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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. Trauma typically involves young adults and results in the loss of more productive work years than both cancer and heart disease combined. Each year, more than 140,000 Americans die and approximately 80,000 are permanently disabled as a result of injury. The loss of productivity and health care costs account for 100 billion dollars annually.

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. 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. 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, yet studies continue to document serious variation and misclassification between hospital-based registries.

Recently, federal agencies have made investments to fortify the establishment of a national trauma registry. 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. Members of ACSCOT and staff associated with the NTDB have long recognized that the NTDB inherits the individual deficiencies of each contributing registry.

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)
2005 National Trauma Data Standard Inclusion Criteria

Did the patient sustain one or more traumatic injuries?

Yes

Does the diagnostic code for any injury included in the following range; ICD-9-CM: 800-959.9?

No

Yes

Did the patient sustain at least one injury with a diagnostic code outside the range of codes listed below? ICD-9-CM codes: 905-909.9, 910-924.9, or 930-939.9?

No

Yes

Did injury result in death? OR

Was the patient transferred to (or from) your hospital via another hospital using EMS or air ambulance? OR

Does the patient’s hospital admission meet inclusion criteria defined by YOUR trauma registry?

For ALL three

Patient INCLUDED in the National Trauma Data Standard

Patient NOT INCLUDED in the National Trauma Data Standard
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
2 Not Known
3 Not Recorded

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.

References to Other Databases
- Compare with NHTSA V.2.10 - E00
Demographic Information
PATIENT’S HOME ZIP CODE

**Data Format** [text]  
**National Element**

**Definition**
The patient’s home ZIP code of primary residence.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:zip</th>
</tr>
</thead>
<tbody>
<tr>
<td>XSD Element / Domain (Simple Type)</td>
<td>HomeZip</td>
</tr>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

**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

Definition
The country where the patient resides.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
<tr>
<td>XSD Element / Domain (Simple Type)</td>
<td>HomeCountry</td>
</tr>
<tr>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
</tbody>
</table>

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

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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

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

**Field Values**
- Relevant value for data element (two 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 Nurses Notes
2. Triage Form / Trauma Flow Sheet
3. EMS Run Sheet
4. Billing Sheet / Medical Records Coding Summary Sheet
5. ED Admission Form

**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

Definition
The patient’s county (or parish) of residence.

XSD Data Type xs:string

Multiple Entry Configuration No

Required in XSD Yes

XSD Element / Domain (Simple Type) HomeCounty

Accepts Null Value Yes, common null values

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

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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

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

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

**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**

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

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

**Field Values**
1. Homeless
2. Undocumented Citizen
3. Migrant
4. Foreign Visitor

**Additional Information**
- Only completed when ZIP code is “Not Applicable”.

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

**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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:date</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>DateOfBirth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td>Minimum Constraint</td>
<td>1,890</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum Constraint</td>
<td>2,030</td>
</tr>
</tbody>
</table>

Field Values
- Relevant value for data element

Additional Information
- Collected as YYYY-MM-DD.
- If 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 Nurses Notes
2. Triage Form / Trauma Flow Sheet
3. EMS Run Sheet
4. Billing Sheet / Medical Records Coding Summary Sheet
5. ED Admission Form

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).

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td>Minimum Constraint</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum Constraint</td>
<td>120</td>
</tr>
</tbody>
</table>

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

**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

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>AgeUnits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
</tbody>
</table>

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

**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] single-choice

Definition
The patient’s race.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>Yes, max 2</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Field Values

1 Asian
2 Native Hawaiian or Other Pacific Islander
3 Other Race
4 American Indian
5 Black or African American
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 Nurses Notes
2. EMS Run Sheet
3. Triage Form / Trauma Flow Sheet
4. Billing Sheet / Medical Records Coding Summary Sheet
5. ED Admission Form

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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>Ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

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

**Multiple Entry Configuration** No

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

**Required in XSD** Yes

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

**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

Definition
The date the injury occurred.

XSD Data Type xs:date  XSD Element / Domain (Simple Type) IncidentDate
Multiple Entry Configuration No  Accepts Null Value Yes, common null values
Required in XSD Yes  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 date of injury is “Not Recorded” or “Not Known”, the null value is blank (or empty).
• 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. ED Nurses Notes
2. Triage Form / Trauma Flow Sheet
3. EMS Run Sheet

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

Definition
The time the injury occurred.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:time</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>IncidentTime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 time of injury is “Not Reported” or “Not Known,” the null value is blank (or empty).
- 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. ED Nurses Notes
2. Triage Form / Trauma Flow Sheet
3. EMS Run Sheet

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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>WorkRelated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

**Definition**
The occupational industry associated with the patient’s work environment.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>PatientsOccupationalIndustry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**Additional Information**
- *Only completed if injury is work-related.*
- If work related, also complete Patient’s Occupation.

**Data Source Hierarchy**
1. ED Nurses Notes
2. EMS Run Sheet
3. Triage Form / Trauma Flow Sheet

**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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
</tr>
</thead>
<tbody>
<tr>
<td>XSD Element / Domain (Simple Type)</td>
<td>PatientsOccupation</td>
</tr>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

**Additional Information**
- Only completed if injury is work-related.
- If work related, also complete Patient’s Occupational Industry.

**Data Source Hierarchy**
1. EMS Run Sheet
2. ED Nurses Notes
3. Triage Form / Trauma Flow Sheet

**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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

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

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

**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**
- Secondary 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).

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

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

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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>XSD Element / Domain (Simple Type)</td>
<td>AdditionalEcode</td>
</tr>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

**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
- Secondary 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).

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:string</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>IncidentCountry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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).

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>XSD Element / Domain (Simple Type)</td>
<td>IncidentState</td>
</tr>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Field Values

- Relevant value for data element (two 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. ED Nurses Notes
2. Triage Form / Trauma Flow Sheet
3. EMS Run Sheet

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

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>XSD Element / Domain (Simple Type)</td>
<td>IncidentCounty</td>
</tr>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

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

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:string</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>IncidentCity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

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

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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:zip</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>InjuryZip / Zip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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.

XSD Data Type xs:integer

Multiple Entry Configuration Yes, max 10

Required in XSD Yes

Accepts Null Value Yes, common null values

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

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

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
CHILDSPECIFICRESTRAINT

Data Format [combo] single-choice

National Element

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
</tr>
</thead>
<tbody>
<tr>
<td>XSD Element / Domain (Simple Type)</td>
<td>ChildSpecificRestraint</td>
</tr>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>AirbagDeployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>Yes, max 4</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Field Values
1 Airbag Not Deployed
2 Airbag Deployed Front
3 Airbag Deployed Side
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. ED Nurses Notes
2. Triage Form / Trauma Flow Sheet
3. EMS Run Sheet

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

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:date</th>
</tr>
</thead>
<tbody>
<tr>
<td>XSD Element / Domain (Simple Type)</td>
<td>EmsNotifyDate</td>
</tr>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
<tr>
<td>Minimum Constraint</td>
<td>1990</td>
</tr>
<tr>
<td>Maximum Constraint</td>
<td>2030</td>
</tr>
</tbody>
</table>

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**

**Definition**

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:time</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>EmsNotifyTime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
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<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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).

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

#### 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).

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:time</th>
<th>XSD Element / Domain (Simple Type)</th>
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<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
</tbody>
</table>

**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**

---

**Definition**

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

---

<table>
<thead>
<tr>
<th>XSD Data Type</th>
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</tr>
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<tbody>
<tr>
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<tr>
<td>Required in XSD</td>
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</tr>
<tr>
<td>Minimum Constraint</td>
<td>1990</td>
</tr>
<tr>
<td>Maximum Constraint</td>
<td>2030</td>
</tr>
</tbody>
</table>

---

**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

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:time</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>EmsLeftTime</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
</tr>
</thead>
<tbody>
<tr>
<td>XSD Element / Domain (Simple Type)</td>
<td>TransportMode</td>
</tr>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

**Field Values**
1. Ground Ambulance
2. Helicopter Ambulance
3. Fixed-wing Ambulance
4. Private/Public Vehicle/Walk-in
5. Police
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-faculty 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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
</tr>
</thead>
<tbody>
<tr>
<td>XSD Element / Domain (Simple Type)</td>
<td>OtherTransportMode</td>
</tr>
<tr>
<td>Multiple Entry Configuration</td>
<td>Yes, max 5</td>
</tr>
<tr>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Field Values
1. Ground Ambulance
2. Helicopter Ambulance
3. Fixed-wing Ambulance
4. Private/Public Vehicle/Walk-in
5. Police
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-faculty Transfer
- Transport Mode
INITIAL FIELD SYSTOLIC BLOOD PRESSURE

Data Format [number]  National Element

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>EmsSbp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
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<td>Minimum Constraint</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum Constraint</td>
<td>299</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
<tr>
<td>XSD Element / Domain (Simple Type)</td>
<td>EmsPulseRate</td>
</tr>
<tr>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Minimum Constraint</td>
<td>0</td>
</tr>
<tr>
<td>Maximum Constraint</td>
<td>299</td>
</tr>
</tbody>
</table>

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).

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

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).

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>EmsPulseOximetry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
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<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td>Minimum Constraint</td>
<td>0</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
</tr>
</thead>
<tbody>
<tr>
<td>XSD Element / Domain</td>
<td>EmsGcsEye</td>
</tr>
<tr>
<td>Multiple Entry</td>
<td>No</td>
</tr>
<tr>
<td>Configuration</td>
<td></td>
</tr>
<tr>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
<tr>
<td>Minimum Constraint</td>
<td>1</td>
</tr>
<tr>
<td>Maximum Constraint</td>
<td>4</td>
</tr>
</tbody>
</table>

Field Values

1. No eye movement when assessed
2. Opens eyes in response to painful stimulation
3. Opens eyes in response to verbal 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**

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>EmsGcsVerbal</th>
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</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td>Minimum Constraint</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Maximum Constraint</td>
<td>5</td>
</tr>
</tbody>
</table>

**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]

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

XSD Data Type xs:integer
XSD Element / Domain (Simple Type) EmsGcsMotor
Multiple Entry Configuration No
Accepts Null Value Yes, common null values
Required in XSD Yes
Minimum Constraint 1
Maximum Constraint 6

Field Values

Pediatric (≤ 2 years):
1 No motor response
2 Extension to pain
3 Flexion to pain
4 Withdrawal from pain
5 Localizing pain
6 Appropriate response to stimulation

Adult:
1 No motor response
2 Extension to pain
3 Flexion to pain
4 Withdrawal from pain
5 Localizing 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

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
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<td>Yes, common null values</td>
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<td>Required in XSD</td>
<td>Yes</td>
<td>Minimum Constraint</td>
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</tr>
<tr>
<td></td>
<td></td>
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<td>15</td>
</tr>
</tbody>
</table>

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**

**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**

<table>
<thead>
<tr>
<th>1</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

**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.

**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]

Definition
The date the patient arrived to the ED/hospital.

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

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

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

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

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**

#### Definition
The time the patient arrived to the ED/hospital.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:time</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>HospitalArrivalTime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

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

#### 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
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
<tr>
<td>XSD Element / Domain (Simple Type)</td>
<td>Sbp</td>
</tr>
<tr>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Minimum Constraint</td>
<td>0</td>
</tr>
<tr>
<td>Maximum Constraint</td>
<td>299</td>
</tr>
</tbody>
</table>

**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. ED Record
2. Triage Form / Trauma Flow 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 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
- Initial ED/Hospital GCS Assessment Qualifiers
- 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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>Multiple Entry Configuration</th>
<th>Required in XSD</th>
<th>Accepts Null Value</th>
<th>Minimum Constraint</th>
<th>Maximum Constraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>xs:integer</td>
<td>PulseRate</td>
<td>No</td>
<td>Yes</td>
<td>Yes, common null values</td>
<td>0</td>
<td>299</td>
</tr>
</tbody>
</table>

Field Values
- Relevant value for data element.

Data Source Hierarchy
1. ED Record
2. Triage Form / Trauma Flow 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 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
- Initial ED/Hospital GCS Assessment Qualifiers
- Alcohol Use Indicator
- Drug Use Indicator
INITIAL ED/HOSPITAL TEMPERATURE

Data Format [number]  National Element

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td>Minimum Constraint</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum Constraint</td>
<td>120</td>
</tr>
</tbody>
</table>

Field Values
- Relevant value for data element.

Data Source Hierarchy
1. ED Record
2. Triage Form / Trauma Flow 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 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
- Initial ED/Hospital GCS Assessment Qualifiers
- 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).

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>RespiratoryRate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td>Minimum Constraint</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum Constraint</td>
<td>59</td>
</tr>
</tbody>
</table>

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. ED Record
2. Triage Form / Trauma Flow 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 or medical device.

Other Associated Elements
- 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
- Initial ED/Hospital GCS Assessment Qualifiers
- 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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>RespiratoryAssistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
</tbody>
</table>

Required in XSD 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.”

Data Source Hierarchy
1. ED Record
2. Triage Form / Trauma Flow 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.

Other Associated Elements
- Initial ED/Hospital Respiratory Rate
INITIAL ED/HOSPITAL OXYGEN SATURATION

Data Format [number]  National Element

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
</tr>
</thead>
<tbody>
<tr>
<td>XSD Element / Domain (Simple Type)</td>
<td>PulseOximetry</td>
</tr>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
<tr>
<td>Minimum Constraint</td>
<td>0</td>
</tr>
<tr>
<td>Maximum Constraint</td>
<td>100</td>
</tr>
</tbody>
</table>

Field Values
- Relevant value for data element.

Additional Information
- If available, complete additional field: “Initial ED/Hospital Supplemental Oxygen”.

Data Source Hierarchy
1. Ed Record
2. Triage Form / Trauma Flow 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 or medical device.

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 GCS - Eye
- 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
**INITIAL ED/HOSPITAL SUPPLEMENTAL OXYGEN**

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

**National Element**

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>SupplementalOxygen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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. ED Record
2. Triage Form / Trauma Flow 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.

**Other Associated Elements**
- Initial ED/Hospital Oxygen Saturation
INITIAL ED/HOSPITAL GCS - EYE

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>GcsEye</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td>Minimum Constraint</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum Constraint</td>
<td>4</td>
</tr>
</tbody>
</table>

**Field Values**
1. No eye movement when assessed
2. Opens eyes in response to painful stimulation
3. Opens eyes in response to verbal stimulation
4. Opens eyes spontaneously

**Additional Information**
- Used to calculate Overall GCS - ED Score.

**Data Source Hierarchy**
1. ED Record
2. Triage Form / Trauma Flow 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 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
INITIAL ED/HOSPITAL GCS - VERBAL

Data Format [number] National Element

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

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

Field Values
Pediatric (< 2 years):

1. No vocal response
2. Inconsolable, agitated
3. Inconsistently consolable, moaning

Adult:

1. No verbal response
2. Incomprehensible sounds
3. Inappropriate words

4. Cries but is consolable, inappropriate interactions
5. Smiles, oriented to sounds, follows objects, interacts

Additional Information
- Used to calculate Overall GCS - ED Score.

Data Source Hierarchy
1. ED Record
2. Triage Form / Trauma Flow 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 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         | XSD Element / Domain (Simple Type) | GcsMotor  
|----------------------|--------------------|-----------------------------------|----------  
| Multiple Entry Configuration | No                | Accepts Null Value | Yes, common null values  
| Required in XSD      | Yes                | Minimum Constraint | 1  
|                      |                    | Maximum Constraint | 6  

Field Values  
Pediatric (< 2 years):  

1. No motor response  
2. Extension to pain  
3. Flexion to pain  
4. Withdrawal from pain  
5. Localizing pain  
6. Appropriate response to stimulation  

Adult:  

1. No motor response  
2. Extension to pain  
3. Flexion to pain  
4. Withdrawal from pain  
5. Localizing pain  
6. Obeys commands  

Additional Information  
- Used to calculate Overall GCS – ED Score.  

Data Source Hierarchy  
1. ED Record  
2. Triage Form / Trauma Flow 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 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 - 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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>TotalGcs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td>Minimum Constraint</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum Constraint</td>
<td>15</td>
</tr>
</tbody>
</table>

**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. ED Record  
2. Triage Form / Trauma Flow 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 Assessment Qualifiers  
- Alcohol Use Indicator  
- Drug Use Indicator
Definition
Documentation of factors potentially affecting the first assessment of GCS upon arrival in the ED/hospital.

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

Field Values
1 Patient Chemically Sedated
2 Obstruction to the Patient’s Eye
3 Patient Intubated

Data Source Hierarchy
1. EMS Run Sheet
2. ED Record
3. Triage Form / Trauma Flow 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

Definition
Use of alcohol by the patient.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>AlcoholUseIndicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Field Values
1 No (not suspected)  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.

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
Definition
Use of drugs by the patient.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>DrugUseIndicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>Yes, max 2</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Field Values
1 No (not suspected)                              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.

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

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>EdDischargeDisposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.”

Data Source Hierarchy
1. Social Worker Notes
2. Discharge Sheet
3. Nursing Progress 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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>DeathInEd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Field Values**
1. DOA: Declared dead on arrival with minimal or no resuscitation attempt
2. Death after failed resuscitation attempt (failure to respond within 15 minutes)
3. Died in ED (other than failed resuscitation attempt)

**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. ED Nurses Notes
2. Physician’s Progress Notes
3. Triage Form / Trauma Flow Sheet

**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 Disposition
- ED Discharge Date
- ED Discharge Time
ED DISCHARGE DATE

Definition
The date the patient was discharged from the ED.

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

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).

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

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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:time</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>EdDischargeTime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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).

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

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

Definition
Operative or essential procedures conducted during hospital stay.

XSD Data Type xs:integer
XSD Element / Domain (Simple Type) HospitaProcedures
Multiple Entry Configuration Yes, max 200
Accepts Null Value Yes, common null values
Required in XSD 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).

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

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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:date</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>HospitalProcedureStartDate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>Yes, max 200</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td>Minimum Constraint</td>
<td>1990</td>
</tr>
</tbody>
</table>

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. Anesthesia Record
2. Operative Reports
3. OR Nurse Notes

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**

**Definition**
The time operative and essential procedures were performed.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:time</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>ProcedureTime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>Yes, max 200</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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. Anesthesia Record
2. Operative Reports
3. OR Nurse Notes

**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

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

XSD Data Type xs:integer

XSD Element / Domain (Simple Type) ComorbidConditions

Multiple Entry Configuration Yes, max 5

Accepts Null Value Yes, common null values

Required in XSD Yes

Field Values

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

Data Source Hierarchy
1. Billing Sheet
2. Discharge Sheet
3. History and Physical

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.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>XSD Element / Domain (Simple Type)</td>
<td>InjuryDiagnosis</td>
</tr>
<tr>
<td>Multiple Entry Configuration</td>
<td>Yes, max 50</td>
</tr>
<tr>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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.
- 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] single-choice

Optional Element

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:string</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>AisPredot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>Yes, max 50</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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] single-choice

Optional Element

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>AisSeverity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>Yes, max 50</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
</tbody>
</table>

**Required in XSD**

Yes

Minimum Constraint

1

Maximum Constraint

6

**Field Values**

1. Minor Injury
2. Moderate Injury
3. Serious Injury
4. Severe Injury
5. Critical Injury
6. Maximum Injury, Virtually Unsurvivable

**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
- Locally Calculated ISS
ISS BODY REGION

Data Format [combo] single-choice

Optional Element

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

XSD Data Type xs:integer  XSD Element / Domain (Simple Type) IssRegion

Multiple Entry Configuration Yes, max 50  Accepts Null Value Yes, common null values
Required in XSD Yes  Minimum Constraint 1  Maximum Constraint 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.

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

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

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

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

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

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

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:integer</th>
<th>XSD Element / Domain (Simple Type)</th>
<th>TotalICuLos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
<td>Minimum Constraint</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum Constraint</td>
<td>400</td>
</tr>
</tbody>
</table>

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

Data Format [number]

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

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

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.

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

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

Definition
The date the patient was discharged from the hospital.

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

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

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**

**Definition**  
The time the patient was discharged from the hospital.

<table>
<thead>
<tr>
<th>XSD Data Type</th>
<th>xs:time</th>
</tr>
</thead>
<tbody>
<tr>
<td>XSD Element / Domain (Simple Type)</td>
<td>HospitalDischargeTime</td>
</tr>
<tr>
<td>Multiple Entry Configuration</td>
<td>No</td>
</tr>
<tr>
<td>Accepts Null Value</td>
<td>Yes, common null values</td>
</tr>
<tr>
<td>Required in XSD</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

**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

Definition
The disposition of the patient when discharged from the hospital.

XSD Data Type \textit{xs:integer} \hspace{1cm} XSD Element / Domain (Simple Type) \textit{HospitalDischargeDisposition}

Multiple Entry Configuration No \hspace{1cm} Accepts Null Value Yes, common null values

Required in XSD Yes

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

Additional Information
- Field value = 6, “home” refers to any place of residence (jail, institutional care, etc)
- Field values based upon UB-92 disposition coding.

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

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
Financial Information
PRIMARY METHOD OF PAYMENT

Data Format [combo] single-choice

National Element

Definition
Primary source of payment for hospital care.

XSD Data Type xs:integer
XSD Element / Domain (Simple Type) PrimaryMethodPayment

Multiple Entry Configuration No
Accepts Null Value Yes, common null values

Required in XSD 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. Hospital Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet

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**

---

**Definition**
Any medical complication that occurred during the patient’s stay at your hospital.

---

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

**XSD Element / Domain (Simple Type)** `HospitalComplications`

**Multiple Entry Configuration** Yes, max 10

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

---

### Field Values

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

---

**Data Source Hierarchy**
1. Billing Sheet
2. History and Physical
3. Discharge 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 (2-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\(^1\) 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

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

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).

13. **Total ED Time**

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

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

14. **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>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TABLE 1: THE BARELL INJURY DIAGNOSIS MATRIX, CLASSIFICATION BY BODY REGION AND NATURE OF THE INJURY</strong></td>
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<tr>
<td><strong>Body Region</strong></td>
<td><strong>Type I</strong></td>
<td><strong>Type II</strong></td>
<td><strong>Type III</strong></td>
<td><strong>Clinical</strong></td>
<td><strong>Classification</strong></td>
<td><strong>Nature of Injuries</strong></td>
<td><strong>ICD-9 Codes</strong></td>
<td><strong>Type I</strong></td>
<td><strong>Type II</strong></td>
<td><strong>Type III</strong></td>
<td><strong>Type IV</strong></td>
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<tr>
<td>Torso + Abdomen</td>
<td><strong>Open Wound</strong></td>
<td><strong>Superficial</strong></td>
<td><strong>Unspecified</strong></td>
<td><strong>Sprains &amp; Strains</strong></td>
<td><strong>Iliac &amp; Gluteal</strong></td>
<td><strong>Anterior</strong></td>
<td><strong>Blood loss</strong></td>
<td><strong>Compromise</strong></td>
<td><strong>Infection</strong></td>
<td><strong>Respiratory</strong></td>
<td><strong>Other</strong></td>
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<td>Head + Neck</td>
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<td>Upper Torso</td>
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<td>Extremities</td>
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<tr>
<td>Pelvis &amp; Urogenital</td>
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<tr>
<td>Other &amp; Multiple</td>
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</tr>
</tbody>
</table>

Special diagnostic codes for trauma: Pelvic (880.4) Pneumothorax (860)
### 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.

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

1 Includes legal intervention (E970-E978) and operations of war (E990-E999).
2 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.
3 Codes in bold are for morbidity coding only. For details see table 2.
4 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](http://www.cdc.gov/nchs/about/otheract/ice/projects.htm)
<table>
<thead>
<tr>
<th>Manner/Intent</th>
<th>Unintentional</th>
<th>Self-inflicted</th>
<th>Assault</th>
<th>Undetermined</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport, other</td>
<td>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</td>
<td>E958.6</td>
<td>E988.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural/environmental</td>
<td>E900.00-E909, E928.0-.2</td>
<td>E958.3</td>
<td></td>
<td>E958.9</td>
<td></td>
</tr>
<tr>
<td>Bites/stings³</td>
<td>E905.0-.6, 9</td>
<td>E906.0-.4, 5, 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overexertion</td>
<td></td>
<td>E927</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poisoning</td>
<td>E850.0-E869.9</td>
<td>E950.0-E952.9</td>
<td>E962.0-.9, E979.6,.7</td>
<td>E980.0-E982.9</td>
<td>E972</td>
</tr>
<tr>
<td>Struck by, against</td>
<td>E916-E917.9</td>
<td>E960.0; E968.2</td>
<td></td>
<td>E973, E975</td>
<td></td>
</tr>
<tr>
<td>Suffocation</td>
<td>E911-E913.9</td>
<td>E953.0-.9</td>
<td></td>
<td>E963</td>
<td>E983.0-.9</td>
</tr>
<tr>
<td>Other specified and classifiable²⁴</td>
<td>E846-E848, E914-E915 E918, E921.0-39, E922.4, 5 E923.0-.9, E925.0-E926.9 E928.3-.5, E929.0-.5</td>
<td>E955.6,.7,.9</td>
<td>E958.0,.4</td>
<td>E985.5,.6,.7</td>
<td>E971, E978 E990-E994, E996 E997.0-.2</td>
</tr>
<tr>
<td>Unspecified</td>
<td>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.</td>
<td></td>
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</tr>
<tr>
<td>All Injury²</td>
<td>E800-E869, E880-E929</td>
<td>E950-E959</td>
<td>E960-E969, E979, E999.1</td>
<td>E980-E989</td>
<td>E970-E978, E990-E999.0</td>
</tr>
</tbody>
</table>

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**Adverse effects**

| E800-E869, E880-E929 |

**Medical care**

| E870-E879 |

**Drugs**

| E930.0-E949.9 |

**All external causes**

| E800-E999 |

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¹Includes legal intervention (E970-E978) and operations of war (E990-E999).
²Three 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.
³Codes in bold are for morbidity coding only. For details see table 2.
⁴E849 (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](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).

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.1-3

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.4 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.


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**
<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male</td>
</tr>
<tr>
<td>2</td>
<td>Female</td>
</tr>
</tbody>
</table>

**NHTSA 2.2.1 Field Values**
<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>650</td>
<td>Male</td>
</tr>
<tr>
<td>655</td>
<td>Female</td>
</tr>
</tbody>
</table>

**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 4 American Indian
2 Native Hawaiian or Other Pacific Islander 5 Black or African American
3 Other Race 6 White

**NHTSA 2.2.1 Field Values**
665 Asian 660 American Indian
675 Native Hawaiian or Other Pacific Islander 670 Black or African American
685 Other Race 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 Element
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
  - ED Death
  - Injury Diagnoses
  - Hospital Discharge Disposition
  - Inter-Facility Transfer
  - Facility ID#
  - Patient ID#
  - Last Modified Date/Time#

- **Error Level 3: Major Logic** – any error that would cause the record to be excluded from use in the ACS Annual Report. 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.

^ Submitting a null value (BIU) for 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.

# 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

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>0001</td>
<td>1</td>
<td>Invalid value</td>
</tr>
<tr>
<td>0002</td>
<td>4</td>
<td>Blank, required field</td>
</tr>
<tr>
<td>0003</td>
<td>5</td>
<td>Not Applicable, complete variable: <strong>Alternate Home Residence</strong></td>
</tr>
<tr>
<td>0004</td>
<td>5</td>
<td>Not Recorded, complete variables: <strong>Patient’s Home Country</strong>, <strong>Patient’s Home State</strong>, <strong>Patient’s Home County</strong> and <strong>Patient’s Home City</strong></td>
</tr>
<tr>
<td>0005</td>
<td>5</td>
<td>Not Known, complete variables: <strong>Patient’s Home Country</strong>, <strong>Patient’s Home State</strong>, <strong>Patient’s Home County</strong> and <strong>Patient’s Home City</strong></td>
</tr>
</tbody>
</table>

#### Patient’s Home Country

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>0101</td>
<td>1</td>
<td>Invalid value</td>
</tr>
<tr>
<td>0102</td>
<td>4</td>
<td>Blank, required to complete when <strong>Patient’s Home Zip Code</strong> is Not Recorded or Not Known</td>
</tr>
<tr>
<td>0103</td>
<td>5</td>
<td>Blank, required to complete variables: <strong>Patient’s Home Zip Code</strong> or <strong>Alternate Home Residence</strong></td>
</tr>
</tbody>
</table>

#### Patient’s Home State

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>0201</td>
<td>1</td>
<td>Invalid value</td>
</tr>
<tr>
<td>0202</td>
<td>4</td>
<td>Blank, required to complete when <strong>Patient’s Home Zip Code</strong> is Not Recorded or Not Known</td>
</tr>
<tr>
<td>0203</td>
<td>5</td>
<td>Blank, required to complete variables: <strong>Patient’s Home Zip Code</strong> or <strong>Alternate Home Residence</strong></td>
</tr>
</tbody>
</table>

#### Patient’s Home County

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>0301</td>
<td>1</td>
<td>Invalid value</td>
</tr>
<tr>
<td>0302</td>
<td>4</td>
<td>Blank, required to complete when <strong>Patient’s Home Zip Code</strong> is Not Recorded or Not Known</td>
</tr>
<tr>
<td>0303</td>
<td>5</td>
<td>Blank, required to complete variables: <strong>Patient’s Home Zip Code</strong> or <strong>Alternate Home Residence</strong></td>
</tr>
</tbody>
</table>
### Patient’s Home City

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>0401</td>
<td>1</td>
<td>Invalid value</td>
</tr>
<tr>
<td>0402</td>
<td>4</td>
<td>Blank, required to complete when Patient’s Home Zip Code is Not Recorded or Not Known</td>
</tr>
<tr>
<td>0403</td>
<td>5</td>
<td>Blank, required to complete variables: Patient’s Home Zip Code or Alternate Home Residence</td>
</tr>
</tbody>
</table>

### Alternate Home Residence

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>0501</td>
<td>1</td>
<td>Invalid value</td>
</tr>
<tr>
<td>0502</td>
<td>4</td>
<td>Blank, required to complete when Patient’s Home Zip Code is Not Applicable</td>
</tr>
<tr>
<td>0503</td>
<td>5</td>
<td>Blank, required to complete variables: Patient’s Home Zip Code or (Patient’s Home Country, Patient’s Home State, Patient’s Home County and Patient’s Home City)</td>
</tr>
</tbody>
</table>

### Date of Birth

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

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

### Age Units

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

### Race

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>0901</td>
<td>1</td>
<td>Invalid value</td>
</tr>
<tr>
<td>0902</td>
<td>4</td>
<td>Blank, required field</td>
</tr>
</tbody>
</table>

### Ethnicity

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>1001</td>
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<td>Invalid value</td>
</tr>
<tr>
<td>1002</td>
<td>4</td>
<td>Blank, required field</td>
</tr>
</tbody>
</table>

### Sex

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>1101</td>
<td>1</td>
<td>Invalid value</td>
</tr>
<tr>
<td>1102</td>
<td>3</td>
<td>Blank, required field</td>
</tr>
</tbody>
</table>
## Injury Information

### Injury Incident Date

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

### Injury Incident Time

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>1301</td>
<td>1</td>
<td>Invalid value</td>
</tr>
<tr>
<td>1302</td>
<td>1</td>
<td>Time out of range</td>
</tr>
<tr>
<td>1303</td>
<td>4</td>
<td>Blank, required field</td>
</tr>
<tr>
<td>1304</td>
<td>4</td>
<td>If Injury Incident Date and EMS Dispatch Date are the same, the Injury Incident Time cannot be later than the EMS Dispatch Time</td>
</tr>
<tr>
<td>1305</td>
<td>4</td>
<td>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</td>
</tr>
<tr>
<td>1306</td>
<td>4</td>
<td>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</td>
</tr>
<tr>
<td>1307</td>
<td>4</td>
<td>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</td>
</tr>
<tr>
<td>1308</td>
<td>4</td>
<td>If Injury Incident Date and ED Discharge Date are the same, the Injury Incident Time cannot be later than the ED Discharge Time</td>
</tr>
<tr>
<td>1309</td>
<td>4</td>
<td>If Injury Incident Date and Hospital Discharge Date are the same, the Injury Incident Time cannot be later than the Hospital Discharge Time</td>
</tr>
</tbody>
</table>
## Work-Related

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>1401</td>
<td>1</td>
<td>Invalid value</td>
</tr>
<tr>
<td>1402</td>
<td>4</td>
<td>Blank, required field</td>
</tr>
<tr>
<td>1403</td>
<td>5</td>
<td>If completed, then Patient’s Occupational Industry must be completed</td>
</tr>
<tr>
<td>1404</td>
<td>5</td>
<td>If completed, then Patient Occupation must be completed</td>
</tr>
</tbody>
</table>

## Patient’s Occupational Industry

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

## Patient’s Occupation

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>1601</td>
<td>1</td>
<td>Invalid value</td>
</tr>
<tr>
<td>1602</td>
<td>4</td>
<td>If completed, then Work-Related must be 1 Yes</td>
</tr>
<tr>
<td>1603</td>
<td>5</td>
<td>If completed, then Patient’s Occupational Industry must be completed</td>
</tr>
<tr>
<td>1604</td>
<td>4</td>
<td>Blank, required to complete when Work-Related is 1 (Yes)</td>
</tr>
</tbody>
</table>

## Primary E-Code

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

## Location E-Code

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>1801</td>
<td>1</td>
<td>Invalid, out of range</td>
</tr>
<tr>
<td>1802</td>
<td>4</td>
<td>Blank, required field</td>
</tr>
</tbody>
</table>
### Additional E-Code

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>1901</td>
<td>1</td>
<td>Invalid, out of range</td>
</tr>
<tr>
<td>1902</td>
<td>4</td>
<td>If completed, Additional E-Code cannot be equal to Primary E-Code.</td>
</tr>
</tbody>
</table>

### Incident Location Zip Code

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

### Incident Country

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

### Incident State

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

### Incident County

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>2301</td>
<td>1</td>
<td>Invalid value</td>
</tr>
<tr>
<td>2302</td>
<td>5</td>
<td>Blank, required to complete variable: Incident Location Zip Code</td>
</tr>
<tr>
<td>2303</td>
<td>4</td>
<td>Blank, required to complete when Incident Location Zip Code is Not Applicable, Not Recorded, or Not Known</td>
</tr>
</tbody>
</table>
### Incident City

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>2401</td>
<td>1</td>
<td>Invalid value</td>
</tr>
<tr>
<td>2402</td>
<td>5</td>
<td>Blank, required to complete variable: <em>Incident Location Zip Code</em></td>
</tr>
<tr>
<td>2403</td>
<td>4</td>
<td>Blank, required to complete when <em>Incident Location Zip Code</em> is Not Applicable, Not Recorded, or Not Known</td>
</tr>
</tbody>
</table>

### Protective Devices

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

### Child Specific Restraint

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>2601</td>
<td>1</td>
<td>Invalid value</td>
</tr>
<tr>
<td>2602</td>
<td>4</td>
<td>If completed, then <em>Protective Device</em> must be 6 (Child Restraint).</td>
</tr>
<tr>
<td>2603</td>
<td>4</td>
<td>Blank, required to complete when <em>Protective Device</em> is 6 (Child Restraint)</td>
</tr>
</tbody>
</table>

### Airbag Deployment

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>2701</td>
<td>1</td>
<td>Invalid value</td>
</tr>
<tr>
<td>2702</td>
<td>4</td>
<td>If completed, then *Protective Device must be 8 (Airbag Present).</td>
</tr>
<tr>
<td>2703</td>
<td>4</td>
<td>Blank, required to complete when <em>Protective Device</em> is 8 (Airbag Present)</td>
</tr>
</tbody>
</table>
### Pre-hospital Information

**EMS Dispatch Date**

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

**EMS Dispatch Time**

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

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

### EMS Unit Arrival on Scene Time

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

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

### EMS Unit Scene Departure Time

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>3301</td>
<td>1</td>
<td>Invalid value</td>
</tr>
<tr>
<td>3302</td>
<td>1</td>
<td>Time out of range</td>
</tr>
<tr>
<td>3303</td>
<td>4</td>
<td>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</td>
</tr>
<tr>
<td>3304</td>
<td>4</td>
<td>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</td>
</tr>
<tr>
<td>3305</td>
<td>4</td>
<td>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</td>
</tr>
<tr>
<td>3306</td>
<td>4</td>
<td>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</td>
</tr>
<tr>
<td>3307</td>
<td>4</td>
<td>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</td>
</tr>
</tbody>
</table>
## Transport Mode

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

## Other Transport Mode

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>3501</td>
<td>1</td>
<td>Invalid value</td>
</tr>
</tbody>
</table>

## Initial Field Systolic Blood Pressure

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>3601</td>
<td>1</td>
<td>Invalid, out of range</td>
</tr>
<tr>
<td>3602</td>
<td>4</td>
<td>Blank, required field</td>
</tr>
</tbody>
</table>

## Initial Field Pulse Rate

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>3701</td>
<td>1</td>
<td>Invalid, out of range</td>
</tr>
<tr>
<td>3702</td>
<td>4</td>
<td>Blank, required field</td>
</tr>
</tbody>
</table>

## Initial Field Respiratory Rate

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>3801</td>
<td>1</td>
<td>Invalid, out of range</td>
</tr>
<tr>
<td>3802</td>
<td>4</td>
<td>Blank, required field</td>
</tr>
</tbody>
</table>

## Initial Field Oxygen Saturation

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>3901</td>
<td>1</td>
<td>Invalid, out of range</td>
</tr>
<tr>
<td>3902</td>
<td>4</td>
<td>Blank, required field</td>
</tr>
</tbody>
</table>

## Initial Field GCS – Eye

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>4001</td>
<td>1</td>
<td>Invalid, out of range</td>
</tr>
<tr>
<td>4002</td>
<td>5</td>
<td>Blank, required to complete variable: Initial Field GCS – Total</td>
</tr>
</tbody>
</table>
### Initial Field GCS – Verbal

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>4101</td>
<td>1</td>
<td>Invalid, out of range</td>
</tr>
<tr>
<td>4102</td>
<td>5</td>
<td>Blank, required to complete variable: Initial Field GCS – Total</td>
</tr>
</tbody>
</table>

### Initial Field GCS – Motor

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>4201</td>
<td>1</td>
<td>Invalid, out of range</td>
</tr>
<tr>
<td>4202</td>
<td>5</td>
<td>Blank, required to complete variable: Initial Field GCS – Total</td>
</tr>
</tbody>
</table>

### Initial Field GCS – Total

<table>
<thead>
<tr>
<th>Rule ID</th>
<th>Level</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>4301</td>
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<tr>
<td>4302</td>
<td>5</td>
<td>Blank, required to complete variables: Initial Field GCS – Eye, Initial Field GCS – Verbal, and Initial Field GCS – Motor</td>
</tr>
<tr>
<td>4303</td>
<td>4</td>
<td>Initial Field GCS – Total does not equal the sum of Initial Field GCS – Eye, Initial Field GCS – Verbal, and Initial Field GCS – Motor</td>
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</table>

### Inter-Facility Transfer*

<table>
<thead>
<tr>
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<tr>
<td>4403</td>
<td>3</td>
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</tr>
<tr>
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<td>Not Known, required Inclusion Criterion</td>
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## Emergency Department Information

### ED/Hospital Arrival Date*

<table>
<thead>
<tr>
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<td>4501</td>
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<tr>
<td>4502</td>
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<td>4503</td>
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<tr>
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</tr>
<tr>
<td>4505</td>
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<td>Not Known, required Inclusion Criterion</td>
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<tr>
<td>4506</td>
<td>3</td>
<td><strong>ED/Hospital Arrival Date</strong> cannot be earlier than <strong>EMS Dispatch Date</strong></td>
</tr>
<tr>
<td>4507</td>
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<td><strong>ED/Hospital Arrival Date</strong> cannot be earlier than <strong>EMS Unit Arrival on Scene Date</strong></td>
</tr>
<tr>
<td>4508</td>
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<td><strong>ED/Hospital Arrival Date</strong> cannot be earlier than <strong>EMS Unit Scene Departure Date</strong></td>
</tr>
<tr>
<td>4509</td>
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<td><strong>ED/Hospital Arrival Date</strong> cannot be later than <strong>ED Discharge Date</strong></td>
</tr>
<tr>
<td>4510</td>
<td>3</td>
<td><strong>ED/Hospital Arrival Date</strong> cannot be later than <strong>Hospital Discharge Date</strong></td>
</tr>
<tr>
<td>4511</td>
<td>3</td>
<td><strong>ED/Hospital Arrival Date</strong> cannot be earlier than <strong>Date of Birth</strong></td>
</tr>
<tr>
<td>4512</td>
<td>3</td>
<td><strong>ED/Hospital Arrival Date</strong> must be after 1993</td>
</tr>
<tr>
<td>4513</td>
<td>3</td>
<td><strong>ED/Hospital Arrival Date</strong> minus <strong>Injury Incident Date</strong> must be less than 30 days</td>
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### ED/Hospital Arrival Time

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<td>4603</td>
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</tr>
<tr>
<td>4604</td>
<td>4</td>
<td>If <strong>ED/Hospital Arrival Date</strong> and <strong>EMS Dispatch Date</strong> are the same, the <strong>ED/Hospital Arrival Time</strong> cannot be earlier than the <strong>EMS Dispatch Time</strong></td>
</tr>
<tr>
<td>4605</td>
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<td>If <strong>ED/Hospital Arrival Date</strong> and <strong>EMS Unit Arrival on Scene Date</strong> are the same, the <strong>ED/Hospital Arrival Time</strong> cannot be earlier than the <strong>EMS Unit Arrival on Scene Time</strong></td>
</tr>
<tr>
<td>4606</td>
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<td>If <strong>ED/Hospital Arrival Date</strong> and <strong>EMS Unit Scene Departure Date</strong> are the same, the <strong>ED/Hospital Arrival Time</strong> cannot be earlier than the <strong>EMS Unit Scene Departure Time</strong></td>
</tr>
<tr>
<td>4607</td>
<td>4</td>
<td>if <strong>ED/Hospital Arrival Date</strong> and <strong>ED Discharge Date</strong> are the same, the <strong>ED/Hospital Arrival Time</strong> cannot be later than the <strong>ED Discharge Time</strong></td>
</tr>
<tr>
<td>4608</td>
<td>4</td>
<td>if <strong>ED/Hospital Arrival Date</strong> and <strong>Hospital Discharge Date</strong> are the same, the <strong>ED/Hospital Arrival Time</strong> cannot be later than the <strong>Hospital Discharge Time</strong></td>
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### Initial ED/Hospital Systolic Blood Pressure

<table>
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<td>4702</td>
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<td>Blank, required field</td>
</tr>
<tr>
<td>4703</td>
<td>4</td>
<td><em>Initial Ed / Hospital Systolic Blood Pressure</em> must be 0 when <em>Ed Death</em> = 1 (DOA).</td>
</tr>
</tbody>
</table>

### Initial ED/Hospital Pulse Rate

<table>
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<th>Level</th>
<th>Message</th>
</tr>
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</tr>
<tr>
<td>4803</td>
<td>4</td>
<td><em>Initial Ed / Hospital Pulse Rate</em> must be 0 when <em>Ed Death</em> = 1 (DOA).</td>
</tr>
</tbody>
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### Initial ED/Hospital Temperature

<table>
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<tr>
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<tr>
<td>4902</td>
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### Initial ED/Hospital Respiratory Rate

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<td>5002</td>
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</tr>
<tr>
<td>5003</td>
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<td><em>Initial ED/Hospital Respiratory Rate</em> must be 0 when <em>Ed Death</em> = 1 (DOA).</td>
</tr>
<tr>
<td>5004</td>
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<td>If completed, then <em>Initial Ed/Hospital Respiratory Assistance</em> must be completed.</td>
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### Initial ED/Hospital Respiratory Assistance

<table>
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<td>5102</td>
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<tr>
<td>5103</td>
<td>4</td>
<td>Blank, required to complete when <em>Initial ED/Hospital Respiratory Rate</em> is complete</td>
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</tbody>
</table>
### Initial ED/Hospital Oxygen Saturation

<table>
<thead>
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</thead>
<tbody>
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<tr>
<td>5202</td>
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<tr>
<td>5203</td>
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<td>If completed, then Initial Ed/Hospital Supplemental Oxygen must be completed</td>
</tr>
</tbody>
</table>

### Initial ED/Hospital Supplemental Oxygen

<table>
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<td>5303</td>
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<td>Blank, required to complete when Initial ED/Hospital Oxygen Saturation is complete</td>
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</tbody>
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### Initial ED/Hospital GCS – Eye

<table>
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<tr>
<td>5402</td>
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<td>Blank, required to complete variable: Initial ED/Hospital GCS – Total</td>
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### Initial ED/Hospital GCS – Verbal

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<td>5502</td>
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<td>Blank, required to complete variable: Initial ED/Hospital GCS – Total</td>
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### Initial ED/Hospital GCS – Motor

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<th>Message</th>
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<tr>
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<td>Blank, required to complete variable: Initial ED/Hospital GCS – Total</td>
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</tbody>
</table>
## Initial ED/Hospital GCS – Total

<table>
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<th>Level</th>
<th>Message</th>
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<tbody>
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<tr>
<td>5702</td>
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<td>Blank, required to complete variables: Initial ED/Hospital GCS – Eye, Initial ED/Hospital GCS – Verbal, and Initial ED/Hospital GCS – Motor</td>
</tr>
<tr>
<td>5703</td>
<td>4</td>
<td>Initial ED/Hospital GCS – Total does not equal the sum of Initial ED/Hospital GCS – Eye, Initial ED/Hospital GCS – Verbal, and Initial ED/Hospital GCS – Motor</td>
</tr>
</tbody>
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## Initial ED/Hospital GCS Assessment Qualifiers

<table>
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## Alcohol Use Indicator

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## Drug Use Indicator

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## ED Discharge Disposition*

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<tr>
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<tr>
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<td>Not Known, required Inclusion Criterion</td>
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### ED Death*

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<th>Message</th>
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<td>Invalid value</td>
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<tr>
<td>6202</td>
<td>2</td>
<td>Blank, required field</td>
</tr>
<tr>
<td>6203</td>
<td>3</td>
<td>If <em>Ed Discharge Disposition</em> = 5 (Died) then <em>Ed Death</em> must be complete.</td>
</tr>
<tr>
<td>6204</td>
<td>2</td>
<td>If <em>Ed Discharge Disposition</em> &lt;&gt; 5 (Died) then <em>Ed Death</em> should be BIU = 1</td>
</tr>
<tr>
<td>6205</td>
<td>2</td>
<td>Not Recorded, required Inclusion Criterion</td>
</tr>
<tr>
<td>6206</td>
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<td>Not Known, required Inclusion Criterion</td>
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### ED Discharge Date

<table>
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<tr>
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<th>Level</th>
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</tr>
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<td>Invalid value</td>
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<tr>
<td>6302</td>
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<td>Date out of range</td>
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<tr>
<td>6303</td>
<td>4</td>
<td>Blank, required field</td>
</tr>
<tr>
<td>6304</td>
<td>4</td>
<td><em>ED Discharge Date</em> cannot be earlier than <em>EMS Dispatch Date</em></td>
</tr>
<tr>
<td>6305</td>
<td>4</td>
<td><em>ED Discharge Date</em> cannot be earlier than <em>EMS Unit Arrival on Scene Date</em></td>
</tr>
<tr>
<td>6306</td>
<td>4</td>
<td><em>ED Discharge Date</em> cannot be earlier than <em>EMS Unit Scene Departure Date</em></td>
</tr>
<tr>
<td>6307</td>
<td>4</td>
<td><em>ED Discharge Date</em> cannot be earlier than <em>ED/Hospital Arrival Date</em></td>
</tr>
<tr>
<td>6308</td>
<td>4</td>
<td><em>ED Discharge Date</em> cannot be later than <em>Hospital Discharge Date</em></td>
</tr>
<tr>
<td>6309</td>
<td>4</td>
<td><em>ED Discharge Date</em> cannot be earlier than <em>Date of Birth</em></td>
</tr>
</tbody>
</table>
## ED Discharge Time

<table>
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<tr>
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<tr>
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<td>Time out of range</td>
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<tr>
<td>6403</td>
<td>4</td>
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</tr>
<tr>
<td>6404</td>
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<td>If ED Discharge Date and EMS Dispatch Date are the same, the ED Discharge Time cannot be earlier than the EMS Dispatch Time</td>
</tr>
<tr>
<td>6405</td>
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<td>If ED Discharge Date and EMS Unit Arrival on Scene Date are the same, the ED Discharge Time cannot be earlier than the EMS Unit Arrival on Scene Time</td>
</tr>
<tr>
<td>6406</td>
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<td>If ED Discharge Date and EMS Unit Scene Departure Date are the same, the ED Discharge Time cannot be earlier than the EMS Unit Scene Departure Time</td>
</tr>
<tr>
<td>6407</td>
<td>4</td>
<td>If ED Discharge Date and ED/Hospital Arrival Date are the same, the ED Discharge Time cannot be earlier than the ED/Hospital Arrival Time</td>
</tr>
<tr>
<td>6408</td>
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<td>If ED Discharge Date and Hospital Discharge Date are the same, the ED Discharge Time cannot be later than the Hospital Discharge Time</td>
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### Hospital Procedure Information

#### Hospital Procedures

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<tr>
<td>6502</td>
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<td>Procedures with the same code cannot have the same Hospital Procedure Start Date and Time.</td>
</tr>
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#### Hospital Procedure Start Date

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</tr>
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<tbody>
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<tr>
<td>6602</td>
<td>1</td>
<td>Date out of range</td>
</tr>
<tr>
<td>6603</td>
<td>4</td>
<td>Hospital Procedure Start Date cannot be earlier than EMS Dispatch Date</td>
</tr>
<tr>
<td>6604</td>
<td>4</td>
<td>Hospital Procedure Start Date cannot be earlier than EMS Unit Arrival on Scene Date</td>
</tr>
<tr>
<td>6605</td>
<td>4</td>
<td>Hospital Procedure Start Date cannot be earlier than EMS Unit Scene Departure Date</td>
</tr>
<tr>
<td>6606</td>
<td>4</td>
<td>Hospital Procedure Start Date cannot be earlier than ED/Hospital Arrival Date</td>
</tr>
<tr>
<td>6607</td>
<td>4</td>
<td>Hospital Procedure Start Date cannot be later than Hospital Discharge Date</td>
</tr>
<tr>
<td>6608</td>
<td>4</td>
<td>Hospital Procedure Start Date cannot be earlier than Date of Birth</td>
</tr>
<tr>
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### Hospital Procedure Start Time

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<tr>
<td>6703</td>
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<td>If Hospital Procedure Start Date and EMS Dispatch Date are the same, the Hospital Procedure Start Time cannot be earlier than the EMS Dispatch Time</td>
</tr>
<tr>
<td>6704</td>
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<td>If Hospital Procedure Start Date and EMS Unit Arrival on Scene Date are the same, the Hospital Procedure Start Time cannot be earlier than the EMS Unit Arrival on Scene Time</td>
</tr>
<tr>
<td>6705</td>
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<td>If Hospital Procedure Start Date and EMS Unit Scene Departure Date are the same, the Hospital Procedure Start Time cannot be earlier than the EMS Unit Scene Departure Time</td>
</tr>
<tr>
<td>6706</td>
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<td>If Hospital Procedure Start Date and ED/Hospital Arrival Date are the same, the Hospital Procedure Start Time cannot be earlier than the ED/Hospital Arrival Time</td>
</tr>
<tr>
<td>6707</td>
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<td>If Hospital Procedure Start Date and Hospital Discharge Date are the same, the Hospital Procedure Start Time cannot be later than the Hospital Discharge Time</td>
</tr>
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### Demographic Information

### Co-Morbid Conditions

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### Injury Diagnoses*

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<td>6902</td>
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<tr>
<td>6903</td>
<td>2</td>
<td>At least one diagnosis must meet inclusion criteria (800 – 959.9, except for 905 – 909.9, 910 – 924.9, 930 – 939.9)</td>
</tr>
</tbody>
</table>
Injury Severity information

**AIS PreDot Code**

<table>
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**AIS Severity**

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**ISS Body Region**

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**AIS Version**

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**Locally Calculated ISS**

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### Outcome Information

#### Total ICU Length of Stay

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<td><strong>Total ICU Length of Stay</strong> should not be greater than the difference between ED/Hospital Arrival Date and Hospital Discharge Date</td>
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#### Total Ventilator Days

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<tr>
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#### Hospital Discharge Date

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<td><strong>Hospital Discharge Date</strong> cannot be earlier than EMS Dispatch Date</td>
</tr>
<tr>
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<td><strong>Hospital Discharge Date</strong> cannot be earlier than EMS Unit Arrival on Scene Date</td>
</tr>
<tr>
<td>7706</td>
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<td><strong>Hospital Discharge Date</strong> cannot be earlier than EMS Unit Scene Departure Date</td>
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</tr>
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<td><strong>Hospital Discharge Date</strong> cannot be earlier than ED Discharge Date</td>
</tr>
<tr>
<td>7709</td>
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<td><strong>Hospital Discharge Date</strong> cannot be earlier than Date of Birth</td>
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</table>
## Hospital Discharge Time

<table>
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<th>Level</th>
<th>Message</th>
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<tr>
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<td>If Hospital Discharge Date and EMS Dispatch Date are the same, the Hospital Discharge Time cannot be earlier than the EMS Dispatch Time</td>
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<td>If Hospital Discharge Date and EMS Unit Arrival on Scene Date are the same, the Hospital Discharge Time cannot be earlier than the EMS Unit Arrival on Scene Time</td>
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<td>7806</td>
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<td>If Hospital Discharge Date and EMS Unit Scene Departure Date are the same, the Hospital Discharge Time cannot be earlier than the EMS Unit Scene Departure Time</td>
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<td>If Hospital Discharge Date and ED Discharge Date are the same, the Hospital Discharge Time cannot be earlier than the ED Discharge Time</td>
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## Hospital Discharge Disposition*

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## Financial Information

### Primary Method of Payment

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Quality Assurance Information

*Hospital Complications*

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*Control Information*

*Last Modified Date Time*

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*Patient ID*

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*Facility ID*

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</table>

*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 State**: The state, territory, or province where the patient was found or to which the unit responded (or best approximation).
   b. **Incident County**: The county or parish where the patient was found or to which the unit responded (or best approximation).
   c. **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.
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**

15. FIPS code (location code)

16. Trauma Type (blunt, penetrating, burn)

17. Intentionality (using CDC matrix)

18. Total EMS Response Time (elapsed time from EMS dispatch to scene arrival)

19. Total EMS Scene Time (elapsed time from EMS scene arrival to scene departure).

20. Total EMS Time (elapsed time from EMS dispatch to hospital arrival)

21. Overall GCS - EMS score (adult and pediatric)

22. Overall GCS - ED score (adult and pediatric)

23. Revised Trauma Score - EMS (adult and pediatric)

24. Revised Trauma Score - ED (adult and pediatric)

25. Abbreviated Injury Scale (six body regions)

26. Injury Severity Score

27. Functional Capacity Index

28. Total ED Time

29. 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

- Patient Zip
  - Patient's Home Country
  - Patient's Home State
  - Patient's Home County
  - Patient's Home City
  - Alternate Home Address

- Date of Birth
  - Age
  - Age Units

- Race
- Ethnicity
- Sex

Calculated field
FIPS Code - Location Code
Prehospital Information

- EMS Dispatch Date
- EMS Dispatch Time
- EMS Unit Arrival on Scene
- EMS Unit Arrival on Scene Time
- EMS Unit Scene Departure Date
- EMS Unit Scene Departure Time
- Transport Mode
- Other Transport Mode
- Initial Field Systolic Blood Pressure
- Initial Field Pulse Rate
- Initial Field Respiratory Rate
- Initial Field Oxygen Saturation
- Initial Field GCS-Eye
- Initial Field GCS-Verbal
- Initial Field GCS-Motor
- Initial Field GCS-Total
- Inter-facility Transfer

- Calculated field: Total EMS Time
- Calculated field: Total EMS Response Time and Total EMS Scene Time
- Calculated field: Total EMS Scene Time
- Calculated field: Revised Trauma Score - EMS (adult and pediatric)
- Calculated field: Revised Trauma Score - EMS (adult and pediatric)
- Calculated field: Overall GCS - EMS (adult and pediatric)
Emergency Department Information

- ED/Hospital Arrival Date
- ED/Hospital Arrival Time
- Initial ED/Hospital Systolic Blood Pressure
  - Revised Trauma Score in ED (adult and pediatric)
- 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)
- Initial ED/Hospital Oxygen Saturation
  - Initial ED/Hospital Supplemental Oxygen
- Initial ED/Hospital GCS-Eye
- Initial ED/Hospital GCS-Verbal
- Initial ED/Hospital GCS-Motor
- Initial ED/Hospital GCS-Total
  - Revised Trauma Score - ED (adult and pediatric)
- Initial ED/Hospital GCS Assessment Qualifiers
- Alcohol Use Indicator
- Drug Use Indicator
- ED Discharge Disposition
  - ED Death
- ED Discharge Time
- ED Discharge Time
  - Total ED Time
  - Total EMS Time, Total ED time and Total Length of Hospital Stay
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

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, 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. Do not include a patient if diabetes is controlled by diet alone.

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., aortofemoral, 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. 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, 291.0-291.3, 291.5, 291.8, 291.81, 291.89, 291.9, 303.00-303.93, 305.00-305.03, 490 though 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.

**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, 585, 586, 588.0 404.12, 404.92*

**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.

*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, 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.

**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 heparin and/or coumadin or warfarin, and/or placement of a vena cava filter or clipping of the vena cava.

*ICD-9 Code Range: 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 within 30 days of injury manifested by new Q-waves on ECG.
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

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: 481, 482.0, 482.1, 482.2, 482.30, 482.31, 482.32, 482.39, 482.40, 482.41, 482.49, 482.81, 482.84, 482.89, 482.9, 483.8, 485, 486
**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 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 PaCO2 <32 mmHg(<4.3 kPa)
5. WBC >12,000 cell/mm3, <4000 cells/mm3, 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).