Predicting Cervical Spine Injury in Children: A Multi-Centered Case-Control Analysis

C-Spine Study

PECARN Protocol Number 026

Primary Investigator:
David M. Jaffe, MD
Julie Leonard, MD MPH

Washington University School of Medicine
St. Louis, Missouri
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Annotations key:

Table name

Column name followed by: # or $N
# = numeric
$N = character N = Length

Code list

Calculated / Derived variable

Value not provided

Notes:

All dates have been recoded to reflect the number of calendar days from emergency department evaluation at the study site.

Sensitive and/or identifying information entered in free text fields has been removed from the public use datasets.

A new masked patient identifier (studysubjectid), site number (site), case ID (caseid), and case/control type indicator (controltype) have been created for the Public Use Datasets and are present in all datasets to facilitate merging. The caseid identifies the case matched to each control.
### Case Screening Form

#### CASE SCREENING SHEET

**Update Patient** *(PI has to cancel his/her signature for you to do updates)*

**Check for Record**

- Was the medical record for this patient available?
  - Yes
  - No

- Was the patient evaluated at the HEDA for trauma related injuries?
  - Yes
  - No

**Inclusion Criteria: Any NO answer means patient is excluded from the case series**

- Is the patient cervical spine injured? (please see ICD-9 diagnostic codes below)
  - Yes
  - No

  **ICD-9 Diagnostic codes:** 805.0-805.19, 805.8-805.9, 806.0-806.19, 806.8-806.9, 839.0-839.18, 839.40, 839.49, 839.50, 839.59, 839.8, 839.9, 952.00-952.09, 952.8, 952.9, 953.0, 954.0, 953.8, 953.9, 954.8 & 954.9

- Did the patient present at the HEDA for evaluation of their injuries prior to their 16th birthday?
  - Yes
  - No

- Did the patient visit at the HEDA occur between Jan 1, 2000 and Dec 31, 2004?
  - Yes
  - No

- Was this the first HEDA visit for evaluation of an injury (injuries)? (If this was a return visit for a prior injury, the patient is excluded)
  - Yes
  - No
### Exclusion Criteria (requires chart review): Any YES answer means patient is excluded from the case series

Were the injuries caused by penetrating trauma? (Ex. ICD-9 E-codes: E920, E922)
- [ ] Yes
- [ ] No

Were the injuries the consequence of medical care or occurred during hospitalization? (Ex. ICD-9 E-codes E870-E876, E878-E879)
- [ ] Yes
- [ ] No

Was the patient admitted with a presumed diagnosis of cervical spine injury, which was subsequently ruled-out on further evaluation?
- [ ] Yes
- [ ] No

Was the patient transferred away from the HEDA for definitive diagnosis and care elsewhere OR transferred to the HEDA after definitive diagnosis and care? (see definition below)
- [ ] Yes
- [ ] No

---

Definitive care includes stabilization of the injury and acute care. This does not exclude patients whose injuries are stabilized and the patient is transferred for inpatient or outpatient rehabilitation at another institution.
### EMS Control Screening

**EMS CONTROL SCREENING Sheet**

<table>
<thead>
<tr>
<th>Check For Record</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the medical record for this patient available?</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Was the patient evaluated at the HEDA for trauma related injuries?</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**Inclusion Criteria: Any NO answer means patient is excluded from the control series**

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the patient evaluated for cervical spine injury at the HEDA? (please see CPT codes below)</td>
<td>Yes, No</td>
</tr>
<tr>
<td>CPT codes: 72040, 72050, 72052, 72125, 72126, 72127, 72141, 72142, 72156, and 72159</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the patient free of cervical spine injury at discharge from the HEDA? (Does not carry the ICD-9 Diagnostic codes and did not have a prior CSI diagnosed)</td>
<td>Yes, No</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Was this the first HEDA visit for evaluation of an injury (injuries)? (If this was a return visit for a prior injury, the patient is excluded)</td>
<td>Yes, No</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Did the patient present at the HEDA for evaluation of their injuries prior to their 16th birthday?</td>
<td>Yes, No</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Did the patient visit at the HEDA occur between Jan 1, 2000 and Dec 31, 2004?</td>
<td>Yes, No</td>
</tr>
</tbody>
</table>
### Exclusion Criteria (requires chart review): Any YES answer means patient is excluded from the control series

Was the patient diagnosed with a cervical spine injury that was not encoded in the ICD-9 billing database?
- Yes
- No

Were the injuries caused by penetrating trauma? (Ex. ICD-9 E-codes: E920, E922)
- Yes
- No

Were the injuries the consequence of medical care or occurred during hospitalization? (Ex. ICD-9 E-codes E870-E876, E878-E879)
- Yes
- No

Was the patient transferred away from the HEDA for definitive diagnosis and care elsewhere OR transferred to the HEDA after definitive diagnosis and care? (see definition below)
- Yes
- No

Definitive care includes stabilization of the injury and acute care. This does not exclude patients whose injuries are stabilized and the patient is transferred for inpatient or outpatient rehabilitation at another institution.

### EMS Control Criteria: Any NO answer means patient is excluded from the control series.

Was the control patient’s visit date within 1 year of the cases visit date?
- Yes
- No

Did the control patient’s age (at time of visit) match within ±365 days of the cases age (at time of visit)?
- Yes
- No

Did the patient arrive by EMS? (Arrival by EMS refers to a primary scene response. If the patient arrived by EMS as an interhospital transfer, answer no to this question)
- Yes
- No
MOI Control Screening

**MOI CONTROL SCREENING SHEET**

<table>
<thead>
<tr>
<th>Check for Record</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Was the medical record for this patient available?</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
<tr>
<td><strong>Was the patient evaluated at the HEDA for trauma related injuries?</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**Inclusion Criteria: Any NO answer means patient is excluded from the control series**

**Was the patient evaluated for cervical spine injury at the HEDA? (please see CPT codes below)**

Yes |  |
| No |  |

CPT codes: 72040, 72050, 72052, 72125, 72126, 72127, 72141, 72142, 72155, and 72159

**Was the patient free of cervical spine injury at discharge from the HEDA? (Does not carry the ICD-9 Diagnostic codes and did not have a prior CSI diagnosed)**

Yes |  |
| No |  |

**Was this the first HEDA visit for evaluation of an injury (injuries)? (If this was a return visit for a prior injury, the patient is excluded)**

Yes |  |
| No |  |

**Did the patient present at the HEDA for evaluation of their injuries prior to their 16th birthday?**

Yes |  |
| No |  |

**Did the patient visit at the HEDA occur between Jan 1, 2000 and Dec 31, 2004?**

Yes |  |
| No |  |
### Exclusion Criteria (requires chart review): Any YES answer means patient is excluded from the control series

Was the patient diagnosed with a cervical spine injury that was not encoded in the ICD-9 billing database?
- Yes
- No

Were the injuries caused by penetrating trauma? (Ex. ICD-9 E-codes: E920, E922)
- Yes
- No

Were the injuries the consequence of medical care or occurred during hospitalization? (Ex. ICD-9 E-codes E870-E876, E878-E879)
- Yes
- No

Was the patient transferred away from the HEDA for definitive diagnosis and care elsewhere OR transferred to the HEDA after definitive diagnosis and care? (see definition below)
- Yes
- No

Definitive care includes stabilization of the injury and acute care. This does not exclude patients whose injuries are stabilized and the patient is transferred for inpatient or outpatient rehabilitation at another institution.

### Mechanism of Injury Control Criteria: Any NO answer means patient is excluded from the control series.

Was the control patient’s visit date within ±1 year of the cases visit date?
- Yes
- No

Did the control patient’s age (at time of visit) match within ±365 days of the cases age (at time of visit)?
- Yes
- No

Did the patient match on mechanism?
- Yes
- No
Random Control Screening

RANDOM CONTROL SCREENING SHEET

Check for Record

Was the medical record for this patient available?

☐ Yes
☐ No

Was the patient evaluated at the HEDA for trauma related injuries?

☐ Yes
☐ No

Inclusion Criteria: Any NO answer means patient is excluded from the control series

Was the patient evaluated for cervical spine injury at the HEDA? (please see CPT codes below)

☐ Yes
☐ No

CPT codes: 72040, 72050, 72052, 72125, 72126, 72127, 72141, 72142, 72156, and 72159

Was the patient free of cervical spine injury at discharge from the HEDA? (Does not carry the ICD-9 Diagnostic codes and did not have a prior CSI diagnosed)

☐ Yes
☐ No

Was this the first HEDA visit for evaluation of an injury (injuries)? (If this was a return visit for a prior injury, the patient is excluded)

☐ Yes
☐ No

Did the patient present at the HEDA for evaluation of their injuries prior to their 16th birthday?

☐ Yes
☐ No

Did the patient visit at the HEDA occur between Jan 1, 2000 and Dec 31, 2004?

☐ Yes
☐ No
### Exclusion Criteria (requires chart review): Any YES answer means patient is excluded from the control series

Was the patient diagnosed with a cervical spine injury that was not encoded in the ICD-9 billing database?
- Yes
- No

Were the injuries caused by penetrating trauma? (Ex. ICD-9 E-codes: E920, E922)
- Yes
- No

Were the injuries the consequence of medical care or occurred during hospitalization? (Ex. ICD-9 E-codes E870-E876, E878-E879)
- Yes
- No

Was the patient transferred away from the HEDA for definitive diagnosis and care elsewhere OR transferred to the HEDA after definitive diagnosis and care? (see definition below)
- Yes
- No

Definitive care includes stabilization of the injury and acute care. This does not exclude patients whose injuries are stabilized and the patient is transferred for inpatient or outpatient rehabilitation at another institution.

### Random Control Criteria: Any NO answer means patient is excluded from the control series

Was the control patient's visit date within + or - 1 year of the cases visit date?
- Yes
- No
### Mechanism of Injury Classification

#### Mechanism of Injury

<table>
<thead>
<tr>
<th>Mechanism of Injury</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MVC - Occupant</strong></td>
<td>Occupant of an automobile involved in a motor vehicle crash (MVC) [E-codes: E810(.0 &amp; .1) - E816(.0 &amp; .1), E819.0 - E819.1, E958.5, &amp; E988.5]</td>
</tr>
<tr>
<td><strong>MVC-NON-Vehicle</strong></td>
<td>Definition:</td>
</tr>
<tr>
<td></td>
<td>• Occupant/Rider of a non-automobile but motorized vehicle (e.g., motorcycle, ATV, 4-Wheeler, etc) involved in a crash [E-codes: E810 (.2 &amp; .3) - E816(.2 &amp; .3), E819 (.2 &amp; .3), E820(.0-3)-E823(.0-3), &amp; E846]</td>
</tr>
<tr>
<td></td>
<td>• Others (non-occupant, non-pedestrian, and non-bicyclist) involved in MVC or undocumented involvement (e.g., patient was not documented as an occupant, pedestrian or bicyclist) [E-codes: E810(4,.5,8, &amp; .9) - E816(4,.5,8, &amp; .9), E817(1,.9), E824-E825.9, &amp; E819(4,.5,8, &amp; .9) - E823(4,.5,8, &amp; .9)]</td>
</tr>
<tr>
<td></td>
<td>• Pedestrian struck by moving vehicle [E-codes: E810(.7) - E816(.7), E819(.7)-E823(.7), E826.0, E958.0, E968.5, &amp; E988.0]</td>
</tr>
<tr>
<td></td>
<td>• Bicyclist or non-motorized vehicle (e.g., scooter, skateboard, etc.) struck by moving vehicle [E-codes: E810(.5) - E816(.6), E819(.6)-E823(.6)]</td>
</tr>
<tr>
<td></td>
<td>• Riders of animal struck by moving vehicles [E-codes: E810(.5)-E819(.5), E820(.5)-E825(.5)]</td>
</tr>
<tr>
<td><strong>FALL</strong></td>
<td>Definition:</td>
</tr>
<tr>
<td></td>
<td>• Fall from elevation, down stairs, from standing/walking/running or a diving injury [E-codes: E833(.0 &amp; .1) - E834(.0 &amp; .1), E843(.0-9), E880-E884.9, E885.9, E886.9, E888 (.0-9), E957, E968.1, &amp; E987]</td>
</tr>
<tr>
<td></td>
<td>• Fall from bike while riding or bike rider colliding with a stationary object [E826.1, E826.8 &amp; E826.9]</td>
</tr>
<tr>
<td></td>
<td>• Fall during a sporting activity [E-codes: E885.1-E885.4, or E886.0]</td>
</tr>
<tr>
<td></td>
<td>• Thrown or fall from animal being ridden [E828 (.2, .8, .9)]</td>
</tr>
<tr>
<td><strong>OTHER</strong></td>
<td>Definition:</td>
</tr>
<tr>
<td></td>
<td>• SPORTS: Injury occurred in sports [E-codes: E917.0, &amp; E917.5]</td>
</tr>
<tr>
<td></td>
<td>• BLUNT TRAUMA: Injury involved 'clothes lining'(i.e., struck in neck with rope/cable or similar item while in moving/riding), assault, or being struck by object or person [E-codes: E960.0-E960.1, E967.0-E967.9, E968.2, E915, E917.1-E917.4, E917.6-E917.9, &amp; E918-E919].</td>
</tr>
<tr>
<td></td>
<td>• All other injuries involving animals [E827, E828 (.0 &amp; .4, .9) &amp; E906]</td>
</tr>
<tr>
<td></td>
<td>• Hanging [E-codes: E953.0, E963 &amp; E983.0]</td>
</tr>
<tr>
<td></td>
<td>• Mechanisms of injuries not already classified</td>
</tr>
</tbody>
</table>
### Demographics

#### DEMOGRAPHICS

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of birth</td>
<td>(format: mm/dd/yyyy)</td>
</tr>
<tr>
<td>AgeInYears #</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>M = Male</td>
<td></td>
</tr>
<tr>
<td>F = Female</td>
<td></td>
</tr>
<tr>
<td>ND = Not Documented</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>W = White</td>
<td></td>
</tr>
<tr>
<td>B = Black</td>
<td></td>
</tr>
<tr>
<td>A = Asian</td>
<td></td>
</tr>
<tr>
<td>AI = American Indian/Alaskan Native</td>
<td></td>
</tr>
<tr>
<td>PI = Pacific Islander</td>
<td></td>
</tr>
<tr>
<td>O = Other</td>
<td></td>
</tr>
<tr>
<td>ND = Not Documented</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>H = Hispanic</td>
<td></td>
</tr>
<tr>
<td>NH = Non-Hispanic</td>
<td></td>
</tr>
<tr>
<td>O = Other</td>
<td></td>
</tr>
<tr>
<td>ND = Not Documented</td>
<td></td>
</tr>
</tbody>
</table>
PayorType $2
- Champus/Tricare/Military Insurance
- Commercial Insurance
  - Fee for service
  - Managed care
  - Not documented
- Other Government
- Self/Uninsured
- Workman’s Compensation
- Medicaid
  - Fee for service
  - Managed care
  - Not documented
  - Value not provided

PayorTypeCI $3
- Commercial Insurance
  - Fee for service
  - Managed care
  - Not documented

PayorTypeMA $3
- Medicaid
  - Fee for service
  - Managed care
  - Not documented

FEE = Fee for service
MC = Managed care
ND = Not Documented
CH = Champus/Tricare/Military Insurance
CI = Commercial Insurance
OG = Other Government
SU = Self/uninsured
WC = Workman’s Compensation
MA = Medicaid
ND = Not Documented
**Clinical Presentation In The Field**

- **EMS** = Patient was transported by EMS from the scene and the record is available
- **OTR** = Patient was not transported by EMS from the scene
- **NR** = Patient was transported from the scene by EMS, but the record is not available

<table>
<thead>
<tr>
<th>Date of EMS arrival at scene:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Format: mm/dd/yyyy):</td>
</tr>
<tr>
<td>Not documented</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time of arrival at scene:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Format: HH:MM):</td>
</tr>
<tr>
<td>Exact time not documented</td>
</tr>
<tr>
<td>(If checked attempt to estimate time of arrival) Estimated time of arrival at scene</td>
</tr>
<tr>
<td>00:01 - 04:00</td>
</tr>
<tr>
<td>04:01 - 08:00</td>
</tr>
<tr>
<td>08:01 - 12:00</td>
</tr>
<tr>
<td>12:01 - 16:00</td>
</tr>
<tr>
<td>16:01 - 20:00</td>
</tr>
<tr>
<td>20:01 - 00:00</td>
</tr>
<tr>
<td>Unable to estimate</td>
</tr>
</tbody>
</table>

- **PtAmbulatoryPriorEMSArrival** = Y = Yes, N = No, PA = Pre-ambulatory/Non-ambulatory, ND = Not documented

- **EMSEstimateTime** = 1 = 00:01 - 04:00, 2 = 04:01 - 08:00, 3 = 08:01 - 12:00, 4 = 12:01 - 16:00, 5 = 16:01 - 20:00, 6 = 20:01 - 00:00, 7 = Unable to estimate

- **EMSArrivalDate**
- **EMSArrivalDateND** = 1 = Checked, 0 = Not Checked

- **EMSArrivalTime**
- **EMSArrivalTimeND** = 1 = Checked, 0 = Not Checked

- **studysubjectid** $7
- **caseid** $7
- **site #
- **controltype $4**
- **case = cervical spine injury**
- **ems = ems control**
- **moi = mechanism of injury control**
- **ran = random control**
<table>
<thead>
<tr>
<th>What was patient's position on EMS arrival?</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Sitting</td>
</tr>
<tr>
<td>- Walking/standing</td>
</tr>
<tr>
<td>- Lying down</td>
</tr>
<tr>
<td>- Immobilized prior to EMS transport crew arrival</td>
</tr>
<tr>
<td>- Pre-ambulatory/Non-ambulatory</td>
</tr>
<tr>
<td>- Not documented</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Was there history of loss of consciousness (LOC)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Yes</td>
</tr>
<tr>
<td>- No</td>
</tr>
<tr>
<td>- Suspected, but not sure</td>
</tr>
<tr>
<td>- Unknown</td>
</tr>
<tr>
<td>- Not documented</td>
</tr>
</tbody>
</table>

- **S** = Sitting
- **W** = Walking/standing
- **L** = Lying down
- **IDEMS** = Immobilized prior to EMS transport crew arrival
- **PA** = Pre-ambulatory/Non-ambulatory
- **ND** = Not documented
Glasgow Coma Score

Is a Glasgow Coma Score (GCS) documented?
- Section Scores (Eye, Verbal, Motor) not documented
  - Total GCS available
  - Total GCS: [ ]
  - Total GCS not documented
- Section Scores (Eye, Verbal, Motor) documented
  Indicate the score for Eye, Verbal, Motor if present in the record
  - Eye
    - Spontaneous
    - Verbal
    - Pain
    - None
  - Verbal
    - Oriented - coos/babbles
    - Confused - irritable/cries
    - Inappropriate words - cries to pain
    - Incomprehensible sounds - moans
    - None
  - Motor
    - Follow Commands
    - Localizes pain [withdraws to touch]
    - Withdraws to pain
    - Abnormal flexure posturing
    - Abnormal extension posturing
    - None
  - Calculated Total GCS: [ ]

Section GCS Available $2
- Y = Yes
- ND = Not documented

Total GCS Manual $2

Total GCS Available $2
- Y = Yes
- ND = Not documented

GCS Eye $1
- 4 = Spontaneous
- 3 = Verbal
- 2 = Pain
- 1 = None

Verbal GCS $1
- 5 = Oriented - coos/babbles
- 4 = Confused - irritable/cries
- 3 = Inappropriate words - cries to pain
- 2 = Incomprehensible sounds - moans
- 1 = None

Motor GCS $1
- 6 = Follow Commands
- 5 = Localizes pain [withdraws to touch]
- 4 = Withdraws to pain
- 3 = Abnormal flexure posturing
- 2 = Abnormal extension posturing
- 1 = None

Total GCS $2

Open text entered into the AVPUMentaltxt field was independently reviewed by three study investigators. They each categorized the response as ALTERED or UNALTERED. Discrepancies were discussed and consensus reached. Only the final categorization is included in this dataset.
### Clinical Interview and Exam

Did the patient complain of pain?

- **Yes** and the regions of the body affected are documented
- **Yes** and the regions of body affected are NOT documented
- **No**
- **Preverbal / Nonverbal**
- **Not applicable**
- **Not documented**

If yes and regions of the body affected are documented, please indicate which regions of the body were affected:

- **PtCompPainHead** #
- **PtCompPainFace** #
- **PtCompPainNeck** #

If neck pain was indicated, did the pain increase with neck movement?

- **Yes**
- **No**
- **Not documented**

- **PtCompPainChest** #
- **PtCompPainBack** #
- **PtCompPainFlank** #
- **PtCompPainAbd** #
- **PtCompPainPelvis** #
- **PtCompPainExt** #
<table>
<thead>
<tr>
<th>Variable</th>
<th>Type</th>
<th>Length</th>
<th>Label</th>
<th>Values</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>PtTenderNeckOtherTxtCat</td>
<td>$</td>
<td>3</td>
<td>Other neck tenderness deemed consistent with posterior midline neck tenderness by consensus panel</td>
<td>YES, Missing</td>
<td>Three study investigators independently reviewed open text entered into the PtTenderOtherTxt and flagged responses that they considered consistent with posterior midline neck tenderness. Discrepancies were discussed and consensus reached, with YES identifying those that were consistent with the definition.</td>
</tr>
</tbody>
</table>
### Limited Range of Motion

- **Yes**
- **No**
- **Sedated or paralyzed**
- **C-collars in place**
- **Not applicable**
- **Not documented**

#### LimitedRangeMotion

Y = Yes and the regions of the body affected are documented
N = No
SP = Sedated or paralyzed
CC = C-collars in place
NA = Not applicable
ND = Not documented

### Other Injuries

#### OtherInjuries

Y = Yes
N = No
ND = Not documented

### Minor Injuries

#### MinorInjuriesList

Y = Yes
N = No
ND = Not documented

### C-Spine Annotated PUD eCRF
### Neurological Exam

**Did the patient have any paresthesias (abnormal tactile sensation)?**
- Yes
- No
- Not applicable
- Not documented

**PtParesthesias $2**

**Y = Yes**  
**N = No**  
**NA = Not applicable**  
**ND = Not documented**

**Did the patient have any loss of sensation (loss of feeling in any region of body)?**
- Yes
- No
- Not applicable
- Not documented

**PtSensoryLoss $2**

**Y = Yes**  
**N = No**  
**NA = Not applicable**  
**ND = Not documented**

**Did the patient have any extremity weakness?**
- Yes
- No
- Not applicable
- Not documented

**PtExtremityWeakness $2**

**Y = Yes**  
**N = No**  
**NA = Not applicable**  
**ND = Not documented**

**Did the patient have a neurological deficit other than paresthesias, loss of sensation or extremity weakness?**
- Yes
- No
- Not applicable
- Not documented

**OtherNeuroDeficit $2**

**Y = Yes**  
**N = No**  
**NA = Not applicable**  
**ND = Not documented**

**OtherNeuroDeficitDesc $100**

If yes, please describe the neurological deficit:

### Derived variable included in the clinical presentation dataset:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type</th>
<th>Length</th>
<th>Label</th>
<th>Values</th>
<th>Details</th>
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<tbody>
<tr>
<td>OtherNeuroDeficitDescCat</td>
<td>$</td>
<td>3</td>
<td>Other neurologic finding deemed consistent with spine injury by consensus panel</td>
<td>YES, NO</td>
<td>Open text entered into the OtherNeuroDeficitDesc field was independently reviewed by three study investigators. Each response was categorized as YES or NO other neurological finding consistent with spine injury. Discrepancies were discussed and consensus reached. Only the final categorization is included in this dataset.</td>
</tr>
</tbody>
</table>
Clinical Interventions in the Field

Please indicate all interventions that occurred in the field prior to transport to an ED.

Is there documentation that cervical spine precautions were implemented by EMS?
- Y = Yes and specific precautions documented
- YND = Yes but specific precautions were not documented
- N = No
  - If yes, please indicate all cervical spine precautions:
    - Y = Yes and specific precautions documented
    - YND = Yes but specific precautions were not documented
    - N = No
      - If yes, please indicate all cervical spine precautions:
        - Cervical Spine Precautions $3
          - Cervical Spine Precautions CC #
          - Cervical Spine Precautions RLB #
          - Cervical Spine Precautions Other #

Is there documentation that medications were given by EMS?
- Y = Yes
- N = No
  - If yes, indicate all medications given:
    - Analgesics
    - Glucocorticoids
    - Paralytics
    - Sedatives
    - Other
      - Meds by EMS $1
        - Meds Given Ana #
        - Meds Given Glu #
        - Meds Given Par #
        - Meds Given Sed #
        - Meds Given Other #

Is there documentation that the patient was intubated by EMS?
- Y = Yes
- IU = Intubation attempted but unsuccessful
- N = No
  - Intubated by EMS $2

Clinical Presentation at an Outside ED

- **clinicalpresentationoutside** (1 of 12)

**site #**  | **caseid $7**  | **controltype $4**

**studysubjectid $7**

**EDDocumentation $4**

**CLINICAL PRESENTATION AT AN OUTSIDE HOSPITAL EMERGENCY DEPARTMENT**

Update Patient | (PI has to cancel his/her signature for you to do updates)  | Create New Issue

**Outside Hospital Emergency Department (ED) Documentation**

- Patient was evaluated at an outside hospital emergency department (ED) prior to study site, and the record is available
- Patient presented at an outside hospital ED, but the record is unavailable
- Patient presented directly to the study site

**ALL information in the outside ED section must come from the outside ED documentation not the EMS run sheet or the study site medical record.**

**EDArrivalDate**

**EDArrivalDateND**

1 = Checked  
0 = Not Checked

**EDArrivalTime**

**EDArrivalTimeND**

1 = Checked  
0 = Not Checked

**ModeArrivalOutsideHospital**

**EDDocumentat**

**EMS** = EMS  
**NEMS** = Non-EMS  
**ND** = Not documented

**PtAmbulatoryPriorArrival**

**Y** = Yes  
**N** = No  
**PA** = Pre-ambulatory/Non-ambulatory  
**ND** = Not documented

**case** = cervical spine injury  
**ems** = ems control  
**moi** = mechanism of injury control  
**ran** = random control
Does the outside hospital ED record document that cervical precautions were implemented prior to arrival?

- Yes and specific precautions were documented.
- Yes but specific precautions were not documented.
- No

   If yes, indicate all cervical spine precautions:
   - Cervical Collar
   - Rigid long board
   - Other method of C-Spine Immobilization

CervicalSpineImmobilization $3

CervicalSpineIntervCC #
CervicalSpineIntervRLB #
CervicalSpineIntervOther #
CervicalSpineIntervOthertxt $82

Does the outside ED record document that the patient received medications prior to arrival?

- Yes
- No

   If yes, indicate all medications given:
   - Analgesics
   - Glucocorticoids
   - Paralytics
   - Sedatives
   - Other

MedsRecdPriorArrival $1

MedsRecdAna #
MedsRecdGlu #
MedsRecdPar #
MedsRecdSed #
MedsRecdOth #
MedsRecdOthtxt $31
Does the outside hospital ED record document that the patient was intubated prior to arrival?

- Yes
- No

ArrPtIntub $1

Was there history of loss of consciousness (LOC)?

- Yes
- No
- Suspected - but not sure
- Unknown
- Not Documented

HxLOC $2

Y = Yes
N = No

Y = Yes
N = No
S = Suspected, but not sure
U = Unknown
ND = Not documented
### Glasgow Coma Score

**Is a Glasgow Coma Score (GCS) documented?**
- Section Scores (Eye, Verbal, Motor) not documented
  - Section GCS Available $2
  - Total GCS: [ ]
  - Total GCS: [ ]
  - Total GCS not documented

**Section scores (Eye, Verbal, Motor) documented**

**Indicate the score for Eye, Verbal, Motor if present in the record**

- **Eye**
  - Spontaneous
  - Verbal
  - Pain
  - None
  - GCSEye $1

- **Verbal**
  - Oriented - coos/babbles
  - Confused - irritable/cries
  - Inappropriate words - cries to pain
  - Incomprehensible sounds - moans
  - None
  - VerbalGCS $1

- **Motor**
  - Follow Commands
  - Localizes pain - withdraws to touch
  - Withdraws to pain
  - Abnormal flexure posturing
  - Abnormal extension posturing
  - None
  - MotorGCS $1

**Calculated Total GCS:** [ ]

**TotalGCS $2**

**TotalGCS Available $2**

**Y = Yes**

**ND = Not documented**

**5 = Oriented - coos/babbles**

**4 = Confused - irritable/cries**

**3 = Inappropriate words - cries to pain**

**2 = Incomprehensible sounds - moans**

**1 = None**

**6 = Follow Commands**

**5 = Localizes pain [withdraws to touch]**

**4 = Withdraws to pain**

**3 = Abnormal flexure posturing**

**2 = Abnormal extension posturing**

**1 = None**
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<th>Variable</th>
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<th>Label</th>
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<tbody>
<tr>
<td>AVPUMentaltxtCat</td>
<td>$</td>
<td>9</td>
<td>Other Term used that cannot be mapped to AVPU (Categorized)</td>
<td>ALTERED</td>
<td>Open text entered into the AVPUMentaltxt field was independently reviewed by three study investigators. They each categorized the response as ALTERED or UNALTERED. Discrepancies were discussed and consensus reached. Only the final categorization is included in this dataset.</td>
</tr>
</tbody>
</table>

### Mental Status

Is there documentation of the patient’s mental status using a narrative description or an AVPU category?

- **AVPU $1**
  - Y = Yes
  - N = No

If yes, check the statement which best describes the patient’s mental status:

- **AVPUDetails $1**
  - A = (A) The patient was described as being awake or alert or oriented.
  - V = (V) The patient was described as responsive to verbal stimuli.
  - P = (P) The patient was described as responsive to pain.
  - U = (U) The patient was described as unresponsive to pain.
  - C = Comatose
  - OB = Obtunded
  - U = Unconscious
  - OTH = Other

- **AVPUMental $3**
  - Term used that cannot be mapped to AVPU
    - Comatose
    - Obtunded
    - Unconscious
    - Other

- **AVPUMentaltxt $100**
  - Other Term used that cannot be mapped to AVPU (Categorized)
Clinical Interview and Exam

Did the patient complain of pain?

- Yes and the regions of the body affected are documented
- Yes and the regions of the body affected are NOT documented
- No
- Preverbal/Nonverbal
- Sedated or paralyzed
- Not applicable
- Not documented

If yes and regions of the body affected are documented, please indicate which regions of the body were affected:

- PtCompPainHead #
- PtCompPainFace #
- PtCompPainNeck #
- PtCompPainChest #
- PtCompPainBack #
- PtCompPainFlank #
- PtCompPainAbd #
- PtCompPainPelvis #
- PtCompPainExt #

PtCompPain Neck Move $2

Y = Yes
N = No
ND = Not documented
1 = Checked
0 = Not checked
C-Spine Annotated PUD eCRF

**Derived variable included in the clinical presentation outside dataset:**

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<th>Variable</th>
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<tbody>
<tr>
<td>PtTenderNeckOtherYntCat</td>
<td>$</td>
<td>3</td>
<td>Other neck tenderness findings deemed consistent with posterior midline neck tenderness by consensus panel</td>
<td>YES</td>
<td>Three study investigators independently reviewed open text entered into the PtTenderNeckLevelOtherYnt and flagged responses that they considered consistent with posterior midline neck tenderness. Discrepancies were discussed and consensus reached, with YES identifying those that were consistent with the definition.</td>
</tr>
<tr>
<td>PtTenderY3</td>
<td>$</td>
<td>3</td>
<td>Other neck tenderness findings deemed consistent with posterior midline neck tenderness by consensus panel</td>
<td>YES</td>
<td>Three study investigators independently reviewed open text entered into the PtTenderNeckLevelOtherYnt and flagged responses that they considered consistent with posterior midline neck tenderness. Discrepancies were discussed and consensus reached, with YES identifying those that were consistent with the definition.</td>
</tr>
</tbody>
</table>
**LimitedRangeMotion**

- **Yes**
- **No**
- **Sedated or paralyzed**
- **C-collar in place**
- **Not applicable**
- **Not documented**

**MinorInjuries**

- **Yes**
- **No**
- **Not documented**

**Y = Yes**
**N = No**
**ND = Not documented**

**OtherInjuries**

- **Y = Yes**
- **N = No**
- **ND = Not documented**

**OtherInjuriesHead #**

- **Y = Yes**
- **N = No**
- **ND = Not documented**

**OtherInjuriesFace #**

- **Y = Yes**
- **N = No**
- **ND = Not documented**

**OtherInjuriesNeck #**

- **Y = Yes**
- **N = No**
- **ND = Not documented**

**OtherInjuriesChest #**

- **Y = Yes**
- **N = No**
- **ND = Not documented**

**OtherInjuriesBack #**

- **Y = Yes**
- **N = No**
- **ND = Not documented**

**OtherInjuriesFlank #**

- **Y = Yes**
- **N = No**
- **ND = Not documented**

**OtherInjuriesAbs #**

- **Y = Yes**
- **N = No**
- **ND = Not documented**

**OtherInjuriesPelvis #**

- **Y = Yes**
- **N = No**
- **ND = Not documented**

**OtherInjuriesExt #**

- **Y = Yes**
- **N = No**
- **ND = Not documented**
### Neurological Examination

**Did the patient have any paresthesias (abnormal tactile sensation)?**
- Yes
- No
- Sedated or paralyzed
- Not applicable
- Not documented

**PtParesthesias $2**
- Y = Yes
- N = No
- S = Sedated or paralyzed
- NA = Not applicable
- ND = Not documented

**Did the patient have any loss of sensation (loss of feeling in any region of body)?**
- Yes
- No
- Sedated or paralyzed
- Not applicable
- Not documented

**PtSensoryLoss $2**
- Y = Yes
- N = No
- S = Sedated or paralyzed
- NA = Not applicable
- ND = Not documented

**Did the patient have any extremity weakness?**
- Yes
- No
- Sedated or paralyzed
- Not applicable
- Not documented

**PtExtremityWeakness $2**
- Y = Yes
- N = No
- S = Sedated or paralyzed
- NA = Not applicable
- ND = Not documented

**Did the patient have a neurological deficit other than paresthesias, loss of sensation or extremity weakness?**
- Yes
- No
- Not Applicable
- Not Documented

**OtherNeuroDeficit $2**
- Y = Yes
- N = No
- S = Sedated or paralyzed
- NA = Not applicable
- ND = Not documented

**OtherNeuroDeficitDesc $198**

---

**Derived variable included in the clinicalpresentationoutside dataset:**

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<tr>
<td>OtherNeuroDeficitDescCat</td>
<td>$</td>
<td>3</td>
<td>Other neurologic finding deemed consistent with spine injury by consensus panel</td>
<td>YES</td>
<td>Open text entered into the OtherNeuroDeficitDesc field was independently reviewed by three study investigators. Each response was categorized as YES or NO other neurological finding consistent with spine injury. Discrepancies were discussed and consensus reached. Only the final categorization is included in this dataset.</td>
</tr>
</tbody>
</table>
### Clinical Interventions in the outside hospital ED

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there documentation that cervical spine precautions were in place when the patient left the ED?</td>
<td>☐ Yes and specific precautions were documented</td>
<td>☐ Yes but specific precautions were not documented</td>
</tr>
<tr>
<td>YD = Yes and specific precautions documented</td>
<td>YND = Yes but specific precautions were not documented</td>
<td></td>
</tr>
<tr>
<td>N = No</td>
<td>1 = Checked</td>
<td>0 = Not Checked</td>
</tr>
<tr>
<td>If Yes, indicate all cervical spine precautions:</td>
<td>MedsbyED $1</td>
<td>CervicalSpinePrecautions $3</td>
</tr>
<tr>
<td>☐ Cervical Collar</td>
<td>☐ Rigid long board</td>
<td>☐ Other method of cervical spine immobilization</td>
</tr>
<tr>
<td>Is there documentation that medications were given in the outside hospital ED?</td>
<td>☐ Yes</td>
<td>☐ No</td>
</tr>
<tr>
<td>Y = Yes</td>
<td>N = No</td>
<td></td>
</tr>
<tr>
<td>If yes, indicate all medications given</td>
<td>MedsGivenAna #</td>
<td>MedsGivenGlu #</td>
</tr>
<tr>
<td>☐ Analgesics</td>
<td>☐ Glucocorticoids</td>
<td>☐ Paralytics</td>
</tr>
<tr>
<td>☐ Sedatives</td>
<td>☐ Other</td>
<td>✣ Other</td>
</tr>
<tr>
<td>☐ Other txt $81</td>
<td>☐ Other txt $49</td>
<td>☐ Other txt $49</td>
</tr>
<tr>
<td>☐ MedsGivenSed #</td>
<td>☐ MedsGivenPar #</td>
<td>☐ MedsGivenOther #</td>
</tr>
<tr>
<td>☐ MedsGivenOther #</td>
<td>☐ MedsGivenAna #</td>
<td>☐ MedsGivenGlu #</td>
</tr>
<tr>
<td>☐ MedsGivenSed #</td>
<td>☐ MedsGivenPar #</td>
<td>☐ MedsGivenOther #</td>
</tr>
<tr>
<td>☐ MedsGivenOther #</td>
<td>☐ MedsGivenAna #</td>
<td>☐ MedsGivenGlu #</td>
</tr>
</tbody>
</table>
### Is there documentation that the patient was intubated in the ED?

- **Yes**
- **Intubation continued**
- **Extubated**
- **No**

**IntubatedED $2**

### What was outside hospital ED Disposition?

- **Home**
- **Admit - ICU**
- **Admit - general inpatient**
- **Admit - short stay - < 24 hour - observation unit**
- **OR**
- **Transferred to**

**OutsideEDDisposition $3**

**Value not provided**

**Y = Yes**
**IC = Intubation continued**
**E = Extubated**
**N = No**

**H = Home**
**ICU = Admit - ICU**
**IPT = Admit - general inpatient**
**OBS = Admit - short stay - < 24 hour - observation unit**
**OR = OR**
**T = Transferred to**
### Clinical Presentation at the Study Site

**Case Study**

- **studySubjectId**: $7
- **caseId**: $7
- **site #**
- **controlType**: $4

#### Clinical Presentations at the Study Site (1 of 13)

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
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<td><strong>Date of Arrival</strong></td>
<td>(Format: mm/dd/yyyy)</td>
</tr>
<tr>
<td><strong>ArrivalDate</strong></td>
<td>#</td>
</tr>
<tr>
<td><strong>Arrival Time</strong></td>
<td>$5</td>
</tr>
<tr>
<td><strong>Mode of Arrival</strong></td>
<td>$2</td>
</tr>
</tbody>
</table>
| **Was patient received in transfer from another hospital?** | $1
- **ReceivedInTransfer**: $1
- **Yes**: Y
- **No**: N

**Diagnosis**

- **DxSpineInjury**: $1
- **Yes**: Y
- **No**: N

**Location of Evaluation**

- **LocEvalPhysician**: $1
- **LocEvalPhysicianTxt**: $18
- **ED**: 1
- **ICU**: 2
- **General Floor**: 3
- **Outpatient Clinic**: 4
- **Other**: 5
- **Not Documented**: ND

---

**Notes**

- All information in the study site section must come from the study site documentation, not the EMS run sheet or the outside hospital ED record. Please refer to your site-specific source hierarchy for optimal source for each data element.

---

**Case**

- **Cervical Spine Injury**
- **EMS Control**
- **Mechanism of Injury Control**
- **Random Control**

---

**Diagnosis**

- **Spine Injury**
- **Yes**: Y
- **No**: N

---

**Location**

- **ED**: 1
- **ICU**: 2
- **General Floor**: 3
- **Outpatient Clinic**: 4
- **Other**: 5
- **Not Documented**: ND
On arrival to the study site was the patient ambulatory?
- Yes
- No
- Pre-ambulatory/Non-ambulatory
- Not documented

Y = Yes
N = No
3 = Pre-ambulatory/Non-ambulatory
ND = Not documented

Does the study site medical record document that cervical spine precautions were implemented prior to arrival?
- Yes and specific precautions were documented
- Yes but specific precautions were not documented.
- No

If yes, indicate all cervical spine precautions:
- Cervical Collar
- Rigid long board
- Other method of cervical spine immobilization

Cervical Spine Immobilization $1
1 = Yes and specific precautions were documented
2 = Yes but specific precautions were not documented.
3 = No

Cervical Spine Interv CC #
Cervical Spine Interv RLB #
Cervical Spine Interv Other #

Cervical Spine Interv Other Text $92
1 = Checked
0 = Not Checked
Does the study site medical record document that the patient received medications prior to arrival?
- Yes
- No
  If yes, please indicate all medications given:
  - Analgesics
  - Glucocorticoids
  - Paralytics
  - Sedatives
  - Other - please specify

MedsRecdPriorArrival $1

MedsRecdAna #
MedsRecdGlu #
MedsRecdPar #
MedsRecdSed #
MedsRecdOR #
MedsRecdORtxt $80

Does the study site medical record document that the patient was intubated prior to arrival?
- Yes
- No

ArrPtIntub $1

Y = Yes
N = No

Was there history of loss of consciousness - LOC?
- Yes
- No
- Suspected - but not sure
- Unknown
- Not documented

HxLOC $2

Y = Yes
N = No
3 = Suspected - but not sure
U = Unknown
ND = Not documented
### Glasgow Coma Score

**Is a Glasgow Coma Score (GCS) documented?**

- **Section Scores (Eye, Verbal, Motor) not documented**
  - Total GCS available
    - Total GCS:
  - Total GCS not documented

**Section scores (Eye, Verbal, Motor) documented**

**Eye**
- Spontaneous
- Verbal
- Pain
- None

**Verbal**
- Oriented - coos/babbles
- Confused - irritable/cries
- Inappropriate words - cries to pain
- Incomprehensible sounds - moans
- None

**Motor**
- Follow Commands
- Localizes pain - withdraws to touch
- Withdraws to pain
- Abnormal flexure posturing
- Abnormal extension posturing
- None

**Total Calculated GCS:**

#### Section GCS Available

- Yes
- ND = Not documented

#### Total GCS Manual

- 4 = Spontaneous
- 3 = Verbal
- 2 = Pain
- 1 = None

#### Total GCS

- 6 = Follow Commands
- 5 = Localizes pain [withdraws to touch]
- 4 = Withdraws to pain
- 3 = Abnormal flexure posturing
- 2 = Abnormal extension posturing
- 1 = None
Derived variable included in the clinicalpresentationsite dataset:

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<td>$</td>
<td>9</td>
<td>Other Term used that cannot be mapped to AVPU (Categorized)</td>
<td>ALTERED UNALTERED</td>
<td>Open text entered into the AVPUMentaltxt field was independently reviewed by three study investigators. They each categorized the response as ALTERED or UNALTERED. Discrepancies were discussed and consensus reached. Only the final categorization is included in this dataset.</td>
</tr>
</tbody>
</table>
### Clinical Interview and Exam

**Did the patient complain of pain?**

- Yes and the regions of the body affected are documented
- Yes and the regions of body affected are NOT documented
- No
- Preverbal/Nonverbal
- Sedated or paralyzed
- Not applicable
- Not documented

If yes and regions of the body affected are documented, please indicate which regions of the body were affected:

- [ ] Head
- [ ] Face
- [x] Neck
  - [ ] Yes
  - [ ] No
  - [ ] Not documented

If neck pain was indicated, did the pain increase with neck movement?

- [ ] Yes
- [ ] No
- [ ] Not documented

<table>
<thead>
<tr>
<th>Region</th>
<th>Checkmark</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Head</td>
<td>[ ]</td>
<td>Y = Yes, N = No, ND = Not documented</td>
</tr>
<tr>
<td>Face</td>
<td>[ ]</td>
<td>Y = Yes, N = No, ND = Not documented</td>
</tr>
<tr>
<td>Neck</td>
<td>[x]</td>
<td>Y = Yes, N = No, ND = Not documented</td>
</tr>
<tr>
<td>Chest</td>
<td>[ ]</td>
<td>Y = Yes, N = No, ND = Not documented</td>
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<tr>
<td>Back</td>
<td>[ ]</td>
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</tr>
<tr>
<td>Flank</td>
<td>[ ]</td>
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<tr>
<td>Abdomen</td>
<td>[ ]</td>
<td>Y = Yes, N = No, ND = Not documented</td>
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<td>[ ]</td>
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<td>Y = Yes, N = No, ND = Not documented</td>
</tr>
<tr>
<td>PtCompPainFace</td>
<td></td>
<td>Y = Yes, N = No, ND = Not documented</td>
</tr>
<tr>
<td>PtCompPainNeck</td>
<td></td>
<td>Y = Yes, N = No, ND = Not documented</td>
</tr>
<tr>
<td>PtCompPainNeckMove</td>
<td></td>
<td>Y = Yes, N = No, ND = Not documented</td>
</tr>
<tr>
<td>PtCompPainChest</td>
<td></td>
<td>Y = Yes, N = No, ND = Not documented</td>
</tr>
<tr>
<td>PtCompPainBack</td>
<td></td>
<td>Y = Yes, N = No, ND = Not documented</td>
</tr>
<tr>
<td>PtCompPainFlank</td>
<td></td>
<td>Y = Yes, N = No, ND = Not documented</td>
</tr>
<tr>
<td>PtCompPainAbd</td>
<td></td>
<td>Y = Yes, N = No, ND = Not documented</td>
</tr>
<tr>
<td>PtCompPainPelvis</td>
<td></td>
<td>Y = Yes, N = No, ND = Not documented</td>
</tr>
<tr>
<td>PtCompPainExt</td>
<td></td>
<td>Y = Yes, N = No, ND = Not documented</td>
</tr>
</tbody>
</table>
C-Spine Annotated PUD eCRF

Did the patient have tenderness on exam?
- Yes and the regions of the body affected are documented
- Yes and the regions of body affected are NOT documented
- No
- Sedated / paralyzed
- Not applicable
- Not documented

If yes and regions of the body affected are documented, please indicate which regions of the body were affected:
- Head
- Face
- Neck

If checked, please check all descriptors that apply:
- Anterior
- Posterior
- Lateral
- Midline
- Level
  - C1
  - C2
  - C3
  - C4
  - C5
  - C6
  - C7
- Other

Y = Yes and the regions of the body affected are documented
YND = Yes and the regions of body affected are NOT documented
N = No
S = Sedated or paralyzed
NA = Not applicable
ND = Not documented

Derived variable included in the clinical presentation site dataset:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type</th>
<th>Length</th>
<th>Label</th>
<th>Values</th>
<th>Details</th>
</tr>
</thead>
</table>
clinicalpresentation site (8 of 13)

- PtTenderChest #
- PtTenderBack #
- PtTenderFlank #
- PtTenderAbd #
- PtTenderPelvis #
- PtTenderExt #

1 = Checked
0 = Not Checked
**Did the patient have limited range of motion of the neck or torticollis?**
- Yes
- No
- Sedated or paralyzed
- C-collar in place
- Not applicable
- Not documented

LimitedRangeMotion $2$

**Y = Yes and the regions of the body affected are documented**

- Yes
- No
- Sedated or paralyzed
- C-collar in place
- NA = Not applicable
- ND = Not documented

**Aside from tenderness on exam, was there any other clinical evidence of substantial injuries?**
- Yes
- No
- Not documented

OtherInjuries $2$

- If yes, check all affected regions of the body:
  - Head
  - Face
  - Neck
  - Chest
  - Back
  - Flank
  - Abdomen
  - Pelvis
  - Extremities

**Y = Yes**

OtherInjuriesHead #
OtherInjuriesFace #
OtherInjuriesNeck #
OtherInjuriesChest #
OtherInjuriesBack #
OtherInjuriesFlank #
OtherInjuriesAbd #
OtherInjuriesPelvis #
OtherInjuriesExt #

- 1 = Checked
- 0 = Not Checked

**Aside from tenderness on exam, was there any other clinical evidence of minor injuries?**
- Yes
- No
- Not documented

MinorInjuries $2$

- If yes check all affected regions of the body:
  - Head
  - Face
  - Neck
  - Chest
  - Back
  - Flank
  - Abdomen
  - Pelvis
  - Extremities

**Y = Yes**

MinorInjuriesHead #
MinorInjuriesFace #
MinorInjuriesNeck #
MinorInjuriesChest #
MinorInjuriesBack #
MinorInjuriesFlank #
MinorInjuriesAbs #
MinorInjuriesPelv #
MinorInjuriesExt #

- 1 = Checked
- 0 = Not Checked

**LimitedRangeMotion $2**

**OtherInjuries $2**

**MinorInjuries $2**
<table>
<thead>
<tr>
<th>Neurological Examination</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Did the patient have any paresthesias (abnormal tactile sensation)?</strong></td>
<td>Y = Yes, N = No, 3 = Sedated or paralyzed, NA = Not applicable, ND = Not documented</td>
</tr>
<tr>
<td><strong>PtParesthesias</strong> $2</td>
<td></td>
</tr>
<tr>
<td><strong>Did the patient have any loss of sensation (loss of feeling in any region of body)??</strong></td>
<td>Y = Yes, N = No, 3 = Sedated or paralyzed, NA = Not applicable, ND = Not documented</td>
</tr>
<tr>
<td><strong>PtSensoryLoss</strong> $2</td>
<td></td>
</tr>
<tr>
<td><strong>Did the patient have any extremity weakness?</strong></td>
<td>Y = Yes, N = No, 3 = Sedated or paralyzed, NA = Not applicable, ND = Not documented</td>
</tr>
<tr>
<td><strong>PtExtremityWeakness</strong> $2</td>
<td></td>
</tr>
<tr>
<td><strong>Did the patient have a neurological deficit other than paresthesias, loss of sensation or extremity weakness?</strong></td>
<td>Y = Yes, N = No, 3 = Sedated or paralyzed, NA = Not applicable, ND = Not documented</td>
</tr>
<tr>
<td><strong>OtherNeuroDeficit</strong> $2</td>
<td></td>
</tr>
<tr>
<td><strong>OtherNeuroDeficitDesc</strong> $277</td>
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</tr>
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**Derived variable included in the clinicalpresentationsite dataset:**

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<tr>
<th>Variable</th>
<th>Type</th>
<th>Length</th>
<th>Label</th>
<th>Values</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>OtherNeuroDeficitDescCat</td>
<td>$</td>
<td>3</td>
<td>Other neurologic finding deemed consistent with spine injury by consensus panel</td>
<td>YES</td>
<td>Open text entered into the OtherNeuroDeficitDesc field was independently reviewed by three study investigators. Each response was categorized as YES or NO other neurological finding consistent with spine injury. Discrepancies were discussed and consensus reached. Only the final categorization is included in this dataset.</td>
</tr>
<tr>
<td>OtherNeuroDeficitDesc</td>
<td>$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Clinical Interventions at the Study Site

**Is there documentation that cervical spine precautions were in place after initial evaluation at the study site?**

- Yes and specific precautions were documented.
- Yes but specific precautions were not documented.
- No

If Yes, indicate all cervical spine precautions:
- Cervical Collar
- Rigid long board
- Other method of cervical spine immobilization

**CSpinePrecautions $3**

**CSpinePrecautionsCC #**

**CSpinePrecautionsRLB #**

**CSpinePrecautionsOther #**

**1 = Checked 0 = Not Checked**

**YD = Yes and specific precautions documented**

**YND = Yes but specific precautions were not documented**

**N = No**

**Is there documentation that medications were given during the initial evaluation at the study site?**

- Yes
- No

If Yes, indicate all medications given:
- Analgesics
- Glucocorticoids
- Paralytics
- Sedatives
- Other (other med)

**MedsGiven $1**

**MedsGivenAna #**

**MedsGivenGlu #**

**MedsGivenPar #**

**MedsGivenSed #**

**MedsGivenOther #**

**1 = Checked 0 = Not Checked**

**Y = Yes**

**N = No**

**YD = Yes**

**INTUB = Intubation continued**

**EXTUB = Extubated**

**NOTUB = No**

**IntubatedSS $5**
What was the patient’s disposition after the initial evaluation at the study site?
- HOME = Home
- ICU = Admit – ICU
- GEN = Admit – general inpatient
- SHORT = Admit – short stay - < 24 hour observation unit
- OR = OR
- TRANSFER = Transferred to
- DEATH = Death at study site

Did the patient undergo interventions for cervical stabilization at the study site?
- Y = Yes
- N = No

If yes, check all interventions that apply:
- Soft Collar
- Rigid Collar
- Brace
- Traction
- Surgical
- Halo
- Internal Fixation
- Other

Did patient receive inpatient rehabilitation at the study site?
- Y = Yes
- N = No

DETERMINISTION: This is defined by the patient being evaluated and admitted to the Rehabilitation Service at the study site. Bedside Physical Therapy does not qualify for inpatient rehabilitation.
Was the patient transferred from the study site to a rehabilitation facility?

- **Yes**
- **No**

Was the patient transferred to Long Term Rehab? $1

Y = Yes
N = No

What was the patient’s neurological outcome at discharge from the study site?

- **Normal**
- **Death during Hospitalization**
- **Persistent Neurological Deficit**

Please classify the patient’s cognitive function.

- **Normal or good recovery**
- **Moderate disability** (Cognitive disabilities but are able to live independently.)
- **Severe disability** (Conscious but have cognitive disabilities that render them dependent.)
- **Persistent vegetative state**

Please classify mobility.

- **Normal**
- **Dependent Ambulation - cane, walker, etc**
- **Wheelchair dependent**
  - **Complete paraplegia**
  - **Complete quadriplegia**
- **Immobile**

Please indicate bowel function.

- **Normal**
- **Incontinence of stool**

Please classify bladder function.

- **Normal**
- **Incontinence of urine**
- **Chronic Catheterization**

N = Normal
I = Incontinence of stool
C = Chronic Catheterization

1 = Checked
0 = Not Checked

OutcomeStudySiteMobility $2

OutcomeStudySiteMobility1 #
OutcomeStudySiteMobility2 #

OutcomeStudySiteUrine $1

N = Normal
I = Incontinence of urine
C = Chronic Catheterization

OutcomeStudySite $3

OutcomeStudySiteNeuro $3

OutcomeStudySiteMobility $2

OutcomeStudySiteMobility1 #
OutcomeStudySiteMobility2 #

OutcomeStudySiteBowel $1

N = Normal
I = Incontinence of stool
C = Chronic Catheterization

N = Normal
DTH = Death during Hospitalization
PND = Persistent Neurological Deficit

NR = Normal or good recovery
MD = Moderate disability (Cognitive disabilities but are able to live independently.)
SD = Severe disability (Conscious but have cognitive disabilities that render them dependent.)
PVS = Persistent vegetative state

DA = Dependent Ambulation - cane, walker, etc
WD = Wheelchair dependent
I = Immobile
C-Spine Annotated PUD eCRF

Injury Classification Sheet

INJURY CLASSIFICATION SHEET

Fracture of the Cervical Spine

Were there fractures of the cervical spine?

- Yes
- No

Y = Yes
N = No

If yes for each fractured vertebrae, check all that apply.

- Occipital condyle fracture
- C1 Fracture
- Arches
  - Anterior
  - Posterior
- Jefferson (Anterior and Posterior)
- Transverse process
- Lateral mass
- Other injury

C1SbFractureOLtxt $61

CFracturesOC #

CFracturesC1 #

CFracturesAR #

CFracturesType $1

CFracturesTP #

CFracturesLM #

CFracturesOI #

1 = Checked
0 = Not Checked

A = Anterior
P = Posterior
J = Jefferson (Anterior and Posterior)
C2 Vertebral Fracture

- C2FracturesC2 #
  - 1 = Checked
  - 0 = Not Checked

- C2SbFractureOdontoid #
  - 1 = Checked
  - 0 = Not Checked

- C2SbFractureOdType $100 #
  - 1 = Type 1--through the tip of the odontoid
  - 2 = Type 2--through the base of the odontoid
  - 3 = Type 3--through the body of C2 involving odontoid

- C2SbFracturePars #
  - 1 = Checked
  - 0 = Not Checked

- C2SbFractureTypePARS #
  - 1 = Checked
  - 0 = Not Checked

- C2SbFractureBOOT #
  - 1 = Checked
  - 0 = Not Checked

- C2SbFractureBOOTTypeWC #

- C2SbFractureBOOTTypeBT #

- C2SbFractureBOOTTypeTD #

- C2SbFractureBOOTTypeLH #

- C2SbFractureBOOTTypeOR #

- C2SbFractureBOOTTypeORtxt $79

- C2SbFractureLA #

- C2SbFractureLM #

- C2SbFractureSP #

- C2SbFractureOR #

- C2SbFractureORtxt $76

- Lamina
- Lateral mass
- Spinous Process
- Other injury

UN = Unilateral
BI = Bilateral (Hangman's)
C4SbFractureBYW #
1 = Checked
0 = Not Checked

C4SbFractureBYB #
1 = Checked
0 = Not Checked

C4SbFractureBYTD #
1 = Checked
0 = Not Checked

C4SbFractureBYLH #
1 = Checked
0 = Not Checked

C4SbFractureBYOR #
1 = Checked
0 = Not Checked

C4SbFractureBYORtxt $33

C4SbFracturePET #
1 = Checked
0 = Not Checked

C4SbFracturePET Type $1
B = Bilateral
U = Unilateral

C4SbFractureTP #
1 = Checked
0 = Not Checked

C4SbFractureLM #
1 = Checked
0 = Not Checked

C4SbFractureFT #
1 = Checked
0 = Not Checked

C4SbFractureFT Type $1
B = Bilateral
U = Unilateral

C4SbFractureLA #
1 = Checked
0 = Not Checked

C4SbFractureSP #
1 = Checked
0 = Not Checked

C4SbFractureCC #
1 = Checked
0 = Not Checked

C4SbFractureOR #
1 = Checked
0 = Not Checked

C4SbFractureORtxt $41
C-Spine Annotated PUD eCRF

injury classification (6 of 15)

C6 Fracture

Body

- Wedge / Compression
- Burst
- Teardrop
- Loss of height
- Other

C6SbFractureBY #

1 = Checked
0 = Not Checked

C6SbFractureBYWC #
C6SbFractureBYB #
C6SbFractureBYTD #
C6SbFractureBYLH #
C6SbFractureBYOR #

C6SbFractureBYORtxt $71

Pedicle

C6SbFracturePE #

- Unilateral
- Bilateral

Transverse process

C6SbFractureTP #
C6SbFractureLM #
C6SbFractureFT #

C6SbFractureFTType $1

B = Bilateral
U = Unilateral

C6SbFracturePEType $1

B = Bilateral
U = Unilateral

Lamina

- Spinous Process
- Canal Compromise
- Other injury

C6SbFractureLA #
C6SbFractureSP #
C6SbFractureCC #
C6SbFractureOR #

C6SbFractureORtxt $30
Ligamentous injury to cervical spinal column

Were there ligamentous injuries to the cervical spinal column?
- Y = Yes
- N = No

If yes for each injured vertebral level, check all that apply.

- **Occipital-atlantal dislocation**
  - LigamentousInjuryOAD #
  - 1 = Checked
  - 0 = Not Checked

- **C1-2**
  - LigamentousInjuryC12 #
  - C1_2SbLigFD #
  - B = Bilateral
  - U = Unilateral
  - 1 = Checked
  - 0 = Not Checked

- **Facet Dislocations(jumped)/Perched Facets**
  - Unilateral
  - Bilateral

- **Subluxation of one vertebral body on another**
  - Atlantoaxial rotary subluxation
  - ADI interval > 5 mm

- **Angulation**
  - C1_2SbLigAL #

- **Signal change on MRI**
  - Anterior ligaments/elements
  - Disc
  - Within spinal canal -- including hematoma
  - Posterior ligaments/elements

- C1_2SbLigSC #
  - C1_2SbLigSCAL #
  - C1_2SbLigSCDC #
  - C1_2SbLigSCWSC #
  - C1_2SbLigSCPL #
  - 1 = Checked
  - 0 = Not Checked
C-Spine Annotated PUD eCRF

injury classification (9 of 15)

- **Ligamentous Injury C2-3 #**
  - 1 = Checked
  - 0 = Not Checked

- **Facet Dislocations (jumped)/Perched Facets**
  - A: Unilateral
  - B: Bilateral

- **Subluxation of one vertebral body on another**

- **Angulation**

- **Signal change on MRI**
  - A: Anterior ligaments/elements
  - D: Disc
  - W: Within spinal canal -- including hematoma
  - P: Posterior ligaments/elements

- **C2_3SbLigFD #**
  - 1 = Checked
  - 0 = Not Checked

- **C2_3SbLigFDUB $1**
  - B: Bilateral
  - U: Unilateral

- **C2_3SbLigSL #**
  - 1 = Checked
  - 0 = Not Checked

- **C2_3SbLigAL #**
  - 1 = Checked
  - 0 = Not Checked

- **C2_3SbLigSC #**
  - 1 = Checked
  - 0 = Not Checked

- **C2_3SbLigSCAL#**
  - 1 = Checked
  - 0 = Not Checked

- **C2_3SbLigSCDC #**
  - 1 = Checked
  - 0 = Not Checked

- **C2_3SbLigSCWSC#**
  - 1 = Checked
  - 0 = Not Checked

- **C2_3SbLigSCPL #**
  - 1 = Checked
  - 0 = Not Checked
C-Spine Annotated PUD eCRF

injury classification (11 of 15)

- Ligamentous Injury C4-5 #
  - Checked: 1
  - Not Checked: 0

- Facet Dislocations (jumped) / Perched Facets
  - Unilateral
  - Bilateral

- Subluxation of one vertebral body on another

- Angulation

- Signal change on MRI
  - Anterior ligaments/elements
  - Disc
  - Within spinal canal -- including hematoma
  - Posterior ligaments/elements

- C4_5SbLigFD #
  - Checked: 1
  - Not Checked: 0

- C4_5SbLigFDUB $1
  - B = Bilateral
  - U = Unilateral

- C4_5SbLigSC #
  - Checked: 1
  - Not Checked: 0

- C4_5SbLigSCAL#
- C4_5SbLigSCDC#
- C4_5SbLigSCWSC#
- C4_5SbLigSCPL#
C-Spine Annotated PUD eCRF

injury classification (12 of 15)

- Ligamentous Injury C5-6
  - Facet Dislocations (jumped) / Perched Facets
    - Unilateral
    - Bilateral
  - C5_6SbLigFD
    - B = Bilateral
    - U = Unilateral
- C5_6SbLigFDUB
- C5_6SbLigSL
- C5_6SbLigAL
- C5_6SbLigSC
  - Anterior ligaments/elements
  - Disc
  - Within spinal canal -- including hematoma
  - Posterior ligaments/elements
  - C5_6SbLigSCAL
  - C5_6SbLigSCDC
  - C5_6SbLigSCWSC
  - C5_6SbLigSCPL
Injury Classification

- **Ligamentous Injury C6-7 #**
  - C6-7SbLigFD #
    - Checked: 1
    - Not Checked: 0
    - Bilateral: B
    - Unilateral: U

- Subluxation of one vertebral body on another

- Signal change on MRI
  - Anterior ligaments/elements
  - Disc
  - Within spinal canal -- including hematoma
  - Posterior ligaments/elements

- C6-7SbLigSC #
  - C6-7SbLigSCAL #
  - C6-7SbLigSCDC #
  - C6-7SbLigSCWSC #
  - C6-7SbLigSCPL #

1 = Checked
0 = Not Checked
Injury Classification (14 of 15)

- C7-T1 Ligamentous Injury
  - C7_T1SbLigFD
    - 1 = Checked
    - 0 = Not Checked
  - C7_T1SbLigFDUB
    - B = Bilateral
    - U = Unilateral

- Subluxation of one vertebral body on another
- Angulation

- Signal change on MRI
  - C7_T1SbLigSC
    - 1 = Checked
    - 0 = Not Checked
  - C7_T1SbLigSCAL
  - C7_T1SbLigSCDC
  - C7_T1SbLigSCWSC
  - C7_T1SbLigSCPL
Cervical Spinal Cord Injury

Injuries to the spinal cord are usually described as increased T2 intensity on the MRI. Please indicate all signal changes in the MRI (if available).

Was there signal changes in the cervical spinal cord on MRI?

- Yes
- No
- Not Applicable - No MRI performed

If yes, please check all the affected cervical levels

- SignalChangeLevelC1 #
- SignalChangeLevelC2 #
- SignalChangeLevelC3 #
- SignalChangeLevelC4 #
- SignalChangeLevelC5 #
- SignalChangeLevelC6 #
- SignalChangeLevelC7 #

Does the patient have a spinal cord injury without radiographic association (SCIWORA)?

- Yes
- No
### Injury Mechanism

**INJURY MECHANISM**

<table>
<thead>
<tr>
<th>Column</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Injury</td>
<td>Text</td>
<td>Date of injury (format: mm/dd/yy)</td>
</tr>
<tr>
<td>Time of day injury occurred</td>
<td>Text</td>
<td>Time of day (format: HH:MM)</td>
</tr>
<tr>
<td>Estimated time of injury</td>
<td>Dropdown</td>
<td>Estimated time of injury</td>
</tr>
<tr>
<td>ICD-9 Mechanism</td>
<td>Text</td>
<td>ICD-9 codes for mechanism of injury</td>
</tr>
<tr>
<td>ICD-9 Location</td>
<td>Text</td>
<td>ICD-9 codes for location where injury occurred</td>
</tr>
</tbody>
</table>

#### Mechanism:
- Mechanism: [Add more entry]

#### Location:
- Location: [Add more entry]
Indicate the primary mechanism of injury. Check only one mechanism.

1. Occupant in Motor Vehicle Collision (MVC)
   - Motor Vehicle Collision

Type of Collision - Check all that apply
   - MVCREC #
   - MVCHOC #
   - MVCSI #
   - MVCSO #
   - MVCEFA #
   - MVCDSC #

InjuryPrimaryMechanism $2
   - 1 = Checked
   - 0 = Not Checked

Speed of patients vehicle
   - MVCSpeed #
   - 1 = <= 25MPH - residential speed
   - 2 = 26 - 54 MPH
   - 3 = >= 55 MPH - highway speed
   - Missing = Vehicle speed not documented

Was a passenger restraint system used?
   - PassRestraint #
   - 1 = Yes - Child safety seat, booster seat, seatbelts or other
   - 0 = No
   - ND = Not documented

1 = Motor Vehicle Collision
2 = Other Motorized Transport Crash
3 = Bike rider struck by moving vehicle
4 = Bike collision or fall from bike
5 = Other non-motorized transport struck by moving vehicle
6 = Pedestrian struck by moving vehicle
7 = Blunt injury to head/neck
8 = Sports injury
9 = Fall from elevation
10 = Fall down stairs
11 = Fall from standing/walking/running
12 = Diving injury
13 = Hanging injury
14 = Other
20 = Other non-motorized transport collision or fall from non-motorized transport while riding
ND = Not documented
2. Other Motorized transport crash (ATV, 4 Wheeler, motorcycle, etc)

Speed of patient’s vehicle
- <= 25MPH - residential speed
- 26 - 54 MPH
- >= 55 MPH - highway speed
- Vehicle speed not documented

OMTSpeed#

Was the injury a result of an object (rope / cable / stick or similar item) striking the neck while the patient was riding a motorized or non-motorized vehicle?
- Yes
- No
- Not documented

Was the child wearing a protective helmet?
- Yes
- No
- Not documented

clotheslining $2

helmet $2

Y = Yes
N = No
ND = Not documented
3. Bike rider struck by moving vehicle

Was the injury a result of an object (rope / cable / stick or similar item) striking the neck while the patient was riding a motorized or non-motorized vehicle?

- Yes
- No
- Not documented

Was the child wearing a protective helmet?

- Yes
- No
- Not documented

- clotheslining $2

4. Bike collision or fall from bike while riding

Was the injury a result of an object (rope / cable / stick or similar item) striking the neck while the patient was riding a motorized or non-motorized vehicle?

- Yes
- No
- Not documented

Was the child wearing a protective helmet?

- Yes
- No
- Not documented

- clotheslining $2

Y = Yes
N = No
ND = Not documented
5. Other Non-motorized transport (go cart, scooter, wagon etc) struck by moving vehicle

- Other non-motorized transport

  Was the injury a result of an object (rope / cable / stick or similar item) striking the neck while the patient was riding a motorized or non-motorized vehicle?
  - Yes: clotheslining $2
  - No
  - Not documented

  Was the child wearing a protective helmet?
  - Yes: helmet $2
  - No
  - Not documented

6. Other Non-motorized transport (go cart, scooter, wagon etc) collision or fall from non-motorized transport while riding

- Other non-motorized transport

  Was the injury a result of an object (rope / cable / stick or similar item) striking the neck while the patient was riding a motorized or non-motorized vehicle?
  - Yes: clotheslining $2
  - No
  - Not documented

  Was the child wearing a protective helmet?
  - Yes: helmet $2
  - No
  - Not documented
7. Pedestrian struck by moving vehicle
   ☐ Pedestrian struck by moving vehicle

8. Blunt injury to the head/neck
   ☐ Blunt injury to the head/neck
   - Assault
   - Suspected or confirmed child abuse
   - Shaken baby syndrome

   Was the injury a result of an object (rope / cable / stick or similar item) striking the neck?
   - Yes
   - No
   - Not documented

9. Sports Injury (describe)
   ☐ Sports injury
   - InjuriousMechanism $156

   Was the injury a result of an object (rope / cable / stick or similar item) striking the neck?
   - Yes
   - No
   - Not documented

   Was the child wearing a protective helmet?
   - Yes
   - No
   - Not documented

Assault #
1 = Checked
0 = Not Checked

ChildAbuse #
Y = Yes
N = No
ND = Not documented

ShakenBabySyndrome #
Y = Yes
N = No
ND = Not documented

clotheslining $2

helmet $2
10. Fall from elevation (estimated height in feet)

- Fall from elevation
  - < 3 ft
  - >= 3 ft to < 10 ft
  - >= 10 ft
  - Not documented

11. Fall down stairs (estimated # of stairs)

- Fall down stairs
  - 5 or less
  - 6-15
  - > 15
  - Not documented

Refer to InjuryPrimaryMechanism annotation on page 66
12. Fall from standing/walking/running
   - Refer to InjuryPrimaryMechanism annotation on page 66

13. Diving Injury
   - Diving injury
   - Refer to InjuryPrimaryMechanism annotation on page 66

14. Hanging Injury
   - Hanging injury
   - Refer to InjuryPrimaryMechanism annotation on page 66

15. Other (describe)
   - Refer to InjuryPrimaryMechanism annotation on page 66
   - injurymechanismtxt $156
      - Was the injury a result of an object (rope / cable / stick or similar item) striking the neck?
        - Yes
        - No
        - Not documented
        - clotheslining $2
      - Was the child wearing a protective helmet?
        - Yes
        - No
        - Not documented
        - helmet $2

16. Not Documented
   - Not documented
   - Refer to InjuryPrimaryMechanism annotation on page 66
## Supplemental Mechanism of Injury Information

### Axial Load

**lblImpHeadFirst requires a value**

Was the impact head first striking against the ground or other solid object OR did a heavy object strike directly on top of the head?

- **Yes**
- **No**
- **Not documented**

If yes, indicate the region of the head that was struck

- **Front - frontal**
- **Top**
- **Back - occipital**
- **Side**
- **Not documented**

**Y = Yes**  
**N = No**  
**ND = Not documented**
Medical History

Past Medical and Surgical History

Body as a whole (Systemic disease or genetic syndromes)

- Normal
- Abnormal

Body As A Whole $1

Body As A Whole0 #
Body As A Whole1 #
Body As A Whole2 #
Body As A Whole3 #
Body As A Whole4 #
Body As A Whole5 #
Body As A Whole6 #

Describe:
Value not provided

Form Off #

No past medical or surgical history is documented on the study site medical record.

Please review the study site medical record for documentation of the patients past medical and surgical history. Classify any noted abnormalities by checking the "abnormal" box next to the affected organ system and describing the condition or procedure using the associated checklist or text box.

N = Normal
A = Abnormal

1 = Checked
0 = Not Checked

PI has to cancel his/her signature for you to do updates.

Create New Issue
Neurological
- Normal
- Abnormal
  
  Describe:
  - Value not provided

Endocrinological
- Normal
- Abnormal
  - Ricketts
  - Other (Please provide a description below)
  
  Describe:
  - Value not provided

Dermatological / Skin / Subcutaneous Tissue
- Normal
- Abnormal
  
  Describe:
  - Value not provided

N = Normal
A = Abnormal
1 = Checked
0 = Not Checked

Value not provided

### Derived variable included in the medicalhistory dataset:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type</th>
<th>Length</th>
<th>Label</th>
<th>Details/Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>OtherPredisposingCondition</td>
<td>$</td>
<td>40</td>
<td>Other predisposing condition identified during a review of medical history information</td>
<td>Study investigators reviewed open text entered into the medical history form and identified conditions that may predispose patients to cervical spine injury that were not recorded in one of the BodyAsAWhole variables. Conditions identified are summarized as a comma-separated list for each patient, and include: Achondrodysplasia, Arnold Chiari Malformation, C-spine fusion, Larsen's Syndrome, C-spine injury, Cervical spinal stenosis, Congenital anomaly of cervical vertebrae, Down's Syndrome, ESRD</td>
</tr>
</tbody>
</table>
Cervical Spine Injury Sheet for Outside ED

site #  caseid $7  controltype $4

studysubjectid $7

case = cervical spine injury
esms = ems control
moi = mechanism of injury control
ran = random control

CERVICAL SPINE INJURY SHEET FOR OUTSIDE ED

Update Patient (PI has to cancel his/her signature for you to do updates)  Create New Issue

Outside Hospital Emergency Department (ED) Documentation

- Patient evaluated at an outside hospital ED-Records Available

Patient was evaluated at an outside hospital emergency department prior to the study site visit and the neuro-imaging reports, spine surgeon consult or operative reports are available.

- Patient evaluated at an outside hospital ED-Records Not Available

Patient presented at an outside hospital ED, but the neuro-imaging reports, spine surgeon consult and operative reports are all unavailable.

- Patient presented directly to the study site.
### Neuro-imaging Reports

Neuro-imaging reports: Please check all studies that were obtained and transcribe the final impression from the radiology report for each study. Please double check all sources for radiology reports.

### X-rays

Were cervical spine x-rays (plain films) performed?

- Yes
- No

If yes, which views were obtained?

- A/P
- Lateral
- Open-mouth - odontoid
- Flexion/Extension
- Swimmers view
- Other

<table>
<thead>
<tr>
<th>XraysViewAP #</th>
<th>XraysViewLt #</th>
<th>XraysViewOM #</th>
<th>XraysViewFE #</th>
<th>XraysViewSW #</th>
<th>XraysViewOt #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = Checked</td>
<td>0 = Not Checked</td>
<td>1 = Checked</td>
<td>0 = Not Checked</td>
<td>1 = Checked</td>
<td>0 = Not Checked</td>
</tr>
</tbody>
</table>

Final Impression: Value not provided
### Computed Tomography (CT)

**Was a cervical spine CT performed?**

- **Yes**
- **No**

**CTPerformed $1**

<table>
<thead>
<tr>
<th>Final Impression:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value not provided</td>
</tr>
</tbody>
</table>

**Y = Yes**  
**N = No**

### Magnetic Resonance Imaging (MRI)

**Was cervical spine MRI performed?**

- **Yes**
- **No**

**MRIPerformed $1**

<table>
<thead>
<tr>
<th>Final Impression:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value not provided</td>
</tr>
</tbody>
</table>
Spine Surgeon Consult and Treatment

Was a spine surgeon's consult available in written or dictated form?
- Yes
- No

Assessment / impression: Value not provided

Was a spine surgery operative report available?
- Yes
- No

Pre-operative diagnosis / impression: Value not provided

Post-operative diagnosis / impression: Value not provided
Cervical Spine Injury Sheet for Study Site

CERVICAL SPINE INJURY SHEET FOR STUDY SITE

Update Patient (PI has to cancel his/her signature for you to do updates) Create New Issue

Neuro-imaging Reports

Neuro-Imaging reports: Please check all studies that were obtained and transcribe the final impression from the radiology report for each study. Please double check all sources for radiology reports.

X-rays

Were cervical spine x-rays (plain films) performed?

- Yes
- No

If yes, which views were obtained?

- A/P
- Lateral
- Open-mouth - odontoid
- Flexion/Extension
- Swimmers view
- Other

Y = Yes
N = No

Value not provided

Final Impression: Value not provided

1 = Checked
0 = Not Checked
### Computed Tomography (CT)

**Was a cervical spine CT performed?**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>CTPerformed $1</td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**Final Impression:** Value not provided

Y = Yes  
N = No

---

### Magnetic Resonance Imaging (MRI)

**Was cervical spine MRI performed?**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>MRIPerformed $1</td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**Final Impression:** Value not provided

Y = Yes  
N = No
### Spine Surgeon Consult and Treatment

**Was a spine surgeon’s consult available in written or dictated form?**
- [ ] Yes
- [ ] No

**WrittenOrDictatedConsult $1**
- **Y = Yes**
- **N = No**

**Assessment / impression:**
- Value not provided

**Was a spine surgery operative report available?**
- [ ] Yes
- [ ] No

**OperativeReport $1**
- **Y = Yes**
- **N = No**

**Pre-operative diagnosis / impression:**
- Value not provided

**Post-operative diagnosis / impression:**
- Value not provided
<table>
<thead>
<tr>
<th>Radiology Review 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate visualization by plain film?</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>reviewResult CA $3</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

| Is there a congenital abnormality of the cervical spine? |
| Yes | No |
| reviewResult IV $4 | IVY = Yes |
| | IVN = No |
| | IVND = Not Documented |
KAPPA form

CLINICAL PRESENTATION AT THE STUDY SITE -- KAPPA Form

On arrival to the study site was the patient ambulatory?
- Yes
- No
- Pre-ambulatory/Non-ambulatory
- Not documented

Was there history of loss of consciousness - LOC?
- Yes
- No
- Suspected - but not sure
- Unknown
- Not documented

PtAmbulatoryPriorArrival $2
HxLOCSSite $2

case = cervical spine injury
ems = ems control
moi = mechanism of injury control
ran = random control
Derived variable included in the kappa dataset:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type</th>
<th>Length</th>
<th>Label</th>
<th>Values</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVPUMentaltxtCat</td>
<td>$</td>
<td>9</td>
<td>Other Term used that cannot be mapped to AVPU</td>
<td>ALTERED, UNALTERED</td>
<td>Open text entered into the AVPUMentaltxt field was independently reviewed by three study investigators. They each categorized the response as ALTERED or UNALTERED. Discrepancies were discussed and consensus reached. Only the final categorization is included in this dataset.</td>
</tr>
</tbody>
</table>
Did the patient complain of pain?
- Yes and the regions of the body affected are documented
- Yes but the regions of body affected are NOT documented
- No
- Preverbal/Nonverbal
- Sedated or paralyzed
- Not applicable
- Not documented

If yes and regions of the body affected are documented, please indicate which regions of the body were affected:
- Head
- Face
- Neck

If neck pain was indicated, did the pain increase with neck movement?
- Yes
- No
- Not documented

Y = Yes
N = No
P=Preverbal/Nonverbal
S = Sedated or paralyzed
NA = Not applicable
ND = Not documented

1 = Checked
0 = Not Checked
Did the patient have tenderness on exam?

- Yes and the regions of the body affected are documented
- Yes and the regions of body affected are NOT documented
- No
- Sedated or paralyzed
- Not applicable
- Not documented

If yes and regions of the body affected are documented, please indicate which regions of the body were affected:

- Head
- Face
- Neck
- Anterior
- Posterior
- Lateral
- Midline
- Level
  - C1
  - C2
  - C3
  - C4
  - C5
  - C6
  - C7
- Other
- Chest
- Back
- Flank
- Abdomen
- Pelvis
- Extremities

Y = Yes and the regions of the body affected are documented
YND = Yes and the regions of body affected are NOT documented
N = No
S = Sedated or paralyzed
NA = Not applicable
ND = Not documented

1 = Checked
0 = Not Checked

PtTender Head #
PtTender Face #
PtTender Neck #
PtTender Neck Ant #
PtTender Neck Pos #
PtTender Neck Lat #
PtTender Neck Mid #
PtTender Neck Level #
PtTender Neck Other #
PtTender Neck Other txt $51
PtTender Chest #
PtTender Back #
PtTender Flank #
PtTender Abd #
PtTender Pelvis #
PtTender Ext #
PtTender Neck Level C1 #
PtTender Neck Level C2 #
PtTender Neck Level C3 #
PtTender Neck Level C4 #
PtTender Neck Level C5 #
PtTender Neck Level C6 #
PtTender Neck Level C7 #
Derived variables included in the kappa dataset:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type</th>
<th>Length</th>
<th>Label</th>
<th>Values</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>PrTenderNeckOtherTxtCat</td>
<td>$</td>
<td>3</td>
<td>Other neck tenderness finding deemed consistent with posterior midline neck tenderness by consensus panel</td>
<td>Yes, No</td>
<td>Three study investigators independently reviewed open text entered into the PrTenderNeckOtherTxt and flagged responses that they considered consistent with posterior midline neck tenderness. Discrepancies were discussed and consensus reached, with YES identifying those that were consistent with the definition.</td>
</tr>
<tr>
<td>OtherNeuroDeficitDescCat</td>
<td>$</td>
<td>3</td>
<td>Other neurologic finding deemed consistent with spine injury by consensus panel</td>
<td>Yes, No</td>
<td>Open text entered into the OtherNeuroDeficitDesc field was independently reviewed by three study investigators. Each response was categorized as YES or NO other neurological finding consistent with spine injury. Discrepancies were discussed and consensus reached. Only the final categorization is included in this dataset.</td>
</tr>
</tbody>
</table>
Aside from tenderness on exam, was there any other clinical evidence of minor injuries?

- Yes
- No
- Not Documented

If yes, check all affected regions of the body:

- Head
- Face
- Neck
- Chest
- Back
- Flank
- Abdomen
- Pelvis
- Extremities

MinorInjuries $2

MinorInjuriesHead 
MinorInjuriesFace 
MinorInjuriesNeck 
MinorInjuriesChest 
MinorInjuriesBack 
MinorInjuriesFlank 
MinorInjuriesAbs 
MinorInjuriesPelv 
MinorInjuriesExt

1 = Checked
0 = Not Checked

MinorInjuries $2

Y = Yes
N = No
ND = Not documented

PtParesthesias $2

PtSensoryLoss $2

Y = Yes
N = No
3 = Sedated or paralyzed
NA = Not applicable
ND = Not documented
C-Spine Annotated PUD eCRF

**Clinical Presentation at the Study Site -- Kappa Form/Clinical Interventions**

Did the patient undergo interventions for cervical stabilization at the study site?

- **Yes**
- **No**

If yes, check all interventions that apply:

- Soft Collar
- Rigid Collar
- Brace
- Traction
- Surgical
- Halo
- Internal Fixation
- Other

- **IntervForCervicalStab $1**
  - **Y = Yes**
  - **N = No**

**IntervForCervicalStabSCollar #**

**IntervForCervicalStabRCollar #**

**IntervForCervicalStabBrace #**

**IntervForCervicalStabTraction #**

**IntervForCervicalStabSurgical #**

**IntervForCervicalStabHalo #**

**IntervForCervicalStabIntFix #**

**IntervForCervicalStabIntFixtxt $122**

**IntervForCervicalStabOther #**

**IntervForCervicalStabOthertxt $58**

---

**PtExtremityWeakness $2**

- **Yes**
- **No**
- **Sedated or paralyzed**
- **Not applicable**
- **Not documented**

**IntervForCervicalStabSCollar #**

**IntervForCervicalStabRCollar #**

**IntervForCervicalStabBrace #**

**IntervForCervicalStabTraction #**

**IntervForCervicalStabSurgical #**

**IntervForCervicalStabHalo #**

**IntervForCervicalStabIntFix #**

**IntervForCervicalStabIntFixtxt $122**

**IntervForCervicalStabOther #**

**IntervForCervicalStabOthertxt $58**

---

**OtherNeuroDeficit $2**

- **Yes**
- **No**
- **Not applicable**
- **Not documented**

**IntervForCervicalStabOther #**

---

**OtherNeuroDeficitDesc $79**

---

**Y = Yes**

**N = No**

**NA = Not applicable**

**ND = Not documented**

---

**IntervForCervicalStabOther #**

**IntervForCervicalStabOthertxt $58**
What was the patient’s neurological outcome at discharge from the study site?

- Normal
- Death during Hospitalization
- Persistent Neurological Deficit

Please classify the patient’s cognitive function:
- Normal or good recovery
- Moderate disability (Cognitive disabilities but are able to live independently.)
- Severe disability (Conscious but have cognitive disabilities that render them dependent.)
- Persistent vegetative state

OutcomeStudySiteNeuro $3

- NR = Normal or good recovery
- MD = Moderate disability (Cognitive disabilities but are able to live independently.)
- SD = Severe disability (Conscious but have cognitive disabilities that render them dependent.)
- PVS = Persistent vegetative state

Please classify mobility:
- Normal
- Dependent Ambulation - cane, walker, etc
- Wheelchair dependent
  - Complete paraplegia
  - Complete quadriplegia
- Immobile

OutcomeStudySiteMobility $2

- N = Normal
- DA = Dependent Ambulation - cane, walker, etc
- WD = Wheelchair dependent
- I = Immobile

OutcomeStudySiteMobility1

OutcomeStudySiteMobility2

Please indicate bowel function:
- Normal
- Incontinence of stool

OutcomeStudySiteBowel $1

- N = Normal
- I = Incontinence of stool

Please classify bladder function:
- Normal
- Incontinence of urine
- Chronic Catheterization

OutcomeStudySiteUrine $1

- N = Normal
- I = Incontinence of urine
- C = Chronic Catheterization

OutcomeStudySite $3

N = Normal
DTH = Death during Hospitalization
PND = Persistent Neurological Deficit
1 = Checked
0 = Not Checked

kappa (9 of 16)
CLINICAL PRESENTATION IN THE FIELD -- KAPPA FORM

ALL information in the Field Section must come from field documentation (EMS Run Sheet) not the hospital records. Please make sure that the EMS run sheet you are abstracting represents the scene (primary) response and not an interhospital transfer.

Field Documentation
- Patient was transported by EMS from the scene and the record is available
- Patient was not transported by EMS from the scene
- Patient was transported from the scene by EMS, but the record is not available

Was patient ambulatory prior to EMS arrival?
- Yes
- No
- Pre-ambulatory/Non-ambulatory
- Not documented

What was patient’s position on EMS arrival?
- Sitting
- Walking/standing
- Lying down
- Immobilized prior to EMS transport crew arrival
- Pre-ambulatory/Non-ambulatory
- Not documented

Was there history of loss of consciousness (LOC)?
- Yes
- No
- Suspected, but not sure
- Unknown
- Not documented

EMS = Patient was transported by EMS from the scene and the record is available
OTR = Patient was not transported by EMS from the scene
NR = Patient was transported from the scene by EMS, but the record is not available

Y = Yes
N = No
PA = Pre-ambulatory/Non-ambulatory
ND = Not documented

S = Sitting
W = Walking/standing
L = Lying down
IDEMS = Immobilized prior to EMS transport crew arrival
PA = Pre-ambulatory/Non-ambulatory
ND = Not documented

Y = Yes
N = No
S = Suspected, but not sure
U = Unknown
ND = Not documented
**CLINICAL PRESENTATION AT AN OUTSIDE HOSPITAL ED -- KAPPA FORM**

ALL information in the outside ED section must come from the outside ED documentation not the EMS run sheet or the study site medical record.

**Outside Hospital Emergency Department (ED) Documentation**
- Patient was evaluated at an outside hospital emergency department (ED) prior to study site, and the record is available.
- Patient presented at an outside hospital ED, but the record is unavailable.
- Patient presented directly to the study site.

On arrival to the outside ED was the patient ambulatory?
- Yes
- No
- Pre-ambulatory/Non-ambulatory
- Not documented

**HxLOCED $2**
- Y = Yes
- N = No
- S = Suspected, but not sure
- U = Unknown
- ND = Not documented

**PtAmbulatoryPriorArrivalED $2**
- ED = Patient was evaluated at an outside hospital emergency department (ED) prior to study site, and the record is available.
- EDU = Patient presented at an outside hospital ED, but the record is unavailable.
- SITE = Patient presented directly to the study site.

**EDDocumentation $4**
- Y = Yes
- N = No
- PA = Pre-ambulatory/Non-ambulatory
- ND = Not documented
1. Occupant in Motor Vehicle Collision (MVC)

<table>
<thead>
<tr>
<th>Type of Collision</th>
<th>Check all that apply</th>
<th>InjuryPrimaryMechanism $2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rear end collision</td>
<td>MVCREC #</td>
<td>1 = Checked</td>
</tr>
<tr>
<td>Head on collision</td>
<td>MVCHOC #</td>
<td>1 = Checked</td>
</tr>
<tr>
<td>Side Impact</td>
<td>MVC SI #</td>
<td>1 = Checked</td>
</tr>
<tr>
<td>Rollover</td>
<td>MVCRO #</td>
<td>1 = Checked</td>
</tr>
<tr>
<td>Ejected from automobile</td>
<td>MVCEFA #</td>
<td>1 = Checked</td>
</tr>
<tr>
<td>Death in the same collision</td>
<td>MVCDSC #</td>
<td>1 = Checked</td>
</tr>
</tbody>
</table>

Speed of patients vehicle
- <= 25MPH - residential speed
- 26 - 54 MPH
- >= 55 MPH - highway speed
- Vehicle speed not documented

Was a passenger restraint system used?
- Yes - Child safety seat, booster seat, seatbelts or other
- No
- Not documented

PassRestraint #

1 = Yes - Child safety seat, booster seat, seatbelts or other
0 = No
Missing = Not documented

1 = Motor Vehicle Collision
2 = Other Motorized Transport Crash
3 = Bike rider struck by moving vehicle
4 = Bike collision or fall from bike
5 = Other non-motorized transport struck by moving vehicle
6 = Pedestrian struck by moving vehicle
7 = Blunt injury to head/neck
8 = Sports injury
9 = Fall from elevation
10 = Fall down stairs
11 = Fall from standing/walking/running
12 = Diving injury
13 = Hanging injury
14 = Other
20 = Other non-motorized transport collision or fall from non-motorized transport while riding
ND = Not documented

MVCSpeed #

1 = <= 25MPH - residential speed
2 = 26 - 54 MPH
3 = >= 55 MPH - highway speed
Missing = Vehicle speed not documented
2. Other Motorized transport crash (ATV, 4 Wheeler, motorcycle, etc)
- Other Motorized Transport Crash
  - Speed of patient's vehicle
    - ≤ 25 MPH - residential speed
    - 26 - 54 MPH
    - ≥ 55 MPH - highway speed
    - Vehicle speed not documented
  - OMTSpeed#
  - Was the injury a result of an object (rope / cable / stick or similar item) striking the neck while the patient was riding a motorized or non-motorized vehicle?
    - Yes
    - No
    - Not documented
  - clotheslining
  - Y = Yes
  - N = No
  - ND = Not documented

3. Bike rider struck by moving vehicle
- Bike rider struck by moving vehicle
  - Was the injury a result of an object (rope / cable / stick or similar item) striking the neck while the patient was riding a motorized or non-motorized vehicle?
    - Yes
    - No
    - Not documented
  - clotheslining
  - Y = Yes
  - N = No
  - ND = Not documented
  - helmet
  - Y = Yes
  - N = No
  - ND = Not documented

Refer to InjuryPrimaryMechanism annotation on page 97
C-Spine Annotated PUD eCRF

4. Bike collision or fall from bike while riding
   - Bike collision or fall from bike
     Was the injury a result of an object (rope/cable/stick or similar item) striking the neck while the patient was riding a motorized or non-motorized vehicle?
     - Yes
     - No
     - Not documented
     - Primary mechanism noted: clotheslining

5. Other Non-motorized transport (go cart, scooter, wagon etc) struck by moving vehicle
   - Other non-motorized transport
     Was the injury a result of an object (rope/cable/stick or similar item) striking the neck while the patient was riding a motorized or non-motorized vehicle?
     - Yes
     - No
     - Not documented
     - Primary mechanism noted: clotheslining

6. Other Non-motorized transport (go cart, scooter, wagon etc) collision or fall from non-motorized transport while riding
   - Other non-motorized transport
     Was the injury a result of an object (rope/cable/stick or similar item) striking the neck while the patient was riding a motorized or non-motorized vehicle?
     - Yes
     - No
     - Not documented
     - Primary mechanism noted: clotheslining

---

Y = Yes
N = No
ND = Not documented

---
7. Pedestrian struck by moving vehicle
   - Pedestrian struck by moving vehicle

8. Blunt injury to the head/neck
   - Blunt injury to the head/neck
     - Assault
     - Suspected or confirmed child abuse
     - Shaken baby syndrome
     - Was the injury a result of an object (rope / cable / stick or similar item) striking the neck?
       - Yes
       - No
       - Not documented
       - Y = Yes
       - N = No
       - ND = Not documented
     - clotheslining $2

9. Sports Injury (describe)
   - Sports injury
     - InjuryPrimaryMechanism $160
     - Was the injury a result of an object (rope / cable / stick or similar item) striking the neck?
       - Yes
       - No
       - Not documented
     - clotheslining $2
     - Was the child wearing a protective helmet?
       - Yes
       - No
       - Not documented
     - helmet $2

10. Fall from elevation (estimated height in feet)
    - Fall from elevation
      - FallFromElevation
      - 1 = "< 3 ft"
      - 2 = ">= 3 ft to < 10 ft"
      - 3 = ">= 10 ft"
      - Missing = Not documented
11. Fall down stairs (estimated # of stairs)
   - Fall down stairs
     - 5 or less
     - 6-15
     - > 15
     - Not documented
   1 = 5 or less
   2 = 6-15
   3 = > 15
   Missing = Not documented

   Refer to InjuryPrimaryMechanism annotation on page 97

12. Fall from standing/walking/running
   - Fall from standing/walking/running
   Refer to InjuryPrimaryMechanism annotation on page 97

13. Diving Injury
   - Diving injury
   Refer to InjuryPrimaryMechanism annotation on page 97

14. Hanging Injury
   - Hanging injury
   Refer to InjuryPrimaryMechanism annotation on page 97

15. Other (describe)
   - Other
     - InjuryPrimaryMechanism $160
   Was the injury a result of an object (rope / cable / stick or similar item) striking the neck?
     - Yes
     - No
     - Not documented

   clotheslining $$2

   Was the child wearing a protective helmet?
     - Yes
     - No
     - Not documented

   helmet $$2

   Refer to InjuryPrimaryMechanism annotation on page 97

16. Not Documented
   - Not documented
   Refer to InjuryPrimaryMechanism annotation on page 97