



**TEXAS**  
Health and Human  
Services

**Texas Department of State  
Health Services**

# 2021 Texas Trauma Injuries for Patients with an Injury Severity Score $\geq 15$

Prepared by the Injury Prevention Unit  
August 18<sup>th</sup>, 2023

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# Texas EMS and Trauma Registries

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- The data used are hospital-reported traumatic injuries. Hospitals must report spinal cord injuries, traumatic brain injuries, and other traumatic injuries specified in Texas Administrative Code, Title 25, Chapter 103.
- This data report includes only records submitted into the Emergency Medical Services and Trauma Registries (EMSTR) through a passive surveillance system.
- Patients transferred between hospitals will result in more than one registries record since each hospital must independently submit a patient's record to the registries.

# Data Definitions



- Injury Severity Score - The Injury Severity Score (ISS) is an anatomical scoring system that provides an overall score for patients with multiple injuries. The ISS scoring categories are:
  - ISS Less than 9 = **mild (ISS 1-8)**.
  - ISS 9-15 = **major**.
  - ISS 16-24 = **severe**.
  - ISS  $\geq$  25 = **critical**.
- Missing – Trauma facility did not fill in the section.

# Methodology Notes

- Per epidemiology best practice, EMSTR suppressed data when there were less than 5 records to protect identifiable data, noted with an asterisk (\*).
- For this analysis, EMSTR used patients with an **ISS of  $\geq 15$** .
- In 2021, EMSTR received **153,135** unique patient records of all ages. 18,144 (12%) had an ISS  $\geq 15$ .
- Age groups – three age groups were used for this analysis:
  - Pediatric – Children under the age of 15;
  - Adult – Ages 15-64; and
  - Geriatric – Ages 65+.

# 2021 Pediatric Trauma Injuries (Children Ages < 15)



# 2021 Pediatric Hospital Designation

Designation Level	Count	Percent
Trauma Center Level I	662	57.52%
Trauma Center Level II	162	14.07%
Trauma Center Level III	131	11.38%
Trauma Center Level IV	102	8.86%
Hospital	29	2.52%
Pediatric Facilities	25	2.17%
STEMI (ST-elevation myocardial infarction) Center	*	*
Missing / Not Known	38	3.30%

# 2021 Pediatric Emergency Department (ED) Disposition

ED Disposition	Number	Percent
Intensive Care Unit (ICU)	400	34.75%
Transferred to Another Hospital	243	21.11%
Floor Bed	209	18.16%
Operating Room	162	14.07%
Deceased	47	4.08%
Observation unit (unit that provides < 24-hour stays)	29	2.52%
Not Applicable**	26	2.26%
Telemetry / step-down unit	23	2.00%
Home without services	9	0.78%
Other (jail, institutional care, mental health, etc.)	*	*

Not Applicable\*\* = directly admitted to the hospital

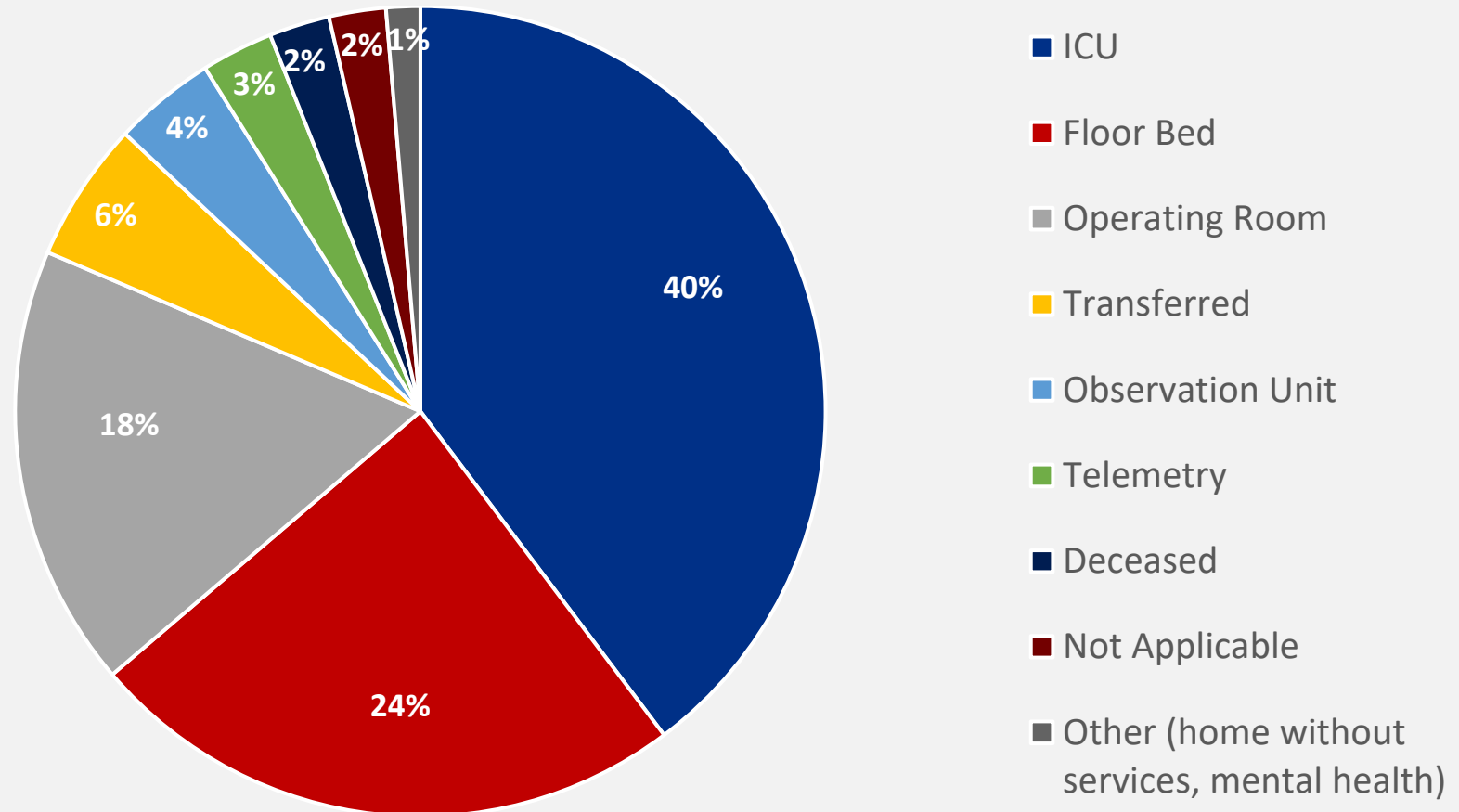


# 2021 Pediatric Hospital Disposition

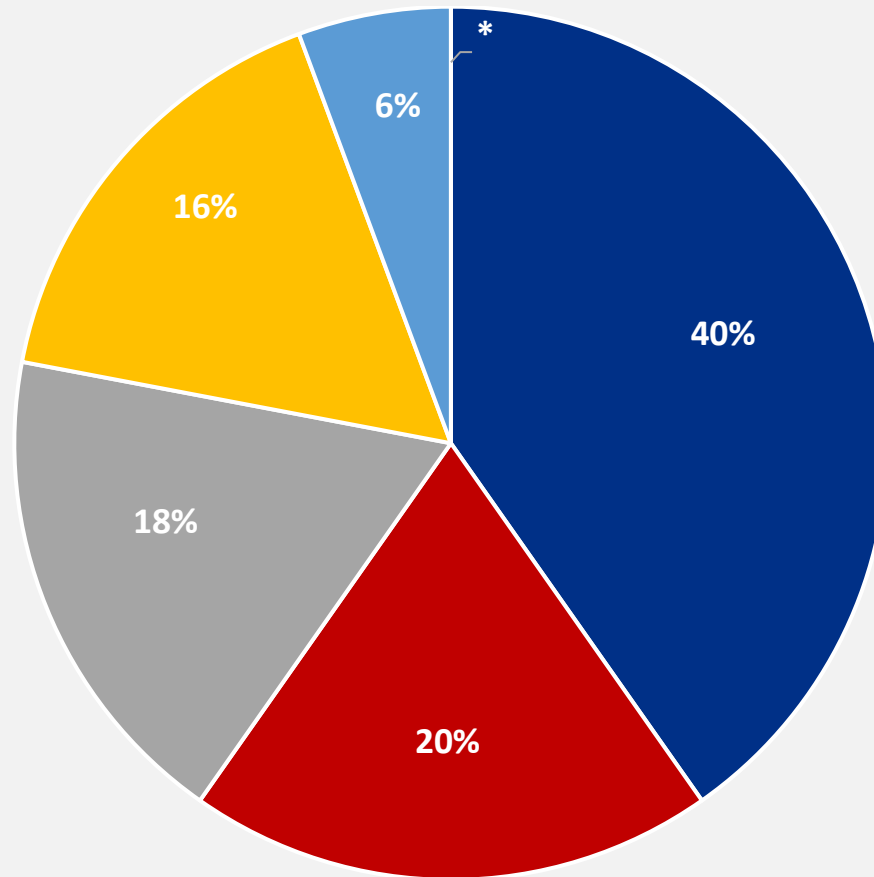
ED Disposition	Number	Percent
Discharged to home or self-care	619	53.78%
Not Applicable**	302	26.24%
Discharged / transferred to inpatient rehab	90	7.82%
Deceased	60	5.21%
Discharged / transferred to short-term general hospital	37	3.21%
Discharged / transferred to home health	37	3.21%
Discharged / transferred to court/ law enforcement	*	*
Discharged / transferred to Skilled Nursing Facility	*	*
Discharged / transferred to a psychiatric hospital	*	*
Discharged / transferred to another type of institution	*	*

Not Applicable\*\* = ED disposition was transferred to another facility, deceased, home without services, or other

# 2021 Pediatric ED Disposition Level I Trauma

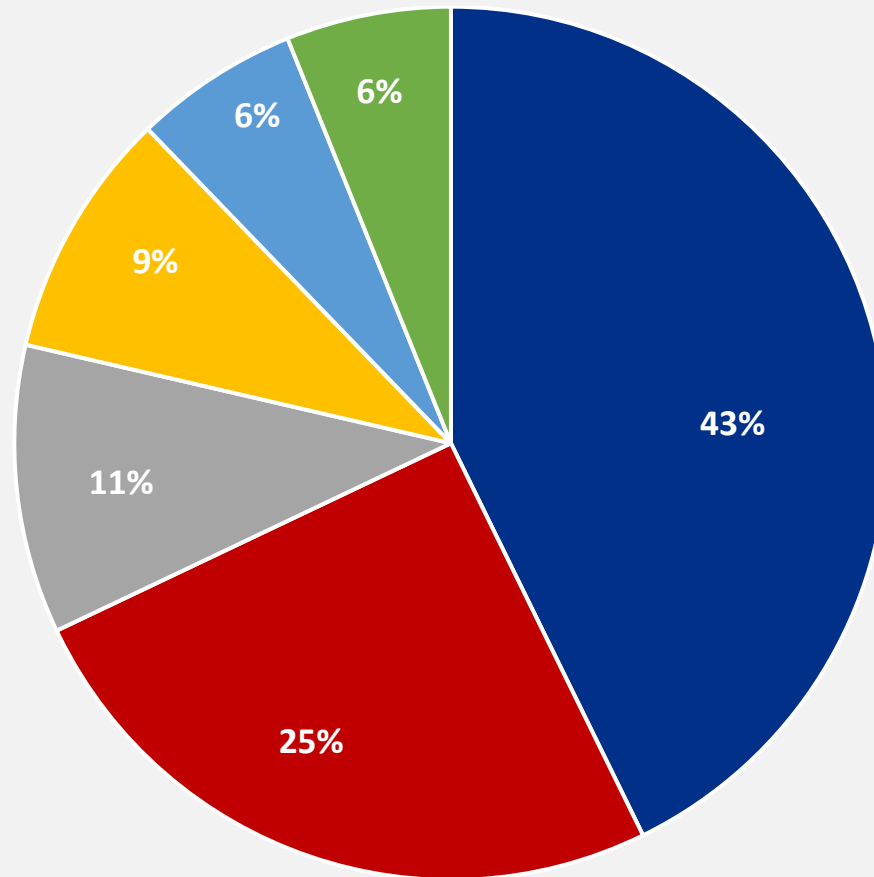


# 2021 Pediatric ED Disposition Level II Trauma



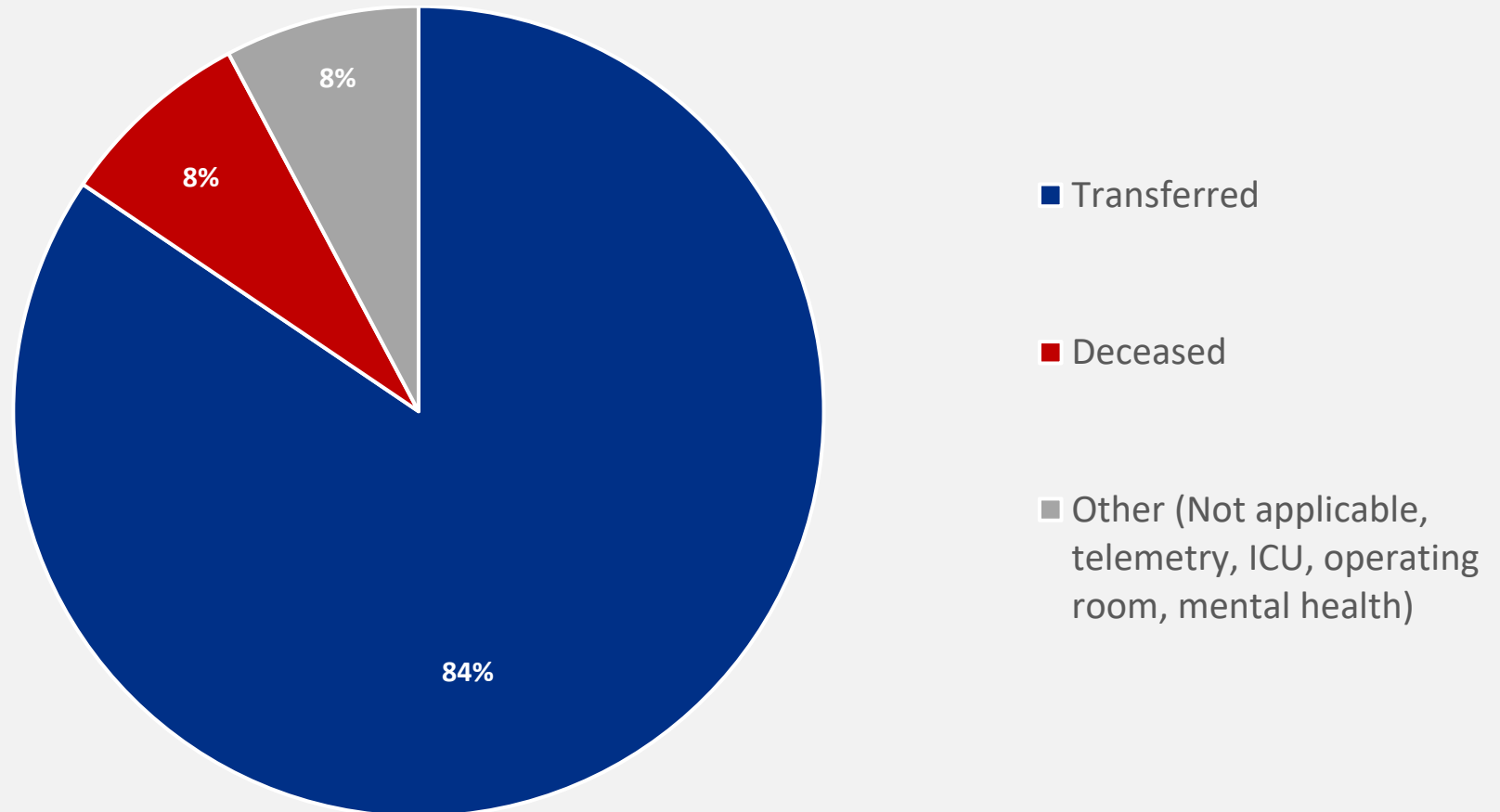
- ICU
- Floor Bed
- Transferred
- Operating Room
- Deceased
- Other (Not applicable, other)

# 2021 Pediatric ED Disposition Level III Trauma

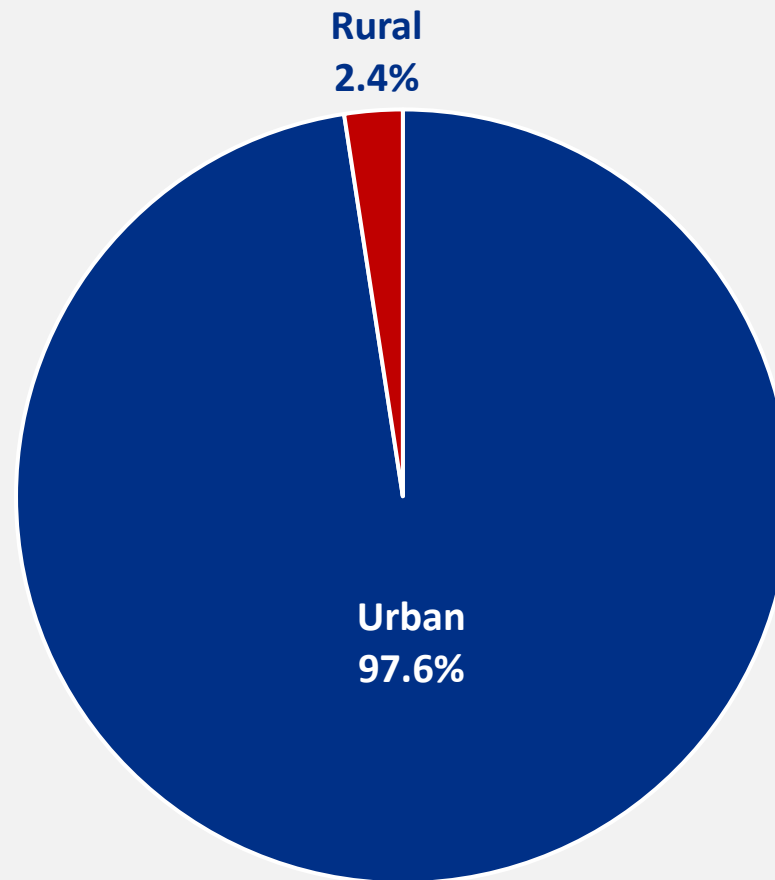


- Transferred
- ICU
- Operating Room
- Deceased
- Floor Bed
- Other (Not applicable, other, telemetry)

# 2021 Pediatric ED Disposition Level IV Trauma



# 2021 Pediatric Urban versus Rural



# 2021 Adult Trauma Injuries (Ages 15 to 64)



# 2021 Adult Hospital Designation

Designation Level	Count	Percent
Trauma Center Level I	5,726	49.83%
Trauma Center Level II	3,172	27.60%
Trauma Center Level III	1,561	13.58%
Trauma Center Level IV	631	5.49%
Hospital	243	2.11%
STEMI (ST-elevation myocardial infarction) Center	6	0.05%
Missing / Not Known	152	1.32%



# 2021 Adult ED Disposition

ED Disposition	Number	Percent
Intensive Care Unit (ICU)	4,682	40.74%
Operating Room	2,691	23.42%
Floor Bed	1,373	11.95%
Transferred to Another Hospital	1,019	8.87%
Deceased	756	6.58%
Telemetry / step-down unit	654	5.69%
Not Applicable**	141	1.23%
Observation unit (unit that provides < 24-hour stays)	105	0.91%
Home without services	49	0.43%
Other (jail, institutional care, mental health, etc.)	13	0.11%
Left against medical advice	6	0.05%
Home with services	*	*
Missing	*	*

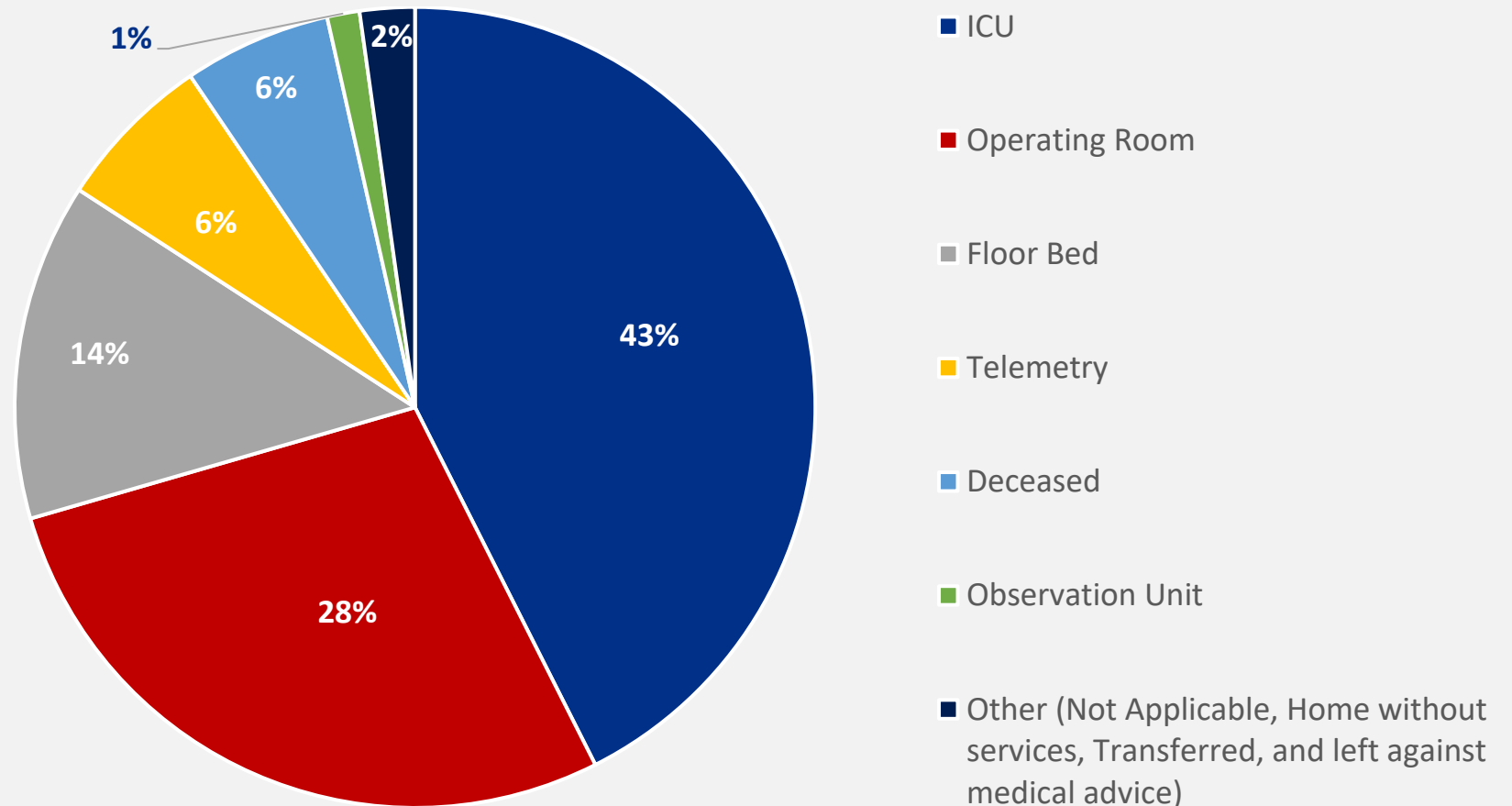
Not Applicable\*\* = directly admitted to the hospital

# 2021 Adult Hospital Disposition

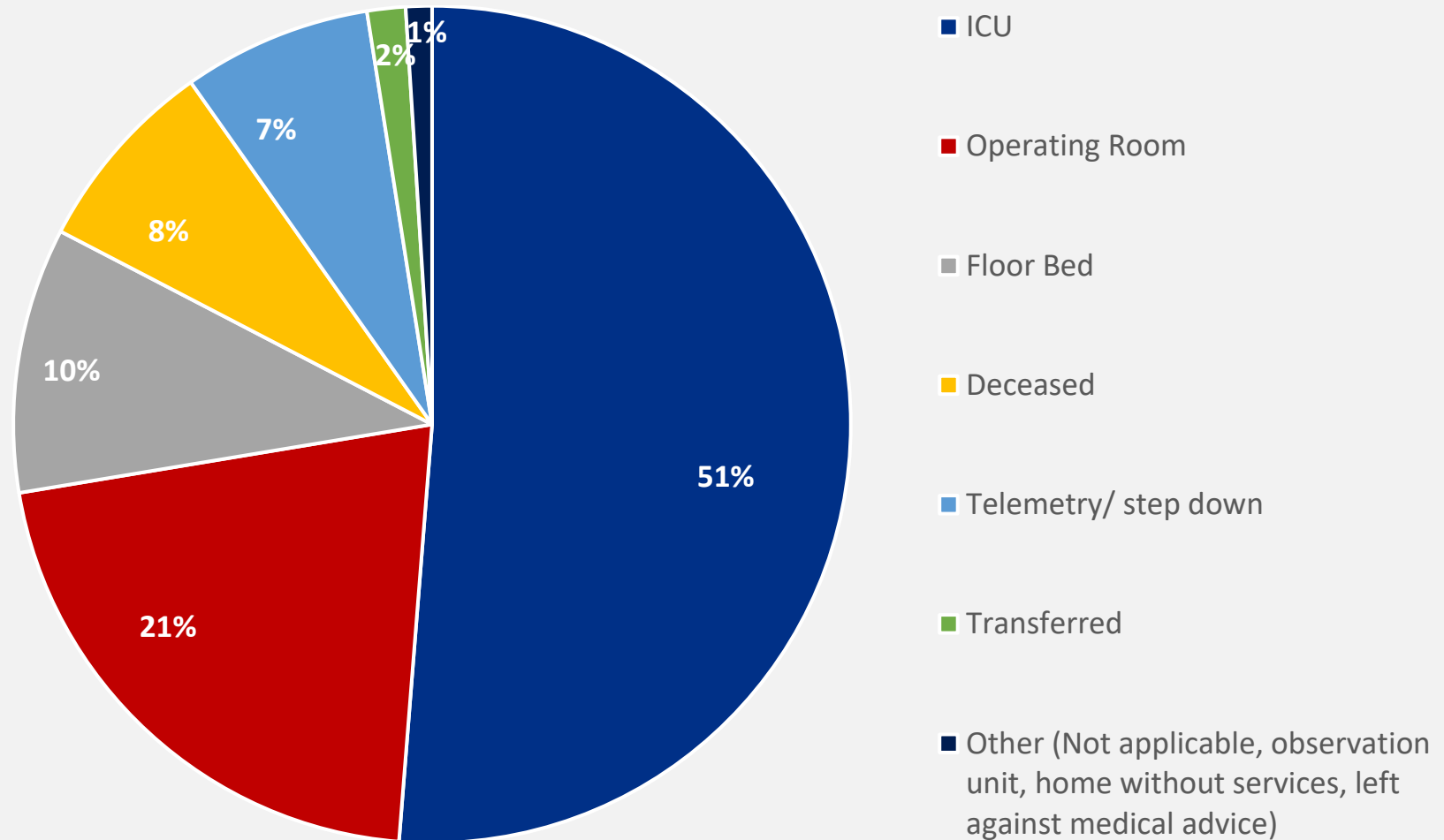
ED Disposition	Number	Percent
Discharged to home or self-care	5,462	47.53%
Not Applicable**	1,844	16.05%
Discharged / transferred to inpatient rehab	1,407	12.24%
Deceased	1,084	9.43%
Discharged / transferred to home health	457	3.98%
Discharged / transferred to Skilled Nursing Facility	355	3.09%
Discharged / transferred to Long Term Care Hospital (LTCH)	241	2.10%
Left against medical advice	207	1.80%
Discharged / transferred to short-term general hospital	138	1.20%
Discharged / transferred to court/ law enforcement	124	1.08%
Discharged / transferred to hospice care	83	0.73%
Discharged / transferred to a psychiatric hospital	57	0.50%
Discharged / transferred to another type of institution	16	0.14%
Discharged / transferred to an Intermediate Care Facility	15	0.13%
Not known / Not recorded	*	*

Not Applicable\*\* = ED disposition was transferred to another facility, deceased, home without services, or other.

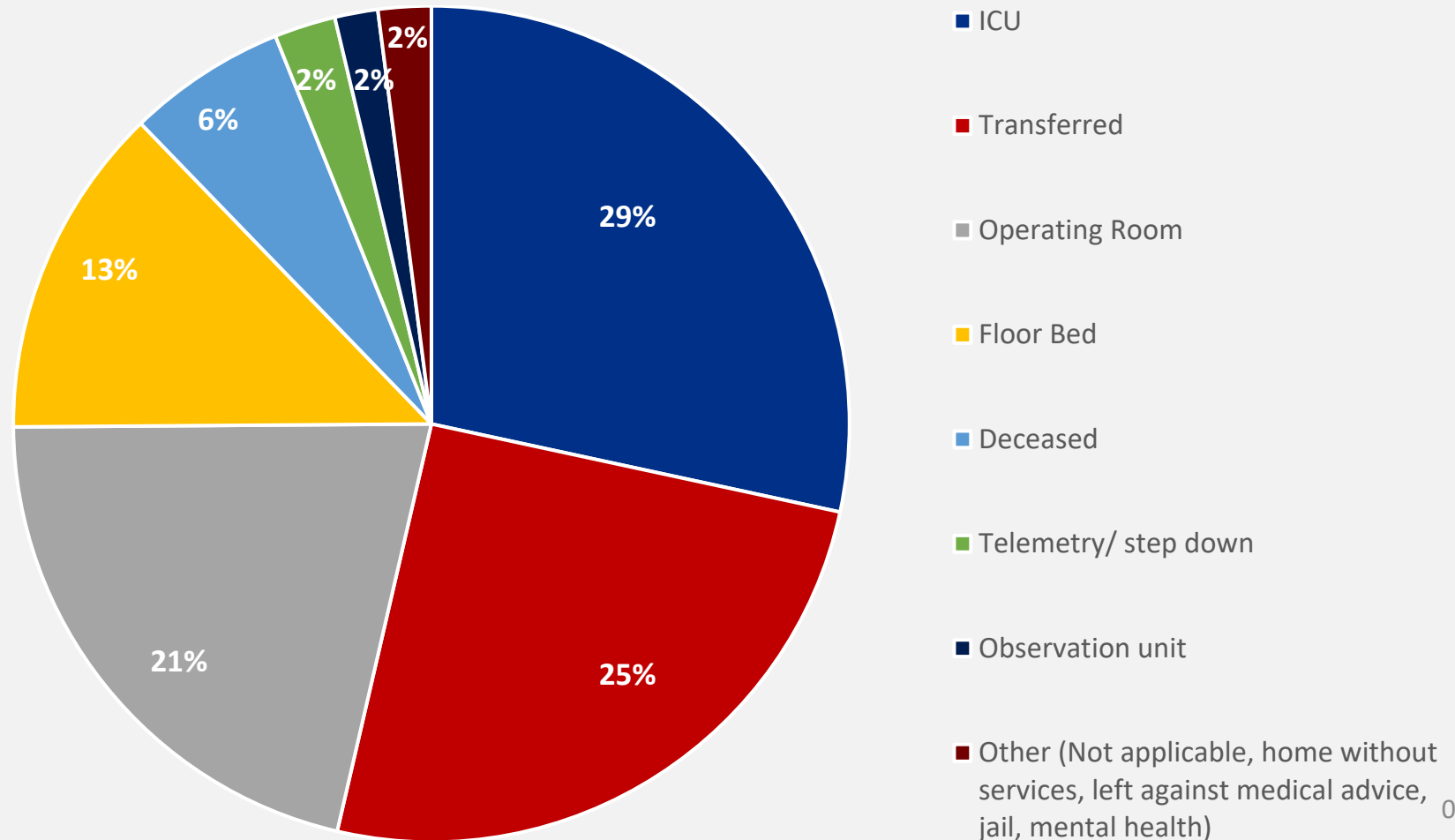
# 2021 Adult ED Disposition Level I Trauma



# 2021 Adult ED Disposition Level II Trauma

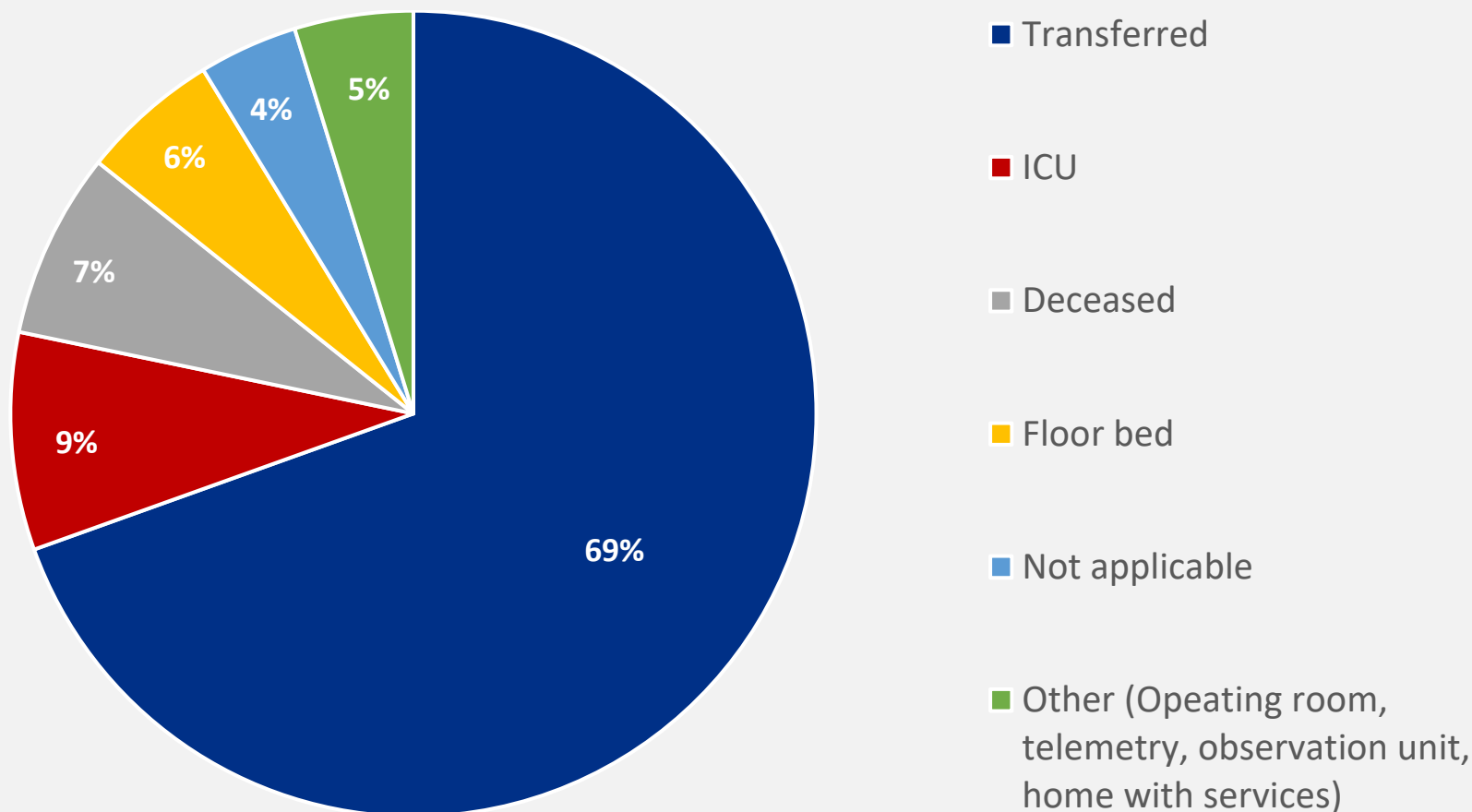


# 2021 Adult ED Disposition Level III Trauma

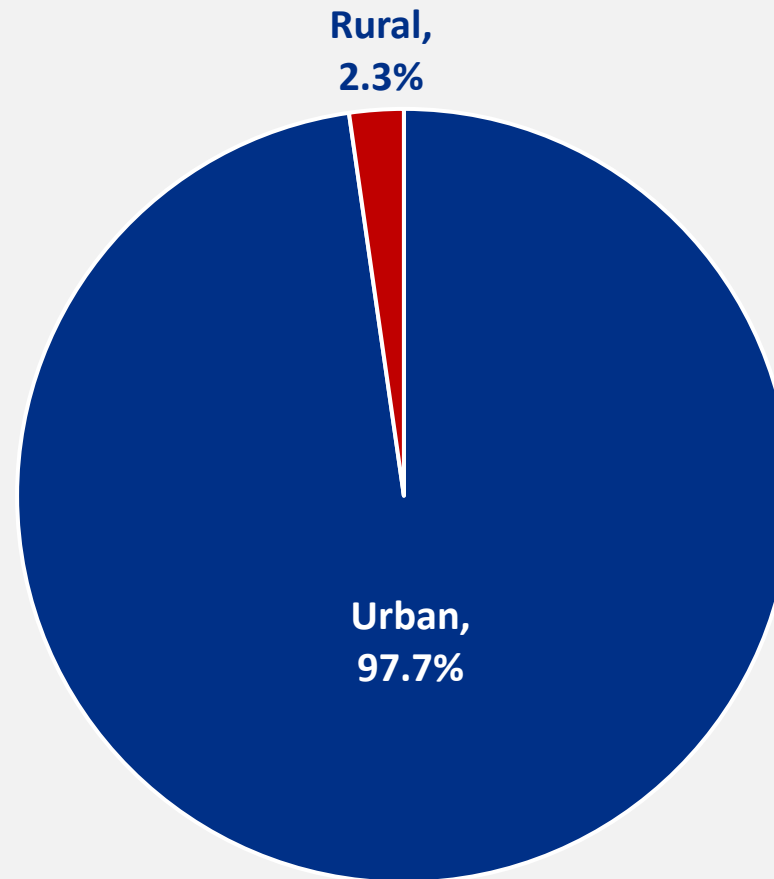


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# 2021 Adult ED Disposition Level IV Trauma



# 2021 Adult Urban versus Rural



# 2021 Adult Deceased by Urban and Rural

	Deceased in ED	Total Number	Percent
Urban	736	11,230	6.55%
Rural	20	261	7.66%

	Deceased in Hospital	Total Number	Percent
Urban	1083	11,230	9.64%
Rural	*	261	*



# 2021 Geriatric Trauma Injuries (Ages $\geq$ 65)



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# 2021 Geriatric Hospital Designation

Designation Level	Count	Percent
Trauma Center Level I	1,953	33.49%
Trauma Center Level II	1,788	30.66%
Trauma Center Level III	978	16.77%
Trauma Center Level IV	783	13.43%
Hospital	176	3.02%
STEMI (ST-elevation myocardial infarction) Center	8	0.14%
Missing / Not Known	145	2.49%

# 2021 Geriatric ED Disposition

ED Disposition	Number	Percent
Intensive Care Unit (ICU)	2,785	47.76%
Transferred to Another Hospital	883	15.14%
Floor Bed	824	14.13%
Operating Room	503	8.63%
Telemetry / step-down unit	443	7.60%
Deceased	149	2.56%
Not Applicable**	135	2.32%
Observation unit (unit that provides < 24-hour stays)	66	1.13%
Home without services	37	0.63%
Other (jail, institutional care, mental health, etc.)	*	*
Home with services	*	*
Left against medical advice	*	*

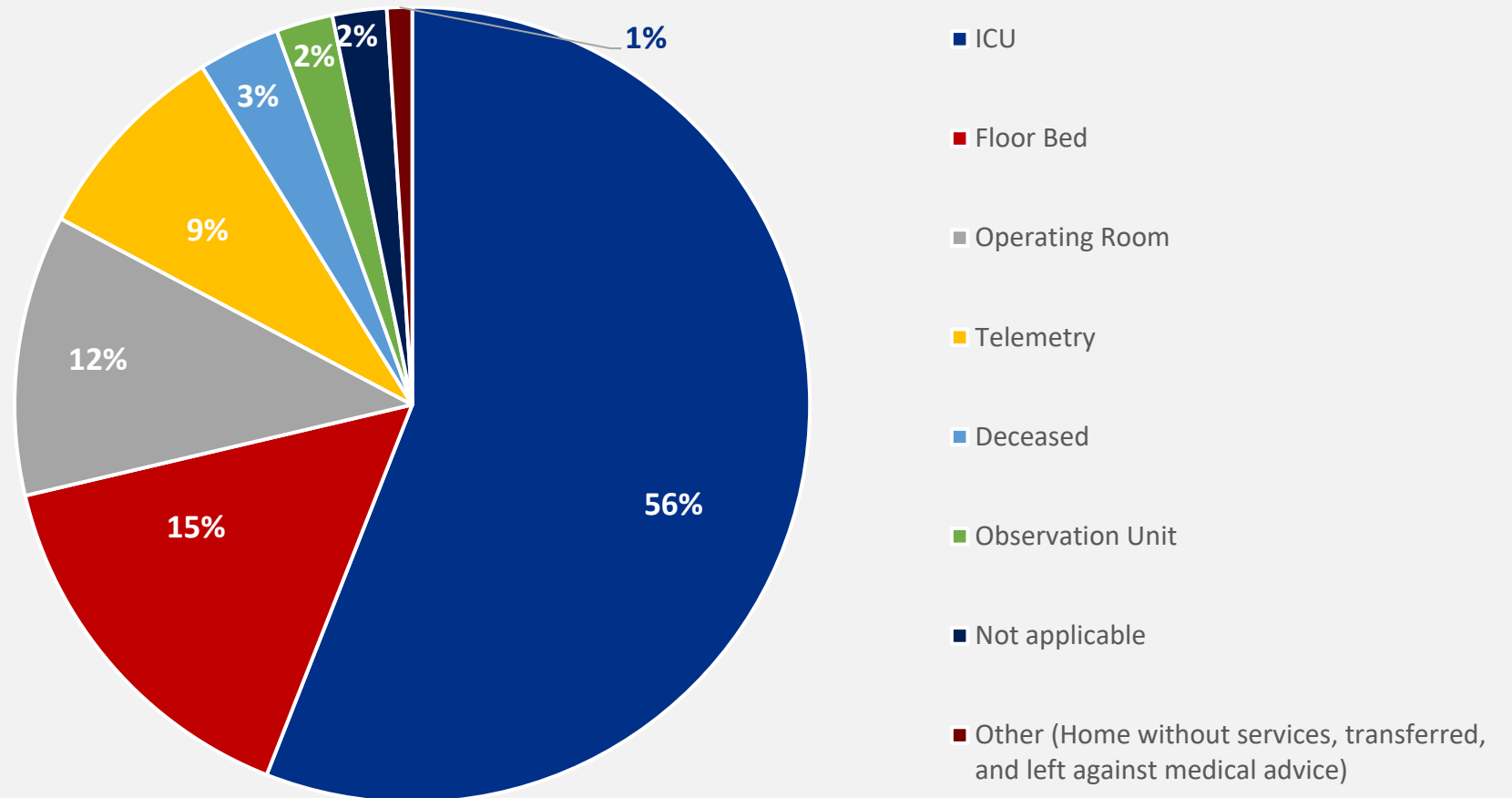
Not Applicable\*\* = directly admitted to the hospital

# 2021 Geriatric Hospital Disposition

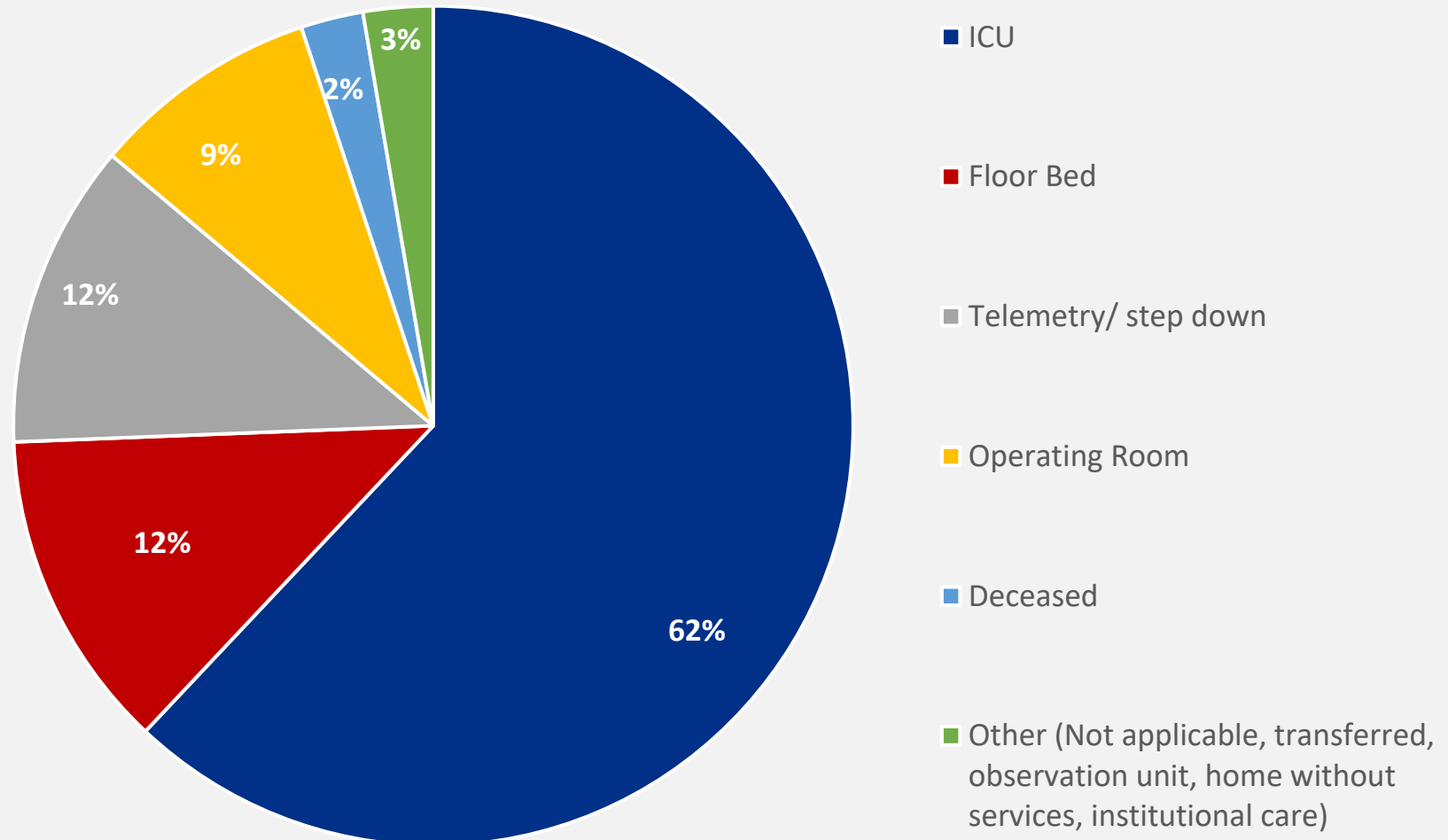
ED Disposition	Number	Percent
Discharged to home or self-care	1,123	19.26%
Not Applicable**	1,075	18.44%
Discharged / transferred to Skilled Nursing Facility	976	16.74%
Discharged / transferred to inpatient rehab	908	15.57%
Deceased	634	10.87%
Discharged / transferred to home health	458	7.85%
Discharged / transferred to hospice care	421	7.22%
Discharged / transferred to Long Term Care Hospital (LTCH)	119	2.04%
Discharged / transferred to short-term general hospital	41	0.70%
Discharged / transferred to an Intermediate Care Facility	37	0.63%
Left against medical advice	27	0.46%
Discharged / transferred to a psychiatric hospital	5	0.09%
Discharged / transferred to another type of institution	*	*
Discharged / transferred to court/ law enforcement	*	*
Discharged / transferred to another type of rehab	*	*
Not known / Not recorded	*	*

Not Applicable\*\* = ED disposition was transferred to another facility, deceased, home without services, or other

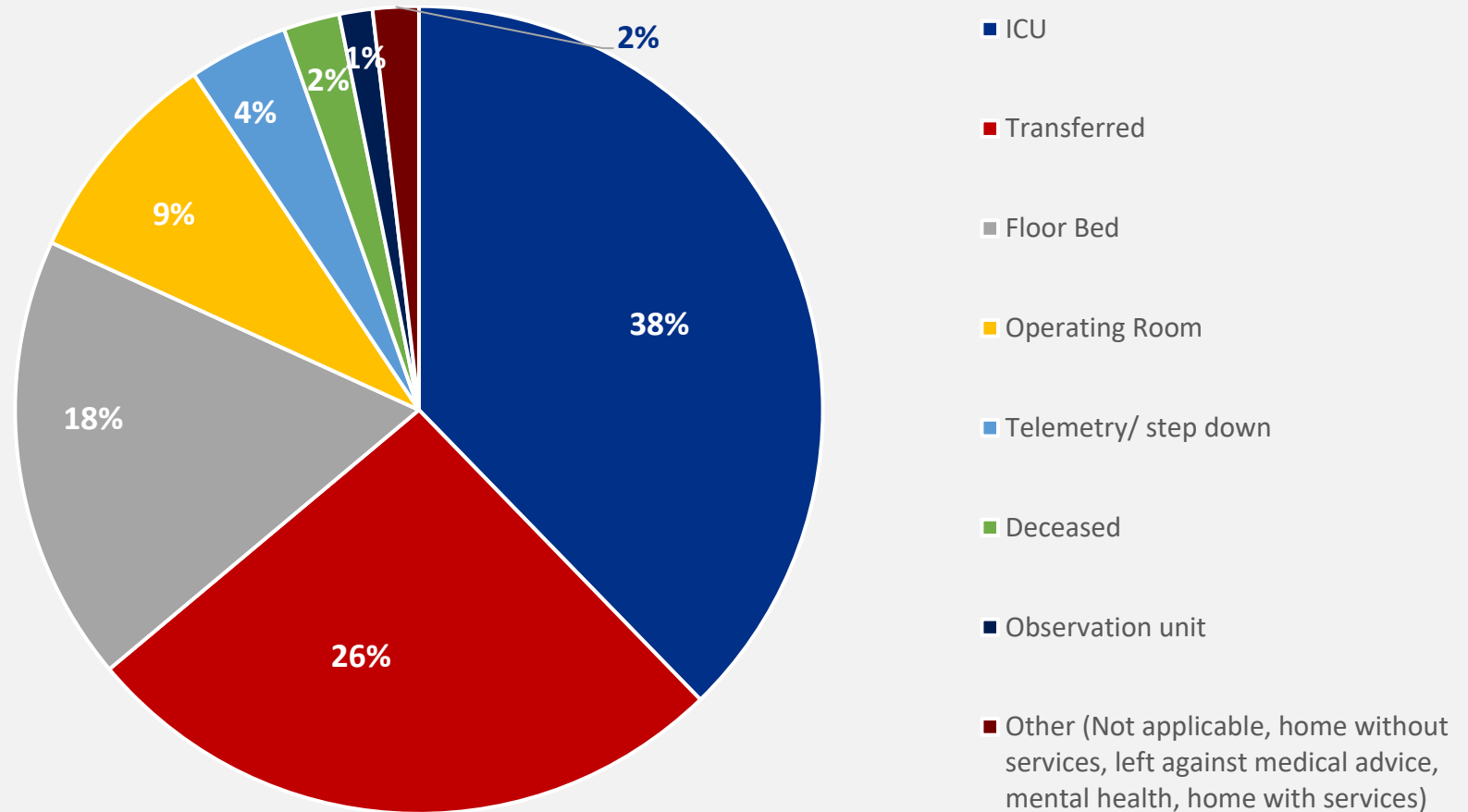
# 2021 Geriatric ED Disposition Level I Trauma



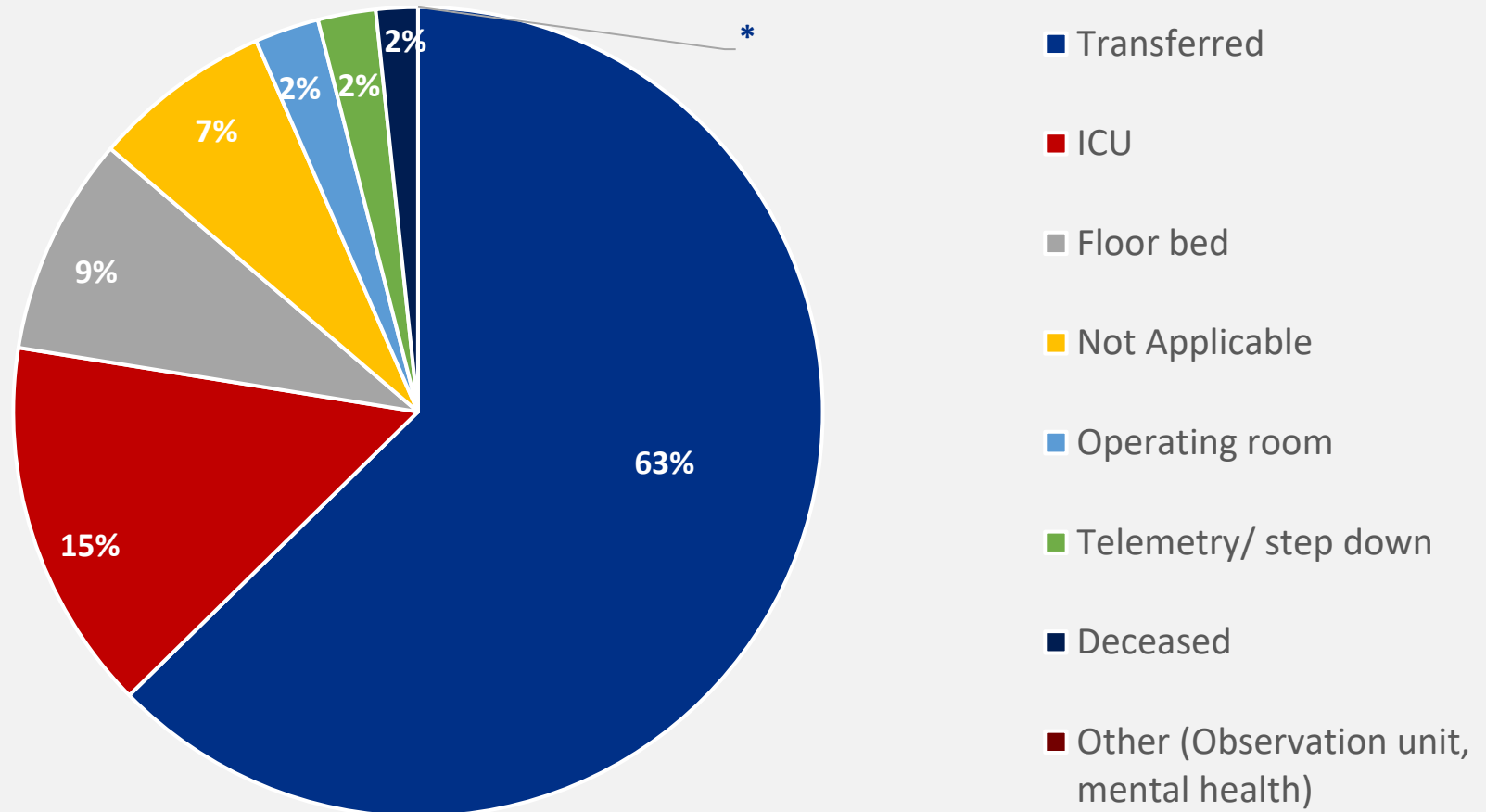
# 2021 Geriatric ED Disposition Level II Trauma



# 2021 Geriatric ED Disposition Level III Trauma

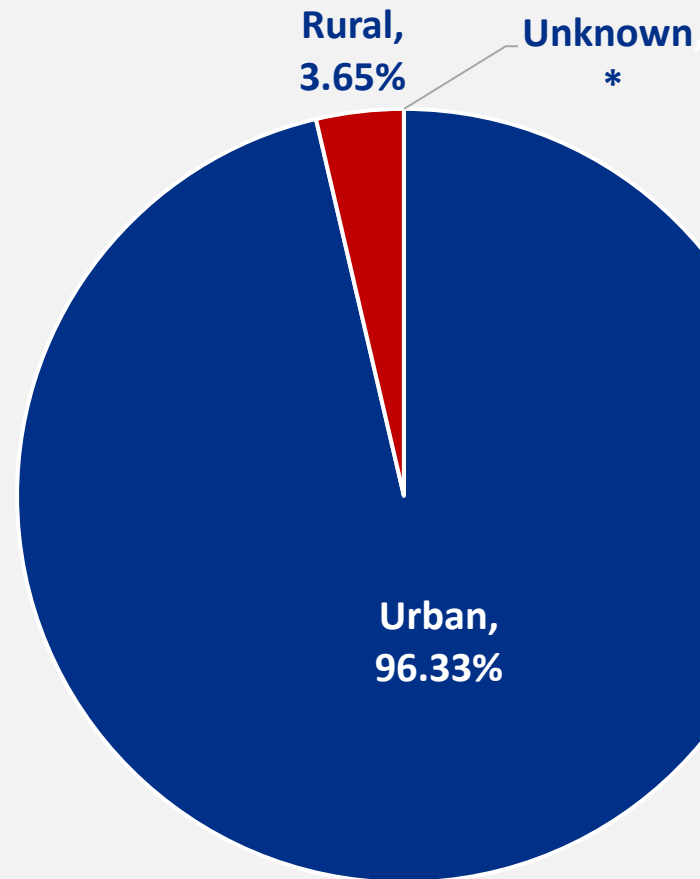


# 2021 Geriatric ED Disposition Level IV Trauma





# 2021 Geriatric Urban versus Rural



# 2021 Geriatric Deceased by Urban and Rural

	Deceased in ED	Total Number	Percent
Urban	142	5,617	2.53%
Rural	7	213	3.29%

	Deceased in Hospital	Total Number	Percent
Urban	627	5,617	11.16%
Rural	7	213	3.29%

# 2021 Pediatric Traumatic Brain Injuries (TBIs)



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# 2021 Pediatric TBIs by Age

Age Group	Count	Percent
Age < 1	949	30.49%
Age 1-4	814	26.16%
Age 5-9	627	20.15%
Age 10-14	722	23.20%
<b>Total</b>	<b>3,112</b>	<b>100.00%</b>

# 2021 Pediatric TBI – Hospital Designation by Age

Designation Level	Age <1	Age 1-4	Age 5-9	Age 10-14	Total
Trauma Center Level I	441	380	340	377	1,538
Trauma Center Level II	151	141	100	117	509
Trauma Center Level III	128	87	80	90	385
Trauma Center Level IV	131	119	81	75	406
<b>Total</b>	<b>851</b>	<b>727</b>	<b>601</b>	<b>659</b>	<b>2,838</b>

# 2021 Pediatric TBI – Transfer by Age

Age Group	# of Transfer	Total in Age	Percent
Age < 1	437	949	46.05%
Age 1-4	347	814	42.63%
Age 5-9	239	627	38.12%
Age 10-14	275	722	38.09%
<b>Total</b>	<b>1,298</b>	<b>3,112</b>	<b>41.71%</b>

# 2021 Pediatric TBI – ISS Score by Age

Injury Severity Score	Age <1	Age 1-4	Age 5-9	Age 10-14	Total
0	16	9	*	*	31
1-8	444	398	256	268	1,366
9-15	329	250	226	236	1,041
16-24	100	84	78	101	363
≥ 25	60	73	64	114	311
<b>Total</b>	<b>949</b>	<b>814</b>	<b>627</b>	<b>722</b>	<b>3,112</b>

# 2021 Pediatric TBI – Deceased in ED by Age Group

Age Group	Deceased in ED	Total Number	Percent
Age < 1	*	949	*
Age 1-4	15	814	1.84%
Age 5-9	8	627	1.28%
Age 10-14	10	722	1.39%
<b>Total</b>	<b>37</b>	<b>3,112</b>	<b>1.19%</b>



# 2021 Pediatric TBI – Deceased in Hospital by Age Group

Age Group	Deceased in Hospital	Total Number	Percent
Age < 1	14	949	1.48%
Age 1-4	11	814	1.35%
Age 5-9	9	627	1.44%
Age 10-14	20	722	2.77%
<b>Total</b>	<b>54</b>	<b>3,112</b>	<b>1.74%</b>

# Resources

- National Trauma Data Bank (NTDB) data dictionary - [facs.org/quality-programs/trauma/tqp/center-programs/ntdb/ntds](https://facs.org/quality-programs/trauma/tqp/center-programs/ntdb/ntds).
- NSW Institute of Trauma and Injury Management - [aci.health.nsw.gov.au/get-involved/institute-of-trauma-and-injury-management](https://aci.health.nsw.gov.au/get-involved/institute-of-trauma-and-injury-management).
- Coding is based on the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM).
- Web-Based Injury Statistics Query and Reporting System - [WISQARS \(Web-based Injury Statistics Query and Reporting System\) | Injury Center | CDC](https://wisqars.cdc.gov/).

# Thank you!

2021 Texas Trauma Injuries for Patients with an Injury Severity Score  $\geq 15$

August 18<sup>th</sup>, 2023

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