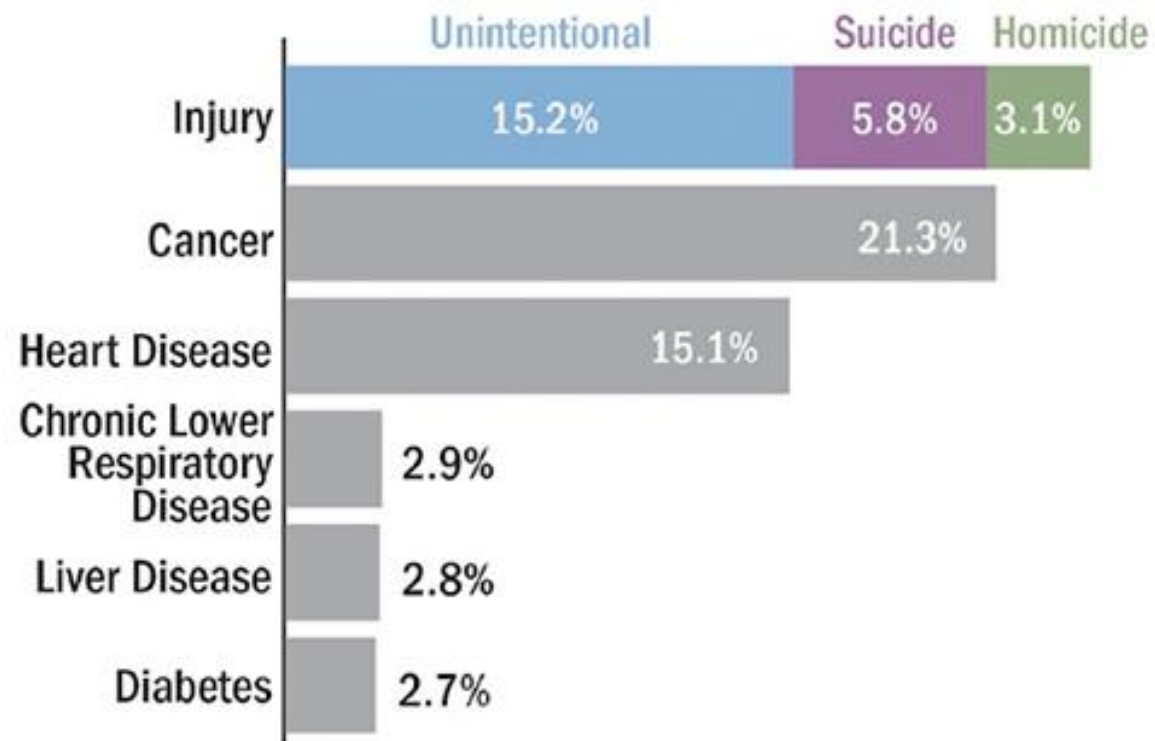


Trauma is the NUMBER ONE cause of death for Americans ages 46 and under, ahead of cancer and heart disease

SOURCE: Data retrieved from NCIPC. 2015b  
National Center for Injury Prevention and Control (NCIPC)

Trauma accounts for more years of potential life lost before age 75 than any other cause, including cancer or heart disease

30% of All Life Years Lost



Percentage Contribution to Total Years of Potential Life Lost Before Age 75

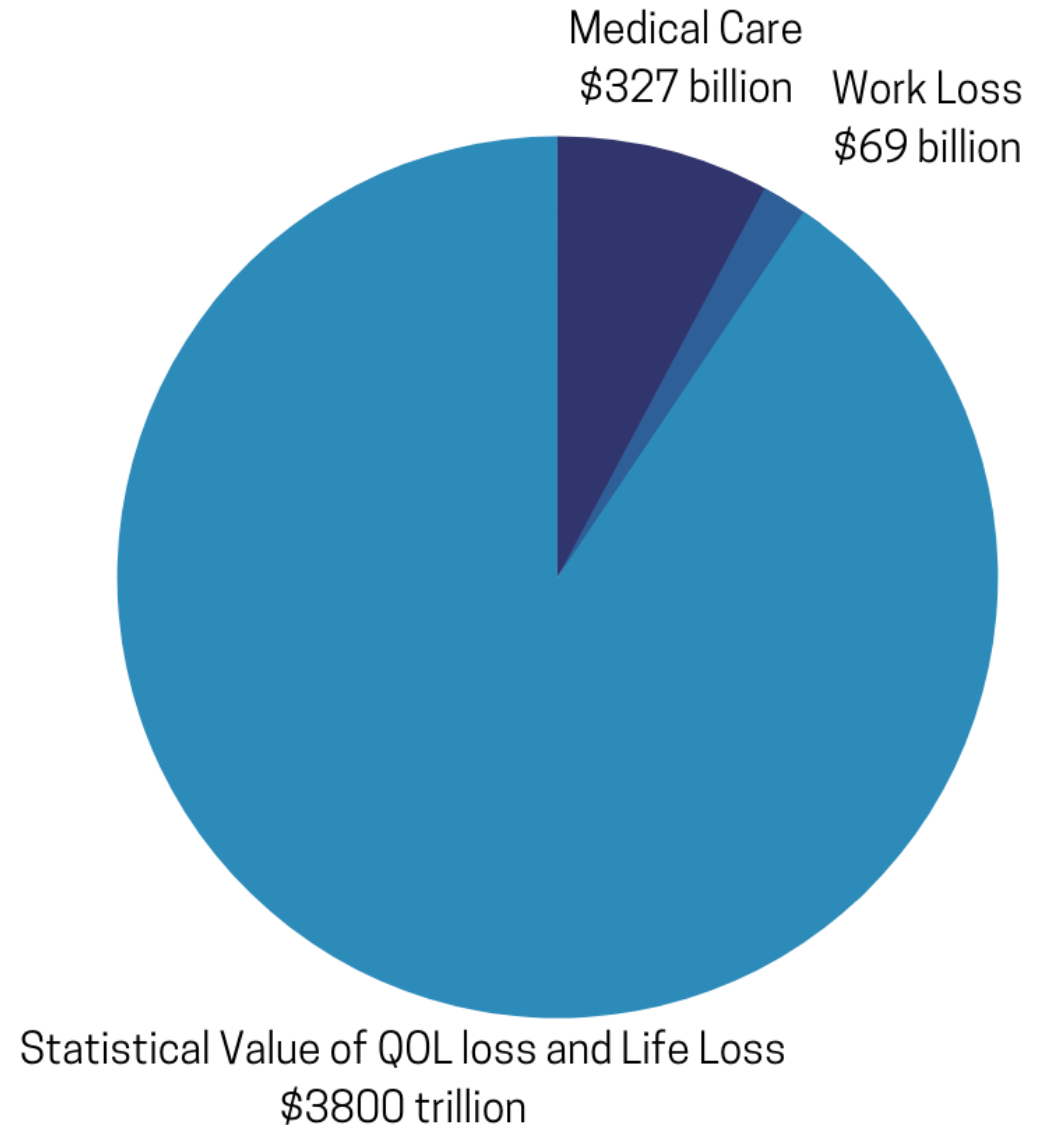
SOURCE: Data retrieved from NCIPC. 2015d.

# ANNUAL TOLL OF TRAUMA IN THE U.S.

## \$4.2 TRILLION

## Annual Cost of Trauma

- *SOURCE: [Centers for Disease Control and Prevention, Morbidity and Mortality Weekly Report, December 3, 2021](#)*



# A Trauma Epidemic

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Traumatic injuries comprise 40% of visits to emergency departments

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There are 200,000 trauma deaths annually. 20% of these deaths could be prevented with optimal trauma care in a system

SOURCE: Data retrieved from NCIPC. 2015d.

# Trauma System

An organized, coordinated approach to facilitating & coordinating a multi-disciplinary system response to injured patients

**Goal:** rapid, appropriate care from scene to appropriate medical facility where the patient receives rapid, appropriate care through discharge

# Levels of Facility Designation

## Regional Trauma Center (Level II)

- Capable of providing advanced trauma care for a region, all major surgical services readily available

## Area Trauma Hospital (Level III)

- Capable of handling most trauma patients within their service area, surgeon always available

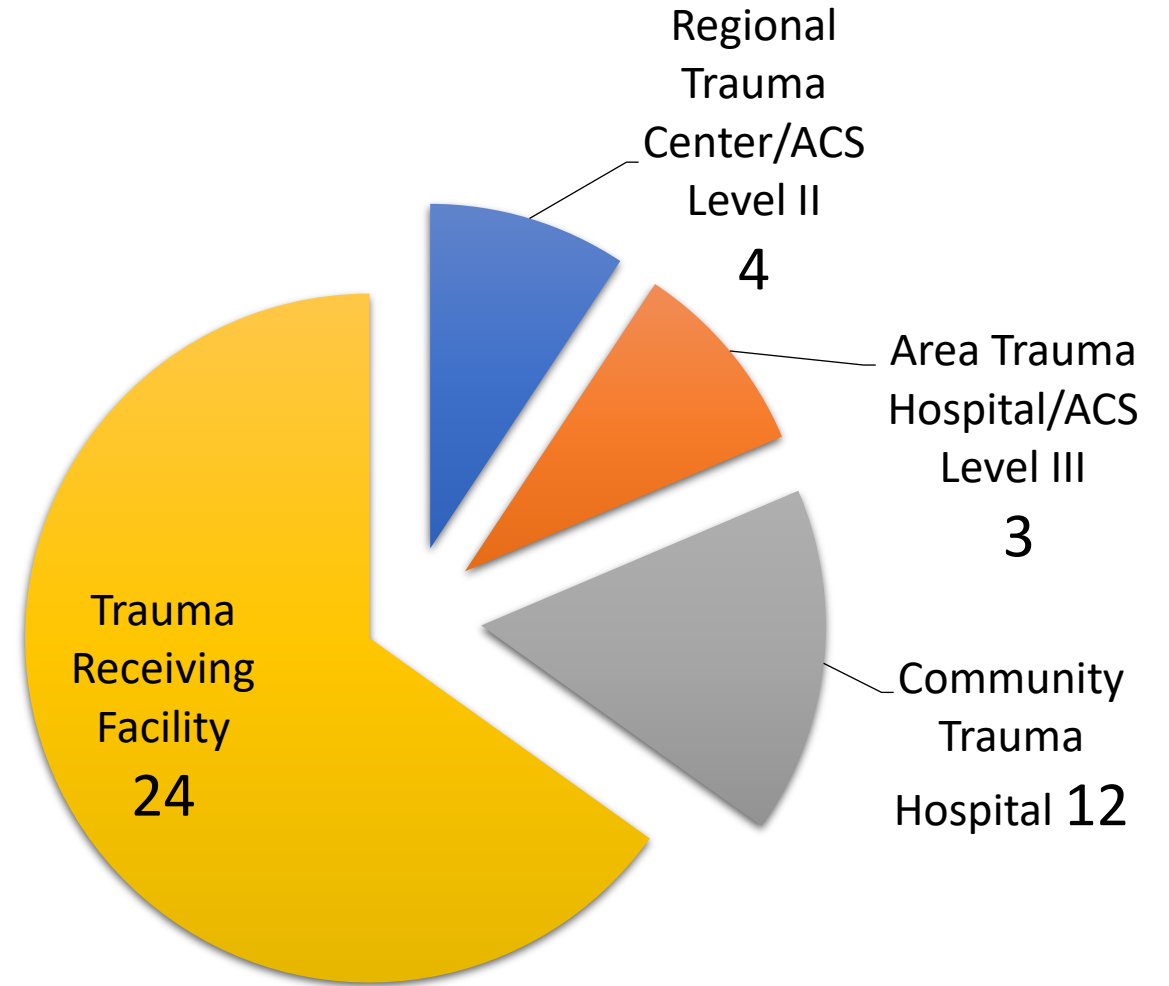
## Community Trauma Hospital (Level IV)

- Able to provide limited emergency and intermittent surgical coverage

## Trauma Receiving Facility (Level V)

- Able to provide limited emergency care with no surgical coverage

# Designated Hospitals By Level







# Closest Level I Centers



# MONTANA TRAUMA REGISTRY

## ANNUAL REPORT 2021



### A Summary of 2020 Trauma Data



MONTANA  
EMS, TRAUMA SYSTEMS &  
INJURY PREVENTION PROGRAM

- In 2020, unintentional fall was the top cause of injury, accounting for just over 50% of all trauma cases in Montana. Unintentional motor vehicle crashes were the second leading cause of injury overall, accounting for 12.6% of all cases. (*Montana Trauma Registry Annual Report 2021: A Summary of 2020 Data*)
- Unintentional MVT-Occupant was the second leading cause of injury overall, accounting for 12.6% of all cases (Table 10). MVT-Occupant made up 16% of cases for patients aged 0-17 years, 19% for those aged 18-64 years, and 5% for those aged 65 and older.

Cause of injury (TQIP)		Total trauma records		Unique Trauma cases*	
		N	%	N	%
1	Unintentional-Fall	2,761	50.7%	2,556	52.9%
2	Unintentional-MVT- Occupant	713	13.1%	610	12.6%
3	Unintentional-Other Transport	345	6.3%	304	6.3%
4	Unintentional-MVT- Other	285	5.2%	195	4.0%
5	Unintentional-Struck By/Against	163	3.0%	145	3.0%
6	Unintentional-MVT- Motorcyclist	149	2.7%	139	2.9%
7	Assault/Homicide-Struck By/Against	122	2.2%	109	2.3%
8	Unintentional-Natural/Environmental- Other	108	2.0%	82	1.7%
9	Unintentional-Pedal Cyclist- Other	101	1.9%	92	1.9%
10	Unintentional-Other Specified- Classifiable	97	1.8%	84	1.7%
	All Top 10	4,844	89.0%	4,316	89.2%
	Other	583	10.7%	505	10.4%
	Missing	18	0.3%	15	0.3%
	<b>Total</b>	<b>5,445</b>	<b>100.0%</b>	<b>4,836</b>	<b>100.0%</b>

SEVERAL  
KEY  
FINDINGS  
OF THE  
REPORT  
INCLUDE:

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Montana's trauma centers have a robust interfacility transportation process - indicative of a well functioning trauma system, however, 30% of patients seen in trauma centers arrive by personal vehicle, not an ambulance

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Montana data align with national crash data – lack of restraint use and the use of alcohol and drugs result in more severe injury

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Several pre-hospital triage criteria are reliable predictors of high injury severity scores



# National Guideline for the Field Triage of Injured Patients

# What's new?

- Not an algorithm
- Simplified to align with information flow to EMS
- Reflect how assessments occur on the scene
- Gets to transport decision sooner

## National Guideline for the Field Triage of Injured Patients

### RED CRITERIA

#### High Risk for Serious Injury

Injury Patterns	Mental Status & Vital Signs
<ul style="list-style-type: none"><li>• Penetrating injuries to head, neck, torso, and proximal extremities</li><li>• Skull deformity, suspected skull fracture</li><li>• Suspected spinal injury with new motor or sensory loss</li><li>• Chest wall instability, deformity, or suspected flail chest</li><li>• Suspected pelvic fracture</li><li>• Suspected fracture of two or more proximal long bones</li><li>• Crushed, degloved, mangled, or pulseless extremity</li><li>• Amputation proximal to wrist or ankle</li><li>• Active bleeding requiring a tourniquet or wound packing with continuous pressure</li></ul>	<p><b>All Patients</b></p> <ul style="list-style-type: none"><li>• Unable to follow commands (motor GCS &lt; 6)</li><li>• RR &lt; 10 or &gt; 29 breaths/min</li><li>• Respiratory distress or need for respiratory support</li><li>• Room-air pulse oximetry &lt; 90%</li></ul> <p><b>Age 0-9 years</b></p> <ul style="list-style-type: none"><li>• SBP &lt; 70mm Hg + (2 x age years)</li></ul> <p><b>Age 10-64 years</b></p> <ul style="list-style-type: none"><li>• SBP &lt; 90 mmHg or</li><li>• HR &gt; SBP</li></ul> <p><b>Age ≥ 65 years</b></p> <ul style="list-style-type: none"><li>• SBP &lt; 110 mmHg or</li><li>• HR &gt; SBP</li></ul>

*Patients meeting any one of the above RED criteria should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system*


### YELLOW CRITERIA


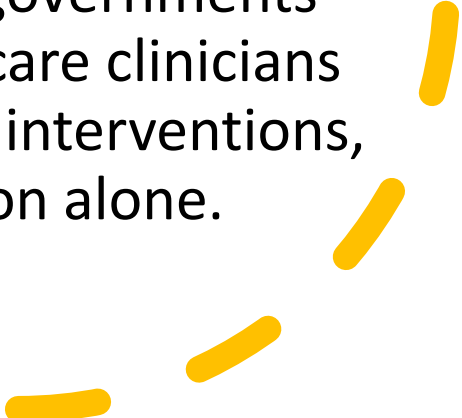
#### Moderate Risk for Serious Injury

Mechanism of Injury	EMS Judgment
<ul style="list-style-type: none"><li>• High-Risk Auto Crash<ul style="list-style-type: none"><li>- Partial or complete ejection</li><li>- Significant intrusion (including roof)<ul style="list-style-type: none"><li>• &gt;12 inches occupant site OR</li><li>• &gt;18 inches any site OR</li><li>• Need for extrication for entrapped patient</li></ul></li><li>- Death in passenger compartment</li><li>- Child (Age 0-9) unrestrained or in unsecured child safety seat</li><li>- Vehicle telemetry data consistent with severe injury</li></ul></li><li>• Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.)</li><li>• Pedestrian/bicycle rider thrown, run over, or with significant impact</li><li>• Fall from height &gt; 10 feet (all ages)</li></ul>	<p><b>Consider risk factors, including:</b></p> <ul style="list-style-type: none"><li>• Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact</li><li>• Anticoagulant use</li><li>• Suspicion of child abuse</li><li>• Special, high-resource healthcare needs</li><li>• Pregnancy &gt; 20 weeks</li><li>• Burns in conjunction with trauma</li><li>• Children should be triaged preferentially to pediatric capable centers</li></ul> <p><b>If concerned, take to a trauma center</b></p>

*Patients meeting any one of the YELLOW CRITERIA WHO DO NOT MEET RED CRITERIA should be preferentially transported to a trauma center, as available within the geographic constraints of the regional trauma system (need not be the highest-level trauma center)*

How can Highway Traffic Safety stakeholders better support and improve post-crash care and improve patient outcomes?

- Support efforts to link EMS databases and other relevant registries such as MVC, traffic safety and law enforcement data, demographic data set, CAD data sets, fatality data and hospitals
  - Fund joint multi-disciplinary highway incident management training projects
  - State trauma systems should be included as relevant stakeholders at all levels.
  - Encourage state, tribal and territorial governments to acknowledge and fund EMS as an essential service, supporting the widespread availability of EMS nationwide.
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- Educate stakeholders about the newly revised National Trauma Field Triage Guidelines and encourage statewide adoption.
  - Educate stakeholders about the newly revised National EMS Model Clinical Guidelines and encourage statewide adoption.
  - Encourage the adoption of Emergency Medical Dispatch (EMD) more widely so that all calls to 911 receive evidence-based pre-arrival instructions.
  - Encourage state, tribal and territorial governments to regard EMS practitioners as health care clinicians who provide emergency medical care, interventions, AND transportation—not transportation alone.
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Thank you. Any questions?