

In 2009, the Indiana Child Fatality Review Team took on the task of reviewing child deaths in groups defined by the cause of death. Nationally, many state fatality review teams are taking this approach as a way to bring specific content experts to the table to enhance discussion, increase knowledge sharing and better develop prevention strategies by compiling large numbers of similar cases for comparison. As a group, we began this process by reviewing the highly preventable cause of death: drowning. We invited a representative from the Department of Natural Resources (DNR) to join the group as they are responsible for the investigation of outdoor drownings—specifically open streams and bodies of water and collected cases from their records as well as the records of the Department of Child Services (DCS). Ideally, we would be able to identify all cases of drowning in the state for children under 18 years of age in order to follow trends over time. Some cases we reviewed were found in both the records of DNR and DCS while others were only found in one of the agencies but not the other. Cases from DCS were not necessarily substantiated as abuse or neglect but rather were investigated by the agency. This report is a summary of the cases reviewed along with our team’s recommendations related to preventing future tragedies.

In 2000, 1,374 children under 19 years of age died due to drowning in the US (WISQARS, CDC). Children at the highest risk for drowning death were between the age of birth and 4 years with a second peak in late adolescence (15-19 years). Research has shown there is a tendency towards underreporting of abuse or neglect related to drownings; many cases are simply identified as “accidental” without further investigation. According to CDC data, drowning deaths rank 4th among unintentional causes of death in children <1 year of age and 2nd for those 1-19 years of age for the years 1999-2007 in Indiana. A common statistic calculated to appreciate the impact a given cause of death has is Years of Potential Life Lost. This is calculated using years lost prior to age 65. For the years 1999-2007, 20,912 years of potential life were lost among our Hoosier children due to drowning. These deaths should be considered preventable.

Cases reviewed included deaths between 2007 and 2009. Due to limitations in how cases were obtained for review, not all cases in those years were available. However, after reviewing the 36 available cases, multiple patterns were apparent as were opportunities for prevention. Cases were reviewed from 25 counties (see Table 1) and included 31 fatalities and 5 near fatalities. The majority of cases reviewed were drownings in natural bodies of water, followed by pools (see Figure 1). There were drowning fatalities in every month except January, November and December, with May and July having the highest number (8 in each) followed by September (6) (see Figure 2). The average age was approximately 6 years with a median of 3.5 years (range, birth-17 years, mode 2 years).

Several factors were noted when reviewing cases by location of fatal events:

Pools

- The majority of pools where drowning occurred were above ground pools
- Many pools were in yards other than the child’s own yard such as a neighbor’s house or a foreclosed property
- Several cases involved unrestricted access to a pool (*e.g.*, the children had been playing in the pool, had gotten out and were unsupervised while near the pool; fencing or gates existed but

were open or not intact; ladders were unsecured or were removed but another access was available)

- Handoffs in responsibility were often inadequate (*i.e.*, more than one family member was available but each thought the other had responsibility for the children)

Bathtubs

- Bathtub drowning may or may not be reported to DCS. Absence of a team investigation may miss important facts that point to supervisory neglect as opposed to a simple “accident”
- Lack of inclusion of DCS in the investigation process misses an opportunity for educational intervention or grief counseling with a family
- Infants should ***never*** be left without supervision in any kind of bathtub (*i.e.*, baby bath tubs, larger bathtubs with a “bath ring”), and a toddler sibling cannot be expected to provide adequate supervision

Decorative bodies of water (*e.g.*, backyard water features, golf course water hazards)

- Any body of water, no matter how small may be potentially hazardous
- Children may be especially attracted to decorative bodies of water because of their features (*e.g.*, waterfalls, fish)
- The presence of any body of water within a child’s walking range requires enhanced supervision

Public beaches

- The presence of others does not absolve a caregiver from their responsibility for *eyes on supervision*; simply being within hearing range (*e.g.*, while reading or visiting with friends) is not adequate
- Many public beaches do not have life guards and have natural risk factors like riptides, currents and varying depths of water
- An “average swimmer” in a pool may encounter life threatening conditions in large natural bodies of water like Lake Michigan
- Children playing on a beach require supervision because of their proximity to water, even if they aren’t “swimming”

Natural bodies of water (*e.g.*, rivers, lakes, ponds, creeks)

- The presence of a body of water on or near the place a child lives doesn't make it safer—a child's familiarity with the water doesn't make them more likely to avoid it and the hazards associated with it
- Features inherent to natural bodies can make them deceptively dangerous (*e.g.*, murky water, unclear depths, bottoms that can cause difficulty with walking or standing)
- Young children should never be the primary supervisor of other children, even when there are adults near-by
- Ice on natural bodies of water is a significant risk factor for drowning; ice that may seem solid can give way resulting in drowning, entrapment and/or hypothermia
- Drug and alcohol use in teens playing in water or those supervising children in water can lead to fatal outcomes

A theme relevant to all drowning cases is the fact that drowning can be silent. There is a widely held belief that people who are drowning will thrash and yell and make enough noise that those nearby would be aware of the event. Repeatedly in a variety of settings this has been shown **not** to be the case. Audible supervision (within hearing distance) is not an adequate safety measure. Children can drown in minutes **silently** making finding their location underwater difficult and decreasing the likelihood of a successful rescue.

Finally, it should be noted, nearly every case we reviewed had some element of inadequate supervision. In some cases, extremely young children were left unattended with known bodies of water nearby or children were left to supervise younger children and either got distracted or were physically unable to prevent the drowning. Some cases involved intoxication on the part of an adult supervisor or failure to recognize potential hazards in the child's environment. Simply telling a child not to do something that could have a fatal outcome is not enough to ensure they indeed comply with the rule. In the presence of water, a clear "verbal hand off" of responsibility for eyes-on supervision from one adult to the next is mandatory. Assuming that the other adult present will automatically assume care when one leaves is inadequate and potentially fatal.

General release recommendations:

1. The best way to prevent a drowning is to prevent access to water. There may be times and places where this is impossible. In these cases, eyes-on constant supervision of children by a responsible **adult** is mandatory. Alarms, locks and sensor devices should be used, as supervision can never be 100% of the time in a home living situation, but caregivers should not be overly reliant on these safety devices.
 - a. Bathtubs require adult supervision. Research has shown that children can and do climb into bathtubs. Leaving water in a tub with a mobile infant can lead to a fatality. It only takes a few inches of water for a drowning to occur.

- b. Infants who can sit unsupported must never be left alone in a tub, no exceptions. The developmental skills necessary to remain sitting are not the same skills as those that allow them to right themselves if they tip over. Having a toddler in the tub with an infant is inadequate protection against drowning. Toddlers do not have the developmental capability to recognize the potential danger of an infant tipping over and may not possess the appropriate motor skills necessary to right the child.
- c. Caregivers frequently underestimate the amount of time spent on leaving the bathroom. Answering a phone, getting a towel or change of clothes or checking on another child can take much longer than anticipated and it only takes a few minutes of oxygen deprivation before permanent damage can occur.
- d. Drowning is frequently silent. The common belief that if a child were in trouble a caregiver would hear them is false. A child can slip underwater and drown without making a sound.
- e. Bodies of water are inherently inviting and dangerous to children. Flotation devices can save lives. These are different than “floaties” (the inflatable arm devices). Full Personal Flotation Devices (PFDs) that are U.S. Coast Guard approved, properly fitted and properly worn are necessary whenever boating or near bodies of water.
- f. Caregivers should not entrust older children or siblings to “watch” a younger child. Children can get distracted and lose track of the younger ones. A child may not recognize potential danger or that another child is in trouble. Children may not have the strength or swimming skills necessary to help a child in danger and more than one child may drown as a result.
- g. Caregivers should not rely on “ears-only” supervision. As drowning can occur silently, an adult must be *watching* the children in their care at all times. This requires strict attention without distractions like reading, TV, or cell phones. Further, adults supervising children should not be under the influence of any intoxicating substances. Frequent breaks are helpful to maintain the necessary level of attention.
- h. When more than one person is responsible (or present) for the supervision of children, there must be a verbal handoff when there is a change in care. If one caregiver is leaving the environment, they should clearly say to the other adult present, “I am leaving now. You are watching Johnny.” Never assume that the other adult is aware of the change in supervision.
- i. Assume if there is any body of water present, it is a potential risk to a child. Knowing that there is a creek nearby or a pool or decorative pond in the neighbor’s yard is important because a child can cover distance even if they are told not to or know that it is against “the rules.” Children do not have the necessary judgment and decision making to always avoid danger and they are naturally curious.

- j. Strict adherence to barrier precautions is life-saving. Four sided barriers to pools are far superior to the often minimally necessary three sided. Pool covers only work when they are properly deployed and secured. Gates to all pools should have a child proof lock that is high above the reach of children. Ladders should always be removed from above ground pools when the pool is not actively in use and be placed far enough away from the pool that a child could not pull it over to gain access.
 - k. Recognition of water hazards at foreclosed properties is the community's responsibility. If a foreclosed property has a pool or spa located on it, the barriers must be maintained to avoid a common nuisance. If fencing or pool cover falls into disrepair, they may no longer prevent access and a death may result. Some local fire departments may be able to help drain abandoned pools that create hazards.
 - l. Adult caregivers should be trained in CPR. Knowing what to do if a drowning victim is recovered immediately can save a life.
2. Agencies should work together during drowning investigations to fully understand the circumstances of the deaths. Many different agencies are required for a complete drowning investigation. The Department of Natural Resources has special expertise in water-related injuries and deaths and can be extremely helpful in investigating the circumstances that led to the fatal event. This can help identify hazards that can be corrected or modified in the environment. The Department of Child Services can provide useful insight into supervision and child welfare as well as providing support to a family coping with the death of a child. Public health agencies can be helpful in assessing the safety of homes or properties and can enforce appropriate safety interventions. It is important that a team approach to the investigation be taken from the beginning.
3. Public awareness must be raised related to the potential dangers of all types of drowning. Using multiple media outlets, primary care physicians, retailers that sell water recreation products and other types of campaigns can be helpful at increasing knowledge and improving safety behaviors. In Indiana, resources like "Wear It Indiana!" (www.wearit.in.gov) and "Water Awareness in Residential Neighborhoods" (www.warnonline.org) are available. Nationally, campaigns exist like "Stewie the Duck" (www.stewietheduck.com) to teach water safety.
4. Children with autism are at especially high risk for drowning. Lacking the developmental awareness of children expected for their age and being attracted to water can lead to drowning. Making sure that parents of autistic children are aware of the risks as well as engaging friends and neighbors of an autistic child to serve as multiple layers of protection is helpful.

Web Resources:

- www.aap.org : July issue of *Pediatrics* contains both the technical report and the official policy statement on the prevention of drowning

- www.usa.safekids.org/water
- www.cdc.gov/safekids/images/CDC-childhoodinjury.pdf
- www.cpsc.gov
- www.uscgboating.org
- www.warnonline.org
- www.wearit.in.gov

Table 1: Counties of drownings

Allen	Johnson	Newton	Vigo
Cass	Kosciusko	Noble	
Clark	LaGrange	Porter	
Dearborn	Lake	Posey	
Dubois	Madison	Putnam	
Elkhart	Monroe	Spencer	
Grant	Morgan	St. Joseph	
Hendricks	Newton	Vanderburgh	

Figure 1: Location of Drowning

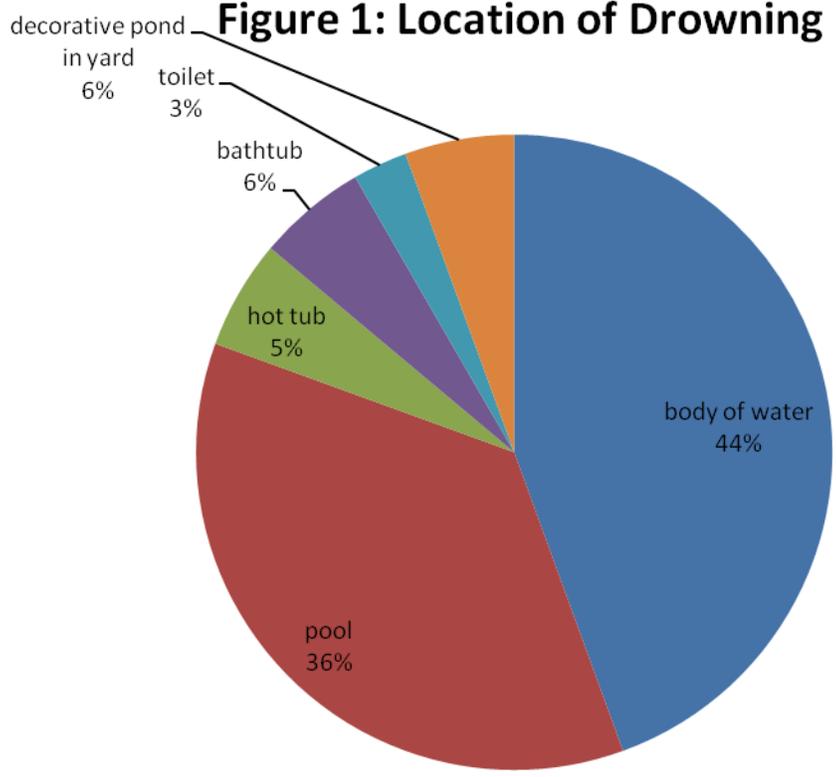
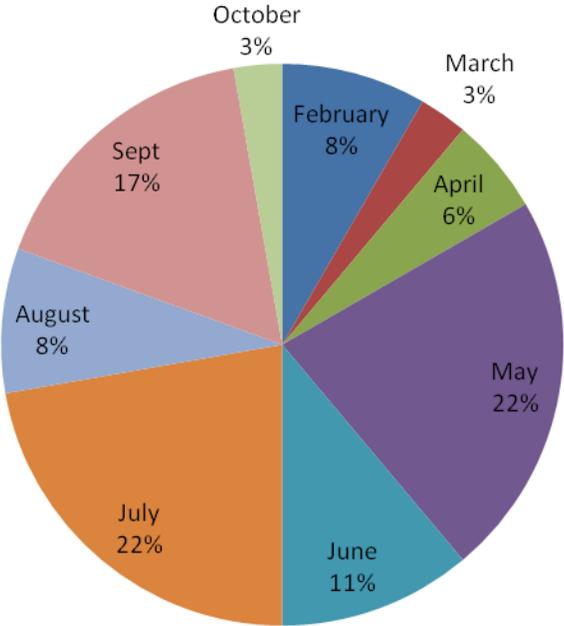


Figure 2: Month of Drowning



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It just takes one mistake
I know a little about drowning.
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With permission

I know a little about drowning. I know the dark feeling that comes over you when you're told that someone you care deeply about has drowned. I know what it's like to keep turning the incident over and over in your mind, questioning why something went terribly wrong. Or wondering why the person didn't ... Or if only someone had gotten there sooner, they might have ... And you wonder if it was painful or if the person was scared.

I know what it's like to watch a mother grieve for a child who has drowned. I know what it's like to see an empty place at the table. And I've been through all of that - twice.

The year I turned 16, I got a summer job as a deckhand on a towboat. In early August, we were locking down at Lock 1 on the Kentucky River when I saw a deputy sheriff pull up, get out of his car and talk to the lockmaster for a moment. They both looked in my direction, and the deputy started walking toward me. I remember it so clearly: it was as if he was walking in slow motion. I knew I hadn't broken any laws, so a feeling came over me that something was wrong. I had no idea what it could be, but I felt it, long before he reached me. I still remember every word.

"I'm sorry to have to tell you this," he began, "but we've just gotten word that your 8-year-old brother has drowned."

I walked along the side of the barge until I reached the boat, doing my best to act like a man. I went to my room, sat down on my bunk and let myself be 16 years old. But the tears didn't help, nothing could help, except seeing my little brother alive again.

And I remember the impact that it had on my family: my mother refusing to accept it, crying for days and days; my grandmother sitting in the porch swing, fanning herself with a little paper fan that had a picture of Jesus on it, staring out across the yard, not saying anything for hours. I remember being at the funeral home and an endless line of people coming up to me with heartfelt condolences and hugs. But little of it registered; I was just numb for weeks. And there's times when solitude and reflection are the only things that are soothing.

Two summers later when I was 18, I was on a different riverboat, southbound on the Ohio River, and got a radio call that my 16-year-old brother had drowned. He had been swimming in a lake with friends and just went under, and never came back up. On some level, I didn't even want to go home. I knew what it would be like. I knew how difficult it was to watch those you love hurt so badly. And I knew that time was the only thing that would reduce the hurt. And I was right. Even if you've been through it before, the hurt is still as sharp as a knife, cutting to the very depths of your soul and leaving you feeling wrung-out and empty.

Every death is a loss, and there's not a good way to die. Automobile wrecks are horrible. Deaths related to health difficulties can sometimes be sudden and unexpected, not to mention painful and hurtful. But there's something about drowning that sets it apart from the others, something dark and mysterious, and scary -

something that never leaves you alone, something that seldom allows closure. And a lot of people never consider the impact it has on those who are on the front lines, those whose job it is to find the loved ones whose lives the water has claimed and return them to their families.

Most of the time, at least in this area, the Indiana Dept. of Natural Resources conservation officers are the ones who step up to the plate and take on the responsibility of water rescue and recovery. Officers Terry Allen and Dennis Talley know, all too well, the mechanics of recovering a drowning victim. And they also know the emotional trauma that accompanies each one.

"Every drowning scene is a double story," Talley said. "We have the job at hand: to recover the victim. And we also have the family of the victim to consider. Many times, the family will hold a vigil at the scene and will stay until the person is recovered. There have been many, many times that families have shown us a picture of the victim. I'm not really sure why they want us to see it, but we always take the time to look at it. Maybe they want us to see the victim as a person, to put a face to the tragedy."

"There was a guy who drowned during real cold weather one time," Allen said. "We weren't able to find him for 43 days. I talked to his wife on the phone every day. Then, when we finally got him out, I had to call her. It was tough. We deal with death our whole career, and we all handle it in different ways. Some incidents stick with you more than others."

"The kids are the hardest," Talley added. "That really bothers us. We usually experience all kinds of emotions. We even get upset at times because we know that, with just a little effort, the drowning could have been prevented. I have never taken a PFD (personal floatation device) off a drowning victim. I've also never unbuckled a seat belt from a deceased crash victim. Seat belts and PFDs save lives."

"And a lot of times, recovering a drowning victim puts us in danger ourselves," said Allen, who is also a diver. "It's so easy to get hung up on something underwater when we're diving. And it gets so frustrating when we can't find a victim. The family is usually watching our every move. And sometimes, we second guess ourselves - and ask ourselves, 'What could we have done differently?' But we're there for the families, and we never forget that. And there's times when we have to put some distance between us and the families, just to do our job. But we usually have an officer on the scene, like Officer Mac Spainhour, who does a wonderful and necessary job of keeping the families informed, and it lets us focus on the job at hand."

"And people who can't swim rarely drown," Talley said. "They tend to use more caution around water. A lot of times, it's the good swimmers who drown. They are often more careless or put themselves in more dangerous situations."

The officers went on to describe training they have had on what happens when a person drowns and the chain of events that cause a person to drown once they are underwater. That same chain of events is included on page 141 through 143 of the book "The Perfect Storm." (There was also a movie based on the book.) I read the book years after my brothers drowned, and it hit me like a rock when I read the description. At first, I thought it was more than I needed to know. But later, I realized that I, and anyone else who spends time on the water, should be aware of this information, if for no other reason than to make us more careful. I have always heard, and liked to believe, that drowning was like going to sleep. I now know differently.

Recently, Crawford, Perry and Harrison counties each lost a special person to drowning. Bart Zimmerman of Corydon was loved by the entire community. A caring, talented and respected person, Zimmerman drowned trying to help others. Derrick Adams, from Taswell, was a great young man. He spent time helping 4-H kids or anyone else who needed it. During his funeral, at Denbo Funeral Home in English, there were so many paying

their respects that the parking lot was full and cars were parked up and down S.R. 64, one of the largest funerals ever at the funeral home.

Ricky Wiseman, of Troy, was known and respected by many throughout Perry County. And just the other day, a guy I knew, Bill Browning, the lockmaster at McAlpine Locks, drowned when he fell from a houseboat on the Ohio River. He wasn't wearing a life jacket.

During my 30-year career as a towboat captain, I was exposed to a lot of drownings. But it's never something you just accept. One time I was in the pilot house, locking up at one of the Ohio River Locks and, as we were raised up, I could see over the concrete walls of the lock. There was a small fishing boat just below the dam, and as I watched, the boat was sucked into the dam by the turbulent water and capsized. The man in the boat came up to the surface and started swimming toward the bank.

There were two or three life jackets floating in the water near him, but he ignored them and kept swimming. He was so close to the dam that the suction kept pulling him under, and a few seconds later, he would resurface and try to swim again. After going under two or three times, exhaustion overcame him and he disappeared for the last time. My first reaction was anger. Why didn't he grab a life preserver? Why wasn't he wearing one? Why didn't he stay with his boat, which was still floating upside down but could have saved him? Why did he put me through this, making me witness everything when I couldn't prevent what was happening or offer help? But after a few minutes, I just felt sick - and drained - and that old familiar dark feeling came over me.

All of my adult life, when I hear about a drowning, I get that same dark feeling. Even if I don't know the person, it's there. I wish there was a way I could put it into words, a way to explain it. But I believe that only those who have had their hearts broken by a drowning can know that feeling.

There are so many ways to prevent drownings. But we never know when they are prevented, only when they aren't. There are programs and precautions that can certainly increase the chances a person will return home from fishing, swimming or boating. Always wear a life jacket while aboard an open boat. Never swim alone or in dangerous waters. Never take chances; on the water, you often get only one.

The Dept. of Natural Resources has trainings for both boat handling and water safety every year but those are often poorly attended. That needs to change. Everyone who buys or has plans to operate a boat should take advantage of the vast amount of knowledge the DNR officers have and are willing to share. Just one little tidbit of information could save a life.

My brothers can never be replaced. Bart Zimmerman, Derrick Adams and Ricky Wiseman can never be replaced. And neither can you.

Editor's note: The Corydon Democrat extends its condolences and prayers to the families of the victims mentioned in this column. It is our hope that by sharing this information with others, we may be able to prevent other families from experiencing similar tragedies.