



WINTER 2012

EMSUPDATE

Emergency Medical Services

Using NEMSIS State-Collected Data; Proving Valuable for Researchers and State, Local and Private Systems Alike

How do we “do” things in EMS?

It’s a valid question that we haven’t always been able to address. But the National EMS Information System (NEMSIS) may soon provide the data we need to answer it. To understand how NEMSIS data can be used, it’s important to first understand what NEMSIS is and how it works.

What Is NEMSIS?

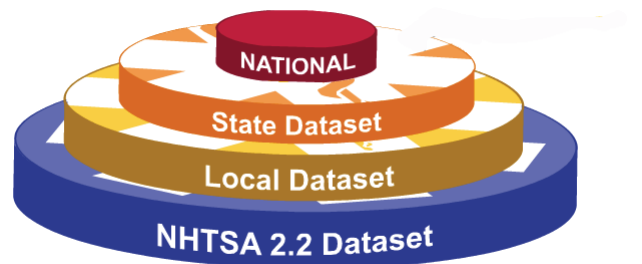
NEMSIS was created nearly a decade ago to standardize the data elements collected by EMS providers and to aggregate the data at a national level, so EMS care can be characterized based on the information available from across the nation. Then EMS improvements can be evidence-based. These data, collected from more than 30 states and territories across the United States, are proving useful for researchers and for those making practical decisions like those made by medical directors and EMS system administrators of local EMS systems and nationwide.

Data Collection—How It Works:

How are data collected in the National EMS Information System? NEMSIS data come from EMS providers. The information collected about every call and each patient becomes a part of NEMSIS, and will be used to make important decisions on how to improve patient care and to operate a more effective, efficient EMS system.

Local EMS systems collect data from EMS providers—from patient care records and EMS system demographics. Then, states throughout the nation receive data from local agencies. The state aggregates those data and transmits a small subset of

their data elements to the national NEMSIS database, which is housed within the NEMSIS Technical Assistance Center (TAC). Ultimately, the data collected by EMS providers becomes a part of NEMSIS—at every level, though in varying degrees.



States and Local providers select elements of the NEMSIS data set according to their needs, keeping the national elements as part of their selection.

Overall, the NEMSIS system has three specific goals:

- Implement an electronic EMS documentation system in every local EMS system, which can collect and use data based on the most current version of the NHTSA NEMSIS dataset standard.
- Implement a state EMS information system in every state and territory, which can receive and use a portion of the local EMS data via the XML standard which allows for the portability of the data from one level to the next.
- Implement a national EMS database, which can receive and use a portion of the state and territorial EMS data via the XML standard.

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Accessing and Using National NEMSIS Data

National NEMSIS data are free and available for anyone—states, students, public agencies, private ambulance services, even individuals—to access and use. There are two ways to access NEMSIS data, says N. Clay Mann, PhD, MS, with the University of Utah School of Medicine, which manages the NEMSIS TAC. “First, there are a number of web-based tools available to access the national data set and run queries based on the 20 million records available there,” Mann says. “The second option is to request an annual research data set, which is also free and available, with instructions at www.nemsis.org.

Available now are the 2010 data set, which includes 10 million records from 31 states, and the 2009 data set, which includes 6 million records from 26 states. Data can be used in a variety of ways:

Evidence-Based Studies

2011 saw the first peer-reviewed article featuring NEMSIS data, with the publication of “Out-of-Hospital Airway Management in the United States” by University of Alabama at Birmingham researcher, Henry E. Wang, et al. in *Resuscitation*. This clinical paper sought to characterize out-of-hospital airway management interventions, outcomes and complications across the United States. Methodology included use of the 2008 NEMSIS Public Release Data Set containing data from 16 states, identifying patients who received advanced airway management examining success and complications in the full set and in key subsets.

“[The Wang study] was the first time ever that scientists have been able to aggregate data from that many intubations across the country,” Mann says. The conclusion of the study was that out-of-hospital ETI success rates were low, and the researchers indicated that the data may guide national efforts to improve the quality of out-of-hospital airway management.

Benchmarking Opportunities

“The dataset can also be used by individual states and agencies for their own benchmarking purposes,” says Mann. To accomplish this, the NEMSIS TAC website provides resources to help state leaders identify 3-5 additional states whose data may serve as a “peer comparison group” against which to benchmark. These states’ EMS data will be aggregated to provide benchmark information.

Customizable Reporting

Each month, there are more than 3,000 visits to the NEMSIS online reporting tool, which features a variety of pre-defined reports, plus the option to create custom queries, reports,

charts and graphs. Detailed tutorials for accessing and using the reporting options are available at <http://www.nemsis.org/reportingTools/reports/reportDemos.html>

Support for Grant Writing

1. As the availability of NEMSIS data is made known, more agencies such as the Centers for Disease Control and Prevention (CDC) and the Emergency Medical Services for Children (EMSC) program, are including the use of NEMSIS data in their grant guidance. For example, EMSC specifies that grant application narratives should include information about the status of EMS data collection in their state, i.e., the process for capturing (and the capture rate, if known):
 - a. Use or non-use of NHTSA 2.2 Pre-hospital Data set
 - b. Identification of the primary contact for NEMSIS related activities. (Name, title, affiliation, phone and email information)
 - c. Plans of the grantee, if funded, to participate in the NEMSIS data survey.

What’s New

With 34 states currently reporting into NEMSIS, the data set receives about 15 million records a year. Until recently, data submissions occurred quarterly or monthly, but Version 3 of NEMSIS, which was introduced in November 2011, mandates the submission of data through web-based services, allowing for data to be submitted much more quickly.

Version 3 also includes specific variables that allow researchers to take a detailed look at performance measures for EMS responses involving trauma, cardiac arrest, stroke and STEMI (ST segment elevation myocardial infarction), the most time sensitive-incidents for treatment and medication.

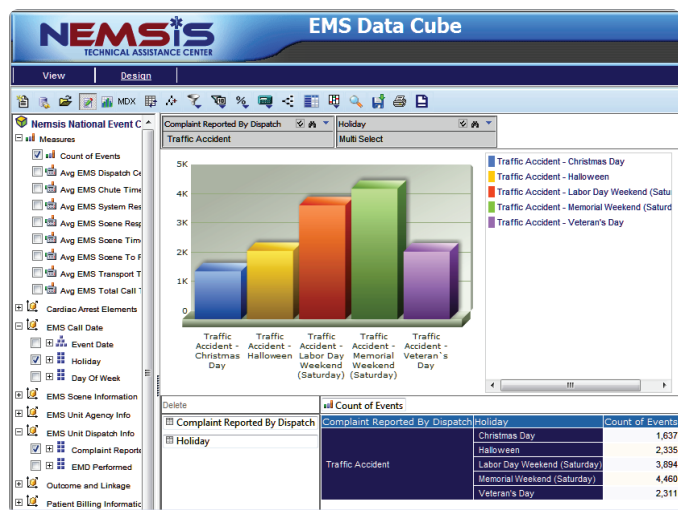
The number of states reporting into the National NEMSIS database continues to increase. In 2012, as many as 12 additional states and territories are expected to begin reporting national dataset information.

Setting the Standard

NEMSIS is currently under review for approval by Health Level Seven International (HL7), the global authority on standards for interoperability of health information technology.

“As we move to the national electronic health records, NEMSIS is poised to be the standard for all prehospital data collection, so as people report and use the data, they can be

comfortable that this data is what will be in a patient's electronic healthcare record (EHR)," said Mann.



Using the EMS Data Cube, anyone can visit NEMSIS.org to access data and create reports. This graph reports traffic accidents by holiday.

The NEMSIS TAC

The National EMS Information System Technical Assistance Center, is the resource center for the NEMSIS project—the development of a national EMS database. The TAC is responsible for:

- providing assistance to state, territory, and local EMS agencies;
- providing assistance to commercial software vendors;
- biannually assessing all state's and territory's capabilities to provide data to the national EMS database;
- collecting EMS data from states to populate the national EMS database;
- creating reference documents for users such as data set explanations and validity documentation;
- maintaining the national database; and
- creating compliance policies and software to assess the capabilities of EMS software applications. ■

Find Out More

NHTSA's Office of EMS continues to support NEMSIS, and a recent webinar about NEMSIS can be accessed at <http://www.syndromic.org/webinars/isds/jan312012>. To find out more about NEMSIS, visit www.nemsis.org.

National EMS Culture of Safety Update

Comment Sought from EMS Community

The American College of Emergency Physicians (ACEP) recently announced the release of the first public draft of the Strategy to Develop and Promote a National Culture of Safety in EMS. The draft is available for download at www.emscultureofsafety.com.

The Strategy document is part of a competitive cooperative agreement between the National Highway Traffic Safety Administration (NHTSA), with support from the Health Resources and Services Administration's (HRSA) EMS for Children (EMSC) Program, and ACEP. The primary objective of the project is to identify key operational and patient safety issues in emergency medical services, and develop a comprehensive strategy for a culture of safety in EMS.

The Strategy stems from a 2009 recommendation by the National Emergency Medical Services Advisory Council (NEMSAC) to NHTSA to create a strategy for building a culture of safety in emergency medical services. NEMSAC characterized developing a culture of safety in EMS as its "top priority" recommendation, chosen via a systematic, evidence- and consensus-based process from among more than 80 possible issues. Further details, rationale and references supporting the Council's recommendation can be found at http://ems.gov/pdf/nemsac/sep09/NEMSAC-OAR_Final_Report_092909.pdf.

This project was conceived as a three-year collaborative effort, harnessing the ideas, experience and expertise of many stakeholders representing both EMS and other disciplines, such as hospitals and aviation. ACEP is leading this effort with assistance from an 18-member Steering Committee made up of representatives from national EMS organizations and chaired by Sabina Braithwaite, MD, MPH, FACEP.

The Strategy was commissioned to serve as a high-level blueprint from which safety decisions can be made. While it is not a consensus document per se, it is intended to provide guidance to decision-makers about the priorities, concerns and commitment of key EMS stakeholders.

"The public comment period is a vital part of the Strategy process," Braithwaite says. "It's a vital mechanism for the project group to obtain the broadest input from EMS stakeholders at all levels to share their views on operational and patient safety, and to share their best ideas for transitioning to a safety centered culture," she adds. All comments for consideration for the next draft must be submitted online by Feb. 24, 2012. Comments may be submitted on behalf of EMS organizations, or by individual

EMS community members and submissions received after the deadline will be considered for the development of subsequent drafts.

ACEP will host a panel presentation and discussion of the current draft at EMS Today in Baltimore, MD, on Wednesday, Feb. 29, 2012, from 7 to 9 p.m. The event is open to the public.

The next draft of the Strategy will be made available for public comment in mid-2012. For more information about the project and to access the current draft and submit comments, visit www.emscultureofsafety.com.

Reporting Emergency Vehicle Safety Defects

Have you ever had problems with your emergency vehicle while answering a call or transporting a patient? If you have, maybe you've wondered if other EMS providers have had the same problem. For emergency vehicle defects—there is a way to find out.

In August 2007, the National Highway Traffic Safety Administration (NHTSA) opened an investigation of a specific ambulance model for loss of power to the interior/exterior lighting systems; which included all of the warning lights and vehicle equipment specifically used for patient care. As a result of the NHTSA investigation, the manufacturer recalled 1,006 ambulances to correct a corrosion condition occurring on a 400 amp fuse as a consequence of exposure to calcium chloride.

Because you are providers of emergency medical care, we know that safety is a top priority—for you and for your patients. We understand—safety is NHTSA's primary focus—it's part of our name. Since its inception, NHTSA has held vehicle manufacturers accountable for recalling vehicles and equipment that have a safety defect. NHTSA uses a number of methods to identify possible vehicle safety issues including reports of potential defects from individuals, organizations, and original equipment manufacturers. As in the story above, once a trend or a significantly dangerous situation is identified, an investigation is triggered and the problem is addressed. NHTSA is committed to keeping all vehicles safe—including ambulances. We want your help to do that. We encourage you to report ambulance defects—so all of us have a true picture of ambulance safety issues—and can do something about it.

NHTSA's Authority for Vehicle Safety

Congress gave NHTSA the authority to issue vehicle safety standards and to require manufacturers to recall vehicles that have safety-related defects or do not meet Federal safety standards. The National Traffic and Motor Vehicle Safety Act (enacted in 1966 and now re-codified as 49 U.S.C. Chapter 301) gave NHTSA this authority. Since 1966:

- More than 390 million cars, trucks, buses, recreational vehicles, motorcycles, and Emergency Medical Service (EMS) vehicles,
- 46 million tires,
- 66 million pieces of motor vehicle equipment, and
- 42 million child safety seats have been recalled to correct safety defects.

Manufacturers voluntarily initiate many of these recalls, while others are either influenced by NHTSA investigations or, in extreme situations, ordered by NHTSA to address safety issues via Federal court. If a safety defect is discovered, the manufacturer must notify NHTSA, as well as vehicle or equipment owners whether they own one vehicle or fleets. Manufacturers are also required to inform their dealers and distributors and provide instructions on how to correct a safety defect. For vehicles less than 10 years old at the time the defect is identified, the manufacturer is required to remedy the problem at no charge to the owner. NHTSA is responsible for monitoring a manufacturer's corrective action to ensure successful completion of a recall campaign.

Examples of defects considered safety-related include:

- Steering components that break suddenly, causing partial or complete loss of vehicle control.
- Problems with fuel system components, particularly in their susceptibility to crash damage, which result in leakage of fuel and may cause vehicle fires.
- Accelerator controls that break or stick.
- Wheels that crack or break, which may result in loss of vehicle control.
- Engine cooling fan blades that break unexpectedly, causing injury to people working on a vehicle.
- Windshield wiper assemblies that fail to operate properly.
- Any part failure related to the vehicles mission.
- Seats and/or seat backs that fail unexpectedly during normal use.

- Critical vehicle components that break, fall apart, or separate from the vehicle, causing potential loss of vehicle control or injury to people inside or outside the vehicle.
- Wiring system problems that result in a fire or loss of lighting.
- Air bags that deploy under conditions for which they are not intended to deploy.

How Safety Issues are Identified

NHTSA can become aware of a safety related defect in many ways, but the primary method is through consumer reports. NHTSA relies on consumers to contact them when they experience a safety related failure on a vehicle so that an investigation can be initiated and the defective component remedied. There is no established number of reports required to open an investigation. Agency technical experts review each and every report filed with NHTSA and conduct a continuous analysis to determine whether a potential safety-related problem exists in any specific line of vehicles or tires.

The number of reports and the severity of the consequences are carefully reviewed by technical staff and measured against the number of vehicles (or items of equipment) manufactured, and how many years the vehicles or equipment have been in service. This ongoing evaluation process allows NHTSA technical staff to determine whether reports represent isolated problems or a defect trend. If a trend is suspected or a problem has a potential for causing an unreasonable risk to safety, the agency will open an investigation to conduct a more detailed analysis of the problem.

What You can do as an EMS Provider

As an EMS provider, you are the key to getting NHTSA involved when you experience a defect on an EMS or any other vehicle you may own or operate. If you think your vehicle may have a safety defect, reporting it to NHTSA is an important first step in getting the situation remedied and making our roads safer—for everyone. There are three ways to report a safety defect:

3 WAYS TO FILE DEFECT REPORTS with NHTSA:

1. Vehicle Safety Hotline: 1-888-327-4236
2. www.SaferCar.gov
3. U.S. Mail:
U.S. Department of Transportation
National Highway Traffic Safety Administration
Office of Defects Investigation (NVS-210)
1200 New Jersey Ave SE
Washington, DC 20590

Each defect report is vital to helping NHTSA pinpoint potential problems. We are all in the business of saving lives—so help us help you. Always report emergency vehicle safety problems to NHTSA. ■

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