Preventing Injuries in Indiana

A Resource Guide

2015 Edition

INDIANA INJURY PREVENTION RESOURCE GUIDE

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Indiana State Department of Health
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Michael R. Pence
Governor

Jerome M. Adams, MD, MPH
State Health Commissioner

Dear Colleague:

Thank you for consulting the 2015 edition of *Preventing Injuries in Indiana: A Resource Guide.* It is a great pleasure to introduce this new document that highlights evidence-based solutions to the problem of injury.

Injury is an important public health issue. According to the Centers for Disease Control and Prevention, violence and injury kills more than 180,000 people each year nationwide, and injuries are the leading cause of death for people in Indiana ages 1 to 44. Unintentional injury contributes to more premature loss of years of life before age 65 than any other cause of death, including heart disease or malignant neoplasms (cancer). Injury deaths are only a part of the overall burden; millions of Americans are injured resulting in emergency department visits and hospitalizations each year.

Injuries can be prevented and their consequences mitigated through simple and effective interventions. Injuries should be prevented because:

- Injuries can be devastating;
- Injuries can be deadly;
- Injuries are costly; and
- Injuries are preventable.

This resource is intended to provide easily accessible and understandable data and information on the size and scope of specific injury problems in Indiana to allow for implementation of appropriate injury-related interventions. It also aims to inform community leaders and medical providers of the major causes and burden of injuries in Indiana for the purposes of developing and implementing interventions to address the ever growing epidemic.

This document is intended to be updated and improved to address new and emerging injury trends and provide additional resources to the injury prevention workforce. We know that often the greatest success in reducing injuries and their associated costs is made by enacting strong, evidence-based policies, which is why we created this resource. By helping you incorporate what is known about injury prevention strategies into practice, education and policy, we can work together to help ensure Hoosiers remain healthy and safe.

Thank you for your ongoing efforts to prevent injuries in Indiana.

Sincerely,

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Executive Summary

The Indiana State Department of Health (ISDH) Division of Trauma and Injury is pleased to provide the first edition of this comprehensive Resource Guide on injuries affecting Hoosiers. By accessing, analyzing and compiling data and evidence-based resources from a wide variety of sources, the Resource Guide describes some of the issues related to injury and the strategies to address the immense toll that injuries take on the lives of Indiana residents. Injuries are a major public health problem and require resources and programming to reduce this toll. This Resource Guide aims to inform injury prevention interventions.

Indiana Statewide Trauma System Injury Prevention Plan

The Indiana State Department of Health is designated as the lead agency for a state trauma care system with goals of preventing injuries and coordinating care for injured patients in order to reduce death and disability. The vision of the ISDH Division of Trauma and Injury Prevention is to prevent injuries in Indiana. The Injury Prevention Plan includes the following steps and priorities:

1. Establish a sustainable and relevant infrastructure that provides leadership, funding, data, policy and evaluation for injury prevention.

2. Facilitate opportunities for collaborative injury prevention efforts in:
    a. Traffic Safety
    b. Poisoning and prescription drug overdose
    c. Traumatic Brain Injury (TBI)

3. Statewide direction and focus for older adult (age 65+) falls prevention

4. Statewide direction and focus for child injury prevention
    a. Safe sleep
    b. Child passenger safety
    c. Bullying

5. Statewide direction and focus for violence prevention
    a. Homicides, suicides, and other violence
    b. Collecting violent death information via Indiana Violent Death Reporting System (INVDRS)

6. Enhance the skills, knowledge, and resources of injury prevention workforce
    a. Resource Guide for Injury Prevention
    b. Injury Prevention Advisory Council membership
    c. Injury Prevention Advisory Council Injury Prevention conference and educational opportunities

What is Evidence-Based Public Health?

Evidence-based public health can be described as the integration of science-based interventions with community preferences to improve population health. Evidence-based decision-making combines the best available research evidence with the experiential evidence of field-based expertise and contextual evidence of the intervention and population to translate evidence into action.[2] These data-informed, best practices are important because they do not waste time, energy, and limited resources on untested and ineffective programs. When implementing an evidence-based program, it is also important to understand the fit, which is the compatibility of the program and the intended audience, and the fidelity, which is implementing core elements and key processes as intended in the original strategy.[3]

How to use the Indiana Injury Prevention Resource Guide

The public health approach to prevention follows four main steps to prevent injuries and violence and minimize their consequences when they occur. The systematic processes are: 1) describe the problem and perform surveillance; 2) identify causes and risk and protective factors; 3) develop, implement, and evaluate prevention strategies; and 4) disseminate and ensure widespread adoption.[4] The goal of the guide was to create a document that can provide easily accessible and understandable information and data on the size and scope of specific injuries in Indiana, while highlighting effective evidence-based solutions to the problem of injury.

The target audience of this guide includes, but is not limited to individuals and organizations concerned with preventing violence and injuries, such as healthcare professionals, public health professionals, trauma program managers and coordinators, care coordinators, injury prevention coordinators, social workers and case managers, and trauma medical directors. By helping to incorporate what is known about injury prevention strategies into programs, practice, and policy, we can together help ensure Indiana remains safe and healthy. The intended use of this guide is as a resource and reference to address the problem of injury at both the state and local level. The guide also brings awareness to the problem of injury, focuses on data-driven decision making and evidence-based solutions, and identifies areas of opportunity in Indiana. This is the first edition of the resource guide, with additional injury prevention topics and resources to be added.

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References:

1. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (2015). Retrieved from http://www.cdc.gov/injury/wisqars/fatal.html.
2. Puddy, R. W. & Wilkins, N. (2011). Understanding Evidence Part 1: Best Available Research Evidence. *A Guide to the Continuum of Evidence of Effectiveness*. Atlanta, GA: Centers for Disease Control and Prevention.
3. Breitenstein, S. M., Gross, D., Garvey, C., Hill, C., Fogg, L., & Resnick, B. (2010). Implementation Fidelity in Community-Based Interventions. *Res Nurs Health*, 33(2):164-73. doi: 10.1002/nur.20373.
4. Mercy, J.A., Rosenberg, M.L., Powell, K.E., Broome, C.V., Roper, W.L. (1993). Public health policy for preventing violence. *Health Aff,* 12-7-29

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Alcohol & Injury

Excessive alcohol consumption is a leading risk factor for morbidity and mortality related to both intentional and unintentional injury in the United States.[1] Excessive alcohol use usually leads to impairment and puts drinkers, their families, and communities at risk. Binge drinking can lead to motor vehicle crashes, injuries, violence against others, alcohol dependence, fetal alcohol spectrum disorders and sudden infant death syndrome, spread of HIV and other sexually transmitted infections, and unplanned pregnancy. The American College of Surgeons Committee on Trauma reports excessive drinking is a significant risk factor for injury, and many injuries have alcohol and drug use as an important contributing factor.[2] It is estimated 30 to 50% of injured patients have a positive blood alcohol concentration (BAC) at the time of trauma center admission.[3] Drivers are considered alcohol-impaired when their BAC is .08 g/dL or higher.

How does alcohol & injury affect the United States?

Fatal data

- From 2006–2010, there were 87,798 alcohol-attributable deaths due to excessive alcohol use on average each year for people all ages, and over half of these deaths were from injury (49,544).[4]
- During the same period, there were 4,358 alcohol-attributable deaths due to excessive alcohol use on average each year for those under 21; and 96% of those deaths were due to injury.[4]
- Male deaths accounted for 71% of all alcohol-attributable deaths for all ages due to excessive alcohol use on average each year.[4]
- In 2012, 10,322 people died in alcohol-impaired-driving crashes, which represents 31% of the total motor vehicle-related traffic fatalities.[5]
- In 2012, 21% of U.S. drivers involved in fatal crashes were alcohol-impaired or roughly 9,678 drivers.[5]

Non-fatal data

- Alcohol consumption is a major cause of hospitalized injury. It is estimated 27% of hospitalized injury victims are positive for alcohol, which includes nearly half of hospitalized pedestrian and near-drowning injury victims. Of hospitalized injuries, an estimated 21% are alcohol-attributable, including 36% of assaults.[6]
- In 2011, nearly 188,000 alcohol-related emergency department visits involved patients age 12 to 20 years.[7]

Cost data

- Excessive drinking cost $223.5 billion in 2006, which equates to $746 per person, or $1.90 per drink. Seventy-two percent of the total cost is lost workplace productivity, 11% in healthcare expenses, 9% in criminal justice costs, and 6% in motor vehicle crash costs.[8]
- Alcohol-attributable crime cost the U.S. more than $73 billion in 2006.[8]
- Costs vary throughout the states; however, the median cost per state is estimated at $2.9 billion.[9]

How does alcohol & injury affect Indiana?

- From 2006-2010, there were 1,646 deaths each year on average due to excessive alcohol use in Indiana. Sixty percent of these deaths were due to injuries, leading to an average of 35,321 years of potential life lost, which is a measure of premature mortality before age 65 years.[4]
- For those under 21, an average of 97% of deaths due to excessive alcohol use were injury-related.[4]
- From 2003-2012, 2,210 people were killed in motor vehicle crashes involving an alcohol-impaired driver, with 228 driver deaths occurring in 2012.[5]
- In 2006, excessive alcohol consumption cost an estimated $4.2 billion; 71% of this total cost is in productivity losses.[9]
- In 2012, 29% of fatalities from alcohol-impaired-driving crashes involved a driver with a BAC .08 g/dL or higher, which is an increase from 25% in 2003.[5]

How do we address this problem?

Policy:

- The Community Preventive Services Task Force recommends maintaining limits on hours and days of alcohol sale in on-premises settings, based on sufficient evidence of effectiveness for reducing excessive alcohol consumption and related harms.[10]
- The Community Preventive Services Task Force recommends **enhanced enforcement of laws prohibiting sale of alcohol to minors**, on the basis of sufficient evidence of effectiveness in limiting underage alcohol purchases.[10]
- The Community Preventive Services Task Force recommends laws that **establish a lower illegal BAC** for young or inexperienced drivers than for older or more experienced drivers based on sufficient evidence of their effectiveness in reducing alcohol-related motor vehicle crashes.[11]
- Originally passed in 2012 at the urging of college students, the **Indiana Lifeline Law** encourages young people to call 911 if someone suffers alcohol poisoning and makes the caller immune from criminal charges related to underage drinking. During the 2014 legislative session, Sen. Merritt authored Senate Enrolled Act 227, an update to the Lifeline Law that expands it to extend immunity from prosecution if underage callers seek help for other types of medical emergencies such as concussions or if they are a victim of a sexual assault, or witness and report a crime.

Data collection:

- The **Indiana Trauma Registry** is a repository into which statewide trauma data has been brought together to support three foundational activities: identification of the trauma population, statewide process improvement activities, and research. Information about traumatic injuries obtained while under the influence of drugs or alcohol is captured.
- The Indiana State Police maintain the **Automated Reporting Information Exchange System (ARIES)**, which captures vehicle crash data, including alcohol-related crashes. The data are used as the analytical foundation for traffic safety program planning and design.

Interventions:

- The Division of Mental Health and Addiction (DMHA) Bureau of Mental Health Promotion and Addiction Prevention provides oversight and administration of the **Substance Abuse Prevention and Treatment** (SAPT) Block Grant to ensure funding that addresses statewide prevention and mental health promotion priorities. The Bureau of Mental Health Promotion and Addiction Prevention's mission is to reduce substance use and abuse and promote behavioral health across the lifespan of Indiana citizens by maintaining a coordinated, effective, and accountable system of prevention and behavioral health promotion services.
- An **interlock device** is a breath-testing unit that a driver must blow into before starting a vehicle. The device disables the ignition if alcohol is detected. Effective January 1, 2015, ignition interlocks are mandatory under state law for repeat alcohol-impaired driving offenders. CDC's *Increasing Alcohol Ignition Interlock Use: Successful Practices for States*: http://www.cdc.gov/motorvehiclesafety/pdf/impaired_driving/ignition-interlock_successful_practices_for_states-a.pdf.
- **Sobriety checkpoints** are drunk driving deterrence locations where law enforcement officers are stationed to check drivers for signs of intoxication and impairment. Sobriety checkpoints have been upheld as constitutional in Indiana.
- The Community Preventive Services Task Force recommends **electronic screening and brief intervention (e-SBI)** based on strong evidence of effectiveness in reducing self-reported excessive alcohol consumption and alcohol-related problems among intervention participants.[10] The American College of Surgeons Committee on Trauma requires all trauma centers to implement universal SBI for alcohol use for all injured patients.[2] Brief alcohol interventions conducted at trauma centers have been shown to reduce trauma recidivism by as much as half.[12]

- According to the **Dietary Guidelines for Americans**, moderate alcohol consumption is defined as having up to 2 drinks per day for men and up to 1 drink per day for women. This definition is referring to the amount consumed on any single day and is not intended as an average over several days.[13]
- The Dietary Guidelines state that it is not recommended that anyone begin drinking or increase their frequency of drinking on the basis of potential health benefits because moderate alcohol intake also is associated with increased risk of violence, drowning, and injuries from falls and motor vehicle crashes.[13]
- The Attorney General's Office collaborates with The Century Council on the **Indiana Safe Students Initiative** to offer material and resources to help fight the battle against underage drinking and drunk driving. Website: http://www.in.gov/attorneygeneral/2607.htm.

Education:

- The CDC Injury Center released Vital Signs packages related to alcohol and drinking:
  - Vital Signs Alcohol Poisoning Deaths: http://www.cdc.gov/vitalsigns/pdf/2015-01-vitalsigns.pdf
  - Vital Signs Alcohol Screening and Counseling: http://www.cdc.gov/vitalsigns/pdf/2014-01-vitalsigns.pdf
  - Vital Signs Binge Drinking (2013): http://www.cdc.gov/vitalsigns/pdf/2013-01-vitalsigns.pdf
  - Vital Signs Binge Drinking (2012): http://www.cdc.gov/vitalsigns/pdf/2012-01-vitalsigns.pdf
  - Vital Signs Binge Drinking (2010): http://www.cdc.gov/vitalsigns/pdf/2010-10-vitalsigns.pdf

Measures: Healthy People 2020:

Substance Abuse (SA)-15: Reduce the proportion of adults who drank excessively in the previous 30 days.
SA-17: Decrease the rate of alcohol-impaired driving (.08+ blood alcohol content [BAC]) fatalities.
SA-20: Reduce the number of deaths attributable to alcohol.

Additional resources:

a. DMHA Bureau of Mental Health Promotion and Addiction Prevention: http://www.in.gov/fssa/dmha/index.htm
b. ISDH Division of Trauma and Injury Prevention: http://www.in.gov/isdh/19537.htm
c. Indiana State Police: http://www.in.gov/isp/
d. CDC: Alcohol and Public Health: http://www.cdc.gov/alcohol/index.htm
e. CDC *Screening and Brief Intervention (SBI) for Unhealthy Alcohol Use: A Step-by-Step Implementation Guide for Trauma Centers:* http://www.cdc.gov/injuryresponse/alcohol-screening/resources.html
f. National Center for Injury Prevention and Control, CDC: www.cdc.gov/Motorvehiclesafety/Impaired_Driving/index.html
g. National Highway Traffic Safety Administration: www.nhtsa.gov/Impaired
h. National Institute on Alcohol Abuse and Alcoholism (NIAAA): http://www.niaaa.nih.gov/
i. The Guide to Community Preventive Services: www.thecommunityguide.org/index.html

References:

1. Centers for Disease Control and Prevention. Alcohol Screening. Retrieved from http://www.cdc.gov/injuryresponse/alcohol-screening/.
2. American College of Surgeons Committee on Trauma. (2014). Resources for Optimal Care of the Injured Patient 2014 (6th edition) [Electronic].
3. Soderstrom, C.A., Dischinger, P.C., Smith, G.S., et al. (1992). Psychoactive substance dependence among trauma center patients. *JAMA,* 267:2756-2759.
4. Centers for Disease Control and Prevention. (2013). Alcohol Related Disease Impact (ARDI) application, 2013. Retrieved from http://nccd.cdc.gov/DPH_ARDI/default/default.aspx
5. National Highway Traffic Safety Administration. (2014). Traffic Safety Facts 2012 Data. State Alcohol-Impaired-Driving Estimates. National Highway Traffic Safety Administration: DOT HS 812 017. NHTSA's National Center for Statistics and Analysis. Retrieved from http://www-nrd.nhtsa.dot.gov/Pubs/812017.pdf
6. Miller, T.R. & Spicer, R.S. (2012). Hospital-Admitted Injury Attributable to Alcohol. *Alcoholism, clinical and experimental research*, 36(1):104-112. doi:10.1111/j.1530-0277.2011.01593.x.
7. 2011 Drug Abuse Warning Network (DAWN) (2014). Retrieved from http://www.samhsa.gov/data/sites/default/files/spot143-underage-drinking-2014/spot143-underage-drinking-2014/spot143-underage-drinking-2014.pdf

8. Bouchery, E.E., et al. (2011). Economic costs of excessive alcohol consumption in the US, 2006. *American journal of preventive medicine,* 41.5: 516-524.
9. Sacks, J.J., et al. (2013). State costs of excessive alcohol consumption, 2006.*American Journal of Preventive Medicine,* 45.4, 474-485. http://www.ajpmonline.org/article/S0749-3797(13)00373-5/pdf
10. Guide to Community Preventive Services. Preventing excessive alcohol consumption. Retrieved from www.thecommunityguide.org/alcohol/index.html. Last updated: 08/2012.
11. Guide to Community Preventive Services. Reducing alcohol-impaired driving: lower BAC laws for young or inexperienced drivers. Retrieved from www.thecommunityguide.org/mvoi/AID/lowerbaclaws.html. Last updated: 09/2013.
12. Gentilello, L.M., Rivara, F.P., et al. (1999). Alcohol interventions in a trauma center as a means of reducing the risk of injury recurrence. *Ann Surg*, 230(4):473-80.
13. U.S. Department of Agriculture and U.S. Department of Health and Human Services. (2010). *Dietary Guidelines for Americans, 2010*. 7th Edition, Washington, DC: US Government Printing Office. Retrieved from http://www.health.gov/dietaryguidelines/dga2010/DietaryGuidelines2010.pdf.

Child Maltreatment

The Federal Child Abuse Prevention and Treatment Act (CAPTA) defines child abuse and neglect as, at a minimum: *Any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act, which presents an imminent risk of serious harm.* The four major categories of maltreatment are: physical abuse, sexual abuse, neglect, and emotional or physiological maltreatment. While these forms may be found separately, they can occur in combination.[1]

How does child maltreatment affect the United States?

Fatal data

- In 2013, it is estimated 1,520 children younger than age 18 died as a result of abuse and/or neglect, a rate of 2.04 deaths per 100,000 children in the national population.[1]
- Of the children that died, 78.9% were killed by one or both of their parents.[1]
- The majority (73.9%) of children that died from abuse and neglect were under 3 years old.[1]

Non-fatal data

- From 2009 to 2013, overall rates of child maltreatment victimization declined, from 9.3 to 9.1 per 1,000 children in the population. This results in an estimated 23,000 fewer victims in 2013 (679,000) compared with 2009 (702,000).[1]
- The victimization rate was highest for children younger than one year (23.1 per 1,000 children in the population of the same age).[1]
- Most often children suffered from neglect (79.5%), followed by physical abuse (18.0%), and sexual abuse (9.0%).[1]
- In 2013, there were an estimated 3.5 million referrals of child maltreatment reported to Child Protective Services agencies across the U.S., affecting nearly 6.4 million children.[1]
- Fifty-one states and territories reported 678,932 unique victims of child abuse or neglect at a rate of 9.1 victims per 1,000 children.[1] A unique count of child victims tallies a child only once regardless of the number of times he or she was found to be a victim during the reporting period.
- From 2000-2008, nearly 340,000 children were treated in U.S. emergency departments (ED) for intentional injuries (excluding those self-inflicted) each year, accounting for an estimated 1.2% of all pediatric ED visits.[2]
- From 2000-2009, pediatric hospital admissions rates of physical abuse increased by 0.79% and rates of high-risk traumatic brain injury increased by 3.1% each year.[3]

Cost data

- In 2010, non-fatal child maltreatment cost the U.S. an estimated $210,012 in average lifetime cost per victim and cost $1.3 million per death, including medical costs and productivity losses.[4]
- Based on new cases of non-fatal and fatal child maltreatment in the U.S., the total lifetime economic burden of child maltreatment is approximately $124 billion. This burden is similar to the cost of other high profile public health problems, including stroke and Type 2 diabetes.[4]

How does child maltreatment affect Indiana?

- In state fiscal year 2013, there were 49 child fatalities substantiated for to abuse or neglect via the fatality review process. Seven of these children had had prior history with the Indiana Department of Child Services (DCS), where the victim had prior substantiated history as a victim. Of the 49 child fatalities, 14 were due to abuse and 35 were due to neglect. Domestic violence was a risk factor in 47% of abuse cases and 23% of neglect cases.[5]
- In 2013, Indiana had 160,878 referrals for child abuse and neglect, and 95,140 of those reports were screened-in for investigation.[1]
- In 2013, there were 21,755 unique victims of child maltreatment in Indiana at a rate of 13.7 per 1,000 children. Indiana's rate is higher compared to the national rate of 9.1. The majority of those children were victims of

neglect (19,172) and sexual abuse (3,075). More than half (52.7%) of victims were young girls, and were most often White (66.7%) or African American (17.9%).[1]

- In 2013, 2,949 victims of child maltreatment were under one year of age, which equated to the age group with the highest rate of 35.6 per 1,000, nearly double the rate of any other age in Indiana. Additionally, 20.8% of victims had a reported disability (*i.e.,* behavior problem, emotional disturbance, or medical condition, etc.).[1]

How do we address this problem?

Policy:

- Under IC 31-33-5-1, any individual who has a reason to believe a child is a victim of abuse or neglect has the duty to make a report. **Each citizen of Indiana is considered a "mandated reporter."** Eighteen other states have similar requirements. While reporting child abuse is everyone's responsibility, Indiana law requires a more stringent standard of reporting in some professions, including staff members in a medical or other public or private institution, school, facility, or agency. These reporters are legally obligated to report alleged child abuse or neglect.
- Failure to report suspected abuse or neglect is a Class B misdemeanor (IC 31-33-22-1; IC 35-50-3-3). Indiana law (IC 31-33-5-3) states that nothing relieves an individual from his own responsibility to report, unless a report has already been made to the best of the individual's belief. School corporations and their employees individually also risk a civil action for damages by the victim of abuse or neglect if they fail to report suspected child abuse or neglect.
- Under IC 31-33-8-1, the Indiana Department of Child Services (DCS) is required to initiate an appropriately thorough child protection investigation of every report of known or suspected child abuse or neglect which meets **statutory sufficiency**. The criterion which is used to make this decision is **the definition of child abuse or neglect.** There may be reports that do not meet the requirements of the statutes and therefore will not be assigned for investigation.
- The **DCS completes a review of all child fatalities** in the following circumstances: for children under the age of one, if the circumstances surrounding the child's death are reported to be sudden, unexpected or unexplained, or if there are allegations of abuse or neglect; and for children age one or older, if the circumstances surrounding the child's death involve allegations of abuse or neglect.
- In 2005, Governor Mitch Daniels established **DCS** as a cabinet-level, independent agency. Governor Daniels sought to create a child welfare agency that could better serve and protect the children and families of Indiana. DCS protects children from abuse and neglect, and works to ensure their financial support.
- **Local child fatality review (CFR)** teams, per IC 16-49-3-3, shall review the death of a child that occurred in the area served by the local child fatality review team if: 1) the death of the child is sudden, unexpected, unexplained, or assessed by the DCS for alleged abuse or neglect that resulted in the death of the child, or 2) the coroner in the area served by the local child fatality review team determines that the cause of the death of the child is undetermined or the result of a homicide, suicide, or accident.
- All regulated child care programs, including licensed homes, licensed centers, registered ministries, legally licensed exempt provider homes that receive payments through the Child Care Development Fund (CCDF) and legally licensed exempt facilities that receive payments through CCDF are required to have **employees and volunteers trained on Child Abuse Detection and Prevention** in order to continue receiving CCDF payments.
- American College of Surgeons Committee on Trauma (ACS) Verified Level I and II pediatric trauma centers are **required to have a mechanism in place to assess children for maltreatment**. Facilities should have standardized guidelines for screening, treatment, and referral for children injured as a result of maltreatment.[6]

Reporting:

- Suspected child abuse or neglect should be reported to the **Indiana DCS** Abuse/ Neglect Hotline, which is a 24-hour, 7-day a week service line: **1-800-800-5556**. Indiana's **Child Protective Services** (**CPS**) protects Indiana's

children from further abuse or neglect and prevents, remedies, or assists in solving problems that may result in abuse, neglect, exploitation, or delinquency of children. Website: http://www.in.gov/dcs/2971.htm.

Collaborations:

- The multi-branch **statewide Commission on Improving the Status of Children in Indiana**, in cooperation with other entities, studies issues concerning vulnerable youth and makes recommendations concerning pending legislation, review, and promotes information sharing and best practices. Website: https://secure.in.gov/children/index.htm
- A **Community Child Protection Team (CPT)** is established in every county per IC 31-33-3. This team is county-wide and multidisciplinary. The community child protection team shall prepare a periodic report regarding child abuse and neglect reports and complaints that the team reviews under this chapter. The CPT will have the following functions that may include, but are not limited to, the review of: (1) any case that DCS has been involved in within the county where the CPT presides; (2) complaints regarding child abuse and neglect cases that are brought to the CPT by a person, agency, or DCS Ombudsman; and (3) screen-outs from DCS (optional).
- The **Child Protection Service Plan/Biennial Regional Service Strategic Plan** is prepared bi-annually pursuant to IC 31-33-4-1 and IC 31-26-6-5. Website: http://www.in.gov/dcs/2829.htm.
- **Local CFR** teams are mandatory in each county, and the local teams are created at the discretion of local leaders. CFR teams are multidisciplinary, professional teams which conduct comprehensive, in-depth reviews of children's deaths and seek to identify the preventable risk factors and circumstances that were involved. CFR teams endeavor to discover and classify the details of these deaths in order to identify trends and inform efforts to implement effective strategies designed to prevent injuries, disability, and death for children.
- A **State CFR** team is mandated and members of the state team are appointed by the Governor. The ISDH provides technical assistance, training and resources for prevention efforts to all local teams.

Data collection:

- **CFR teams** ensure the accurate identification and uniform, consistent reporting of the cause and manner of every child death. The case report is part of the standardized Child Death Review Case Reporting System, a web-based application. Website: www.childdeathreview.org.
- The Indiana Child Abuse and Neglect Hotline reports monthly hotline statistics: https://secure.in.gov/dcs/3165.htm.
- CDC's *Child Maltreatment Surveillance: Uniform Definitions for Public Health and Recommended Data Elements, Version 1.0* is a set of recommendations designed to promote consistent terminology and data collection related to child maltreatment. Website: http://www.cdc.gov/violenceprevention/pub/cmp-surveillance.html.

Programs:

- The **Indiana Home Visiting** program is jointly led by the ISDH and the DCS. The Maternal Infant Early Childhood Home Visiting grant is an evidence-based policy initiative providing resources to expand home visiting services. The overall goal is to improve health and development outcomes for at-risk children and families in Indiana. One of the benchmark areas is to prevent child injuries, child abuse, neglect or maltreatment, and reduce associated ED visits.
- **Community Partners for Child Safety** (CPCS) is a secondary child abuse prevention service that builds community resources and collaborative prevention networks throughout each DCS region in the state. CPCS serves those families that are identified through self-referral or other community agency referrals. CPCS provide home-based case management services to connect families to resources to strengthen the family and prevent child abuse and neglect. Each community is empowered to define its own resources which can include, but are not limited to: Schools, social services agencies, health care providers, public health, hospitals, child care providers, community mental health agencies, DCS offices, child abuse prevention agencies like Healthy Families and local Prevent Child

Abuse Councils, Youth Services Bureaus, Child Advocacy Centers, faith-based communities, and Twelve Step Programs.

- The **Kids First Trust Fund** supports statewide child abuse prevention efforts. The fund is generated by private and public contributions through purchases of Kids First License plates and a portion of divorce filing fees.
- **Community Based Child Abuse Prevention** (CBCAP) is federally funded for the purpose of child abuse prevention. Indiana's CBCAP funds enhance the development and support of community agencies that deliver services for parenting classes, community education, fatherhood programs, services to children with disabilities and their families. It supports the coordinated collaboration efforts of community-based prevention agencies to network and strengthen prevention programs statewide.
- **Youth Service Bureaus** (YSB) are funded with state funds for the purpose of providing administrative support to those bureaus that deliver services aimed at the prevention of juvenile delinquency within every DCS region of the state. The primary statutory purpose is to provide information and referral to youth and their families, delinquency prevention, community education, and advocacy for youth.
- **Project Safe Place** is funded with state funds for the purpose of providing a community outreach network that delivers emergency services, temporary shelter, and counseling for troubled youth in crisis situations. The triangular "Safe Place" signs found in business establishments are provided through this program to let youth in crisis know that this is a safe place to ask for help and staff working in these businesses are trained to assist.
- **Early Head Start** is an early education program for low-income families with infants and toddlers, designed to support child development and parent and family well-being. There is promising evidence the program may be effective in lowering child maltreatment. Website: http://eclkc.ohs.acf.hhs.gov/hslc/tta-system/ehsnrc.
- The **Period of Purple Crying** is an evidence-based infant abuse prevention program that educates parents and caregivers about normal infant crying, soothing techniques and ways to cope through this sometimes difficult period. The acronym PURPLE describes characteristics of an infant's crying during the first few months and Period indicates that crying has a beginning and an end. Website: http://purplecrying.info/.
- **Essentials for Childhood: Steps to Create Safe, Stable, Nurturing Relationships and Environments** provides strategies that communities can consider to promote positive development of children and families, and specifically to the prevention of all forms of child maltreatment. Website: http://www.cdc.gov/violenceprevention/pdf/essentials_for_childhood_framework.pdf.
- The **California Evidence-Based Clearinghouse for Child Welfare Program Registry** provides a searchable database of programs that can be utilized by professionals that serve children and families involved with the child welfare system. Website: http://www.cebc4cw.org/home/.
- Addressing common forms of child maltreatment: evidence-informed interventions and gaps in current knowledge Website: http://onlinelibrary.wiley.com/doi/10.1111/cfs.12021/abstract.

Measures: Healthy People 2020:
Injury and Violence Prevention (IVP)-37: Reduce child maltreatment deaths.
IVP-38: Reduce non-fatal child maltreatment.

Additional resources:

Indiana Department of Child Services
Indiana Government Center South
302 West Washington St, Room E306
Indianapolis, IN 46204
Website: http://www.in.gov/dcs/index.htm

Indiana State Department of Health
2 North Meridian Street
Indianapolis, Indiana 46204

DCS Ombudsman Information (Located at the Indiana Department of Administration)
Phone:317-234-7361
Fax: 317-232-3154
Email: DCSOmbudsman@idoa.in.gov

ISDH Indiana Child Fatality Review Program
Phone: (317)233-1240
Email: GMartin1@isdh.IN.gov
Website: http://www.in.gov/isdh/26349.htm

ISDH Maternal and Child Health Division
Phone: (317)233-7940
Website: http://www.in.gov/isdh/19571.htm

ISDH Trauma and Injury Prevention Division
Phone: (317)233-7716
Email: Indianatrauma@isdh.IN.gov
Website: http://www.in.gov/isdh/19537.htm

a. **Indiana Family Helpline**: 1-855-HELP-1ST (1-855-435-7178) Website: http://www.in.gov/isdh/21047.htm
b. **Indiana Safe Haven Hotline**: 1-877-796-HOPE (1-877-796- 4673) or 2-1-1. Website: http://safehaven.tv/
c. Indiana Association of Resources and Child Advocacy: http://www.iarca.org/
d. Prevent Child Abuse Indiana: http://www.pcain.org/
e. CDC- Understanding Evidence: https://vetoviolence.cdc.gov/evidence/
f. CDC Essentials for Childhood: Steps to Create Safe, Stable, Nurturing Relationships and Environments Website: http://www.cdc.gov/violenceprevention/pdf/essentials_for_childhood_framework.pdf
g. The Adverse Childhood Experiences Study: http://acestudy.org/
h. Childhelp USA National Child Abuse Hotline at 1-800-4-A-CHILD (1-800-422-4453)
i. Child Welfare Information Gateway: www.childwelfare.gov
j. National Center for Injury Prevention and Control, CDC: http://www.cdc.gov/injury/
k. National Center for the Review & Prevention of Child Deaths: https://www.childdeathreview.org/
l. Nurse Family Partnership: www.nursefamilypartnership.org
m. The Period of PURPLE Crying: http://purplecrying.info/
n. Prevent Child Abuse America: www.preventchildabuse.org
o. THRIVES: A Global Technical Package to Prevent Violence Against Children: http://www.cdc.gov/violenceprevention/pdf/vacs-thrives.pdf
p. U.S. Dept. of Health & Human Services- Child Welfare Information Gateway: https://www.childwelfare.gov/preventing/evidence
q. U.S. Dept. of Health and Human Services Administration for Children & Families: www.acf.hhs.gov

References:

1. U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2015). *Child maltreatment 2013*. Retrieved from http://www.acf.hhs.gov/programs/cb/research-data-technology/statistics-research/child-maltreatment.
2. Monuteaux, M.C., Lee, L. & Eric Fleegler, E. (2012). Children injured by violence in the United States: emergency department utilization, 2000-2008. *Society for Academic Emergency Medicine,* 19 (5). Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1553-2712.2012.01341.x/pdf doi: 10.1111/j.1553-2712.2012.01341.x.
3. Wood, J. N., Medina, S.P., Feudtner, C., Luan, X., Localio, R., Fieldston, E.S. & Rubin, D.M. (2012). Local Macroeconomic Trends and Hospital Admissions for Child Abuse, 2000–2009. *Pediatrics*, e358 -e364 doi: 10.1542/peds.2011-3755). Retrieved from http://pediatrics.aappublications.org/content/130/2/e358.full.pdf+html .
4. Fang, X., Brown, D.S., Florence, C.S., & Mercy, J. A. (2012). The economic burden of child maltreatment in the United States and implications for prevention. Child Abuse & Neglect, 36(2), 156-165. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3776454/pdf/nihms508485.pdf.
5. Indiana Department of Child Services. Annual Report of Child Fatalities 2013: State Fiscal Year (SFY) / July 01, 2012 to June 30, 2013. Retrieved from http://www.in.gov/dcs/files/FatalitySFY2013.pdf.
6. American College of Surgeons Committee on Trauma. Resources for Optimal Care of the Injured Patient 2014 (6th edition) [Electronic]

Distracted Driving

Distracted driving is any form of activity that diverts a person's attention away from their primary task of driving, including texting, eating and drinking, grooming, talking on the phone or to passengers, and listening to loud music. Distracted driving may lead to other dangerous behaviors including speeding, risk-taking behaviors, and drowsy driving. Some reasons why drivers engage in distracted driving include stressful jobs, busy lifestyles, and easy access to technology. The three main types of distraction are: Visual, manual, and cognitive, but not all three have to occur for a driver to be dangerously distracted. Texting while driving is especially dangerous because it involves all three types of distraction at the same time. A distraction-affected crash or collision is any event in which a driver was identified as distracted at the time of the crash.

How does distracted driving affect the United States?

Fatal data

- The number of people who died due to distracted driving crashes was 3,154 in 2012, which is a slight decrease from 3,328 and 3,360 deaths in 2012 and 2011, respectively.[1]
- In 2013, nearly one in ten fatal crashes were due to a distraction. These crashes involved 2,959 distracted drivers, as some crashes involved more than one distracted driver.[1]
- The top distraction while driving is the use of a cell phone, and cell phones were involved in 411 fatal crashes in 2013.[1] However, cell phone use may not be indicated in the crash report and the true burden is underreported.[2]
- Each day, nearly nine people are killed in crashes that involve a distracted driver. [1]
- In 2013, 85% of the fatalities in distraction-affected crashes involved motor vehicle occupants or motorcyclists.[1]
- In 2013, 480 non-occupants such as pedestrians and bicyclists were killed in distraction- related crashes.[1]
- Drivers in their twenties make up 23% of the distracted drivers in fatal crashes.[1]

Non-fatal data

- Each day, 1,060 people are injured in crashes that involve a distracted driver.[3]
- There were 284,000 distraction-affected injury crashes in 2013, which represents 18% of all crashes. In these crashes, 294,000 drivers were distracted at the time of the crash, indicating more than one driver could be distracted during a crash incident.[1]
- In 2013, 424,000 people were injured in motor vehicle crashes involving a distracted driver, which was an increase from 421,000 people injured in 2012 and 387,000 people injured in 2011.[1]
- An estimated 34,000 people were injured in 2013 in crashes specifically involving cell phones.[1]
- In the U.S., 31% of drivers ages 18 to 64 reported that they had read or sent text messages or email messages while driving at least once within the last 30 days. Additionally, 69% of drivers in the U.S. in the same age group reported that they had talked on their cell phone while driving within the last 30 days.[3]

Cost data

- Crashes in which at least one driver was identified as being distracted cost $46 billion in 2010, which represented 17% of the total economic loss and cost of motor vehicle crashes.[4]
- Distracted driving caused $129 billion in 2010 in societal harm, as measured by comprehensive costs, representing 15% of the total harm caused by motor vehicle collisions.[4]

How does distracted driving affect Indiana?

- In 2013, there were 9,551 motor vehicle collisions in Indiana due to distraction. Of these collisions, 1,068 involved a driver that was distracted by a cell phone. This is a decrease from the previous year with 1,132 cell phone-distracted collisions.[5]

- There were five fatal collisions due to distraction from cell phones in 2013, in which four fatalities were among drivers.[5]
- It is estimated the economic cost of traffic collisions due to distraction was $207.5 million in 2013.[5]
- The average economic cost of traffic collision due to any distraction was $21,728, and $23,057 due to cell phone distraction.[5]
- 33% of high school students, including 67% of 12th graders reported having texted or emailed while driving a car or other vehicle at least once during the past month, according to the 2011 Indiana Youth Risk Behavior Survey.[6]

How do we address this problem?
Data collection:

- The Indiana State Police maintain the **Automated Reporting Information Exchange System (ARIES)**, which captures vehicle crash data, including distracted driving related crashes. The data are used as the analytical foundation for traffic safety program planning and design in Indiana.

Policy:

- Primary laws allow law enforcement to stop vehicles simply because occupants for a specific traffic violation, and are more effective than secondary laws, which require that a vehicle be stopped for some other traffic violation.
    - Ban on all telecommunication device use (handheld and hands-free) for novice drivers (under age 18) with the exception of a 9-1-1 emergency call (Primary law). [8]
    - Ban on texting while driving for all drivers (Primary law).[8]
- **Graduated Drivers Licensing** (GDL) implementation in 2009 and 2010 led to a 29% decrease in teen driver (15 to 17 year old) collisions between 2009 and 2012. The GDL law seeks to reduce the number of young driver collisions by reducing driver distractions and building driver experiences through supervision.

Programs:

- The Indiana Criminal Justice Institute (ICJI) **Traffic Safety Division** manages federal funds that are allocated throughout Indiana to support programs designed to fulfill its mission: "To reduce death, injury, property damage and economic cost associated with traffic crashes on Indiana's roadways." The ICJI Traffic Safety Division publishes an annual Indiana Highway Safety Plan, which includes programs and resources to prevent distracted driving injuries and fatalities. The **Rule the Road Teen Driving** program educates young drivers and their parents about the GDL law, basic car maintenance, seat belt safety, and the dangers of distracted and impaired driving.

Education:

- The American Academy of Orthopaedic Surgeons and the Alliance of Automobile Manufacturers teamed up to launch the national public service campaign of "**Decide to Drive**" in 2011, which aims to affect behavior changes relating to driver distractions that pose a threat to drivers, passengers, and pedestrians.[9]
- The National Highway Traffic Safety Administration (NHTSA) designates April as National Distracted Driving Awareness Month. The paid media campaign focuses on the primary message of **U Drive. U Text. U Pay.**
- NHTSA and the U.S. Department of Transportation created a **pledge to end distracted driving** by driving phone-free. Website: http://www.distraction.gov/get-involved/take-the-pledge.html.
- Employers can foster a culture of workplace safety and health by discouraging use of cell phones while driving by developing a motor vehicle safety policy. **INSafe**, the Indiana Department of Labor's OSHA consultation program, provides employers with free onsite consultation, outreach, training and education. INSafe's resources are designed to assist employers to further advance the safety, health and prosperity of Hoosiers in the workplace.
- The **Indiana Department of Labor** encourages employers to **declare vehicles as "text-free zones."** As of July 1, 2011, texting and emailing, including reading and/or responding while driving, is against the law and violators may face fines.

Measures:

While not included as objectives in Healthy People 2020, there are several emerging issues in injury and violence prevention that need further research, analysis, and monitoring. For unintentional injuries, there is a need to better understand the trends, causes, and preventions strategies for motor vehicle crashes due to distracted driving.

Related Healthy People 2020 Goals:

Injury and Violence Prevention (IVP)-13: Reduce motor vehicle crash-related deaths.

IVP-13.1: Reduce motor vehicle crash-related deaths per 100,000 population.

IVP-13.2: Reduce motor vehicle crash-related deaths per 100 million vehicle miles traveled.

IVP-14: Reduce non-fatal motor vehicle crash-related injuries.

Additional resources:

a. Advocates for Highway and Auto Safety: www.saferoads.org
b. American Academy of Orthopaedic Surgeons Decide to Drive: http://www.decidetodrive.org/
c. CDC Distracted Driving http://www.cdc.gov/motorvehiclesafety/distracted_driving/
d. National Highway Traffic Safety Administration (NHTSA): www.nhtsa.dot.gov
e. National Safety Council: Distracted Driving: http://www.nsc.org/safety_road/Distracted_Driving/Pages/distracted_driving.aspx
f. Official U.S. Government Website for Distracted Driving: http://www.distraction.gov/index.html

References:

1. National Highway Traffic Safety Administration. (2015). Distracted Driving 2013. DOT HS 812 132. Retrieved from http://www.distraction.gov/downloads/pdfs/Distracted_Driving_2013_Research_note.pdf
2. National Safety Council. (2013). Crashes Involving Cell Phones. Retrieved from http://www.nsc.org/DistractedDrivingDocuments/NSC-Under-Reporting-White-Paper.pdf
3. Centers for Disease Control and Prevention. Distracted Driving. Retrieved from http://www.cdc.gov/motorvehiclesafety/distracted_driving/.
4. Blincoe, L.J., Miller, T.R., Zaloshnja, E., & Lawrence, B.A. (2014). The economic and societal impact of motor vehicle crashes, 2010. (Report No. DOT HS 812 013). Washington, DC: National Highway Traffic Safety Administration.
5. Nunn, S., Sapp, D., Thelin, R., Lisby, K. & Payton,S. Indiana Crash Facts, 2013. Retrieved from http://www.in.gov/cji/files/CrashFactBook_2013.pdf.
6. Indiana State Department of Health (2012). Youth Risk Behavior Surveillance, 2011.
7. Nagle, M. (2011). Indiana 2010 Traffic Safety Facts: Effects of Graduated Driver Licensing on Crash Outcomes in Indiana. Retrieved from http://www.in.gov/cji/files/T_GDL_Effects_2010.pdf.
8. National Highway Traffic Safety Administration. State Laws. Retrieved from DISTRACTION.GOV: Official US Government Website for Distracted Driving: http://www.distraction.gov/content/get-the-facts/state-laws.html.
9. Decide to Drive. American Academy of Orthopaedic Surgeons. Retrieved from http://www.decidetodrive.org/.

Drug Poisoning / Prescription Drug Overdose

Any drug has the potential to be misused or abused, and may be even more dangerous when used in combination with other drugs or alcohol. The most common drugs involved in prescription drug overdose deaths include Hydrocodone (e.g., Vicodin), Oxycodone (e.g., OxyContin), Oxymorphone (e.g., Opana), and Methadone (especially when prescribed for pain). Changes in how providers prescribe these powerful drugs created, and continue to fuel, the epidemic. The amount of opioids prescribed and sold in the U.S. quadrupled from 1999 through 2011. Taking too many prescription painkillers may cause a person to stop breathing, leading to death.[1] While the public health burden of the prescription drug epidemic remains substantial, 2012 saw the first national drop in prescription overdose deaths since the 1990s, and appears to have leveled off. This drop in deaths parallels a similar drop in painkiller prescribing rates across the country.[2]

Heroin overdose death rates have been climbing sharply since 2010. Evidence to date suggests that widespread prescription opioid exposure and increasing rates of opioid addiction have played a role in the growth of heroin use. Heroin is an opioid and acts on the same receptors in the brain as opioid pain relievers. Approximately three out of four new heroin users report having abused prescription opioids prior to using heroin.[3]
Risk factors for painkiller abuse and overdose include:

- Obtaining overlapping prescriptions from multiple providers and pharmacies.[4,5,6,7]
- Taking high daily dosages of prescription painkillers.[5,8,9,10]
- Having mental illness or a history of alcohol or other substance abuse.[11]
- Living in rural areas and having low income.
- Inappropriate provider prescribing practices and patient use are substantially higher among Medicaid patients than among privately insured patients.[12]
- In one study based on 2010 data, 40% of Medicaid enrollees with painkiller prescriptions had at least one indicator of potentially inappropriate use or prescribing, including overlapping painkiller prescriptions, overlapping painkiller and benzodiazepine prescriptions, and long-acting or extended release prescription painkillers for acute pain and high daily doses.[12]

How does drug poisoning affect the United States?

Fatal data

- In the U.S., 44 people die each day from overdose of prescription painkillers.[13]
- From 2009-2013, unintentional poisoning was the number one leading cause of injury death in the U.S. for adults, aged 25 to 64, and the third leading cause of youth and young adults aged 15 to 24.[14]
- Deaths from prescription painkillers have quadrupled since 1999, killing more than 16,000 people in 2013.[15]
- In 2013, there were 43,982 drug poisoning deaths in the U.S. and of those, 51.8% (22,767) were related to prescription drugs and to heroin overdose.[13,14]
- In 2013, there were 22,767 prescription drug overdose-related deaths. Seventy- one percent (16,235 deaths) of prescription drug overdose-related deaths involved opioid analgesics (opioid pain relievers or prescription painkillers), and 30.6% involved benzodiazepines. People who died from drug overdose may have combinations of benzodiazepines and opioids in their bodies, resulting in some deaths having more than one drug classification.[13]
- Men are more likely to die from prescription opioid overdose, but the gap between men and women is closing. Deaths among women due to prescription painkiller overdose increased more than 400% during 1999-2010, compared to 237% among men.[15]

Non-fatal data

- In 2011, there were 2.5 million emergency department (ED) visits attributed to drug misuse or abuse, and of those visits, more than 1.4 million involved pharmaceuticals.[16]
- The number of ED visits involving misuse or abuse of pharmaceuticals has steadily increased from 2004 (626,470 visits) through 2011 (1,428,145 visits). The most common drugs involved were anti-anxiety and insomnia medications and narcotic pain relievers.[16]

- From 2004 to 2011, the rate of ED visits involving misuse or abuse of pharmaceuticals has increased by 114%. The rate of ED visits involving central nervous system stimulants increased by 292%, and anti-anxiety and insomnia medication visits increased by 124%.[16]

Cost data

- Fatal unintentional poisoning costs were about $68 million in 2010. Of this amount, the combined cost of work loss and medical costs was an average of $653,429 per fatality.[14]
- In the U.S., prescription opioid abuse costs were about $55.7 billion in 2007. Of this amount, 46% was attributable to lost productivity, 45% to healthcare costs (e.g., abuse treatment), and 9% to criminal justice costs.[17]

How does drug poisoning affect Indiana?

- Poisoning is the leading cause of injury deaths in Indiana, and drugs cause 9 out of 10 poisoning deaths. Drug poisoning (overdose) deaths increased five-fold since 1999, surpassing motor vehicle traffic-related deaths in 2008.
- In 2013, the drug overdose death rate was 16.3 deaths per 100,000 persons, compared to a motor vehicle traffic-related death rate of 11.7 deaths per 100,000 persons.[1]
- In 2013, there were 1,049 drug poisoning deaths in Indiana, compared to 184 in 1999. Heroin overdose deaths increased from less than 5 in 1999 to 152 in 2013. Deaths due to benzodiazepine overdose increased from 7 in 1999 to 74 in 2013.[18]
- In 2013, there were 16.5 drug poisoning deaths per 100,000 in Indiana, a rate slightly higher than the national rate of 13.7 and the Midwest rate of 14.6. Indiana ranks 16th for drug overdose deaths.[14]
- Males had rates 1.5 times higher than females and persons aged 35-39 years had the highest rate of all age categories (32.7 per 100,000).[14]
- The 2011 Youth Risk Behavior Survey found over 21% of Indiana 9th-12th graders have taken a controlled prescription drugs for non-medical reasons.
- In 2013, there were 11,066 non-fatal drug poisoning-related emergency department visits, of which 2,157 visits were due to opioid overdose.[18]
- In January 2015, the prescription drug abuse epidemic in Indiana gained national prominence for its link to an epidemic of acute HIV infection in a rural city resulting from sharing syringes while injecting oral oxymorphone (OPANA®). As of June 2015, 169 people have been diagnosed with HIV; approximately 88% of those are co-infected with hepatitis C. The affected county ranks second in the state for average age-adjusted prescription drug overdose mortality rates (33.48 for years 2002-2013).[18]

How do we address this problem?

Collaborations:

- Established by Executive Order, the **Governor's Task Force on Drug Enforcement, Treatment, and Prevention** will bring together Indiana experts from a variety of specialties to evaluate the growing national drug problem here in Indiana. Specifically, the Task Force is charged with:
    - **Statewide assessment:** Evaluate the existing resources across all areas, identify gaps in enforcement, treatment and prevention and provide recommendations for improvement;
    - **Enforcement:** Identify effective strategies so federal, state, and local law enforcement can partner together to combat drug abuse;
    - **Treatment:** Analyze available resources for treatment and identify best practices for treating drug addiction;
    - **Prevention:** Identify programs and/or policies which are effective in preventing drug abuse, including early youth intervention programs. Website: http://www.in.gov/gtfdetp/index.htm.
- The **Indiana Attorney General's Prescription Drug Abuse Task Force** (Task Force) works to significantly reduce the abuse of controlled prescription drugs and to decrease the number of deaths associated with these drugs in

Indiana. The Task Force employs a multi-modal, multi-disciplinary approach through five Committees: (1) Education; (2) Enforcement; (3) INSPECT (4) Take Back; and (5) Treatment & Recovery. Website: http://www.in.gov/bitterpill/.

- The multi-branch **statewide Commission on Improving the Status of Children in Indiana**, in cooperation with other entities, studies issues concerning vulnerable youth and makes recommendations concerning pending legislation, review, and promotes information sharing and best practices. As part of the Commission, the **Substance Abuse and Child Safety Task Force's** mission is to "Explore best practices and evidenced-based research to create positive, lasting outcomes for children who abuse drugs, live in households where drug abuse exists, or who are in need of mental health treatment. To that end, our aim is to craft effective ways to address gaps in mental health and substance abuse services between urban and rural communities, the lack of long-term solutions for children with mental health and substance abuse problems in and out of the juvenile justice system, and financial barriers to receiving mental health and substance abuse treatment regardless of where families live." Website: https://secure.in.gov/children/index.htm.
- The **Indiana Statewide Trauma System Injury Prevention Plan** includes opportunities for collaborative poisoning and drug overdose prevention efforts.
- ISDH Division of Mental Health and Addiction **Substance Abuse Prevention and the Mental Health Promotion Strategic Plan** 2012-2017. Website: http://www.in.gov/fssa/dmha/4484.htm.

Data collection:

- INSPECT, Indiana's prescription drug monitoring program, was designed to serve as a tool to address the problem of prescription drug abuse and diversion in Indiana. By compiling controlled substance information into an online database, INSPECT performs two critical functions:
    - Maintain a warehouse of patient information for health care professionals.
    - Provide an important investigative tool for law enforcement.

  Indiana was the first state in the nation to share data with all neighboring states and continues to share live data with other states. Website: http://www.in.gov/pla/inspect/.
- Naloxone use by Emergency Medical Service (EMS) providers is captured in the pre-hospital component of the **Indiana Trauma Registry**. Additionally, with legislation passed in 2015, the ISDH will capture data on naloxone use by lay persons.
- The **Indiana State Department of Health Division of Trauma and Injury Prevention** conducts statewide injury surveillance of overdose deaths through death certificates, hospitalizations, and ED visits.

Policy:

- The 2013 legislative session ensured the sustainability of INSPECT by dedicating 100% of the Indiana Controlled Substance Registration (CSR) fees paid by prescribers to support ongoing use and maintenance of INSPECT, required owners of pain management clinics to maintain a CSR, and required the Medical Licensing Board (MLB) to adopt rules for prescribing opioids for chronic pain. The Task Force assisted with rule promulgation and published a complementary prescriber toolkit.
- The Task Force highlighted inconsistent reporting of Neonatal Abstinence Syndrome (NAS) during the 2014 legislative session. A NAS Committee of the Indiana Perinatal Quality Improvement Collaborative (IPQIC) Network developed screening and reporting protocols to assess the NAS burden, now implemented in a pilot program. Additional legislation passed reduces the reporting interval to INSPECT from seven days to 24 hours, effective January 2016 and permits first responder use of naloxone.
- Senate Enrolled Act 406 during the 2015 legislative session, commonly referred to as the "Naloxone Bill", allows for broader distribution of naloxone, a prescription drug that reverses the effects of an opioid overdose. Prescribers can prescribe directly to someone at-risk or to their family/friends or by standing order. The prescriber has to provide instructions on how to use the drug, ensure that emergency authorities are called if the drug is used, and provide information on drug addiction treatment information (including Vivitrol). When the authorities

are called, they must register the dispensing of naloxone with the Indiana Trauma Registry. The ISDH must work with the Indiana Department of Homeland Security on this reporting requirement.

Education:

- "***First Do No Harm: The Indiana Healthcare Providers Guide to the Safe, Effective Management of Chronic Non-Terminal Pain***" developed by the Indiana Prescription Drug Abuse Prevention Task Force's Education Committee. This provider toolkit, based on expert opinion and recognized standards of care, was developed over many months with the input of healthcare providers representing multiple specialties and all corners of the state. First Do No Harm provides options for the safe and responsible treatment of chronic pain, including prescriptions for opioids when indicated, with the ultimate goals of patient safety and functional improvement. It was developed as an interactive compendium to the new Medical Licensing Board rule addressing Opioid Prescribing for Chronic, Non-terminal Pain. Website: http://www.in.gov/bitterpill/files/First_Do_No_Harm_V_1_0.pdf.
- **Substance Abuse and Mental Health Services Administration Opioid Overdose Prevention Toolkit** - Updated 2014 equips communities and local governments with material to develop policies and practices to help prevent opioid-related overdoses and deaths. Addresses issues for first responders, treatment providers, and those recovering from opioid overdose. Website: http://store.samhsa.gov/product/Opioid-Overdose-Prevention-Toolkit-Updated-2014/SMA14-4742.
- **CDC education recommendations**:
    - Talk with your doctor about:
        - The risks of prescription painkillers and other ways to manage your pain.
        - Making a plan on when and how to stop, if a choice is made to use prescription painkillers.
    - Use prescription painkillers only as instructed by your doctor.
    - Store prescription painkillers in a safe place and out of reach of others.
    - Help prevent misuse and abuse by not selling or sharing prescription painkillers. Never use another person's prescription painkillers. Website: http://www.cdc.gov/drugoverdose/epidemic/public.html.
- CDC ***Policy Impact: Prescription Painkiller Overdoses*** presents evidence-based policy approaches to help reverse the prescription painkiller overdose epidemic: http://www.cdc.gov/homeandrecreationalsafety/pdf/policyimpact-prescriptionpainkillerod.pdf.
- The CDC Injury Center released several Vital Signs packages:
    1. **Prescription Painkiller Overdoses in the U.S.**: http://www.cdc.gov/vitalsigns/PainkillerOverdoses/index.html
    2. **Use and Abuse of Methadone as a Painkiller**:http://www.cdc.gov/vitalsigns/MethadoneOverdoses/index.html
    3. **Prescription Painkiller Overdoses - A Growing Epidemic, Especially Among Women**: http://www.cdc.gov/vitalsigns/PrescriptionPainkillerOverdoses/index.html
    4. **Opioid Painkiller Prescribing - Where You Live Makes a Difference**: http://www.cdc.gov/vitalsigns/opioid-prescribing/
    5. **Today's Heroin Epidemic:** http://www.cdc.gov/vitalsigns/heroin/index.html

Interventions:

- CDC recommends patients who are prescribed opioid pain relievers be counseled against sharing medications, about proper medication storage, use, and disposal, and compliance with prescribing physician's instructions. [19]
- **Disposal of unused** medications through **proper disposal** and **Drug Take-Back Events** ensures unwanted or unneeded medications do not end up on the street or damage the environment.
- Get help for **Substance Abuse Problems** via SAMHSA's National Helpline: 1-800-662-HELP or through SAMHSA's **Behavioral Health Treatment Services Locator:** https://findtreatment.samhsa.gov/.
- If a poisoning occurs, remain calm, and:
    - Call 911 if you have a poison emergency and the victim has collapsed or is not breathing.
    - Call the Indiana Poison Center Helpline: 1-800-222-1222 if the victim is awake and alert. Try to have this information ready: 1) the victim's age and weight, 2) the container or bottle of the poison if available, and 3) the time and address of the poison exposure.

- **Project Lazarus** works to prevent deaths due to drug overdose through community activation and coalition building, monitoring and epidemiologic surveillance, prevention of overdose through medical education and other means, use of overdose reversing medication by community members, and evaluation of program components. Website: http://www.projectlazarus.org/.

Measures: Healthy People 2020:

Injury and Violence Prevention (IVP)-9: Prevent an increase in poisoning deaths.

IVP-9.1: Prevent an increase in poisoning deaths among all persons.

IVP-9.2: Prevent an increase in poisoning deaths among persons aged 35 to 54 years.

IVP-9.3: Prevent an increase in poisoning deaths caused by unintentional or undetermined intent among all persons.

IVP-9.4: Prevent an increase in poisoning deaths caused by unintentional or undetermined intent among persons aged 35 to 54 years.

IVP-10: Prevent an increase in non-fatal poisonings.

SA-12: Reduce drug-induced deaths.

SA-19: Reduce the past-year nonmedical use of prescription drugs.

SA-19.1: Reduce the past-year nonmedical use of pain relievers.

SA-19.2: Reduce the past-year nonmedical use of tranquilizers.

SA-19.3: Reduce the past-year nonmedical use of stimulants.

SA-19.4: Reduce the past-year nonmedical use of sedatives.

SA-19.5: Reduce the past-year nonmedical use of any psychotherapeutic drug (including pain relievers, tranquilizers, stimulants, and sedatives).

Additional resources:

a. ISDH Division of Trauma and Injury Prevention: http://www.in.gov/isdh/19537.htm and http://www.in.gov/isdh/26689.htm
b. DMHA Bureau of Mental Health Promotion and Addiction Prevention: http://www.in.gov/fssa/dmha/index.htm
c. Indiana Attorney General Prescription Drug Abuse Prevention Task Force: http://www.in.gov/bitterpill/
d. Indiana Poison Center Helpline: 1-800-222-1222 http://indianapoison.org/
e. Indiana Governor's Task Force on Drug Enforcement, Treatment and Prevention: http://www.in.gov/gtfdetp/index.htm
f. INSPECT (Indiana's Prescription Drug Monitoring Program): http://www.in.gov/pla/inspect/
g. Indiana State Epidemiology and Outcomes Work Group: EPI Profile: http://www.healthpolicy.iupui.edu/projectDetail.aspx?ProjectID=4395
h. Harm Reduction Coalition Tools & Best Practices: http://harmreduction.org/issues/overdose-prevention/tools-best-practices/
i. National Safety Council: http://www.nsc.org/pages/home.aspx
j. Substance Abuse and Mental Health Services Administration (SAMHSA): www.samhsa.gov
k. U.S. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control: http://www.cdc.gov/homeandrecreationalsafety/poisoning/index.html
l. U.S. Centers for Disease Control and Prevention, Prevent Unintentional Poisoning: http://www.cdc.gov/features/poisonprevention/
m. U.S. Drug Enforcement Administration: http://www.dea.gov/index.shtml
n. U.S. Food and Drug Administration Disposal of Unused Medicines: http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm101653.htm

References:

1. Centers for Disease Control and Prevention. Understanding the Epidemic. Retrieved from http://www.cdc.gov/drugoverdose/epidemic/index.html.
2. National Center for Health Statistics. (2014). Multiple cause-of-death data, 1999–2013. CDC WONDER online database. 2014. Retrieved from http://wonder.cdc.gov/mcd.html
3. Rudd, R.A., Paulozzi, L.J., Bauer, M.J.; et al. (2014). Increases in Heroin Overdose Deaths - 28 States. *MMWR*, 63: 849-854
4. White, A.G., Birnbaum, H.G., Schiller, M., Tang, J. & Katz, N.P. (2009). Analytic models to identify patients at risk for prescription opioid abuse. *Am J of Managed Care,* 15(12):897-906.
5. Hall, A.J., Logan, J.E., Toblin, R.L., Kaplan, J.A., Kraner, J.C., Bixler, D., et al. (2008). Patterns of abuse among unintentional pharmaceutical overdose fatalities. *JAMA,*300(22):2613-20.

6. Peirce GL, Smith MJ, Abate MA, Halverson J. Doctor and Pharmacy Shopping for Controlled Substances. Med Care 2012 Jun;50(6):494-500.
7. Yang, Z., Wilsey, B., Bohm, M., Soulsby, M., Roy, K., Ritley, D., et al. (2015). Defining Risk for Prescription Opioid Overdose: Pharmacy Shopping and Overlapping Prescriptions among Long-Term Opioid Users in Medicaid. *J Pain,* doi: 10.1016/j.jpain.2015.01.475.
8. Green, T.C., Graub, L.E., Carver, H.W., Kinzly, M. & Heimer, R. (2011). Epidemiologic trends and geographic patterns of fatal opioid intoxications in Connecticut, USA: 1997–2007. *Drug and Alcohol Dependence,* 115:221-8.
9. Paulozzi, L.J., Logan, J.E., Hall, A.J., McKinstry, E., Kaplan, J.A. & Crosby, A.E. (2009). A comparison of drug overdose deaths involving methadone and other opioid analgesics in West Virginia. *Addiction,*104(9):1541-8.
10. Dunn, K.M., Saunders, K.W., Rutter, C.M., Banta-Green, C.J., Merrill, J.O., Sullivan, M.D., et al. (2010). Opioid prescriptions for chronic pain and overdose: a cohort study. *Ann Intern Med*, 152(2):85-92.
11. Bohnert, A.S., Valenstein, M., Bair, M.J., Ganoczy, D., McCarthy, J.F., Ilgen, M.A., et al. (2011). Association between opioid prescribing patterns and opioid overdose-related deaths. *JAMA*, 305(13):1315-1321.
12. Mack, K.A., Zhang, K., Paulozzi, L.J., Jones, C. (2015). Prescription Practices involving Opioid Analgesics among Americans with Medicaid, 2010. *J Health Care Poor Underserved,* 26(1):182-98.
13. Centers for Disease Control and Prevention. National Vital Statistics System mortality data. (2015). Retrieved from http://www.cdc.gov/nchs/deaths.htm.
14. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (2015). Retrieved from http://www.cdc.gov/injury/wisqars/fatal.html.
15. Centers for Disease Control and Prevention. National Center for Injury Prevention and Control, Division of Unintentional Injury Prevention. (2013). Prescription Painkiller Overdoses. A growing epidemic, especially among women. *CDC Vital Signs*. Retrieved from http://www.cdc.gov/vitalsigns/PrescriptionPainkillerOverdoses/
16. Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. The DAWN Report: Highlights of the 2011 Drug Abuse Warning Network (DAWN) Findings on Drug-Related Emergency Department Visits. Rockville, MD. Retrieved from http://www.samhsa.gov/data/2k13/DAWN127/sr127-DAWN-highlights.htm
17. Birnbaum, H.G., White, A.G., Schiller, M., Waldman, T., Cleveland, J.M., & Roland, C.L. (2011). Societal costs of prescription opioid abuse, dependence, and misuse in the United States. *Pain Medicine*, 12: 657-667.
18. Indiana State Department of Health, Epidemiology Resource Center, Data Analysis Team.
19. Centers for Disease Control and Prevention. (2015). Tips to prevent poisoning. Retrieved from http://www.cdc.gov/homeandrecreationalsafety/poisoning/preventiontips.htm

Infant Safe Sleep

A death of a baby before his first birthday, known as infant mortality, is a critical indicator of the health of a population. It reflects the overall state of maternal health as well as the quality and accessibility of primary health care available to pregnant women and infants. A number of factors contribute to infant mortality, including suffocation. Infant deaths due to suffocation result when the child is in a place or position where he is unable to breathe.[1] A majority of these suffocations occur when infants are in unsafe sleeping environments, and the American Academy of Pediatrics first linked sleep position and infant death in 1992.[2] Major risk factors for infant death include infants sleeping on their stomachs, infant sleeping on soft surfaces and loose bedding, toys, and other objects in the sleeping environment, overheating, bed-sharing, sleeping places other than a crib, maternal smoking during pregnancy, faulty design of cribs or beds, quality of supervision at time of death, and other factors.[1] The Academy strengthened its recommendations in 2005 and 2011 to further emphasize supine sleep position and other environmental factors to protect against sleep-related deaths, such as room-sharing but not bed-sharing, ensuring a firm sleep surface free of soft objects, and avoiding alcohol, illicit drugs, and smoke.[2]

Infants spend more than 14 hours a day sleeping – and sometimes more. While sleep is an important part of an infant's development, it can also be a dangerous time if parents and caregivers do not follow a few simple guidelines. Make sure to follow the ABCs of safe sleep:

A. **Alone**. Infants should always sleep alone. The American Academy of Pediatrics warns that babies should never go to sleep with anyone or practice co-sleeping, as this raises the risk for suffocation. Cribs, cradles, bassinets, and Pack 'n Play portable cribs can be placed in the parent's room to create a separate, but close sleeping environment. Alone also means the **crib should not have anything in it**. The crib should be free of toys, stuffed animals, pillows, bumper pads and blankets. Dress your baby in light sleep clothes or use a sleep sack (not a blanket) for extra warmth.
B. **Backs**. Infants should always sleep on their backs on a firm surface with a tight-fitting bottom sheet. Soft surfaces like cushy mattresses or sofas are not safe places for a baby to sleep. Babies should not have pillows, comforters, quilts or other soft items beneath or on top of them.
C. **Crib**. The safest place for a baby is in a crib – not a bed or sofa. A crib should be free and clear of toys, stuffed animals, bumper pads and blankets. The infant should sleep in a bassinet, crib or play yard that meets current safety standards from the U.S. Consumer Product Safety Commission. The mattress should fit snugly in the crib so there are not any gaps or spaces between the mattress and the crib frame. Don't let your baby sleep in his carrier or sling, car seat or stroller because babies who sleep in these items can suffocate.[2,3]

How does infant safe sleep affect the United States?

Fatal data

- While the incidence of sudden infant death syndrome (SIDS) has been decreasing since 1992, other causes of sudden unexpected infant death that occur during sleep, such as suffocation, asphyxia, and entrapment have increased in incidence.[2]
- In 2013, 979 infants died as a result of unintentional suffocation.[4]
- Unintentional suffocation deaths resulted in 107,547 years of potential life lost before age 65 years in 2013, a measure of premature mortality.[4]
- An analysis of U.S. Consumer Product Safety Commission data revealed 15 suffocation deaths between 1990 and 1997 resulting from car seats overturning after being placed on a bed, mattress, or couch.[2]

Non-fatal data

- More than 131,000 infants sustained non-fatal injuries as a result of unintentional suffocation between 2001-2013.[4]

Cost data

- In 2010, infant suffocation deaths cost the U.S. more than $1.15 million in medical costs and lost productivity.[4]

How does infant safe sleep affect Indiana?

- Suffocation was the leading cause of unintentional injury death for children under one year of age, and suffocation deaths are preventable. In 2013, 34 infants died as a result of unintentional suffocation (66.7%).[5]
- Unintentional suffocation deaths resulted in 3,820 years of potential life lost before age 65 years in 2013, a measure of premature mortality.[4]
- In 2010, fatal suffocation injuries among infants cost Indiana $32.4 million in total medical and work loss costs.[4]

How do we address this problem?

Policy:

- Important child care laws enacted by the Indiana General Assembly (SEA 305 and HEA 1494) went into effect on July 1, 2013. All regulated child care programs are impacted by the laws including licensed homes, licensed centers, registered ministries, legally licensed exempt provider homes that receive payments through the **Child Care Development Fund (CCDF)** and legally licensed exempt facilities that receive payments through CCDF. The law requires primary caregiver complete training on safe sleep for infants. Website: https://secure.in.gov/fssa/carefinder/4945.htm.
- IC 16-49-3-3 states a local **Child Fatality Review** team shall review the death of a child that occurred in the area served by the local child fatality review team if: 1) the death of the child is sudden, unexpected, unexplained, or assessed by the Department of Child Services (DCS) for alleged abuse or neglect that resulted in the death of the child, or 2) the coroner in the area served by the local child fatality review team determines that the cause of the death of the child is undetermined or the result of a homicide, suicide, or accident.
- **American Academy of Pediatrics Policy Statement**: Task Force on Sudden Infant Death Syndrome http://pediatrics.aappublications.org/content/early/2011/10/12/peds.2011-2285.full.pdf.
- **U.S. Health and Human Services Agencies Support Infant Safe Sleep Recommendation:** http://www.nichd.nih.gov/news/releases/Pages/101811-infant-safe-sleep-recommendations.aspx.

Collaborations:

- **Indiana Perinatal Network (IPN)** is an alliance of hundreds of individuals and organizations across Indiana committed to the beliefs that: Every mother deserves a healthy and safe pregnancy and every baby deserves to be born healthy and into a safe and nurturing home.
- The **Indiana Child Fatality Review Program** attempts to better understand how and why children die, take action to prevent other deaths, and improve the health and safety of our children. Each local child fatality review team is made up of a coroner/deputy coroner, a pathologist, and pediatrician or family practice physician, and local representatives from law enforcement, the local health department, DCS, emergency medical services, a school district within the region, fire responders, the prosecuting attorney's office, and the mental-health community. The teams are required to review all deaths of children under the age of 18 that are sudden, unexpected or unexplained, all deaths that are assessed by DCS, and all deaths that are determined to be the result of homicide, suicide, accident, or are undetermined.
- The multi-branch **statewide Commission on Improving the Status of Children in Indiana**, in cooperation with other entities, studies issues concerning vulnerable youth and makes recommendations concerning pending legislation, review, and promotes information sharing and best practices. Website: https://secure.in.gov/children/index.htm.

Data collection:

- The **Indiana Child Fatality Review teams** ensure the accurate identification and uniform, consistent reporting of the cause and manner of every child death. The case report is part of the Child Death Review Case Reporting System, a web-based application. The system allows local and state users to enter case data, access and download

their data and download standardized reports via the Internet. More information on this system is available from the National Center for Child Death Review at www.childdeathreview.org.

- Statewide direction and focus for child injury prevention safe sleep is one of the areas outlined in the **Indiana Statewide Trauma System Injury Prevention Plan**. The Indiana State Department of Health Division of Trauma and Injury Prevention conducts statewide injury surveillance through death certificates, hospitalizations, and ED visits.

Programs:

- **Indiana State Department of Health Safe Sleep Action Plan**
    - Work with agencies to distribute infant survival kits and provide safe sleep education throughout the state.
    - Work with external partners to expand and standardize safe sleep training for nurses, caregivers and childcare providers.
    - Provide first responders with safe sleep training/education to help expand safe sleep messaging.
    - Help reduce sleep-related infant deaths by providing first responders with training/education to standardize and improve infant death scene investigations, and promote consistent classification and reporting of sudden unexpected infant death (SUID) cases.
    - Promote and support the Cribs for Kids National Safe Sleep Hospital Certification Program that strives to award recognition to hospitals that demonstrate a commitment to reducing infant Sleep-Related Deaths through promoting best safe sleep practices and educating health professionals and parents/caregivers on infant sleep safety.
    - Establish partnerships with agencies to improve the well-being of infants and children in the community.
- **Indiana Safe Sleep Collaborative**: ISDH, in collaboration with DCS and a partnership with the Cribs for Kids National Infant Safe Sleep Initiative, has implemented a statewide program that provides education and **Infant Survival Kits** to infant caregivers and families. The survival kits contain one infant Pack 'n Play portable crib, fitted sheet with imprinted safe sleep messaging, wearable blanket, pacifier, and safe sleep recommendations for those in need with an infant at risk for SIDS or sleep-related death. There are currently 23 education/survival kit distribution sites throughout the state, reaching families in all 92 counties.
- **"Labor of Love" public awareness campaign:** A sustained, statewide information effort began January 2015. The goal is to raise awareness of the problem of infant mortality and encourage support for education and prevention. The fundamental premise of the campaign is to educate citizens that everyone has a role to play to ensure our babies reach their first birthdays. Website: http://www.in.gov/laboroflove/.
- **ISDH Child Fatality Review Program** provides technical support and assistance to local child fatality review teams to enhance existing capacity, identify sudden unexpected infant deaths, and collect, review, and enter accurate, objective, and comprehensive surveillance data on SUID cases that occur in Indiana. The purpose of child fatality review is to examine the circumstances and risk factors involved in a child's death, monitor and identify the magnitude, trends, and features of infant death and translate findings into prevention strategies by disseminating useful, actionable data to stakeholders and data providers to support and improve local, state, and national infant mortality prevention policies, programs, and practices.
- **The Cribs for Kids® Safe Sleep Hospital Initiative** is a hospital certification program awarding recognition to hospitals that demonstrate a commitment to best practices and education on infant sleep safety. Requirements include: developing a safe sleep policy statement, train staff on guidelines and policies, educate parents on safe sleep practices, replace regular receiving blankets with wearable blankets, and affiliate with local Cribs for Kids partners. Website: http://www.cribsforkids.org/safesleephospitalcertification/.
- **The Baby-Friendly Hospital Initiative** is a global program sponsored by the World Health Organization and the United Nations Children's Fund (UNICEF) to encourage and recognize hospitals and birthing centers that offer an optimal level of care for lactation. As of June, 2015, Indiana has 8 Baby-Friendly Hospitals. Website: http://www.babyfriendlyusa.org/.

- **Indiana Tobacco Quitline 10-Call Protocol for Pregnant Women- 1-800-QUIT-NOW (800-784-8669):** A tailored quitline intervention for pregnant women includes up to 10 calls with relapse prevention sensitivity. The first 5-6 calls are completed within 60 to 90 days of enrollment, and one call is made 30 days prior to the woman's planned due date. In addition, two postpartum contacts are made (15 days and 45 days postpartum, emphasizing the importance of remaining quit beyond delivery). The program takes a woman-centered approach, balancing the benefits of quitting for both the fetus and the woman, in addition to incorporating an element to enlist optimal support for the woman and to encourage smoking partners to quit as well. Website: http://www.in.gov/quitline/.

Education:

- Safe Sleep Awareness can be pivotal in assisting to decrease our infant mortality rate in the state of Indiana. The educational messages focus on three key risk reduction recommendations –**ABC: babies sleep safest alone, on their backs and in a crib**. The messaging encourages breastfeeding and safe bonding practices that can occur while the baby and mother are awake – both in and outside of the adult bed.
- Most infant suffocations occur in the sleeping environment. Infants should be placed on their backs to sleep in bare cribs that meet safety standards of the **U.S. Consumer Product Safety Commission** (CPSC) and the **Juvenile Products Manufacturers Association** (JPMA). Since June 28, 2011, all cribs sold in the United States must meet new federal requirements for overall crib safety, including:
    - Traditional drop-side cribs cannot be made or sold; immobilizers and repair kits are not allowed;
    - Wood slats must be made of stronger wood to prevent breakage;
    - Crib hardware must have anti-loosening devices to keep it from coming loose or falling off;
    - Mattress supports must be more durable;
    - Safety testing must be more rigorous.[6]
    - U.S. Consumer Product Safety Commission certified cribs, cradles, bassinets, and Pack 'n Play portable cribs can be used for a safe sleeping environment, with the remaining components of the ABCs of Safe Sleep.

Measures: Healthy People 2020:

Injury and Violence Prevention (IVP)-24: Reduce unintentional suffocation deaths.
IVP-24.2: Reduce unintentional suffocation deaths among infants 0 to 12 months.

Additional resources:

Indiana Department of Child Services
Indiana Government Center South
302 West Washington St, Room E306
Indianapolis, IN 46204
Website: http://www.in.gov/dcs/index.htm

Indiana State Department of Health
2 North Meridian Street
Indianapolis, Indiana 46204

ISDH Maternal and Child Health Division
Phone: (317)233-7940
Email: bfranklin@isdh.IN.gov
Website: http://www.in.gov/isdh/19571.htm

DCS Ombudsman Information (Located at the Indiana Department of Administration)
Phone:317-234-7361
Fax: 317-232-3154
Email: DCSOmbudsman@idoa.in.gov

ISDH Indiana Child Fatality Review Program
Phone: (317)233-1240
Email: GMartin1@isdh.IN.gov
Website: http://www.in.gov/isdh/26349.htm

ISDH Trauma and Injury Prevention Division
Phone: (317)233-7716
Email: Indianatrauma@isdh.IN.gov
Website: http://www.in.gov/isdh/19537.htm

a. Indiana Child Abuse/ Neglect Hotline: 1-800-800-5556
b. Indiana Family Helpline: 1-855-HELP-1ST (1-855-435-7178): Website: http://www.in.gov/isdh/21047.htm
c. Indiana Tobacco Quitline: 1-800-QUIT-NOW (800-784-8669) Website: http://www.in.gov/quitline/

d. Indiana Substance Abuse Treatment for Women: http://www.in.gov/idoc/2966.htm
a. SIDS & Infant Loss Support: 317-924-0825
b. Indiana Perinatal Network: http://www.indianaperinatal.org/?page=MF_Safe_Sleep
c. Indiana Children's Bureau, Inc.: http://www.childrensbureau.org/what-we-do/child-care-development-fund-ccdf
d. American Academy of Pediatrics Policy on Safe Sleep: http://pediatrics.aappublications.org/content/early/2011/10/12/peds.2011-2284.full.pdf+html
e. CDC Sudden Unexpected Infant Death and Sudden Infant Death Syndrome: http://www.cdc.gov/sids/
f. CDC Protect the ones you love: Suffocation: http://www.cdc.gov/safechild/Suffocation/index.html
g. Children's Safety Network: http://www.childrenssafetynetwork.org/injurytopics/safe-sleep
h. Cribs for Kids http://www.cribsforkids.org/
i. First Candle http://www.firstcandle.org/
j. Kids in Danger: http://www.kidsindanger.org/
k. Juvenile Products Manufacturers Association: http://jpma.org/
l. March of Dimes: http://www.marchofdimes.org/baby/safe-sleep-for-your-baby.aspx
m. The Maternal & Child Health Library at Georgetown University: Safe Sleep: http://www.mchlibrary.info/suid-sids/SafeSleep/index.html
n. The National Center for the Review and Prevention of Child Deaths: https://www.childdeathreview.org/
o. Prevent Child Injuries: Safe Sleep Toolkit: http://preventchildinjury.org/resources-3/safe-sleep.aspx
p. Safe Child Program www.cdc.gov/safechild
q. Safe Kids Indiana/ Safe Kids Worldwide: http://www.safekids.org/
r. U.S. Department of Health and Human Services: Safe to Sleep: http://www.nichd.nih.gov/sts/Pages/default.aspx
   What does a safe sleep environment look like? http://ocfs.ny.gov/main/publications/20090306-BTS-English_tearsheet-FINAL.pdf
s. U.S. Consumer Product Safety Commission: http://www.cpsc.gov/

References:

1. National Center for the Review and Prevention of Child Deaths. SIDS/ SUID Fact Sheet. Retrieved from https://www.childdeathreview.org/reporting/sidssuid/
2. Task Force on Sudden Infant Death Syndrome. (2011). Policy statement: SIDS and other sleep-related infant deaths: expansion of recommendations for a safe infant sleeping environment. *Pediatrics,* 128:1030–39
3. Indiana State Department of Health. (2015). Indiana Labor of Love. Retrieved from http://www.in.gov/laboroflove/693.htm
4. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (2015). Retrieved from http://www.cdc.gov/injury/wisqars/fatal.html.
5. Indiana State Department of Health, Epidemiology Resource Center, Data Analysis Team.
6. 6. U.S. Consumer Product Safety Commission (CPSC). A Safer Generation of Cribs: New Federal Requirements. Retrieved from http://www.cpsc.gov//PageFiles/113598/cribrules.pdf

Older Adult Falls

Each year, millions of older adults age 65 years and older fall. Falls are rapid vertical deceleration due to the force of gravity and injury occurs when an individual strikes a surface at the same or lower level. Serious morbidity, including hip fractures and mortality, can occur due to falls, but can be prevented. The pattern of fall-related injury results from several factors, including the distance of the fall, type of landing surface, orientation of falling, and body part that impacts first.[1] The injury severity is a function of the mechanical properties of tissue, the suddenness of impact, the localization of impact, and the manner and amount of energy delivered.[2] Falls from more than 20 feet have historically been triaged to trauma centers per CDC Guidelines for Field Triage of Injured Patients, but even low-level falls can cause serious head injuries and other bodily injuries.[3,4] A host of factors can contribute to a fall. Poor muscle tone, vision problems, medication use, and sedentary lifestyle are the biggest contributors to ground-level and stair falls, and environmental components such as poor lighting and lack of handrails may increase the frequency of falling.[5]

The U.S. Census Bureau currently projects the baby-boom population will total 61.3 million in 2029, when the youngest boomers reach age 65. The aging of the baby boomers creates a dramatic shift in the age composition of the U.S. population. Projections of the entire older population which includes the *pre*-baby-boom cohorts born before 1946 suggest that 71.4 million people will be age 65 or older in 2029.[6] This means that the older adults age 65 and older will make up about 20% of the U.S. population by 2030, up from almost 14% in 2012.[6,7] The proportion of the total U.S. population who are age 65 and older is projected to increase from 13.1 in 2010 to 20.3 in 2030 and to 20.9 in 2050.[8] Falls are a major health problem among older adults. Falls lead to decreased mobility, increased risk of early death, and loss of independence. Falls can also have major psychological and social consequences. Seniors may restrict their activities because of a fear of falling and a loss of self-confidence, which can lead to reduced mobility, fewer social interactions, decreased physical fitness, and reduced quality of life.[9, 10]

How do older adult falls affect the United States?

Fatal data

- Falls are the leading cause of both fatal and non-fatal injuries for older adults age 65 years and older.
- There were 25,464 fatal falls among older adults in the U.S., one fatal fall occurring every 21 minutes.[11]
- About 1,800 older adults living in nursing homes die each year from fall-related injuries.[12]
- From 1999 to 2013, the number of fatal falls among older adults in the U.S. increased by 152% from 10,097 to 25,464. Over the same 15-year period, the fall death rate for older adults increased 96% from 29.0 to 57.0 per 100,000 population.[11]
- More women age 65 and older die from falls compared to men of the same age, although men die at a rate approximately 40% higher than women.[11]
- Fall fatality rates differ by race and ethnicity: older whites are 2.7 times more likely to die from a fall compared to black counterparts and non-Hispanics have higher rates than Hispanics.[11]

Non-fatal data

- Falls can cause moderate to severe injuries, including hip fractures and head traumas.
- In 2013, 2.5 million non-fatal falls among older adults were treated in emergency departments (ED) and more than 734,000 of these injuries resulted in hospitalizations.[11]
- There are more than 258,000 hip fractures each year. The rate for women is almost twice the rate for men and white women have significantly higher hip fracture rates compared to black women.[13]
- By 2030, the number of hip fractures is projected to reach 289,000, an increase of 12% from 2010.[14]
- The number of hip fractures among men is projected to increase 51.8 % while the number among women is projected to decrease 3.5 %.[14]
- Older adults living in nursing homes who fall frequently sustain injuries that result in permanent disability and reduced quality of life. About 10-20% of nursing home falls cause serious injuries and 2-6% cause fractures.[12]

- Muscle weakness and walking or gait problems are the most common causes of falls among nursing home residents, accounting for approximately 24% of the falls in nursing homes.[12]

Cost data

- In 2013, the direct medical costs of falls, adjusted for inflation, totaled $34 billion.[15]
- By 2020, the annual direct and indirect cost of fall injuries is expected to reach $67.7 billion.[15]
- Fall-related injury is one of the 20 most expensive medical conditions among community-dwelling older adults.[16]

How do older adult falls affect Indiana?

- Falls are the leading cause of injury-related ED visits, hospitalization and death for Hoosiers age 65 and older. Nearly 350 older adults died in 2013 from fall-related injury in Indiana, which is a 92.8% increase from 181 fall-related deaths in 1999.[11]
- There were 3,824 fatal falls among older adults in Indiana from 1999 to 2013, for a rate of 31.7 fatal falls per 100,000 population for the 15-year period.[11]
- The rate of fatal falls among older adults increased by 58.1% from 24.1 deaths per 100,000 population in 1999 to 38.1 per 100,000 in 2013.[11]
- In 2013, there were more than 37,000 fall-related ED visits among older adults and 69% of these visits were among women.
- On average, an older adult falls every 15 minutes resulting in a fall-related ED visit.
- Nearly 15 older adult women fall per day resulting in a fall-related hospitalization.
- In 2013, there were more than 5,600 hip fracture hospitalizations among older adults and 73% of these hospitalizations were among women.
- Fall fatalities among older adults result in $38.3 million medical and work loss costs every year.[11]

How do we address this problem?

Policy:

- The **Division of Aging** was created as Indiana's State Unit on Aging in accordance with the Older Americans Act (OAA) and is part of the Family and Social Services Administration. By Indiana statute IC 12-9.1-1-1, the division is granted the legal authority to establish and monitor programs that serve the needs of Indiana seniors. In addition, FSSA's Division of Aging proactively carries out a wide range of functions designed to enhance comprehensive and coordinated community-based systems serving areas throughout Indiana through the following methods: (1) Advocacy; (2)Brokering of services; (3) Coordination; (4) Information sharing; (5) Interagency linkages; (6) Monitoring and evaluation; (7) Planning; and (8)Protective services.
- The American College of Surgeons (ACS) Committee on Trauma supports efforts to promote, enact and sustain policies and legislation that:
    1. Encourage older adult care providers to implement comprehensive fall prevention programming to:
        - Develop community partnerships with community-based centers;
        - Incorporate evidence-based exercise and physical therapy fall prevention program;
        - Collaborate with home-based visiting programs to complete multi-factorial risk assessments that include medication review, assessment of vision, home safety, and balance and gait, and consideration of vitamin D supplementation.
    2. Collaboration with statewide and regional fall prevention coalitions for local networking and resources.
    3. Assess the risk and benefit of anti-platelet and anticoagulation therapies in older adult patients.
    4. Assess the risk of falls in regular practice.[17]

Data collection:

- The ISDH Division of Trauma and Injury Prevention conducts statewide injury surveillance of older adult falls through death certificates, hospitalizations, and ED visits. The **Indiana Trauma Registry** is a repository into which

statewide trauma data has been brought together. Traumatic injuries due to falls are captured in the Indiana Trauma Registry.

- Statewide direction and focus for older adult falls prevention is one of the priority areas outlined in the **Indiana Statewide Trauma System Injury Prevention Plan**.

Interventions:

- The **Centers for Disease Control and Prevention (CDC) STEADI** (Stopping Elderly Accidents, Deaths, and Injuries) tool kit was created with healthcare provider input and describes a physician-delegated approach to incorporating fall prevention in clinical settings. It provides a simple algorithm for screening, assessments, treatment, and follow-up based on the American Geriatric Society's clinical practice guidelines.
- **STEADI Phase One** includes three steps a provider can complete in one visit:
    1. ASK patients if they've fallen in the past year, feel unsteady, or worry about falling.
    2. REVIEW medications and stop, switch, or reduce the dosage of drugs that increase fall risk.
    3. RECOMMEND Vitamin D supplements of at least 800 IU/day with calcium.
        - Website: http://www.cdc.gov/homeandrecreationalsafety/Falls/steadi/index.html
- The **U.S. Preventive Services Task Force** recommends exercise or physical therapy and vitamin D supplements to prevent falls among community-dwelling older adults who are at increased fall-risk.[18]
- The **National Institute on Aging** interventions for the prevention of falls include exercise for balance and strength, monitoring for home and environmental hazards, and regular medical services to ensure optimum vision and hearing and medication management.[19]
- CDC Compendium of Effective Fall Interventions: What works for Community-Dwelling Older Adults, third edition, provides public health organizations and aging services providers with the information to identify effective fall interventions that are most appropriate for their particular needs, resources, and population. This 3rd edition describes single interventions (15 exercise interventions, four home modification interventions, and 10 clinical interventions) and 12 multifaceted interventions (which address multiple risk factors):
    1. **Exercise**:
        - Stay Safe, Stay Active Barnett, et al. (2003)
        - The Otago Exercise Program Campbell, et al. and Robertson, et al.
        - LiFE (Lifestyle approach to reducing Falls through Exercise) Clemson, et al. (2012)
        - Erlangen Fitness Intervention Freiberger, et al. (2007)
        - Senior Fitness and Prevention (SEFIP) Kemmler, et al. (2010)
        - Adapted Physical Activity Program Kovacs, et al. (2013)
        - Tai Chi: Moving for Better Balance Li, et al. (2005)
        - Australian Group Exercise Program Lord, et al. (2003)
        - Yaktrax® Walker McKiernan (2005)
        - Veterans Affairs Group Exercise Program Rubenstein, et al. (2000)
        - Falls Management Exercise (FaME) Intervention Skelton, et al. (2005)
        - Music-Based Multitask Exercise Program Trombetti, et al. (2011)
        - Central Sydney Tai Chi Tria l Voukelatos, et al. (2007)
        - Simplified Tai Chi Wolf, et al. (1996)
        - Multi-target Stepping Program Yamada, et al. (2013)
    2. **Home Modification Interventions**
        - The VIP Trial Campbell, et al. (2005)
        - Home Visits by an Occupational Therapist Cumming, et al. (1999)
        - Falls-HIT (Home Intervention Team) Program Nikolaus, et al. (2003)
        - Home Assessment and Modification Pighills, et al. (2011)
    3. **Clinical**
        - Three-Year Study of Vitamin D (Cholecalciferol) Plus Calcium Bischoff-Ferrari, et al. (2006)
        - Psychotropic Medication Withdrawal Campbell, et al. (1999)
        - Active Vitamin D (Calcitriol) as a Falls Intervention Gallagher, et al. (2007)

- VISIBLE (Visual Intervention Strategy Incorporating Bifocal and Long-distance Eyewear) Study Haran, et al. (2010)
- Vitamin D to Prevent Falls After Hip Fracture Harwood, et al. (2004)
- Cataract Surgery Harwood, et al. (2006)
- Pacemaker Surgery Kenny, et al. (2001)
- Study of 1000 IU Vitamin D Daily for One Year Pfeifer, et al. (2009)
- Quality Use of Medicines Program Pit, et al. (2007)
- Podiatry & Exercise Intervention Spink, et al. (2011)

4. **Multifaceted Interventions**
    - Stepping On Clemson, et al. (2004)
    - PROFET (Prevention of Falls in the Elderly Trial) Close, et al. (1999)
    - Accident & Emergency Fallers Davison, et al. (2005)
    - The NoFalls Intervention Day, et al. (2002)
    - The SAFE Health Behavior and Exercise Intervention Hornbrook, et al. (1994)
    - Falls Team Prevention Program Logan, et al. (2010)
    - KAAOS (Falls and Osteoporosis Clinic Palvanen, et al. (2014)
    - Multifactorial Fall Prevention Program Salminen, et al. (2009)
    - Nijmegen Falls Prevention Program (NFPP) for adults with Osteoporosis Smulders, et al. (2010)
    - The Winchester Falls Project Spice, et al. (2009)
    - Yale FCSIT (Frailty and Injuries: Cooperative Studies of Intervention Techniques) Tinetti, et al. (1994)
    - A Multifactorial Program Wagner, et al. (1994)

- CDC's *Preventing Falls: How to Develop Community-based Fall Prevention Programs for Older Adults* provides organizations with the building blocks to implement effective fall prevention programs. Website: http://www.cdc.gov/HomeandRecreationalSafety/Falls/community_preventfalls.html
- CICOA Aging & In-Home Solutions Solutions Guide: A Resource for Seniors, People with Disabilities and Family Caregivers 2015-2016 Edition. Website: http://cicoa.org/solutions-guide/.

Collaborations:

- **Outreach Services of Indiana** is a project of the Family and Social Services Administration (FSSA).Outreach provides staff training, technical assistance, consultation and backup service provision throughout Indiana to improve the life and support individuals with developmental disabilities and their families, service providers, and case managers. Adults and children who live in Indiana and have an intellectual or developmental disability qualify for Outreach Services at no cost. Anyone including a family member can refer someone to Outreach Services.
- **Indiana Fall Prevention Coalition** is part of the Falls Free Initiative, a national collaborative effort led by the National Council on Aging, to educate the public and support and expand evidence-based programs and interventions that help communities, states, federal agencies, nonprofits, businesses, and older adults and their families prevent falls. Website: http://infallprevention.org/.

Programs:

- The ISDH Health Care Quality Resource Center's **Falls Prevention Resource Center** is aimed towards preventing falls in health care facilities providing care for patients and residents. Website: http://www.state.in.us/isdh/25376.htm.
- The Indiana Family and Social Services Administration's **Division of Disability and Rehabilitative Services** (DDRS) works to provide continuous support and life-long commitment for citizens in need of disability and rehabilitative supports in the State of Indiana. The **Bureau of Quality Improvement Services** (BQIS) monitors services to individuals by organizations and providers. BQIS is funded by or funded under the authority of the DDRS and organizations/providers that have entered into a provider agreement under IC 12-15-11 to provide Medicaid in-home waiver services. Website: http://www.in.gov/fssa/ddrs/3341.htm.
- **Title III-D Disease Prevention and Health Promotion** services are provided through Indiana's 16 Area Agencies on Aging. Services provide information and support to older individuals with the intent to assist them in avoiding

illness and improving health status. Services are provided at multipurpose senior community centers, congregate meal sites, home-delivered meals programs, senior high-rises, retirement communities or other appropriate sites. Injury Control services available under Title II-D include education materials, sessions, or activities aimed at helping clients prevent falls and injury. These can include fall prevention exercise classes and methods of "fall proofing" the client's home. **Indiana's Area Agencies on Aging** provide case management, information, and referrals to various services for persons who are aging or developmentally disabled. To apply for services, or to report suspected Medicare fraud or abuse, contact the AAA or call toll free 1-800-986-3505. Website: http://www.in.gov/fssa/da/3478.htm.

- The **Indiana Healthcare Leadership Conference** is an initiative of the ISDH and the March 2015 conference focused on Falls Prevention. The conferences are intended to bring together statewide healthcare leaders to promote important quality of care issues. This conference includes providers from long term care, state surveyors, healthcare organizations, and individuals with significant interests in health care.

Measures: Healthy People 2020:

Injury and Violence Prevention (IVP)-23: Prevent an increase in fall-related deaths.
IVP-23.1: Prevent an increase in fall-related deaths among all persons.
IVP-23.2: Prevent an increase in fall-related deaths among adults aged 65 years and older.

Additional resources:

FSSA Division of Aging
Phone: 1-888-673-0002
Website: http://www.in.gov/fssa/da/3466.htm

ISDH Trauma and Injury Prevention Division
Phone: (317)233-7716
Email: Indianatrauma@isdh.IN.gov
Website: http://www.in.gov/isdh/19537.htm

Long Term Care State Ombudsman
Phone Toll Free: 1-800-622-4484 or 317-232-7134
Email: Arlene.Franklin@fssa.IN.gov

a. ISDH Falls Prevention Resource Center: http://www.state.in.us/isdh/25376.htm
b. Indiana Family and Social Services Administration, Division of Disability and Rehabilitative Services (DDRS): http://www.in.gov/fssa/ddrs/3341.htm
c. Indiana Family and Social Services Administration, Quality Improvement: http://www.in.gov/fssa/ddrs/4247.htm
d. Indiana Adult Protective Services (APS): State Hotline Toll Free: 1-800-992-6978
e. Indiana Fall Prevention Coalition: http://infallprevention.org/
f. CICOA Aging & In-Home Solutions: http://cicoa.org/
g. CDC Compendium of Effective Fall Interventions: What Works for Community-Dwelling Older Adults, 3rd Edition: http://www.cdc.gov/homeandrecreationalsafety/pdf/CDC_Falls_Compendium-2015-a.pdf
h. CDC Preventing Falls Among Older Adults: http://www.cdc.gov/Features/OlderAmericans/
i. CDC *Preventing Falls: How to Develop Community-based Fall Prevention Programs for Older Adults* http://www.cdc.gov/HomeandRecreationalSafety/Falls/community_preventfalls.html
j. Fall Prevention Center of Excellence: http://www.stopfalls.org
k. National Center for Injury Prevention and Control, CDC: http://www.cdc.gov/HomeandRecreationalSafety/Falls/index.html
l. National Council on Aging: http://www.ncoa.org/improve-health/falls-prevention/
m. National Institute on Aging: http://www.nia.nih.gov/
n. The State of Aging and Health in America 2013:http://www.cdc.gov/aging/pdf/state-aging-health-in-america-2013.pdf
o. U.S. Department of Health and Human Services Administration on Aging: http://www.aoa.gov/AoA_programs/
p. U.S. Preventive Services Task Force Recommendations for Prevention of Falls in Community-Dwelling Older Adults: http://annals.org/article.aspx?articleid=1305528

References:

1. Schermer, C.R. (2002). Injuries Due to Falls from Heights. American College of Surgeons Committee on Trauma. Retrieved from https://www.facs.org/quality-programs/trauma/ipc/falls

2. Committee on Injury and Poisoning Prevention, American Academy of Pediatrics and Widome, M.D. (Ed.). (1997).*Injury prevention and control for children and youth* (3rd ed.). Elk Grove Village, IL: American Academy of Pediatrics.
3. Murray J.A., Chen D., Velmahos .G.C., et al. (2000). Pediatric falls: Is height a predictor of injury and outcome? *Am Surg,* 66(9):863-865.
4. Kennedy R.L., Grant P.T. & Blackwell D. (2001). Low-impact falls: Demands on a system of trauma management, prediction of outcome, and influence of comorbidities. *J Trauma,* 51(4):717-724.
5. Centers for Disease Control and Prevention. (2002). Injury Research Agenda: Preventing Injuries at Home and in the Community. National Center for Injury Prevention and Control. Retrieved from www.cdc.gov/ncipc/pub_res/research_agenda/04.
6. Pollard, K. & Scommegna, P. (2014). Just How Many Baby Boomers Are There? Population Reference Bureau. Retrieved from http://www.prb.org/Publications/Articles/2002/JustHowManyBabyBoomersAreThere.aspx
7. Vincent, G. K. & Velkoff, V.A. (2010). The Next Four Decades: The Older Population in the United States: 2010 to 2050 (Population Estimates and Projections). Current Population Reports, US Census Bureau. Retrieved from http://www.census.gov/prod/2010pubs/p25-1138.pdf
8. Colby, S.L. & Ortman, J.M. (2014). The Baby Boom Cohort in the United States, 2012 to 2060. Current Population Reports, US Census Bureau. Retrieved from http://www.census.gov/prod/2014pubs/p25-1141.pdf
9. Bell, A.J., Talbot-Stern, J.K., Hennessy, A. (2000). Characteristics and outcomes of older patients presenting to the emergency department after a fall: a retrospective analysis. *Medical Journal of Australia,* 173(4):176–7.
10. Vellas, B.J., Wayne, S.J., Romero, L.J., Baumgartner, R.N. & Garry, P.J. (1997). Fear of falling and restriction of mobility in elderly fallers. *Age and Ageing,* 26:189–193.
11. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (2015). Retrieved from http://www.cdc.gov/injury/wisqars/fatal.html.
12. Rubenstein, L.Z., Robbins, A.S., Schulman, B.L., Rosado, J., Osterweil, D., & Josephson, K.R. (1988). Falls and instability in the elderly. *Journal of the American Geriatrics Society*, 36:266–78.
13. National Hospital Discharge Survey (NHDS), National Center for Health Statistics. Retrieved from www.cdc.gov/nchs/hdi.htm.
14. Stevens J.A. & Rudd, R.A. (2013). The impact of decreasing U.S. hip fracture rates on future hip fracture estimates. *Osteoporosis International,* DOI 10.1007/s00198-013-2375-9.
15. Stevens, J.A., Corso, P.S., Finkelstein, E.A. & Miller, T.R. (2006). The costs of fatal and nonfatal falls among older adults. *Injury Prevention*, 12:290–5.
16. Carroll, N.V., Slattum, P.W. & Cox, F.M. (2005). The cost of falls among the community-dwelling elderly. *Journal of Managed Care Pharmacy,* 11(4):307-16.
17. American College of Surgeons Committee on Trauma (2014). Statement on Older Adult Falls and Falls Prevention. Retrieved from https://www.facs.org/about-acs/statements/73-older-falls
18. U.S. Preventive Services Task Force (2012). Prevention of Falls in Community-Dwelling Older Adults: U.S. Preventive Services Task Force Recommendation Statement. *Ann Intern Med,* 157(3):197-204. doi:10.7326/0003-4819-157-3-201208070-00462
19. National Institute on Aging. (2009). *AgePage: Falls and Fractures*. Bethesda, MD: U.S. Department of Health and Human Services. Retrieved from www.nia.nih.gov/health/publication/falls-and-fractures.

Sexual Violence

Sexual violence (SV) is any sexual act that is perpetrated against someone's will. Sexual violence encompasses a range of offenses, including a completed nonconsensual sex act (i.e., rape), an attempted nonconsensual sex act, abusive sexual contact (i.e., unwanted touching), and non-contact sexual abuse (e.g., threatened sexual violence, exhibitionism, verbal sexual harassment). It includes: forced or alcohol/ drug-facilitated penetration of a victim; forced or alcohol/drug-facilitated incidents in which the victim was made to penetrate a perpetrator or someone else; non-physically pressured unwanted penetration; intentional sexual touching; or non-contact acts of a sexual nature. All types involve victims who do not consent, or who are unable to consent or refuse to allow the act. Sexual violence can also occur when a perpetrator forces or coerces a victim to engage in sexual acts with a third party.[1] Sexual violence can be committed by anyone:

- A current or former intimate partner,
- A family member,
- A person in position of power or trust,
- A friend or acquaintance, or
- A stranger, or someone known only by sight.

A consistent definition of SV is needed to monitor the prevalence of sexual violence and examine trends over time. Primary prevention of sexual violence is defined as: "Approaches that take place before sexual violence has occurred to prevent initial perpetration or victimization."[2] Sexual violence is a major public health, human rights, and social justice issue.

How does sexual violence affect the United States?

- Sexual violence is a social phenomenon that permeates all of society. No one is immune from its impact. According to the Centers for Disease Control and Prevention's (CDC) National Intimate Partner and Sexual Violence Survey (NISVS):
  - One in five women and nearly one in 59 men have experienced an attempted or completed rape in their lifetime, defined as penetrating a victim by use of force or through alcohol/drug facilitation.[3]
  - Approximately one in 15 men (6.7%) reported that they were made to penetrate someone else during their lifetime.[3]
  - An estimated 12.5% of women and 5.8% of men reported sexual coercion in their lifetime (i.e., unwanted sexual penetration after being pressured in a nonphysical way).[3]
  - More than one-quarter of women (27.3%) and approximately one in nine men (10.8%) have experienced some form of unwanted sexual contact in their lifetime.[3]
  - Nearly one-third of women (32.1%) and nearly one in eight men (13.3%) experienced some type of noncontact unwanted sexual experience in their lifetime.[3]
  - The majority of victims of all types of sexual violence knew their perpetrators. It is estimated 46.7% of female victims of rape had at least one perpetrator who was an acquaintance, and an estimated 45.4% of female rape victims had at least one perpetrator who was an intimate partner.[3]
  - Twenty-nine percent of male victims of rape reported their perpetrators were an intimate partner.[3]
  - More than half of women who experienced alcohol/drug-facilitated penetration were victimized by an acquaintance.[3]
- Girls who are sexually abused are more likely to:
  - Suffer physical violence and sexual re-victimization,
  - Engage in self-harming behavior, and
  - Be a victim of intimate partner violence later in life.[4]
- Many sexual violence survivors can experience physical injury, mental health consequences such as depression, anxiety, low self-esteem, and suicide attempts, and other health consequences such as gastrointestinal disorders, substance abuse, sexually transmitted diseases, and gynecological or pregnancy complications. These severe consequences can lead to hospitalization, disability, or death.[5]

How does sexual violence affect Indiana?

- The reported lifetime prevalence of rape by any perpetrator, or the proportion of residents in Indiana who have experienced this type of sexual violence, is 20.4%, with an estimated 505,000 victims. [5]
- The reported lifetime prevalence of sexual violence other than rape by any perpetrator, or the proportion of residents in Indiana who have experienced this type of sexual violence, is 43.9%, with an estimated 1,091,000 victims.[5]
- In Indiana in 2012, an estimated 125,000 Hoosiers reported unwanted sexual advances or forced sexual activity.[6]
- This startling trend is not restricted to adults. Indiana's youth are victims at high rates as well. According to the 2011 **Youth Risk Behavior Survey (YRBS)**, 14.5% of Hoosier high school-aged girls and 5.2% of Hoosier high school-aged boys report being physically forced to have unwanted sexual intercourse.[7]

How do we address this problem?

The most common sexual violence prevention strategies currently focus on the victim, the perpetrator, or bystanders. However, other promising prevention strategies include addressing social norms, policies, or laws in communities to reduce the perpetration of sexual violence across the state.

Policy:

- Congress passed the Violence Against Women Act in 1994. This landmark legislation established the Rape Prevention and Education (RPE) program at CDC. The goal of the RPE program is to strengthen sexual violence prevention efforts at the local, state, and national level. It operates in all 50 states, the District of Columbia, Puerto Rico, and four U.S. territories. **Indiana's Rape Prevention and Education (RPE) Program** is administered through the **ISDH Office of Women's Health (OWH)**.
- Per Indiana Code 12-18-8-6, a county may establish a **county domestic violence fatality review team** for the purposes of reviewing a death resulting from or in connection with domestic violence (defined in IC 34-6-2-34.5).
- Emergency Nurses Association's Position Statement on the **Care of Sexual Assault and Rape Victims in the ED**: https://www.ena.org/SiteCollectionDocuments/Position%20Statements/SexualAssaultRapeVictims.pdf.

Data collection:

- ISDH collects sexual violence data through multiple avenues: the Uniform Crime Report, the Youth Risk Behavioral Survey, and the Behavioral Risk Factor Survey.
    - The **Uniform Crime Report (UCR)**, a national source of crime data compiled by the Federal Bureau of Investigation (FBI), is used to gather data reported by Indiana's law enforcement agencies.
    - The **Youth Risk Behavioral Survey (YRBS)** is a national school-based survey conducted at the state level and analyzed by the Centers for Disease Control and Prevention (CDC). The YRBS captures health data on youth, grades 9-12. Indiana's YRBS includes questions pertaining to physically forced or coerced sexual intercourse.
    - The **Behavioral Risk Factor Survey (BRFS)** is a national telephone health survey conducted at the state level and analyzed by the CDC. The BRFS captures health data on adults 18 years of age and older. Indiana's BRFS has questions pertaining to sexual violence victimization.
- A consistent definition is needed to monitor the prevalence of sexual violence and examine trends over time and inform prevention and intervention efforts. The CDC developed ***Sexual Violence Surveillance: Uniform Definitions and Recommended Data Elements*** to create consistent definitions to help in determining the magnitude of sexual violence and aids in comparing the problem across jurisdictions. Consistency also allows researchers to measure risk and protective factors for victimization in a uniform manner. Website: http://www.cdc.gov/violenceprevention/pdf/sv_surveillance_definitionsl-2009-a.pdf.

Reporting:

- Suspected child abuse and neglect, including sexual abuse, should be reported to the **Indiana Department of Child Services (DCS)** Abuse/ Neglect Hotline, which is a 24-hour, 7-day a week service line: **1-800-800-5556**. There is a local number for every county listed at the DCS website: http://www.in.gov/dcs/2372.htm.
- **If you or someone you know is a victim of sexual violence:**
    - Contact the Rape, Abuse, and Incest National Network (RAINN) hotline at 1-800-656-HOPE (1-800-656-4673). Help is free, confidential, and available 24/7. Website: http://www.rainn.org/get-information
    - Contact your local emergency services at 9-1-1.

Programs:

- Primary prevention of sexual violence targets activities that take place before sexual violence has occurred. **Prevention of sexual violence on campus** can include the following activities: [8]
    a. Identifying cultural and social norms that support sexual violence;[8]
    b. Strengthening sense of community;[8]
    c. Targeting entire community and engage the campus community;[8]
    d. Linking sexual violence to alcohol use/abuse in campaigns and messaging; [8] and
    e. Using peer educators and leaders to spread the word about preventing sexual violence and to improve bystander efficacy and willingness to intervene.[8]
- OWH recognized the significant effect that sexual assault has had on the overall health of women in the state. Since 2008, OWH has administered the federally funded **RPE program** to help reduce and eliminate the incidence of sexual violence across the state. ISDH approaches sexual violence from a public health perspective, recognizing that primary prevention, including efforts to change cultural norms, behaviors, and practices, is essential to create a state free from violence. Public health is concerned with community and population-based approaches rather than those focused on the individual, and uses data-informed, evidence-based approaches. All sexual violence primary prevention program planning and implementation is rooted in a four-step practice in the public health approach.
- The ISDH OWH chairs and oversees the work of the **Sexual Violence Primary Prevention Council**.
- Indiana has developed its first comprehensive plan to address sexual violence across the state, entitled **Indiana's Commitment to Primary Prevention: A state free of sexual violence 2010-2015**.
- **Indiana- Multicultural Efforts to End Sexual Assault (MESA)** is a statewide program focused on including traditionally underserved and underrepresented critical populations in sexual violence prevention efforts. The agency works to organize and mobilize local communities in culturally relevant primary prevention strategies to improve the quality of life for individuals and families. For community organizations seeking to work cross-culturally in their prevention efforts, MESA provides training on outreach strategies. MESA is mobilizing Native American, Latina, immigrant, African American/Black, Asian, LGBTQ communities and college campuses in sexual violence prevention efforts. MESA is housed in the College of Agriculture at Purdue University.
- MESA, with the support of the ISDH, hosted a cultural competency workshop for medical students, staff, and faculty at the Indiana University School of Medicine in Indianapolis in March, 2014. The workshop, "LGBTQ+ Affirming Health Care: Understanding LGBTQ+ Specific Needs in Health Care," highlighted the need for cultural competency when dealing with sexual violence issues within the LGBTQ+ population. Working with medical students is an exceptionally effective method of sexual violence primary prevention because it changes the culture of medicine and health care.
- **April is Sexual Assault Awareness Month**, with the goal to raise public awareness about sexual violence and to educate communities on how to prevent it.

Measures: Healthy People 2020:

Injury and Violence Prevention (IVP)-40 (Developmental): Reduce sexual violence.
IVP-40.1(Developmental): Reduce rape or attempted rape.

IVP-40.2(Developmental): Reduce abusive sexual contact other than rape or attempted rape.
IVP-40.3(Developmental): Reduce non-contact sexual abuse.

Additional resources:

Indiana State Department of Health
Office of Women's Health
2 N. Meridian Street, Section 3M
Indianapolis, Indiana 46204
http://www.state.in.us/isdh/18061.htm

a. ISDH Sexual Violence Primary Prevention Program: http://www.state.in.us/isdh/23820.htm
b. Indiana Coalition Against Domestic Violence: http://www.icadvinc.org/
c. Stand 4 Respect: http://www.stand4respect.org/
d. Indiana Criminal Justice Institute: http://www.in.gov/cji/index.htm
e. Domestic Violence Network of Greater Indianapolis- www.dvnconnect.org
f. Emergency Nurses Association (ENA)- Indiana Chapter Forensic Nursing- http://www.indianaena.org/forensic-home/
g. CDC Sexual Violence: http://www.cdc.gov/ViolencePrevention/sexualviolence/index.html
h. CDC Systematic Review of Primary Prevention Strategies for Sexual Violence Perpetration: http://www.sciencedirect.com/science/article/pii/S1359178914000536
i. Men Can Stop Rape: http://www.mencanstoprape.org/
j. Men Stopping Violence: http://www.menstoppingviolence.org/
k. National Alliance to End Sexual Violence: http://www.endsexualviolence.org/
l. National Center on Domestic and Sexual Violence: http://www.ncdsv.org/
m. National Center for Victims of Crime: http://www.victimsofcrime.org/
n. National Sexual Violence Resource Center: http://www.nsvrc.org
o. Not Alone: https://www.notalone.gov/
p. Prevent Connect: http://www.preventconnect.org/
q. Rape, Abuse and Incest National Network Hotline: https://rainn.org/ or (800) 656-HOPE
r. Rape Prevention and Education (RPE) Program: http://www.cdc.gov/violenceprevention/rpe/index.html
s. Violence Against Women Network (VAWnet): www.vawnet.org
t. United States Department of Justice Office on Violence Against Women: http://www.justice.gov/ovw

References:

1. Basile, K.C., Smith, S.G., Breiding, M.J., Black, M.C. & Mahendra, R.R. (2014). Sexual violence surveillance: uniform definitions and recommended data elements version 2.0. Atlanta: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.
2. Centers for Disease Control and Prevention. (2004). Sexual Violence Prevention: Beginning the Dialogue." Retrieved from http://www.cdc.gov/violenceprevention/pdf/svprevention-a.pdf
3. Breiding, M.J., Smith, S.G., Basile, K.C., Walters, M.L., Chen, J. & Merrick, M.T. (2014). Prevalence and Characteristics of Sexual Violence, Stalking, and Intimate Partner Violence Victimization—National Intimate Partner and Sexual Violence Survey, United States, 2011. *MMWR*, 63(SS-8): 1-18.
4. Wilkins, N., Tsao, B., Hertz, M., Davis, R. & Klevens, J. (2014). Connecting the Dots: An Overview of the Links Among Multiple Forms of Violence. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention Oakland, CA: Prevention Institute.
5. Black, M.C., Basile, K.C., Breiding, M.J., Smith, S.G., Walters, M.L., Merrick, M.T., Chen, J. & Stevens, M.R. (2011). The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 Summary Report. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.
6. Indiana State Department of Health (2014). Behavior Risk Factor Surveillance System, 2012.
7. Indiana State Department of Health, Division of Maternal and Child Health (2012). Youth Risk Behavior Surveillance, 2011.
8. American College Health Association. (2008). Shifting the Paradigm: Primary Prevention of Sexual Violence Toolkit, 2008. Retrieved from http://www.acha.org/sexualviolence/docs/ACHA_PSV_toolkit.pdf

Suicide Prevention

Suicide is a major global and national public health issue, with devastating effects on individuals, families, and communities. A **suicide** is a death caused by self-directed (self-inflicted) injurious behavior with any intent to die as a result of the behavior. Suicides only represent a portion of the total impact of suicidal behavior. Non-fatal suicide thoughts and behaviors include attempts and ideation. A **suicide attempt** is a non-fatal self-directed (self-inflicted) potentially injurious behavior with any intent to die as a result of the behavior. **Suicidal ideation** includes thinking about, considering, or planning for suicide. Substantially more are hospitalized as a result of non-fatal suicidal behavior and even more are treated in emergency departments (EDs) or not treated at all.[1] Many more people struggle with thoughts of suicide, causing the magnitude of the problem to be far greater than what current statistics indicate. The effects of suicide are not limited to individuals; estimates suggests that for each death by suicide 115 people are exposed to suicide (know someone who died by suicide), and among these, 25 experience a major life disruption (known as **loss survivors** [those bereaved of suicide]).[4] Extrapolating these estimates indicates there are more than one million loss survivors a year. With the 825,832 suicides from 1989 through 2013, the number of survivors of suicide loss in the U.S. is 20.65 million, or one out of every 15 Americans in 2013.[5]

Suicide warning signs include talking about a specific suicide plan, losing interest in things and activities, and acting irritable or agitated.[2] While each suicide or attempted suicide can be as unique as the person who experiences it, there are ways to address the multiple social, emotional, environmental, and health factors involved. Suicide prevention efforts must involve different strategies requiring a wide range of partners and draw on a diverse set of resources and tools.[3] Protective factors play an important role in understanding and preventing suicide. Protective factors include an individual's coping and problem solving skills, reasons for living (e.g., children in the home), and moral/religious objections to suicide. A person's relationships, such as connectedness to individuals, family, community and social institutions, and supportive relationships with health care providers contribute to mental health status. Safe and supportive school and community environments and sources of continued care after psychiatric hospitalization are community-level protective factors. Society plays a vital role in protecting individuals from suicide, including availability of physical and mental health care and restrictions to lethal means of suicide.[2] Understanding the measures or factors that safeguard against suicide is essential to preventing suicide, yet they may not entirely remove the risk.

How does suicide affect the U.S.?

Fatal data

- Suicide is the 10th leading cause of death in the U.S., resulting in 41,149 deaths in 2013.[6]
- Nearly 113 suicides occur per day, which is an average of one person dying every 12.8 minutes.[6]
- The highest rate is among 50-54 year olds, with 20.44 suicides per 100,000 population.[6]
- Suicide is the second leading cause of death among adolescents and young adults ages 15-29 years.[6]
- In 2013, 32,055 men died compared to 9,094 women, which equates to 3.5 males die by suicide for every one female who dies by suicide. The suicide death rate for men is 3.7 times greater compared to that of women (20.2 vs. 5.5 per 100,000 population).[6]
- From 1999 to 2013, the number of deaths by suicide in the U.S. increased by 41% from 29,199 to 41,149. Over the same 15-year period, the suicide death rate increased 23.8% from 10.5 to 13.0 per 100,000 population.[6]
- There were 1,719 suicides occurring in at workplace between 2003 and 2010. Workplace suicide rates were found to be highest for men, workers aged 65–74 years, those in protective service occupations, and those in farming, fishing, and forestry.[7]

Non-fatal data

- There were 494,169 non-fatal self-harm injury-related hospitalization and ED visits in 2013.[6]
- In 2013, an estimated 9.3 million adults aged 18 or older had serious thoughts of suicide in the past year, 2.7 million adults made suicide plans in the past year, and 1.3 million adults attempted suicide in the past year.[5,8]

- There were three female suicide attempts for each male attempt.[5]
- It is estimated there are 25 suicide attempts for every death by suicide, and 100-200 attempts for every one death among 15-24 year olds and four suicide attempts for every death for older adults.[5]

Cost data

- Suicide deaths resulted in $44.6 billion in combined medical and work loss costs in 2010. The average cost per death in medical expenses and lost productivity was nearly $1.2 million.[9]

How does suicide affect Indiana?

- In 2013, 937 suicides occurred in Indiana, making suicide the 11th leading cause of death among Hoosiers. There were 190 suicides among 45-54 year olds, which was the age group with the greatest number of deaths for men and women.
- Indiana had the 28th highest suicide rate in the U.S. with 14.4 per 100,000 in 2013, which is greater than the national average and the Midwest average.[5,6]
- In 2013 there were 2,352 non-fatal self-Inflicted Injury-related hospitalizations, of which 93% (2190) were due to poisoning.
- Adults age 25-34 had the greatest number of non-fatal self-Inflicted Injury-related hospitalizations, followed by 35-44 year olds.
- In 2013, there were 5,177 non-fatal self-inflicted injury related ED visits of which 62.8% (3,255) were due to poisoning.
- Adults age 25-34 had the greatest number of non-fatal self-inflicted injury-related ED visits, followed by 15-19 year olds.
- Suicide deaths resulted in $1.02 billion in combined medical and work loss costs in 2010. The average cost per death in medical expenses and lost productivity was approximately $1.2 million.[9]

How do we address this problem?

Policy:

- Effective July 1, 2013, per IC 20-28-5-3, the Indiana Department of Education (DOE) may not issue an initial teaching license (includes instructional, student services and administrative licenses) at any grade level to an applicant for an initial teaching license unless the applicant shows evidence that the applicant has successfully completed education and training on the prevention of child suicide and the recognition of signs that a student may be considering suicide.
- **Local child fatality review (CFR)** Teams, per IC 16-49-3-3, shall review the death of a child that occurred in the area served by the local child fatality review team if: 1) the death of the child is sudden, unexpected, unexplained, or assessed by the DCS for alleged abuse or neglect that resulted in the death of the child, or 2) the coroner in the area served by the local child fatality review team determines that the cause of the death of the child is undetermined or the result of a homicide, **suicide**, or accident.
- Per Indiana Code 12-18-8-6, a county may establish a **county domestic violence fatality review team** for the purpose of reviewing a death resulting from or in connection with domestic violence, including if the manner of death is suicide and the deceased individual was a victim of an act of domestic violence (defined in IC 34-6-2-34.5).

Data collection:

- CDC recently released *Self-Directed Violence Surveillance: Uniform Definitions and Recommended Data Elements, version 1.0,* which promotes and improves the ability of individuals and organizations to gather self-directed violence surveillance data. Website: http://www.cdc.gov/ViolencePrevention/pub/selfdirected_violence.html

- CDC updated the Web-based Injury Statistics Query and Reporting System (WISQARS) to include data from the National Violent Death Reporting System (NVDRS). WISQARS is an interactive, online database that provides fatal and non-fatal injury data from a variety of sources. Website: http://www.cdc.gov/injury/wisqars/nvdrs.html
- Indiana is one of 32 states to receive funding for the Centers for Disease Control (CDC) Collecting Violent Death Data Using the National Violent Death Reporting System (NVDRS). The purpose of the funding is to improve the planning, implementation, and evaluation of violence prevention programs. The grant will be administered by the State Department of Health's Division of Trauma and Injury Prevention. The **Indiana Violent Death Reporting System (INVDRS)** will gather vital records data, law enforcement records, and coroner reports into one central web-based registry in order to better understand the circumstances of violent deaths, including homicides, **suicides**, undetermined intent deaths, and unintentional firearm deaths for the purposes of prevention.
- The **Indiana Child Fatality Review Program** attempts to better understand how and why children die, take action to prevent other deaths, and improve the health and safety of our children. Each local child fatality review team will be made up of coroner/deputy coroner, a pathologist, and pediatrician or family practice physician, and local representatives from law enforcement, the local health department, Indiana Department of Child Services' (DCS), emergency medical services, a school district within the region, fire responders, the prosecuting attorney's office, and the mental health community. The teams are required to review all deaths of children under the age of 18 that are sudden, unexpected or unexplained, all deaths that are assessed by DCS, and all deaths that are determined to be the result of homicide, **suicide**, accident, or are undetermined.
- The ISDH Division of Trauma and Injury Prevention conducts statewide injury surveillance through death certificates, hospitalizations, and ED visits. The **Indiana Trauma Registry** is a repository into which statewide trauma data has been brought together to support three foundational activities: identification of the trauma population, statewide process improvement activities, and research.
- Statewide direction and focus for violence prevention, including suicide prevention, is one of the priority areas outlined in the **Indiana Statewide Trauma System Injury Prevention Plan**.

Interventions:

Crisis Hotlines:

- **National Suicide Prevention LifeLine**: 1-800-273-TALK (1-800-273-8255)
- **Teen Suicide Hotline:** 1-800-SUICIDE (1-800-784-2433)
- **Mental Health America of Greater Indianapolis:** 317-251-7575 Or Text CSIS to 839863
- **Community Health Network 24-hour crisis line:** 1-800-662-3445 Or Text 'HELPNOW' to 20121

Peer Support Groups:

- Active Minds: www.activeminds.org/
- American Foundation for Suicide Prevention - Indiana Support Groups: www.afsp.org/index.cfm?fuseaction=home.viewPage&page_id=9DA567C3-918C-589E-74AE34A3B0484E2D
- Depression & Bipolar Support Alliance: www.dbsalliance.org
- The National Mental Health Consumers' Self-Help Clearinghouse: www.mhselfhelp.org
- The National Empowerment Center: www.power2u.org
- Directory of Consumer-Run State-Wide Organizations: www.power2u.org/consumerrun-statewide.html
- National Consumer Supporter Technical Assistance Center: www.ncstac.org
- National Coalition of Mental Health Consumer/Survivor Organizations: http://www.ncmhr.org
- STAR Center: www.consumerstar.org
- To Write Love on Her Arms: www.twloha.com/index.php
- Alliance of Hope for Suicide Survivors: www.allianceofhope.org
- Friends for Survival: www.friendsforsurvival.org
- HEARTBEAT: Grief Support Following Suicide: http://heartbeatsurvivorsaftersuicide.org/

- Suicide Aftercare Association's **Survivors of Suicide Support Groups** for suicide loss survivors (friends and family left behind after a suicide) exist across Indiana. The support groups also advocate for education and prevention of suicide. Website: http://www.suicideaftercare.org/indiana.html.
- Preventing Suicide: How to Start a Survivors' Group, from the Department of Mental Health and Substance Abuse at the World Health Organization, contains material to start a self-help support group for survivors of suicide.

Collaborations & Partnerships:

- The Family and Social Services Administration (FSSA) Division of Mental Health and Addiction (DMHA) facilitate the **State of Indiana Suicide Prevention Task Force** and is charged with developing a **state suicide prevention plan**. This task force is comprised of representatives from 10 organizations, including membership from other state agencies such as the ISDH and the Indiana Department of Education, in addition to community organizations whose focus is on providing mental health services and suicide prevention efforts. Website: http://www.in.gov/issp/files/plan.pdf.
- **Zero Suicides for Indiana Youth Initiative** is a comprehensive early intervention and suicide prevention program that will train healthcare and youth-serving organizations to identify and refer at-risk youth. Community Health Network received a Substance Abuse Mental Health Services Administration (SAMHSA) grant to expand and accelerate this program. Website: http://www.ecommunity.com/s/behavioral-health/zero-suicides/.

Programs & Education:

- Warning signs: The following are some of the signs you might notice in yourself or a friend that may be reason for concern.
  - Talking about wanting to die or to kill oneself
  - Looking for a way to kill oneself, such as searching online or buying a gun
  - Talking about feeling hopeless or having no reason to live
  - Talking about feeling trapped or in unbearable pain
  - Talking about being a burden to others
  - Increasing the use of alcohol or drugs
  - Acting anxious or agitated; behaving recklessly
  - Sleeping too little or too much
  - Withdrawing or feeling isolated
  - Showing rage or talking about seeking revenge
  - Displaying extreme mood swings

- The **Best Practices Registry for Suicide Prevention (BPR)**: A collaborative project of the Suicide Prevention Resource Center and the American Foundation for Suicide Prevention, the Best Practices Registry (BPR) is a sortable and searchable registry containing: Section I) evidence-based programs, Section II) expert and consensus statements, and Section III) programs, practices, and policies whose content has been reviewed according to specific standards. Website: http://www.sprc.org/bpr/using-bpr.
- SAMHSA's **National Registry of Evidence-based Programs and Practices** (NREPP) is a searchable online registry of more than 340 substance abuse and mental health interventions. NREPP was developed to help the public learn more about evidence-based interventions that are available for implementation. Website: http://www.nrepp.samhsa.gov/.
- **Suicide Prevention Basics** from the Suicide Prevention Resource Center promotes a public health approach to suicide prevention. SPRC provides accurate data, up-to-date research, and knowledge of effective strategies and interventions to prevent suicide. Website: http://www.sprc.org/basics/.
- **Jason Foundation, Inc** is dedicated to the prevention of the "silent epidemic" of youth suicide through educational and awareness programs that equip young people, educators/youth workers and parents with resources and tools to help identify and assist at-risk youth. All programs are offered at no cost to participants and include computer modules for youth, staff development training, and community seminars. Website: http://jasonfoundation.com/.
- SAMHSA's "**Preventing Suicide: A Toolkit for High Schools"** affirms the need for schools to offer a comprehensive suicide prevention program to include parents, teachers, students, and administrators. Website: http://store.samhsa.gov/product/Preventing-Suicide-A-Toolkit-for-High-Schools/SMA12-4669.

- **U OK? Friends Ask!** Suicide Prevention Program was developed by the National Center for the Prevention of Youth Suicide, a program of the American Association of Suicidology (AAS). U OK? is a school or community-based youth suicide prevention and awareness program that calls on the interest and ability of young leaders to educate their peers on what to look for and how to help. Website: http://www.suicidology.org/ncpys/u-ok-program.
- **safeTALK**, an educational program provided by the **American Foundation for Suicide Prevention**, is a three-hour workshop that prepares anyone over the age of 15 to become a suicide-alert helper. The training teaches people how to provide practical help to people with thoughts of suicide and activate a suicide alert using the TALK steps: Tell, Ask, Listen and KeepSafe. Website: http://www.afsp.org/local-chapters/find-your-local-chapter/afsp-national-capital-area/upcoming-chapter-events/safetalk-training.
- **Youth in Crisis: Preventing Suicides** is a program through Purdue University to provide suicide prevention training for teachers to fulfill Indiana Department of Education requirements for educator licensure. Website: https://www.eventreg.purdue.edu/ec2k/courselisting.aspx?1=&master_ID=4023&course_area=1446&course_number=289&course_subtitle=00.
- **Indiana Department of Education Required New Teacher Suicide Prevention trainings** (website: http://www.doe.in.gov/licensing/suicide-prevention-training) and Indiana State Suicide Prevention training (website: http://www.in.gov/issp/2365.htm).

Measures: Healthy People 2020:
Injury and Violence Prevention (IVP)-41: Reduce non-fatal intentional self-harm injuries.
IVP-43: Increase the number of States and the District of Columbia that link data on violent deaths from death certificates, law enforcement, and coroner and medical examiner reports to inform prevention efforts at the State and local levels.

Additional resources:

a. ISDH Division of Trauma and Injury Prevention: http://www.in.gov/isdh/19537.htm
b. Indiana Suicide Coalitions, Councils, and Taskforces: http://www.in.gov/issp/2377.htm
c. Indiana Department of Education: http://www.doe.in.gov/student-services/suicide-prevention-and-response
d. American Foundation for Suicide Prevention Indiana Chapter: https://www.afsp.org/local-chapters/local-chapters-listed-by-state/indiana/afsp-indiana
e. IPFW Behavioral Health & Family Studies Institute: http://www.ipfw.edu/departments/chhs/centers/bhi/
f. Mental Health America of Indiana: http://www.nmha.org/
g. Mental Health America of Greater Indianapolis: http://www.mhaindy.net/ Crisis Hotline: 317-251-7575 or Text CSIS to 839863
h. Suicide Aftercare Association Indiana: http://www.suicideaftercare.org/indiana.html
i. Suicide Prevention Resource Center: Indiana: http://www.sprc.org/states/indiana
j. Action Alliance for Suicide Prevention: http://actionallianceforsuicideprevention.org/
k. American Academy of Pediatrics (AAP): www.aap.org
l. American Association of Suicidality (AAS): http://www.suicidology.org/
m. American Foundation for Suicide Prevention (AFSP): www.afsp.org
n. American Psychiatric Association: www.psych.org
o. American Psychological Association (APA): www.apa.org
p. Centre for Suicide Prevention: http://suicideinfo.ca/
q. Forefront: Innovations in Suicide Prevention (for the State of Washington): http://intheforefront.org/
r. Injury Control Research Center for Suicide Prevention (ICRC-S): http://suicideprevention-icrc-s.org/
s. Man Therapy: www.Mantherapy.org
t. National Action Alliance for Suicide Prevention: http://actionallianceforsuicideprevention.org/
u. National Association of School Psychologists: www.nasponline.org
v. National Center for Injury Prevention and Control, CDC: www.cdc.gov/violenceprevention/suicide
w. National Center for Suicide Prevention Training: www.ncspt.org
x. National Institute of Mental Health (NIMH): http://www.nimh.nih.gov/index.shtml
y. National Mental Health Information Center: http://healthfinder.gov/orgs/HR2480.htm

z. National Organization for People of Color Against Suicide:www.nopcas.org
aa. National Suicide Prevention Lifeline: http://www.suicidepreventionlifeline.org/ Phone: (800) 273-TALK (8255)
bb. QPR Institute: www.qprinstitute.com
cc. Screening for Mental Health: https://mentalhealthscreening.org/
dd. Society for the Prevention of Teen Suicide: http://sptsuniversity.org/
ee. Stop a Suicide Today: http://www.stopasuicide.org/
ff. Suicide Awareness Voice of Education (SAVE): www.save.org
gg. Substance Abuse and Mental Health Services Administration (SAMHSA): www.samhsa.gov
hh. Suicide Prevention Resource Center (SPRC): http://www.sprc.org
ii. The Trevor Project: http://www.thetrevorproject.org/
jj. Yellow Ribbon Suicide Prevention Program: http://yellowribbon.org/

References:

1. Crosby, A.E., Ortega, L. & Melanson, C. (2011). Self-directed Violence Surveillance: Uniform Definitions and Recommended Data Elements, Version 1.0. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Retrieved from http://www.cdc.gov/violenceprevention/pdf/self-directed-violence-a.pdf
2. American Foundation for Suicide Prevention, 2012. Warning signs of suicide. Available from: http://www.afsp.org/preventing-suicide/risk-factors-and-warning-signs.
3. Crosby AE, Division of Violence Prevention, National Center for Injury Prevention and Control, CDC. Suicidal thoughts and behaviors among adults aged >= 18 years---United States, 2008–2009. Morbidity and Mortality Weekly Report (MMWR): Surveillance Summaries, 2011; 60(SS13); 1-22.
4. Cerel, J. (2015. We are all connected in suicidology: The continuum of "survivorship." Plenary presentation at the 48th annual conference of the American Association of Suicidology, Atlanta GA.
5. Drapeau, C. W., & McIntosh, J. L. (for the American Association of Suicidology). (2015). U.S.A. suicide 2013: Official final data. Washington, DC: American Association of Suicidology, dated April 24, 2015. Retrieved from http://www.suicidology.org
6. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (2015). Retrieved from http://www.cdc.gov/injury/wisqars/fatal.html.
7. Tiesman, H. M.,Konda, S., Hartley, D., Menéndez, C. C., Ridenour, M., & Hendricks, S. (2015). Suicide in U.S. Workplaces, 2003–2010. American Journal of Preventive Medicine, 48(6): 675-682. Retrieved from http://dx.doi.org/10.1016/j.amepre.2014.12.011 doi: 10.1016/j.amepre.2014.12.011
8. Substance Abuse and Mental Health Services Administration [SAMHSA], Center for Behavioral Health Statistics and Quality. (2014). The NSDUH Report: Substance Use and Mental Health Estimates from the 2013 National Survey on Drug Use and Health: Overview of Findings. Rockville, MD: SAMHSA. Retrieved from http://store.samhsa.gov/shin/content//NSDUH14-0904/NSDUH14-0904.pdf
9. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention (2014). Learn about the Costs of Violent Deaths. Retrieved from http://wisqars.cdc.gov:8080/costT/

Trauma & Trauma System

A trauma system is an organized, coordinated approach to treating individuals who have sustained severe injuries requiring rapid evaluation and transport to specific hospitals with trauma care staff, equipment, and capabilities to provide the needed comprehensive care. The ultimate goal of an efficient and effective trauma system is to get the right patient the right care, at the right place, at the right time. Research indicates there is a 25% reduction in deaths for severely injured patients who receive care at a American College of Surgeons (ACS) verified level I trauma center rather than a non-trauma center.[1] However, not all injured patients can or should be transported to a level I center, therefore Emergency Medical Service (EMS) providers must perform field triage to assist in determining the most appropriate level of care needed for the patient. Injuries and violence have a significant impact on the well-being of Americans by contributing to premature death, disability, poor mental health, high medical costs, and lost productivity. The effects of injuries and violence extend beyond the injured person or victim of violence to family members, friends, employers, and communities.[2]

How does trauma affect the United States?

Fatal data

- Injury is the leading cause of death for people ages 1–44 years in the United States.[3]
- Nearly 193,000 people died from injuries in 2013—1 person every 3 minutes.[3]
- More children die due to injury than all other causes combined, thus all trauma systems should consider the unique needs of injured children and develop appropriate strategies to meet these needs.[4]

Non-fatal data

- Injury is a leading cause of disability for all ages, regardless of sex, race/ethnicity, or socioeconomic status.[3]
- Non-fatal injuries contributed to more than 27 million emergency department (ED) visits and 2.5 million hospitalizations [3]
- Regardless of age, injured children most commonly die of, or are disabled by, central nervous system injury. [4]

Cost data

- In 2010, the estimated medical and work loss lifetime costs in United States totaled $113.2 billion for unintentional injury deaths, $44.6 billion for suicide deaths and $25 billion for homicide deaths.[3]
- It is estimated that medical costs of injury account for 12% of national health care expenditures.[4]
- The ultimate goal of trauma care is to restore the patient to pre-injury status, which is not only best for the patient but it also is less costly. When rehabilitation results in independent patient function, there is a 90% cost savings compared to costs for repeated hospitalizations and custodial care.[4]

How does trauma affect Indiana?

- Injury is the leading cause of death for Hoosiers age 1 through 44 years and the fifth leading cause of death overall.
- In 2013, more than 4,400 Hoosiers died from injuries. More than 33,000 Hoosiers are hospitalized and more than 600,000 visit EDs for injuries each year.[5]
- Indiana does not have an integrated statewide trauma system, but has components of one, including: EMS providers, trauma centers, a trauma registry, and rehabilitation facilities.
- Indiana's trauma system includes 11 trauma centers around the state: three ACS verified Level I, six verified Level II, and two Level III verified facilities.
- As of January 2015, 78% of the population was able to access trauma care within a 45 minute driving distance. Additionally, 51% of the land area and 89% of interstates in Indiana have access to trauma care within a 45-minute driving distance.

How do we address this problem?

Policy:

- In 2006, Governor Daniels signed Public Law 155 (now codified at IC 16-19-3-28) ordering the **ISDH to develop, implement and oversee a statewide comprehensive trauma care system**. Indiana Code states:
  (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.
- In November 2009, Gov. Daniels signed an Executive Order creating the **Indiana Trauma Care Committee**, which serves as an advisory body to the ISDH on all issues involving trauma. In January 2013, Governor Pence re-issued Gov. Daniels' original Executive Order.
- Gov. Daniels signed the **Triage and Transport rule** into law in August 2012, after ISDH and EMS staff worked for more than a year to get the rule passed. The rule mandates that the most seriously injured patients, those classified Step 1 and Step 2 by the CDC Field Triage Decision Scheme, be taken to a trauma center unless the trauma center is more than 45 minutes away or if the patient's life is endangered by going directly to a trauma center. In either case, the ambulance may take the patient to the nearest hospital.
- In November 2014, the **Trauma Registry rule** was published, requiring all hospitals with EDs, EMS providers, and rehabilitation hospitals, to report trauma cases to the **Indiana Trauma Registry**.

Data collection:

- The trauma registry is a core component of any statewide trauma system. The **Indiana Trauma Registry** collects pre-hospital (EMS), hospital, and rehabilitation data for trauma incidents, and serves as the repository into which statewide trauma data has been brought together to support three foundational activities: identification of the trauma population, statewide process improvement activities, and research.
  - The hospital component of the Indiana Trauma Registry was implemented in 2007, with initial participation by the seven American College of Surgeons (ACS) trauma centers at that time. This dynamic data registry can assess system improvement and outcomes. As of February 2015, 84 hospitals and 11 trauma centers in Indiana report to the Indiana Trauma Registry. Trauma data is reported on a quarterly basis.
  - The pre-hospital component started collecting EMS run sheets in January 2013, and has captured more than 1 million runs from 207 EMS providers as of June, 2015.
  - The rehabilitation component began data collection in June 2014.
- The **Indiana Trauma Registry** requires the National Trauma Data Bank (NTDB) data elements for each incident submitted and follows strict inclusion/exclusion criteria. The Indiana Trauma Registry Data Dictionary can be accessed here: http://www.in.gov/isdh/25407.htm.

Education:

- The CDC provides the "**Field Triage Decision Scheme: The National Trauma Triage Protocol**" (Decision Scheme), to help emergency medical responders better and more quickly determine if an injured person needs care at a trauma center. The Decision Scheme is based on current best practices in trauma triage. Widespread use can ensure that injured people get the right level of care as quickly as possible. Website: http://www.cdc.gov/fieldtriage/index.html.
- The **Rural Trauma Team Development Course** (RTTDC) emphasizes the important role of smaller, often rural, non-trauma hospitals in the overall state trauma system. The program covers key concepts in the triage of trauma patients, including the decision whether the hospital can meet the patient's needs or needs to transfer the patient

to a trauma center. Understanding everyone's role in a statewide trauma system is crucial in providing good care to trauma patients, especially when at least 60% of all trauma deaths occur where only 25% of the population lives.

Interventions:

- Trauma centers have opportunities to reduce the burden of injury and trauma through reducing trauma recidivism and injury prevention activities. **ACS Verified Level I and II trauma centers are required to have a designated injury prevention coordinator**. Trauma-center based injury prevention programs, outreach activities, and community partnerships are strategies to reduce injury-related morbidity and mortality.[4]
- The ACS Committee on Trauma requires all trauma centers to implement universal **screening and brief intervention** for alcohol use for all injured patients.[4] Brief alcohol interventions conducted at trauma centers have been shown to reduce trauma recidivism by as much as half.[7]

Collaborations:

- The **Indiana State Trauma Care Committee** is established through Executive Order. Governor Daniels originally created the committee in 2009 and Governor Pence re-issued the Executive Order in 2013. The Committee serves as an advisory group for the Governor and State Health Commissioner regarding the development and implementation of a comprehensive statewide trauma system. The Committee meets quarterly and has several subcommittees: Designation, Performance Improvement, and Trauma System Planning. Website: http://www.in.gov/isdh/25400.htm.

Measures: Healthy People 2020:

Injury and Violence Prevention (IVP)-8: Increase access to trauma care in the United States.

IVP-8.1: Increase the proportion of the population residing within the continental U.S. with access to trauma care.

IVP-8.2: Increase the proportion of the land mass of the continental U.S. with access to trauma care.

Additional resources:

a. ISDH Division of Trauma and Injury Prevention: http://www.in.gov/isdh/19537.htm
b. Indiana State Trauma Care Committee: http://www.in.gov/isdh/25400.htm
c. Indiana Trauma Network: http://www.in.gov/isdh/25966.htm
d. American Association for the Surgery of Trauma(AAST) : http://www.aast.org/Default.aspx
e. American Academy of Orthopaedic Surgeons/ Orthopaedic Trauma Society: http://www.aaos.org/home.asp
f. American College of Surgeons Committee on Trauma (ACS-COT): https://www.facs.org/quality-programs/trauma
g. American Trauma Society (ATS): http://www.amtrauma.org/
h. Pediatric Trauma Society (PTS): http://pediatrictraumasociety.org/
i. National EMS Advisory Council: http://ems.gov/
j. Society of Trauma Nurses (STN): http://www.traumanurses.org/
k. Trauma Prevention Coalition: http://www.aast.org/trauma-prevention-coalition
l. Trauma Survivors Network (TSN): http://www.traumasurvivorsnetwork.org/
m. Resources for Optimal Care of the Injured Patient- 6th Edition: https://www.facs.org/quality-programs/trauma/vrc/resources

References:

1. MacKenzie, E.J., Rivara, F.P., Jurkovich, G.J., Nathens, A.B., Frey, K.P., Egleston, B.L., et al. (2006). A national evaluation of the effect of trauma center care on mortality. *N Engl J Med,* 354(4):366–78
2. Finkelstein, E.A., Corso, P.S., Miller, T.R. (2006). *Incidence and economic burden of injuries in the United States*. New York: Oxford University Press.
3. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (2015). Retrieved from http://www.cdc.gov/injury/wisqars/fatal.html.
4. American College of Surgeons Committee on Trauma. (2014). Resources for Optimal Care of the Injured Patient 2014 (6th edition) [Electronic]
5. Indiana State Department of Health, Epidemiology Resource Center, Data Analysis Team.
6. American College of Surgeons Committee on Trauma. Rural Trauma Team Development Course, 3rd Edition.
7. Gentilello, L.M., Rivara, F.P., et al. (1999). Alcohol interventions in a trauma center as a means of reducing the risk of injury recurrence. *Ann Surg*, 230(4):473-80.

Traumatic Brain Injury

A traumatic brain injury (TBI) is caused by a bump, blow, jolt or penetration to the head disrupting the normal function of the brain.[1] When one or more of the following clinical signs is observed, it constitutes an alteration in brain function: a) any period of loss of, or decreased, consciousness; b) any loss of memory for events immediately before or after the injury; c) neurological deficits such as muscle weakness, loss of balance and coordination, disruption of vision, change in speech and language, or sensory loss; or d) any alteration in mental state at the time of the injury such as confusion, disorientation, slowed thinking, or difficulty concentrating.[2] Each year, traumatic brain injuries contribute to a substantial number of deaths and cases of permanent disability.[3] In 2010, 2.5 million TBIs occurred either as an isolated injury or along with other injuries resulting in hospitalizations, emergency department (ED) visits, and death.[3] The health effects resulting from a TBI can be broadly categorized into cognitive, behavioral/emotional, motor, and somatic symptoms and the severity varies.[4,5]

How does traumatic brain injury affect the United States?

Fatal data

- Every day, 138 people in the United States die from injuries that include TBI. Nearly 53,000 died of TBI-related injuries in 2010.[3]
- Patients who sustained a TBI as a result of a motorcycle crash were three times as likely to die in the ED compared to those who suffered motorcycle injuries not involving a TBI.[6]
- Among adolescents and adults who received rehabilitation for TBI, 20% will have died at five years post-injury, and nearly 40% will have declined in function from the level of recovery attained one to two years post injury.[7]

Non-fatal data

- In 2010, approximately 2.2 million people were treated in and released from EDs and another 283,600 were hospitalized and discharged. These numbers underestimate the true burden of TBI because it does not account for individuals who did not receive medical care, had office-based visits, or received care at a federal facility such as through the Veterans Affairs.[3]
- Data estimates indicate 3.2–5.3 million persons in the United States are living with a TBI-related disability.[3]
- While the risk factors, health effects, and long-term outcomes of TBI vary by person, some persons require special considerations, including children and older adults, rural residents, military service members and veterans, and incarcerated populations. Children age 0–4 years, adolescents age 15–19 years, and older adults age 75 years and older are among the most likely to have a TBI-related ED visit or hospitalization.[3]
    - Approximately 145,000 children and adolescents age 0–19 years are living with substantial and long-lasting limitations in social, behavioral, physical, or cognitive functioning following a TBI.[8]
    - Approximately 775,000 older adults live with long-term disability associated with TBI.[8]
    - The prevalence of TBI-related disability in rural geographical areas is estimated to be higher than urban and suburban areas (24% compared with 15% and 14%, respectively).[9] Additionally, TBI- affected persons in rural areas are less likely to have access to specialized trauma care and rehabilitation professionals.[10,11]
    - Those who serve in the U.S. military are at significant risk for TBI as Department of Defense data revealed that from 2000 through 2011, 235,046 service members were diagnosed with a TBI (or 4.2% of the 5.6 million who served in the Army, Air Force, Navy, and Marine Corps).[12] Explosive blasts can also cause TBI, particularly among those who serve in the U.S. military.[3]
    - The estimated prevalence of TBI in imprisoned populations is 60.3%.[13]
- It is estimated 7% of all sports and recreation-related injuries treated in ED from 2001-2012 were TBIs. Nearly 70% of all sports and recreational-related TBIs were reported among persons 0 to 19 years of age.
- Males have about twice the rate of sports and recreational-related TBIs as females. The largest number of these TBIs among males occurred during bicycling, football, and basketball. Among females, the largest number of these TBIs occurred during bicycling, playground activities and horseback riding.[14]

Cost data

- The estimated economic cost of TBI in 2010, including direct and indirect medical costs, is estimated to be approximately $76.5 billion.[15, 16]
- The cost of fatal TBIs and TBIs requiring hospitalization account for roughly 90% of the total TBI medical costs.[15, 16]
- The societal and medical-care costs associated with TBI are more extensive for older adults than younger patients due to older adults needing longer hospital stays and having slower rates of functional improvement during inpatient rehabilitation.[3]
- Motorcycle crash-related hospitalizations with a TBI diagnosis had median hospital charges nearly $9,000 greater than hospitalizations without a TBI diagnosis.[6]
- TBI may lead to long-term impairment, functional limitations and disability affecting quality of life. Approximately 60% of those of working age (16 to 60 years) who were discharged from inpatient rehabilitation following a TBI between 2001 and 2010 were still unemployed two years after their injury. However, more than a third of those who were employed were employed only in a part-time capacity.[17]

How does traumatic brain injury affect Indiana?

- In 2013, 1,165 Hoosiers died of TBI-related injuries. Nearly three-quarters of these deaths were among men.
- Rates of TBI death increased from 15.1 per 100,000 in 2011 to 17.1 per 100,000 in 2013.
- The highest number of TBI-related deaths were among 15-24 year olds, however, the highest rates of TBI-related deaths were among Hoosiers age 85 years and older.
- In 2013, there were 4,567 TBI-related hospitalizations. Sixty percent of the hospitalizations were among men.
- The highest rate and number of TBI-related hospitalizations were among Hoosiers age 85 years and older.
- In 2013, there were 46,079 TBI- related ED visits due to TBI.
- Unintentional falls are the leading cause of injury among those who were hospitalized or treated and released from EDs with a TBI alone or in combination with other injuries or conditions.
- Adolescents and young adults have the highest rates of motor vehicle-related TBIs, while the youngest children and older adults are at highest risk for sustaining fall-related TBIs.

How do we address this problem?

Policy:

- Per IC 16-41-42.2-4, the **Indiana Spinal Cord and Brain Injury Fund** is utilized to 1) establish and maintain a state medical surveillance registry for traumatic spinal cord and brain injuries; 2) fulfill the duties of the board; 3) fund research related to treatment and cure of spinal cord and brain injuries; 4) fund post-acute extended treatment and services for an individual with a spinal cord injury or facilities that offer long term activity based therapy services for spinal cord injuries requiring extended post-acute care; 5) fund post-acute extended treatment and services for an individual with a brain injury or facilities that offer long term activity based therapy services for brain injuries requiring extended post-acute care; and 6) develop a statewide trauma system. The fund is expected to generate approximately $1.6 million per year, with the majority of money generated to be allocated to research projects.
- Per IC 16-41-40-5, **information and instructional materials concerning shaken baby syndrome** (abusive head trauma) must be provided to a parent or guardian of each newborn upon discharge from the hospital. The informational material must explain the medical effects of abusive head trauma on infants and children and emphasize preventive measures.

Data collection:

- The ISDH Division of Trauma and Injury Prevention conducts statewide injury surveillance through death certificates, hospitalizations, and ED visits. The **Indiana Trauma Registry** is a repository into which statewide trauma data has been brought together to support three foundational activities: identification of the trauma

population, statewide process improvement activities, and research. Information about traumatic injuries, including spinal cord and brain injuries, is captured in the Indiana Trauma Registry.

- **State Injury Indicators Report** tracks TBI hospitalizations and deaths in states to help states and the CDC Injury Center better identify and prevent TBIs. ISDH participates in the annual reporting.
- ***Pediatric Abusive Head Trauma: Recommended Definitions for Public Health Surveillance and Research*** provides standard definitions and data elements to improve the quality and consistency of data for public health surveillance purposes of abusive head trauma. Website: http://www.cdc.gov/violenceprevention/pdf/pedheadtrauma-a.pdf.

Programs:

- The **Indiana Department of Corrections** received funding from the U.S. Department of Health and Human Services/ Health Resources and Services Administration to help prison staff learn to identify inmates with brain injuries and provide treatment for released offenders with TBI.
- The **Indiana Statewide Trauma System Injury Prevention Plan** includes facilitating opportunities for collaborative injury prevention efforts in traumatic brain injury.

Education:

- There are many simple ways to reduce the chance of sustaining a TBI, which include:
  a. Buckling your child in the car using a size and age-appropriate child safety seat, booster seat, or seat belt.
  b. Wearing a seat belt every time you drive or ride in a motor vehicle.
  c. Never driving while under the influence of alcohol or drugs.
  d. Wearing a helmet and making sure your children wear helmets while bicycling and playing contact sports
  e. Making living areas safer for seniors through home modifications, such as
     a. Removing tripping hazards such as throw rugs and clutter in walkways;
     b. Using nonslip mats in the bathtub and on shower floors;
     c. Installing grab bars next to the toilet and in the tub or shower, and handrails on both sides of stairways;
  f. Making living areas safer for children by installing window guards to keep young children from falling out of open windows, and using safety gates at the top and bottom of stairs when young children are around.
  g. Making sure the surface on your child's playground is made of shock-absorbing material, such as hardwood, mulch or sand.
- The CDC Injury Center developed ***Heads Up to Clinicians: Addressing Concussion in Sports among Kids and Teens***, a free online course developed with support from the National Football League (NFL) and CDC Foundation, teaches health care professionals how to recognize and manage concussion in young athletes. Website: http://www.cdc.gov/HeadsUp/providers/training/index.html.
- The Journal of Head Trauma Rehabilitation released a special issue highlighting work from CDC and CDC's partners to prevent traumatic brain injury (TBI) and to help people better recognize, respond, and recover if a TBI occurs. Website: http://journals.lww.com/headtraumarehab/toc/2015/05000.
- **The CDC HEADS UP Concussion and Helmet Safety App** provides information for parents and coaches to instantly access concussion safety information to spot a potential concussion, respond if an athlete has a concussion or other serious brain injury, and help and athlete safely return to school and play. Website: http://www.cdc.gov/headsup/resources/app.html?s_cid=headsup_govd106.
- Association of State and Territorial Health Officials (ASTHO) Resources for Preventing Traumatic Brain Injuries provides links to TBI factsheets and prevention guides for specific populations, including infants, active military and veterans, and older adults. Website: http://www.astho.org/Programs/Prevention/Injury-and-Violence-Prevention/Preventing-Traumatic-Brain-Injury/Preventing-Traumatic-Brain-Injuries/.

Measures: Healthy People 2020:

Injury and Violence Prevention (IVP)-2 Reduce fatal and non-fatal traumatic brain injuries.

IVP-2.1 Reduce fatal traumatic brain injuries.

IVP-2.2 Reduce hospitalizations for non-fatal traumatic brain injuries.

IVP-2.3 Reduce ED visits for non-fatal traumatic brain injuries.

Additional resources:

a. ISDH Division of Trauma and Injury Prevention: http://www.in.gov/isdh/19537.htm
b. Indiana Special Emphasis Report on TBI: http://www.in.gov/isdh/25396.htm
c. Brain Injury Association of Indiana: http://biaindiana.org/
d. ASTHO Resources for Preventing Traumatic Brain Injuries: http://www.astho.org/Programs/Prevention/Injury-and-Violence-Prevention/Preventing-Traumatic-Brain-Injury/Preventing-Traumatic-Brain-Injuries/
e. CDC Traumatic Brain Injury: http://www.cdc.gov/traumaticbraininjury/
f. National Center for Injury Prevention and Control, CDC: www.cdc.gov/concussion
g. CDC's Heads Up to Concussion: http://www.cdc.gov/concussion/headsup/index.html
h. CDC Injury Center and the American College of Emergency Physicians (ACEP)'s ***Updated Mild Traumatic Brain Injury Management Guideline for Adults*** to improve clinical management and to reduce adverse health outcomes among TBI patients. Website: http://www.cdc.gov/concussion/HeadsUp/clinicians_guide.html
i. Heads up to Clinicians: Concussion Traininghttp://www.cdc.gov/concussion/HeadsUp/clinicians/index.html
j. CDC's ***Report to Congress on Traumatic Brain Injury Epidemiology and Rehabilitation: Recommendations for Addressing Critical Gaps***. Website: http://www.cdc.gov/traumaticbraininjury/pdf/TBI_Report_to_Congress_Epi_and_Rehab-a.pdf
k. CDC's ***Report to Congress on Traumatic Brain Injury in the United States: Understanding the Public Health Problem among Current and Former Military Personnel***. Website: http://www.cdc.gov/traumaticbraininjury/pubs/congress_military.html
l. HRSA Traumatic Brain Injury Program: http://mchb.hrsa.gov/programs/traumaticbraininjury/
m. National Center on Shaken Baby Syndrome: http://www.dontshake.org/

References:

1. Marr, A.L., and Coronado, V.G. (Eds.). (2004). Central nervous system injury surveillance data submission standards—2002. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.
2. Menon, D.K., Schwab, K., Wright, D.W., Maas, A.I., and Demographics and Clinical Assessment Working Group of the International and Interagency Initiative toward Common Data Elements for Research on Traumatic Brain Injury and Psychological Health. (2010). Position statement: Definition of traumatic brain injury. *Archives of Physical Medicine and Rehabilitation*, 91(11), 1637–1640.
3. Centers for Disease Control and Prevention. (2014). Report to Congress on Traumatic Brain Injury in the United States: Epidemiology and Rehabilitation. National Center for Injury Prevention and Control; Division of Unintentional Injury Prevention. Atlanta, GA. Retrieved from http://www.cdc.gov/traumaticbraininjury/pdf/TBI_Report_to_Congress_Epi_and_Rehab-a.pdf.
4. Riggio, S. & Wong, M. (2009). Neurobehavioral sequelae of traumatic brain injury. *Mount Sinai Journal of Medicine*, 76(2), 163–172.
5. Walker, W.C., and Pickett, T.C. (2007). Motor impairment after severe traumatic brain injury: A longitudinal multicenter study. *Journal of Rehabilitation Research and Development*, 44(7), 975–982.
6. Harmon, K.J., Marshall, S.W., Proescholdbell, S.K., Naumann, R.B., & Waller, A.E. (2015). Motorcycle Crash-Related Emergency Department Visits and Hospitalizations for Traumatic Brain Injury in North Carolina. *J Head Trauma Rehabilitation*, 30(3): 175–184.
7. Corrigan, J.D., Cuthbert, J.P., Harrison-Felix, C., Whiteneck, G.G., Bell, J.M., Miller, A.C., Coronado, V.C., Pretz, C.R. (2014). US population estimates of health and social outcomes 5 years after rehabilitation for traumatic brain injury. *Journal of Head Trauma and Rehabilitation,* 29 (6), E1–9.
8. Zaloshnja, E., Miller, T., Langlois, J.A., & Selassie, A.W. (2008). Prevalence of long-term disability from traumatic brain injury in the civilian population of the United States, 2005. *The Journal of Head Trauma Rehabilitation*, 23(6), 394–400.
9. Kaye, H.S. (1997). *Disability watch: The status of people with disabilities in the United States*. San Francisco, CA: Disability Statistics Center, Institute for Health and Aging, University of California at San Francisco.
10. Johnstone, B., Nossaman, L.D., Schopp, L.H., Holmquist, L., and Rupright, S.J. (2002). Distribution of services and supports for people with traumatic brain injury in rural and urban Missouri. *Journal of Rural Health*, 18(1), 109–117.
11. Murphy, J. (2004). Care of the patient with traumatic brain injury: Urban versus rural challenges. *Topics in Emergency Medicine*, 26(3), 231–236.
12. CDC, NIH, DOD, and VA Leadership Panel. (2013). Report to Congress on Traumatic Brain Injury in the United States: Understanding the Public Health Problem among Current and Former Military Personnel. Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), the Department of Defense (DOD), and the Department of Veterans Affairs (VA).
13. Shiroma, E.J., Ferguson, P.L., & Pickelsimer, E. (2012). Prevalence of traumatic brain injury in an offender population: a meta-analysis. *J Head Trauma Rehabilitation*, 27(3):E1–10.

14. Coronado, V.G., Haileyesus, T., Cheng, T.A., Bell, J.M., Haarbauer-Krupa, J., Lionbarger, M.R., ... Gilchrist, J. (2015)Trends in Sports- and Recreation-Related Traumatic Brain Injuries Treated in US Emergency Departments: The National Electronic Injury Surveillance System-All Injury Program (NEISS-AIP) 2001-2012. *J Head Trauma Rehabilitation,* 30(3): 195–197.
15. Finkelstein, E., Corso, P., Miller, T. and associates. (2006). *The Incidence and Economic Burden of Injuries in the United States*. New York (NY): Oxford University Press.
16. Coronado, V.G., Faul, M., McGuire, L.C., Sugerman, D. & Pearson, W.S. (2012). Epidemiology of TBI. Brain Injury Medicine. Principles and Practice, 2nd edition.
17. Cuthbert, J. P., Harrison-Felix, C., Corrigan, J. D., Bell, J. M., Haarbauer-Krupa, J.K., Miller, A. C. (2015). Unemployment in the United States After Traumatic Brain Injury for Working-Age Individuals: Prevalence and Associated Factors 2 Years Postinjury. *J Head Trauma Rehabilitation,* 30(3): 160-174.

Appendix A: Glossary of Injury and Violence Terms and Acronyms

The following list provides a general means to help with the interpretation of ICD-9 External Cause of injury codes (E-Codes). The definitions are not comprehensive.

Age-adjusted rate: Age-adjusted rates are a weighted average of the age-specific incidence or mortality rate from a targeted population with weights that are proportional to persons in corresponding age groups of a standard population (Year 2000 U.S. population), for purposes of making comparisons of rates over time or between populations.

Benzodiazepines: Central nervous system depressants used as sedatives, to induce sleep, prevent seizures, and relieve anxiety.

Cause of injury/ Mechanism of injury: The circumstances or activities or way in which the person sustained the injury.

Crude rate: The number of deaths, hospitalizations, or ED visits over a specified time period divided by the total population (per 100,000).

Cut/Pierce: Injury from an incision, slash, perforation, or puncture by a pointed or sharp instrument, object, or weapon, such as injuries from knives, power hand tools, and household appliances. This does not include bite wounds or being stuck by or against a blunt object.

Drowning/Submersion: Suffocation (asphyxia) from drowning and submersion in water or another liquid. The injury may or may not involve a watercraft. Examples include drowning in rivers, swimming pools, and bathtubs.

Drug abuse: Continued use of illicit or prescription drugs despite problems from drug use with relationships, work, school, health, or safety. People with substance abuse often experience loss of control and take drugs in larger amounts or for longer than they intended.

Drug overdose: When a drug is swallowed, inhaled, injected, or absorbed through the skin in excessive amounts and injures the body. Overdoses are either intentional or unintentional. If the person taking or giving a substance did not mean to hurt themselves or others, then it is unintentional.

Falls: Injury occurs when an individual descends abruptly because of the force of gravity and strikes a surface at the same or lower level. The unintentional falls category involves steps or stairs, ladders and scaffolds, and other falls from one level to another (including falls from a chair or bed. Falls by suicide are described as “jumping from high places” and homicide falls are described as “pushing from high places.”

Fire/Burn: Injury from severe exposure to flames, heat, or chemicals. This category can be further broken into injury from fire and flames, and from hot objects and substances. Examples include smoke inhalation to the upper and lower airways and lungs, structural fires, clothing ignition, burns caused by hot liquids and steam, caustics and corrosives.

Firearms: Force injury resulting from a bullet or projectile shot from a powder-charged gun.

Homicide: Injuries inflicted by another person with the intent to kill or injure. This broad category includes any means and excludes injuries due to legal interventions or operations of war.

Inhalation/Ingestion/Suffocation: Injury caused by the inhalation or ingestion of food or other objects that block respiration and by other mechanical means that hinder breathing (e.g., plastic bag over nose or mouth, suffocation by bedding, and unintentional or intentional hanging or strangulation).

Lifetime prevalence: The proportion of people in a population who have ever experienced a particular outcome, such as a particular form of violence.

Midwest: For the purposes of this report, the Midwest includes the following states: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

Motor vehicle traffic: Injury resulting from any vehicle (automobiles, vans, trucks, motorcycles, and other motorized cycles) incident known or assumed to be traveling on public roads, streets, or highways.

Motor vehicle traffic (motorcyclist): Injured person identified as a driver or passenger of a motorcycle involved in a collision, loss of control, crash or event involving another vehicle, an object, or pedestrian.

Motor vehicle traffic (occupant): Injury to a person identified as a driver or passenger of a motor vehicle involved in a collision, rollover, crash, or event involving another vehicle, an object, or pedestrian.

Motor vehicle traffic (pedal cyclist): Injury resulting from collision, loss of control, crash, or other event between a pedal cyclist and a motor vehicle or pedestrian on a public road or highway.

Motor vehicle traffic (pedestrian): Injury to a person struck by or against a vehicle such as a car, truck, van, buses, etc. where the person injured was not at the time of the collision riding in or on a motor vehicle, bicycle, motorcycle, or other vehicle being hit by a motor vehicle on a public road or highway.

Naloxone: A prescription drug that can reverse an opioid or heroin overdose if administered in time.

Opioid: Derived from the opium poppy (or synthetic versions of it) and used for pain relief. Examples include hydrocodone (Vicodin®), oxycodone (OxyCotin®, Fentora®), methadone, and codeine.

Pedal cyclist (other): Injury among pedal cyclists not involving a motor vehicle or pedestrian traffic incident, such as those being hit by a train, a motor vehicle while not in traffic, by other means of transport, or by a collision with another pedal cycle.

Pedestrian (other): Injury to a person involved in a collision, where the person was not riding in or on a motor vehicle, train, or other motor vehicle when the collision occurred.

Poisoning: Injury or death due to the ingestion, inhalation, absorption through the skin, or injection of a drug, toxin, or other chemical such as gases and corrosives. Examples of poisonings include harmful effects resulting from exposure to alcohol, disinfectants, cleansers, paints, insecticides, and caustics.

Prescription drug misuse: The use of prescription drugs in a manner other than as directed.

Struck By/Against: Injury resulting from being struck by (hit) or striking against (hitting) objects or persons. This category does not involve machinery or vehicles. Unintentional injuries specify being struck accidentally by a falling object and striking against or being struck accidentally by objects or persons. Homicide/assault include being struck by a blunt or thrown object and injuries sustained in an unarmed fight or brawl.

Suicide: Death caused by self-directed (self-inflicted) injurious behavior with any intent to die as a result of the behavior.

Suicide attempt: Non-fatal self-directed (self-inflicted) potentially injurious behavior with any intent to die as a result of the behavior.

Suicidal ideation: Thinking about, considering, or planning for suicide.

Years of Potential Life Lost (YPLL): A measure of premature mortality or early death. All deceased person's ages are subtracted from a standard age (e.g. 65 years) and totaled, the years lost, and then divided by the number of deceased persons in that cause category. This statistic excludes people who died at or older than the selected standard age.

Acronyms:

ACS: American College of Surgeons
BAC: Blood Alcohol Concentration
BRFSS: Behavioral Risk Factor Surveillance System
CCDF: Child Care Development Fund
CDC: Centers for Disease Control and Prevention
CFR: Child Fatality Review
CPS: Child Protective Services
CPT: Community Child Protection Team
DCS: Indiana Department of Child Services
DMHA: Division of Mental Health and Addiction
E-Codes: External-Cause of Injury Codes
ED visits: Emergency Department visits
EMS: Emergency Medical Services
FSSA: Indiana Family and Social Services Administration
IC: Indiana Code, found at http://iga.in.gov/
ICD-9: International Classification of Diseases- Ninth Revision
ICD-10: International Classification of Diseases-Tenth Revision
ICJI: Indiana Criminal Justice Institute
INSPECT: Indiana's prescription drug monitoring program
INVDRS: Indiana Violent Death Reporting System
ISDH: Indiana State Department of Health
MVT: Motor Vehicle Traffic
NAS: Neonatal Abstinence Syndrome
NHTSA: National Highway Traffic Safety Administration
NTDB: National Trauma Data Bank
OWH: Office of Women's Health
RTTDC: Rural Trauma Team Development Course
SAMHSA: Substance Abuse and Mental Health Services Administration
STEADI: Stopping Elderly Accidents, Deaths, and Injuries
SV: Sexual Violence
TBI: Traumatic Brain Injury
WISQARS: Web-based Injury Statistics Query and Reporting System
YPLL: Years of potential life lost
YRBS: Youth Risk Behavior Survey

Appendix B: ISDH Vital Statistics and Hospital Discharge Data

Death data, representing a portion of the data presented in this Resource Guide, relies upon the Indiana State Department of Health mortality reports, based on completion of death certificates. The cause-of-death section of the death certificate is organized according to the World Health Organization guidelines and coded with ICD-10. Death records data is collected from the ISDH Office of Vital Records.

The source agency for the collection of hospital discharge data is the Indiana Hospital Association, which collects hospital discharge data from Indiana hospitals. Beginning with year 2002, selected patient-level data has been sent to the ISDH Epidemiology Resource Center through a working agreement. The injury and external cause of injury codes were classified according to the ICD-9-CM. The criterion of data analysis is based on the recommendations from the Safe States to be used to determine if a patient record is defined as an injury hospitalization. Records can be characterized as patient-level hospital discharges whose principle reason for admission was the result of injury and whose record had at least one valid supplemental E-code.

Outpatient/Emergency Department visit data was also utilized in this report from the hospital discharge data. The same procedures from Safe States Alliance were followed for inclusion and exclusion of injury related data. The injury and external cause of injury codes were classified according to the ICD-9-CM. These records can be characterized as patient-level hospital discharges whose principle reason for admission was the result of injury and whose record had at least one valid supplemental E-code.

A significant part of the ISDH Division of Trauma and Injury Prevention's mission involves collecting data from Emergency Medical Services (EMS) providers, hospitals with emergency departments (ED) and rehabilitation facilities. The trauma registry is a core component of any statewide trauma system. The Indiana Trauma Registry is a repository into which statewide trauma data has been brought together to support three foundational activities: identification of the trauma population, statewide process improvement activities, and research. The Indiana Trauma Registry was implemented in 2007, with initial participation by the seven hospitals in Indiana that were verified by the American College of Surgeons as Level I or Level II trauma centers. Non-trauma hospitals in Indiana actively submit data to the state trauma registry. In 2013, the ISDH implemented the Indiana State EMS Bridge. The combination of EMS and trauma data allows Indiana to develop a more robust data system with which we can create a better patient care system. The rehabilitation component of the trauma registry began data collection in June 2014.

Data Analysis Notes: A **crude rate** is the number of deaths, hospitalizations, or ED visits over a specified time period divided by the total population (per 100,000). An **age-adjusted rate** is a weighted average of the age-specific incidence or mortality rate from a targeted population with a weight that is proportional to persons in corresponding age group of a standard population, for purposes of making comparisons of rates over time or between populations. A **count** is simply the number of deaths, hospitalizations or ED visits during a specified time. Depending on the data source and the injury topic, crude and age-adjusted rates and counts are provided to illustrate the burden within Indiana, a specific demographic or age group, and the burden on the healthcare system in Indiana.

Appendix C: Resources to Find Evidence-Based Programs

The following organizations provide information on evidence-based and promising injury prevention programs. The list is provided as a starting point and is not intended to be an exhaustive listing. Please note that a listing here is for the convenience of the Resource Guide and does not represent an endorsement by ISDH. URLs are subject to change.

Resource:	Web address:
1. Blueprints for Healthy Youth Development	http://www.blueprintsprograms.com/
2. Centers for Disease Control and Prevention National Center for Injury Prevention and Control	cdc.gov/injury
3. CDC Understanding Evidence	https://vetoviolence.cdc.gov/apps/evidence/#
4. Child Injury Prevention Tool	http://childinjuryprevention.org/main.html
5. Coalition for Evidence-Based Policy	http://evidencebasedprograms.org/
6. The Cochrane Library	cochranelibrary.com
7. The Community Guide	thecommunityguide.org/index.html
8. Community Tool Box	http://ctb.ku.edu/en/databases-best-practices
9. Find Youth Info	http://www.findyouthinfo.gov/program-directory
10. Injury Control Research Center- Suicide	suicideprevention-icrc-s.org
11. National Association of County & City Health Officials Model Practices	http://naccho.org/topics/modelpractices/
12. National Highway Traffic Safety Administration: Motor Vehicle Traffic Strategies	http://www.nhtsa.gov/staticfiles/nti/pdf/811727.pdf
13. Office of Juvenile Justice and Delinquency Prevention's (OJJDP's) Model Programs Guide	http://www.ojjdp.gov/mpg/
14. Prevent Child Injury	http://www.preventchildinjury.org/
15. SafetyLit Literature	http://www.safetylit.org/
16. Suicide Prevention Resource Center	http://www.sprc.org/
17. Substance Abuse and Mental Health (SAMHSA) National Registry of Evidence-Based Programs and Practices	nrepp.samhsa.gov
18. University of Michigan Injury Center	injurycenter.umich.edu

Appendix D: State, Regional and National Injury Prevention Organizations

The following organizations provide information and resources on injury prevention issues and innovative programs. The list is provided as a starting point and is not intended to be an exhaustive listing. Please note that a listing here is for the convenience of the Resource Guide and does not represent an endorsement by ISDH. URLs are subject to change.

	Organization	Website
State	American Automobile Association Hoosier (AAA)	https://www.hoosier.aaa.com/
	American Foundation of Suicide Prevention- Indiana Chapter	http://www.afsp.org/local-chapters/find-your-local-chapter/afsp-indiana
	Attorney General Prescription Drug Abuse Task Force	http://www.in.gov/bitterpill/
	Automotive Safety Program	http://www.preventinjury.org/
	Emergency Nurses Association (ENA)- Indiana Chapter	http://www.indianaena.org/
	Indiana Child Fatality Review Program	http://www.in.gov/isdh/26154.htm
	Indiana Coalition Against Domestic Violence (ICADV)	http://www.icadvinc.org/
	Indiana Criminal Justice Institute (ICJI)	http://www.in.gov/cji/
	Indiana Department of Child Services (DCS)	http://www.in.gov/dcs/2869
	Indiana Department of Mental Health & Addiction (DMHA)	http://www.in.gov/fssa/dmha/index.htm
	Indiana Department of Transportation (INDOT)	http://www.in.gov/indot/
	Indiana Fall Prevention Coalition (INFPC)	http://infallprevention.org/
	Indiana Injury Prevention Advisory Council (IPAC)	http://www.in.gov/isdh/25395.htm
	Indiana Perinatal Network (IPN)	http://www.indianaperinatal.org/
	Indiana State Suicide Prevention	http://www.in.gov/issp/
	Indiana State Trauma Care Committee (ISTCC)	http://www.in.gov/isdh/25400.htm
	Indiana Trauma Network (ITN)	http://www.in.gov/isdh/25966.htm
	Indiana's Rape Prevention and Education Program (RPE)	http://www.in.gov/isdh/23820.htm
	ISDH Division of Trauma and Injury Prevention	http://www.in.gov/isdh/19537.htm
	ISDH Falls Prevention Resource Center	http://www.state.in.us/isdh/25376.htm

	ISDH Maternal Child Health	http://www.state.in.us/isdh/19571.htm
	ISDH Office of Women's Health	http://www.state.in.us/isdh/18061.htm
	ISDH Sexual Violence Primary Prevention Program	http://www.state.in.us/isdh/23820.htm
	Prevent Child Abuse Indiana	http://pcain.org/
	Safe Kids- Indiana Chapter	http://www.safekids.org/coalition/safe-kids-indiana
Regional	Midwest Injury Prevention Alliance (MIPA)	http://www.midwestinjury.com/
National	American Automobile Association (AAA)	www.aaa.com
	AARP	http://www.aarp.org/
	American Academy of Orthopaedic Surgeons/ Orthopaedic Trauma Society	http://www.aaos.org/home.asp
	American Academy of Pediatrics (AAP)	https://www.aap.org
	American Association for the Surgery of Trauma (AAST)	http://www.aast.org
	American Association of Poison Control Centers (AAPCC)	http://www.aapcc.org/
	American Burn Association (ABA)	http://www.ameriburn.org/
	American College of Emergency Physicians (ACEP)	http://www.acep.org/
	American College of Preventive Medicine (ACPM)	http://www.acpm.org/
	American College of Sports Medicine (ACSM)	http://www.acsm.org/
	American College of Surgeons- Committee on Trauma (ACS-COT)	https://www.facs.org/quality-programs/trauma
	American Foundation for Suicide Prevention (AFSP)	http://www.afsp.org/
	American Medical Association (AMA)	http://www.ama-assn.org/
	American Occupational Therapy Association (AOTA)	http://www.aota.org/
	American Physical Therapy Association (APTA)	http://www.apta.org/

	American Psychological Association (APA)	http://www.apa.org/
	American Public Health Association (APHA)	https://www.apha.org/
	American Trauma Society (ATS)	http://www.amtrauma.org/
	Association of Maternal and Child Health Programs (AMCHP)	http://www.amchp.org/
	Association of State and Territorial Health Officials (ASTHO)	http://www.astho.org/
	Brain Injury Association of America (BIAA)	http://www.biausa.org/
	Brain Trauma Foundation (BTF)	https://www.braintrauma.org/
	Break the Cycle	http://www.breakthecycle.org/
	Center of Excellence on Elder Abuse and Neglect	http://www.centeronelderabuse.org/
	Centers for Disease Control and Prevention (CDC)	http://www.cdc.gov/
	Child Injury Prevention Alliance (CIPA)	http://www.childinjurypreventionalliance.org/
	Children's Safety Network, Education Development Center	http://www.childrenssafetynetwork.org/
	Consumer Product Safety Commission	http://www.cpsc.gov/
	Council of State and Territorial Epidemiologists (CSTE)	http://www.cste.org/
	Directors of Health Promotion and Education (DHPE)	http://www.dhpe.org/
	Emergency Nurses Association	https://www.ena.org
	First Candle: Infant Suffocation	http://www.firstcandle.org/
	Futures without Violence	http://www.futureswithoutviolence.org/
	Injury Free Coalition for Kids	http://www.injuryfree.org/
	Juvenile Products Manufacturers Association (JPMA)	http://jpma.org/
	Kids in Danger	http://www.kidsindanger.org/

	National Alliance to End Sexual Violence (NAESV)	http://endsexualviolence.org/
	National Association of County and City Health Officials (NACCHO)	http://www.naccho.org/
	National Association of State Emergency Medical Service Officials (NASEMSO)	https://www.nasemso.org/
	National Association of State Head Injury Administrators (NASHIA)	http://www.nashia.org/
	National Association of Students Against Violence Everywhere (SAVE)	http://nationalsave.org/
	National Center on Domestic and Sexual Violence (NCDSV)	http://www.ncdsv.org/
	National Council on Aging (NCOA)	http://www.ncoa.org/
	National Domestic Violence Hotline	http://www.thehotline.org/
	National EMS Advisory Council	http://ems.gov/
	National Fire Protection Association	http://www.nfpa.org/
	National Highway Traffic Safety Administration (NHTSA)	www.nhtsa.gov/
	National Institute for Occupational Safety and Health (NIOSH)	http://www.cdc.gov/niosh/
	National Institute on Alcohol Abuse and Alcoholism (NIAAA)	http://www.niaaa.nih.gov/
	National Network to End Domestic Violence (NNEDV)	http://nnedv.org/
	National Physicians Alliance (NPA)	http://npalliance.org/
	National Safety Council (NSC)	http://www.nsc.org/
	National Sexual Violence Resource Center (NSVRC)	http://www.nsvrc.org/
	National Violence Prevention Network (NVPN)	http://www.preventviolence.net/
	Occupational Safety & Health Administration	https://www.osha.gov/
	PACER's National Bullying Prevention Center	www.PACER.org/Bullying
	Pediatric Trauma Society (PTS)	http://pediatrictraumasociety.org/

	Prevent Child Abuse America	http://www.preventchildabuse.org/
	Prevent Child Injury	http://preventchildinjury.org/
	Prevention Institute	http://www.preventioninstitute.org/
	Safe Kids Worldwide	http://www.safekids.org/
	Safe States Alliance	http://www.safestates.org/
	SafetyLit	http://www.safetylit.org/
	Society for Advancement of Violence and Injury Research (SAVIR)	http://www.savirweb.org/
	Society for Public Health Education (SOPHE)	http://www.sophe.org/
	Society of Trauma Nurses	http://www.traumanurses.org/
	Stopbullying.gov	http://www.stopbullying.gov/
	Striving to Reduce Youth Violence Everywhere (STRYVE)	http://vetoviolence.cdc.gov/apps/stryve/home.html
	Substance Abuse and Mental Health Services Administration (SAMHSA)	http://www.samhsa.gov/
	Suicide Awareness Voices of Education (SAVE)	http://www.save.org/
	Suicide Prevention Resource Center (SPRC)	http://www.sprc.org/
	The Safety Institute	http://www.thesafetyinstitute.org/
	ThinkFirst National Injury Prevention Foundation	http://www.thinkfirst.org/
	Trauma Prevention Coalition	http://www.aast.org/trauma-prevention-coalition
	Trauma Survivors Network (TSN)	http://www.traumasurvivorsnetwork.org/
	U.S. Consumer Product Safety Commission	http://www.cpsc.gov/
	Veto Violence	http://vetoviolence.cdc.gov/

Appendix E: Indiana Injury Prevention Reports and Information

Child Injuries Report Series:

- 2015 Child Injuries Report 0-5 Years - A report on child injury-related fatalities, hospitalizations and ED visits in Indiana infants and children ages 0-5 years for 2011-2013
- 2015 Indiana Injury Report 6-11 Years - A report on child injury-related fatalities, hospitalizations and ED visits among Indiana children age 6-11 years for 2011-2013
- 2015 Indiana Injury Report 12-18 Years - A report on injury-related fatalities, hospitalizations and ED visits among Indiana teens age 12-18 years for 2011-2013

Drug Overdose Deaths Report:

- 2015 Drug Overdose Deaths Report (updated 11/2015)
- 2014 Drug Overdose Deaths Report

Traumatic Brain Injuries Report:

- 2015 Traumatic Brain Injuries Report
- 2014 Traumatic Brain Injuries Report

Injuries in Indiana Report:

- 2014 Injuries in Indiana Report - A Report on Injury-Related Fatalities, Hospitalizations, and Emergency Department Visits for the years of 2007 through 2010
- 2009 Injuries in Indiana Report - A Report on Injury-Related Fatalities and Injuries Resulting in Hospitalization for the years of 2003 through 2006
- 2005 Injuries in Indiana Report - A Report on Injury-Related Fatalities and Injuries Resulting in Hospitalization for the years of 1999 through 2002

Indiana Violent Death Reporting System (INVDRS):

- Main Website: http://www.in.gov/isdh/26539.htm
- Handout on the INVDRS
- Handout on the INVDRS and Child Fatality Review Program

Trauma Registry Data Requests

If you are interested in de-identified, statewide data, fill out the division data request form and return it to the ISDH Division of Trauma and Injury Prevention. If you are interested in identifiable data, you must fill out both the ISDH Division of Trauma and Injury Prevention division data request form and the agency data request form. If you are interested in patient level data or variables that could lead to individual identification, it will need administrative approval. Please submit to the Division of Trauma and Injury Prevention by email to indianatrauma@isdh.in.gov:

- The agency data request form
- The division data request form
- A document on letterhead describing the study
- IRB approval (if applicable)

Preventing Injuries in Indiana: Injury Prevention Resource Guide App available:

Apple store: https://itunes.apple.com/us/app/preventing-injuries-in-indiana/id1037435460?mt=8
Android store: https://play.google.com/store/apps/details?id=doh.in.gov.indianaprevention&hl=en