



**TEXAS**  
Health and Human  
Services

**Texas Department of State  
Health Services**

# Texas EMS and Trauma Registries Data Quality Series Part 1

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Presenters:

Gavin Sussman, EMSTR Program Manager

Judy Whitfield, Registry Operations Support Team Lead

Holly Hornsby, Registry Operations Support

Kiana Perez, Data Analyst

[injury.web@dshs.texas.gov](mailto:injury.web@dshs.texas.gov)

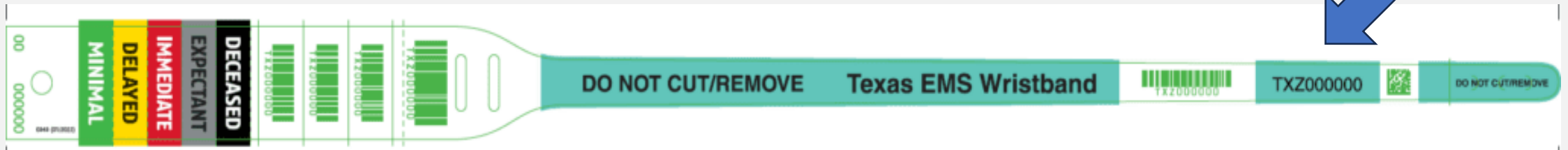
# Trauma (Acute Injury)



# Trauma / Acute Injury Topics

- Emergency Medical Services (EMS) Patient Wristband Initiative
- Abbreviated Injury Scale (AIS)
- Injury Severity Score (ISS) Scoring
- Glasgow Coma Scale Documentation
- Trauma Quality Improvement Program (TQIP) Performance Metrics
- Duplicate Patients Explained
- Helpful Resources
- Questions

# EMS Patient Wristband (For the Trauma Registrar)



Texas EMS Wristband information:

- You will record the patient's Texas EMS Wristband Number (i.e., TXZ000000) in your **State\_Trauma\_Number** field.
- This is a Texas custom element that was made available in November 2023.
- The wristband provides opportunities for data linkage between the continuum of prehospital and definitive care.

## NOTE:

Please include the Alpha Character (i.e., TX**A**123456) in your Trauma Registry Record.

- Alpha characters are manufacturer specific.
- Please contact your Regional Advisory Council (RAC) for questions on Texas EMS Wristband procurement.

# Abbreviated Injury Scoring (AIS)

The Abbreviated Injury Scale (AIS) is a practical data quality measure to rank injuries by severity and is used to assess the Injury Severity Score (ISS) of a trauma patient.

- **Each injury** notated in the Patient Care Report will have a single severity score listed according to anatomical injury and not long term affects/consequences.
- Acceptable versions: AIS 05, Update 08, and AIS 15.
- The AIS code is a numerical 7-digit unique identifier.
- The AIS Element **cannot be**:
  1. Blank.
  2. Not Applicable.
  3. Not Known / Not Recorded along with any other value.

Please review the [AIS Coding dictionary](#) for more information.

The screenshot shows a web interface for a patient record. At the top, a green navigation bar contains the text "Welcome, Luke Skywalker" and links for "Home | Create Record | Search | Upload | Entity | Reports". Below this, a red warning message states "Fictional patient used for demonstration purposes only." The main heading is "Injury Severity Information - Charlie Brown - Patient Record - Hospital". The form contains several fields: "\*AIS Version" is a dropdown menu set to "AIS 15"; "AIS Code - Direct Entry" is an empty text input field; "\*AIS Body Region" is a dropdown menu set to "Please Select" with a "+ Add New" button next to it. Below these, there is a section for "\*AIS Body Region:" with a dropdown set to "Head", "\*AIS Specific Structure:" with a dropdown set to "12 - Head, Vessels", and "\*AIS code:" with a text input field containing "120802.4 - Cavernous sinu", which is circled in red. At the bottom of this section is a "Delete AIS Code Information" button.

# Injury Severity Scoring (1 of 2)

- The (ISS) is a frequently used, integral part of trauma injury assessment.
- The ISS score is the sum of the squares of the three most severely injured body regions.



**$A^2 + B^2 + C^2 = ISS$  (where A, B, and C indicate different body regions).**

- ISS Scores can range between **1-75**.
- The EMSTR system is designed to help the user calculate the correct ISS code automatically within the (direct-entry) **Trauma Patient Record**.

**Injury Severity Information - Charlie Brown - Patient Record - Hospital**

\*AIS Version: AIS 15

AIS Code - Direct Entry:

\*AIS Body Region: Please Select

\*AIS Body Region: Head  \*AIS code: 120802.4 - Cavernous sinu

\*AIS Specific Structure: 12 - Head, Vessels

\*AIS Body Region: Neck  \*AIS code: 320208.3 - Carotid artery [

\*AIS Specific Structure: 32 - Neck, Vessels

\*AIS Body Region: Lower Extremity  \*AIS code: 821204.1 - Other named vi

\*AIS Specific Structure: 82 - Lower Extremity, Vess

\*Locally Calculated ISS: 26

Mechanism of injury: Motor Vehicle Motorcycli

Injury type: Other

\*Indicates required field

Fictional patient used for demonstration purposes only.

# Injury Severity Scoring (2 of 2)

**Limitations:** There are six body regions used to calculate the ISS: 'Head/Neck', 'Face', 'Chest', 'Abdominal or Pelvic Contents', 'Extremities of Pelvic Girdle', and 'External Injuries'.

## Additional Considerations:

- Registrars can only use the three most severely injured body regions to calculate the ISS score.
- If multiple injury codes are listed for the same body region, you can only use the highest Post Dot\* code.

\*Post Dot: In the format 123456.7 – Comprised of *Body Region (1)*, *Structure (2)*, *Structure type (3-4)*, *Injury Level (5-6)*, and the *Severity Score (7)*.

Please review the [AIS dictionary](#) for more information.

**Injury Severity Information - Charlie Brown - Patient Record - Hospital**

\*AIS Version: AIS 15

AIS Code - Direct Entry:

\*AIS Body Region: Please Select

\*AIS Body Region: Head  \*AIS code: 120802.4 - Cavernous sinu

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\*Locally Calculated ISS: 26

Mechanism of injury: Motor Vehicle Motorcycli

Injury type: Other

\*Indicates required field

Fictional patient used for demonstration purposes only.



# Glasgow Coma Scale (GCS)

- You can only record a unique response for the GCS-15 or the GCS-40.

**NOTE:** This includes the **Motor, Verbal, Eye,** and **Total** subsections.

- When you document the GCS-15 or the GCS-40, the other corresponding value(s) should be marked with **null** values.
- EMSTR will reject **blank responses** for either field per the National Trauma Data Standards (NTDS) / International Trauma Data Exchange (ITDX) 2023 Guidelines.
- Both GCS-15 and GCS-40 cannot be marked with null values. Recording the results of a GCS assessment is **mandatory** on every patient.
  - **Manual Entry** providers get a live validation process.
  - **File Upload** providers should review the Feedback Report.

# TQIP Measures for Processes of Care

You are required to document TQIP process improvement measures.

- This applies to trauma (acute injury) submitters of all designation levels.
- This includes general and free-standing hospitals.

Visit EMSTR – [Hospital Reporting Requirements](#) -> [2023 Resources](#) for additional detail on state-specific requirements.

## TQIP MEASURES FOR PROCESSES OF CARE

HIGHEST GCS-TOTAL .....  
HIGHEST GCS-MOTOR .....  
GCS ASSESSMENT QUALIFIER COMPONENT OF HIGHEST GCS TOTAL .....  
HIGHEST GCS-40 MOTOR .....  
INITIAL ED/HOSPITAL PUPILLARY RESPONSE .....  
MIDLINE SHIFT .....  
CEREBRAL MONITOR.....  
CEREBRAL MONITOR DATE .....  
CEREBRAL MONITOR TIME .....  
VENOUS THROMBOEMBOLISM PROPHYLAXIS TYPE .....  
VENOUS THROMBOEMBOLISM PROPHYLAXIS DATE .....  
VENOUS THROMBOEMBOLISM PROPHYLAXIS TIME .....  
PACKED RED BLOOD CELLS .....

WHOLE BLOOD.....  
PLASMA .....  
PLATELETS .....  
CRYOPRECIPITATE.....  
ANGIOGRAPHY.....  
EMBOLIZATION SITE .....  
ANGIOGRAPHY DATE.....  
ANGIOGRAPHY TIME .....  
SURGERY FOR HEMORRHAGE CONTROL TYPE.....  
SURGERY FOR HEMORRHAGE CONTROL DATE .....  
SURGERY FOR HEMORRHAGE CONTROL TIME .....  
WITHDRAWAL OF LIFE SUPPORTING TREATMENT.....  
WITHDRAWAL OF LIFE SUPPORTING TREATMENT DATE.....  
WITHDRAWAL OF LIFE SUPPORTING TREATMENT TIME .....  
ANTIBIOTIC THERAPY .....  
ANTIBIOTIC THERAPY DATE.....  
ANTIBIOTIC THERAPY TIME.....

# Duplicate Patient Records Explained

- The EMSTR system accepts records submitted in both NTDS 2020 and 2023 standards.
- This allows facilities to have flexibility in making vendor software transitions. We recommend you transition to the latest available version as soon as possible.
- If you submit a patient record twice in the **same** standard (i.e., NTDS 2023), EMSTR will de-duplicate and only count the most recent record.
- If you submit a patient record twice in **different** NTDS versions, they may appear **TWICE** in your State Health Analytics and Reports Platform (SHARP) reports.
- EMSTR staff manually de-duplicate between data standards once annually.

# Helpful Resources

- [Texas EMS and Trauma Registry](#)
  - [Hospital Requirements](#)
  - [EMSTR Webinars and Presentations](#)
  - [EMSTR \(New\) Platform Resources](#)

If you have questions or need to contact us, please email [injury.web@dshs.texas.gov](mailto:injury.web@dshs.texas.gov).

# Questions / Intermission

We will begin promptly at 10:30AM (CST) with EMS topics.

Please post your questions in the chat.

You may also email us at [injury.web@dshs.texas.gov](mailto:injury.web@dshs.texas.gov) if your questions are not addressed.

# EMS Registry



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# EMS Registry Topics

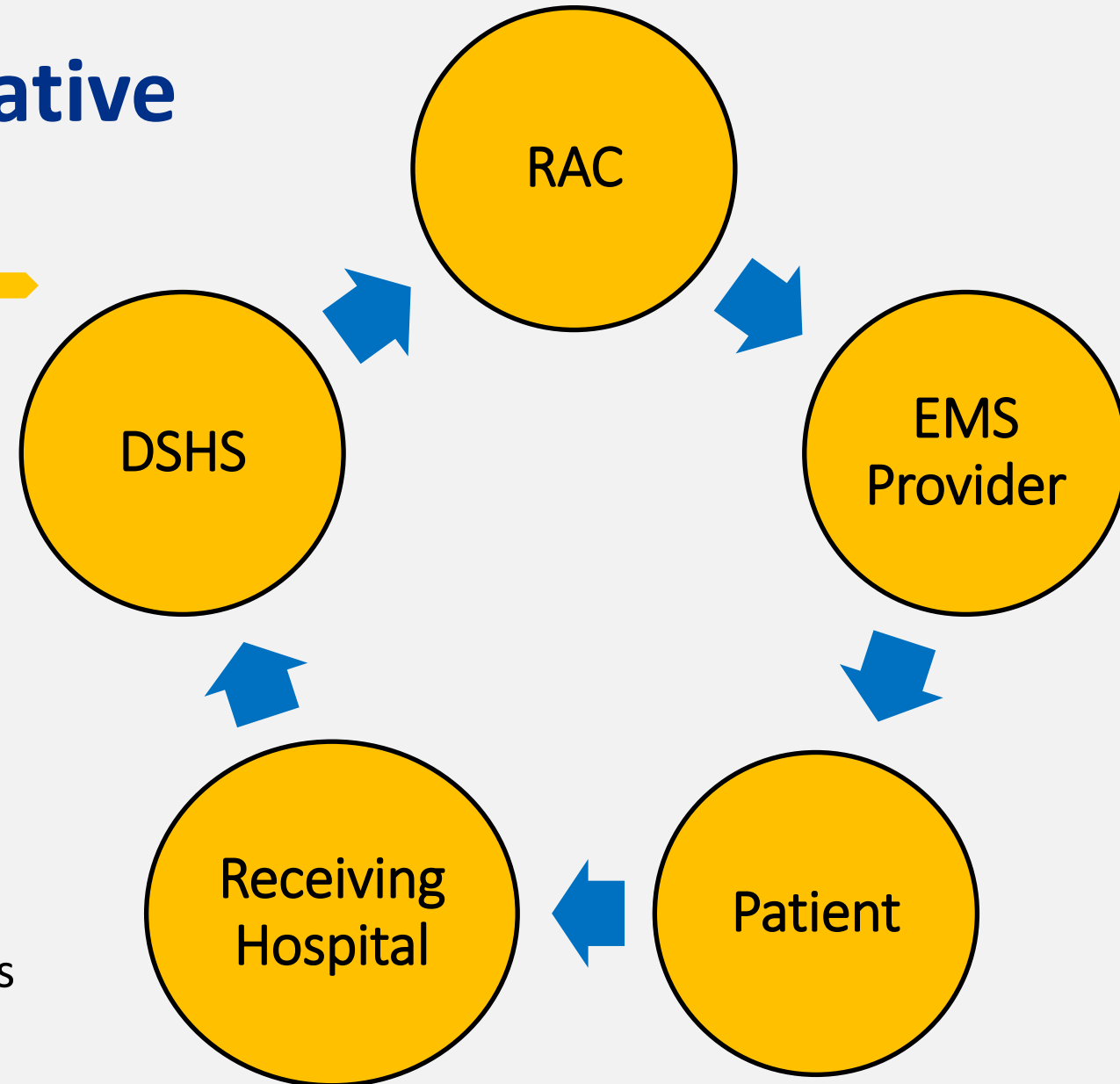
- EMS (Patient) Wristband Initiative
- Universal Unique Identifier
- Stroke Assessment and Assessment Type
- Stroke Severity Scores
- Whole Blood Administration
- Helpful Resources
- Question and Answer Time



# Texas EMS Wristband Initiative

## Linked Data and Triage Opportunities

- Your local Regional Advisory Council (RAC) distributes Texas EMS Wristbands to EMS providers.  
**NOTE:** Please contact your specific [RAC](#) with questions on procurement.
- The number is entered in [eOutcome.03](#) and [eOutcome.04](#).
  - Use external ID type “**other**”.
  - External ID Number (example) = **TXP123456**.
  - Some vendor’s software, including EMSTR’s manual entry system, may auto-populate the “**TX**”.





# Universal Unique Identifier Explained

- The National EMS Information System (NEMESIS) introduced Universal Unique Identifiers (UUIDs) with version 3.5.0.
- UUIDs are assigned to all data objects within an EMS agency's NEMESIS-Complaint Patient Care Record (PCR). Since each data object has an unchanging UUID assigned, it serves as a unique key for determining exactly which record to update.
  - UUIDs are generated by the EMS Agency's Vendor software or EMSTR.
  - UUIDs primarily exist within the agency's demographic data (locations, personnel vehicles etc.) but an UUID is also assigned to the individual PCR.
- UUIDs allow NEMESIS systems to successfully process data updates.

Accommodating Record Updates: EMS ➡ State ➡ NEMESIS

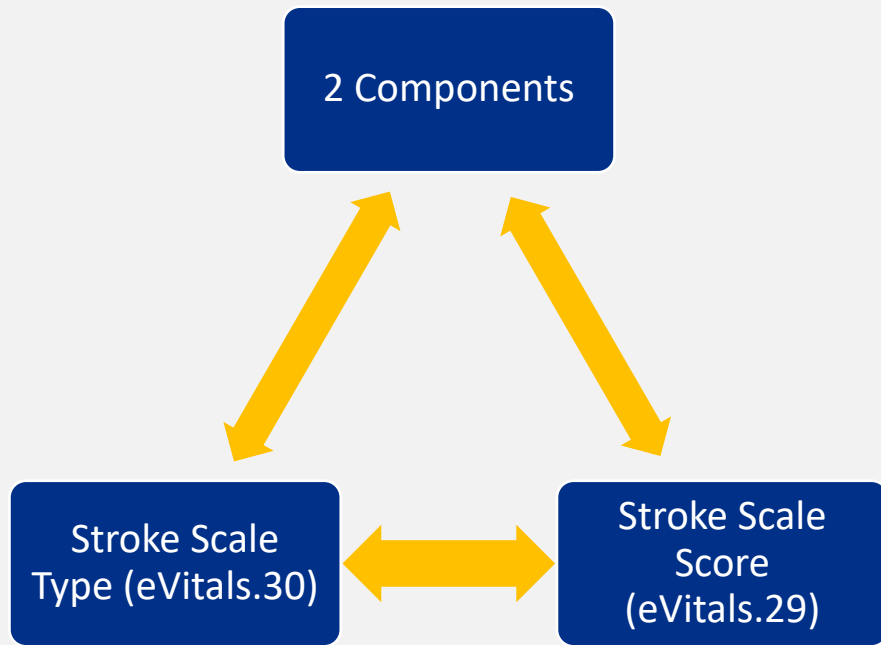


# UUID in Patient Care Records

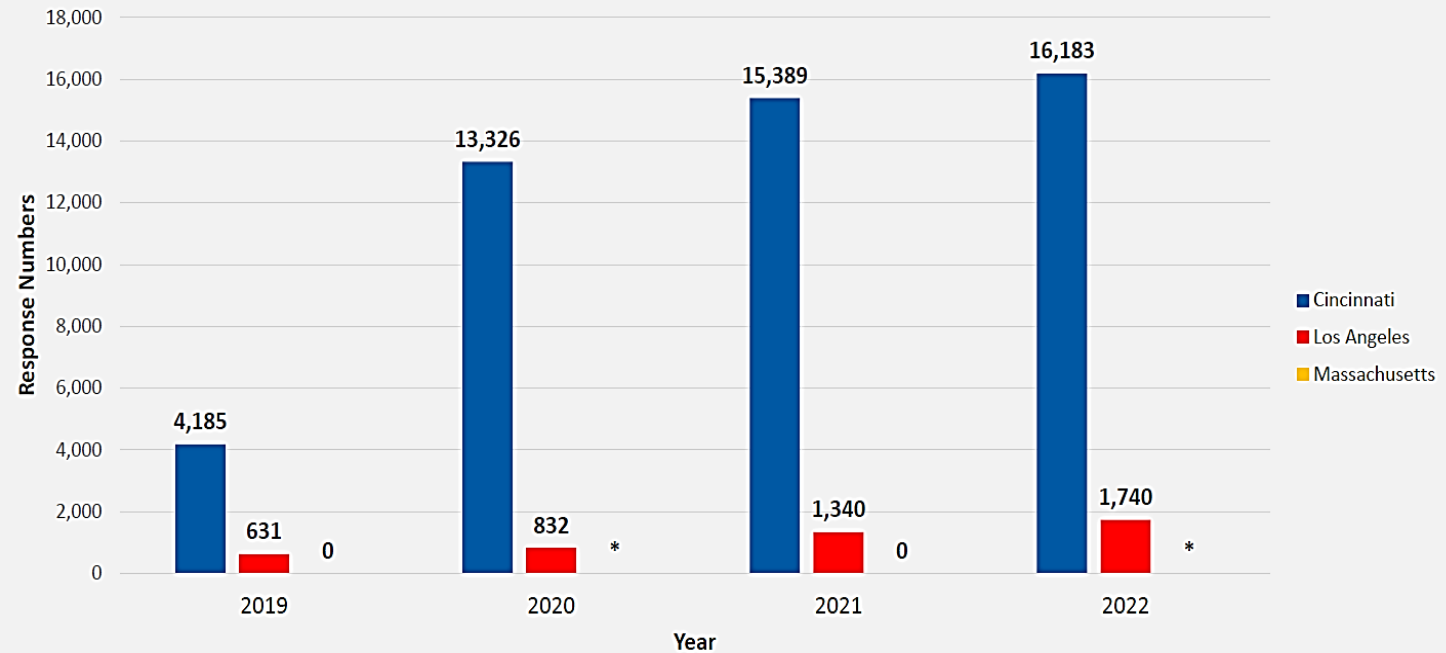
- The UUID is software-generated using a defined and repeatable algorithm.
- It is mandatory on every PCR, guaranteed to be unique, and contains no patient identifying information.
- The UUID is also valuable in data linkage.
- The American College of Surgeons (ACS) recommends leveraging the NEMESIS PCR UUID for linkage with trauma registry data.



# Stroke Assessment and Scoring



Preference by Assessment Type



Based on 2022 EMS Data where *Providers\_Primary Impression* was ***Suspected Stroke/TIA***:

- Only **39.41%** had a documented Stroke Scale Type and Score.
- **15.01%** were marked 'N/A' and **45.58%** 'Not Recorded'.

Consider contacting your EMS vendor if you believe this information is not available or in a logical location for your providers to document.

# Stroke Severity Scoring

Identifying **Large Vessel Occlusion (LVO)**:

- Will likely require Endovascular Therapy (EVT).
- Early identification and transport to a Capable\* Stroke Center.

**How to Assess:**

- **FAST-ED:** Field Assessment Stroke Triage for Emergency Destination.
- **RACE:** Rapid Arterial Occlusion Evaluation.
- Both eVitals.29 (Stroke Scale Type) and eVitals.30 (Stroke Scale Result) can accommodate multiple values.

**Example:** Cincinatti Prehospital Stroke Assessment and FAST-ED Examination for LVO.

eVitals.30 - Stroke Scale Type			
Definition			
The type of stroke scale used.			
National Element	Yes	Pertinent Negatives (PN)	No
State Element	Yes	NOT Values	Yes
Version 2 Element		Is Nillable	Yes
Usage	Required	Recurrence	1 : 1
Associated Performance Measure Initiatives			
Stroke			
Attributes			
NOT Values (NV)			
7701001 - Not Applicable		7701003 - Not Recorded	
Code List			
<b>Code</b>	<b>Description</b>		
3330001	Cincinnati Prehospital Stroke Scale (CPSS)		
3330004	Los Angeles Prehospital Stroke Screen (LAPSS)		
3330005	Massachusetts Stroke Scale (MSS)		
3330007	Miami Emergency Neurologic Deficit Exam (MEND)		
3330009	NIH Stroke Scale (NIHSS)		
3330011	Other Stroke Scale Type		
<u>3330013</u>	<u>FAST-ED</u>		
3330015	Boston Stroke Scale (BOSS)		
3330017	Ontario Prehospital Stroke Scale (OPSS)		
3330019	Melbourne Ambulance Stroke Screen (MASS)		
<u>3330021</u>	<u>Rapid Arterial Occlusion Evaluation (RACE)</u>		
3330023	Los Angeles Motor Score (LAMS)		

\* Please ask your local Stroke Center(s) regarding their capabilities.

# Whole Blood Administration

NEMESIS Element	Element Name	Response Selection	Notes
eMedication.01	Medication Administered Date/Time	Document local time of administration	Ensure additional doses are documented.
eMedication.03	Medication Administered	See permissible options below	Options are vendor-specific.
eMedication.05	Medication Dose	Unique value is required	Dose is per individual administration.
eMedication.06	Medication Units	Typically in ML	Quantity is <u>important</u> .

## eMedications.03 - Medication Administered

### Data Element Comment

List of medications based on RxNorm (RXCUI) code and SNOMED-CT codes for blood products.

Reference the NEMESIS Suggested Lists at: <https://nemesis.org/technical-resources/version-3/version-3-resources/>

#### RxNorm

Website - <http://www.nlm.nih.gov/research/umls/rxnorm/docs/rxnormfiles.html>

Product - RxNorm Full Monthly Release

#### SNOMED-CT

Website: [http://www.nlm.nih.gov/research/umls/Snomed/snomed\\_main.html](http://www.nlm.nih.gov/research/umls/Snomed/snomed_main.html)

Product: Product - UMLS Metathesaurus.

#### Allowable SNOMED-CT codes are:

116762002 Administration of blood product  
 116795008 Transfusion of cryoprecipitate  
 116861002 Transfusion of fresh frozen plasma  
 116865006 Administration of albumin  
 180208003 Intravenous blood transfusion of platelets  
 33389009 Transfusion of whole blood  
 71493000 Transfusion of packed red blood cells

- Any additional considerations can be documented in the ***eNarrative.01***.
- Check that your *eMedication* Field(s) are properly documented to allow for better outcome analysis at the local, state, and federal level.

# Helpful Resources

- [Texas EMS and Trauma Registry](#)
  - [EMS Reporting Requirements](#)
  - [EMSTR Webinars and Presentations](#)
  - [EMSTR \(New\) Platform Resources](#)
- [Texas Regional Advisory Councils](#)
- [NEMESIS 3.5.0 Data Dictionary](#)

Questions? Contact us at [injury.web@dshs.texas.gov](mailto:injury.web@dshs.texas.gov).



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# Question and Answer Time

Please post your questions in the Go-To Webinar chat or follow up at [injury.web@dshs.texas.gov](mailto:injury.web@dshs.texas.gov).



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# Thank you!

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