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## Standard Guide for Establishing Operating Emergency Medical Services and Management Information Systems, or Both<sup>1</sup>

This standard is issued under the fixed designation F1629; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 The Emergency Medical Services Management Information System (EMS-MIS) serves as a framework for the management and linkage of data documenting the complete emergency episode from onset through the pre-hospital, emergency department, and hospital phases to final discharge. This document establishes a standard guideline for the planning, development, and maintenance of an EMS-MIS framework, including linkage among pre-hospital, hospital, and other public safety or government agencies. The resultant EMS-MIS should be capable of monitoring the compliance of an EMS system with its established system standards, and provide an objective basis upon which different EMS systems can be comparatively evaluated.

#### 1.2 EMS-MIS Goals:

1.2.1 To manage data regarding response to a medical emergency.

1.2.2 To provide a process for obtaining and documenting objective, reliable data.

1.2.3 To provide information that can be used to affect operational changes in an EMS system leading to the delivery of better quality emergency medical care.

1.2.4 To provide information to guide the rational investment of local, state, and national resources to improve and maintain EMS.

1.3 This guide will standardize data needed for decision making at various levels of the EMS system, and offer suggestions as to the appropriate use of this information.

1.4 This guide comments on several possible configurations for information flow and data processing, recognizing that no one configuration is best suited to all circumstances.

1.5 This guide focuses on pre-hospital medical activities, including emergency responses, scheduled transports, and all interinstitutional transfers.

1.6 This guide addresses EMS-MIS techniques applicable to the internal operations of outpatient and inpatient facilities as well as pre-hospital care providers.

1.7 This guide will not address specialized data systems and applications such as trauma registries, but will allow for interfacing with such applications.

1.8 This guide will not address computer-aided dispatch (CAD) systems, nor system status management (SSM) applications, but will allow for interfacing with such applications.

### 2. Referenced Documents

#### 2.1 ASTM Standards:<sup>2</sup>

E622 Guide for Developing Computerized Systems (Discontinued 2000) (Withdrawn 2000)<sup>3</sup>

E623 Guide for Developing Functional Requirements for Computerized Systems (Withdrawn 1994)<sup>3</sup>

E624 Guide for Developing Implementation Designs for Computerized Systems (Withdrawn 1994)<sup>3</sup>

E625 Guide for Training Users of Computerized Systems (Discontinued 2000) (Withdrawn 2000)<sup>3</sup>

E627 Guide for Documenting Computerized Systems (Discontinued 2000) (Withdrawn 2000)<sup>3</sup>

E730 Guide for Developing Functional Designs for Computerized Systems (Withdrawn 1994)<sup>3</sup>

E1113 Guide for Project Definition for Computerized Systems (Withdrawn 1994)<sup>3</sup>

E1239 Practice for Description of Reservation/Registration-Admission, Discharge, Transfer (R-ADT) Systems for Electronic Health Record (EHR) Systems

E1384 Practice for Content and Structure of the Electronic Health Record (EHR)

F1177 Terminology Relating to Emergency Medical Services

<sup>1</sup> This guide is under the jurisdiction of ASTM Committee F30 on Emergency Medical Services and is the direct responsibility of Subcommittee F30.03 on Organization/Management.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).

### 3. Terminology

3.1 Standard EMS terminology is referenced in Terminology **F1177**. Definition of individual data elements is given in **5.3** and **5.4**.

#### 3.2 Definitions of Terms Specific to This Standard:

3.2.1 *Continuing Medical Education (CME)*—refers to data that identify all continuing medical education activity completed by an EMT in the system.

3.2.2 *Data Flow Diagram (DFD)*—Diagram that partitions system business functions into a series of events that enhances analysis and clarifies the purpose, events, and functions that take place for each process.

3.2.3 *Emergency Medical Services Management Information System (EMS-MIS)*—a framework for the management and linkage of data documenting the complete emergency episode from onset through the pre-hospital, emergency department, and hospital phases to final discharge.

3.2.4 *Patient Care Record (PCR)*—refers to the data elements described in **5.3** which are to be completed by each PSO for every patient who is treated or transported, or both.

3.2.5 *Provider Service Organization (PSO)*—any public service or commercial organization that utilizes providers to deliver pre-hospital emergency medical care, and transports patients to healthcare facilities, on either an emergency or prescheduled, non-emergent basis.

3.2.6 *Public Safety Answering Point (PSAP)*—a dispatch center that receives incoming calls for help.

3.2.7 *Regional Emergency Medical Services Organization (REMSO)*—Political users of the EMS-MIS at the regional level. This could include an organizational entity such as a regional EMS council, a multi-county hospital consortium, and so forth, or a regional coordinating division within the prevailing EMS authority.

### 4. Summary of Guide

4.1 The ability to deliver high-quality, cost-effective pre-hospital care can be enhanced by analysis of information about the EMS system's structure, process, and outcomes. This guide defines a standardized terminology and recommends a conceptual design for a computerized EMS-MIS which can facilitate such analysis.

4.2 This guide is intended to serve as a blueprint for the initiation of such a system in geopolitical areas where computerized EMS-MIS is not available or is being updated and to provide a standard basis for data collection to allow for meaningful comparisons between EMS systems throughout the country. The EMS-MIS's already in operation should give serious consideration to restructuring their databases to be consistent with this guide.

4.3 **Fig. 1** defines the major organizational entities involved in day-to-day EMS operations. This diagram is based upon the assumption that these organizations represent the potential sources of all data and policies needed for the EMS-MIS. It shows types of data and reports available from the various entities, and needed by them to optimize their operation.

4.4 **Fig. 2** defines the political users of the EMS-MIS. It should be understood that such entities as LOCAL EMS-MIS, REMSO, EMS-MIS, and so forth, do not necessarily refer to distinct organizational entities, but may be coordinating divisions within the prevailing EMS authority.

4.5 The EMS-MIS defined herein recognizes a graduated process of data collection and analysis. This means that data elements collected at the provider and hospital levels may be useful only at the local levels. Emphasis has been given to the ability to capture information in an electromagnetic format as closely as possible to the time/source from which it was generated in order to enhance completeness, validity, reliability, and utilization of data. By observing the linkage parameters defined herein, it should be possible for higher levels of the pyramid to access detailed data through well-defined linkage mechanisms, when and if necessary, without resorting to costly duplication and centralization of all data elements.

4.6 The task group recommends that the data collected by the PSO be aggregated at the various levels that have responsibility for medical quality assurance, planning, and management activities. These levels include but are not limited to the emergency department, hospital(s), regional EMS, and statewide.

4.6.1 The emergency department is an important link between the pre-hospital and inpatient settings.

4.6.2 The medical direction for a PSO, on-line and frequently off-line as well, usually originates in an adjacent hospital emergency department. Analysis of pooled data at this level facilitates medical quality assurance activities and minimizes the necessity for uploading confidential and sensitive data to higher levels of the pyramid.

4.6.3 Access to hospital in-patient data may occur at the hospital or state level. More rapid feedback to medical care providers is possible when the in-patient data are accessed while the patient is hospitalized or shortly after discharge. Statewide hospital data are usually merged and available within six months after the year's end. These state data are useful for planning and for linkage to nonmedical data.

4.6.4 Laptop/palmtop and other computer technology that permits computerized data entry at the scene facilitates immediate and efficient access to the data by local EMS-MIS in addition to timely export to regional and statewide entities.

4.7 All data element definitions, formats, and data communications protocols herein will be coordinated with those of the ASTM E31.12 Subcommittee on the Computerized Patient Record, the Center for Disease Control Consensus Trauma Registry Minimum Data Set, the NHTSA uniform prehospital EMS data elements, and the Subcommittee on Ambulatory Care Statistics and the Interagency Task Forces of the National Committee on Vital and Health Statistics for the Uniform Ambulatory Care Data Set and the Uniform Hospital Discharge Data Set.

4.8 The EMS-MIS's may wish to include additional data elements in their databases for a variety of purposes. In addition to the sources listed in **4.7**, some of the data elements

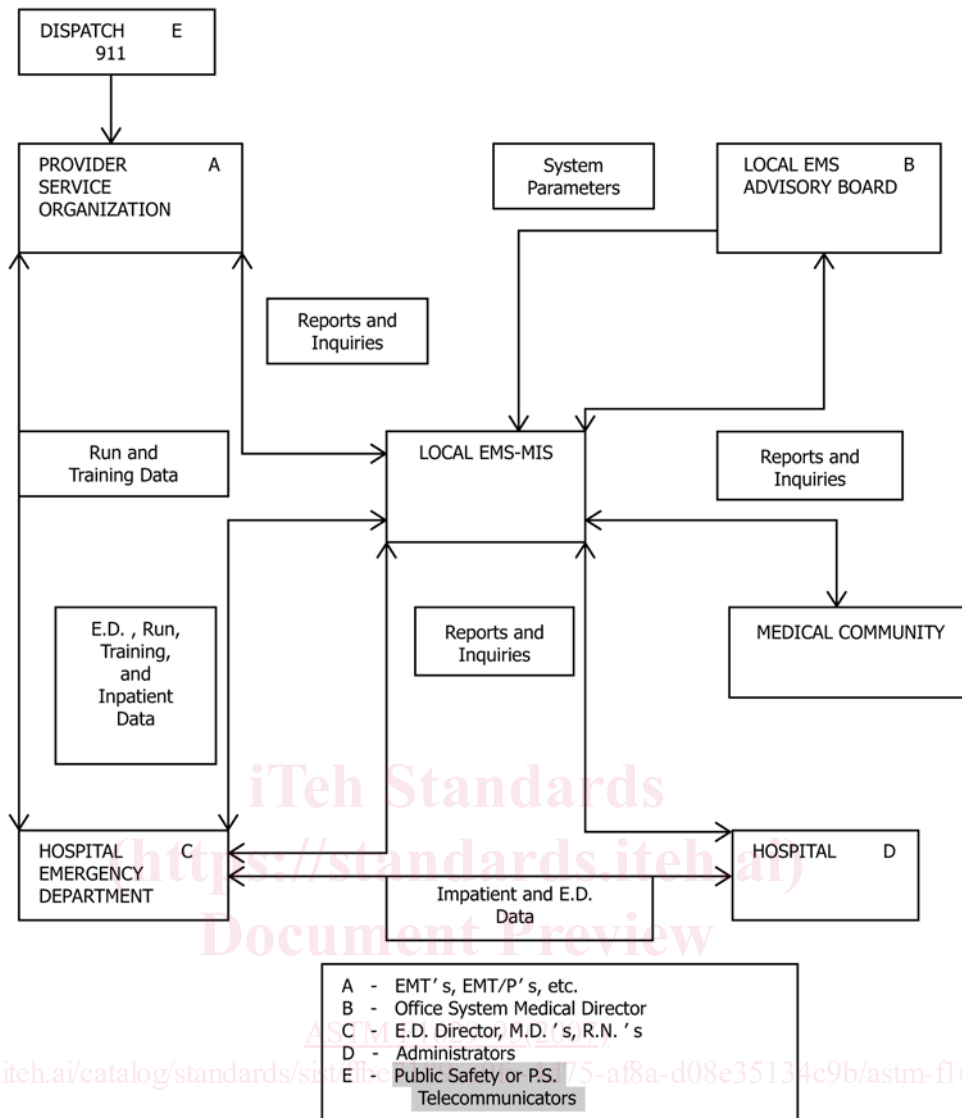


FIG. 1 EMS-MIS Context Diagram I

presented in 5.3 were chosen if they met either of the conditions listed as follows:

4.8.1 The data element is necessary for identification/documentation or recall/linkage of the event, or both.

4.8.2 The data element is needed for generation of a useful management report.

4.9 The data list was kept as small as feasible for reasons of practicality, cost, and a better chance of successful implementation of the system as a whole. It reflects the consensus of the Task Group and the 1994 national consensus conference sponsored by the National Highway Traffic Safety Administration. Additions to the standard data set herein will be made by the following procedure: Any person who proposes a data element for inclusion in the data set should submit the following information, in writing, to the F30.03.03 Task Group.

4.9.1 An explicit definition of the element.

4.9.2 The organization in the Level I Context Diagram (Fig. 1) responsible for recording the data element.

4.9.3 The logical database file the element should reside in. (See 5.8.6.7 for the list of database files.)

4.9.4 The organizations that should have possession of the element routinely and optionally.

4.9.5 Those who should have access to the element.

4.9.6 The purpose of the data element and its various uses.

4.10 After review of the information in 4.9.1 to 4.9.6, the task group will vote to include/exclude the element, and so advise Subcommittee F30.03.

4.11 Certain key identifiers must exist in a planned, coordinated manner in order for an EMS-MIS to function efficiently and without ambiguity. There should be a system in each state that allows for the assignment of unique identification or registration numbers to each of the following:

4.11.1 Individual providers.

4.11.2 Provider service organizations (PSO).

4.11.3 Individual vehicles owned or operated by PSO's, or both.

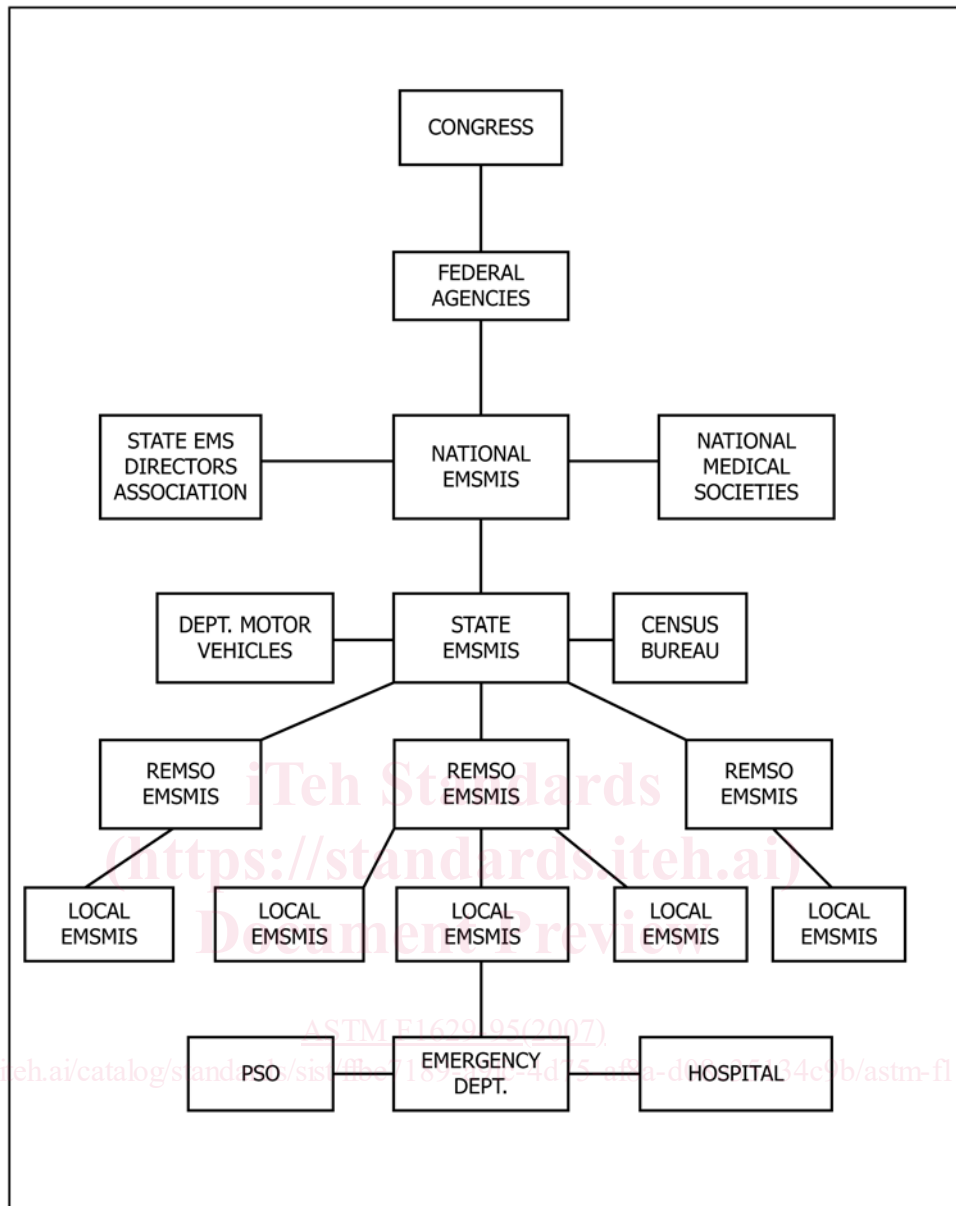


FIG. 2 EMS-MIS Context Diagram II

4.11.4 First responder organizations.

4.11.5 Physicians.

4.11.6 Nurses.

4.11.7 Hospitals.

4.11.8 Non-hospital in-patient institutions (nursing homes, rehabilitation facilities, and so forth).

4.11.9 A statewide, standard, patient care record. The record may be computerized, or paper, or both. Regardless of the form, the record should be prenumbered or assigned a unique identifier on a real-time basis.

## 5. Significance and Use

5.1 Data recorded during the patient’s pre-hospital phase of care should become a part of the patient’s formal emergency department or inpatient medical record, or both. The data elements listed herein are not meant to limit or define the entire

scope of information to be elicited during a given patient encounter. These data elements should, however, be documented and subsequently computerized for generation of management reports.

5.2 *Identification of Sources of Data*—Data for the EMS-MIS should be collected from the source organizations listed and shown in Fig. 1 and Fig. 2. The responsibility for collecting the data should rest with the organization as detailed. Responsibility for computerizing the data depend upon the specifics of the individual EMS-MIS design (see 5.8).

5.2.1 *Provider Organization Patient Care Records (PCR), (Run Reports):*

5.2.1.1 Each provider organization should document every time a vehicle is dispatched regardless of the outcome of the call.



5.2.1.2 Separate PCR's must be completed by each PSO for every patient who is treated or transported, or both. Each patient must be identified by a record number that is unique statewide.

5.2.1.3 Patient care records should be computerized at the local level whenever feasible to promote efficient data access.

5.2.1.4 PCR's should include the applicable data elements as defined in 5.3.2.

5.2.1.5 A process for obtaining the data elements collected by the dispatcher should be established and followed by the provider.

5.2.1.6 The provider should maintain personnel records including the data elements listed in 5.3 and 5.4.

5.2.2 *Hospital Emergency Department Record:*

5.2.2.1 The hospital emergency department should document medical direction. The documentation should include all instances of radio or telephone contact with providers.

5.2.2.2 The hospital emergency department should generate a unique record for each emergency patient visit.

5.2.2.3 Emergency department data should be computerized and also merged at the regional or state level.

5.2.2.4 Data elements listed in 5.4.2 that are usually contained in the emergency department record are important for EMS-MIS evaluation.

5.2.3 *Hospital Discharge Record:*

5.2.3.1 A hospital discharge abstract should be completed for every emergency patient discharged from an inpatient facility.

5.2.3.2 Data elements listed in 5.4.3 that are usually contained in the hospital discharge abstract are important for EMS-MIS evaluation.

5.2.3.3 Hospital discharge data should be computerized and merged statewide.

5.2.3.4 Computerized hospital discharge data should be linked to pre-hospital EMS data in order to document all patients transported by EMS who were admitted and discharged from a hospital.

5.3 *Provider:*

5.3.1 The following data elements should be recorded about the patient by the provider and maintained in its respective "EMS RUN" database file (5.8.6.7(I)). The following data elements are defined according to the NHTSA definitions for essential and desirable pre-hospital EMS data elements. Essential elements are marked with an asterisk and desirable elements are unmarked. Data elements marked with a bullet represent elements not included among the NHTSA elements but recommended during the ASTM consensus process.

5.3.2 All dates are coded numerically as YYYYMMDD. Time is coded numerically as HHMM. Multiple entries should be possible particularly for patient assessment criteria.

5.3.2.1 *Onset Date*—Date of onset of symptoms or injury date.

5.3.2.2 *Onset Time*—Time of onset of symptoms or injury time.

5.3.2.3 *\*Date Incident Reported*—Date the call is first received by a public safety answering point (PSAP) or other designated entity.

5.3.2.4 *\*Time Incident Reported*—Time the call is first received by a public safety answering point (PSAP) or other designated entity.

5.3.2.5 *\*Public Safety Incident Number*—The incident number assigned by the PSAP when the call for help is received.

5.3.2.6 *\*Time EMS Dispatch Notified*—Time of first connection with EMS dispatch.

5.3.2.7 *\*Incident Number*—Unique number for each incident reported to EMS dispatch. This number is assigned by EMS. If there is a CAD system, this would be the CAD system incident number.

5.3.2.8 *\*Patient name*—The current name of the patient receiving emergency medical care services for whom the record is being created and about whom data are being collected. The name should be defined to include last name, first name, middle name, initial.

5.3.2.9 *Age*—The patients age:

- {3 digits for age in years}
- 888 Not applicable
- 999 Unknown
- 000 For patients up to 1 year of age

5.3.2.10 *\*Date of birth*—Patient's date of birth.

5.3.2.11 *\*Gender*—The gender of the patient:

- M Male
- F Female
- U Unknown

5.3.2.12 *\*Race/Ethnicity*—Patient's ethnic origin including:

- 1 White non-Hispanic
- 2 White Hispanic
- 3 Black non-Hispanic
- 4 Black Hispanic
- 5 American Indian/Alaskan Native
- 6 Asian or Pacific Islander
- 7 Other
- 8 Not applicable
- 9 Unknown

5.3.2.13 *Social Security Number*—Patient social security number:

- {9 digit SSN}
- 888888888 Not applicable
- 999999999 Unknown

5.3.2.14 *Patient Street Address*—Patient's address of actual residence.

5.3.2.15 *\*City of Residence*—Patient's city or township of actual residence (if applicable):

- {5 digit FIPS code}
- 88888 Not applicable
- 99999 Unknown

5.3.2.16 *County of Residence*—Patient's county actual residence (if applicable):

- {3 digit FIPS code}
- 888 Not applicable
- 999 Unknown

5.3.2.17 *State of Residence*—State, territory, or province, or District of Columbia, where patient resides:

- {2 digit FIPS code}
- 88 Not applicable
- 99 Unknown

5.3.2.18 *\*Zip Code of Residence*—Zip code of patient's residence:

{5 digit Zip Code}  
88888 Not applicable  
99999 Unknown

5.3.2.19 *Telephone Number*—Patient’s primary telephone number:

{10 digit telephone number}  
888888888 Not applicable  
999999999 Unknown

5.3.2.20 *\*Agency/Unit Number*—Number that identifies the agency and unit responding to an incident (state specific).

5.3.2.21 *\*Patient Care Record Number*—Unique number for each patient care record (PCR) (state specific).

5.3.2.22 *\*Response Number*—Unique number for each individual response by a response team/vehicle to an incident (team/agency specific).

5.3.2.23 *\*Service Type*—Type of service requested:

- 1 Scene
- 2 Unscheduled interfacility transfer
- 3 Scheduled interfacility transfer
- 4 Standby
- 5 Rendezvous
- 8 Not applicable
- 9 Unknown

5.3.2.24 *\*Vehicle Type*—Type of vehicle that responded to the incident:

- 1 Ground (transport, non-transport)
- 2 Rotor craft
- 3 Fixed wing
- 4 Other
- 5 None

5.3.2.25 *\*Mileage at Outset*—The mileage at the time the vehicle is dispatched on a run.

5.3.2.26 *\*Mileage at Scene*—The mileage on the vehicle when it arrives at the scene.

5.3.2.27 *\*Mileage at Destination*—The mileage on the vehicle when the patient is transferred to the receiving health care facility.

5.3.2.28 *\*Mileage at Return*—The mileage when the vehicle returns to its point of outset.

5.3.2.29 *\*Crew Member One Number*—Personnel certification/license number for crew member who is designated as responsible for the care of the patient. This person will be the signer of the patient care record. The personnel certification/license number should be a unique identifier statewide.

5.3.2.30 *\*Crew Member One Type*—Type of personnel certification/license for first crew member:

- 1 First responder
- 2 EMT basic
- 3 EMT intermediate
- 4 EMT paramedic
- 5 Nurse
- 6 Physician
- 7 Other health care professional
- 8 None of the above
- 9 Unknown

5.3.2.31 *\*Crew Member Two Number*—Personnel certification/license number for second crew member. This should be a unique identifier statewide.

5.3.2.32 *\*Crew Member Two Type*—Type of personnel certification/license for second crew member.

- 1 First responder
- 2 EMT basic
- 3 EMT intermediate
- 4 EMT paramedic
- 5 Nurse
- 6 Physician
- 7 Other health care professional
- 8 None of the above
- 9 Unknown

5.3.2.33 *Crew Member Three Number*—Personnel certification/license number for third crew member. This should be a unique identifier statewide.

5.3.2.34 *Crew Member Three Type*—Type of personnel certification/license for second crew member.

- 1 First responder
- 2 EMT basic
- 3 EMT intermediate
- 4 EMT paramedic
- 5 Nurse
- 6 Physician
- 7 Other health care professional
- 8 None of the above
- 9 Unknown

5.3.2.35 *\*Highest Available Level of Care*—This should be determined by the ability to deliver care at the time of the patient encounter whether limited by certification status of the most senior individual or the type of equipment being carried at the time.

- 1 EMT—paramedic
- 2 EMT—advanced/intermediate
- 3 EMT—basic
- 4 EMT—other

5.3.2.36 *\*Initiation of Service Request*:

- 1 Emergency, 911
- 2 Emergency, non-911
- 3 Scheduled transport
- 4 On-scene request (for example, squad happens to witness accident)
- 5 Other

5.3.2.37 *Date Unit Notified*—Date response unit is notified by EMS dispatch.

5.3.2.38 *\*Time Unit Notified*—Time response unit is notified by EMS dispatch.

5.3.2.39 *\*Location/Status of Responding Unit*—Coded value to indicate the location/status (primary post, secondary post, enroute back, etc.) of the responding unit when notified by EMS dispatch. This element should be defined according to local dispatch configurations.

5.3.2.40 *\*Lights and Sirens to Scene*—The use of lights and sirens enroute to scene:

- 1 Non-emergent, no lights or sirens
- 2 Initial emergent, downgraded to no lights or sirens
- 3 Initial non-emergent, upgraded to lights or sirens
- 4 Emergent, with lights or sirens
- 8 Not applicable

5.3.2.41 *\*Time Unit Responding*—Time that the response unit begins physical motion.

5.3.2.42 *\*Time of Arrival at Scene*—Time EMS unit stops physical motion at scene (last place that the unit or vehicle stops prior to assessing the patient).

5.3.2.43 *Time of Arrival at Patient*—Time response personnel establish direct contact with patient.

5.3.2.44 *\*Time Unit Left Scene*—Time when the response unit began physical motion from scene.

5.3.2.45 *\*Time of Arrival at Destination*—Time when the patient arrives at destination or transfer point.

5.3.2.46 *\*Time Back in Service*—Time response unit back in service and available for response.

5.3.2.47 *\*Location Type/Scene Description*—Type of location of incident including:

- 849.0 Home/residence
- 849.1 Farm
- 849.2 Mine/quarry
- 849.3 Industrial place and premises
- 849.4 Place for recreation or sport
- 849.5 Street or highway
- 849.6 Public building
- 849.7 Residential institution
- 849.E Educational institution
- 849.8 Other specified location
- 849.9 Unspecified location
- 849.10 Unknown

5.3.2.48 *\*Incident Address*—Address (or best approximation) where patient was found, or, if no patient, address to which unit responded. Use route numbers and mileposts, or other landmarks, which can be coded in a consistent manner if a street address is not applicable. In maritime areas and in rural and wilderness areas, consideration should be given to use of geographic information system (GIS) coordinates or geographic positioning system (GPS) coordinates corresponding to the location of the incident site.

5.3.2.49 *\*Incident City*—City or township (if applicable) where patient was found, or to which unit responded (or best approximation):

- {5 digit FIPS code}
- 88888 Not applicable
- 99999 Unknown

5.3.2.50 *\*Incident County*—County or parish (if applicable) where patient was found, or to which unit responded (or best approximation):

- {3 digit FIPS code}
- 888 Not applicable
- 999 Unknown

5.3.2.51 *\*Incident State*—State, territory, or province, or District of Columbia, where patient was found or to which unit responded:

- {2 digit FIPS code}
- 88 Not applicable
- 99 Unknown

5.3.2.52 *Factors Affecting EMS Delivery of Care*—Special circumstances affecting the EMS response or delivery of care:

- 01 Adverse weather
- 02 Adverse road conditions
- 03 Vehicle problems
- 04 Unsafe scene
- 05 Language barrier
- 06 Prolonged extrication (>20 min)
- 07 Hazardous material
- 08 Crowd control
- 09 Other
- 88 Not applicable

5.3.2.53 *\*Complaint at Dispatch*—Patient's chief complaint as reported at the time of dispatch.

5.3.2.54 *\*Cause of Injury*—External cause of injury (E code):

- 81x.x Motor vehicle traffic crash

- 814.x Pedestrian traffic accident
- 82x.x Motor vehicle non-traffic crash
- 826.x Bicycle accident
- 83x.x Water transport accident
- 84x.x Aircraft related accident
- 85x.x Accidental drug poisoning
- 86x.x Accidental chemical poisoning
- 88x.x Accidental falls
- 890.x Fire and flames
- 890.2 Smoke inhalation
- 900.x Excessive heat
- 901.x Excessive cold
- 905.x Venomous stings (plants, animals)
- 906.x Animal Bites
- 907.x Lightning
- 907.x Lightning
- 910.x Drowning
- 913.x Mechanical suffocation
- 919.x Machinery accidents
- 925.x Electrocution (non-lightning)
- 925.x Electrocution (non-lightning)
- 926.x Radiation exposure
- 955.x Firearm self-inflicted (intentional)
- 960.1 Rape/sexual assault
- 965.x Firearm assault
- 966.x Stabbing assault
- 967.x Child assault/abuse

*Other assault:*

- 985.x Firearm injury (accidental)
- 000.8 Not applicable
- 000.9 Unknown
- Other (Record as narrative)

5.3.2.55 *\*Safety Equipment*—Safety equipment in use by the patient at time of the injury.

- 00 None
- 01 Shoulder belt only used
- 02 Lap belt only used
- 03 Shoulder and lap belt device
- 04 Child safety seat
- 05 Helmet used
- 06 Airbag, not deployed
- 07 Airbag deployed, no belt used
- 08 Airbag deployed, shoulder belt used
- 09 Airbag deployed, lap belt used
- 10 Airbag deployed, lap and shoulder used
- 11 Airbag deployed, child safety seat used
- 12 Eye protection used
- 13 Protective clothing used
- 14 Personal flotation device used
- 15 Protective clothing/gear used
- 88 Not applicable
- 99 Unknown

5.3.2.56 *\*Suspected Alcohol/Drug Use*—Suspected alcohol or drug use by patient:

- 1 Alcohol, yes
- 2 Drugs, yes
- 3 Alcohol/Drugs, yes
- 8 Not applicable
- 9 Unknown

5.3.2.57 *Injury Intent*—Intent of individual inflicting injury:

- 1 Intentional, self
- 2 Intentional, other
- 3 Unintentional
- 8 Not applicable
- 9 Unknown

5.3.2.58 *\*First Responder Organization Identification Number*—This should be a unique alphanumeric sequence assigned by the state which identifies each first responder organization in the state, and should be listed on the provider run PCR if a trained first responder was present at the scene.

5.3.2.59 •*Bystander Assistance*—This should indicate which type of first aid was administered by a non-first responder at the scene and be coded as:

- 1 Extrication
- 2 Airway assistance/Heimlich maneuver
- 3 Bleeding control
- 4 CPR
- 5 Multiple
- 6 Automatic external defibrillator
- 7 Other

5.3.2.60 *Chief Complaint*—Statement of problem by patient or other person to provider.

5.3.2.61 *Provider Impression*—Provider’s clinical impression that led to the management given to the patient (treatments, medications, procedures):

- 789.00 Abdominal pain/problems
- 519.80 Airway obstruction
- 995.30 Allergic reaction
- 780.09 Altered level of consciousness
- 312.90 Behavioral
- 427.50 Cardiac arrest
- 427.90 Cardiac rhythm disturbance
- 786.50 Chest pain/discomfort
- 250.90 Diabetic symptoms (hypoglycemia)
- 994.80 Electrocutation
- 780.60 Hyperthermia
- 785.59 Hypovolemia/shock
- 987.90 Inhalation injury (toxic gas)
- 798.99 Obvious death
- 977.90 Poisoning, drug ingestion
- 659.90 Pregnancy/OB delivery
- 799.10 Respiratory arrest
- 786.09 Respiratory distress
- 780.30 Seizure
- 959.90 Sexual assault/rape
- 987.90 Smoke inhalation
- 989.50 Stings/venomous bites
- 991.60 Hypothermia
- 436.00 Stroke/CVA
- 780.20 Syncope/fainting
- 959.90 Traumatic injury
- 623.80 Vaginal hemorrhage
- 623.80 Vaginal hemorrhage
- 000.77 Other
- 000.88 Not applicable
- 000.99 Unknown

5.3.2.62 •*Initial Assessment Acuity*—Coded value to indicate the initial assessment of patient acuity by provider at the scene before care is rendered. This data element should be defined according to local standards to facilitate quality assurance and managed care activities. The definition should be consistent with the definition for 5.3.2.99.

5.3.2.63 *Preexisting Condition Source of Data*—Source of information about the patient’s preexisting condition recorded in 5.3.2.64:

- 01 Patient
- 02 Relative/Friend
- 03 Central monitoring agency (for example, private security organization storing health records)
- 04 Physician/patient provider
- 05 Other

5.3.2.64 •*Preexisting Condition*, Preexisting medical conditions known to the provider:

- 493.90 Asthma
- 239.90 Cancer
- 585.00 Chronic renal failure
- 518.81 Chronic respiratory failure
- 250.00 Diabetes
- 492.80 Emphysema

- 401.90 Hypertension
- 312.90 Psychiatric problems
- 780.30 Seizure convulsions
- V44.00 Tracheostomy
- 011.90 Tuberculosis

5.3.2.65 •*Signs and Symptoms Present*—Signs and symptoms reported to or observed by provider:

- 789.00 Abdominal pain
- 724.50 Back pain
- 578.10 Bloody stools
- 786.09 Breathing difficulty
- 427.50 Cardiorespiratory arrest
- 786.50 Chest pain
- 933.10 Choking
- 558.90 Diarrhea
- 780.40 Dizziness
- 388.70 Ear pain
- 379.91 Eye pain
- 780.60 Fever/hyperthermia
- 784.00 Headache
- 401.90 Hypertension
- 787.00 Nausea
- 344.90 Paralysis
- 785.10 Palpitations
- 659.90 Pregnancy/childbirth/miscarriage
- 780.30 Seizures/convulsions
- 780.20 Syncope
- 780.09 Unresponsive/unconscious
- Uncontrolled bleeding
- 623.80 Vaginal bleeding
- 787.00 Vomiting
- 780.70 Weakness (malaise)
- 991.60 Hypothermia

5.3.2.66 •*Systolic Blood Pressure*—Patient’s systolic blood pressure:

- {Systolic BP}
- 888 Not obtained
- 999 Unknown

5.3.2.67 *Diastolic Blood Pressure*—Patient’s diastolic blood pressure:

- {Diastolic BP}
- 888 Not obtained
- 999 Unknown

5.3.2.68 •*Pulse Rate*—Patient’s palpated or auscultated pulse rate expressed in number per minute:

- {Pulse rate}
- 888 Not obtained
- 999 Unknown

5.3.2.69 •*Respiratory Rate*—Unassisted patient respiratory rate expressed as number per minute:

- {Respiratory rate}
- 888 Not obtained
- 999 Unknown

5.3.2.70 *Respiratory Effort*—Patient’s respiratory effort (this field is essential for children 18 years or less):

- 0 Normal
- 1 Increased, not labored
- 2 Increased and labored or decreased and fatigued
- 3 Absent
- 9 Not assessed

5.3.2.71 *Skin Perfusion*—Patient skin perfusion, expressed as normal or decreased (this field is essential for children 18 years or less):

- 1 Normal
- 2 Decreased
- 9 Not assessed



5.3.2.72 *Treatment Authorization*—Indicates the type, if any, of treatment authorization:

- 01 Protocol (standing orders)
- 02 On-line (radio telephone)
- 03 On-scene
- 04 Written orders (patient specific)
- 88 Not applicable
- 99 Unknown

5.3.2.73 •*Initiation of ALS*—Coded as:

- Before contact with medical direction
- After contact with medical direction
- No ALS initiated

5.3.2.74 •*On Line Medical Direction Facility Number*—This should be the unique identification number of the radio resource facility, regardless of whether or not the radio resource/medical control facility ultimately received the patient.

5.3.2.75 •*Time on-line Medical Direction Established*—Best estimate of time medical director contacted or protocol implemented.

5.3.2.76 *Time of First CPR*—Best estimate of time of first CPR.

5.3.2.77 *Provider of First CPR*—Person who performed first CPR on patient:

- 1 Bystander
- 2 EMS responder
- 3 Not applicable
- 9 Unknown

5.3.2.78 *Time CPR Discontinued*—Time at which medical control or responding EMS unit terminated resuscitation efforts (chest compressions and CPR) in the field.

5.3.2.79 •*Time of Witnessed Cardiac Arrest*—Time of witnessed cardiac arrest.

5.3.2.80 *Witness of Cardiac Arrest*—Person who witnessed the cardiac arrest:

- 1 Bystander
- 2 EMS responder
- 3 Not applicable
- 9 Unknown

5.3.2.81 *Time of First Defibrillatory Shock*—Time of first defibrillatory shock.

5.3.2.82 *Return of Spontaneous Circulation*—Whether a palpable pulse or blood pressure was restored following cardiac arrest and resuscitation in the field:

- 1 Yes
- 2 No
- 8 Not applicable

5.3.2.83 *Initial Cardiac Rhythm*—Initial monitored cardiac rhythm as interpreted by EMS personnel:

- 01 Sinus rhythm
- 02 Other rhythm from 60–100 (not otherwise listed)
- 03 Paced rhythm
- 04 Bradycardia
- 05 Extrasystole
- 06 Narrow complex tachycardia
- 07 Wide complex tachycardia
- 08 Ventricular fibrillation
- 09 Asystole
- 10 Pulseless electrical activity
- 88 Not applicable
- 99 Unknown

5.3.2.84 *Rhythm at Destination*—Monitored cardiac rhythm upon arrival at destination:

- 01 Sinus rhythm
- 02 Other rhythm from 60–100 (not otherwise listed)
- 03 Paced rhythm
- 04 Bradycardia
- 05 Extrasystole
- 06 Narrow complex tachycardia
- 08 Ventricular fibrillation
- 07 Wide complex tachycardia
- 09 Asystole
- 10 Pulseless electrical activity
- 88 Not applicable
- 99 Unknown

5.3.2.85 •*Glasgow Coma Score, Eye*—A one-digit number denoting the eye component of the patient’s Glasgow coma score at the time of the provider’s arrival on scene.

- 1 None
- 2 Opens eyes in response to painful stimulation
- 3 Opens eyes in response to verbal stimulation
- 4 Opens eyes spontaneously
- 9 Unknown

5.3.2.86 •*Glasgow Coma Score, Verbal*—A one-digit number denoting the verbal component of the patient’s Glasgow coma score at the time of the provider’s arrival on scene:

For patients >5 years:

- 1 None
- 2 Nonspecific sounds
- 3 Inappropriate words
- 4 Confused conversation or speech
- 5 Oriented and appropriate speech
- 9 Unknown

For patients 2–5 years:

- 1 None
- 2 Moans, whimpers, unintelligible sounds
- 3 Inappropriate words
- 4 Confused conversation or speech
- 5 Appropriate words or speech
- 9 Not assessed

For patients 0–23 months:

- 1 None
- 2 Moans, whimpers
- 3 Irritable cry words
- 4 Cries but inconsolable
- 5 Cries appropriately to stimulus, smiles, coos, fixes, and follows
- 9 Not assessed

5.3.2.87 •*Glasgow Coma Score, Motor*—A one-digit number denoting the motor component of the patient’s Glasgow coma score at the time of the provider’s arrival on scene.

For patients >5 years:

- 1 None
- 2 Extensor posturing in response to painful stimulation
- 3 Flexor posturing in response to painful stimulation
- 4 General withdrawal in response to painful stimulation
- 5 Localization of painful stimulation
- 6 Obeys commands with appropriate motor response
- 9 Unknown

For patients up to 5 years:

- 1 None
- 2 Extensor posturing in response to painful stimulation
- 3 Flexor posturing in response to painful stimulation
- 4 General withdrawal in response to painful stimulation
- 5 Localization of painful stimulation
- 6 Spontaneous or purposeful movement
- 9 Not assessed

5.3.2.88 *Glasgow Coma Score Total*—A two-digit number denoting the patient’s first GCS to be automatically calculated at the time of computerization.

5.3.2.89 *Revised Trauma Score*—Patient's revised trauma score.

*Respiratory Rate Component:*

- 4 10–29 min
- 3 >29 min
- 2 6–9 min
- 1 1–5 min
- 0 None spontaneous

*Systolic Blood Pressure Component:*

- 4 >89 mm Hg
- 3 76–89 mm Hg
- 2 50–75 mm Hg
- 1 1–49 mm Hg
- 0 No pulse

*Neurologic Component:*

- 4 Glasgow coma score 13–15
- 3 Glasgow coma score 9–12
- 2 Glasgow coma score 6–8
- 1 Glasgow coma score 4–5
- 0 Glasgow coma score 3

5.3.2.90 *Other Severity Measures Implemented at the Scene*—Coded value to indicate severity determined from other measures, such as blood sugar, etc. This data element should be defined locally to support quality improvement activities.

5.3.2.91 *Injury Description*—Clinical description of injury type and body site to be organized as a matrix for data collection:

*Body Sites:*

- A External (including burns)
- B Head only (excluding neck, cervical, spine, and ear)
- C Face (including ear)
- D Neck
- E Thorax (excluding thoracic spine)
- F Abdomen (excluding lumbar spine)
- G Spine
- H Upper extremities
- I Lower extremities or bony pelvis
- J Body region unspecified

*Injury types:*

- 01 Amputation
- 02 Blunt injury
- 03 Burn
- 04 Crush
- 05 Dislocation/fracture
- 06 Gunshot
- 07 Laceration
- 08 Pain without swelling/bruising
- 09 Puncture/stab
- 10 Soft tissue swelling/bruising

5.3.2.92 *Medication Name*—Medication name, time, and identification of provider giving the medication. The medications include but are not limited to:

- 1.1 Diphenhydramine
- 2.1 Atropine
- 3.1 Albuterol
- 3.2 Terbutaline
- 3.3 Dopamine
- 3.4 Epinephrine
- 3.5 Isoproterenol
- 3.6 Metaproterenol
- 4.1 Succinylcholine
- 5.1 Heparin
- 6.1 Adenosine
- 6.2 Bretylium tosylate

- 6.3 Lidocaine
- 6.4 Procainamide
- 6.5 Verapamil
- 6.6 Nifedipine
- 7.1 Amyl nitrate
- 7.2 Nitroglycerin
- 8.1 Aspirin
- 9.1 Meperidine
- 9.2 Morphine
- 10.1 Naloxone
- 11.1 Acetaminophen
- 12.1 Diazepam
- 13.1 Magnesium sulfate
- 14.1 Lorazepam
- 15.1 Sodium bicarbonate
- 16.1 Calcium chloride
- 16.2 Calcium gluconate
- 17.1 Dextrose and water (50 %)
- 18.1 Furosemide
- 18.2 Mannitol
- 18.3 Bumetanide
- 19.1 Charcoal, activated
- 20.1 Ipecac
- 21.1 Metoclopramide
- 22.1 Dexamethasone
- 22.2 Methylprednisolone
- 23.1 Glucagon
- 24.1 Thiamine

5.3.2.93 *Procedure or Treatment Name*—Procedure or treatment name, time, and identification of provider giving the medication. The procedures include but are not limited to:

- 96.70 Assisted ventilation (positive pressure)
- 93.59 Backboard
- 39.98 Bleeding controlled
- 93.57 Burn care
- 99.60 Cardiopulmonary resuscitation
- 93.52 Cervical immobilization
- 31.10 Cricothyrotomy
- 89.51 ECG monitoring
- 96.04 Endotracheal intubation
- 99.63 External cardiac massage
- 99.62 External defibrillation (includes auto)
- 38.93 Intravenous catheter
- 41.92 Intraosseous catheter
- 99.29 Intravenous fluids
- 93.58 MAST (military antishock trousers)
- 96.01 Nasopharyngeal airway insertion
- 96.05 Nasogastric tube insertion
- 73.59 Obstetrical care (delivery)
- 96.02 Oropharyngeal airway insertion
- 93.96 Oxygen by mask
- 93.96 Oxygen by cannula
- 93.54 Splint of extremity
- 93.54 Traction splint

5.3.2.94 *Procedure Attempts*—Total number of attempts for each procedure attempted, regardless of success.

5.3.2.95 *Destination Determination*—Reason a transport destination was selected:

- 01 Closest facility (none below)
- 02 Patient/family choice
- 03 Patient physician choice
- 04 Managed care
- 05 Law enforcement choice
- 06 Protocol
- 07 Specialty resource center
- 08 On-line medical direction
- 09 Diversion
- 10 Other
- 88 Not applicable