message separator.

"NAK(s) received"

If the external system sends a NAK to XSock, it probably indicates a data format incompatibility between Logician and the external system, perhaps due to different interpretations of the HL7 specification or system-specific limitations. This problem usually must be addressed on the external system side or by changing the options available in LinkLogic.

Extra characters at the beginning of the file

After the socket library receives the trailer sequence, it assumes the next character begins a header sequence. If it does not, the socket library logs an error message (either in the "Channel Activity Log" message list in XSock or in the activity log in the DTS), and treats those characters as the beginning of the next message.

Often, if the sending system puts an extra carriage return or linefeed after the trailer, it shows up, along with the next header sequence, at the beginning of the next message. Correct this by adjusting the definition of the trailer sequence to match exactly what is being sent.

Sockets FAQ

This section includes an overview of TCP/IP socket transmissions, socket setup options, and answers to common questions about using socket.

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What is the TCP/IP Socket Manager?

TCP/IP Socket Manager is an extension to the Data Transfer Station (DTS) application, which allows data to be imported from and exported to other systems over a network connection.

What is TCP/IP?

TCP/IP (**T**ransmission **C**ontrol **P**rotocol/**I**nternet **P**rotocol) is a language that allows two computers to communicate over a network connection. TCP/IP is a technology used for Ethernet local area networks, as well as for the Internet and for private long-distance networks. TCP/IP is supported by every major computer vendor and operating system.

What is a socket?

Sockets are the connections between applications created using TCP/IP. Two systems each create a socket, connect them together, and then send data in both directions. All the data is passed over the intervening network in a way that is transparent to the applications. Since *TCP/IP* and *Sockets* are standards, two systems can exchange data without any special transfer programs.

What types of systems can LinkLogic connect to?

TCP/IP is supported by all supported operating systems for Centricity Practice Solution, including UNIX, and Windows XP, and Vista. Because TCP/IP is built into these operating systems, LinkLogic can communicate with any of them over a network connection.

For detailed specifications, see the latest configuration requirements for your Centricity Practice Solution system available on the Centricity Practice Web site at <http://centricitypractice.gehealthcare.com>.

Is the Socket Manager based on industry standards?

TCP/IP is a well-supported communications method for networks. However, it does not define anything about the format of the data being sent.

The Socket Manager understands the structure of HL7 messages, so it can determine the type of data being communicated, and respond appropriately to the sender regarding errors. For all other formats, the Socket Manager does not need to know the details of the format. Files may conform to standards such as ASTM1238, or they may be in other, proprietary formats. Of course, in order for the data to be imported into a Centricity Practice Solution system, it must be in a format understood by LinkLogic.

The Socket Manager uses the Microsoft Windows Sockets library for all its TCP/IP communication. This is provided as a standard part of Windows XP and Vista.

What systems does the Socket Manager run under?

The Socket Manager (and the DTS) run on the GE-supported systems, including Windows XP Professional and Windows Vista Business or Enterprise.

For detailed specifications, see the latest configuration requirements for your Centricity Practice Solution system available on the Centricity Practice Web site at <http://centricitypractice.gehealthcare.com>.

How does the Socket Manager know who it is talking to?

Systems on a TCP/IP network are identified by either a host name or an IP address, and a port number. The host name and the IP address are unique for each computer on the network.

What is a host name?

This is the name given to each computer. In Windows, for example, this is set at installation time and can be changed via the Network control panel. Other systems will set this differently. A host name on a network is like a person's name on a telephone system. The names seen at the end of email addresses and at the beginning of Web site addresses (e.g., centricitypractice.gehealthcare.com) are host names.

What is an IP address?

The address assigned to each computer on a network that is used, like a phone number, to make connections. The computer has a *host name* for configuring relationships among computers on a network and an IP address for making the actual connections. Like a phone system, directory services provide an IP address when given a host name, so users don't have to deal with IP addresses. These services are used automatically by the Socket Manager, so end users generally don't have to deal with IP addresses.

What is a port number?

If an IP address is like a phone number, then a port number is like an extension. A single computer can offer multiple services to other systems that may connect via TCP/IP, such as LinkLogic, FTP or World Wide Web.

Each service is provided on a different port, so that by specifying a port number, the other system is selecting a particular service to connect to. Many types of connections have standard port numbers; for example, the standard public Web port number for all visitors is 80.

The Socket Manager supports connections on multiple ports. Multiple systems can connect to the same port number with no problem, so the Socket Manager can establish multiple conversations with multiple systems with only a single port number. Each port is associated with a LinkLogic relationship, which typically means it will be used by a specific external system.

Who initiates the connection?

Socket Manager can be configured to *create* connections with other systems or to *accept* connections from other systems. Continuing the phone analogy, who initiates the call has nothing to do with how information flows. Regardless of who makes the call, both systems can send and receive.

When the Socket Manager creates a connection with another system, it initiates the connection. When the Socket Manager *listens* for incoming connections, it accepts connections. The Socket Manager can initiate connections with some systems while accepting connections from others.

How long do systems stay connected?

When the Socket Manager accepts a connection from another system, it is up to the other system to close the connection. The Socket Manager will generally leave the connection open until it senses that it has been closed by the other system.

When the Socket Manager initiates a connection, it controls when the connection is closed. Socket Manager can be set to operate in two modes:

- **Permanent connections** are left up until one system or the other is shut down.
- **Transient connections** are closed (after a short delay) once all data has been sent or received.

Each possible connection can be configured with a different mode.

Select a mode (accept, permanent or transient) by considering the capabilities of both systems and other constraints and deciding what will work best. For example, if the Socket Manager will be talking to a system that is not always up, it is better for the Socket Manager accept connections from that system.



If a change to task definitions in Centricity Practice Solution requires the Socket Manager to change its connections, it will close all connections and then reopen them.

If another system closes a permanent connection unexpectedly, the Socket Manager will attempt to reconnect every five minutes.

What types of data can be transferred?

Any type of data that can be imported or exported through LinkLogic can be sent or received via the Socket Manager. This includes HL7 data and ASTM 1238 files.

ASTM 1238 files and text file are referred to as RAW files, while HL7 files are treated differently.

What's the difference between RAW files and HL7 files?

Transfer of a RAW file requires communication in only one direction: The sender packages the data and sends it to the receiver. This mode works for any type of data, but does not allow the receiver to respond that it has received and made sense of the data.

Alternatively, the HL7 specification defines an ACK/NAK protocol (for Acknowledge/Negative Acknowledge) that allows a receiver to say, for each message, that it has been received in good shape and will be processed.

Because the handling is different for HL7, a single connection can handle RAW data or HL7 data, not both.

How does Socket Manager know a transfer is finished?

For transient connections, the sending system closes the connection when the transfer is complete. However, if several consecutive files are sent over the same connection, there is no built-in way to know when all transfers are complete.

To solve this problem Socket Manager allows each connection to have a header and trailer sequence that indicates the start and finish of a set of transfers. This is a sequence of bytes (characters) that won't occur in the data, such as control (unprintable) characters not allowed in defined formats like HL7. To communicate properly, all transfers over the same connection must use the same header and trailer, and both systems must be set up with the same header and trailer. Set these options in LinkLogic Setup.

How much data does the Socket Manager send at one time?

RAW files: an entire file is sent as a single transfer, including header and trailer.

HL7 files: Options include the following:

- All messages exported in a single job can be transferred at once
- Each message can be treated as a separate transfer.

Often, other systems are limited to receiving one message at a time. Set these options in LinkLogic Setup.

What is the HL7 Minimal Lower Level Protocol?

HL7 defines a minimal lower level protocol which includes a specific header and trailer character; these are the defaults used by the Socket Manager.

The minimal lower level protocol also includes some optional features for error detection and correction, but these are not used by the Socket Manager (TCP/IP has its own error detection/correction).

How does Socket Manager know the type of data in a file?

For a file to be imported correctly by LinkLogic, its type must be specified as part of the file name. The Socket Manager examines incoming data to determine what type it is, and gives the file the correct name.

RAW files: Certain character patterns are expected at the beginning of the file which identify it as ASTM 1238 or other formats. If the beginning of the file is not recognized, the file is left with ".TMP" as its suffix.

HL7 files: The first message header is used to determine the type of the file. All HL7 messages in the same transfer must be of the same type and come from the same source system.

Isn't it slower to transfer data in files?

Our testing has shown that using files to transfer data between the Socket Manager and LinkLogic does not affect performance, considering the overhead of the actual communication and the interaction with the database. In modern operating systems, file data is temporarily stored in memory and can be accessed from there, so the application receiving the data may see it before it even arrives on the disk.

How does the Socket Manager work with the DTS?

The Socket Manager is part of the DTS, and is controlled by the DTS job controller. The DTS uses LinkLogic setup information to initialize the Socket Manager when it starts up. At the point, permanent connections are attempted and the Socket Manager begins listening to ports where incoming connections can be made.

When the DTS executes an export task that has socket transfer enabled, the data is sent by the Socket Manager over the specified connection. This may require opening a connection if there isn't one open already.

The Socket Manager also continuously monitors all connections for incoming data. When data arrives over a connection, the Socket Manager notifies the DTS, which will import the data according to its schedule of import tasks. This allows for prioritization of incoming data.

When is data transferred?

The DTS allows you to specify a regular schedule of importing and exporting data, so that more important data can be processed quickly and less important data deferred for later processing.

On export, data is transferred over the connection as soon as it is exported from the database.

How do I set up LinkLogic to use the Socket Manager?

LinkLogic setup can be performed from any Centricity Practice Solution workstation, however sockets may only be defined for workstations as Data Transfer Stations (DTS).

- 1 In Centricity Practice Solution, go to **Administration > System > LinkLogic** and select **Stations**.
- 2 Select the DTS you want to configure for sockets communication. If necessary, first change the desired workstation to serve as DTS and select tasks to be imported/exported through the socket.
- 3 Click **New** to set the host name (or IP address), the port number, the header and trailer sequences, and the connection mode.

A transfer task is always associated with a specific external system. For additional setup options, click F1 on the Stations screen for online help.

What other setup options are available?

You can also specify the following options:

- Whether outgoing HL7 data is to be ACK'ed by the other system
- Whether to send AR or AE for NAK to the sending system when LinkLogic encounters an error
- Whether HL7 data is sent in a single batch or one message at a time
- How long a transient connection stays open when no data is sent or received
- Whether files are kept, deleted, or moved to a different location after processing

How do I know if transfers are successful?

The Socket Manager logs informational messages about each transfer in the LinkLogic Activity Log. It also notes when connections are opened and closed.

What kinds of problems can occur during a transfer?

A variety of communication problems can affect a transfer, including network interruptions, a software fault on the other system, or hardware problems. Because the data flows over a network that is shared by other systems, problems with other applications or computers may interrupt a transfer between the Socket Manager and another system.

From the Socket Manager's point of view, several things may happen:

- **A connection is not made:** This may happen because the host name or IP address is wrong (or has been changed), or because the other system is not up and running.
- **A connection is closed unexpectedly:** This can be caused by a software crash or hardware fault on the other system, or an interruption in the

network. If data was being transferred OUT, the file will be saved so the transfer can be attempted later. If a transfer IN is interrupted, the partial file is kept but not processed (presumably the sending system will send it again later).

- **The other system stops sending or receiving for a period:** This is generally a software fault network problem. This is treated the same as a closed connection.
- **An HL7 message is NAK'ed:** This is usually caused by a configuration problem in LinkLogic setup or a problem with the other system (such as trying to send messages to a system that can't understand them).

These problems only occur when communication is being set up or changed. In this case, the file being transferred is retained.

What happens when transfer problems occur?

For all the cases described above, informative error messages appear in the LinkLogic Activity Log. Transfer files that were not processed successfully are retained for later processing or examination.

Can I use the Socket Manager over a dial-up connection?

You can use two standards (SLIP and PPP) to send TCP/IP over a telephone connection. These standards are commonly used, for example, when you access the Internet from a home computer. The SLIP or PPP connection is transparent to the Socket Manager, so transfers can work over such a connection.

The difficulty is in establishing a telephone connection, because the Socket Manager does not do this. However, for example, you can use Windows Dial-up Networking (also called Remote Access Service, or RAS) to set up a SLIP or PPP connection and configure it to dial the phone manually or automatically.

Configuring a workstation to automatically dial another computer and manage the dial-up connection is complex and will require someone with networking expertise.

Can I do socket transfers from a Centricity Practice Solution workstation?

GE only supports Socket Manager capabilities on defined DTS workstation for the following reasons:

- Depending on the connection mode, the host name of the DTS system may need to be configured into the other system.
- Allowing socket connections to a workstation presents security risks for the system.
- Automated transfer tasks can be performed by only one workstation per database.

- The hardware/software resources required to support the Socket Manager may not exist on every system (e.g., a modem for dial-up connections).

What information do third parties need for integration?

Physical network

The LinkLogic TCP/IP Socket Manager is designed to operate over any physical TCP/IP network connection, including Ethernet, wide area networks, and dial-up lines. In the case of dial-up, the connection must have been established previously (e.g., via SLIP or PPP) before the Socket Manager can communicate.

TCP/IP requirements

The Socket Manager operates only using the Stream (TCP) capability of TCP/IP. It cannot use Datagrams (UDP). Since TCP guarantees reliable, sequenced delivery, the Socket Manager does no transport-level checking of its own.

Host Names and Addresses

The Socket Manager can identify other hosts via either host names or IP addresses. Host names are resolved using whatever name services are in use on the network, including DNS and lmhost files.

For connections initiated by the Socket Manager, the host name or address is used to identify the other system. For connections accepted by the Socket Manager from the other system, the host name or address is used to verify who is at the other end of the connection.

Port Numbers

The Socket Manager can initiate connections to, and accept connections on, any port number. This is configured in LinkLogic Setup. Typically the port numbers used are between 1024 and 32767.

Establishing Connections

When *initiating* a connection, the Socket Manager attempts to connect to the specified host and port.

When *accepting* a connection from another system, the Socket Manager listens on the port specified in LinkLogic Setup for connection attempts from other systems. For incoming connections, the Socket Manager provides no authentication support.

The Socket Manager can initiate both permanent and transient connections. A permanent connection is established when the Socket Manager is initialized and remains connected as long as both the Socket Manager and the other system are running. A transient connection is initiated when there is data to be sent to the other system, or when another system is to be polled for data, and

is closed after all pending transfers are complete (a one-minute time-out is used to determine that all transfers are done).

The Socket Manager can also accept connections that are either permanent or transient. In this case the Socket Manager expects the connection to be closed by the other system.

Security

The Socket Manager provides no authentication (name/password). It is expected that this is done at the time the network connection is made or that the Socket Manager is operating in a secure environment.

Data encryption

The Socket Manager does not currently support data encryption. It assumes that a host name is sufficient to identify the system to which it is connected. It is not designed for use in unprotected environments such as the Internet.

Block Delimiters

In stream-based communication over a permanent connection, there is nothing corresponding to End-of-File, so some means must be used to determine the end of the last message in a batch. To enable this, user-specified block header and trailer strings can be defined in LinkLogic Setup. The defaults are those defined for the HL7 Minimal Lower Level Protocol, i.e., hex 0B for the header and hex 1C for the trailer.

In the case of transient connections, block delimiters are not required, because closure of the connection constitutes end of file.

HL7 Acknowledgment

LinkLogic and the Socket Manager operate in the HL7 original acknowledgment mode. This means that for each message received by the Socket Manager, an MSA message may optionally be returned.

Incoming data is validated based on message type, HL7 version, and basic syntax. If the message passes this validation an AA (Application Accept) code is returned; otherwise an AR (Application Reject) code is returned by default. If errors occur in processing the data after this point, an error indication is raised in the LinkLogic system, but the external system is not notified, unless LinkLogic is configured to send AE (Application Error) instead of AR on the LinkLogic > Stations > New Socket Channel window.

For outgoing data, LinkLogic can be configured either to always expect an MSA message, or to never expect one. To send the block header and trailer characters after each message, rather than after a set of messages, on the New/Change Socket Channel window, check the option **Header/trailer per message**.

Resolving LinkLogic errors

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Error resolution is an important part of LinkLogic implementation and day-to-day monitoring of LinkLogic and Data Transfer Station (DTS) activity. This appendix provides a complete list of LinkLogic message codes, with a description of the problem and recommended short-term and long-term solutions for correcting it. If you encounter an error that is not documented, please contact Centricity Services or your Value-Added Reseller.

This reference is also available in online help. For detailed information about a message displayed on the LinkLogic Activity Log, click **F1** in the application and enter the message code on the help Search tab.

Activity Log messages

When a problem in data transfer occurs, LinkLogic displays the following types of messages in the LinkLogic Activity Log:

- **Notes** convey information. You typically do not need to take any action. For detailed description Notes message descriptions, see [“Notes messages” on page 645](#)

Once you become familiar with these messages, you might want to exclude some of them to improve performance and reduce the number of Activity Log entries. See [“Excluding messages and warnings from the Activity Log” on page 640](#).

- **Warnings** indicate problems in the data that do not stop DTS from processing the rest of the job. For detailed Warning message descriptions, see [“Warning messages” on page 649](#).
-

- **Errors** report problems that cause DTS to stop processing a job and require you to correct the underlying problem and reprocess the job. For detailed Error message descriptions, see [“Error messages” on page 683](#).
 - A **fatal error** prevents DTS from processing a job. See [“Fatal errors” on page 732](#).
 - A **critical error** causes DTS to stop processing a job without completing a database transaction. GE recommends that you enable the error entry display.

Excluding messages and warnings from the Activity Log

You can reduce the number of messages in the LinkLogic Activity Log by preventing certain messages from being logged. For example, each time a job is queued, LinkLogic adds message code 7 to the LinkLogic Activity Log; and when a job completes, LinkLogic adds message code 1. Once you are familiar with these messages, you'll want to exclude them.

To reduce the number of messages and warnings in the LinkLogic Activity Log, you can exclude those you don't want to see by editing the **emr.ini** file on the workstation where you view the LinkLogic Activity Log

!!! Before you exclude a warning or error message, confirm that the condition being reported does not prevent you from importing important data.

Exclude specified messages from the Activity Log

Example: Every time a job is queued, LinkLogic adds message code 7 to the Activity Log; every time a job completes, LinkLogic adds message code 1. You can safely exclude these messages.

!!! Important! Changing the emr.ini file on a workstation only affects what displays in the Activity Log on that workstation. To change what is logged from Data Transfer Stations, you must make the change in each workstation's emr.ini file.

- 1 On each workstation, open the **emr.ini** file in Notepad.
- 2 For messages related to manual operations (LinkLogic module), in the public area of the file, find the `L3IgnoreMessages` command in the [Logician Public] section.

For messages related to the DTS, you'll find this in the [HOSTNAME DTS #] section(s) of the file. If you are running more than one DTS on the machine, each DTS will have a separate section in the emr.ini file.
- 3 Type the message codes you don't want to see, separated by commas.
For example:

L3IgnoreMessages=1,7



The L3IgnoreMessages command has no values assigned to it when you first install the application.

- 4 Shut down and restart the program on the workstation, either Data Transfer Station or Centricity Practice Solution.

!!! Changing the **emr.ini** file on a workstation only affects that workstation.

Exclude specified warnings from the Activity Log

Example: You may want to see warnings for an empty field (code 4138) generally, but ignore those pertaining to result status. You can modify the *L3IgnoreEmptyWarnings* command to exclude only warnings about an empty result status field.

!!! Important! Changing the emr.ini file on a workstation only affects what displays in the Activity Log on that workstation. To change what is logged from Data Transfer Stations, you must make the change in each workstation's emr.ini file.

- 1 On each workstation, open the **emr.ini** file in Notepad.
- 2 For messages related to manual operations (LinkLogic module), in the public area of the file, find the `L3IgnoreEmptyWarnings` command in the [Logician Public] section.

For messages related to the DTS, you'll find this in the [HOSTNAME DTS #] section(s) of the file. If you are running more than one DTS on the machine, each DTS will have a separate section in the emr.ini file.

- 3 Type the names of fields you want to ignore separated by commas.

Example: If you see the following message

```
IXP Warning: Warning-enabled empty field:
ResultObservation: ResultStatus (ResultObservation):
OBX|3|ST|LOI-2093-3^ CHOLESTEROL||115|mg/dl|||||
19951113121406
```

type this in the **emr.ini** file:

```
L3IgnoreEmptyWarnings=ResultStatus
```

- 4 Shut down and restart the program on the workstation, either Data Transfer Station or Centricity Practice Solution.

!!! Changing the emr.ini file on a workstation only affects that workstation.

Resolving errors

Whenever possible, LinkLogic attempts to skip an offending data segment and process the rest of the file. It stores problem data segments in an exception file in the LLOGIC\ERROR directory. You can often resolve errors in exception files directly from the LinkLogic Errors tab and then reprocess them on the Jobs tab.

To view errors that require your action, in LinkLogic, click the Errors tab and review the Pending Errors list. If an error generated an exception file, you'll see it listed here. Other messages related to a selected error appear below in the Activity log list.

Resolving common error types

This table describes some common and suggests steps to take to resolve them.

Error type.	Example	Resolution steps
Appointment	LinkLogic can't find the appointment book or the appointment type	Select the error in the Pending errors list, then click Resolve.
Cannot Import	LinkLogic can't find a relationship for the data or the header record in the data file isn't correct.	<ul style="list-style-type: none"> • Add a LinkLogic relationship • Double-click the error in the Pending Errors list and correct the name of the relationship in the data file, save the file as a text document without formatting, and then click Resolve.
Cannot Resolve	LinkLogic can't process the job, due to a missing configuration file or a bad export segment.	<p>Call Centricity Services or your Value-Added Reseller</p> <ul style="list-style-type: none"> • Bad data segments indicate a corrupt database. • Missing configuration files indicate that LinkLogic cannot locate the cross-reference or IXP file in the network LinkLogic folder.
Critical	One or more configuration files for the relationship has an error.	<p>Call Centricity Services or your Value-Added Reseller</p> <p>This error indicates a problem with the installation or the database.</p>
Data type	LinkLogic can't find a relationship for the data that is imported using a TCP/IP socket connection.	<ul style="list-style-type: none"> • Add a LinkLogic relationship • Double-click the error in the Pending Errors list and correct the name of the relationship in the data file, save the file as a text document without formatting, and then click Resolve.

Error type	Example	Resolution steps
DB Failed	A serious database error occurred.	Call Centricity Services or your Value-Added Reseller This error indicates a problem with the installation or the database.
Disperse	LinkLogic can't import the data because the patient's chart is being updated by another user.	Select the error in the Pending errors list, then click Resolve.
Failed	LinkLogic can't process the import file, possibly due to a patient mismatch or the wrong data format.	<ul style="list-style-type: none"> If the messages show that the data doesn't match a patient, then select the error in the Pending errors list and click Resolve. If messages show that data is missing or bad, double-click the error in the Pending Errors list. Correct the name of the relationship in the data file, save the file as a text document without formatting, and then click Resolve.
Orphaned	LinkLogic cannot find the responsible provider.	Select the error in the Pending errors list, then click Resolve.
Retry Limit	Data Transfer Station can't export the data after trying numerous times to export the data using a TCP/IP socket.	Select the error in the Pending errors list, then click Resolve.

Working with errors in exception files

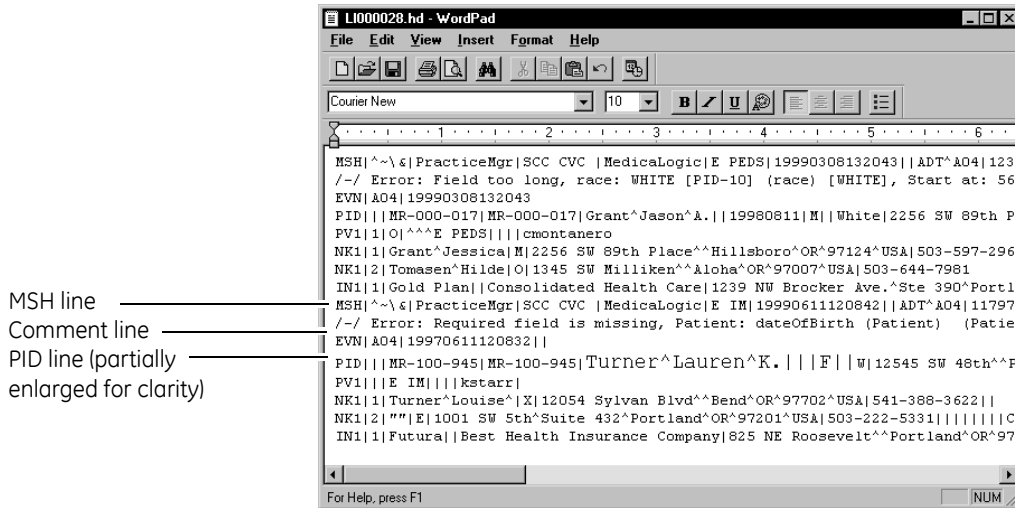
Data segment: a piece of information in an import or export file

Depending on the type of data being imported, the exception file contains at least three data segments for each erroneous record (shown in the following illustration):

- **A message header segment.** This segment begins with the code `MSH` and contains administrative information about the erroneous patient data.
- **A comment segment.** This segment begins with the text `/- / ERROR` and contains information specific to the error.
- **A patient ID segment.** This segment contains the patient data that LinkLogic could not import into Centricity Practice Solution. The patient ID record begins with the code `PID`.

This segment is different if the erroneous import record contains observation, appointment, or provider data. See the appropriate interface specification in ["Part II: LinkLogic interface specifications" on page 45](#).

- ✓ When correcting data in an exception file, be sure to change the data in the actual data segment, not the comment line



These error data segments apply to import and export records that follow the HL7 data format. Exception files for ASTM 1238 are structured differently. See [“LabLink Import ASTM interface specification” on page 225](#), for more information.

Import errors

When an import job generates errors and warnings, the LinkLogic module's Errors tab helps you determine the cause of the errors.

Most errors and warnings generated for demographics import jobs, for example, are one of two types:

- **Invalid data formats errors** should have been corrected before your clinic began using LinkLogic in its daily operations. If you continue to see these errors, contact your Clinic Application Manager or Enterprise LinkLogic Manager to resolve these problems.
- **Missing information** from an external information system usually causes a warning, not an error. If the information was simply not entered in the information system, you can enter it there and update the patient's record. If the information is in the system but you don't see it in Centricity Practice Solution, check the import file for errors and correct them.

Notes messages

Notes messages are informative. You typically do not need to take any action. Once you become familiar with these messages, you might want to exclude some Notes messages to improve performance and reduce the number of Activity Log entries. See [“Excluding messages and warnings from the Activity Log” on page 640](#).

1 Job startup

Cause	LinkLogic has done one of the following actions: <ul style="list-style-type: none"> • Begun the specified import/export job • Completed queuing the specified job for processing • Started socket transfer for export job
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1 Job finished

Cause	LinkLogic has completed the specified import/export job.
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7 Importing files

Cause	LinkLogic queued the specified file and is processing the import job.
LinkLogic action	The queuing and processing of jobs to import data is a single, combined operation. LinkLogic processes the file as soon as you select it on the Jobs tab.

8 Processing of file stopped by user

Cause	A user stopped the processing of a data file.
LinkLogic action	LinkLogic doesn't process any of the patient data from the file until you select the file on the Jobs tab and process it.
Recommended action	Contact your Information Systems department or your Centricity Practice Solution Manager to determine the reason the job was stopped. Be sure all problems are resolved before selecting and processing the file on the Jobs tab.

14 Recurring Task stopped by user

Cause	A user shut down Data Transfer Station or stopped a recurring task.
LinkLogic action	Data Transfer Station doesn't process any data for the specified task until the next appropriate time. This time is based upon Recurring Task Options selected in LinkLogic setup (Administration).
Recommended action	Contact your Information Systems department or Centricity Practice Solution Manager to inquire about possible network problems that might have prompted the shutdown or disabling of the specific task before you restart Data Transfer Station or enable the task.

16 Recurring Task Processing File

Cause	Data Transfer Station is currently processing a data file.
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17 Recurring Task Found No Files to Process

Cause	Data Transfer Station found no new data files in the inbox.
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20 Automatic refresh of station configuration succeeded

Cause	LinkLogic successfully updated the workstation configuration. This indicates that the LinkLogic workstation reread LinkLogic setup information from the database. This event is initiated automatically whenever a user makes a change to the LinkLogic setup configuration.
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21 Automatic refresh of station configuration failed

Cause	This message might be caused by problems such as the inability to connect to the network, loss of a network connection, or out-of-memory on Data Transfer Station. It is likely that other error messages will accompany this one.
LinkLogic action	Queuing and/or processing of data files might not work properly.
Recommended action	Contact your Information Systems department to correct the problem between the network and your workstation.

22 Writing additional export file

Cause	LinkLogic has created a new file while processing the specified export job.
LinkLogic action	The maximum number of patients in a single export file had been reached in the previous export file.
Recommended action	The maximum number of patients permitted in a single export file is specified in the Defaults control set in the LinkLogic folder in the Setup module. If necessary, change the number from the default value of 4000.

23 Save folder archived

Cause	The “Automatically archive 'Save' folder” option has been configured in LinkLogic Defaults setup.
LinkLogic action	When this option is used, the DTS renames the LinkLogic save folder once per day. The new names are “SAVE” followed by the month, day, and year. This prevents a single save folder from accumulating too many files as to make it unmanageable.

24 Archival of Save folder failed

Cause	The “Automatically archive 'Save' folder” option has been configured in LinkLogic Defaults setup, and there was a problem accessing the network LinkLogic folder and/or the LinkLogic save folder.
LinkLogic action	Although the “Automatically archive 'Save' folder” option has been configured in LinkLogic Defaults setup, either the DTS could not create an archived LinkLogic save folder or after the LinkLogic save folder was renamed to be an archive, a new LinkLogic save folder could not be created.
Recommended action	Check the network permissions to make sure that the user that runs the DTS has permissions to create and rename folders in the network LinkLogic folder and to read and write the LinkLogic save folder.

26 Exporting file

Cause	LinkLogic has queued the specified export job and is processing the job to export the data.
LinkLogic action	The queuing and processing of jobs to export data is a single, combined operation. LinkLogic processes the job as soon as you specify what to export from the Jobs tab.

29 Socket Communications Information: Information may have been exported through specified socket connection

Cause	LinkLogic completed an attempt to export data through the socket connection. The content of the message indicates whether the transfer was successful or unsuccessful.
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37 Imported note signed during dispersal

Cause	The data file contained information that identifies an imported document as signed.
LinkLogic action	The document was imported as a signed chart note.

43 Schedule Import: Schedule template is not available for <provider> on <date>. System schedule template has been extended for date <date>

Cause	No schedule template is associated for the provider/resource on the date of appointment.
LinkLogic action	LinkLogic extended the existing system-generated template of the provider/resource for the date of appointment and imported the appointment.

Note. This message only displays in the Chart-only licensed version.

45 Job task name: exporting data for number patient(s) to filename

Cause	An export job is starting. Task name is the name of the relationship. Number is the number of patients that will be exported. Filename is the name of the export file.
LinkLogic action	If more than one patient is being exported, LinkLogic identifies the number of patients to be exported and the name of the export file.

46 Schedule Import: System-generated schedule template created on date <date> for <provider or resource>

Cause	No schedule template is associated for the provider/resource on the date of appointment.
LinkLogic action	LinkLogic created a system-generated schedule template for the provider/resource and imported the appointment.

Note. This message only displays in the Chart-only licensed version.

6146 LinkLogic (version #)

Cause	LinkLogic logs this message the first time any import/export job is performed after either LinkLogic or Data Transfer Station has been started.
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Warning messages

Warning messages indicate a problem in the data. Despite the problem, LinkLogic often successfully imports the data.

Once you are familiar with these messages, you can exclude some warnings to improve performance and reduce the number of Activity Log entries. See [“Excluding messages and warnings from the Activity Log” on page 640.](#)

1024 Generic warning

Cause	LinkLogic encountered something unexpected in its processing.
LinkLogic action	<p>Since there is no specific message code available, LinkLogic logs a generic warning. Some examples of the text of this message include</p> <ul style="list-style-type: none"> • DTS Skipping empty file. • DTS Skipping file since matches must be confirmed. • A change in priority occurred with document overlay. • Document(s) not automatically printed since printer context was not set for chart documents.
Recommended action	Contact the LinkLogic Manager, Centricity Services, or your Value-Added Reseller with the text of the warning message.

1026 Visit ID differs

Cause	An external system might have sent two records for the same appointment with different values for the visit identifier (also known as the encounter reference number).
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LinkLogic action	LinkLogic sets the external visit identifier the first time an appointment is imported. If a subsequent import for this appointment (to change the status to Arrived or Canceled, for example) specifies a different visit identifier, the old existing value is replaced with the newly imported value.
Short-term solution	Identify the differences in the visit identifiers and correct the erroneous entry in the external system.
Recommended action	Contact your Information Systems department, the Centricity Practice Solution Manager, or the LinkLogic Manager to ensure that visit identifiers are used properly and do not change when appointment details change and require appointment data to be re-imported by LinkLogic.

1027 Dispersal of data from file stopped by user

Cause	A user stopped the processing of a data file while data was being dispersed to the Centricity Practice Solution database.
LinkLogic action	LinkLogic doesn't disperse any more of the patient data from the file until you select the file on the Errors tab and resolve it.
Recommended action	Contact your Information Systems department or your Centricity Practice Solution Manager to determine the reason the job was stopped. Be sure all problems are resolved before selecting and resolving the file on the Errors tab.

1028 Unexpected File Extension

Cause	The data file has an extension that is not recognized by LinkLogic.
LinkLogic action	The data file will not be queued for processing until it has a valid extension.
Short-term solution	Change the file extension to one that LinkLogic recognizes. Use one of the following extensions. Demographics HL7 - .hd Documents HL7 - .ht Lab results ASTM - .lr Lab results HL7 - .hr Appointments HL7 - .sl
	Note: GE does not support the MedicaLogic proprietary formats: Demographics (.ad) and Documents (.ot)
Recommended action	Contact your external system vendor to ensure the data files use the correct file extensions before sending additional data files.

1029 Ignoring Field

Cause	<p>The data file contains information in a field that is not used by LinkLogic during data import.</p> <p>Note: In the MedicalLogic proprietary data formats, these fields are marked as "n/a."</p> <p>GE does not support these formats.</p> <p>This message is logged only when a Documents Import file contains data indicating the external document is signed, but the corresponding LinkLogic relationship has not enabled the Import Authenticated Documents (TXA-17) as Signed task option.</p>
LinkLogic action	<p>Data contained in this field will not be imported or viewable in the Centricity Practice Solution database. For current Documents Import relationships, this message indicates that LinkLogic will import the document as an unsigned chart note.</p>
Recommended action	<p>For current Documents Import relationships, use LinkLogic Task Options Setup to enable the Import Signed Documents as Signed option.</p> <p>If this is required information, make an enhancement request for future support of the specified field.</p>

1030 External system Indicated Patient Was Deleted

Cause	<p>One of the following conditions occurred.</p> <ul style="list-style-type: none"> • A Demographics Import data file using the HL7 format has an event type code A23, A29, or P02, which instructs LinkLogic to delete the specified patient record. • A Demographics Import data file using the MedicalLogic proprietary data format indicates a delete action. GE does not support this format.
LinkLogic action	<p>LinkLogic doesn't delete the patient and ignores this information. The patient's status in Centricity Practice Solution isn't changed.</p>

1031 Duplicate External ID

Cause	An external system might have sent two records for the same patient with the same external identifier, but the last name is spelled differently.
LinkLogic action	LinkLogic creates an additional patient with the same external identifier, resulting in multiple patients with the same external identifier.
Short-term solution	Identify the differences in the last name and correct the erroneous entry in the external system.
Recommended action	Contact your Information Systems department, the Centricity Practice Solution Manager, or the LinkLogic Manager to change the patient's external ID in Registration.

1032 Need last name to process referring physician

Cause	The data file contains a referring physician UPIN, but the referring physician's name was not specified.
LinkLogic action	LinkLogic won't import the referring physician data, and as a result it won't be visible on the Registration Contacts tab.
Short-term solution	Associate the intended referring physician with the patient by setting them up as a contact in the Registration module.
Recommended action	Review the data file sent by the external system to determine if the last name was sent. If the last name was missing from the data file, this problem requires workflow-related changes to ensure the full name of each referring physician is entered when the data is entered.

1033 Need name to process pharmacy

Cause	The data file contains information regarding a contact with pharmacy as the relationship type, but no associated pharmacy name was specified.
LinkLogic action	LinkLogic won't import the pharmacy data, and as a result it won't be visible on the Registration Contacts tab.
Short-term solution	Associate the intended pharmacy with the patient by setting it up as a contact in the Registration module.
Recommended action	This problem requires workflow-related changes to ensure all pharmacy information is entered when the data is entered.

1034 Need name to process contact

Cause	The data file contains information regarding a contact, but no contact name was specified.
LinkLogic action	LinkLogic won't import the contact data, and as a result it won't be visible on Registration Contacts tab.
Short-term solution	Associate the intended contact with the patient by setting them up as a contact in Registration.
Recommended action	This problem requires workflow-related changes to ensure all contact information is entered when the data is entered.

1035 Ignoring name of independent contact

Cause	The data file contains information regarding an independent contact that is also a patient.
LinkLogic action	LinkLogic won't import the registration information for this person and no changes will be made in the Centricity Practice Solution data. LinkLogic does not allow updates of patient data through contact records.

1036 Updating external ID for patient

Cause	Demographics data from the external system specified an external identifier for a patient that is different from the existing external identifier for that patient.
LinkLogic action	Use of external identifiers in patient matching is optional. If an existing patient can be found, LinkLogic updates the external identifier value.
Recommended action	This is normal and expected behavior. For more information about import of patient information, see “DemographicsLink Import /Export HL7 interface specification” on page 87 . You can configure whether or not to allow import files to update patient external IDs in Administration.

1037 Cannot Remove File

Cause	The Delete File operation and the end of job processing cannot be completed due to possible network problems such as inappropriate network rights or network mapping inefficiencies.
LinkLogic action	The data file remains in the LinkLogic in folder after processing
Short-term solution	Manually delete the data file from the in folder.
Recommended action	Contact your Information Systems department for assistance in determining and resolving the possible network-related problems.

1038 Invalid Date/Time Value

Cause	The data file contains a date/time stamp that does not conform to the format defined in the data format specifications.
LinkLogic action	LinkLogic sets the source date/time to the time the file is imported.
Recommended action	Contact your external systems vendor regarding the required changes to the date format prior to further transmission of data files.

1039 File Was Already Queued

Cause	Data Transfer Station or someone using LinkLogic attempted to queue a file for processing but the file was already queued (either by Data Transfer Station or by another workstation). Note: This file may not have been successfully processed during the first attempt. In this case, the file is listed on the LinkLogic Errors tab.
Recommended action	Check the LinkLogic Jobs and Errors tabs for the specified filename. If you cannot find the file, make sure the settings in Organize Jobs and the Organize Errors windows are set to view all jobs.

1041 Patient is not assigned a responsible care provider

Cause	A patient imported from a demographics data file did not have a responsible provider defined in the data file, and/or the value in the data file could not be properly matched to a non-obsolete Centricity Practice Solution user.
LinkLogic action	LinkLogic imports the patient registration data. The data appears in the Registration module with no associated responsible provider.
Short-term solution	Manually assign the patient's responsible provider in the Registration module.
Recommended action	If appropriate, create or update a responsible provider cross-reference file and use LinkLogic setup in Administration to associate it with the LinkLogic relationship.

1042 Provider Has Been Set

Cause	This appears when someone attempts to resolve an Orphan error in LinkLogic, and the previously orphaned document has now been assigned a provider through some other means, such as the document being signed.
LinkLogic action	LinkLogic does not change the document since it already has an associated provider.

1043 Cannot Move File

Cause	The Move File operation at the end of job processing cannot be completed. This could be due to possible network problems, such as inappropriate network rights or network mapping inefficiencies. This could also be caused when a file with the same name is already in the save folder.
LinkLogic action	The data file will remain in the LinkLogic in folder after processing.
Short-term solution	Manually move the data file from the in folder to the save folder.
Recommended action	Contact your Information Systems department for assistance in determining and resolving the possible network-related problems.

1044 Ambiguous match/delete request ignored

Cause	<p>One of the following conditions has occurred.</p> <ul style="list-style-type: none"> • A Demographics Import data file using the HL7 format has an event type code A23, A29, or P02, which instructs LinkLogic to delete the specified patient record. • A Demographics Import data file using the MedicalLogic proprietary data format indicates a delete action. Note: GE does not support this format. • LinkLogic was unable to find a unique match to the specified patient, contact, or insurance plan.
LinkLogic action	LinkLogic ignores the request to delete the patient, contact, or insurance plan.
Recommended action	<p>Search for the patient. If the patient is in the Centricity Practice Solution database, examine the data file to ensure adequate matching information is provided to perform a unique match to the patient.</p> <p>If appropriate, remove the proper contact and/or insurance plan for the patient using the Registration module.</p>

1045 Schedule Import: Appointment at: cannot create document

Cause	A potential database problem exists.
LinkLogic action	LinkLogic doesn't create a document in the patient's chart to indicate the arrival or cancellation of the appointment.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so that they can determine the cause of the problem.

1048 Note Import: Document cannot be signed without specifying authentication person

Cause	The data file did not specify an authenticator for the document.
LinkLogic action	LinkLogic imports the document as Unsigned.
Recommended action	<p>If it is desired that documents be automatically signed during import, then the authentication person must be specified, and the specified provider must have the privilege to sign imported documents.</p> <p>For information on how to have imported documents automatically signed, see “NotesLink Import/Export HL7 interface specification” on page 341.</p> <p>See online help in Centricity Practice Solution for instructions on how to set provider privileges.</p>

1049 Lab Import: Ignoring observation with Order or Result Status `X`

Cause	<p>A laboratory results data file contains a new observation with 'X' specified as the order or result status value.</p> <p>Note: For more information on order or result status codes, see the appropriate interface specification.</p>
LinkLogic action	LinkLogic imports the document as Unsigned. LinkLogic creates a document identifying all laboratory results within the data file. The result values for the observation is not dispersed to the flowsheet.
Recommended action	<p>If it is desired that documents be automatically signed during import, then the authentication person must be specified, and the specified provider must have the privilege to sign imported documents.</p> <p>For information on how to have imported lab reports automatically signed, see “LabLink Import/Export HL7 interface specification” on page 253.</p> <p>See online help in Centricity Practice Solution for instructions on how to set provider privileges.</p>

1050 Lower Priority Result Status/Could Not Disperse Observation

Cause	A laboratory results data file contains an observation matching a previously imported observation's date/time stamp, but it has a lower priority status rating. Note: For more information on priority status ratings, see the appropriate interface specification.
LinkLogic action	LinkLogic creates a document identifying all laboratory results within the data file. The result values for the observation with the lower priority are not dispersed to the flowsheet.

1051 No Units Specified for Numeric Result

Cause	A data file for laboratory results contains at least one numeric result value with no associated unit of measure.
LinkLogic action	LinkLogic doesn't disperse the result value that did not contain an associated unit of measure. The corresponding document contains information identifying the result value that did not have units.

1052 New lab result differs from previous value

Cause	A data file for laboratory results contains an observation matching a previously imported observation's date/time stamp, but it has a different value. Note: This message occurs even if the result has a status of corrected.
LinkLogic action	LinkLogic creates a document that contains an explanation identifying the old value/new value imported. LinkLogic disperses the value for the specified observation to the flowsheet.

1053 Schedule Import: On-hold arrival document could not be created

Cause	Scheduling data from an external system has set the status of an existing appointment to Arrived. The LinkLogic task for importing the scheduling data is set up to automatically create on-hold documents for appointment arrivals. Unfortunately, the appointment type of the specified appointment does not have both associated encounter type and document type.
LinkLogic action	LinkLogic updates the appointment status to Arrived but does not create an on-hold document in the patient's chart.
Recommended action	Associate an encounter type that has an associated document type with the appointment type in the Setup module.

1054 Appointment not found

Cause	<p>The data file contains information for updating the appointment status for an appointment that could not be found in the Centricity Practice Solution database. Either the previous import of a data file that scheduled the appointment could not be completed, or there was no previous data file that scheduled the appointment.</p> <p>Usually this message is logged when the appointment status Deleted is used to attempt to remove an existing appointment.</p>
LinkLogic action	LinkLogic ignores the information pertaining to the specified appointment.
Recommended action	<p>Review the Activity Log messages to find the problem with the initial import and resolve the problems with the original data file.</p> <p>If necessary, adjust the workflow of the scheduling interface to ensure LinkLogic always imports data files for appointments with appointment status Booked before data files with appointment status Canceled or Deleted.</p>

1055 Schedule Import: Filler status code BOOKED was ignored

Cause	Scheduling data from the external system has attempted set the status of an existing Arrived, Canceled, or No Show appointment to Booked.
LinkLogic action	LinkLogic ignores the information pertaining to the specified appointment. LinkLogic only responds to appointment status Booked in scheduling import data when the matched existing appointments still have appointment status Booked.
Recommended action	Review the Activity Log messages to find the appointment whose data was not changed. If necessary, adjust the workflow of the scheduling interface to ensure no attempts are made to change Arrived, Canceled, or No Show appointments back to status Booked.

1056 Recurring Tasks for Socket Communications Disabled

Cause	No transfer options for socket communications have been specified in LinkLogic setup.
Recommended action	If socket communications are required, see "Guide to socket implementation" on page 613 , for detailed instructions.

1057 User does not have privileges to view confidential arrival document

Cause	The provider specified in the scheduling data file does not have the privileges to view documents with the confidentiality type set for the encounter type associated with the appointment type defined in Administration.
LinkLogic action	LinkLogic still creates a confidential, on-hold arrival document for the specified appointment (since it had both associated encounter type and document type).
Recommended action	If the provider associated with the appointment book needs to view confidential document types, see online help for instructions on how to change confidentiality privileges.

1058 Note Import: Document specified as parent for external attachment already signed state

Cause	The data file contains information indicating that a document should be treated as the parent of one or more external attachments but the matched existing document is already 'Signed'.
LinkLogic action	LinkLogic creates a new unsigned document to be the parent of the external attachment(s).
Recommended action	Contact your external system vendor regarding required changes to document identifiers for external reference data prior to further transmissions of data files.

1059 Note Import: Document specified as parent for external attachment was not found

Cause	The data file contains information indicating that a document should be treated as the parent of one or more external attachments. The identified existing document could not be found.
LinkLogic action	LinkLogic creates a new unsigned document to be the parent of the external attachment(s).
Recommended action	Contact your external system vendor regarding required changes to document identifiers for external reference data prior to further transmissions of data files.

1060 Schedule Import: Not permitted to change future appointment to No Show

Cause	Scheduling data from the external system has attempted set the status of an existing future appointment to No Show.
LinkLogic action	LinkLogic ignores the information pertaining to the specified appointment. LinkLogic only responds to appointment status No Show in scheduling import data when the matched existing appointments have appointment dates and times that are before the date/time at which import of the No Show event is attempted.
Recommended action	Refer to the interface specification to determine the appropriate field that contains the No Show filler status code. This problem may require workflow-related changes to ensure that all No Show events are only sent through LinkLogic for appointments scheduled in the past.

1061 Schedule Import: Not permitted to change future appointment to Arrived

Cause	Scheduling data from the external system has attempted set the status of an existing future appointment to Arrived.
LinkLogic action	LinkLogic ignores the information pertaining to the specified appointment. LinkLogic only responds to appointment status Arrived in scheduling import data when the matched existing appointments have appointment dates that are at least one day after the date at which import of the arrival event is attempted.
Recommended action	Refer to the interface specification to determine the appropriate field that contains the Arrived filler status code. This problem may require workflow-related changes to ensure that all arrival events are only sent through LinkLogic on or before the day of the appointment.

1062 Demographics note ignored

Cause	Demographics data from the external system has specified document information.
LinkLogic action	LinkLogic ignores the information pertaining to the specified document. LinkLogic only responds to document information in demographics import data when the event type code indicates a patient discharge event.
Recommended action	For the field that contains the event type code and fields that contain document information, see "DemographicsLink Import /Export HL7 interface specification" on page 87. This problem may require workflow-related changes to ensure that only hospital discharge summary document information is included in demographics data, and only for patient discharge events.

1064 Document not automatically printed - cannot view charts

Cause	Although the "Automatically print imported documents" task option is configured for the LinkLogic relationship identified in the data file, one or more of the imported documents was not printed because the Centricity Practice Solution user importing the documents does not have the privilege to view/print charts.
LinkLogic action	LinkLogic imports the documents but does not automatically print them. This is only logged for manual imports done through LinkLogic in Centricity Practice Solution for documents or lab results import tasks configured to automatically print imported chart documents. It is never logged by the DTS, which is assumed to have all privileges.
Short-term solution	Review the Activity Log messages to find the name of the data file that was being imported when this warning was logged. Examine the data file to determine the patient(s) for whom the document data was being imported. Use the chart module to manually print the documents.
Recommended action	For documents to print automatically during import, the person performing the data import must have the privilege to view/print charts. See online help for instructions on how to set user privileges.

1065 Document not automatically printed - cannot view confidential documents

Cause	Either the "Automatically print imported documents" task option is not configured for the LinkLogic relationship identified in the data file or one or more of the imported confidential documents was not printed because the Centricity Practice Solution user importing the documents does not have required confidentiality privileges.
LinkLogic action	LinkLogic imports the confidential document but does not automatically print it. This is only logged for manual imports done through LinkLogic in Centricity Practice Solution for documents or lab results import tasks configured to automatically print imported chart documents. It is never logged by the DTS, which is assumed to have all privileges.
Short-term solution	Review the Activity Log messages to find the name of the data file that was being imported when this warning was logged. Examine the data file to determine the patient(s) for whom the document data was being imported. Use the chart module to manually print the confidential documents.
Recommended action	If you want confidential documents to automatically print during import, configure the "Automatically print imported confidential documents" task option in "Confidentiality Options" in LinkLogic setup. The person performing the data import must also have the privilege to view/print confidential documents with the confidentiality type associated with the LinkLogic relationship. See the "Import restricted documents as confidentiality type" task option in LinkLogic setup. See online help for instructions on how to set user privileges.

1066 Note Import: Parent document ignored

Cause	The data file contains information indicating that a document should be treated as the parent of another document, but the document type is not "Transcription" and/or there were no external attachments specified.
LinkLogic action	LinkLogic ignores the information regarding the parent document.
Recommended action	Contact your external system vendor regarding required changes to the document data for parent document information prior to further transmissions of data files.

1067 New Patient Creation Disabled - Not Imported

Cause	The relationship for the data type to be imported does not have the "Create a new medical record" patient-matching option selected in LinkLogic Setup in Administration.
LinkLogic action	The patient identified in the data file will not be registered Centricity Practice Solution.
Short-term solution	Manually register the patient in the Registration module.
Recommended action	Select the "Create a new medical record" patient-matching option in LinkLogic Setup for that relationship (using the Matching button).

1068 Scan Inbox: Unexpected Extension: Renaming File

Cause	A data file found while Data Transfer Station was scanning the inbox has an extension that is not recognized by LinkLogic.
LinkLogic action	The data file will remain in the in folder with the .xxq file extension until you replace the extension with one recognized by LinkLogic. The data file will not be processed.
Short-term solution	Change the file extension to one that LinkLogic recognizes. Use one of the following extensions.
	Demographics HL7 - .hd Documents HL7 - .ht Lab results ASTM - .lr Lab results HL7 - .hr Appointments HL7 - .sl
	Note: GE does not support the MedicalLogic proprietary formats: Demographics (.ad) and Documents (.ot)
Recommended action	Contact your external system vendor to ensure they use the correct data file extensions before sending additional data files.

1069 Lab import: No conversion units found for input units

Cause	The data file contains one or more laboratory results with units of measure outside of the defined units of measure expected by LinkLogic.
LinkLogic action	LinkLogic creates a document and disperses the values to the flowsheet, including the unknown unit of measure as a text value.
Recommended action	<p>Because the placement of units may interfere with reliably graphing these laboratory values, you should investigate the usage of the units of measure and take one of the following corrective actions.</p> <p>Contact your laboratory vendor and recommend the appropriate change to the unit of measure expected by LinkLogic.</p> <p>See "Cross-referencing field values" on page 461, for instructions for creating a conversion table that will map the incoming value to the expected value within Centricity Practice Solution.</p>

1070 Lab Import: Numeric Result Expected

Cause	The data file contains a laboratory result value that cannot be interpreted as a proper numeric value.
LinkLogic action	LinkLogic creates a document and disperses the value to the flowsheet as textual data. The non-numeric lab result will not be included in any flowsheet graphs.

1071 Lab Import: Multiple Observations Found for Code

Cause	The data file contains at least one laboratory code that is mapped to more than one internal observation term.
LinkLogic action	LinkLogic does not import the laboratory result as this could potentially send the result value to the wrong observation term.
Recommended action	Check your laboratory codes cross-reference mappings to ensure each external code is mapped to only one internal observation term. Once you have made the appropriate corrections, remove the existing .xrf file and import the revised .xrs file to associate the new file with the relationship. For details, see "Many-to-one and one-to-many mappings" on page 465 .

1072 Lab Import: No Matching Observation Heading Found

Cause	The data file contains observations and laboratory codes for dispersal to the flowsheet, but LinkLogic found no observation headings to match to within the Centricity Practice Solution database.
LinkLogic action	LinkLogic creates a document, but does not disperse the values for these results to the flowsheet. The document includes notification regarding values that were not dispersed to the flowsheet.
Recommended action	Complete the import of the observation terms clinical kit.

1073 Lab Import: Null Observation Value in Import File

Cause	The data file contains an empty (NULL) value or double quotes ("") indicating a null value for the laboratory result value. See "NULL strings vs. quoted white space strings" on page 456 .
LinkLogic action	LinkLogic creates a document with notification regarding values that were not dispersed to the flowsheet due to errors during import.

1077 Lab Import: Imported Result Collides with Internal Observation

Cause	The data file contains a laboratory value that collides with a value directly entered in the flowsheet. For example, a value is entered with the exact same patient, observation, and date/time.
LinkLogic action	LinkLogic won't overlay a manually entered observation. LinkLogic creates a document, but does not disperse values to the flowsheet. The document includes notification regarding values that were not dispersed to the flowsheet due to errors during import.

1080 Note Import: Invalid Signing Authentication Date

Cause	The data file contains information indicating that a document should be signed but a valid date for signature date/time could not be determined.
LinkLogic action	LinkLogic imports the document as Unsigned.
Short-term solution	If appropriate, have a user with document signing privileges sign the document.
Recommended action	Contact your external system vendor regarding required changes to the date/time data prior to further transmissions of data files.

1081 Note Import: Provider Does Not Have Signing Privileges

Cause	The provider specified in the data file as the authenticator does not have document-signing privileges defined in Administration.
LinkLogic action	LinkLogic imports the document as Unsigned.
Recommended action	If the specified provider needs the privilege to sign imported documents, see online help for instructions on how to change the privileges.

1082 Name is not permitted to be blank/related information ignored

Cause	The data file contains blank first and last name for the personal contact record or blank company name for a business contact record that contains other information, such as address or phone number.
LinkLogic action	LinkLogic ignores the contact record. No contact is created nor is any existing contact data changed.
Short-term solution	Create or update patient contact information on the Registration Contacts tab.
Recommended action	Correct the DemographicsLink Import interface to always send names with contact data.

1083 Note Import: Dictation Number Could Not Be Found

Cause	The document number identified to link this report to others within Centricity Practice Solution was not found in the Centricity Practice Solution database. This is most commonly caused by typographical errors in the data file.
LinkLogic action	LinkLogic places the document into the patient's chart without the link to other documents.
Recommended action	Review the process by which the document ID is provided to the sending application to ensure the correct numbers are being provided.

1084 Note Import: Invalid Dictation Number

Cause	The document number identified to link this report to other documents in Centricity Practice Solution was not found in the Centricity Practice Solution database.
LinkLogic action	LinkLogic places the document into the patient's chart without the link to other documents.
Recommended action	Review the process in which the document ID is provided to the sending application to ensure the correct numbers are being provided.

1085 Schedule Import: End Time is Earlier or Equal to Start Time

Cause	The data file contains a date indicating that the time for the appointment to end is earlier or equal to the time for the appointment to start.
LinkLogic action	LinkLogic schedules an appointment for 15 minutes.
Recommended action	Refer to the interface specification to determine the appropriate field containing the invalid data. This problem may require workflow-related changes to ensure all timing information is set properly.

1086 Schedule Import: End Time more than 24 hours past Start Time

Cause	The data file contains a date indicating that the specified time for the appointment to end is more than 24 hours past the appointment's start time.
LinkLogic action	LinkLogic schedules an appointment for 15 minutes.
Recommended action	Refer to the interface specification to determine the appropriate field containing the invalid time data. This problem may require workflow-related changes to ensure all timing information is set properly. See " ScheduLink Import HL7 interface specification " on page 425.

1087 Only Self-Relationship Allowed is Guarantor - Contact Ignored

Cause	The data file contains a contact with the same name as the patient, but the relationship type is not set to Guarantor. Currently, the only self-referential contact allowed is Guarantor.
LinkLogic action	LinkLogic ignores the contact information contained in this patient segment.
Recommended action	This problem requires workflow-related changes to ensure correct contact information is entered at the time of data entry.

1088 Document Date is Invalid

Cause	The data file contains a document encounter date that is greater than 24 hours from the attempted import time.
LinkLogic action	LinkLogic uses the attempted import time for the document's encounter date.
Recommended action	Refer to the interface specification to determine the appropriate field containing the invalid date data. This problem may require workflow-related changes to ensure all date information is set properly.

1089 Chart Update Performed on Inactive Patient

Cause	Information in a data file has been matched to a patient who has been marked as inactive in the Centricity Practice Solution database.
LinkLogic action	LinkLogic imports the information to the inactive patient's chart.
Recommended action	Review the patient status and ensure that it is desirable to leave this patient as inactive. Consider changing the birth date and last name when a patient needs to be inactivated.

1090 Schedule Import: Duration is less than minimum permitted - Using default for this appointment type

Cause	Scheduling data from the external system has set the appointment duration at less than the minimum of 1 minute.
LinkLogic action	LinkLogic schedules the appointment and sets the duration for the minimum time allowed for this appointment type.
Recommended action	Redefine the appointment default minimum time allowed in the Setup module.

1091 Schedule Import: Duration is less than minimum permitted - Using default of 15 minutes

Cause	Scheduling data from the external system has set the appointment duration for less than the minimum of 1 minute and the appointment type from the data file was not defined in Centricity Practice Solution.
LinkLogic action	LinkLogic schedules the appointment for a duration of 15 minutes.
Recommended action	Define the specified appointment type in Administration or correct the source data to have valid values for the appointment type data field. If desired, create an appointment type cross-reference file and associate it with the relationship using LinkLogic Task Option setup. For details, see "Cross-referencing field values" on page 461.

1092 Imported External ID differs for patient - ID not updated

Cause	The patient identifier from the external system differs from the external ID in the Centricity Practice Solution database.
LinkLogic action	LinkLogic updates all of the patient information except for the external identifier.
Short-term solution	Review the information in Registration to ensure the correct information was applied to the appropriate patient record.
Recommended action	Review the process of assigning external IDs to patients in the external system. It may be necessary to change the workflow process to ensure the correct identifier is assigned to the patient at the time of data entry in the external system.

1093 Schedule Import: Units of time not hours, minutes, or seconds

Cause	The ScheduLink Import file contains units of time that are not recognized by LinkLogic as hours, minutes, or seconds.
LinkLogic action	An error is logged on the LinkLogic Activity Log, and the appointment is not scheduled.
Short-term solution	Edit the data file and correct the unit of time. Select the file and import it again.
Recommended action	This problem should be addressed at the workflow level to ensure the correct unit of time is being entered when the data is entered.

1094 No external ID created for insurance carrier

Cause	The data file did not contain any information in the insurance identifier field.
LinkLogic action	<ul style="list-style-type: none"> Without an external identifier, LinkLogic can only match insurance carriers using name and address. This can be problematic and sometimes results in duplicate insurance carriers.
Recommended action	Refer to the interface specification to determine the appropriate fields for the insurance plan data. This problem may require workflow-related changes to ensure all insurance carrier information is set properly.

1095 Export terminated after exporting <actual> patients of <expected>

Cause	An export job terminated before the expected number of patients was exported. <actual> is the number of patients exported. <expected> is the number of patients that should have been exported.
LinkLogic action	Logs this message to identify how many patients were actually exported before the job terminated.
Recommended action	Check the Activity Log for other messages related to this job. The actual cause of the failure should be logged. Be aware that intentionally terminating the export will cause LinkLogic to log this message.

1096 Note Import: Transcriptions specifying a parent document cannot be automatically signed

Cause	The data file contains information indicating that a transcription document that should be treated as the parent of another document should be considered signed.
LinkLogic action	LinkLogic ignores the information regarding the document signature and creates an unsigned document.
Recommended action	Contact Centricity Services or your Value-Added Reseller and your external system vendor regarding required changes to the document data for parent documents and automatic signing of documents on import prior to further transmissions of data files.

1097 Value is too long and will be truncated

Cause	<p>The specified field in the data file contains information that exceeds the maximum length permitted in the Centricity Practice Solution database.</p> <p>This message is logged when a referring physician's UPIN exceeds 8 characters. Although the HL7 data format permits 32 characters, the UPIN column in the PERSON table in the database only permits 8 characters.</p>
LinkLogic action	LinkLogic truncates the data to the maximum permitted in the Centricity Practice Solution database.
Recommended action	Read the entire message description to determine which field was too long. Copy the file to a separate folder for reference and contact the vendor with information regarding the corrections needed prior to further transmission of data files.

1098 Schedule Import: <facility or provider home location facility> mapped to more than one location of care. Document created in patient's home location of care

Cause	Facility in HL7 file is mapped to more than one location of care.
LinkLogic action	LinkLogic created the document using patient's home location of care.
Recommended action	1:1 mapping between facility and location of care is recommended.

Note. This message only displays in the Chart-only licensed version.

1099 Schedule Import: More than one schedule template found for resource <resource name>

Cause	More than one schedule template is associated for the provider/resource on the date of appointment.
LinkLogic action	LinkLogic does not import the appointment.
Recommended action	Application allows only one active schedule template per provider/schedule resource on a given day. If you see numerous dispersal failures, contact Centricity Services or your Value-Added Reseller with the contents of the message.

Note. This message only displays in the Chart-only licensed version.

1100 Schedule Import: Unable to create system schedule template for <provider name>

Cause	<ol style="list-style-type: none"> 1 Provider's home location of care not associated with a facility. 2 A potential database problem exists.
LinkLogic action	LinkLogic does not create a system generated template and appointment is not imported.
Recommended action	Map provider's providers home location of care with a valid facility. .If you see numerous dispersal failures, contact Centricity Services or your Value-Added Reseller with the contents of the message.

Note. This message only displays in the Chart-only licensed version.

1101 External attachment detected but setup options disallow this feature

Cause	The data file contains information about one or more external attachments, but the task option for importing external attachments is not selected.
LinkLogic action	LinkLogic ignores the data and does not create a new document.
Recommended action	Enable the “Import external attachments” task option in LinkLogic setup.

1102 Document overlay could not be completed

Cause	<p>There are several reasons why document overlay may not succeed:</p> <ul style="list-style-type: none"> • The matched document has been modified in a way to not allow overlay to occur. • Cannot replace a final document with a preliminary document. If this is attempted, overlay is not done and the document type of the imported document is set to “Replaced”. • Lab documents must have all observations replaced to allow overlay to occur. • Overlay is not permitted for documents that are the parent of a group of other documents. • Overlay cannot be done if another user has a lock on the matched document.
LinkLogic action	LinkLogic does not overlay the imported document, but instead creates a new document.
Recommended action	Contact your Centricity Practice Solution Manager or the LinkLogic Manager for assistance in properly using document overlay capabilities. See “Using document overlay” on page 577 .

1103 Schedule Import: Unable to create slots in system-generated template for <provider name> on <date>

Cause	A potential database problem exists.
LinkLogic action	A DB Failed error appears on the LinkLogic Errors tab. No information from the incoming data file is dispersed to the database.
Short-term solution	On LinkLogic Errors tab, click Resolve to execute the job manually. On Jobs tab, click Execute to import the data into the database.
Recommended action	If you see numerous dispersal failures, contact Centricity Services or your Value-Added Reseller with the contents of the message.

1104 Schedule Import: Some portion of the time is not available at the specified facility for appointment <appointment>. Import file: <file name>. Created an overbooked appointment

Cause	<ol style="list-style-type: none"> 1 Appointment's facility does not match provider's home location of care's mapped facility. 2 Appointment slot is not free.
LinkLogic action	LinkLogic created an overbooked appointment.

Note. This message only displays in the Chart-only licensed version.

1105 External attachment comment has been truncated

Cause	The comment for an external attachment in imported document data exceeds the maximum length of 80 characters permitted in the Centricity Practice Solution database.
LinkLogic action	LinkLogic truncates the comment data to 80 characters.
Recommended action	<p>Contact Centricity Services or your Value-Added Reseller and your external system vendor regarding required changes to the document data to ensure that all comments sent to LinkLogic for external attachments do not exceed 80 characters in length.</p> <p>Refer to the interface specification to determine which data field is used to specify comments for external attachments. See "ImageLink Import/Export HL7 interface specification" on page 135.</p>

1106 Ignoring duplicate external ID

Cause	Demographics data from the external system has specified an external identifier for a patient that is the same as the external identifier for another patient.
LinkLogic action	LinkLogic ignores the external identifier value since the external ID set is configured to require all external identifiers be unique.
Short-term solution	Contact your Information Systems department, the Centricity Practice Solution Manager, or the LinkLogic Manager to assign the patient's external ID using the Registration module.
Recommended action	Review the process of assigning external IDs to patients in the external system. It may be necessary to change the workflow process to ensure the unique identifiers are assigned to each patient at the time of data entry in the external system. Contact Centricity Services or your Value-Added Reseller and your external system vendor regarding to assess whether or not it is appropriate for the external ID set to be restricted to having only unique ID values.

1107 Schedule Import: The specified facility was unknown for appointment <appointment>. Import file: <filename>. Provider/Resource's home location's facility is used to create the appointment

Cause	Imported HL7 file does not have a valid facility.
LinkLogic action	LinkLogic created an appointment using the mapped facility for the provider/resource home location of care.
Short-term solution	Check the HL7 message and change the facility in AIL-3 to a valid facility and then import again.
Recommended action	Verify the MIK mapping for Facility to ensure the list is complete and correct.

Note. This message only displays in the Chart-only licensed version.

1108 Schedule Import: AIL segment not specified for appointment <appointment>. Import file: <filename>. Must have at least one valid facility for every appointment. Provider/Resource's facility is used to create the appointment

Cause	Facility is missing in the imported HL7 file.
LinkLogic action	LinkLogic created an appointment using the mapped facility for the provider/resource home location of care.
Recommended action	Make certain the outbound HL7 message from practice management system includes AIL-3 to ensure the same facility is used by LinkLogic.

Note. This message only displays in the Chart-only licensed version.

1109 Patient death indicator ignored

Cause	Although an HL7 demographics data file specified 'Y' for the patient death indicator field, the death date/time field was either missing or an invalid (such as being in the future).
LinkLogic action	In this situation the patient death indicator is ignored and the patient status is not changed.
Recommended action	Contact Centricity Services or your Value-Added Reseller and your external system vendor regarding required changes to the demographics data to ensure that all death date/time data sent to LinkLogic is valid.

1110 External system indicated patient is now deceased

Cause	An HL7 demographics data file specified both 'Y' for the patient death indicator field and a valid death date/time value.
LinkLogic action	In this situation the patient status is changed to deceased. The death date/time is ignored because there is now place to store this information in the Centricity Practice Solution database.
Recommended action	If for any reason this data from the external system (identified in the contents of this message) was incorrect, use the Registration module to restore the patient status back to being active.

1111 Document overlay not attempted

Cause	One or more of the data fields that are required for document overlay did not have a value.
LinkLogic action	In this situation document overlay is not performed.
Recommended action	Contact Centricity Services or your Value-Added Reseller and your external system vendor regarding required changes to either the lab results data or the documents import data to ensure that the data meets the document overlay requirements. See “LabLink Import/Export HL7 interface specification” on page 253 , or “NotesLink Import/Export HL7 interface specification” on page 341 .

1112 Cannot CC document

Cause	An unknown user was identified as an intended routing recipient of a document.
LinkLogic action	In this situation carbon-copy document routing is not performed.
Recommended action	Contact Centricity Services or your Value-Added Reseller and your external system vendor regarding required changes to either the lab results data or the documents import data to ensure that the data meets the requirements for carbon copy document routing. If necessary, use a provider cross-reference file. See “LabLink Import/Export HL7 interface specification” on page 253 , or “NotesLink Import/Export HL7 interface specification” on page 341 . See also “Cross-referencing field values” on page 461 .

1113 Order number not found

Cause	The order number specified in the incoming data could not be found in Centricity Practice Solution.
LinkLogic action	In this situation orders are not marked for automatic completion.
Recommended action	<p>Contact Centricity Services and your external system vendor regarding required changes to either the lab results data or the documents import data to ensure that the proper order numbers are specified so the data meets the requirements for automatic completion of orders.</p> <p>See “LabLink Import/Export HL7 interface specification” on page 253, or “NotesLink Import/Export HL7 interface specification” on page 341.</p>

1114 More than one order matched order number

Cause	More than one Centricity Practice Solution order matched the order number specified in the incoming data.
LinkLogic action	In this situation orders are not marked for automatic completion.
Recommended action	<p>Contact Centricity Services and your external system vendor regarding required changes to either the lab results data or the documents import data to ensure that the proper order numbers are specified so the data meets the requirements for automatic completion of orders.</p> <p>See “LabLink Import/Export HL7 interface specification” on page 253, or “NotesLink Import/Export HL7 interface specification” on page 341.</p>

1115 Patient location of care is obsolete

Cause	The location of care specified in the incoming data identified a location that has been marked as inactive.
LinkLogic action	In this situation LinkLogic uses the root location of care, thus ignoring the value from the import data.
Recommended action	<p>Contact Centricity Services or your Value-Added Reseller and your external system vendor regarding required changes to the import data to ensure that the proper values are sent to identify locations of care.</p> <p>Go to Administration > System > Locations Of Care to determine active and inactive locations of care.</p>

1116 Ignoring multiple Guarantors

Cause	The data file contained information about multiple guarantors.
LinkLogic action	LinkLogic imports guarantor information from only the first GT1 segment.
Recommended action	This problem may require workflow-related changes to ensure only one GT1 segment is sent to LinkLogic. If this is not practical or possible, then you may ignore this message.

1117 Schedule Import: Arrival document could not be created since appointment does not have valid responsible provider

Cause	LinkLogic could not determine an internal Centricity Practice Solution provider identifier for the resource identified in the appointments data file.
LinkLogic action	LinkLogic updates the appointment status to <i>Arrived</i> but does not create an on-hold document in the patient's chart.
Recommended action	Contact Centricity Services or your Value-Added Reseller for help in ensuring your doctors (Responsible Providers) are configured correctly to use the Chart module. If Responsible Providers are not properly configured, appointment arrival documents cannot be created.

1118 Schedule Import: On-hold arrival document not created since .NET components failed

Cause	LinkLogic could not communicate with the internal process Centricity Practice Solution uses to create documents for appointment arrivals.
LinkLogic action	LinkLogic updates the appointment status to <i>Arrived</i> but does not create an on-hold document in the patient's chart.
Recommended action	Contact Centricity Services or your Value-Added Reseller for help in ensuring Centricity Practice Solution is installed properly.

1119 Patient was not assigned a referring provider

Cause	A patient imported from a demographics data file did not have a referring provider defined in the data file, and/or the value in the data file could not be properly matched to an active referring doctor defined in Centricity Practice Solution.
LinkLogic action	LinkLogic imports the patient registration data. The data appears in Registration with no associated referring provider.
Short-term solution	Manually assign the patient's referring provider in Registration.
Recommended action	If appropriate, create or update the referring provider mapping for MIK in Advanced Setup Options in Server Setup.

1120 Ignoring duplicate external ID for insurance carrier

Cause	Demographics data from the external system has specified an external identifier for an insurance carrier that is the same as the external identifier for another insurance carrier
LinkLogic action	LinkLogic ignores the external identifier value since the external ID values for insurance carriers must be unique.
Short-term solution	Contact your Information Systems department, the Centricity Practice Solution Manager, or the LinkLogic Manager to assign the insurance carrier's external ID. If appropriate, create or update the insurance company ID mapping for MIK in Advanced Setup Options in Server Setup.
Recommended action	Review the process of assigning external IDs to insurance carriers in the external system. It may be necessary to change the workflow process to ensure that unique identifiers are assigned to each insurance carrier at the time of data entry in the external system.

1121 Updating external ID for insurance carrier

Cause	Demographics data from the external system specified an external identifier for an insurance carrier that is different from the existing external identifier for that insurance carrier
LinkLogic action	If LinkLogic cannot match an existing insurance carrier using its external identifier, LinkLogic attempts to match using name and address. If an existing insurance carrier can be found, LinkLogic updates the external identifier value.
Recommended action	This is normal and expected behavior. For more information about import of insurance information, see “DemographicsLink Import /Export HL7 interface specification” on page 87.

Error messages

Error messages indicate a serious problem. Often an error prevents the successful import or export of data and requires that you correct the underlying problem.

Once you become familiar with these messages, you might want to exclude some of them to improve performance and reduce the number of Activity Log entries. See [“Excluding messages and warnings from the Activity Log”](#) on page 640.

!!! Before you exclude an error message, make certain the condition reported does not prevent you from importing important data.

2048 Rename failed

Cause	The file could not be renamed when Data Transfer Station scanned the inbox.
LinkLogic action	The file is not queued, and the new data is not imported automatically by Data Transfer Station.
Short-term solution	Move the data file out of LinkLogic's IN and SAVE folders to other locations, and import the file manually in LinkLogic > Jobs.
Recommended action	Use the Move File option, and periodically make sure you manually move files out of the LinkLogic SAVE folder.

2051 Unable to locate IXP file

Cause	One of the following conditions exists: <ul style="list-style-type: none"> • The default path for LinkLogic is incorrect • The CONFIG\STANDARD folder is not accessible from this workstation • The CONFIG\STANDARD folder does not contain the appropriate configuration files for processing the data file.
LinkLogic action	LinkLogic doesn't queue data files for processing until the problem is corrected.
Recommended action	Contact your Information Systems department with the error information for their assistance in troubleshooting the possible network or directory problem. If network problems are resolved and the issue remains a problem, contact Centricity Services or your Value-Added Reseller for assistance with obtaining the appropriate configuration file.

2052 IXP failure state: ##### description

Cause	The data file being processed contained a problem that can be further understood by referring to the message code number listed as the “state” of import/export processing and following the instructions relating to that number as defined in this document.
Recommended action	Complete the recommended action associated with the message code number in the error description.

2053 IXP Report

Cause	The data file being processed contained data that could not be parsed correctly.
LinkLogic action	Error message 2053 usually follows message 2052 and provides more information about the problem.
Recommended action	Complete the instructed recommended action for error message 2052.

2054 Relationship is not defined

Cause	<p>A relationship for the producer of this data file is not defined in LinkLogic setup. The producer name is recognized, but all known relationships have been defined for different data types.</p> <p>For example, error message 2054 is logged if an attempt is made to queue an appointments data file (ScheduLink interface) for a producer named ABC when only a Documents relationship (DemographicsLink interface) has been defined for ABC.</p>
LinkLogic action	The data file will not be queued for processing until an appropriate relationship has been defined for this producer in LinkLogic setup in Administration.
Recommended action	<p>Refer to the appropriate interface specification to determine the correct producer ID name field in the data file. Return to LinkLogic setup and define a relationship for the producer of the data.</p> <p>You will also want to complete the appropriate Task Options in LinkLogic setup and associate any appropriate configuration files for the producer before importing data.</p>

2055 External Source Name is Not Recognized

Cause	A relationship for the producer of this data file has not been defined in LinkLogic setup in Administration. The producer name is not recognized.
LinkLogic action	The data file will not be queued for processing until an appropriate relationship has been defined for this producer in LinkLogic setup.
Recommended action	<p>In LinkLogic setup, define a relationship for the producer of the data.</p> <p>You will also want to complete the appropriate Task Options in LinkLogic setup and associate any appropriate configuration files for the producer before importing data.</p>

2057 Internal Error

Cause	The database is missing data or contains unexpected data, such as corrections in an application service pack.
LinkLogic action	LinkLogic may not be able to complete an operation.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so they can correct your database as necessary.

2058 Imbedded external attachments not supported

Cause	The data file contains information about one or more external attachments, but the dictation placeholder field is not blank.
LinkLogic action	LinkLogic ignores the data and does not create a new document.
Recommended action	<p>Contact Centricity Services or your Value-Added Reseller and your external system vendor regarding required changes to the document data to ensure that all data sent to LinkLogic for external attachments does not specify dictation placeholder identifiers.</p> <p>See “NotesLink Import/Export HL7 interface specification” on page 341, or “ImageLink Import/Export HL7 interface specification” on page 135, to determine which field is used for the dictation placeholder ID and how external attachments can be imported properly.</p>

2060 Using external source name(s) multiple matches were found

Cause	A uniquely named relationship for the producer of this data file has not been defined in LinkLogic setup in Administration. The producer name is not recognized.
LinkLogic action	The data file will not be queued for processing until an appropriate relationship has been defined for this producer in LinkLogic setup.
Recommended action	<p>More than one relationship was found when attempting to match data in the header record to relationship names in the L3QUALIFIER table in the database. The contents of the actual message should indicate which relationship names LinkLogic detected as potential matches.</p> <p>Either change the header record in the source data to correctly and uniquely match a single relationship, or change one of the relationship names in LinkLogic Relationships setup. See the appropriate interface specification to determine the fields which identify the sender of the data).</p>

2061 Internal MLDB Failure

Cause	Usually this message appears when the application is unable to insert or update information in the database.
LinkLogic action	LinkLogic does not disperse the patient information into the database. It is unlikely that an exception file was generated, and further errors will occur until the root problem is solved.
Short-term solution	Immediately review the contents of the CPO06.log file. Look for errors produced at approximately the same time as message 2061 was logged. Print or save any information you find and fax or email it to Centricity Services.
Recommended action	Follow up the submission of CPO06.log with a phone call to Centricity Services.

2062 Unknown Care Provider

Cause	This error might be caused by any of the following: <ul style="list-style-type: none">• The responsible provider specified in the data file is not appropriately entered into the user ID cross-reference file.• The responsible provider specified in the data file does not exist in the user ID cross-reference file.• The responsible provider for the patient isn't specified in the data file.
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LinkLogic action	LinkLogic disperses the patient information to the chart as expected. However, the imported information is sent to the responsible provider defined in the patient's registration, if any. If no responsible provider is defined in the patient's registration information, an orphaned document error appears on the LinkLogic Errors tab.
Short-term solution	If LinkLogic generates an orphaned error, you can manually select a provider. On the LinkLogic Errors tab, select the orphan document error, then click Resolve. Once you choose a provider from the list, LinkLogic routes the document to the selected provider's Desktop.
Recommended action	<p>Refer to the appropriate interface specification to determine if the provider name exists in the data file and appears in the appropriate field.</p> <p>If the name does not exist, you might need to change the workflow to include the entry of a provider name, or to ensure that the appropriate provider's name is identified when information is sent to the vendor.</p> <p>If the provider name does exist in the data file, check the user ID cross-reference file to ensure the provider specified exists in the file and that the entry for the provider matches the entry in the data file.</p>

2063 Voice snippets as external attachments not supported

Cause	The data file contains information about an external attachment to an externally managed voice snippet.
LinkLogic action	LinkLogic ignores the data and does not create a new document.
Recommended action	<p>Contact Centricity Services or your Value-Added Reseller and your external system vendor regarding required changes to the document data to ensure that all data sent to LinkLogic for external attachments does not specify information for voice snippets for observation identifiers.</p> <p>To determine which field is used for the observation ID and how external attachments can be imported properly, see "NotesLink Import/Export HL7 interface specification" on page 341.</p>

2064 Internal phase error/not unique

Cause	LinkLogic couldn't find a unique match for the patient, contact, or insurance data.
LinkLogic action	LinkLogic does not disperse the demographics data.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log to eliminate duplicate data in your database.

2065 Need more information to create patient

Cause	The data file does not contain the minimum required information to complete the registration for a patient.
LinkLogic action	Patient is not registered in Centricity Practice Solution.
Short-term solution	Manually register the patient using the Registration module.
Recommended action	This problem may require a change to the workflow to ensure adequate registration information is being entered into the external system when the data is entered.

2066 Attempt to Lock/Unlock patient failed

Cause	Either LinkLogic could not obtain a lock for a patient or another potential database problem exists.
LinkLogic action	<p>Before attempting to disperse demographics data for a patient, LinkLogic could not obtain the master lock for a specific patient.</p> <ul style="list-style-type: none"> • If the problem was failure to lock the patient record, you see a Pending Dispersal error on the LinkLogic Errors tab. • If the problem was a failure to unlock the patient record, you see a DB Failed error on the LinkLogic Errors tab.
Short-term solution	<ul style="list-style-type: none"> • For Pending Dispersal errors, click Resolve on the LinkLogic Errors tab to import the data into the database. • For DB Failed errors, click Resolve on the LinkLogic Errors tab to put the job back into a manual state. <p>Then click Execute on the LinkLogic Jobs tab to import the data into the database.</p>
Recommended action	if you see numerous patient lock/unlock failures, contact Centricity Services or your Value-Added Reseller with the contents of the message, including the name of the patient and CPO06.log so that they can determine the cause of the problem.

2067 Dispersal failed. No data was added or changed for insurance company or contact

Cause	A potential database problem exists.
LinkLogic action	A DB Failed error appears on the LinkLogic Errors tab. No information from the incoming data file is dispersed into the database.
Short-term solution	Click Resolve on the LinkLogic Errors tab to put the job into the manual state. Then click Execute on the Jobs tab to import the data into the database.
Recommended action	If you see numerous dispersal failures, contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so they can determine the cause of the problem.

2068 Could not create document

Cause	A document could not be created while LinkLogic was attempting to disperse data to the database.
LinkLogic action	LinkLogic does not create a new document.
Short-term solution	Read the entire message description to determine the name of the patient for whom the document was not created and to determine what the document summary would have been. Check the Activity Log for other messages related to this job to determine the name of the data file that was being imported. Attempt to manually import the file again on the LinkLogic Jobs tab.
Recommended action	If this problem persists, contact Centricity Services or your Value-Added Reseller with the contents of the message, including the name of the patient and CPO06.log so they can determine the cause of the problem.

2069 Unable to find external attachment document

Cause	The data file contains information indicating that a new document should be treated as having an external attachment. The specified visible document identifier could not be matched to an existing document in the database
LinkLogic action	LinkLogic creates a new document that does not have any external attachments.
Recommended action	Review the process in which the visible document ID is provided to the sending application to ensure the correct numbers are being provided. Contact your external system vendor regarding required changes to document identifiers for external reference data prior to further transmissions of data files.

2070 Unable to create document for external attachment

Cause	A document for holding links to one or more external attachments could not be created while LinkLogic was attempting to disperse data to the database.
LinkLogic action	LinkLogic does not create a new document. No links external attachments are made.
Recommended action	Read the entire message description to determine the name of the patient for whom the document was not created and to determine the comment for the external attachment. Check the Activity Log for other messages related to this job to determine the name of the data file that was being imported. Attempt to manually import the file again on the LinkLogic Jobs tab. If this problem persists, contact Centricity Services or your Value-Added Reseller with the contents of the message, including the name of the patient and CPO06.log so they can determine the cause of the problem.

2071 Corrupt data found when attempting to export data

Cause	Corrupt data was encountered in the database when LinkLogic attempted to create an export data file.
LinkLogic action	Data for the patient specified is not exported. An unresolvable error is created on the LinkLogic Errors tab.
Recommended action	<p>Read the entire message description to determine the name of the patient whose data could not be exported.</p> <p>Check the Activity Log for other messages related to this job to determine which data field was corrupt and the type of data that was being exported.</p> <p>Remove the "Cannot Resolve" pending error job on the LinkLogic Errors tab. Switch to the Pending Jobs tab and attempt to manually export the data for the specific patient again.</p> <p>If this error persists, contact Centricity Services or your Value-Added Reseller with the contents of the activity log messages and CPO06.log so they can correct your database as necessary to correct any corrupt data.</p>

2072 External attachment moniker more than 2048 characters in length

Cause	The data file contains information about a moniker for an external attachment that exceeds the maximum length of 2048 characters.
LinkLogic action	LinkLogic ignores the data and does not create an external attachment. A "Failed" error job appears on the LinkLogic Errors tab.
Recommended action	<p>Contact Centricity Services or your Value-Added Reseller and your external system vendor regarding required changes to the document data to ensure that all data regarding monikers sent to LinkLogic for external attachments does not exceed 2048 characters in length.</p> <p>To determine which field is used for the moniker and how external attachments can be imported properly, see "NotesLink Import/Export HL7 interface specification" on page 341.</p>

2073 Schedule Import: Appointment type not defined

Cause	The scheduling data file contained an appointment type that has not been defined in Administration.
LinkLogic action	LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section.
Recommended action	<p>Read the entire message description to determine the name of the appointment type that was not recognized. Define the appointment type in Administration, or correct the source data to have valid values for the appointment type data field.</p> <p>If desired, create an appointment type cross-reference file and associate it with the relationship using LinkLogic Task Options in Administration.</p>

2074 Schedule Import: Could not uniquely match appointment type

Cause	The specified data file contained an appointment type that could not be uniquely identified based on those defined in Administration.
LinkLogic action	LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section.
Recommended action	<p>Read the entire message description to determine the name of the appointment type that was not recognized. Ensure that all appointment types defined in Administration have unique names or correct the source data to have proper values for the appointment type data field.</p> <p>If desired, create an appointment type cross-reference file and associate it with the relationship using LinkLogic Task Option Setup.</p>

2075 Schedule Import: No Appointment type was specified

Cause	A scheduling data file did not specify a value for the appointment type.
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LinkLogic action	LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section.
Short-term solution	Manually create the appointment in the Scheduling component. Remove the "Cannot Resolve" pending error job using the Pending Errors section of LinkLogic.
Recommended action	Correct the source data to always specify values for the appointment type data field. To determine which field is used for appointment type, see " ScheduLink Import HL7 interface specification " on page 425.

2076 Lab Import: No Associated Lab Document Found

Cause	LinkLogic's processing task could not find the expected data in LinkLogic's intermediate tables in the database.
LinkLogic action	LinkLogic doesn't disperse the laboratory results for the patient.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so they can determine the cause of the problem.

2077 Lab Import Requires Cross Reference File

Cause	There isn't a laboratory codes cross-reference file associated with this producer in LinkLogic Task Options.
LinkLogic action	The data file is not imported.
Recommended action	Complete the association of an appropriate laboratory codes cross-reference file in LinkLogic Task Options.

2078 Default value used for LinkLogic attribute

Cause	A value for a LinkLogic option required to process import data could not be found in the LinkLogic attribute tables.
LinkLogic action	In this situation LinkLogic uses the default value for the option.
Recommended action	Contact Centricity Services or your Value-Added Reseller for help ensuring your LinkLogic attribute tables have proper data in them. You may also change them in LinkLogic Task Options and then reset the value(s) of the option(s) whose value could not be determined during import.

2079 Schedule Import: No patient ID data for appointment

Cause	LinkLogic could not find the expected data in LinkLogic's intermediate tables in the database.
LinkLogic action	LinkLogic doesn't disperse the appointment data.
Recommended action	<p>The problem may require a review of the workflow process when scheduling appointments on the external system to ensure all appropriate patient information is entered at the time of data entry.</p> <p>Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so they can determine the cause of the problem.</p>

2080 Schedule Import: Could not uniquely match resource

Cause	The specified data file contained a resource that could not be uniquely identified based on those defined in Administration.
LinkLogic action	LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section.
Short-term solution	Read the entire message description to determine the name of the resource that was not recognized. Remove the "Cannot Resolve" pending error job in LinkLogic Pending Errors.
Recommended action	<p>If appropriate, create or update the resource mapping for MIK in Advanced Setup Options in Server Setup.</p> <p>If appropriate, modify the resource definitions in Administration, or correct the source data to have valid values for the resource data field.</p>

2082 Schedule Import: Must have at least one resource for every appointment

Cause	After processing all of the AI* segments in an appointments data file, not even one resource could be identified for the specified appointment. This can occur when unknown or invalid resources are specified.
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LinkLogic action	LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section.
Short-term solution	Manually create the appointment in the Scheduling component. Remove the "Cannot Resolve" pending error job in LinkLogic Pending Errors section.
Recommended action	If appropriate, create or update the resource mapping for MIK in Advanced Setup Options in Server Setup. If appropriate, modify the resource definitions in Administration, or correct the source data to have valid values for the resource data field.

2084 Cannot create unique file name - delete unused export files

Cause	LinkLogic could not generate a name for an export file.
LinkLogic action	LinkLogic doesn't queue the export job.
Recommended action	Remove all files in LinkLogic's out folder or move them to another folder.

2087 Schedule Import: Missing or incorrect status code

Cause	A ScheduLink Import file either contains an invalid status code for an appointment, or the file doesn't contain a status code.
LinkLogic action	LinkLogic doesn't schedule the appointment.
Short-term solution	To determine the valid entry for the status code, see "ScheduLink Import HL7 interface specification" on page 425 . Edit the original data file and correct the status code. Manually queue and execute the file on the LinkLogic Jobs tab.
Recommended action	It may be necessary to examine the workflow process to ensure the correct status codes are entered when the data is entered.

2088 Maximum retries exceeded for attempt to transfer file

Cause	The maximum number of attempts permitted for transmitting data through a socket has been exceeded.
LinkLogic action	On the LinkLogic Errors tab, you see the socket output job with a Retry Limit error.
Recommended action	Resolve the error to put it back into the Ready state so Data Transfer Station can attempt to transmit the file again

2096 File extension incorrect for relationship

Cause	<p>This error message occurs when an imported file has an extension that does not match the format of the file contents. The relationship for the producer of this data file was defined to use a different data format.</p> <p>For instance, an HL7 Lab Results file has an extension of .hr. If the relationship value in MSH-3 is for an ASTM formatted Lab Results file (.lr), this error is returned.</p>
LinkLogic action	The data file is not queued.
Recommended action	<p>Do one of the following:</p> <ul style="list-style-type: none"> • Correct the data format for the LinkLogic relationship in Administration. • Use the appropriate data format and file extension in the files.

2097 Schedule Import: None of specified resources were known

Cause	The scheduling data file contained a resource that has not been defined in Administration.
LinkLogic action	LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section.
Recommended action	<p>Read the entire message to determine the name of the scheduling data file being imported when the error occurred. Remove the "Cannot Resolve" pending error job in LinkLogic Pending Errors section.</p> <p>Edit the scheduling data file and correct the data in field AIG-3. Switch to the Pending Jobs section and import the corrected data file to cause the appointment data to be dispersed.</p>

2098 Too many retries/recurring task suspended

Cause	Data Transfer Station attempted to perform the recurring task the maximum number of times permitted.
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LinkLogic action	The task will not run again until Data Transfer Station is restarted.
Short-term solution	Restart Data Transfer Station.
Recommended action	Look for associated messages to help determine the root cause. If the database has missing data and an export recurring task fails numerous times, add the missing data and restart Data Transfer Station.

2100 Schedule Import: Appointment not created. A valid Appointment type was not found

Cause	LinkLogic could not determine an internal appointment type for the appointment type identified in the appointments data file.
LinkLogic action	LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section. This message appears after message 2073, 2074, and/or 2075.
Recommended action	<p>Read the entire message to determine the patient name, appointment start time, and unknown appointment type. Remove the "Cannot Resolve" pending error job in the Pending Errors section of LinkLogic. Switch to Scheduling to manually create the appointment.</p> <p>Define the appointment type in Administration, or correct the source data to have valid values for the appointment type data field in SCH-8. If desired, create an appointment type cross-reference file and associate it with the relationship using LinkLogic Task Options in Administration.</p>

2101 Schedule Import: Appointment not created. It does not have a valid Resource

Cause	LinkLogic could not determine an internal resource ID for the resource identified in the AIG segment of the appointments data file.
LinkLogic action	LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section. This message appears after message 2080, 2082, and/or 2097.
Recommended action	<p>Read the entire message to determine the patient name, appointment start time, and unknown resource. Remove the "Cannot Resolve" pending error job in the Pending Errors section of LinkLogic. Switch to Scheduling to manually create the appointment.</p> <p>Define the resource and/or provider in Administration, or correct the source data to have valid values for the resource data field. If appropriate, create or update the resource mapping for MIK in Advanced Setup Options in Server Setup.</p>

2102 Schedule Import: The specified facility was unknown

Cause	The scheduling data file contained a facility that has not been defined in Administration.
LinkLogic action	LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section.
Short-term solution	<p>Read the entire message to determine the patient name, appointment start time, and the name of the scheduling data file that was being imported when this error occurred. Remove the "Cannot Resolve" pending error job in the Pending Errors section of LinkLogic.</p> <p>Edit the scheduling data file and correct the data in field AIL-3. Switch to the Pending Jobs section and import the corrected data file to cause the appointment data to be dispersed.</p>
Recommended action	<p>If appropriate, create or update the facility mapping for MIK in Advanced Setup Options in Server Setup.</p> <p>If appropriate, define the facility in Administration, or correct the source data to have valid values for the resource data field.</p>

2103 Schedule Import: Could not uniquely match facility

Cause	The scheduling data file contained a facility that could not be uniquely identified based on those defined in Administration.
LinkLogic action	LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section.
Short-term solution	Read the entire message to determine the name of the facility that was not recognized. Remove the "Cannot Resolve" pending error job in the Pending Errors section of LinkLogic.
Recommended action	If appropriate, create or update the facility mapping for MIK in Advanced Setup Options in Server Setup. If appropriate, modify the facility definitions in Administration, or correct the source data to have valid values for the resource data field.

2104 Schedule Import: Must have at least one facility for every appointment

Cause	After processing the AIL segment in an appointments data file, no facility could be identified for the specified appointment. This can occur when an unknown or invalid facility is specified in the AIL-3 field.
LinkLogic action	LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section.
Short-term solution	Manually create the appointment in Scheduling. Remove the "Cannot Resolve" pending error job in the Pending Errors section of LinkLogic.
Recommended action	If appropriate, create or update the facility mapping for MIK in Advanced Setup Options in Server Setup. If appropriate, modify the facility definitions in Administration, or correct the source data to have valid values for the facility data field.

2105 Schedule Import: Appointment not created. It does not have a valid Facility

Cause	LinkLogic could not determine an internal facility ID for the facility identified in field AIL-3 in the AIL segment of the appointments data file.
LinkLogic action	LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section. This message appears after message 2102, 2103, and/or 2104.
Recommended action	<p>Read the entire message description to determine the patient name, appointment start time, and unknown facility. Remove the "Cannot Resolve" pending error job in the Pending Errors section of LinkLogic. Switch to Scheduling to manually create the appointment.</p> <p>Define the facility in Administration, or correct the source data to have valid values for the facility data field. If appropriate, create or update the facility mapping for MIK in Advanced Setup Options in Server Setup.</p>

2106 Schedule Import: Appointment not created. It does not have a valid Appointment Status

Cause	LinkLogic could not determine an internal appointment status ID for the appointment status identified in the SCH-25 field of the SCH segment of the appointments data file.
LinkLogic action	LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section.
Recommended action	<p>Read the entire message to determine the patient name, appointment start time, and unknown appointment status. Remove the "Cannot Resolve" pending error job in the Pending Errors section of LinkLogic. Switch to Scheduling to manually create the appointment.</p> <p>Define the HL7 Mapping for "Appointment Status" and/or "Appointment Cancel" in Administration, or correct the source data to have valid values for the appointment status data field.</p>

2107 Schedule Import: No Schedule found for Resource

Cause	A schedule for the resource identified in the AIG segment in the scheduling data file could not be uniquely identified based on those defined in Administration
LinkLogic action	LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section.
Short-term solution	Read the entire message to determine the resource name and appointment date. Remove the "Cannot Resolve" pending error job in the Pending Errors section of LinkLogic.
Recommended action	If appropriate, create or update the resource mapping for MIK in Advanced Setup Options in Server Setup. Define the schedule and schedule template for the resource in Administration. If necessary, correct the source data to have valid values for the resource data field in AIG-3.

2108 Schedule Import: Appointment not created. A valid Schedule was not found

Cause	LinkLogic could not determine an internal schedule ID for the resource identified in the AIG segment of the appointments data file.
LinkLogic action	LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section. This message appears after message 2107.
Short-term solution	Read the entire message to determine the patient name, appointment start time, and resource without a schedule. Remove the "Cannot Resolve" pending error job in the Pending Errors section of LinkLogic. Switch to Scheduling to manually create the appointment.
Recommended action	If appropriate, create or update the resource mapping for MIK in Advanced Setup Options in Server Setup. Define the schedule and schedule template for the resource in Administration. If necessary, correct the source data to have valid values for the resource data field.

2109 Schedule Import: Appointment not created. Not able to lock the Slots

Cause	LinkLogic could not lock the appointment slot(s) for the time slots of the schedule for the resource identified in the appointments data file.
LinkLogic action	LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section.
Short-term solution	<p>Read the entire message to determine the patient name, appointment start time, resource name, and the name of the scheduling data file that was being imported when this error occurred. Remove the "Cannot Resolve" pending error job in the Pending Errors section of the LinkLogic.</p> <p>Switch to Scheduling to manually create the appointment.</p>
Recommended action	<p>If this error persists, contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so your database can be corrected as necessary to remove any potential dangling locks on appointment slots.</p> <p>This error can occur if the facility identified in the AIL-3 field in the scheduling data file does not match the facility defined for appointment slots in the schedule for the resource identified in the scheduling data file. If this occurs, either change the facility in the data file and re-import it, or in Administration change the facility assigned to the appointment slots in the schedule template.</p> <p>This error can also occur if the resource identified in the AIG-3 field is not configured to be able to use the appointment type identified in the SCH-8 field. Check the resource assignments for appointment types in Administration.</p>

2110 Schedule Import: Cannot Assign Appointment ID to the locked Slots

Cause	<p>There are two potential causes of this message.</p> <ul style="list-style-type: none">• LinkLogic could not assign an appointment to its time slot(s) in the schedule for the resource identified in the appointments data file.• LinkLogic could not determine the internal appointment ID for a new appointment it was attempting to create.
LinkLogic action	<p>LinkLogic does not create or update an appointment; no scheduling information is dispersed into the database. An unresolvable error is created in the Pending Errors section.</p>
Short-term solution	<p>Read the entire message to determine the patient name, appointment start time, internal appointment ID, and the name of the scheduling data file that was being imported when this error occurred. Remove the "Cannot Resolve" pending error job in the Pending Errors section of LinkLogic.</p> <p>Switch to the Pending Jobs section and import the data file again to cause the appointment data to be dispersed. If necessary, switch to Scheduling to manually create the appointment.</p>
Recommended action	<p>If this error persists, contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log for help in troubleshooting the problem.</p>

2111 No match was found for the external identifier

Cause	LinkLogic could not determine an internal identifier for the external value for one of the data fields in the import data file.
LinkLogic action	Data contained in the field will not be imported or viewable in the database. This message is logged for the following data fields: <ul style="list-style-type: none"> • Race • Marital Status • Employment Status • Contact Relation • Preferred Language • Patient Relations (insurance and/or guarantor relationship to patient)
Recommended action	If appropriate, create or update the relevant mapping for MIK in Advanced Setup Options in Server Setup. If appropriate, modify the relevant list in Administration, or correct the source data to have valid values for the relevant data field.

2112 Multiple matches were found for the external identifier

Cause	The import data file contained an external value that could not be uniquely identified based on the MIK mappings defined in Advanced Setup Options in Server Setup.
LinkLogic action	Data contained in the field will not be imported or viewable in the database. This message is logged for the following data fields: <ul style="list-style-type: none"> • Race • Marital Status • Employment Status • Contact Relation • Preferred Language • Patient Relations (insurance and/or guarantor relationship to patient)
Recommended action	If appropriate, create or update the relevant mapping for MIK in Advanced Setup Options in Server Setup. If appropriate, modify the relevant list in Administration, or correct the source data to have valid values for the relevant data field.

IXP messages

An IXP message can be a note, a warning, or an error. The problem typically occurs during the import file validation phase. In general, IXP messages indicate a problem with the content of the file.

Once you become familiar with these messages, you can exclude some of the messages to improve performance and reduce the number of Activity Log entries. See [“Excluding messages and warnings from the Activity Log” on page 640](#).

4109 Exception file

Cause	The data file contains a problem that generated an exception file. You can find the file on the LinkLogic Errors tab.
Recommended action	Review all error or warning messages pertaining to the data file and perform the solutions for those messages as instructed in this document.

4117 Internal Error

Cause	An unexpected error occurred. The most probable cause is data that violates the interface specification but which LinkLogic is unable to identify.
LinkLogic action	The job is stopped.
Recommended action	Do not attempt to re-import or re-export the data that caused the error. Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so that they can determine the cause of the problem.

4118 IXP Warning

Cause	This is a generic message number assigned to all unclassified warnings.
Recommended action	Read the warning message. There are probably other warning messages close to this message that contain more specific information.

4119 IXP Error

Cause	This is a generic message number assigned to all unclassified errors.
Recommended action	Read the error message. There are probably other errors or warnings close to this message that contain more specific information about the problem.

4120 IXP System Crash

Cause	An internal error occurred that is so severe the system immediately stopped all processing.
LinkLogic action	LinkLogic stops processing the job that caused the error.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so that they can determine the cause of the problem.

4121 Unable to Load Table

Cause	This is a diagnostic message. It should not occur during normal use of the system.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so that they can determine the cause of the problem.

4122 Creating New Record in Table

Cause	This is a diagnostic message. It should not occur during normal use of the system.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so that they can determine the cause of the problem.

4125 Bad Cross Reference Control

Cause	A cross-reference file contains bad or invalid data.
LinkLogic action	LinkLogic won't process any jobs associated with this interface.
Recommended action	Correct the cross-reference file and restart the job.

4126 Bad IXP Format

Cause	This is a diagnostic message. It should not occur during normal use of the system.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so that they can determine the cause of the problem.

4128 Bad IXP Database Access

Cause	This is a diagnostic message. It should not occur during normal use of the system.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so that they can determine the cause of the problem.

4129 Forced Account/ EID Match Mode Enabled

Cause	The alternative matching algorithm has been activated.
LinkLogic action	Patient matches will be made solely by external ID, rather than the normal series of criteria.
Recommended action	This can only happen intentionally. If you are not aware of why this is happening, contact Centricity Services or your Value-Added Reseller.

4130 During Initial Pass

Cause	Part of a larger message.
Recommended action	Read the warning message. There are probably other warning messages close to this message that contain more specific information.

4131 Error In Header Record

Cause	There is a problem in the header record of the data file that will not allow the data to be processed.
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LinkLogic action	LinkLogic won't process the data until you correct the exception file.
Short-term solution	Refer to the appropriate interface specification and correct the problem in the exception file. Return to the LinkLogic module and click Resolve to process the exception file. You can then manually process the file from the LinkLogic Jobs tab.
Recommended action	Contact your external systems vendor regarding changes needed prior to further transmission of data files.

4132 Exception File Error

Cause	An error occurred while creating an exception file. This can only occur if LinkLogic is unable to create or append to the exception file.
LinkLogic action	The job stops. A partial or missing exception file is the outcome.
Recommended action	Check network rights in the exception file folder.

4133 Warning

Cause	This is a generic LinkLogic warning message for unclassified warnings.
Recommended action	Read the surrounding warning messages for more specific information.

4138 Warning enabled empty field

Cause	LinkLogic attempted to validate information for a field that did not contain any data. The message indicates the name of the field that was empty and the segment containing the empty field.
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4142 Unexpected Field Value

Cause	A value has been detected in an incoming field that does not conform to the format or enumerated data set established for that field.
LinkLogic action	The block of patient data associated with this field is not processed.
Recommended action	Correct the contents of the field to comply with the interface specification.

4143 File Processing Ended Early At Footer Record/Bytes Remaining

Cause	The data file contained information that followed the footer record.
LinkLogic action	LinkLogic ignores information following the footer record and doesn't import it into the application.
Recommended action	If the information following the footer record is valid, contact your external system vendor regarding changes required prior to further transmission of data files.

4145 Duplicate cross-reference item

Cause	A cross-reference file contained a duplicate mapping.
LinkLogic action	LinkLogic considers the cross-reference file to be invalid and will not process any jobs for any relationships configured with the offending .XRF file.
Recommended action	<p>The message should include the name of the .XRF file and indicate which mapping value is a duplicate. Remove or correct the duplicate and reprocess the job.</p> <p>Also, in LinkLogic Task Options remove the cross-reference file and add it back using the Configuration Files grid. This action validates the file before associating .XRF files with LinkLogic relationships or relationship types.</p>

IXP general messages

5123 File could not be opened

Cause	<p>LinkLogic could not open the data file for processing. This could occur for the following reasons:</p> <ul style="list-style-type: none"> • A data file was moved from its original location after being queued. • An incomplete LinkLogic folder structure does not contain the appropriate configuration files. • The data file extension is invalid. • The network drive mapping is inaccurate.
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LinkLogic action	LinkLogic doesn't process the data file.
Short-term solution	DO NOT move files out of the error folder and then attempt to execute them using the Resolve button on the Errors tab or the Execute button on the Jobs tab.
Recommended action	Contact your Information Systems department to determine if the network mappings are accurate on this workstation. Check the file extension to ensure it is a valid LinkLogic data format extension. Ensure the LinkLogic folder structure is complete and contains all appropriate subfolders.

5124 File could not be created

Cause	LinkLogic couldn't create the export data file. This might be due to a possible problem with network directory rights or an inaccurate network directory mapping. It might also apply to the creation of an exception filename in the errors folder for the same reasons.
LinkLogic action	LinkLogic doesn't process the data.
Recommended action	Contact your Information Systems department to ensure the network mapping is accurate for this workstation and that the network directory rights include the Write attribute.

5125 Child element is invalid

Cause	A field or record in the data file contains data not compliant with the interface specification.
LinkLogic action	The data contained in the patient segment is placed in an exception file and will not be processed until the exception file is corrected and manually processed.
Short-term solution	<p>Read the entire message description to determine which field contains the inappropriate data. This will generally be displayed following the line that reads IXP Warning: <i>name_of_field</i> and again after the message LinkLogic Error: A child element is invalid; <i>name_of_field</i>.</p> <p>If the message is logged during an export, either the 5160 or 5125 warning message identifies which patient has missing data. The other message identifies which field as missing data. Review all messages to determine the exact field with missing or invalid data.</p> <p>Once you determine which field needs to be corrected, refer to the appropriate interface specification to help you correct the exception file. Return to LinkLogic to resolve the exception file from the Errors tab, then manually process the file from the Jobs tab.</p>
Recommended action	<ol style="list-style-type: none"> 1 Determine whether the problem is workflow-related (e.g., information not entered in the external system) or caused by the vendor not including the data in the data file. <ul style="list-style-type: none"> • If workflow-related, instruct the data entry person how to avoid the problem in the future. • If vendor-related, copy the file to a separate folder for reference and inform the vendor what corrections to make before sending further data files. 2 Enter the missing data in the application when you have it. <p>The DTS may re-export the data during its next scheduled interval. For example, if demographics were not exported for a patient, supplying the missing data in Registration results in the DTS exporting the corrected demographics. However, if you add a missing guarantor home phone number for an order, the DTS may not generate an orders export message because the it only queries for new or changed orders, not all changes in supporting data fields.</p> <p>If the DTS does not re-export the data during its next scheduled export interval, on the LinkLogic Jobs tab manually export the data for the patient. Make sure you use the proper method for transmitting the export data file from the LinkLogic outbox to the destination system. The DTS can send data through TCP/IP socket connections, but the LinkLogic module in the client application cannot.</p>

5126 Child Element Has Invalid Content

Cause	A field in the data file contains data that does not conform to the interface specification.
LinkLogic action	Data in the patient segment is placed in an exception file and will not be processed until the user manually corrects the invalid data.
Short-term solution	Refer to the appropriate interface specification to determine the nature of the invalid entry. Correct the data in the exception file. Return to LinkLogic Errors tab and resolve the exception.
Recommended action	Determine whether this problem is related to data entry errors or pertains to invalid data sent by the external system vendor. If this problem is related to the vendor, contact your vendor representative regarding the required changes to the data format prior to further transmission of data.

5140 Invalid Field Type

Cause	The data in the field does not match the data type specified in the interface specification.
LinkLogic action	Data in the patient segment is placed in an exception file and will not be processed until the user manually corrects the invalid data.
Short-term solution	Refer to the appropriate interface specification to determine the nature of the invalid entry. Correct the data in the exception file. Return to the LinkLogic Errors tab and resolve the exception.
Recommended action	Determine whether this problem is related to data entry errors or pertains to invalid data sent by the external system vendor. If this problem is related to the vendor, contact your vendor representative regarding the required changes to the data format prior to further transmission of data.

5143 No Header Record Could Be Found

Cause	The data file does not have a message header record, which is required for data processing.
LinkLogic action	LinkLogic doesn't queue the data file.
Short-term solution	Edit the data file and add the appropriate header record information, if known.
Recommended action	Contact your external systems vendor regarding the required changes prior to further transmission of data files.

5144 The first locatable record does not conform to header record format

Cause	The data file extension does not match the relationship data type specified in LinkLogic setup in Administration.
LinkLogic action	LinkLogic won't process the data file until the correct extension is provided or the data type for the relationship is correctly defined.
Short-term solution	To determine the correct extension for the file, see "Data exchange protocols" on page 477 . If the data file does not have the correct extension, correct the file extension and reprocess the file. If the file has the correct extension, redefine the relationship in LinkLogic Setup.
Recommended action	If the data file does not have the correct extension, inform the vendor of the correct extension needed prior to further transmission of data files. If the data file has the correct extension, redefining the relationship as mentioned in the short-term solution will also apply to future transmissions from that vendor.

5145 Field List Not Matched to Record Definition

Cause	One or more of the fields in the referenced record does not meet the interface specification for this record type.
LinkLogic action	The patient data segment is not processed.
Recommended action	Correct the record in the exception file that is created as a result of this job. Process the exception file.

5153 Illegal Import Version

Cause	The import version specified in the data file header record is unsupported by your version of LinkLogic.
LinkLogic action	The data file is not queued for processing.
Short-term solution	Edit the data file and enter the appropriate import version as specified in the interface specification.
Recommended action	Contact your external systems vendor regarding the required changes prior to further transmission of data files.

5154 Parser Cannot Handle This IXP Version

Cause	The referenced IXP file is not the proper version for your version of LinkLogic.
LinkLogic action	The associated interface is not processed.
Short-term solution	Compare the IXP files in the LinkLogic folder to the files shipped on the installation CD-ROM. Files with differences should be replaced with the proper files from the CD-ROM.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so they can determine the cause of the problem.

5156 Error in Field During Processing

Cause	A field contained a format or content error. This message applies generically to all field errors.
LinkLogic action	The patient data segment is not processed.
Recommended action	Correct the field in the exception file generated as a result of this job. Process the exception file.

5157 Error in Child Record During Processing

Cause	The record had an associated child record that contained an error. For example, a PV1 record that contains invalid data is considered a child of a PID record. The PID record lists this error.
LinkLogic action	The patient data segment is not processed.
Recommended action	Correct the child record in the associated exception file. Process the exception file.

5158 Error In Writing To Exception File

Cause	A problem was encountered while writing data to an exception file.
LinkLogic action	LinkLogic stops processing the job.
Recommended action	Check network rights for the LinkLogic error folder. Be certain that the LinkLogic workstation has sufficient rights to create and append files in that folder.

5159 Record Type is Not Recognized

Cause	The data file contains a record segment that is not recognized by LinkLogic.
LinkLogic action	LinkLogic creates an exception file with the data segment.
Short-term solution	Edit the exception file and remove the unrecognized record type. Return to LinkLogic, click Resolve to requeue the exception file, then process the exception file from the LinkLogic Jobs tab.
Recommended action	Contact your external systems vendor regarding the required changes to the record type prior to further transmission of data files.

5160 Required field is missing

Cause	A field that is required by LinkLogic is missing from the data file.
LinkLogic action	LinkLogic creates an exception file with the data in the patient segment and doesn't process this data segment.
Short-term solution	<p>Read the entire message description to determine which field is missing the required data. This will generally be displayed following the line that reads IXP Warning: <i>name_of_field</i>, and again after the message LinkLogic Error: Required field is missing; <i>name_of_field</i>.</p> <p>Once you determine which field is missing data, refer to the appropriate interface specification to help you correct the exception file.</p> <p>If the message is logged during an export, either the 5160 or 5125 warning message identifies which patient has missing data. The other message identifies which field as missing data. Review all messages to determine the exact field with missing or invalid data.</p> <p>Add the required information and save your changes. Return to LinkLogic Errors tab, click Resolve to requeue the exception file, then manually process the file on the Jobs tab.</p>
Recommended action	<ol style="list-style-type: none"> Determine whether the problem is workflow-related (e.g., information not entered in the external system) or caused by the vendor not including the data in the data file. <ul style="list-style-type: none"> If workflow-related, instruct the data entry person how to avoid the problem in the future. If vendor-related, copy the file to a separate folder for reference and inform the vendor what corrections to make before sending further data files.

Recommended action, cont'd	<p>2 When you have it, try to enter the missing data in the application.</p> <p>The DTS may re-export the data during its next scheduled interval. For example, if demographics were not exported for a patient, supplying the missing data in Registration results in the DTS exporting the corrected demographics. However, if you add a missing guarantor home phone number for an order, the DTS may not generate an orders export message because the it only queries for new or changed orders, not all changes in supporting data fields.</p> <p>If the DTS does not re-export the data during its next scheduled export interval, on the LinkLogic Jobs tab manually export the data for the patient. Make sure you use the proper method for transmitting the export data file from the LinkLogic outbox to the destination system. The DTS can send data through TCP/IP socket connections, but the LinkLogic module in the client application cannot.</p>
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5161 Record has Bad or Invalid Data Structure

Cause	This message should not occur during normal use of the system.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so they can determine the cause of the problem

5163 Field too long

Cause	The specified field in the data file contains information that exceeds the maximum length specified in the interface specifications or the maximum length permitted in the database.
LinkLogic action	<p>LinkLogic creates an exception file if the length of the specified field in the data file exceeds the maximum field length specified in the interface specifications. LinkLogic won't process the data until the exception file is corrected and manually processed.</p> <p>If the data file's specified field length meets the requirements defined in the interface specification but exceeds the maximum length of the corresponding database field where the information is stored, LinkLogic truncates the data.</p>
Short-term solution	<p>Read the entire message description to determine which field has a length problem. The field with the problem displays at the end of the message, "IXP Warning: Field too long." You may also see the message, "LinkLogic Error: Field too long." This message also shows the field with the problem.</p> <p>Once you determine which field is incorrect, refer to the appropriate interface specification to help you correct the exception file or correct the truncated data in the application, if necessary.</p> <p>When correcting an exception file, follow these steps:</p> <ol style="list-style-type: none"> 1. Add the required information and save your changes. 2. Return to the LinkLogic Errors tab. 3. Click Resolve to re-queue the exception file. 4. Manually process the file on the Jobs tab.
Recommended action	Copy the file to a separate folder for reference and contact the vendor with information regarding the corrections needed prior to further transmission of data files.

5164 A Table Could Not Be Located

Cause	This message should not occur during normal use of the system.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so that they can determine the cause of the problem.

5165 Error Creating New Database Record

Cause	LinkLogic could not import the data. This can be the result of a table reaching its maximum extent size.
LinkLogic action	The job halts immediately with a critical failure.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so that they can determine the cause of the problem.

5166 Invalid Table Name

Cause	This is a diagnostic message.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so that they can determine the cause of the problem.

5167 Error Setting Value of Field

Cause	An imported value is being assigned to a field that does not support that value or format, or the database has rejected the assignment of a value for an unknown reason.
LinkLogic action	The job stops.
Recommended action	Remove the offending value from the incoming data.

5169 An Unexpected Error Has Occurred

Cause	An error that LinkLogic cannot identify has occurred.
LinkLogic action	The job stops.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so that they can determine the cause of the problem.

5170 Database Macro is Bad

Cause	This message should not occur during normal use of the system.
LinkLogic action	The job stops with a critical failure.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so that they can determine the cause of the problem.

5171 Failure During Script Execution

Cause	A database-related error occurred while processing a job.
LinkLogic action	The job stops with a critical failure.
Recommended action	This error is the generic representation of a more specific database-related error. Read the surrounding error and warning messages in the LinkLogic Activity Log for a more precise statement of the problem.

5172 Critical Abort State

Cause	Any error that has ended in a critical failure will cause this error to be logged when the job is terminated.
LinkLogic action	The job stops with a critical failure.
Recommended action	Read the surrounding error and warning messages in the LinkLogic Activity Log for a more precise statement of the problem.

5174 Invalid File Path Name

Cause	<p>LinkLogic is attempting to access a file that has an invalid filename or pathname.</p> <p>The most probable reason is that LinkLogic is configured with an invalid LinkLogic folder pathname, or that a network path has become unavailable since LinkLogic or the current job was configured.</p>
LinkLogic action	The job stops.
Recommended action	<p>Verify that the pathname is formatted properly and is accessible from the workstation that has reported the error.</p> <p>If the path is not accessible, map the required network resource to the pathname specified.</p>

5176 Error Retrieving Field

Cause	An error occurred while retrieving a field value from the database.
LinkLogic action	The job stops.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so that they can determine the cause of the problem.

5177 Maximum safe string length would be exceeded

Cause	While processing a job, an error has occurred. The description of the error, once completely assembled, would have exceeded the maximum amount of space that LinkLogic allows for the reporting of errors.
Recommended action	Check the Activity Log for surrounding error and warning messages for a detailed description of events leading to the error.

5178 Record could not be broken apart properly

Cause	This occurs when end-of-line characters or hard carriage returns do not appropriately separate data file records. This may also occur when a NotesLink Import file doesn't contain /*Begin Note*/.
LinkLogic action	LinkLogic creates an exception file with the data in the patient segment and won't process the data until the exception file is corrected and manually processed.
Short-term solution	Edit the exception file and add a hard carriage return after the appropriate records. Return to the LinkLogic Errors tab, click Resolve to requeue the exception file, then process the exception file from the LinkLogic Jobs tab.
Recommended action	Contact your external systems vendor regarding the required changes prior to further transmission of data files.

5182 Field Contents are Invalid

Cause	The data file contains data that does not conform to the interface specification. Most likely the value in the field does not match one of the values in the enumerated list of valid values for this data.
LinkLogic action	LinkLogic creates an exception file with the data in the patient segment and won't process the data until the exception file is corrected and manually processed.
Short-term solution	Read the entire message to determine which field is invalid. Edit the exception file to correct or remove the invalid data. Return to the LinkLogic Errors tab, click Resolve button to requeue the exception file, then process the exception file from the LinkLogic Jobs tab.
Recommended action	Contact your external systems vendor regarding the required changes prior to further transmission of data files.

5183 Error Executing SQL Statement

Cause	An error occurred on the database server while executing an SQL statement that was issued by this station. The most common cause of this problem is an improperly formatted SQL statement.
LinkLogic action	The job stops with a critical failure.
Recommended action	Contact Centricity Services or your Value-Added Reseller with the contents of the message and CPO06.log so that they can determine the cause of the problem.

5184 No Default Value Found For Defaulted Field

Cause	A field is defined to have a default value on import, but no default value could be found. This occurs when a .dft file has been damaged or modified incorrectly.
LinkLogic action	The job stops. No jobs of this interface type will be processed.
Recommended action	Compare .dft files in the standard and local folders to the .dft files shipped on the CD. Replace files that differ from the originals.

5185 Maximum Line Length Exceeded

Cause	Interfaces other than NotesLink have a maximum line length of 4000 characters between record delimiters. An incoming record exceeded this maximum.
Recommended action	Modify the offending line in the incoming file and restart the job.

5186 Total Record Does Not Match Record Count

Cause	The total record count specified in the data file is inaccurate. Note. This message is not applicable for HL7 data.
LinkLogic action	LinkLogic doesn't queue the data file.
Short-term solution	Edit the data file to correct the record count or remove the record count from this particular data file.
Recommended action	Contact your external systems vendor regarding the required changes to the total record segment prior to further transmission of data files.

5190 No existing data could be found to match incoming data

Cause	<p>This message might be caused by the following:</p> <ul style="list-style-type: none"> • The data file did not contain enough information to perform a unique match to an existing patient. • The patient isn't registered in Centricity Practice Solution.
LinkLogic action	<p>LinkLogic creates an exception file with the data in the patient segment and won't process the data until the exception file is corrected and manually processed.</p>
Short-term solution	<p>Determine the exception file name from this error message (message code 5190) in the Activity Log. From the Errors tab, select the appropriate exception file and click Resolve.</p> <p>You see the Data-To-Patient Matching window, where you can either match the information to an existing patient or click New Patient to complete the registration of the patient.</p>
Recommended action	<p>Frequent occurrence of this error might indicate a workflow-related problem in which the patient registration is not being completed prior to the receipt of other patient data, such as transcribed notes or laboratory results.</p> <p>Investigate the current workflow and make the appropriate changes to ensure that registration of patients occurs in a timely manner.</p> <p>This error might also indicate the absence of required patient matching criteria in the transmitted data files. If this is the case, a change in workflow may also be required to ensure the data entry or information provided to vendors contains sufficient patient matching criteria to enable a unique match to existing patients.</p>

5191 Maximum Number of Match Items Exceeded

Cause	<p>LinkLogic has a maximum number of 4096 patients that can be imported in a single file. The incoming data has exceeded this limit.</p>
LinkLogic action	<p>The job stops.</p>
Recommended action	<p>Break the file apart into smaller files each containing 4096 patients or less. Restart the original job and queue the new files to be processed.</p>

5192 File contains unacceptable or unprintable characters

Cause	The following may cause this message: <ul style="list-style-type: none"> • The data file was saved as a format other than a text document or contains characters outside the normal 7-bit ASCII range. • The data file contains non-ASCII characters. The AutoCorrect feature in some word processing programs can cause this.
LinkLogic action	LinkLogic creates an exception file with the data in the patient segment and won't process the data until the exception file is corrected and manually processed.
Short-term solution	Open the data file in a DOS text editor (WordPad and Notepad do not display non-ASCII characters) to determine if the file contains non-ASCII characters. If you find non-ASCII characters, delete them and save your changes. If the file does not contain non-ASCII characters but was saved in a format other than a text document, save the file as text.
Recommended action	If the file contained non-ASCII characters, save the file in a separate folder for reference, contact the vendor, and provide information regarding needed corrections prior to further transmission of data files.

5193 Maximum Number of Incoming Matchable Records Exceeded

Cause	See 5191. This error is reported when the critical failure state of the job is set.
LinkLogic action	The job stops in a critical failure state.
Recommended action	See "5191 Maximum Number of Match Items Exceeded" on page 724.

5194 Multiple header records found in incoming filer

Cause	The data file contains multiple sequential header records that LinkLogic cannot process. If the interface uses the MedicaLogic proprietary format, only one header record is allowed per file. Note. This format is no longer supported by GE.
LinkLogic action	The data file is not queued for processing.
Short-term solution	Edit the data file to remove all but a single sequential header record. Return to the LinkLogic Jobs tab and select the data file for processing.
Recommended action	Contact your external systems vendor regarding the required changes to the header records prior to further transmission of data files.

5195 A Record of This Type Already Exists in This Data Segment

Cause	The data file contains multiple records of a type that can only be presented once in a data segment.
LinkLogic action	LinkLogic creates an exception file with the data in the patient segment.
Short-term solution	Remove the offending record from the exception file and process the exception file.
Recommended action	Determine why the source of the data is in violation of the interface specification. Eliminate the violation.

5196 The Record Format is Not Supported By the Source Data Format

Cause	The incoming data file contains a record with a structure that corresponds to an older (or newer) version of the format specified for that record type.
LinkLogic action	LinkLogic creates an exception file with the data in the patient segment.
Short-term solution	Correct the offending record in the exception file and process the exception file.
Recommended action	Determine the reason for the violation of the interface specification. Eliminate the violation at the source of the data.

5197 Multi-line field or record is not properly terminated

Cause	In MedicalLogic proprietary format, a record that spans multiple lines is not properly delimited. Fields that span multiple lines must be delimited by double quotes or /*Begin Note*/ and /*End Note*/ pairs. Note. This format is no longer supported by GE.
LinkLogic action	LinkLogic creates an exception file with the data in the patient segment.
Short-term solution	Properly delimit the multi-line field with quotes or /*Begin Note*/ and /*End Note*/ pairs.

5198 A Failure Occurred During Database Access

Cause	While interacting with the database, LinkLogic encountered an unexpected error.
LinkLogic action	The job is stopped and left in a critical failure state.
Recommended action	Contact Centricity Services or your Value-Added Reseller.

5199 A Non-Unique Business Abbreviation is Being Ignored

Cause	An imported file contains a new business name, but the supplied business abbreviation conflicts with an existing business.
LinkLogic action	LinkLogic ignores the non-unique abbreviation.
Recommended action	Make business abbreviations unique at the source of the data.

5200 The Specified Responsible Provider Does Not Have Document Signing Privileges

Cause	A provider specified in the data file as the ordering provider does not have document signing privileges defined in Administration.
LinkLogic action	LinkLogic places the document on the default responsible provider's Desktop.
Recommended action	If the specified provider should have the privilege to sign imported documents, refer to online help for details on changing privileges.

5201 External ID Match Mode Has Been Requested for a Relationship with No Associated External IDs

Cause	An external ID match mode is defined in LinkLogic setup for this producer, but there is no external IDs present in the appropriate field of the data file.
LinkLogic action	LinkLogic matches the data to other patient matching criteria, if available.
Recommended action	Redefine the matching mode in LinkLogic setup in Administration, or instruct the external system vendor to provide the external identifier for the patient in the appropriate field.

5202 Required record is missing

Cause	A record that is required by LinkLogic for processing the data has been omitted from the data file.
LinkLogic action	The data contained in the patient segment is placed in an exception file and will not be processed until the exception file is corrected and manually processed.
Short-term solution	Refer to the appropriate interface specifications to determine the record that is missing from the data file. Manually enter the required data using an editor such as WordPad or NotePad and save your changes. Then return to the LinkLogic Errors tab to resolve the exception file and manually process the file from the Jobs tab.
Recommended action	Contact your vendor and provide information regarding the needed changes to provide the required record prior to further transmission of data files.

5203 A unique person match could not be isolated for

Cause	An incoming contact could not be uniquely matched to an existing contact of the same name for the associated patient.
LinkLogic action	Another contact will be created with the specified name and associated with the specified patient.
Recommended action	Manually eliminate duplicate contact names and relationships for the associated patient to avoid future duplication.

5204 The Incoming Data File Contains a Header That Requests Test/Debug Mode

Cause	The data file processing ID is set to test/debug mode in the header record, but the job is configured for production mode.
LinkLogic action	Data from the file is not imported into the application.
Short-term solution	Edit the data file and change the processing ID to P for production mode. Return to LinkLogic and import the data file.
Recommended action	Contact your external systems vendor regarding the change to the processing ID prior to further transmission of data files.

5206 This record is being ignored and will not be validated

Cause	The data file contains a record that is not used by LinkLogic during data import. Note. This error is also listed when there is a file extension error (see errors 5144 and 2053).
LinkLogic action	Data contained in the record is not imported or displayed in the application.
Short-term solution	Verify the cause of the error message. If the error is a result of a problem with the header record, refer to the appropriate interface specification, resolve the problem with the information in the header record, return to the Errors Tab, and resolve the exception file. Otherwise, verify that you do not require the information contained in the record. If necessary, complete an enhancement request to request support for that particular record type. If the record is unnecessary, the message can be excluded.

5207 No Records Were Located For Export

Cause	LinkLogic cannot locate any record matching the specified type to export.
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5208 The Incoming Data File Contains a Header That Requests Production Mode

Cause	The data file processing ID is set for production mode, but the job is configured for test mode.
LinkLogic action	Data from the file is not imported into the application.
Short-term solution	Edit the data file and change the processing ID to D for debugging mode, then return to LinkLogic, and import the data file; or switch to Administration, and change the LinkLogic relationship from test mode to production mode.
Recommended action	Contact your external systems vendor regarding the change to the processing ID prior to further transmission of data files.

5209 An IXP File Has a Bad or Missing Checksum

Cause	A configuration file located in the llogic\config\standard or llogic\config\local folder is out of date.
LinkLogic action	LinkLogic displays this message each time it attempts to access this out-of-date configuration file.
Recommended action	Contact Centricity Services or your Value-Added Reseller and complete the process required to update your configuration file.

5210 An IXP File Has a Conflicting Patch ID

Cause	A configuration file located in the llogic\config\standard or llogic\config\local folder is out of date.
LinkLogic action	LinkLogic displays this message each time it attempts to access this out-of-date configuration file.
Recommended action	Contact Centricity Services or your Value-Added Reseller and complete the process required to update your configuration file.

5211 An Incoming Date Field Contains an Ambiguous Two Digit Year

Cause	The data file contains a date field that uses only two digits to specify the year.
LinkLogic action	LinkLogic displays this message each time it detects only 2 digits being used to specify year values.
Recommended action	Contact Centricity Services or your Value-Added Reseller and your external system vendor regarding required changes to the data to ensure that all data sent to LinkLogic for all date fields specifies four digits to avoid any possible misinterpretation. Refer to the interface specifications to determine which fields are used for dates.

5212 Match ignored due to invalid date of birth

Cause	Although the data file contained enough information to uniquely match an existing patient, the patient has a null date of birth in the database. This message can be logged in interfaces such as NotesLink and/or LabLink in which the date of birth is an optional field.
LinkLogic action	LinkLogic also logs message 5190 and creates an exception file with the data in the patient segment and won't process the data until the exception file is corrected and manually processed.
Short-term Solution	Determine the exception file name from the "No existing data" message (message code 5190) in the Activity Log. From the Errors tab, select the appropriate exception file and click Resolve. You see the Data-To-Patient Matching window, where you can either match the information to an existing patient or click New Patient to complete the registration of the patient.
Recommended action	Examine the message to determine the patient whose date of birth is null. Go to Registration to assign a valid date of birth.

5213 A Unique Guarantor-Name Could Not Be Isolated

Cause	An incoming guarantor could not be uniquely matched to an existing guarantor of the same name.
LinkLogic action	Another guarantor will be created with the specified name and associated with the specified patient.
Recommended action	Manually eliminate duplicate guarantor names and relationships for the associated patient to avoid future duplication.

Fatal errors

Fatal error messages indicate a severe problem that prevents the system from operating. In general, a fatal error prevents Centricity Practice Solution or Data Transfer Station from starting up again until the problem is corrected.

3076 Missing network LinkLogic directory for station

Cause	The path to the LinkLogic folder is invalid, or the LinkLogic folder is not accessible from this workstation.
LinkLogic action	LinkLogic will not queue any files.
Recommended action	Contact your Information Systems department with the error information so they can assist you in troubleshooting a possible network problem.

3077 Invalid LinkLogic Folder

Cause	The path to the LinkLogic folder is invalid, or the LinkLogic folder is not accessible from this workstation.
LinkLogic action	LinkLogic will not queue any files.
Recommended action	Contact your Information Systems department with the error information so they can assist you in troubleshooting a possible network problem.

3078 No LinkLogic folder has been specified

Cause	The path to the LinkLogic folder hasn't been set on this workstation, or the network LinkLogic folder is not accessible from this station.
LinkLogic action	LinkLogic won't queue any files until the path is specified or the network drive mappings are corrected.
Recommended action	Define the path to the network LinkLogic folder in Administration. If necessary, change the drive mappings on this workstation so that the drive specified for the network LinkLogic folder is accessible.

Socket errors

8194 Socket communications information: Scanning incoming HL7 messages

Cause	Data received on a socket channel has been put into a file with the extension ".tmp".
LinkLogic action	The Socket Manager scans the data in the file to see if it contains an HL7 header segment that LinkLogic recognizes and if HL7 acknowledgments should be sent in reply.

8196 Socket communications information: Scan complete

Cause	The Socket Manager has scanned all necessary segments of the HL7 ".tmp" file.
LinkLogic action	The Socket Manager will attempt to rename the file with a suffix that will be found when the DTS runs the scan inbox task.

8201 Socket communications information: No acknowledgment received

Cause	LinkLogic has not received an expected acknowledgment from the external system after attempting to transmit an export file.
LinkLogic action	LinkLogic attempts to retransmit the file a maximum of five times.
Recommended action	Contact the external systems vendor to ensure their system is set to send an acknowledgment. After resolving any possible problems with the external system, restart the connection with the external system, then restart Data Transfer Station.

8209 Socket communications information: Receiving

Cause	The Socket Manager has recognized the block header sequence on a socket channel.
LinkLogic action	The Socket Manager reads data into memory until the block trailer sequence is sent.

8210 Socket communications information: Receive complete

Cause	The Socket Manager has recognized the block trailer sequence on a socket channel.
LinkLogic action	The Socket Manager writes the data into a file with the extension ".tmp".

8221 Socket communications information: listener started

Cause	LinkLogic Socket Manager initiated the communications sequence and is looking for possible communication from the external system.
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8222 Socket communications information: listener terminated

Cause	LinkLogic Socket Manager stopped the communications sequence.
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8223 Socket communications information: Connection abnormally terminated

Cause	Socket communication connection lost between Data Transfer Station and the external system.
Recommended action	Contact your Information Systems department to ensure there aren't any problems with the network operating system. If no network problems exist, contact your external systems vendor for assistance with identifying the problem that might have interrupted the connection.

8224 Socket communications information: connection accepted

Cause	The socket connection was accepted by external system.
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8225 Socket communications information: Task abnormally terminated

Cause	The socket connection for a specified task has been disabled or stopped by a user.
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8227 Socket communications information: Cannot connect to host

Cause	There are problems connecting to the host system.
Recommended action	Contact your Information Systems department to ensure there aren't any problems with the network operating system. If no network problems exist, contact your external systems vendor for assistance with determining the problem that might have interrupted the connection.

8228 Socket communications information: Connection established

Cause	The socket connection has been established between systems.
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8232 Socket communications information: shutdown requested

Cause	The external system requested LinkLogic to close the socket connection.
Recommended action	LinkLogic attempts to close its side of the connection.

8234 Socket communications: Cannot open HL7 file

Cause	The file to be transmitted to the external system cannot be opened.
LinkLogic action	LinkLogic won't transmit the file.
Recommended action	Manually export the data. Alternatively, attempt to find the file named in this message and manually update the data in the external system.

8235 Socket communications: Unsupported HL7 message type in file

Cause	The HL7 message type being sent by the host system is unrecognized by LinkLogic. MSH-5 must be ADT, BAR, MDM, ORU, SIU, or ACK.
LinkLogic action	The data file will remain in LinkLogic's in folder with a .tmp file extension.
Recommended action	Contact the external systems vendor regarding the required changes to the message type prior to further transmission of data files.

8236 Socket communications information: HL7 file does not begin with message header

Cause	The first segment of the file did not begin with MSH, or the HL7 version in the header segment was not 2.1, 2.2, or 2.3.
LinkLogic action	The data file remains in LinkLogic's in folder with a .tmp file extension.
Recommended action	Contact the external systems vendor regarding the required changes prior to further transmission of data files.

8237 Socket communications information: File type recognized

Cause	The Socket Manager received data and set the file extension appropriately based on the data in the header record of the file.
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8239 Socket communications information: socket manager started

Cause	LinkLogic started Socket Manager communication.
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8247 Socket communications information: socket deadlock

Cause	<p>Send and receive conflicts occur on the same socket channel (same host name and port number).</p> <p>For example, if a socket channel has detected incoming data and locked it for receiving, an attempt by a separate thread to send data on that channel can create a socket deadlock.</p>
LinkLogic action	<p>DTS processing continues and logs an error. If a deadlock occurs because the system cannot lock the socket log file (socklog.txt), a message box displays and DTS processing stalls until there is user input.</p>
Recommended action	<p>To prevent this type of deadlock, use different send and receive channels. If transfers occur between DTS and a single host, use different port numbers to solve the problem. This solution requires defining two socket channels on both ends.</p>

Glossary

ACK/NAK	<p>The HL7 specification defines an ACK/NAK protocol (for Acknowledge/Negative Acknowledge) that allows a receiver to say, for each message, that it has been received in good shape and will be processed.</p> <p>Alternatively, transfer of a RAW file (ASTM 1238 or text files, for example) requires communication in only one direction: The sender packages and sends the data, but does not allow the receiver to respond that it has received and made sense of the data. Because the handling is different for HL7, a single socket connection can handle RAW data or HL7 data, not both.</p>
activity log	<p>The Activity Log lists notes, warnings, and error messages for every job you manually import or export, and for every job Data Transfer Station processes.</p>
ASTM 1238	<p>A format based on the ASTM E1238-94 standard (Standard Specification for Transferring Clinical Observations Between Independent Computer Systems), version 2 or later. LinkLogic's use of this format is defined in the Laboratory Results Interface Specification: ASTM 1238.</p>
Centricity Clinical Gateway	<p>The Centricity Clinical Gateway 7.1 (CCG) provides seamless communications between the Centricity products and external health care interfaces. CCG provides a web interface to monitor and deploy Cloverleaf sites within your network.</p>
Cloverleaf	<p>Cloverleaf™ 5.5 MB (Multi-Byte) interface engine receives messages from various internal and external sources in a variety of protocols. Messages are converted as necessary and routed to the appropriate destination. Sources and destinations include the Centricity applications and the defined Cloverleaf sites (interfaces).</p> <p>Cloverleaf v5.5 is required. Different versions of Cloverleaf cannot be run on the same server.</p>
configuration file	<p>A file that tells LinkLogic how to import or export information between Centricity Practice Solution and an external system. There are two types of configuration files: cross-reference files and protocol (IXP) files.</p> <p>Add or change configuration files when developing and testing a new interface to the application. To add or change a configuration file, go to Setup Settings, open the LinkLogic folder, and select Task Options.</p>
cross-reference file	<p>Cross-reference files are LinkLogic configuration files that translate import data to values Centricity Practice Solution can recognize and export data to values other computer systems can recognize.</p>
Data Exchange server	<p>A separate server used for the internal and external interface access. The Centricity Clinical Gateway, Cloverleaf, and DTS are installed on this server.</p>
data format	<p>The way information is structured in an import or export file to ensure that both the sending system and the receiving system use the same format. LinkLogic supports ASTM 1238 and HL7 (Health Level 7).</p>

data segment	<p>A piece of information in an import or export file. The amount of data in a data segment depends on the data format and how you're viewing the data in LinkLogic.</p> <p>When you use test mode for a new import/export interface, LinkLogic processes and displays the data file in segments. The Message header displays as the first segment, followed by the next group of records (which are associated with a single patient) as the second segment. This continues until LinkLogic processes the entire file. An exception file (or error file) contains a data segment with all the records associated with a patient.</p>
Data Transfer Station (DTS)	<p>An application that runs on the interface engine server and sends data to and receives data from other information systems through files and TCP/IP socket connections. Data Transfer Station works with LinkLogic to import data into and export data out of a the Centricity Practice Solution database.</p>
dictation placeholder	<p>A component that a provider inserts into a chart note to indicates where to import a transcribed document later. NotesLink HL7 Import interface is used to import transcription into the chart note. When the transcriptionist completes the note and converts it into the HL7 data file, the document ID and the location ID must be in the correct fields.</p> <p>When the transcription imports into Centricity Practice Solution, it is routed to the provider's desktop as a separate document. The provider can read and make edits to the transcription. When the provider signs the transcription, it merges into the original note at the dictation placeholder's location.</p>
document overlay	<p>Replaces an imported document with a later version of the same document, so that only the most recent information displays on the provider's Centricity Practice Solution desktop and in the chart</p>
EDI	<p>Electronic Data Interchange (EDI) is a method of passing your claim information through a telephone line via a modem or over the Internet, to be received by a Clearinghouse.</p>
errors	<p>When you import and export data from Centricity Practice Solution, errors can occasionally occur. If you are in the initial testing phase for a new interface, you may see many errors. If you are using the interface in daily clinical operations, you should see very few errors.</p> <p>When an error occurs, LinkLogic issues an error message in the Activity Log and often creates an error entry in the Pending Errors list on the LinkLogic Errors tab.</p> <p>Errors can occur for many reasons,</p> <ul style="list-style-type: none">■ LinkLogic can't process the import file due to a patient mismatch or the wrong data format.■ LinkLogic can't find the responsible provider.■ LinkLogic can't find a relationship for the data or the header record in the data file isn't correct.■ LinkLogic can't process the job, due to a missing configuration file or a bad export segment.

errors list	<ul style="list-style-type: none"> ■ LinkLogic can't import the data because the patient's chart is being updated by another user. ■ LinkLogic can't find the appointment book or the appointment type. <p>A list of the errors that occurred while you manually processed jobs or Data Transfer Station automatically processed jobs. Use this list to resolve import and export problems. When you select an error in the list, notes, warnings, and error messages associated with the error appear. These messages and the error type enable error resolution.</p> <p>To view the errors list, go to LinkLogic Errors.</p>
error type	<p>Indicates the problem that occurred when importing or exporting data. The type and the specific messages associated with the error enable error resolution.</p> <ul style="list-style-type: none"> ■ Appointment LinkLogic can't find the appointment book or the appointment type. ■ Cannot Import LinkLogic can't find a relationship for the data or the header record in the data file isn't correct. ■ Cannot Resolve LinkLogic can't process the job, due to a missing configuration file, a bad export segment, or any number of other problems. ■ Critical One or more configuration files for the relationship has an error. Call Centricity Services. ■ Data Type LinkLogic can't find a relationship for the data that is imported using a TCP/IP socket connection. ■ DB Failed A serious database error occurred. Call Centricity Services or your Value-Added Reseller. ■ Disperse LinkLogic can't import the data because the patient's chart is being updated by another user. ■ Failed LinkLogic can't process the entire file, possibly due to a patient mismatch or the wrong data format. ■ Orphaned LinkLogic can't find the responsible provider. ■ Retry LimitData Transfer Station can't export the data after trying numerous times to export the data using a TCP/IP socket.
exception file	<p>A file created when LinkLogic or the Data Transfer Station cannot successfully import or export data to or from Centricity Practice Solution. Although the job that is being imported may contain data for many patients, an exception file contains the whole patient segment that could not be processed.</p> <p>LinkLogic generates an error message when an exception file is created. Use the Errors tab in LinkLogic to resolve errors and to reprocess exception files. Exception files are stored in the LLOGIC\ERROR directory.</p>
export	<p>The export component of an interface is where the producer, in response to some trigger event, extracts information from its database and formats it in an agreed-upon format. The data can be in a file and put into a directory or it can be a stream of information.</p>

external ID	<p>A patient identifier used outside of Centricity Practice Solution — for example, by a billing system or a laboratory. If you have the Registration privilege to Change Patient External IDs, this field is empty in Registration.</p> <p>You can enter a Medical Record Number (MRN) for the practice management system.</p>
external report	<p>A document containing information from external sources, such as medical laboratories and transcription services. External reports are imported into Centricity Practice Solution automatically with LinkLogic. An appropriate document type is assigned during the import based on the imported data. View and sign external reports from both Desktop Documents and Chart Documents.</p>
header/trailer sequence	<p>In socket transmissions, each connection has a header and trailer sequence that indicates the start and finish of a set of transfers. This is a sequence of bytes (characters) that won't occur in the data, such as control (unprintable) characters not allowed in defined formats like HL7. To communicate properly, all transfers over the same connection must use the same header and trailer, and both systems must be set up with the same header and trailer. These options are set in LinkLogic Setup.</p>
HL7 (Health Level 7)	<p>A standard for electronic data exchange in healthcare environments. It defines data formats for clinical and financial information that will be exchanged between healthcare computing systems. LinkLogic's use of this format is defined in the interface specifications for each interface type.</p>
host name	<p>This is the name given to each computer. In Windows, for example, this is set at installation time and can be changed via the Network control panel. Other systems will set this differently. A host name on a network is like a person's name on a telephone system. The names seen at the end of email addresses and at the beginning of Web site addresses (e.g., microsoft.com) are host names.</p>
ID set	<p>Patient identification numbers from a computer system. When you add a patient, the application assigns a unique identifier to the patient, called the patient ID. Collectively, these IDs are the ID set.</p> <p>Other programs, such as a practice management system, assign an ID to patients. Centricity Practice Solution can store one or more external identifiers for each patient. You can use the patient ID set or an external ID set for matching import data with patients.</p>
import	<p>The import component of an interface is where the consumer of the data receives the formatted data.</p>
inbox	<p>In LinkLogic, the Inbox is the LLOGIC\DATA\IN directory. LinkLogic looks for new import jobs in this directory.</p>
immunization registry	<p>An immunization registry is a regional (usually statewide) repository of immunization records and other immunization information for people living in that area. It records historical immunization information about individuals and shares it with other state registries. Each immunization registry provides interfaces that can be used by clinics and healthcare systems to send and receive immunization data.</p>

	Centricity Practice Solution supports communication with the Scientific Technologies Corporation (STC) registry and state registries based on the Wisconsin Immunization Registry (WIR) standard.
interface	A medium that enables communication between two otherwise incompatible components. Interface can refer to a device, a common area, or a set of instructions. Devices are hardware interfaces, while common storage areas and sets of instructions are software interfaces.
interface kit	A collection of files that you import into Centricity Practice Solution to enable a Lab Results relationship for a specific vendor. After importing the interface kit, you can choose your laboratory in the Unique ID/Name list in the New Relationship screen. Your laboratory must be in the list for you to create the relationship. To import an interface kit, go to Administration > System , open the LinkLogic folder and select Import Interface Kits .
interface specification	A document describing the data format, message format, and data exchange protocols for each LinkLogic interface.
IP address	The address assigned to each computer on a network that is used, like a phone number, to make connections. The computer has a <i>host name</i> for configuring relationships among computers on a network and an IP address for making the actual connections. Like a phone system, directory services provide an IP address when given a host name, so users don't have to deal with IP addresses.
job	A LinkLogic job is a data file associated with a relationship and the relationship's task options. A job can be an import file, an export file, or an exception file. LinkLogic or Data Transfer Station queues and processes jobs to import or export data.
laboratory result code	A laboratory information system's unique identifier for a lab test or procedure. When you import laboratory results, use a cross-reference file to translate these codes to Centricity Practice Solution internal codes for observation term.
LinkLogic	LinkLogic runs within Centricity Practice Solution and is used to exchange information with other healthcare information systems. LinkLogic imports demographics, documents, lab results, appointments, and references to external images into the database and exports patient data for demographics, documents, observations, procedures, allergies, problems and clinical summaries.
LinkLogic directory	Contains subdirectories where LinkLogic finds and stores information. In addition to the network LinkLogic directory installed to the first Data Transfer Station, each workstation running LinkLogic has a local LinkLogic directory. The local LinkLogic directory should only be used for testing local interfaces
moniker	A component that contains a reference to an external attachment
NotesLink macro	The HL7 NotesLink Macro is used by transcriptionists to convert word-processed notes to a HL7 NotesLink data file so it can be imported into Centricity Practice Solution. The macro is located in the LLOGIC\MACROS\HL7 directory.
outbox	A term used to describe the LLOGIC\DATA\OUT directory. LinkLogic puts export jobs in this directory.

port number	<p>If an IP address is like a phone number, then a port number is like an extension. A single computer can offer multiple services to other systems that may connect via TCP/IP, such as LinkLogic, FTP or World Wide Web.</p> <p>Each service is provided on a different port, so that by specifying a port number, the other system is selecting a particular service to connect to. Many types of connections have standard port numbers; for example, the standard public Web port number for all visitors is 80.</p>
producer	<p>A computer system that generates data for another computer system to use. A producer can be a practice management system, an off-site transcription server, a lab information system, or Centricity Practice Solution.</p>
protocol (IXP) file	<p>A file that tells LinkLogic how to import and export data; sometimes called IXP files due to the file extension. If you create an interface, contact Centricity Services for help customizing your interface custom file.</p> <p>Once you have the custom protocol file, put it in the LLOGIC\CONFIG\LOCAL directory. To add the protocol file to the relationship, use the New Configuration File screen. If you have custom protocol files, each new Centricity Practice Solution release automatically upgrades them.</p>
RAW files	<p>In socket transmissions, transfer of a RAW file requires communication in only one direction: The sender packages the data and sends it to the receiver. This mode works for any type of data, but does not allow the receiver to respond that it has received and made sense of the data.</p> <p>Alternatively, the HL7 specification defines an ACK/NAK protocol (for Acknowledge/Negative Acknowledge) that allows a receiver to say, for each message, that it has been received in good shape and will be processed.</p>
recurring tasks	<p>A recurring task is a task that Data Transfer Station (DTS) processes automatically on a regular schedule. When you set up DTS to scan the inbox, all import relationships that you've created become recurring tasks. For each export task that you want to recur, you set up recurring task options.</p>
relationship	<p>A LinkLogic relationship is a description of an interface between Centricity Practice Solution and another computer system. You create a relationship in the application for every interface you use in your clinic. A relationship description includes the following information:</p> <ul style="list-style-type: none">■ Direction—import or export■ Type—Demographics, Lab Results, Documents■ Data format—The other computer system's unique ID■ Patient ID—Centricity Practice Solution ID or an external ID <p>When you add a relationship, LinkLogic creates a corresponding task with predefined options. The task options describe the behavior of the relationship.</p>
sockets	<p>The connections between applications created using TCP/IP. Two systems each create a socket, connect them together, and then send data in both directions. All the data is passed over the intervening network in a way that is transparent to the applications. Since TCP/IP and Sockets are standards, two systems can exchange data without any special transfer programs.</p>

tasks	When you add a relationship, LinkLogic creates a corresponding task with predefined options. For example, if you add a demographics relationship called <i>PracticeMgr</i> , LinkLogic creates a task called PracticeMgr in Task Options | Import Tasks | Demographics . The task options describe the behavior of the relationship.
TCP/IP	Transmission Control Protocol/Internet Protocol is a language that allows two computers to communicate over a network connection. TCP/IP is a technology used for Ethernet local area networks, as well as for the Internet and for private long-distance networks. TCP/IP is supported by every major computer vendor and operating system.
TCP/IP sockets	<p>A fast and efficient way to send and receive data to and from other computer systems. Sockets send and receive information in continuous streams of information, rather than storing and transferring the information in a file.</p> <p>You can use TCP/IP sockets for interfaces using the HL7 data format to transfer data to and from Centricity Practice Solution. LinkLogic's support for TCP/IP sockets is based on the Windows Winsock API.</p> <p>Because LinkLogic is a file-based system, it converts the stream of information it receives into a file before importing the data into Centricity Practice Solution. To use TCP/IP sockets, you must install Data Transfer Station.</p>
test mode	Export test mode allows you to create an export job with information in the file indicating that it contains test data. To enable test mode for export jobs, go to Setup Settings, open LinkLogic, select Task Options, then select the export relationship and check Export Data in Test Mode.
transfer	The transfer component of an interface moves the data from one location to another. The move can be as simple as copying a file from one directory to another. It can be as complex as moving the data across the country. Data can be moved using copy and move commands, dial-up modems, fax lines, file transfer protocol (FTP), or TCP/IP sockets. The producer and consumer must agree on how the information will be transferred and where the data is picked up and delivered.
translate	The translate component of an interface is only necessary if the consumer of the information can't understand the format of the data sent by the producer. Although both the producer and consumer have agreed on a data format, there may still be a need to translate information. In a simple case, the producer may send the provider's name as first name, last name. The consumer needs first initial, last name, without spaces or punctuation. This situation is easily solved with a LinkLogic cross-reference file.
trigger event	An event in a healthcare workflow that triggers the transfer of information, identified in HL7 by a unique 3-character code.
