Indiana State
Department of Health

Trauma and Injury Prevention

2016-2018 Strategic Plan

As of February 12, 2016

DRAFT

Mission statement

To develop, implement and provide oversight of a statewide comprehensive trauma care system that:

- Prevents injuries.
- Saves lives.
- Improves the care and outcomes of trauma patients.

Vision

Prevent injuries in Indiana.

Core values

- Health promotion and prevention.
- Data collection, analysis, and information dissemination.
- Evidence-based best practices for public health promotion, training, and health care quality.

Strategic priorities

The Division of Trauma and Injury Prevention considers the following Indiana State Department of Health (ISDH) priorities will have the most impact on the way the division operates and on its ability to deliver on its Mission and Vision:

- Better use of information and data from electronic sources to develop and sponsor outcomes-driven programs.
- Improve relationships and partnerships with key stakeholders, coalitions and networks throughout the State and the nation.
- Decrease disease incidence and burden.
- Improve response and preparedness networks and capabilities.
- Reduce administrative costs through improving operational efficiencies.
- Recruitment, evaluation and retention of top talent in public health.

What is a trauma system?

An ideal trauma system includes all the components identified with optimal trauma care, such as prevention, access, pre-hospital care and transportation, acute hospital care, rehabilitation and research activities. The term “inclusive” trauma system is used for this all-encompassing approach, as opposed to the term “exclusive” system, which focuses only on the major trauma center. It must be noted however that an “inclusive” system does not mean an unplanned or unregulated system. Each facility should have an identifiable role based on resources and needs of the community rather than their self-selected level of designation. Although this document still addresses trauma center verification and consultation, it also emphasizes the need for various levels of trauma centers to cooperate in the care of injured patients to avoid wasting precious medical resources. The intent of this emphasis is to provide optimal care in a cost-effective manner.

Trauma system elements

A trauma system is an organized approach to treating patients with acute injuries. We need to evaluate the entire trauma system to get a better understanding of the continuum of trauma patient care in Indiana. Indiana does not have an integrated statewide trauma system—we are one of only 6 states without one. Indiana has <u>components</u> of a system:

- Emergency medical services (EMS) providers.
- Trauma centers.
- Trauma registry.
- Rehabilitation facilities.

Indiana trauma system history

2004

- Trauma System Advisory Task Force formed.

2006

- IC 16-19-3-28 (Public Law 155) named the Indiana State Health Department (ISDH) the lead agency for statewide trauma system:
  State department designated as lead agency of a statewide trauma care system; rule making authority
  Sec. 28
  (a) The state department is the lead agency for the development, implementation, and oversight of a statewide comprehensive trauma care system to prevent injuries, save lives, and improve the care and outcome of individuals injured in Indiana.
  (b) The state department may adopt rules under IC 4-22-2 concerning the development and implementation of the following:
  (1) A state trauma registry.
  (2) Standards and procedures for trauma care level designation of hospitals.
- ISDH hired a trauma system manager.

2007

- Federal funding from the National Highway Transportation Safety Administration (NHTSA 408) for the state trauma registry was received from the Indiana Criminal Justice Institute (ICJI). A contract with a trauma registry software vendor (ImageTrend) was completed.
  - ICJI funding continues today.

2008

- Senate Bill 249 gave the Department of Homeland Security (IDHS) the authority to adopt Emergency Medical Services (EMS) triage and transportation protocols.
- ISDH hired its first state trauma registry manager.
- The American College of Surgeons (ACS) conducted an evaluation of Indiana's trauma system.

2009

- ACS provided a set of recommendations for further development of Indiana's trauma system.
- Governor Daniels created by executive order the Indiana State Trauma Care Committee (ISTCC).

2010

- The first meeting of the ISTCC (previously the Trauma Care Task Force) was held. The ISTCC serves as an advisory body to the ISDH on all issues involving trauma.

2011

- The ISDH hired a trauma and injury prevention division director, prioritizing trauma and injury prevention as a division within the agency.

2012

- The EMS Commission adopted the Triage and Transport Rule with significant assistance from ISTCC members and ISDH staff.

2013

- Governor Pence re-issued Governor Daniels' original Executive Order creating the Indiana State Trauma Care Committee.
- The ISDH worked with the EMS Commission to approve "in the process of ACS verification" trauma centers for purposes of the Triage and Transport Rule, which will greatly increase the number of trauma centers in Indiana and will better prepare Indiana hospitals to become ACS-verified trauma centers.

- Governor Pence signed the Trauma Registry Rule. The trauma registry rule requires all EMS providers, hospitals with emergency departments, and rehabilitation hospitals to submit their trauma data to the state trauma registry.
- Indiana University Health Ball Memorial was the first "in the process of ACS verification" trauma center approved by the EMS Commission.

2014

- The ISDH hosted its first statewide EMS Medical Directors' Conference.
- IU Health Arnett Hospital and IU Health Ball Memorial Hospital became the state's first ACS-verified level III trauma centers.
- The ISDH received $1.4 million from the Centers for Disease Control and Prevention (CDC) to gather critical data on violent deaths using the National Violent Death Reporting System (NVDRS).

2015

- The ISDH hosted the first statewide Injury Prevention Conference and hired an Injury Prevention Program Coordinator.
- The ISDH hired an epidemiologist, a law enforcement records coordinator and a records consultant to implement the NVDRS grant it received in 2014 from CDC.
- As of July 1, the EMS registry responsibilities shifted from the ISDH to the Indiana Department of Homeland Security.
- The ISDH hosted the second annual EMS Medical Directors' Conference.
- The ISDH published and released "Preventing Injuries in Indiana: A Resource Guide" and application on iOS and Android platforms.
- At the end of the year, eight "in the process of ACS verification" trauma centers have been approved.

Burden of injuries in Indiana

Injuries are caused by acute exposure to physical agents, such as mechanical force or energy, heat, electricity, chemicals and ionizing radiation, in amounts or at rates that cause bodily harm. Injury may either be unintentional or intentional (violence-related, including assault, homicide and suicide) and can lead to death, disability and lifelong health consequences. Unintentional injury accounts for the vast majority of injury-related deaths and can be defined as involving injury or poisoning by unpremeditated measures. Unintentional injury is also the leading cause of years of potential life lost in Indiana, which is a measure of premature mortality and early death. Regardless of intention, injury has emerged as a public health issue leading to significant morbidity and mortality.

Injury is the leading cause of death for Indiana residents[r1] ages 1 through 44 years, and the fifth leading cause of death overall. In 2013, there were 4,409 injury deaths at an age-adjusted rate of 65.93 per 100,000, compared to a national rate of 58.53 per 100,000. Of the 4,409 injury deaths, 944 Hoosiers died by suicide and 400 died from homicide. The leading causes of unintentional injury death in Indiana in 2013 were poisoning (919 deaths), motor vehicle collisions (800 deaths) and falls (418 deaths). In the same year, more than 50,000 Hoosiers suffered a traumatic brain injury (TBI), which resulted in 1,164 deaths. The highest number of TBI-related deaths were among 25-34 year olds.

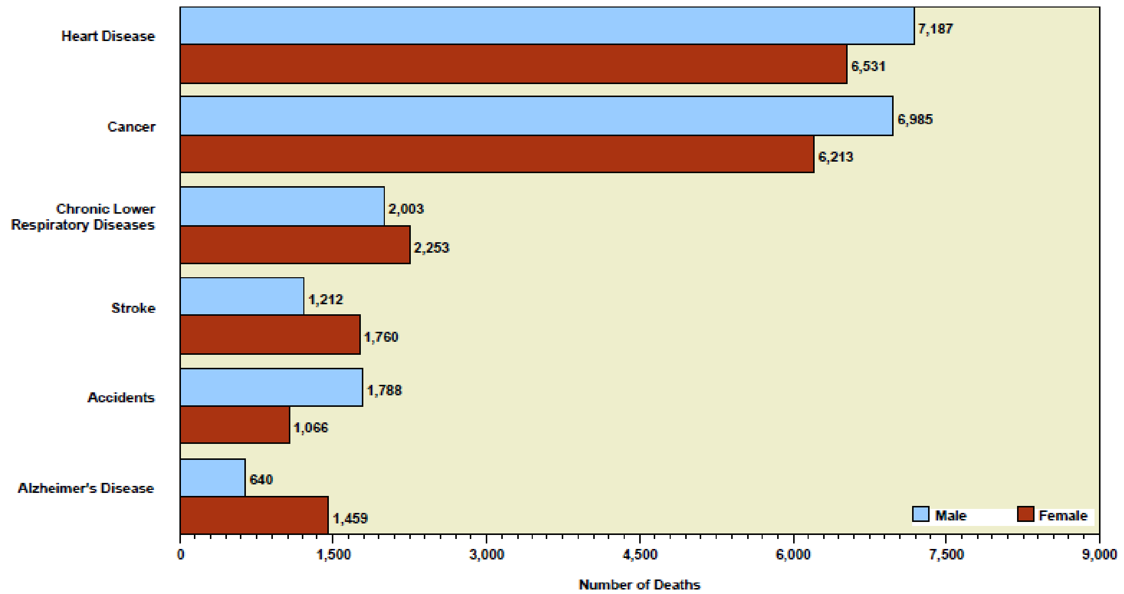
The injury pyramid provides a visualization of injury spectrum, illustrating the reality that injury-related deaths represent a small percentage overall injury-related outcomes. While deaths are the most devastating outcome related to injuries, the analysis of hospitalization and emergency department visits related to injury provides additional useful information. Although injury deaths are significant, non-fatal injuries occur more frequently. More than 31,000 Hoosiers are hospitalized and more than 600,000 visit emergency departments for injuries each year.

Adapted from Safe States Alliance (formerly State and Territorial Injury Prevention Directors Association): Safe States, 2003 Edition

The financial consequences from injuries are extensive. The CDC estimates that the lifetime medical costs were more than $47.9 million and work loss costs totaled more than $4.1 billion for injury deaths occurring in Indiana in 2010. From motor vehicle crash deaths in Indiana in one year, the CDC estimates $10 million in medical costs and $1.06 billion in work lost costs. These totals do not include other costs such as impacts on the quality of life.

Leading Causes of Death

Total Population, by Sex: Indiana Residents, 2013



Indiana State Department of Health, Epidemiology Resource Center, Data Analysis Team.
Indiana Mortality Report, State and County Data 2013. 2015

10 Leading Causes of Injury Deaths, Indiana

2013, All Races, Both Sexes

	Age Groups										
Rank	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	All Ages
1	Unintentional Suffocation 35	Unintentional MV Traffic 10	Unintentional MV Traffic ---	Unintentional MV Traffic 13	Unintentional MV Traffic 167	Unintentional Poisoning 248	Unintentional Poisoning 210	Unintentional Poisoning 213	Unintentional Poisoning 118	Unintentional Fall 349	Unintentional Poisoning 919
2	Homicide Unspecified ---	Unintentional Drowning ---	Unintentional Fire/burn ---	Suicide Suffocation ---	Homicide Firearm 125	Unintentional MV Traffic 138	Unintentional MV Traffic 107	Unintentional MV Traffic 112	Unintentional MV Traffic 108	Unintentional Unspecified 217	Unintentional MV Traffic 800
3	Homicide Other Spec., classifiable ---	Unintentional Fire/burn ---	Homicide Unspecified ---	Homicide Firearm ---	Unintentional Poisoning 92	Suicide Firearm 84	Suicide Firearm 77	Suicide Firearm 104	Suicide Firearm 87	Unintentional MV Traffic 136	Suicide Firearm 523
4	Homicide Poisoning ---	Unintentional Suffocation ---	Unintentional Drowning ---	Suicide Firearm ---	Suicide Firearm 54	Homicide Firearm 81	Suicide Suffocation 50	Suicide Poisoning 47	Suicide Poisoning 35	Suicide Firearm 114	Unintentional Fall 418
5	Undetermined Drowning ---	Homicide Unspecified ---	Unintentional Suffocation ---	Unintentional Poisoning ---	Suicide Suffocation 50	Suicide Suffocation 58	Homicide Firearm 42	Undetermined Poisoning 31	Undetermined Poisoning 29	Unintentional Suffocation 86	Homicide Firearm 298
6	Undetermined Poisoning ---	Unintentional Pedestrian, Other ---	Adverse Effects ---	Unintentional Suffocation ---	Unintentional Drowning ---	Undetermined Poisoning 21	Undetermined Poisoning 31	Suicide Suffocation 30	Unintentional Fall 28	Adverse Effects 47	Unintentional Unspecified 256
7	Undetermined Suffocation ---	Homicide Other Spec., classifiable ---	Homicide Fire/burn ---	Eight Tied ---	Undetermined Poisoning ---	Suicide Poisoning 15	Suicide Poisoning 30	Homicide Firearm 28	Suicide Suffocation 22	Unintentional Poisoning 34	Suicide Suffocation 223
8	Unintentional MV Traffic ---	Unintentional Natural/ Environment ---	Unintentional Natural/ Environment ---	Eight Tied ---	Unintentional Other Land Transport ---	Homicide Unspecified 12	Unintentional Drowning 12	Unintentional Fall 22	Unintentional Suffocation 18	Unintentional Fire/burn 28	Unintentional Suffocation 184
9	Four Tied ---	Unintentional Unspecified ---	Unintentional Struck by or Against ---	Eight Tied ---	Legal Int. Firearm ---	Unintentional Drowning 11	Unintentional Suffocation 12	Unintentional Suffocation 13	Unintentional Fire/burn 17	Unintentional Other Spec., NEC N 16	Suicide Poisoning 143
10	Four Tied ---	Seven Tied ---	---	Eight Tied ---	Two Tied ---	Two Tied 10	Unintentional Fire/burn 10	Two Tied ---	Unintentional Unspecified 17	Suicide Poisoning 12	Undetermined Poisoning 121

WISARS Note: Counts of less than 10 deaths have been surpressed (---).
Produced By: Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC
Data Source: National Center for Health Statistics (NCHS), National Vital Statistics System

Trauma Centers in Indiana

Trauma Centers
in Indiana

Level I

Indianapolis
Eskenazi Health
IU Health Methodist Hospital
Riley Hospital for Children at IU Health

Level II

Evansville
Deaconess Hospital
St. Mary's Medical Center of Evansville

Ft. Wayne
Lutheran Hosptial of Indiana
Parkview Regional Medical Center

Indianapolis
St. Vincent Indianapolis Hospital

South Bend
Memorial Hospital of South Bend

Level III

Lafayette
IU Health - Arnett Hospital

Muncie
IU Health - Ball Memorial Hospital

In the process of ACS Verification

Level II

Terre Haute
Terre Haute Regional

Level III

Anderson
Community Hospital - Anderson
St. Vincent Hospital

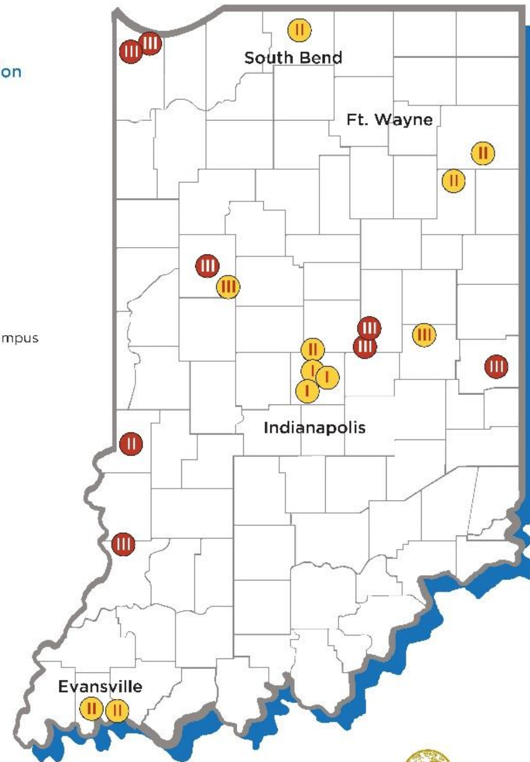
Gary
Methodist Hospital - Northlake Campus

Lafayette
Franciscan St. Elizabeth - East

Vincennes
Good Samaritan Hospital

Richmond
Reid Health

Crown Point
Franciscan St. Anthony Health



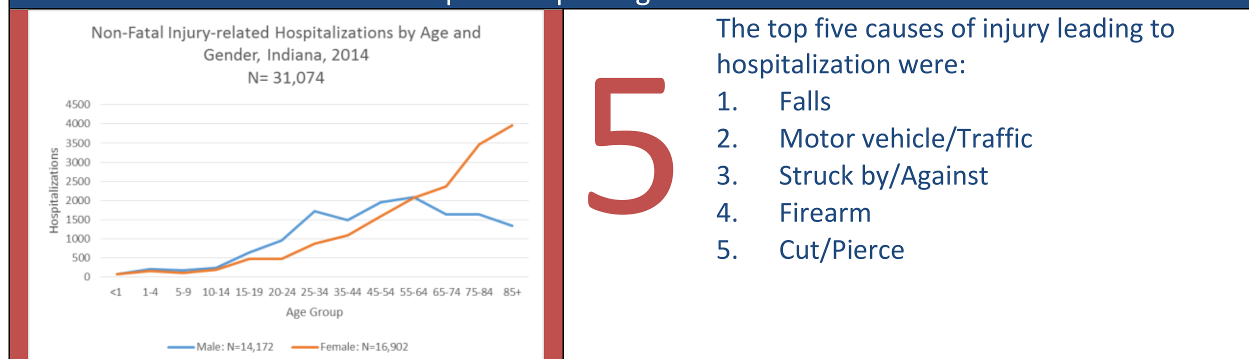
As of: 2/8/2016

SNAPSHOT OF THE INDIANA TRAUMA SYSTEM

	16 Trauma Centers
VERIFICATION	3 Level I
	6 Level II
	2 Level III
	5 “In the Process” Trauma Centers
DESIGNATION	1 Level II
	7 Level III

Indiana EMS/Trauma Registry Reporting

Hospitals Reporting Trauma Records



Indiana efforts to reduce injuries and violence

There are a variety of strategies that can be effective for preventing injuries and mitigating their effects. These strategies generally fall within three categories: legal or policy changes, product and environmental safety developments, and education. While the burden remains high, Indiana has implemented policies, programs and prevention efforts to reduce injury and trauma morbidity and mortality.

The Trust for America’s Health, with funding from the Robert Wood Johnson Foundation, published the 2015 *The Facts Hurt: A State-By-State Injury Prevention Policy Report***.** The Report focused on a series of 10 indicators that provides a snapshot of efforts states are taking to prevent and reduce injuries and violence. Indiana met six of the ten indicators and, while not a comprehensive evaluation of injury and violence prevention, they do provide information about the strengths and weaknesses of each state’s injury prevention program.

Indicator	Indiana Status	Number of States Meeting Indicator
1. Does the state have a primary seat belt law?	Yes	34 states and D.C. have primary seat belt laws
2. Does the state require mandatory ignition interlocks for all convicted drunk drivers, even first-time offenders?	No	21 states require mandatory ignition interlocks for all convicted drunk drivers, even first-time offenders

3. Does the state require car seats or booster seats for children up to at least the age of 8?	Yes	35 states and D.C. require that children ride in car seats or booster seats up to at least the age 8
4. Does the state restrict teens from nighttime driving after 10 p.m. (Most states have a Graduated Drivers License (GDL) with some time and passenger restrictions, but this indicator requires a 10 p.m. restriction)?	No	11 states restrict nighttime driving for teens starting at 10 p.m. in their Graduated Driver Licensing laws.
5. Does the state require bicycle helmets for all children?	No	21 states and Washington, D.C. require bicycle helmets for all children.
6. Does the state have fewer homicides than the national goal established by the U.S. Department of Health and Human Services (HHS)?	Yes	31 states have homicide rates at or below the national goal of 5.5 per 100,000 people.
7. Does the state have a child abuse and neglect rate at or below the national rate?	No	25 states have child abuse and neglect rates at or below the national rate of 9.1 per 1,000 children.
8. Does the state have fewer deaths from falls than the national goal established by HHS?	Yes	13 states have fewer fall-related deaths than the national goal of 7.2 per 100,000 people
9. Does the state require mandatory use of data from the prescription drug monitoring program (PDMP) by at least some healthcare providers?	Yes	25 states require mandatory use of PDMPs for healthcare providers in at least some circumstances.
10. Does the state have laws in place to expand access to, and use of, naloxone, an overdose rescue drug?	Yes	34 states and D.C. have a law making it easier for medical professionals to prescribe and dispense naloxone and/or for lay administrators to use it without the potential for legal ramifications

Robert Wood Johnson Foundation (June 2015). *The facts hurt: A state-by-state injury prevention policy report 2015.* Retrieved from http://healthyamericans.org/assets/files/TFAH-2015-InjuryRpt-final6.18.pdf

System development

The statute granting ISDH authority over the state's trauma system includes a directive that ISDH develop that system. System development is a process in which different stakeholders cooperate to enhance and improve performance. As trauma center and non-trauma centers programs develop and emerge, it is important to integrate individual facility and regional trauma systems into a larger public health framework. The division will collaborate with statewide partners to integrate systems and improve the standard of trauma care across the state of Indiana.

Objectives	Strategies
1. Build relationships with internal and external organizations involved with trauma-related activities (e.g., disaster preparedness, mental health, burns, rehabilitation, and specific patient populations).	1.1 Identify partners and stakeholders to be involved with the Indiana State Trauma Care Committee.
	1.2 Obtain data sharing agreements and Memorandums of Understanding (MOUs) with entities.
	1.3 Provide data reports relevant to their area of focus.
	1.4 Attend meetings and events to engage with new partners and provide information about Indiana's trauma system and how it pertains to their work.
2. Develop regional trauma systems.	2.1 Create roadmap to help districts develop their regional trauma committee.
	2.2 Encourage regular collaboration within the region.
	2.3 Provide region-specific data to assist regions in identifying areas of opportunity.
	2.4 Provide state-level updates to regions to align regional and state goals and initiatives.
	2.5 Create an inter-facility transfer tool kit that can be utilized by non-trauma centers and trauma centers.
	2.6 Establish patient care review processes.
	2.7 Explore methods to monitor regional trauma system development.
	2.8 Facilitate cross-regional communication and collaboration, especially in areas without verified trauma centers.
	2.9 Implement regional PI processes that feed into statewide PI processes.
	2.10 Evaluate region-specific resources to maximize the continuum of trauma care while minimizing expenses.
	2.11 Identify experts from other states to present successes and lessons learned in regional trauma system development.
	2.12 Connect ACS-verified trauma centers and non-trauma centers through mentorship program.
3. Develop a budget to fund a statewide trauma system.	3.1 Identify top priority areas and funding needed to support these activities. Research other states' trauma funding streams and budgets to identify trauma system activities that improve patient care.
	3.2 Present the budget to the ISTCC.
	3.3 Present the budget to the ISDH Chief Financial Officer.
	3.4 Explore the capabilities of establishing a trauma care fund as referenced in Executive Order for ISTCC.
	3.5 Work with Indiana Hospital Association to budget funds left over from 2008 ACS consultation visit.
4. Establish a funding stream to sustain the statewide trauma system.	4.1 Provide a budget and justification as part of the budget legislative proposal for FY17.
	4.2 Work with ISDH Finance to identify and apply for funding opportunities based on division's priority areas.

	4.3 Work with the Healthy Hoosiers Foundation (HHF) to promote donations earmarked for trauma programs.
	4.4 Work with other ISDH divisions to identify collaborative funding opportunities.
	4.5 Share funding opportunities with stakeholders and partners to enhance local trauma and injury prevention efforts.
5. Establish next steps in statewide trauma system development with the American College of Surgeons (ACS).	5.1 Invite ACS to return to Indiana for a statewide trauma system reassessment.
	5.2 Work with the ACS Advocacy group to identify what has worked in other states regarding trauma system development and funding.
6. Consider establishing an annual awards banquet for those providing excellent trauma care in the state.	6.1 Create an awards subcommittee to establish awards and criteria to qualify for awards.
	6.2 Utilize end of the year meetings or events to include an awards ceremony.
7. Create state Designation Rule.	7.1 Work with Designation subcommittee of ISTCC to establish criteria for state designation of trauma centers.
	7.2 Ensure that designation rule subsumes "in the process" designation and adds the ability to review "in the process" hospitals during the two-year process.
8. Update Executive Order for the Indiana State Trauma Care Committee (ISTCC).	8.1 Update Executive Order to reflect current state of trauma system (rehabilitation facility representative, level III trauma center representation, "in the process" facility representation).
	8.2 Discuss creating ISTCC in state law versus Executive Order.
	8.3 Establish terms of committee members.
9. Create tools that can be utilized by new trauma stakeholders regarding the history of statewide trauma system development.	9.1 Update Orientation Packet on a monthly basis and share with new ISTCC members, as well as new trauma stakeholders.
	9.2 Establish an orientation folder that contains: • Orientation document. • *Trauma Times* newsletter. • Opportunities to get involved with the development of the statewide trauma system. • Contact information for division staff. Orientation folder will be given to hospitals submitting "in the process" applications and new ISTCC members.
10. Focus on staff development for the Division of Trauma and Injury Prevention.	10.1 Evaluate skills of current staff and identify areas of opportunity for advancement within the Division.
	10.2 Identify continuing education opportunities for staff.
11. Maintain Indiana Spinal Cord and Brain Injury Research Fund Board.	11.1 Coordinate meetings for Indiana Spinal Cord and Brain Injury Research Fund Board.
	11.2 Coordinate annual conference for recipients of Indiana Spinal Cord and Brain Injury Research Fund.
12. Encourage opportunities for policymakers and health department leadership regarding public health	12.1 Coordinate state policymaker visits to trauma centers.
	12.2 Facilitate opportunities (i.e., trauma tour events) with policymakers to increase recognition of the role of public health in injury prevention and trauma care system development.

approaches to trauma and injury prevention.	
13. Focus on pediatric population injury prevention and trauma care needs.	13.1 Identify and implement pediatric injury prevention programs, including child passenger safety.
	13.2 Support pediatric readiness initiatives including patient care coordinators at facilities.
	13.3 Conduct surveillance and disseminate pediatric trauma and injury findings to support prevention programs.

Pre-hospital

The first phase of Indiana's trauma system activates immediately following an injury — a call is made to the 911 operator, the response is coordinated among various Emergency Medical Services (EMS) ambulances, initial assessments and diagnoses of the patient are made, and the patient is stabilized and quickly but safely transported to a local hospital or trauma center. EMS crews are often the critical link between the injury-producing event and definitive care at a trauma center or local hospital. The first hour post-injury is known as "the Golden Hour," when critical skilled care must be provided. The Indiana Department of Homeland Security (IDHS) is responsible for oversight of EMS in Indiana.

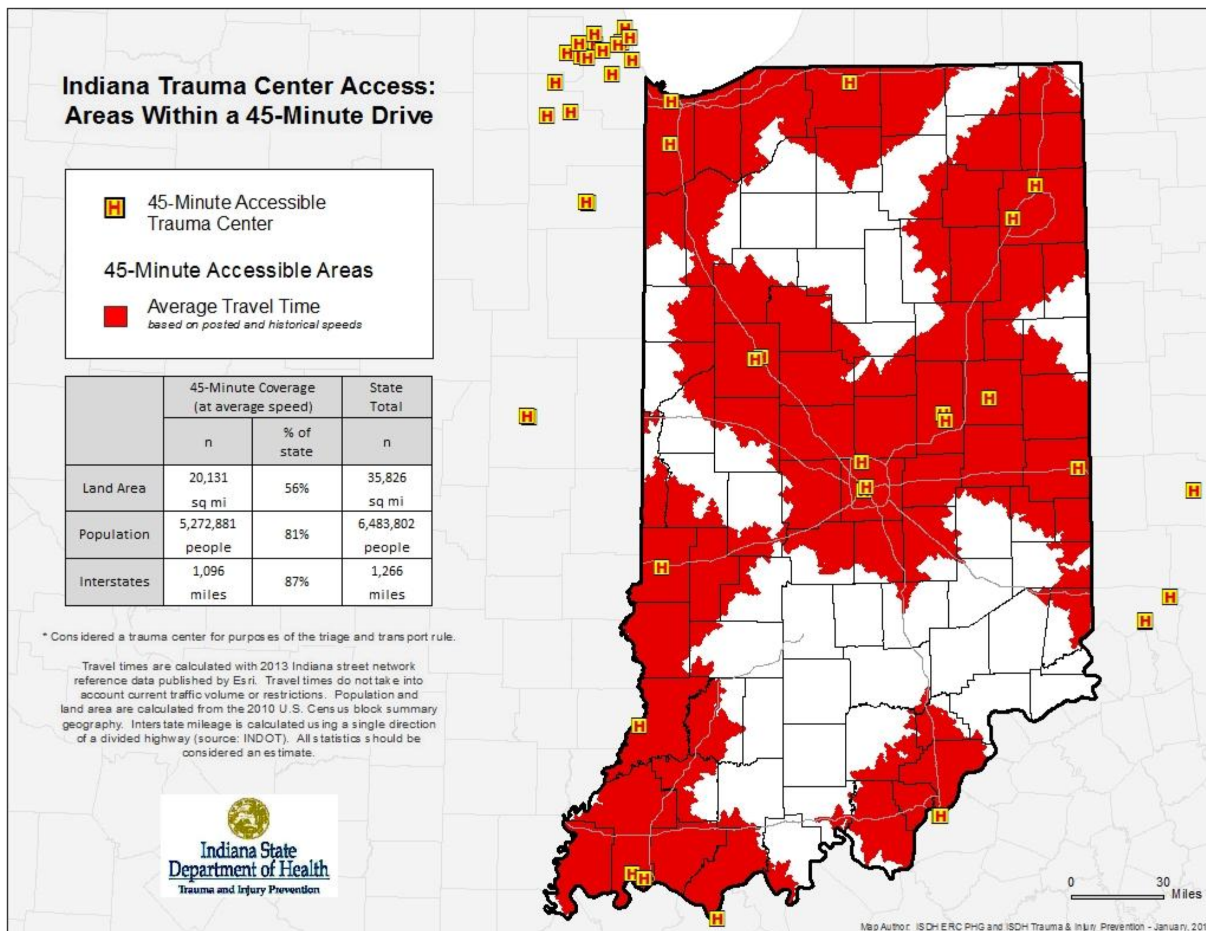
Objective	Strategy
1. Update the Triage & Transport Rule in collaboration with the EMS Commission	1.1 Convene the extended Designation subcommittee (consists of hospitals and EMS providers) to review the rule in detail and make suggestions on what can be done to update the rule.
	1.2 Analyze prehospital data to assist with recommendations.
	1.3 Present the recommendations established by the Designation subcommittee to the Indiana State Trauma Care Committee (ISTCC).
	1.4 Make recommendations to the EMS Commission based on the ISTCC discussion and ISDH review.
	1.5 Support learning opportunities to educate EMS providers about Rule changes.
2. Evaluate compliance of EMS providers with Triage and Transport Rule.	2.1 Work with IDHS to establish educational opportunities for EMS providers to gain better understanding of rule.
	2.2 Analyze trauma registry data to determine compliance with rule.
	2.3 Provide regular data reports to EMS Commission and ISTCC to determine rule compliance.
3. Assist EMS Commission with tracking EMS delivery of run sheets to hospitals.	3.1 Encourage compliance with EMS run sheet law by communicating with hospitals to identify EMS providers not leaving run sheets.
	3.2 Report bi-monthly to EMS Commission EMS providers not leaving run sheets at hospitals and trauma centers.
4. Assist EMS Commission with transition to NEMSIS V3.	4.1 Review data elements for NEMSIS V3 that are related to trauma and injury prevention activities and priorities and make

	recommendations to EMS Commission.
5. Develop database to track Narcan/Naloxone administration by pre-hospital providers.	5.1 Track Narcan/Naloxone administration by pre-hospital providers in registry.
	5.2 Report statewide Narcan/Naloxone administration by pre-hospital providers to EMS Commission.
6. Enhance knowledge of EMS workforce.	6.1 Coordinate conference events related to EMS education, including annual EMS Medical Directors' Conference, to increase the knowledge and expertise of Indiana's EMS workforce.
	6.2 Provide and support trauma education opportunities for prehospital workforce.
7. Assist with developing emerging policies, practices and standards.	7.1 Connect EMS experts with the Indiana Perinatal Quality Improvement Committee to assist with implementing transport standards.
	7.2 Work with IDHS and ISDH Division of Chronic Disease, Primary Care and Rural Health to work on establishing Community Paramedicine practices in Indiana.
	7.3 Support IDHS with legislative initiatives such as liability coverage for EMS medical directors.
8. Evaluate pre-hospital resources.	8.1 Identify types of services provided by each EMS provider.
	8.2 Identify gaps in pre-hospital care.
9. Coordinate annual EMS Medical Directors' Conference.	9.1 Work with EMS Medical Directors' (MD) conference planning committee to identify areas of focus and speakers.
	9.2 Work with Indiana Fire Chiefs Association (IFCA) to coordinate EMS MD conference with the annual Indiana Emergency Response Conference (IERC).
	9.3 Work with St. Vincent Hospital to obtain Continuing Medical Education (CME) hours for event.

Trauma Center/Emergency Department (ED)

Trauma centers are hospitals that have applied for, and been granted, verification as a trauma center by the American College of Surgeons (ACS). Hospitals in Indiana that are working on becoming a verified trauma center can apply to become "in the process of ACS verification" trauma center status purposes of the triage and transport rule. Currently there are eight "in the process" trauma centers in Indiana including: Community Hospital of Anderson & Madison, Franciscan St. Elizabeth- East, Franciscan St. Anthony Health-Crown Point, Good Samaritan Hospital, Methodist Hospital – Northlake Campus, Reid Health, St. Vincent Hospital Anderson and Terre Haute Regional. ACS-verified centers for Levels I, II and III, with Level I trauma centers providing the highest level of trauma care. Trauma centers are unique in their capabilities and are not the typical community hospital ED. Indiana now has eleven ACS-verified trauma centers around the state: Memorial Hospital in South Bend; Parkview and Lutheran Hospitals in Fort Wayne; IU Health-Riley Children's Hospital, IU Health-Methodist Hospital, St. Vincent, and Eskenazi Health (formerly Wishard Hospital) in Indianapolis; IU Health-Arnett Hospital in Lafayette; IU Health - Ball Memorial Hospital in Muncie; and Deaconess Hospital and St. Mary's Medical Center in Evansville. In addition to the in-state trauma centers there are also over twenty trauma centers located across state

lines in Ohio, Michigan, Kentucky and Illinois that receive patients from Indiana. But for all the trauma centers Indiana has, there are not enough of them to adequately meet the needs of injured Hoosiers and visitors to the state. Hospital EDs are part of the statewide trauma system, as not all injured patients are taken to trauma centers; the vast majority of injured patients can be, and are, treated at local, non-trauma center hospitals. Non-trauma center hospitals stabilize and provide definitive life-saving care for patients who do not require trauma center care. Many times, especially in rural areas where timely access to trauma centers is not possible, non-trauma center hospital EDs provide definitive care to trauma patients out of necessity.



	45-Minute Coverage (at average speed)		State Total
	n	% of state	n
Land Area	20,131 sq mi	56%	35,826 sq mi
Population	5,272,881 people	81%	6,483,802 people
Interstates	1,096 miles	87%	1,266 miles

Objectives	Strategies: Enhance the "in the process" process
1. Increase trauma system coverage in Indiana.	1.1 Develop more ACS-verified trauma centers.
	1.2 Monitor trauma system coverage through 45 minute travel map with continuous update and inclusion of new trauma centers on the map.
2. Enhance knowledge of trauma workforce.	2.1 Coordinate conference events related to trauma education.
	2.2 Provide and support trauma education opportunities for non-trauma centers.

	2.3 Identify and address gaps in trauma knowledge and training qualification requirements.
	2.4 Connect ACS-verified trauma centers and non-trauma centers through mentorship program.
	2.5 Survey hospital workforce to track educational progress.
	2.6 Encourage hospitals to establish minimum educational requirements for emergency department staff.
	2.7 Produce report of each hospital's staff qualification requirements (e.g. TNCC, TCAR, ATLS, PALS, etc.).
	2.8 Encourage Indiana Trauma Network meetings as an opportunity for all trauma centers to network and work together on knowledge gaps.
3. Evaluate and maintain database of trauma center resources.	3.1 Identify types of surgeons.
	3.2 Identify burn care services.
	3.3 Identify classifications of physicians providing burn care services.
	3.4 Investigate role of burn centers in trauma system.
	3.5 Categorize trauma activation criteria per facility.
	3.6 Collect admissions volumes: adult trauma center treating injured children, burn centers, level I trauma centers and pediatric trauma centers.
	3.7 Collect trauma certifications per facility.
	3.8 Assemble information on the types of injury prevention programs the trauma centers are implementing.
	3.9 Gather performance improvement audit filters.
	3.10 Identify types of psychological and psychiatric services available per facility for trauma patients.
	3.11 Categorize types of in-patient rehabilitation services per facility.
	3.12 Compile inter-facility transfer agreements per facility.
4. Encourage level I and II trauma centers to serve as the regional resource center.	4.1 Encourage trauma centers to teach Rural Trauma Team Development Course (RTTDC).
	4.2 Establish inter-facility transfer criteria (ACS)
	4.3 Coordinate inter-facility transfer agreements
5. Track performance improvement of trauma centers.	5.1 Standardize subset of trauma system performance improvement activities per each facility.

Acute Medical Care

Acute medical care facilities are hospitals that provide care for short periods of time. Trauma patients are admitted to an acute medical care facility in order to allow them to recover from their injuries as well as recover from procedures and surgeries utilized to fix their injuries. Patients with the most serious injuries recover in the intensive care unit, while less seriously injured patients may recover in a critical care unit, a step-down care unit or a medical-surgical care unit. There are more than 120 hospitals in Indiana, all of which are regulated by the ISDH.

Objectives	Strategies:
1. Compile a list of acute care resources.	1.1 Compile a database of services provided by each hospital with an emergency department to identify areas of need in trauma care.
2. Connect acute care facilities to the trauma centers to which they transfer patients.	2.1 Encourage non-trauma centers to receive Rural Trauma Team Development Course (RTTDC) training from trauma centers.
	2.2 Assist acute care facilities with identifying their role in Indiana's trauma system.

Rehabilitation

Rehabilitation centers care for trauma patients' post-acute care and seek to enable these patients to realize their fullest post-injury potential. Oftentimes, these patients have sustained severe or catastrophic injuries, resulting in long-standing or permanent impairments. Rehabilitative interventions strive to allow the patient to return to the highest level of function, reducing disability and avoiding handicap whenever possible. When rehabilitation results in independent patient function, there is a 90 percent cost savings compared with costs for custodial care and repeated hospitalizations. Unfortunately, the rehabilitation phase of care often is not sufficiently integrated into the trauma system, even in the most mature, well-developed statewide trauma systems.

Objectives	Strategies
1. Compile a list of rehabilitation resources.	1.1 Compile services provided by each rehabilitation facility to identify areas of need in rehabilitation trauma care.
2. Integrate rehabilitation phase of care into the statewide trauma system.	2.1 Build relationships with divisions, agencies and organizations that are involved with trauma-related activities, specifically rehabilitation.
	2.2 Identify partners and stakeholders to be involved with the Indiana State Trauma Care Committee.
	2.3 Provide data reports relevant to their area of focus.
	2.4 Attend events and meetings to engage with new partners and provide information about Indiana's trauma system and how it pertains to their line of work.

Injury Prevention and Outreach

Injury prevention and outreach begins with the collection and analysis of population and patient data from a wide variety of sources to describe the status of injury morbidity, mortality and burden distribution throughout the state. Injury epidemiology is concerned with the evaluation of the frequency, rates and pattern of injury events in a population and is obtained by analyzing data from sources such as death records, hospital discharge databases and data from EMS, emergency departments and trauma registries. Trauma systems must develop strategies that help prevent injury as

part of an integrated, coordinated and inclusive trauma system. For years, the ISDH has conducted an array of injury prevention programs. With the creation of the ISDH Trauma and Injury Prevention Division in 2011, ISDH has focused on the collection and analysis of injury data and injury prevention programming implementing best available evidence-based practices in the field. The overall mission is to prevent injuries in Indiana through collaborative efforts in leadership, education and policy.

Developed in collaboration with the Indiana Injury Prevention Advisory Council (IPAC), this injury prevention strategic plan outlines objectives and strategies, featuring specific, data-informed injury mechanisms and targets. The plan provides a blueprint for individuals, organizations and agencies to use in facing challenges to the health and lives of Indiana residents. While there are certainly many injury issues that require consideration, the injury issues selected for the plan were based on the analysis of relevant data, of which some is extracted in this plan report. Injury data was used to establish these priorities and to select best available evidence strategies. The Division's *Preventing Injuries in Indiana: A Resource Guide* provides detailed information on a variety of injuries affecting Hoosiers.

Objectives	**Strategies**
1. Identify and support the use of evidence-based injury prevention interventions.	1.1 Identify and support data-informed priorities and opportunities to prevent injuries and reduce the burden of injury and violence.
	1.2 Facilitate opportunities for collaborative injury prevention efforts in: • Traffic safety, • Poisoning and • Traumatic brain injury (TBI).
	1.3 Provide statewide direction and focus for older adult (age 65+) falls prevention.
	1.4 Provide statewide direction and focus for child injury prevention efforts in: • Safe sleep, • Child abuse and maltreatment, • Child passenger safety and • Bullying.
	1.4 Provide statewide direction and focus for violence prevention focus on reducing homicides, suicides, intimate partner violence and sexual assault and other types of violence.
	1.5 Conduct public health surveillance of injury and violence to identify priorities and opportunities.
2. Establish a sustainable and relevant infrastructure that provides leadership, funding, data, policy and evaluation for injury and violence prevention.	2.1 Provide access and technical assistance for best practices and evidence-based injury prevention strategies, especially related to: • Child passenger safety for all children in Indiana, and • CDC Stopping Elderly Accidents, Deaths & Injuries (STEADI) toolkit implementation for older adult falls prevention.
	2.2 Apply for injury-related funding opportunities to support continuation of efforts.

	2.3 Collect, analyze, and disseminate injury and violence data through fact sheets, maps and other data reports.
	2.4 Select, implement and evaluate effective policy and program strategies.
	2.5 Evaluate and assess outcomes, successes and opportunities for injury prevention.
	2.6 Build injury prevention program evaluation capacity.
	2.7 Maintain list of trauma center-based injury prevention programs on Division's website.
	2.8 Support other ISDH divisions conducting injury prevention efforts, such as Office of Women's Health Rape Prevention & Education Program and the Maternal and Child Health Division.
3. Increase the quality and availability of injury data for planning, surveillance, and evaluation.	3.1 Maintain, update and enhance the *Preventing Injury in Indiana: A Resource Guide* and associated mobile application.
	3.2 Promote the usability and flexibility of the *Preventing Injury in Indiana: A Resource Guide* and associated mobile application.
	3.3 Increase public awareness activities through resource guide and mobile app.
4. Enhance the skills, knowledge and resources of injury prevention workforce.	4.1 Establish, maintain and increase Indiana Injury Prevention Advisory Council (IPAC) membership.
	4.2 Plan and host an annual IPAC Injury Prevention Conference as an educational and awareness effort.
	4.3 Provide technical assistance to support injury prevention workforce.
	4.4 Establish and maintain regular communication through email, conference calls, newsletter, ListServs and social media to collaborate and keep injury workforce engaged and up-to-date on emerging injury data trends.
	4.5 Engage partners from various sectors for collaboration, especially related to priority strategies.
5. Facilitate violent death data collection, analysis and dissemination through the Indiana Violent Death Reporting System (INVDRS).	5.1 Utilize stakeholder networks to increase partner participation of providing and using data.
	5.2 Build relationships with other organizations and agencies that are working on violence prevention to identify best practices and emerging trends.
	5.3 Encourage partners to promote INVDRS mission and vision.
6. Stay current with trauma and injury prevention trends and emerging issues.	6.1 Collaborate with partners to inform Division of local, state and national emerging issues within the field.
	6.2 Utilize committees and subject matter experts to provide direction and guidance to the division.

The Indiana State Department of Health, in partnership with the Indiana Injury Prevention Advisory Council (IPAC) and associated partners and stakeholders, will use these objectives and priorities as a framework to strengthen statewide injury prevention coordination and expansion in Indiana. To impact

the morbidity and mortality associated with the aforementioned injuries will require collaboration by many agencies and organizations; continued education of the public, health care providers, partner agencies and organizations; and consideration of environmental safety measures that can be implemented.

Injury and Trauma Public Education

Objectives	*Strategies*
1. Create trauma training opportunities.	1.1 Utilize IN-TRAIN system to provide distance learning opportunities.
	1.2 Utilize webcast system to provide distance learning opportunities.
2. Utilize multiple communication outlets to provide trauma stakeholders with consistent messaging.	2.1 Maintain website content.
	2.2 Maintain handouts and fact sheets.
	2.3 Create relevant and timely social media content for Twitter account @INDTrauma.
	2.4 Release monthly newsletter, *Trauma Times,* highlighting the work of the ISDH and trauma partners throughout the state.
	2.5 Travel the state (trauma tour) providing trauma stakeholders with opportunities to share what is going on in their community.
	2.6 Utilize Indiana Trauma Network to promote ongoing local trainings.

Injury Surveillance & Quality Improvement

A state's trauma registry is not only the repository for data about trauma in its state; it also exists to improve outcomes for injured patients. The trauma registry data is used to measure and analyze all aspects of the system to ensure the highest quality care is provided to all. ISDH operates the Indiana Trauma Registry and is responsible for instituting processes to evaluate the performance of all aspects of the system, from the EMS provider to the trauma center/acute care hospital to the rehabilitation provider. The Indiana Trauma Registry monitors variations in incidence and outcomes and system performance. The ISDH Trauma Registry began receiving trauma data in 2007 from the seven ACS-verified trauma centers at that time.

Objectives	*Strategies*
1. Increase and maintain the participation of emergency medical services (EMS) providers, hospitals with emergency departments (ED) and rehabilitation facilities trauma data reporting.	1.1 Work with hospitals that are already reporting data to serve as mentor facilities for hospitals that are not yet reporting data.
	1.2 Establish and maintain a reporting schedule.
	1.3 Provide consistent communication with entities that are required to report to serve as reminders of the reporting deadlines.
	1.4 Promote free software that is available for entities to use.
	1.5 Provide trauma registry training and support for entities reporting data.
	1.6 Provide data reports for entities that have submitted data.
	1.7 Publish list of providers submitting data to the Indiana Trauma Registry.

	1.8 Utilize stakeholder networks to increase partner participation.
	1.9 Offer funding opportunities to data providers (if funding available).
2. Increase and maintain the participation of coroners and law enforcement agencies reporting violent death cases.	2.1 Work with associations to serve as supporting entities to encourage entities to participate in the Indiana Violent Death Reporting System (INVDRS).
	2.2 Establish and maintain a reporting schedule.
	2.3 Provide consistent communication with entities that are required to report to serve as reminders of the reporting deadlines.
	2.4 Promote free software that is available for entities to use.
	2.5 Provide registry training and support for entities reporting data.
	2.6 Provide data reports for entities that have submitted data.
	2.7 Publish list of providers submitting data to the INVDRS.
	2.8 Utilize stakeholder networks to increase partner participation.
	2.9 Offer funding opportunities to data providers.
3. Develop processes to exchange data with surrounding states (Illinois, Kentucky, Ohio and Michigan).	3.1 Establish Data Sharing Agreements with equivalent state agencies.
	3.2 Establish and maintain a reporting deadline schedule.
	3.3 Include the information in the division's data reports.
	3.4 Utilize work groups (i.e. Midwest Injury Prevention Alliance [MIPA]) to establish data exchanges.
4. Build relationships with other state agencies that are working on similar projects (i.e., state trauma registry, National Violent Death Reporting System, etc.) so that we can identify best practices and emerging trends.	4.1 Utilize ListServs, conference calls, webinars, regional subcommittees, national conferences, etc. to collaborate with key partners.
	4.2 Adapt and modify already-existing strategies established by other states.
5. Utilize committees (Indiana State Trauma Care Committee, Indiana Trauma Network, Injury Prevention Advisory Council, INVDRS Advisory Board, etc.) and Subject Matter Experts (SMEs) to provide direction and guidance to the division.	5.1 Meet regularly to review the state's current landscape and ask for feedback to guide the future direction.
	5.2 Regular communication (email, phone calls, newsletter, ListServs, social media) to keep committees up-to-date on developments.
6. Create clear and comprehensive databases to establish the division as a leader in statewide data	6.1 Utilize our committees to address data quality concerns and to review data analysis.
	6.2 Send data quality reports to data providers.
	6.3 Encourage data providers to submit feedback regarding data

collection.	reports.
	6.4 Continue recruiting efforts to increase completeness (number of entities reporting data).
	6.5 Establish and maintain a reporting deadline schedule.
	6.6 Review individual cases to identify data quality issues and report summary findings to committees.
	6.7 Link datasets to provide a complete picture of the burden of violence and injury in Indiana.
	6.8 Develop standard operating procedures to handle data system issues (i.e., data storage, large data files, etc.).
	6.9 Provide ongoing educational opportunities (monthly quizzes, training events, etc.) to help with education of registrars to ensure consistency and accuracy in data reporting.
7. Maximize the utilization of data.	7.1 Identify the burden of injury in Indiana.
	7.2 Process data requests submitted by vested partners.
	7.3 Adapt and modify already-existing data analysis and dissemination strategies established by other states.
	7.4 Disseminate data to injury prevention stakeholders, data providers and other interested parties through reports, fact sheets, and other materials.
	7.5 Complete all legislatively mandated reports, including annual fireworks-related injury report.
	7.6 Report data graphically through charts, tables, and maps when appropriate.
	7.7 Investigate best practices for data analysis and reporting, including ACS Orange Book.
	7.8 Collaborate with clinical researchers to utilize their expertise and provide clinical relevance of metrics.
8. Utilize technology to stay current in injury surveillance database best practices.	8.1 Establish a process to take data directly from hospitals' Electronic Medical Record (EMR) into the Indiana Trauma Registry – "Blue Sky Project".
	8.2 Improve the accessibility while minimizing costs of reporting data through the "Blue Sky Project" by providing technical assistance to facilities that want to utilize new technologies.
	8.3 Promote new technologies through a variety of communication outlets (e.g., HL7).
	8.4 Develop technology to transfer data across data systems and to improve existing data systems.
	8.5 Research new technologies to improve communication in the trauma system (Field Bridge, Hospital Hub, etc.).
	8.6 Develop protocols related to updated data standards, including transition from ICD-9-CM to ICD-10-CM.
	8.7 Explore feasibility of implementing unique patient identifiers to track patients through healthcare system. Work with Traffic Records Coordinating Committee to investigate possibilities for tracking system.

9. Utilize Performance Improvement (PI) Subcommittee to identify areas of opportunity in the statewide trauma system.	9.1 Track and trend data results in improving the overall system.
	9.2 Encourage compliance with EMS run sheet law by communicating with hospitals to identify EMS providers not leaving run sheets and provide that information to the Indiana Department of Homeland Security (IDHS) and the EMS Commission so that they can follow-up with those EMS providers.
10. Track the performance of the statewide trauma system.	10.1 Create a dashboard of metrics (mortality rate, ACS Needs Assessment Tool, education for trauma care providers [pre-hospital & hospital] Risk Factors, etc.) that will be shared with the PI Subcommittee and ISTCC. The division will be mindful of seasonality in trauma.
	10.2 Improve and maintain baseline metrics for grant deliverables (i.e. ICJI NHTSA grant).
	10.3 Implement regional PI processes that feed into statewide PI processes.