

NEMSIS Data Dictionary Version 3.0

Overview and Summary

This data dictionary represents 24 months of effort collaborating with the EMS industry through web-based reviews, public comment periods, focus groups, industry dialogue, topic focused projects, and consensus. The National EMS Information System Version 3.0 represents a revision from the existing version 2.1.1 released in 2005 as well as the initial movement of this standard into Health Level 7 (HL7). At the time of this publication, NEMSIS Version 3.0 has passed the first of three ballots within HL7 in an effort to be recognized as a federal and international healthcare information standard. Final HL7 adoption of NEMSIS Version 3.0 is expected in 2012. HL7 will be the permanent home for the NEMSIS standard once fully adopted and future revisions will occur through the HL7 process.

The NEMSIS Data Dictionary represents a final and complete list of EMS data elements for Version 3.0. All data elements are considered final.

The NEMSIS Version 3.0 Standard contains several components that are being completed sequentially with all components to be complete and final in the 3rd quarter of 2010. The NEMSIS Version 3.0 Standard when complete will contain the following:

- * **NEMSIS Data Dictionary**
 - List of data elements, definitions, values, codes sets, and relationships
- * **NEMSIS XSDs**
 - Messaging standard with structural requirements
- * **Business Logic**
 - Business Logic required to be implemented using Schematron at the time of record completion
- * **Web-Services**
 - Automated data exchange using a secure internet based technology

NEMSIS Version 3.0 development tools, software requirements, and compliance testing processes will be finalized in the 3rd quarter of 2010. Development tools and draft requirements will be posted over the next 60 days for evaluation and public comment at www.NEMSIS.org.

NEMSIS Version 3.0 Data Dictionary Content

- * **Data Element Number**
 - The NEMSIS Version 3 numbering system has been revised to improve the information that can be derived from just the data element number. An example of a data element number is DAAgency.01.
 - The data element number begins with either a “D” representing the demographic section or an “E” representing the EMS PCR section.
 - A one word descriptor for each section is now included in the data element number
 - A period separates the section (e.g. DAAgency) from the data element number in the section (counter beginning at 01).
- * **National and State Element Indicator**
 - Indication that the data element is recommended to be collected at the “National” or “State” levels.
 - **Considered Draft pending 30 Day Public Comment Period to be completed in the next 60 days**
- * **Data Element Name**
 - The long name for the data element (a descriptive short name will be provided with the future XSD specifications).
- * **Data Element Definition**
 - The definition for the data element.
- * **Version 2 Number**
 - The NEMSIS Version 2.2.1 Data Element Number.
 - If the Data Element is new to Version 3.0, the Version 2 Number will be blank.
- * **Data Structure Information**
 - **Multiplicity**
 - Indication that the data element can have more than one value.

- None (Only one value accepted)
- Yes as a Group (Only one value accepted but the data element is part of a group where multiple groups can be created)
- Yes Individually (Multiple values accepted)
- **Usage**
 - Indication of when the data element is expected to be collected.
 - Mandatory = Must be completed and will not accept null values
 - Required = Must be completed but will accept null values
 - Optional = Not required but if completed will not accept null values
- **Grouping**
 - A list of associated data elements that together describe a topic or component.
- **Null Value Attributes**
 - Indication that the data element can have null values.
 - Null Values are used (where permitted) to document that a data element was not or could not be completed. Null Values have been condensed in Version 3 to the following:
- **Null Values Accepted**
 - Indication of which of the following three nulls values is acceptable.
 - Not all data elements can accept null values.
 - Not Applicable = The data element is not applicable or pertinent to the EMS event
 - Not Recorded = The data element was left blank or Not Recorded by the User
 - Not Reported = The data element is not collected/implemented within the software
- **Negative Action Values**
 - A list of negative action values which can be associated with a data element.
 - Not all data elements accept Negative Action Values.
- * **Associated Performance Measure Initiatives**
 - Indication that the data element has value in describing, defining, or measuring EMS from a performance perspective. Performance Measures can be associated with EMS service delivery, patient care, or both. The following service delivery or time dependent illness/injury performance measure topics have been included in NEMSIS Version 3:
 - Airway Management
 - Out of Hospital Cardiac Arrest
 - Acute Pediatric Care
 - EMS Response Time
 - ST Elevation Myocardial Infarction (STEMI)
 - Acute Stroke Care
 - Acute Injury/Trauma Care
- * **Code Descriptors**
 - Value sets associated with the data element. Not all data elements have predefined value sets.
 - Codes for each value is provided in **Bold**.
 - Codes are typically sequential and some ordering is provided in an effort to present information based on workflow.
 - Several values and codes reference external standards such as ICD-10, RXNORM, etc. NEMSIS development documentation will assist in providing a recommended list of EMS specific values and codes from these larger standards.
- * **Data Element Editorial Comments**
 - Comments are provided to describe additions, changes, clarifications, or provide additional insight into the data element.
- * **Version 3 Changes Implemented**
 - Comments providing insight into specific Version 3 changes such as new or revised data elements.

NEMSIS Version 3 can be summarized as follows:

NEMSIS NHTSA Uniform PreHospital Dataset	Version 2.2.1	Version 3.0
Demographic Data Elements	110	133 (25%)
Existing (Version 2)	86 (78%)	86 (65%)
New		47 (35%)
Retired	23 (22%)	
EMS Data Elements	318	405 (75%)
Existing (Version 2)	257 (81%)	257 (63%)
New		148 (37%)
Retired	57 (19%)	
Overall Total	428	538
Existing (Version 2)	348 (81%)	343 (64%)
New		195 (36%)
Retired	80 (19%)	

NEMSIS Version 3 includes several new types of information to better describe EMS from an industry, workforce, EMS service delivery, and patient care perspective. Examples of new Version 3.0 content include:

- * EMS Agencies can have more than one state and multiple Agency numbers
- * Multiple EMS Agency contacts can now be managed within the Demographic Section
- * State level configuration and customized data elements have been enhanced without changing the NEMSIS Version 3.0 Standard.
- * EMS Agency Location and GIS information has been enhanced
- * EMS Professional and Workforce information has been enhanced
- * EMS Response and Transport Modes have been enhanced to better define emergent, non-emergent, scheduled, and non-scheduled variation.
- * EMS Crew level information has been enhanced
- * Times have been expanded to include Air Medical and other enhanced time parameters
- * The payment/billing section has been greatly expanded to meet current electronic billing requirements
- * Scene location information has been enhanced to improve geo-coding and location analysis
- * Compliant, Diagnosis, Injury Cause, and Procedures are now based on ICD-10
- * Cardiac Arrest information has been enhanced to add focus on CPR and post arrest cooling
- * Automated Collision Notification information has been included
- * The data elements required to document and evaluate the CDC Field Triage Algorithm for trauma have been included
- * Medications are now stored using the RXNORM standard
- * Vital Sign and patient monitoring information have been enhanced
- * A new section for laboratory and diagnostic imaging results has been added
- * The exam section has been reconfigured to improve documentation and ease of use
- * Disposition information has been enhanced especially associated with Specialty Centers and time dependent illness/injury Systems of Care.
- * Much of the medical device information has been mapped into the vital sign section
- * Inclusion of electronic signatures and external electronic documents
- * Outcome information has been expanded to include additional Emergency Department and Hospital Outcome information (often obtained through linkage).
- * An airway section has been added to better document and evaluate airway management
- * Improved work related illness and injury documentation capability
- * Version 3 content has focused on objective performance measurement to better describe and evaluate EMS service delivery and patient care. State and National data elements are based on identified performance measures (additional documentation will be provided in the public comment period for State and National Data Elements)

Go to www.NEMSIS.org

Questions related to NEMSIS Version 3.0 can be addressed to Greg Mears, MD at gdm@med.unc.edu