



Iowa Trauma Registry Report 2017



Iowa Department of Public Health
Protecting and Improving the Health of Iowans

Executive Summary

- 22,103 hospital admissions with a trauma injury present
 - 18,355 unique patients
 - Data retrieved from IHA Inpatient Database
- 14,385 hospital admissions with a trauma injury as the admitting/principal diagnosis
 - 12,507 unique patients
 - Data retrieved from IHA Inpatient Database
- 115 of 118 hospitals reporting to trauma registry
 - Data retrieved from Iowa Trauma Registry
 - All level I, II and III facilities are reporting, as well as 97% of level IV facilities
 - 20,680 incidents
 - 18,304 unique patients
 - 242/323 incidents of physical abuse investigated
 - 6.6% of incidents were work-related
 - 2.7% of incidents were farm-related
 - 22.6% of incidents were motor vehicle crashes
 - 6,906 trauma alerts
 - 2,119 level 1
 - 4,787 level 2
 - 320 self-inflicted injuries
 - 1,514 assault injuries
 - 57.6% male, 42.2% female, 0.2% unknown
 - 710 incidents of transfer delay
- 333,320 EMS Incident Reports (an incident report occurs each time an EMS program is notified to respond)
 - 230,719 EMS transport incident reports
 - 78,098 trauma-related incident reports
 - 39,405 trauma-related transport incident reports

Overview

In 1995, the state legislature established the Iowa Trauma Care System Development Act. The Act designated the Iowa Department of Public Health (IDPH) as the lead agency for system development and implementation, and established the Trauma System Advisory Council (TSAC) to advise the department and to evaluate system effectiveness. The legislation also established the State Trauma Registry for statewide injury-reporting as a reportable condition. On January 1, 2001, the Iowa Trauma System became fully operational. Hospitals in Iowa were reviewed, verified and categorized and had at least one physician with Advanced Trauma Life Support (ATLS) training. The committee structure for oversight and evaluation was established and the State Trauma Registry was in place. The all-inclusive system required the participation of Iowa hospitals, transporting ambulance services and rehabilitation centers.

In 2015, the American College of Surgeons-Committee on Trauma (ACS) completed a trauma system consultation visit to assess Iowa's trauma system. The ACS review team made multiple recommendations for improvement, including improving the use of data to drive and document changes in the trauma system. The full ACS Trauma System Consultation Report is available at <https://idph.iowa.gov/Portals/1/userfiles/61/Iowa%20TSC%20Report%20Final.pdf>. Significant progress has been made in meeting the data reporting and other recommendations identified by ACS.

The continuing goal of the trauma system is to provide timely, specialized care by matching trauma patient needs to appropriate resources, from the time of injury through rehabilitation. Meeting this goal requires the cooperation of trauma care providers and resources throughout the state along each phase of trauma care. A systems approach recognizes this continuum of care and has been shown to reduce overall costs, disability and death associated with traumatic injury. To accelerate the progress already being made in reducing morbidity and mortality of traumatic injuries, the three injury control components of prevention, acute care and rehabilitation must work together.

State Trauma Registry

Iowa Administrative Code 641 Chapter 136 (IAC 641-136) established the State Trauma Registry in 1996. Trauma was identified as a reportable condition. A "trauma patient" is defined as a victim of an external cause of injury that results in major or minor tissue damage or destruction caused by intentional or unintentional exposure to thermal, mechanical, electrical or chemical energy, or by the absence of heat or oxygen (see attached Data Sources document for ICD-10 codes). Chapter 136-Trauma Registry was updated in July 2018. The registry collects and analyzes reportable patient data on the incidence, severity and causes of trauma. The Iowa Trauma Patient Data Dictionary (January 2017) specifies the inclusion criteria and reportable patient data to be reported to the trauma registry.

The data collected is compiled in this annual report, which includes the magnitude of injuries in Iowa, the organization of trauma care, the performance of care, and outcomes of injured patients in Iowa. The Trauma System Advisory Council's System Evaluation and Quality Improvement Subcommittee routinely reviews the data for system improvement recommendations. The data is used by hospitals to drive performance improvement and injury prevention activities. Aggregate data from the registry is used by the trauma service areas to help inform overall improvements to the trauma system. The data has been used for the Burden of Injury Report, statewide injury prevention efforts and research.

Trauma Hospitals

Iowa has an inclusive trauma system. All 118 hospitals in Iowa are verified as a trauma care facility at some level. There are four levels of trauma care facilities in Iowa. Level I facilities have the resources necessary to provide trauma care to patients with significant traumatic injuries and conduct trauma research. Level II facilities have similar resources for care of the trauma patient, but may not actively conduct research activities. Level III facilities have surgical capabilities 24/7/365 including orthopedic surgery, but may not have the resources needed to provide definitive care for the most significantly injured trauma patients. Level IV facilities have the resources and training needed to stabilize traumatically-injured patients and provide definitive care for those with minor injuries. The following map shows the location and level of all Iowa trauma care facilities in 2017.

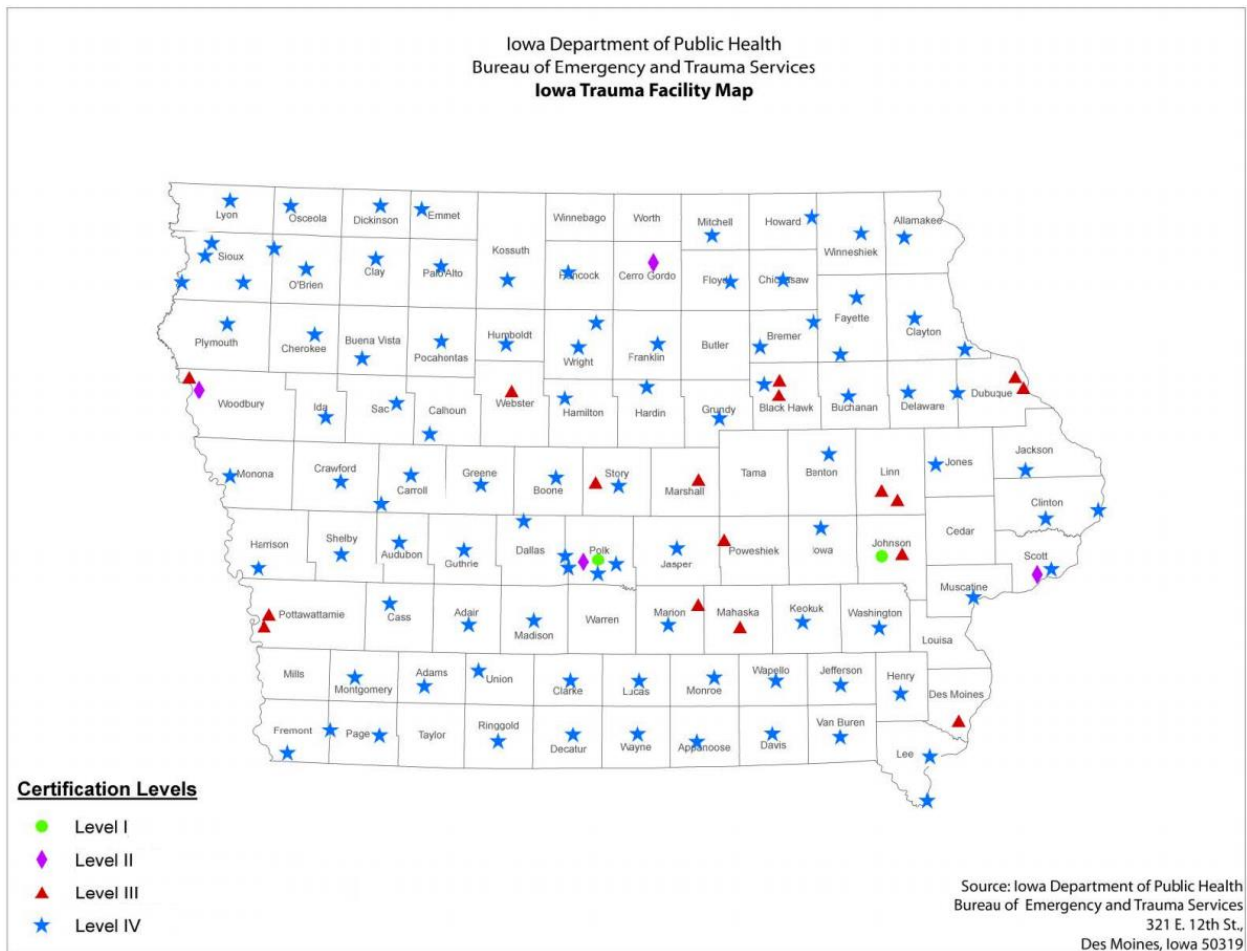


Figure 1: Locations of the trauma system care facilities by level of hospital capability in 2017.

Trauma Facility Level Count

Source: Iowa Department of Public Health | 2017

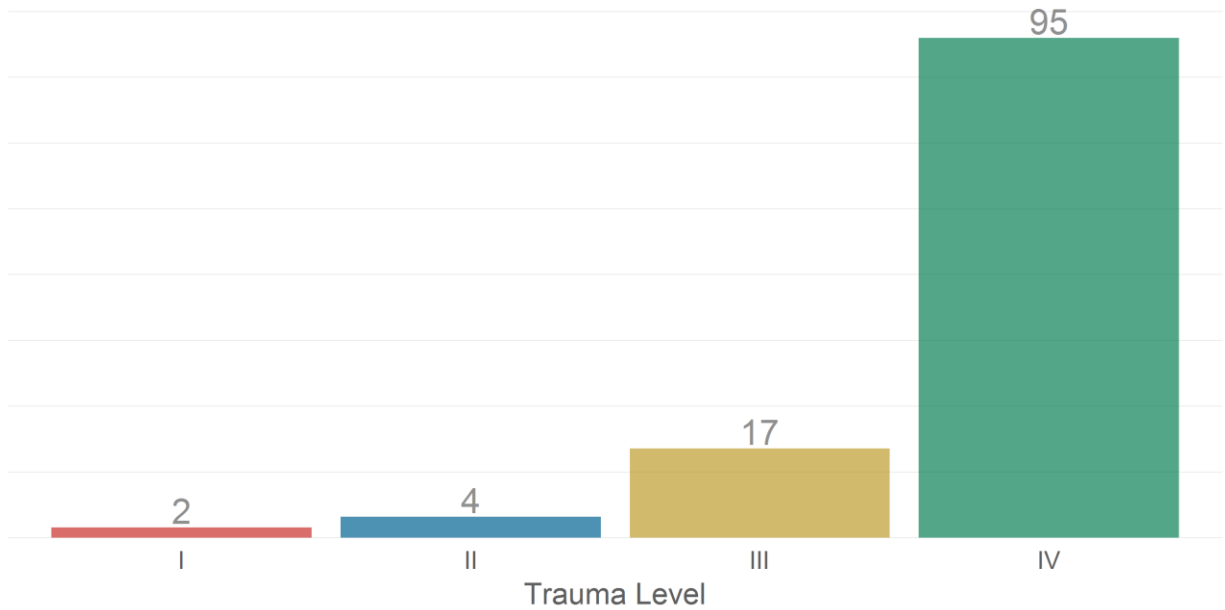


Figure 2: There were no changes to trauma facility designations in 2017.

All 118 trauma care facilities in Iowa are required to submit data to the state trauma registry. Both Level I and two of the four Level II facilities are verified as trauma care facilities by the American College of Surgeons (ACS). The remaining hospitals in Iowa are verified as trauma care facilities by the Iowa Department of Public Health and the Iowa Trauma Survey Team. The trauma survey team is a group of health care providers contracted by IDPH to assist in verifying trauma care facilities' compliance with trauma criteria. This group of health care providers is made up of trauma surgeons, emergency medicine physicians and trauma nurses from across the state. The trauma survey team uses the criteria adopted in Iowa Administrative Code 641 Chapter 134-Trauma Care Facility Categorization and Verification to assess the hospitals.

Count of Incidents by Trauma Facility Level

Source: Iowa Trauma Registry | 2017

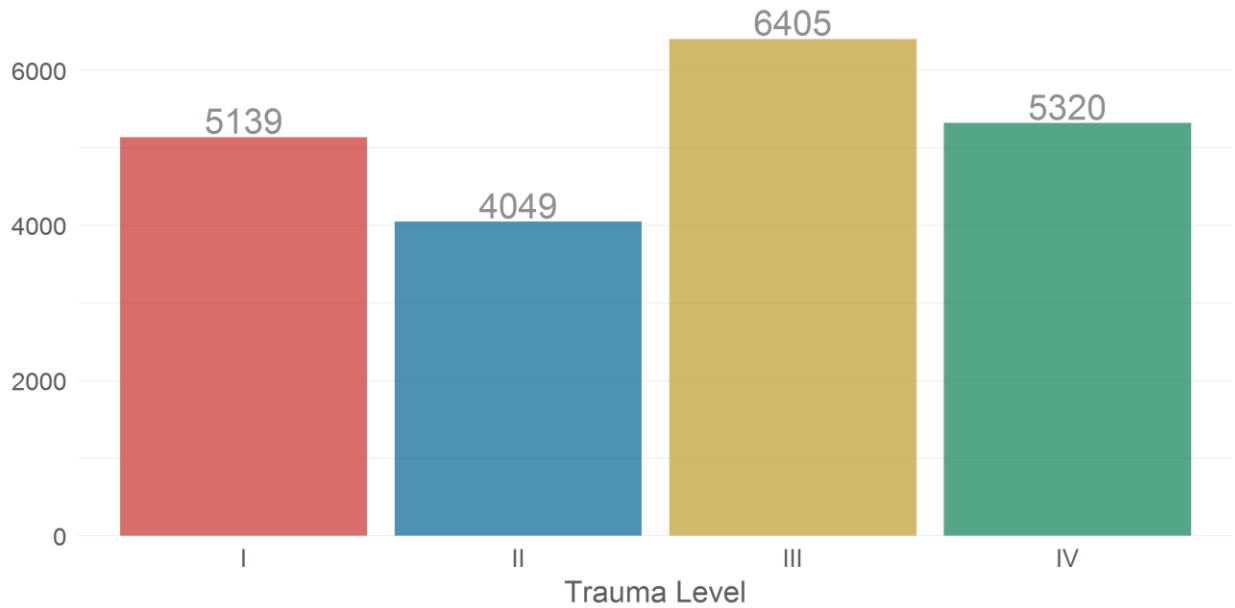


Figure 3: The number of trauma patients reported through the State Trauma Registry by facility level in 2017.

All Iowa hospitals have a requirement to submit data. The Iowa Department of Public Health transitioned the Trauma Registry to a new vendor in 2015. At that time, department staff provided training to hospital staff in multiple locations across the state. This has resulted in more incidents being reported to the state trauma registry. In 2014, Level IV facilities reported 2,005 incidents, as compared to 5,320 in 2017. All level I, II and III facilities reported data for patients seen in 2017. Ninety-seven percent of level IV facilities reported patients to the registry seen in 2017. The department continues to support hospital data reporting education and training.

Response to Trauma

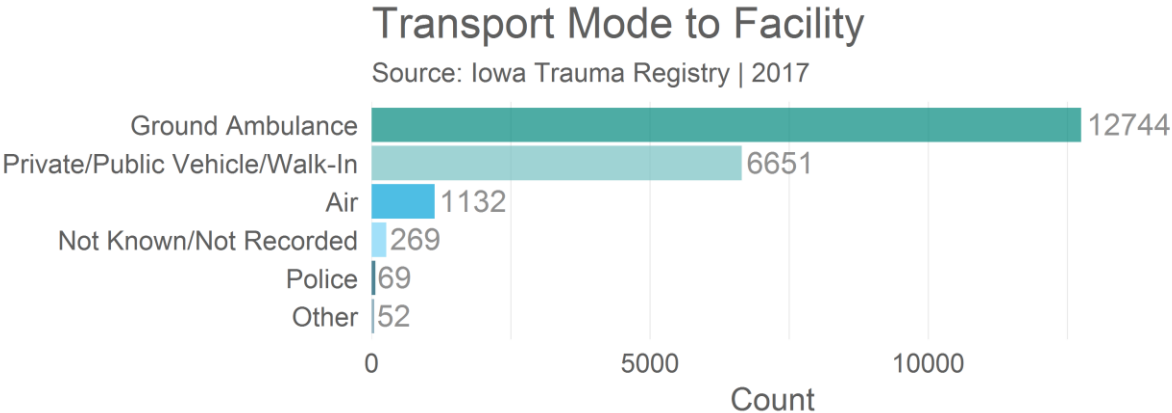


Figure 4: Method used to transport trauma patients to emergency care.

The data depicted in this table shows the mode or mechanism of transport of trauma patients for trauma care. Based on the Iowa Trauma Registry, 61 percent of patients were transported to the trauma care facility by ground ambulance, 32 percent of patients were transported by private/public vehicle/walk-in, 5 percent of patients were transported by air (helicopter or fixed-wing aircraft), the mechanism for transport for 1 percent of the patients is unknown and less than 1 percent of trauma patients were transported by police or other.

Incident Count by ISS Range

Source: Iowa Trauma Registry | 2017

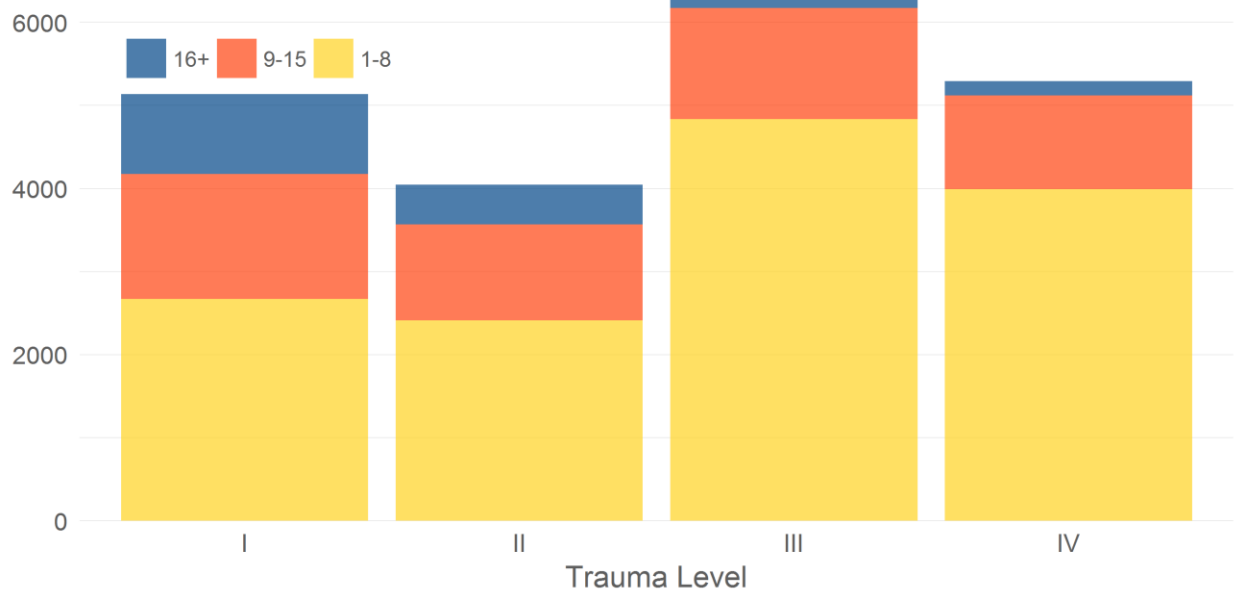


Figure 5: Incidents by trauma level within each Injury Severity Score (ISS) range.

The Injury Severity Score, or ISS, is a method used to rate the severity of the patient's injury. It correlates with morbidity, mortality and hospital length of stay for injured patients. This score is based on the patient's diagnosed injuries. ISS scores can range from 0 to 75. Any score greater than 15 is considered major trauma, also known as polytrauma. A score of 1-8 is considered minor trauma, and scores ranging from 9-15 are considered moderate trauma.

The data in the chart is from all levels of hospitals, and does not solely depict data from hospitals that provided definitive care for the trauma patient. Level IV and some Level III facilities provide stabilizing care for significantly injured trauma patients before transferring that patient to a definitive care hospital that is able to perform a higher level of stabilizing treatment. The ISS is retrospective and based on all the patient's diagnosed injuries. The ISS ratings for patients seen at Level IV and Level III facilities is likely to be artificially low. The Level IV and Level III facilities may not identify all of the trauma patient's injuries before transport. Level IV and Level III facilities may only identify the most critical injuries that require stabilization, before transport. This may impact the reported ISS of some patients seen at Level IV and Level III facilities who are then transported to a definitive care facility for a higher level stabilizing treatment.

Trauma registry data shows 48 percent of incidents at Level I facilities had an ISS over 8 and Level II facilities had 40 percent of incidents with an ISS over 8. Both Level III and Level IV facilities had 24 percent of incidents with an ISS over 8.

Cause of Injury Frequency

Source: Iowa Trauma Registry | 2017

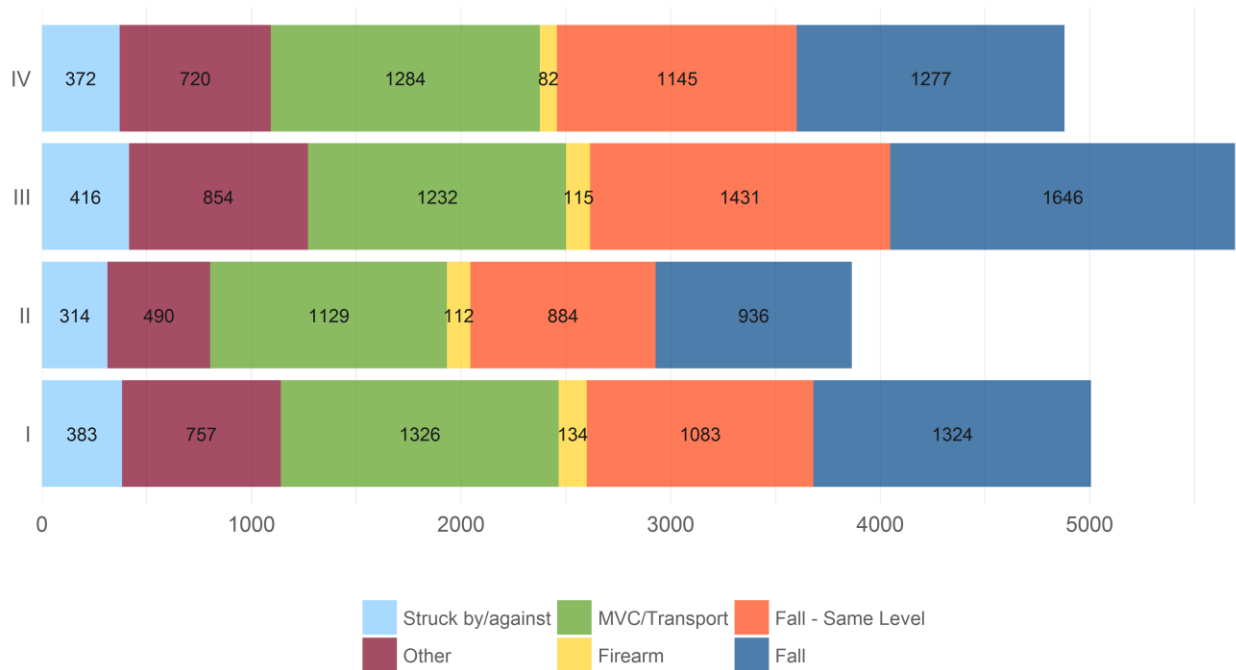


Figure 6

Level III facilities saw a greater percentage of their incidents as falls than other facilities, both for same-level falls and otherwise. An injury type that is not shown as its own category in the table is burn injuries; they are in the “Other” category due to relatively small counts. Level I facilities see burn patients at a rate about 3 to 4 times higher than the other levels. The state’s only verified burn center is a Level I trauma care facility. The subcategories of the Other category in Figure 6 are expanded out to greater specificity in Figure 7, albeit not split out by trauma level. Burn injuries are listed as Fire/Flame.

Cause of Injury Frequency

Source: Iowa Trauma Registry | 2017

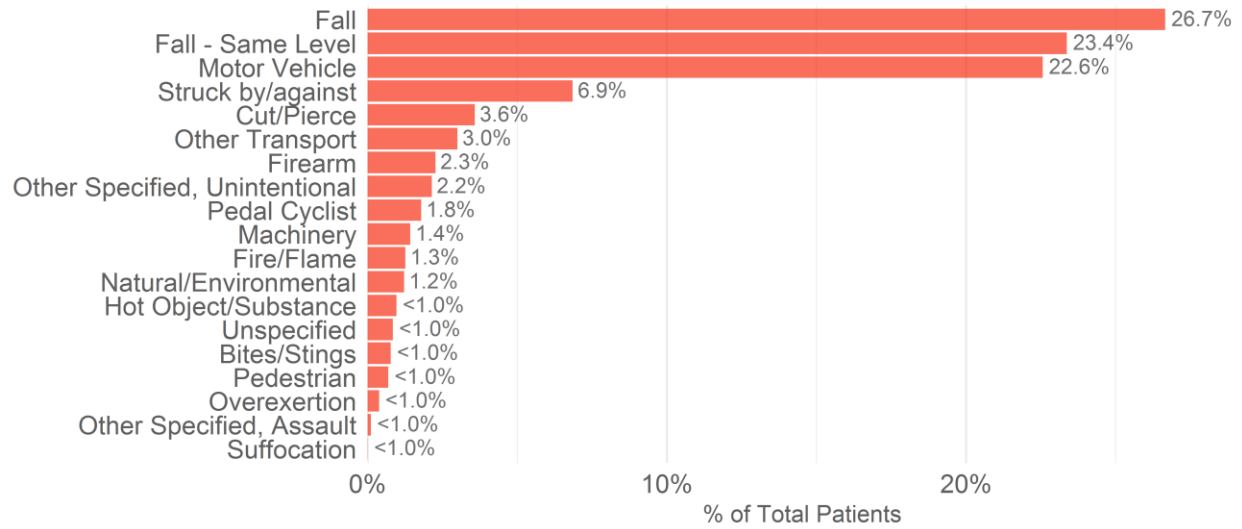


Figure 7

Non-same-level falls do outnumber the same-level falls. All falls account for one half of all the injuries in the registry. Since the trauma registry does not include isolated hip fractures, this percentage is significantly lower than the nearly 70 percent in Figure 9 which uses the Iowa Hospital Association's Inpatient and Outpatient Data Registry.

Hospital Admissions

Hospital admissions data are obtained from the Iowa Hospital Association’s Inpatient and Outpatient Data Registry. A trauma injury must be either the admitting or principal diagnosis to be included in this data set. A trauma injury has a diagnosis code that falls within the ICD-10 ranges shown starting on page 10 of the Iowa Trauma Patient Data Dictionary (<https://idph.iowa.gov/Portals/1/userfiles/43/Trauma%20Registry%20Data%20Dictionary%20Jan%20202017.pdf>). Based on these criteria, there were 14,072 patients with a trauma diagnosis code as the admitting or principal diagnosis code for first-hospital admissions at Iowa facilities.

Trauma Admissions by Age Range

Source: Iowa Inpatient Database | 2017

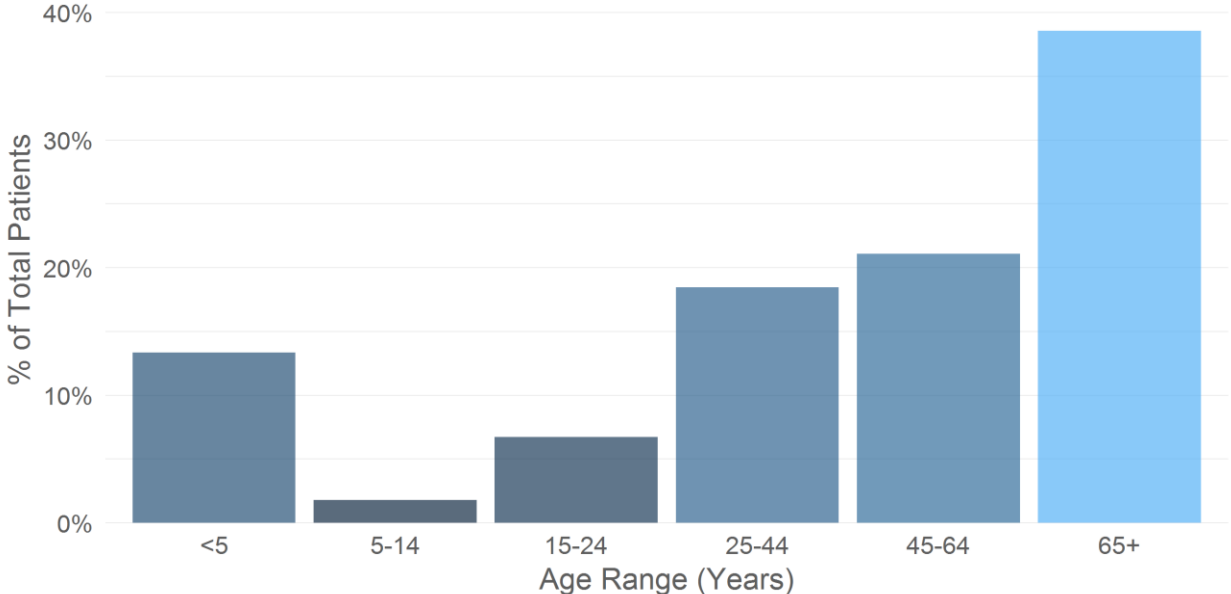


Figure 8

Patients 65 and older accounted for the plurality of trauma admissions. Note that the age ranges are not of equal length; there are 5-, 10-, and 20-year ranges, as well as the open-ended 65+ range. Since the inpatient database does not exclude isolated hip fractures due to same-level falls like the state trauma registry, the inpatient database has more patients in the 65+ range.

Nature of Injury Frequency

Source: Iowa Inpatient Database | 2017

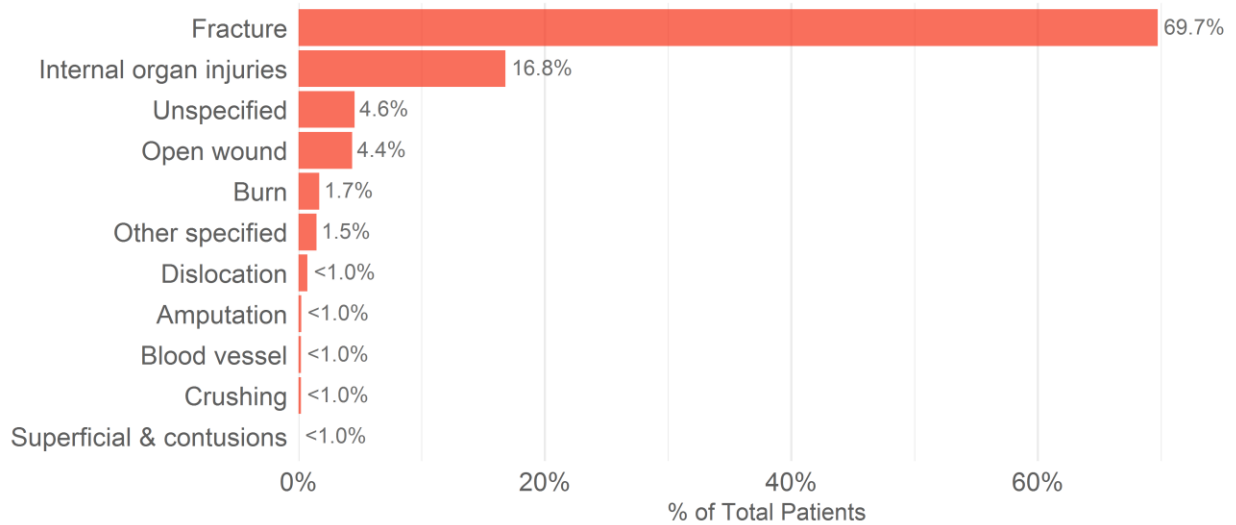


Figure 10

Fractures are, by far, the most common primary trauma diagnoses that result in hospital admissions. The nature of injury is determined from the ICD-10 diagnosis code.

Injury Body Region Frequency

Source: Iowa Inpatient Database | 2017

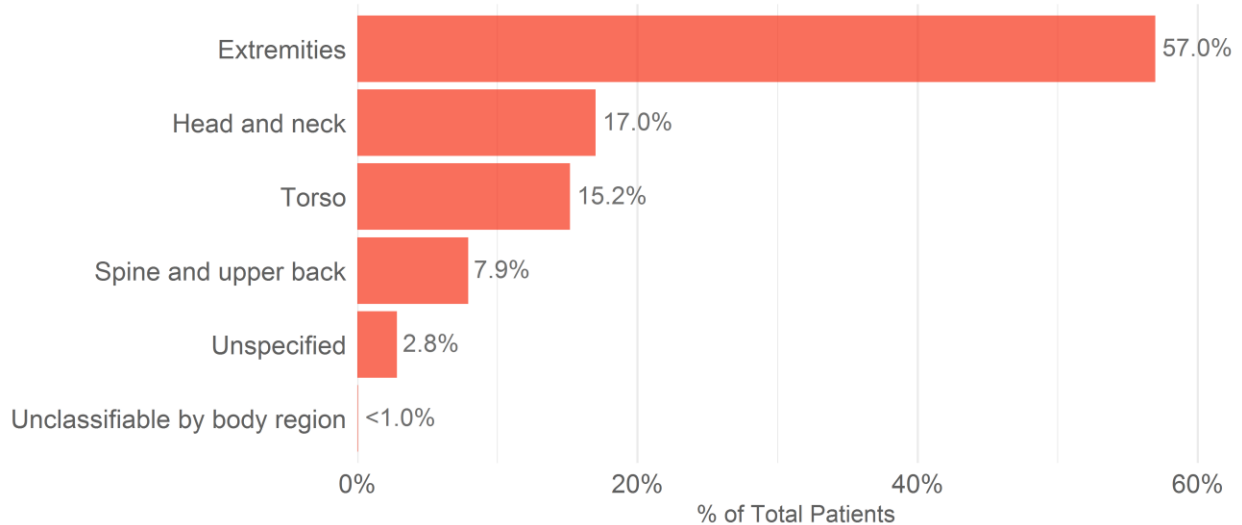


Figure 11

The body region is also derived from the ICD-10 diagnosis code. Most primary diagnosis codes for trauma injuries are for the extremities and fewer than 5 percent of body regions were unspecified or unclassifiable.

Deaths

Death data was compiled from publicly available reports from the Iowa Bureau of Health Statistics (see Iowa Death Certificate Data in Data Sources) and the Centers for Disease Control and Prevention (CDC) Underlying Cause of Death report tool (see Centers for Disease Control and Prevention in Data Sources).

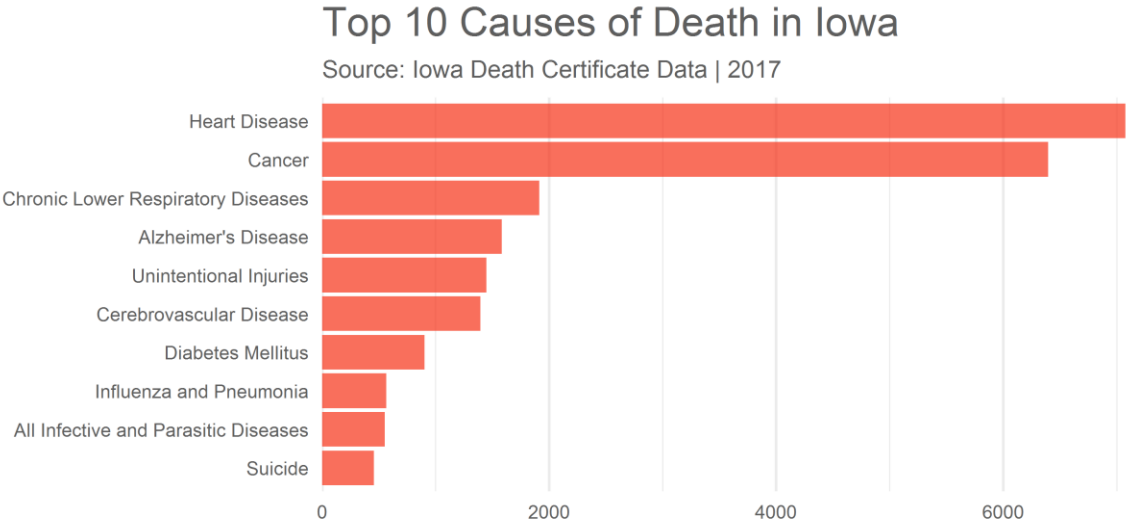


Figure 13

Unintentional injuries account for most trauma deaths in Iowa for 2017. The suicide category of this figure also includes trauma injuries. According to the CDC, injury is the leading cause of death among persons 1-44 years of age.

https://www.cdc.gov/injury/wisqars/overview/key_data.html

Iowa Trauma Deaths by Intentionality

Source: Iowa Death Certificate Data | 2010-2017

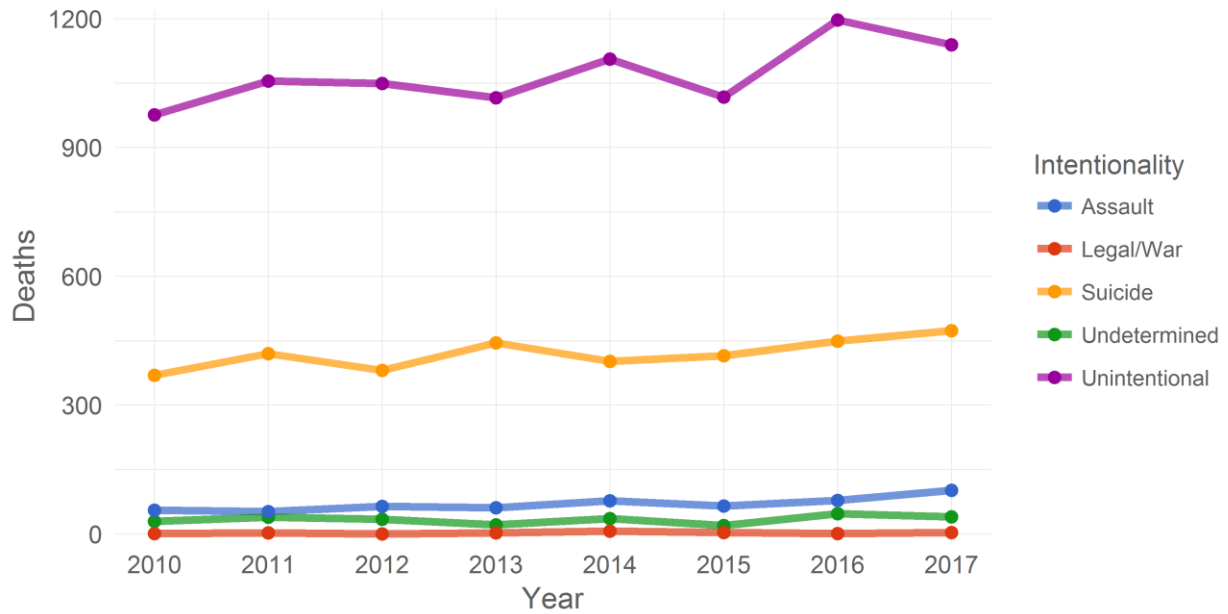


Figure 14: Historical data on trauma deaths categorized by intentionality.

Following the large increase from 2015 to 2016 in unintentional injuries, there was a slight decrease in 2017. Both assault and suicide saw small increases over consecutive years.

Iowa Unintentional Trauma Deaths by Cause

Source: Iowa Death Certificate Data | 2010-2017

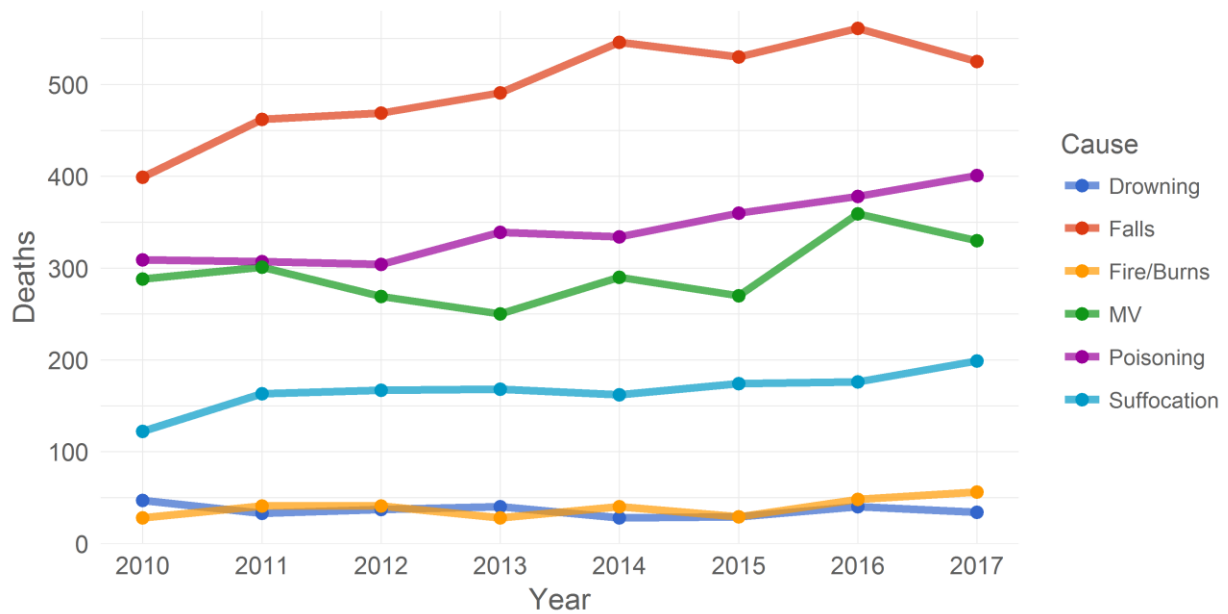


Figure 15

Following the increases in each of the six categories from 2015 to 2016, only fire/burn, suffocation and poisoning deaths increased from 2016 to 2017. Fall and motor vehicle deaths both saw significant declines and drowning deaths decreased slightly.

Iowa Trauma Suicides by Cause

Source: Iowa Death Certificate Data | 2010-2017

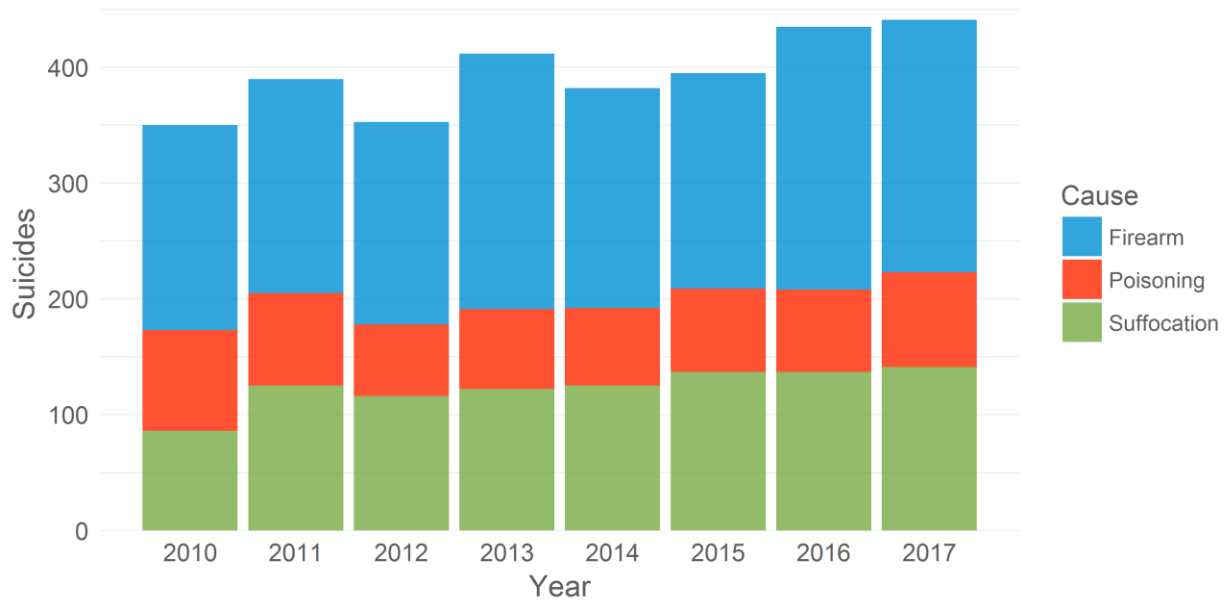


Figure 16: Historical death certificate data for 3 causes of suicide in Iowa.

From 2016 to 2017, firearm suicides decreased, after a large increase from 2015 to 2016. Poisoning suicides had decreased and stagnated until this year when they surpassed the 2011 amount, although not as high as the amount in 2010.

Trends in Trauma Deaths			
Cause	5-Year Average	2017 Deaths	% ▲/▼
Drowning	35	34	-2.9%
Fall	519	525	1.2%
Fire/Flame	37	56	51.4%
MV Traffic	288	330	14.6%
Poisoning	343	401	16.9%
Suffocation	169	199	17.8%

The above table shows the deaths from the six given categories, regardless of intentionality. Drowning was the only category that did not have more deaths in 2017 than the five-year average from 2012 to 2016. Fire/Flame saw the largest percentage difference between the five-year average and the 2017 total, but poisonings accounted for the largest nominal increase at 58 deaths higher than the trailing five-year average.

Iowa Unintentional Fall Deaths

Source: Iowa Death Certificate Data | 2002-2017

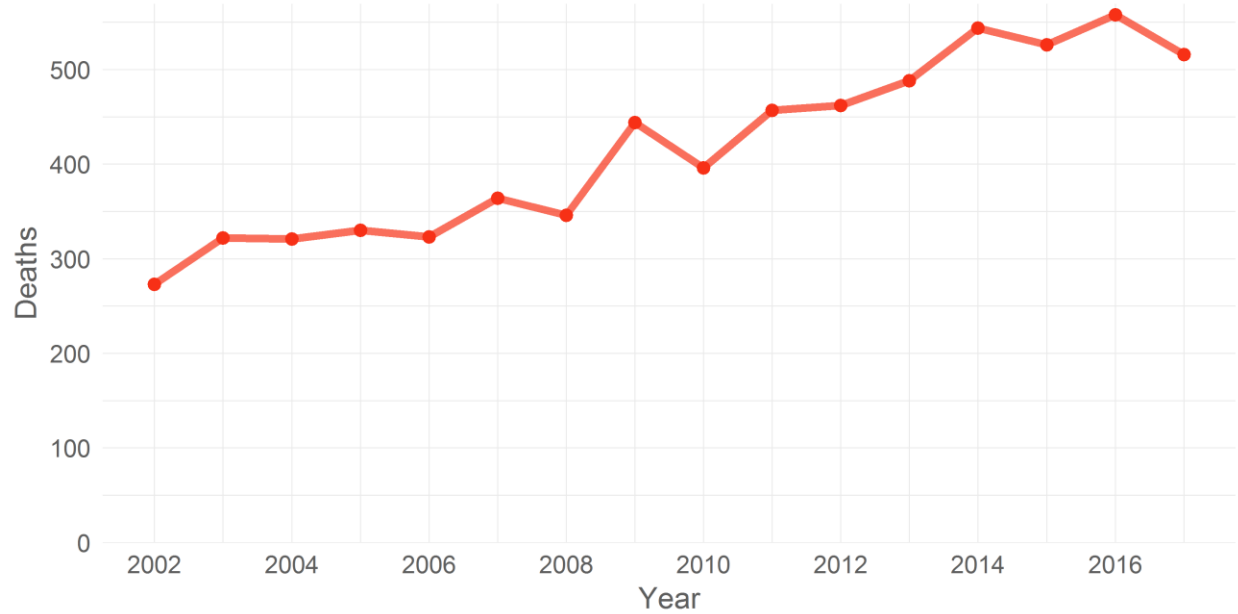


Figure 17

Deaths due to unintentional falls have remained steady for the past few years. The 516 deaths in 2017 is the lowest total since 2013, but it is still an 89.0 percent increase from the 273 deaths in 2002, while Iowa's population only increased 7.1 percent in that time.

Iowa Poisoning Deaths

Source: Iowa Death Certificate Data | 2002-2017

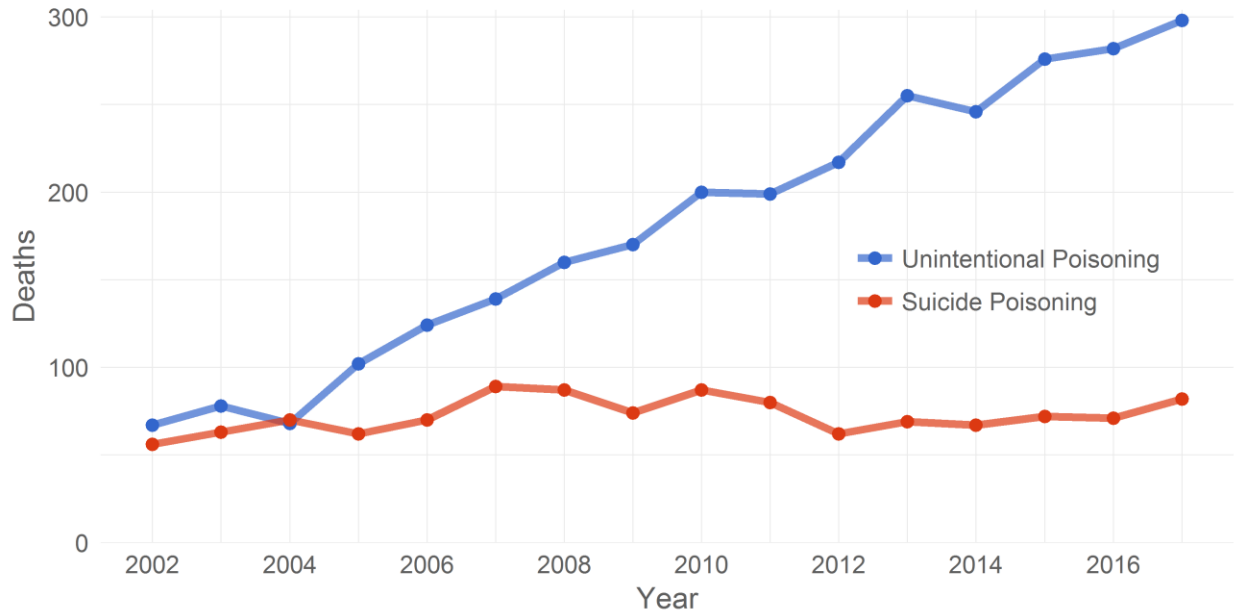


Figure 18

While poisoning deaths continue to rise, suicide by poisoning has remained relatively flat for the past 16 years. The number of poisoning suicides increased 20.2 percent, compared to the past 5-year average, but looking at this graphical output, the 2017 figure does not appear abnormal when compared to historical trends. The unintentional poisonings, however, have increased at a steadily high rate all but three of the past 16 years.

Performance Indicators

The System Evaluation and Quality Improvement Subcommittee (SEQIS) of the Trauma System Advisory Council (TSAC) established a set of indicators to measure the trends in performance of the statewide trauma system. In order to calculate these indicators, data is extracted from the state trauma registry, processed according to the accompanying Hospital System State Indicators document (Attachment 1), and distributed to all reporting facilities. Using these indicators, trauma programs are able to see their own performance compared to other hospitals of the same level, as well as compared to the state as a whole. Below are the indicator results for the state in the far right column, as well as divided up by trauma facility level (with levels I and II combined).

Trauma indicator data is provided to all Iowa hospitals and trauma service areas on a quarterly basis. The data is used to drive performance improvement processes and prevention programs. The quarterly data reports assist hospitals and service areas in monitoring changes within the trauma system.

Indicators Calculated For 2017	Level I & II	Level III	Level IV	State	Goal
Indicator 1a - Trauma Surgeon Responding Within 15 Minutes	85.6%	64.9%	N/A	78.6%	80.0%
Indicator 1b - Trauma Surgeon Responding Within 30 Minutes	96.5%	93.5%	N/A	95.5%	80.0%
Indicator 1c - Trauma Surgeon Response Time Unknown	2.3%	7.1%	N/A	4.1%	0.0%
Indicator 1d - Physician Responding Within 5 Minutes	90.9%	47.8%	85.1%	69.4%	80.0%
Indicator 1e - Physician Responding Within 20 Minutes	97.6%	84.0%	95.8%	90.8%	100.0%
Indicator 1f - Physician Response Time Unknown	1.4%	3.9%	7.5%	3.7%	0.0%
Indicator 2 - Injury Time Blank	27.0%	16.2%	7.5%	18.7%	0.0%
Indicator 3 - Probability of Survival Calculated	95.0%	87.3%	81.8%	89.3%	100.0%
Indicator 4a - Deceased Trauma Patient Autopsied	26.0%	35.4%	38.0%	32.0%	
Indicator 4b - No Autopsy On Death With LOS Greater Than 72 Hours	91.9%	95.2%	100.0%	93.8%	
Indicator 5a - Blood ETOH Measured	39.3%	16.9%	15.5%	26.4%	75.0%
Indicator 5b - Blood ETOH Positive	99.8%	94.4%	89.2%	97.2%	
Indicator 6a - 1st Hospital Initial GCS Less Than 9 With No Head CT Before Transfer To Definitive Care	N/A	56.8%	73.3%	65.1%	100.0%

Indicator 6b - 1st Hospital Initial GCS Less Than 9 And Arrived To Definitive Care Over 3 Hours From Injury	27.7%	18.9%	6.0%	24.7%	0.0%
Indicator 7 - Patients To Definitive Care Greater Than 3 Hours	45.5%	20.3%	13.8%	31.9%	0.0%
Indicator 8 - Survival Rate For All Traumas	96.3%	98.6%	98.2%	97.5%	
Survival Rate For Low Risk Traumas	98.9%	99.3%	98.7%	99.0%	
Survival Rate For Moderate Risk Traumas	92.6%	91.5%	92.4%	92.4%	
Survival Rate For High Risk Traumas	39.4%	28.6%	23.8%	37.1%	
Other Indicator 1 - Incidents Submitted Within 60 Days Of Patient Discharge	42.3%	73.2%	70.6%	58.9%	80.0%
Other Indicator 2 - Incidents With Validity Score Greater Than 84	77.8%	99.4%	96.7%	89.2%	90.0%

Attachment 1

Hospital System State Indicators

Details regarding the calculation of the indicators are described below.

- Indicator 1a – Trauma surgeon present in ED within 15 minutes of patient arrival
 - For level 1 trauma activations, how often did the first responding trauma surgeon arrive within 15 minutes of the arrival of the patient?
 - Trauma surgeons are defined as trauma team members who have 'Surgery/Trauma' selected for the Trauma Team Member Service Type on the incident form.
 - The response time is calculated as the minutes from the ED/Acute Care Admission Time to the Trauma Team Member Arrived Time.
 - 15 minutes is the indicator for Level I and II facilities.
 - This indicator disregards incidents for which there was no calculable response time for a 'Surgery/Trauma' trauma team member.
- Indicator 1b – Trauma surgeon present in ED within 30 minutes of patient arrival
 - Calculated the same as 1a, but 30 minutes is the indicator for Level III facilities.
- Indicator 1c – Trauma surgeon response time unknown
 - For level 1 trauma activations, how often is the response time of the trauma surgeons unable to be calculated?
 - If the response time is unable to be calculated, the registry is missing at least one of ED/Acute Care Admission Date/Time or Trauma Team Member Arrived Date/Time.
- Indicator 1d – 1st physician (Trauma surgeon or ED physician) present in ED within 5 minutes of patient arrival
 - For level 1 and 2 trauma activations, how often did the first responding physician arrive within 5 minutes of the arrival of the patient?
 - Physicians are defined as trauma team members who have "Surgery/Trauma" or "Emergency Medicine" selected for the Trauma Team Member Service Type on the incident form.
 - The response time is calculated as the minutes from the ED/Acute Care Admission Time to the Trauma Team Member Arrived Time.
 - 5 minutes is the indicator for Level I and II facilities.
 - This indicator disregards incidents for which there was no calculable response time for a "Surgery/Trauma" or "Emergency Medicine" trauma team member.
- Indicator 1e – 1st physician (Trauma surgeon or ED physician) present in ED within 20 minutes of patient arrival
 - Calculated the same as 1d, but 20 minutes is the indicator for Level III and IV facilities.
- Indicator 1f – Physician response time unknown

- For level 1 and 2 trauma activations, how often is the response time of the physician unable to be calculated?
 - If the response time is unable to be calculated, the registry is missing at least one of ED/Acute Care Admission Date/Time or Trauma Team Member Arrived Date/Time.
- Indicator 2 – Missing injury time
 - Calculated as the number of incidents with a missing injury time divided by the total number of incidents for the period.
- Indicator 3 – Trauma patient had a Probability of Survival (Ps) score calculated
 - Calculated as the number of incidents with a valid Probability of Survival score divided by the total number of incidents for the period.
 - Probability of Survival is calculated using the following factors:
 - Injury Severity Score (ISS): Derived from the AIS codes associated with the diagnosis codes.
 - Revised Trauma Score (RTS): Derived from Glasgow Come Scale, systolic blood pressure and respiratory rate.
 - Patient age.
 - Trauma type: Derived from the injury code (found on the Injury tab in ImageTrend) and its associated trauma type.
 - If any of those factors are missing, the Probability of Survival score will not be calculated.
- Indicator 4a – Deceased trauma patient was autopsied
 - Calculated as the number of incidents with a “Yes” value for Autopsy divided by the number of incidents with a value of “Deceased/Expired” for either ED/Acute Care Disposition or Hospital Discharge Disposition.
- Indicator 4b – No autopsy done on death with stay greater than 72 hours
 - Calculated as the number of deceased patients who were at the facility for over 72 hours and did not have an autopsy performed divided by all deceased patients who were at the facility for over 72 hours.
- Indicator 5a – Blood ETOH was measured
 - Calculated as the number of patients who had blood ETOH measured divided by all patients.
 - This does not exclude any patients, so pediatric patients are included.
- Indicator 5b – Blood ETOH was positive
 - Calculated as the number of patients who had a positive blood ETOH divided by the number of patients who had blood ETOH measured.
- Indicator 6a – 1st hospital initial GCS < 9 with no head CT done before transfer to definitive care
 - Calculated as the number of patients with a GCS less than 9 at the first hospital who did not have a head CT prior to transfer divided by the number of patients with a GCS less than 9 at the first hospital who were transferred.
 - The numbers for each hospital are only for patients who were not transferred out of your facility, so this indicator for your facility is for patients who received

definitive care at your facility.

- Indicator 6b – 1st hospital initial GCS < 9 arrived to definitive care > 3 hours in transferred patients
 - Calculated as the number of patients with a GCS less than 9 at the first hospital who arrived to definitive care over 3 hours from injury time divided by the number of patients with a GCS less than 9 who were transferred.
- Indicator 7 – SEQIS population that arrived to definitive care in > 3 hours from injury time
 - Calculated as the number of patients who took more than 3 hours to arrive at the definitive care facility from injury time divided by all patients.
 - Definitive care is determined the same as in 6a; i.e., patient is not transferred out.
- Indicator 8 – Survival rate by risk for death (high, moderate and low) stratified by trauma hospital level
 - The definitions for risk levels are as follows (Abnormal Physiology thresholds also listed):
 - Abnormal Physiology
 - GCS 3-5
 - Respiration <5 or >30 respirations per minute
 - Systolic Blood Pressure <60 mm Hg
 - Risk Definitions
 - High
 - Probability of Survival <2 **OR**
 - ISS >41 **OR**
 - ISS >24 if Abnormal Physiology
 - Moderate
 - Probability of Survival 0.2-<0.5 **OR**
 - ISS 16-41
 - Low
 - Probability of Survival 0.5-1.0 **OR**
 - ISS <16 **OR**
 - Normal range physiology
 - All survival rates are calculated as the number of patients who do not have an ED/Acute Care Disposition or Hospital Discharge Disposition of “Deceased/Expired” divided by all patients.
 - Other Indicator 1 – Incident submitted within 60 days of patient discharge
 - Calculated as the number of incidents entered in the trauma registry within 60 days of patient discharge divided by the number of all incidents.

- The data dictionary specifies that 80% of incidents should be entered within 60 days of patient discharge and 100% of incidents should be entered within 120 days of patient discharge.
- The patient discharge date is the later of ED/Acute Care Admission Date and Hospital Discharge Date.
- Other Indicator 2 – Incident has validity score of 85% or greater
 - Calculated as the number of incidents with a validity score of 85% or greater divided by all incidents.

Data Sources

Centers for Disease Control and Prevention: Although included in the 2016 report, the CDC doesn't publish the relevant data until approximately December of the following year, so the 2017 CDC data is not available for this report.

IHA Inpatient and Outpatient Data Registry: These are patients who were admitted to a given facility. The incidents used for analysis were the patients whose admitting or principal diagnosis was a trauma diagnosis code based on the state's trauma registry inclusion criteria.

Iowa Death Certificate Data: The Bureau of Health Statistics provides the trauma program with trauma-related death statistics. This data is preliminary for 2017, as the finalization of data typically occurs during the summer of the following year.

Iowa EMS Registry: This registry contains the EMS run reports for the state of Iowa in 2017. During this year, the registry transitioned from www.iowafirebridge.com to www.imagetrendelite.com/Elite/?organizationId=iowa. Data is pulled from both sources to complete the year's data.

Iowa Trauma Registry: This is the trauma registry that hospitals are required to submit data to as defined by the inclusion criteria on page 10 of the Iowa Trauma Registry Data Dictionary (<https://idph.iowa.gov/Portals/1/userfiles/43/Trauma%20Registry%20Data%20Dictionary%20Jan%202017.pdf>). Note that some facilities track same-level falls resulting in isolated hip fractures, but this data is not required. The information is collected on <https://patientregistry.imagetrend.com/iowa/>.