

Child Fatality Review and Prevention in Indiana

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Director

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Indiana State
Department of Health

Child Fatality Review

Child Fatality Review is a public health injury prevention process that examines the preventability of the circumstances and risk factors involved in a child's death. The goal is to improve the health and safety of children by identifying and understanding the factors that place a child at risk for illness or injury.

- Monitor data
- Identify trends, injuries, and deaths
- Review and learn from the reported deaths
- Develop recommendations and community interventions that may help prevent injuries and future child deaths in collaboration with key partners




Mission & Vision

Mission:

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.

Vision:



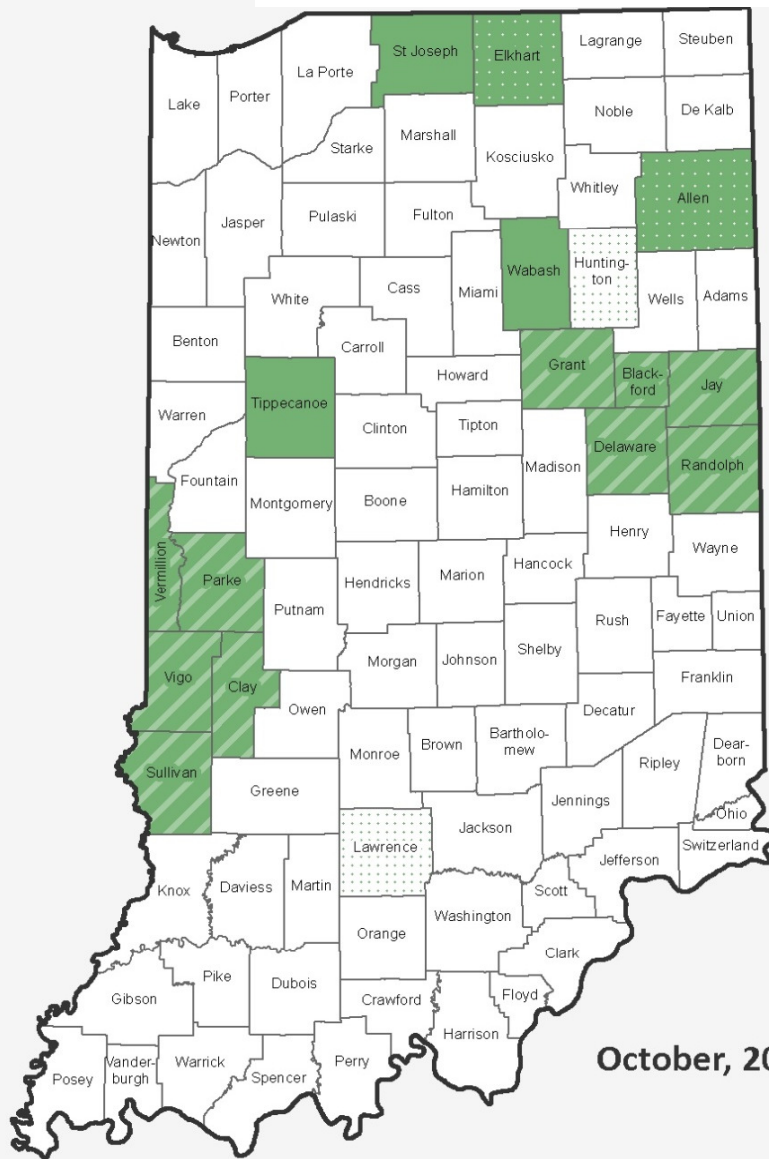
Understanding the circumstances causing a child's death will help prevent other deaths, poor health outcomes, and injury or disability in other children.

Prevention ... Prevention ... Prevention

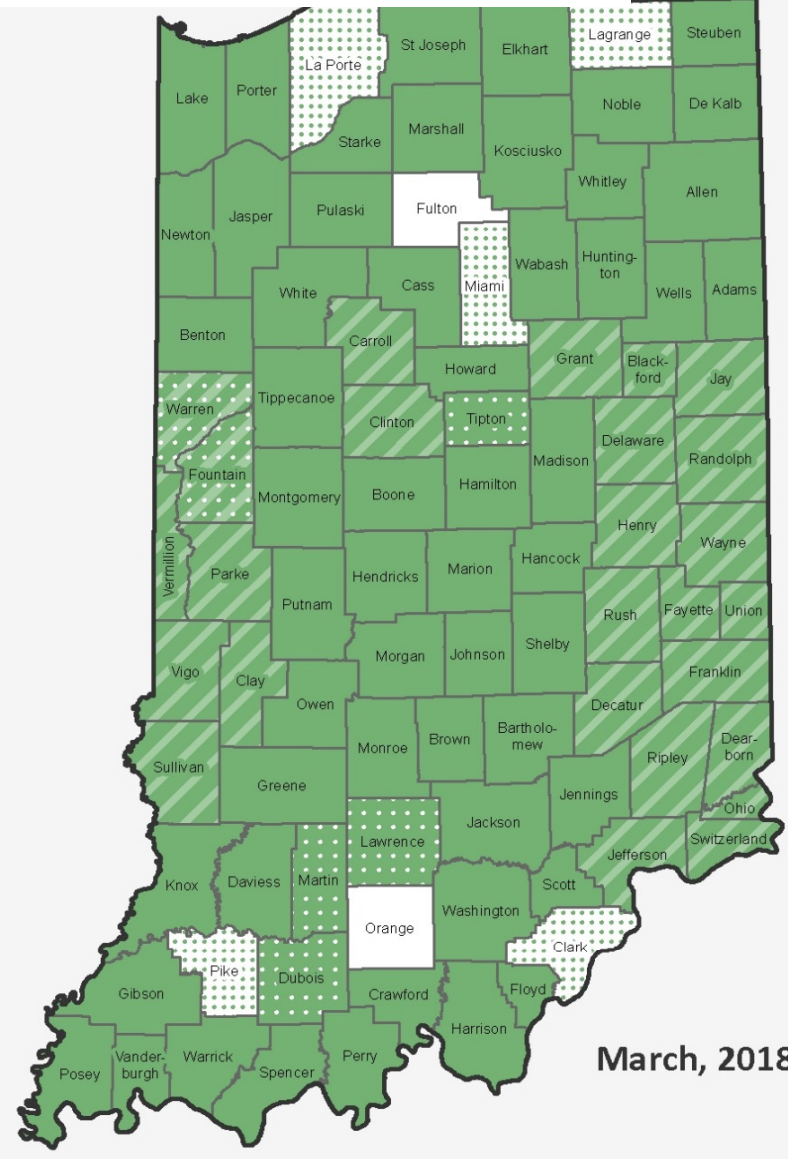


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Local Child Fatality Review Teams' Progress



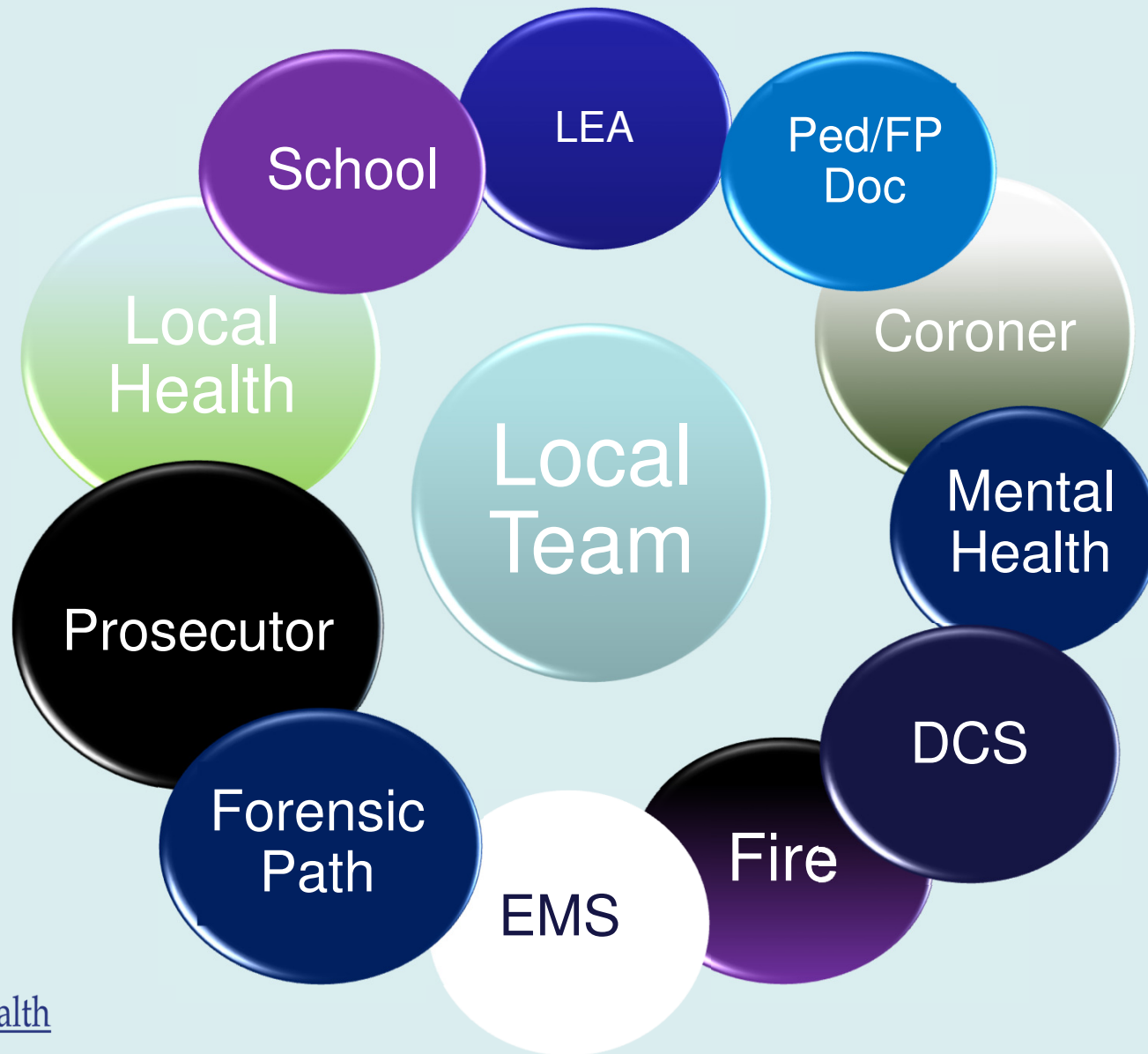
October, 2013



March, 2018

Official: County Regional **Non-Official:** County Regional **Un-Verified:** County Regional

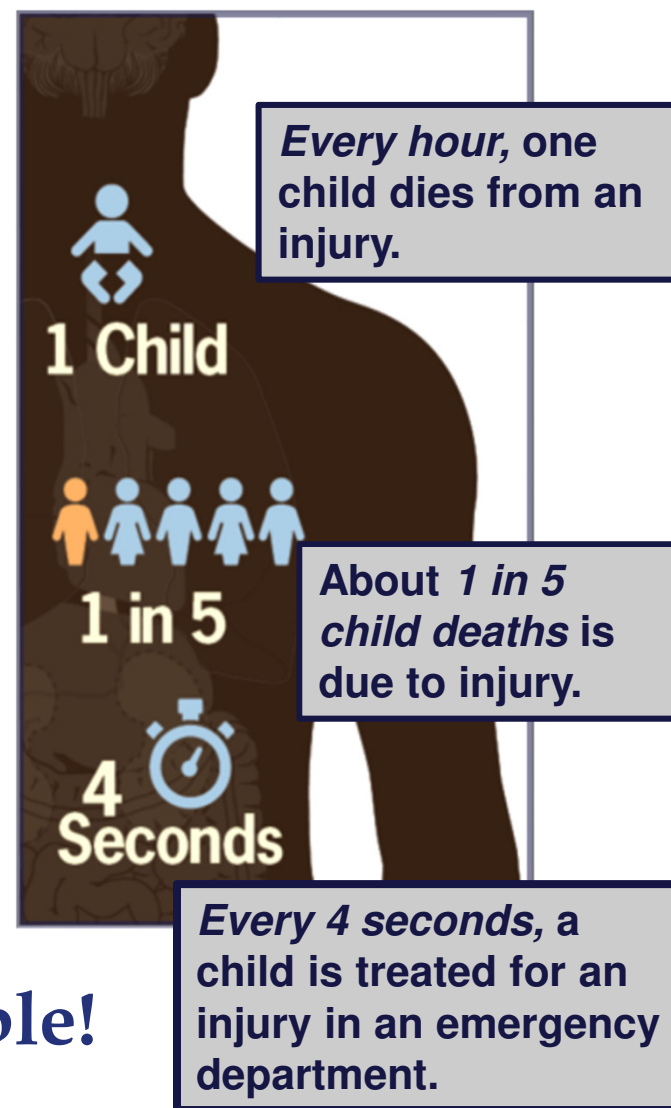
IC 16-49-2-4



Why child fatality reviews?

- Injury is the No. 1 cause of death among children
- From 2007 – 2016 in Indiana, there were 2478 children who died from injuries (ages 0 – 17 years)
This is an average of 248 *preventable* deaths per year
- In 2016, there were more than 4,800 hospitalizations and more than 210,000 ED visits.
- Every two minutes a child is treated for an injury in an ER.

All injury deaths are preventable!



Why collect data?

- Captures the risk factors and circumstances contributing to the death of a child
- Provides ability to track trends at county, regional, state, and national level
- Allows prevention to be targeted to specific groups or risk factors

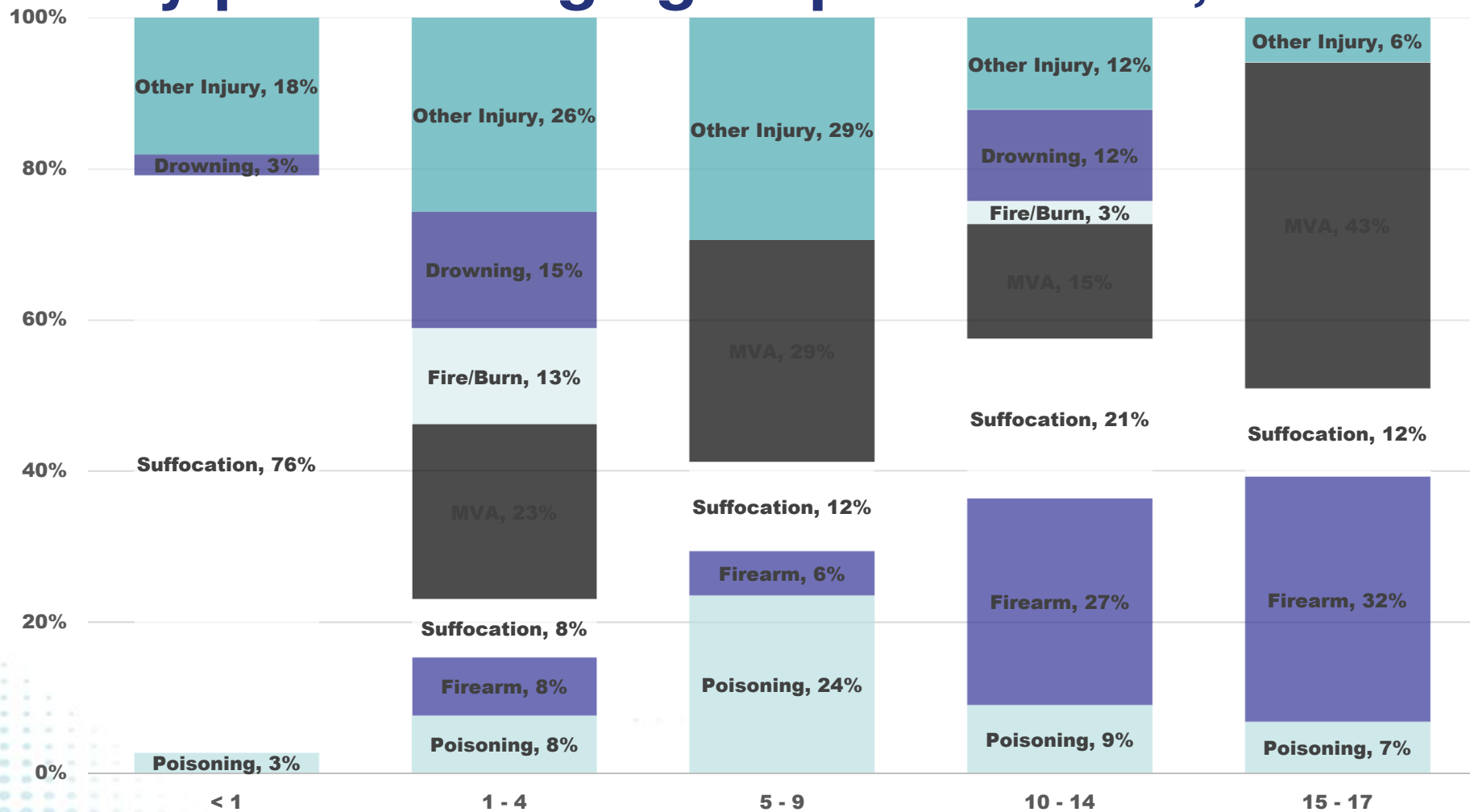


Five leading causes of death in Indiana 2016, all races, both sexes

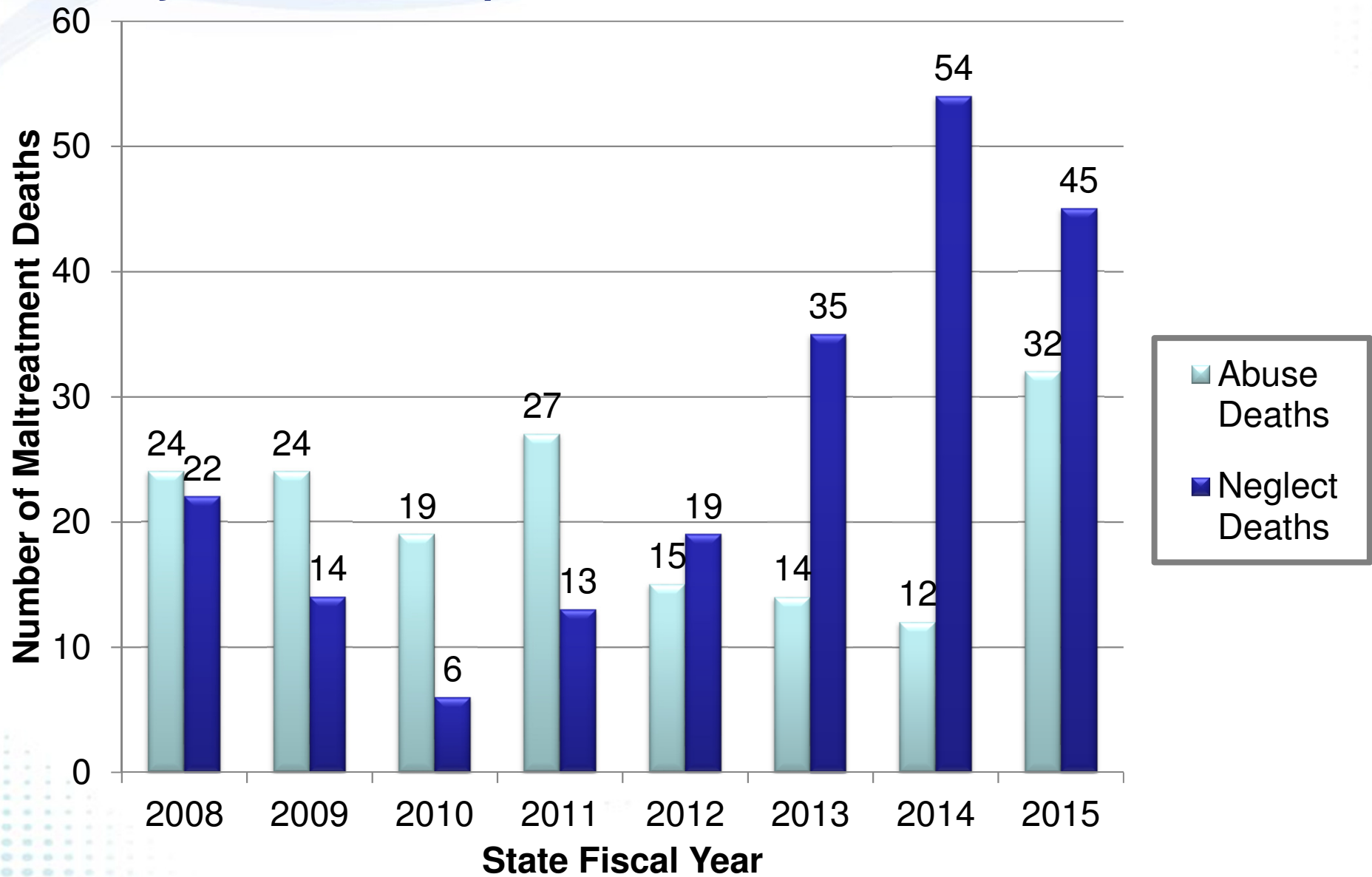
Rank	<u>Age Group</u>				
	< 1	1-4	5-9	10-14	15-17
1	Congenital Malformation 154	Unintentional Injury 101	Unintentional Injury 64	Unintentional Injury 74	Unintentional Injury 131
2	Short Gestation 106	Congenital Anomalies 10	Homicide ---	Suicide 10	Suicide 24
3	Unintentional Injury 58	Homicide 10	Nervous System Disorder ---	Malignant Neoplasm 10	Homicide 22
4	SIDS 50	Unknown ---	Congenital Anomalies ---	Nervous System Disorder ---	Malignant Neoplasm ---
5	Bacterial Sepsis 13	Malignant Neoplasm ---	Malignant Neoplasm ---	Homicide ---	Nervous System Disorder ---

Note: For leading cause categories in this State-level chart, counts of less than 10 deaths have been suppressed (---). Produced By: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. Data Source: National Center for Health Statistics (NCHS), National Vital Statistics System.

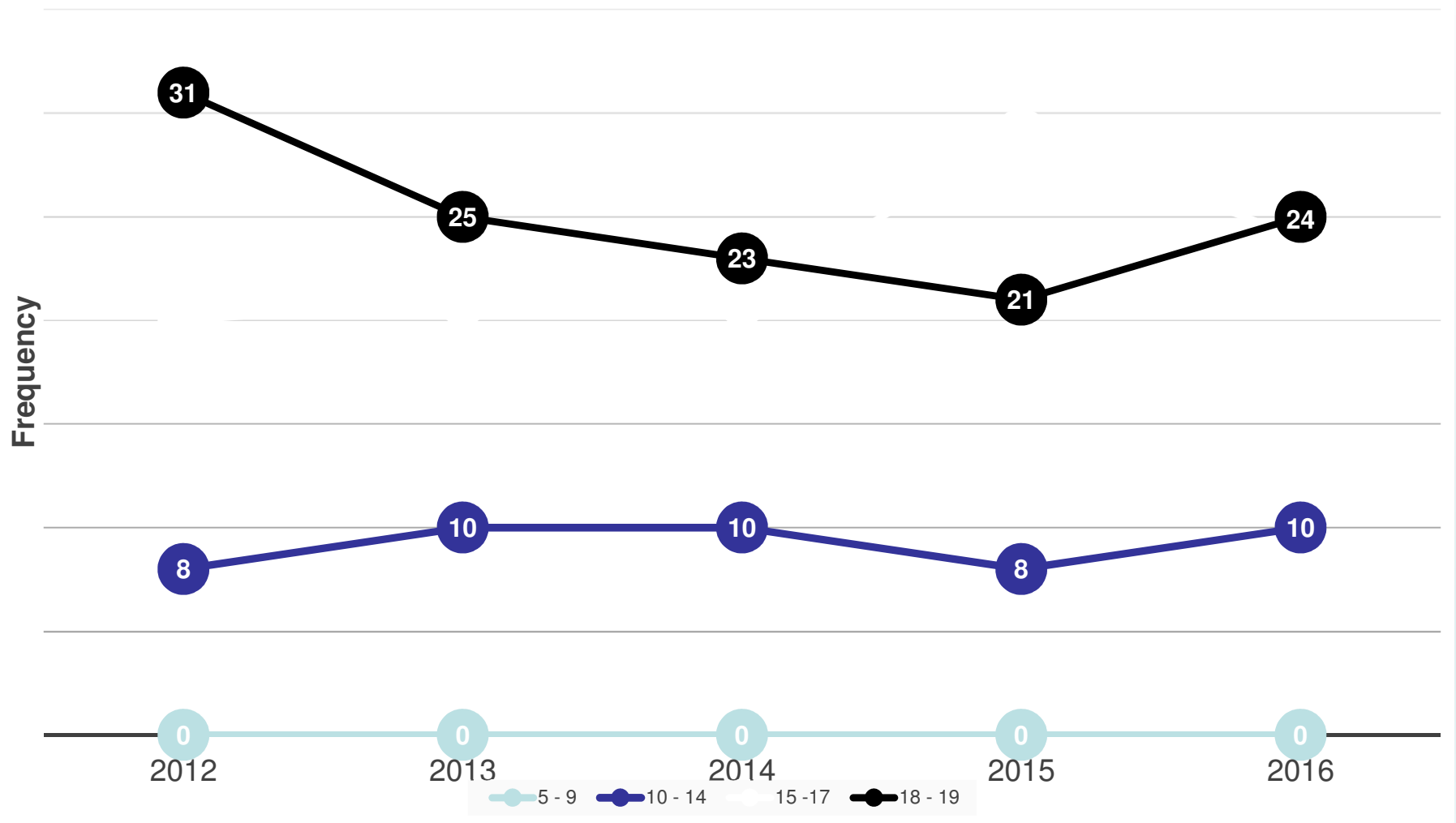
Top causes of unintentional injury deaths by pediatric age group in Indiana, 2016



Indiana child maltreatment deaths as reported by the Indiana Department of Child Services, 2008-2015

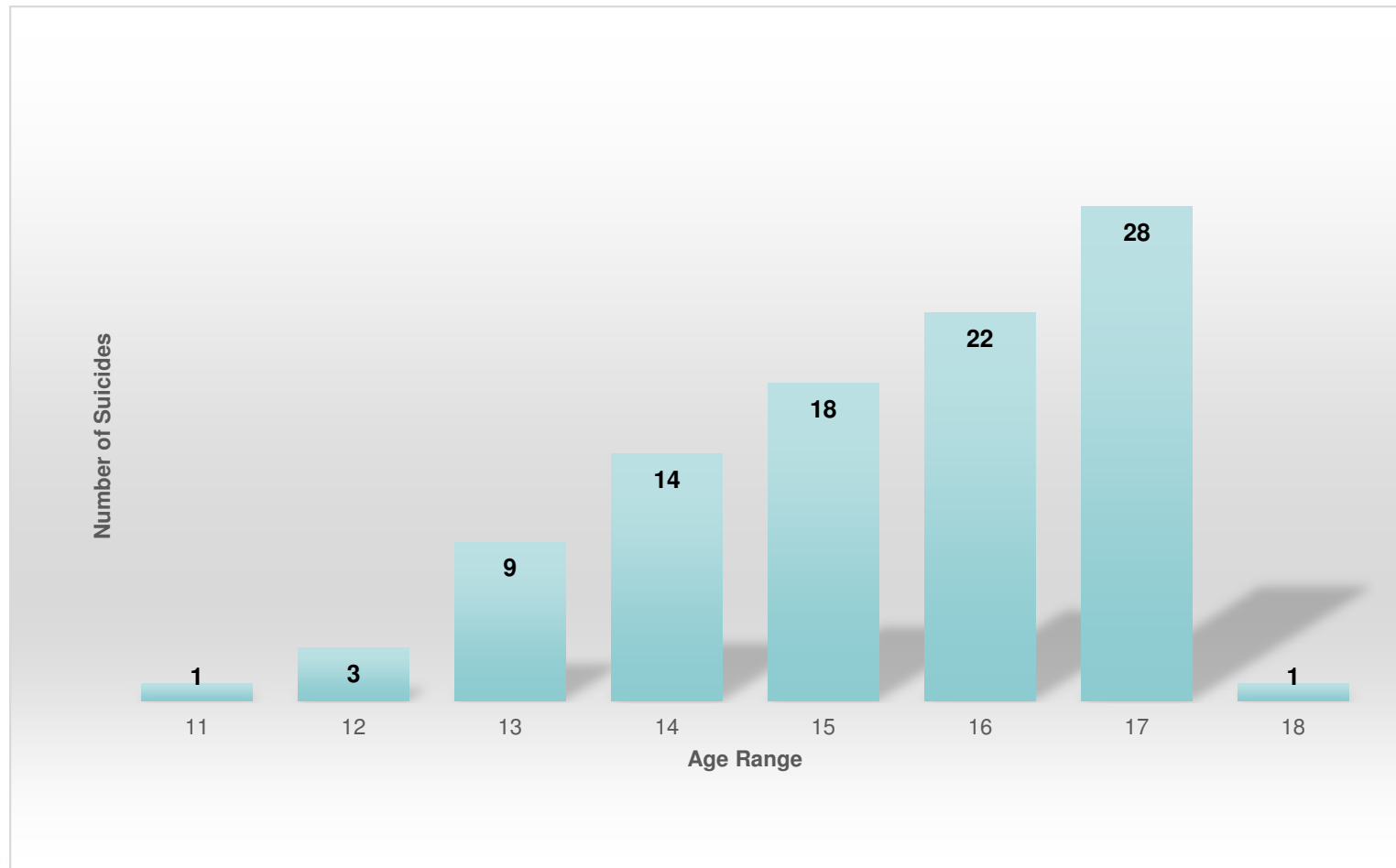


Annual suicide counts ages 5-19 in Indiana, 2012-2016

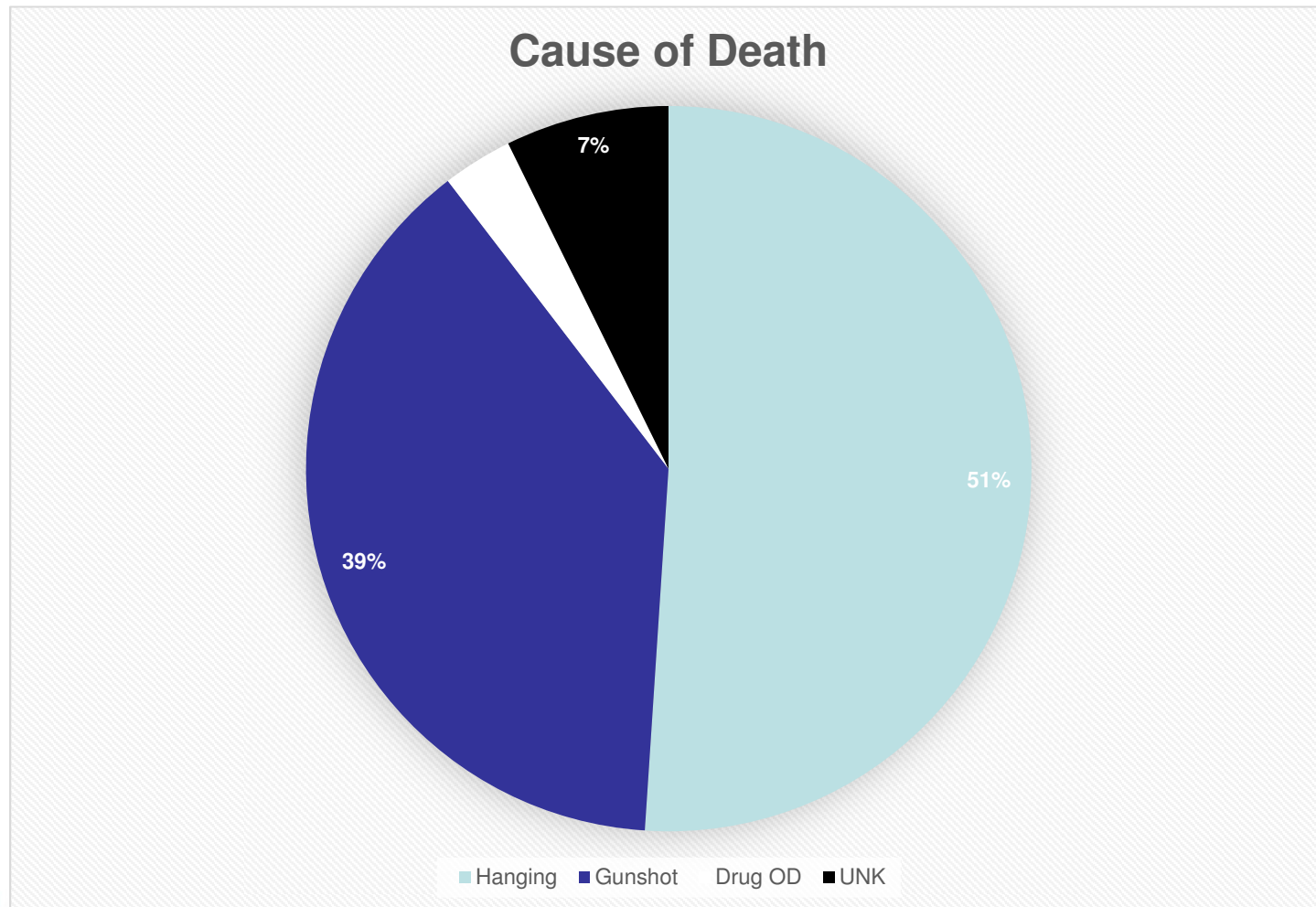


ICD-10 Code Used to Classify Suicide: 'X60 '-'X849','Y870'

Suicide by Age Group (n=96)

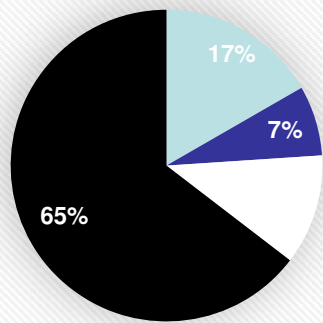


Suicide Methods



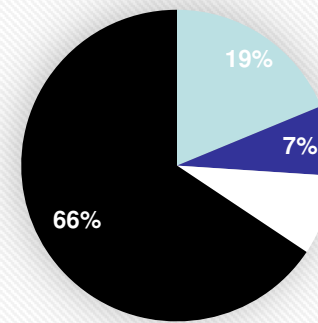
Suicidal thoughts and behaviors

Prior Suicide threat



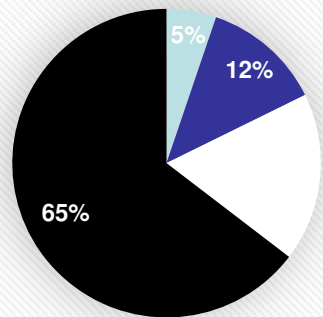
■ Yes ■ No UNK ■ Blank

Child talked about suicide



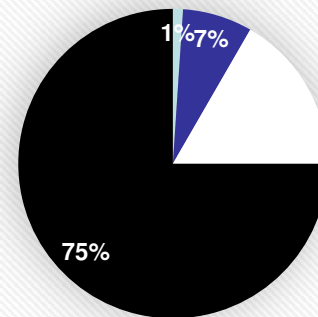
■ Yes ■ No UNK ■ Blank

Prior attempts



■ Yes ■ No UNK ■ Blank

Family history of suicide



■ Yes ■ No UNK ■ Blank

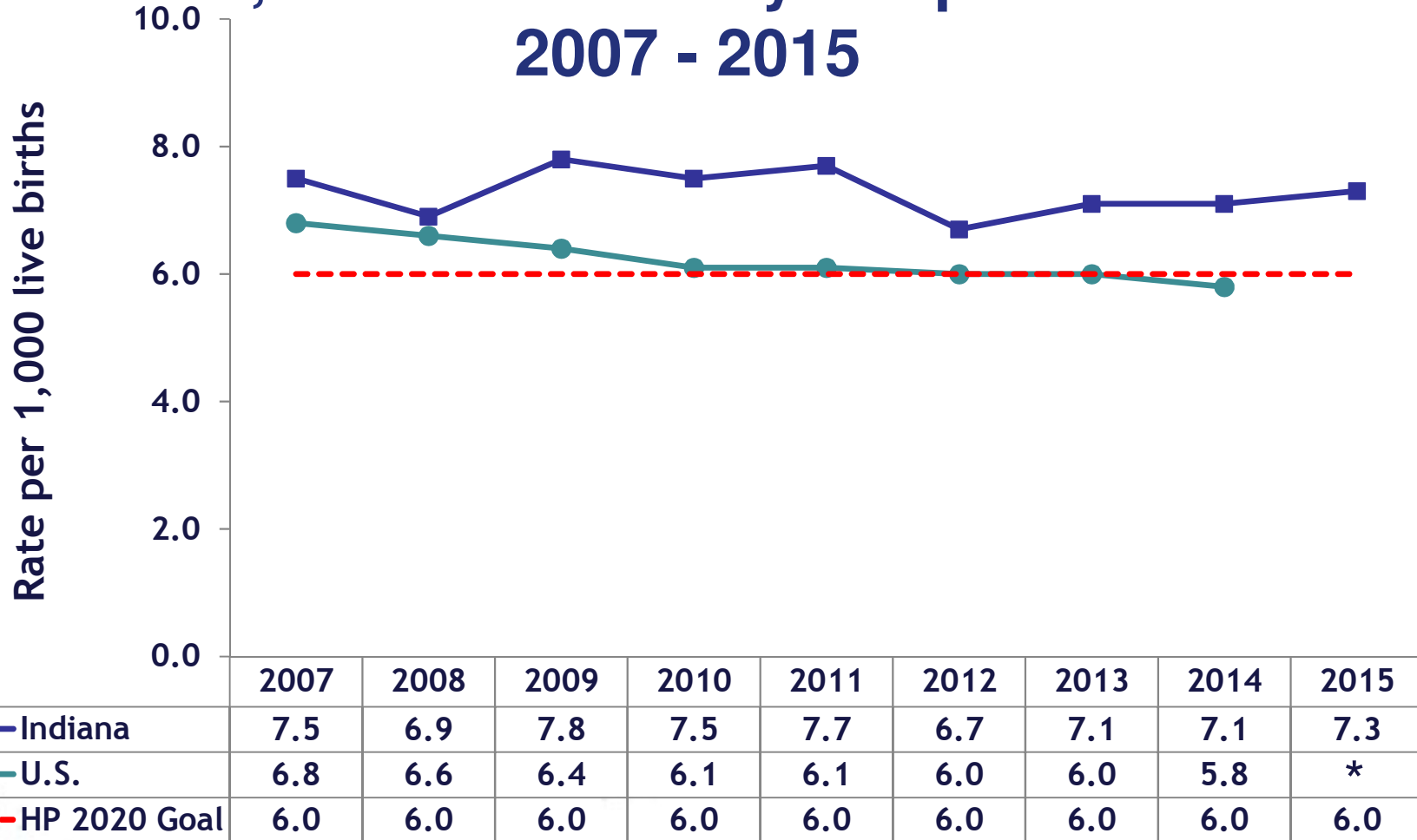
Infant Mortality in Indiana



- 623 Hoosier babies died before their 1st birthday in 2016
 - **Over 50 babies EVERY month**
 - **Nearly 12 babies EVERY week**
- Over 3,000 infant lives lost in the last five years
 - Nearly 42 school buses at maximum capacity**

Infant Mortality Rates

Indiana, U.S. and Healthy People 2020 Goal 2007 - 2015



*Note: Data not available.

Source: Indiana State Department of Health, Maternal & Child Health Epidemiology Division [November 14, 2016]

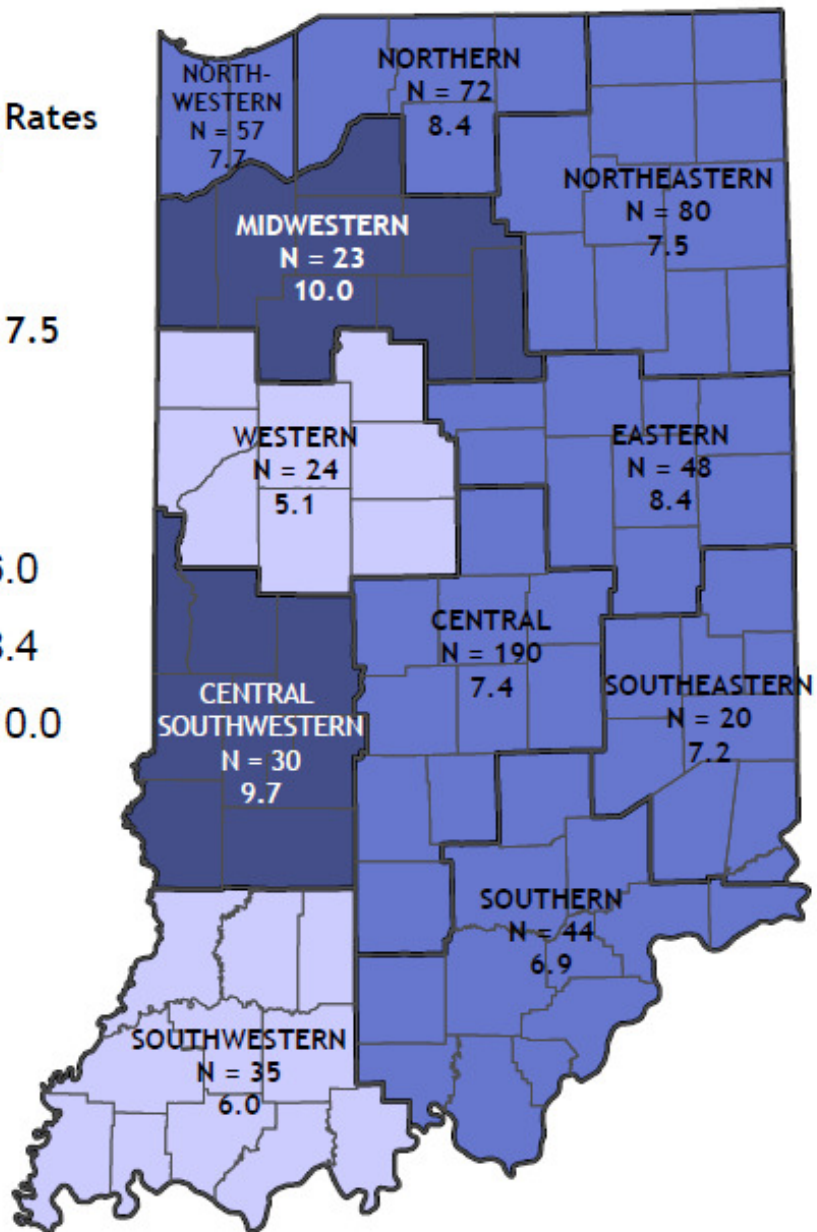
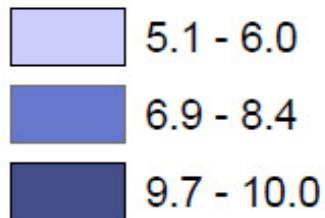
United States Original: Centers for Disease Control and Prevention National Center for Health Statistics

Indiana Original Source: Indiana State Department of Health, PHPC, ERC, Data Analysis Team

Infant Mortality Rates by Region

2016

Indiana IMR = 7.5
N = 623



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Source: Indiana State Department of Health, Division of Maternal and Child Health
Created: December 14, 2017

Data Source: Indiana State Department of Health, Epidemiology Resource Center, Data Analysis Team

Infant Mortality Rates County Level All Races 2012 – 2016

HIGHEST Infant Mortality Rates in Indiana

Jay, 13.7	Lake, 8.4
Cass, 10.1	Marion, 8.4
Grant, 9.6	Dubois, 8.3
Bartholomew, 9.3	Henry, 8.3
Wayne, 9.0	St. Joseph, 8.2
Delaware, 8.5	LaPorte, 8.0

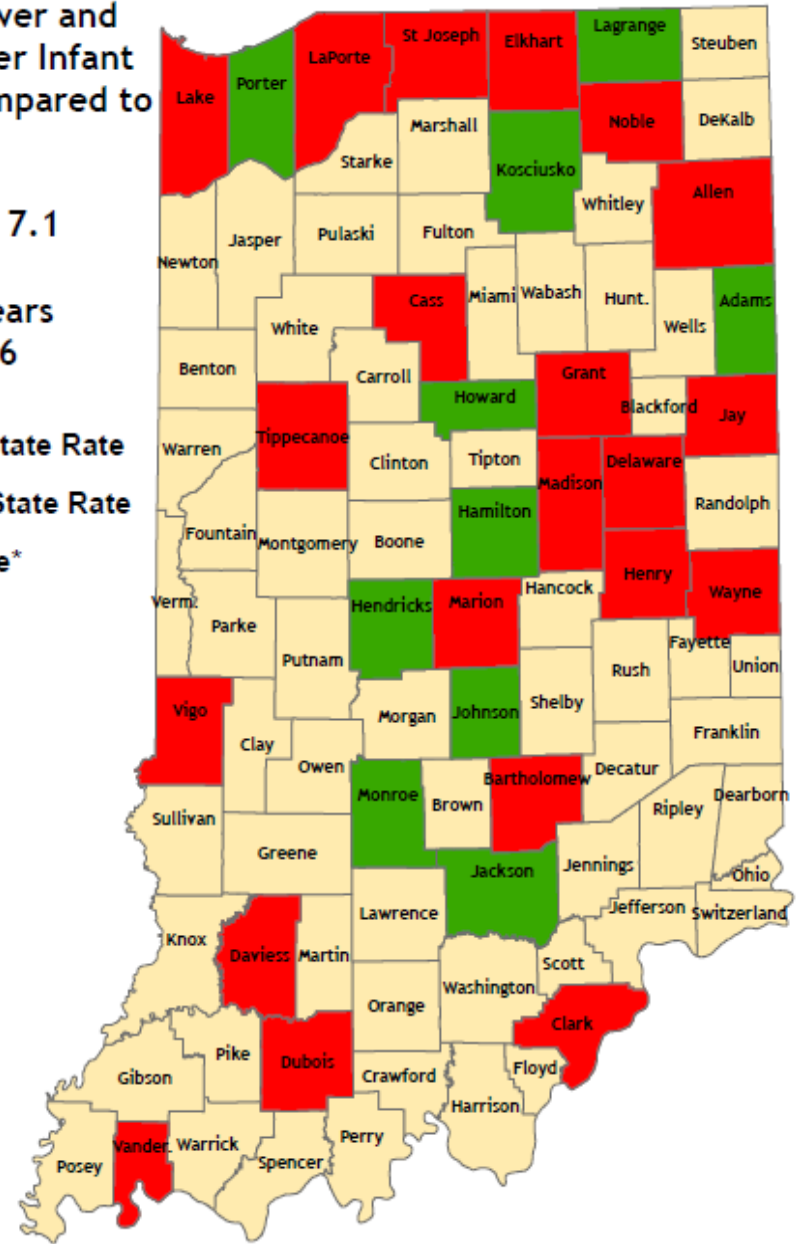
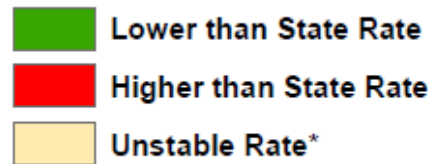
Counties that have REACHED HP2020 Goal

Hamilton, 4.1
Porter, 4.9
Johnson, 5.2
Hendricks, 5.6

Counties with Lower and Counties with Higher Infant Mortality Rates Compared to Indiana

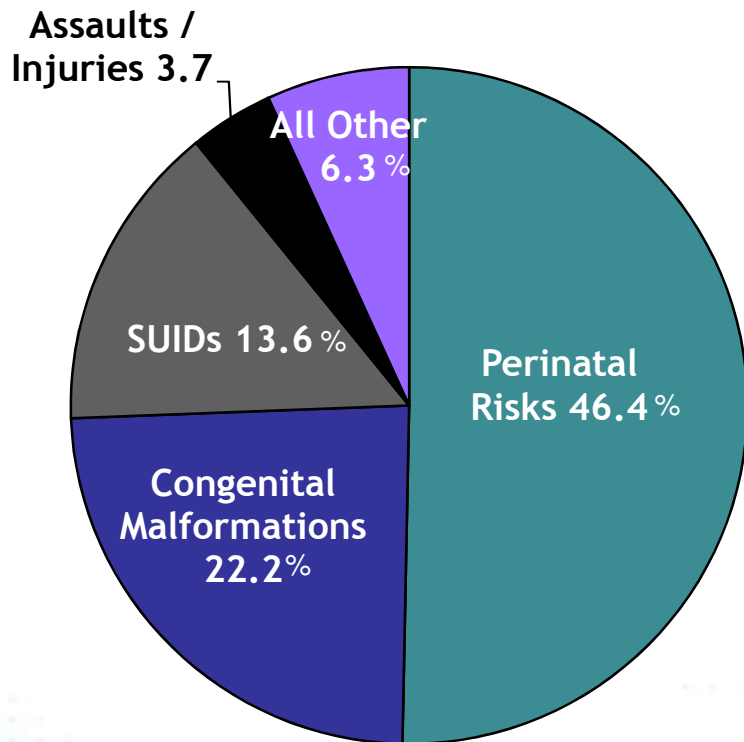
Indiana IMR = 7.1

Aggregated Years
2012 - 2016

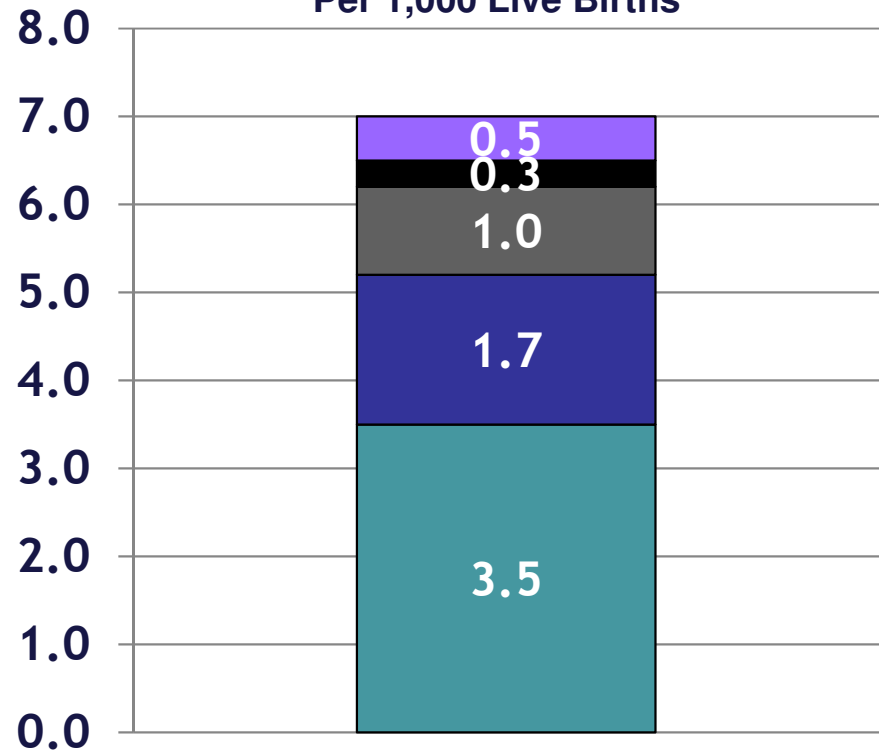


Infant Mortality Distribution by Cause Indiana 2016

% Distribution of Infant Deaths
N = 623



Cause Specific Mortality Rates*
Per 1,000 Live Births



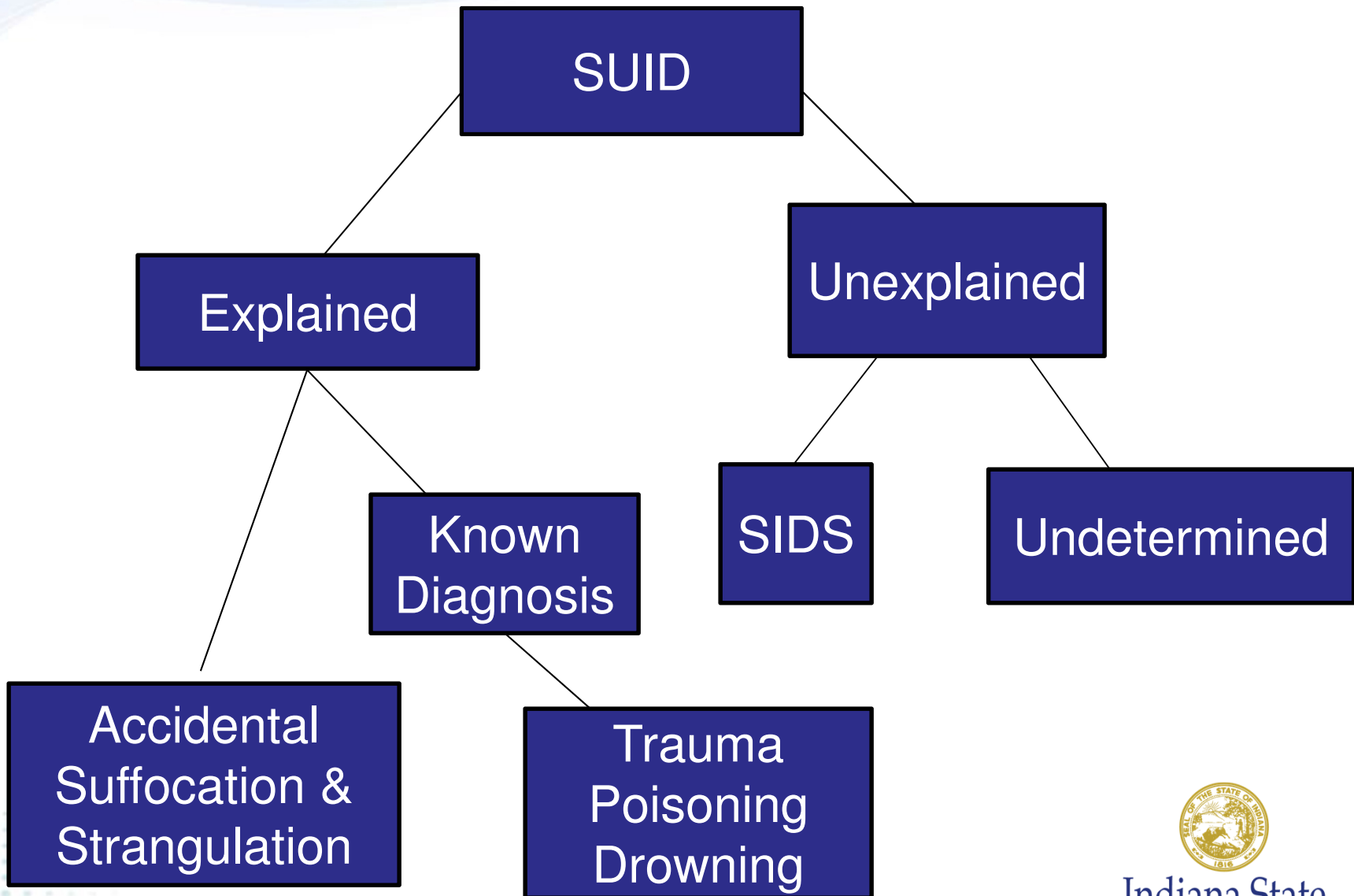
*Note: Cause specific mortality rates may not exactly equal the overall infant mortality rate due to rounding.
Source: Indiana State Department of Health, Maternal & Child Health Epidemiology Division [January 5, 2018]
Indiana Original Source: Indiana State Department of Health, PHPC, ERC, Data Analysis Team

SUID

- SUID: Sudden Unexpected Infant Death
- SUID is the umbrella heading under which sudden infant deaths are classified
- SUID includes accidental sleep-related deaths
- Reducing risk versus prevention
- Must know the difference between SIDS and ASSB (accidental suffocation, strangulation in bed)
- Important to know the difference between the two when educating the community

SUID

- **Sudden infant death syndrome (SIDS):** The sudden death of an infant less than 1 year of age that cannot be explained after a thorough investigation is conducted, including a complete autopsy, examination of the death scene, and a review of the clinical history. SIDS is a diagnosis of exclusion, made only after all other possibilities have been ruled out.
- **Unknown cause:** The sudden death of an infant less than 1 year old that remains undetermined because one or more parts of the investigation were not completed.
- **Accidental suffocation and strangulation in bed (ASSB):** The sudden death of an infant less than 1 year of age that can happen because of
 - Suffocation by soft bedding
 - Wedging/entrapment
 - Overlay
 - Strangulation



Evaluation of 2014 Indiana SUID Data



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Department of Health

Committee Review Goals

Goal1

- Evaluate the quality and completeness of infant deaths reporting

Goal2

- Determine if SUID Investigations (SUIDI) are being conducted as recommended by the CDC SUIDI protocol

Goal3

- Classify the cause and manner of death, using the CDC SUID Case Registry algorithm

Goal4

- Identify prevalent SUID/Sudden Infant Death Syndrome (SIDS) risk factors and formulate prevention recommendations

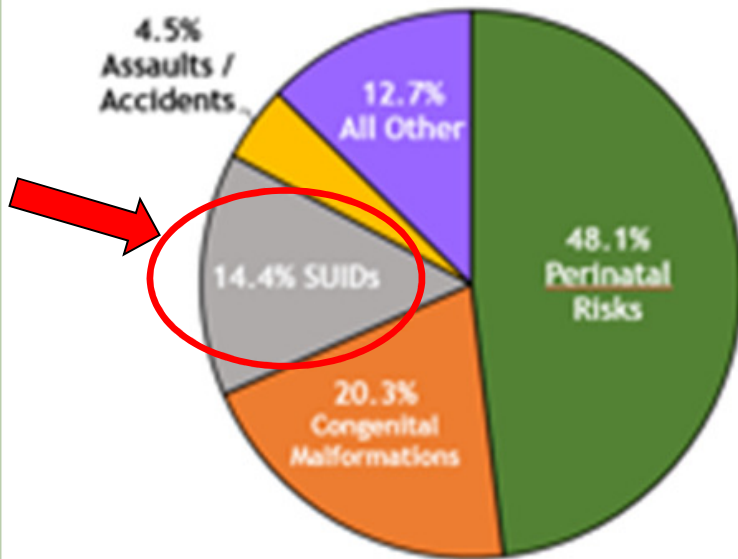
Methods

The Statewide Child Fatality Review (CFR) Committee used the following data sources for this retrospective study:

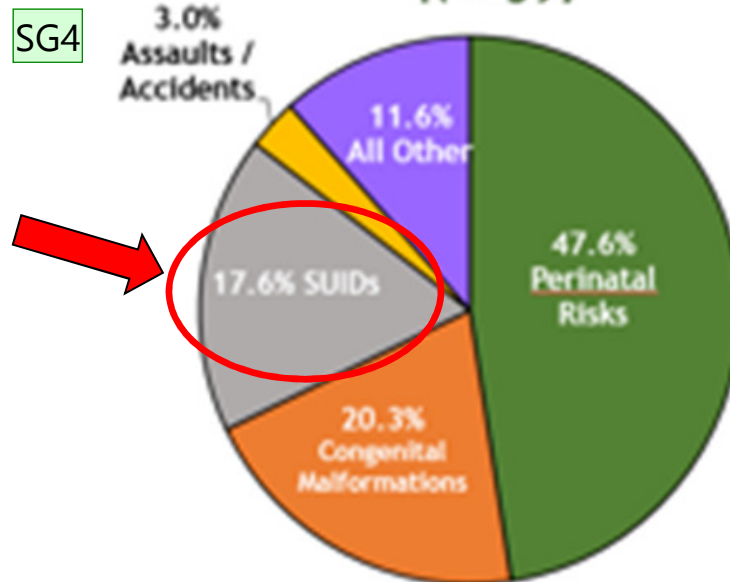
- Death certificates
- Autopsy reports
- Department of Child Services records
- National Center for Fatality Review and Prevention Case Reporting System (NCFRP CRS)

Key findings

Original % Distribution of Infant Deaths
N = 597



% Distribution of Infant Deaths with
19 discovered ASSB
N = 597



*Note: Cause specific mortality rates may not exactly equal the overall infant mortality rate due to rounding.
Source: Indiana State Department of Health, Maternal & Child Health Epidemiology Division (November 13, 2017)
Indiana Original Source: Indiana State Department of Health, PRPC, ERC, Data Analysis Team

Slide 27

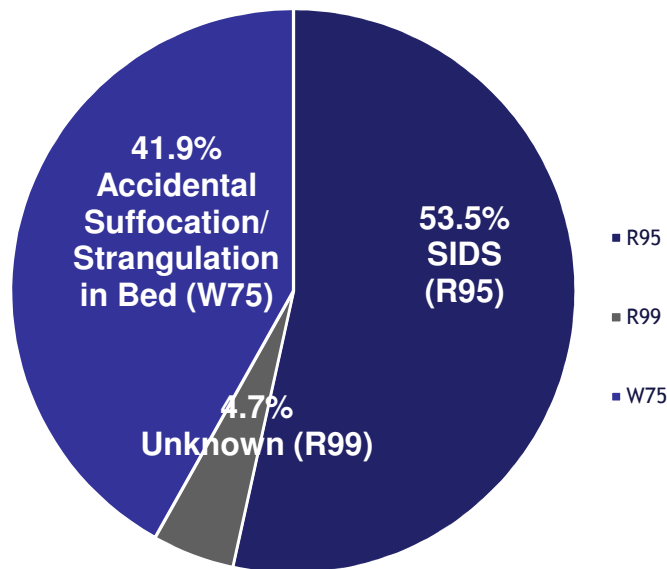
SG4

This chart is really blurry. Is there a way to make it better quality?

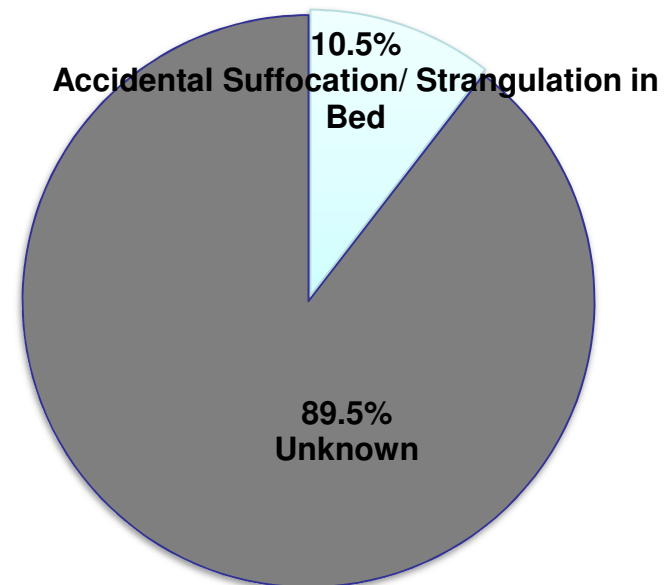
Sanderson, Greta, 6/18/2018

Effect of missing investigation data on the classification SUIDs

% Distribution of SUIDs Deaths Identified Through Vital Records (n = 86)



% Distribution of SUIDs Deaths Based on the CDC Algorithm (n=105)

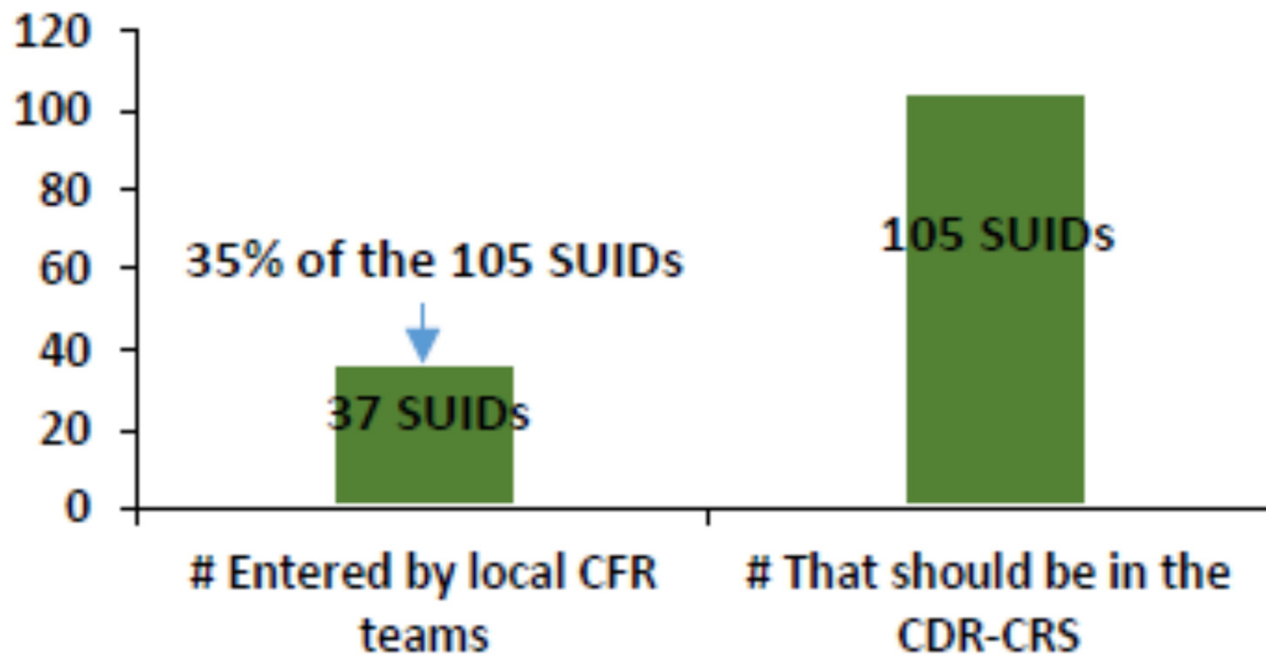


Key findings

- A death scene investigation was conducted in 87% of the 105 deaths (N=91)
- While a majority of SUIDs had a partial death scene investigation, not all were complete or included the necessary documentation
- Only 48% of infant autopsies were conducted by a forensic pathologist in 2014, despite statute requiring an FP for all infant deaths
- X-rays were only taken in 51% of the SUIDs investigations

Key findings

Figure 10: Number of SUIDs Entered in the CDR-CRS



Key findings

OUT OF 105 SUIDS REVIEWED

99

Mentioned at least one unsafe sleep factor

4

Provided inadequate information for the CFR committee to determine if the sleeping environment was unsafe

2

Had no unsafe sleep factor



Summary of Recommendations

SUIDI

- Death scene investigators should utilize SUIDI protocol

SUID Case
Registry
Algorithm

- Local CFR teams should employ the SUID Case Registry Algorithm when reviewing SUIDs

CDC
definitions
for types of
SUID

- Death certifiers and coroners should adopt the CDC definitions for types of SUID (Sudden Infant Death Syndrome, ASSB, or Unknown/Undetermined)

NCFRP
CRS

- Local CFR teams should use NCFRP CRS data to implement evidence-based programs/activities to reduce SUIDs

Sleep-Related Deaths

- **Are 100% preventable!**
- Accidental Suffocation and Strangulation in Bed (ASSB)
- Falls under SUID
- Types:
 - Suffocation
 - Wedging
 - Entrapment
 - Strangulation



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Indiana's Safe Sleep Program

- Strives to reduce the infant mortality rate in Indiana by providing early intervention and education through direct, consultative services to infant caregivers
- Establishes partnerships with agencies across the state to provide safe sleep education and Infant Survival Kits for parents and caregivers who do not have a safe place for their infants to sleep
- Educational messages focus on three key risk reduction recommendations from the AAP and NIH, which states that infants sleep safest:
 - Alone
 - On their backs
 - In a separate, safe sleep environment

Safe Sleep Community Partners

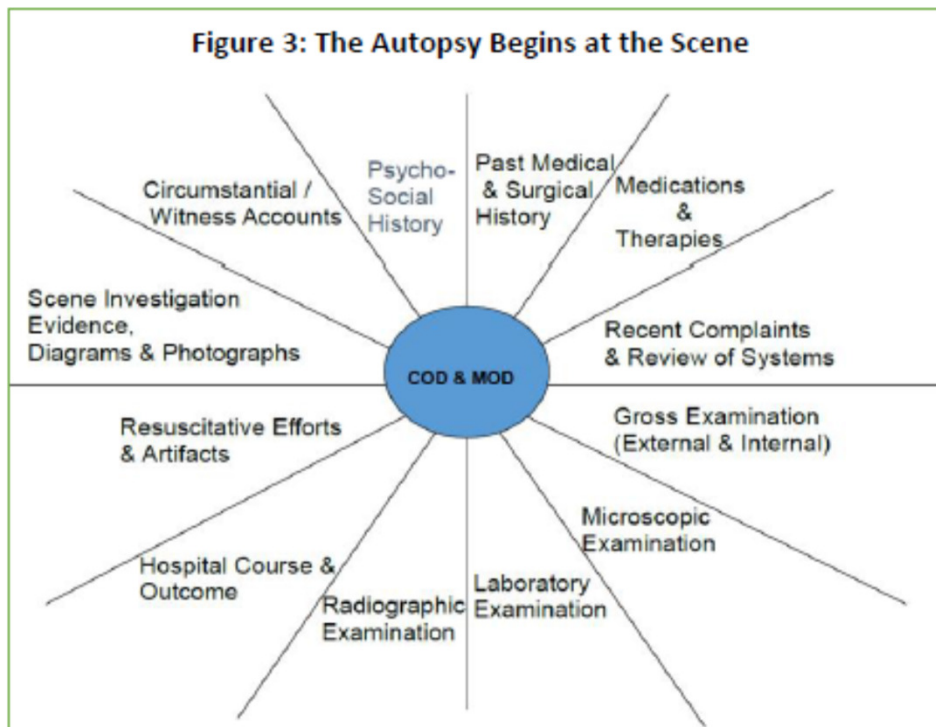
- Fire departments
- Law enforcement agencies
- Emergency medical services
- Child care workers
- Nurse sororities
- High school health classes
- Faith-based nurseries
- Black/ African American sororities
- March of Dimes
- Black Firefighter's Association



SUIDI

- SIDS, unlike the other SUID causes, is a diagnosis of exclusion, given only after all other possible causes of sudden, unexplained death have been ruled out through a careful case investigation
 - Sudden Unexplained thorough examination of the death scene
 - a complete autopsy
 - a review of the infant's medical history
- Sudden Unexplained/Unexpected Infant Death Investigation (SUIDI), created by the CDC in 2006, aims to standardize and improve data collected at infant death scenes and to promote consistent classification and reporting of SUIDs

SUIDI



- A comprehensive death scene investigation is often the only way to distinguish SIDS from suffocation
- SUIDI aims to standardize data collection in infant death investigations
- Emphasis on collaboration

Direct On-Scene Education (DOSE)TM

DOSE is an innovative attempt at eliminating sleep related infant death due to suffocation, strangulation or positional asphyxia by using First Responders to identify and remove hazards while delivering education on scene during emergency and non-emergency 911 calls.

****Every call is a potential opportunity for education on safe sleep****

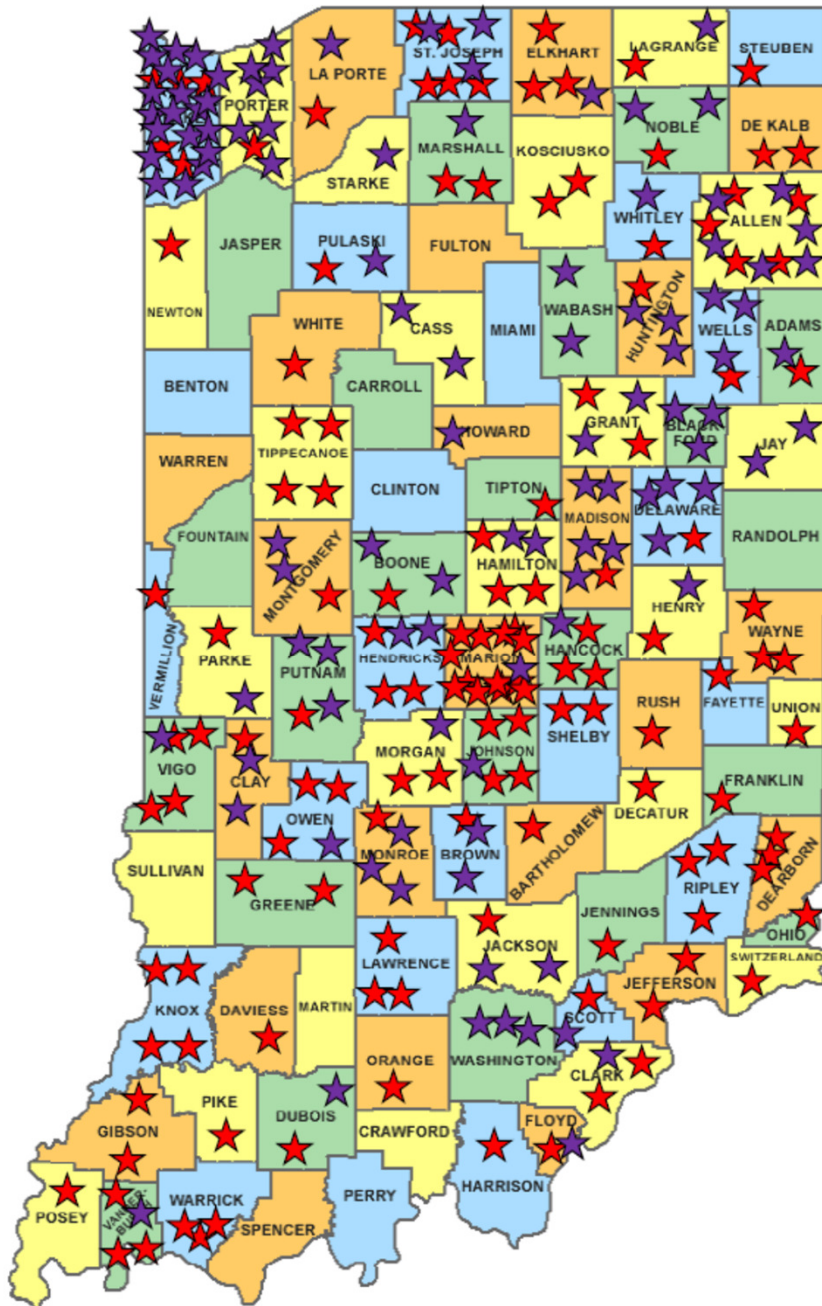


Environment Check

- Where is baby sleeping or where will the baby be sleeping when it is born?
- Is there a crib? Pack n play?
- Does the crib have bumper pads?
- Does the crib have toys, stuffed animals, loose blankets or pillows in it?
- Is the baby sharing a bed with other children or adults?



★ March 2017 DOSE Trainers ★ 2016 Trainers



DOSE in Indiana



It's Working!



●●○○ AT&T LTE 9:12 PM 68%
facebook.com



Griffith Fire Department added 2 new photos — with Kevin LaDuke and Mike Sharp.

4 mins · 🌐

The Griffith Fire Department is proud to announce that we will be a part of the DOSE Program which is Direct On Scene Education to help prevent Sudden Unexpected Infant Death.

If you read in the NWI Times this weekend, infant mortality rates are on the rise throughout Indiana. The numbers are so staggering, they compare to a third world country.

We will be giving more information once we get the program up and rolling. We look forward to it being another benefit to our community and a way for us to protect lives, especially infants.

Thank you to Battalion Chief Kevin LaDuke and Firefighter Mike Sharp of the Saint John Fire Department for putting on a great program for us

"Used the DOSE program at 1 a.m. last night on a CO call. Bumper pads in crib, no more."



A Program of Healthy Mothers, Healthy Babies Coalition of Broward County, Inc. Developed By: Captain James Carroll & Jennifer Combs, MSN, ARNP



2017

Drowning Prevention Report

Collaborative Efforts

DNR Division of Law Enforcement
Indiana Conservation Officers





The Group

More than 600 reports
and
11 years of data

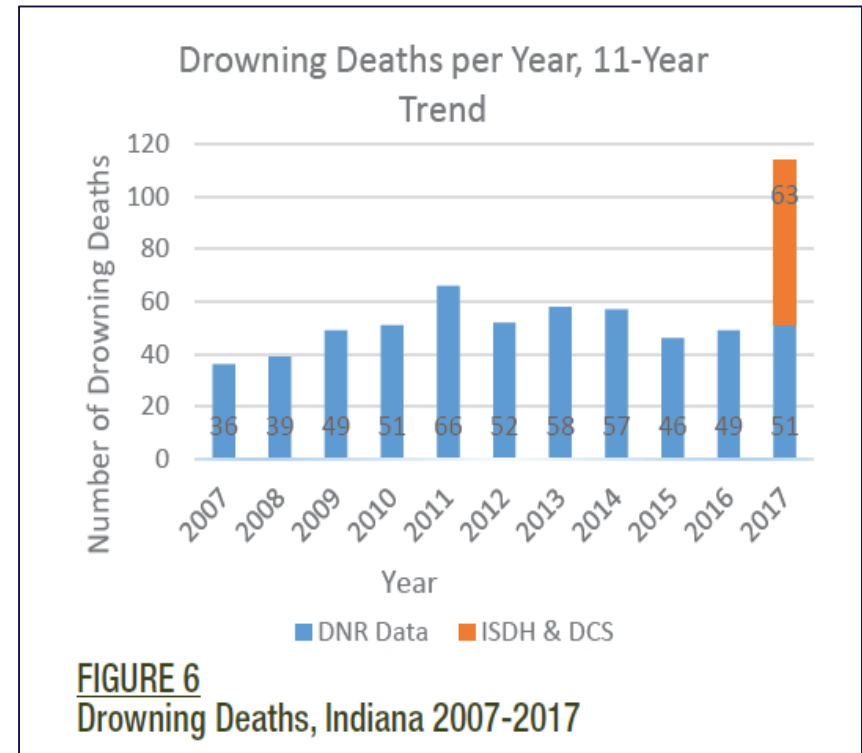


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Collective Impact

- First it was just DNR - Studying hundreds of drowning reports
- Then joined by other data-collecting agencies
- Committing to monthly meetings
- Agreeing on data collection fields
- Navigating legal restrictions
- Finally ... Compiling a comprehensive drowning report!



43 turned into 114!

2017 STATISTICS

114 PEOPLE DROWNED in Indiana
January 1 - December 31, 2017

Drowning by Sex

78% Male, 22% Female

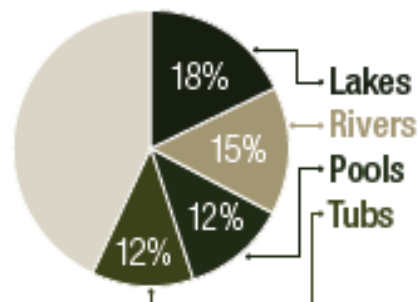


Driving into flooded waters,

including lawn mowers into private ponds, have been in the top 4 leading causes of known drownings over the last 11 years.



Top 3 Drowning Locations



Top 3 Drowning Activities



Drownings in Indiana



Divided by Indiana DNR Law Enforcement Districts

Why Does this Concern Us?



Drowning =
Leading Cause of Death
Children younger than age 14



It's Preventable!

Prevention Stories & Tips

CASE STUDY | Parent Supervision & Barriers

Scenario

While attempting to stay cool on a hot summer day, a mother took her young son over to a relative's house to enjoy their above-ground pool. The mother decided that the heat was unbearable and stepped inside the house for a moment to get cooled off by the air conditioning. The child's grandmother was trying to watch the child through a window but would lose visual contact for brief moments. After a short time of not being able to see the child, the mother and grandmother ran outside to check on the 3-year-old and found him lying on the bottom of the pool. Efforts to revive him failed.

Solution



Have constant visual contact.

A mother was bathing her 2-year-old daughter and allowing her 1-year-old son to play outside the tub. The mother left the bathroom to look for a towel. She returned three to six minutes later to find the 1-year-old face down in the tub.



It only takes seconds for an accident to happen.

A family was having a gathering. A 2-year-old male was observed outside with other children playing. The adult supervisor was making lunch for the family. When the adult went to check on the child 10-15 minutes later, she was unable to locate him. He was found in the family pool shortly after.



Actively supervise around water.

A mother, father, and their 3-year-old, autistic, non-verbal son were preparing dinner. Each parent believed the child was with the other. The back door was observed open. After searching for 10-15 minutes, they contacted emergency services. Police located the child in a nearby retention pond.



Designate an adult at all times with a verbal handoff.

A 3-year-old child drowned in a pond located near the backyard of the child's home. The mother of the child allowed the child to play in the back yard, unsupervised, while she remained in the front yard to pull weeds and then talk with her boyfriend. When the mother went to the backyard to check on the child, she was unable to find the child. The child was eventually found in the pond. Due to the fact the child was unsupervised and there were no barriers between the backyard and the pond, the child was able to enter the water and drown.



Time building a barrier is time well-spent.

CASE STUDY | Wear a Life Jacket

In June 2012, only 17 days apart, two Indianapolis teenagers lost their lives under very similar circumstances while enjoying a trip with friends at a campground in Central Indiana. The trips were intended to provide a day of outdoor recreation for inner city kids who generally did not have much opportunity to participate in these types of activities. The campground is known for the crystal clear lake that is decorated with many floating swimming platforms and specially designed for a day of fun on the water.



It takes seconds. Use them wisely.

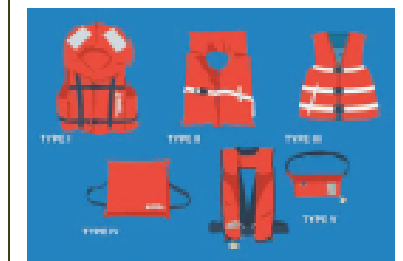


Signs are posted from the parking lot to the water that state, "Anyone entering the water **MUST** wear a life jacket." Each of these teens ignored the warning signs, and both believed that their ability to swim coupled with their level of physical fitness could easily overcome any risk they may encounter a mere few feet from the swimming dock.

Witnesses state that both of these young people showed signs of struggle and were tossed life jackets, but not within their reach. A 14-year-old and a 15-year-old, who both believed that they were good swimmers, tragically lost their lives. This could have been prevented by taking a moment to put on a life jacket.

Proper Life Jacket Fit

PFJ Selection, Use, Wear, and Care **\$30=Life**
United States Coast Guard Web site
<https://www.uscg.mil/faq/faq5214/pfjselection.aspx>



Life jackets are just like the seatbelt in your car.

You never get an advanced warning to put it on prior to an accident. Remember this when selecting a life jacket for yourself or children. Proper fit and comfort increases your willingness to put it on.

Child Drowning Deaths

There were 29 drowning deaths among those aged 0-12 in 2017. Twenty-three (79%) were male and six (21%) were female.



Actively supervise children in and around open bodies of water.



More than half of drownings among infants (under age 1) occur in bathtubs.

Drowning Deaths by Sex (Ages 0-12)

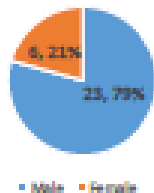


FIGURE 6
Drowning deaths by sex, Indiana 2007-2017

Drowning Locations

- Private Ponds-23%
- Retention Ponds-7%
- Pools-22%
- Tubs-5%
- Lakes-17%
- Beaches-3%
- Rivers-15%
- Flood Waters-1%

Swim only in authorized areas such as swimming pools, beaches, etc.

Leading Drowning Activities

Falling
27%

Swimming
19%

Bathing
5%

Boating
2%

The Center for Disease Control reports drowning as the leading cause of death by age.

#1 - Ages 1-4

#2 - Ages 5-9

#4 - Ages 10-14

#5 - Ages 15-24

Leading Causes of Child Drownings



No parent supervision



No Protective Barriers

Drownings typically occur when a child is left unattended or during a lapse in supervision.

CASE STUDY | Rescue Techniques

First try to talk the victim to safety.



REACH

Extend anything that could pull the victim to safety such as a fishing rod, tree branch, boat oar, trouser belt, towel, jumper cables, or any other object that can extend your reach. If nothing is available, lean that on the dock/ground/ice and grab the victim's hand or wrist, and pull him or her to safety.



THROW

If the victim is too far away to reach, THROW the victim a lifejacket (PFD) or anything else that will float. Coolers, spare tires, pool rafts, or anything else that might float should be considered.



ROW

If a boat is available, ROW to the victim and then use an oar or paddle to pull the victim to the back (stern) of the boat. Let the victim hold onto the stern as you paddle to shore. If the victim is too weak, hold onto him or her until help arrives. If using a powerboat, stop the engine and glide to the victim from the downwind side.



GO

Swimmers without lifesaving training should not swim to a victim. Instead, GO for help. If you must swim, take along anything that floats to keep between you and the victim.

Share these rescue techniques with others.

2017 drowning prevention report | page 100 | 15

Other findings



6 p.m. is the most frequent time of day for drowning deaths to occur over the 10-year DNR study period (2007-2016).

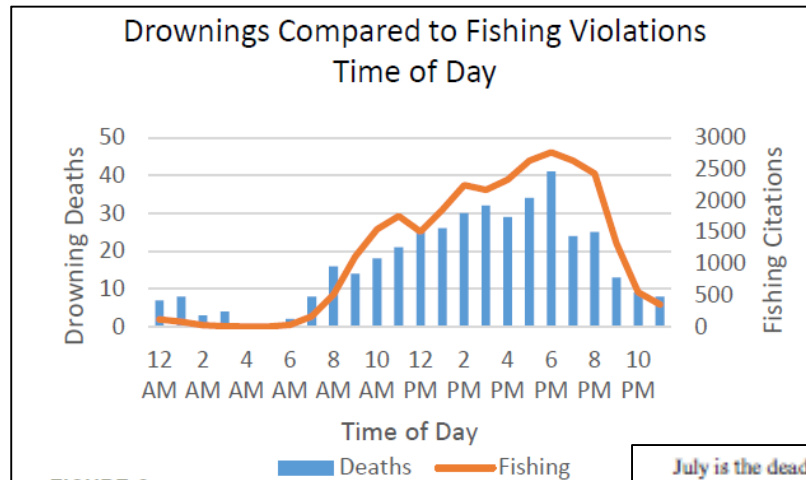
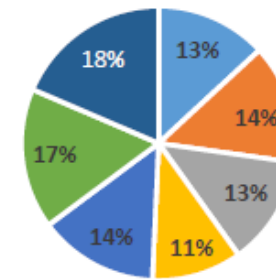


FIGURE 6
Drowning deaths and fishing violations by time of day average, Indiana 2007-2016, DNR data only

Sundays (18%) are the leading day for drowning deaths followed by Saturday (17%) and then Tuesdays (14%) and Fridays (14%). In 2016 Monday lead (20%); however, Tuesdays remain tied with Fridays.

Drowning Deaths by Day of Week, 10 Year Trend



- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Sunday

deaths by day of the week, Indiana 2006-2016, DNR data only

July is the deadliest month for deaths to occur with one hundred two (102) of the recorded drownings over the 11-year DNR study period (2007-2017). June follows closely behind with 99 drownings and then August with 61 drownings. As a comparison, in 2017, June (25) and July (25) were tied for the deadliest months.

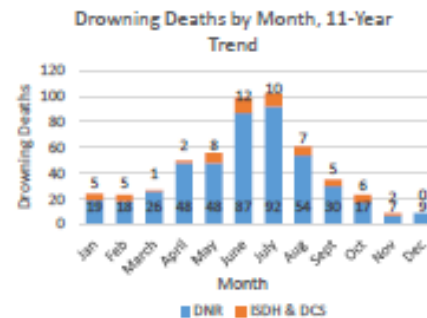


FIGURE 15
Drowning deaths by month, Indiana 2007-2017, 11 year trend

Slide 49

CKL15

use this slide to talk about why knowing this information can lead to better prevention

Cunningham, Kelly L, 5/29/2018

C-Pod App



Success Stories and Prevent Programming



Indiana State
Department of Health

Local Teams at Work ...

Farm Safety



Safe Sleep



ATV Safety



Water Safety



Safety Sam

- Over the past 5 years, 1,285 ATV-related injuries have occurred in Indiana
- 21 ATV-related deaths in 2016
- Helmet law
- Safety Sam



Slide 53

CKL6

do we already have slides somewhere about this?

Cunningham, Kelly L, 5/16/2018

Overdose Fatality Review

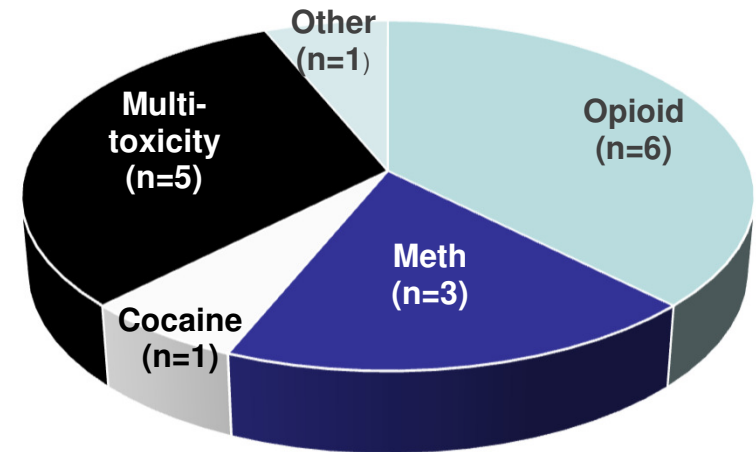
- Modeled after other mortality review teams (child fatality review, fetal-infant mortality review, etc.)
- Multi-agency / multi-disciplinary team assembled to conduct **confidential** case reviews of overdose deaths
- The goal is to prevent **future** deaths by:
 - Identifying missed opportunities for prevention and gaps in system
 - Building working relationships between local stakeholders on overdose prevention
 - Recommending policies, programs, laws, etc. to prevent overdose deaths
 - Informing local overdose prevention strategy
- Team members bring info from respective agencies about decedents to inform review

Results to Date

20 reviewed cases

- Average age - 41.3 years
- 9 cases had documented mental health history
- 12 cases had documented history of incarceration
- 3 cases had history of suicide attempt
- One case was a high school teacher with a master's degree
- One drowning death, two suicides

Toxicology Results



Indiana State
Department of Health

Preliminary Outcomes

- Responder fatigue – collaboration with DMHA, ICJI
- Addiction/Recovery stigma
- Finalization of guidance document/tool kit
 - Will be adding anti-stigma guidance for meeting facilitators
- Prosecution of fraudulent reports of stolen prescriptions
- Recognition of ACES
- Coroner confiscating prescribed meds at terminal scene
 - Training funeral homes to provide resource/knowledge about dropbox locations

Preliminary Outcomes

- Training of local pharmacists/hospital prescribers
 - Challenges of pharmacists who do not want to fill scripts, but face blowback
- Funding search for lock boxes
- Plans to track naloxone administrations to see how many patients ultimately die
- Beginning stages of collecting resource list for teams/first responders

“Never doubt that a small group of thoughtful, committed citizens can change the world.

Indeed, it is the only thing that ever has.”
— *Margaret Mead*



Indiana State
Department of Health

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