NOTS
Northern Ohio Trauma System

2025 ANNUAL REPORT

RIGHT PATIENT. RIGHT PLACE. RIGHT TIME.

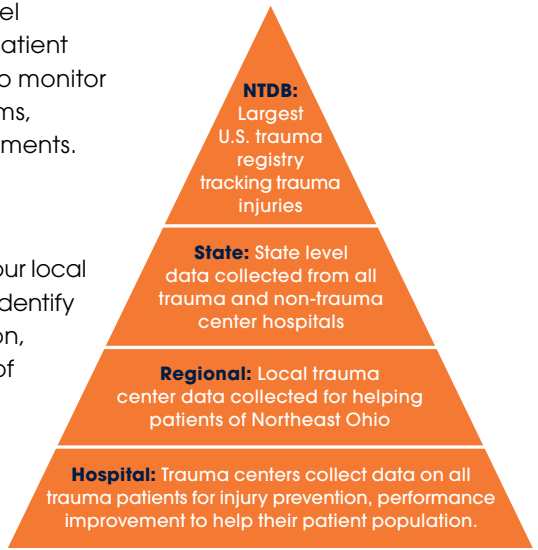
TABLE OF CONTENTS

THE POWER OF TRAUMA DATA:

WHY WE COLLECT IT AND HOW TQIP, NTDB, OHIO, AND THE NOTS REGION WORK TOGETHER

Trauma data is more than numbers. It's the foundation for improving patient care, guiding best practices, and identifying trends that save lives. Each organization we work with plays a unique role in turning this data into action:

- **TQIP (Trauma Quality Improvement Program):** A national program through the American College of Surgeons that benchmarks trauma center performance, compares outcomes, and identifies opportunities for quality improvement. Trauma Quality Improvement Program (TQIP) | ACS
- **NTDB (National Trauma Data Bank):** The largest trauma registry in the United States, collecting standardized data from trauma centers nationwide to track injury trends and outcomes. National Trauma Data Bank® (NTDB®) | ACS
- **Ohio Trauma Registry:** A state-level database that collects trauma patient information from Ohio hospitals to monitor care, support prevention programs, and meet state reporting requirements. Trauma Acute Care Registry | Emergency Medical Services
- **NOTS Regional Data:** Focused on our local trauma system, this data helps us identify patterns, strengthen collaboration, and address the specific needs of patients in our region. Northern Ohio Trauma System

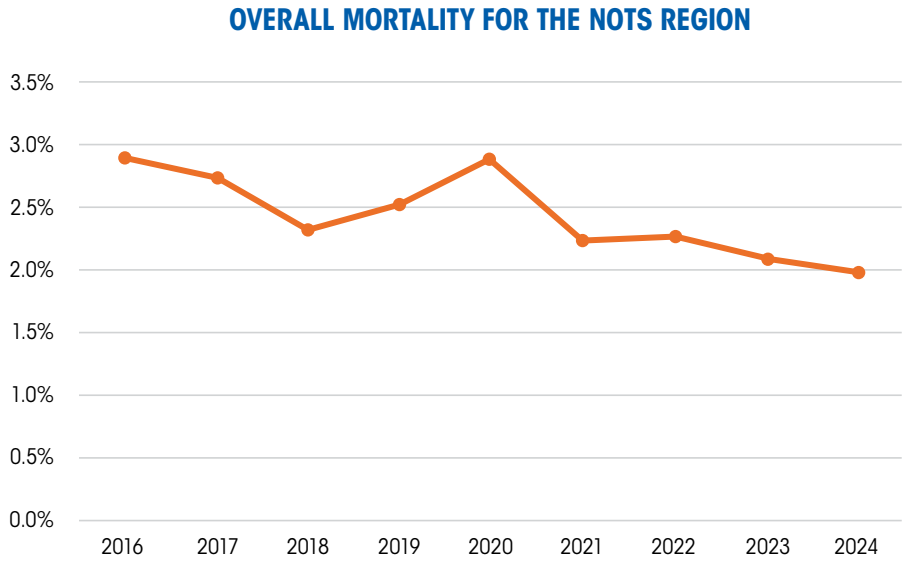


Together, these layers of data give us the local, state, and national insight we need to improve trauma care at every level.

MISSION STATEMENT

RIGHT PATIENT. RIGHT PLACE. RIGHT TIME.

To Provide the Highest Quality of Care to Trauma Patients Across the Region by Rigorously Evaluating and Improving Outcomes, Optimizing Resources, and Providing Education across the Region Utilizing a Collaborative Approach with Hospitals, Emergency Medical Services, and Public Health Services.



EXECUTIVE SUMMARY

GREETING FROM OUR MEDICAL DIRECTOR

I am excited to share with you the 2025 Northern Ohio Trauma System annual report. I want to begin by thanking our Director, Danielle Rossler, and our Data Specialist, Sara Arida, both of whom work tirelessly every year to put this report together. Our regional collaboration continues to fulfill our mission of providing the highest quality trauma care for Northeast Ohio. The 2025 report provides an annual accounting of all the trauma patients who were treated at our regional trauma centers in 2024, as well as patients treated at our region's adult and pediatric burn center. We continue to see a decrease in trauma mortality in the region, as well as a decrease in the total number of victims of gun violence being brought to our trauma centers. However, elderly falls continue to increase in number, representing an area of continually needed regional collaboration.

Through a multidisciplinary and collaborative approach utilizing education and advocacy, NOTS will continue to serve the citizens of Northeast Ohio by providing the best possible trauma care. We hope you find ths report informative and evidence of our commitment to serving the citizens of Northeast Ohio.

Sincerely,
Justin Dvorak, MD

JUSTIN DVORAK, MD
Trauma Medical Director, NOTS

"Our regional collaboration continues to fulfill our mission of providing the highest quality trauma care for Northeast Ohio."

NOTS STAFF

JUSTIN DVORAK, MD
Trauma Medical Director

MICHAEL DINGELDEIN, MD, FACS, FAAP, FCCM
Trauma Pediatric Medical Director

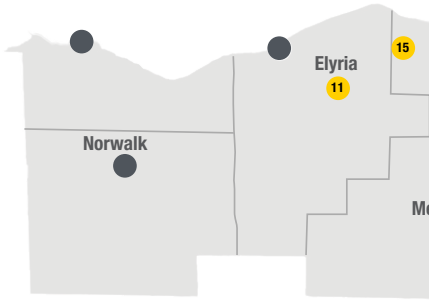
DANIELLE ROSSLER, MBA, BSN, RN
Director

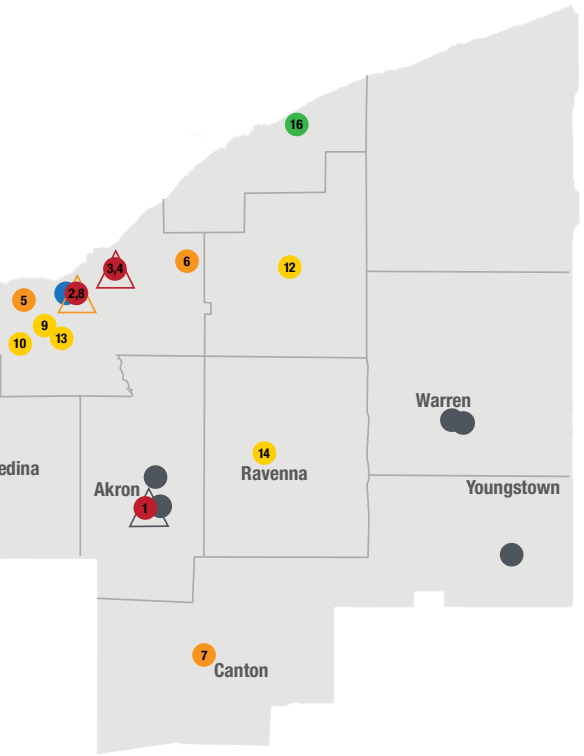
MONI JAMES, EMSI, BPH
EMS/ATLS Coordinator

SARA ARIDA, CSTR,CAISS, RHIT
Data Specialist

KEY

- ADULT LEVEL I
- ADULT LEVEL II
- ADULT LEVEL III
- NOTS NON-TRAUMA HOSPITAL
- NON-NOTS TRAUMA CENTER
- BURN CENTER
- PEDIATRIC LEVEL I
- PEDIATRIC LEVEL II





CURRENT NOTS HOSPITALS

LEVEL I

1. Cleveland Clinic Akron General
2. MetroHealth Medical Center (Adult)
3. University Hospitals Cleveland Medical Center
4. University Hospitals Rainbow Babies & Children's Hospital

LEVEL II

5. Cleveland Clinic Fairview Hospital
6. Cleveland Clinic Hillcrest Hospital
7. Cleveland Clinic Mercy Hospital – Canton
8. MetroHealth Medical Center (Pediatric)

LEVEL III

9. MetroHealth Parma Medical Center
10. Southwest General Health Center
11. UH Elyria Medical Center
12. UH Geauga Medical Center
13. UH Parma Medical Center
14. UH Portage Medical Center
15. UH St. John Medical Center
16. UH Lake West Medical Center

BURN CENTER

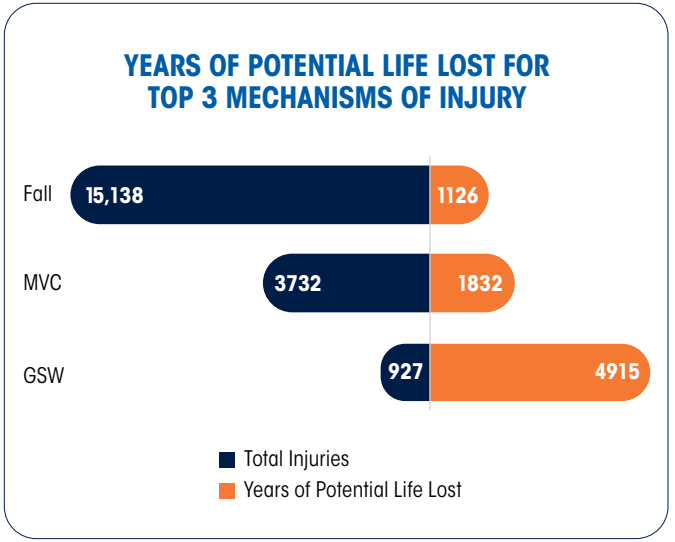
17. MetroHealth Medical Center

YEARS OF POTENTIAL LIFE LOST

Years of Potential Life Lost (YPLL) measures the years a person would have lived had they not died prematurely. This metric helps illustrate the population burden of disease and injury. A high number of YPLLs can reflect the loss of contributions an individual could have made to society.

For this analysis, a reference life expectancy of 75 years was used. We examined YPLLs in 2023 for the top three mechanisms of injury: **falls, motor vehicle collisions (MVCs), and gunshot wounds (GSWs).**

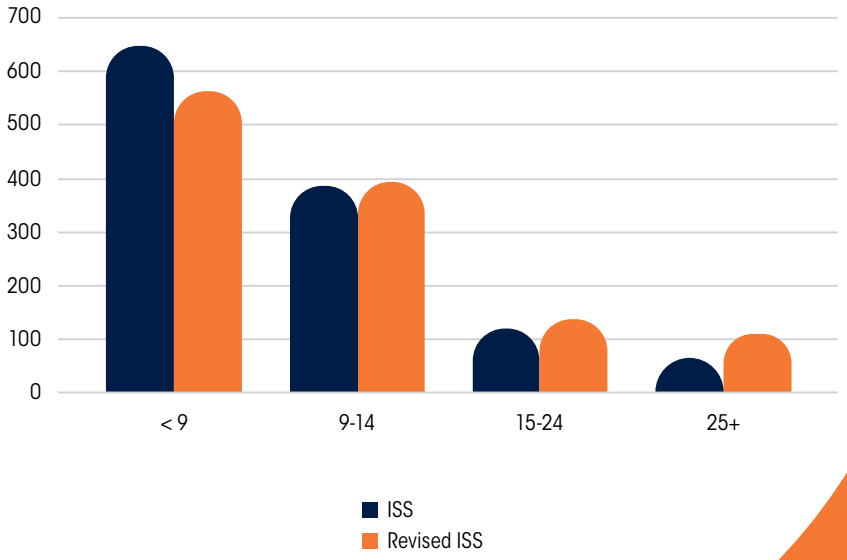
YPLLs were inversely proportional to the total number of injuries for each mechanism. Falls accounted for the most injuries but the fewest YPLLs, while GSWs had the fewest injuries but the highest YPLLs. This difference is largely due to the age patterns associated with each mechanism—falls are more often fatal in older individuals, whereas GSWs disproportionately affect younger individuals, leading to more years of life lost.



	TOTAL INJURIES	DEATHS	MORTALITY	YPLL*	MEAN YPLL PER DEATH	TOTAL YPLL PER DEATH
FALL	15,138	205	1.4%	1,126	5.5	1,126
MVC	3,732	86	2.3%	1,832	21.3	1,832
GSW	927	123	13.3%	4,915	40.0	4,915

*This YPLL calculation assumes a 75-year life expectancy.

ISS VS. REVISED ISS



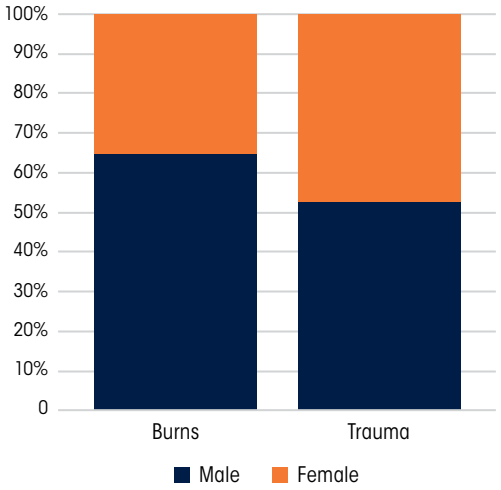
The graph to the left shows the original ISS* for patients' injuries, calculated at the outside facility within the NOTS region. Once patients are transferred to the highest level of care needed, the receiving NOTS facility recalculates the ISS based on a more detailed assessment of the injuries. This graph highlights the importance of a regional trauma system—ensuring patients get to the right place at the right time.

*The Injury Severity Score (ISS) is an established medical score to assess trauma severity. It correlates with mortality, morbidity, and hospitalization time after trauma. It is used to define the term "major trauma". A major trauma (or polytrauma) is defined as having an Injury Severity Score greater than 15.

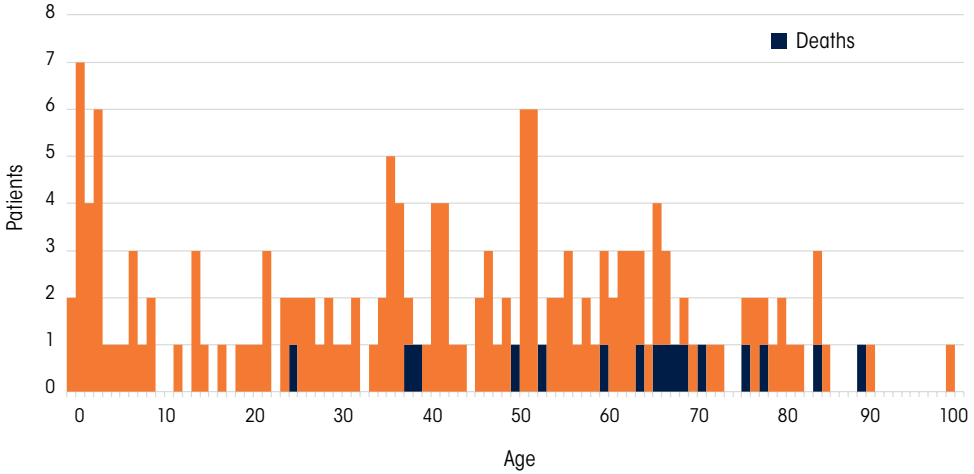
NOTS REGIONAL BURN CARE CENTER,
METROHEALTH MEDICAL CENTER

MetroHealth's Burn Care Center, verified by the American Burn Association for both adult and pediatric care, has provided the highest level of burn treatment to Northeast Ohio for more than 50 years. As part of a fully resourced Adult Level I Trauma Center, we combine expert clinical care with a commitment to advancing burn treatment through prevention, education, and research. Recognized as a center of distinction, our program offers comprehensive outpatient services, dedicated adult and pediatric support groups, and the Institute for Burn Ethics in partnership with Case Western Reserve University.

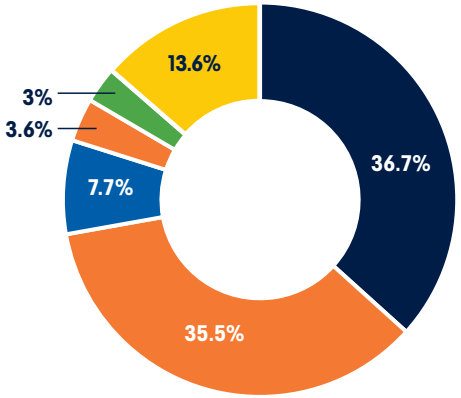
BURNS VS. TRAUMA



BURNS: BY AGE

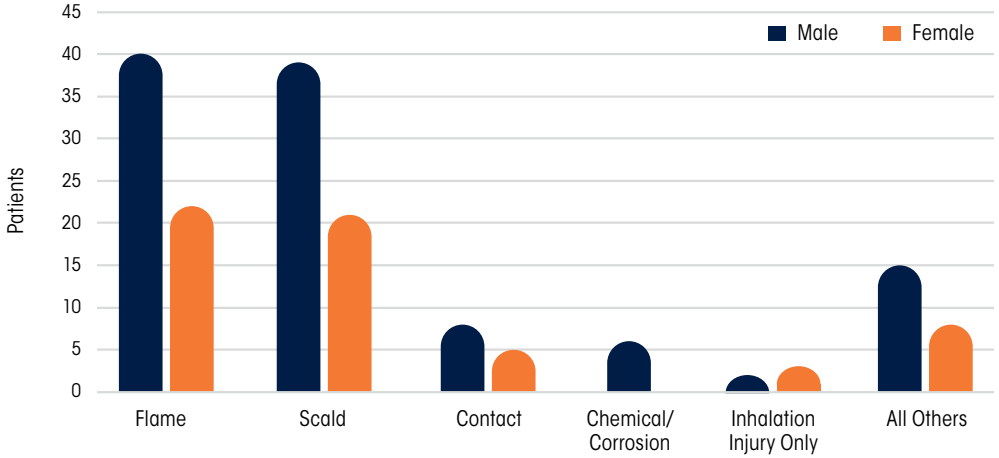


BURN CATEGORIES



- Flame
- Scald
- Contact
- Chemical/Corrosion
- Inhalation Injury Only
- All Others*

BURN CATEGORIES: BY GENDER



Flame Burn – A thermal injury resulting from direct exposure to an open flame.

Scald Burn – A thermal injury caused by contact with hot liquids or steam.

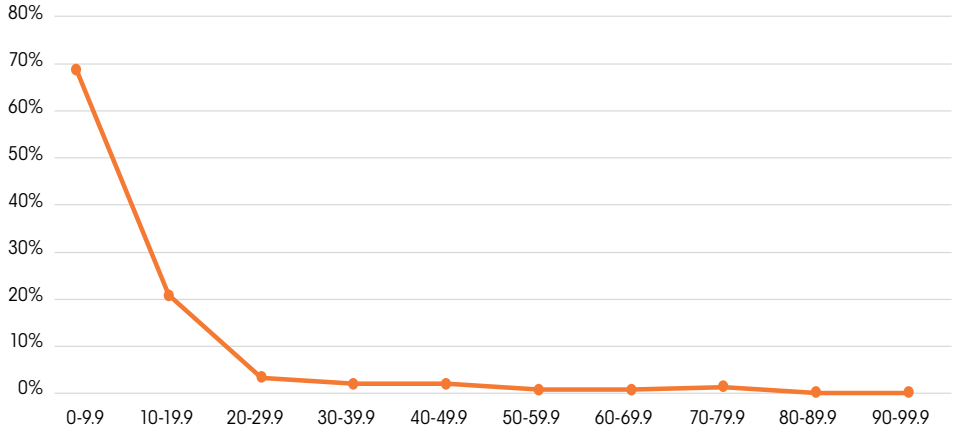
Contact Burn – A thermal injury resulting from direct contact with a hot solid object, typically involving prolonged heat transfer to the skin.

Chemical Burn (Corrosive Burn) – A tissue injury caused by exposure to caustic or corrosive substances such as acids, alkalis, or solvents.

Inhalation Injury – Damage to the respiratory tract or lungs caused by inhalation of smoke, hot gases, or toxic fumes.

*Note: All others include Inhalation Injury Only, Cold Injury, Friction/Shearing, Electrical, Flash, and Traumatic Injuries.

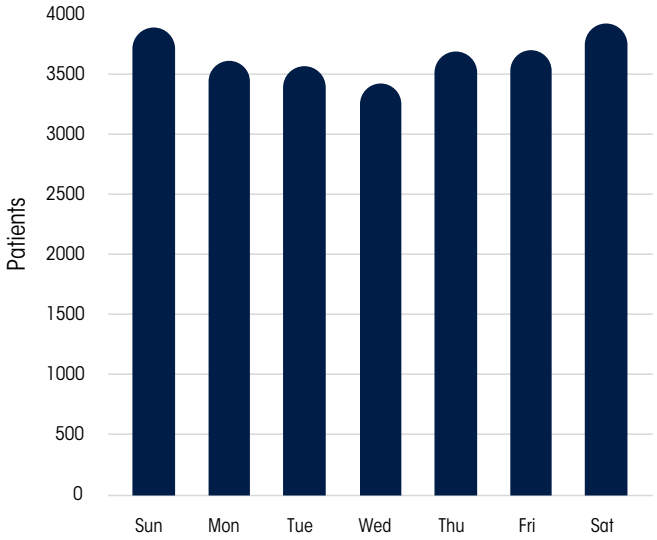
NOTS REGIONAL BURN CARE CENTER,
METROHEALTH MEDICAL CENTER (cont'd)



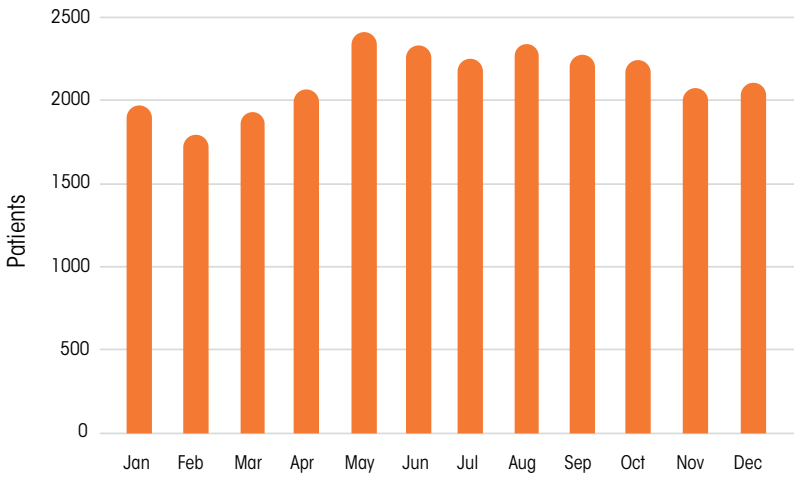
Total Body Surface Area (TBSA)—The percentage of the body's skin involved in a burn or wound; used to estimate injury size and guide treatment.

FREQUENCY OF TRAUMA

FREQUENCY OF TRAUMA: BY DAY OF WEEK

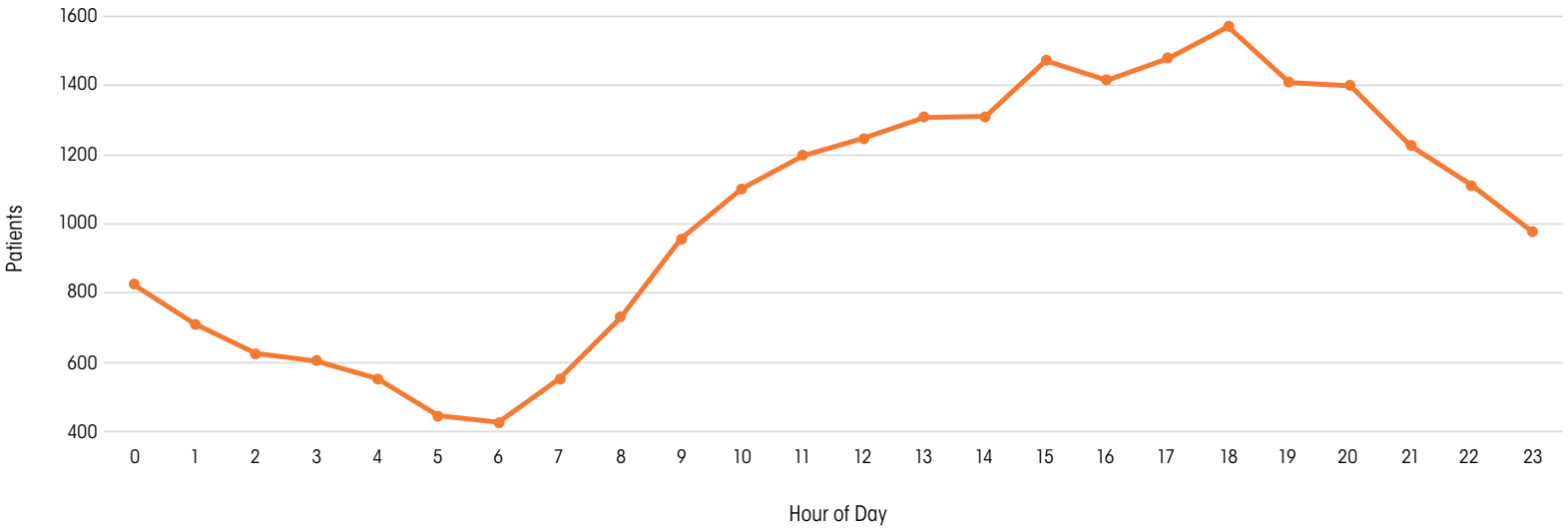


FREQUENCY OF TRAUMA: BY MONTH

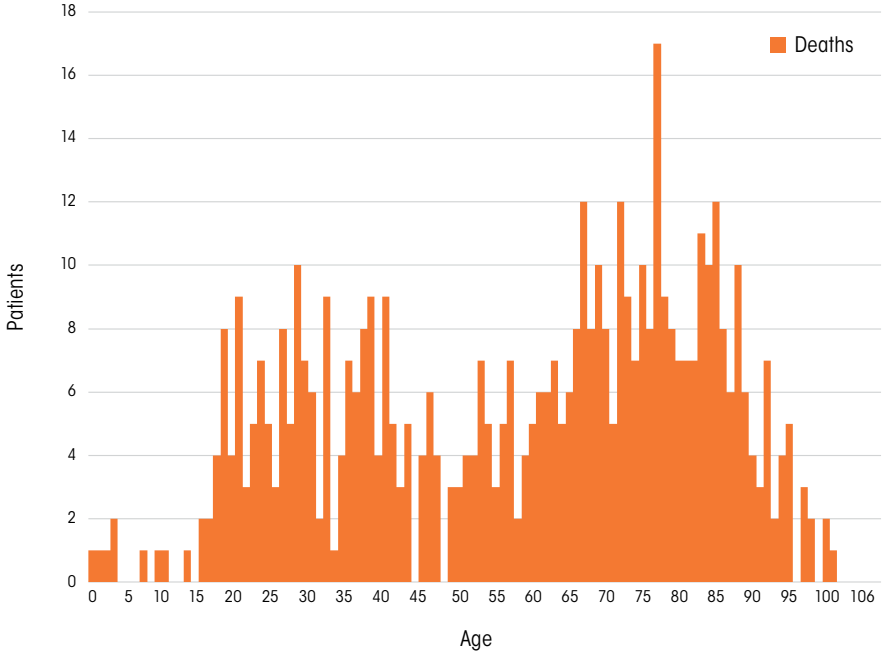


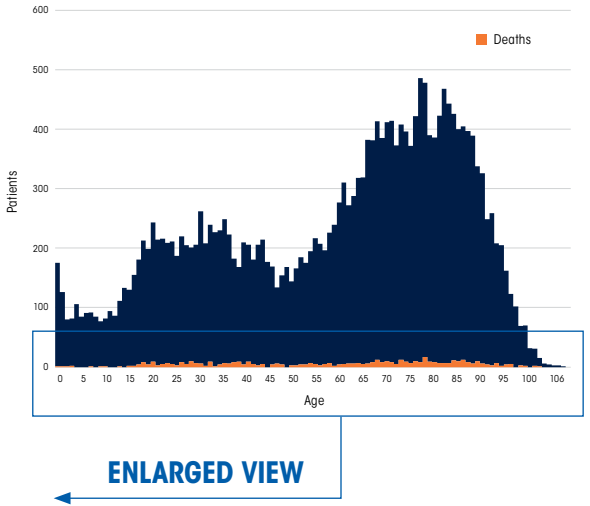
FREQUENCY OF TRAUMA (cont'd)

FREQUENCY OF TRAUMA: BY HOUR OF DAY



FREQUENCY OF TRAUMA: ALL PATIENTS BY AGE

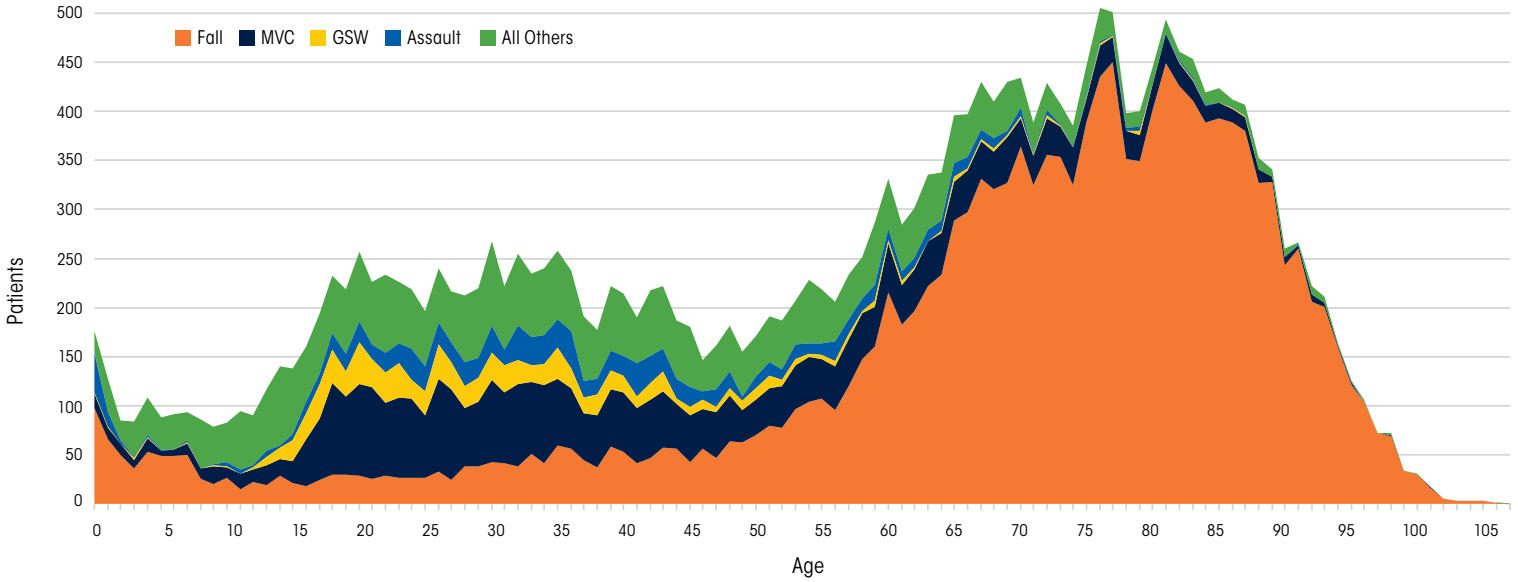




The enlarged view on the left side of the image highlights the number of deaths by age among trauma patients. This detailed breakdown provides a clearer representation of mortality trends across age groups, offering valuable insight into which age ranges experience higher trauma-related fatalities.

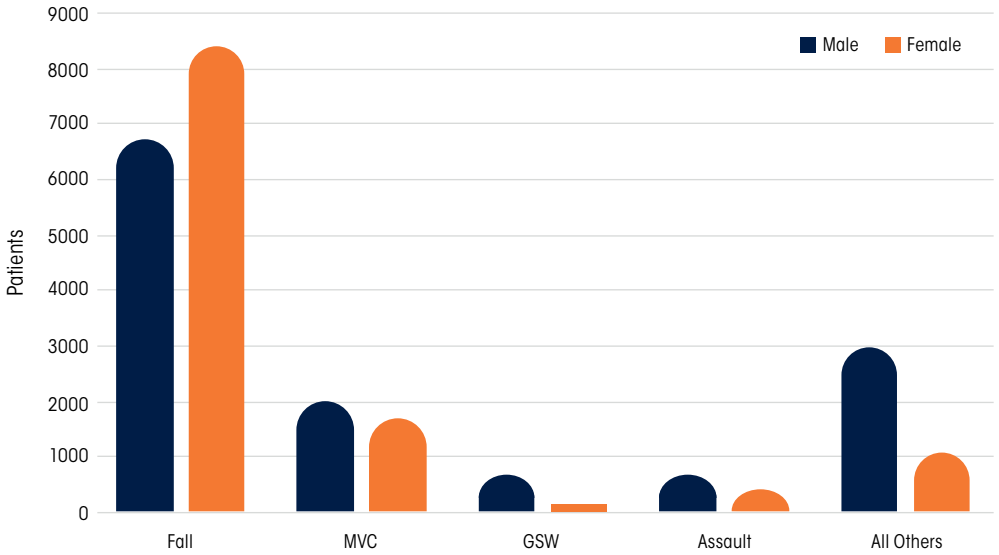
MECHANISMS OF INJURY

TOP MECHANISMS OF INJURY: BY AGE

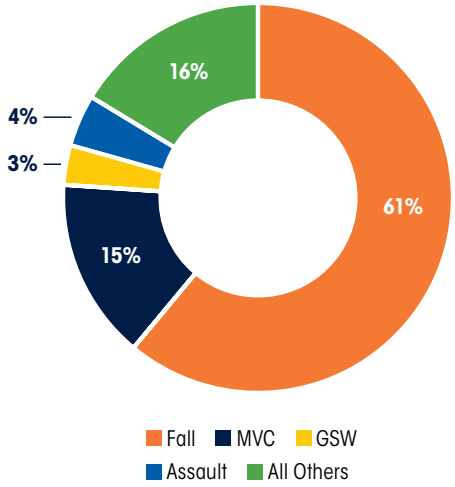


*Note: All others include Animal Injury (Includes Bite and Struck By), Bicycle, Biting (Human), Burn, Crush, Cut, Drown, Exposure, Inhalation, Machine, MCC, OV, Overexertion, Pedestrian, Sport, Stab, Struck, Suffocation/Hang/Asphyxiation, Unknown (Found Down), and Watercraft.

MECHANISMS OF INJURY: BY GENDER

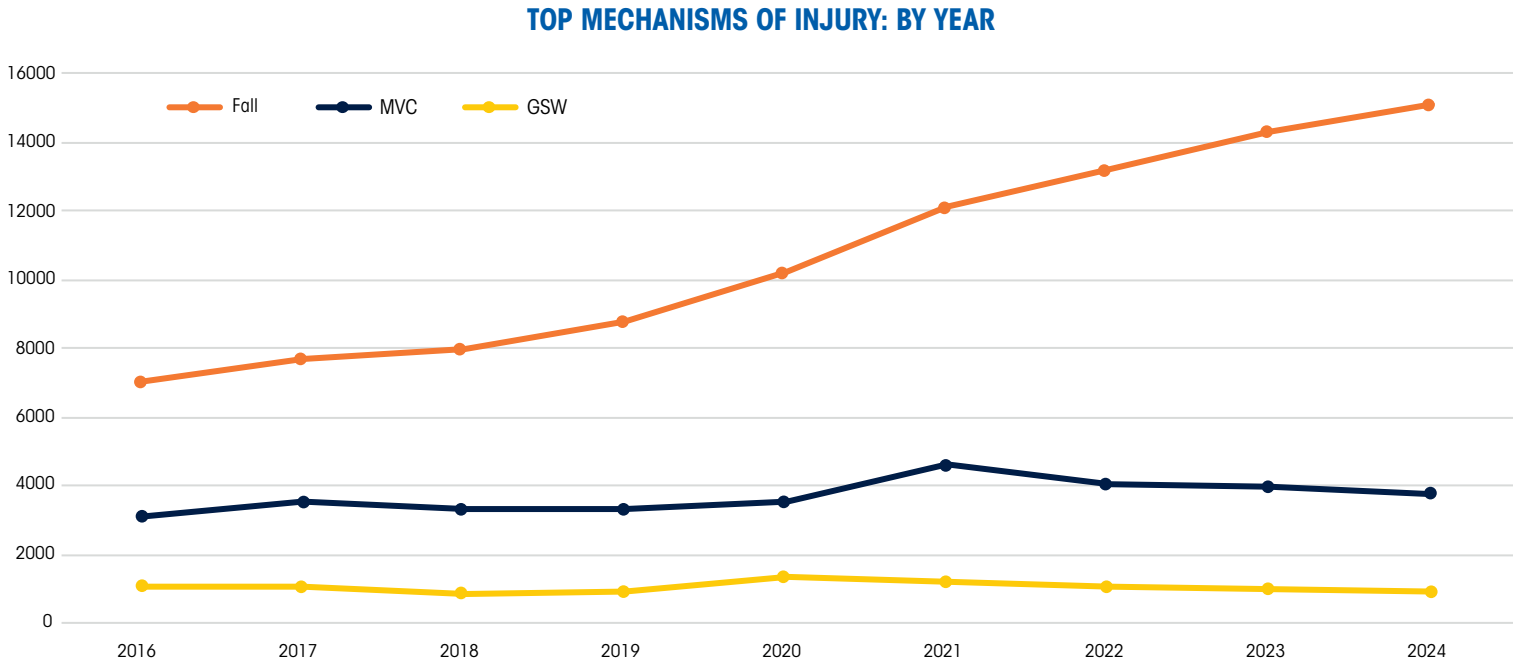


ALL PATIENTS



*Note: All others include Animal Injury (Includes Bite and Struck By), Bicycle, Biting (Human), Burn, Crush, Cut, Drown, Exposure, Inhalation, Machine, MCC, OV, Overexertion, Pedestrian, Sport, Stab, Struck, Suffocation/Hang/Asphyxiation, Unknown (Found Down), Watercraft.

MECHANISMS OF INJURY (cont'd)



MECHANISMS OF INJURY: BY ISS GROUP

MECHANISM	<9	9-14	15-24	25+
Animal Injury (Includes Bite and Struck By)	129	20	6	0
Assault	358	157	35	12
Bicycle	146	93	16	6
Biting (Human)	1	0	0	0
Burn	188	12	4	19
Crush Injury	52	11	2	3
Cut	117	20	0	0
Drown	0	4	0	3
Exposure	5	2	0	0
Fall	5450	4965	654	375
GSW	235	229	109	120
Inhalation	0	2	0	0
Machine	55	10	0	1

MECHANISM	<9	9-14	15-24	25+
MCC	231	167	85	62
MVC	1336	585	212	158
OV	192	94	28	16
Overexertion	41	10	0	0
Pedestrian	157	113	32	41
Sport	156	25	3	1
Stab	123	44	11	7
Struck	265	77	16	6
Suffocation/Hanging/Asphyxiation	3	14	1	3
Unknown (Found Down)	60	43	15	22
Watercraft	4	0	1	0
Totals	**9304**	**6697**	**1230**	**855**

MECHANISMS OF INJURY (cont'd)

MECHANISMS OF INJURY: BY AGE GROUP

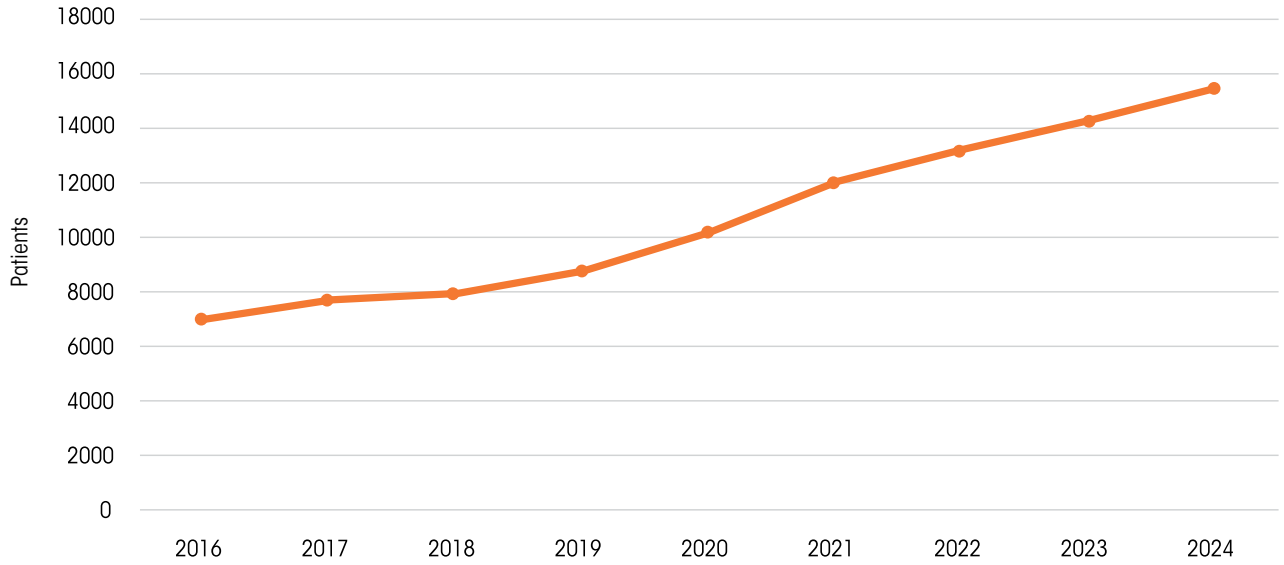
MECHANISM	<15	15-20	21-40	41-65	66-80	>80
Animal Injury (Includes Bite and Struck By)	84	3	51	39	21	3
Assault	84	84	477	380	66	9
Bicycle	82	31	66	114	60	11
Biting (Human)	0	0	3	1	0	0
Burn	67	12	76	85	36	13
Crush Injury	3	3	24	33	10	1
Cut	8	15	70	72	20	5
Drown	9	0	5	2	0	0
Exposure	0	0	4	2	0	2
Fall	610	154	801	2878	5372	5021
GSW	32	185	491	176	24	5
Inhalation	0	0	2	0	1	0

MECHANISM	<15	15-20	21-40	41-65	66-80	>80
Machine	6	2	20	28	11	4
MCC	22	76	297	257	53	4
MVC	189	398	1443	1115	493	182
OV	43	48	136	103	26	4
Overexertion	4	1	12	20	8	8
Pedestrian	45	55	197	194	83	14
Sport	118	56	22	11	3	2
Stab	15	21	154	87	7	2
Struck	111	44	101	125	53	21
Suffocation/Hanging/Asphyxiation	4	8	15	13	0	0
Unknown (Found Down)	8	5	42	72	59	46
Watercraft	0	0	3	2	0	0
Totals	**1544**	**1201**	**4512**	**5809**	**6406**	**5357**

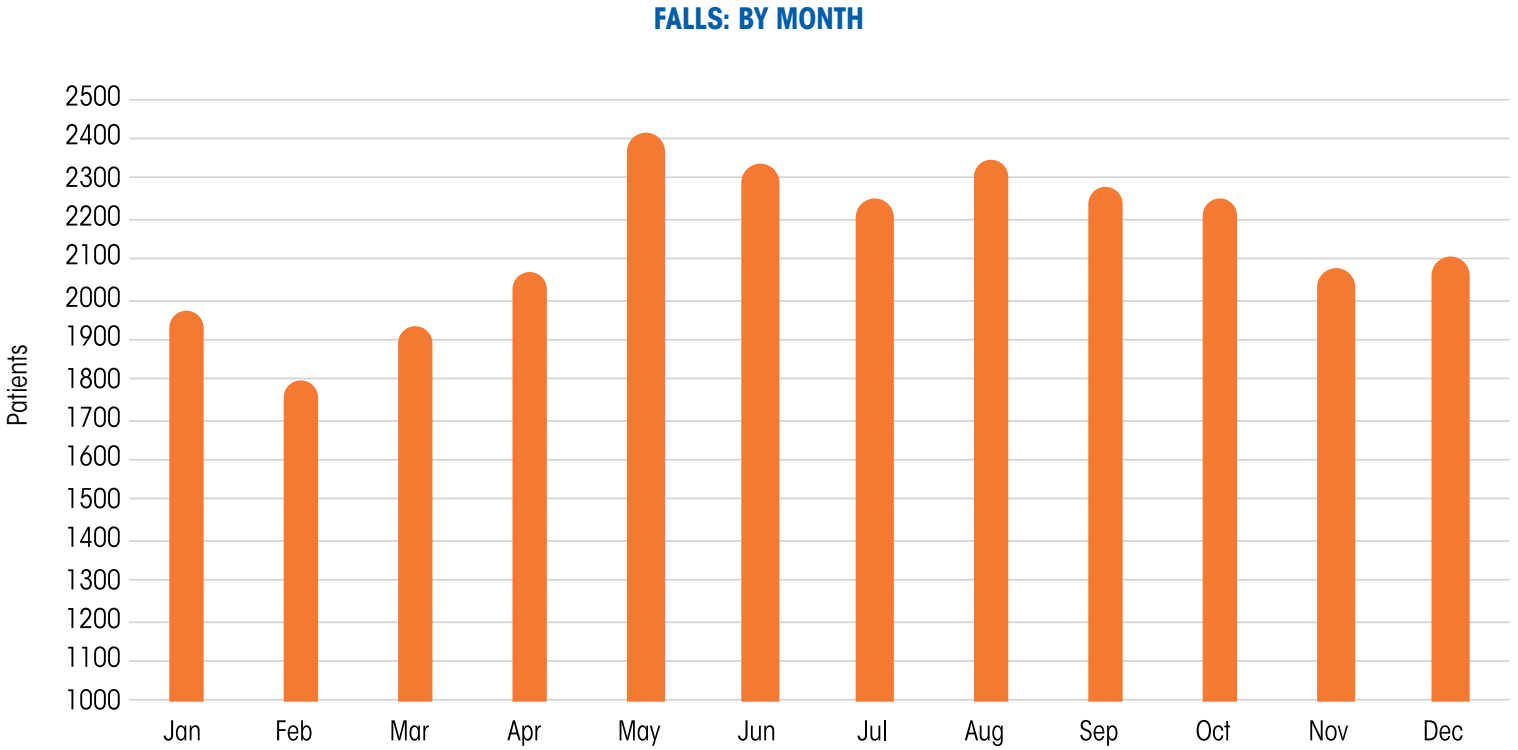
FALLS

The increase in reported falls is partly due to broader data capture. In 2017, we began including data from more trauma centers, and starting in **2021**, all hip fractures were entered into the trauma registry. This expanded reporting results in a higher count of fall-related injuries compared to previous years.

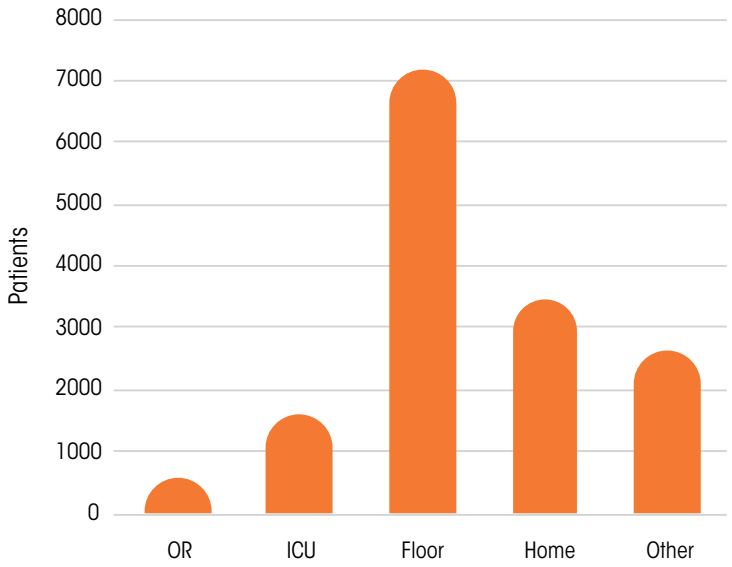
FALLS: BY YEAR



FALLS (cont'd)


FALLS: BY MONTH
Patients
2500
2400
2300
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

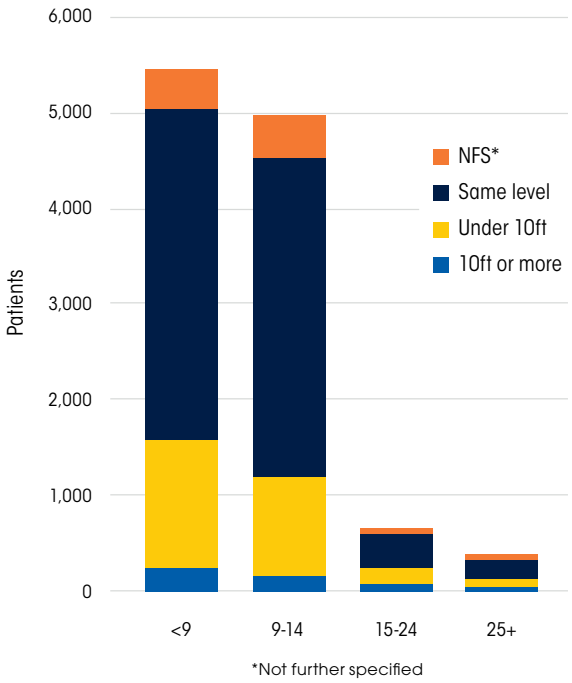
FALLS: BY ED* DISPOSITION



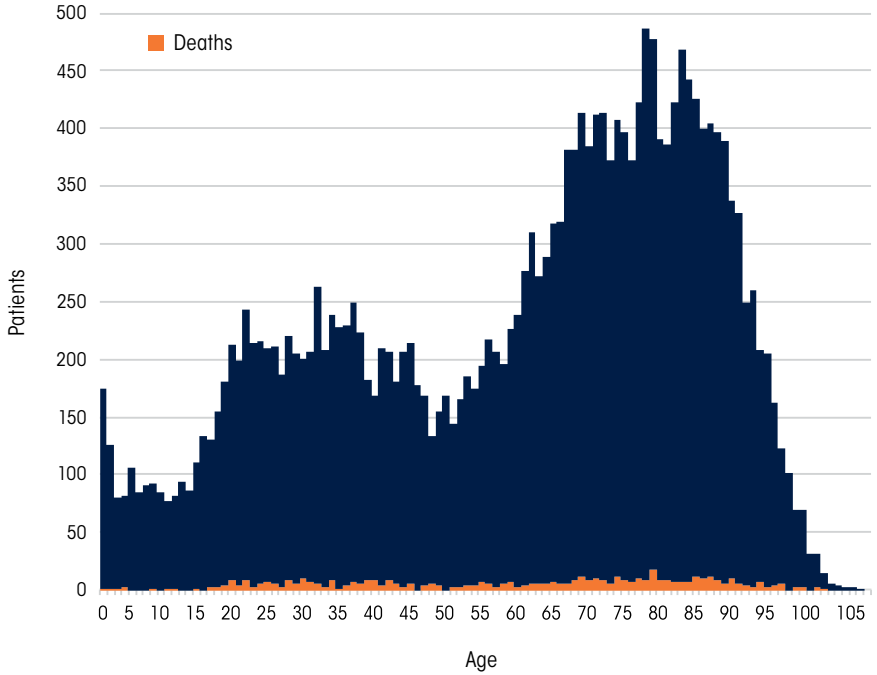
*ED = emergency department

FALLS (cont'd)

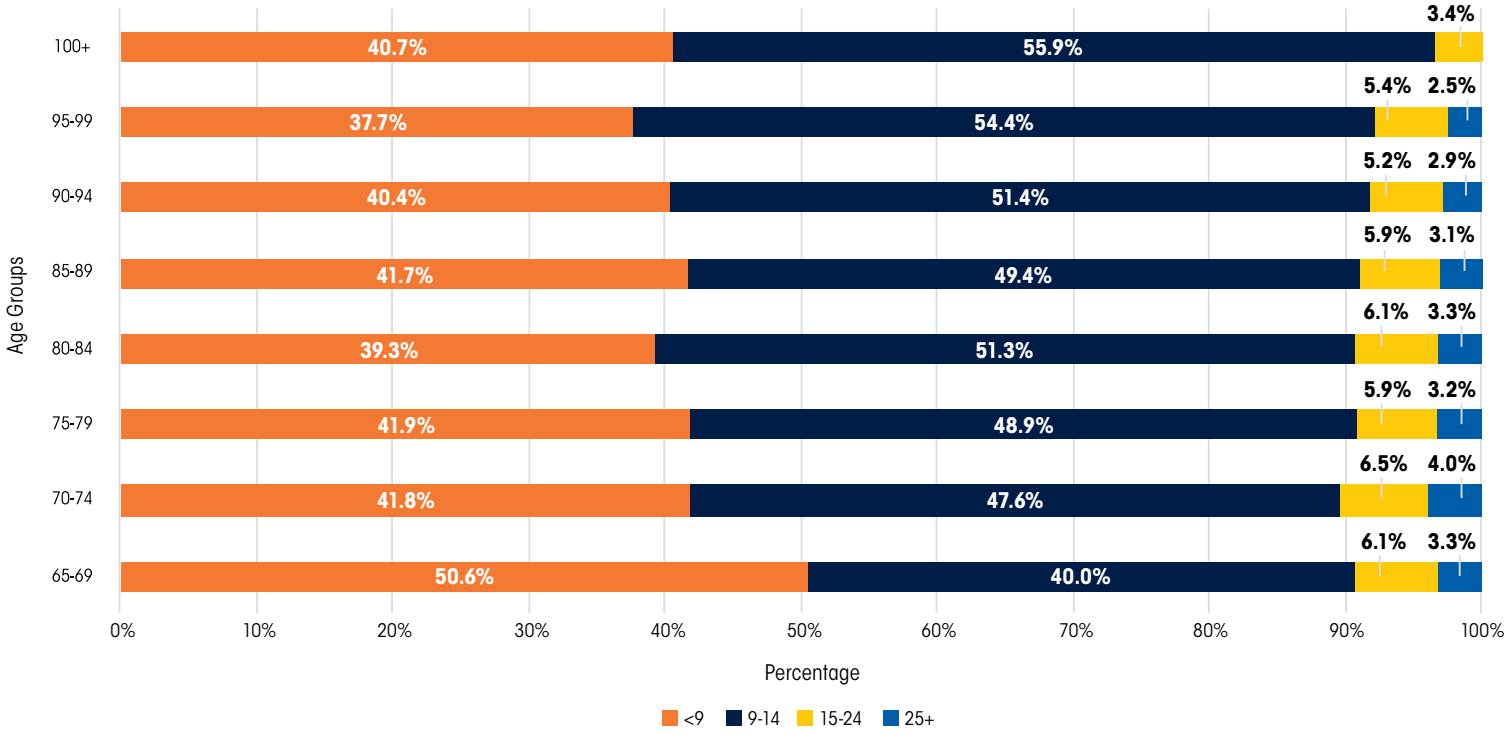
FALLS: BY INJURY SEVERITY SCORE (ISS)



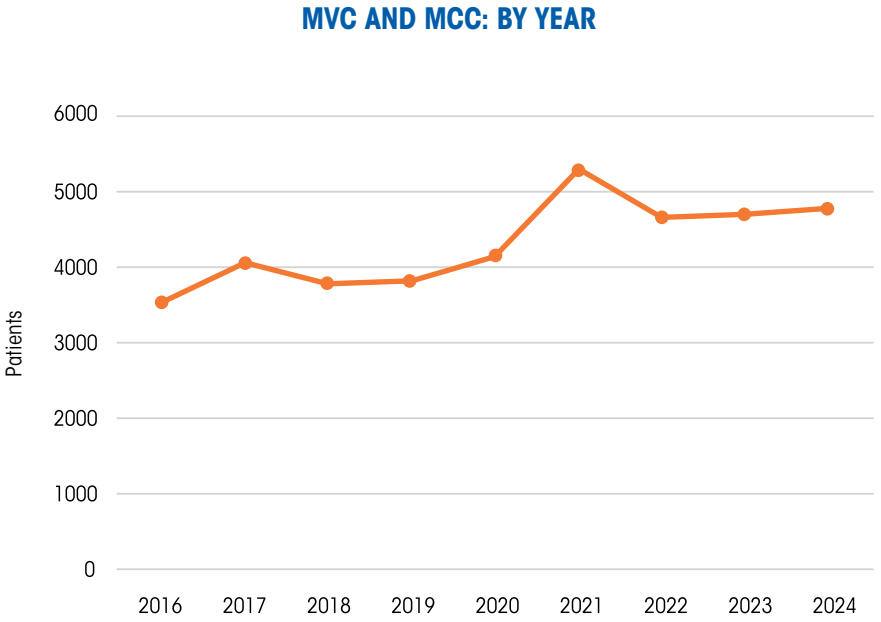
FALLS: BY AGE



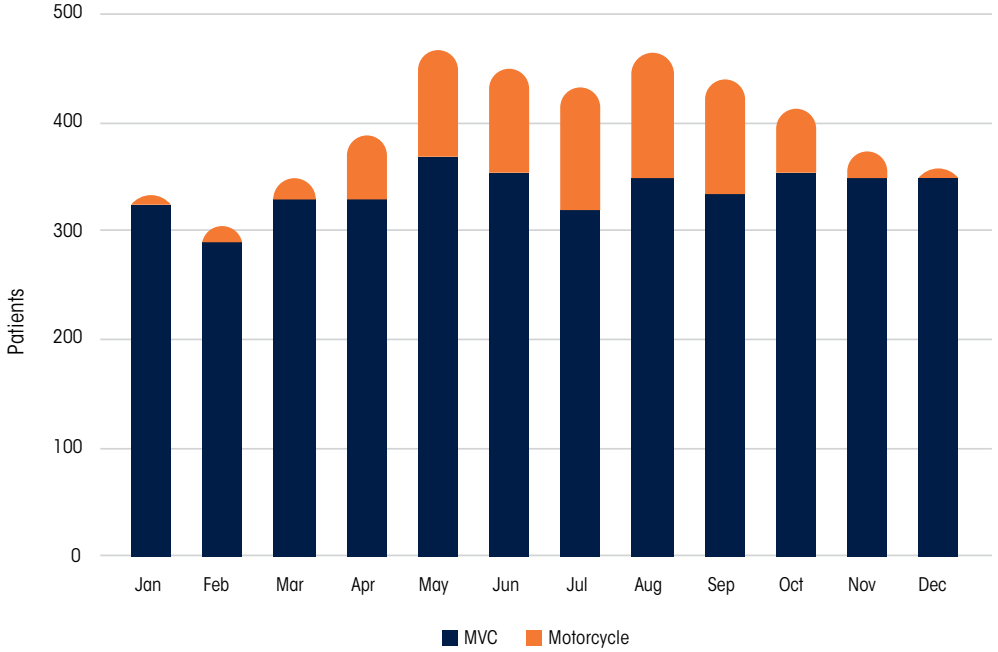
PERCENTAGE OF GERIATRIC FALL INJURIES: BY ISS AND AGE



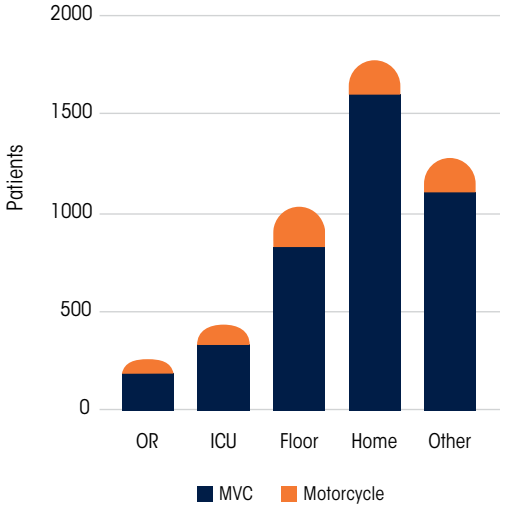
MOTOR VEHICLE AND MOTORCYCLE CRASHES



MVC AND MCC: BY MONTH

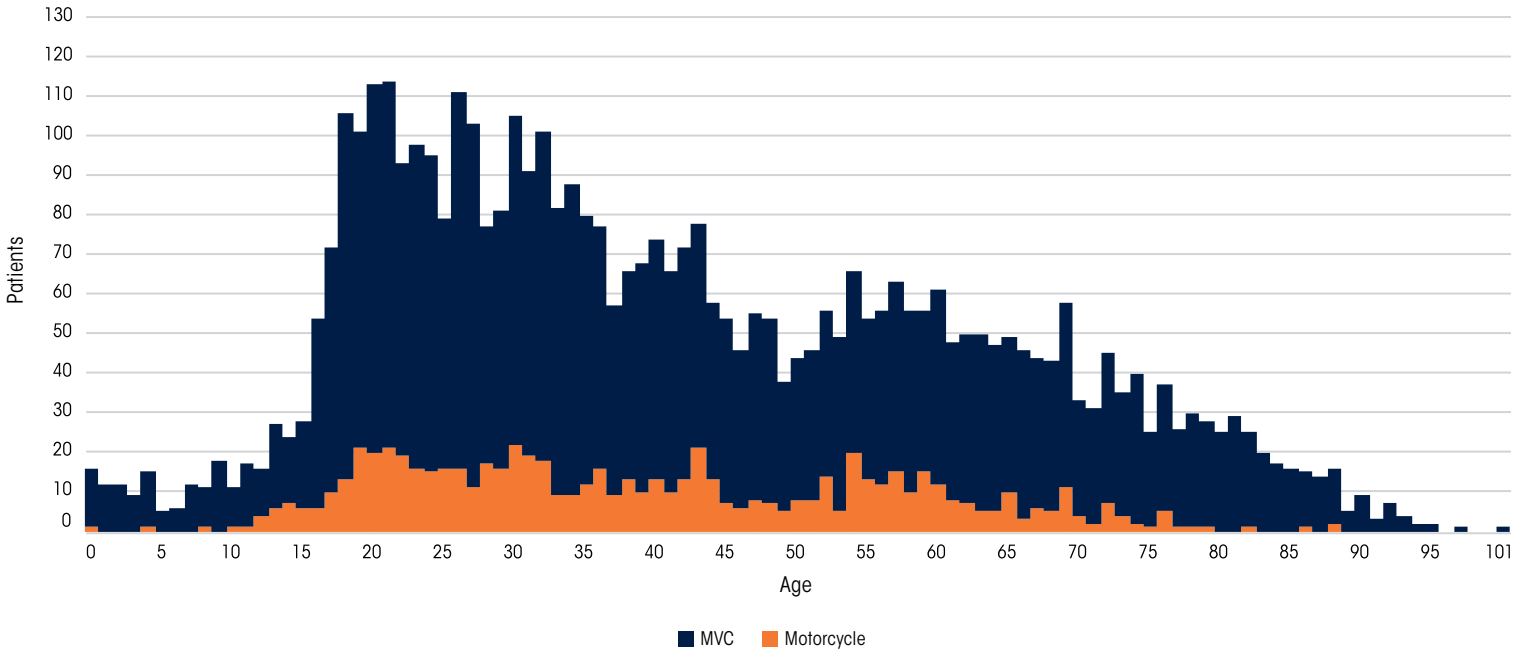


MVC AND MCC: BY ED DISPOSITION

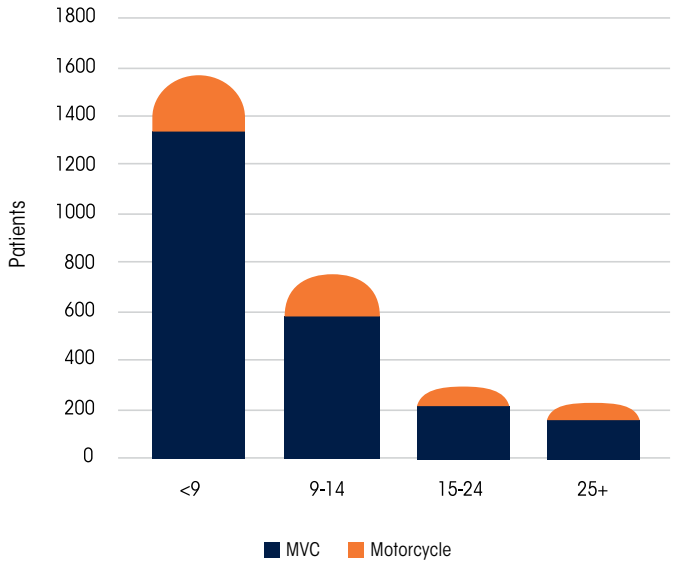


MOTOR VEHICLE AND MOTORCYCLE CRASHES (cont'd)

MVC AND MCC: BY AGE

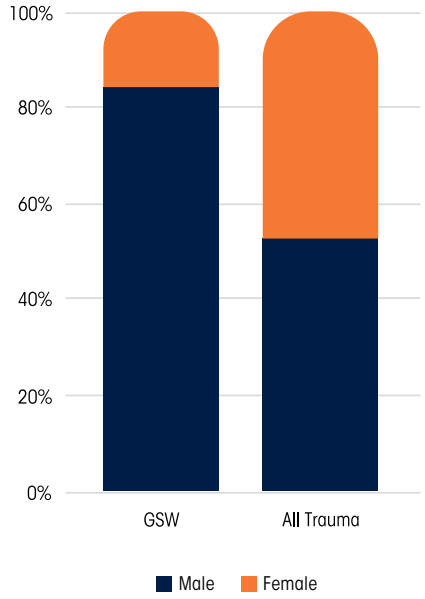


MVC AND MCC: BY INJURY SEVERITY SCORE (ISS)

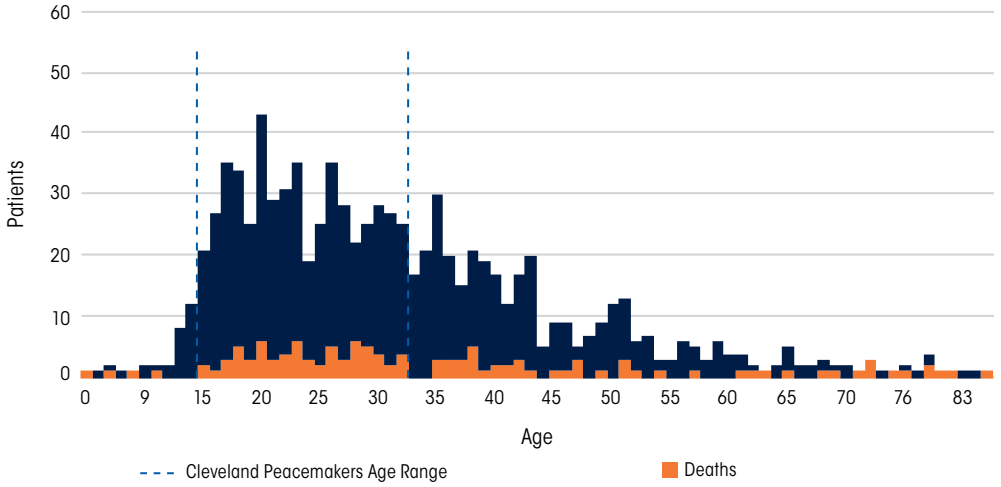


GUNSHOT WOUNDS

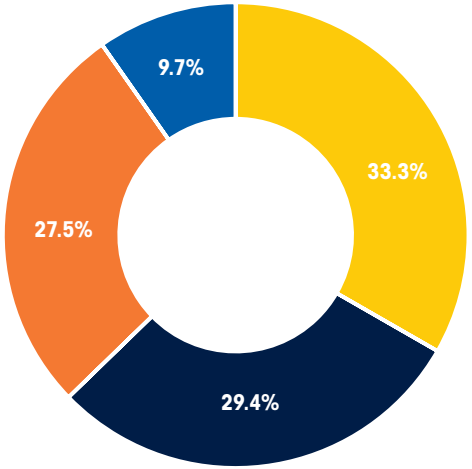
GSWs VS. ALL TRAUMA: BY GENDER



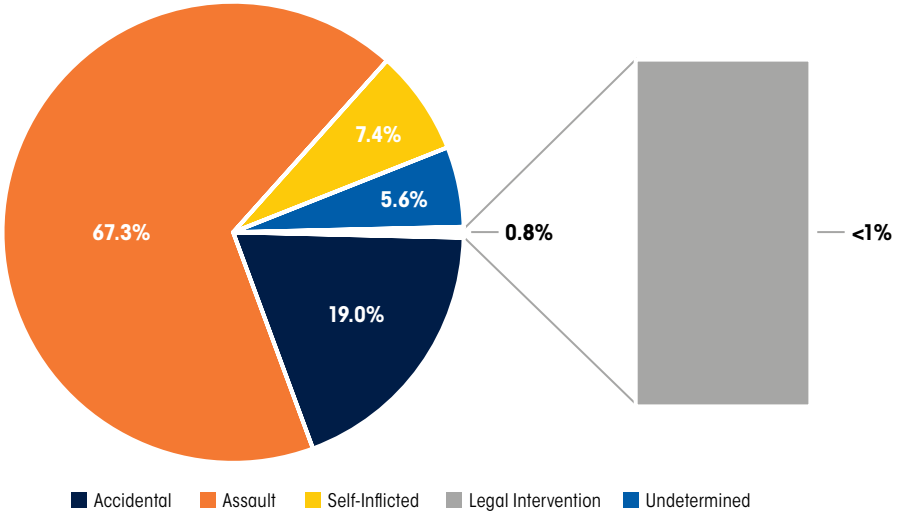
GSWs: BY AGE



GSWs: BY ED DISPOSITION

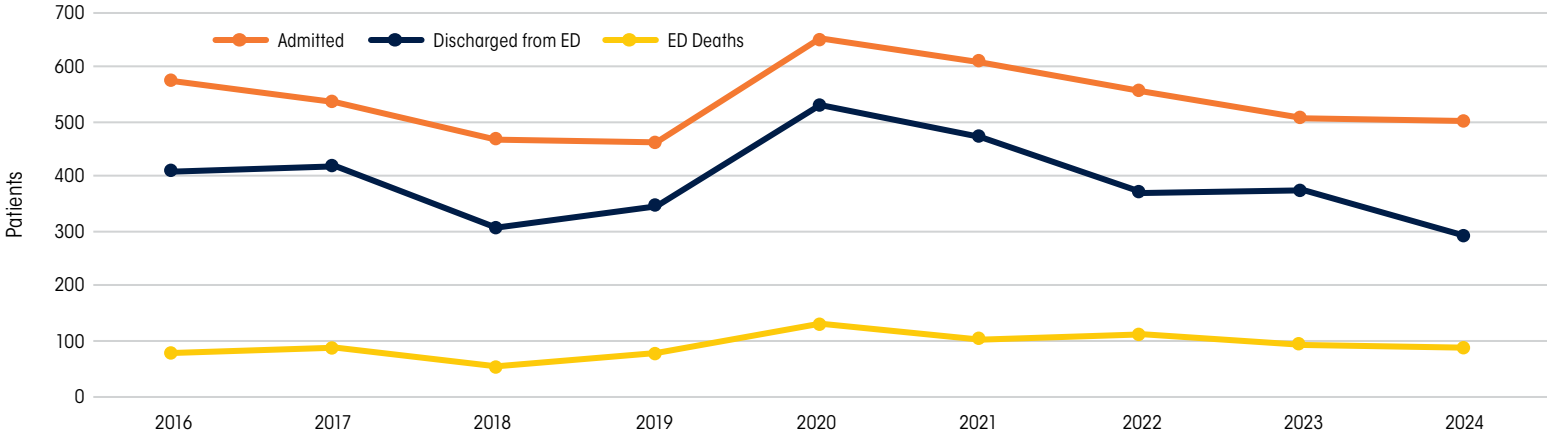


GSWs: BY INTENT



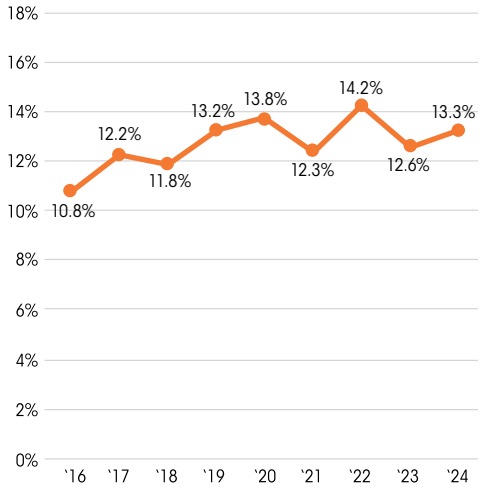
GUNSHOT WOUNDS (cont'd)

GSWs: BY YEAR AND ED DISPOSITION

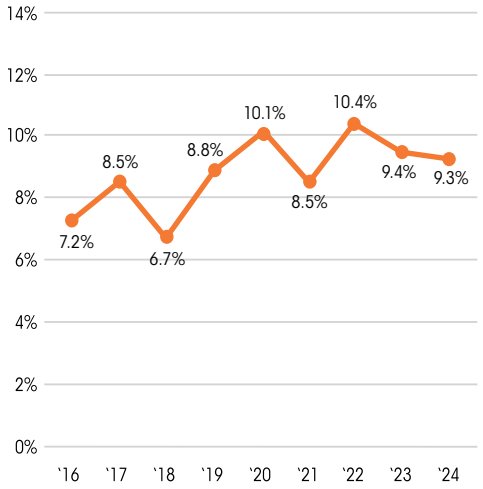


	2016	2017	2018	2019	2020	2021	2022	2023	2024
ED DEATHS	76	89	56	79	134	103	111	94	86
ADMITTED DEATHS	38	39	43	39	49	46	43	31	37
TOTAL	114	128	99	118	183	149	154	125	123
ALL GSWs	1060	1049	838	893	1327	1209	1064	996	927

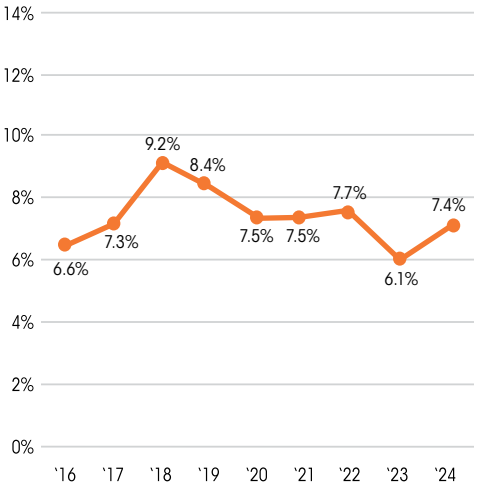
GSW MORTALITY BY YEAR



GSW ED MORTALITY BY YEAR



GSW ADMITTED MORTALITY BY YEAR

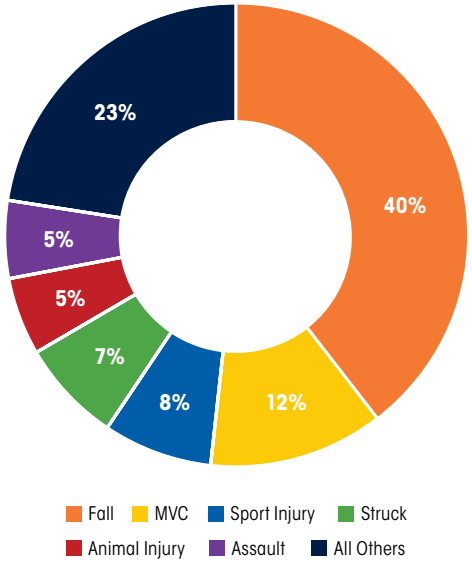


PEDIATRIC AND ADOLESCENT 14 YEARS AND YOUNGER

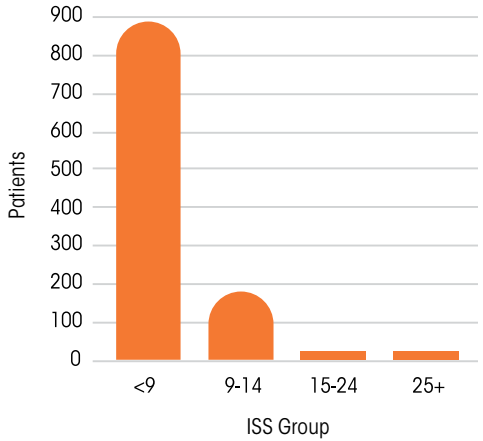
MECHANISM OF INJURY	PATIENTS
Fall	610
MVC	189
Sport	118
Bicycle	82
Other Vehicle/Off Road (ATV, Animal, Golf Cart)	43
Pedestrian	45
Animal Injury (includes Bite and Struck By)	84
Burn	67
Struck By or Against	111
GSW	32
Assault	84
MCC	22
All Others*	57
GRAND TOTAL	**1,544**

*All others includes Crush Injury, Cut, Drowning/ Submersion, Machine, Overexertion, Stab, Suffocation/ Hanging/Asphyxiation, and Unknown (Found Down).

PEDIATRIC MECHANISM OF INJURY

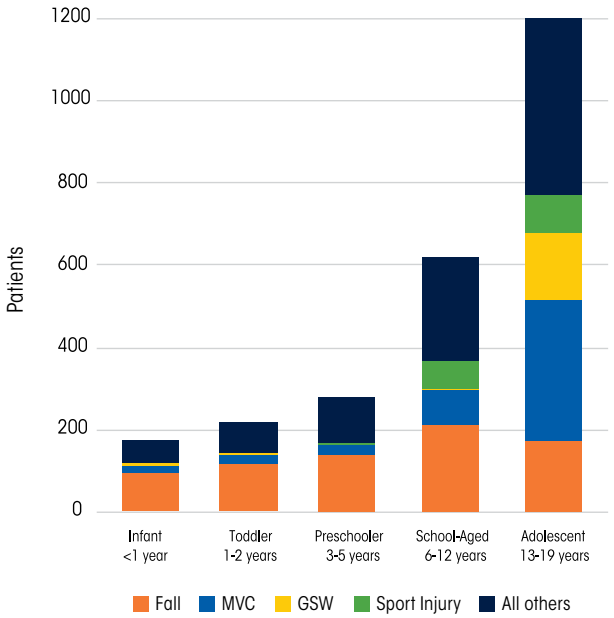


PEDIATRIC TRAUMA: BY INJURY SEVERITY SCORE (ISS)



PEDIATRIC AND ADOLESCENT 19 YEARS AND YOUNGER

PEDIATRIC MECHANISM OF INJURY: BY AGE GROUP

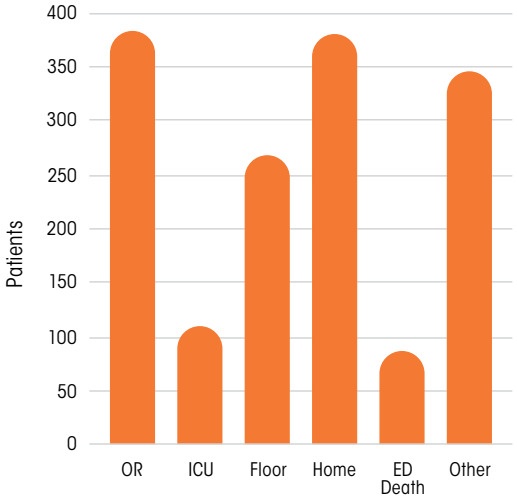


*Note: Due to small case counts in some categories, some cells were combined to protect patient privacy.

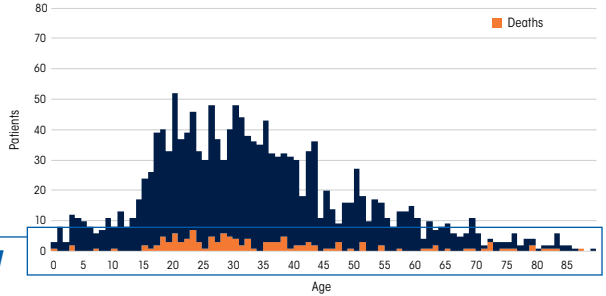
PEDIATRIC MECHANISM	INFANT <1 YEAR	TODDLER 1-2 YEARS	PRESCHOOLER 3-5 YEARS	SCHOOL-AGED 6-12 YEARS	ADOLESCENT 13-19 YEARS
Fall	98	116	138	210	173
MVC	15	24	28	84	343
GSW	4		8		162
Sport Injury	0		5	67	96
All Others	61	72	107	250	427
TOTALS	**178**	**212**	**286**	**611**	**1201**

PENETRATING TRAUMA

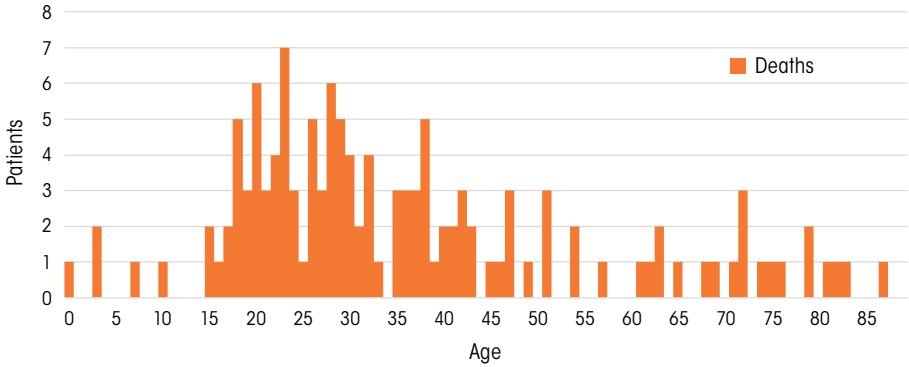
PENETRATING TRAUMA: ED DISPOSITION



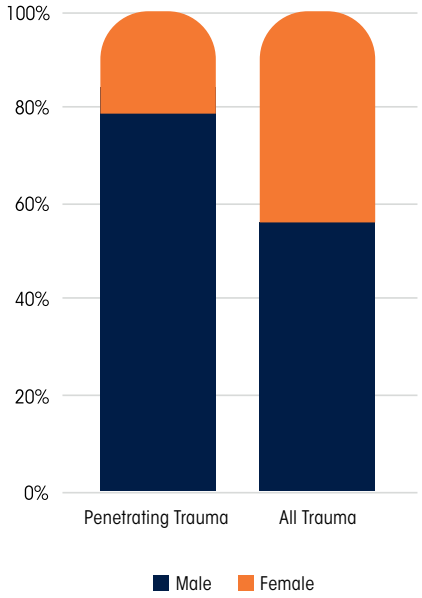
PENETRATING TRAUMA: BY AGE



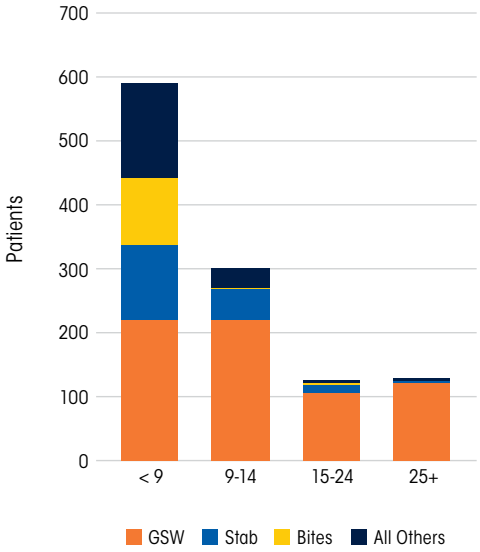
ENLARGED VIEW



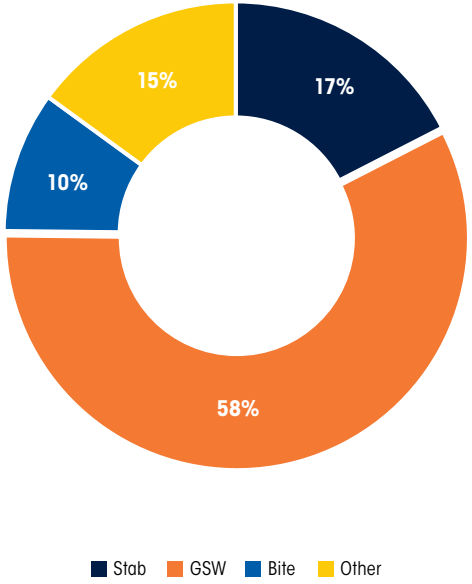
PENETRATING TRAUMA VS. ALL TRAUMA: BY GENDER



PENETRATING TRAUMA: BY INJURY SEVERITY SCORE (ISS) AND MECHANISM

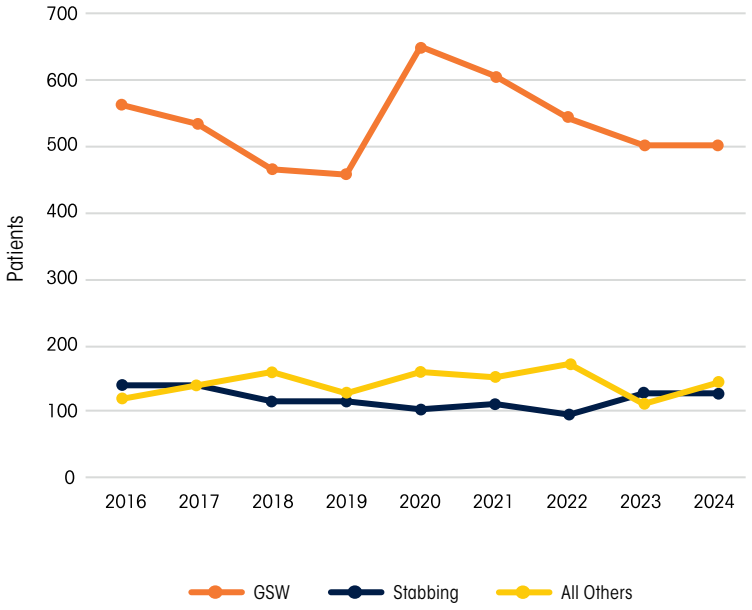


PENETRATING TRAUMA: BY TYPE

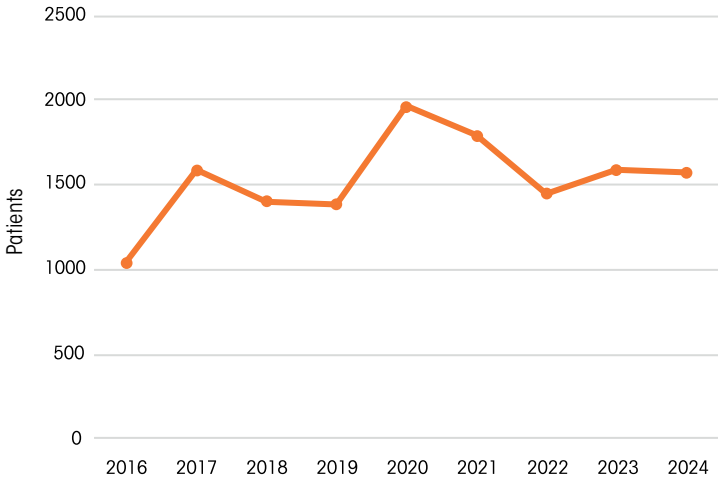


PENETRATING TRAUMA (cont'd)

ADMITTED PENETRATING TRAUMA: BY TYPE AND YEAR



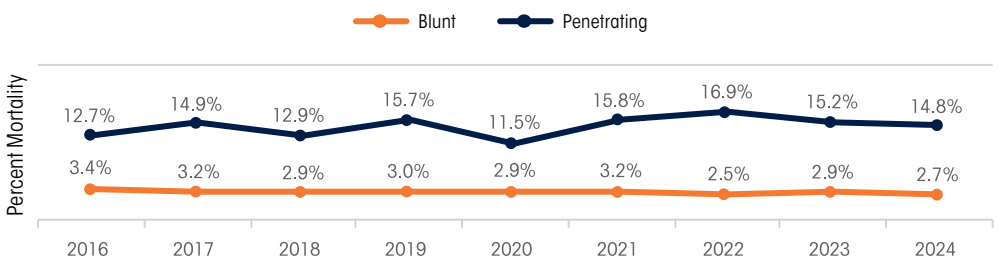
PENETRATING TRAUMA: TOTAL BY YEAR



OUTCOMES

The figures on these pages illustrate mortality trends within the NOTS region over time. Data includes all trauma-related deaths occurring in the emergency department or following hospital admission, categorized by injury type. Blunt injuries, such as those resulting from falls or motor vehicle crashes, are presented separately from penetrating injuries, which primarily consist of gunshot wounds and stabbings. For each year, the total number of patients (n) within each category is provided to support interpretation of these trends.

ALL MORTALITY



	2016	2017	2018	2019	2020	2021	2022	2023	2024
Blunt	3.4%	3.2%	2.9%	3.0%	2.9%	3.2%	2.5%	2.9%	2.7%
Penetrating	12.7%	14.9%	12.9%	15.7%	11.5%	15.8%	16.9%	15.2%	14.8%

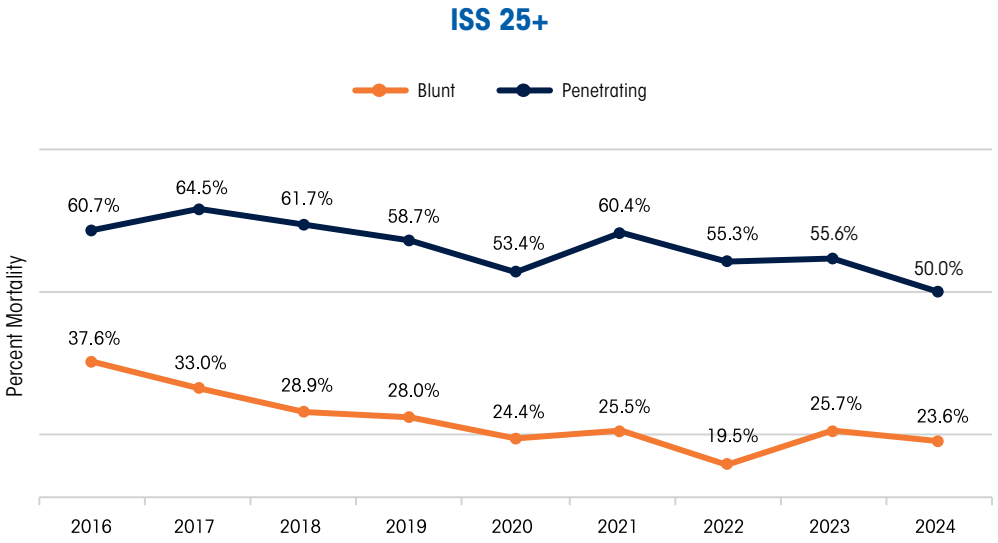
MORTALITY: ALL ADMITTED PATIENTS AND ED DEATHS

This figure illustrates regional trauma mortality trends over time for patients across all Injury Severity Scores (ISSs). In 2024, there were 13,186 patients with blunt injuries and 862 with penetrating injuries. Mortality rates are presented as raw percentages, unadjusted for injury severity or other factors. Overall injury volumes have remained stable since 2020, with only minor year-to-year fluctuations in mortality for both blunt and penetrating trauma.

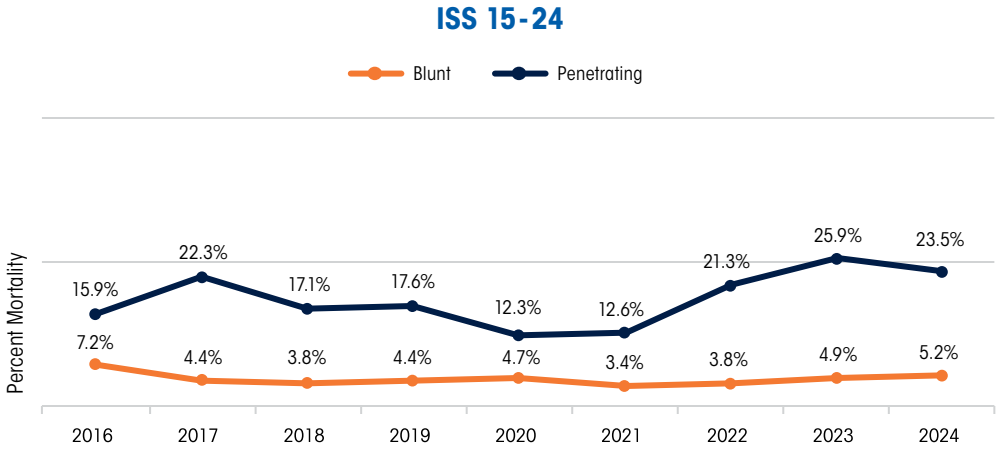
OUTCOMES (cont'd)

MORTALITY: ADMITTED PATIENTS AND ED DEATHS WITH ISS OF 25+

This figure focuses on patients with the most severe injuries, defined as an Injury Severity Score (ISS) of 25 or higher. These patients typically have life-threatening trauma and a substantially reduced likelihood of survival—historically, about 50% do not survive their injuries. In 2024, mortality among patients with penetrating injuries continued its downward trend from 2023, while blunt injury mortality also showed improvement. Trauma care also involves honoring patient and family wishes, including the decision to forgo life-sustaining therapy in favor of comfort-focused care. Currently, we do not track how frequently these preferences are fulfilled.



	2016	2017	2018	2019	2020	2021	2022	2023	2024
Blunt	37.6%	33.0%	28.9%	28.0%	24.4%	25.5%	19.5%	25.7%	23.6%
Penetrating	60.7%	64.5%	61.7%	58.7%	53.4%	60.4%	55.3%	55.6%	50.0%



	2016	2017	2018	2019	2020	2021	2022	2023	2024
Blunt	7.2%	4.4%	3.8%	4.4%	4.7%	3.4%	3.8%	4.9%	5.2%
Penetrating	15.9%	22.3%	17.1%	17.6%	12.3%	12.6%	21.3%	25.9%	23.5%

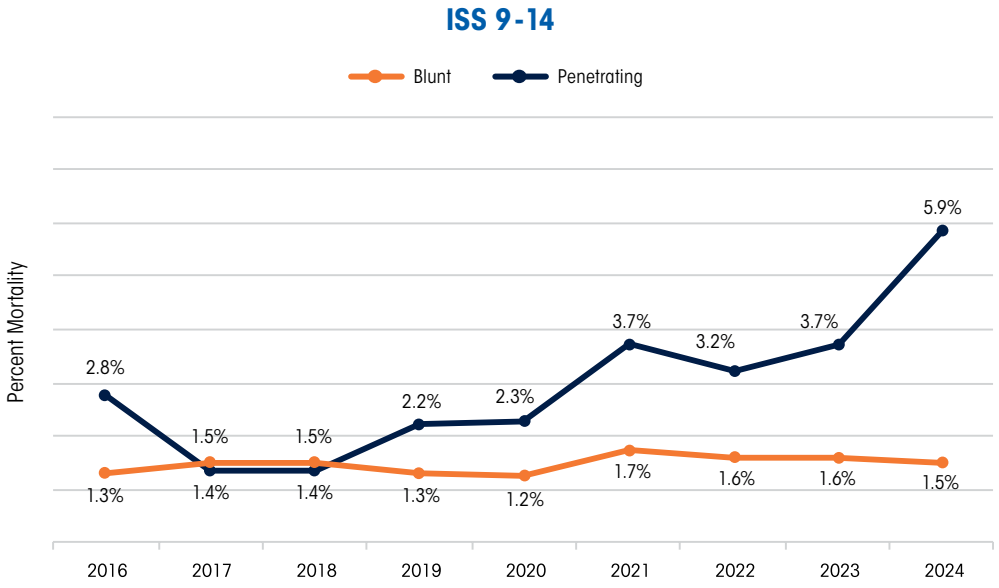
MORTALITY: ADMITTED PATIENTS AND ED DEATHS WITH INJURY SEVERITY SCORE OF 15-24

This group represents patients with moderate injury severity. From the inception of NOTS, a central goal has been to improve outcomes for this population. While eliminating mortality entirely may be unattainable, the program continues to pursue that objective. In the most recent period, mortality of blunt increased while mortality of penetrating went down.

OUTCOMES (cont'd)

MORTALITY: ADMITTED PATIENTS AND ED DEATHS WITH INJURY SEVERITY SCORE OF 9-14

Patients with a minor Injury Severity Score (ISS) of 9–14 comprise a substantial portion of trauma admissions, with mortality remaining infrequent. Fatalities in this cohort are typically associated with significant comorbid conditions. From 2023 to 2024, blunt trauma mortality remained stable; however, penetrating trauma mortality demonstrated an increase. This trend may reflect a reduction in the overall incidence of penetrating injuries alongside a higher case-fatality rate, as well as potential limitations in injury coding accuracy when autopsy data is unavailable.



	2016	2017	2018	2019	2020	2021	2022	2023	2024
Blunt	1.3%	1.5%	1.5%	1.3%	1.2%	1.7%	1.6%	1.6%	1.5%
Penetrating	2.8%	1.4%	1.4%	2.2%	2.3%	3.7%	3.2%	3.7%	5.9%

2024 NOTS BOARD MEMBERS

The Northern Ohio Trauma System (NOTS) Board is composed of representatives who bring diverse expertise and perspectives to guide the system's mission. Each participating hospital system appoints three representatives to the Board, ensuring balanced input from across the region's healthcare institutions. In addition, three public seats are included to represent the broader community and provide an external perspective. Together, these members collaborate to strengthen trauma care, improve outcomes, and advance the work of NOTS across Northern Ohio.

BRENDAN M. PATTERSON, MD, MBA
Chair, Department of Orthopaedics, Cleveland Clinic

Professor, Orthopaedics
Case Western Reserve University School of Medicine

OLUSEGUN ISHMAEL, MD, MBA
Chief Operating Officer, President of the Hospital Division
The MetroHealth System

MATTHEW L. MOORMAN, MD, MBA, FACS, FAWM, FCCM
Chief, Division of Trauma, Critical Care, and Acute Surgery
University Hospitals Cleveland Medical Center

MARIE CRANDALL, MD, MPH, FACS
Chair of the Department of Surgery
The MetroHealth System

2024 NOTS BOARD MEMBERS (cont'd)

CRISTINA NICKELL MPH, BSN, RN, CCRN
Director, Trauma and Acute Care Surgery Programs
Division of Trauma, Critical Care, Burns, and Emergency General Surgery
The MetroHealth System

R. MATTHEW WALSH, MD, FACS
Professor of Surgery; Rich Family Distinguished Chair of Digestive Diseases; Chairman
Department of General Surgery;
Digestive Disease Institute Chairman;
Academic Department of Surgery,
Education Institute, Cleveland Clinic

ED DABKOWSKI
Research Associate
Begun Center for Violence Prevention Research and Education,
Case Western Reserve University

PAUL R. HINCHEY, MD, MBA
President
Community Delivery Network
Interim Chief Operating Officer
University Hospitals Cleveland Medical Center

JAMES MARK, MD
Director of the Emergency Department, Center Director for ESI Region
Cleveland Clinic
Chief of Staff,
Cleveland Clinic Fairview Hospital

NICOLE A. CARLTON
Assistant Director
Cleveland Department of Public Safety

BRANDY CARNEY
Chief
Cuyahoga County Public Safety
& Justice Services

SCOTT SASSER, MD, FACEP
Chief Physician Executive, President
UH Medical Group and
UH Physician Services
Carol and Arthur F. Anton Chair
in Physician Leadership
University Hospitals Health System

GLOSSARY OF TERMS

Adolescents: Patients ages 13-19 years.

Cause of Death: For the purpose of national mortality statistics, every death is attributed to one underlying condition, based on information reported on the death certificate, and uses the international rules for selecting the underlying cause of death from the condition stated on the death certificate. For injury deaths, the underlying cause is defined as the circumstance of the accident or violence that produced the fatal injury.

Coroner: A person whose standard role is to confirm and certify the death of an individual within a jurisdiction. A coroner may also conduct or order an inquest into the manner or cause of death, and investigate or confirm the identity of an unknown person who has been found dead within the coroner's jurisdiction.

Drowning: This category includes injuries from drowning/near drowning and submersion with and without involvement of watercraft.

Emergency Department (ED): A medical treatment facility specializing in emergency medicine and the acute care of patients who present without prior appointment, either by their own means or by ambulance. The emergency department is usually found in a hospital or other primary care center.

Frequency: The number of times an event occurs.

Geriatric: Patients ages 65 and older.

Gunshot Wounds (GSWs): This category includes injuries from firearms, including unintentional, suicide, homicide, legal intervention, and undetermined intent.

Homicide: The killing of or intent to kill one person by another.

ICD-10 Code: The International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) is a system used by physicians and other healthcare providers to classify and code all diagnoses, symptoms, and procedures recorded in conjunction with hospital care in the United States.

Incidence: The number of instances of illness or injury during a given period of time in a specified population.

Injury: Any unintentional or intentional damage to the body resulting from acute exposure to thermal, mechanical,

electrical, or chemical energy or from the absence of such essentials as heat or oxygen. According to the Injury Surveillance Guidelines, an injury is the physical damage that results when a human body is suddenly or briefly subjected to intolerable levels of energy. Injury can be a bodily lesion resulting from acute exposure to energy in an amount that exceeds the threshold of physiological tolerance, or it can be an impairment of function resulting from a lack of one or more vital elements (air, water, or warmth), as in strangulation, drowning, or freezing. The time between exposure to the energy and the appearance of an injury is short. The energy causing an injury may be one of the following:

- Mechanical
- Radiant
- Thermal
- Electrical
- Chemical

Injury Severity Score (ISS): The Injury Severity Score (ISS) is an established medical score to assess trauma severity. It correlates with mortality, morbidity, and hospitalization time after trauma. It is used to define the term "major trauma". A major trauma (or polytrauma) is defined as the Injury Severity Score being greater than 15.

International Classification for Diseases (ICD): The ICD provides the ground rules for coding and classifying cause-of-death data.

Major Trauma: A patient with injuries that result in death, intensive care admission, major operations of the head, chest or abdomen, a hospital stay of three or more days, or an ISS of greater than 15.

Mechanism of Injury (MOI): The manner in which a physical injury occurred (e.g., fall from a height, ground-level fall, high- or low-speed motor vehicle accident, ejection from a vehicle, vehicle rollover). The MOI is used to estimate the forces involved in trauma and, thus, the potential severity for wounding, fractures, and internal organ damage that a patient may suffer as a result of the injury.

Minor Trauma: A patient who is entered into the trauma system, has an ISS of less than or equal to 15, and survives until hospital discharge.

Morbidity: Number of persons nonfatally injured or disabled. Usually expressed as a rate, meaning the number of nonfatal injuries in a certain population in a given time period divided by the size of the population.

Mortality: Deaths caused by injury and disease. Usually expressed as a rate, meaning the number of deaths in a certain population in a given time period divided by the size of the population.

OV: Other Vehicle/ Off road (ATV, Animal, Golf Cart)

Pedestrian: This category includes injuries among pedestrians hit by a train, a motor vehicle while not in traffic, or another means of transportation.

Pediatric: Patients ages 0-15 years.

Penetrating: This category includes injuries caused by cutting and piercing instruments: knives, swords, daggers, power lawn mowers, power hand tools, or household appliances.

Risk Factors: Characteristics of people, behavior, or environment that increase the chance of disease or injury occurring. Examples: alcohol use, poverty, and gender.

Struck By/Against: This category includes injuries resulting from being struck by or striking against objects or persons. This category includes being struck (unintentionally) by a falling object, being struck or striking objects or persons (sports), and injuries sustained in an unarmed fight or brawl.

Years of Potential Life Lost (YPLL): The concept of years of potential life lost involves estimating the average time a person would have lived had he or she not died prematurely.

Cleveland Clinic

MetroHealth

University Hospitals

Southwest General

NOTS

Northern Ohio Trauma System

NOTS 2025 ANNUAL REPORT

Written By: **Danielle Rossler, MBA, BSN, RN**
Director

Justin Dvorak, MD
Trauma Medical Director

Data By: **Sara Arida, CSTR, CAISS, RHIT**
Data Specialist

Design: **A.M. Design Group**

northernohiotraumasystem.com