

# National Trauma Data Standard

# DATA DICTIONARY

## Version 1.2.2



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## Introduction

Traumatic injury, both accidental and intentional, is the leading cause of death in the first four decades of life, according to the National Center for Health Statistics.<sup>1</sup> Trauma typically involves young adults and results in the loss of more productive work years than both cancer and heart disease combined.<sup>2</sup> Each year, more than 140,000 Americans die and approximately 80,000 are permanently disabled as a result of injury.<sup>3</sup> The loss of productivity and health care costs account for 100 billion dollars annually.<sup>4</sup>

Research provides evidence of the effectiveness of trauma and EMS systems in reducing mortality, morbidity, and lost productivity from traumatic injuries. Almost three decades of research consistently suggests that in-hospital (and post-discharge) mortality rates are reduced by 20 to 25% among severely injured patients treated in trauma centers organized into a regional or statewide trauma system.<sup>5-9</sup> Nevertheless, much of the work investigating the effectiveness of trauma system (center) development has been hampered by the lack of consistent, quality data to demonstrate differences in mortality over time or between hospitals, regions, or states.

Hospital-based trauma registries are the basis for much of the research and quality assessment work that has informed clinicians and policy makers about methods to optimize the care of injured patients. Yet, the actual data points contained in independent hospital registries are often so different in content and structure that comparison across registries is nearly impossible.<sup>10</sup> Database construction for trauma registries is often completed in isolation with no nationally recognized standard data dictionary to ensure consistency across registries. Efforts to standardize hospital registry content have been published<sup>11,12</sup>, yet studies continue to document serious variation and misclassification between hospital-based registries.<sup>13,14</sup>

Recently, federal agencies have made investments to fortify the establishment of a national trauma registry.<sup>15,16</sup> Much of this funding has focused on the National Trauma Data Standard™ (NTDS), which represents a concerted and sustained effort by the American College of Surgeons Committee on Trauma (ACSCOT) to provide an extensive collection of trauma registry data provided primarily by accredited/designated trauma centers across the U.S.<sup>17</sup> Members of ACSCOT and staff associated with the NTDB have long recognized that the NTDB inherits the individual deficiencies of each contributing registry.<sup>18</sup>

During 2004 through 2006, the ACSCOT Subcommittee on Trauma Registry Programs was supported by the U.S. Health Resources and Services Administration (HRSA) to devise a uniform set of trauma registry variables and associated variable definitions. The ACSCOT Subcommittee also characterized a core set of trauma registry inclusion criteria that would maximize participation by all state, regional and local trauma registries. This data dictionary

represents the culmination of this work. Institutionalizing the basic standards provided in this document will greatly increase the likelihood that a national trauma registry would provide clinical information beneficial in characterizing traumatic injury and enhancing our ability to improve trauma care in the United States.

To realize this objective, it is important that this subset of uniform registry variables be incorporated into all trauma registries, regardless of trauma center accreditation/designation (or lack thereof). Local, regional or state registries are then admonished to provide a yearly download of these uniform variables to the NTDB for all patients satisfying the inclusion criteria described in this document. This subset of variables, for all registries, will represent the contents of the new National Trauma Data Bank (NTDB) in the future.

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# National Trauma Data Standard Dataset Patient Inclusion Criteria

## Definition:

To ensure consistent data collection across States into the National Trauma Data Standard, a trauma patient is defined as a patient sustaining a traumatic injury and meeting the following criteria:

**At least one** of the following injury diagnostic codes defined in the *International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)*:  
**800–959.9**

## Excluding the following isolated injuries:

905–909.9 (late effects of injury)

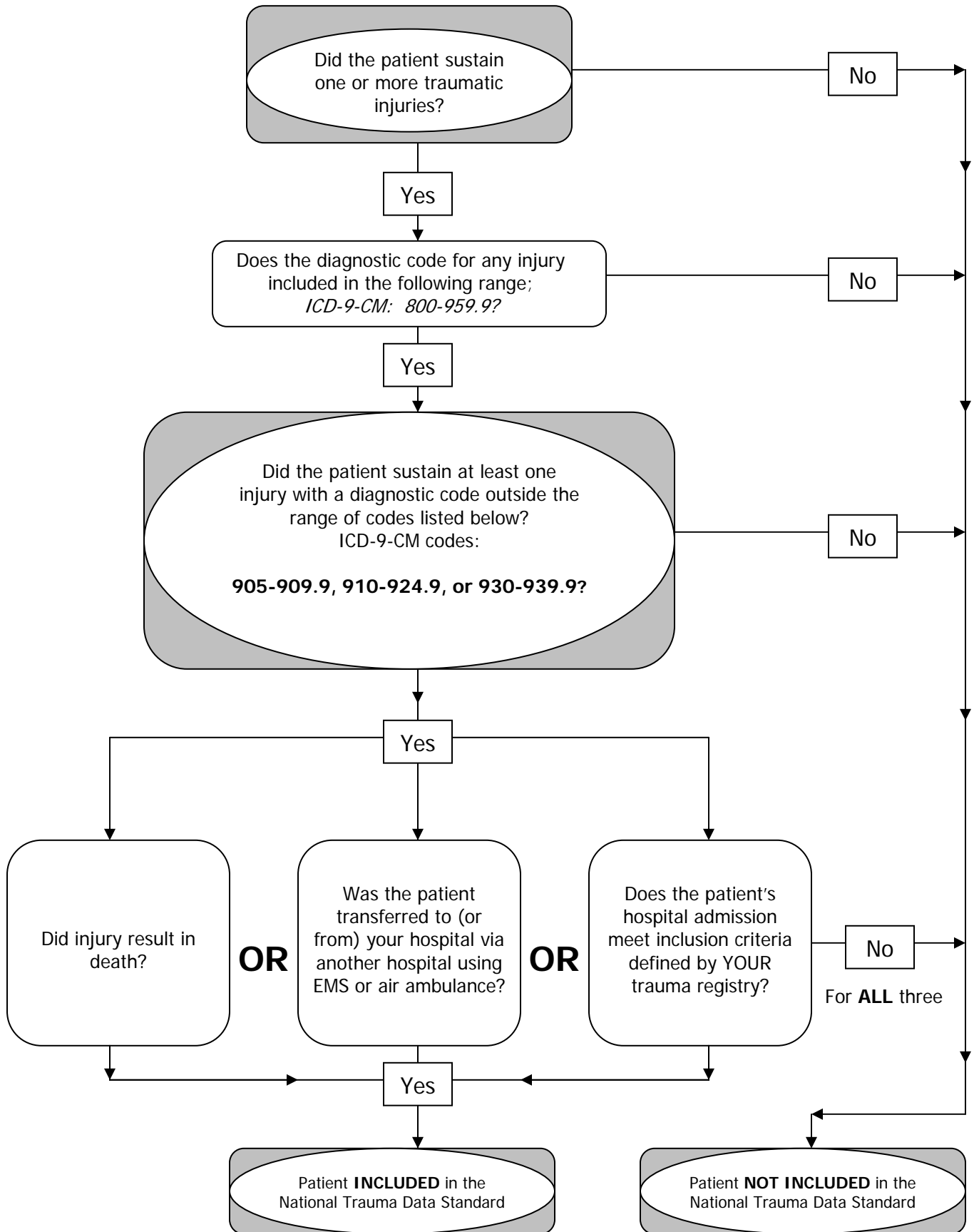
910–924.9 (superficial injuries, including blisters, contusions, abrasions, and insect bites)

930–939.9 (foreign bodies)

**AND MUST INCLUDE ONE OF THE FOLLOWING IN ADDITION TO (ICD-9-CM 800–959.9):**

- Hospital admission as defined by your trauma registry inclusion criteria; OR
- Patient transfer via EMS transport (including air ambulance) from one hospital to another hospital; OR
- Death resulting from the traumatic injury (independent of hospital admission or hospital transfer status)

# 2008 National Trauma Data Standard Inclusion Criteria



# COMMON NULL VALUES

Data Format [combo] single-choice

*National Element*



---

## Definition

These values are to be used with each of the National Trauma Data Standard Data Elements described in this document which have been defined to accept the Null Values. Please include these variables in the implementation of the ACS Version X.X Dataset.

## Field Values

1 Not Applicable

3 Not Recorded

2 Not Known

## Additional Information

- For any collection of data to be of value and reliably represent what was intended, a strong commitment must be made to ensure the correct documentation of incomplete data. When data elements associated with the National Trauma Data Standard are to be electronically stored in a database or moved from one database to another using XML, the indicated null values should be applied.
- *Not Applicable*: This null value code applies if, at the time of patient care documentation, the information requested was “Not Applicable” to the patient, the hospitalization or the patient care event. For example, variables documenting EMS care would be “Not Applicable” if a patient self- transports to the hospital.
- *Not Known*: This null value applies if, at the time of patient care documentation, information was “Not Known” to the patient, family, or health care provider. This documents that there was an attempt to obtain information but it was unknown by all parties involved at the time of documentation. For example, injury date and time may be documented in the hospital patient care report as “Unknown”.
- *Not Recorded*: This null value code applies if hospital documentation or an information system has an empty field or nothing is recorded. This null value signifies that the hospital patient care record provides a “place holder” to document the specific data element, but that no value for that element was recorded for the patient. For example, a hospital patient care record may request date of birth, but none was recorded. Not Recorded should also be coded in instances where documentation was expected but none was provided (i.e. providing an EMS run sheet for the hospital record).

## References to Other Databases

- Compare with NHTSA V.2.10 - E00

## **Demographic Information**

## PATIENT'S HOME ZIP CODE

Data Format [text]

National Element

D\_01

### Definition

The patient's home ZIP code of primary residence.

**XSD Data Type** *xs:zip*

**Multiple Entry Configuration** No

**Required in XSD** Yes

**XSD Element / Domain (Simple Type)** *HomeZip*

**Accepts Null Value** Yes, common null values

### Field Values

- Relevant value for data element

### Additional Information

- Can be stored as a 5 or 9 digit code (XXXXX-XXXX).
- May require adherence to HIPAA regulations.

### Data Source Hierarchy

1. Billing Sheet / Medical Records Coding Summary Sheet
2. ED Admission Form
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

### Uses

- Allows data to be sorted based upon the geographic location of the patient's home.
- *If zip code is "Not Applicable", complete variable: Alternate Home Residence.*
- *If zip code is "Not Recorded" or "Not Known", complete variables: Patient's Home Country; Patient's Home State; Patient's Home County and; Patient's Home City.*

### Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Common Null Values
- Patient's Home Country
- Patient's Home State
- Patient's Home County
- Patient's Home City
- Alternate Home Residence

### References to Other Databases

- NHTSA V.2.2 - E06\_08

**PATIENT'S HOME COUNTRY**

Data Format [combo] single-choice

*National Element***Definition**

The country where the patient resides.

**XSD Data Type** *xs:string***Multiple Entry Configuration** No**Required in XSD** Yes**XSD Element / Domain (Simple Type)** *HomeCountry***Accepts Null Value** Yes, common null values**Field Values**

- Relevant value for data element (two digit alpha country code)

**Additional Information**

- *Only completed when ZIP code is "Not Recorded" or "Not Known".*
- *Values are two character fields representing a country (e.g., US).*

**Data Source Hierarchy**

1. Billing Sheet / Medical Records Coding Summary Sheet
2. ED Admission Form
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

**Uses**

- Allows data to be sorted based upon the geographic location of the patient's home.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Common Null Values
- Patient's Home State
- Patient's Home County
- Patient's Home City
- Alternate Home Residence

**References to Other Databases**

- NHTSA 2.2 - E06\_09

**PATIENT'S HOME STATE**

Data Format [combo] single-choice

*National Element***Definition**

The state (territory, province, or District of Columbia) where the patient resides.

**XSD Data Type** *xs:string***XSD Element / Domain (Simple Type)** *HomeState***Multiple Entry Configuration** No**Accepts Null Value** Yes, common null values**Required in XSD** Yes**Field Values**

- Relevant value for data element (two digit numeric FIPS code)

**Additional Information**

- *Only completed when ZIP code is "Not Recorded" or "Not Known".*
- Used to calculate FIPS code.

**Data Source Hierarchy**

1. ED Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

**Uses**

- Allows data to be sorted based upon the geographic location of the patient's home.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Common Null Values
- Patient's Home Country
- Patient's Home County
- Patient's Home City
- Alternate Home Residence

**References to Other Databases**

- NHTSA 2.2 - E06\_07



## PATIENT'S HOME COUNTY

Data Format [combo] single-choice

*National Element*

D\_04

### Definition

The patient's county (or parish) of residence.

**XSD Data Type** *xs:string*

**XSD Element / Domain (Simple Type)** *HomeCounty*

**Multiple Entry Configuration** No

**Accepts Null Value** Yes, common null values

**Required in XSD** Yes

### Field Values

- Relevant value for data element (three digit FIPS code)

### Additional Information

- *Only completed when ZIP code is "Not Recorded" or "Not Known".*
- Used to calculate FIPS code.

### Data Source Hierarchy

1. Billing Sheet / Medical Records Coding Summary Sheet
2. ED Admission Form
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

### Uses

- Allows data to be sorted based upon the geographic location of the patient's home.

### Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Common Null Values
- Patient's Home Country
- Patient's Home State
- Patient's Home City
- Alternate Home Residence

### References to Other Databases

- NHTSA 2.2 - E06\_06

**PATIENT'S HOME CITY**

Data Format [combo] single-choice

*National Element***Definition**

The patient's city (or township, or village) of residence.

**XSD Data Type** *xs:string***XSD Element / Domain (Simple Type)** *HomeCity***Multiple Entry Configuration** No**Accepts Null Value** Yes, common null values**Required in XSD** Yes**Field Values**

- Relevant value for data element (five digit FIPS code)

**Additional Information**

- *Only completed when ZIP code is "Not Recorded" or "Not Known".*
- Used to calculate FIPS code.

**Data Source Hierarchy**

1. ED Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

**Uses**

- Allows data to be sorted based upon the geographic location of the patient's home.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Common Null Values
- Patient's Home Country
- Patient's Home State
- Patient's Home County
- Alternate Home Residence

**References to Other Databases**

- NHTSA V.2.2 - E06\_05

## ALTERNATE HOME RESIDENCE

Data Format [combo] single-choice

*National Element*

D\_06

### Definition

Documentation of the type of patient without a home zip code.

**XSD Data Type** *xs:integer*

**XSD Element / Domain (Simple Type)** *HomeResidence*

**Multiple Entry Configuration** No

**Accepts Null Value** Yes, common null values

**Required in XSD** Yes

### Field Values

1 Homeless

3 Migrant

2 Undocumented Citizen

4 Foreign Visitor

### Additional Information

- *Only completed when ZIP code is "Not Applicable".*

### Data Source Hierarchy

1. Billing Sheet / Medical Records Coding Summary Sheet
2. ED Admission Form
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

### Uses

- Allows data to be sorted based upon type of residence

### Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Common Null Values
- Patient's Home Country
- Patient's Home State
- Patient's Home County
- Patient's Home City

**DATE OF BIRTH**

Data Format [date]

*National Element***Definition**

The patient's date of birth.

**XSD Data Type** *xs:date***XSD Element / Domain (Simple Type)** *DateOfBirth***Multiple Entry Configuration** No**Accepts Null Value** Yes, common null values**Required in XSD** Yes**Minimum Constraint** 1,890 **Maximum Constraint** 2,030**Field Values**

- Relevant value for data element

**Additional Information**

- Collected as YYYY-MM-DD.
- *If age is less than 24 hours, complete variables: Age and; Age Units.*
- *If "Not Recorded", or "Not Known" complete variables: Age and; Age Units.*
- Used to calculate patient age in days, months, or years then deleted.

**Data Source Hierarchy**

1. ED Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

**Uses**

- Allows data to be sorted based on age.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Patient Age
- Age Units

**References to Other Databases**

- NHTSA V.2.2 - E06\_16

**AGE****Data Format** [number]**National Element****Definition**

The patient's age at the time of injury (best approximation).

**XSD Data Type** *xs:integer***Multiple Entry Configuration** No**Required in XSD** Yes**XSD Element / Domain (Simple Type)** *Age***Accepts Null Value** Yes, common null values**Minimum Constraint** 0 **Maximum Constraint** 120**Field Values**

- Relevant value for data element

**Additional Information**

- Used to calculate patient age in hours, days, months, or years.
- *Only completed when Date of Birth is less than 24 hours, "Not Recorded", or "Not Known".*
- *Must also complete variable: Age Units*

**Data Source Hierarchy**

1. ED Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

**Uses**

- Allows data to be sorted based on age.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Date of Birth
- Age Units

**References to Other Databases**

- NHTSA V.2.2 - E06\_14

**AGE UNITS****Data Format** [combo] single-choice**National Element****Definition**

The units used to document the patient's age (Years, Months, Days, Hours).

**XSD Data Type** *xs:integer***XSD Element / Domain (Simple Type)** *AgeUnits***Multiple Entry Configuration** No**Accepts Null Value** Yes, common null values**Required in XSD** Yes**Field Values**

1 Hours                      3 Months

2 Days                        4 Years

**Additional Information**

- Used to calculate patient age in hours, days, months, or years.
- *Only completed when date of birth is less than 24 hours, "Not Recorded", or "Not Known."*
- *Must also complete variable: Age*

**Data Source Hierarchy**

1. ED Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet
3. Triage Form / Trauma Flow Sheet
4. EMS Run Sheet
5. ED Nurses Notes

**Uses**

- Allows data to be sorted based upon age.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Date of Birth
- Age

**References to Other Databases**

- NHTSA V.2.2 - E06\_15

**RACE****Data Format** [combo] multiple-choice**National Element****Definition**

The patient's race.

**XSD Data Type** *xs:integer***Multiple Entry Configuration** Yes, max 2**Required in XSD** Yes**XSD Element / Domain (Simple Type)** *Race***Accepts Null Value** Yes, common null values**Field Values**

1 Asian

4 American Indian

2 Native Hawaiian or Other Pacific Islander

5 Black or African American

3 Other Race

6 White

**Additional Information**

- Patient race should be based upon self-report or identified by a family member
- The maximum number of races that may be reported for an individual patient is 2.

**Data Source Hierarchy**

1. ED Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet
3. Triage Form / Trauma Flow Sheet
4. EMS Run Sheet
5. ED Nurses Notes

**Uses**

- Allows data to be sorted based upon race.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**References to Other Databases**

- NHTSA V.2.2 - E06\_12

**ETHNICITY****Data Format** [combo] single-choice**National Element****Definition**

The patient's ethnicity.

**XSD Data Type** *xs:integer***Multiple Entry Configuration** No**Required in XSD** Yes**XSD Element / Domain (Simple Type)** *Ethnicity***Accepts Null Value** Yes, common null values**Field Values**

1 Hispanic or Latino

2 Not Hispanic or Latino

**Additional Information**

- Patient ethnicity should be based upon self-report or identified by a family member
- The maximum number of ethnicities that may be reported for an individual patient is 1.

**Data Source Hierarchy**

1. ED Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet
3. Triage Form / Trauma Flow Sheet
4. EMS Run Sheet
5. ED Nurses Notes

**Uses**

- Allows data to be sorted based upon ethnicity.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**References to Other Databases**

- NHTSA V.2.2 - E06\_13



**SEX**

Data Format [combo] single-choice

**National Element****Definition**

The patient's sex.

**XSD Data Type** *xs:integer***Multiple Entry Configuration** No**Required in XSD** Yes**XSD Element / Domain (Simple Type)** *Sex***Accepts Null Value** Yes, common null values**Field Values**

1 Male

2 Female

**Additional Information**

- Patients who have undergone a surgical and/or hormonal sex reassignment should be coded using the current assignment.

**Data Source Hierarchy**

1. ED Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

**Uses**

- Allows data to be sorted based upon gender.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**References to Other Databases**

- NHTSA V.2.2 - E06\_11

## **Injury Information**

## INJURY INCIDENT DATE

Data Format [date]

*National Element*

I\_01

### Definition

The date the injury occurred.

**XSD Data Type** *xs:date*

**Multiple Entry Configuration** No

**Required in XSD** Yes

**XSD Element / Domain (Simple Type)** *IncidentDate*

**Accepts Null Value** Yes, common null values

**Minimum Constraint** 1,990 **Maximum Constraint** 2,030

### Field Values

- Relevant value for data element.

### Additional Information

- Collected as YYYY-MM-DD.
- Estimates of date of injury should be based upon report by patient, witness, family, or health care provider. Other proxy measures (e.g., 911 call time) should not be used.
- If the date is electronically stored within a database or transmitted via XML as a “tick,” the referenced variables may also be used.

### Data Source Hierarchy

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

### Uses

- Important to identify when the injury event started to better analyze resource utilization and outcomes.

### Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

### References to Other Databases

- NHTSA V.2.2 - E05\_01

## INJURY INCIDENT TIME

Data Format [time]

*National Element*

I\_02

### Definition

The time the injury occurred.

**XSD Data Type** *xs:time*

**Multiple Entry Configuration** No

**Required in XSD** Yes

**XSD Element / Domain (Simple Type)** *IncidentTime*

**Accepts Null Value** Yes, common null values

### Field Values

- Relevant value for data element.

### Additional Information

- Collected as HH:MM.
- HH:MM should be collected as military time.
- Estimates of time of injury should be based upon report by patient, witness, family, or health care provider. Other proxy measures (e.g., 911 call time) should not be used.
- If the time is electronically stored within a database or transmitted via XML as a “tick”, the referenced variables may also be used.

### Data Source Hierarchy

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

### Uses

- Important to identify when the injury event started to better analyze resource utilization and outcomes.

### Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

### References to Other Databases

- NHTSA V.2.2 - E05\_01

**WORK-RELATED**

Data Format [combo] single-choice

**National Element****Definition**

Indication of whether the injury occurred during paid employment.

**XSD Data Type** *xs:integer***Multiple Entry Configuration** No**Required in XSD** Yes**XSD Element / Domain (Simple Type)** *WorkRelated***Accepts Null Value** Yes, common null values**Field Values**

1 Yes

2 No

**Additional Information**

- *If work related, two additional data fields must be completed: Patient's Occupational Industry and Patient's Occupation.*

**Data Source Hierarchy**

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

**Uses**

- Allows one to characterize injuries associated with job environments.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Patient's Occupational Industry
- Patient's Occupation

**References to Other Databases**

- NHTSA V.2.2 - E07\_15

## PATIENT'S OCCUPATIONAL INDUSTRY

Data Format [combo] single-choice

*National Element*

I\_04

### Definition

The occupational industry associated with the patient's work environment.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>PatientsOccupationalIndustry</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

### Field Values

1 Finance, Insurance, and Real Estate	8 Construction
2 Manufacturing	9 Government
3 Retail Trade	10 Natural Resources and Mining
4 Transportation and Public Utilities	11 Information Services
5 Agriculture, Forestry, Fishing	12 Wholesale Trade
6 Professional and Business Services	13 Leisure and Hospitality
7 Education and Health Services	14 Other Services

### Additional Information

- *Only completed if injury is work-related.*
- If work related, also complete Patient's Occupation.
- Based upon US Bureau of Labor Statistics Industry Classification.

### Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. EMS Run Sheet
3. ED Nurses Notes

### Uses

- Can be used to better describe injuries associated with work environments.

### Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Work-related
- Patient's occupation

### References to Other Databases

- NHTSA V.2.2 - E07\_16

**PATIENT'S OCCUPATION**

Data Format [combo] single-choice

**National Element****Definition**

The occupation of the patient.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>PatientsOccupation</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

**Field Values**

1 Business and Financial Operations Occupations	13 Computer and Mathematical Occupations
2 Architecture and Engineering Occupations	14 Life, Physical, and Social Science Occupations
3 Community and Social Services Occupations	15 Legal Occupations
4 Education, Training, and Library Occupations	16 Arts, Design, Entertainment, Sports, and Media
5 Healthcare Practitioners and Technical Occupations	17 Healthcare Support Occupations
6 Protective Service Occupations	18 Food Preparation and Serving Related
7 Building and Grounds Cleaning and Maintenance	19 Personal Care and Service Occupations
8 Sales and Related Occupations	20 Office and Administrative Support Occupations
9 Farming, Fishing, and Forestry Occupations	21 Construction and Extraction Occupations
10 Installation, Maintenance, and Repair Occupations	22 Production Occupations
11 Transportation and Material Moving Occupations	23 Military Specific Occupations
12 Management Occupations	

**Additional Information**

- Only completed if injury is work-related.
- If work related, also complete Patient's Occupational Industry.
- Based upon 1999 US Bureau of Labor Statistics Standard Occupational Classification (SOC).

**Data Source Hierarchy**

1. Triage Form / Trauma Flow Sheet
2. EMS Run Sheet
3. ED Nurses Notes

**Uses**

- Can be used to better describe injuries associated with work environments.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Work-related
- Patient's occupational industry

**References to Other Databases**

- NHTSA V.2.2 - E07\_17

**PRIMARY E-CODE**

Data Format [number]

**National Element****Definition**

E-code used to describe the mechanism (or external factor) that caused the injury event.

<b>XSD Data Type</b> <i>xs:string</i>	<b>XSD Element / Domain (Simple Type)</b> <i>PrimaryEcode</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

**Field Values**

- Relevant ICD-9-CM code value for injury event

**Additional Information**

- The Primary E-code should describe the main reason a patient is admitted to the hospital.
- E-codes are used to auto-generate two calculated fields: Trauma Type: (Blunt, Penetrating, Burn) and Intentionality (based upon CDC matrix).
- ICD-9-CM Codes were retained over ICD-10 due to CMS's continued use of ICD-9.

**Data Source Hierarchy**

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. Billing Sheet / Medical Records Coding Summary Sheet
4. ED Nurses Notes

**Uses**

- Allows injuries to be characterized by mechanism causing the injury.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Location E-code
- Additional E-code



**LOCATION E-CODE**

Data Format [number]

*National Element***Definition**

E-code used to describe the place/site/location of the injury event (E 849.X).

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>LocationEcode</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	<b>Minimum Constraint</b> 0 <b>Maximum Constraint</b> 9

**Field Values**

- Relevant ICD-9-CM code value for injury location.

**Additional Information**

- ICD-9-CM Codes were retained over ICD-10 due to CMS's continued use of ICD-9.

**Data Source Hierarchy**

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. Billing Sheet / Medical Records Coding Summary Sheet
4. ED Nurses Notes

**Uses**

- Allows injuries to be characterized by the place/site/location of the injury.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Primary E-code
- Additional E-code

**ADDITIONAL E-CODE**

Data Format [number]

*National Element***Definition**

Additional E-code used to describe, for example, a mass casualty event, or other external cause.

<b>XSD Data Type</b> <i>xs:string</i>	<b>XSD Element / Domain (Simple Type)</b> <i>AdditionalEcode</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

**Field Values**

- Relevant ICD-9-CM code value for injury event

**Additional Information**

- E-codes are used to auto-generate two calculated fields: Trauma Type: (Blunt, Penetrating, Burn) and Intentionality (based upon CDC matrix).
- ICD-9-CM Codes were retained over ICD-10 due to CMS's continued use of ICD-9.

**Data Source Hierarchy**

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. Billing Sheet / Medical Records Coding Summary Sheet
4. ED Nurses Notes

**Uses**

- Allows injuries to be characterized by external cause or presence of a mass casualty event.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Primary E-code
- Location E-code

**INCIDENT COUNTRY**

Data Format [combo] single-choice

*National Element***Definition**

The country where the patient was found or to which the unit responded (or best approximation).

**XSD Data Type** *xs:string***XSD Element / Domain (Simple Type)** *IncidentCountry***Multiple Entry Configuration** No**Accepts Null Value** Yes, common null values**Required in XSD** Yes**Field Values**

- Relevant value for data element (two digit alpha country code)

**Additional Information**

- *Only completed when Incident Location ZIP code is "Not Applicable", "Not Recorded", or "Not Known".*
- *Values are two character fields representing a country (e.g., US).*

**Data Source Hierarchy**

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

**Uses**

- Allows data to be sorted based upon the geographic location of the injury event.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Incident State
- Incident County
- Incident City

**INCIDENT STATE**

Data Format [combo] single-choice

**National Element****Definition**

The state, territory, or province where the patient was found or to which the unit responded (or best approximation).

<b>XSD Data Type</b> <i>xs:string</i>	<b>XSD Element / Domain (Simple Type)</b> <i>IncidentState</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

**Field Values**

- Relevant value for data element (two digit numeric FIPS code)

**Additional Information**

- *Only completed when Incident Location ZIP code is "Not Applicable", "Not Recorded", or "Not Known".*
- Used to calculate FIPS code.

**Data Source Hierarchy**

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

**Uses**

- Allows data to be sorted based upon the geographic location of the injury event.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Incident Country
- Incident County
- Incident City

**References to Other Databases**

- NHTSA 2.2 - E08\_14

## INCIDENT COUNTY

Data Format [combo] single-choice

*National Element*

L\_11

### Definition

The county or parish where the patient was found or to which the unit responded (or best approximation).

**XSD Data Type** *xs:string*

**XSD Element / Domain (Simple Type)** *IncidentCounty*

**Multiple Entry Configuration** No

**Accepts Null Value** Yes, common null values

**Required in XSD** Yes

### Field Values

- Relevant value for data element (three digit FIPS code).

### Additional Information

- *Only completed when Incident Location ZIP code is "Not Applicable", "Not Recorded" or "Not Known".*
- Used to calculate FIPS code.

### Data Source Hierarchy

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

### Uses

- Allows data to be sorted based upon the geographic location of the injury event.

### Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Incident Country
- Incident State
- Incident City

### References to Other Databases

- NHTSA 2.2 - E08\_13

## INCIDENT CITY

Data Format [combo] single-choice

*National Element*

I\_12

### Definition

The city or township where the patient was found or to which the unit responded.

**XSD Data Type** *xs:string*

**XSD Element / Domain (Simple Type)** *IncidentCity*

**Multiple Entry Configuration** No

**Accepts Null Value** Yes, common null values

**Required in XSD** Yes

### Field Values

- Relevant value for data element (five digit FIPS code)

### Additional Information

- *Only completed when Incident Location ZIP code is "Not Applicable", "Not Recorded" or "Not Known".*
- Used to calculate FIPS code.
- If incident location resides outside of formal city boundaries, report nearest city/town.

### Data Source Hierarchy

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

### Uses

- Allows data to be sorted based upon the geographic location of the injury event.

### Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Incident Country
- Incident State
- Incident County

### References to Other Databases

- NHTSA V.2.2 - E08\_12

**INCIDENT LOCATION ZIP CODE**

Data Format [text]

*National Element***Definition**

The ZIP code of the incident location.

**XSD Data Type** *xs:zip***Multiple Entry Configuration** No**Required in XSD** Yes**XSD Element / Domain (Simple Type)** *InjuryZip / Zip***Accepts Null Value** Yes, common null values**Field Values**

- Relevant value for data element

**Additional Information**

- Can be stored as a 5 or 9 digit code (XXXXX-XXXX).
- If "Not Applicable", "Not Recorded", or "Not Known" complete variables: *Incident State; Incident County; Incident City; and Incident Country.*
- May require adherence to HIPAA regulations.

**Data Source Hierarchy**

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

**Uses**

- Allows data to be sorted based upon the geographic location of the injury event.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**References to Other Databases**

- NHTSA V.2.2 - E08\_15

**PROTECTIVE DEVICES**

Data Format [combo] multiple-choice

*National Element***Definition**

Protective devices (safety equipment) in use or worn by the patient at the time of the injury.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>ProtectiveDevice</i>
<b>Multiple Entry Configuration</b> Yes, max 10	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

**Field Values**

1 None	6 Child Restraint (booster seat, child car seat)
2 Lap Belt	7 Helmet (e.g., bicycle, skiing, motorcycle)
3 Personal Floatation Device	8 Airbag Present
4 Protective Non-Clothing Gear (e.g., shin guard)	9 Protective Clothing (e.g., padded leather pants)
5 Eye Protection	10 Shoulder Belt
	11 Other

**Additional Information**

- Check all that apply.
- If “Child Restraint” is present, complete variable “Child Specific Restraint.”
- If “Airbag” is present, complete variable “Airbag Deployment.”
- Evidence of the use of safety equipment may be reported or observed.
- Lap Belt should be used to include those patients that are restrained, but not further specified.

**Data Source Hierarchy**

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

**Uses**

- Used to better define injury cause and characterize injury patterns.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Airbag Deployment
- Child Specific Restraint

**References to Other Databases**

- Compare to NHTSA V.2.2 – E10\_08



**CHILD SPECIFIC RESTRAINT**

Data Format [combo] single-choice

**National Element****Definition**

Protective child restraint devices used by patient at the time of injury.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>ChildSpecificRestraint</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

**Field Values**

1 Child Car Seat

3 Child Booster Seat

2 Infant Car Seat

**Additional Information**

- Evidence of the use of child restraint may be reported or observed.
- *Only completed when Protective Devices include "Child Restraint"*

**Data Source Hierarchy**

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

**Uses**

- Used to better define injury cause and characterize injury patterns.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Protective Devices

**AIRBAG DEPLOYMENT**

Data Format [combo] multiple-choice

*National Element***Definition**

Indication of an airbag deployment during a motor vehicle crash.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>AirbagDeployment</i>
<b>Multiple Entry Configuration</b> Yes, max 4	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

**Field Values**

1 Airbag Not Deployed

3 Airbag Deployed Side

2 Airbag Deployed Front

4 Airbag Deployed Other (knee, airbelt, curtain, etc.)

**Additional Information**

- Check all that apply.
- Evidence of the use of airbag deployment may be reported or observed.
- *Only completed when Protective Devices include "Airbag"*

**Data Source Hierarchy**

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

**Uses**

- Used to better define injury cause and characterize injury patterns.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Protective Devices

**References to Other Databases**

- NHTSA V.2.2 – E10\_09

## **Pre-hospital Information**

## EMS DISPATCH DATE

Data Format [date]

*National Element*

P\_01

### Definition

The date the unit *transporting to your hospital* was notified by dispatch.

**XSD Data Type** *xs:date*

**Multiple Entry Configuration** No

**Required in XSD** Yes

**XSD Element / Domain (Simple Type)** *EmsNotifyDate*

**Accepts Null Value** Yes, common null values

**Minimum Constraint** 1990 **Maximum Constraint** 2030

### Field Values

- Relevant value for data element.

### Additional Information

- Collected as YYYY-MM-DD
- If the date is electronically stored within a database or transmitted via XML as a “tick,” the referenced variables may also be used.
- Used to auto-generate an additional calculated field: Total EMS Time (elapsed time from EMS dispatch to hospital arrival).

### Data Source Hierarchy

1. EMS Run Sheet

### Uses

- Allows data to be sorted based upon EMS agency time intervals.

### Data Collection

- 911 or Dispatch Center and electronically or verbally transmitted to the EMS agency.

### Other Associated Elements

- EMS Unit Arrival on Scene Date and Time
- EMS Unit Left Scene Date and Time

### References to Other Databases

- NHTSA V.2.2 - E05\_04

## EMS DISPATCH TIME

Data Format [time]

*National Element*

P\_02

### Definition

The time the unit *transporting to your hospital* was notified by dispatch.

**XSD Data Type** *xs:time*

**XSD Element / Domain (Simple Type)** *EmsNotifyTime*

**Multiple Entry Configuration** No

**Accepts Null Value** Yes, common null values

**Required in XSD** Yes

### Field Values

- Relevant value for data element.

### Additional Information

- Collected as HH:MM.
- HH:MM should be collected as military time.
- If the time is electronically stored within a database or transmitted via XML as a “tick,” the referenced variables may also be used.
- Used to auto-generate an additional calculated field: Total EMS Time (elapsed time from EMS dispatch to hospital arrival).

### Data Source Hierarchy

1. EMS Run Sheet

### Uses

- Allows data to be sorted based upon EMS agency time intervals.

### Data Collection

- 911 or Dispatch Center and electronically or verbally transmitted to the EMS agency.

### Other Associated Elements

- EMS Unit Arrival on Scene Date and Time
- EMS Unit Left Scene Date and Time

### References to Other Databases

- NHTSA V.2.2 - E05\_04

**EMS UNIT ARRIVAL ON SCENE DATE**

Data Format [date/time]

*National Element***Definition**

The date the unit *transporting to your hospital* arrived on the scene (the time the vehicle stopped moving).

<b>XSD Data Type</b> <i>xs:date</i>	<b>XSD Element / Domain (Simple Type)</b> <i>EmsArrivalDate</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	<b>Minimum Constraint</b> 1990 <b>Maximum Constraint</b> 2030

**Field Values**

- Relevant value for data element.

**Additional Information**

- Collected as YYYY-MM-DD
- Scene may be defined as “initial hospital” for inter-facility transfers.
- If the date is electronically stored within a database or transmitted via XML as a “tick”, the referenced variables may also be used.
- Used to auto-generate two additional calculated fields: Total EMS Response Time (elapsed time from EMS dispatch to scene arrival) & Total EMS Scene Time (elapsed time from EMS scene arrival to scene departure).

**Data Source Hierarchy**

1. EMS Run Sheet

**Uses**

- Allows data to be sorted based upon EMS agency time intervals.

**Data Collection**

- 911 or Dispatch Center and electronically or verbally transmitted to the EMS agency.

**Other Associated Elements**

- EMS Unit Dispatch Date and Time
- EMS Unit Left Scene Date and Time

**References to Other Databases**

- NHTSA V.2.2 - E05\_06

**EMS UNIT ARRIVAL ON SCENE TIME**

Data Format [date/time]

*National Element***Definition**

The time the unit *transporting to your hospital* arrived on the scene (the time the vehicle stopped moving).

**XSD Data Type** *xs:time***XSD Element / Domain (Simple Type)** *EmsArrivalTime***Multiple Entry Configuration** No**Accepts Null Value** Yes, common null values**Required in XSD** Yes**Field Values**

- Relevant value for data element.

**Additional Information**

- Collected as HH:MM.
- Scene may be defined as “initial hospital” for inter-facility transfers.
- HH:MM should be collected as military time.
- If the time is electronically stored within a database or transmitted via XML as a “tick”, the referenced variables may also be used.
- Used to auto-generate two additional calculated fields: Total EMS Response Time (elapsed time from EMS dispatch to scene arrival) & Total EMS Scene Time (elapsed time from EMS scene arrival to scene departure).

**Data Source Hierarchy**

1. EMS Run Sheet

**Uses**

- Allows data to be sorted based upon EMS agency time intervals.

**Data Collection**

- 911 or Dispatch Center and electronically or verbally transmitted to the EMS agency.

**Other Associated Elements**

- EMS Unit Dispatch Date and Time
- EMS Unit Left Scene Date and Time

**References to Other Databases**

- NHTSA V.2.2 - E05\_06

## EMS UNIT SCENE DEPARTURE DATE

Data Format [date/time]

*National Element*

P\_05

### Definition

The date the unit *transporting to your hospital* left the scene (the time the vehicle started moving).

**XSD Data Type** *xs:date*

**XSD Element / Domain (Simple Type)** *EmsLeftDate*

**Multiple Entry Configuration** No

**Accepts Null Value** Yes, common null values

**Required in XSD** Yes

**Minimum Constraint** 1990 **Maximum Constraint** 2030

### Field Values

- Relevant value for data element.

### Additional Information

- Collected as YYYY-MM-DD
- Scene may be defined as “initial hospital” for inter-facility transfers.
- If the date is electronically stored within a database or transmitted via XML as a “tick,” the referenced variables may also be used.
- Used to auto-generate an additional calculated field: Total EMS Scene Time (elapsed time from EMS scene arrival to scene departure).

### Data Source Hierarchy

1. EMS Run Sheet

### Uses

- Allows data to be sorted based upon EMS agency time intervals.

### Data Collection

- 911 or Dispatch Center and electronically or verbally transmitted to the EMS agency.

### Other Associated Elements

- EMS Dispatch Date and Time
- EMS Unit Arrival on Scene Date and Time

### References to Other Databases

- NHTSA V.2.2 - E05\_09



## EMS UNIT SCENE DEPARTURE TIME

Data Format [time]

National Element

P\_06

### Definition

The time the unit *transporting to your hospital* left the scene (the time the vehicle started moving).

**XSD Data Type** *xs:time*

**Multiple Entry Configuration** No

**Required in XSD** Yes

**XSD Element / Domain (Simple Type)** *EmsLeftTime*

**Accepts Null Value** Yes, common null values

### Field Values

- Relevant value for data element.

### Additional Information

- Collected as HH:MM.
- Scene may be defined as “initial hospital” for inter-facility transfers.
- HH:MM should be collected as military time.
- If the time is electronically stored within a database or transmitted via XML as a “tick,” the referenced variables may also be used.
- Used to auto-generate an additional calculated field: Total EMS Scene Time (elapsed time from EMS scene arrival to scene departure).

### Data Source Hierarchy

1. EMS Run Sheet

### Uses

- Allows data to be sorted based upon EMS agency time intervals.

### Data Collection

- 911 or Dispatch Center and electronically or verbally transmitted to the EMS agency.

### Other Associated Elements

- EMS Dispatch Date and Time
- EMS Unit Arrival on Scene Date and Time

### References to Other Databases

- NHTSA V.2.2 - E05\_09

**TRANSPORT MODE**

Data Format [combo] single-choice

*National Element***Definition**

The mode of transport delivering the patient to your hospital.

**XSD Data Type** *xs:integer***XSD Element / Domain (Simple Type)** *TransportMode***Multiple Entry Configuration** No**Accepts Null Value** Yes, common null values**Required in XSD** Yes**Field Values**

1 Ground Ambulance

4 Private/Public Vehicle/Walk-in

2 Helicopter Ambulance

5 Police

3 Fixed-wing Ambulance

6 Other

**Data Source Hierarchy**

1. EMS Run Sheet

**Uses**

- Allows data to be evaluated based on mode of transport utilized to reach the hospital.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Inter-facility Transfer
- Other Transport Mode

**OTHER TRANSPORT MODE**

Data Format [combo] multiple-choice

*National Element***Definition**

All other modes of transport used during patient care event, except the mode delivering the patient to the hospital.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>OtherTransportMode</i>
<b>Multiple Entry Configuration</b> Yes, max 5	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

**Field Values**

1 Ground Ambulance	4 Private/Public Vehicle/Walk-in
2 Helicopter Ambulance	5 Police
3 Fixed-wing Ambulance	6 Other

**Data Source Hierarchy**

1. EMS Run Sheet

**Uses**

- Allows data to be evaluated based on mode of transport utilized to reach the hospital.
- A total of five other transport segments (different or similar modes) may be recorded.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Inter-facility Transfer
- Transport Mode

# INITIAL FIELD SYSTOLIC BLOOD PRESSURE

Data Format [number]

National Element

P\_09

## Definition

First recorded systolic blood pressure in the pre-hospital setting.

**XSD Data Type** *xs:integer*

**Multiple Entry Configuration** No

**Required in XSD** Yes

**XSD Element / Domain (Simple Type)** *EmsSbp*

**Accepts Null Value** Yes, common null values

**Minimum Constraint** 0 **Maximum Constraint** 299

## Field Values

- Relevant value for data element.

## Additional Information

- Used to auto-generate an additional calculated field: Revised Trauma Score - EMS (adult & pediatric).

## Data Source Hierarchy

1. EMS Run Sheet

## Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

## Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

## Other Associated Elements

- Initial Field Pulse Rate
- Initial Field Respiratory Rate
- Initial Field SaO2
- Initial Field GCS - Eye
- Initial Field GCS - Verbal
- Initial Field GCS - Motor
- Initial Field GCS- Total

## References to Other Databases

- Compare to NHTSA 2.2 – E14\_04

**INITIAL FIELD PULSE RATE**

Data Format [number]

*National Element***Definition**

First recorded pulse in the pre-hospital setting (palpated or auscultated), expressed as a number per minute.

**XSD Data Type** *xs:integer***Multiple Entry Configuration** No**Required in XSD** Yes**XSD Element / Domain (Simple Type)** *EmsPulseRate***Accepts Null Value** Yes, common null values**Minimum Constraint** 0 **Maximum Constraint** 299**Field Values**

- Relevant value for data element.

**Data Source Hierarchy**

1. EMS Run Sheet

**Uses**

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Initial Field Systolic Blood Pressure
- Initial Field Respiratory Rate
- Initial Field SaO2
- Initial Field GCS - Eye
- Initial Field GCS - Verbal
- Initial Field GCS - Motor
- Initial Field GCS- Total

**References to Other Databases**

- Compare to NHTSA 2.2 – E14\_07

**INITIAL FIELD RESPIRATORY RATE**

Data Format [number]

*National Element***Definition**

First recorded respiratory rate in the pre-hospital setting (expressed as a number per minute).

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>EmsRespiratoryRate</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	<b>Minimum Constraint</b> 0 <b>Maximum Constraint</b> 59

**Field Values**

- Relevant value for data element.

**Additional Information**

- Used to auto-generate an additional calculated field: Revised Trauma Score - EMS (adult & pediatric).

**Data Source Hierarchy**

1. EMS Run Sheet

**Uses**

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Initial Field Systolic Blood Pressure
- Initial Field Pulse Rate
- Initial Field SaO2
- Initial Field GCS - Eye
- Initial Field GCS - Verbal
- Initial Field GCS - Motor
- Initial Field GCS- Total

**References to Other Databases**

- Compare to NHTSA 2.2 – E14\_11

**INITIAL FIELD OXYGEN SATURATION**

Data Format [number]

*National Element***Definition**

First recorded oxygen saturation in the pre-hospital setting (expressed as a percentage).

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>EmsPulseOximetry</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	<b>Minimum Constraint</b> 0 <b>Maximum Constraint</b> 100

**Field Values**

- Relevant value for data element.

**Data Source Hierarchy**

1. EMS Run Sheet

**Uses**

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Initial Field Systolic Blood Pressure
- Initial Field Pulse Rate
- Initial Field Respiratory Rate
- Initial Field GCS - Eye
- Initial Field GCS - Verbal
- Initial Field GCS - Motor
- Initial Field GCS- Total

**References to Other Databases**

- Compare to NHTSA 2.2 – E14\_09

**INITIAL FIELD GCS - EYE**

Data Format [number]

*National Element***Definition**

First recorded Glasgow Coma Score (Eye) in the pre-hospital setting.

**XSD Data Type** *xs:integer***XSD Element / Domain (Simple Type)** *EmsGcsEye***Multiple Entry Configuration** No**Accepts Null Value** Yes, common null values**Required in XSD** Yes**Minimum Constraint** 1 **Maximum Constraint** 4**Field Values**

1 No eye movement when assessed

3 Opens eyes in response to verbal stimulation

2 Opens eyes in response to painful stimulation

4 Opens eyes spontaneously

**Additional Information**

- Used to calculate Overall GCS - EMS Score.

**Data Source Hierarchy**

1. EMS Run Sheet

**Uses**

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Initial Field Systolic Blood Pressure
- Initial Field Pulse Rate
- Initial Field respiratory rate
- Initial Field SaO2
- Initial Field GCS - Verbal
- Initial Field GCS - Motor
- Initial Field GCS- Total

**References to Other Databases**

- NHTSA 2.2 – E14\_15



## INITIAL FIELD GCS - VERBAL

Data Format [number]

National Element

P\_14

### Definition

First recorded Glasgow Coma Score (Verbal) in the pre-hospital setting.

**XSD Data Type** *xs:integer*

**XSD Element / Domain (Simple Type)** *EmsGcsVerbal*

**Multiple Entry Configuration** No

**Accepts Null Value** Yes, common null values

**Required in XSD** Yes

**Minimum Constraint** 1 **Maximum Constraint** 5

### Field Values

Pediatric (≤ 2 years):

1 No vocal response

4 Cries but is consolable, inappropriate interactions

2 Inconsolable, agitated

5 Smiles, oriented to sounds, follows objects, Interacts

3 Inconsistently consolable, moaning

Adult:

1 No verbal response

4 Confused

2 Incomprehensible sounds

5 Oriented

3 Inappropriate words

### Additional Information

- Used to calculate Overall GCS - EMS Score.

### Data Source Hierarchy

1. EMS Run Sheet

### Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

### Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Initial Field Systolic Blood Pressure
- Initial Field respiratory rate
- Initial Field Pulse Rate
- Initial Field SaO2
- Initial Field GCS - Eye
- Initial Field GCS - Motor
- Initial Field GCS- Total

### References to Other Databases

- NHTSA 2.2 – E14\_16

## INITIAL FIELD GCS - MOTOR

Data Format [number]

National Element

P\_15

### Definition

First recorded Glasgow Coma Score (Motor) in the pre-hospital setting.

**XSD Data Type** *xs:integer*

**Multiple Entry Configuration** No

**Required in XSD** Yes

**XSD Element / Domain (Simple Type)** *EmsGcsMotor*

**Accepts Null Value** Yes, common null values

**Minimum Constraint** 1 **Maximum Constraint** 6

### Field Values

Pediatric (≤ 2 years):

1 No motor response

4 Withdrawal from pain

2 Extension to pain

5 Localizing pain

3 Flexion to pain

6 Appropriate response to stimulation

Adult:

1 No motor response

4 Withdrawal from pain

2 Extension to pain

5 Localizing pain

3 Flexion to pain

6 Obeys commands

### Additional Information

- Used to calculate Overall GCS - EMS Score.

### Data Source Hierarchy

1. EMS Run Sheet

### Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

### Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Initial Field Systolic Blood Pressure
- Initial Field respiratory rate
- Initial Field Pulse Rate
- Initial Field SaO2
- Initial Field GCS - Eye
- Initial Field GCS - Verbal
- Initial Field GCS- Total

### References to Other Databases

- NHTSA 2.2 – E14\_17

## INITIAL FIELD GCS - TOTAL

Data Format [number]

*National Element*

P\_16

### Definition

First recorded Glasgow Coma Score (total) in the pre-hospital setting.

**XSD Data Type** *xs:integer*

**XSD Element / Domain (Simple Type)** *EmsTotalGcs*

**Multiple Entry Configuration** No

**Accepts Null Value** Yes, common null values

**Required in XSD** Yes

**Minimum Constraint** 3 **Maximum Constraint** 15

### Field Values

- Relevant value for data element.

### Additional Information

- *Utilize only if total score is available without component scores.*
- Used to auto-generate an additional calculated field: Revised Trauma Score - EMS (adult & pediatric).

### Data Source Hierarchy

1. EMS Run Sheet

### Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

### Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Initial Field Systolic Blood Pressure
- Initial Field Pulse Rate
- Initial Field respiratory rate
- Initial Field SaO2
- Initial Field GCS - Eye
- Initial Field GCS - Verbal
- Initial Field GCS - Motor

### References to Other Databases

- Compare to NHTSA 2.2 – E14\_19

## INTER-FACILITY TRANSFER

Data Format [combo] single-choice

*National Element*

P\_17

### Definition

Was the patient transferred to your facility from another acute care facility?

**XSD Data Type** *xs:integer*

**XSD Element / Domain (Simple Type)** *InterFacilityTransfer*

**Multiple Entry Configuration** No

**Accepts Null Value** Yes, common null values

**Required in XSD** Yes

### Field Values

1 Yes

2 No

### Additional Information

- Patients transferred from a private doctor's office, stand-alone ambulatory surgery center, or delivered to your hospital by a non-EMS transport is not considered an inter-facility transfer.
- Outlying facilities purporting to provide emergency care services or utilized to stabilize a patient are considered acute care facilities.

### Data Source Hierarchy

1. EMS Run Sheet

### Uses

- Allows data to be evaluated based on presence of an inter-facility transfer.

### Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Transport Mode
- Other Transport Mode

## **Emergency Department Information**

## ED/HOSPITAL ARRIVAL DATE

Data Format [date]

National Element

ED\_01

### Definition

The date the patient arrived to the ED/hospital.

<b>XSD Data Type</b> <i>xs:date</i>	<b>XSD Element / Domain (Simple Type)</b> <i>HospitalArrivalDate</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	<b>Minimum Constraint</b> 1990 <b>Maximum Constraint</b> 2030

### Field Values

- Relevant value for data element.

### Additional Information

- If the patient was brought to the ED, enter date patient arrived at ED. If patient was directly admitted to the hospital, enter date patient was admitted to the hospital.
- Collected as YYYY-MM-DD.
- If the date is electronically stored within a database or transmitted via XML as a “tick,” the referenced variables may also be used.
- Used to auto-generate two additional calculated fields: Total EMS Time: (elapsed time from EMS dispatch to hospital arrival) and Total Length of Hospital Stay (elapsed time from ED/Hospital Arrival to ED/Hospital Discharge).

### Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. ED Record
3. Billing Sheet / Medical Records Coding Summary Sheet
4. Hospital Discharge Summary

### Uses

- Allows data to be sorted based upon total length of hospital stay.

### Data Collection

- Hospital records or electronically available through linkage with medical records.

### Other Associated Elements

- EMS Dispatch Date
- EMS Dispatch Time
- EMS Unit Arrival on Scene Date
- EMS Unit Arrival on Scene Time

## ED/HOSPITAL ARRIVAL TIME

Data Format [time]

*National Element*

ED\_02

### Definition

The time the patient arrived to the ED/hospital.

<b>XSD Data Type</b> <i>xs:time</i>	<b>XSD Element / Domain (Simple Type)</b> <i>HospitalArrivalTime</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

### Field Values

- Relevant value for data element.

### Additional Information

- If the patient was brought to the ED, enter time patient arrived at ED. If patient was directly admitted to the hospital, enter time patient was admitted to the hospital.
- Collected as HH:MM.
- HH:MM should be collected as military time.
- If the time is electronically stored within a database or transmitted via XML as a "tick," the referenced variables may also be used.
- Used to auto-generate two additional calculated fields: Total EMS Time: (elapsed time from EMS dispatch to hospital arrival) and Total Length of Hospital Stay (elapsed time from ED/Hospital Arrival to ED/Hospital Discharge).

### Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. ED Record
3. Billing Sheet / Medical Records Coding Summary Sheet
4. Hospital Discharge Summary

### Uses

- Allows data to be sorted based upon total length of hospital stay.

### Data Collection

- Hospital records or electronically available through linkage with medical records.

### Other Associated Elements

- EMS Dispatch Date
- EMS Dispatch Time
- EMS Unit Arrival on Scene Date
- EMS Unit Arrival on Scene Time

**INITIAL ED/HOSPITAL SYSTOLIC BLOOD PRESSURE**

Data Format [number]

*National Element***Definition**

First recorded systolic blood pressure in the ED/hospital.

**XSD Data Type** *xs:integer***Multiple Entry Configuration** No**Required in XSD** Yes**XSD Element / Domain (Simple Type)** *Sbp***Accepts Null Value** Yes, common null values**Minimum Constraint** 0 **Maximum Constraint** 299**Field Values**

- Relevant value for data element.

**Additional Information**

- Used to auto-generate an additional calculated field: Revised Trauma Score - ED (adult & pediatric).

**Data Source Hierarchy**

1. Triage Form / Trauma Flow Sheet
2. ED Record

**Uses**

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

**Data Collection**

- Hospital records or electronically through linkage with EMS/medical record or medical device.

**Other Associated Elements**

- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Respiratory Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS- Total
- Alcohol Use Indicator
- Drug Use Indicator



**INITIAL ED/HOSPITAL PULSE RATE**

Data Format [number]

*National Element***Definition**

First recorded pulse in the ED/hospital (palpated or auscultated), expressed as a number per minute.

**XSD Data Type** *xs:integer***Multiple Entry Configuration** No**Required in XSD** Yes**XSD Element / Domain (Simple Type)** *PulseRate***Accepts Null Value** Yes, common null values**Minimum Constraint** 0 **Maximum Constraint** 299**Field Values**

- Relevant value for data element.

**Data Source Hierarchy**

1. Triage Form / Trauma Flow Sheet
2. ED Record

**Uses**

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

**Data Collection**

- Hospital records or electronically through linkage with EMS/medical record or medical device.

**Other Associated Elements**

- Initial ED/Hospital Systolic Blood Pressure
- Initial ED/Hospital Respiratory Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS- Total
- Alcohol Use Indicator
- Drug Use Indicator

## INITIAL ED/HOSPITAL TEMPERATURE

Data Format [number]

*National Element*

ED\_05

### Definition

First recorded temperature (in degrees Celsius [centigrade]) in the ED/hospital.

**XSD Data Type** *xs:decimal*

**Multiple Entry Configuration** No

**Required in XSD** Yes

**XSD Element / Domain (Simple Type)** *Temperature*

**Accepts Null Value** Yes, common null values

**Minimum Constraint** 0.0 **Maximum Constraint** 45.0

### Field Values

- Relevant value for data element.

### Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. ED Record

### Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

### Data Collection

- Hospital records or electronically through linkage with EMS/medical record or medical device.

### Other Associated Elements

- Initial ED/Hospital Systolic Blood Pressure
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital respiratory rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS- Total
- Alcohol Use Indicator
- Drug Use Indicator

**INITIAL ED/HOSPITAL RESPIRATORY RATE**

Data Format [number]

*National Element***Definition**

First recorded respiratory rate in the ED/hospital (expressed as a number per minute).

**XSD Data Type** *xs:integer***Multiple Entry Configuration** No**Required in XSD** Yes**XSD Element / Domain (Simple Type)** *RespiratoryRate***Accepts Null Value** Yes, common null values**Minimum Constraint** 0 **Maximum Constraint** 59**Field Values**

- Relevant value for data element.

**Additional Information**

- *If available, complete additional field: "Initial ED/Hospital Respiratory Assistance."*
- Used to auto-generate an additional calculated field: Revised Trauma Score - ED (adult & pediatric).

**Data Source Hierarchy**

1. Triage Form / Trauma Flow Sheet
2. ED Record

**Uses**

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

**Data Collection**

- Hospital records or electronically through linkage with EMS/medical record or medical device.

**Other Associated Elements**

- Initial ED/Hospital Respiratory Assistance
- Initial ED/Hospital Systolic Blood Pressure
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS- Total
- Alcohol Use Indicator
- Drug Use Indicator

**INITIAL ED/HOSPITAL RESPIRATORY ASSISTANCE**

Data Format [combo] single-choice

**National Element****Definition**

Determination of respiratory assistance associated with the initial ED/hospital respiratory rate.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>RespiratoryAssistance</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

**Field Values**

1 Unassisted Respiratory Rate

2 Assisted Respiratory Rate

**Additional Information**

- *Only completed if a value is provided for “Initial ED/Hospital Respiratory Rate.”*
- *Respiratory Assistance is defined as mechanical and/or external support of respiration.*

**Data Source Hierarchy**

1. Triage Form / Trauma Flow Sheet
2. ED Record

**Uses**

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

**Data Collection**

- Hospital records.

**Other Associated Elements**

- Initial ED/Hospital Respiratory Rate

# INITIAL ED/HOSPITAL OXYGEN SATURATION

Data Format [number]

National Element

ED\_08

## Definition

First recorded oxygen saturation in the ED/hospital (expressed as a percentage).

**XSD Data Type** *xs:integer*

**Multiple Entry Configuration** No

**Required in XSD** Yes

**XSD Element / Domain (Simple Type)** *PulseOximetry*

**Accepts Null Value** Yes, common null values

**Minimum Constraint** 0 **Maximum Constraint** 100

## Field Values

- Relevant value for data element.

## Additional Information

- *If available, complete additional field: "Initial ED/Hospital Supplemental Oxygen".*

## Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. Ed Record

## Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

## Data Collection

- Hospital records or electronically through linkage with EMS/medical record or medical device.

## Other Associated Elements

- Initial ED/Hospital Supplemental Oxygen
- Initial ED/Hospital Systolic Blood Pressure
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital Respiratory Rate
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS- Total
- Alcohol Use Indicator
- Drug Use Indicator

## INITIAL ED/HOSPITAL SUPPLEMENTAL OXYGEN

Data Format [combo] single-choice

*National Element*

ED\_09

### Definition

Determination of the presence of supplemental oxygen during assessment of initial ED/hospital oxygen saturation level.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>SupplementalOxygen</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

### Field Values

1 No Supplemental Oxygen

2 Supplemental Oxygen

### Additional Information

- *Only completed if a value is provided for "Initial ED/Hospital Oxygen Saturation."*

### Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. ED Record

### Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

### Data Collection

- Hospital records.

### Other Associated Elements

- Initial ED/Hospital Oxygen Saturation

**INITIAL ED/HOSPITAL GCS - EYE**

Data Format [number]

**National Element****Definition**

First recorded Glasgow Coma Score (Eye) in the ED/hospital.

**XSD Data Type** *xs:integer***Multiple Entry Configuration** No**Required in XSD** Yes**XSD Element / Domain (Simple Type)** *GcsEye***Accepts Null Value** Yes, common null values**Minimum Constraint** 1 **Maximum Constraint** 4**Field Values**

1 No eye movement when assessed

3 Opens eyes in response to verbal stimulation

2 Opens eyes in response to painful stimulation

4 Opens eyes spontaneously

**Additional Information**

- Used to calculate Overall GCS - ED Score.

**Data Source Hierarchy**

1. Triage Form / Trauma Flow Sheet
2. ED Reocrd

**Uses**

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

**Data Collection**

- Hospital records or electronically through linkage with EMS/medical record.

**Other Associated Elements**

- Initial Systolic Blood Pressure
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital respiratory rate
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS- Total
- Initial ED/Hospital GCS Assessment Qualifiers
- Alcohol Use Indicator
- Drug Use Indicator

**Definition**

First recorded Glasgow Coma Score (Verbal) in the ED/hospital.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>GcsVerbal</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	<b>Minimum Constraint</b> 1 <b>Maximum Constraint</b> 5

**Field Values**

Pediatric (≤ 2 years):

- |                                      |  |
|--------------------------------------|--|
| 1 No vocal response                  | 4 Cries but is consolable, inappropriate interactions    |
| 2 Inconsolable, agitated             | 5 Smiles, oriented to sounds, follows objects, interacts |
| 3 Inconsistently consolable, moaning |  |

Adult:

- |                           |            |
|---------------------------|------------|
| 1 No verbal response      | 4 Confused |
| 2 Incomprehensible sounds | 5 Oriented |
| 3 Inappropriate words     |            |

**Additional Information**

- Used to calculate Overall GCS - ED Score.

**Data Source Hierarchy**

1. Triage Form / Trauma Flow Sheet
2. ED Record

**Uses**

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

**Data Collection**

- Hospital records or electronically through linkage with EMS/medical record.

**Other Associated Elements**

- Initial Systolic Blood Pressure
- Initial ED/Hospital respiratory rate
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS- Total
- Initial ED/Hospital GCS Assessment Qualifiers
- Alcohol Use Indicator
- Drug Use Indicator



**INITIAL ED/HOSPITAL GCS - MOTOR**

Data Format [number]

*National Element***Definition**

First recorded Glasgow Coma Score (Motor) in the ED/hospital.

**XSD Data Type** *xs:integer***Multiple Entry Configuration** No**Required in XSD** Yes**XSD Element / Domain (Simple Type)** *GcsMotor***Accepts Null Value** Yes, common null values**Minimum Constraint** 1 **Maximum Constraint** 6**Field Values**Pediatric (≤ 2 years):

1 No motor response

4 Withdrawal from pain

2 Extension to pain

5 Localizing pain

3 Flexion to pain

6 Appropriate response to stimulation

Adult:

1 No motor response

4 Withdrawal from pain

2 Extension to pain

5 Localizing pain

3 Flexion to pain

6 Obeys commands

**Additional Information**

- Used to calculate Overall GCS – ED Score.

**Data Source Hierarchy**

1. Triage Form / Trauma Flow Sheet
2. ED Record

**Uses**

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

**Data Collection**

- Hospital records or electronically through linkage with EMS/medical record.

**Other Associated Elements**

- Initial Systolic Blood Pressure
- Initial ED/Hospital Respiratory Rate
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital SaO<sub>2</sub>
- Initial ED/Hospital GCS – Eye
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS- Total
- Initial ED/Hospital GCS Assessment Qualifiers
- Alcohol Use Indicator
- Drug Use Indicator

**INITIAL ED/HOSPITAL GCS - TOTAL**

Data Format [number]

*National Element***Definition**

First recorded Glasgow Coma Score (total) in the ED/hospital.

**XSD Data Type** *xs:integer***Multiple Entry Configuration** No**Required in XSD** Yes**XSD Element / Domain (Simple Type)** *TotalGcs***Accepts Null Value** Yes, common null values**Minimum Constraint** 3 **Maximum Constraint** 15**Field Values**

- Relevant value for data element.

**Additional Information**

- *Utilize only if total score is available without component scores.*
- Used to auto-generate an additional calculated field: Revised Trauma Score - ED (adult & pediatric.)

**Data Source Hierarchy**

1. Triage Form / Trauma Flow Sheet
2. ED Record

**Uses**

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

**Data Collection**

- Hospital records or electronically through linkage with EMS/medical record.

**Other Associated Elements**

- Initial ED/Hospital Systolic Blood Pressure
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital respiratory rate
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS Assessment Qualifiers
- Alcohol Use Indicator
- Drug Use Indicator

**INITIAL ED/HOSPITAL GCS ASSESSMENT QUALIFIERS**

Data Format [combo] multiple-choice

*National Element***Definition**

Documentation of factors potentially affecting the first assessment of GCS upon arrival in the ED/hospital.

**XSD Data Type** *xs:integer***XSD Element / Domain (Simple Type)** *GcsQualifier***Multiple Entry Configuration** Yes, max 3**Accepts Null Value** Yes, common null values**Required in XSD** Yes**Field Values**

1 Patient Chemically Sedated

3 Patient Intubated

2 Obstruction to the Patient's Eye

**Additional Information**

- Identifies medical treatments given to the patient that may affect the first assessment of GCS. This field does not apply to self-medications the patient may have administered (i.e., ETOH, prescriptions, etc.).

**Data Source Hierarchy**

- Triage Form / Trauma Flow Sheet
- ED Record
- EMS Run Sheet

**Uses**

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

**Data Collection**

- Hospital records or electronically through linkage with EMS/medical record.

**Other Associated Elements**

- Initial ED/Hospital Systolic Blood Pressure
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital Respiratory Rate
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS- Total
- Alcohol Use Indicator
- Drug Use Indicator

# ALCOHOL USE INDICATOR

Data Format [combo] single-choice

National Element

ED\_15

## Definition

Use of alcohol by the patient.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>AlcoholUseIndicators</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

## Field Values

1 No (not suspected, not tested)

3 Yes (confirmed by test [trace levels])

2 No (confirmed by test)

4 Yes (confirmed by test [beyond legal limit])

## Additional Information

- Blood alcohol concentration (BAC) may be documented at any facility (or setting) treating this patient event.
- “Trace levels” is defined as any alcohol level below the legal limit, but not zero.
- “Beyond legal limit” is defined as a blood alcohol concentration above the legal limit for the state in which the treating institution is located. Above any legal limit, DUI, DWI or DWAI, would apply here.
- If alcohol use is suspected, but not confirmed by test, record null value “Not Known”.

## Data Source Hierarchy

1. Lab Results
2. ED Physician Notes

## Uses

- Allows data to be sorted based upon alcohol and drug indicators.

## Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

## Other Associated Elements

- Drug Use Indicator

**DRUG USE INDICATOR**

Data Format [combo] multiple-choice

*National Element***Definition**

Use of drugs by the patient.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>DrugUseIndicator</i>
<b>Multiple Entry Configuration</b> Yes, max 2	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

**Field Values**

1 No (not suspected, not tested)	3 Yes (confirmed by test [prescription drug])
2 No (confirmed by test)	4 Yes (confirmed by test [illegal use drug])

**Additional Information**

- Drug use may be documented at any facility (or setting) treating this patient event.
- “Illegal use drug” includes illegal use of prescription drugs.
- If drug use is suspected, but not confirmed by test, record null value “Not Known”.
- This data element refers to drug use by the patient and does not include medical treatment.

**Data Source Hierarchy**

1. Lab Results
2. ED Physician Notes

**Uses**

- Allows data to be sorted based upon alcohol and drug indicators.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Alcohol Use Indicator

**ED DISCHARGE DISPOSITION**

Data Format [combo] single-choice

*National Element***Definition**

The disposition of the patient at the time of discharge from the ED.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>EdDischargeDisposition</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

**Field Values**

1 Floor bed (general admission, non specialty unit bed)	7 Operating Room
2 Observation unit (unit that provides < 24 hour stays)	8 Intensive Care Unit (ICU)
3 Telemetry/step-down unit (less acuity than ICU)	9 Home without services
4 Home with services	10 Left against medical advice
5 Died	11 Transferred to another hospital
6 Other (jail, institutional care, mental health, etc.)	

**Additional Information**

- Based upon UB-92 disposition coding.
- *If reported as "Died" complete variable "ED Death."*
- If the patient is directly admitted to the hospital, code as N/A

**Data Source Hierarchy**

1. Discharge Sheet
2. Nursing Progress Notes
3. Social Worker Notes

**Uses**

- Can be used to roughly characterize functional status at hospital discharge.

**Data Collection**

- Hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- ED Discharge Date and Time

**ED DEATH**

Data Format [combo] single-choice

*National Element***Definition**

The type of death incurred while the patient was in the ED.

**XSD Data Type** *xs:integer***XSD Element / Domain (Simple Type)** *DeathInEd***Multiple Entry Configuration** No**Accepts Null Value** Yes, common null values**Required in XSD** Yes**Field Values**

1 DOA: Declared dead on arrival with minimal or no resuscitation attempt

3 Died in ED (other than failed resuscitation attempt)

2 Death after failed resuscitation attempt (failure to respond within 15 minutes)

**Additional Information**

- Only completed when ED Discharge Disposition is completed as "Died"
- Patients treated in accordance with a "Do Not Resuscitate" (DNR) order should be coded under "Died in ED (other than failed resuscitation attempt)".
- Dead on Arrival is defined as arrival at the hospital with no signs of life, but with pre-hospital CPR as indicated below:
  - Age >12 years
    - Blunt trauma, more than 5 minutes pre-hospital CPR
    - Penetrating head/neck/abdomen trauma, more than 5 minutes pre-hospital CPR
    - Penetrating chest trauma, more than 15 minutes pre-hospital CPR
  - Age ≤ 12 years
    - Blunt trauma, more than 15 minutes pre-hospital CPR
    - Penetrating trauma, more than 15 minutes pre-hospital CPR

**Data Source Hierarchy**

1. Triage Form / Trauma Flow Sheet
2. Physician's Progress Notes
3. ED Nurses Notes

**Uses**

- Can be used to roughly characterize the condition of the patient upon arrival at the ED.

**Data Collection**

- Hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- ED Discharge Disposition
- ED Discharge Date
- ED Discharge Time

**ED DISCHARGE DATE**

Data Format [date]

*National Element***Definition**

The date the patient was discharged from the ED.

<b>XSD Data Type</b> <i>xs:date</i>	<b>XSD Element / Domain (Simple Type)</b> <i>EdDischargeDate</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	<b>Minimum Constraint</b> 1990 <b>Maximum Constraint</b> 2030

**Field Values**

- Relevant value for data element.

**Additional Information**

- Collected as YYYY-MM-DD.
- If the date is electronically stored within a database or transmitted via XML as a “tick”, the referenced variables may also be used.
- Used to auto-generate an additional calculated field: Total ED Time: (elapsed time from ED admit to ED discharge).
- If the patient is directly admitted to the hospital, code as N/A

**Data Source Hierarchy**

1. Hospital Discharge Summary
2. Billing Sheet / Medical Records Coding Summary Sheet
3. Physician’s Progress Notes

**Uses**

- Allows data to be assessed based upon total length of ED stay.

**Data Collection**

- Hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- ED Discharge Disposition
- ED Discharge Time



**ED DISCHARGE TIME**

Data Format [time]

*National Element***Definition**

The time the patient was discharged from the ED.

**XSD Data Type** *xs:time***XSD Element / Domain (Simple Type)** *EdDischargeTime***Multiple Entry Configuration** No**Accepts Null Value** Yes, common null values**Required in XSD** Yes**Field Values**

- Relevant value for data element.

**Additional Information**

- Collected as HH:MM.
- HH:MM should be collected as military time.
- If the time is electronically stored within a database or transmitted via XML as a “tick”, the referenced variables may also be used.
- Used to auto-generate an additional calculated field: Total ED Time: (elapsed time from ED admit to ED discharge).
- If the patient is directly admitted to the hospital, code as N/A

**Data Source Hierarchy**

1. Hospital Record
2. Billing Sheet / Medical Records Coding Summary Sheet
3. Physician’s Progress Notes

**Uses**

- Allows data to be sorted based upon total length of ED stay.

**Data Collection**

- Hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- ED Discharge Disposition
- ED Discharge Date

## **Hospital Procedure Information**

## HOSPITAL PROCEDURES

Data Format [combo] multiple-choice

*National Element*

HP\_01

### Definition

Operative or essential procedures conducted during hospital stay.

<b>XSD Data Type</b> <i>xs:string</i>	<b>XSD Element / Domain (Simple Type)</b> <i>HospitalProcedure</i>
<b>Multiple Entry Configuration</b> Yes, max 200	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

### Field Values

- Major and minor procedure (ICD-9-CM) IP codes.
- The maximum number of procedures that may be reported for a patient is 200.

### Additional Information

- Operative and/or essential procedures is defined as procedures performed in the Operating Room, Emergency Department, or Intensive Care Unit that were essential to the diagnoses, stabilization, or treatment of the patient's specific injuries.
- Repeated diagnostic procedures (e.g., repeated CT scan) should not be recorded (record only the first procedure).
- Include only procedures performed at your institution.

### Data Source Hierarchy

1. Operative Reports
2. ER and ICU Records
3. Trauma Flow Sheet
4. Anesthesia Record
5. Billing Sheet / Medical Records Coding Summary Sheet
6. Hospital Discharge Summary

### Uses

- Allows data to be used to characterize procedures used to treat specific injury types.

### Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Procedure Date
- Procedure Time

**HOSPITAL PROCEDURE START DATE**

Data Format [date]

*National Element***Definition**

The date operative and essential procedures were performed.

<b>XSD Data Type</b> <i>xs:date</i>	<b>XSD Element / Domain (Simple Type)</b> <i>HospitalProcedureStartDate</i>
<b>Multiple Entry Configuration</b> Yes, max 200	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	<b>Minimum Constraint</b> 1990 <b>Maximum Constraint</b> 2030

**Field Values**

- Relevant value for data element.

**Additional Information**

- Collected as YYYY-MM-DD.
- If the date is electronically stored within a database or transmitted via XML as a “tick,” the referenced variables may also be used.

**Data Source Hierarchy**

1. OR Nurses Notes
2. Operative Reports
3. Anesthesia Record

**Uses**

- Allows data to be stratified by time until operative and essential procedures were performed.

**Data Collection**

- Hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Hospital Procedures
- Procedure Time

## HOSPITAL PROCEDURE START TIME

Data Format [time]

*National Element*

HP\_03

### Definition

The time operative and essential procedures were performed.

<b>XSD Data Type</b> <i>xs:time</i>	<b>XSD Element / Domain (Simple Type)</b> <i>HospitalProcedureStartTime</i>
<b>Multiple Entry Configuration</b> Yes, max 200	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

### Field Values

- Relevant value for data element.

### Additional Information

- Collected as HH:MM.
- HH:MM should be collected as military time.
- Procedure start time is defined as the time the incision was made (or the procedure started).
- If the time is electronically stored within a database or transmitted via XML as a “tick,” the referenced variables may also be used.

### Data Source Hierarchy

1. OR Nurses Notes
2. Operative Reports
3. Anesthesia Record

### Uses

- Allows data to be stratified by time until operative and essential procedures were performed.

### Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Hospital Procedures
- Procedure Date

## **Diagnoses Information**

## CO-MORBID CONDITIONS

Data Format [combo] multiple-choice

National Element

DG\_01

### Definition

Pre-existing co-morbid factors present before patient arrival at the ED/hospital.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>ComorbidCondition</i>
<b>Multiple Entry Configuration</b> Yes, max 5	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

### Field Values

- |  |  |
|--|--|
| 1 No NTDS co-morbidities are present     | 13 Do Not Resuscitate (DNR) status                       |
| 2 Alcoholism                             | 14 Esophageal varices                                    |
| 3 Ascites within 30 days                 | 15 Functionally dependent health status                  |
| 4 Bleeding disorder                      | 16 History of angina within past 1 month                 |
| 5 Chemotherapy for cancer within 30 days | 17 History of myocardial infarction within past 6 months |
| 6 Congenital Anomalies                   | 18 History of revascularization / amputation for PVD     |
| 7 Congestive heart failure               | 19 Hypertension requiring medication                     |
| 8 Current smoker                         | 20 Impaired sensorium                                    |
| 9 Currently requiring or on dialysis     | 21 Prematurity   |
| 10 CVA/residual neurological deficit     | 22 Obesity   |
| 11 Diabetes mellitus                     | 23 Respiratory Disease                                   |
| 12 Disseminated cancer                   | 24 Steroid use   |

### Additional Information

- The field value (1) "No NTDS co-morbidities are present" would be chosen if none of the pre-existing co-morbid factors listed above are present in the patient. This particular field value is available since individual state or hospital registries may track additional co-morbid factors not listed here.
- The value "N/A" should be used for patients with no known co-morbid conditions coded by your registry or defined in the NTDS Data Dictionary."

### Data Source Hierarchy

1. History and Physical
2. Discharge Sheet
3. Billing Sheet

### Uses

- Allows data to be used to characterize patients and hospital outcomes based upon the presence (and type) of co-morbid condition.

### Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Injury Diagnosis

**INJURY DIAGNOSES**

Data Format [combo] multiple-choice

*National Element***Definition**

Diagnoses related to all identified injuries.

**XSD Data Type** *xs:string***XSD Element / Domain (Simple Type)** *InjuryDiagnosis***Multiple Entry Configuration** Yes, max 50**Accepts Null Value** Yes, common null values**Required in XSD** Yes**Field Values**

- Injury diagnoses as defined by (ICD-9-CM) codes (code range: 800-959.9).
- The maximum number of diagnoses that may be reported for an individual patient is 50.

**Additional Information**

- ICD-9-CM codes should be listed starting with the most to least significant injury. The primary injury resulting in the hospitalization should be listed first. The “significance” of other injuries should be based upon severity and location.
- ICD-9-CM codes pertaining to other medical conditions (e.g., CVA, MI, co-morbidities, etc.) may also be included in this field, following a complete listing of injury diagnoses.
- Used to auto-generate eight additional calculated fields: Abbreviated Injury Scale (six body regions), Injury Severity Score and the Functional Capacity Index.

**Data Source Hierarchy**

1. Hospital Discharge Summary
2. Billing Sheet / Medical Records Coding Summary Sheet
3. Trauma Flow Sheet
4. ER and ICU Records

**Uses**

- Allows data to be used to characterize patients and hospital outcomes based upon the presence, severity and type of injury.

**Data Collection**

- Hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Co-morbid Conditions



## **Injury Severity Information**

## AIS PREDOT CODE

Data Format [combo] multiple choice

*Optional Element*

IS\_01

### Definition

The Abbreviated Injury Scale (AIS) predot codes that reflect the patient's injuries.

<b>XSD Data Type</b> <i>xs:string</i>	<b>XSD Element / Domain (Simple Type)</b> <i>AisPredot</i>
<b>Multiple Entry Configuration</b> Yes, max 50	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

### Field Values

- The predot code is the 6 digits preceding the decimal point in an associated AIS code.

### Additional Information

- This variable is considered *optional* and is not required as part of the NTDS dataset

### Uses

- Allows data to be used to characterize patients and hospital outcomes based upon the presence, severity and type of injury.

### Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Common Null Values
- AIS Severity
- ISS Body Region
- AIS Version
- Locally Calculated ISS

**AIS SEVERITY****Data Format** [combo] multiple choice**Optional Element****Definition**

The Abbreviated Injury Scale (AIS) severity codes that reflect the patient's injuries.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>AisSeverity</i>
<b>Multiple Entry Configuration</b> Yes, max 50	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	<b>Minimum Constraint</b> 1 <b>Maximum Constraint</b> 6

**Field Values**

1 Minor Injury	4 Severe Injury
2 Moderate Injury	5 Critical Injury
3 Serious Injury	6 Maximum Injury, Virtually Unsurvivable
	9 Not Possible to Assign

**Additional Information**

- This variable is considered *optional* and is not required as part of the NTDS dataset
- The field value (9) "Not Possible to Assign" would be chosen if it is not possible to assign a severity to an injury.

**Uses**

- Allows data to be used to characterize patients and hospital outcomes based upon the presence, severity and type of injury.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Common Null Values
- AIS PREDOT
- ISS Body Region
- AIS Version
- Locally Calculated ISS

## ISS BODY REGION

Data Format [combo] multiple choice

*Optional Element*

IS\_03

### Definition

The Injury Severity Score (ISS) body region codes that reflects the patient's injuries.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>IssRegion</i>
<b>Multiple Entry Configuration</b> Yes, max 50	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	<b>Minimum Constraint</b> 1 <b>Maximum Constraint</b> 6

### Field Values

1 Head or Neck	4 Abdominal or pelvic contents
2 Face	5 Extremities or pelvic girdle
3 Chest	6 External

- Head or neck injuries include injury to the brain or cervical spine, skull or cervical spine fractures.
- Facial injuries include those involving mouth, ears, nose and facial bones.
- Chest injuries include all lesions to internal organs. Chest injuries also include those to the diaphragm, rib cage, and thoracic spine.
- Abdominal or pelvic contents injuries include all lesions to internal organs. Lumbar spine lesions are included in the abdominal or pelvic region.
- Injuries to the extremities or to the pelvic or shoulder girdle include sprains, fractures, dislocations, and amputations, except for the spinal column, skull and rib cage.
- External injuries include lacerations, contusions, abrasions, and burns, independent of their location on the body surface.

### Additional Information

- This variable is considered *optional* and is not required as part of the NTDS dataset

### Uses

- Allows data to be used to characterize patients and hospital outcomes based upon the presence, severity and type of injury.

### Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Common Null Values
- AIS PREDOT
- AIS Severity
- AIS Version
- Locally Calculated ISS

**AIS VERSION**

Data Format [combo] single-choice

**Optional Element****Definition**

The software (and version) used to calculate Abbreviated Injury Scale (AIS) severity codes.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>AisVersion</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

**Field Values**

1 80 Full code (description & severity, XXXXXX.Y)	9 AIS80 only (Severity only, .Y)
2 85 Full code (description & severity, XXXXXX.Y)	10 AIS85 only (Severity only, .Y)
3 90 Full code (description & severity, XXXXXX.Y)	11 AIS90 only (Severity only, .Y)
4 95 Full code (description & severity, XXXXXX.Y)	12 AIS95 only (Severity only, .Y)
5 98 Full code (description & severity, XXXXXX.Y)	13 AIS98 only (Severity only, .Y)
6 05 Full code (description & severity, XXXXXX.Y)	14 AIS05 only (Severity only, .Y)
7 ICD Map	15 Other
8 Tri-Code	

**Additional Information**

- This variable is considered *optional* and is not required as part of the NTDS dataset

**Uses**

- Allows data to be used to characterize patients and hospital outcomes based upon the presence, severity and type of injury.

**Data Collection**

- EMS or hospital records or electronically through linkage with the EMS/medical record.

**Other Associated Elements**

- Common Null Values
- AIS PREDOT
- ISS Body Region
- AIS Severity
- Locally Calculated ISS

## LOCALLY CALCULATED ISS

Data Format [combo] single-choice

*Optional Element*

IS\_05

---

### Definition

The Injury Severity Score (ISS) that reflects the patient's injuries.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>IssLocal</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	<b>Minimum Constraint</b> 1 <b>Maximum Constraint</b> 75

### Field Values

- Relevant ISS value for the constellation of injuries.

### Additional Information

- This variable is considered *optional* and is not required as part of the NTDS dataset

### Uses

- Allows data to be used to characterize patients and hospital outcomes based upon the presence, severity and type of injury.

### Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Common Null Values
- AIS PREDOT
- ISS Body Region
- AIS Version
- AIS Severity

## **Outcome Information**

# TOTAL ICU LENGTH OF STAY

Data Format [number]

National Element

O\_01

## Definition

The total number of patient days in any ICU (including all episodes).

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>TotalCuLos</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	<b>Minimum Constraint</b> 0 <b>Maximum Constraint</b> 400

## Field Values

- Relevant value for data element.

## Additional Information

- Recorded in full day increments with any partial day listed as a full day.
- Field allows for multiple admission and discharge dates and autofills with total ICU LOS. If a patient is admitted and discharged on the same date, the LOS is one day.

## Data Source Hierarchy

1. ICU Nursing Flow Sheet
2. Calculate Based on Admission Form and Discharge Sheet
3. Nursing Progress Notes

## Uses

- Provides a rough estimate of severity of injury and resource utilization.

## Data Collection

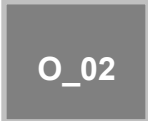
- Hospital records or electronically through linkage with EMS/medical record.



# TOTAL VENTILATOR DAYS

Data Format [number]

*National Element*



## Definition

The total number of patient days spent on a mechanical ventilator (including all episodes).

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>TotalVentDays</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	<b>Minimum Constraint</b> 0 <b>Maximum Constraint</b> 400

## Field Values

- Relevant value for data element.

## Additional Information

- Recorded in full day increments with any partial day listed as a full day.
- Field allows for multiple “start” and “stop” dates and calculates total days spent on a mechanical ventilator. If a patient begins and ends mechanical ventilation on the same date, the total ventilator days is one day.
- Includes mechanical ventilation time associated with OR procedures.

## Data Source Hierarchy

1. ICU Respiratory Therapy Flowsheet
2. ICU Nursing Flow Sheet
3. Physician’s Daily Progress Notes
4. Calculate Based on Admission Form and Discharge Sheet

## Uses

- Provides a rough estimate of severity of injury and resource utilization.

## Data Collection

- Hospital records or electronically through linkage with EMS/medical record.

## HOSPITAL DISCHARGE DATE

Data Format [date/time]

*National Element*

O\_03

### Definition

The date the patient was discharged from the hospital.

<b>XSD Data Type</b> <i>xs:date</i>	<b>XSD Element / Domain (Simple Type)</b> <i>HospitalDischargeDate</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	<b>Minimum Constraint</b> 1990 <b>Maximum Constraint</b> 2030

### Field Values

- Relevant value for data element.

### Additional Information

- Collected as YYYY-MM-DD.
- If the date is electronically stored within a database or transmitted via XML as a “tick”, the referenced variables may also be used.
- Used to auto-generate an additional calculated field: Total Length of Hospital Stay (elapsed time from ED/hospital arrival to hospital discharge).

### Data Source Hierarchy

1. Hospital Record
2. Billing Sheet / Medical Records Coding Summary Sheet
3. Physician Discharge Summary

### Uses

- Provides a rough estimate of severity of injury and resource utilization.

### Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- ED/Hospital Admission Date
- ED/Hospital Admission Time
- Hospital Discharge Time

## HOSPITAL DISCHARGE TIME

Data Format [time]

National Element

O\_04

### Definition

The time the patient was discharged from the hospital.

<b>XSD Data Type</b> <i>xs:time</i>	<b>XSD Element / Domain (Simple Type)</b> <i>HospitalDischargeTime</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

### Field Values

- Relevant value for data element.

### Additional Information

- Collected as HH:MM.
- HH:MM should be collected as military time.
- If the time is electronically stored within a database or transmitted via XML as a “tick”, the referenced variables may also be used.
- Used to auto-generate an additional calculated field: Total Length of Hospital Stay (elapsed time from ED/hospital arrival to hospital discharge).

### Data Source Hierarchy

1. Hospital Record
2. Billing Sheet / Medical Records Coding Summary Sheet
3. Physician Discharge Summary

### Uses

- Provides a rough estimate of severity of injury and resource utilization.

### Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- ED/Hospital Admission Date and Time
- Hospital Discharge Date

# HOSPITAL DISCHARGE DISPOSITION

Data Format [combo] single-choice

*National Element*

O\_05

## Definition

The disposition of the patient when discharged from the hospital.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>HospitalDischargeDisposition</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

## Field Values

- |   |   |
|---|---|
| 1 Discharged/Transferred to another acute care hospital using EMS | 6 Discharged home with no home services   |
| 2 Discharged/Transferred to an Intermediate Care Facility         | 7 Discharged/Transferred to Skilled Nursing Facility                                  |
| 3 Discharge/Transferred to home under care of Home Health Agency  | 8 Discharged/ Transferred to hospice care   |
| 4 Left against medical advice                                     | 9 Discharged/Transferred to another type of rehabilitation or long-term care facility |
| 5 Expired   |   |

## Additional Information

- Field value = 6, “home” refers to any place of residence (jail, institutional care, etc)
- Field values based upon UB-92 disposition coding.
- Disposition to any other non-medical facility should be coded as 6: Discharged home with no home services.”
- Disposition to any other medical facility should be coded as 9: Discharged/Transferred to another type of rehabilitation or long-term care facility

## Data Source Hierarchy

1. Hospital Discharge Summary Sheet
2. Nurses Notes
3. Case Manager / Social Services Notes

## Uses

- Can be used to roughly characterize functional status at hospital discharge.

## Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

## Other Associated Elements

- ED Discharge Date
- ED Discharge Time

## Section O\_05 Outcome Information

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## **Financial Information**

## PRIMARY METHOD OF PAYMENT

Data Format [combo] single-choice

*National Element*

F\_01

### Definition

Primary source of payment for hospital care.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>PrimaryMethodPayment</i>
<b>Multiple Entry Configuration</b> No	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

### Field Values

1 Medicaid	6 Medicare
2 Not Billed (for any reason)	7 Other Government
3 Self Pay	8 Workers Compensation
4 Private/Commercial Insurance	9 Blue Cross/Blue Shield
5 No Fault Automobile	10 Other

### Data Source Hierarchy

1. Billing Sheet / Medical Records Coding Summary Sheet
2. Hospital Admission Form

### Uses

- Allows data to be sorted based upon payer mix.

### Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

## **Quality Assurance Information**

## HOSPITAL COMPLICATIONS

Data Format [combo] multiple-choice

National Element

Q\_01

### Definition

Any medical complication that occurred during the patient's stay at your hospital.

<b>XSD Data Type</b> <i>xs:integer</i>	<b>XSD Element / Domain (Simple Type)</b> <i>HospitalComplication</i>
<b>Multiple Entry Configuration</b> Yes, max 10	<b>Accepts Null Value</b> Yes, common null values
<b>Required in XSD</b> Yes	

### Field Values

- |   |  |
|---|--|
| 1 No NTDS listed medical complications occurred | 14 Deep Vein Thrombosis (DVT) / thrombophlebitis |
| 2 Abdominal compartment syndrome                | 15 Extremity compartment syndrome                |
| 3 Abdominal fascia left open                    | 16 Graft/prosthesis/flap failure                 |
| 4 Acute renal failure                           | 17 Intracranial pressure                         |
| 5 Acute respiratory distress syndrome (ARDS)    | 18 Myocardial infarction                         |
| 6 Base deficit                                  | 19 Organ/space surgical site infection           |
| 7 Bleeding                                      | 20 Pneumonia                                     |
| 8 Cardiac arrest with CPR                       | 21 Pulmonary embolism                            |
| 9 Coagulopathy                                  | 22 Stroke / CVA                                  |
| 10 Coma   | 23 Superficial surgical site infection           |
| 11 Decubitus ulcer                              | 24 Systemic sepsis                               |
| 12 Deep surgical site infection                 | 25 Unplanned intubation                          |
| 13 Drug or alcohol withdrawal syndrome          | 26 Wound disruption                              |

### Additional Information

- The field value (1) "No NTDS listed medical complications occurred" would be chosen if none of the hospital complications listed above are present in the patient. This particular field value is available since individual state or hospital registries may track additional hospital complications not listed here.
- The value "N/A" should be used for patients with no known co-morbid conditions coded by your registry or defined in the NTDS Data Dictionary."

### Data Source Hierarchy

- Discharge Sheet
- History and Physical
- Billing Sheet

### Uses

- Allows data to be used to characterize patients and hospital outcomes based upon the presence (and type) of hospital complication.

### Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

### Other Associated Elements

- Injury Diagnosis



**Appendix 1: Auto Calculated Variables  
Based upon Existing Data Elements**

## Variables Auto-Calculated Based on Existing Data Elements

### 1. FIPS code (location code)

*Definition:* Federal information processing standards codes (FIPS codes) are a standardized set of numeric codes issued by the National Institute of Standards and Technology (NIST) to ensure uniform identification of geographic entities. The entities covered include: states, counties, cities and other statistically equivalent entities.

*Calculation:* An overall FIPS code is calculated by concatenating individual FIPS codes for state (2-digit FIPS code), county (3-digit FIPS code) and city (5-digit FIPS code) in that order.

### 2. Trauma Type (blunt, penetrating, burn)

*Definition:* An indication of the type (or nature) of trauma produced by an injury.

*Calculation:* Injury diagnoses are categorized according to the Barell Matrix<sup>1</sup> a two-dimensional array of ICD-9-CM codes grouped by body region and nature of injury. The Barell Matrix and the ICD-9-CM codes defining each cell are presented in Table 1 in this Appendix. An electronic version of the Barell Matrix may be viewed at: [www.cdc.gov/nchs/about/otheract/ice/barellmatrix.htm](http://www.cdc.gov/nchs/about/otheract/ice/barellmatrix.htm)

### 3. Injury Intentionality (using CDC matrix)

*Definition:* An indication of whether an injury was caused by an act carried out on purpose by oneself or by another person(s), with the goal of injuring or killing.

*Calculation:* A matrix table grouping External Cause of Injury Codes (E-Codes) into two classifications: *mechanism* of injury or cause of death (e.g., falls, etc.) by *intent* of injury or manner of death (i.e., unintentional or "accidental," etc. [see Table 2]). An electronic version of the CDC matrix may be viewed at: [www.cdc.gov/ncipc/whatsnew/matrix2.htm](http://www.cdc.gov/ncipc/whatsnew/matrix2.htm)

### 4. Total EMS Response Time

*Definition:* The total elapsed time from dispatch of the EMS transporting unit to scene arrival of the EMS transporting unit (i.e., the time the vehicle stopped moving).

*Calculation:* EMS Unit Arrival on Scene DateTime – EMS Dispatch DateTime

### 5. Total EMS Scene Time

*Definition:* The total elapsed time from EMS transporting unit scene arrival to EMS transporting unit scene departure (i.e., the time the vehicle started moving).

*Calculation:* EMS Unit Scene Departure DateTime – EMS Unit Arrival on Scene DateTime

6. *Total EMS Time*

*Definition:* The total elapsed time from dispatch of the EMS transporting unit to hospital arrival of the EMS transporting unit.

*Calculation:* ED/Hospital Arrival DateTime – EMS Dispatch DateTime

7. *Overall GCS - EMS score (adult and pediatric)*

*Definition:* A scale calculated in the out-of-hospital setting which evaluates the patient's initial level of awareness, which indirectly indicates the extent of neurologic injury. The scale rates three categories of patient responses; eye opening, best verbal response, and best motor response. The lowest score is 3 and is indicative of no response, the highest score is 15, indicates the patient is alert and aware of his or her surroundings.

*Calculation:* Initial Field GCS Eye + Initial Field GCS Verbal + Initial Field GCS Motor

8. *Overall GCS - ED score (adult and pediatric)*

*Definition:* A scale calculated in the emergency department (ED) or hospital setting which evaluates the patient's initial (upon arrival) level of awareness, which indirectly indicates the extent of neurologic injury. The scale rates three categories of patient responses; eye opening, best verbal response, and best motor response. The lowest score is 3 and is indicative of no response, the highest score is 15, indicates the patient is alert and aware of his or her surroundings.

*Calculation:* Initial ED/Hospital GCS Eye + Initial ED/Hospital GCS Verbal + Initial ED/Hospital GCS Motor

9. *Revised Trauma Score - EMS (adult and pediatric)*

*Definition:* The Revised Trauma Score is a physiological scoring system used to predict death from injury or need for trauma center care. It is scored based upon the initial vital signs obtained from the patient in the out-of-hospital setting.

*Calculation:* RTS = 0.9368 (Initial Field GCS Total) + 0.7326 (Initial Field Systolic Blood Pressure) + 0.2908 (Initial Field Respiratory Rate)

10. *Revised Trauma Score - ED (adult and pediatric)*

*Definition:* The Revised Trauma Score is a physiological scoring system used to predict death from injury or need for trauma center care. It is scored based upon the initial vital signs obtained from the patient in the ED or hospital setting.

*Calculation:* RTS = 0.9368 (Initial ED/Hospital GCS Total) + 0.7326 (Initial ED/Hospital Systolic Blood Pressure) + 0.2908 (Initial ED/Hospital Respiratory Rate)

### 11. *Abbreviated Injury Scale (six body regions)*

*Definition:* The Abbreviated Injury Scale (AIS) is an anatomical scoring system first introduced in 1969. Since this time it has been revised and updated against survival to provide a ranking the severity of injury. AIS scores are available for six body regions; Head (or neck), Face, Chest, Abdominal, Extremities (including pelvis) and External. The AIS is monitored by a scaling committee of the Association for the Advancement of Automotive Medicine.

*Calculation:* Injuries are ranked on a scale of 1 to 6, with 1 being minor, 5 severe and 6 an un-survivable injury. This represents the 'threat to life' associated with an injury and is not meant to represent a comprehensive measure of severity. The AIS is not a true scale, in that the difference between any two AIS scores is not the same as the difference between another set of two scores.

### 12. *Injury Severity Score*

*Definition:* The Injury Severity Score (ISS) is an anatomical scoring system that provides an overall score for patients with multiple injuries.

*Calculation:* Each injury is assigned an Abbreviated Injury Scale (AIS) score and is allocated to one of six body regions (Head, Face, Chest, Abdomen, Extremities (including Pelvis) and External). The 3 most severely injured body regions have their AIS score squared and added together to produce the ISS score. Only the highest AIS score in each body region is used. The ISS score takes values from 0 to 75. If an injury is assigned an AIS of 6 (un-survivable injury), the ISS score is automatically assigned to 75.

### 13. *Functional Capacity Index*

*Definition:* The Functional Capacity Index (FCI) maps AIS injury descriptions into scores that reflect expected levels of reduced functional capacity at 1 year after injury. The FCI predicts functional capacity across 10 dimensions of physical function. It is meant to predict the ability of the injured to perform tasks important for everyday living independent of physical and social environment.

*Calculation:* Specific scores for functional capacity dimensions are assigned (by expert consensus) to each AIS injury description (the "pre-dots") as is one overall score that summarizes function across the 10 dimensions. The overall FCI score ranges from 0 (representing death) to 1 (representing no limitations).

### 14. *Total ED Time*

*Definition:* The total elapsed time the patient was in the emergency department (ED).

*Calculation:* ED Discharge DateTime – ED/Hospital Arrival DateTime

### 15. *Total Length of Hospital Stay*

*Definition:* The total elapsed time the patient was in the hospital.

*Calculation:* Hospital Discharge DateTime – ED/Hospital Arrival DateTime

# TABLE 1: THE BARELL INJURY DIAGNOSIS MATRIX, CLASSIFICATION BY BODY REGION AND NATURE OF THE INJURY

		A	B	C	D	E	F	G	H	I	J	K	L		
		ICD-9-CM codes	FRACTURE 800-829	DISLOCATION 830-839	SPRAINS & STRAINS 840-848	INTERNAL 850-854, 860-869, 952, 995.55	OPEN WOUND 870-884, 890-894	AMPUTATIONS 895-897, 895-897	BLOOD VESSELS 900-904	CONTUSION / SUPERFICIAL 910-924	CRUSH 925-929	BURNS 940-949	NERVES 950-951, 953-957	UNSPECIFIED 959	
Head and Neck	Traumatic Brain Injury	1 Type 1 TBI	800.801,803,804(1.1-4, 6-9), (03-05, 53-55) 850(2-4), 851-854, 950(1-3), 995.55	800.801,803,804(1.1-4, 6-9) 800.801,803,804(03-05, 53-55)	/	/	850(2-4) 851-854*, 995.55	/	/	/	/	/	950.1-3	/	
		2 Type 2 TBI	800.801,803,804(00.02, 06, 09) (50, 52, 56, 59) 850(0, 1, 5, 9)	800.801,803,804(00.02, 06, 09) 800.801,803,804(50, 52, 56, 59)	/	/	850(0, 1, 5, 9)	/	/	/	/	/	/	/	
		3 Type 3 TBI	800.801,803,804(01, 51)	800.801,803,804(01, 51)	/	/	/	/	/	/	/	/	/	/	/
	Other head, face and neck	4 Other Head	873(0-1, 8-9), 941.x6, 951, 959.01	/	/	/	/	873.0-1, 8-9	/	/	/	/	941.x6	951	959.01*
		5 Face	802, 830, 848.0-1, 872, 873.2-7, 941(x1, x3-x5, x7)	802	830	848.0-1	/	872, 873.2-7	/	/	/	/	941.x1, x3, x5, x7	/	/
		6 Eye	870-871, 918, 921, 940, 941.x2, 950(0, 9)	/	/	/	/	870-871	/	/	918, 921	/	940, 941.x2	950(0, 9)	/
		7 Neck	807.5-6, 848.2, 874, 925.2, 941.x8, 953.0, 954.0	807.5-6	/	848.2	/	874	/	/	/	925.2	941.x8	953.0, 954.0	/
		8 Head, Face and Neck Unspecified	900, 910, 920, 925.1, 941.x0, x9, 947.0, 957.0, 959.09	/	/	/	/	/	/	900	910, 920	925.1	941.x0, x9, 947.0	957	959.09
Spine and back	Spinal Cord (SCI)	9 Cervical SCI	806(0-1), 952.0	806.0-1	/	/	952	/	/	/	/	/	/	/	
		10 Thoracic/Dorsal SCI	806(2-3), 952.1	806.2-3	/	/	952.1	/	/	/	/	/	/	/	
		11 Lumbar SCI	806(4-5), 952.2	806.4-5	/	/	952.2	/	/	/	/	/	/	/	
		12 Sacrum Coccyx SCI	806(6-7), 952(3-4)	806.6-7	/	/	952.3-4	/	/	/	/	/	/	/	
		13 Spine- Back unspecified SCI	806(8-9), 952(8-9)	806.8-9	/	/	952.8-9	/	/	/	/	/	/	/	
	Vertebral Column (VCI)	14 Cervical VCI	805(0-1), 839(0-1), 847.0	805.0-1	839.0-1	847.0	/	/	/	/	/	/	/	/	
		15 Thoracic/Dorsal VCI	805(2-3), 839(21, 31), 847.1	805.2-3	839.21, 31	847.1	/	/	/	/	/	/	/	/	
		16 Lumbar VCI	805(4-5), 839(20, 30), 847.2	805.4-5	839.20, 30	847.2	/	/	/	/	/	/	/	/	
17 Sacrum Coccyx VCI	805(6-7), 839(41-42), 839(51-52), 847.3-4	805.6-7	839(41-42, 51-52)	847.3-4	/	/	/	/	/	/	/	/			
18 Spine- Back unspecified VCI	805(8-9), 839(40, 49), 839(50, 59)	805.8-9	839(40, 49, 50, 59)	/	/	/	/	/	/	/	/	/			
Torso	Torso	19 Chest (Thorax)	807(0-4), 839(61, 71), 848(3-4), 860-862, 875, 879(0-1), 901, 922(0-01, 33), 926.19, 942x1-x2, 953.1	807.0-4	839.61, 71	848.3-4	860-862	875, 879.0-1	/	901	922(0, 1, 33)	926.19	942.x1-x2	953.1	
		20 Abdomen	863-866, 868, 879(2-5), 902(0-4), 922.2, 942.x3, 947.3, 953(2, 5)	/	/	/	863-866, 868	879.2-5	/	902.0-4	922.2	/	942.x3, 947.3	953.2, 953.5	
		21 Pelvis & Urogenital	808, 839(69, 79), 846, 848.5, 867, 877-878, 902(5, 81-82), 922.4, 926(0, 12), 942.x5, 947.4, 953.3	808	839.69, 79	846, 848.5	867	877-878	/	902(5, 81-82)	922.4	926(0, 12)	942.x5, 947.4	953.3	
		22 Trunk	809, 879(6-7), 911, 922(8-9), 926(8-9), 942(x.0-x9), 954(1, 8-9), 959.1	809	/	/	/	879.6-7	/	/	911, 922.8-9	926.8-9	942.x0, 942.x9	954.1, 8-9	959.1
		23 Back and Buttock	847.9, 876, 922(31-32), 926.11, 942.x4	/	/	847.9	/	876	/	/	922.31-32	926.11	942.x4	/	
Extremities	Upper	24 Shoulder & upper arm	810-812, 831, 840, 880, 887(2-3), 912, 923.0, 927.0, 943(x3-x6), 959.2	810-812	831	840	880	887.2-3	/	912, 923.0	927.0	943.x3-x6	/	959.2	
		25 Forearm & elbow	813, 832, 841, 881(x0-x1), 887(0-1), 923.1, 927.1, 943(x1-x2)	813	832	841	881.x0-x1	887.0-1	/	923.1	927.1	943.x1-x2	/	/	
		26 Wrist, hand & fingers	814-817, 823, 834, 842, 891.x2, 892, 893, 895-896, 914-915, 922(2-3), 927(2-3), 944, 959(4-5)	814-817	833, 834	842	/	881.x2, 882, 883	842	885-886	914-915, 922.2-3	927.2-3	944	/	959.4-5
		27 Other & unspecified	818, 884, 887(4-7), 903, 913, 923(8-9), 927(8-9), 943(x0, x9), 953.4, 955, 959.3	818	/	/	/	884	887.4-7	903	913, 923.8, 9	927.8-9	943.x0, x9	953.4, 955	959.3
		28 Hip	820, 835, 843, 924.01, 928.01	820	835	843	/	/	/	/	924.01	928.01	/	/	
	Lower	29 Upper leg & thigh	821, 897(2-3), 924.00, 928.00, 945.x6	821	/	/	/	897.2-3	/	924.00	928.00	945.x6	/	/	
		30 Knee	822, 836, 844.0-3, 924.11, 928.11, 945.x5	822	836	844.0-3	/	/	/	924.11	928.11	945.x5	/	/	
		31 Lower leg & ankle	823-824, 837, 845.0, 897(0-1), 924(10, 21), 928(10, 21), 945(x3-x4)	823-824	837	845.0	/	897.0-1	/	924.10, 21	928.10, 21	945.x3-x4	/	/	
		32 Foot & toes	825-826, 838, 845.1, 892-893, 895-896, 917, 924(3, 20), 928(3, 20), 945(x1-x2)	825-826	838	845.1	/	892-893	895-896	/	917, 924.3, 20	928.3, 20	945.x1-x2	/	/
		33 Other & unspecified	827, 844(8-9), 890-891, 894, 897(4-7), 904(0-8), 916, 924(4-5), 928(8-9), 945(x0, x9), 959.6-7	827	/	844.8, 9	/	890-891, 894	897.4-7	904.0-8	916, 924.4-5	928.8, 9	945.x0, x9	/	959.6-7
Unclassifiable by site	Other & unspecified	34 Other/ multiple	819, 828, 902(87, 89), 947(1-2), 953.8, 956	819, 828	/	/	/	/	902.87, 89	/	/	947.1-2	953.8, 956	/	
		35 Unspecified site	829, 839(8-9), 848(8-9), 869, 879(8, 9), 902.9, 904.9, 919, 924(8, 9), 929, 946, 947(8, 9), 948, 949, 953.9, 957(1, 8, 9), 959(8, 9)	829	839.8-9	848.8-9	869	879(8-9)	/	902.9, 904.9	919, 924.8, 9	929	946, 947.8, 9	953.9, 957.1, 8, 9	959.8, 9
	36 System-wide & late effects	905-908, 909(0, 1, 2, 4, 9), 930-939, 958, 960-994, 995.50-54, 59, 995(80-85)	Foreign body (930-939), Early complications of trauma (958), Poisoning (960-979), Toxic Effects (980-989), Other and unspecified effects of external cause (990-994) Child and adult maltreatment (995.50-54, 59, 995.80-85) Late effects of injuries, poisonings, toxic effects and other external causes (905-909) excluding 909(3, 5)												

Special diagnostic codes for trauma: Flail Chest (807.4) Pneumothorax (860)

For purposes of classification, head injuries are labeled as **Type 1 TBI** if there is recorded evidence of an intracranial injury or a moderate or a prolonged loss of consciousness (LOC), Shaken Infant Syndrome (SIS), or injuries to the optic nerve pathways.

**Type 2 TBI** includes injuries with no evidence of intracranial injury, and LOC of less than one hour, or LOC of unknown duration, or unspecified level of consciousness. **Type 3 TBI** includes patients with no evidence of intracranial injury and no LOC.

\*Note from CDC: 959.01 (added to ICD-9-CM in 1997) is not intended to be assigned to TBI cases; however, in the USA it has been assigned incorrectly to a substantial proportion of cases previously coded 854.

## TABLE 2: INJURY INTENTIONALITY CDC MATRIX

This matrix contains the ICD-9 external-cause-of-injury codes used for coding of injury mortality data and additional ICD-9-CM external-cause-of-injury codes, designated in bold, only used for coding of injury morbidity data. In addition, a list of ICD-9-CM external-cause-of-injury codes that have been added since 1994 along with their descriptors is appended to the matrix.

Mechanism/Cause	Manner/Intent				
	Unintentional	Self-inflicted	Assault	Undetermined	Other
<b>Cut/pierce</b>	E920.0-.9	E956	E966	E986	E974
<b>Drowning/submersion</b>	E830.0-.9, E832.0-.9, E910.0-.9	E954	E964	E984	
<b>Fall</b>	E880.0-E886.9, E888	E957.0-.9	E968.1	E987.0-.9	
<b>Fire/burn<sup>3</sup></b>	E890.0-E899, E924.0-.9	E958.1,.2,.7	E961, E968.0,.3, <b>E979.3</b>	E988.1,.2,.7	
<b>Fire/flame<sup>3</sup></b>	E890.0-E899	E958.1	E968.0, <b>E979.3</b>	E988.1	
<b>Hot object/substance</b>	E924.0-.9	E958.2,.7	E961,E968.3	E988.2,37	
<b>Firearm<sup>3</sup></b>	E922.0-.3,.8,.9	E955.0-.4	E965.0-4, <b>E979.4</b>	E985.0-.4	E970
<b>Machinery</b>	E919 (.0-.9)				
<b>Motor vehicle traffic<sup>2,3</sup></b>	E810-E819 (.0-.9)	E958.5	<b>E968.5</b>	E988.5	
<b>Occupant</b>	E810.-E819 (.0,.1)				
<b>Motorcyclist</b>	E810-E819 (.2,.3)				
<b>Pedal cyclist</b>	E810-E819 (.6)				
<b>Pedestrian</b>	E810-E819 (.7)				
<b>Unspecified</b>	E810-E819 (.9)				
<b>Pedal cyclist, other</b>	E800-E807 (.3) E820-E825 (.6), E826.1,.9 E827-E829(.1)				
<b>Pedestrian, other</b>	E800-E807(.2) E820-E825(.7) E826-E829(.0)				

<sup>1</sup>Includes legal intervention (E970-E978) and operations of war (E990-E999).

<sup>2</sup>Three 4th-digit codes (.4 [occupant of streetcar], .5 [rider of animal], .8 [other specified person]) are not presented separately because of small numbers. However, because they are included in the overall motor vehicle traffic category, the sum of these categories can be derived by subtraction.

<sup>3</sup>Codes in bold are for morbidity coding only. For details see table 2.

<sup>4</sup>E849 (place of occurrence) has been excluded from the matrix. For mortality coding, an ICD-9 E849 code does not exist. For morbidity coding, an ICD-9-CM E849 code should never be first-listed E code and should only appear as an additional code to specify the place of occurrence of the injury incident.

**Note:** ICD-9 E codes for coding underlying cause of death apply to injury-related death data from 1979 through 1998. Then there is a new ICD-10 external cause of injury matrix that applies to death data from 1999 and after. This can be found on the National Center for Health Statistics website at <http://www.cdc.gov/nchs/about/otheract/ice/projects.htm>

**TABLE 2: INJURY INTENTIONALITY CDC MATRIX**

Mechanism/Cause	Manner/Intent				
	Unintentional	Self-inflicted	Assault	Undetermined	Other
Transport, other	E800-E807 (.0,.1,.8,.9) E820-E825 (.0-.5,.8,.9) E826.2-8 E827-E829 (.2-.9) E831.0-.9, E833.0-E845.9	E958.6		E988.6	
Natural/environmental	E900.00-E909, E928.0-.2	E958.3		E958.3	
Bites/stings <sup>3</sup>	E905.0-6,.9 E906.0-4,.5,.9				
Overexertion	E927				
Poisoning	E850.0-E869.9	E950.0-E952.9	E962.0-.9, <b>E979.6,.7</b>	E980.0-E982.9	E972
Struck by, against	E916-E917.9		E960.0; E968.2		E973, E975
Suffocation	E911-E913.9	E953.0-.9	E963	E983.0-.9	
Other specified and classifiable <sup>3,4</sup>	E846-E848, E914-E915 E918, E921.0-39, <b>E922.4,.5</b> E923.0-.9, E925.0-E926.9 <b>E928(.3-.5), E929.0-.5</b>	E9555,. <b>6,.7,.9</b> E958.0,.4	E960.1,E965.5-.9 E967.0-.9, E968.4,. <b>6,.7</b> <b>E979 (.0-.2,.5,.8,.9)</b>	E985.5,. <b>6,.7</b> E988.0,.4	E971, E978 E990-E994, E996 E997.0-.2
Unspecified	E887. E928.9, E929.9	E958.9	E968.9	E988.9	E976, E997.9
All Injury <sup>3</sup>	E800-E869, E880-E929	E950-E959	E960-E969, <b>E979</b> , E999.1	E980-E989	E970-E978, E990-E999.0
Adverse effects					E870-E879 E930.0-E949.9
Medical care					E870-E879
Drugs					E930.0-E949.9
All external causes					E800-E999

<sup>1</sup>Includes legal intervention (E970-E978) and operations of war (E990-E999).

<sup>2</sup>Three 4th-digit codes (.4 [occupant of streetcar], .5 [rider of animal], .8 [other specified person]) are not presented separately because of small numbers. However, because they are included in the overall motor vehicle traffic category, the sum of these categories can be derived by subtraction.

<sup>3</sup>Codes in bold are for morbidity coding only. For details see table 2.

<sup>4</sup>E849 (place of occurrence) has been excluded from the matrix. For mortality coding, an ICD-9 E849 code does not exist. For morbidity coding, an ICD-9-CM E849 code should never be first-listed E code and should only appear as an additional code to specify the place of occurrence of the injury incident.

**Note:** ICD-9 E codes for coding underlying cause of death apply to injury-related death data from 1979 through 1998. Then there is a new ICD-10 external cause of injury matrix that applies to death data from 1999 and after. This can be found on the National Center for Health Statistics website at <http://www.cdc.gov/nchs/about/otheract/ice/projects.htm>.

**Appendix 2: Auto Populated Variables  
Defining Hospital Characteristics**



## The Purpose of Variables Defining Hospital Characteristics

This appendix defines variables which are collected at the time of hospital registration (and data submission) that are “attached” to each submitted trauma registry case. The purpose of these variables is to allow researchers, state entities and others (in accordance with ACS policy) to stratify data analyses in ways that allow the efficacy of trauma care to be evaluated for different levels of care. Variables will allow both trauma *center* performance and trauma *system* performance to be evaluated and benchmarked. It is important to note that the anonymity of hospitals will be safeguarded in accordance with current ACS policy and specific requirements contained within existing Business Associate Agreements maintained between states (and/or hospitals) and the ACS.

Examples of the type of national and state assessments that can be conducted using these variables include:

1. Injury severity/type by admitting hospital designation (i.e., an assessment of over-under triage).
2. The prevalence of injury severity/type presenting to frontier, rural, suburban and urban hospitals by bed size and available resources.
3. Procedure types by admitting hospital designation.
4. Length of stay by injury type and hospital designation.
5. Resource utilization by injury characteristics (e.g., procedures, ICU LOS, insurance, etc.) and hospital size and designation.
6. Frequency of inter-facility transfer after hospitalization by injury severity and hospital trauma designation.
7. Hospital complications by injury characteristics, hospital designation and patient age.

Variables describing hospital characteristics are completed by personnel at each hospital on an annual basis (at the time of data submission to the NTDB). Responses to each variable are stored and automatically attached to each record sent to the National Trauma Data Bank. The description of the variables attached to each record is categorized into three sections (Hospital Characteristics, Patient Inclusion Criteria, and Pediatric Care) Variables and the associated value labels are provided below:

## Variables Describing Hospital Characteristics

Variable #1: ACS Verification Level

Values: Level I, II, III, IV, Not applicable.

Variable #2: ACS Pediatric Verification Level

Values: Level I, II, Not applicable.

Variable #3: State Designation/Accreditation

Values: Level I, II, III, IV, Not applicable.

Variable #4: State Pediatric Designation/Accreditation

Values: Level I, II, Not applicable.

Variable #5: Number of Beds for:

Values: Adult \_\_\_\_\_

Pediatric \_\_\_\_\_

Burn \_\_\_\_\_

ICU for trauma patients \_\_\_\_\_

ICU for burn patients \_\_\_\_\_

Variable #6: Hospital Teaching Status

Values: University, Community, Non-teaching

Variable #7: Hospital Type

Values: For profit, Non-profit, N/A

Variable #8: Number of Core Trauma Surgeons \_\_\_\_\_

Variable #9: Number of Neurosurgeons \_\_\_\_\_

Variable #10: Number of Orthopedic Surgeons \_\_\_\_\_

Variable #11: Number of Trauma Registrars (FTEs) \_\_\_\_\_

Variable #12: Comorbidity Recording

Values: Derived from ICD-9-CM coding, Chart abstraction by trauma registrar,  
Calculated by software registry program, Not collected

Variable #13: Complication Recording

Values: Derived from ICD-9-CM coding, Chart abstraction by trauma registrar,  
Calculated by software registry program, Not collected

Variable #14: How AIS is coded in the trauma registry

Values: 80 Full code (description plus severity, XXXXXX.Y), 85 Full code (description plus severity, XXXXXX.Y), 90 Full code (description plus severity, XXXXXX.Y), 95 Full code (description plus severity, XXXXXX.Y), 98 Full code (description plus severity, XXXXXX.Y), 05 Full code (description plus severity, XXXXXX.Y), ICD Map, Tri-Code, AIS80 only (Severity only, .Y), AIS85 only (Severity only, .Y), AIS90 only (Severity only, .Y), AIS95 only (Severity only, .Y), AIS98 only (Severity only, .Y), AIS05 only (Severity only, .Y), Other, N/A

### **Variables Describing Trauma Registry Patient Inclusion Criteria**

Variable #15: Length of Stay

Values: 23 hour holds, >= 24 hours, >= 48 hours, >=72 hours, All admissions

Variable #16: Hip Fractures Included

Values: Isolated hip fractures included (all ages), Isolated hip fractures in the non-elderly, Age cutoff for hip fractures in non-elderly patients \_\_\_\_\_

Variable #17: DOAs in ED Included

Variable #18: Deaths after receiving any evaluation/treatment including died in ED

Variable #19: Transfers into your facility included

Values: All transfers, transfers provided they are within \_\_\_\_\_ hours of injury

Variable #20: Transfers out of your facility included

Values: All Transfers

Variable #21: ICD-9-CM Inclusion Range \_\_\_\_\_

Variable #22: ICD-9-CM Exclusion Range \_\_\_\_\_

Variable #23: AIS Code Inclusions Range \_\_\_\_\_

Variable #24: AIS Code Exclusions Range \_\_\_\_\_

## **Variables Describing Pediatric Care**

Variable #25: Type of Pediatric Facility

Values: Associated with a pediatric hospital, Have a pediatric ward, Have a pediatric ICU, Transfer bulk of severely injured children to other specialty centers, none of the above

Variable #26: Services offered to children

Values: No children (not applicable), Provide all acute care services, Share role with another center (resuscitation and care of acute injuries followed by transfer)

Variable #27: Age Cut-off (in Years) for Pediatric Patients \_\_\_\_\_

**Appendix 3: Data Elements used to Link Pre-Hospital Data  
with Trauma Registry Data**

## Introduction to Data Linkage

Variables contained within the National Trauma Data Standard (NTDS) were defined specifically to compliment variables contained within the National Highway Traffic Safety Administration (NHTSA) 2.2 dataset. The NHTSA 2.2 dataset is a standardized collection of variables designed to characterize the pre-hospital environment and the patient care provided by Emergency Medical Services (EMS) providers prior to the patient arriving at the hospital. Variables that are common to both datasets are defined similarly, allowing data to be shared between the two datasets. The advantage to trauma registries is that, given the appropriate hardware infrastructure and software translation table, 36% of the total variables contained in the NTDS can be automatically completed (auto-populated) in the trauma registry by information transmitted electronically from a NHTSA 2.2 compliant EMS record. The advantage to EMS registries is that patient outcome information available in hospital records can be “back-populated” into an EMS registry to provide benchmarks for quality and performance indicators.

The purpose of the software translation table is to ensure that information contained in the NHTSA 2.2 database is correctly translated and interpreted by the NTDS database. This translation table is available and may be acquired by contacting the American College of Surgeons ([www.ntdb.org](http://www.ntdb.org)).

The purpose of this appendix is to identify variables defined in the NHTSA 2.2 or the NTDS datasets (or both) that may be used to “link” an EMS patient care record with a trauma registry record describing the same patient. There are several methods that may be employed to ensure that data correctly “links” a patient in the EMS record to the same patient in a trauma registry. A software product may “track” patients from pre-hospital care through the hospital stay using a common unique patient identifier. Another approach utilizes demographic and patient information collected in the EMS registry and trauma registry to “probabilistically” or “deterministically” link the right patient records together. Deterministic and probabilistic linkage are established methods that utilize variables common in both datasets to determine if two different records (one EMS record and one trauma record) are associated with the same patient and health care event.<sup>1-3</sup>

The variables defined in this appendix have, in the past, proven highly reliable and accurate at identify records associated with the same patient in different registries.<sup>4</sup> To successfully utilize a probabilistic (or deterministic) linkage process it is not necessary that common demographic variables be defined exactly as listed here (i.e., exact XSDs) or that these specific variables be utilized. These variables serve as an example of how identified variables may be used to correctly link patient records together. It would be advisable to contact a statistician when constructing an algorithm for linking patient records within the same database or across different databases.

## References:

1. Newgard CD. Validation of probabilistic linkage to match de-identified ambulance records to a state trauma registry. *Acad Emerg Med.* 2006;13:69-75.
2. Clark DE. Practical introduction to record linkage for injury research. *Inj Prev.* 2004;10:186-91.
3. Clark DE, Hahn DR. Comparison of probabilistic and deterministic record linkage in the development of a statewide trauma registry. *Proc Annu Symp Comput Appl Med Care.* 1995:397-401.
4. Cook LJ, Olson LM, Dean JM. Probabilistic record linkage: relationships between file sizes, identifiers and match weights. *Methods Inf Med.* 2001;40:196-203.

## **LAST NAME**

**Data Format** [text]

---

### **Definition**

The patient's last (family) name

### **NHTSA 2.2.1 Field Values**

Relevant value for data element.

### **Uses**

- Value used to probabilistically link to EMS record

### **References in NHTSA Version 2.2.1 Dataset**

NHTSA V.2.2.1 - E06\_01



## **FIRST NAME**

**Data Format** [text]

---

### **Definition**

The patient's first (given) name

### **NHTSA 2.2.1 Field Values**

Relevant value for data element

### **Uses**

- Value used to probabilistically link to EMS record

### **References in NHTSA Version 2.2.1 Dataset**

NHTSA V.2.2.1 - E06\_02

## **PATIENT'S HOME ZIP CODE**

**Data Format** [text]

---

### **Definition**

The patient's home ZIP code of primary residence.

### **NTDS and NHTSA 2.2.1 Field Values**

- Relevant value for data element

### **Additional Information**

- Can be stored as a 5 or 9 digit code (XXXXX-XXXX).
- May require adherence to HIPAA regulations.

### **Uses**

- Value used to probabilistically link to EMS record

### **References in NHTSA Version 2.2.1 Dataset**

- NHTSA V.2.2.1 - E06\_08

## **SOCIAL SECURITY NUMBER**

**Data Format** [number]

---

### **Definition**

The patient's social security number

### **NHTSA 2.2.1 Field Values**

Relevant value for data element

### **Uses**

- Value used to probabilistically link to EMS record

### **References in NHTSA Version 2.2.1 Dataset**

NHTSA V.2.2.1 - E06\_10

## SEX

**Data Format** [combo] single-choice

***National Element***

---

### Definition

The patient's sex.

### NTDS Field Values

1 Male

2 Female

### NHTSA 2.2.1 Field Values

650 Male

655 Female

### Uses

- Value used to probabilistically link to EMS record

### References in NHTSA Version 2.2.1 Dataset

- NHTSA V.2.2.1 - E06\_08

**RACE****Data Format** [combo] single-choice**National Element****Definition**

The patient's race.

**NTDS Field Values**

1 Asian

2 Native Hawaiian or Other Pacific Islander

3 Other Race

4 American Indian

5 Black or African American

6 White

**NHTSA 2.2.1 Field Values**

665 Asian

675 Native Hawaiian or Other Pacific Islander

685 Other Race

660 American Indian

670 Black or African American

680 White

**Uses**

- Value used to probabilistically link to EMS record.

**References in NHTSA Version 2.2.1 Dataset**

- NHTSA V.2.2.1 - E06\_12

## ETHNICITY

**Data Format** [combo] single-choice

***National Element***

---

### Definition

The patient's ethnicity.

### NTDS Field Values

1 Hispanic or Latino

2 Not Hispanic or Latino

### NHTSA 2.2.1 Field Values

690 Hispanic or Latino

695 Not Hispanic or Latino

### Uses

- Value used to probabilistically link to EMS record

### References in NHTSA Version 2.2.1 Dataset

- NHTSA V.2.2.1 - E06\_13

**AGE****Data Format** [number]**National Element**

---

**Definition**

The patient's age at the time of injury (best approximation)

**NTDS and NHTSA 2.2.1 Field Values**

- Relevant value for data element

**Uses**

- Value used to probabilistically link to EMS record

**References in NHTSA Version 2.2.1 Dataset**

- NHTSA V.2.2.1 - E06\_14

**AGE UNITS****Data Format** [combo] single-choice**National Element****Definition**

The units used to document the patient's age (Years, Months, Days, Hours)

**NTDS Field Values**

1 Hours                      3 Months

2 Days                        4 Years

**NHTSA 2.2.1 Field Values**

700 Hours                    705 Days

710 Months                  715 Years

**Uses**

- Value used to probabilistically link to EMS record

**References in NHTSA Version 2.2.1 Dataset**

- NHTSA V.2.2.1 - E06\_15



## **DATE OF BIRTH**

**Data Format** [date]

***National Element***

---

### **Definition**

The patient's date of birth.

### **NTDS and NHTSA 2.2.1 Field Values**

- Relevant value for data element

### **Uses**

- Value used to probabilistically link to EMS record

### **References in NHTSA Version 2.2.1 Dataset**

NHTSA V.2.2.1 - E06\_16

**Appendix 4: Edit Checks for the National Trauma Data  
Standard Data Elements**

## INTRODUCTION

The variable edit check rules described in this Appendix are those that are produced by the Validator when an NTDS XML file is checked. The rule ID associated with each edit check has four digits with the first two being associated with a field in the data dictionary. The last two digits are sequentially assigned according to the message associated with the edit check rule.

There is an Error Level associated with each edit check and these are important to developers and to users alike and should be used to decide what checks (or errors) must be addressed before submitting to NTDB. Some errors are mandatory to address and some are somewhat discretionary. Ultimately the number of errors resolved in the submitted data is up to the individual submitter and the quality of data that is available for reporting and research in NTDB.

The Error Levels can be explained as follows:

- **Error Level 1: Format / Schema\*** – any error that does not conform to the “rules” of the XSD. That is, these are errors that arise from XML data that cannot be parsed or would otherwise not be legal XML. Some errors in this Level do not have a Rule ID – for example: illegal tag, commingling of null values and actual data, out of range errors, etc.
- **Error Level 2: Inclusion Criteria\*** – an error that affects the fields needed to determine if the record meets the inclusion criteria for NTDB. These fields currently include:
  - *ED/Hospital Arrival Date*
  - *ED Discharge Disposition*<sup>^</sup>
  - *ED Death*<sup>^</sup>
  - *Injury Diagnoses*
  - *Hospital Discharge Disposition*<sup>^</sup>
  - *Inter-Facility Transfer*<sup>^</sup>
  - *Facility ID*<sup>#</sup>
  - *Patient ID*<sup>#</sup>
  - *Last Modified Date / Time*<sup>#</sup>
- **Error Level 3: Major Logic** – data consistency checks related to variables commonly used for reporting. Examples include DOB, Arrival Date, Gender, Ecode, etc.
- **Error Level 4: Minor Logic** – data consistency checks (e.g. dates) and blank fields that are acceptable to create a “valid” XML record but may cause certain parts of the record to be excluded from future research inclusion. For example, an intentionally blank *Total Ventilator Days* field is ok to submit but a researcher interested in doing a study on outcomes based on records with this field being valued would not include records with blanks.
- **Error Level 5: Data Entry Prompts** – “data checks” in this category are recommended to developers to function as prompts for application users. These prompts should be more correctly termed “warnings” to inform users that they should double-check their entry or be required to complete additional fields.

### Important Notes:

- \* Any XML file submitted to NTDB that contains one or more Level 1 or 2 Errors will result in the entire file being rejected. These kinds of errors must be resolved before a submission will be accepted.
- <sup>^</sup> Submitting a null value (BIU) for *ED Discharge Disposition*, *ED Death*, *Hospital Discharge Disposition*, and *Inter-Facility Transfer* is valid to do and will not generate a file rejection. However, having a real value (1 or 2) in this field is strongly encouraged if it is available.
- <sup>#</sup> *Facility ID*, *Patient ID* and *Last Modified Date/Time* are not described in the data dictionary and are only required in the XML file as control information for back-end NTDB processing. However, these fields are mandatory to provide in every XML record. Consult your Registry Vendor if one of these errors occurs.

## Demographic Information

### Patient's Home Zip Code

Rule ID	Level	Message
0001	1	Invalid value
0002	4	Blank, required field
0003	5	Not Applicable, complete variable: <i>Alternate Home Residence</i>
0004	5	Not Recorded, complete variables: <i>Patient's Home Country, Patient's Home State, Patient's Home County and Patient's Home City</i>
0005	5	Not Known, complete variables: <i>Patient's Home Country, Patient's Home State, Patient's Home County and Patient's Home City</i>

### Patient's Home Country

Rule ID	Level	Message
0101	1	Invalid value
0102	4	Blank, required to complete when <i>Patient's Home Zip Code</i> is Not Recorded or Not Known
0103	5	Blank, required to complete variables: <i>Patient's Home Zip Code</i> or <i>Alternate Home Residence</i>

### Patient's Home State

Rule ID	Level	Message
0201	1	Invalid value
0202	4	Blank, required to complete when <i>Patient's Home Zip Code</i> is Not Recorded or Not Known
0203	5	Blank, required to complete variables: <i>Patient's Home Zip Code</i> or <i>Alternate Home Residence</i>

### Patient's Home County

Rule ID	Level	Message
0301	1	Invalid value
0302	4	Blank, required to complete when <i>Patient's Home Zip Code</i> is Not Recorded or Not Known
0303	5	Blank, required to complete variables: <i>Patient's Home Zip Code</i> or <i>Alternate Home Residence</i>

### **Patient's Home City**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
0401	1	Invalid value
0402	4	Blank, required to complete when <i>Patient's Home Zip Code</i> is Not Recorded or Not Known
0403	5	Blank, required to complete variables: <i>Patient's Home Zip Code</i> or <i>Alternate Home Residence</i>

### **Alternate Home Residence**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
0501	1	Invalid value
0502	4	Blank, required to complete when <i>Patient's Home Zip Code</i> is Not Applicable
0503	5	Blank, required to complete variables: <i>Patient's Home Zip Code</i> or ( <i>Patient's Home Country</i> , <i>Patient's Home State</i> , <i>Patient's Home County</i> and <i>Patient's Home City</i> )

### **Date of Birth**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
0601	1	Invalid value
0602	1	Date out of range
0603	3	Blank, required to complete variables: <i>Age</i> and <i>Age Units</i> if less than 24 hours
0604	5	Not Recorded, complete variables: <i>Age</i> and <i>Age Units</i>
0605	5	Not Known, complete variables: <i>Age</i> and <i>Age Units</i>
0606	3	<i>Date of Birth</i> cannot be later than <i>EMS Dispatch Date</i>
0607	3	<i>Date of Birth</i> cannot be later than <i>EMS Unit Arrival on Scene Date</i>
0608	3	<i>Date of Birth</i> cannot be later than <i>EMS Unit Scene Departure Date</i>
0609	3	<i>Date of Birth</i> cannot be later than <i>ED/Hospital Arrival Date</i>
0610	3	<i>Date of Birth</i> cannot be later than <i>ED Discharge Date</i>
0611	3	<i>Date of Birth</i> cannot be later than <i>Hospital Discharge Date</i>
0612	3	<i>Date of Birth</i> + 120 must be less than <i>Ed/Hospital Arrival Date</i>

## Age

Rule ID	Level	Message
0701	1	Invalid value
0702	5	Blank, required to complete variable: <i>Date of Birth</i>
0703	4	Blank, required to complete when <i>Date of Birth</i> is less than 24 hours, Not Recorded, or Not Known
0704	3	<i>Ed/Hospital Arrival Date</i> minus <i>Date of Birth</i> must equal submitted <i>Age</i> .

## Age Units

Rule ID	Level	Message
0801	1	Invalid value
0802	5	Blank, required to complete variable: <i>Date of Birth</i>
0803	4	Blank, required to complete when <i>Date of Birth</i> is less than 24 hours, Not Recorded, or Not Known

## Race

Rule ID	Level	Message
0901	1	Invalid value
0902	4	Blank, required field

## Ethnicity

Rule ID	Level	Message
1001	1	Invalid value
1002	4	Blank, required field

## Sex

Rule ID	Level	Message
1101	1	Invalid value
1102	3	Blank, required field

## Injury Information

### Injury Incident Date

Rule ID	Level	Message
1201	1	Invalid Value
1202	1	Date out of range
1203	4	Blank, required field
1204	4	<i>Injury Incident Date cannot be earlier than Date of Birth</i>
1205	4	<i>Injury Incident Date cannot be later than EMS Dispatch Date</i>
1206	4	<i>Injury Incident Date cannot be later than EMS Unit Arrival on Scene Date</i>
1207	4	<i>Injury Incident Date cannot be later than EMS Unit Scene Departure Date</i>
1208	4	<i>Injury Incident Date cannot be later than ED/Hospital Arrival Date</i>
1209	4	<i>Injury Incident Date cannot be later than ED Discharge Date</i>
1210	4	<i>Injury Incident Date cannot be later than Hospital Discharge Date</i>

### Injury Incident Time

Rule ID	Level	Message
1301	1	Invalid value
1302	1	Time out of range
1303	4	Blank, required field
1304	4	<i>If Injury Incident Date and EMS Dispatch Date are the same, the Injury Incident Time cannot be later than the EMS Dispatch Time</i>
1305	4	<i>If Injury Incident Date and EMS Unit Arrival on Scene Date are the same, the Injury Incident Time cannot be later than the EMS Unit Arrival on Scene Time</i>
1306	4	<i>If Injury Incident Date and EMS Unit Scene Departure Date are the same, the Injury Incident Time cannot be later than the EMS Unit Scene Departure Time</i>
1307	4	<i>If Injury Incident Date and ED/Hospital Arrival Date are the same, the Injury Incident Time cannot be later than the ED/Hospital Arrival Time</i>
1308	4	<i>If Injury Incident Date and ED Discharge Date are the same, the Injury Incident Time cannot be later than the ED Discharge Time</i>
1309	4	<i>If Injury Incident Date and Hospital Discharge Date are the same, the Injury Incident Time cannot be later than the Hospital Discharge Time</i>

### **Work-Related**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
1401	1	Invalid value
1402	4	Blank, required field
1403	5	If completed, then <i>Patient's Occupational Industry</i> must be completed
1404	5	If completed, then <i>Patient Occupation</i> must be completed

### **Patient's Occupational Industry**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
1501	1	Invalid value
1502	4	If completed, then <i>Work-Related</i> must be 1 Yes
1503	5	If completed, then <i>Patient Occupation</i> must be completed
1504	4	Blank, required to complete when <i>Work-Related</i> is 1 (Yes)

### **Patient's Occupation**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
1601	1	Invalid value
1602	4	If completed, then <i>Work-Related</i> must be 1 Yes
1603	5	If completed, then <i>Patient's Occupational Industry</i> must be completed
1604	4	Blank, required to complete when <i>Work-Related</i> is 1 (Yes)

### **Primary E-Code**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
1701	1	Invalid, out of range
1702	3	Blank, required field (at least one ICD-9-CM trauma code must be entered)
1703	3	<i>E-code</i> should not be = (810.0, 811.0, 812.0, 813.0, 814.0, 815.0, 816.0, 817.0, 818.0, 819.0) and <i>Age</i> < 15
1704	3	Should not be 849.x

### **Location E-Code**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
1801	1	Invalid, out of range
1802	4	Blank, required field



### **Additional E-Code**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
1901	1	Invalid, out of range
1902	4	If completed, <i>Additional E-Code</i> cannot be equal to <i>Primary E-Code</i> .

### **Incident Location Zip Code**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
2001	1	Invalid value
2002	4	Blank, required field
2003	5	Not Recorded, complete variables: <i>Incident State</i> , <i>Incident County</i> and <i>Incident City</i>
2004	5	Not Known, complete variables: <i>Incident State</i> , <i>Incident County</i> and <i>Incident City</i>
2005	5	Not Applicable, complete variables: <i>Incident State</i> , <i>Incident County</i> and <i>Incident City</i>

### **Incident Country**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
2101	1	Invalid value
2102	4	Blank, required to complete when <i>Incident Location Zip Code</i> is Not Applicable, Not Recorded, or Not Known
2103	5	Blank, required to complete variable: <i>Incident Location Zip Code</i>

### **Incident State**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
2201	1	Invalid value
2202	5	Blank, required to complete variable: <i>Incident Location Zip Code</i>
2203	4	Blank, required to complete when <i>Incident Location Zip Code</i> is Not Applicable, Not Recorded, or Not Known

### **Incident County**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
2301	1	Invalid value
2302	5	Blank, required to complete variable: <i>Incident Location Zip Code</i>
2303	4	Blank, required to complete when <i>Incident Location Zip Code</i> is Not Applicable, Not Recorded, or Not Known

### **Incident City**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
2401	1	Invalid value
2402	5	Blank, required to complete variable: <i>Incident Location Zip Code</i>
2403	4	Blank, required to complete when <i>Incident Location Zip Code</i> is Not Applicable, Not Recorded, or Not Known

### **Protective Devices**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
2501	1	Invalid value
2502	4	Blank, required field
2503	5	If <i>Protective Device</i> = 6 (Child Restraint) then <i>Child Specific Restraint</i> must be completed
2504	5	If <i>Protective Device</i> = 8 (Airbag Present) then <i>Airbag Deployment</i> must be completed

### **Child Specific Restraint**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
2601	1	Invalid value
2602	4	If completed, then <i>Protective Device</i> must be 6 (Child Restraint).
2603	4	Blank, required to complete when <i>Protective Device</i> is 6 (Child Restraint)

### **Airbag Deployment**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
2701	1	Invalid value
2702	4	If completed, then <i>Protective Device</i> must be 8 (Airbag Present).
2703	4	Blank, required to complete when <i>Protective Device</i> is 8 (Airbag Present)

## Pre-hospital Information

### EMS Dispatch Date

Rule ID	Level	Message
2801	1	Invalid value
2802	1	Date out of range
2803	4	<i>EMS Dispatch Date cannot be earlier than Date of Birth</i>
2804	4	<i>EMS Dispatch Date cannot be later than EMS Unit Arrival on Scene Date</i>
2805	4	<i>EMS Dispatch Date cannot be later than EMS Unit Scene Departure Date</i>
2806	4	<i>EMS Dispatch Date cannot be later than ED/Hospital Arrival Date</i>
2807	4	<i>EMS Dispatch Date cannot be later than ED Discharge Date</i>
2808	4	<i>EMS Dispatch Date cannot be later than Hospital Discharge Date</i>

### EMS Dispatch Time

Rule ID	Level	Message
2901	1	Invalid value
2902	1	Time out of range
2903	4	<i>If EMS Dispatch Date and EMS Unit Arrival on Scene Date are the same, the EMS Dispatch Time cannot be later than the EMS Unit Arrival on Scene Time</i>
2904	4	<i>If EMS Dispatch Date and EMS Unit Scene Departure Date are the same, the EMS Dispatch Time cannot be later than the EMS Unit Scene Departure Time</i>
2905	4	<i>If EMS Dispatch Date and ED/Hospital Arrival Date are the same, the EMS Dispatch Time cannot be later than the ED/Hospital Arrival Time</i>
2906	4	<i>If EMS Dispatch Date and ED Discharge Date are the same, the EMS Dispatch Time cannot be later than the ED Discharge Time</i>
2907	4	<i>If EMS Dispatch Date and Hospital Discharge Date are the same, the EMS Dispatch Time cannot be later than the Hospital Discharge Time</i>

### **EMS Unit Arrival on Scene Date**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
3001	1	Invalid value
3002	1	Date out of range
3003	4	<i>EMS Unit Arrival on Scene Date cannot be earlier than Date of Birth</i>
3004	4	<i>EMS Unit Arrival on Scene Date cannot be earlier than EMS Dispatch Date</i>
3005	4	<i>EMS Unit Arrival on Scene Date cannot be later than EMS Unit Scene Departure Date</i>
3006	4	<i>EMS Unit Arrival on Scene Date cannot be later than ED/Hospital Arrival Date</i>
3007	4	<i>EMS Unit Arrival on Scene Date cannot be later than ED Discharge Date</i>
3008	4	<i>EMS Unit Arrival on Scene Date and cannot be later than Hospital Discharge Date</i>

### **EMS Unit Arrival on Scene Time**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
3101	1	Invalid value
3102	1	Time out of range
3103	4	<i>If EMS Unit Arrival on Scene Date and EMS Dispatch Date are the same, the EMS Unit Arrival on Scene Time cannot be earlier than the EMS Dispatch Time</i>
3104	4	<i>If EMS Unit Arrival on Scene Date and EMS Unit Scene Departure Date are the same, the EMS Unit Arrival on Scene Time cannot be later than the EMS Unit Scene Departure Time</i>
3105	4	<i>If EMS Unit Arrival on Scene Date and ED/Hospital Arrival Date are the same, the EMS Unit Arrival on Scene Time cannot be later than the ED/Hospital Arrival Time</i>
3106	4	<i>If EMS Unit Arrival on Scene Date and ED Discharge Date are the same, the EMS Unit Arrival on Scene Time cannot be later than the ED Discharge Time</i>
3107	4	<i>if EMS Unit Arrival on Scene Date and Hospital Discharge Date are the same, the EMS Unit Arrival on Scene Time cannot be later than the Hospital Discharge Time</i>

### **EMS Unit Scene Departure Date**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
3201	1	Invalid value
3202	1	Date out of range
3203	4	<i>EMS Unit Scene Departure Date cannot be earlier than Date of Birth</i>
3204	4	<i>EMS Unit Scene Departure Date cannot be earlier than EMS Dispatch Date</i>
3205	4	<i>EMS Unit Scene Departure Date cannot be earlier than EMS Unit Arrival on Scene Date</i>
3206	4	<i>EMS Unit Scene Departure Date cannot be later than ED/Hospital Arrival Date</i>
3207	4	<i>EMS Unit Scene Departure Date cannot be later than ED Discharge Date</i>
3208	4	<i>EMS Unit Scene Departure Date cannot be later than Hospital Discharge Date</i>

### **EMS Unit Scene Departure Time**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
3301	1	Invalid value
3302	1	Time out of range
3303	4	<i>If EMS Unit Scene Departure Date and EMS Dispatch Date are the same, the EMS Unit Scene Departure Time cannot be earlier than the EMS Dispatch Time</i>
3304	4	<i>If EMS Unit Scene Departure Date and EMS Unit Arrival on Scene Date are the same, the EMS Unit Scene Departure Time cannot be earlier than the EMS Unit Arrival on Scene Time</i>
3305	4	<i>if EMS Unit Scene Departure Date and ED/Hospital Arrival Date are the same, the EMS Unit Scene Departure Time cannot be later than the ED/Hospital Arrival Time</i>
3306	4	<i>If EMS Unit Scene Departure Date and ED Discharge Date are the same, the EMS Unit Scene Departure Time cannot be later than the ED Discharge Time</i>
3307	4	<i>If EMS Unit Scene Departure Date and Hospital Discharge Date are the same, the EMS Unit Scene Departure Time cannot be later than the Hospital Discharge Time</i>

### **Transport Mode**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
3401	1	Invalid value
3402	4	Blank, required field
3403	4	<i>If EMS response times are provided, Transport Mode cannot be 4 (Private/Public Vehicle/Walk-in)</i>

### **Other Transport Mode**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
3501	1	Invalid value

### **Initial Field Systolic Blood Pressure**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
3601	1	Invalid value
3602	4	Blank, required field
3603	3	Invalid, out of range

### **Initial Field Pulse Rate**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
3701	1	Invalid value
3702	4	Blank, required field
3703	3	Invalid, out of range

### **Initial Field Respiratory Rate**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
3801	1	Invalid value
3802	4	Blank, required field
3803	3	Invalid, out of range

### **Initial Field Oxygen Saturation**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
3901	1	Invalid value
3902	4	Blank, required field
3903	3	Invalid, out of range

### **Initial Field GCS – Eye**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
4001	1	Invalid, out of range
4002	5	Blank, required to complete variable: <i>Initial Field GCS – Total</i>

### **Initial Field GCS – Verbal**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
4101	1	Invalid, out of range
4102	5	Blank, required to complete variable: <i>Initial Field GCS – Total</i>

### ***Initial Field GCS – Motor***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
4201	1	Invalid, out of range
4202	5	Blank, required to complete variable: <i>Initial Field GCS – Total</i>

### ***Initial Field GCS – Total***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
4301	1	Invalid, out of range
4302	5	Blank, required to complete variables: <i>Initial Field GCS – Eye</i> , <i>Initial Field GCS – Verbal</i> , and <i>Initial Field GCS – Motor</i>
4303	4	<i>Initial Field GCS – Total</i> does not equal the sum of <i>Initial Field GCS – Eye</i> , <i>Initial Field GCS – Verbal</i> , and <i>Initial Field GCS – Motor</i>

### ***Inter-Facility Transfer\****

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
4401	3	Blank, required field
4402	1	Invalid value
4403	3	Not Recorded, required Inclusion Criterion
4404	3	Not Known, required Inclusion Criterion

## Emergency Department Information

### ED/Hospital Arrival Date\*

Rule ID	Level	Message
4501	1	Invalid value
4502	1	Date out of range
4503	2	Blank, required field
4504	2	Not Recorded, required Inclusion Criterion
4505	2	Not Known, required Inclusion Criterion
4506	3	<i>ED/Hospital Arrival Date cannot be earlier than EMS Dispatch Date</i>
4507	3	<i>ED/Hospital Arrival Date cannot be earlier than EMS Unit Arrival on Scene Date</i>
4508	3	<i>ED/Hospital Arrival Date cannot be earlier than EMS Unit Scene Departure Date</i>
4509	3	<i>ED/Hospital Arrival Date cannot be later than ED Discharge Date</i>
4510	3	<i>ED/Hospital Arrival Date cannot be later than Hospital Discharge Date</i>
4511	3	<i>ED/Hospital Arrival Date cannot be earlier than Date of Birth</i>
4512	3	<i>Ed/Hospital Arrival Date must be after 1993</i>
4513	3	<i>Ed/Hospital Arrival Date minus Injury Incident Date must be less than 30 days</i>

### ED/Hospital Arrival Time

Rule ID	Level	Message
4601	1	Invalid value
4602	1	Time out of range
4603	4	Blank, required field
4604	4	<i>If ED/Hospital Arrival Date and EMS Dispatch Date are the same, the ED/Hospital Arrival Time cannot be earlier than the EMS Dispatch Time</i>
4605	4	<i>If ED/Hospital Arrival Date and EMS Unit Arrival on Scene Date are the same, the ED/Hospital Arrival Time cannot be earlier than the EMS Unit Arrival on Scene Time</i>
4606	4	<i>If ED/Hospital Arrival Date and EMS Unit Scene Departure Date are the same, the ED/Hospital Arrival Time cannot be earlier than the EMS Unit Scene Departure Time</i>
4607	4	<i>if ED/Hospital Arrival Date and ED Discharge Date are the same, the ED/Hospital Arrival Time cannot be later than the ED Discharge Time</i>
4608	4	<i>if ED/Hospital Arrival Date and Hospital Discharge Date are the same, the ED/Hospital Arrival Time cannot be later than the Hospital Discharge Time</i>



### ***Initial ED/Hospital Systolic Blood Pressure***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
4701	1	Invalid value
4702	4	Blank, required field
4703	4	<i>Initial Ed / Hospital Systolic Blood Pressure</i> must be 0 when <i>Ed Death = 1</i> (DOA).
4704	3	Invalid, out of range

### ***Initial ED/Hospital Pulse Rate***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
4801	1	Invalid value
4802	4	Blank, required field
4803	4	<i>Initial Ed / Hospital Pulse Rate</i> must be 0 when <i>Ed Death = 1</i> (DOA).
4804	3	Invalid, out of range

### ***Initial ED/Hospital Temperature***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
4901	1	Invalid value
4902	4	Blank, required field
4903	3	Invalid, out of range

### ***Initial ED/Hospital Respiratory Rate***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
5001	1	Invalid value
5002	4	Blank, required field
5003	4	<i>Initial ED/Hospital Respiratory Rate</i> must be 0 when <i>Ed Death = 1</i> (DOA).
5004	5	If completed, then <i>Initial Ed/Hospital Respiratory Assistance</i> must be completed.
5005	3	Invalid, out of range

### ***Initial ED/Hospital Respiratory Assistance***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
5101	1	Invalid value
5102	4	Blank, required field
5103	4	Blank, required to complete when <i>Initial ED/Hospital Respiratory Rate</i> is complete

### ***Initial ED/Hospital Oxygen Saturation***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
5201	1	Invalid value
5202	4	Blank, required field
5203	5	If completed, then <i>Initial Ed/Hospital Supplemental Oxygen</i> must be completed
5204	3	Invalid, out of range

### ***Initial ED/Hospital Supplemental Oxygen***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
5301	1	Invalid value
5302	4	Blank, required field
5303	4	Blank, required to complete when <i>Initial ED/Hospital Oxygen Saturation</i> is complete

### ***Initial ED/Hospital GCS – Eye***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
5401	1	Invalid, out of range
5402	5	Blank, required to complete variable: <i>Initial ED/Hospital GCS – Total</i>

### ***Initial ED/Hospital GCS – Verbal***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
5501	1	Invalid, out of range
5502	5	Blank, required to complete variable: <i>Initial ED/Hospital GCS – Total</i>

### ***Initial ED/Hospital GCS – Motor***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
5601	1	Invalid, out of range
5602	5	Blank, required to complete variable: <i>Initial ED/Hospital GCS – Total</i>

### ***Initial ED/Hospital GCS – Total***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
5701	1	Invalid, out of range
5702	5	Blank, required to complete variables: <i>Initial ED/Hospital GCS – Eye, Initial ED/Hospital GCS – Verbal, and Initial ED/Hospital GCS – Motor</i>
5703	4	<i>Initial ED/Hospital GCS – Total</i> does not equal the sum of <i>Initial ED/Hospital GCS – Eye, Initial ED/Hospital GCS – Verbal, and Initial ED/Hospital GCS – Motor</i>

### ***Initial ED/Hospital GCS Assessment Qualifiers***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
5801	1	Invalid value
5802	4	Blank, required field

### ***Alcohol Use Indicator***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
5901	1	Invalid value
5902	4	Blank, required field

### ***Drug Use Indicator***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
6001	1	Invalid value
6002	4	Blank, required field

### ***ED Discharge Disposition\****

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
6101	1	Invalid value
6102	3	Blank, required field
6103	3	Not Recorded, required Inclusion Criterion
6104	3	Not Known, required Inclusion Criterion

### **ED Death\***

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
6201	1	Invalid value
6202	3	Blank, required field
6203	3	If <i>Ed Discharge Disposition</i> = 5 (Died) then <i>Ed Death</i> must be complete.
6204	3	If <i>Ed Discharge Disposition</i> <> 5 (Died) then <i>Ed Death</i> should be BIU = 1
6205	3	Not Recorded, required Inclusion Criterion
6206	3	Not Known, required Inclusion Criterion

### **ED Discharge Date**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
6301	1	Invalid value
6302	1	Date out of range
6303	4	Blank, required field
6304	4	<i>ED Discharge Date</i> cannot be earlier than <i>EMS Dispatch Date</i>
6305	4	<i>ED Discharge Date</i> cannot be earlier than <i>EMS Unit Arrival on Scene Date</i>
6306	4	<i>ED Discharge Date</i> cannot be earlier than <i>EMS Unit Scene Departure Date</i>
6307	4	<i>ED Discharge Date</i> cannot be earlier than <i>ED/Hospital Arrival Date</i>
6308	4	<i>ED Discharge Date</i> cannot be later than <i>Hospital Discharge Date</i>
6309	4	<i>ED Discharge Date</i> cannot be earlier than <i>Date of Birth</i>

## **ED Discharge Time**

<b>Rule ID</b>	<b>Level</b>	<b>Message</b>
6401	1	Invalid value
6402	1	Time out of range
6403	4	Blank, required field
6404	4	If <i>ED Discharge Date</i> and <i>EMS Dispatch Date</i> are the same, the <i>ED Discharge Time</i> cannot be earlier than the <i>EMS Dispatch Time</i>
6405	4	If <i>ED Discharge Date</i> and <i>EMS Unit Arrival on Scene Date</i> are the same, the <i>ED Discharge Time</i> cannot be earlier than the <i>EMS Unit Arrival on Scene Time</i>
6406	4	If <i>ED Discharge Date</i> and <i>EMS Unit Scene Departure Date</i> are the same, the <i>ED Discharge Time</i> cannot be earlier than the <i>EMS Unit Scene Departure Time</i>
6407	4	If <i>ED Discharge Date</i> and <i>ED/Hospital Arrival Date</i> are the same, the <i>ED Discharge Time</i> cannot be earlier than the <i>ED/Hospital Arrival Time</i>
6408	4	If <i>ED Discharge Date</i> and <i>Hospital Discharge Date</i> are the same, the <i>ED Discharge Time</i> cannot be later than the <i>Hospital Discharge Time</i>

## Hospital Procedure Information

### Hospital Procedures

Rule ID	Level	Message
6501	1	Invalid value
6502	1	Procedures with the same code cannot have the same <i>Hospital Procedure Start Date and Time</i> .
6503	4	Blank, required field

### Hospital Procedure Start Date

Rule ID	Level	Message
6601	1	Invalid value
6602	1	Date out of range
6603	4	<i>Hospital Procedure Start Date</i> cannot be earlier than <i>EMS Dispatch Date</i>
6604	4	<i>Hospital Procedure Start Date</i> cannot be earlier than <i>EMS Unit Arrival on Scene Date</i>
6605	4	<i>Hospital Procedure Start Date</i> cannot be earlier than <i>EMS Unit Scene Departure Date</i>
6606	4	<i>Hospital Procedure Start Date</i> cannot be earlier than <i>ED/Hospital Arrival Date</i>
6607	4	<i>Hospital Procedure Start Date</i> cannot be later than <i>Hospital Discharge Date</i>
6608	4	<i>Hospital Procedure Start Date</i> cannot be earlier than <i>Date of Birth</i>
6609	4	Blank, required field

## Hospital Procedure Start Time

Rule ID	Level	Message
6701	1	Invalid value
6702	1	Time out of range
6703	4	If <i>Hospital Procedure Start Date</i> and <i>EMS Dispatch Date</i> are the same, the <i>Hospital Procedure Start Time</i> cannot be earlier than the <i>EMS Dispatch Time</i>
6704	4	If <i>Hospital Procedure Start Date</i> and <i>EMS Unit Arrival on Scene Date</i> are the same, the <i>Hospital Procedure Start Time</i> cannot be earlier than the <i>EMS Unit Arrival on Scene Time</i>
6705	4	if <i>Hospital Procedure Start Date</i> and <i>EMS Unit Scene Departure Date</i> are the same, the <i>Hospital Procedure Start Time</i> cannot be earlier than the <i>EMS Unit Scene Departure Time</i>
6706	4	If <i>Hospital Procedure Start Date</i> and <i>ED/Hospital Arrival Date</i> are the same, the <i>Hospital Procedure Start Time</i> cannot be earlier than the <i>ED/Hospital Arrival Time</i>
6707	4	If <i>Hospital Procedure Start Date</i> and <i>Hospital Discharge Date</i> are the same, the <i>Hospital Procedure Start Time</i> cannot be later than the <i>Hospital Discharge Time</i>
6708	4	Blank, required field

## Diagnoses Information

### Co-Morbid Conditions

Rule ID	Level	Message
6801	1	Invalid value
6802	4	Blank, required field

### Injury Diagnoses\*

Rule ID	Level	Message
6901	1	Invalid value
6902	4	Blank, required field
6903	2	At least one diagnosis must be provided and meet inclusion criteria (800 – 959.9, except for 905 – 909.9, 910 – 924.9, 930 – 939.9)

## Injury Severity Information

### *AIS PreDot Code*

Rule ID	Level	Message
7001	1	Invalid value
7002	5	If completed, then <i>AIS Severity</i> must be completed.
7003	5	If completed, then <i>AIS Version</i> must be completed.

### *AIS Severity*

Rule ID	Level	Message
7101	1	Invalid value
7102	5	If completed, then <i>AIS Version</i> must be completed.
7103	4	Blank, required to complete when <i>AIS PreDot Code</i> is complete

### *ISS Body Region*

Rule ID	Level	Message
7201	1	Invalid value
7202	5	If completed, then <i>AIS Severity</i> must be completed.
7203	5	If completed, then <i>AIS Version</i> must be completed.

### *AIS Version*

Rule ID	Level	Message
7301	1	Invalid value
7302	4	Blank, required to complete when <i>AIS PreDot Code</i> , <i>AIS Severity</i> , or <i>ISS Body Region</i> are provided.

### *Locally Calculated ISS*

Rule ID	Level	Message
7401	1	Invalid value
7402	3	Must be the sum of three squares



## Outcome Information

### Total ICU Length of Stay

Rule ID	Level	Message
7501	1	Invalid value
7502	3	Blank, required field
7503	3	<i>Total ICU Length of Stay</i> should not be greater than the difference between <i>ED/Hospital Arrival Date</i> and <i>Hospital Discharge Date</i>
7504	3	<i>Should not be greater than 365</i>

### Total Ventilator Days

Rule ID	Level	Message
7601	1	Invalid value
7602	4	Blank, required field
7603	4	<i>Total Ventilator Days</i> should not be greater than the difference between <i>ED/Hospital Arrival Date</i> and <i>Hospital Discharge Date</i>
7604	4	<i>Should not be greater than 365</i>

### Hospital Discharge Date

Rule ID	Level	Message
7701	1	Invalid value
7702	1	Date out of range
7703	3	Blank, required field
7704	3	<i>Hospital Discharge Date</i> cannot be earlier than <i>EMS Dispatch Date</i>
7705	3	<i>Hospital Discharge Date</i> cannot be earlier than <i>EMS Unit Arrival on Scene Date</i>
7706	3	<i>Hospital Discharge Date</i> cannot be earlier than <i>EMS Unit Scene Departure Date</i>
7707	3	<i>Hospital Discharge Date</i> cannot be earlier than <i>ED/Hospital Arrival Date</i>
7708	3	<i>Hospital Discharge Date</i> cannot be earlier than <i>ED Discharge Date</i>
7709	3	<i>Hospital DischargeDate</i> cannot be earlier than <i>Date of Birth</i>

## Hospital Discharge Time

Rule ID	Level	Message
7801	1	Invalid value
7802	1	Time out of range
7803	4	Blank, required field
7804	4	If <i>Hospital Discharge Date</i> and <i>EMS Dispatch Date</i> are the same, the <i>Hospital Discharge Time</i> cannot be earlier than the <i>EMS Dispatch Time</i>
7805	4	If <i>Hospital Discharge Date</i> and <i>EMS Unit Arrival on Scene Date</i> are the same, the <i>Hospital Discharge Time</i> cannot be earlier than the <i>EMS Unit Arrival on Scene Time</i>
7806	4	If <i>Hospital Discharge Date</i> and <i>EMS Unit Scene Departure Date</i> are the same, the <i>Hospital Discharge Time</i> cannot be earlier than the <i>EMS Unit Scene Departure Time</i>
7807	4	If <i>Hospital Discharge Date</i> and <i>ED/Hospital Arrival Date</i> are the same, the <i>Hospital Discharge Time</i> cannot be earlier than the <i>ED/Hospital Arrival Time</i>
7808	4	If <i>Hospital Discharge Date</i> and <i>ED Discharge Date</i> are the same, the <i>Hospital Discharge Time</i> cannot be earlier than the <i>ED Discharge Time</i>

## Hospital Discharge Disposition\*

Rule ID	Level	Message
7901	1	Invalid value
7902	3	Blank, required field
7903	3	If <i>ED Discharge Disposition</i> = 5 (Died) then <i>Hospital Discharge Disposition</i> can only be 5 (Expired).
7904	3	Not Recorded, required Inclusion Criterion
7905	3	Not Known, required Inclusion Criterion

## Financial Information

### Primary Method of Payment

Rule ID	Level	Message
8001	1	Invalid value
8002	4	Blank, required field

## Quality Assurance Information

### *Hospital Complications*

Rule ID	Level	Message
8101	1	Invalid value
8102	4	Blank, required field

## Control Information

### *Last Modified Date Time*

Rule ID	Level	Message
8201	1	Invalid value
8202	2	Blank, required field

### *Patient ID*

Rule ID	Level	Message
8301	1	Invalid value
8302	2	Blank, required field

### *Facility ID*

Rule ID	Level	Message
8401	1	Invalid value 65 e
8402	2	Blank, required field

\*Inclusion criterion

## **Appendix 5: National Trauma Data Standard Data Scheme**

## Data Scheme

### Demographic Variables

1. **Patient's Home Zip Code:** The patient's home ZIP code of primary residence.

If Patient's Home Zip Code is "Not Recorded," or "Not Known," the following four variables will be collected to generate a FIPS Code:

- a. **Patient's Home Country:** The patient's home country where he/she resides.
- b. **Patient's Home State:** The patient's home state (territory, province, or District of Columbia) where the patient resides.
- c. **Patient's Home County:** The patient's home county (or parish) of residence.
- d. **Patient's Home City:** The patient's home city (or township, village) of residence.

If Patient's Home Zip Code is "Not Applicable," the following variable will be collected.

- e. **Alternate Home Residence:** Documentation of the type of patient without a home Zip Code.

2. **Date of Birth:** The patient's date of birth.

If Date of Birth is "Not Recorded," "Not Known," or less than 24 hours, the following two variables will be collected to determine the patient's age:

- a. **Age:** The patient's age at the time of injury (best approximation).
- b. **Age Units:** The units used to document the patient's age (Years, Months, Days, Hours).

3. **Race:** The patient's race.
4. **Ethnicity:** The patient's ethnicity.
5. **Sex:** The patient's sex.

## Injury Variables

6. **Injury Incident Date:** The date the injury occurred.
7. **Injury Incident Time:** The time the injury occurred.
8. **Work-Related:** Indication of whether the injury occurred during paid employment.

If the injury is determined to be “Work-Related”, the following two variables will be collected:

- a. **Patient’s Occupational Industry:** The occupational industry associated with the patient’s work environment.
  - b. **Patient’s Occupation:** The occupation of the patient.
9. **Primary E-code:** E-code used to describe the mechanism (or external factor) that caused the injury event.

Autocalculates: Trauma Type & Intentionality

10. **Location E-code:** E-code used to describe the place/site/location of the injury event (E 849.X).
11. **Additional E-code:** Additional E-code used to describe, for example, a mass casualty event, or other external cause.
12. **Incident Location Zip Code:** The ZIP code of the incident location.

If the Incident Location Zip Code is “Not Applicable,” “Not Recorded,” or “Not Known,” the following three variables will be collected to generate a FIPS Code:

- a. **Incident Country:** The country where the patient was found or to which the unit responded (or best approximation).
  - b. **Incident State:** The state, territory, or province where the patient was found or to which the unit responded (or best approximation).
  - c. **Incident County:** The county or parish where the patient was found or to which the unit responded (or best approximation).
  - d. **Incident City:** The city or township where the patient was found or to which the unit responded (or best approximation).
13. **Protective Devices:** Protective devices (safety equipment) in use or worn by the patient at the time of the injury.

If “Child Restraint” is present, complete variable “Child Specific Restraint.”

- a. **Child Specific Restraint:** Protective child restraint devices used by patient at the time of injury.

If “Protective Devices” include “Airbag” complete variable “Airbag Deployment.”

- a. **Airbag Deployment:** Indication of an airbag deployment during a motor vehicle crash.

### Pre-hospital Variables

14. **EMS Dispatch Date:** The date the unit transporting to your hospital was notified by dispatch.

Autocalculates: Total EMS Time

15. **EMS Dispatch Time:** The time the unit transporting to your hospital was notified by dispatch.

Autocalculates: Total EMS Time

16. **EMS Unit Arrival on Scene Date:** The date the unit transporting to your hospital arrived on the scene.

Autocalculates: Total EMS Response Time and Total EMS Scene Time

17. **EMS Unit Arrival on Scene Time:** The time the unit transporting to your hospital arrived on the scene (the time the vehicle stopped moving).

Autocalculates: Total EMS Response Time and Total EMS Scene Time

18. **EMS Unit Scene Departure Date:** The date the unit transporting to your hospital left the scene.

Autocalculates: Total EMS Scene Time

19. **EMS Unit Scene Departure Time:** The time the unit transporting to your hospital left the scene (the time the vehicle started moving).

Autocalculates: Total EMS Scene Time

20. **Transport Mode:** The mode of transport delivering the patient to your hospital.

21. **Other Transport Mode:** All other modes of transport used during patient care event, except the mode delivering the patient to the hospital.

22. **Initial Field Systolic Blood Pressure:** First recorded systolic blood pressure in the pre-hospital setting.

Autocalculates: Revised Trauma Score – EMS (adult & pediatric)

23. **Initial Field Pulse Rate:** First recorded pulse in the pre-hospital setting (palpated or auscultated, expressed as a number per minute).

24. **Initial Field Respiratory Rate:** First recorded respiratory rate in the pre-hospital setting (expressed as a number per minute).

Autocalculates: Revised Trauma Score – EMS (adult and pediatric)

25. **Initial Field Oxygen Saturation:** First recorded oxygen saturation in the pre-hospital setting (expressed as a percentage).

26. **Initial Field GCS – Eye:** First recorded Glasgow Coma Score (Eye) in the pre-hospital setting.

Autocalculates: Overall GCS - EMS Score (adult and pediatric)

27. **Initial Field GCS – Verbal:** First recorded Glasgow Coma Score (Verbal) in the pre-hospital setting.

Autocalculates: Overall GCS – EMS Score (adult and pediatric)

28. **Initial Field GCS – Motor:** First recorded Glasgow Coma Score (Motor) in the pre-hospital setting.

Autocalculates: Overall GCS – EMS Score (adult and pediatric)

29. **Initial Field GCS – Total:** First recorded Glasgow Coma Score (total) in the Pre-hospital setting.

Utilize only if total score is available without component scores.

Autocalculates: Revised Trauma Score - EMS (adult and pediatric)

30. **Inter-Facility Transfer:** Was the patient transferred to your facility from another acute care facility?

### **Emergency Department Variables**

31. **ED/Hospital Arrival Date:** The date the patient arrived to the ED/Hospital.

Autocalculates: Total EMS Time and Total Length of Hospital Stay

32. **ED/Hospital Arrival Time:** The time the patient arrived to the ED/Hospital.

Autocalculates: Total EMS Time and Total Length of Hospital Stay

33. **Initial ED/Hospital Systolic Blood Pressure:** First recorded systolic blood pressure in the ED/hospital.



Autocalculates: Revised Trauma Score - ED (adult and pediatric)

34. **Initial ED/Hospital Pulse Rate:** First recorded pulse in the ED/hospital (palpated or auscultated, expressed as a number per minute).

35. **Initial ED/Hospital Temperature:** First recorded temperature (in degrees Celsius/centigrade) in the ED/hospital.

36. **Initial ED/Hospital Respiratory Rate:** First recorded respiratory rate in the ED/hospital (expressed as a number per minute).

Autocalculates: Revised Trauma Score - ED (adult and pediatric)

If a value is provided for “Initial ED/Hospital Respiratory Rate,” then complete “Initial ED/Hospital Respiratory Assistance.”

a. **Initial ED/Hospital Respiratory Assistance:** Determination of respiratory assistance associated with the initial ED/hospital respiratory rate.

37. **Initial ED/Hospital Oxygen Saturation:** First recorded oxygen saturation in the ED/hospital (expressed as a percentage).

If available, complete additional field: “Initial ED/Hospital Supplemental Oxygen”:

a. **Initial ED/Hospital Supplemental Oxygen:** Determination of the presence of supplemental oxygen during assessment of initial ED/hospital oxygen saturation level.

38. **Initial ED/Hospital GCS – Eye:** First recorded Glasgow Coma Score (Eye) in the ED/hospital.

Autocalculates: Overall GCS - ED (adult and pediatric)

39. **Initial ED/Hospital GCS – Verbal:** First recorded Glasgow Coma Score (Verbal) in the ED/hospital.

Autocalculates: Overall GCS - ED (adult and pediatric)

40. **Initial ED GCS/Hospital – Motor:** First recorded Glasgow Coma Score (Motor) in the ED/hospital.

Autocalculates: Overall GCS - ED (adult and pediatric)

41. **Initial ED/Hospital GCS – Total:** First recorded Glasgow Coma Score (total) in the ED/hospital.

Utilize only if total score is available without component scores.

Autocalculates: Revised Trauma Score - ED (adult and pediatric)

- 42. **Initial ED/Hospital GCS Assessment Qualifiers:** Documentation of factors potentially affecting the first assessment of GCS upon arrival in the ED/hospital.
- 43. **Alcohol Use Indicator:** Use of alcohol by the patient.
- 44. **Drug Use Indicator:** Use of drugs by the patient.
- 45. **ED Discharge Disposition:** The disposition of the patient at the time of discharge from the ED.

If the ED Discharge Disposition is recorded as “Died”, the field below documents under what circumstances the death occurred:

- a. **ED Death:** The type of death incurred while the patient was in the ED.
46. **ED Discharge Date:** The date the patient was discharged from the ED.

Autocalculates: Total ED Time

47. **ED Discharge Time:** The time the patient was discharged from the ED.

Autocalculates: Total ED Time

### Hospital Procedure Variables

- 48. **Hospital Procedures:** Operative or essential procedures conducted during hospital stay.
- 49. **Hospital Procedure Start Date:** The date operative and essential procedures were performed.
- 50. **Hospital Procedure Start Time:** The time operative and essential procedures were performed.

### Diagnosis Variables

- 51. **Comorbid Conditions:** Pre-existing comorbid factors present prior to patient arrival at the ED/hospital.
- 52. **Injury Diagnosis:** Diagnoses related to all identified injuries.

Autocalculates: Abbreviated Injury Score (six body regions), Injury Severity Score and Functional Capacity Index.

### **Injury Severity Variables**

- 53. ***AIS Predot Code***: The Abbreviated Injury Scale (AIS) predot codes that reflect the patient's injuries.
- 54. ***AIS Severity***: The Abbreviated Injury Scale (AIS) severity codes that reflect the patient's injuries.
- 55. ***ISS Body Region***: The Injury Severity Score (ISS) body region codes that reflect the patient's injuries.
- 56. ***AIS Version***: The software (and version) used to calculate Abbreviated Injury Scale (AIS) severity codes.
- 57. ***Locally Calculated ISS***: The Injury Severity Score (ISS) that reflects the patient's injuries.

### **Outcome Information Variables**

- 58. ***Total ICU Length of Stay***: The total number of patient days in any ICU (including all episodes).
- 59. ***Total Ventilator Days***: The total number of patient days spent on a mechanical ventilator (including all episodes)
- 60. ***Hospital Discharge Date***: The date the patient was discharged from the hospital.  
  
Autocalculates: Total Length of Hospital Stay
- 61. ***Hospital Discharge Time***: The time the patient was discharged from the hospital.  
  
Autocalculates: Total Length of Hospital Stay
- 62. ***Hospital Discharge Disposition***: The disposition of the patient when discharged from the hospital.

### **Financial Information Variables**

- 63. ***Primary Method of Payment***: Primary source of payment for hospital care.

### **Quality Assurance Information Variables**

- 64. ***Hospital Complications***: Any medical complication that occurred during the patient's stay at your hospital.

## **Auto-Populated Variables Defining Hospital Characteristics**

1. **AHA Identification Number:** *The number assigned to the admitting hospital by the American Hospital Association*
2. **Hospital Trauma Verification/Designation:** *Determination of whether the hospital has been verified and/or designated as a trauma center.*
3. **Level of Trauma Center (Adult):** *Determination of trauma center level at which the hospital is verified and/or designated.*
4. **Level of Trauma Center (Pediatric):** *Determination of trauma center level at which the hospital is verified and/or designated.*
5. **Trauma Center Authority:** *Identification of the organization of governing body designating/verifying the trauma center*

## **Variables Auto-Calculated Based on Existing Data Elements**

16. *FIPS code (location code)*
17. *Trauma Type (blunt, penetrating, burn)*
18. *Intentionality (using CDC matrix)*
19. *Total EMS Response Time (elapsed time from EMS dispatch to scene arrival)*
20. *Total EMS Scene Time (elapsed time from EMS scene arrival to scene departure).*
21. *Total EMS Time (elapsed time from EMS dispatch to hospital arrival)*
22. *Overall GCS - EMS score (adult and pediatric)*
23. *Overall GCS - ED score (adult and pediatric)*
24. *Revised Trauma Score - EMS (adult and pediatric)*
25. *Revised Trauma Score - ED (adult and pediatric)*
26. *Abbreviated Injury Scale (six body regions)*
27. *Injury Severity Score*
28. *Functional Capacity Index*
29. *Total ED Time*
30. *Total Length of Hospital Stay*

## Appendix 6: National Trauma Data Standard Data Tree

### Graphical Scheme of the National Trauma Data Standard Data Elements

#### Data Element Types

Black Underlined - main category or grouping of the data elements

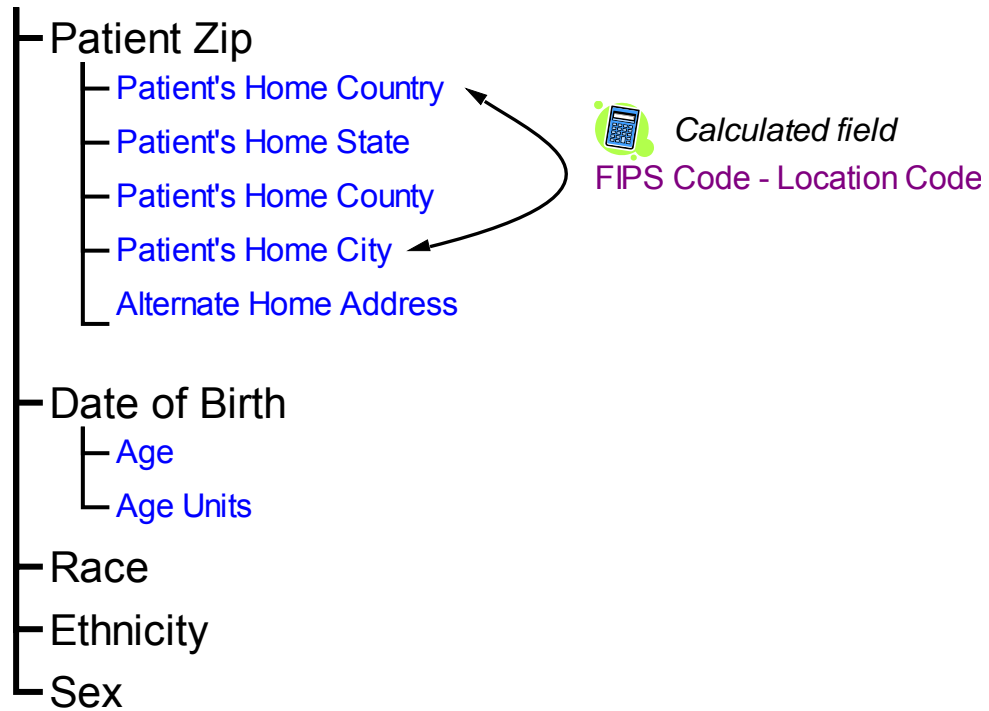
Black - primary data elements included in the National Trauma Data Standard Dataset.

Blue - secondary data elements accessible only if primary variable is “unknown”, “not recorded”, “not applicable”, or “not known”.

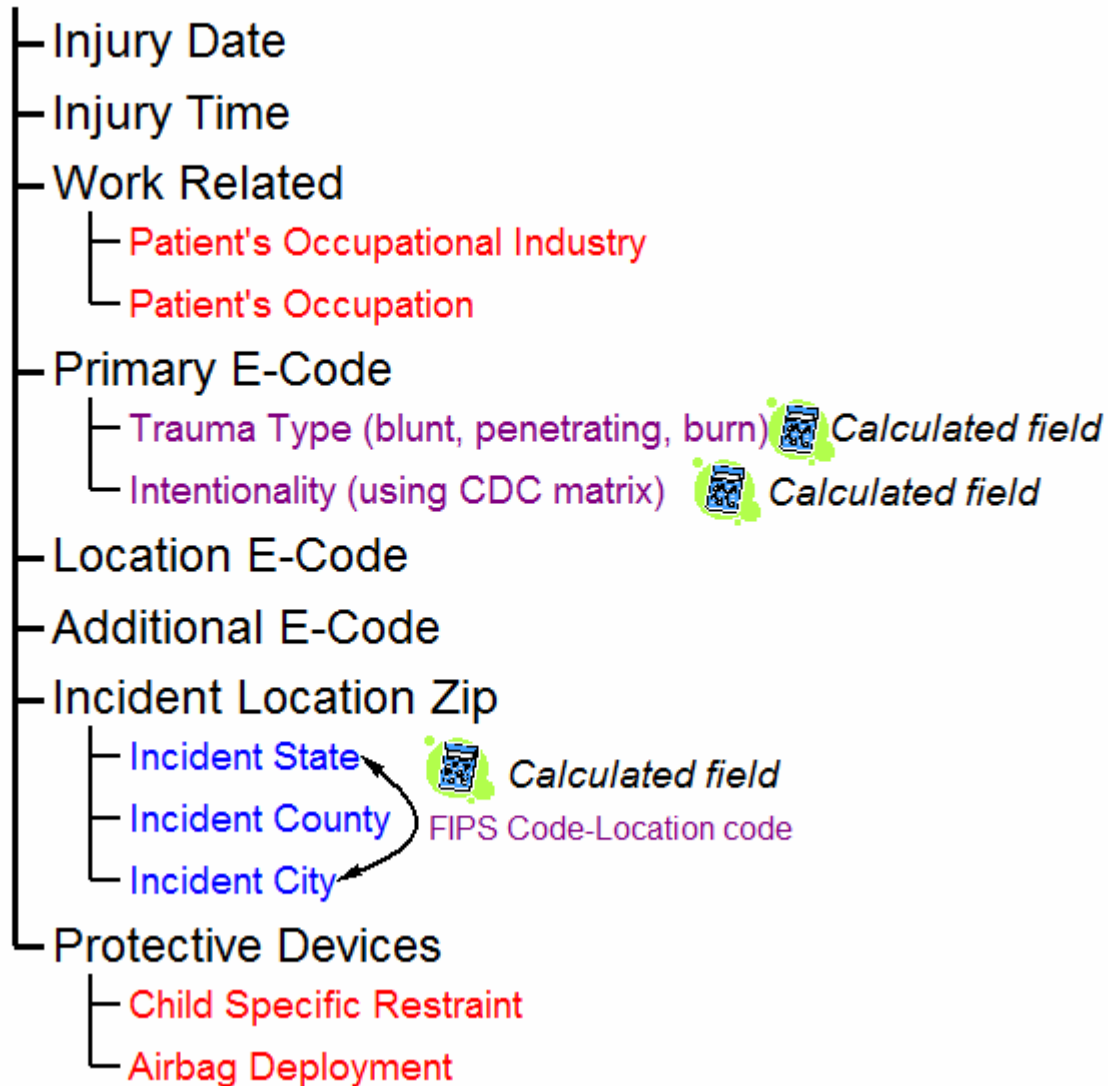
Red - supportive data elements that further characterize the primary variable.

Purple - data elements auto-calculated based upon information provided by primary variable

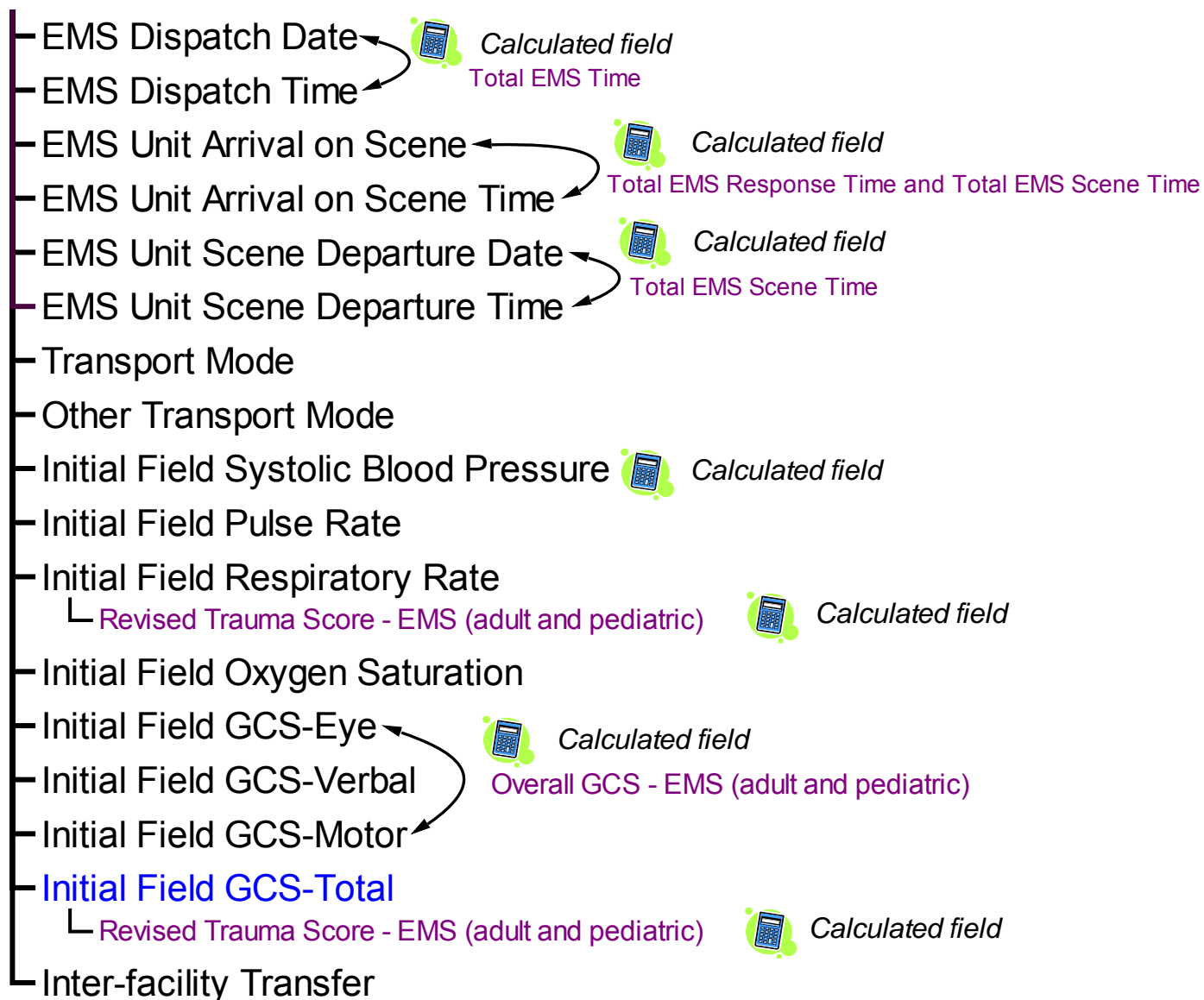
## Demographic Information



## Injury Information













## Prehospital Information








## Emergency Department Information

- ED/Hospital Arrival Date  *Calculated field*
- ED/Hospital Arrival Time  *Total EMS Time, Total ED time and Total Length of Hospital Stay*
- Initial ED/Hospital Systolic Blood Pressure
  - └ Revised Trauma Score in ED (adult and pediatric)  *Calculated field*
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital Respiratory Rate
  - └ Initial ED/Hospital Respiratory Assistance
  - └ Revised Trauma Score - ED (adult and pediatric)  *Calculated field*
- Initial ED/Hospital Oxygen Saturation
  - └ Initial ED/Hospital Supplemental Oxygen
- Initial ED/Hospital GCS-Eye  *Calculated field*
- Initial ED/Hospital GCS-Verbal  *Overall GCS - ED (adult and pediatric)*
- Initial ED/Hospital GCS-Motor  *Overall GCS - ED (adult and pediatric)*
- **Initial ED/Hospital GCS-Total**
  - └ Revised Trauma Score - ED (adult and pediatric)  *Calculated field*
- Initial ED/Hospital GCS Assessment Qualifiers
- Alcohol Use Indicator
- Drug Use Indicator
- ED Discharge Disposition
  - └ ED Death
- ED Discharge  *Calculated field*
- ED Discharge Time  *Total ED Time* *Calculated field*


## Hospital Procedure Information

- └ Hospital Procedures
  - └ Hospital Procedure Start Date
  - └ Hospital Procedure StartTime

## Diagnosis Information

- └ Co-morbid Conditions
- └ Injury Diagnosis
  - └ Abbreviated Injury Scale (six body regions)  *Calculated field*
  - └ Injury Severity Score  *Calculated field*
  - └ Functional Capacity Index  *Calculated field*

## Outcome Information

- └ Total ICU Length of Stay
  - └ Total Number of Ventilator Days
  - └ Hospital Discharge Date
  - └ Hospital Discharge Time
  - └ Hospital Discharge Disposition
-  *Calculated field*  
Total Hospital Length of Stay
- Note: Arrows point from the 'Total Hospital Length of Stay' label to the 'Hospital Discharge Date' and 'Hospital Discharge Time' items in the list above.*

## Financial Information

- └ Primary Method of Payment

## Quality Assurance Information

- └ Hospital Complications

## **Appendix 7: Glossary of Terms**

## Co-Morbid Conditions

**Alcoholism:** To be determined based upon the brief screening tool used at your institution.

*ICD-9 Code Range: 291.0-291.3, 291.5, 291.8, 291.81, 291.89, 291.9, 303.00-303.93, 305.00-305.03, V11.3*

**Ascites:** The presence of fluid accumulation (other than blood) in the peritoneal cavity noted on physical examination, abdominal ultrasound, or abdominal CT/MRI.

*ICD-9 Code Range: 789.5*

**Bleeding disorder:** Any condition that places the patient at risk for excessive bleeding due to a deficiency of blood clotting elements (e.g., vitamin K deficiency, hemophilia, thrombocytopenia, chronic anticoagulation therapy with Coumadin, Plavix, or similar medications). Do not include the patient on chronic aspirin therapy.

*ICD-9 Code Range: for example - 269.0, 286.0, 286.1, 286.4, 287.1, 287.3-287.5, 287.9*

**Chemotherapy for cancer within 30 days:** A patient who had any chemotherapy treatment for cancer in the 30 days prior to admission. Chemotherapy may include, but is not restricted to, oral and parenteral treatment with chemotherapeutic agents for malignancies such as colon, breast, lung, head and neck, and gastrointestinal solid tumors as well as lymphatic and hematopoietic malignancies such as lymphoma, leukemia, and multiple myeloma.

*ICD-9 Code Range: V58.1*

**Congenital Anomalies:** Defined as documentation of a cardiac, pulmonary, body wall, CNS/spinal, GI, renal, orthopedic, or metabolic congenital anomaly.

*ICD-9 Code Range: 740.0 through 759.9*

**Congestive heart failure:** Defined as the inability of the heart to pump a sufficient quantity of blood to meet the metabolic needs of the body or can do so only at an increased ventricular filling pressure. To be included, this condition must be noted in the medical record as CHF, congestive heart failure, or pulmonary edema with onset or increasing symptoms within 30 days prior to injury. Common manifestations are:

1. Abnormal limitation in exercise tolerance due to dyspnea or fatigue
2. Orthopnea (dyspnea on lying supine)
3. Paroxysmal nocturnal dyspnea (awakening from sleep with dyspnea)
4. Increased jugular venous pressure
5. Pulmonary rales on physical examination
6. Cardiomegaly
7. Pulmonary vascular engorgement

*ICD-9 Code Range: 398.91, 402.11, 402.01, 402.91, 404.11, 404.13, 404.91, 404.93, 425.0-425.9, 428.0*

**Current smoker:** A patient who has smoked cigarettes in the year prior to admission. Do not include patients who smoke cigars or pipes or use chewing tobacco.

**Currently requiring or on dialysis:** Acute or chronic renal failure prior to injury that was requiring periodic peritoneal dialysis, hemodialysis, hemofiltration, or hemodiafiltration.

*ICD-9 Code Range: V45.1*

**CVA/residual neurological deficit:** A history prior to injury of a cerebrovascular accident (embolic, thrombotic, or hemorrhagic) with persistent residual motor, sensory, or cognitive dysfunction. (e.g., hemiplegia, hemiparesis, aphasia, sensory deficit, impaired memory).

*ICD-9 Code Range: 362.34, 430-438.9, 436*

**Diabetes mellitus:** Diabetes mellitus prior to injury that required exogenous parenteral insulin or an oral hypoglycemic agent.

*ICD-9 Code Range: 250.00-250.39, 250.4- 250.79*

**Disseminated cancer:** Patients who have cancer that:

1. Has spread to one site or more sites in addition to the primary site AND
2. In whom the presence of multiple metastases indicates the cancer is widespread, fulminant, or near terminal. Other terms describing disseminated cancer include “diffuse,” “widely metastatic,” “widespread,” or “carcinomatosis.” Common sites of metastases include major organs (e.g., brain, lung, liver, meninges, abdomen, peritoneum, pleura, bone).

*ICD-9 Code Range: 196.0-199.1*

**Do Not Resuscitate (DNR) status:** The patient had a Do-Not-Resuscitate (DNR) document or similar advance directive recorded prior to injury.

**Esophageal varices:** Esophageal varices are engorged collateral veins in the esophagus which bypass a scarred liver to carry portal blood to the superior vena cava. A sustained increase in portal pressure results in esophageal varices which are most frequently demonstrated by direct visualization at esophagoscopy.

*ICD-9 Code Range: 456.0-456.2*

**Functionally dependent health status:** Pre-injury functional status may be represented by the ability of the patient to complete activities of daily living (ADL) including: bathing, feeding, dressing, toileting, and walking. This item is marked YES if the patient, prior to injury, was partially dependent or completely dependent upon equipment, devices or another person to complete some or all activities of daily living. Formal definitions of dependency are listed below:

1. Partially dependent: The patient requires the use of equipment or devices coupled with assistance from another person for some activities of daily living. Any patient coming from a nursing home setting who is not totally dependent would fall into this category, as would any patient who requires kidney dialysis or home ventilator support that requires chronic oxygen therapy yet maintains some independent functions.
2. Totally dependent: The patient cannot perform any activities of daily living for himself/herself. This would include a patient who is totally dependent upon nursing care, or a dependent nursing home patient. All patients with psychiatric illnesses should be evaluated for their ability to function with or without assistance with ADLs just as the non-psychiatric patient.

**History of angina within past 1 month:** Pain or discomfort between the diaphragm and the mandible resulting from myocardial ischemia. Typically angina is a dull, diffuse (fist sized or larger) substernal chest discomfort precipitated by exertion or emotion and relieved by rest or nitroglycerine. Radiation often occurs to the arms and shoulders and occasionally to the neck, jaw (mandible, not maxilla), or interscapular region. For patients on anti-anginal medications, enter yes only if the patient has had angina within one month prior to admission.

*ICD-9 Code Range: V12.5, V12.50*

**History of Myocardial Infarction within past 6 months:** The history of a non-Q wave, or a Q wave infarction in the six months prior to injury as diagnosed in the patient's medical record.

*ICD-9 Code Range: 412*

**History of revasc/amp for PVD** (History of revascularization/amputation for peripheral vascular disease): Any type of angioplasty or revascularization procedure for atherosclerotic PVD (e.g., aortafemoral, femoral-femoral, femoral-popliteal) or a patient who has had any type of amputation procedure for PVD (e.g., toe amputations, transmetatarsal amputations, below the knee or above the knee amputations). Patients who have had amputation for trauma or resection of abdominal aortic aneurysms would not be included.

**Hypertension requiring medication:** History of a persistent elevation of systolic blood pressure >140 mm Hg and a diastolic blood pressure >90 mm Hg requiring an antihypertensive treatment (e.g., diuretics, beta blockers, ACE inhibitors, calcium channel blockers).

*ICD-9 Code Range: 401.0-401.9, 405.0-405.99, 402.0, 402.10, 402.90, 403.00, 403.10, 403.90, 404.00, 404.10, 404.90*

**Impaired sensorium:** Patients should be noted to having an impaired sensorium if they had mental status changes, and/or delirium in the context of a current illness prior to injury. Patients with chronic or longstanding mental status changes secondary to chronic mental illness (e.g., schizophrenia) or chronic dementing illnesses (e.g., multi-infarct dementia, senile dementia of the Alzheimer's type) should also be included. Mental retardation would qualify as impaired sensorium. For pediatric populations, patients with documented behavior disturbances, attention disorders, delayed learning or delayed development should be included.

*ICD-9 Code Range: 290-290.9, 299.00, 312.9, 314.00, 315.2, 315.3, 315.31, 315.39, 315.5, 315.8, 315.9, 317, 318.0, 318.1, 319, 331-331.2, V11.0, V11.1, V11.2, V11.8*

**Prematurity:** Defined as documentation of premature birth, a history of bronchopulmonary dysplasia, ventilator support for greater than 7 days after birth, or the diagnosis of cerebral palsy. Premature birth is defined as infants delivered before 37 weeks from the first day of the last menstrual period.

*ICD-9 Code Range: 343.0 through 343.9, 765.0, 765.1, 770.7, 96.72*

**Obesity:** Defined as a Body Mass Index of 40 or greater.

*ICD-9 Code Range: 278.00-278.01*

**Respiratory Disease:** Defined as severe chronic lung disease, chronic asthma; cystic fibrosis; or COPD (such as emphysema and /or chronic bronchitis) resulting in any one or more of the following:

1. Functional disability from COPD (e.g., dyspnea, inability to perform ADLs)
2. Hospitalization in the past for treatment of COPD
3. Requires chronic bronchodilator therapy with oral or inhaled agents
4. An FEV1 of <75% of predicted on pulmonary function testing

Do not include patients whose only pulmonary disease is *acute* asthma. Do not include patients with diffuse interstitial fibrosis or sarcoidosis.

*ICD-9 Code Range: 277.0, 490 through 493.9*

**Steroid use:** Patients that required the regular administration of oral or parenteral corticosteroid medications (e.g., Prednisone, Decadron) in the 30 days prior to injury for a chronic medical condition (e.g., COPD, asthma, rheumatologic disease, rheumatoid arthritis, inflammatory bowel disease). Do not include topical corticosteroids applied to the skin or corticosteroids administered by inhalation or rectally.



## Hospital Complications

**Abdominal compartment syndrome:** Defined as the sudden increase in the intra-abdominal pressure resulting in alteration in the respiratory mechanism, hemodynamic parameters, and renal perfusion. Typically patients with this syndrome are critically ill and require ventilator support and/or reoperation.

*ICD-9 Code Range: 958.93*

**Abdominal fascia left open:** No primary surgical closure of the fascia or intra-abdominal packs left at conclusion of primary laparotomy (damage control).

**Acute renal failure:** A patient who did not require dialysis prior to injury, who has worsening renal dysfunction after injury requiring hemodialysis, ultrafiltration, or peritoneal dialysis. If the patient refuses treatment (e.g., dialysis), the condition is still considered present.

*ICD-9 Code Range: 403.11, 403.91, 404.12, 404.92, 582-582.9, 583-583.7, 584.5-584.9 585, 586, 588.0 404.12, 404.92, 958.5*

**ARDS:** Adult (Acute) Respiratory Distress Syndrome: ARDS occurs in conjunction with catastrophic medical conditions, such as pneumonia, shock, sepsis (or severe infection throughout the body, sometimes also referred to as systemic infection, and may include or also be called a blood or blood-borne infection), and trauma. It is a form of sudden and often severe lung failure characterized by  $\text{PaO}_2/\text{FiO}_2 \leq 200$ , decreased compliance, and diffuse bilateral pulmonary infiltrates without associated clinical evidence of CHF. The process must persist beyond 36 hours and require mechanical ventilation.

*ICD-9 Code Range: ICD-9 codes 518.5 and 518.82 cross-referenced with procedural codes for ventilatory support (96.70, 96.71 and 96.72).*

**Base deficit:** Defined as a value greater than 4 at any time during admission. This number is reported as a component of arterial or venous blood gases. The number may be reported by the lab as Base Deficit, or as Base Excess with a negative value.

**Bleeding:** Any transfusion (including autologous) of five or more units of packed red blood cells or whole blood given from the time the patient is injured up to and including 72 hours later. The blood may be given for any reason.

**Cardiac arrest with CPR:** The absence of a cardiac rhythm or presence of chaotic cardiac rhythm that results in loss of consciousness requiring the initiation of any component of basic and/or advanced cardiac life support. Excludes patients that arrive at the hospital in full arrest.

*ICD-9 Code Range: 427.5*

**Coagulopathy:** Defined as twice the upper limit of the normal range for PT or PTT in a patient without a pre-injury bleeding disorder of this magnitude.

*ICD-9 Code Range: 286.0-286.4, 286.6, 287.1, 287.3*

**Coma:** Defined as significantly impaired level of consciousness (exclude transient disorientation or psychosis) for greater than 24 hours. The patient should be unconscious, or postures to painful stimuli, or is unresponsive to all stimuli. Does not include drug-induced coma.

**Decubitus ulcer:** Defined as a “pressure sore” resulting from pressure exerted on the skin, soft tissue, muscle, or bone by the weight of an individual against a surface beneath. Individuals unable to avoid long periods of uninterrupted pressure over bony prominences are at increased risk for the development of necrosis and ulceration.

*ICD-9 Code Range: 707.0*

**Deep surgical site infection:** Defined as an infection that occurs within 30 days after an operation and the infection appears to be related to the operation. The infection should involve deep soft tissues (e.g., fascial and muscle layers) at the site of incision and at least one of the following:

1. Purulent drainage from the deep incision but not from the organ/space component of the surgical site.
2. A deep incision spontaneously dehisces or is deliberately opened by a surgeon when the patient has at least one of the following signs or symptoms: fever (> 38 C), localized pain, or tenderness, unless site is culture-negative.
3. An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination.
4. Diagnosis of a deep incision infection by a surgeon or attending physician.

Note:

Report infections that involve both superficial and deep incision sites as deep surgical site infection. If wound spontaneously opens as a result of infection, code for Deep Surgical Site Infection and Wound Disruption.

**Drug or alcohol withdrawal syndrome:** Defined as a set of symptoms that may occur when a person who has been drinking too much alcohol or habitually using certain drugs suddenly stops. Symptoms may include: activation syndrome (i.e., tremulousness, agitation, rapid heart beat and high blood pressure), seizures, hallucinations or delirium tremens.

*ICD-9 Code Range: 291.0, 291.3, 291.81, 292.0*

**Deep Vein Thrombosis (DVT)/thrombophlebitis:** The formation, development, or existence of a blood clot or thrombus within the vascular system, which may be coupled with inflammation. This diagnosis may be confirmed by a venogram, ultrasound, or CT. The patient must be treated with anticoagulation therapy and/or placement of a vena cava filter or clipping of the vena cava.

*ICD-9 Code Range: 451.0, 451.1, 451.11, 451.19, 451.8, 451.81- 451.84, 451.89, 451.9, 453.40, 459.10-459.19, 997.2, 999.2*

**Extremity compartment syndrome:** Defined as a condition in which there is swelling and an increase in pressure within a limited space (a fascial compartment) that presses on and

compromises blood vessels, nerves, and/or tendons that run through that compartment. Compartment syndromes usually involve the leg but can also occur in the forearm, arm, thigh, and shoulder.

**Graft/prosthesis/flap failure:** Mechanical failure of an extracardiac vascular graft or prosthesis including myocutaneous flaps and skin grafts requiring return to the operating room or a balloon angioplasty.

*ICD-9 Code Range: 996.0, 996.1, 996.5, 996.52, 996.61, 996.62*

**Intracranial pressure elevation:** Defined as intracranial pressure greater than 25 Torr for greater than 30 minutes.

**Myocardial infarction:** A new acute myocardial infarction occurring during hospitalization (within 30 days of injury).

*ICD-9 Code Range: 410.00, 410.02, 410.10, 410.12, 410.20, 410.22, 410.30, 410.32, 410.40, 410.42, 410.50, 410.52, 410.60, 410.62, 410.70, 410.72, 410.80, 410.82, 410.90, 410.92, 412*

**Organ/space surgical site infection:** Defined as an infection that occurs within 30 days after an operation and infection involves any part of the anatomy (eg, organs or spaces) other than the incision, which was opened or manipulated during a procedure; and at least one of the following, including:

1. Purulent drainage from a drain that is placed through a stab wound or puncture into the organ/space;
2. Organisms isolated from an aseptically obtained culture of fluid or tissue in the organ/space;
3. An abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or radiologic examination; or
4. Diagnosis of an organ/space SSI by a surgeon or attending physician.

**Pneumonia:** Patients with evidence of pneumonia that develops during the hospitalization. Patients with pneumonia must meet at least one of the following two criteria:

Criterion 1. Rales or dullness to percussion on physical examination of chest AND any of the following:

- a. New onset of purulent sputum or change in character of sputum
- b. Organism isolated from blood culture
- c. Isolation of pathogen from specimen obtained by transtracheal aspirate, bronchial brushing, or biopsy

Criterion 2. Chest radiographic examination shows new or progressive infiltrate, consolidation, cavitation, or pleural effusion AND any of the following:

- a. New onset of purulent sputum or change in character of sputum
- b. Organism isolated from the blood
- c. Isolation of pathogen from specimen obtained by transtracheal aspirate, bronchial brushing, or biopsy
- d. Isolation of virus or detection of viral antigen in respiratory secretions
- e. Diagnostic single antibody titer (IgM) or fourfold increase in paired serum samples (IgG) for pathogen

f. Histopathologic evidence of pneumonia

*ICD-9 Code Range: 480, 480.0-480.3, 481, 482.0, 482.1, 482.2, 482.3, 482.30, 482.31, 482.32, 482.39, 482.4, 482.40, 482.41, 482.49, 482.8, 482.81-482.84, 482.89, 482.9, 483.0, 483.1, 483.8, 484, 484.1, 484.3, 484.5-484.8, 485, 486*

**Pulmonary embolism:** Defined as a lodging of a blood clot in a pulmonary artery with subsequent obstruction of blood supply to the lung parenchyma. The blood clots usually originate from the deep leg veins or the pelvic venous system. Consider the condition present if the patient has a V-Q scan interpreted as high probability of pulmonary embolism or a positive pulmonary arteriogram or positive CT angiogram.

*ICD-9 Code Range: 415.11, 415.19*

**Stroke/CVA:** Following injury, patient develops an embolic, thrombotic, or hemorrhagic vascular accident or stroke with motor, sensory, or cognitive dysfunction (e.g., hemiplegia, hemiparesis, aphasia, sensory deficit, impaired memory) that persists for 24 or more hours.

*ICD-9 Code Range: 997.02*

**Superficial surgical site infection:** Defined as an infection that occurs within 30 days after an operation and infection involves only skin or subcutaneous tissue of the incision and at least one of the following:

1. Purulent drainage, with or without laboratory confirmation, from the superficial incision.
2. Organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision.
3. At least one of the following signs or symptoms of infection: pain or tenderness, localized swelling, redness, or heat and superficial incision is deliberately opened by the surgeon, unless incision is culture-negative.
4. Diagnosis of superficial incisional surgical site infection by the surgeon or attending physician.

Do not report the following conditions as superficial surgical site infection:

1. Stitch abscess (minimal inflammation and discharge confined to the points of suture penetration).
2. Infected burn wound.
3. Incisional SSI that extends into the fascial and muscle layers (see deep surgical site infection).

**Systemic sepsis:** Defined as definitive evidence of infection, plus evidence of a systemic response to infection. This systemic response is manifested by the presence of infection and TWO or more of the following conditions:

1. Temp >38 degrees C or <36 degrees C
2. Sepsis with hypotension despite adequate fluid resuscitation combined with perfusion abnormalities that may include, but are not limited to, lactic acidosis, oliguria, or an acute

alteration in mental status. Patients who are on inotropic or vasopressor agents may not be hypotensive at the time that perfusion abnormalities are measured.

3. HR >90 bpm
4. RR >20 breaths/min or PaCO<sub>2</sub> <32 mmHg(<4.3 kPa)
5. WBC >12,000 cell/mm<sup>3</sup>, <4000 cells/mm<sup>3</sup>, or >10% immature (band) forms

*ICD-9 Code Range: 038.0, 038.10, 038.11, 038.19, 038.3, 038.4-038.9, 790.7*

**Unplanned intubation:** Patient requires placement of an endotracheal tube and mechanical or assisted ventilation because of the onset of respiratory or cardiac failure manifested by severe respiratory distress, hypoxia, hypercarbia, or respiratory acidosis. In patients who were intubated in the field or Emergency Department, or those intubated for surgery, unplanned intubation occurs if they require reintubation after being extubated.

**Wound disruption:** Separation of the layers of a surgical wound, which may be partial or complete, with disruption of the fascia.

*ICD-9 Code Range: 998.3, 998.31, 998.32*

## Other Terms

**Dead on arrival:** Dead on Arrival is defined as arrival at the hospital with no signs of life, but with pre-hospital CPR as indicated below:

Age >12 years

Blunt trauma, more than 5 minutes pre-hospital CPR

Penetrating head/neck/abdomen trauma, more than 5 minutes pre-hospital CPR

Penetrating chest trauma, more than 15 minutes pre-hospital CPR

Age ≤ 12 years

Blunt trauma, more than 15 minutes pre-hospital CPR

Penetrating trauma, more than 15 minutes pre-hospital CPR

**Operative and/or essential procedures** is defined as procedures performed in the Operating Room, Emergency Department, or Intensive Care Unit that were essential to the diagnoses, stabilization, or treatment of the patient's specific injuries. Repeated diagnostic procedures (e.g., repeated CT scan) should not be recorded (record only the first procedure).