

# **TRCC Executive Committee**

## **Meeting Agenda**

**1:30-3:30 p.m. Tuesday, Jan. 28, 2020 - 118 Riverside, Room 43**

### **1) Call to order and distribution of sign-in sheet**

- a) Distribution of sign-in sheet and introductions
- b) Remarks from TRCC Chair, Michael Chacon, P.E., TxDOT-Traffic Safety Div.
  - i) He is attending a conference today
- c) Remarks from Terry Pence, TxDOT-TRF-TS
  - i) Just closed FY19. Submitted annual report to NHTSA. That is currently under review and will be posted online once approved.
  - ii) Just closed FY21 RFP. Great response. All of the proposals are being reviewed and gathering the internal comments. Traffic Records projects will be presented to the TRCC in March. There were seven total proposals. 121 general grants. 170 proposals in STEP, which is an increase and a record.
- d) Remarks from TRCC Moderator, Larry Krantz
  - i) Thank you for being here. Glad to see STEP increasing. Reviewing FY19 data for STEP.
- e) Approval of October 2019 TRCC Meeting Minutes
  - i) Approved.

### **2) 2018 Suspected Serious Injury Discussion (Hanni and Dao)**

- a) See attached power point for Dan Dao's presentation
  - i) Discussion on why injury severity assigned by officer and medical staff can differ. Several follow up questions for DSHS were proposed which DSHS will pursue.
- b) Larbi's presentation
  - i) Presented graph showing drop in Texas in 2017 of A crashes. That is the same time of the definition change crash. Trying to figure out if the definition changed is the reason for the drop or if there are other factors.

- ii) Discussion for reasons why. Some think safety improvements (airbags, auto braking, etc.) are having an impact. Looked up data and found possible injury crashes increased. Maybe suspected injury and being reclassified as possible injured?
- iii) Anecdotal, officers said they assumed incapacitating meant they couldn't walk away. Led to officers classifying broken legs as incapacitating. Now broken legs are being classified as a B or C injury.
- iv) Tables are in the attachments.

### **3) FY21 Proposals (Krantz)**

- a) Covered during opening remarks.

### **4) Intersection Database Development Subcommittee Update (Graber)**

- a) Currently pursuing two simultaneous approaches.
  - i) In the short term, TxDOT has a tool that may allow for the quick creation of a basic inventory.
  - ii) The subcommittee will continue its work advising the long term development of the complete inventory.

### **5) FY20 TRCC Technical Assistance Overview – Performance Measures and Strategic Plan Update (Graber)**

- a) TRCC member will be contacted over the next few months to develop performance measures and update the strategic plan.

### **6) TRCC Strategic Vision Discussion (Graber)**

- a) Rob – what are the TRCC goals. What are our vision.
- b) Larbi – Everyone is striving towards vision zero. With that in mind the TRCC is about data linkages to achieve that goal.
- c) Larbi – a good start would be injury severity would be determined by medical field not LE. Would need to be a timely linkage.
- d) Tullos – Would need to have a hierarchy b/c the LE maybe the only people on the scene for non and possible injury. If there was an EMS run then the medical field takes priority.
- e) Dan – TRCC website with basic stats.

- f) Tullos – TRCC allows multiple perspectives to answer questions, such as Dan and Larbi’s presentation.
- g) Rob – TRCC allows you work with multiple partners to identify trends. Are trends regional or statewide?
- h) Tullos – Another TRCC role can be to reduce duplicative effort.
- i) Taylor – Linking people. Helps bring different perspectives so you can look at the problem differently. Who has data that is not in the room that we can use.
- j) Dan – Would like to know what others are thinking about as far as what is coming up, important trends, etc. since DSHS only sees the health side.
- k) Larry – Can’t just be great ideas, has to be able to be implemented. TRCC should figure out what needs to be recommended to reduce crashes.
- l) Tullos – External partners such as the vehicle manufactures are important to be included.

**7) HSOC Update – Tullos**

- a) Working with TxDOT on crash analytics
- b) Getting an increase in requests for data products for LE around the state.
- c) Interactive ArcGIS STEP maps has been rolled out.
- d) Added a layer to their TxMap that has all rail crossing locations, including emergency contact numbers for each crossing and unique identifiers for each crossing.

**8) Adjourn**

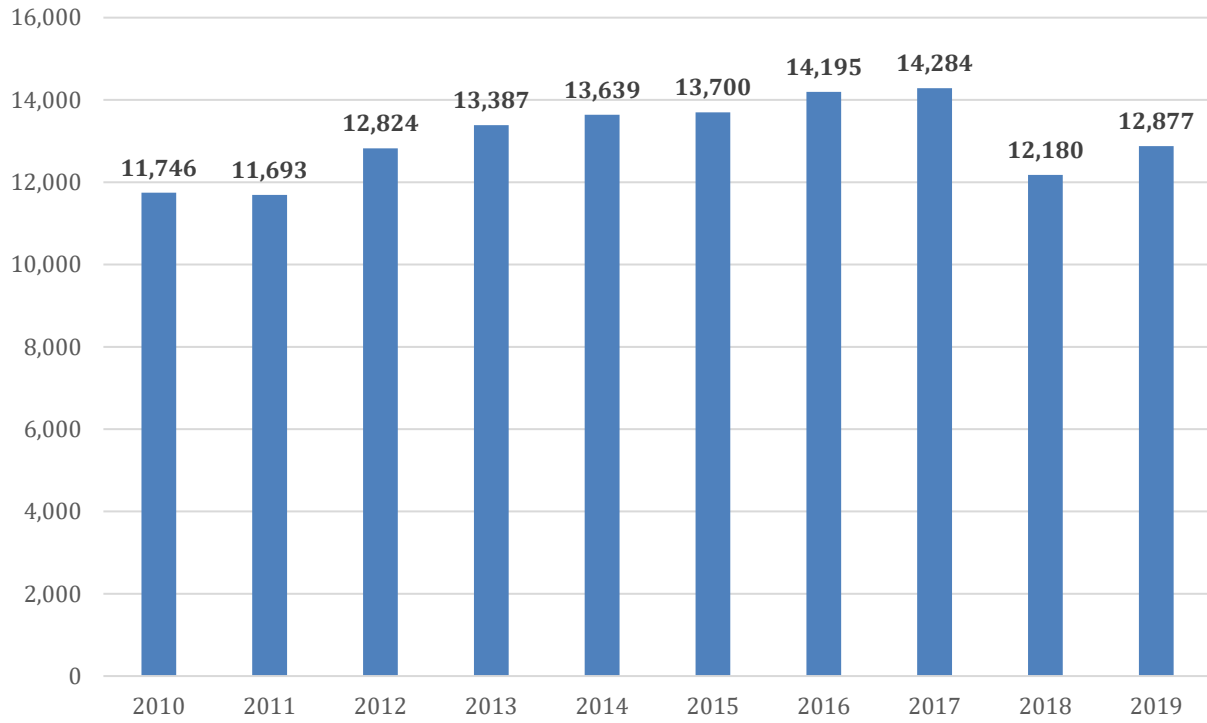
- a) Next TRCC Meeting is 1:30 p.m. Tuesday, March 31, 2020

## Larbi's Presentation Charts and Graphs

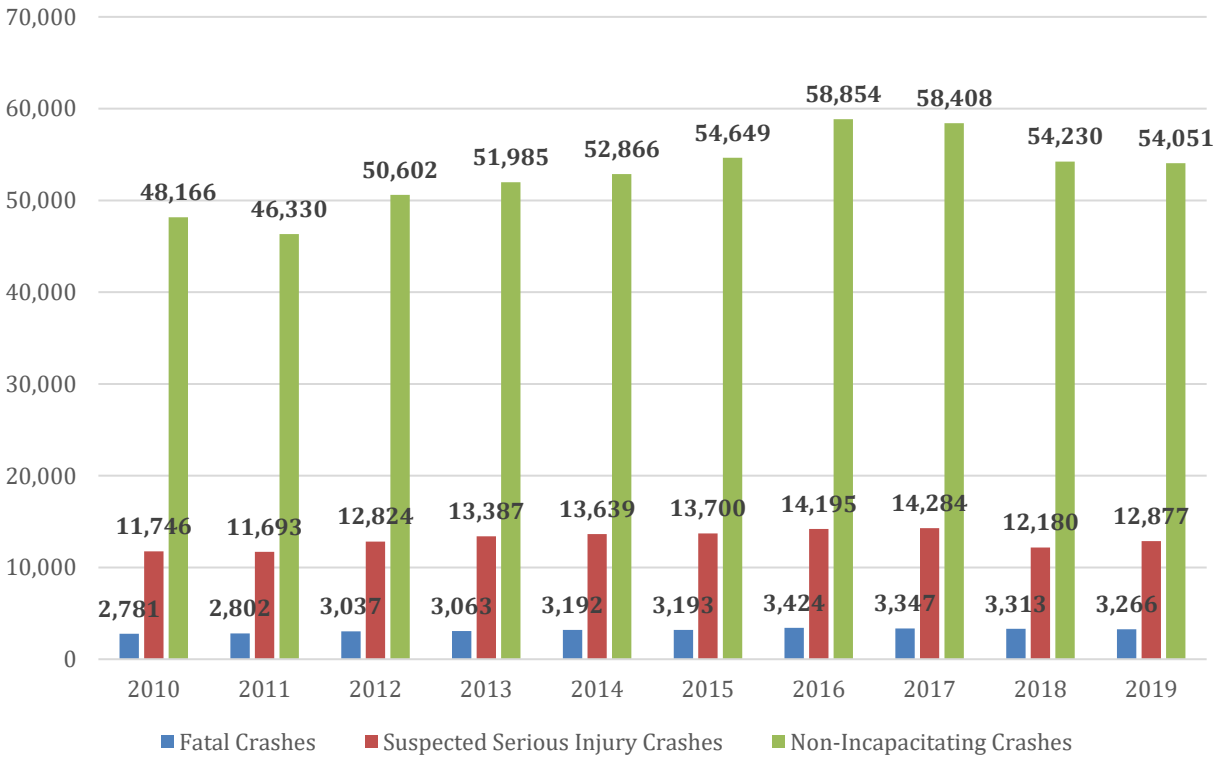
### Reportable Motor Vehicle Traffic Crashes Statewide 2010 - 2020 Year to Date

Crash Year	Fatal Crashes	Suspected Serious Injury Crashes	Non-Incapacitating Injury Crashes	Total Crashes
2010	2,781	11,746	48,166	392,047
2011	2,802	11,693	46,330	384,427
2012	3,037	12,824	50,602	417,744
2013	3,063	13,387	51,985	446,093
2014	3,192	13,639	52,866	477,702
2015	3,193	13,700	54,649	522,743
2016	3,424	14,195	58,854	553,333
2017	3,347	14,284	58,408	538,796
2018	3,313	12,180	54,230	544,546
2019	3,266	12,877	54,051	559,743
2020 YTD	116	580	2,572	27,279

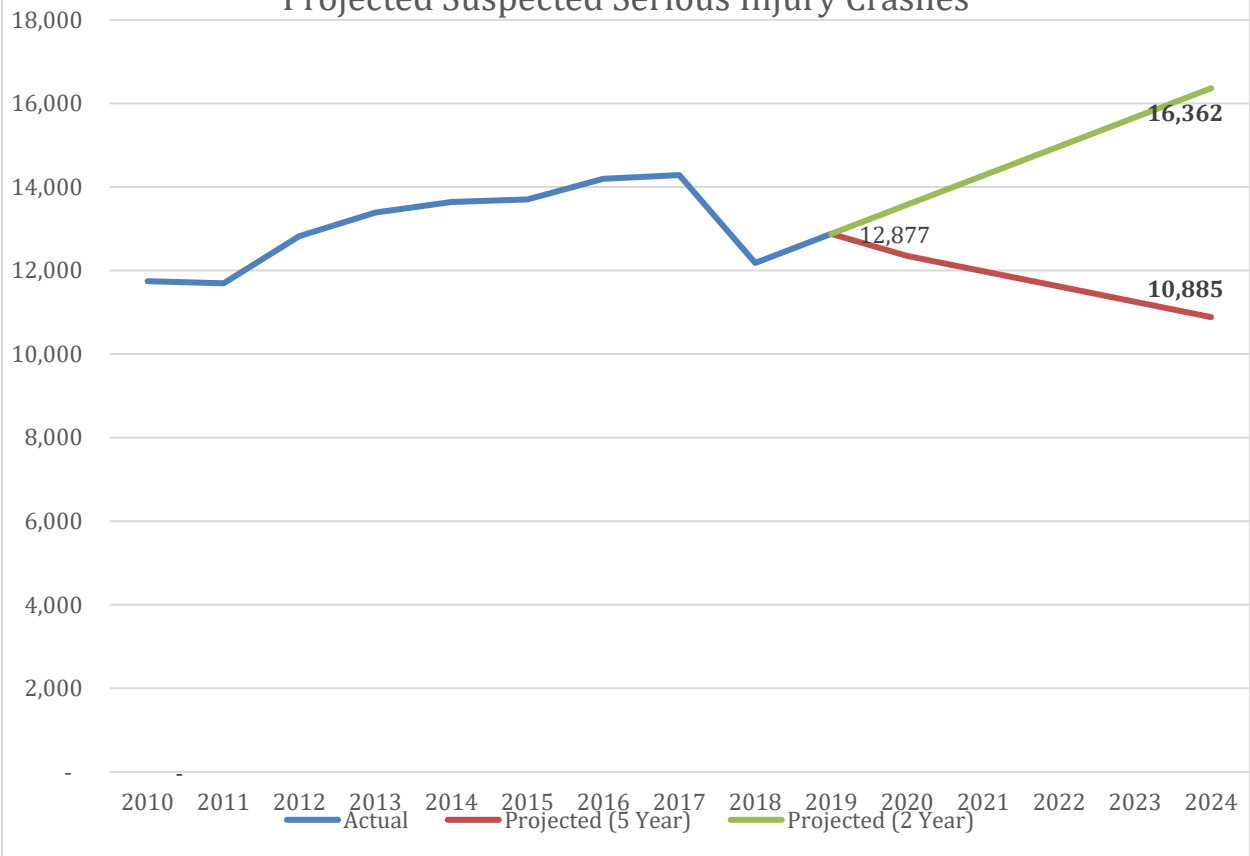
## Statewide Reportable Motor Vehicle Traffic Suspected Serious Injury Crashes 2010 - 2019




## Statewide Reportable Motor Vehicle Traffic Crashes 2010 - 2019



### Projected Suspected Serious Injury Crashes






TEXAS  
Health and Human  
Services

Texas Department of State  
Health Services

**Exploring the Injury Severity and Fatality Measures  
in the 2018 Linked Databases –EMS/Trauma/Crash**


**Texas Emergency Medical Service & Trauma Registries  
Office of Injury Prevention**

1/28/2020 1



## Objective

- Provide background information on data
- Introduce the linked dataset
- Compare distributions between
  - Crash-assigned
    - CR-3 reported injury severity ID
    - TxDOT crash data
  - Hospital-assigned
    - Injury Severity Scores (ISS)
    - DSHS Trauma hospital data
- Assess that the fatalities occurred after transport



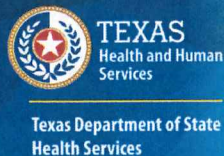
TEXAS  
Health and Human  
Services

Texas Department of State  
Health Services

1/28/2020 EMS and Trauma Registry, 2018, Office of Injury Prevention, Maternal and Child Health Unit 2



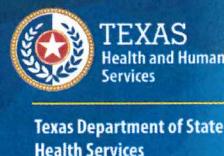
## Background – EMS and Trauma Registry Dataset



### Emergency Medical Service (EMS) Data, 2018


- Chapter 92 of Health and Safety Code (HSC) states all EMS runs must be reported.
- EMS runs follow National EMS Information System standard:
  - 700+ EMS Agencies report data
  - Data elements:
    - Demographics
    - Procedures
    - Vital signs
    - Run time
    - Transport conditions, etc.

## Background – EMS and Trauma Registry Dataset



### Trauma Hospitalization Data, 2018


- HSC Chapter 92 states hospitals must report significant trauma injuries.
- Trauma Hospitalizations follow National Trauma Data Bank Standard:
  - 280+ Trauma hospitals
  - Data elements:
    - Demographics
    - Payment type
    - Injury severity and procedures, etc.



**TEXAS**  
Health and Human  
Services


Texas Department of State  
Health Services

## Background – Data Linkage



The diagram illustrates the process of data linkage. It starts with three components: a red circle for 'Crash Records Information System (CRIS)' (with TxDOT below it), a purple circle for 'EMS' (with DSHS below it), and a blue circle for 'Trauma Hospital' (with DSHS below it). These are connected by plus signs. An equals sign follows, leading to a green circle labeled 'Linked records (LINK)' (with DSHS below it).

1/28/2020      EMS and Trauma Registry, 2018, Office of Injury Prevention, Maternal and Child Health Unit      5



**TEXAS**  
Health and Human  
Services

Texas Department of State  
Health Services

## Linked Data Inclusion Criteria

- **Trauma Hospital**
  - Motor Vehicle Traffic-related ICD10-CM:
    - (V1-V89, X81, X82, X83, Y02, Y08, Y32, Y36, Y37, Y38)
- **EMS**
  - Motor Vehicle Traffic-related ICD10-CM
  - Chief Complaint:
    - Traffic Transportation Incident
    - Automated Crash Notification


*Excluded records with transfers*

1/28/2020      EMS and Trauma Registry, 2018, Office of Injury Prevention, Maternal and Child Health Unit      6



## Matching Variables Used for Probabilistic Data Linkage

	Matching Variables
<b>Crash to Trauma</b>	Birth Date, Incident Date, Last Name, First Name
<b>Crash to EMS</b>	Birth Date, Incident Date, Last Name, First Name
<b>Crash to EMS to Trauma</b>	Unique ID (created by concatenating/combining Crash ID, Unit Number, Person Number)




**TEXAS**  
Health and Human Services  
Texas Department of State Health Services

LINK, EMS and Trauma Registry, 2018, Office of Injury Prevention, Maternal and Child Health Unit

1/28/2020 7

## Background – Data Linkage



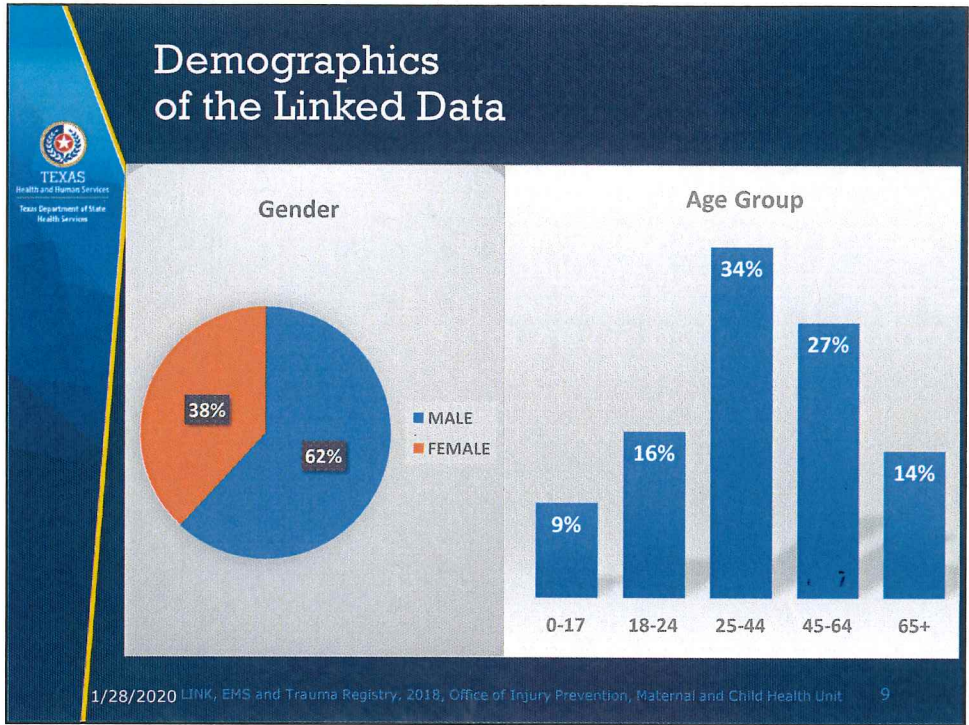
**TEXAS**  
Health and Human Services  
Texas Department of State Health Services

Dataset	Original Data (Count)	Transportation related injuries subset (Count)	Linked Pairs (Count)	Linked de-duplicated pairs (Count)
<b>Crash</b>	1,617,063	1,617,063	-	-
<b>EMS</b>	3,325,631	208,784	118,029	-
<b>Trauma</b>	132,406	24,909	15,283	-
<b>Crash to EMS to Trauma</b>	-	-	6,667	5,712

1/28/2020

LINK, EMS and Trauma Registry, 2018, Office of Injury Prevention, Maternal and Child Health Unit

8



### Crash-assigned Injury Severity ID

#### Original Crash Data (CRIS) vs Linked Data (LINK)

Crash-assigned Injury Severity ID	%	
	Original Crash Data (CRIS)	Linked Data (LINK)
NOT INJURED	76.1	2.2
POSSIBLE INJURY	10.2	23.6
NON-INCAPACITATING INJURY	4.7	31.2
SUSPECTED SERIOUS INJURY	0.9	37.8
KILLED	0.2	4.9
UNKNOWN	7.9	0.3
TOTAL	100.0	100.0


By nature, the linked data contain more severe injuries in comparison to the original crash databases.

1/28/2020 CRIS, TxDOT, 2018 LINK, EMS and Trauma Registry, 2018, Office of Injury Prevention, Maternal and Child Health Unit 10



## Hospital-assigned Injury Severity Score (ISS)

- Decided by the Association for the Advancement of Automotive Medicine
- Ranges from 0 to 75:
  - i. Mild 0-9
  - ii. Moderate 10-15
  - iii. Severe 16-24
  - iv. Very severe 25-27
- A series of anatomically-defined injury descriptions that were mapped according to:
  - i. Energy dissipation
  - ii. Threat to life
  - iii. Permanent impairment
  - iv. Treatment period
  - v. Incidence

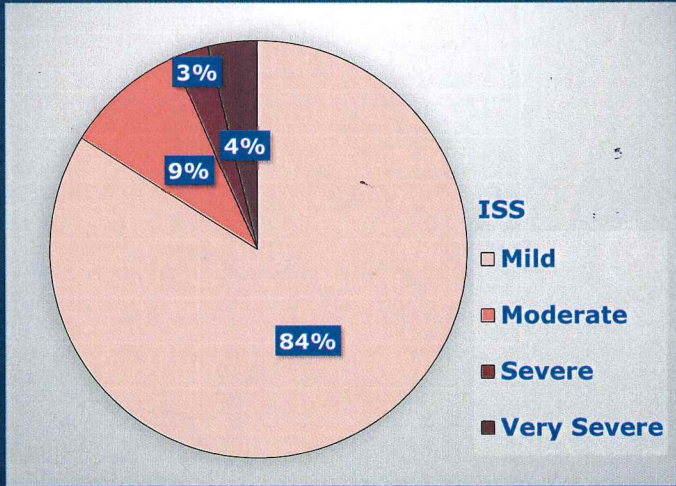


**TEXAS**  
Health and Human Services  
Texas Department of State Health Services


1/28/2020

EMS and Trauma Registry, 2018, Office of Injury Prevention, Maternal and Child Health Unit

### [Linked Data] Hospital-assigned ISS By Crash-assigned Injury Severity ID: **Not Injured**



ISS Category	Percentage
Mild	84%
Moderate	9%
Severe	4%
Very Severe	3%

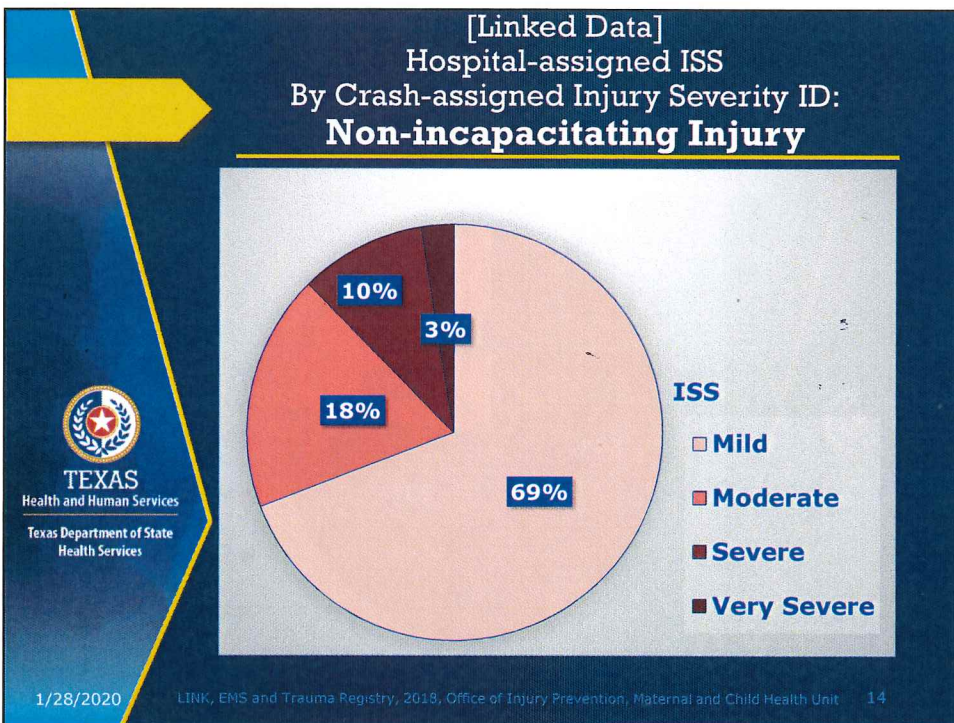
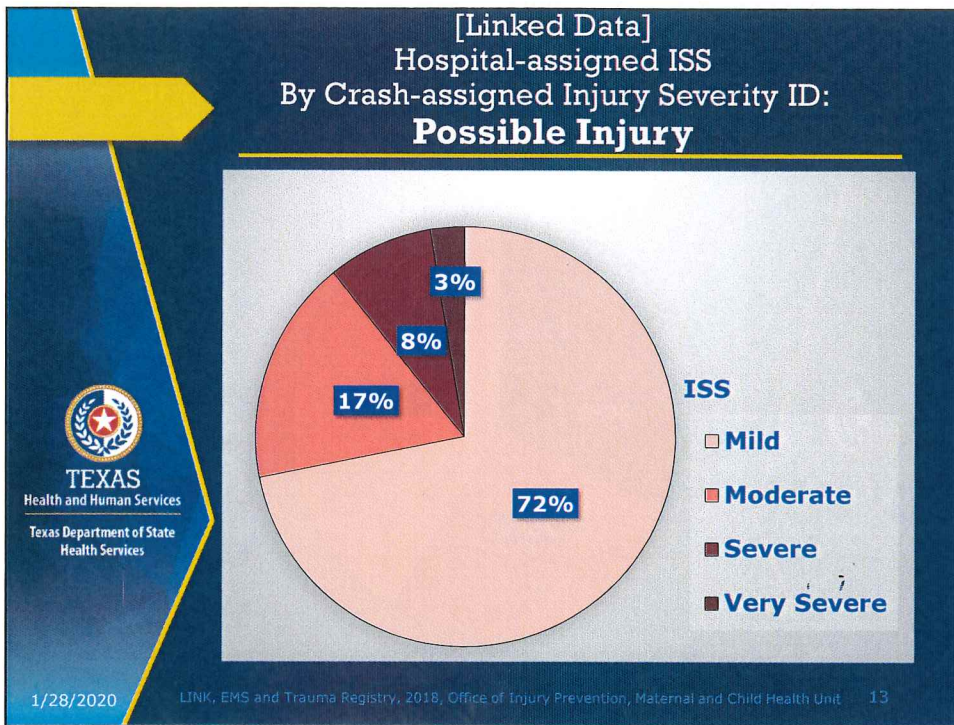


**TEXAS**  
Health and Human Services  
Texas Department of State Health Services

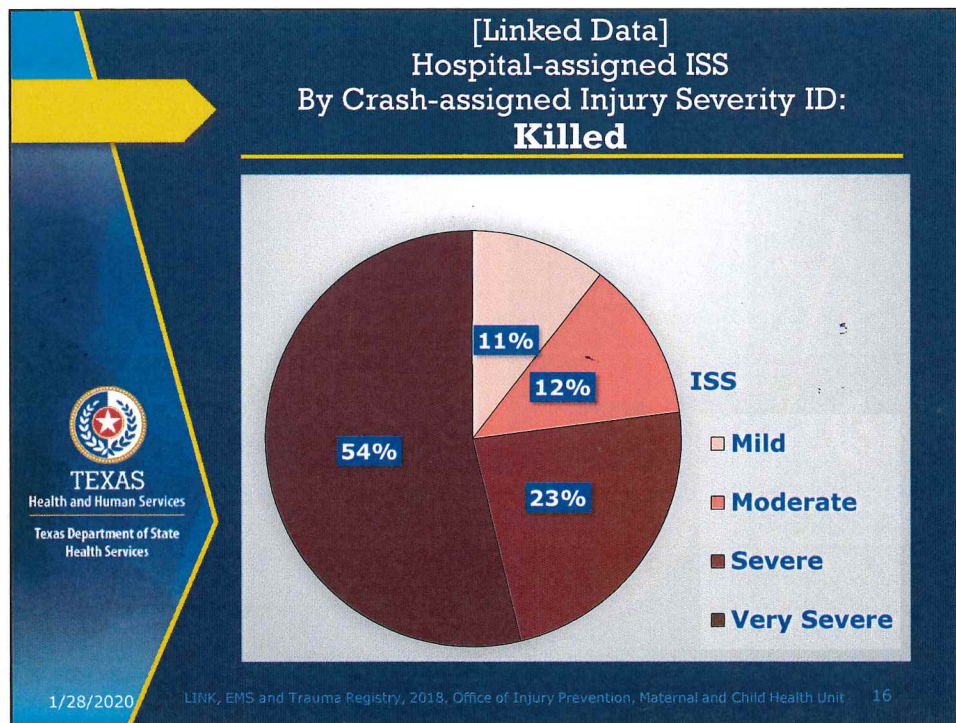
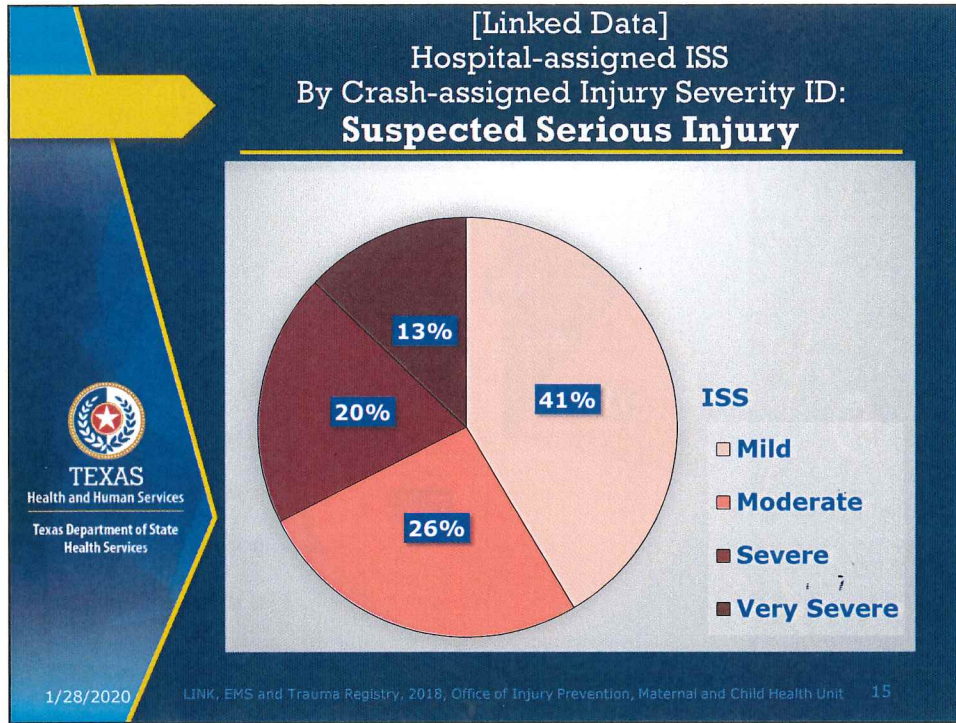
1/28/2020

LINK, EMS and Trauma Registry, 2018, Office of Injury Prevention, Maternal and Child Health Unit





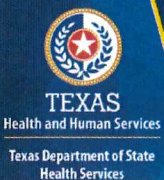







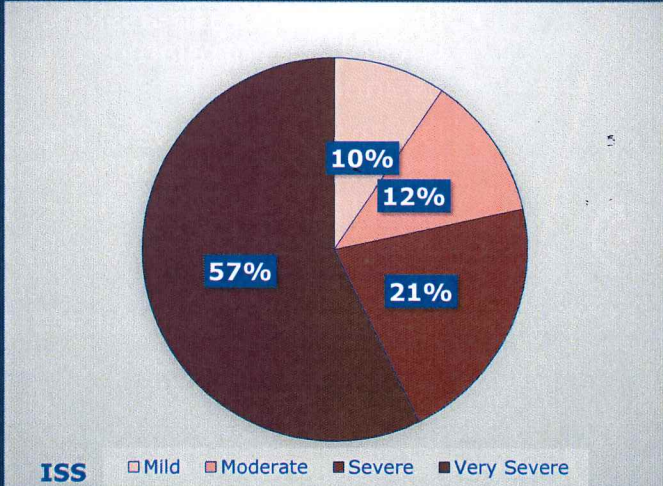
### [Linked Data] Hospital-assigned Fatality

Out of 5,712 deduplicated linked records, 266 records (4.7%) reported by the clinicians, have died at the emergency department or inpatient hospital settings.

1/28/2020 LINK, EMS and Trauma Registry, 2018, Office of Injury Prevention, Maternal and Child Health Unit 17

### [Linked Data] Hospital-assigned Fatality By Hospital-assigned ISS

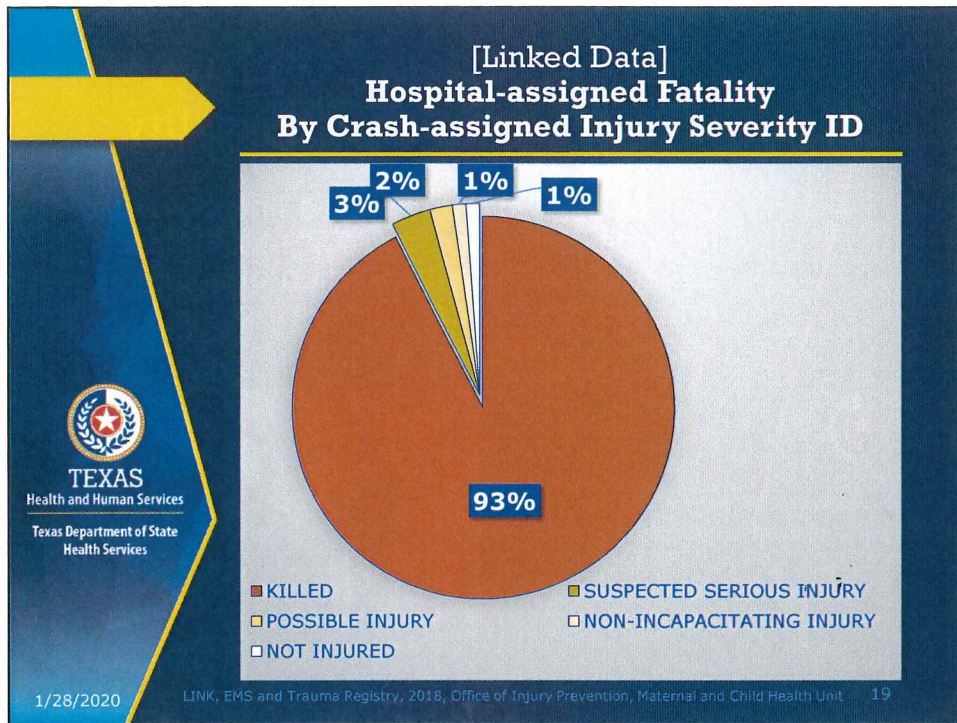


ISS Category	Percentage
Mild	10%
Moderate	12%
Severe	21%
Very Severe	57%

ISS    □ Mild    □ Moderate    □ Severe    □ Very Severe

1/28/2020 LINK, EMS and Trauma Registry, 2018, Office of Injury Prevention, Maternal and Child Health Unit 18






**Conclusion**

- In general, crash-assigned injury severity is correlated to hospital-assigned ISS.
- Deaths do not always mean higher hospital-assigned ISS since the scoring is multifactorial.
- Linked dataset between crash, EMS, and trauma hospital can capture patients who later passed away from the injuries.

1/28/2020 LINK, EMS and Trauma Registry, 2018, Office of Injury Prevention, Maternal and Child Health Unit 20





TEXAS  
Health and Human Services  
Texas Department of State  
Health Services

## Limitations: Injury Severity Score Metrics

---


### Crash-assigned Score

- Subjective determination by non-medical personnel
- Likelihood of classifying severe internal injuries is low
- Developed based on threat to life and survivability, not only incapacitation

### Hospital-assigned ISS

- Unweighted summary measure of single or multiple injuries
- Multiple dimensions of injury considered:
  - Likelihood of death;
  - Use of hospital resources;
  - Cost of resources/ treatments;
  - Length of recovery;
  - Likelihood and extent of disability;
  - Impact on quality of life, etc.


1/28/2020      LINK, EMS and Trauma Registry, 2018, Office of Injury Prevention, Maternal and Child Health Unit      21



TEXAS  
Health and Human Services  
Texas Department of State  
Health Services

## Questions / Answer

---



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

1/28/2020      EMS and Trauma Registry, 2018, Office of Injury Prevention, Maternal and Child Health Unit      22

TRCC Sign-In Sheet

1:30-3:30 p.m. Tuesday, Jan. 28, 2020 - 118 Riverside, Room 43

	<u>Name</u>	<u>Agency</u>	<u>Email</u>
1.	Jon Gruber	TTT	j-gruber@ti.tamu.edu
2.	DAVID FREIDENFELD	TXDOT-TPP	david.freidenfeld@txdot.gov
3.	DAN DAO	Dept. State Health Services	DAN.DAO@DSHS.TEXAS.GOV
4.	Terry Pence	TXDOT	terry.pence@txdot.gov
5.	Tim Thompson	TX DMV	t.m.thompson@txdmv.gov
6.	Jodie Tullos	TXDPS	jodie.tullos@dps.texas.gov
7.	Luis Zayas	HSOC DPS	Luis.Zayas@dps.texas.gov
8.	James Taylor	TXDPS-HSOC	james.taylor@dps.texas.gov
9.	Ed Burgos	FHWA	ed.burgos-gomez@dot.gov
10.	LARBI HANNI	TXDOT	Larbi.hanni@txdot.gov
11.	Haruna Miyakado	DSHS	HarunaMiyakado@dshs.texas.gov
12.	Robert Klein	DSHS	rob.klein@hroc.state.tx.us
13.			
14.			
15.			
16.			
17.			
18.	Ex Zentrias Sturdivant - webex	NHTSA	
19.	Angie Suarez - webex	DPS	
20.	Becky Walker - webex	NHTSA	