NHSIA Webinar Series
Overview
Key Concepts
Capability & Business
  Viewpoints
Information Viewpoint
Systems & Infrastructure
  Viewpoints and Wrap-
  Up

National Human Services Interoperability Architecture (NHSIA)

Key Concepts

June 2012

ADMINISTRATION FOR
CHILDREN & FAMILIES

JOHNS HOPKINS
UNIVERSITY

Webinars will be held Thursdays at 1 PM Eastern

#	Webinar Title	Date
1	Overview	May 31
2	Key Concepts	June 14
3	Capability and Business Viewpoints	June 28
4	Information Viewpoint	July 12
5	Systems and Infrastructure Viewpoints	July 26

Today →

Outline

➢ **Introduction and welcome by ACF**

➢ **NHSIA goals**

➢ **Key features of NHSIA**

➢ **Example improvements**

➢ **Questions and next steps**

> **Learning Objective for this Webinar**
>
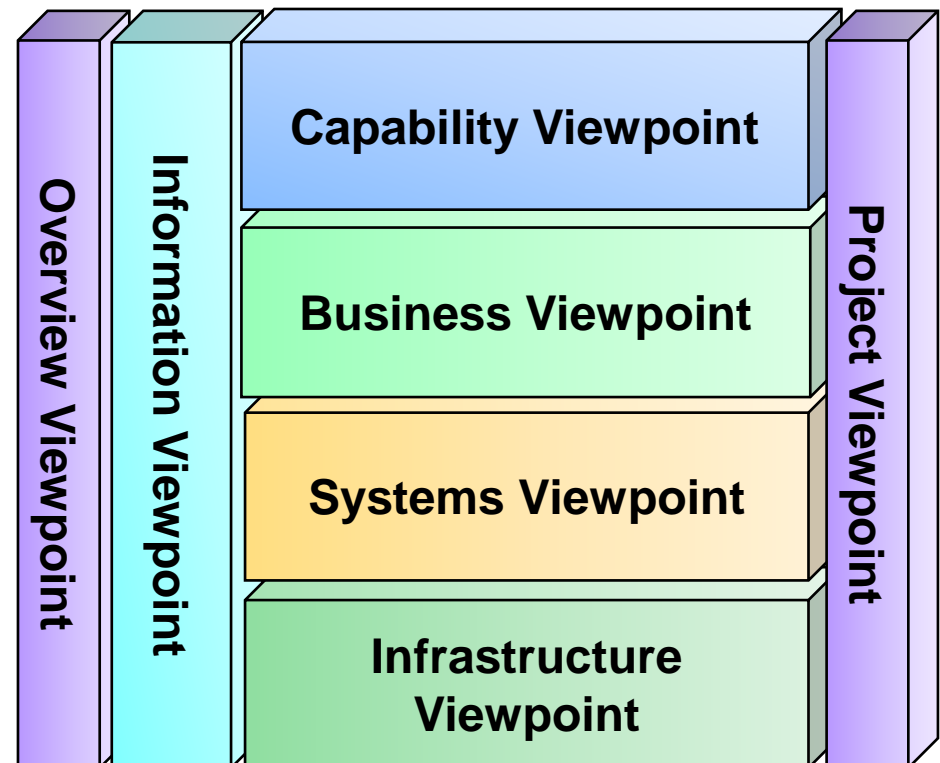> Understand what is at the heart of NHSIA.

Note: Feel free to enter comments or questions in the Chat window throughout the webinar. At the end we will open the phone lines to take questions.

This webinar summarizes key concepts in NHSIA that are represented across the viewpoints.

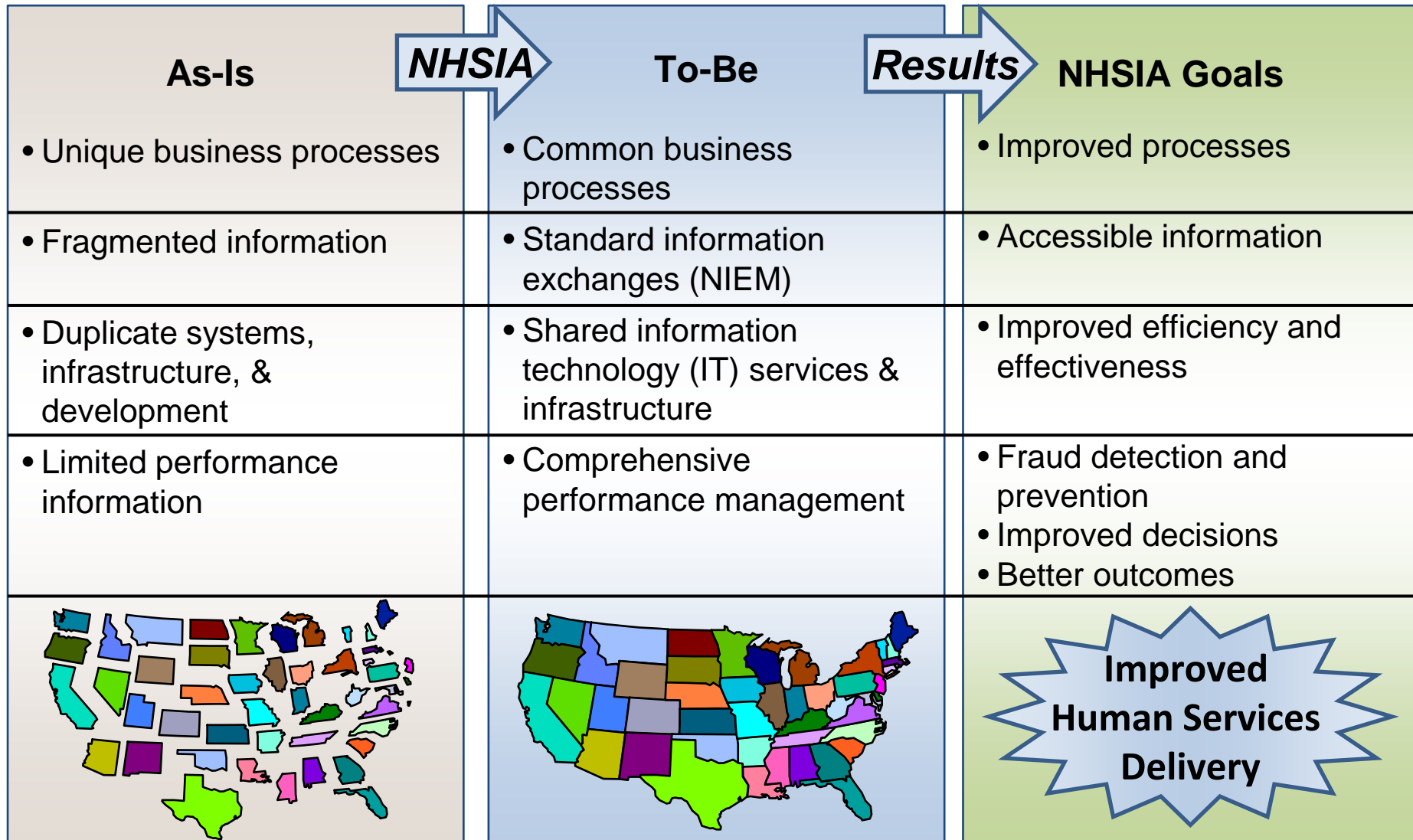White papers provide additional detail about some key concepts.

Papers

- Client and Case Management D0.2
- Master Person Index D0.2
- Eligibility D0.2
- Applicability of Electronic Health Records D0.1
- Identity and Access Management D0.2
- "NHSIA Core" Concepts D0.2

Overview Viewpoint

Information Viewpoint

Capability Viewpoint

Business Viewpoint

Systems Viewpoint

Infrastructure Viewpoint

Project Viewpoint

NHSIA Goals

NHSIA Provides a *Framework* and *Roadmap* To Achieve Common Goals

As-Is	NHSIA → To-Be	Results → NHSIA Goals
• Unique business processes	• Common business processes	• Improved processes
• Fragmented information	• Standard information exchanges (NIEM)	• Accessible information
• Duplicate systems, infrastructure, & development	• Shared information technology (IT) services & infrastructure	• Improved efficiency and effectiveness
• Limited performance information	• Comprehensive performance management	• Fraud detection and prevention • Improved decisions • Better outcomes

Improved Human Services Delivery

NHSIA Goals

➢ Establish a **common vocabulary**

➢ Provide a **business and technical framework** for stakeholders

➢ Promote **sharing and reuse** of processes, applications, services, data, and infrastructure across all human service domains and programs

➢ Promote the development and use of **standards for data exchange**

➢ Promote the development of **standard data structures** required to enable data exchange

➢ Provide a technical approach for stakeholders to improve both implementation and operational **efficiency and effectiveness**

Worst-case Today: Silos

IAM - Identity and Access Management
CA - Confidentiality and Privacy Agreement
PI - Person Index
CP - Case Portfolio
PR - Provider Registry
EL - Eligibility Determination
PM - Performance Management
... many more!

Medicaid	Mental Health	Substance Abuse	Financial Assistance	Food Nutrition	Home Energy Assistance	Adoption/ Foster Care	Child Care	Child Support Enforcement	Child Protection
IAM	IAM	IAM	IAM	IAM	IAM	IAM	IAM	IAM	IAM
CA	CA	CA	CA	CA	CA	CA	CA	CA	CA
PI	PI	PI	PI	PI	PI	PI	PI	PI	PI
CP	CP	CP	CP	CP	CP	CP	CP	CP	CP
PR	PR	PR	PR	PR	PR	PR	PR	PR	PR
EL	EL	EL	EL	EL	EL	EL	EL	EL	EL
PM	PM	PM	PM	PM	PM	PM	PM	PM	PM
...	...	...	...	...	...	...	...	...	...

Common Processes, Shared Capabilities, Shared Information

Benefit across programs

Benefit across states, counties,...

Identity and Access Management

Confidentiality and Privacy Agreement

Master Person Index

Case Portfolio

Provider Registry

Eligibility Determination

Performance Management

... and more!

Medicaid

Mental Health

Substance Abuse

Financial Assistance

Food Nutrition

Home Energy Assistance

Adoption/ Foster Care

Child Care

Child Support Enforcement

Child Protection

Child Protection

Child Protection

Support the NIEM Process To Define Exchange Standards
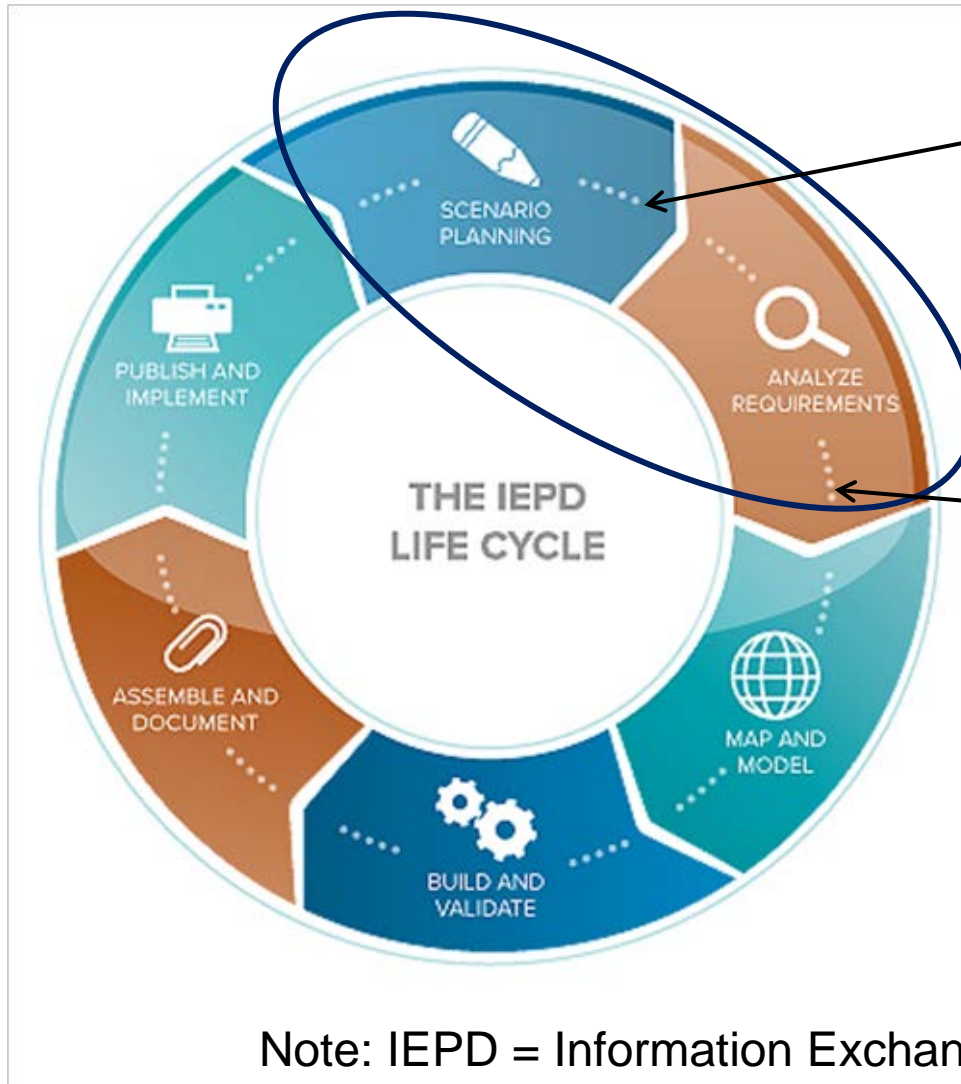
Scenario planning:
- **High-level business case**
- **Information needed**

Analyze requirements:
- **Business context**
- **Information exchange model**
- **Data requirements (mapping)**

Note: IEPD = Information Exchange Package Documentation

Key features of NHSIA

Key Architectural Features

> **Shared processes**

> **Identity management and access control**

> **Shared infrastructure**

> **Shared information**

> **Shared IT services and applications**

> **Built-in performance metrics and assessment**

Business Processes Map to HS Programs :
Client Management

Shared processes

ID	Process Name	Medicaid (MITA)	BH (SAMHSA)	Financial Assistance	Adoption & Foster Care	Child Care	Child Support Enforcement	Child Protection	Home Energy Assistance	Food/ Nutrition
Client Management (CM)										
Client Information Management										
CM1	Establish Shared Client Information	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA
CM2	Manage Shared Client Information	MITA (CM2+CM4)	SAMHSA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA
CM3	Establish Agency Client Information	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA
CM4	Manage Agency Client Information	MITA (CM2+CM4)	SAMHSA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA
CM5	Find Client Information	MITA	SAMHSA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA
Client Support										
CM6	Manage Client Communications	MITA	SAMHSA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA	NHSIA
CM7	Perform Population and Client Outreach	MITA	SAMHSA	TBD	TBD	TBD	TBD	TBD	TBD	TBD

As-Is Worst Case: Each User Must Access Each Data Source Separately
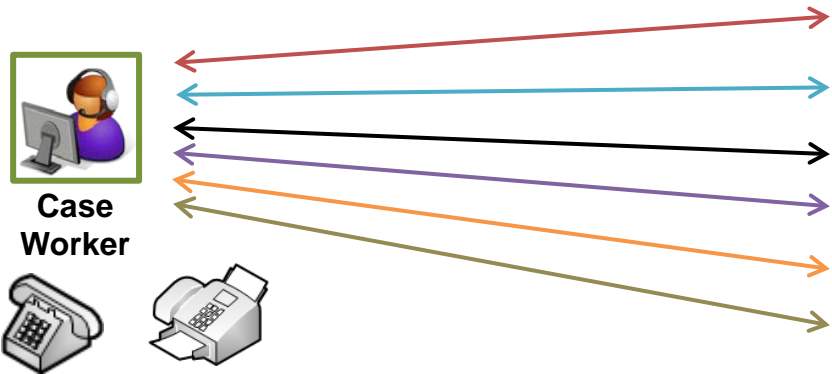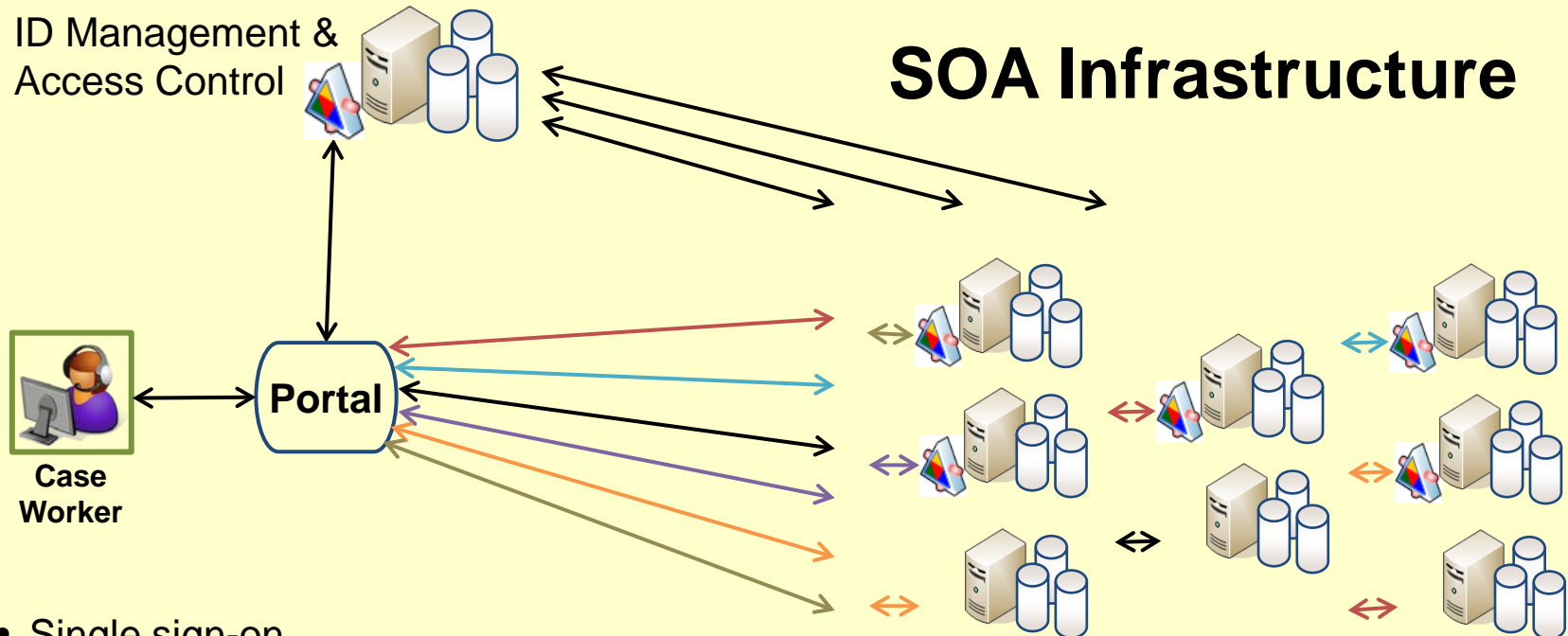

Case Worker

- Multiple logins & passwords
- Custom interfaces
- No common vocabulary
- Phone and fax may be required
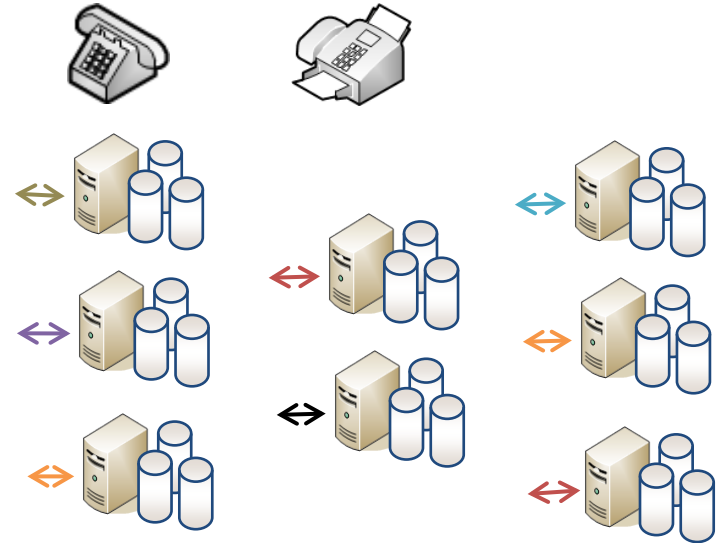
In many counties and states, it is difficult and time consuming (if not impossible) for a case worker to assemble all the information necessary to make good recommendations and decisions on behalf of clients.

Allow More Convenient & Extensive Access to Data

ID Management & Access Control

SOA Infrastructure

Portal

Case Worker

- Single sign-on
- Access control
- SOA: Service-Oriented Architecture

- Critical systems are service-enabled
- Common access control mechanisms

SOA allows software on one computer to use a service (e.g., to access information) on another networked computer.

Key:

IT Service

Use Shared Infrastructure & Clouds to Share, Reduce, & Simplify IT Infrastructure

ID Management & Access Control

Portal

Case Worker
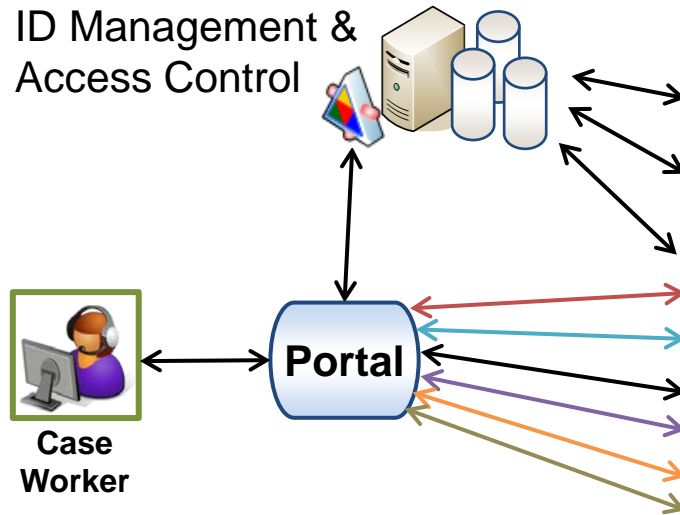
- Systems are no longer viewed as monolithic packages of software, hardware, and data unique to each program.
- A common infrastructure is established and leveraged across multiple human service programs (and possibly other programs).

# Standardized NIEM Transactions Enable Integrating Data

Standardized NIEM Interfaces

ID Management & Access Control

Portal

Case Worker

Software Applications

Cloud

Data Center

A case worker can access information from different agencies using standard exchanges based on a common vocabulary.
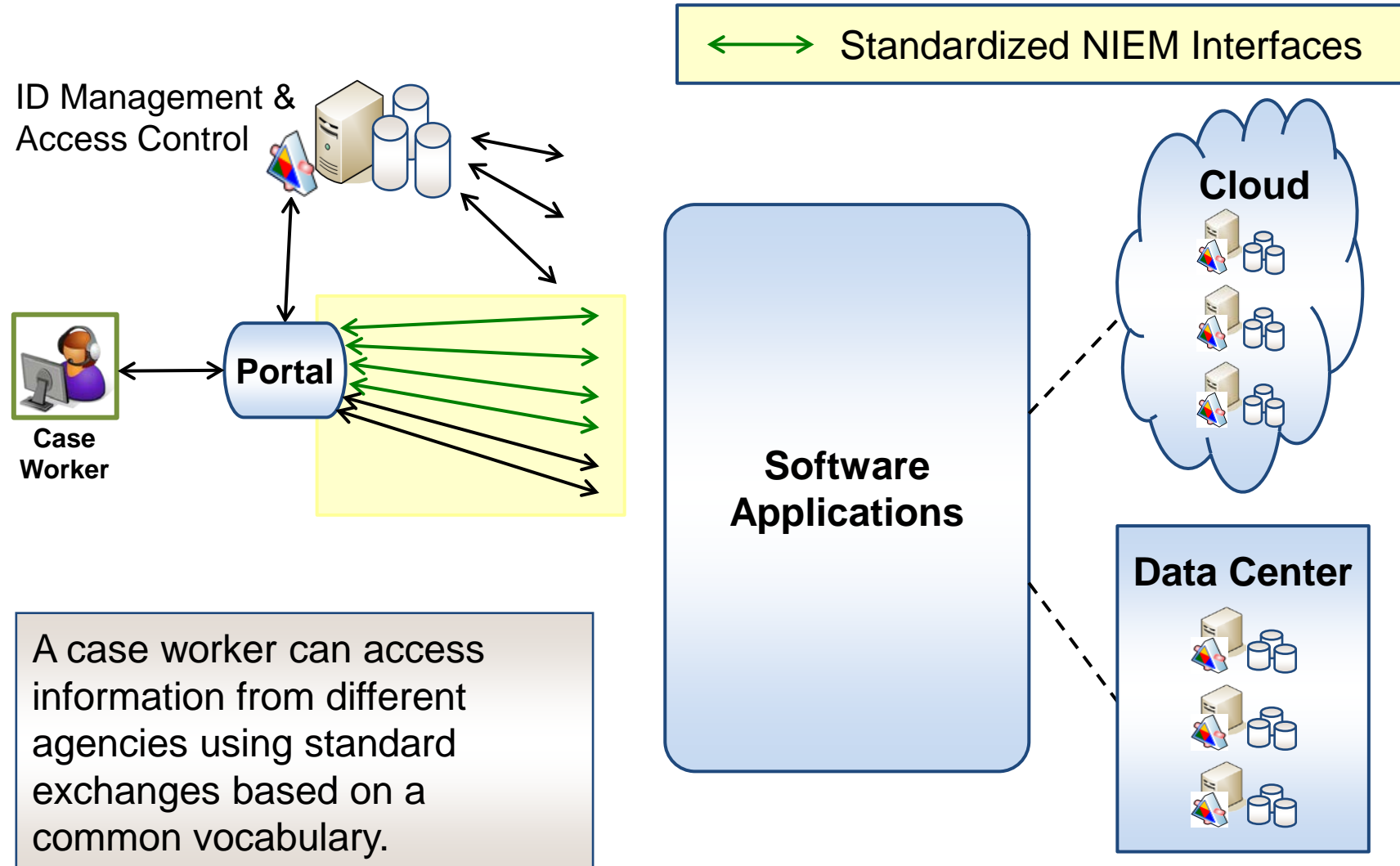
Provide Core Services to Allow Finding and Accessing Critical Information

- Security Services
- Person Services
- Case Services
- Provider Services
- Program Services

County Hub

Case Worker

Portal

Software Applications

Cloud

Data Center
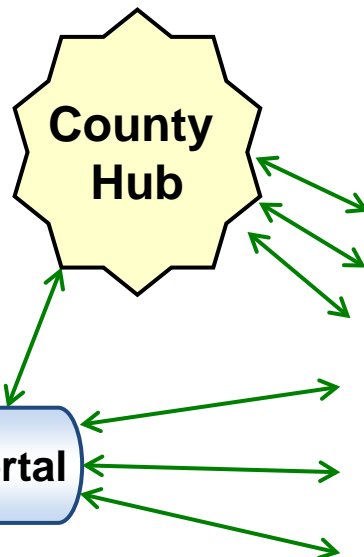
Establish a county hub to house key services (e.g., Provide Individual Case Summary) that allow people and software applications to find and access information from anywhere in the county.
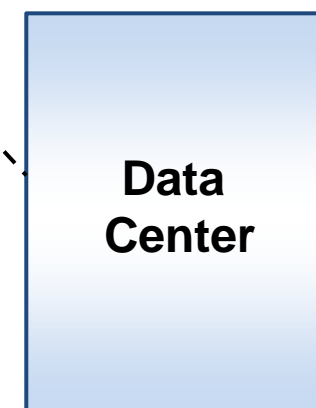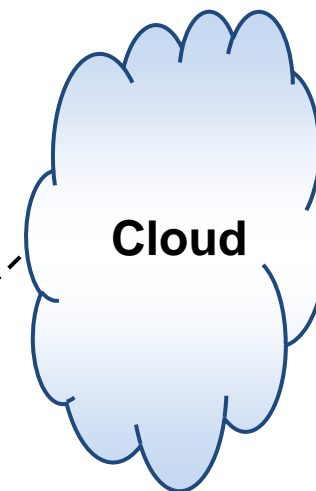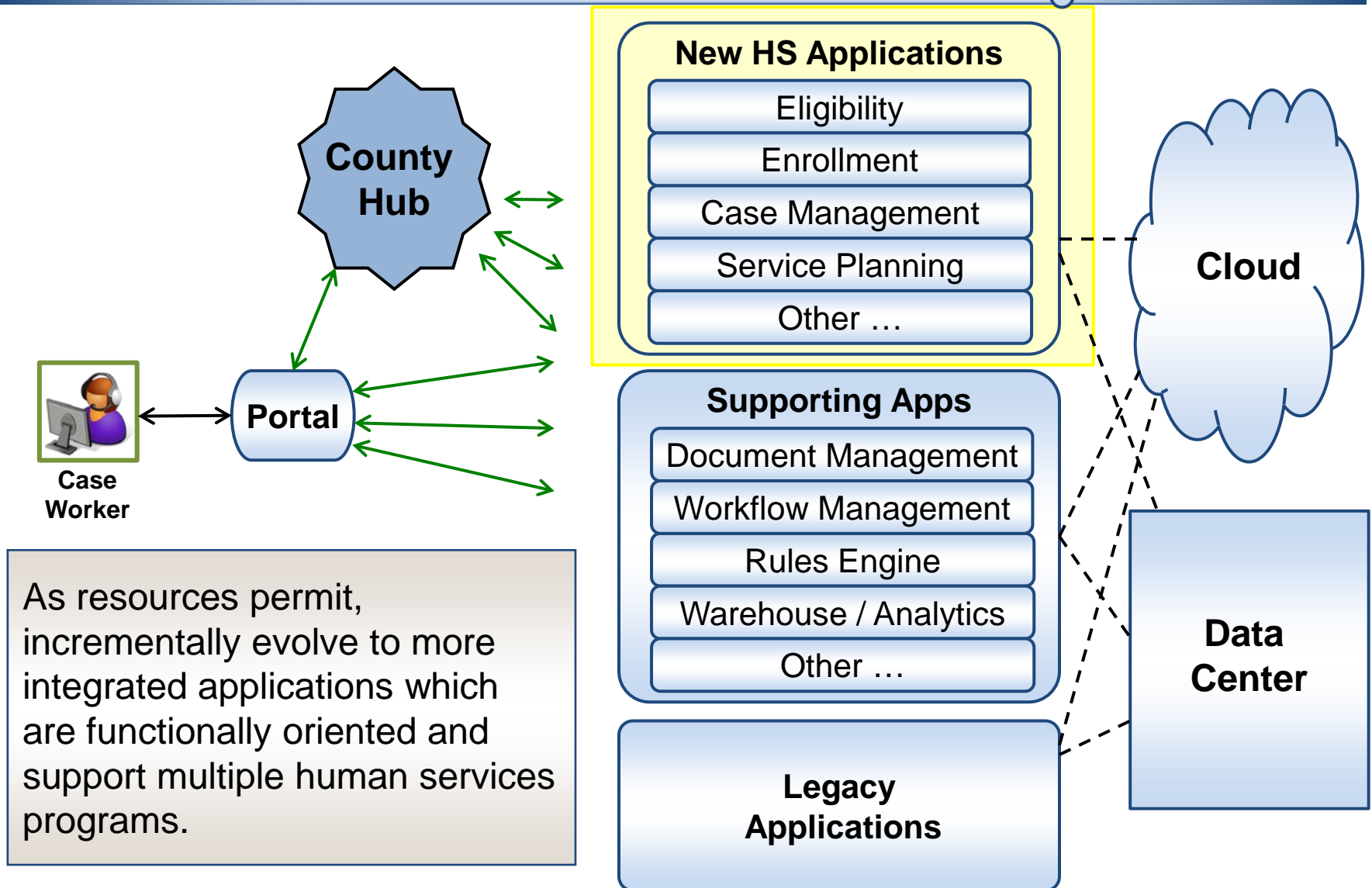
Share Supporting Applications Across all Human Services
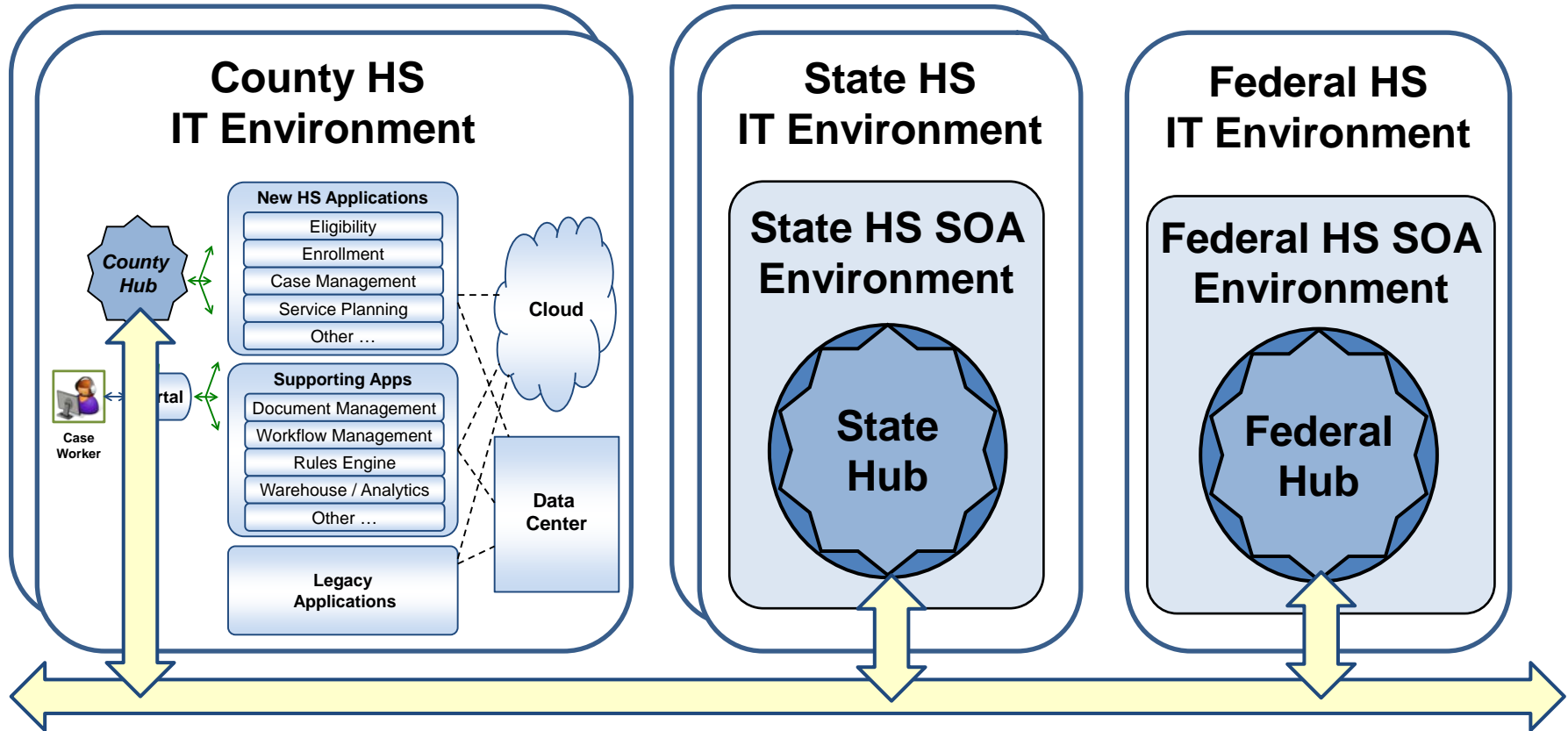
County Hub

Software Applications

Cloud

Portal

Case Worker

Supporting software applications can be shared across human service programs, saving development, training, and maintenance costs.

Supporting SW Apps

Document Management

Workflow Management

Rules Engine

Warehouse / Analytics

Other …

Data Center
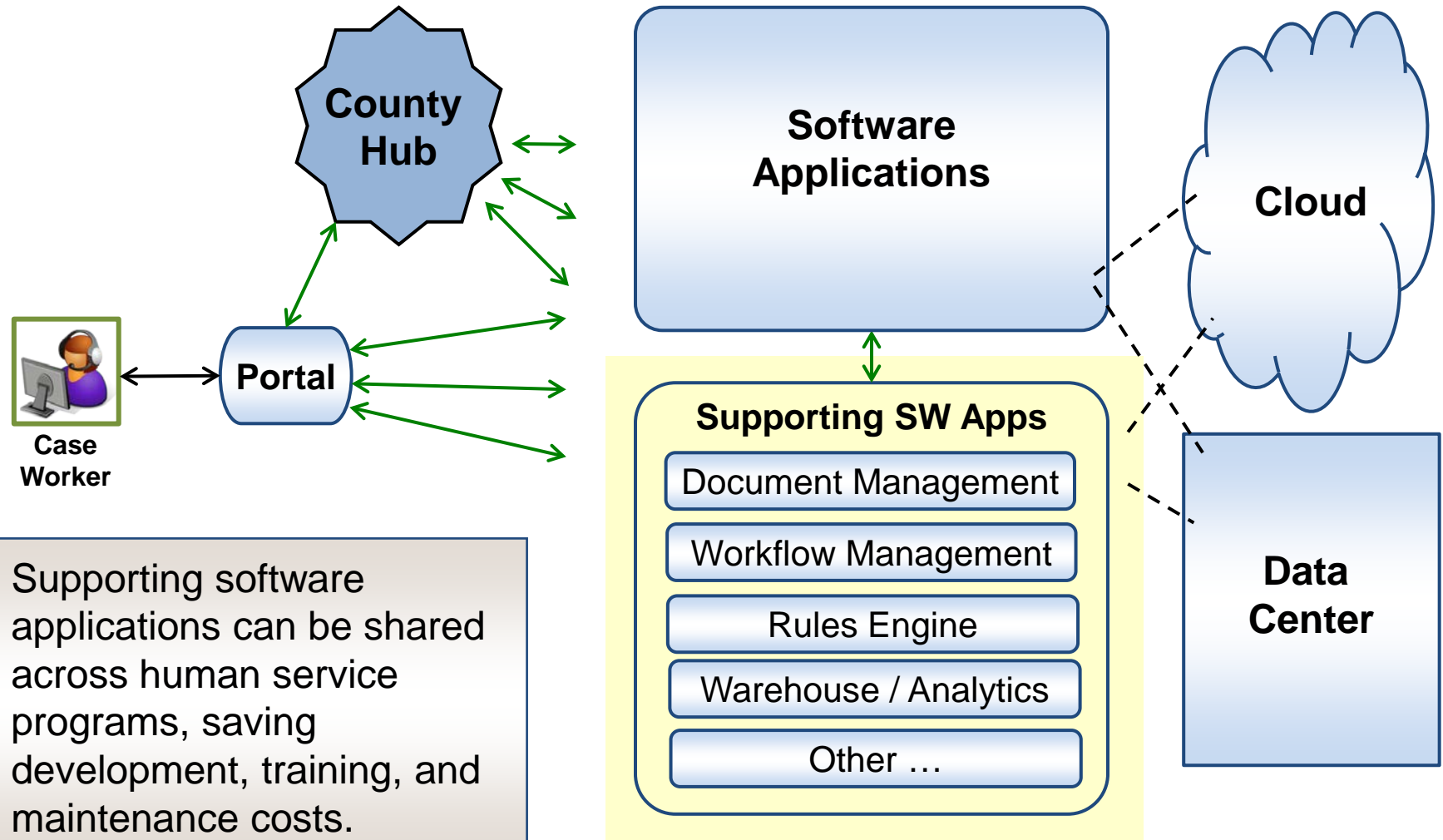
Organize New Human Service Applications by Function Instead of Program

County Hub

Case Worker

Portal

New HS Applications
- Eligibility
- Enrollment
- Case Management
- Service Planning
- Other …

Supporting Apps
- Document Management
- Workflow Management
- Rules Engine
- Warehouse / Analytics
- Other …

Legacy Applications

Cloud

Data Center

As resources permit, incrementally evolve to more integrated applications which are functionally oriented and support multiple human services programs.

The Hubs Enable National IT Service Sharing Information Exchange

County HS IT Environment

County Hub

Case Worker

Portal

New HS Applications
- Eligibility
- Enrollment
- Case Management
- Service Planning
- Other …

Supporting Apps
- Document Management
- Workflow Management
- Rules Engine
- Warehouse / Analytics
- Other …

Legacy Applications

Cloud

Data Center

State HS IT Environment

State HS SOA Environment

State Hub

Federal HS IT Environment

Federal HS SOA Environment

Federal Hub

Each county is linked via the hubs within the state, and each state within the nation.
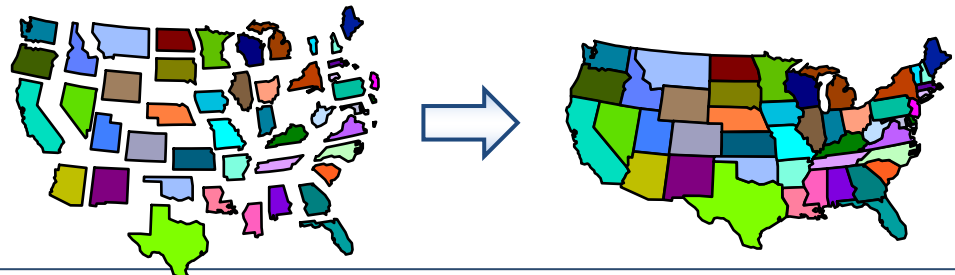
Collect Metrics During Routine Operations for Fraud Detection & Performance Assessment

Built-in performance metrics and assessment

- ➢ **Capture key indicators in performance information repositories**
- ➢ **Detect fraud**
- ➢ **Monitor client status**
- ➢ **Enhance awareness across programs**
- ➢ **Generate standard reports**
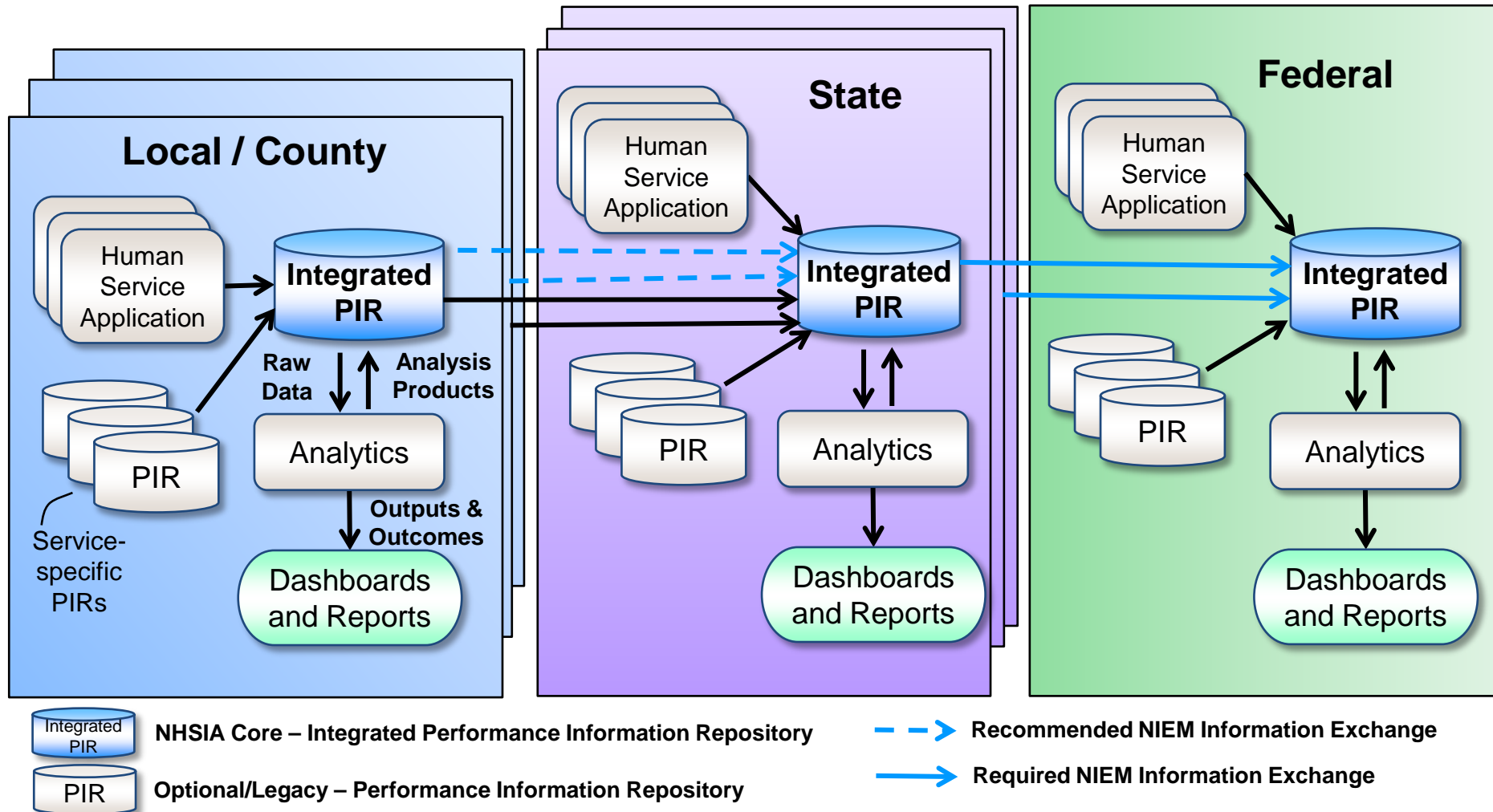- ➢ **Assess performance through longitudinal studies**
- ➢ **…**
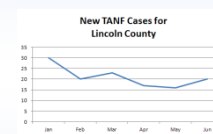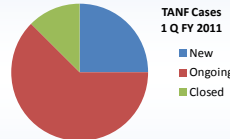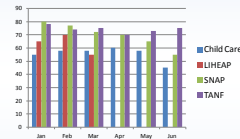
Assess outcomes

Collected indicators support near-real-time and long-term decision making.

Collect and Analyze Performance Information at Each Level to Suit Needs

Built-in performance metrics and assessment

Local / County
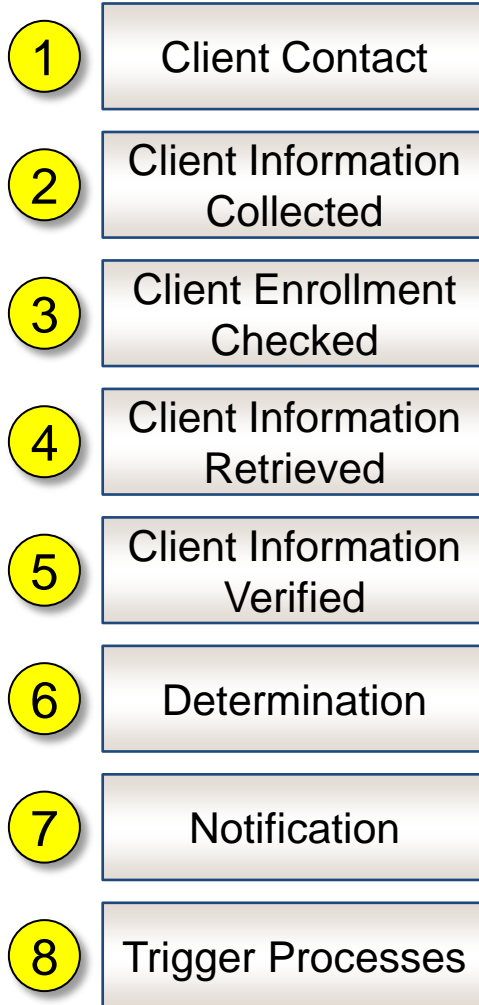
Human Service Application

Integrated PIR

Raw Data → ← ↑ Analysis Products

Analytics

Outputs & Outcomes

Dashboards and Reports

PIR

Service-specific PIRs

State

Human Service Application

Integrated PIR

PIR

Analytics

Dashboards and Reports

Federal

Human Service Application

Integrated PIR

PIR

Analytics

Dashboards and Reports

Integrated PIR — NHSIA Core – Integrated Performance Information Repository

PIR — Optional/Legacy – Performance Information Repository

– – –▶ Recommended NIEM Information Exchange

——▶ Required NIEM Information Exchange

Example improvements

NIEM-based Standards Facilitate Information Sharing

CASE MANAGEMENT EXAMPLE

Summary of cases associated with a person

Summary of individual case

Summary of individual case

County

VERIFICATION EXAMPLE

Verification

Master person selection

Federal

Person citizenship status
Person residency status
Social security number
Person income

State
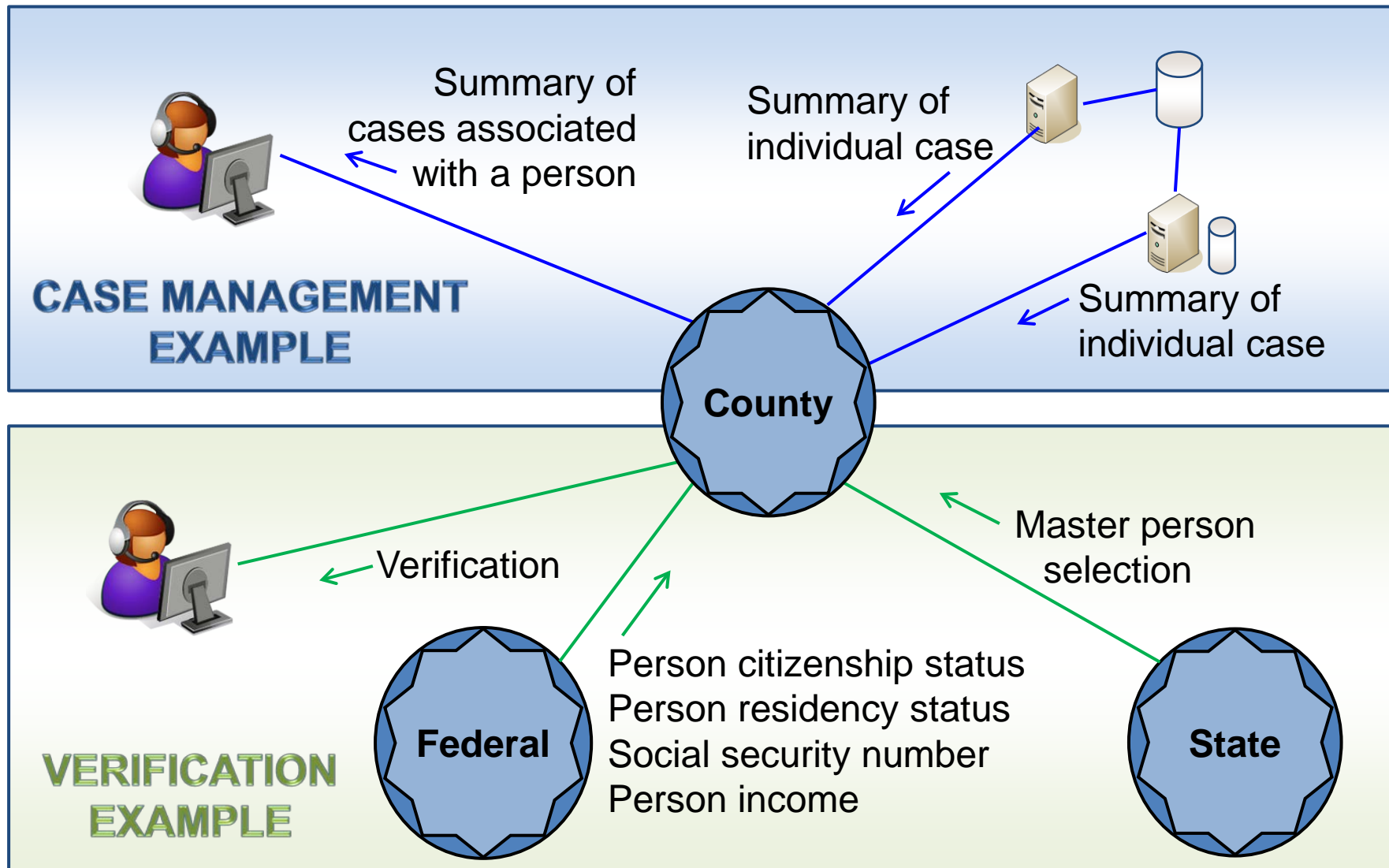
Integrated Eligibility and Enrollment

① Client Contact

② Client Information Collected

③ Client Enrollment Checked

④ Client Information Retrieved

⑤ Client Information Verified

⑥ Determination

⑦ Notification

⑧ Trigger Processes

Basic eligibility determination thread

NHSIA promotes

✓ **One-stop shop**

✓ **Shared client intake**

✓ **Verification services**

✓ **Visibility into all benefits**

✓ **Common processes for initial or on-going eligibility determination**

Integrated Case Information / Management

Worst-case today

- ➤ **Difficult to see the whole picture of the client**
- ➤ **Case records isolated in agency systems**
- ➤ **Some records still on paper**
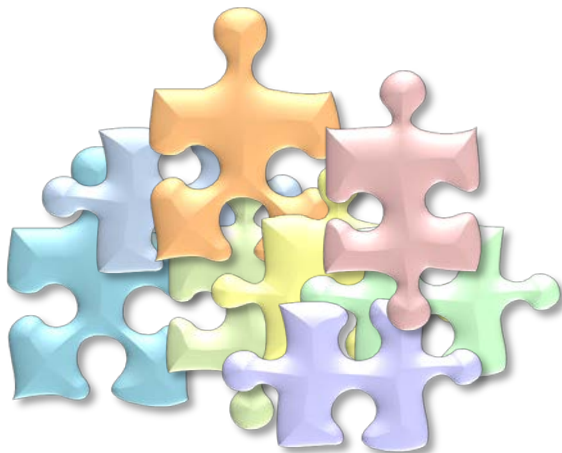
NHSIA promotes

- ✓ **Holistic view of client needs**
- ✓ **Holistic understanding of benefits provided to client**
- ✓ **Historical understanding of client's status**
- ✓ **Information sharing transcends programs and jurisdictions**
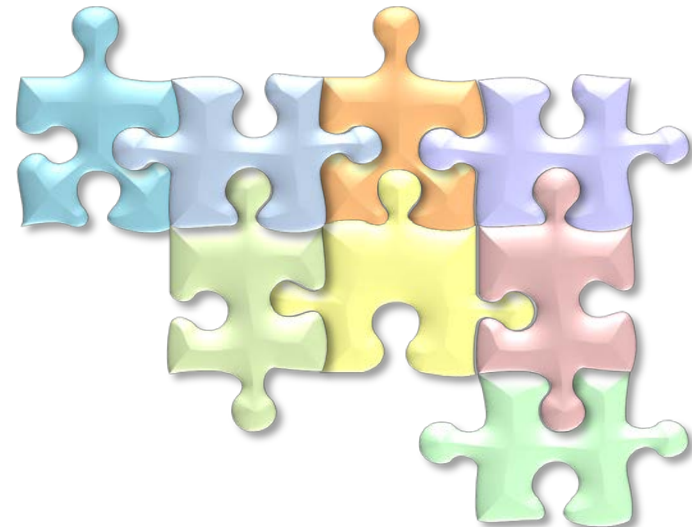
Master Person Index:
Find Information More Easily

➢ **Enable a worker to look for information about a person**

➢ **Automatically choose the best match for a person using probabilistic techniques**

➢ **Link to records in distributed sources**
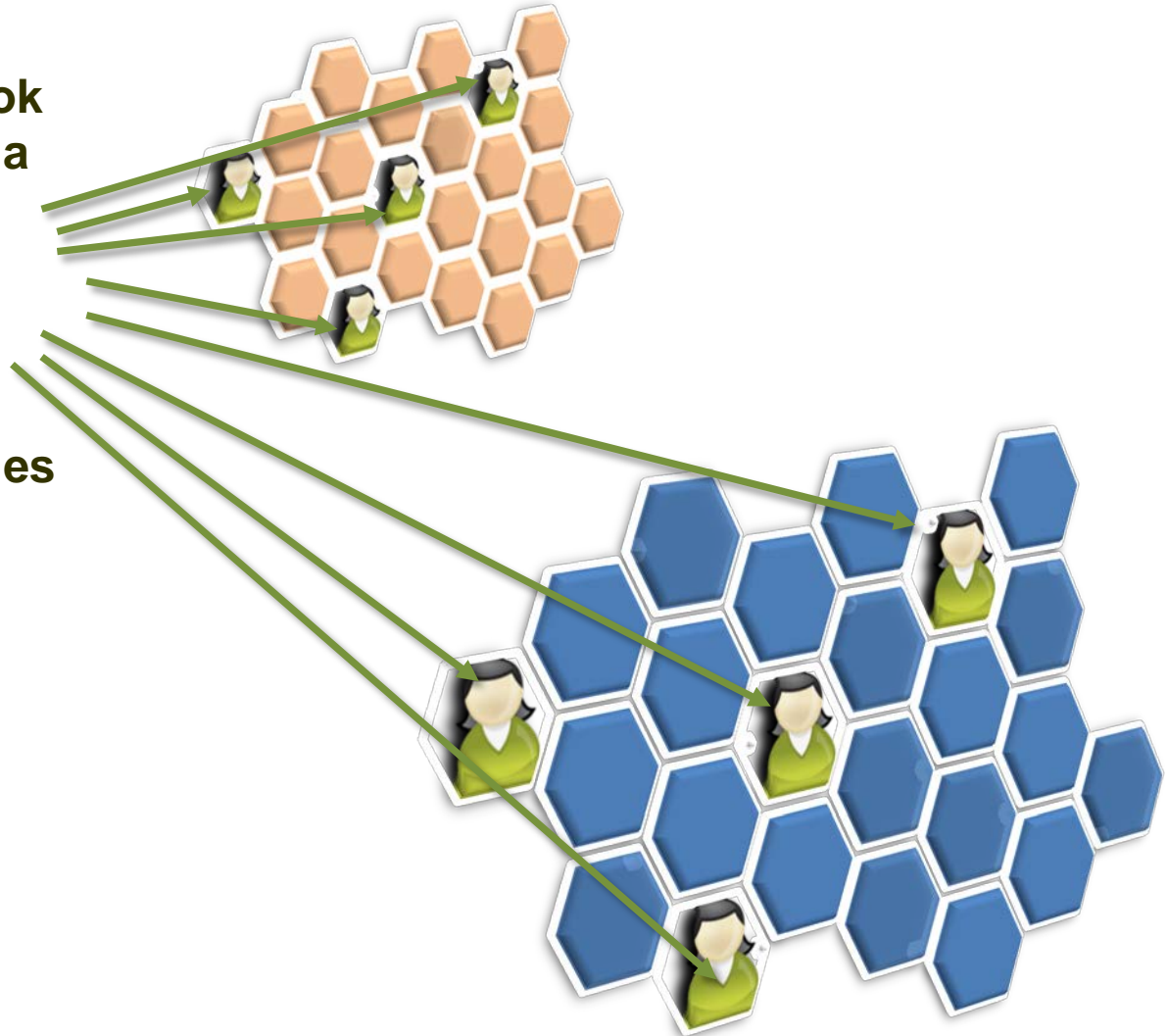
Master Person Indices Reduce Duplicate Records

MPI identifier
Index entry status

Identifying Information:
Name
Gender
Date of birth
Place of birth
Mother's maiden name
Previous surname
Basic contact info (address, phone, email)
Primary IDs (e.g., SSN, driver ID, ID used by agency/program X, etc.)

Optional additional Identifying Information:
Additional contact info (e.g., alternate contact info; emergency contact person and their contact info)

Alias(es)	*Height*
Eye color	*Race*
Citizenship	*Marital status*
Other IDs	

Pointer Information:
Source System AA-A
Pointer to record 1 (e.g., client information
 release authorization)
Pointer to record n

…
Source System AA-Z
Pointer to record 1
Pointer to record n
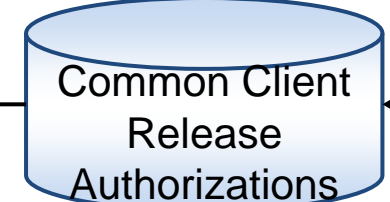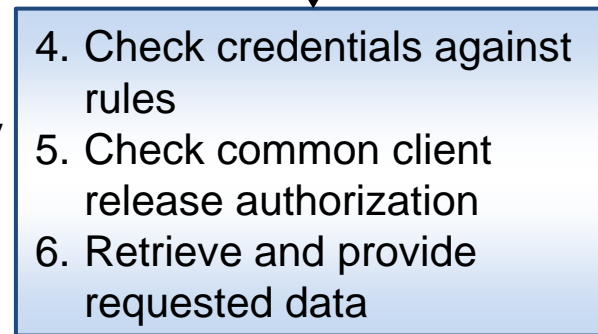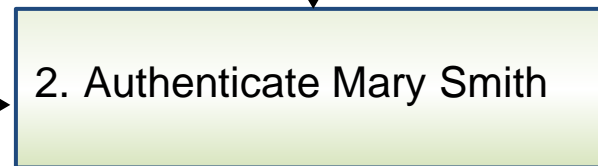
Source System
AA-A

Shared Records

Source System
AA-B

…

Source System
AA-Z

Agency AA-B Records

Agency AA-Z Records

NHSIA in Action

Jane Doe: authorizes release of selected information about her

User Credentials

Authentication Activities
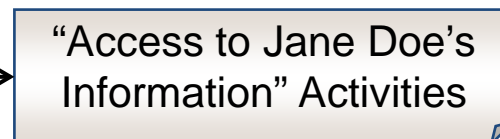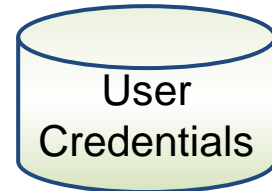
1. Worker Mary Smith: logs on

2. Authenticate Mary Smith

Find Jane Doe

MPI

Smith's credentials

3. Invokes service to find and read contact, demographic, employment, financial, health, and client history data about Jane Doe to plan services
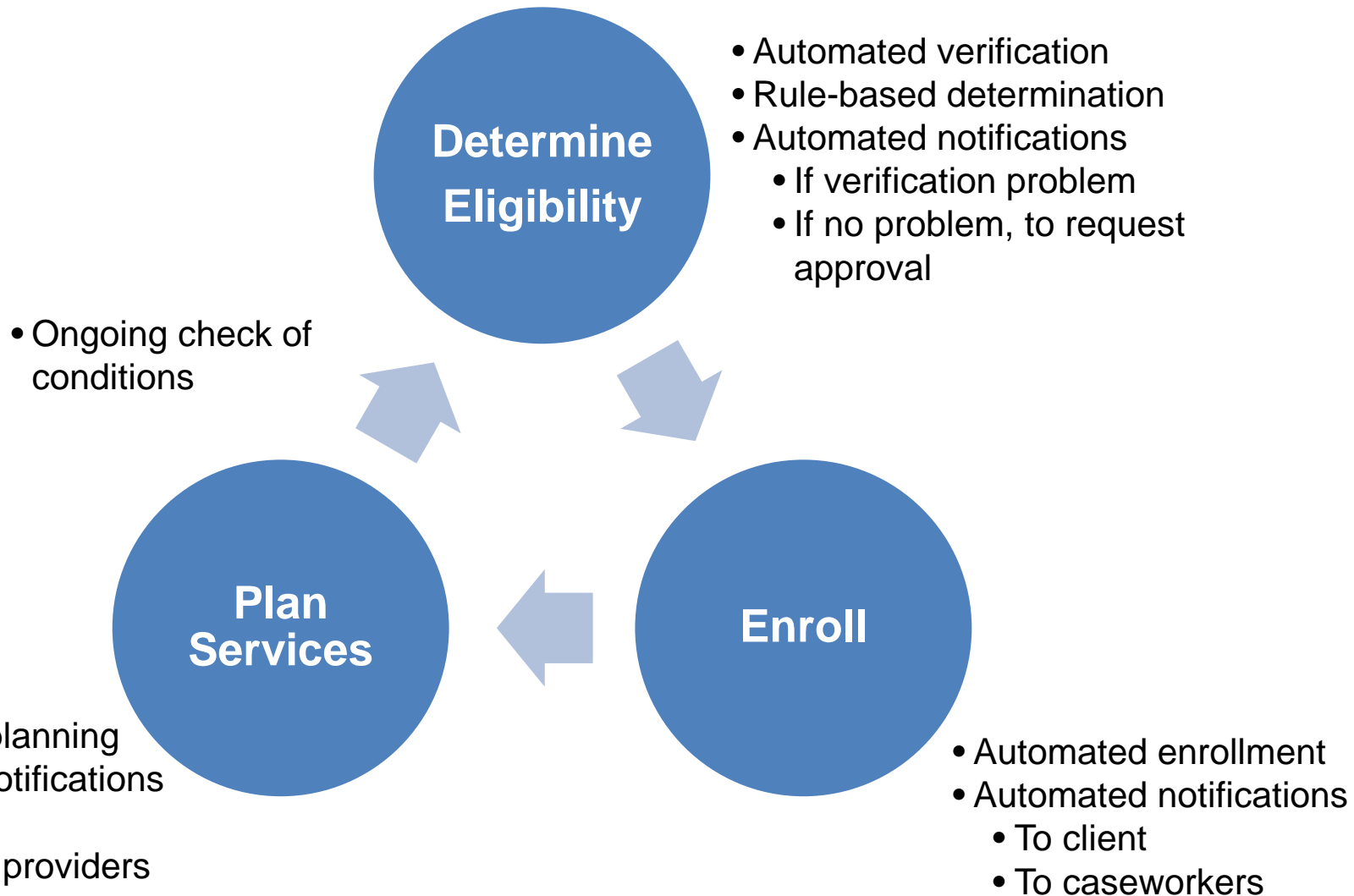
4. Check credentials against rules
5. Check common client release authorization
6. Retrieve and provide requested data

Access Rules

Doe's release authorization

Common Client Release Authorizations

Doe's data (no health)

Doe's data

"Access to Jane Doe's Information" Activities

Shared Person Data

Automated Processes Streamline Workflow

Determine Eligibility

- Automated verification
- Rule-based determination
- Automated notifications
  - If verification problem
  - If no problem, to request approval

- Ongoing check of conditions

Plan Services

Enroll

- Rule-based planning
- Automated notifications
  - To client
  - To service providers

- Automated enrollment
- Automated notifications
  - To client
  - To caseworkers

# Define Data Accessibility Needed to Support Disaster Response

NHSIA will facilitate sharing of service history between case workers, providers, and jurisdictions, both during normal operations and extraordinary conditions, e.g., large natural disasters.

NHSIA Promotes

- **Virtualization & cloud computing**
- **Common security services**
- **Master Person Index**
- **NIEM transactions**
- **HHS record bank**

HHS Information Accessible from Anywhere
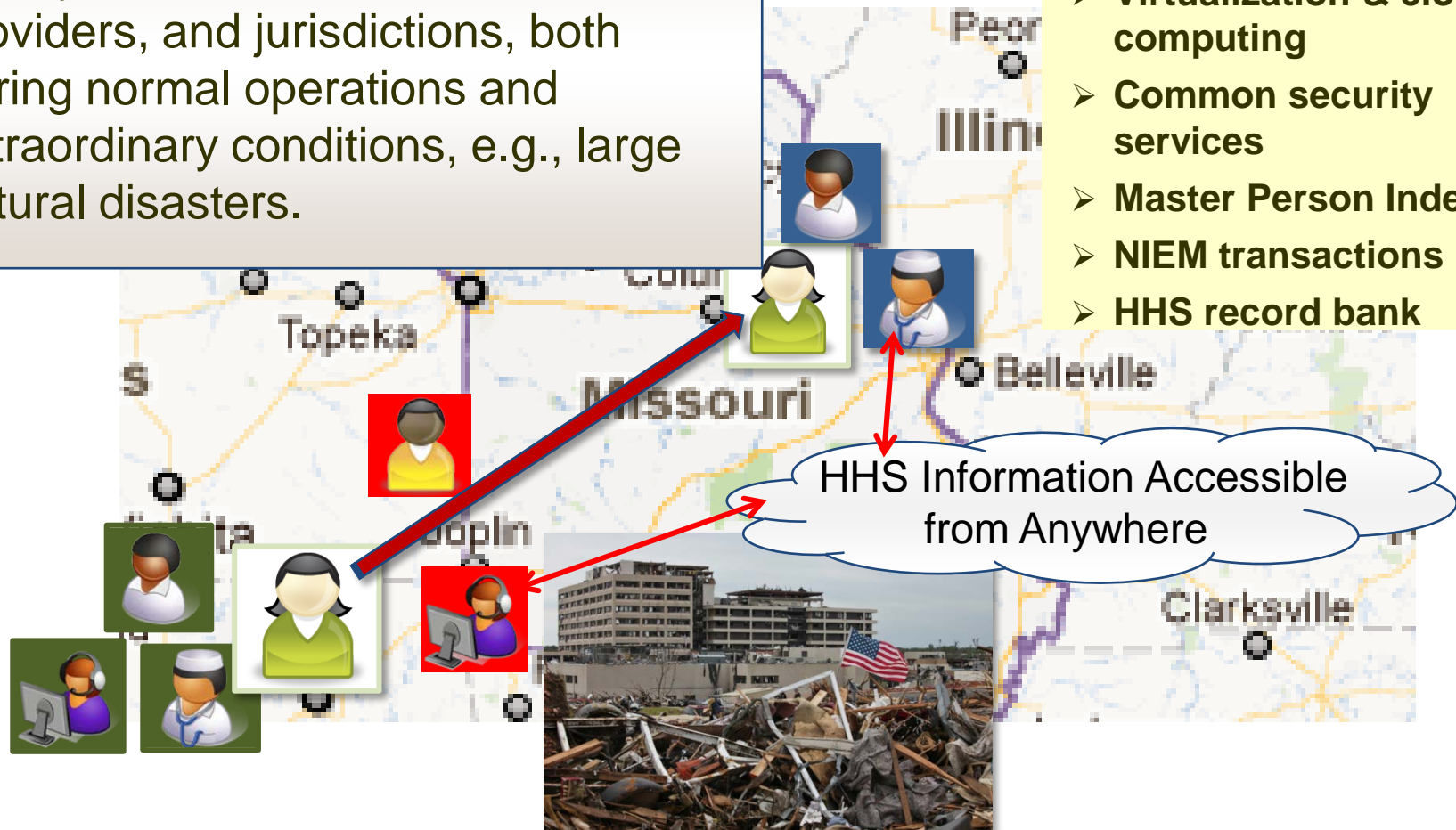
NHSIA Core Provides a Solid Foundation for Better Programs and Integrated Services
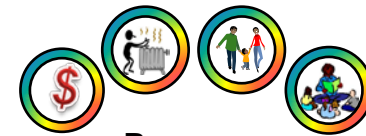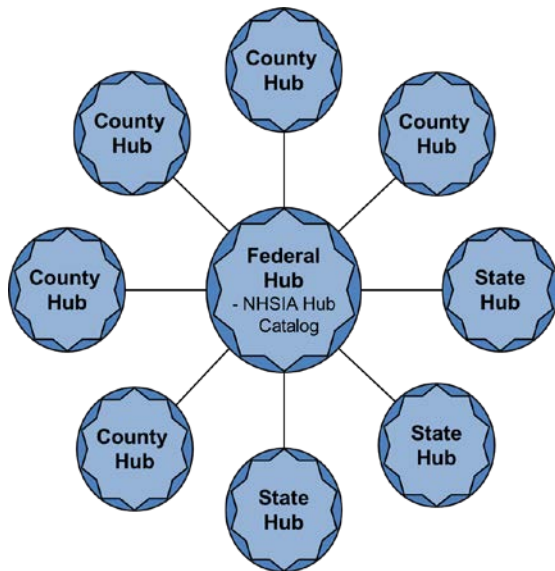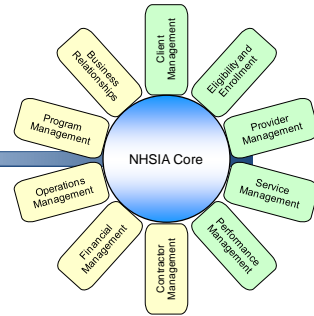
Program Performance Information

Hubs

Core IT Services

Repositories

Service-Oriented Infrastructure
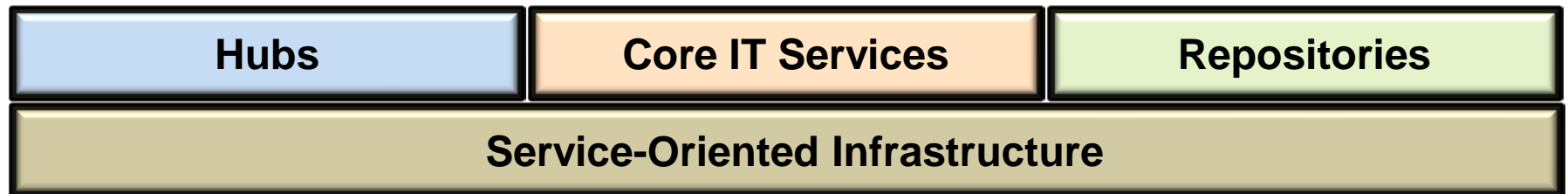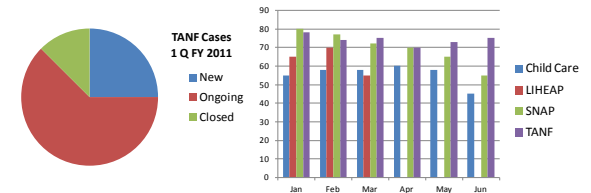
Establishing the NHSIA core enables subsequent Incremental improvements in human services systems

Questions and next steps

Questions?

- ➤ **Chat window**
  - **If we don't have time to answer all the questions during the webinar time window, we will post answers on the ACF Interoperability site**
- ➤ **Email: joseph.bodmer@acf.hhs.gov**
- ➤ **Telephone: Joe Bodmer 202-690-1234**

- ➤ **Note: If you are not speaking, please mute your phones by pressing *6. To speak, press *6 again.**

NHSIA Documents Related To This Webinar

- ➢ **Client and Case Management D0.2**
- ➢ **Master Person Index D0.2**
- ➢ **Eligibility D0.2**
- ➢ **Applicability of Electronic Health Records D0.1**
- ➢ **Identity and Access Management D0.2**
- ➢ **"NHSIA Core" Concepts D0.2**

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Next →

Next webinar: Capability and Business Viewpoints

➢ **Introduction and welcome by ACF**

➢ **Capability Viewpoint**

➢ **Capabilities**

➢ **NHSIA Scorecard**

➢ **Performance Reference Model (PRM)**

➢ **Business Viewpoint**

➢ **Business Viewpoint Components**

➢ **Questions and next steps**

Thank you for participating and see you next time!

➤ **Capability and Business Viewpoints**

➤ **Thursday, June 28 at 1 PM Eastern**