

A blue-tinted photograph of two paramedics in uniform, focused on providing medical care to a patient. The paramedic on the left is leaning over, and the one on the right is also leaning in, both appearing to be working on the patient's chest area. The background shows a blurred building with windows.

# Transitioning to NEMESIS 3

*Resources for Local EMS Services*

**NEMESIS**toolkit



# Getting Started

*When it comes to EMS, one size definitely doesn't fit all. But there are many similarities between implementing NEMSIS Version 3 in a fire department and implementing NEMSIS Version 3 in a private ambulance service, third-service EMS agency or volunteer ambulance service. For example, asking members of your workforce to change the way they report data may sound daunting. But the benefits of moving to NEMSIS Version 3 far outweigh the challenges of implementing a new reporting tool. And with the right preparation, your EMS service, regardless of its type, can ensure a smooth transition to NEMSIS Version 3 in compliance with your state's reporting requirements.*

The keys to a smooth transition to NEMSIS Version 3 are preparation and communication. Here are some essential tips:

- ✓ **Ensure that field providers** are aware of the coming changes — and properly trained prior to implementation.
- ✓ **Communicate early and often** with internal IT staff, state EMS officials, data managers and your software vendor.
- ✓ **Ensure that any required hardware upgrades** are addressed early on.

# FAQs for Leaders

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## What is NEMSIS?

The National EMS Information System (NEMSIS) is an EMS industry data standard that allows a uniform method of collecting information related to EMS patient care and operations. NEMSIS defines data fields for electronic patient care reports (ePCRs) so that a paramedic treating a patient in Ohio is collecting data in the same way as an EMT in Arizona, even if they are using different ePCR or electronic health record (EHR) software.

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## What is the NEMSIS Version 3 standard and how is it different from the current standard?

Version 3 is the latest NEMSIS standard. It's currently being implemented by states and territories across the United States. (While there are currently two separate fielded standards, 3.3.4 and 3.4.0, they are very similar and commonly referenced together as Version 3.) NEMSIS Version 3 offers many opportunities not available with previous versions, such as:

- More specific fields in order to collect data that can help EMS systems measure and improve performance, as well as provide necessary information to hospitals and other healthcare entities involved in care for the patient

- Improved validation system to help ensure that patient reports submitted to the state by local agencies have the required minimum information for a complete record

- A web-based submission system that allows for easier, real-time submission to state and national EMS databases

- Ability to integrate with other healthcare records through use of the Health Level 7 (HL7) standard

Moving to NEMSIS Version 3 will also help state and local EMS systems in other ways — for example, improving the ability to research and develop evidence-based protocols for patient care, and preparing EMS systems for future changes to reimbursement models. The EMS Compass initiative, designed

to create standardized performance measures, uses the Version 3 standard; agencies using Version 3 data will be able to use these evidence-based measures to measure and improve patient care.

Other features of NEMSIS Version 3 include:

- Use of ICD-10 codes for impressions, signs and symptoms, injuries and locations.

- Use of SNOMED codes for procedures and environment allergies.

- Use of RxNORM codes for medications and allergies.
- Documentation of pertinent negatives.

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### Why are the options for provider impression so different in Version 3?

NEMSIS Version 3 uses ICD-10 codes for documenting the provider impression of the patient's chief reason for requesting and requiring EMS treatment or transport. ICD-10 is the latest edition of an international classification system used by most hospitals, healthcare providers and payers in the United States to document provider's impressions and diagnoses. This expanded list now allows your EMTs and paramedics to document their impression of a patient's condition at a much deeper level than previously allowed, but also still allows for less-detailed descriptions by using a hierarchical coding system. For example, for every detailed code (e.g., "turtle bite") there is a base code ("animal bite") that is less specific.

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### Why do I hear about NEMSIS 3 forcing EMTs and paramedics to document the same thing multiple times or answer the same question multiple times?

Several of the "questions" in NEMSIS Version 3 appear rather similar but are different in clinically important ways. A common example is being able to document the exact same item in the "Primary Impression" field as in the "Primary Symptoms" field. While these questions might allow for some of the same answers on certain occasions, they also allow for much more detail, as the symptoms can help build a case to justify the impression that was entered.

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**If there's a national data standard, why is my state's data dictionary different than another state's?**

The NEMSIS V3 data dictionary consists of 574 data elements, which were developed with input from stakeholders across the country. While these elements capture all of the information needed during a typical EMS encounter with a patient today, states also have the option of adding additional data fields for research or as new data collection needs are discovered. As states develop these customized fields, NEMSIS works to ensure they are shared with other states and with software vendors so other states can adopt the same elements if they desire. The custom elements shared with NEMSIS are available on the NEMSIS website.

While NEMSIS is a national standard, EMS is regulated at the state and/or local level—meaning it is ultimately up to states and localities to decide exactly what data elements to collect and how to collect them. For this reason, it is vitally important to know what your state's plan is for NEMSIS v3 implementation.

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**How should my organization collect and submit data under NEMSIS 3?**

The first step is to ensure that you are using software that is compliant with NEMSIS Version 3 and standards required by your state and/or local jurisdiction. A list of vendors recognized by the NEMSIS Technical Assistance Center (TAC) is available [here](#). To verify that a vendor is compliant with state and local regulations, contact your state and local EMS officials. (Contact information for state EMS data managers is also available [here](#).)

After collecting data during patient encounters, local EMS organizations typically are responsible for submitting that data to state databases in the NEMSIS format via a web service, which allows information to be exchanged securely, even across different operating systems and programming languages. Unlike with previous versions of NEMSIS, Version 3 allows for automated, near real-time submission of data. That also means that states and local agencies will get faster feedback on the quality of the data, making it easier for information to be corrected sooner and more accurately.

Many EMS software vendors perform this function on behalf of their customers; some require customers to submit data on their own. Early in the transition to Version 3, make sure you are in contact with your vendor and state officials to ensure you are prepared to submit data in a timely manner—many states have rules and regulations that require data submission, with fines or other penalties for agencies that do not comply.

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**Will I lose my old data when I transition to Version 3?**

This is a question for your software vendor. Some agencies will be able to transfer data into a new system, allowing for seamless integration and the ability to trend over time across the period of the transition. Others will find that the upgrade will require maintaining a separate database for information collected prior to the transition. Either way, it is critical to ensure that the data is not lost in order to still have access to it for planning, performance measurement, long-term recordkeeping, and other uses.

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**How is data quality managed in NEMSIS Version 3?**

NEMSIS Version 3 ensures better data quality using a dual-pass validation system. The first pass is XML validation, which ensures the data is properly formatted—for example, making sure the dispatch date is not only present, but includes a four-digit year. The second pass is something called Schematron — a rule-based language for XML document validation that is capable of logical comparison for business rule validation. For example, Schematron may ensure that the date of transport to the hospital is not prior to the dispatch date, since you cannot transport a patient prior to being dispatched.

Data quality is also ensured through compliance testing of software used at both the state and local levels.

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**How are changes to NEMSIS Version 3 communicated?**

Incremental changes are made to the NEMSIS data standard every two to four years, while critical patches may be published more frequently. Updates to the NEMSIS Version 3 dataset are announced and posted on the NEMSIS TAC Website. You can also subscribe to the NEMSIS List Server, or join the discussion group, to be informed via email on important facts and news. Many state EMS offices also hold regular webinars and conference calls, publish newsletters or emails, and have websites with more information. Check with your state EMS office or on [nemsis.org](http://nemsis.org) for links and contact information.

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**My EMS service operates in multiple states. How does that work in a NEMSIS 3 world when my medics need to record data specific to each state?**

Your service will need to use patient care reporting software that is compliant in each state in which it operates. If the states require different elements, your organization will need to work with your software vendor and state EMS officials to ensure the right data is being collected and submitted to each state in order to comply with regulations.

A special challenge arises if your service operates simultaneously in one state that uses the NEMSIS 2 standard and another that uses NEMSIS 3. In that case, ask your software vendor about mapping data from NEMSIS 3 down to the more general NEMSIS 2 dataset, a process known as a “downgrade cross walk.” An alternate arrangement may be to maintain separate accounts with a software vendor. In either case, this question underscores the importance of good communication and starting the process well in advance of your state’s deadline.

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#### What is the difference between NEMSIS Version 3.3.4 and Version 3.4?

There are minor differences between the versions. Version 3.4 introduces a few new fields, eliminates some, and modifies a few others.

The NEMSIS TAC will collect both NEMSIS Version 3.3.4 and Version 3.4 data until the end of 2017; Version 3.4 will officially become the standard on January 1, 2018. Major revisions to the NEMSIS standard will occur on a four-year cycle. The next major revision could be released in March 2018 and would officially become the standard on January 1, 2019.

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#### What is the National EMS Database?

After most states collect data from local agencies, they submit a subset of that data to the National EMS Database. Because each state collects EMS data using the same standards, the tens of millions of de-identified patient care records in the national database can be used by researchers and policymakers to answer questions about EMS systems and patient care delivery.

**Major revisions to the NEMSIS standard will occur on a four-year cycle.**

# Transition Checklist

*No two EMS agencies are alike: Every EMS service faces its own unique concerns — along with state and/or local regulatory considerations — when transitioning to NEMSIS Version 3 data collection. Despite these differences, however, there are numerous steps that virtually every local EMS responder organization should follow to ensure that its NEMSIS 3 implementation is as smooth as possible.*

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## ✓ Contact your state data manager.

Determine what the Version 3 timeline is for the state. Be clear in your understanding of when your service can begin submitting Version 3 data and when it must use Version 3 data.

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## ✓ Find out how the state is communicating decisions related to NEMSIS Version 3 and make sure someone from your EMS service is involved.

This may include regularly checking a website, signing up for email updates, attending webinars and meetings, and other ways of maintaining regular contact with state EMS decision-makers.

Specific questions you and your software vendor will need state officials to answer include:

Is the state adopting NEMSIS v3.3.4 or NEMSIS v3.4?  
Has the state finalized a data dictionary?

Is the state requiring any custom elements?  
Are those elements the same as those other states have used, or are they unique to our state?

Is the state offering any training related to NEMSIS Version 3 data collection or submission?

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## ✓ Confirm with your software vendor that your EMS software has been certified as compliant by both the NEMSIS Technical Assistance Center (TAC) and the state. A list of NEMSIS compliant vendors is available at [NEMSIS.org](https://www.nemsis.org).

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- ✓ If necessary, update hardware based on new software system requirements.
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- ✓ Confirm that your software vendor and state data manager have your organization's current EMS service demographic information.
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- ✓ Discuss with your software vendor how to safeguard and access previously collected data. Ask whether your prior data will seamlessly integrate with the data collected using NEMSIS Version 3.
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- ✓ Determine who will be responsible for submitting data to the state — your EMS service or the vendor.
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- ✓ Set a transition target date with your software vendor.
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- ✓ Request training courses and/or materials from your software vendor or state officials.
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- ✓ Schedule training time with staff. Everyone involved in the collection and use of EMS data (including field providers, billing staff, etc.) should receive adequate training prior to the “go live” date.

**Request training courses and/or materials from your software vendor or state officials.**

# FAQs for Field Personnel

*For local EMS services implementing NEMSIS Version 3, ensuring that paramedics and EMTs know the reason for the changes, along with the value that the new standard brings, is key to adoption and a successful transition. This FAQ was designed to help EMS providers understand the transition to Version 3 and how it may impact them and their patients.*

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## Why is my EMS service upgrading to NEMSIS Version 3?

Version 3 is the most recent NEMSIS standard. It's currently being implemented by states and territories across the United States. Your EMS service may be upgrading because your state has mandated that all EMS calls be documented using Version 3. Or perhaps your EMS service's leaders wish to improve their ability to use data to improve patient care.

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## Why is NEMSIS Version 3 better than the current version?

Version 3 offers many opportunities that were not available with earlier versions of NEMSIS, such as:

- More specific number of data fields in order to collect the data that can help EMS systems measure and improve performance and provide necessary information to hospitals and other healthcare entities involved in care for the patient. For example, NEMSIS 3 has added pertinent negatives, so you can document why a chest pain patient did not receive aspirin.

- Improved validation system to help ensure that the patient reports your agency submits to the state have the required minimum information for a complete record

- A web-based submission system that allows for easier, real-time submission to state and national EMS databases
- Ability to integrate with other healthcare records through use of the Health Level 7 (HL7) standard

Moving to NEMSIS Version 3 will also help your state and the local EMS system(s) you work for in other ways. For example, Version 3 will make it easier to research and develop evidence-based protocols for patient care. The new standard will also help EMS systems measure performance and quality. The EMS Compass initiative, designed to create standardized performance measures, uses the Version 3 standard; agencies using Version 3 data will be able to use these evidence-based measures to measure and improve patient care.

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### Is NEMSIS 3 going to change how I do my job?

The changes in NEMSIS Version 3 will not directly change how you perform your job in the field treating patients but they will improve how you document the care provided. NEMSIS 3 does not, for example, dictate your treatment protocols or regulate your certification or licensing. That said, the answer to this question varies on how your employer implements the new standard, particularly when it comes to software. In many organizations that are already using electronic PCRs, the move to NEMSIS 3 will mean the addition of some new data fields and changes in the options to complete some data fields that already existed—but the PCR itself will not change significantly.

In other services, a change in PCR software may be required as some software vendors have not developed a Version 3 compliant product. If you practice EMS in such an organization, you may have to learn new software—but because NEMSIS has standardized the data collected by EMS providers across the country, the information you enter into the report should be similar to what you were entering with previous software.

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### Why are the options for Provider Impression so different in Version 3?

One of the most significant changes in Version 3 is that the Provider Impression field is now based on patient diagnoses that are linked behind the scenes to the same ICD-10 codes used by physicians. ICD-10 is the latest edition of an international classification system used by most hospitals, healthcare providers and payers in the United States to document providers' impressions and diagnoses. Using ICD-10 codes will help create consistency between EMS and the rest of the healthcare system. But it also may mean a change in what options are available for you when you document the provider impression. Follow your service's policies and your state's instructions for how best to complete this field.

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**Why does it feel like I am documenting the same thing multiple times or answering the same question multiple times?**

Several of the questions in NEMSIS Version 3 appear repetitive at first glance, but are different in clinically important ways. A common example is being able to document the exact same item in the Primary Impression field as in the Primary Symptoms field. While these questions might be answered the same way under certain circumstances, they also provide much more detail, as the symptoms can help build a case to justify the impression that you enter.

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**If NEMSIS establishes a national data standard, why do different departments have different ePCRs?**

There are several reasons for variations among patient documentation software systems in EMS. One is simply that agencies can choose which software platform best meets their needs, as long as it complies with local and state requirements.

In addition, while NEMSIS establishes a baseline set of data to be collected, EMS is regulated at the state and/or local level—meaning it is ultimately up to states and localities to decide exactly what data elements to collect and how to collect them. The NEMSIS Version 3 data dictionary consists of 574 data elements, which were developed with input from stakeholders across the country. While these elements capture all of the information needed during a typical EMS encounter with a patient, states also have the option of adding additional data fields for research or as new data collection needs are discovered.

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**How is patient data used after I enter it? Does it really help EMS?**

The simple answer is that the information you document is used by the hospital, your service, and at state and national levels to improve patient care. At the individual level, the hospital can look at your patient care report to find information about the patient you transported and what treatments or actions you may have performed. NEMSIS Version 3 uses the HL7 standard used by many hospital systems, which means patients' EMS records can be merged more easily with those from the hospital.

At the local level, your EMS service can use the data to help assess the local EMS system's or community's needs. For example, your service might want to know whether there's been a rise in opioid use in a certain area, so it can work with public health and law enforcement to help prevent overdose deaths. Or your quality improvement manager might look at whether practitioners are checking blood sugars on appropriate patients. The data can also be used locally to increase protocol compliance or modify protocols to align with what actually happens in the field and patient outcomes.

Information entered into the ePCR using NEMSIS Version 3 is also then submitted to the state and eventually the National EMS Database. This data is used not to look at an individual patient's information for treatment purposes, but to provide regulators, policy makers and researchers a way to assess EMS system performance across larger geographical areas. For example, a study might use Version 3 data at the national level to help determine which EMS treatments make the most difference for patients.