Virginia Department of Health

Office of Emergency Medical Services (OEMS)

Quarterly Report on Trauma Incidents

Q2 2022*

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This report is based on the deliberations of the System Improvement Committee and analyses performed by Office of EMS Epidemiology staff.

*Important Note: The Office of Emergency Medical Services is currently in the process of transitioning to a new data management system for all pre-hospital and trauma registry data. System performance issues identified and corrected during the transition may limit the accuracy of the data contained within this report. As such, this report is considered preliminary and subject to change. Thank you for your understanding and patience during this transition.

Introduction

Section B 3. of the Code of Virginia (§32.1-111.3) requires the monitoring of the quality of the Commonwealth's emergency medical services (EMS) and trauma services using data from the EMS patient care information system. The EMS Advisory Board reviews and analyzes such data quarterly and reports its findings to the Commissioner. The Advisory Board has delegated this function to the System Improvement Committee (formerly the Trauma Performance Improvement Committee).

This quarterly report focuses on four key areas:

1. Completeness of prehospital vital sign documentation (blood pressure, respiratory rate, and Glasgow Coma Score) as required in Step 1 of the Virginia Field Trauma Triage Decision Scheme.
2. The number of trauma patients treated and transported by EMS agencies.
3. The number of trauma patients who met Step 1 (vitals), Step 2 (anatomy of injury), and Step 3 (mechanism of injury/impact) Virginia Field Trauma Triage Criteria.
4. The number of patients meeting trauma triage criteria transported to hospitals not designated as trauma centers.

The results reported here represent a high-level summary of the findings. This report describes how each EMS Council Region is performing. The report will be provided to the appropriate Regional EMS Council Director for each region. The Directors will be given an opportunity to provide feedback, which may explain special circumstances for which an exception occurred. The findings of this report and any feedback from the Directors will be used to drive education and improve the Trauma Triage Plan.

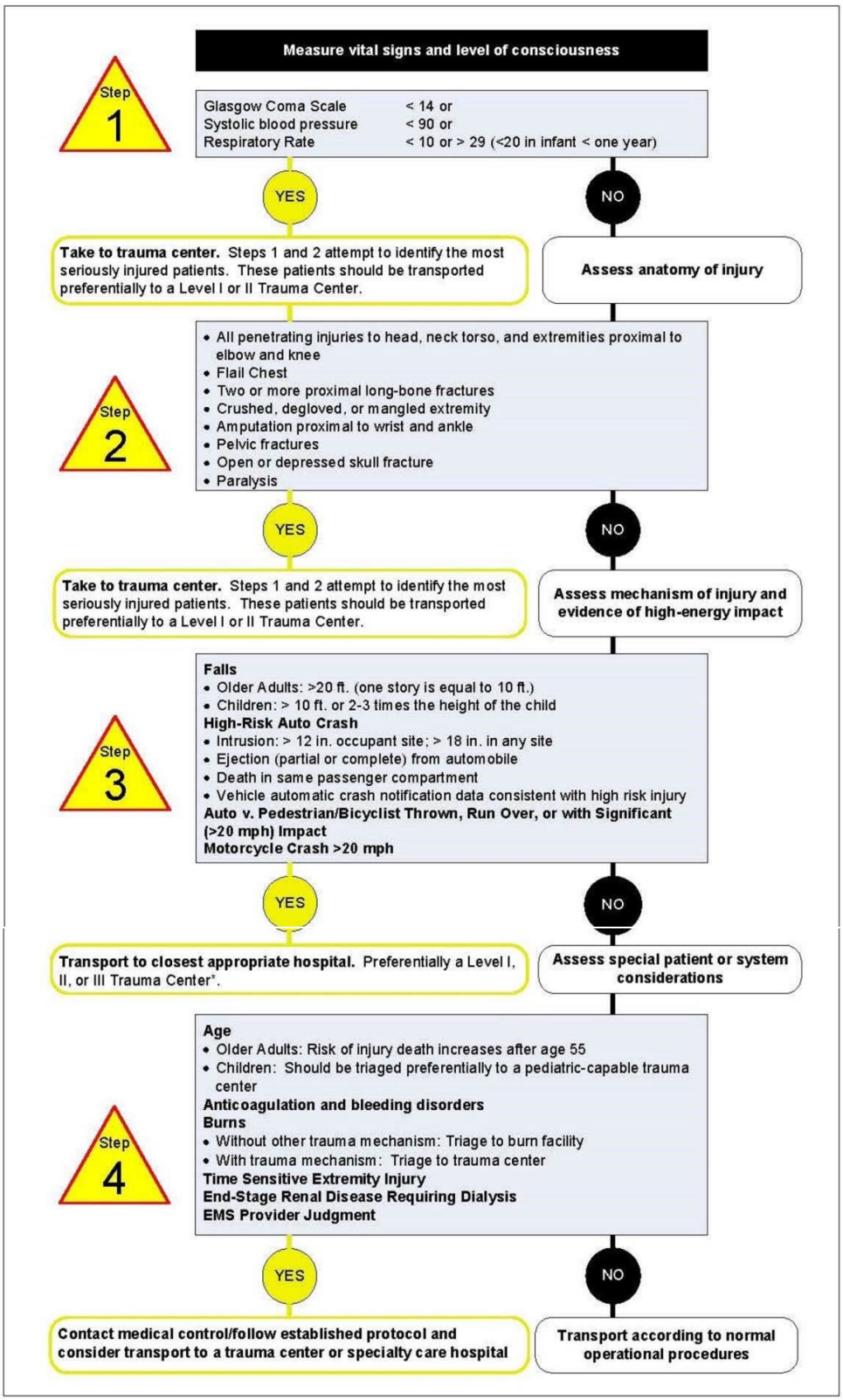
EMS patient data is extracted from patient medical records submitted by EMS agencies to the Virginia Pre-Hospital Information Bridge (VPHIB) program (Elite v3) maintained within the Virginia Department of Health's (VDH) Office of Emergency Medical Services (OEMS). Data summarized in this report represent EMS responses that occurred during the second quarter of 2022 (April through June) and were entered into ESO as of 11/15/2022. VPHIB v3 data are based on the National EMS Information System (NEMSIS) standards.

This report includes all EMS responses categorized as trauma incidents using the following guidelines (Table 1).

Table 1. Definition of Trauma Patients within VPHIB version 3

Type of Service Requested	
911 Response (Scene)	
Incident/Patient Disposition	
Patient Treated, Transported by this EMS unit	
Situation Provider Primary Impression (ICD-10-CM)	
• S00-S09 (Injuries to the head) • S10-S19 (Injuries to the neck) • S20-S29 (Injuries to the thorax) • S30-S39 (Injuries to the abdomen, lower back, lumbar spine, pelvis, and external genitals) • S40-S49 (Injuries to the shoulder and upper arm) • S50-S59 (Injuries to the elbow and forearm) • S60-S69 (Injuries to the wrist, hand, and fingers) • S70-S79 (Injuries to the hip and thigh) • S80-S89 (Injuries to the knee and lower leg) • S90-S99 (Injuries to the ankle and foot) • T07 (Injuries involving multiple body regions) • T14 (Injury of unspecified body region) • T20-T25 (Burns and corrosions of external body surfaces, specified by site) • T26-T28 (Burns and corrosions confined to eye and internal organs) • T30-T32 (Burns and corrosions of multiple and unspecified body regions) • T75.0 (Effects of lightning) • T75.4 (Electrocution) (With 7th digit character modifier of A, B, or C; D through S are excluded)	*Excluding:* • *S00 (Superficial injuries of the head)* • *S10 (Superficial injuries of the neck)* • *S20 (Superficial injuries of the thorax)* • *S30 (Superficial injuries of the abdomen, pelvis, lower back and external genitals)* • *S40 (Superficial injuries of shoulder and upper arm)* • *S50 (Superficial injuries of elbow and forearm)* • *S60 (Superficial injuries of wrist, hand, and fingers)* • *S70 (Superficial injuries of hip and thigh)* • *S80 (Superficial injuries of knee and lower leg)* • *S90 (Superficial injuries of ankle, foot, and toes)*

Figure 1. Virginia Field Trauma Triage Decision Scheme



Virginia Trauma Summary, Second Quarter, 2022

EMS agencies in Virginia responded to a total of 384,985 EMS calls; of that total, 244,045 (63.4%) patients had a disposition of treated and transported by the unit, 49,331 (12.8%) had a disposition of canceled, 29,573 (7.7%) patients had a disposition of EMS assist, 6,301 (1.6%) patients had a disposition of treated and transferred care to another unit, 3,693 (1.0%) patients were documented as dead at the scene, and 52,042 (13.5%) patients had some other incident disposition (e.g., patient treated and released AMA, patient treated and transported by private vehicle, etc.). Out of the total EMS calls, **22,807** (**5.9%**) incidents were classified as trauma incidents. The Northern Virginia EMS Council had the highest number of trauma calls (5,348; 23.5%), followed by the Old Dominion EMS Alliance (4,405; 19.3%). Trauma incident numbers for the quarter, broken down by month and Regional EMS Council, are shown in Figure 2. Tables 2-4 summarize the body regions most frequently affected by trauma, the top 10 hospitals receiving trauma transports, and vital signs data quality for trauma incidents.

Figure 2. Monthly Trauma Incidents by Regional EMS Council, Second Quarter, 2022, Virginia

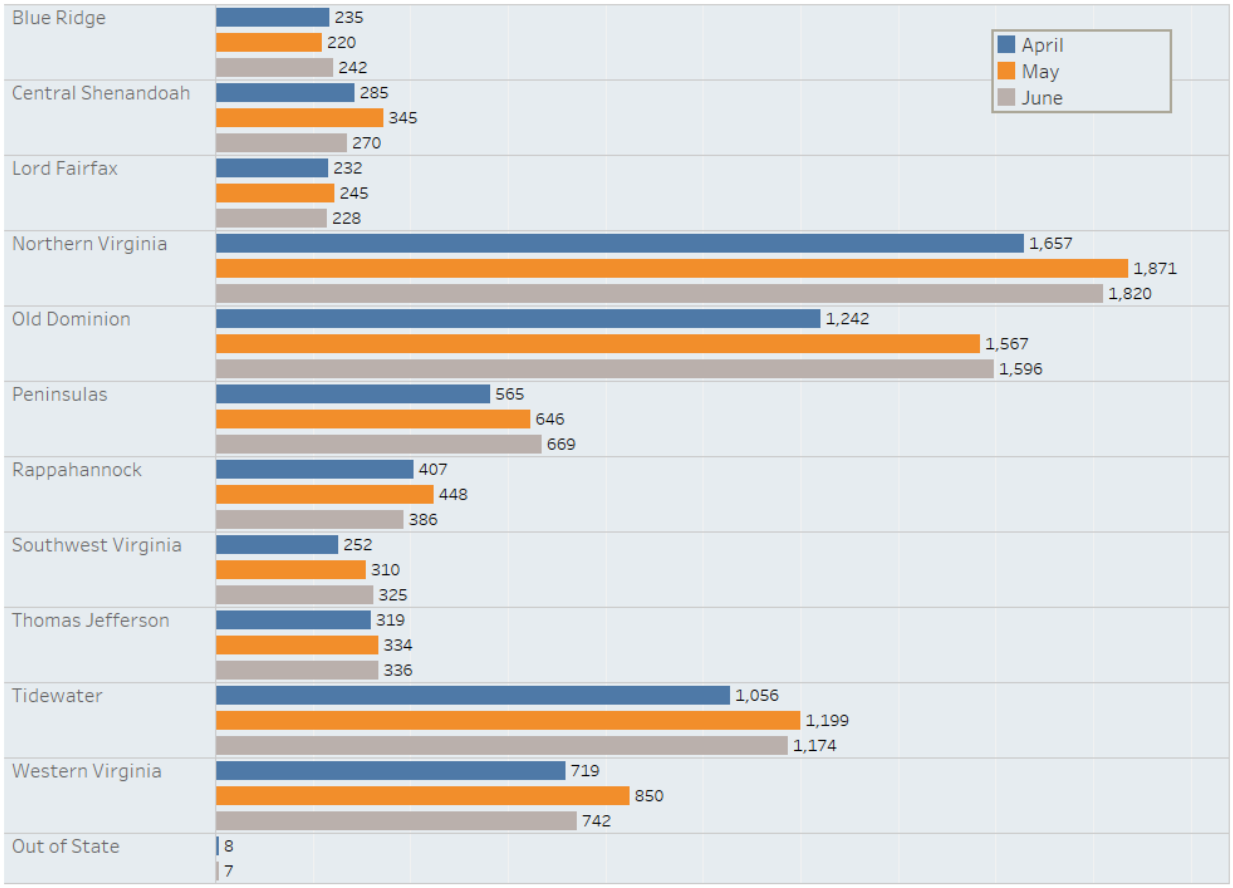


Table 2. Trauma Incidents by Abbreviated Injury Scale (AIS) Body Region, Second Quarter 2022, Virginia

Body Region	Counts of Incidents
Head	4,564 (20.0%)
Face	1,616 (7.1%)
Neck	907 (4.0%)
Thorax	511 (2.2%)
Abdomen	434 (1.9%)
Spine	1,222 (5.4%)
Upper Extremity	3,357 (14.7%)
Lower Extremity	5,029 (22.1%)
Unspecified	5,063 (22.2%)
Multiple Injuries	104 (0.5%)

Table 3: Top Ten Hospital Destinations for Trauma Incidents, Second Quarter 2022, Virginia

Destination Hospital For Trauma Incidents	Counts of Incidents
Inova Fairfax Hospital	1,514 (6.6%)
Sentara Norfolk General Hospital	933 (4.1%)
Carilion Roanoke Memorial Hospital	928 (4.1%)
Riverside Regional Medical Center	872 (3.8%)
VCU Health Systems	777 (3.4%)
UVA Health System	701 (3.1%)
MWHC Mary Washington Hospital	687 (3.0%)
Senara Northern Virginia Medical Center	589 (2.6%)
Sentara Virginia Beach General Hospital	568 (2.5%)
HCA Chippenham Hospital	532 (2.3%)

Table 4. Vital Signs Data Quality for Trauma Incidents, Second Quarter 2022, Virginia

Vital Signs Data Quality	Counts of Incidents
Total Number of Trauma Incidents	22,807
Patients with All 3 Vital Signs Reported	22,090 (96.9%)
Patients with Incomplete* Vital Signs	717 (3.1%)
Patients with Systolic Blood Pressure Reported	22,713 (99.6%)
Patients with Respiratory Rate Reported	22,483 (98.6%)
Patients with Glasgow Coma Score Reported	22,430 (98.3%)

*Incomplete vital signs are missing one or more of the vital signs required in Step 1 of the Trauma Triage algorithm (e.g., Systolic Blood Pressure, Respiratory Rate, or Glasgow Coma Score).

Trauma Incidents Meeting Virginia Trauma Triage Criteria

- Of the 22,807 trauma incidents reported by EMS during the second quarter of 2022, 1,773 (7.8%) met Trauma Triage Step 1 criteria, 463 (2.0%) met Step 2 criteria, and 512 (2.2%) met Step 3 criteria. Incidents can meet criteria for more than one step; those incidents were classified into the highest severity level met. For example, if an incident met both Step 1 and Step 2 criteria, it was counted as a Step 1 incident.
- Among the incidents meeting Step 1 criteria, 1,529 (86.2%) were classified as meeting Step 1 based on reported vital signs (see Appendix 1). The remaining 244 (13.8%) incidents were classified as meeting Step 1 based on the provider's impression, as reported in the "Trauma Center Criteria" field in the patient care report.
- Incidents meeting Step 2 and Step 3 were based solely on the "Trauma Center Criteria" and "Vehicular, Pedestrian, or Other Injury Risk Factor" fields.

Pediatric Patients (Age < 15)

Trauma patients <15 years old are considered pediatric patients per trauma triage criteria. Of the 22,807 trauma incidents reported by EMS during the second quarter of 2022, 1,326 (5.8%) occurred among pediatric patients. Of the 1,773 Virginia trauma incidents meeting Step 1 trauma criteria, 182 (10.3%) occurred among pediatric patients (further details are shown below).

Table 5. Hospital Destination Type for Pediatric Patients Meeting Step 1 Criteria by Regional EMS Council, Second Quarter 2022, Virginia

Regional EMS Council	Met Step 1	Trauma Hospital				Non-Trauma Hospital
		Level I	Level II	Level III	Pediatric Trauma Center	
Blue Ridge	7	0	2	0	3	2
Central Shenandoah	6	0	0	0	0	6
Lord Fairfax	6	0	3	0	0	3
Northern	56	30	5	7	3	11
Old Dominion	32	5	2	2	16	7
Peninsulas	10	0	2	0	5	3
Rappahannock	10	0	4	0	2	4
Southwest	5	3	0	0	0	2
Thomas Jefferson	7	7	0	0	0	0
Tidewater	28	2	1	0	15	10
Western	15	1	0	1	8	5
Out of State	0	0	0	0	0	0
Grand Total	182	48 (26.4%)	19 (10.4%)	10 (5.5%)	52 (28.6%)	53 (29.1%)

- There were 63 incidents involving pediatric patients that met Step 1 trauma criteria that were taken to a Level III trauma center or lower designation.
- Among the 463 incidents meeting Step 2 criteria during the second quarter of 2022, 23 (5.0%) occurred among pediatric patients. Thirteen (56.5%) were taken to a pediatric trauma center, 5 (21.7%) were taken to a Level I trauma center, 1 (4.3%) was taken to a Level II trauma center, 3 (13.0%) were taken to a Level III trauma center, and 1 (4.3%) was taken to a non-trauma designated hospital.
- Of the 512 incidents that met Step 3 criteria during the second quarter of 2022, 47 (9.2%) occurred among pediatric patients. Seventeen (36.2%) were taken to a pediatric trauma center, 13 (27.7%) were taken to a Level I trauma center, 5 (10.6%) were taken to a Level II trauma center, 9 (19.1%) were taken to a Level III trauma center, and 3 (6.4%) were taken to non-trauma designated hospitals.
- There were 159 pediatric patients who received a medication other than oxygen. Of those, 112 (70.4%) patients had a weight recorded.

Geriatric Patients (Age ≥ 65)

There were 9,778 (42.9% of total trauma incidents) reports of trauma among geriatric patients during the second quarter of 2022. Of the 1,773 Virginia trauma incidents meeting Step 1 trauma criteria, 653 (36.8%) occurred among geriatric patients (further details are shown below).

Table 6. Hospital Destination Type for Geriatric Patients Meeting Step 1 Criteria by Regional EMS Council, Second Quarter 2022, Virginia

Regional EMS Council	Met Step 1	Trauma Hospital			Non-Trauma Hospital
		Level I	Level II	Level III	
Blue Ridge	27	4	18	0	5
Central Shenandoah	30	0	0	0	30
Lord Fairfax	23	0	7	0	16
Northern	139	64	29	25	21
Old Dominion	119	27	17	10	65
Peninsulas	55	0	21	0	34
Rappahannock	33	1	23	0	9
Southwest	26	1	4	1	20
Thomas Jefferson	27	19	0	0	8
Tidewater	79	14	2	19	44
Western	95	40	0	12	43
Out of State	0	0	0	0	0
Grand Total	653	170 (26.0%)	121 (18.5%)	67 (10.3%)	295 (45.2%)

- There were 362 incidents involving geriatric patients who met Step 1 trauma criteria who were taken to a Level III trauma center or lower designation.
- Of the 295 geriatric patients who met Step 1 criteria and were taken to non-trauma designated hospitals, 33 (11.2%) had an EMS provider primary impression of an isolated hip injury.
- Among the 463 incidents meeting Step 2 criteria during the second quarter of 2022, 81 (17.5%) occurred among geriatric patients. Of those, 39 (48.1.%) patients were taken to a Level I trauma center, 11 (13.6%) were taken to a Level II trauma center, 10 (12.3%) were taken to a Level III trauma center, and 21 (25.9%) were taken to non-trauma designated hospitals.
- Of the 512 incidents that met Step 3 criteria during the second quarter of 2022, 73 (14.3%) occurred among geriatric patients. Eighteen (24.7%) patients were taken to a Level I trauma center, 9 (12.3%) were taken to a Level II trauma center, 16 (21.9%) were taken to a Level III trauma center, and 30 (41.1%) were taken to non-trauma designated hospitals.

Adult Patients (15 ≥ Age < 65)

The majority of the 22,807 trauma cases that occurred during the second quarter of 2022 were among adult patients (n=11,689 , 51.3% of all trauma incidents). Of the 1,773 Virginia trauma incidents meeting Step 1 trauma criteria, 928 (52.3%) occurred among adult patients. The hospital destination type for adult trauma incidents meeting Step 1 criteria is shown below by Regional EMS Council (Table 7).

Table 7. Hospital Destination Type for Adult Patients Meeting Step 1 Criteria by Regional EMS Council, Second Quarter 2022, Virginia

Regional EMS Council	Met Step 1	Trauma Hospital			Non-Trauma Hospital
		Level I	Level II	Level III	
Blue Ridge	20	7	12	0	1
Central Shenandoah	22	0	0	0	22
Lord Fairfax	18	0	12	0	6
Northern	231	120	57	22	32
Old Dominion	211	117	22	33	39
Peninsulas	71	3	48	0	20
Rappahannock	41	6	29	0	6
Southwest	23	5	3	1	14
Thomas Jefferson	42	34	1	0	7
Tidewater	142	68	2	42	30
Western	107	57	0	17	33
Out of State	0	0	0	0	0
Grand Total	928	417 (44.9%)	186 (20.0%)	115 (12.4%)	210 (22.6%)

- There were 325 incidents involving adult patients who met Step 1 trauma criteria who were taken to a Level III trauma center or lower designation.

- Among the 463 incidents meeting Step 2 criteria during the second quarter of 2022, 359 (77.5%) occurred among adult patients. Of those, 240 (66.9%) patients were taken to a Level I trauma center, 50 (13.9%) patients were taken to a Level II trauma center, 24 (6.7%) were taken to a Level III trauma center, and 45 (12.5%) patients were taken to non-trauma designated hospitals.
- Among the 512 incidents meeting Step 3 criteria during the second quarter of 2022, 392 (76.6%) occurred among adult patients. Of those, 188 (48.0%) were taken to a Level I trauma center, 82 (20.9%) patients were taken to a Level II trauma center, 60 (15.3%) were taken to a Level III trauma center, and 62 (15.8%) patients were taken to non-trauma designated hospitals.

Air-Medical EMS Transport

There were 362 trauma patient transports by an air-medical ambulance during the second quarter of 2022. Of those:

- Thirty-four (9.4%) were pediatric transports, of which:
  - Nineteen (55.9%) were taken to a Level I trauma center and 15 (44.1%) were taken to a pediatric trauma center.
- Sixty-four (17.7%) were geriatric transports, of which:
  - Fifty-seven (89.1%) were taken to a Level I trauma center, 6 (9.4%) were taken to a Level II trauma center, and 1 (1.6%) were taken to a non-trauma designated hospital.
- Two-hundred and sixty-three (72.7%) were adult transports, of which:
  - Two hundred and forty-eight (94.3%) were taken to a Level I trauma center, 9 (3.4%) were taken to a Level II trauma center, 1 (0.4%) were taken to a Level III trauma center, and 5 (1.9%) were taken to a non-trauma designated hospital.
- One trauma patient (0.3%) transported by air medical were of unknown age and was taken to a Level I trauma center.

Causes of Injury

Trauma patient records were analyzed to identify the causes of injuries in the Commonwealth of Virginia. Fall injuries occurred most commonly, followed by motor vehicle collision injuries. Causes of injury for the second quarter of 2022 are shown in Table 8.

Table 8. Frequencies and Percentages of Causes of Injury, Second Quarter 2022, Virginia

Causes of Injury	Frequency	Percentage of the Total
Falls, slips/trips	9,541	41.8%
MVC-related	4,715	20.7%
Blunt force trauma	1,010	4.4%
Penetrating trauma	614	2.7%
Firearm	299	1.3%
Non-motorized transport	262	1.1%
Machine-related	230	1.0%
Animal-related	163	0.7%
Burn, smoke inhalation, electrocution, explosion	125	0.5%
Self-harm	53	0.2%

Table 8. Frequencies and Percentages of Causes of Injury, Second Quarter 2022, Virginia (continued)

Causes of Injury	Frequency	Percentage of the Total
Recreational	42	0.2%
Abuse	23	0.1%
Poisoning	22	0.1%
Asphyxiation	14	0.1%
Human bite	10	<0.1%
Overexertion/strain	9	<0.1%
Environment/weather-related	8	<0.1%
Aircraft	3	<0.1%
Drowning	3	<0.1%
Unspecified	5,661	24.8%
Grand Total	22,807	100.0%

Under-Triage of Trauma Incidents

A trauma incident is considered to be under-triaged if the incident met Step 1 or Step 2 trauma triage criteria and the patient was taken to either a Level III trauma center or a non-trauma designated hospital, or if the incident met Step 3 trauma triage criteria and the patient was taken to a non-trauma designated hospital. Injuries to the head, arms, or legs occurred most often among the under-triaged incidents (Table 9).

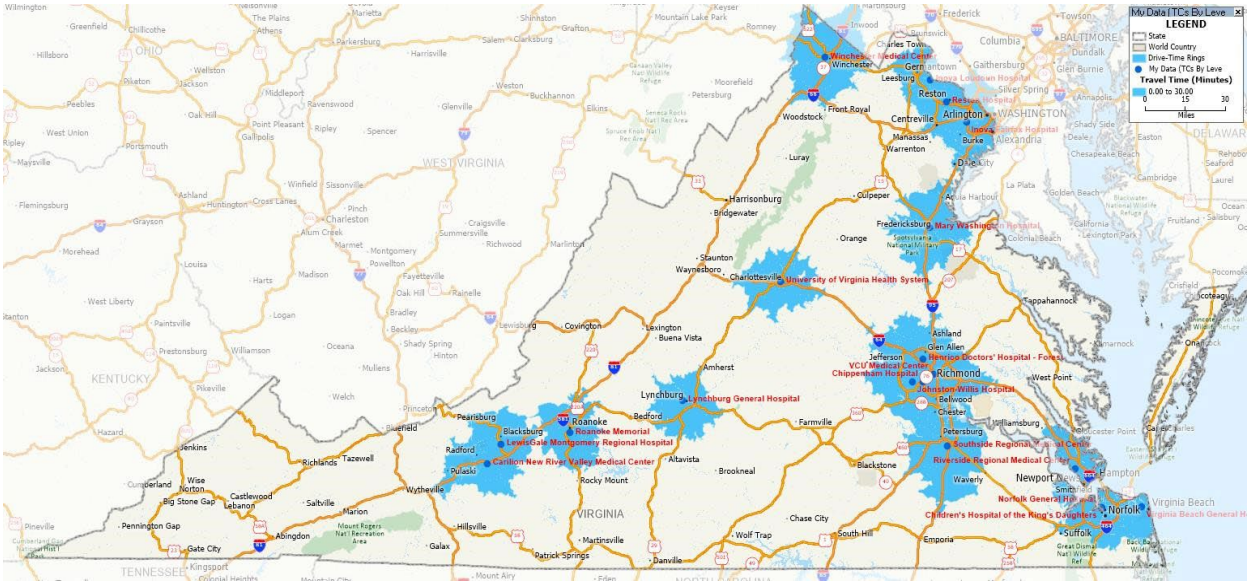
Table 9. Frequencies and Percentages of Under-Triaged Trauma Patients by AIS Body Region of Injury, Second Quarter 2022, Virginia

AIS Region	Frequency	Percentage among Under-Triaged Patients
Unspecified	278	29.2%
Head	234	24.6%
Lower Extremities	162	17.0%
Upper Extremities	102	10.7%
Face	77	8.1%
Spine	23	2.4%
Abdomen	22	2.3%
Thorax	22	2.3%
Neck	16	1.7%
Multiple	15	1.6%
Grand Total	951	100%

Distribution of Trauma Facilities across Virginia

Trauma centers across Virginia are not uniformly distributed. The upper part of the Northern Virginia EMS Council and parts of Central Virginia (e.g., the greater Richmond area) have greater access to trauma centers, as multiple trauma centers are located within close proximity. Most parts of the Old Dominion EMS Alliance, Central Shenandoah EMS Council, and Western Virginia EMS Council have very limited access to trauma centers. The Central Shenandoah EMS Council and Southwest Virginia EMS Council have no trauma centers within their EMS regions, but are reasonably close to Level II trauma centers in other EMS regions or states. The distribution of trauma centers across Virginia, surrounded by rings showing the geographical areas within a 30-minute drive of each trauma center, is shown below (Figure 4). This map displays which parts of Virginia have limited access to a trauma center.

Figure 3. Trauma Centers across Virginia, Surrounded by 30-Minute Drive Time Rings



Data Quality

Virginia EMS agencies have been working very hard to make sure they provide optimal care to their patients while also making efforts to improve data quality. Over the past years, there has been a significant improvement in trauma triage data quality. Continuation of this improvement is what the System Improvement Committee expects. The OEMS conducted quality assurance checks on trauma triage records from the second quarter of 2022, as described below.

- **Blank Vital Signs** (i.e., no numerical value and no pertinent negative reported): There were a total of 94 trauma incidents without systolic blood pressure documented, 324 trauma incidents without respiratory rate documented, and 377 trauma incidents without GCS documented. In some cases, vitals are unable to be obtained due to patient refusal or because the patient is a child. Such cases should be documented as Pertinent Negatives (e.g., “Refused” or “Unable to Complete”). Leaving the vital sign field blank and reporting such cases only in the patient care narrative will result in the vital sign being identified as missing.

- **Atypical Vital Signs:** Atypical vital signs are vitals with extreme values. The cutoff values for vitals to be considered atypical are chosen arbitrarily only for quality check and validation purposes. For this report, systolic blood pressures with values of less than 40 or greater than 250 and respiratory rates of less than 3 or greater than 100 were deemed extreme values. There were 20 instances of extreme systolic blood pressures and 32 instances of extreme respiratory rates, totaling 52 instances of extreme values.
- **Blank Trauma Triage Criteria:** There were 19,833 trauma incidents where the "Trauma Center Criteria" field and the "Vehicular, Pedestrian, or Other Injury Risk Factor" fields were both blank. It is understandable that not all trauma incidents meet trauma triage criteria; however, some of these records are incorrectly classified or do not report important information.
    - Of those incidents, 976 (4.9%) had recorded vitals meeting Step 1 trauma triage criteria.
    - Step 2 and Step 3 trauma incidents may also be missing trauma triage criteria and therefore may also be incorrectly classified. However, Steps 2 and 3 trauma triage criteria are not based on vital signs, so the exact amount of misclassification cannot be identified.
- **Blank Age**
    - There were eight trauma incident records where age or age units was left blank; quality assurance of the records showed that one was a pediatric patient and one was an adult patient. An additional eight patients were identified to have an unknown age during quality assurance of patient records.
        - Of the 14 incidents where patient age was unknown, 10 met Step 1 trauma triage criteria. The remaining four did not meet trauma triage criteria. Two of the Step 1 patients were taken to non-trauma centers and the other eight patients were appropriately triaged.
            - Of the remaining four incidents where patient age was unknown, the reported respiratory rate for three patients was between 10 and 20. Patients less than 1 year of age with a respiratory rate between 10 and 20 meet Step 1 criteria. However, these patients could not be classified as Step 1 because their age was unknown.

Conclusions

Many factors influence the decision regarding where a patient is transported. As noted above, trauma centers are not equally distributed across Virginia. In some areas (Southwest Virginia and Northern Virginia), out of state trauma center resources are available. Despite having a total of 12 Level I and Level II trauma centers (combined) in Virginia, as well as access to several other similar facilities in surrounding states, large areas of Virginia remain underserved. The variability of resources across Virginia is often compounded by geographic and (especially in the case of Helicopter or Medevac EMS) weather factors. Although a solution to this problem is beyond the scope of this report, this variability needs to be considered when comparing the outcomes of pre-hospital trauma patients in Virginia.

Missing vital signs data in EMS records continues to be an area of focus for performance improvement efforts. Currently, about one out of every 32 patients (3.1%) have incomplete vital signs data. During the second quarter of 2022, 31.6% of patients who met Step 1 trauma triage criteria and 14.5% of patients who met Step 2 criteria were taken to non-trauma centers. Acknowledging these data,

there may be a need to re-examine how trauma triage criteria are being applied in the field, with an eye towards the existing barriers to trauma center access, including the absence of trauma centers in broad swaths of Virginia. Whether the addition of trauma resources center would allow for improved access and care requires further study.

OEMS staff performed quality assurance on trauma triage data from the second quarter of 2022. Specifically, the data values that were reviewed included the vital signs used in Step 1 trauma triage criteria designation, atypical vital sign values, and trauma triage criteria fields listed as not applicable, not recorded, or blank. OEMS will continue to perform these data quality checks and will summarize findings for inclusion in future trauma triage reports.

Appendix 1: Elite v3 Data Dictionary Elements for Trauma Triage Vital Signs and Trauma Triage Criteria

eVitals.06 - SBP (Systolic Blood Pressure)

Definition

The patient's systolic blood pressure.

National Element	Yes	Pertinent Negatives (PN)	Yes
State Element	Yes	NOT Values	Yes
Version 2 Element	E14_04	Is Nillable	Yes
Usage	Required	Recurrence	1 : 1

Associated Performance Measure Initiatives

Airway Cardiac Arrest Pediatric STEMI Stroke Trauma

Attributes

NOT Values (NV)
7701001 - Not Applicable 7701003 - Not Recorded

Pertinent Negatives (PN)
8801005 - Exam Finding Not Present 8801019 - Refused 8801023 - Unable to Complete

Constraints

Data Type	minInclusive	maxInclusive
integer	0	500

Data Element Comment

Required for ACS-Field Triage and other patient scoring systems.

eVitals.14 - Respiratory Rate

Definition

The patient's respiratory rate expressed as a number per minute.

National Element	Yes	Pertinent Negatives (PN)	Yes
State Element	Yes	NOT Values	Yes
Version 2 Element	E14_11	Is Nillable	Yes
Usage	Required	Recurrence	1 : 1

Associated Performance Measure Initiatives

Airway Cardiac Arrest Pediatric STEMI Stroke Trauma

Attributes

NOT Values (NV)
7701001 - Not Applicable 7701003 - Not Recorded

Pertinent Negatives (PN)
8801005 - Exam Finding Not Present 8801019 - Refused 8801023 - Unable to Complete

Constraints

Data Type	minInclusive	maxInclusive
integer	0	300

Data Element Comment

eVitals.23 - Total Glasgow Coma Score

Definition

The patient's total Glasgow Coma Score.

National Element	No	Pertinent Negatives (PN)	Yes
State Element	Yes	NOT Values	Yes
Version 2 Element	E14_19	Is Nillable	Yes
Usage	Required	Recurrence	1 : 1

Associated Performance Measure Initiatives

Airway Cardiac Arrest Pediatric STEMI Stroke Trauma

Attributes

NOT Values (NV)

7701001 - Not Applicable 7701003 - Not Recorded 7701005 - Not Reporting

Pertinent Negatives (PN)

8801019 - Refused 8801023 - Unable to Complete

Constraints

Data Type	minInclusive	maxInclusive
integer	3	15

Data Element Comment

Can be documented or calculated from EVitals.19 (GCS-Eye), EVitals.20 (GCS-Verbal), and EVitals.21 (GCS-Motor).

eInjury.03 - Trauma Center Criteria

Definition

Physiologic and Anatomic Field Trauma Triage Criteria (steps 1 and 2) as defined by the Centers for Disease Control.

National Element	Yes	Pertinent Negatives (PN)	No
State Element	Yes	NOT Values	Yes
Version 2 Element		Is Nillable	Yes
Usage	Required	Recurrence	1 : M

Associated Performance Measure Initiatives

Trauma

Attributes

NOT Values (NV)
7701001 - Not Applicable 7701003 - Not Recorded

CorrelationID
Data Type: string **minLength:** 0 **maxLength:** 255

Code List

Code	Description
2903001	Amputation proximal to wrist or ankle
2903003	Crushed, degloved, mangled, or pulseless extremity
2903005	Chest wall instability or deformity (e.g., flail chest)
2903007	Glasgow Coma Score <= 13
2903009	Open or depressed skull fracture
2903011	Paralysis
2903013	Pelvic fractures
2903015	All penetrating injuries to head, neck, torso, and extremities proximal to elbow or knee
2903017	Respiratory Rate <10 or >29 breaths per minute (<20 in infants aged <1 year) or need for ventilatory support
2903019	Systolic Blood Pressure <90 mmHg
2903021	Two or more proximal long-bone fractures

Data Element Comment

2011 Guidelines for the Field Triage of Injured Patients - value choices for Steps 1 and 2. For falls, one story is equal to 10 feet.

Code 7701001 - Not Applicable should be used when none of the values listed in the code list for element eInjury.03 apply.

Version 3 Changes Implemented

Added to better evaluate the CDC-ACS 2011 Guidelines for the Field Triage of Injured Patients.
Website: http://www.cdc.gov/FieldTriage/