PREVENTING CHILD DEATHS IN MISSOURI

THE MISSOURI CHILD FATALITY REVIEW PROGRAM

ANNUAL REPORT FOR 2017

Missouri Department of Social Services
State Technical Assistance Team
PO Box 208
Jefferson City, Missouri 65102-0208
(800) 487-1626
(573) 751-5980
http://www.dss.mo.gov/stat/mcfrp.htm

Mike Parson, Governor

State of Missouri

Steve Corsi, Psy.D, Director

Missouri Department of Social Services

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DEDICATION

This report reflects the work of many dedicated professionals throughout the State of Missouri. Through better understanding of how and why children die, we strive to improve and protect the lives of Missouri's youngest citizens. We will always remember that each number represents a precious life lost. We dedicate this report to these children and their families.

MISSOURI CHILD FATALITY REVIEW PROGRAM

Death rates for infants, children and teens are widely recognized as valuable measures of child wellbeing; however, it is the accuracy of key factors associated with child deaths that provides the basis for identifying vulnerable children, and responding in ways that protect and improve their lives. Over 25 years of research has proven that prevention or significant reductions of child abuse and neglect fatalities, as well as other serious and fatal injuries, cannot be achieved without more complete information about how and why children are dying. Without such thorough information, many child abuse and neglect deaths would go under-reported and/or misclassified. It is nationally recognized that a system of comprehensive child death review panels has made a major difference.

In 1991, Missouri initiated the first comprehensive statewide child fatality review system in the nation, designed to produce a more accurate picture of each child death, as well as a database providing ongoing surveillance of all childhood fatalities. While the program has evolved and adapted to meet new challenges, the objectives have remained the same. The program identifies potentially fatal risks to infants and children, and responds with multi-level prevention strategies. The ongoing success of the program is due in large part to the support of county-based panel members, administrators and other child protection professionals who volunteer for this difficult work, which is a true expression of advocacy for children and families in our state.

Missouri legislation requires that every county in our state (including the City of St. Louis), at a **minimum,** maintain a multidisciplinary panel comprised of a prosecuting attorney, coroner/medical examiner, law enforcement representative, juvenile officer, Children's Division representative, public health representative, and emergency services representative to examine the deaths of all children under the age of 18. If the death meets program criteria, it is referred to the county's multidisciplinary Child Fatality Review Program (CFRP) panel. Optional members may be added at the discretion of the panel. **The panels do not act as an investigative body.** Their purpose is to enhance the knowledge base of the mandated investigators; evaluate and address potential need for services; identify and implement prevention interventions for the family and community; and enhance multidisciplinary communications and coordination.

Of the average 1,000 child deaths annually in Missouri, approximately 40% merit review. To come under review, at the time of death, the cause must be unclear, unexplained, or of a suspicious circumstance, to include all injury, homicide or suicide deaths. **All sudden, unexplained deaths of infants, one week to one year of age, are specifically required to be reviewed by the CFRP panel. (This is the only age group for which an autopsy is mandatory by state statute.)**

Statistical data on all child deaths is collected by means of the National Center for Fatality Review and Prevention (NCFRP) Child Death Reporting (CDR) System. The system allows for multi-state, local, and state users to further enhance knowledge and identification of trends, spikes and patterns of risks, leading to improved investigations, provision of community-based services and implementation of prevention best practices on the local, state and national level.

CHILD FATALITY REVIEW PROGRAM 2017 STATE PANEL

According to RSMo 210.195, "The Director of the Department of Social Services shall appoint a state child fatality review panel, which shall meet biannually to provide oversight and make recommendations to the Department of Social Services, State Technical Assistance Team." In this oversight role, the panel is encouraged to identify systemic problems and bring concerns to the attention of the State Technical Assistance Team. The composition of the state panel mirrors that of the county panels; each multidisciplinary profession is represented by a recognized leader in the respective discipline.

Chairperson
Harold Bengsch
Greene County Commissioner
Springfield

Prosecuting Attorneys
Catherine Vannier
Missouri Office of Prosecution Services
Jefferson City

Kathi Alizadeh
St. Louis County Prosecutors Office
Clayton

Coroner
Gina White
Dent County
Cameron

Medical Examiner
Mary Case, M.D.
St. Louis, St. Charles, Franklin and Jefferson Counties
St. Louis

Keith Norton, M.D.
Southwest Missouri Forensics
Nixa

Law Enforcement
Sgt. Anthony Caveletti
St. Louis County Police
St. Louis

Chief Bill Carson
Maryland Heights Police
Maryland Heights

Lt. Col. Sandra Karsten
Missouri State Highway Patrol
Jefferson City

Public Health Service
Douglas Beal, M.D.
Forensic Pediatrician
Columbia

Terra Frazier, D.O.
Child Abuse Pediatrician
Children's Mercy Hospital & Clinics
Kansas City

Patricia Schnitzer, Ph.D., RN
University of Missouri
Columbia

Sharmini Rogers, MBBS, MPH, Chief
Bureau of Genetics and Healthy Childhood
Missouri Department of Health and Senior Services
Jefferson City

Children's Division
Tim Decker, Director
Missouri Department of Social Services
Jefferson City

Cari Pointer
Jefferson City

Juvenile Office
Tammy Walden
Missouri 26th Judicial Circuit
Camdenton

Emergency Medical Services
Virginia Wilson
Missouri University Health System
Columbia

Optional Members
Emily Van Schenkhof
Missouri Children's Trust Fund
Jefferson City

Kelly Schultz
Missouri Office of Child Advocacy
Jefferson City

Mark Gutchen
Missouri Division of Legal Services
Jefferson City

STATE TECHNICAL ASSISTANCE TEAM AND CHILD FATALITY REVIEW PROGRAM

Missouri State Statutes

- Section 210.150 and 210.152 (Confidentiality and Reporting of Child Fatalities)
- Section 210.192 and 210.194 (Child Fatality Review Panels)
- Section 210.195 (State Technical Assistance Team - duties)
- Section 210.196 (Child Death Pathologists)
- Section 211.321; 219.061 (Accessibility of juvenile records for child fatality review)
- Section 194.117 (Sudden Infant Death; infant autopsies)
- Section 58.452 and 58.722 (Coroner/Medical Examiners responsibilities regarding child fatality review)

Confidentiality Issues (RSMo. 210.192 to 210.196)

Proper CFRP review of a child death requires a thorough examination of all relevant data, including historical information concerning the deceased child and his/her family. Much of this information is protected from disclosure by law, especially medical and child abuse/neglect information; **therefore, CFRP panel meetings are ALWAYS closed to the public and cannot be lawfully conducted unless the public is excluded.**

Each CFRP member should confine his or her public statements only to the fact that the panel met and that each panel member was charged to implement their own statutory mandates. **Under no circumstances, should any other specific information about the case or CFRP panel discussions be disclosed outside of the review.** All CFRP panel members who are asked to make a public statement should refer such inquiries to the CFRP panel spokesperson. Failure to observe this procedure may impede an investigation and/or violate Children's Division regulations, as well as other state and federal confidentiality statutes that contain penalties.

Individual disciplines (coroner/medical examiners, law enforcement agencies, prosecuting attorneys, etc.) can still make public statements consistent with their individual agency's participation in an investigation, as long as they do not refer to the specific details discussed at the CFRP panel meeting, which could violate other agencies' state statutes. No CFRP panel member is prohibited from making public statements about the general purpose, nature or effects of the CFRP process. Panel members should also be aware that the legislation which established the CFRP panels provides official immunity to all panel participants to work together on a child fatality.

Mandated Activities for CFRP Panels

- Every county must have a multidisciplinary CFRP panel (114 counties and the City of St. Louis).
- The county CFRP panel must consist of at least the following seven core members: prosecuting attorney, coroner/medical examiner, law enforcement representative, juvenile officer, Children's Division representative, public health representative, and emergency services representative. Panels may elect to have additional members on either a permanent or situational basis.
- All deaths, age birth through 17, must be reported to the coroner/medical examiner.
- By state statute, all children, age one week to one year, who die in a sudden, unexplained manner, are mandated to have an autopsy.

- The State CFRP panel must meet at least twice per year to review the program's progress and identify systemic needs and problems.
- CFRP panels must use uniform protocols and the NCFRP CDR system for data collection.
- Child autopsies must be performed by certified child-death pathologists.
- Knowingly violating reporting requirements is a Class A misdemeanor.
- When a child's death meets the criteria for review as defined by CFRP Protocols and Procedures, activation of the CFRP panel must occur within 24 hours of the child's death, with a meeting scheduled as soon as practical. A majority of core panel disciplines is required to be present (four or more member disciplines).

Missouri Child Fatalities

Missouri Child Fatalities refers to all children under age 18, who died in Missouri, without regard to the state of residence or the state in which the illness, injury or event occurred. (For example, a child who is a resident of Kentucky, injured in a motor vehicle crash in Illinois and is brought to a Missouri hospital, where he subsequently dies, would be considered as a "Missouri Child Fatality.") All illness, injury and events occurring within federal military installations, although located in Missouri, are handled the same as out-of-state incidents. Statistical data would be reported to the CDR system, but such deaths would be deemed non-reviewable, as the installations and other states have their own child fatality review processes.

Missouri Incident Fatality refers to a fatal illness, injury or event, which occurs within the State of Missouri. If the death meets the criteria for panel review, it is reviewed in the county in which the fatal injury, illness or event occurred.

Multiple-Cause Deaths: *Cause of death* is a disease, abnormality, or injury that contributed directly or indirectly to the death; however, a death often results from the combined effect of two or more conditions. Because the CFPR is focused on the prevention of child fatalities, the precipitating events are of particular concern. Therefore, deaths are categorized according to the circumstances, which may not be the immediate cause of death listed on the death certificate. (An example would be a child passenger in a car that runs off the road and lands in a ditch full of water; the "immediate cause of death" is listed on the death certificate as "drowning," but the precipitating event was a motor vehicle crash.)

- Every Missouri Incident Fatality is required to be initially reviewed by the coroner/medical examiner and the county CFRP panel chairperson to determine if death meets program criteria for review. The findings of this initial review are reported in the NCFRP CDR system.

- All child deaths that are unclear, unexplained, or of a suspicious circumstance (which includes all injury events, homicides, suicides, medical nonfeasance and sudden unexpected deaths of infants one week to one year of age) are required to be reviewed by the county-based multidisciplinary CFRP panel. Upon completion of the panel review, the NCFRP CDR System record is reviewed, making any necessary corrections and/or additions, and all pertinent sections of the record are completed as appropriate.

- In-house CFRP data management links the data collected on the NCFRP CDR system with the Department of Health and Senior Services (DHSS) Bureau of Vital Records birth and death data. Every attempt is made to reconcile the two systems; however, in some cases, crucial data components are incomplete and are noted as appropriate.

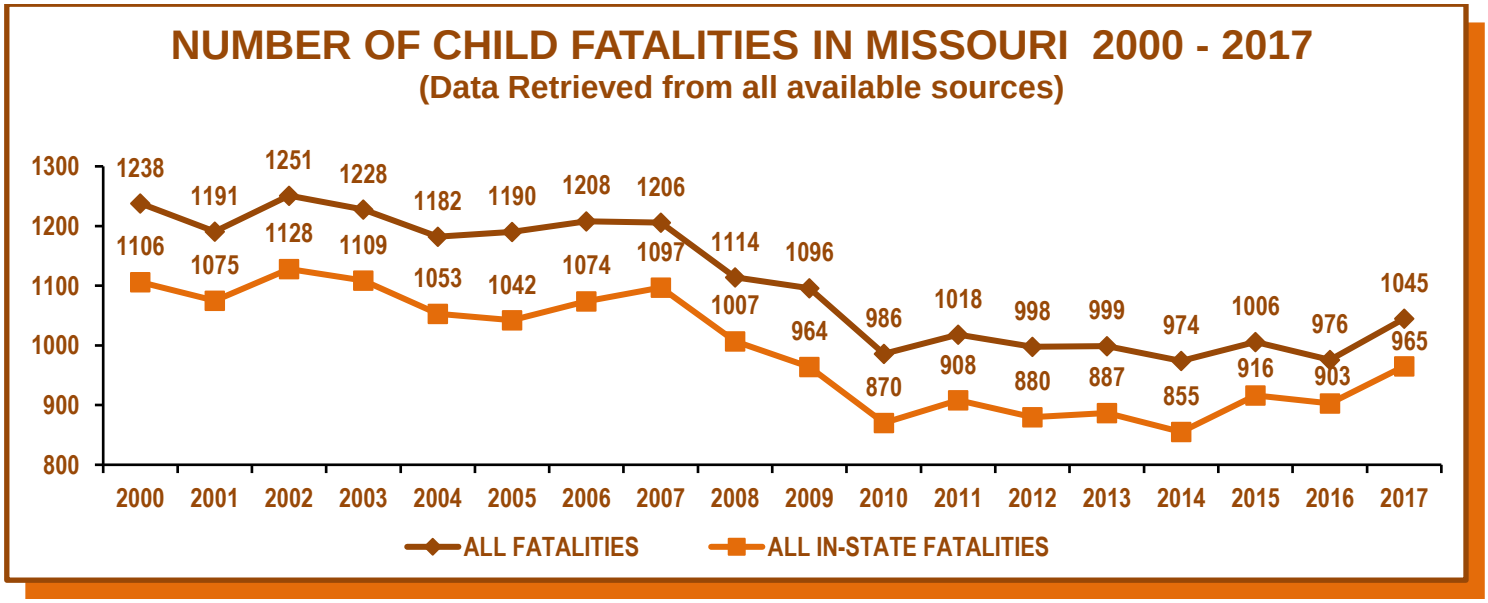
- All deaths included in the CFRP Annual Report occurred in calendar year **2017**, although some cases may not have been brought to county panel review until 2018. In a number of cases, panels did not complete all of the information requested on the NCFRP CDR system.

- **Seventy-nine** Missouri child fatalities were due to events that occurred in either other states or on federal installations in Missouri. Although documented in the NCFRP CDR system, these deaths are not considered Missouri Incident Fatalities and are not otherwise addressed in this report.

- Of the **412** Missouri Incident Fatalities with indication for review as reported in NCFRP CDR System, **50** either did not receive required CFRP panel review, and/or panel findings were not entered. These fatalities are included in this 2017 CFRP Annual Report, because the data, though incomplete, is useful and accurate within the limitations of the information provided.

- **Eight** Missouri Incident Fatalities reported to the CFRP by death certificates from DHSS, were neither initially entered into the CDR system; nor if needed, received required CFRP panel review. Because we do not have sufficient information on these deaths, these fatalities are **not** included in the data for this annual report.

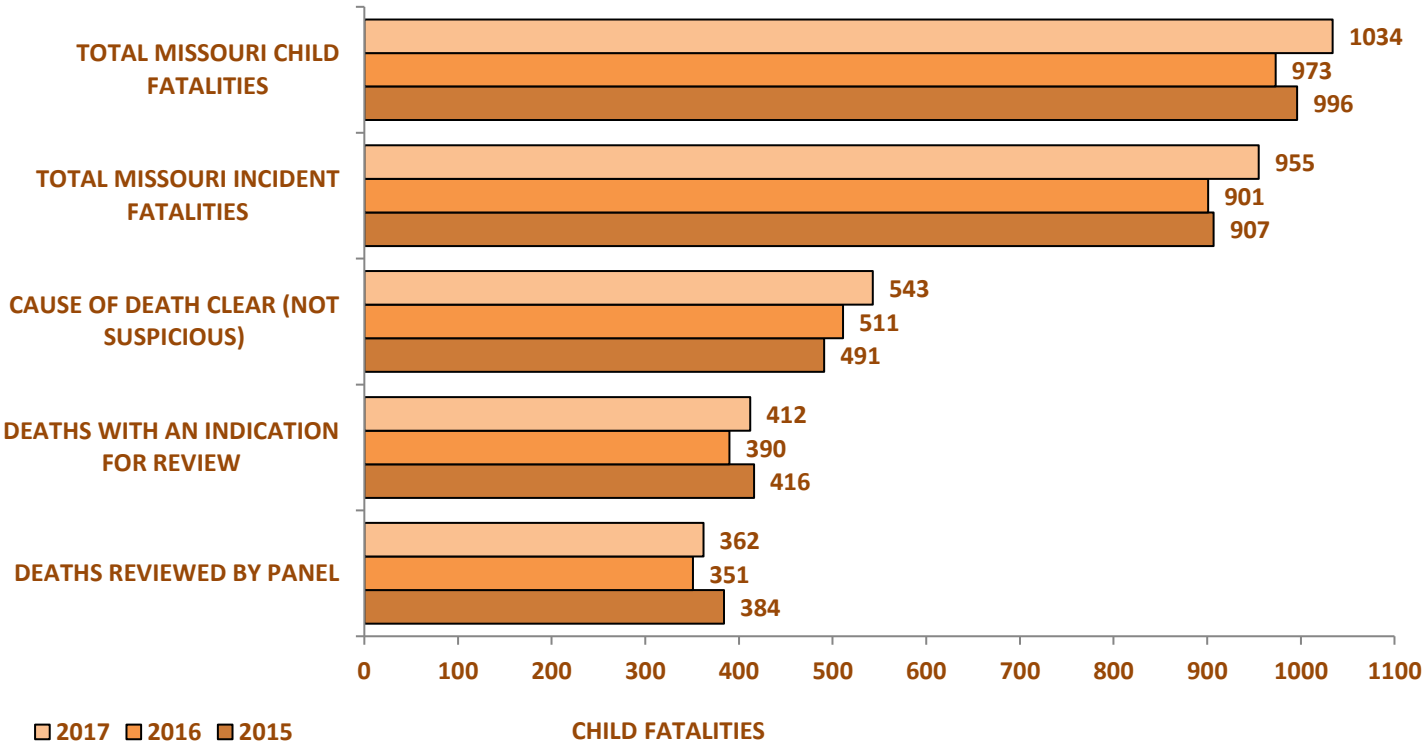
- The data for this report comes from the NCFRP CDR system information submitted by the county-based CFRP panels. Compliance for reporting overall Missouri Incident Fatalities is **99%** and county child fatality reviews is **88%.** Please be aware that our report does not reflect the actual total number of Missouri Child Fatalities and Missouri Incident Fatalities, only those reported. Below is a chart showing the number of known child deaths, taken from all available sources, in Missouri from 2000 to 2017.



SUMMARY OF FINDINGS

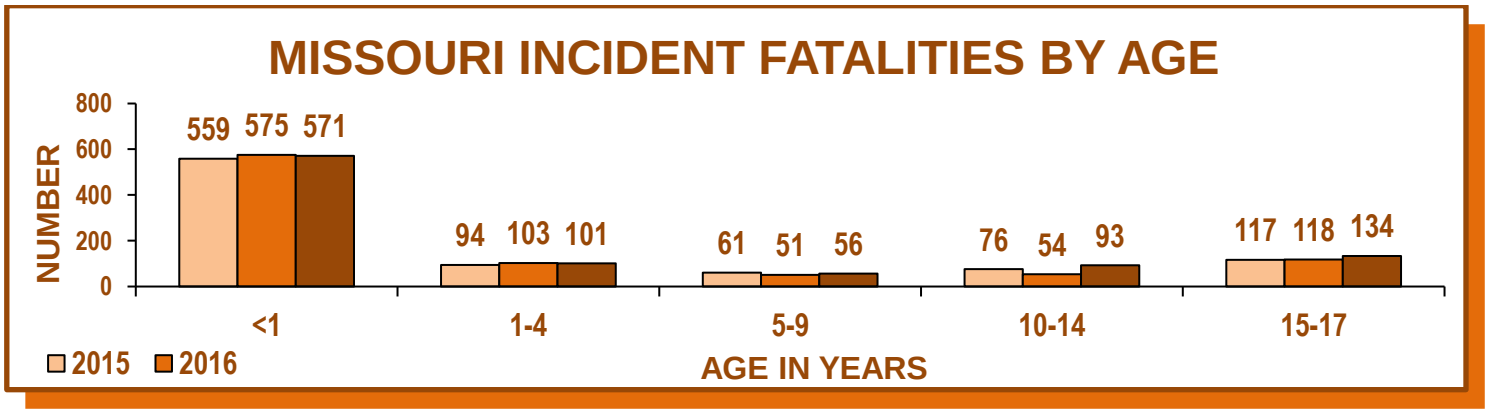
In 2017, CFRP received information on **1034** children of which **79** deaths were due to events occurring out of state or on federal installations. The remaining **955** deaths were determined to be Missouri Incident Fatalities and therefore subject to initial review. The coroner/medical examiners and county CFRP chairpersons determined **543** deaths did not met criteria for detailed panel review. The remaining **412** deaths had indicators for review, of which **362** were reviewed by the county panels.

MISSOURI CHILD FATALITIES VS. MISSOURI INCIDENT FATALITIES

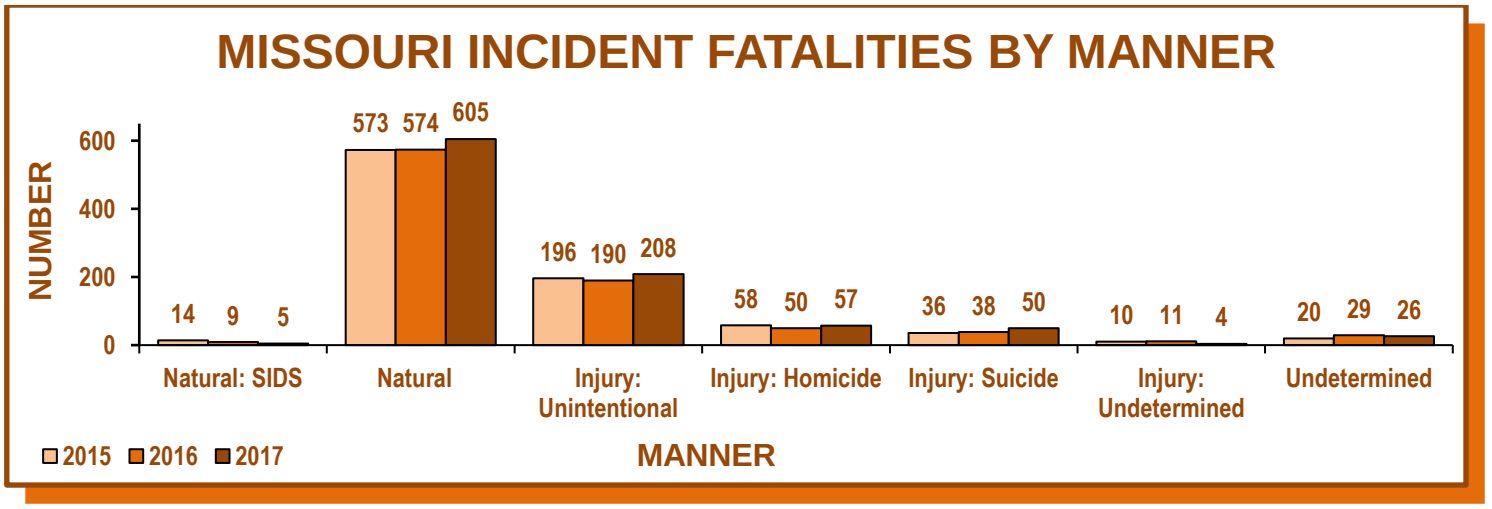


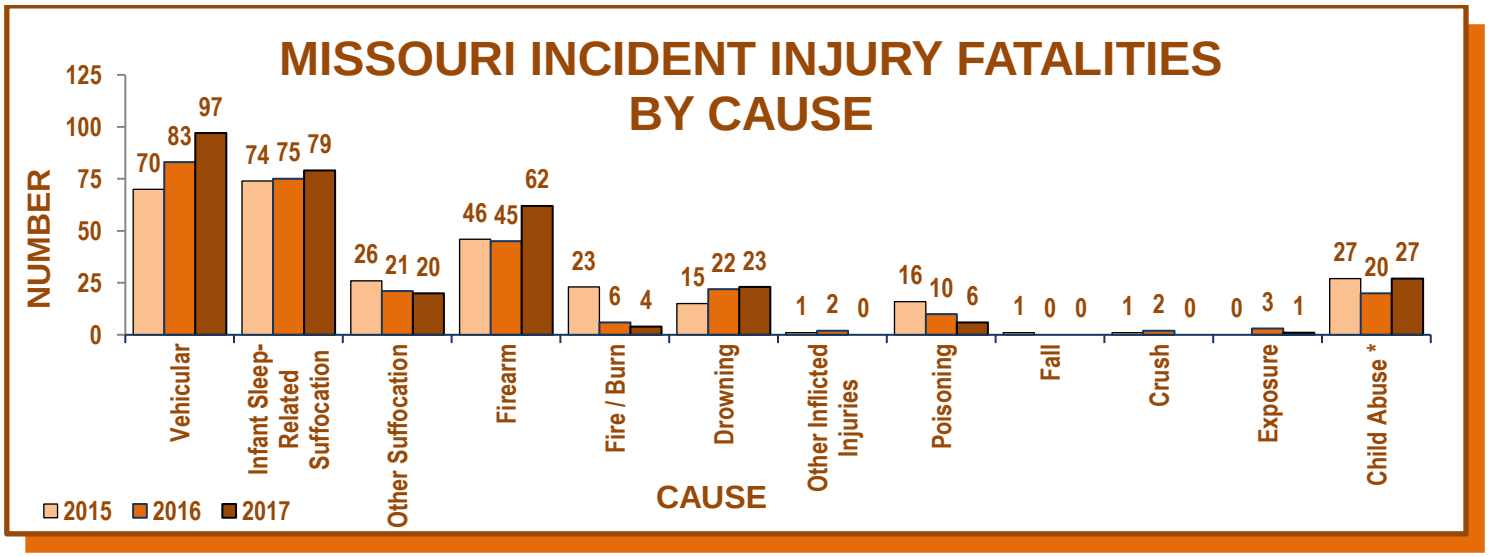
MISSOURI INCIDENT FATALITIES BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	367	348	401	White	624	605	640
Male	540	553	553	Black	237	256	275
Unknown			1	American Indian	1	2	0
				Pacific Islander	2	2	3
				Asian	15	15	13
				Multi-Racial	28	21	24
	907	901	955		907	901	955



Missouri death certificates identify deaths by *manner of death* and *cause of death*. *Manners of death* are defined as Natural: SIDS; Natural; Injury: Unintentional; Injury: Homicide; Injury: Suicide; Injury: Undetermined; and Undetermined. For CFRP purposes, Sudden Infant Death Syndrome (SIDS) deaths are identified separately from other types of natural deaths, as these deaths are of particular program interest. The *cause of death*, on the other hand, is the actual mechanism by which the death occurred; i.e., firearm, vehicular, poisoning, suffocation, etc.





*Child abuse deaths can include deaths from casual categories of suffocation/strangulation, firearm, drowning, abusive head trauma, struck/blunt trauma, dehydration.

While *manner* and *cause of death* are separate, it is the combination of the two that defines how the death occurred. For example, a child died from a firearm injury, but knowing if the injury was unintentional, intentional or undetermined allows for a better understanding of how the child died. Most CFRP panel findings coincide with the death certificate *manner of death*, but there may be instances where they do not. This can occur when other factors gathered from the review process were not readily available at the time the death certificate was completed; i.e., the death certificate may indicate SIDS as the *manner of death*, but from panel concerns related to unsafe bedding and/or sleep surface sharing, they might complete the data collection as the cause of death being from suffocation/strangulation or even undetermined. Panel findings may also result in getting the official *manner of death* amended.

Just as SIDS deaths are separated from natural cause, deaths that are determined to be child abuse are also separated out from other intentional injury deaths. For example, if a child receives a fatal intentional inflicted burn from a person who has care, custody and/or control of the child, the death would only be addressed in the child abuse category. In deaths where the panel found that serious neglect may have contributed to, but did not cause the death, it will be only noted as fatal child neglect in this section, but the death will still be counted in the appropriate manner and causal categories.

AUTOPSIES

Missouri State Statute, RSMo. 194-117, requires that an autopsy be performed for all children aged one week to one year, who die “suddenly when in apparent good health.” The need for all other child autopsies are based upon the circumstances surrounding the death, and determined by coroners and medical examiners in consultation with their local Certified Child Death Pathologist.

Missouri’s Certified Child Death Pathologist Network ensures autopsies performed on children, birth through age 17, are performed by professionals with expertise in forensic pediatrics. A listing of network members can be obtained at **http://www.dss.mo.gov/stat/cpn.htm**.

NATURAL FATALITIES

In 2017, natural fatalities were responsible for the deaths of 605 Missouri children, representing 63% of all Missouri Incident Fatalities.

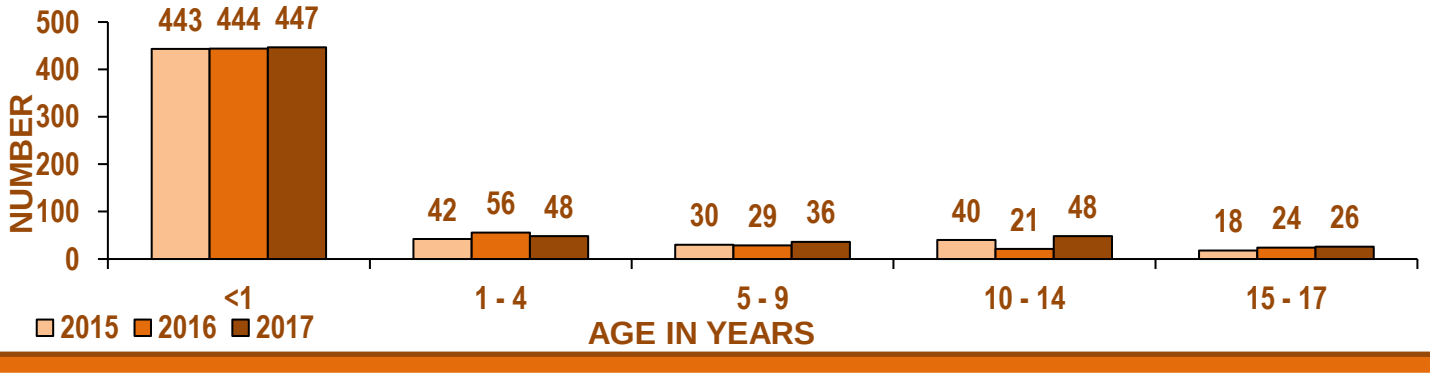
- **Prematurity is the cause of 41% of all illness/natural deaths.**
- **Fifty-eight percent of the babies who died from premature birth were white, 33% were black and 9% were other.**
- **The average gestational age of premature births was 23.3 weeks and the average weight was 658 grams or 1 lb. 7 oz.**
- **Fifty-eight percent of the premature children died within one day of birth.**
- **The age of the mothers of premature babies range from 14 to 42 years.**

Most child deaths are from natural causes. Natural deaths include illnesses, prematurity, congenital anomalies, cardiac conditions, cancer, infection and other medical conditions. A majority of natural deaths occur within the first year of life and are often related to prematurity or congenital anomalies. Although SIDS is considered a natural *manner of death*, it will be specifically addressed in a separate section. The following data show trends in natural deaths by sex and race, age, and cause.

NATURAL FATALITIES BY SEX AND RACE

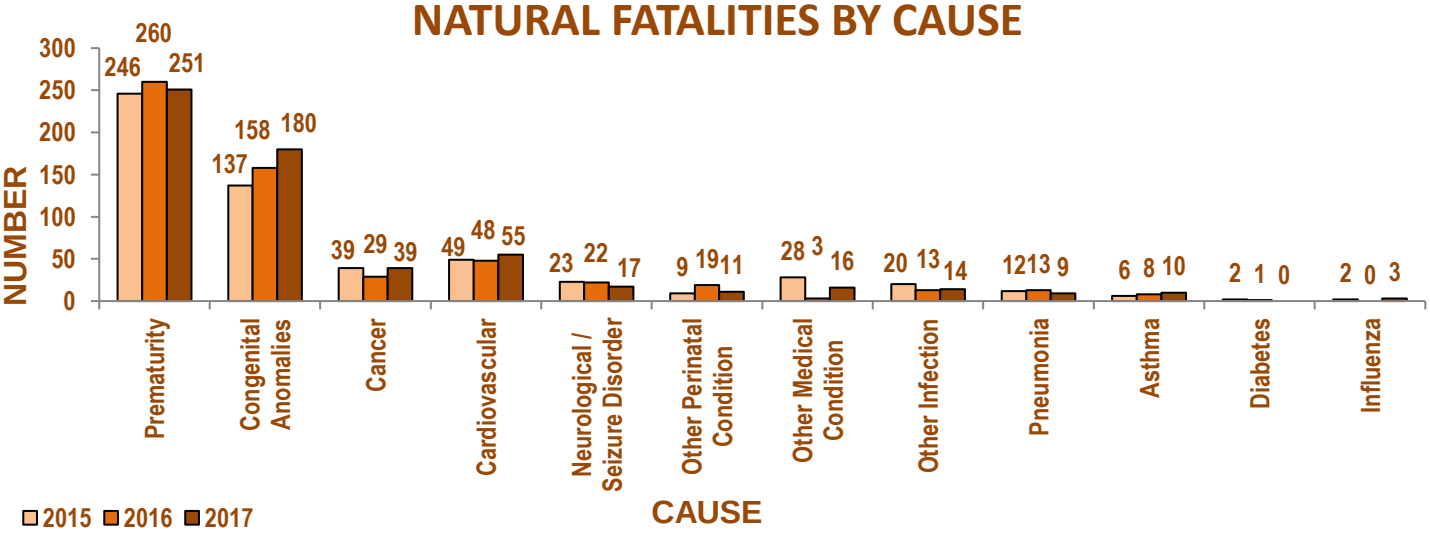
SEX	2015	2016	2017	RACE	2015	2016	2017
Female	245	242	279	White	385	377	415
Male	328	332	325	Black	157	170	158
Unknown	0	0	1	American Indian	1	2	0
				Asian	11	9	12
				Pacific Islander	0	2	2
				Multi-Racial	19	14	18
	573	574	605		573	574	605

NATURAL FATALITIES BY AGE



Children die from a variety of medical conditions, but premature birth is the leading cause. In 2017, of the **605** natural deaths, **251** were from premature birth.

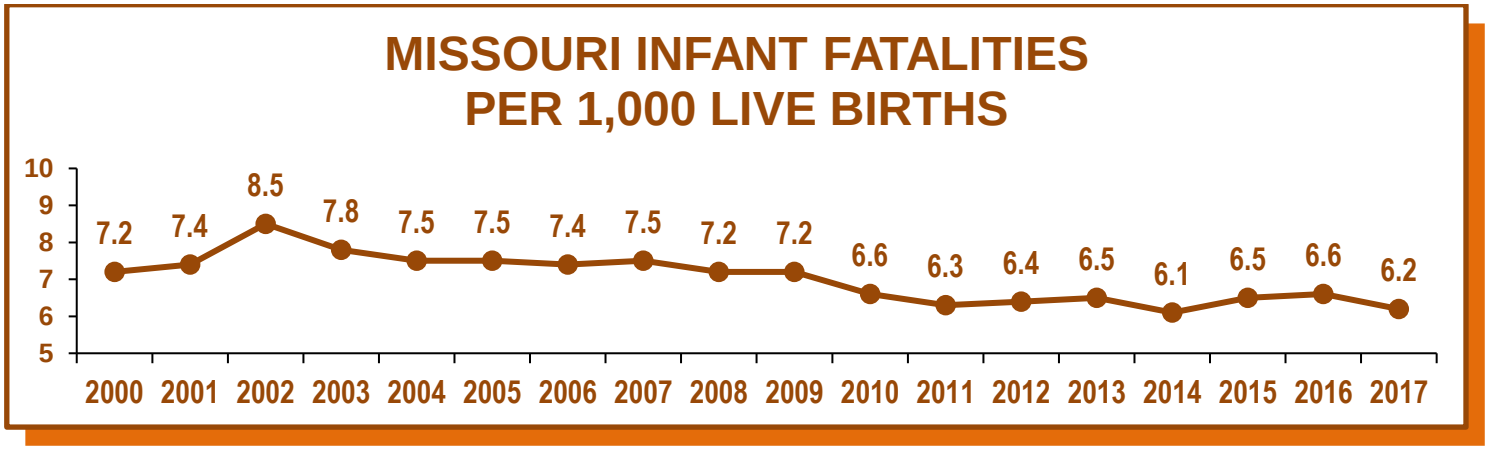
NATURAL FATALITIES BY CAUSE



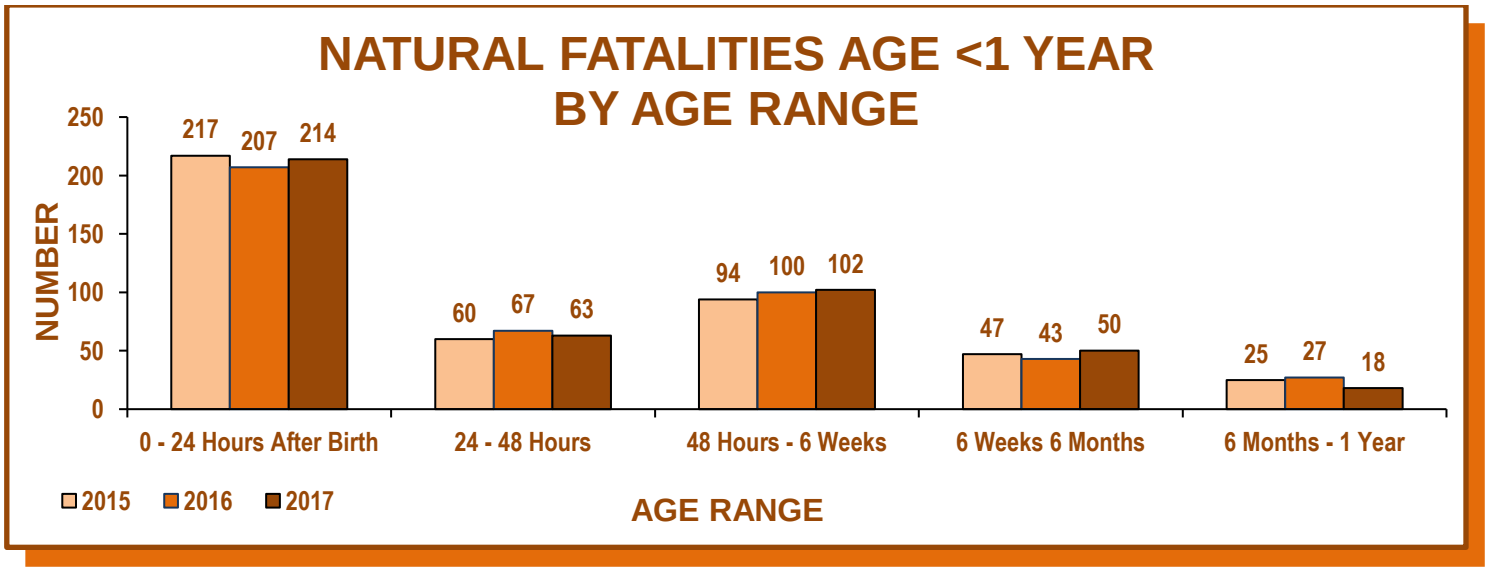
The statistics do not necessarily reflect how many children were born with fatal congenital defects, since such defects can fall under the cardiovascular or neurological/seizure disorder medical conditions. Even with the breakout of these medical conditions, congenital anomalies are by far the second largest reason for natural deaths in the state.

Infant Mortality

Prematurity is also the leading cause of death in the first month of life and those that survive could potentially face lifelong serious health issues. Preterm birth rates have been dropping since 2006, with the largest decrease seen in the late-preterm births (34 to 37 weeks gestation). Babies born late-preterm, have a death rate three times higher than babies born at full term. By reducing the number of children born prematurely, even by just a few weeks, could save many infant lives. The Center for Disease Control and Prevention (CDC) reports that the preterm rate is up to 10% of all births. Missouri's 2017 rate is higher than the national average at 10.6.



In Missouri, the overall infant mortality rate is higher than the national rate of 5.8 deaths per 1000 live births. Infants less than one year of age comprise the majority of natural cause deaths at **447**. Of the **277** deaths that occurred within the first 48 hours, **215** occurred within 24 hours after birth.

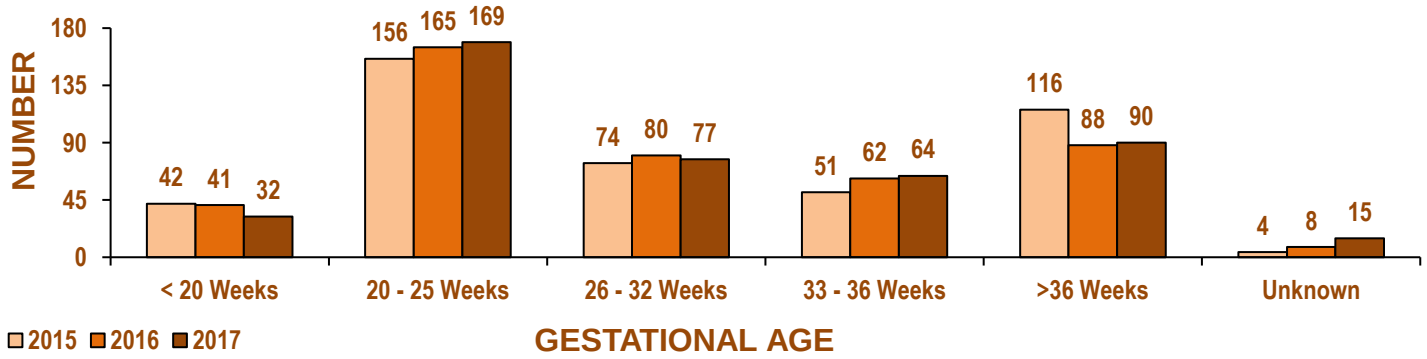


NATURAL FATALITIES <1 YEAR BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	193	192	212	White	293	293	306
Male	250	252	234	Black	125	129	118
Unknown			1	American Indian	0	1	0
				Pacific Islander	0	2	0
				Asian	8	8	10
				Multi-Racial	17	11	13
	443	444	447		443	444	447

Infants can be classified as premature for two different reasons: they can be born "preterm" because of a "curtailed gestation (gestational age of <37 completed weeks)"; or they can be "premature by virtue of birth weight (2,500 grams or less at birth)." Children in the second category are referred to as "Low Birth Weight" or "LBW" children. This differentiation is made because while the two can be linked, there are other factors besides prematurity which can result in a LBW baby. In 2017, **342** infants were reported to be born preterm, while **335** LBW children were reported during that same period.

NATURAL FATALITIES AGE <1 YEAR BY GESTATIONAL AGE AT BIRTH

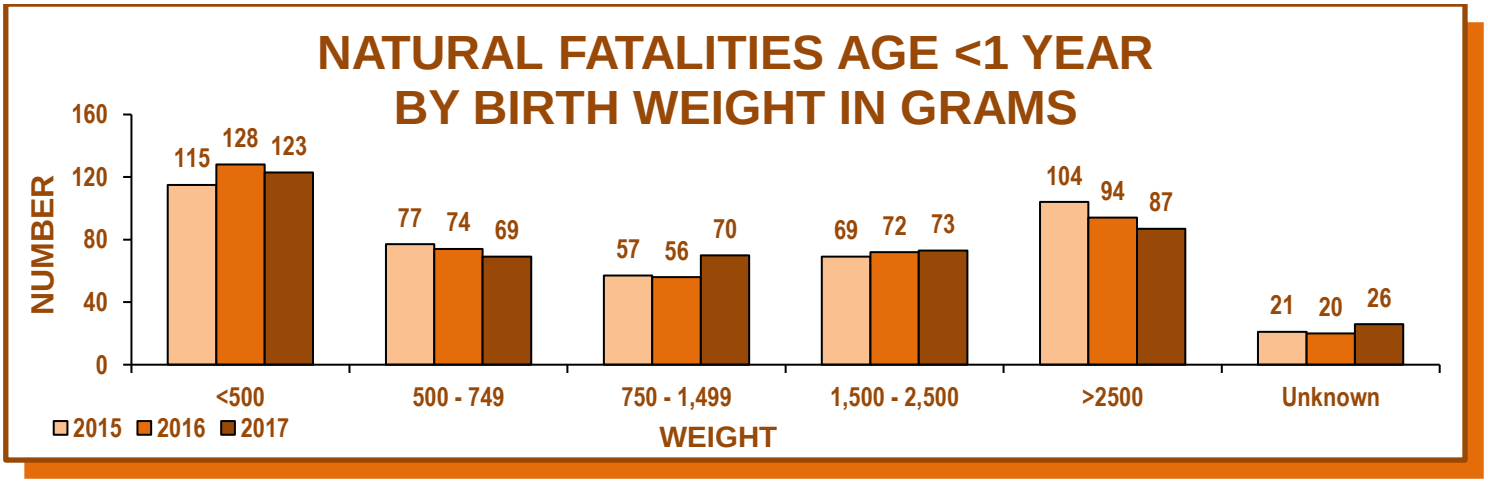


Of the **343** deaths of infants born preterm, **201** were born at 25 weeks or less. *Very preterm* babies are usually born with severe health issues and are more unlikely to survive, **144** *very preterm* infants died within 24 hours of birth. The youngest premature infant ever known to have survived for an extended period was born at 21 weeks and four days. Prematurity was the direct cause of **195** *very preterm* infant deaths, the remainder died from congenital defects or birth trauma.

Seventy-seven of the preterm infants were in the *moderately preterm* range of 26-32 weeks; **38** of these infants died within the first 24 hours. **Thirty** lived longer than a week with **six** infants living three months or longer. **Thirty-six** of the *moderately preterm* infants died from causes directly related to prematurity, **37** died from congenital anomalies, and the remainder died from various cardiovascular anomalies, infections and other perinatal conditions.

Of the **Sixty-four** deaths of infants born in the *late preterm* range of 33-36 weeks; **31** of these infants died within the first 24 hours; **21** lived more than a week, and **eight** lived for three months or longer.

Only **nine** *late preterm* deaths were directly related to prematurity, **35** were from congenital anomalies, and the remainder died from cardiovascular anomalies, birth-related events, pneumonia or infections.



Babies born from multiple-birth pregnancies are more likely to be born small. **Twenty-three** of the infants born at less than 500 grams were from multiple-birth pregnancies. The smallest baby ever known to have lived long enough to leave a hospital was 260 grams (8.6 ounces) and was born at 26 weeks gestation.

Maternal health issues and use of drugs, alcohol or tobacco during pregnancy, are other factors that may cause children to be born premature or with low birth weights. **Nineteen** mothers had medical complications such as diabetes or preeclampsia, **three** admitted to smoking during pregnancy, and **twelve** abused over-the-counter or prescription drugs.

Twelve of the children who died from natural causes within the first year of life were known to have had no prenatal care. All **12** of these children were known to have been born before the 37th week of gestation and **ten** were low birth weight.

SLEEP-RELATED INFANT FATALITIES

There were 94 infant deaths marked as sleep-related by the panels in 2017.

- Seventy-one percent of all infants who died from sleep-related issues were receiving Medicaid.
- Sixty-five percent of the infants were sharing a sleep surface with one or more adults and/or children.
- The ages of the mothers ranged from 15-41 years with the average age being 25 years old.
- Sixty-one percent of the infants who died from sleep-related issues were white, 35% were black and 4% were multi-racial.

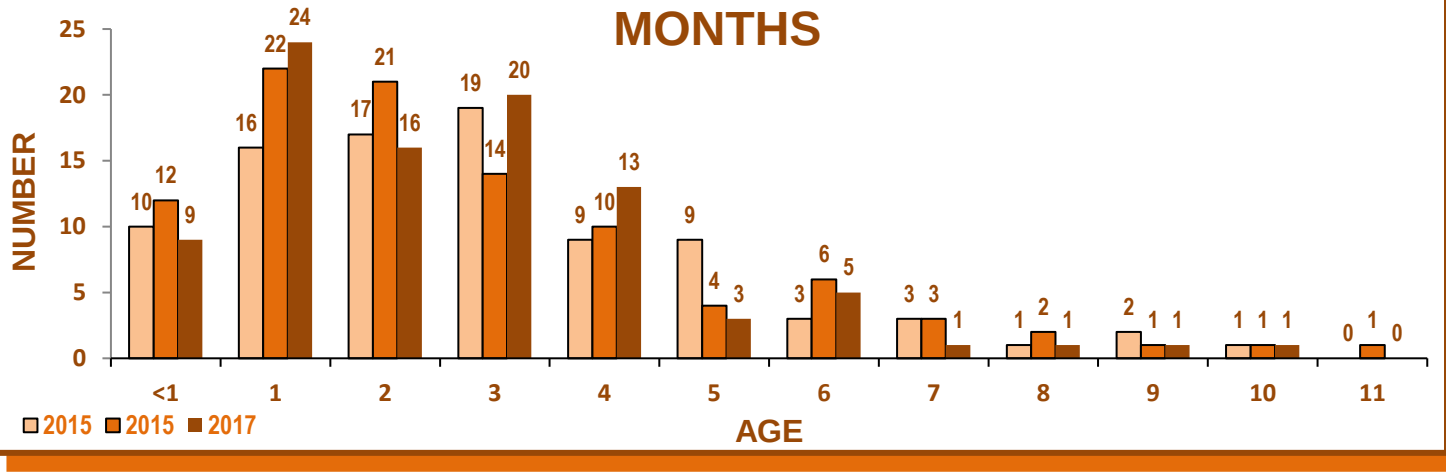
In 2017, of all infants who died from non-medical causes, **76%** were related to the infant's sleep environment. Another way to look at it, is that we are losing about four standard kindergarten classrooms worth* of infants a year; or one infant every two and a half days to deaths that could have been prevented.

* Missouri Department of Education Class size and Assigned Enrollments

MISSOURI SLEEP-RELATED FATALITIES BY SEX AND RACE

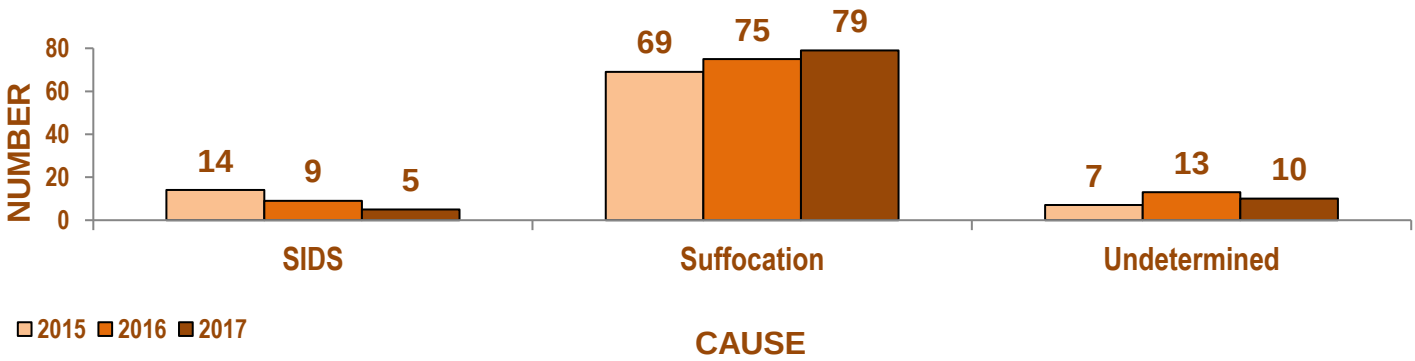
SEX	2015	2016	2017	RACE	2015	2016	2017
Female	34	31	40	White	67	61	57
Male	56	66	54	Black	19	28	33
				Multi-Racial	4	7	4
	90	97	94		90	97	94

SLEEP-RELATED INFANT DEATHS BY AGE IN MONTHS

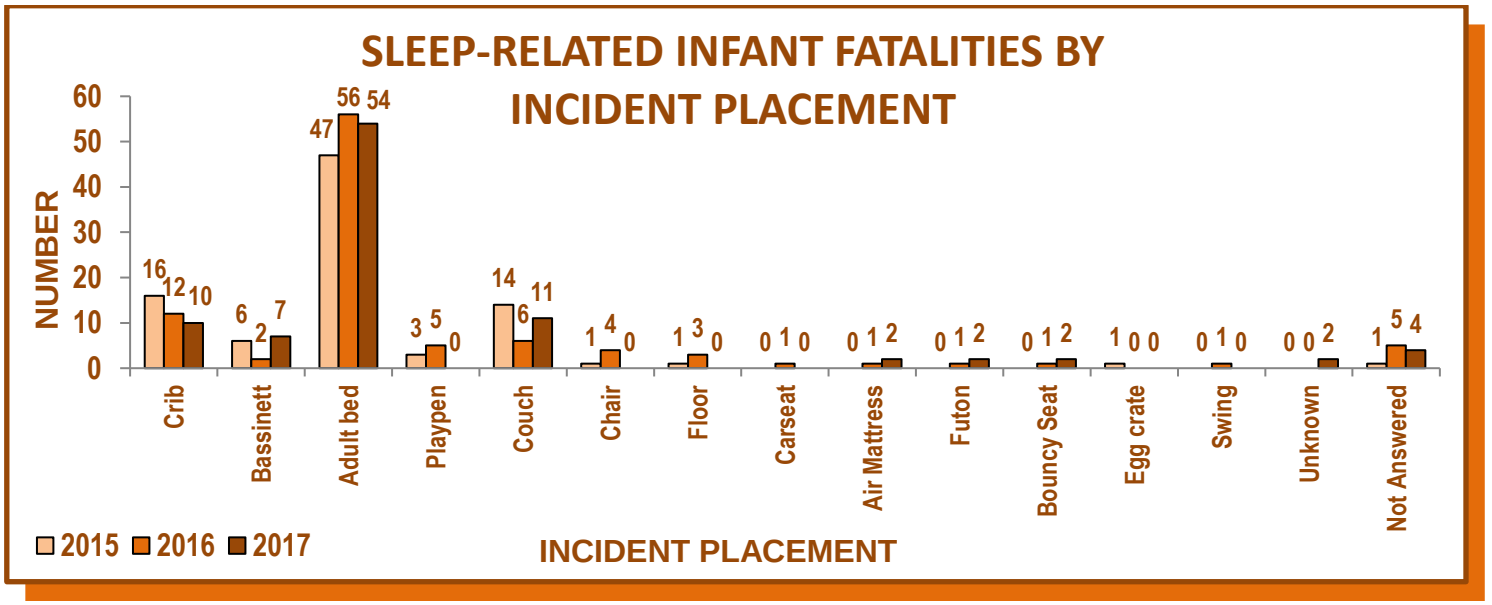


Eighty-four percent of the infant sleep-related deaths were determined to have been suffocation deaths by the child forensic pathologists and county panels.

SLEEP-RELATED INFANT FATALITIES BY CAUSE

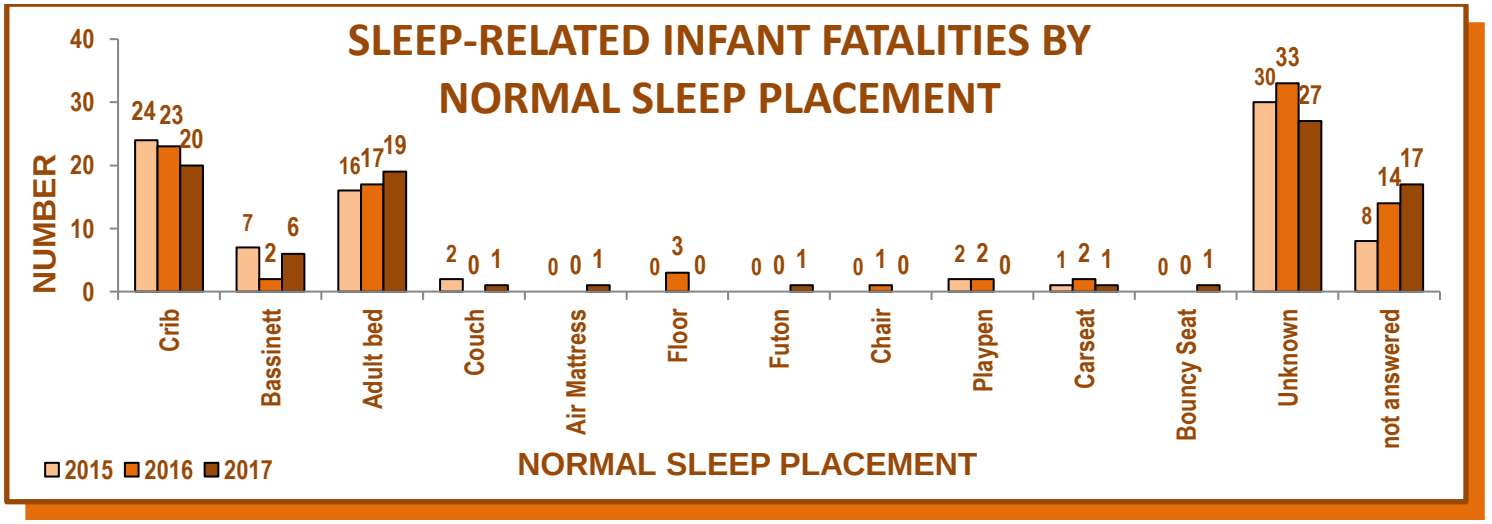


Fifty-four (57%) of all sleep-related infant deaths were known to have occurred while the infant was sleeping in an adult bed. In **51** of the deaths, the infant was sharing a sleep surface with an adult. In the other **forty-three** deaths, the child became tangled in or face down into pillows or thick comforters.



It is hard to know if the safe sleep message is actually getting out to parents when one sees how many infants are found in an adult bed. However, only 35% of the parents who placed their children on adult beds admitted that was where the infant usually slept. Whether this is because of a reluctance of the parents to admit they knowingly placed the child in an unsafe sleep environment or because of poor data collection, is unknown at this time.

New parents are exposed to many challenges to the safe sleep message. Their parents or other relatives may tell new parents that they slept with their children and it is perfectly safe, even though the decrease in infant deaths since safe sleep practices were instituted shows that same surface sleeping is a risk. Some advocate groups continue to endorse unsafe sleep practices, contrary the American Academy of Pediatrics' recommendations. Some advertisements unwittingly encourage unsafe sleep practices, when a baby is shown to be in a crib with quilts and bumper pads, sleeping with parents in bed or on a sofa. It's hard to resist these messages, especially when you' are sleep deprived and struggling to adjust to having an infant in the home. This is why it is so important to continue to promote the safe sleep message.



Another issue is that even when parents consistently put their child to sleep in a safe environment, other caregivers may not. A 2018 study by the University of Virginia Health System found that babies who died in their sleep were often placed in unsafe sleep positions while being watched by someone other than their parent. In Missouri in 2017, **nine** of the **94** infants who died from unsafe sleep were known to have been being watched by someone other than their parent; **three** by grandparents, **four** by babysitters, **one** by licensed child care worker and **one** by other family member.

Something We Can Do:

The safest place for an infant to sleep is alone, on his or her back, in a crib in the same room where the parents sleep. There should be nothing in the crib except for the infant and a fitted sheet. The crib should not contain any toys or soft bedding such as blankets, bumper pads or pillows. Unfortunately, many parents have either not received this information, been instructed differently by family members or are unable to provide a safe crib for their infant.

The ***Safe Cribs for Missouri*** program provides portable cribs and safe sleep education to low-income families who have no other resources for obtaining a crib. The program is administered by the Department of Health and Senior Services and implemented through participating local public health agencies. Safe sleep education follows the most recent American Academy of Pediatrics recommendations for a safe infant sleeping environment. Funding for the ***Safe Cribs for Missouri*** program is provided by the Maternal Child Health Services Block Grant (Title V) and the Missouri Children's Trust Fund. For additional information about the ***Safe Cribs for Missouri*** program, visit https://health.mo.gov/living/families/babies/safecribs/index.php or call 573-751-6266 or 800-877-6246.

Additionally, the **First Birthday Project** is assisting 12 counties in the Southeast Missouri area by supplying safe sleep training and boxinettes to qualifying women who just gave birth. If the women enroll and attend WIC appointments, they will be given a pack-n-play to replace the boxinette, when the child reaches four months of age. This project was implemented to reduce the infant mortality rate for that area, as the average infant mortality rate for the Southeast Missouri area stands at 9.4%, while the state rate is 6.2%.

SUDDEN INFANT DEATH SYNDROME

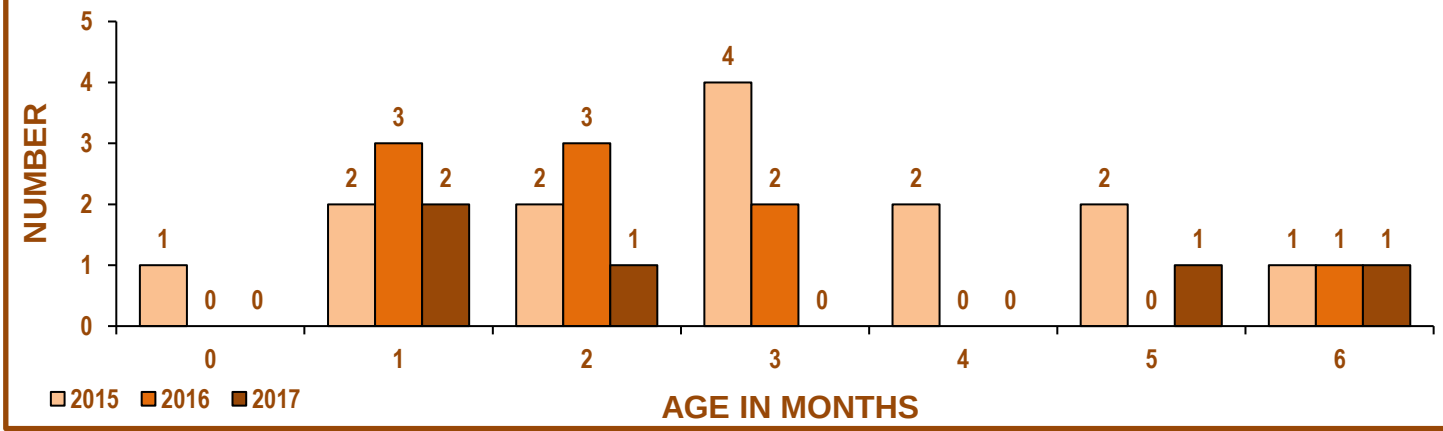
In 2017, five Missouri infant fatalities were classified as Sudden Infant Death Syndrome (SIDS).

The term SIDS describes the sudden, unexpected deaths of infants under one year of age, typically during their sleep, which remain unexplained **after** thorough examination of the death scene, case investigation, complete autopsy, and review of medical and social histories. SIDS remains a diagnosis of exclusion; even though current research may be finding the mechanisms of SIDS. There are still no agreed upon pathological markers that distinguish SIDS from other causes of sudden unexpected infant death. There are no warning signs or symptoms. Nationally, 90% of infant fatalities classified as SIDS occur within the first six months of life, peaking at two to four months. While there are several known risk factors, the specific cause or causes of SIDS are not yet defined.

SIDS FATALITIES BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	4	1	0	White	12	7	4
Male	10	8	5	Black	2	2	1
				Multi-Racial	0	0	0
	14	9	5		14	9	5

SIDS FATALITIES BY AGE IN MONTHS



Current Research Findings and Theories

Studies show that while a child who dies of SIDS may look normal, many of them may have an underlying genetic abnormality which made them more susceptible. It is hoped that these findings will eventually lead to tests that can determine which children are at greatest risk.

Continued research, thorough investigations, along with child fatality review, allow for better identification of the intricate causes behind SIDS. Standardized and thorough data collection on sudden infant deaths, provided and entered into the NCFRP CDR system by local CFRP panels, enhance identification of risk factors, facilitation of risk reduction efforts and implementation of prevention best practices, which will have a greater impact in saving infant lives.

Other Risk Factors

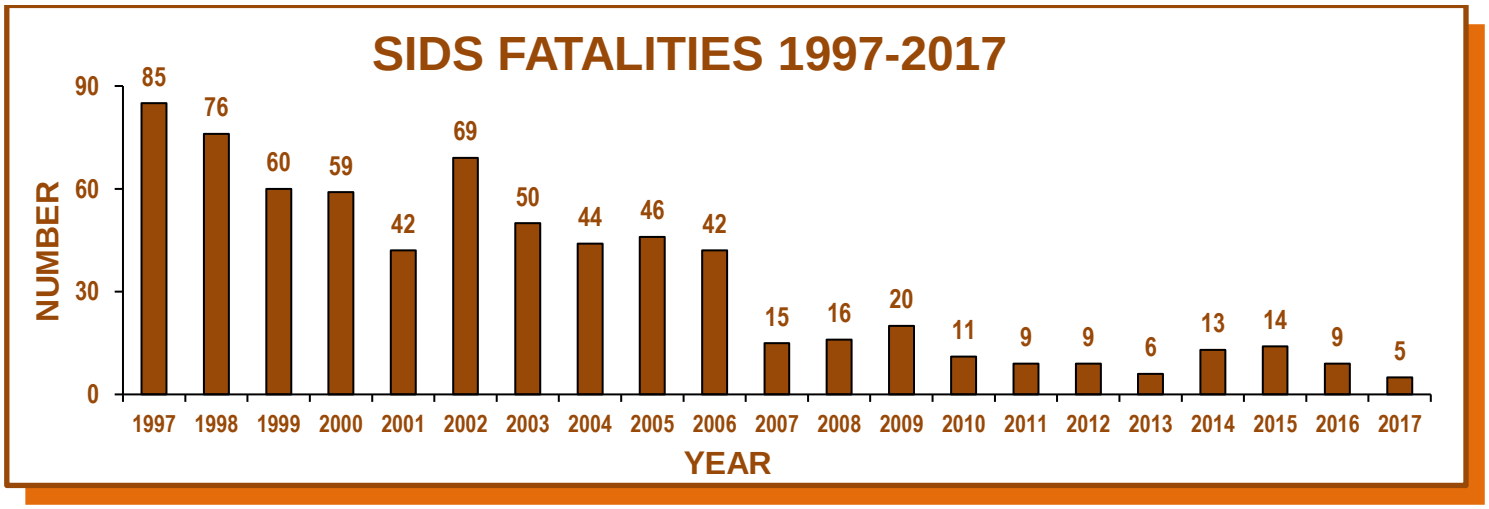
Other risk factors, many associated with the mother's health and behavior, place the infant at a significantly higher risk of sudden, unexpected infant death:

- Prematurity
- Low birth weight
- Less than 18 months between births
- Mother younger than 18
- Prenatal smoking
- Multiple births
- Late or no prenatal care
- Alcohol and substance use

Certain environmental stressors have also been shown to be highly significant risk factors:

- Prone or side sleeping
- Soft sleep surfaces
- Loose bedding
- Sharing a sleep surface
- Overheating
- Exposure to tobacco smoke

Environmental stressors are modifiable and the reduction of these risk factors through parent/caretaker education has great potential to save infant lives.

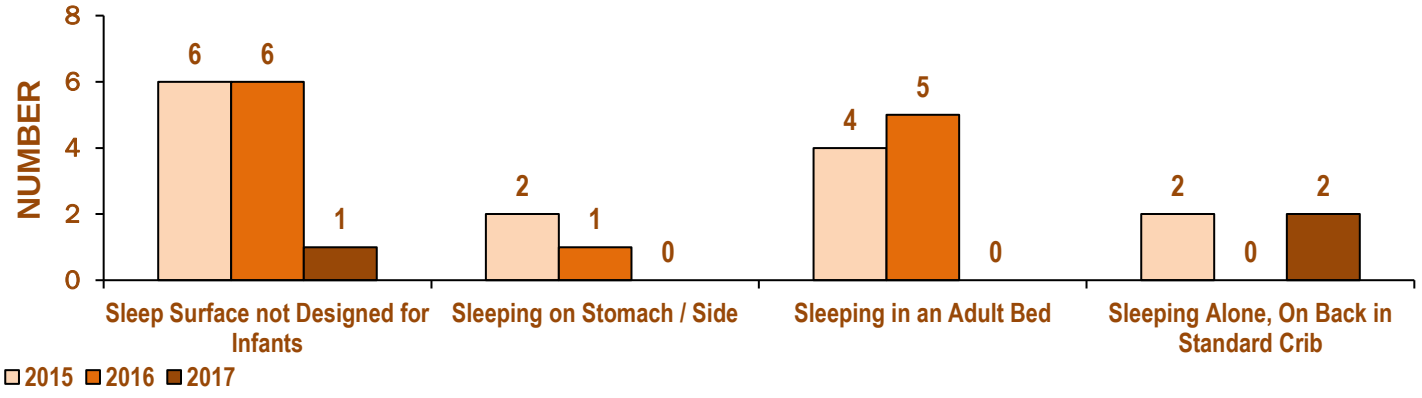


Many deaths attributed to SIDS each year, are found in potential high risk environments from which infants are unable to extricate themselves, such as being on their stomachs, face down, or where their noses and mouths can become covered by soft bedding. Historically, unsafe sleep arrangements have occurred in a majority of sudden infant deaths diagnosed as SIDS, unintentional suffocation and cause undetermined. Unsafe sleep arrangements include any sleep surface not designed for infants, inappropriate bedding, sleeping with head or face covered, and sharing a sleep surface.

In 2017, there were **104** deaths that would have previously been called SIDS (a reduction of 35% from 1991). With proper scene investigations and autopsies only **five** of these deaths were diagnosed as SIDS; **79** of them were determined to be suffocation, **10** were undetermined and **10** were from natural causes.

Of the **five** sudden unexpected infant deaths reviewed by county CFRP panels and diagnosed as SIDS, **one** infant was listed as being placed in an "unknown sleeping position," possibly due to a lack of thorough scene investigation or the reluctance of caregivers to admit they may have placed the child in a compromising sleep position. Of the remaining infant deaths, sleep position was not reported in **one**; and **three** were reported placed to sleep on their backs. Only **two** of the **five** infants whose deaths were classified as SIDS, were known to be sleeping alone on their backs, in a crib. The safest place for an infant to sleep is in a standard crib with a fitted sheet, on his or her back, without soft bedding or toys of any kind.

SIDS FATALITIES: SLEEP ENVIRONMENT



SLEEP-RELATED INFANT SUFFOCATION

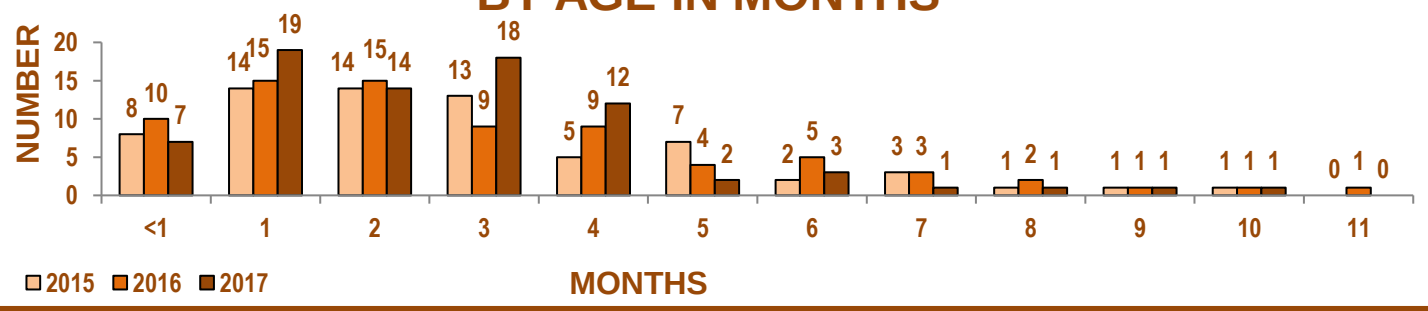
In 2017, 79 Infants died from sleep-related suffocations.

Deaths by unintentional suffocation are much more prevalent among children under one year of age than from any other age range. In 2017, there were **81** total unintentional suffocation deaths, **79** of these were infants under one year of age.

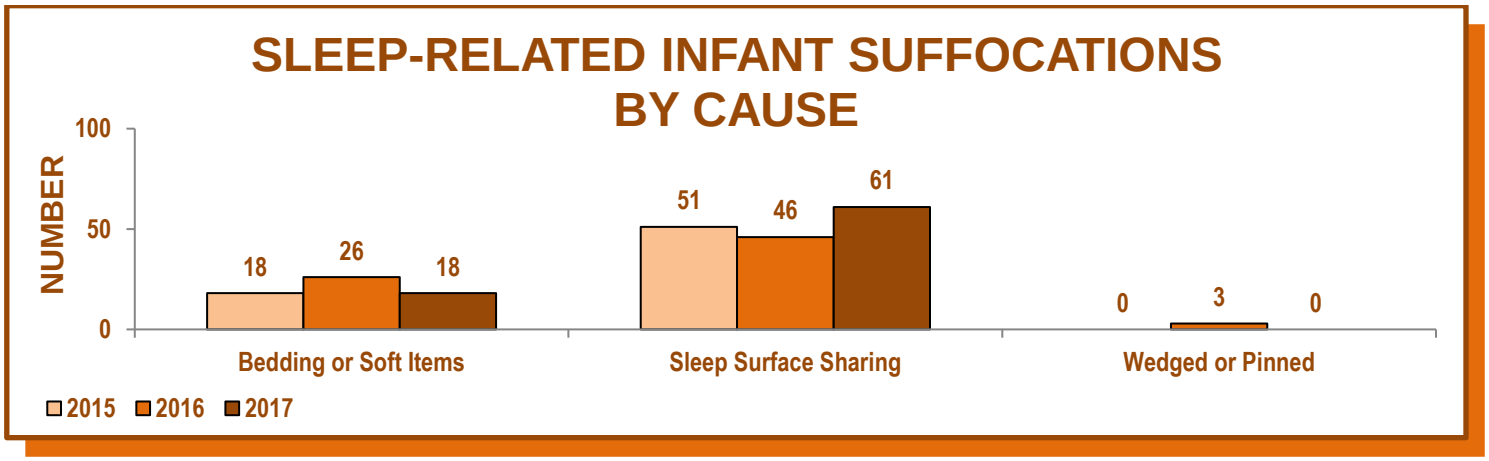
SLEEP-RELATED INFANT SUFFOCATION BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	27	26	33	White	50	47	46
Male	42	49	46	Black	15	22	30
				Multi-Racial	4	5	3
	69	75	79		69	75	79

SLEEP-RELATED INFANT SUFFOCATIONS BY AGE IN MONTHS

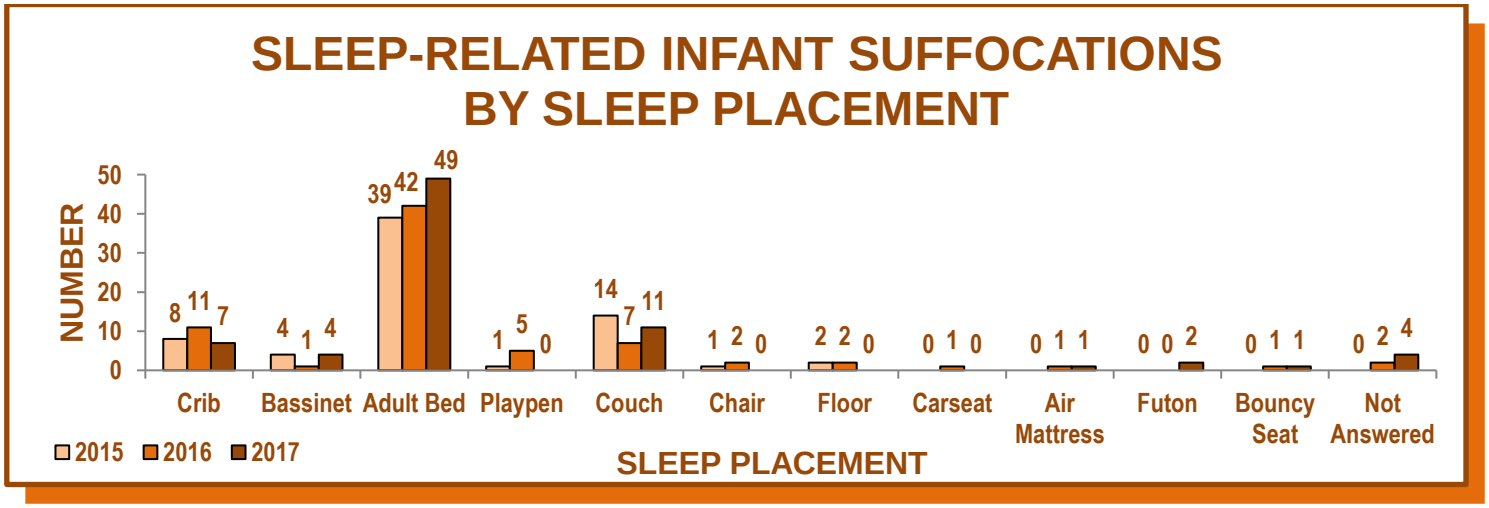


Like SIDS deaths, sleep-related infant suffocations occur within the first six months of life, but unlike SIDS these deaths begin to peak at one month of age.



Accidental suffocation and strangulation in bed is the leading cause of infant injury deaths. There are several possible mechanisms which can cause sleep-related suffocations in infants; i.e., suffocation by soft bedding, overlay, wedging, or entrapment.

Eighteen infants died due to soft bedding; **six** were in their cribs with soft bedding and/or bumper pads; **four** were placed to sleep in bassinets with soft bedding; **three** were placed on adult beds with either pillows or comforters; **one** was placed on a sofa with pillows; **one** was on a futon; **one** was in a bouncy seat with blankets and **one** was in a sleeping bag on top of an air mattress.



An overlay is a type of unintentional suffocation that occurs when an infant is sharing the same sleep surface with one or more persons (adults, other children or even pets) who either rollover on or entrap the infant, such as under an arm or leg. Suffocation due to overlay can be verified by one of the following means: 1) someone who was on the same sleep surface, admitting that they were overlying the infant when they awoke; or 2) the observations of another person.

To reduce the risk of unintentional suffocation deaths of infants, it is recommended that the infant sleep in the parents' room, but on a separate sleep surface (crib, bassinette or pack 'n play) close to the parents' bed. This arrangement not only decreases the risk of SIDS by as much as 50% and is safer than bedsharing or solitary sleeping (when the infant is in a separate room), but is also more likely to prevent suffocation, strangulation, or entrapment, which may occur when the infant is sleeping in an adult bed. Furthermore, room sharing without bedsharing allows close proximity to the infant, which facilitates feeding, comforting and monitoring of the infant.

Unfortunately, many Missouri parents continue to share a sleeping surface with their infants. Of the **79** infants under one year of age that died of unintentional suffocation, **61** were sharing a sleep surface with one of more individuals; **57** of them were sleeping in an adult bed; **ten** were sleeping on sofas; and, **one** was sleeping on a futon with a parent. In **five** other of these cases, the panels either did not answer the question, or stated the answer was unknown.

SLEEP-RELATED UNDETERMINED

In 2017, there were 10 sleep-related infant deaths whose cause and manner of death could not be determined.

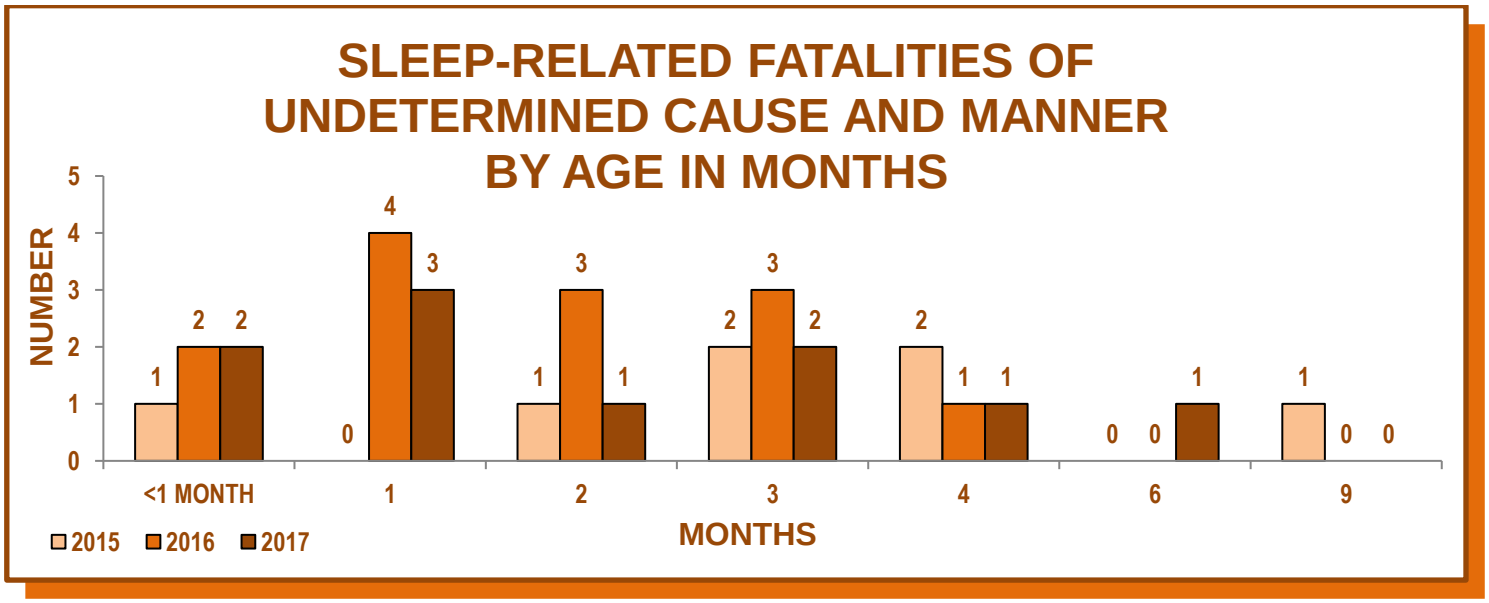
The CDC calls this category "Ill Defined and Unknown Cause of Mortality," and, in the case of infants, defines it as "The sudden death of an infant less than one year of age that cannot be explained as a thorough investigation was not conducted and cause of death could not be determined."

The Differences between Undetermined and SIDS Fatalities are:

- Sudden Unexpected Infant/Child Death (SUID/SUCD) covers deaths which were caused by many factors of which Undetermined and SIDS are just two. Others factors include poisoning or overdose, cardiac channelopathies, inborn errors of metabolism, infections and accidental suffocations.
- Both the manner and cause of the death listed under Undetermined are unknown. In SIDS deaths, the manner is classified as Natural.
- Like SIDS, in an Undetermined death there was nothing found at autopsy to indicate exactly why the child died. Unlike SIDS, in Undetermined deaths there were increased risk factors present, such as a recent illness, unsafe sleep surfaces or same surface sleep sharing; i.e. beds, couch, and chair, which can be neither proven nor disproven to have caused the death. Or, there was a lack of a thorough investigation having been conducted.

SLEEP-RELATED FATALITIES UNDETERMINED CAUSE AND MANNER BY SEX AND RACE

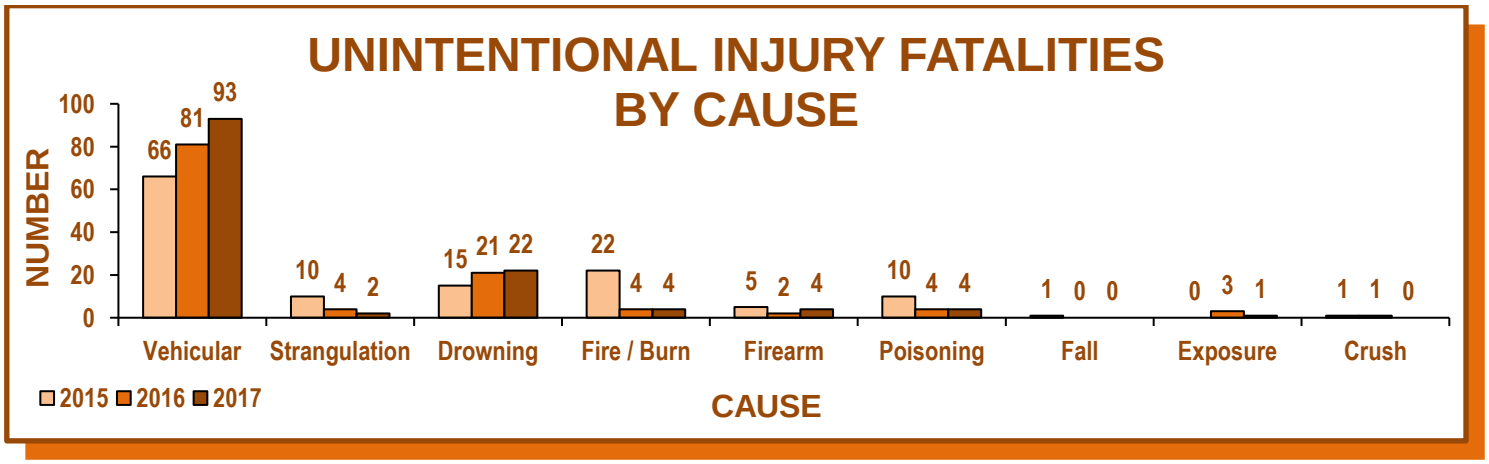
SEX	2015	2016	2017	RACE	2015	2016	2017
Female	4	4	7	White	5	7	7
Male	3	9	3	Black	2	4	2
				Multi-Racial	0	2	1
	7	13	10		7	13	10



UNINTENTIONAL INJURY FATALITIES

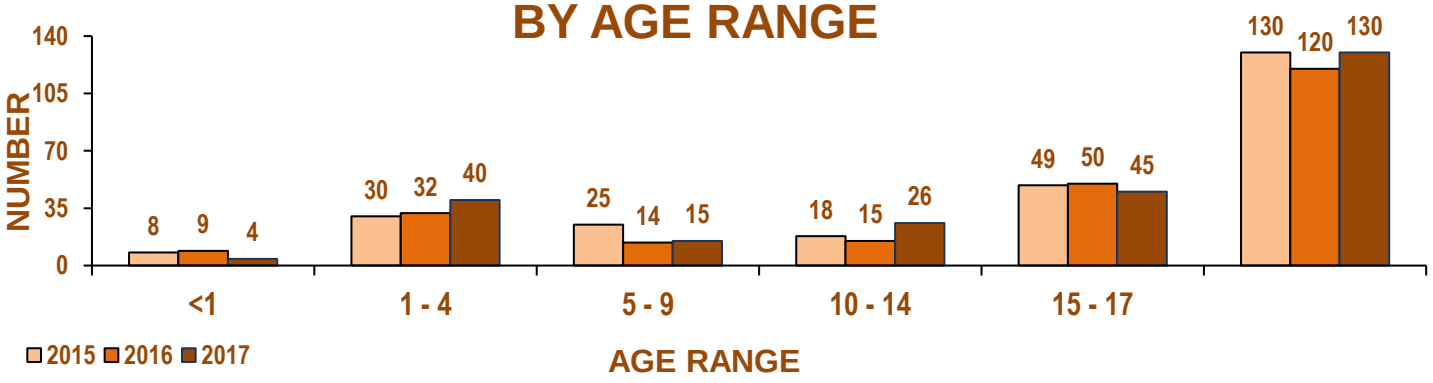
In 2017, there were 130 other child unintentional injury fatalities

There were a total **208** unintentional injuries in Missouri in 2017. **Seventy-eight** of those deaths were addressed in the prior sleep-related section. Of the remaining **130**, the leading causes of death are vehicular at **93,** and drowning at **22**.



Unintentional injury fatalities are most prevalent in the youngest and oldest age ranges. Children under one year of age are the most vulnerable, relying on the actions of others to keep them safe; while the older children often engage in risk taking behaviors, as they begin their transition to adulthood.

UNINTENTIONAL INJURY FATALITIES BY AGE RANGE



UNINTENTIONAL INJURY FATALITIES BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	49	45	45	White	95	93	94
Male	81	75	85	Black	30	21	32
				Asian	4	4	0
				Multi-Racial	1	2	4
	130	120	130		130	120	130

Unintentional Versus Accidental

The CFRP was implemented to more accurately identify the causes of child fatalities and strategies for how to prevent similar child deaths from occurring. While this seems rather straightforward, there still remains reluctance in some communities to review circumstances surrounding "tragic, unavoidable accidents." This is not just a Missouri phenomenon. The real problem rests in the word "*accident.*" An accident is an unexpected occurrence which happens by chance…an event that is not amenable to planning or prediction; whereas, an injury is a definable, correctable event with specific, identifiable risks for occurrence. A better definition for "*accident*" is that it results from a risk that is poorly managed. Accidents, or rather unintentional injuries, do not just happen. They are caused by lack of knowledge, oversight and/or carelessness—a lack of proper training and realization that a risk exists.

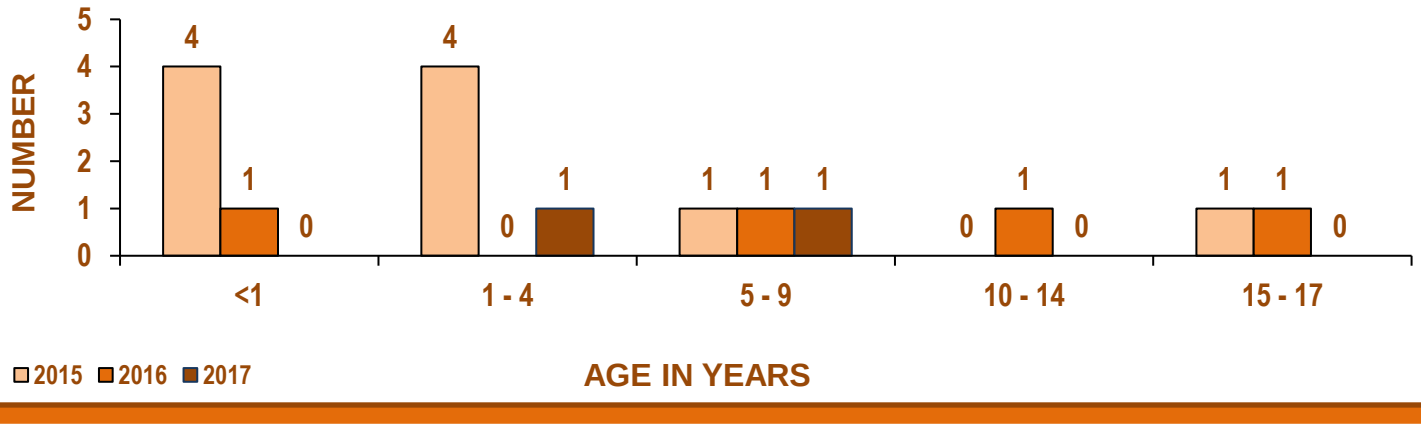
Leaving small children (less than six years of age) unsupervised around water or moving vehicles, and placing babies in unsafe sleeping environments are all ill-advised; yet, these actions resulted in the deaths of **111** children in 2017. Some people believe that vehicular crash deaths (a more appropriate term) cannot be prevented, but it is well known that appropriate road signage/maintenance, following laws, avoiding distractions, driver education, and correctly using seatbelts and child safety seats save lives. Of the **79** children who died while either driving or riding in a motor vehicle, **55** were known to be unrestrained at the time of the crash.

ASPHYXIATION

There were 2 non-sleep-related asphyxiations in 2017.

There were a total of **81** unintentional suffocation deaths in 2017. **Seventy-nine** asphyxiation deaths were discussed in the prior sleep-related infant death section. Unintentional suffocation deaths in older children are often related to circumstances associated with choking, aspiration and/or strangulation.

ASPHYXIATION BY AGE

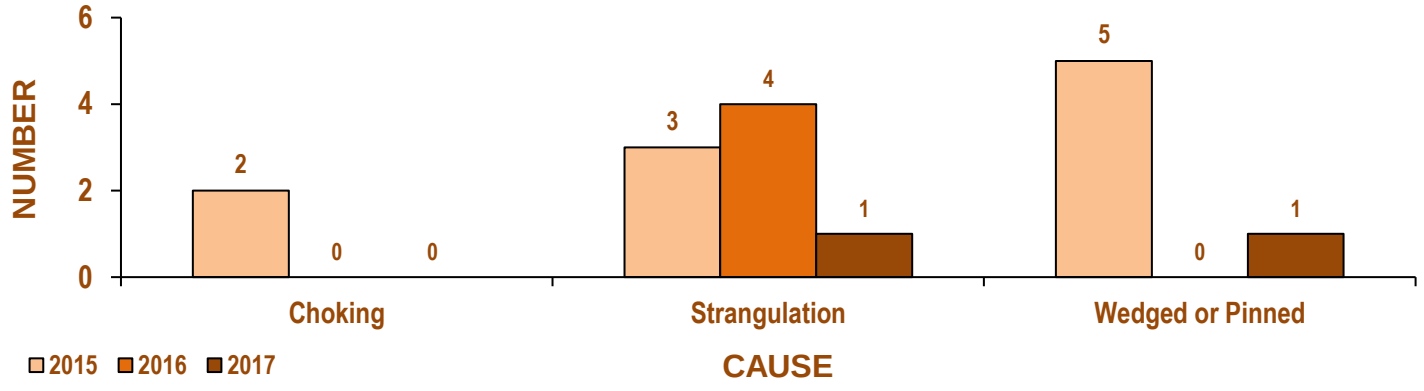


The Child Safety Protection Act bans any toy intended for use by children under three years of age that may pose a choking, aspiration or ingestion hazard, and requires choking hazard warning labels on packaging for these items, when intended for use by children ages three to six years. To address strangulation hazards, the Consumer Product Safety Commission (CPSC) issued mandatory standards for various items such as cribs and window blinds, as well as voluntary guidelines for children's clothing to prevent strangling; i.e., from drawstrings of outerwear garments, such as jackets and hoodies.

ASPHYXIATION BY SEX AND RACE

	2015	2016	2017	RACE	2015	2016	2017
Female	5	2	1	White	8	2	2
Male	5	2	1	Black	2	1	0
				Multi-Racial	0	1	0
	10	4	2		10	4	2

ASPHYXIATION BY CAUSE



There was **one** child who died from strangulation; and, **one** toddler who became wedged between the wall and bedframe.

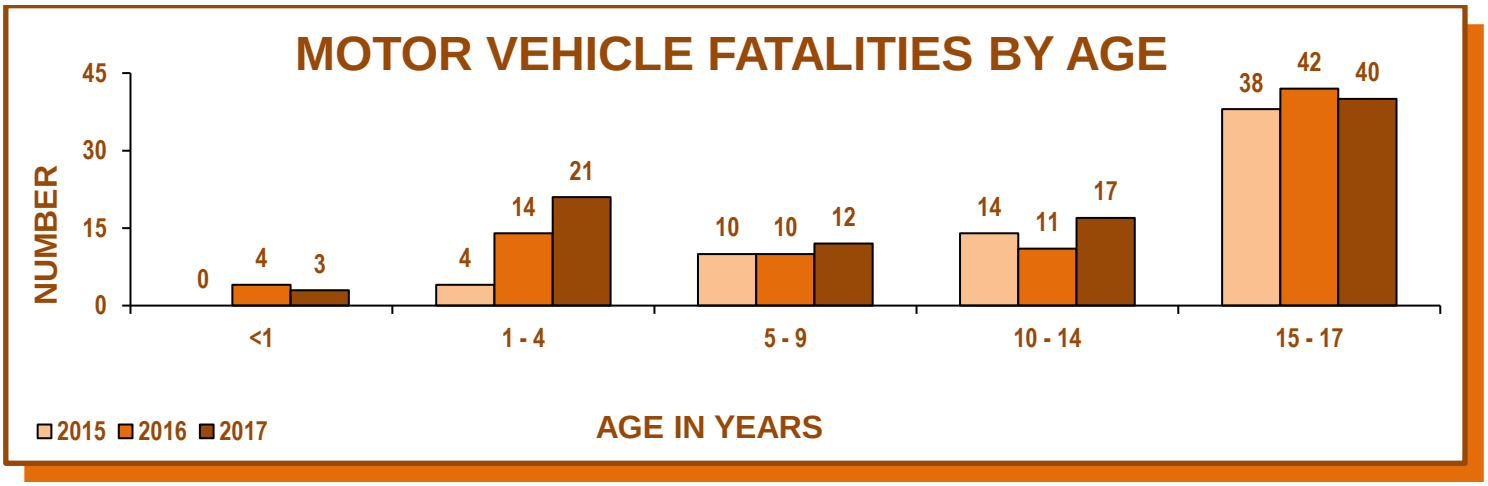
MOTOR VEHICLE FATALITIES

There were 93 unintentional vehicle fatalities in 2017.

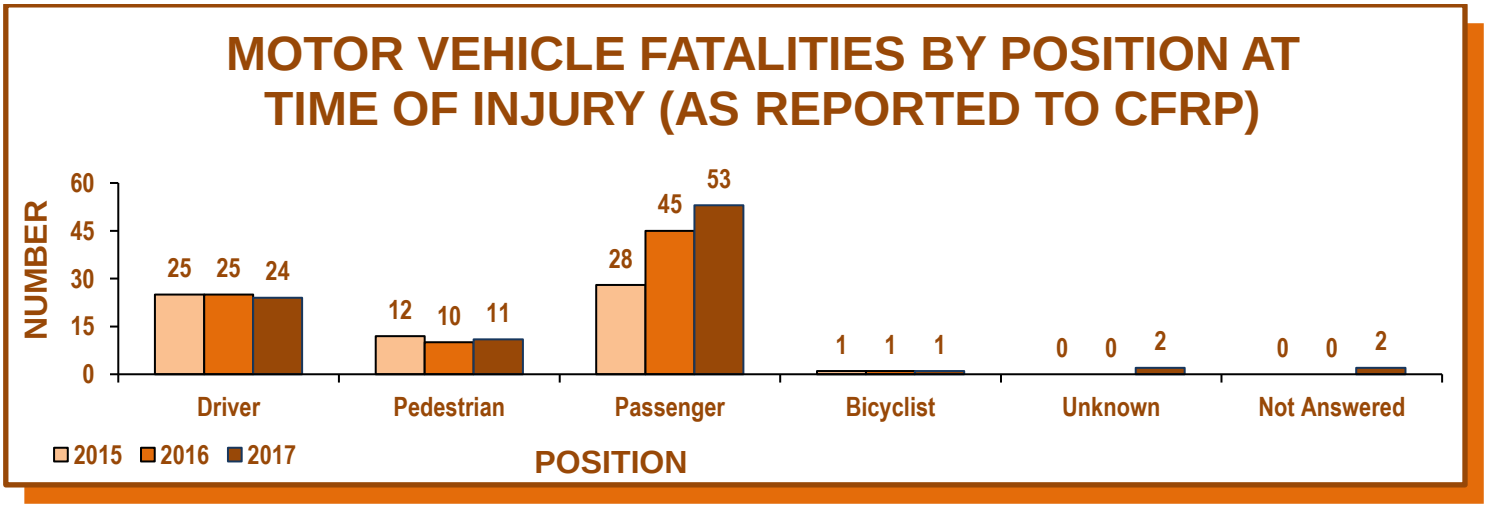
- Fifty-one percent of the children who died from vehicle crashes were teenagers.
- Forty-three percent of teens who died from vehicle crashes were drivers, 57% were passengers.
- Sixty percent of teens who died from vehicle crashes were male, 40% female. Sixty-eight percent were white, 28% were black and 4% were multi-racial.
- Forty percent of teen drivers and passengers were known to be unrestrained at the time of the crash.

MOTOR VEHICLE FATALITIES BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	22	32	32	White	48	65	68
Male	44	49	61	Black	15	14	22
				Pacific Islander	1	0	0
				Asian	2	2	0
				Multi-Racial	0	0	3
	66	81	93		66	81	93



For the past five years, unintentional vehicle crashes have been the second leading cause of injury deaths for children. Motor vehicle fatalities include drivers and passengers, pedestrians who are struck, bicyclists and occupants in any other form of transportation, including airplanes, trains and all-terrain vehicles. **Seventy-four** of the **93** unintentional motor vehicle deaths were reviewed by local CFRP panels.



CAUSE OF INCIDENT*			
SPEEDING	28	POOR TIRES	2
RECKLESSNESS	25	POOR WEATHER	2
DRUG OR ALCOHOL USE	15	CELL PHONE USE WHILE DRIVING	2
UNSAFE SPEED FOR CONDITIONS	13	CAR CHANGING LANES	2
DRIVER INEXPERIENCE	11	FATIGUE / SLEEPING	1
DRIVER DISTRACTION	10	MEDICAL EVENT (SEIZURE)	1
VEHICLE ROLLOVER	9	ANIMAL IN ROADWAY	1
DRIVER ERROR	7	RACING	1
RAN STOP SIGN / RED LIGHT	4	ROAD HAZARD	1
MECHANICAL FAILURE	3	UNKNOWN	4
BACK/FRONT RUNOVER	3	NOT ANSWERED	14
POOR SIGHT LINE	3		

TYPE OF VEHICLE	
CAR	41
SUV	20
TRUCK	10
ATV	6
NOT ANSWERED	4
VAN	3
TRACTOR	2
BICYCLE	1
GARBAGE TRUCK	1
HORSE DRAWN BUCKBOARD	1
MOTORCYCLE	1
OTHER FARM VEHICLE	1
SEMI/TRACTOR TRAILER	1
UNKNOWN	1

RESTRAINTS – LAP BELT	
PRESENT, NOT USED	22
PRESENT, USED CORRECTLY	16
PRESENT, USED INCORRECTLY	4
NEEDED, BUT NONE PRESENT	1
NOT APPLICABLE	11
UNKNOWN	11
NOT ANSWERED	28

ROAD CONDITIONS*	
NORMAL	51
WET	8
GRAVEL	6
ICE/SNOW	2
INADEQUATE LIGHTING	2
UNKNOWN CONDITION	2
CONSTRUCTION ZONE	1
NOT ANSWERED	20

LOCATION OF CRASH*	
HIGHWAY	25
RURAL ROAD	21
CITY STREET	20
RESIDENTIAL STREET	12
INTERSECTION	6
DRIVEWAY	2
OFF ROAD	2
SHOULDER	2
PARKING AREA	1
RAILROAD TRACKS	1
OTHER	1
NOT ANSWERED	9

RESTRAINT – HELMET USE	
NEEDED, NONE PRESENT	3
UNKNOWN	2
PRESENT, USED CORRECTLY	1
NOT APPLICABLE	85
NOT ANSWERED	2

RESTRAINTS – BOOSTER SEAT	
NEEDED BUT NONE PRESENT	2
PRESENT, USED CORRECTLY	1
UNKNOWN	87
NOT APPLICABLE	2
NOT ANSWERED	1

RESTRAINTS – CHILD SEAT	
PRESENT USED CORRECTLY	5
UNKNOWN	4
NEEDED BUT NONE PRESENT	2
NOT APPLICABLE	81
NOT ANSWERED	5

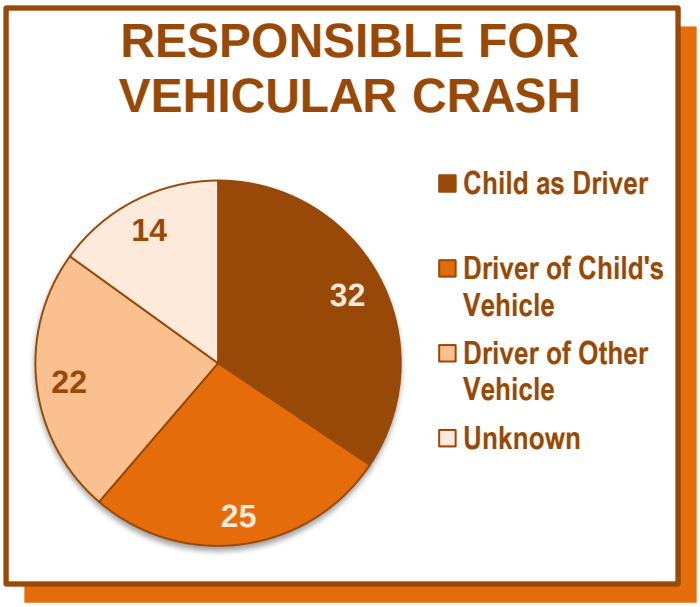
ALCOHOL AND/OR OTHER DRUG USE**			
DRIVER OF CHILD'S VEHICLE IMPAIRED	9	DECEDENT DRIVING IMPAIRED	2
DRIVER OF OTHER VEHICLE IMPAIRED	4	NOT APPLICABLE / UNKNOWN	78

* A single crash may be the result of multiple causes and/or environmental conditions.

**With multiple incomplete panel reviews it is hard to determine if the cases that are listed as not being impaired were actually not impaired, or if this question was simply not answered by the county.

Most vehicle crashes occur due to the actions of one or more persons, be it recklessness, impaired driving, inattention or simply inexperience.

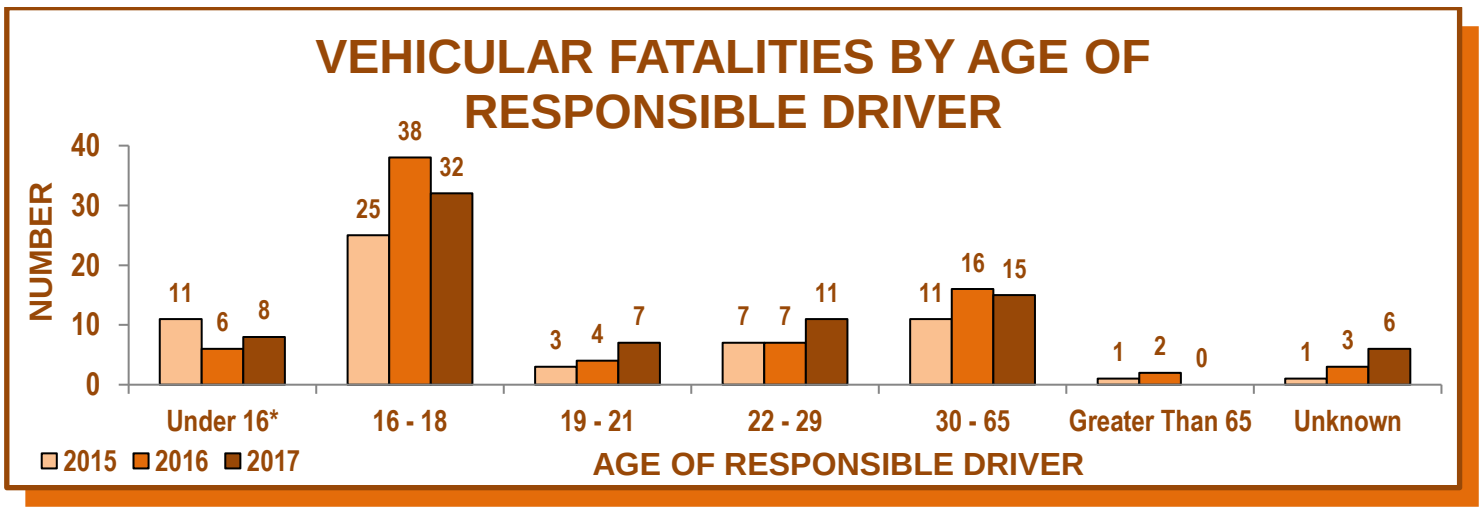
Of the **93** reported motor vehicle fatalities, the driver of the child's vehicle was responsible for **32** of the crashes; **25** were caused by the teen/child as driver (note this includes the operator of a bicycle); **22** were caused by the driver of another vehicle. The other **14** were either not answered or unknown.



As compared to other drivers, a higher proportion of teenagers are responsible for their fatal crashes because of their own driving errors. Of the **79** motor vehicle fatalities in which a driver was determined to be responsible for the accident, **47** were age 21 or less, of which **32** were between 16 and 18 years old and **eight** were below 16 years of age.

Driver and Passenger Fatalities

Of the **93** reported motor vehicle child fatalities in 2017, **79** involved drivers and passengers. Public education and child restraint laws have led to an increase in the use of child restraints; however, much work still needs to be done, as **29** of the **55** child passenger fatalities were known to be riding unrestrained. **Fifteen** of the **55** child passenger fatalities were under age five and **five** of those were known to be unrestrained. The most common reasons restrained children die in crashes are misuse of child safety seats and premature graduation to seatbelts. **Four** child passenger fatalities were incorrectly secured in a seat belt, **one** was in an improperly secured booster seat and **one** was in an improperly secured child seat.



* Includes drivers of bicycles, skateboards and ATV's, as well as underage and unlicensed drivers.

Of the **93** reported unintentional motor vehicle fatalities, **fifteen** involved either a victim or a driver who was impaired. **Two** crashes involved teen drivers who were impaired. **Four** drunk drivers caused the death of **seven** children in their own vehicles. **Four** drunk drivers killed **five** children when they struck the vehicles the children were riding in.

In Missouri, the highest fatality rates are found among teenage drivers. Teenagers are involved in three times as many fatal crashes as other drivers due to inexperience and immaturity, along with greater risk exposure.

Missouri has a Graduated Driver's License law for new drivers as it takes time to master the skills needed to safely operate a motor vehicle. The law requires all first-time drivers ages 15 through 18 complete a period of driving with a licensed driver (instruction permit), and restricted driving (intermediate license), before getting a full driver license. The issuance of a permit ensures that a new driver gets at least 40 hours of supervised driving practice, before being allowed to drive on their own. The intermediate license restricts the number of teens that a new teen driver can have in their vehicle, as well as the hours of day they are allowed to drive.

There were **two** child fatalities in vehicle crashes that involved inclement weather and/or driving at unsafe speeds for road conditions. Educating teens on defensive driving, to include how to drive in inclement weather, or adverse road conditions; i.e., how to react to the vehicle skidding, sliding or hydroplaning; when to reduce speed, brake and/or let off the gas pedal when traveling on ice or snow covered bridges or roadways; or never driving through flooded roadways, etc., can save lives.

Distracted driving is any activity that takes a person's attention away from the task of driving, be it eating, changing radio station or texting. As texting requires visual, manual and cognitive attention from the driver, it is by far the most alarming distraction. According to **distraction.gov**, 71% of teens and young people say they have composed/sent text messages while driving, and 78% of teens and young adults say they have read one while driving. Currently, Missouri law bans all drivers, 21 and younger, from text messaging, and commercial drivers from texting or using handheld cell phones, while driving. **Two** Missouri children died from vehicle accidents involving cell phone use, **one** was a pedestrian that was struck by a teen driver, who was on their phone. The other **one** was a teen driver who was using his phone when he wrecked.

Regulations alone cannot address teen driver safety. Graduated licensing for teen drivers and texting bans must be combined with education for both parents and teens about identified risks to teenage drivers, such as the dangers of underage drinking, speeding, inattention, distracted driving and low seatbelt use. Parents often believe their child would never participate in such foolish behaviors, but 46% of the high school participants in the 2017 Missouri Youth Risk Behavior Survey indicated that they had either text or emailed while driving within the past 30 days of taking the survey. Even more worrisome, 65% of teens had ridden with someone who was using a cell phone while driving. Sixteen percent of the participants admitted to riding with a driver who has been drinking, and 5.3% of them said that they had driven while drinking within the same timeframe.

Seatbelts are known to reduce the risk of fatal motor vehicle injury by as much as 45%. There were **40** teenagers, age 15-17, that died in motor vehicle crashes; **22** were passengers and **18** were drivers. Of the **40** teen driver and passenger deaths, **17** were known to be unrestrained at the time of the crash.

Pedestrian Fatalities

Twelve motor vehicle fatalities involved child pedestrians. Of these children, **one** was an infant, under age one, **seven** were between the ages of one and four; **three** were between the ages of five and nine; **one** was between the ages of 10 and 14.

- **Three** children died when they were backed over in driveways and other parking areas. Unfortunately, this is not a rare occurrence as young children are at increased risk of pedestrian injury and death in driveways and other relatively protected areas, as it is harder for drivers of larger-sized vehicles such as SUV's and vans to see a small child either behind or in front of the vehicle.

- Young children are particularly vulnerable, because they are exposed to traffic threats that exceed their cognitive, developmental, behavioral, physical and sensory abilities. Also, parents often overestimate their children's pedestrian skills. Children are impulsive and have difficulty judging speed, spatial relations and distance. **One** child ran out in front of moving vehicles.
- Practical, skill-based pedestrian safety training efforts have demonstrated improvements in children's traffic behavior. Environmental modifications are also effective at reducing traffic-related pedestrian incidents.

Bicycle-Related Fatalities

By definition, motor vehicle fatalities include bicycle-related injuries that occur when children are either struck by a motor vehicle or other circumstance. Of the **93** reported motor vehicle fatalities, **one** was a bicyclist.

Bicycles are associated with more childhood injuries than any other consumer product. Head injury is the leading cause of death in bicycle crashes and is the most important determinant of bicycle-related death and permanent disability. Evidence has shown that the single most effective safety device available to reduce head injury and death from bicycle crashes is a helmet. In the event of a crash, wearing a bicycle helmet reduces the risk of head injury by as much as 85% and the risk of brain injury by as much as 88%.

In comparison with younger children, children ages 10 to 14 are at greater risk for traumatic brain injury from a bicycle-related crash, most likely because helmet use declines as children age. According to 2015 Missouri Youth Risk Behavior Survey, among students that rode a bicycle in the past 12 months, 51.7% of middle school students and 85.7% of high school students never or rarely wore a bicycle helmet.

More than 80% of bicycle-related deaths are directly due to the bicyclist's actions. Such actions as riding into a street without stopping, turning left or swerving into traffic that is coming from behind, running a stop sign or riding against the flow of traffic are all too common, and are often fatal. Children should be taught the rules of the road and to obey all traffic laws.

All-Terrain Vehicle Fatalities

Six of the **93** reported motor vehicle fatalities, involved all-terrain vehicles (ATVs). ATVs are designed for off-road use on a variety of terrains. By the nature of their design, ATVs can be unstable due to their high center of gravity, inadequate suspension system, no rear-wheel differential, and of further hazard due to their weight and ability to reach higher speeds. Most injuries associated with ATVs occur when the driver loses control, the vehicle rolls over or there is a collision with a fixed object. The driver or passenger is either pinned beneath the ATV or thrown off. Head injuries account for most of the deaths. **None** of the **six** ATV-related child fatalities were known to have been wearing helmets, **five** of them died from head trauma, and **one** died from compression.

It is recognized by many safety organizations that children do not have the cognitive and physical abilities to drive or ride these vehicles safely. Missouri requires that all children under the age of 18 wear helmets when riding on an ATV; no one under 16 operates an ATV unless on a parent's land or accompanied by a parent; and passengers may not be carried with the only exceptions being for agricultural purposes and ATVs designed to carry more than one person.

Trends in Vehicular Fatalities

MISSOURI MOTOR VEHICLE FATALITIES 2008 - 2017			
Year	Child Fatalities	Total Fatalities	Percentage of Total Fatalities
2008	99	960	10.31%
2009	80	878	9.11%
2010	58	821	7.06%
2011	85	786	10.81%
2012	72	826	8.72%
2013	77	757	10.17%
2014	83	766	10.84%
2015	70	853	8.21%
2016	81	931	8.70%
2017	93	1037	8.98%

Decades of motor vehicle safety prevention efforts were making a positive difference in the number of deaths on Missouri roads, but this year the number of deaths jumped back up to a number not seen since 2006. Since 2008, the annual number of overall vehicular fatalities in Missouri has raised 7%. In comparison, the number of child fatalities from vehicle crashes has dropped 6%.

There are many safety and prevention factors that have played a part in this reduction, to include, but not limited to, improved passive safety systems in vehicles such as airbags and crumple zones; active technologies such as electronic stability control and sensor systems; child safety restraint equipment; traffic safety prevention programs and active law enforcement efforts.

Keeping Children Safe In and Around Motor Vehicles

Attention concerning child safety and motor vehicles has focused largely on protecting children as they ride in and on vehicles of all kinds, primarily motor vehicles on public roads. The Missouri CFRP reviews and collects data on motor vehicle fatalities among children as passengers, drivers, pedestrians and bicyclists. However, children who are unsupervised in or around motor vehicles that are not in traffic are at an increased risk for injury and death, whether it be heatstroke from being left in vehicles, back- or run-overs or vehicles being accidentally put into gear.

Education campaigns aimed at parents and caregivers, should communicate ensuring adequate supervision when children are playing in areas near parked motor vehicles; never leaving children alone in an motor vehicle, even when they are asleep or restrained; and keeping motor vehicles locked in a garage or driveway, and keeping keys out of children's reach.

FIRE/BURN FATALITIES

In 2017, four Missouri children died of unintentional fire/burn injuries.

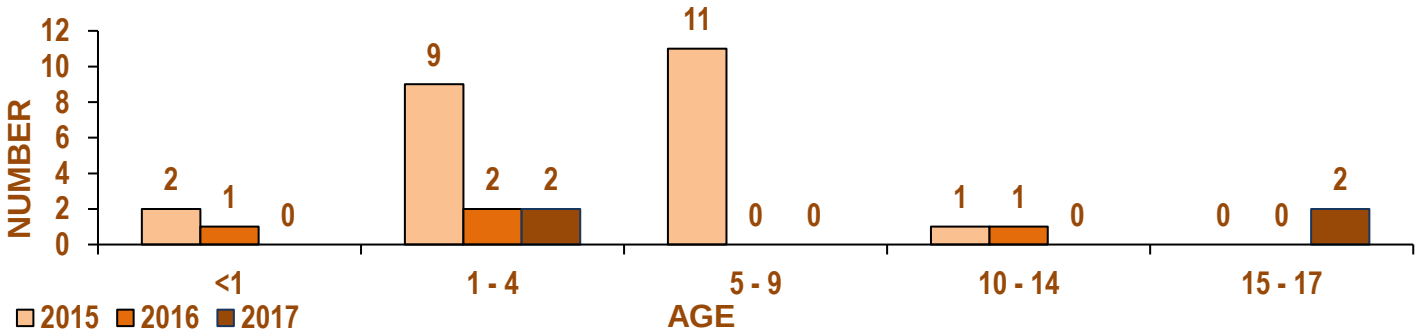
Nationally, fires and burns were the third leading cause of unintentional death among children one to nine years of age, and fourth among both children less than one and ages 10-14. Children ages one to four were at much higher risk than any other age group in children.

Two out of three times, when a child is injured or dies from a residential fire, a smoke detector is either not working or not present. Having a working smoke detector is very important in reducing the chance of dying in a fire by nearly half.

Fire/Burn Fatalities among Children

In 2017, there were **four** child fire/burn deaths. Male children are generally at greater risk of death than females. **Three** of the **four** fire/burn fatalities were male. **Two** of the fire/burn fatalities, were age four or younger. Young children have a less acute sense of danger or understanding of how to quickly and properly react to a fire or life-threatening burn situation. It is often more instinctual for a child to "hide" from a fire, than try to escape. They are also less physically able to tolerate toxic combustion, rendering them more susceptible to fire-related asphyxiation. Additionally, younger children have thinner skin, causing them to be more susceptible to severe burns and scalding at lower temperatures, than what would still be considered tolerable by many adults.

FIRE/BURN FATALITIES BY AGE



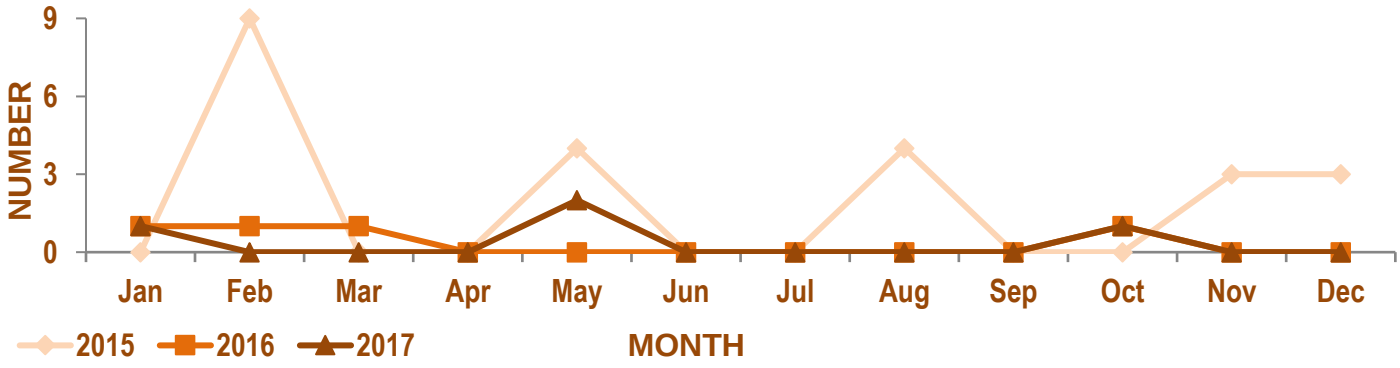
FIRE / BURN FATALITIES BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	13	0	1	White	17	2	3
Male	10	4	3	Black	6	2	1
	23	4	4		23	4	4

Children from low-income families are at greater risk for fire-related death and injury, due to factors such as a lack of working smoke detectors, substandard housing, use of alternative heating sources and economic constraints on providing adequate adult supervision. Children living in rural areas have a dramatically higher risk of dying in a residential fire, primarily due to the types of winter heating used. Death rates in rural communities are more than twice the rates in large cities, and more than three times higher than rates in large towns and small cities. **Three** of the **four** fire deaths were in rural areas.

Of the fatal fires reviewed, only **one** was indicated to have smoke detectors and it was not known to have been working. Organizations and fire departments that promote residential fire safety and burn prevention have also played a role in reducing the death rate from fire and burn injury.

FIRE/BURN FATALITIES BY MONTH OF DEATH



SMOKE ALARM PRESENT	
Yes	1
No	0
Unknown	3

FIRE STARTED BY	
No One	1
Child	1
Unknown	2

SOURCE OF FIRE	
Cigarette Lighter	2
Electrical Wiring	1
Unknown	1

WAS STRUCTURE A RENTAL PROPERTY	
Yes	2
No	1
Unknown	01

SMOKE ALARM IN WORKING ORDER	
Yes	0
No	0
Unknown	0
Not Answered	1

MULTIPLE FIRE DEATHS	
Yes	0
No	4

TYPE OF BUILDING	
Single Home	2
Duplex	1
Trailer Home	1

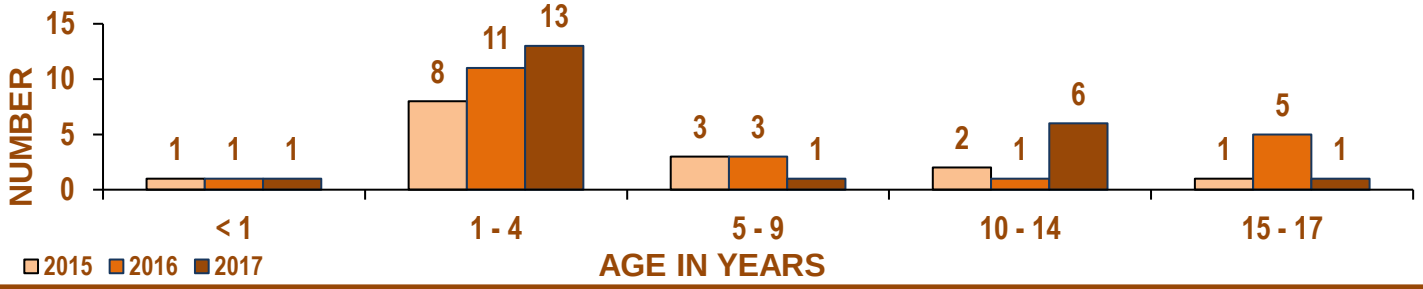
DROWNINGS

In 2017, 22 children drowned in Missouri.

Drowning is the third leading cause of unintentional injury death worldwide, accounting for 7% of all injury-related deaths. Of the **22** children who drowned, **14** were age four and under, **seven** were ages five to 14, and **one** was 15-17.

Most drownings among infants under the age of one occur in bathtubs, while most drownings among children ages one to four occur at pools. Young children can drown in as little as one inch of water; therefore, they are at risk of drowning in wading pools, bath and hot tubs, buckets, and toilets. The head of an infant or toddler is disproportionately large and heavy, representing approximately 20% of the total body weight, making them top-heavy and unable to escape when head-first in a toilet or bucket.

DROWNINGS BY AGE



DROWNINGS BY SEX AND RACE

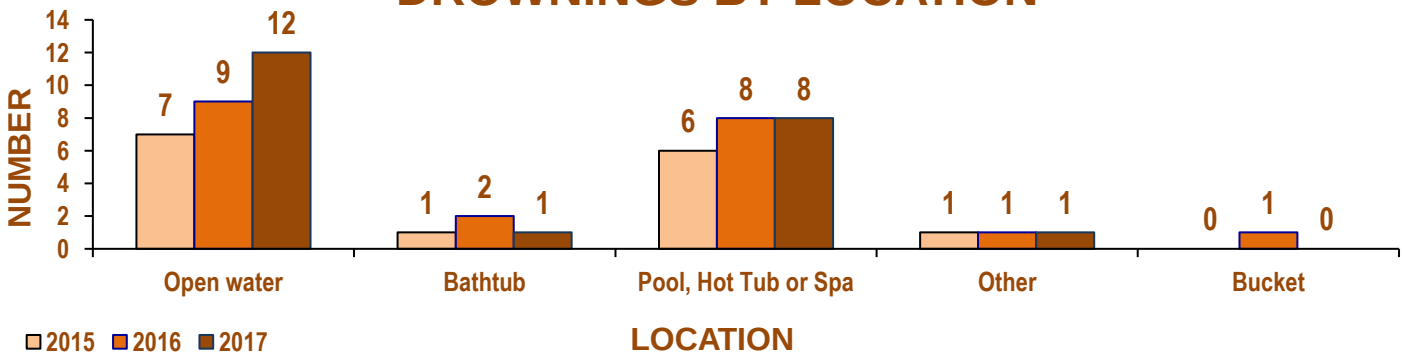
SEX	2015	2016	2017	RACE	2015	2016	2017
Female	8	7	7	White	11	17	17
Male	7	14	15	Black	2	2	4
				Asian	1	2	0
				Multi-Racial	1	0	1
	15	21	22		15	21	22

Older children are more likely to drown in open water locations such as creeks, lakes and rivers. Of the **22** children who drowned, **eight** occurred in swimming pools, hot tubs or spas, **12** occurred in open water locations, **one** occurred in a bathtub, and **one** occurred while mother was trying to clean his nose with a syringe of saline.

A drowning can occur quickly and silently in a matter of seconds, and typically occurs when a child is left unattended or there is a brief lapse in supervision. The belief that a drowning victim will make lots of noise while thrashing around in the water, before drowning, is not accurate. So experts say just being in the area, reading a book or a tablet is not enough. Adult supervision needs to be actively looking and listening at all times.

Even good swimmers can drown. A cramp, an injury, or even swallowing water the wrong way when a wave hits someone in the face can cause them to flounder and go under; which is why it is recommended that Coast Guard approved flotation devices such as life vests/jackets be worn when swimming and never swim alone.

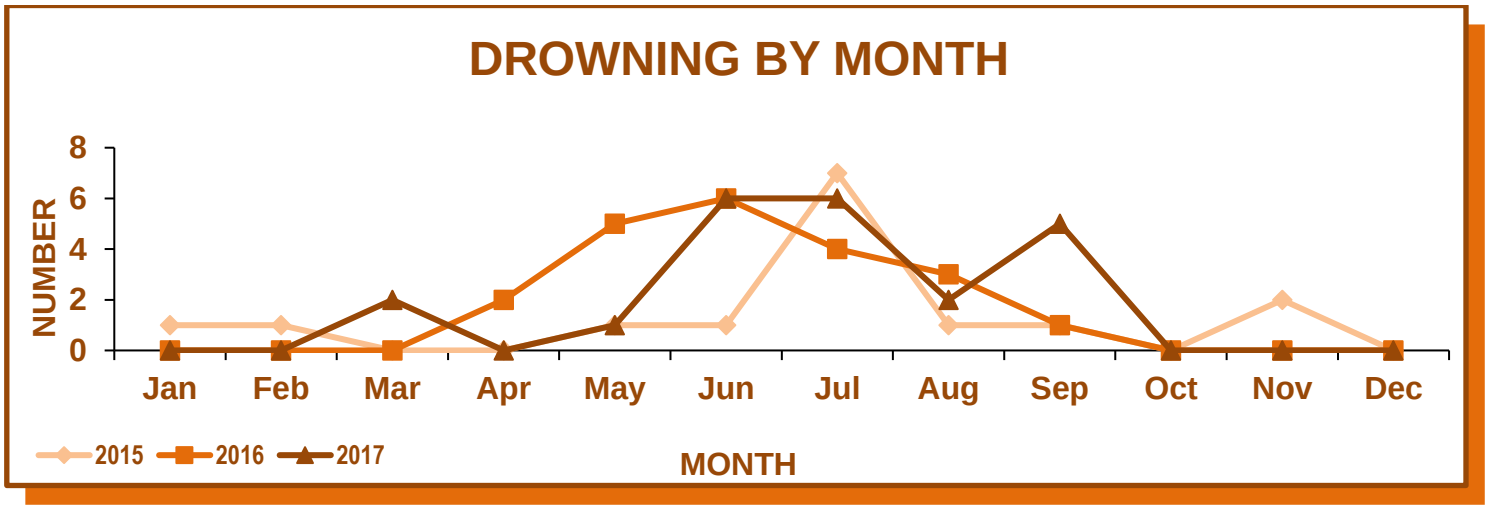
DROWNINGS BY LOCATION



Drowning Safety

Use of a snug-fitting, age appropriate Coast Guard approved personal flotation device (PFD) such as a life vest/jacket, is well-established as an effective means to prevent drowning deaths. Type IV PFDs such as ring life buoys or buoyant cushions are for emergency rescues only, and are not acceptable as PFDs for children, especially under the age of seven. Of the drownings investigated and reported by the Missouri State Highway Patrol and data collected from CFRP panels, only **one** of the children who drowned was wearing a PFD.

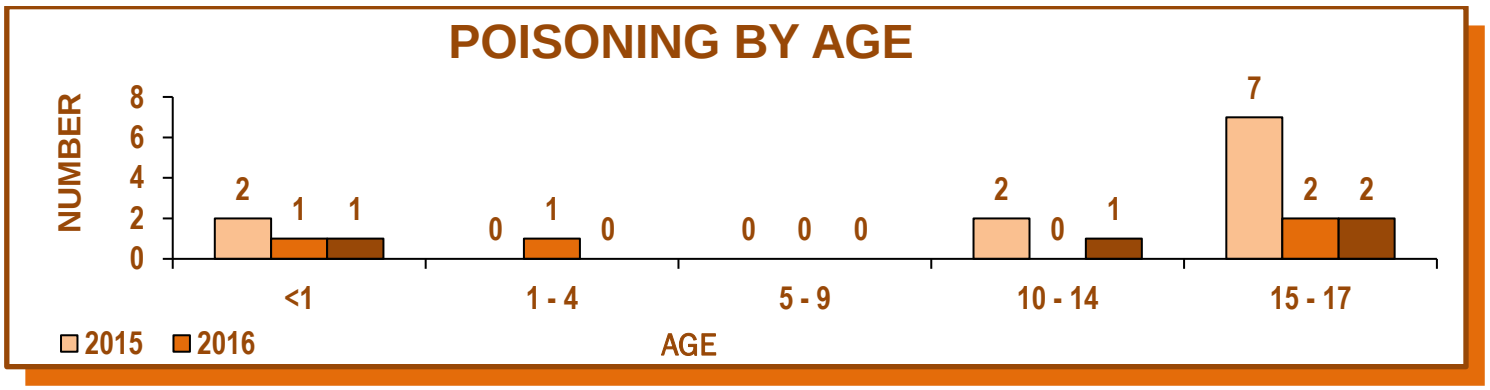
With the abundance of water recreation areas within the state, warm weather months of May, June, July and August are peak months for drowning in pools and open water.



POISONINGS

In 2017, four children died of unintentional poisoning.

A poison is a substance that is harmful to the body when ingested, inhaled, injected or absorbed through the skin. Children are at risk of poisoning from household and personal care products, medications, vitamins, indoor plants, lead, carbon monoxide and button cell batteries.



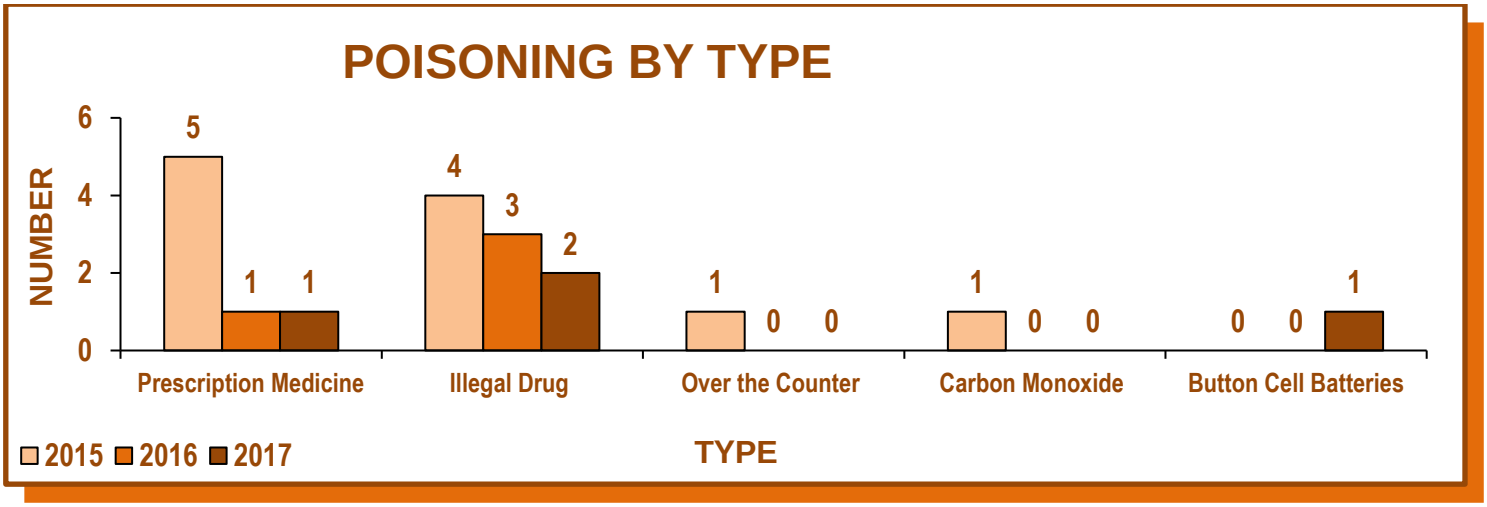
A new poisoning issue for toddlers and young children are button cell batteries. Button cell batteries are small single celled batteries which range between 5mm to 25 mm. The problem with these batteries is that they are easy to swallow without choking or coughing, which means unless someone sees them doing swallowing the battery, parents or caregivers will have no idea what has happened.

Once swallowed, these batteries can cause devastating internal injuries. If the battery becomes stuck in the esophagus, it can burn through the tissue in a little as two hours. Even once the battery starts to burn, the symptoms such as coughing and feeling ill can easily be written off by parents or medical personnel as something else. **One** Missouri child died in 2017, after swallowing a button battery.

POISONING BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	1	1	3	White	8	3	1
Male	10	3	1	Black	3	1	3
	11	4	4		11	4	4

Death rates from poisoning overall have decreased, but the percentage of deaths due to medications has increased. In children under age five, unintentional medication overdoses are caused by unsupervised accidental ingestion.



Illicit drug use typically begins at junior high school age and increases through high school age. By the time students are seniors, the rate of illicit drug use has climbed to almost 25%. The pattern for alcohol use is similar and by the time students are seniors, the rate of alcohol use has reached an alarming 50%. Research tells us that the brain is still developing during adolescence, particularly in those areas that control decision making. As these are vulnerable years for children, parents and other adults need to be not only familiar with, but also watch out for warning signs of drug and/or alcohol use, so they can provide intervention that not only addresses addiction, but can also save the child's wellbeing and/or life.

Three teens died of unintentional poisoning in 2017, **two** died from a mix of illegal drugs (**one** by Fentanyl and one by Phencyclidine [PCP]), and **one** died from a mix of prescription medications (Morphine, Oxycodone and Alprazolam [also known as Xanax]).
Missouri is currently in the process of joining the other 49 states in keeping a statewide prescription drug database. This type of database helps identify people who acquire excess prescriptions for addictive

painkillers and tranquilizers, as well as the physicians who over-prescribe them. These monitoring systems track opioid painkillers (such as Oxycodone and Hydrocodone) and tranquilizers (such as Xanax and Valium).

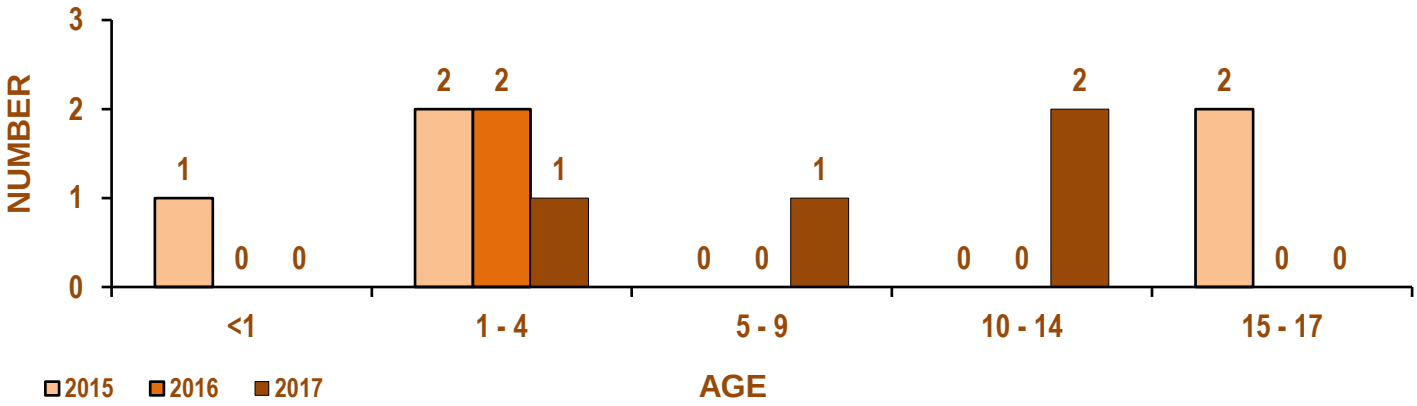
The Missouri Poison Center is an informational resource and provides statewide service 24-hours a day, 7-days a week, professionally staffed by nurses, pharmacists and physicians who are prepared to assist with exposures in all age groups. It is free service to the public and can be accessed, either on the internet at **https://missouripoisoncenter.org/**, or toll free at **1-800-222-1222**.

FIREARM FATALITIES

In 2017, four Missouri children died of unintentional firearm injuries.

Only one of these four deaths was reviewed by their local County Child Fatality Review Panel.

FIREARM FATALITIES BY AGE



FIREARM FATALITIES BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	2	1	1	White	3	0	3
Male	3	1	3	Black	2	2	1
				American Indian	0	0	0
				Pacific Islander	0	0	0
				Asian	0	0	0
				Multi-Racial	0	0	0
	5	2	4		5	2	4

All **four** of the unintentional firearm deaths among children involved a handgun that was owned by family or frequent visitors to the home, and were stored loaded and unsecured. **One** toddler shot herself after finding a handgun, **one** child was shot while playing in the home with a handgun; **two** children accidentally were shot by their fathers. One father tripped and the gun he was carrying went off; and the other was taking what he thought was an unloaded gun out of a safe when it discharged.

Parents need to store their guns safely, preferably unloaded and inaccessible to children:

- Most unintentional childhood firearm deaths involve guns kept in the home that have been left loaded, safety off and accessible to children.
- Unintentional firearm deaths among children most often occur when children are unsupervised and out of school.

Many parents have unrealistic expectations of their children's capabilities and behavior around guns:

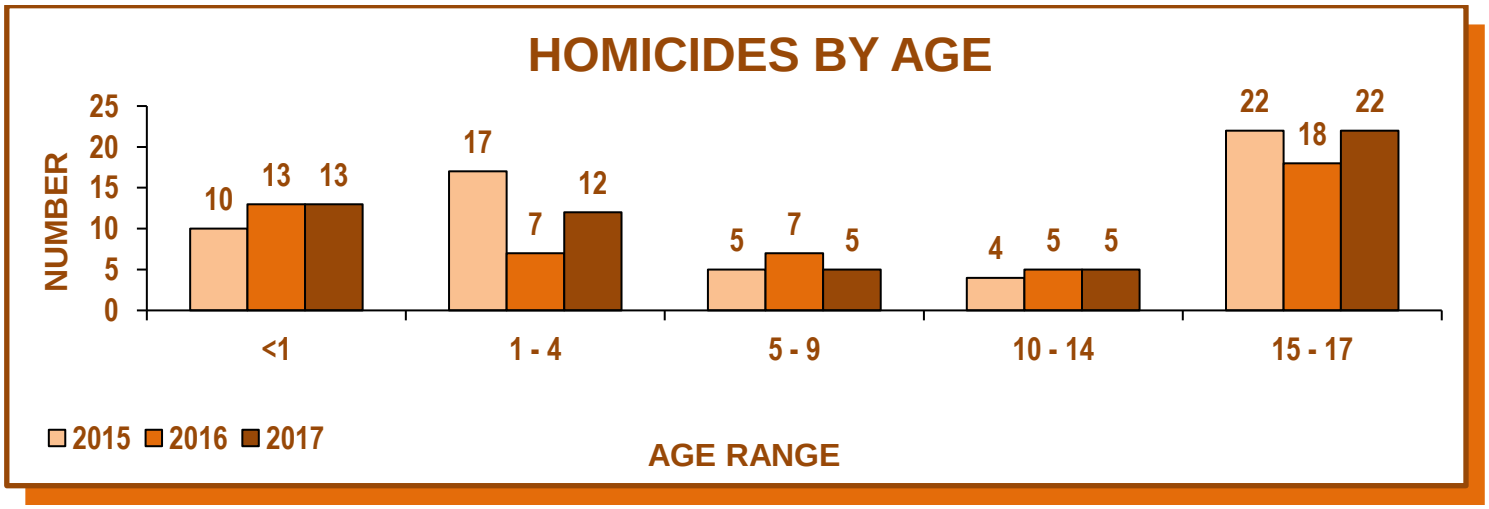
- Nearly two-thirds of parents with school-age children believe that the firearm(s) in the home are safe from their children. Even many younger children know where the gun is kept.
- Few children, age eight or younger, can reliably distinguish between real and toy guns, or fully understand the consequences of their actions.
- Many children who found and handled a gun, or pulled the trigger, reported having some previous type of firearm safety instruction.
- Toy guns must conform to marking requirements under the U.S. Department of Commerce regulation.

HOMICIDES

In 2017, homicide was listed as the death certificate manner of death for 57 Missouri children.

Fatal Child Abuse and Neglect: Child death resulting directly from inflicted physical injury and/or grossly negligent treatment by a parent or caretaker, regardless of motive or intent. This includes, but is not limited to, children whose deaths were reported as homicide by death certificate. A total of **99** children were identified by CFRP panels, as victims of Fatal Child Abuse and/or Neglect; of those, **32** were reported by death certificate as Homicide, with **27** being considered "Child Abuse."

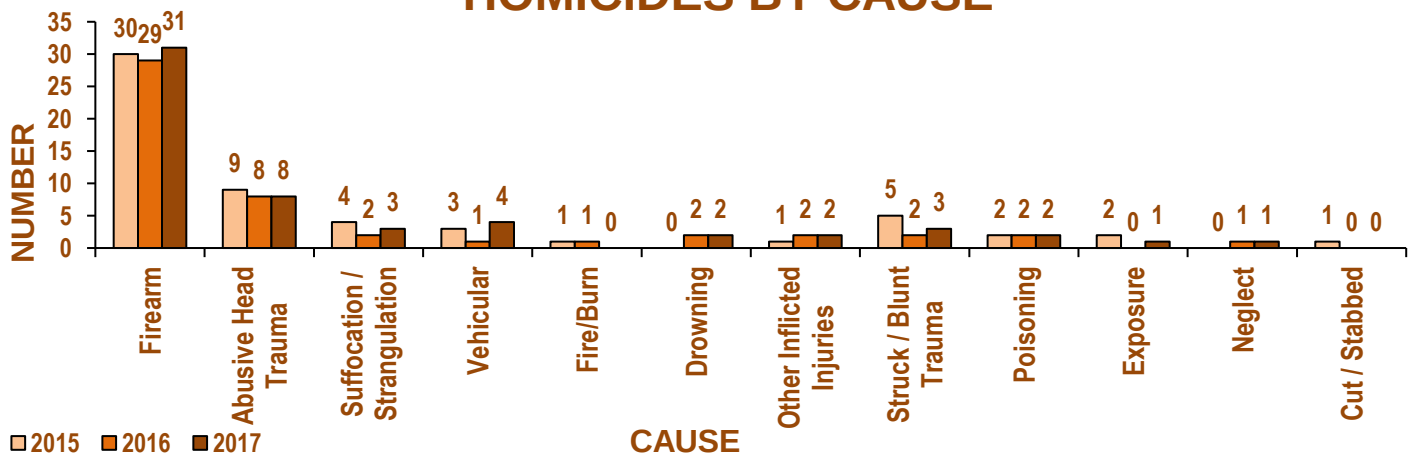
Other Homicides: Child death in which the perpetrator was not in charge of the child, was engaged in criminal or negligent behavior, and the child may or may not have been the intended victim. These homicides include teen violence and events such as motor vehicle deaths involving drugs and/or alcohol. There were **30** such fatalities. Of those, the CFRP panels identified **five** child deaths in which parental negligence was a contributing factor.



HOMICIDES BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	20	12	17	White	29	20	22
Male	38	38	40	Black	26	27	30
				Multi-Racial	3	3	5
	58	50	57		58	50	57

HOMICIDES BY CAUSE



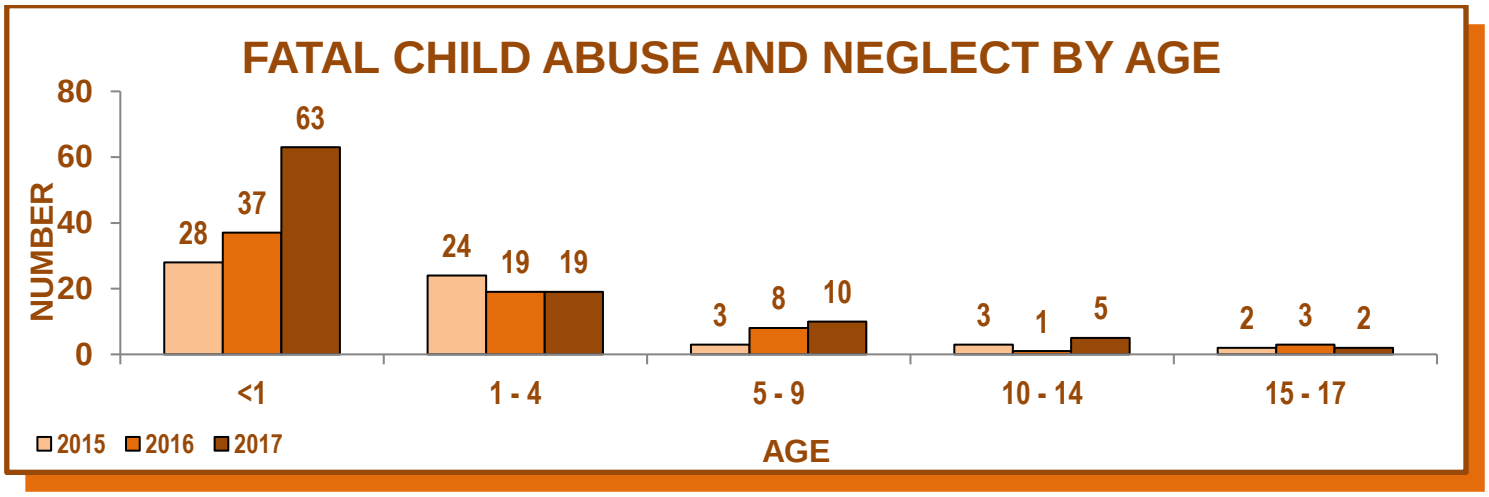
FATAL CHILD ABUSE AND NEGLECT

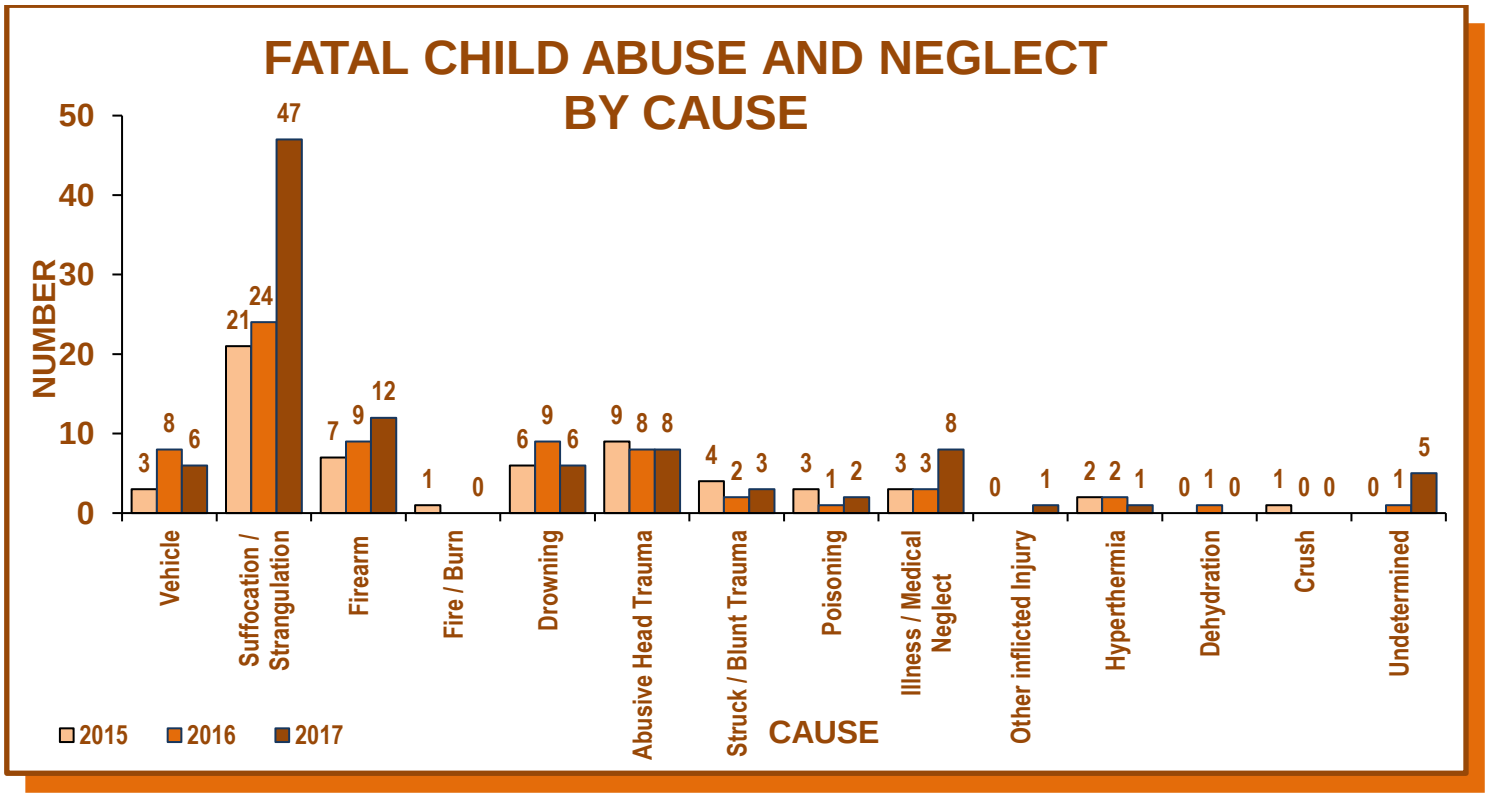
In 2017, 99* Missouri children were victims of Fatal Child Abuse and Neglect, of which, 32 were reported as homicide by death certificate.

*Due to changes to the National Fatality Review Case Reporting System's way that child neglect and exposure to hazards is defined, these numbers will not reflect the same numbers as in previously published reports. Records entered in 2017, were more likely to fall under this category because neglect questions were added to the system about issues that were not addressed before.

FATAL CHILD ABUSE AND NEGLECT BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	21	23	40	White	35	35	56
Male	39	45	59	Black	20	28	36
				Multi-Racial	5	5	7
	60	68	99		60	68	99





Child fatalities are the most tragic consequences of child abuse and neglect. It is well documented that child abuse and neglect fatalities have been under-reported, both nationally and in Missouri. Properly organized and functioning child fatality review systems have improved the accuracy of child death reporting.

There are three entities within state government responsible for child fatality information: the Department of Health and Senior Services - Bureau of Vital Statistics, the Department of Social Services - Children's Division and CFRP. All three exchange and match child fatality data in order to ensure accuracy throughout the systems. However, the Bureau of Vital Statistics, Children's Division and CFRP serve very different functions and, therefore, different classifications and timing periods apply, when child fatality data is reported.

Vital Statistics and Death Certificate Information

A death certificate is issued to serve as legal documentation that a specific individual has died, but not as legal proof of the cause of death. It also provides information for mortality statistics that may be used to assess the state's heath, causes of morbidity and mortality, and developing priorities for funding and programs that involve public health and safety issues.

Death certificate information is widely recognized as an inadequate single source for identification of child abuse and neglect deaths, due to inadequate scene investigation or lack of autopsy, inadequate investigation by law enforcement or child protection, misdiagnosis by a physician, or coroner determination of cause. Child abuse and neglect fatalities often mimic illness and accidents, and neglect deaths are particularly difficult to identify, because negligent treatment often results in illness and infection that can be attributed to natural causes.

Children's Division: Child Abuse/Neglect Fatalities

The Department of Social Services - Children's Division is the hub of Missouri's child protection community. The Children's Division provides a multi-response system for addressing each report of child abuse and neglect received by the Child Abuse/Neglect Hotline Unit (CANHU). Their responsibilities are limited to reports that meet the legal definition of child abuse and neglect, stipulated in RSMo. 210.110, for children under the age of 18, for whom the perpetrator has care, custody and control.

Since 2000, all child deaths are to be reported to the CANHU and by statute, are specifically mandated to be brought to the attention of the division by the coroner or medical examiner. A fatality report is taken and, when appropriate, the report is accepted for investigation of child abuse and neglect by the division, who is also responsible for protecting any other children in the household, to include removal by order of the court, if applicable, until the investigation is complete and their safety can be assured. The CFRP is also immediately notified by the Children's Division Central Registry Unit of all reported fatalities.

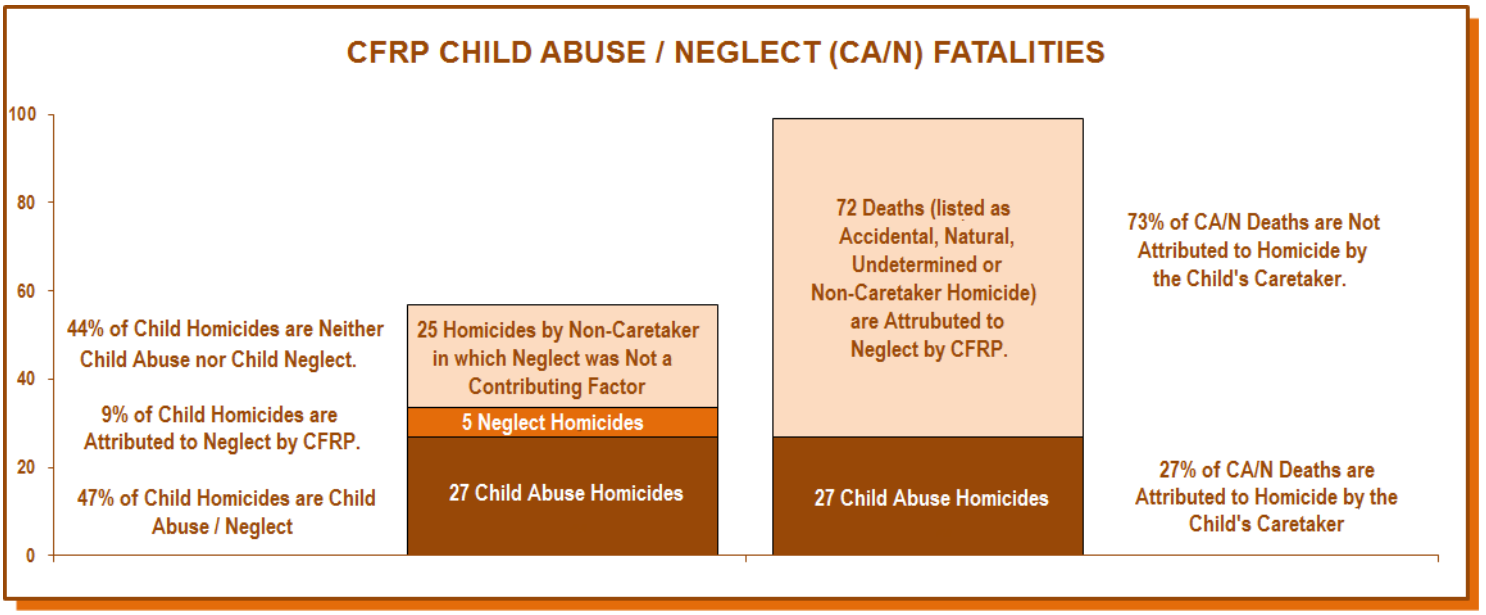
Investigations are classified as *preponderance of evidence child abuse and neglect*, when there is sufficient evidence to prove that a child who died was abused or neglected, or when the finding is court-adjudicated. An example would be an unsupervised toddler who was run over in the driveway of her home. That death would be included as a pedestrian fatality in this CFRP Annual Report, with Inadequate Care as a contributing factor. In incidents, Children's Division may determine that there was a *preponderance of evidence* to believe that this child was the victim of neglect, specifically lack of supervision.

Missouri Child Fatality Review Program: Fatal Child Abuse, Neglect and Exposure to Hazards

Child fatalities represent the extreme of all issues having negative impact on children. Over the years, research discovered that many fatal child injury cases were inadequately investigated, as many children were not only dying from common household hazards due to inadequate supervision, but also from undetected fatal abuse and neglect misclassified as natural deaths, accidents or suicides. Additionally, information necessary for a thorough investigation of a child death was distributed among agencies, which could not share records.

In 1992, Missouri initiated a comprehensive, statewide CFRP which has resulted in better investigations, more timely communication, improved coordination of provision of services and prevention efforts, training and technical assistance, and standardized data collection that allows us to understand much more about how our children die, the circumstances in which they die and who, if anyone, may be responsible.

The CFRP defines fatal abuse and neglect as child deaths resulting directly from inflicted physical injury and/or grossly negligent treatment by a parent or caretaker, regardless of motive or intent. This number includes, but is no longer limited to, children whose deaths were reported as homicide by death certificate; their death certificate *manner of death* may include natural, accident or undetermined.



FATAL CHILD ABUSE: INFLICTED INJURY

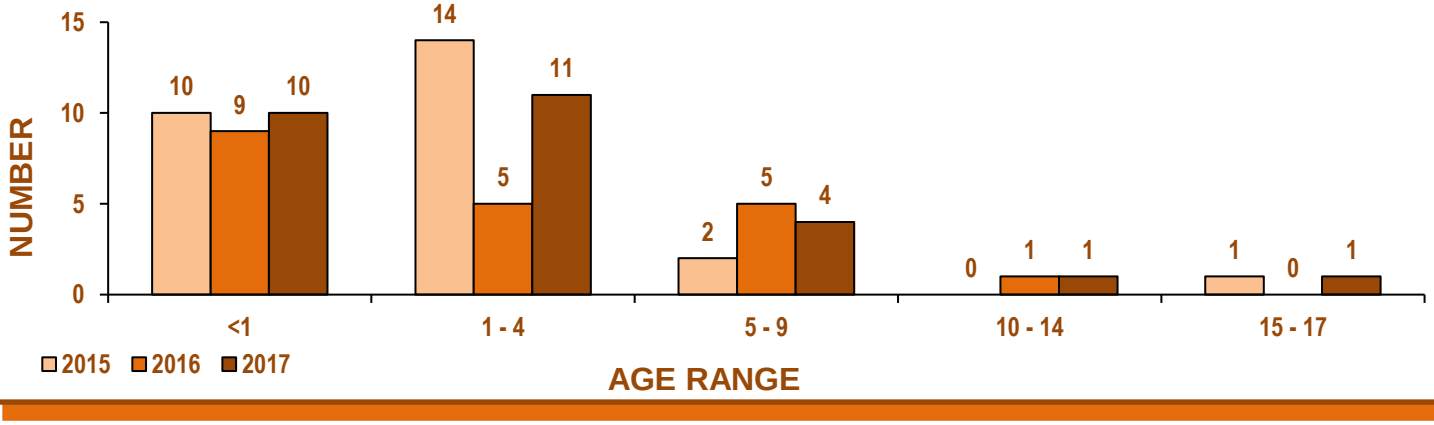
In 2017, 27 Missouri children died from inflicted injury at the hands of a parent or caretaker.

- Fifty-two percent of the children who died at the hands of their guardian or caretaker had a prior history of maltreatment.
- Sixty-three percent of these children were covered by Medicaid.
- There were prior or current parental domestic dispute issues, such as a contested divorce or domestic violence in 15% of these cases.

Fatal child abuse may involve repeated abuse over a period of time, as in battered child syndrome, or it may involve a single, impulsive incident, such as drowning, suffocation or abusive head trauma. Infants and younger children are more vulnerable to die from abuse and neglect due to their dependency, small size and inability to defend themselves.

In 2017, **21** of the **27** Missouri children who died from inflicted abuse or neglect at the hands of a parent or caretaker were four years of age or younger. Of those, **ten** were infants under the age of one year.

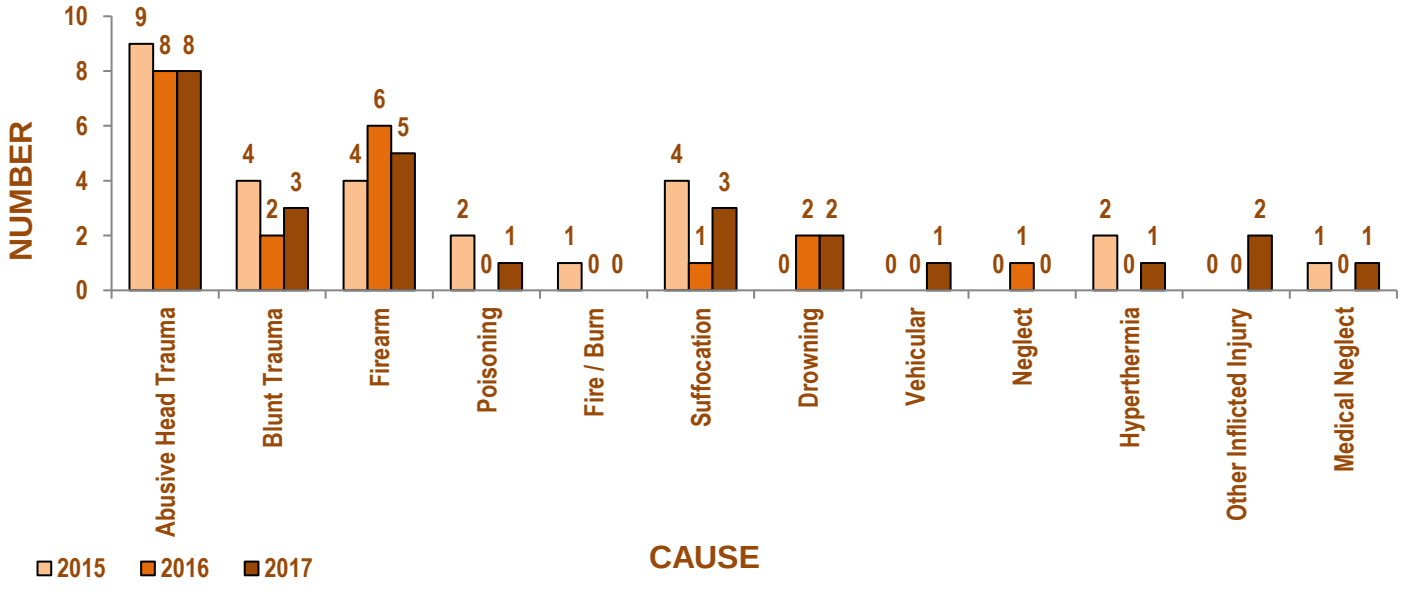
FATAL CHILD ABUSE BY AGE



FATAL CHILD ABUSE BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	10	6	12	White	18	12	16
Male	17	14	15	Black	7	6	7
				Multi-Racial	2	2	4
	27	20	27		27	20	27

FATAL CHILD ABUSE BY CAUSE



Abusive Head Trauma

Of the **27** Missouri children who died from inflicted injury at the hand of a parent or caretaker in 2017, **eight** were victims of abusive head trauma, formerly known as Shaken Baby Syndrome.

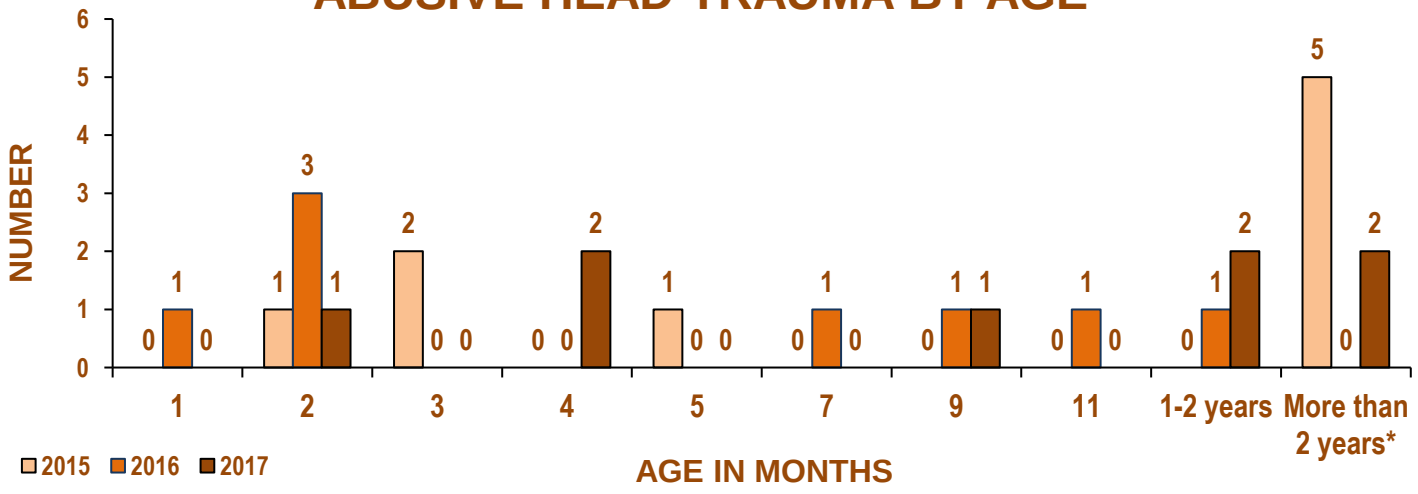
Pediatric abusive head trauma is defined as an injury to the skull or intracranial contents of an infant or young child under five years of age, due to inflicted blunt impact and/or violent shaking. The signs and symptoms that a child exhibits after having been subjected to this kind of trauma range from minor (irritability, lethargy, tremors, vomiting) to major (seizures, coma, stupor, death), which are caused by neurological changes related to destruction of brain cells secondary to trauma, lack of oxygen to the brain cells and swelling of the brain. Extensive retinal hemorrhages in one or both eyes are found in the vast majority of these cases.

Not all abusive head injuries are fatal. According to Dr. Mary Case, St. Louis County Medical Examiner and Forensic Pathologist, who has conducted significant research on the topic, up to to 30% of children who suffer abusive head injuries die, 30-50% suffer significant cognitive or neurological deficits of which 30% may recover. Data also indicates that babies who appear well at discharge may show evidence of cognitive or behavioral difficulties later on, possibly by school age.

ABUSIVE HEAD TRAUMA BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	3	1	4	White	5	5	5
Male	6	7	4	Black	4	3	1
				American Indian	0	0	0
				Pacific Islander	0	0	0
				Asian	0	0	0
				Multi-Racial	0	0	2
	9	8	8		9	8	8

ABUSIVE HEAD TRAUMA BY AGE



* In 2015, two children died from abusive head trauma injuries they both sustained in 2011.

For abusive head injuries, the average victim's age is between three and eight months, although these injuries are occasionally seen in children up to four-years old. Infants are particularly vulnerable to abusive head trauma injuries, because of their unique physical and behaviors characteristics. Physically, infants' heads are large and heavy in proportion to their body weight, and their neck muscles are too weak to support such a disproportionately large head. Because infants' brains are immature, they are more easily injured. When an infant is shaken, the head rotates wildly on the axis of the neck creating multiple forces within the head, which lead to tearing of veins and arteries. **Seven** of the **eight** children who died from abusive head trauma were under one year of age. The oldest child was 18 months old.

Young parents, unstable family conditions, low socioeconomic status, and disability or prematurity of the child make an infant particularly vulnerable. The triggering event for abusive head trauma is almost always the baby's crying and loss of control by the caregiver. Research found that the amount of crying in infants tend to increase on a daily basis, starting at about one to two weeks, getting worse for up to two to three months and then starts to decline. While some babies cry more than others, all infants go through this same pattern. None of the **nine** children who died of abusive head trauma have a known triggering event, possibly due to the lack of cooperation from the perpetrator.

Nationally, perpetrators of abusive head trauma are more often male, with birth fathers accounting for the majority, followed by mothers, and mother's boyfriends.

Perpetrators of abusive head trauma fatalities in Missouri included **two** birth fathers, **three** birth mothers, **two** male partner of child's mother, and **one** female babysitter.

Fatal Child Neglect: Inadequate Care and Grossly Negligent Treatment

The majority of unintentional fatalities and serious injuries among young children are the result of a temporary lack of supervision or inattention at a critical moment; i.e., when infants and toddlers drown in bathtubs and swimming pools, or young children dart in front of moving vehicles. Parents and others often underestimate the degree of supervision required by young children.

Negligent treatment of a child is an act of omission, which can be fatal when due to gross inadequate physical protection; or withholding nutrition or health care necessary to preserve life. Child deaths resulting from grossly negligent treatment are frequently difficult to identify, because neglect often results in illnesses and infections that can be attributed to natural causes, exposure to hostile environments or circumstances that result in fatal "accidents."

Definitions of negligent treatment vary depending on whether one takes a legal, medical, psychological, social services or lay perspective. There are broad, widely recognized categories of neglect that include: *physical, emotional, medical, mental* and *educational*. There are subsets and variations in severity that often include *severe, near fatal* and *fatal*. Negligent treatment may or may not be intentional; however, the end result for the child is the same whether the parent is willingly neglectful or neglectful due to factors such as ignorance, depression, overwhelming stress and inadequate support.

Gross negligent treatment by a parent or caretaker generally involves failure to protect from harm and withholding or failing to provide supervision, food, shelter, or medical care necessary to meet the child's basic needs. This level of negligence is egregious and surpasses momentary inattention or a temporary condition; it is often part of a pattern of negligent treatment. Child fatalities often result when a parent or caretaker fails to adequately supervise the child, usually for extended periods of time. In some cases, failure to protect from harm or failure to meet basic needs, involves exposure to a hostile environment or hazardous situation with potential for serious injury or death; i.e., a child less than one-year old left unattended in a bathtub with water running; or small children unrestrained while riding in a vehicle driven by an intoxicated parent.

Medical neglect refers to failure to provide prescribed medical treatment or emergency medical care for a known illness or injury with potential for a serious or fatal outcome; i.e., untreated diabetes or asthma.

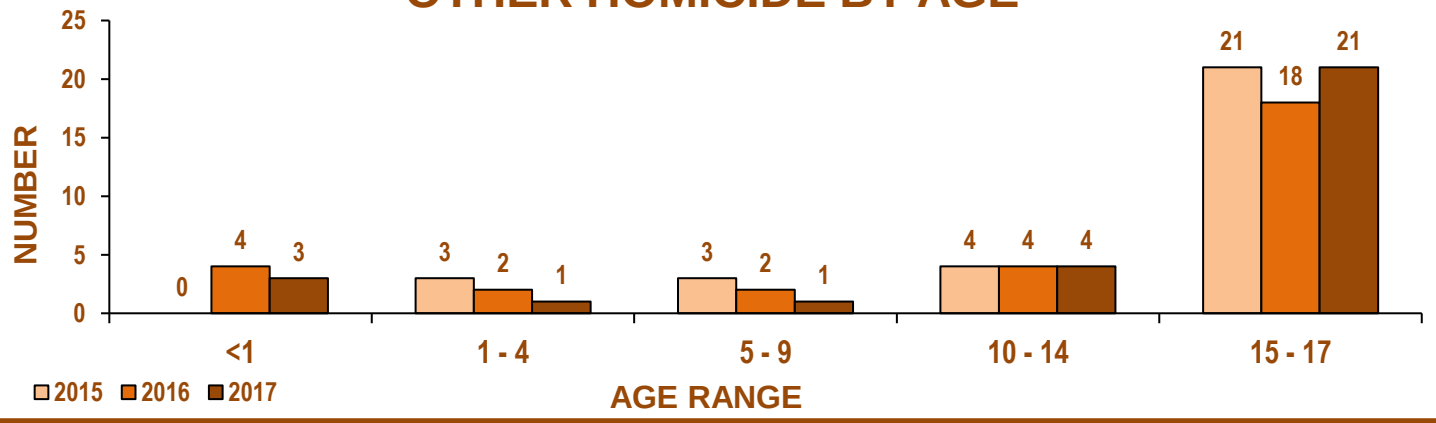
As part of the review process, CFRP panels are asked to consider and designate all child fatalities in which Inadequate Care and/or Gross Negligent Treatment had contributed to the death of the child. CFRP panels found that Gross Negligent Treatment contributed to the deaths of **99** Missouri children; of those **32** were designated as Homicide by death certificate – **27** were discussed in **Fatal Child Abuse**. The **five** remaining homicides are included in the **Other Homicides** section. For data purposes, all fatal child neglect deaths are included in the appropriate data section, **Natural Causes**, **Unintentional Injury**, **Homicide** or **Suicide**.

Total Child Fatalities	Cause	*Gross Negligent Treatment that Contributed to the Fatality			Details
		Child neglect	Poor / Absent Supervision	Exposure to Hazards	
4	Drowning	0	0	4	Three children, ages three and under, drowned in pools. One child, age one, got too close to a pond and fell in.
7	Firearm	1	4	2	One toddler and one young child shot themselves with handguns. Three children found loaded guns in the house and accidentally shot their siblings or friends. One teen was involved in gang violence and should have been better supervised. One child died when a firearm, that had just been removed from storage, and was thought to be unloaded discharged.
7	Illness / Natural	3	0	4	Three premature infants were born to mothers who used drugs during pregnancy. Four children with major medical issues died and believed that medical neglect contributed to the deaths.
1	Poisoning	0	0	1	An infant died of methamphetamine intoxication. Both of the child's parents are pending arrest.
43	Suffocation	3	1	39	One infant was placed and found face down on an adult mattress. Ten infants suffocated from bedding or other soft items in their sleep area. Thirty-two infants died while sharing a sleeping surface with other adults and/or children.
5	Undetermined	1	0	4	Four infants whose cause of death were unable to be determined, were sharing a sleeping surface with other adults and/or children. One infant had unexplained injuries which did not cause its death, but was believed may have contributed to it.
5	Vehicular	0	2	3	Three toddlers were backed over in driveways. One eight-year old was riding a full-sized ATV when it flipped over crushing his airway. One unrestrained teen was riding with his mother when their vehicle was stuck, killing both.
Total Child Neglect Deaths = 72		**8**	**7**	**57**	

OTHER HOMICIDES

Of the 57 child homicides in Missouri in 2017, 30 involved perpetrators who were: not in charge of the child; engaged in criminal or negligent behavior; or the child may or may not have been the intended victim.

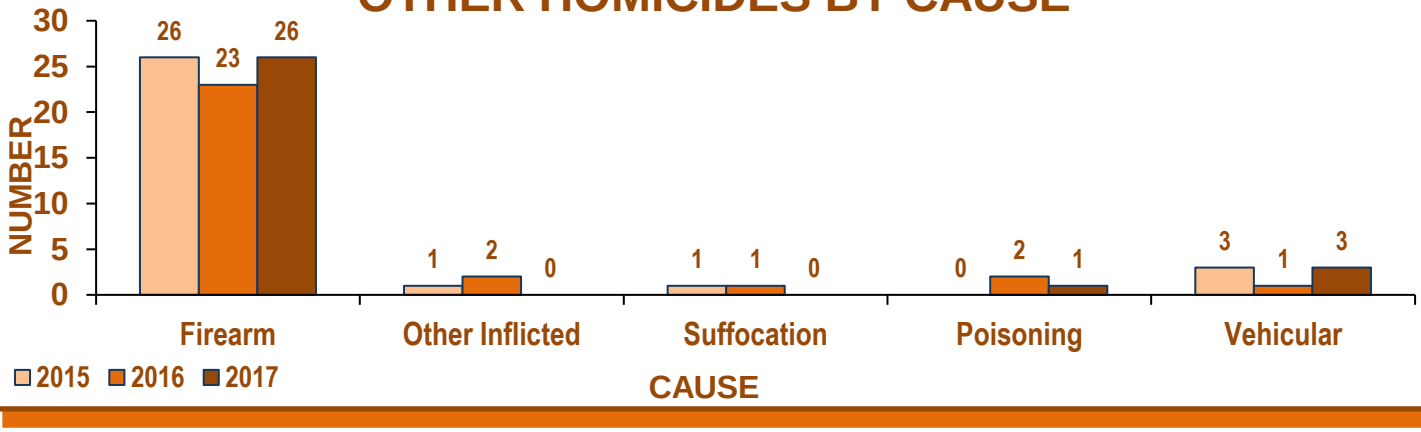
OTHER HOMICIDE BY AGE



OTHER HOMICIDES BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	10	6	5	White	11	8	6
Male	21	24	25	Black	19	21	23
				American Indian	0	0	0
				Pacific Islander	0	0	0
				Asian	0	0	0
				Multi-Racial	1	1	1
	31	30	30		31	30	30

OTHER HOMICIDES BY CAUSE



Twenty deaths were related to youth violence. Additionally, **nine** of these deaths were caused by the victim being involved in harmful behaviors which put them at risk, such as gang membership, illegal activities or involvement with drugs. Research on youth violence has increased understanding of factors that make some populations more vulnerable to victimization and perpetration. Risk factors contribute and increase the likelihood that a young person will become violent; however, risk factors are not direct causes of youth violence.

SUICIDES

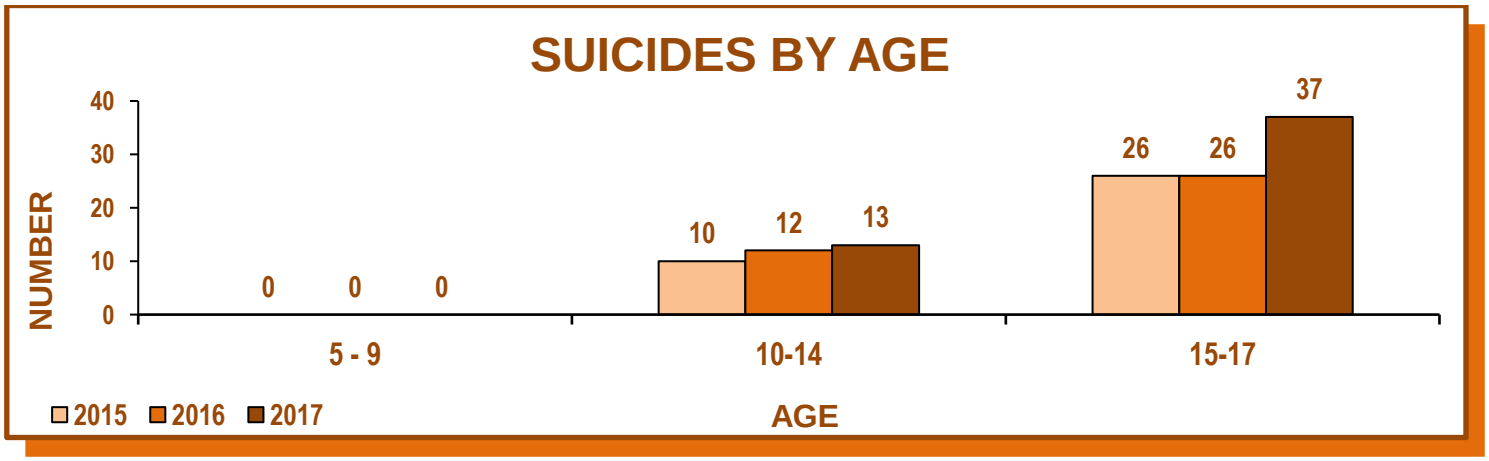
In 2017, 50 Missouri children committed suicide.

- Fifty percent of the children who committed suicide had a history of maltreatment as a victim.
- Twenty-two percent of the children who committed suicide were reported have had a history of mental health services or medication.
- Fifty-eight percent of these children had recent personal crisis.
- Thirty percent of the children who committed suicide were receiving Medicaid.

Note: Only 39 of the 50 Missouri child suicide deaths were reviewed by the local panels.

According to Missouri Department of Mental Health, for over a decade the suicide rate in Missouri has been higher than the national rate. In 2017, Missouri's suicide rate was 18.5 per 100,000, which is significantly higher, when compared to the national 2017 rate of 14 per 100,000. While the numbers are for the entire population, in 2017, there was an increase in child suicides, 17 and under. In 2017, **50** children died of self-inflicted injuries; **37** were ages 15-17; and the remaining **13** were children ages 10-14.

The 2017 Youth Risk Behavioral Survey (YRBS) found that 20.9% of all Missouri high school students and 24.1% of female high school students reported they seriously considered suicide. It also stated that 15.5% of all students actually made a suicide plan. Many more students attempt suicide than those that succeed, 8.6% of the students surveyed stated they had attempted suicide. The suicide attempt rate for females ages 15-24 was more than double the rate for all Missourians, but more males succeed than females. Males took their lives at nearly double the rate of females, representing 72% of all child suicides in Missouri.

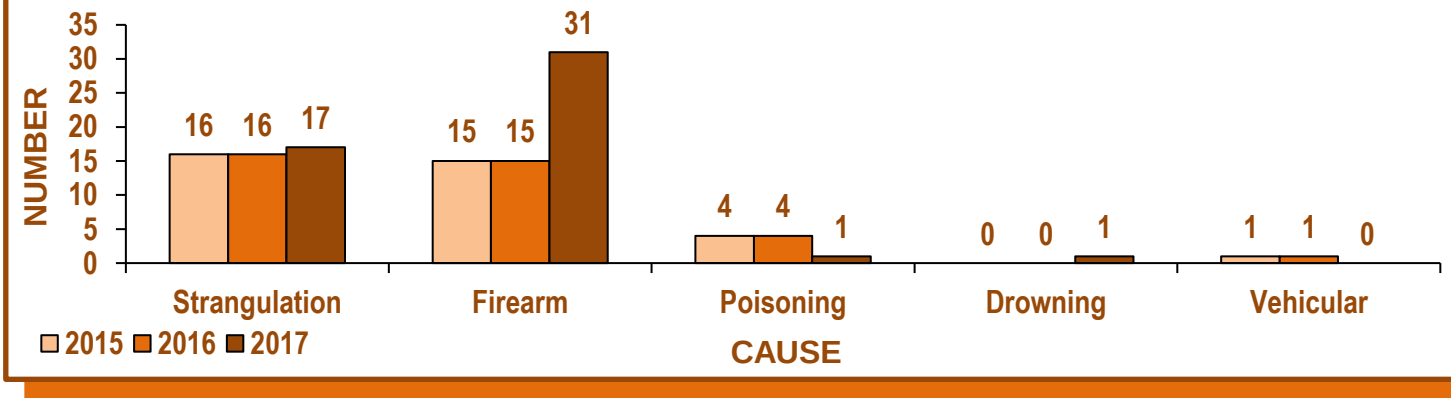


SUICIDES BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	8	14	14	White	33	34	44
Male	28	24	36	Black	2	3	5
				American Indian	1	0	0
				Asian	0	1	1
	36	38	50		36	38	50

Firearms and strangulation are the most common mechanism of suicide among Missouri children.

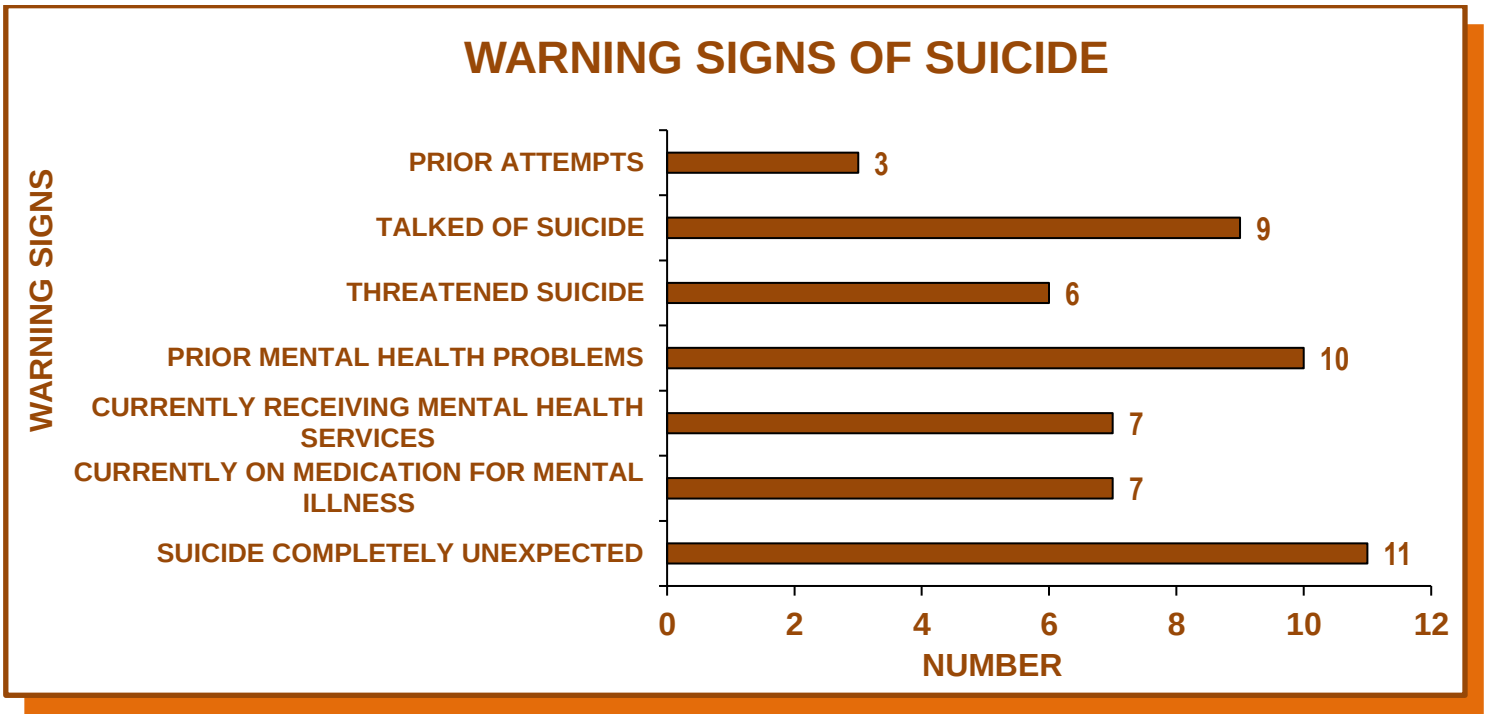
SUICIDES BY MECHANISM



While suicide is rarely spontaneous, many times it is brought about due to a personal crisis. **Twenty-five** of the children, who committed suicide in 2017, had recent history of one or more personal crises.

RECENT HISTORY OF PERSONAL CRISES			
FAMILY DISCORD	7	ARGUMENT WITH FRIENDS	1
ARGUMENT WITH BOYFRIEND / GIRLFRIEND	7	BULLYING AS A PERPETRATOR	1
BREAKUP WITH BOYFRIEND / GIRLFRIEND	6	OTHER SERIOUS SCHOOL PROBLEMS	1
ARGUMENT WITH PARENTS / CAREGIVERS	3	PHYSICAL ABUSE / ASSAULT	1
OTHER DEATH OF FRIEND OR RELATIVE	3	DRUGS / ALCOHOL	1
BULLYING AS A VICTIM	2	SEXUAL ORIENTATION / GENDER IDENTITY ISSUES	1
EMOTIONAL NEGLECT / ABUSE	2	INVOLVEMENT WITH THE INTERNET	1
PARENTS' DIVORCE / SEPARATION	2	OTHER	2
SUICIDE BY FRIEND OR RELATIVE	1	UNKNOWN	3

Suicide is rarely a spontaneous decision and most people give warning signs that they are contemplating taking their own lives. Of the **50** Missouri children who committed suicide in 2017, **11** (58%) were known to have displayed one or more warning signs. NOTE: In 28 child fatality cases, the "warning signs" questions were not answered.



Risk and Protective Factors for Youth Suicide

Suicide is a reaction to intense feelings of loneliness, worthlessness, hopelessness, or depression. Suicidal behaviors in youth are usually the result of a process that involves multiple social, economic, familial and individual risk factors, with mental health problems playing an important part in its development. The Missouri Suicide Prevention Plan tells us that understanding the interactive relationship between risk and protective factors in suicidal behavior continues to be studied and drives the development of interventions. Risk factors are a combination of stressful events, situations, and/or conditions that may increase the likelihood of suicide, especially when several coincide at any given time. Risk factors for suicide include, but are not limited to:

Bio-Psycho-Social Risk Factors

- Mental disorders, particularly mood disorders, schizophrenia, anxiety disorders and certain personality disorders
- Alcohol and other substance use disorders
- Hopelessness
- Impulsive and/or aggressive tendencies
- History of trauma or abuse (bullying, violence and assault)
- Some major physical illnesses
- Previous suicide attempt
- Family history of suicide

Environmental Risk Factors

- Academic, job or financial loss
- Relational or social loss (divorce, incarceration, legal problems)
- Easy access to lethal means
- Local clusters of suicide that have a contagious influence

Socio-Cultural Risk Factors

- Lack of social support and sense of isolation
- Stigma associated with help-seeking behavior
- Barriers to accessing health care, especially mental health and substance abuse treatment
- Certain cultural and religious beliefs (for instance, the belief that suicide is a noble resolution of a personal dilemma)
- Exposure to suicidal behavior of others, including through media coverage and influence of others who have died by suicide

Protective factors make it less likely that individuals will develop suicidal ideations, and may encompass biological, psychological or social factors in the individual, family and environment.

Protective Factors

- Effective clinical care for mental, physical and substance use disorders
- Easy access to a variety of clinical interventions and support for help-seeking
- Restricted access to highly lethal means of suicide
- Strong connections to family and community support
- Support through ongoing medical and mental health care relationships
- Skills in problem solving, conflict resolution and nonviolent handling of disputes
- Cultural and religious beliefs that discourage suicide and support self-preservation

The Missouri Suicide Prevention Plan

The Missouri Suicide Prevention Plan – A Collaborative Effort – Bringing a National Dialogue to the State, includes research, data-specific strategies for reducing suicide and suicidal behaviors, and links to suicide prevention resources. The state plan is available online at the Missouri Department of Mental Health website: **http://dmh.mo.gov/docs/mentalillness/suicideplan.pdf**. The plan emphasize that suicide is a large, complex problem. Missouri's communities are too diverse in their members and needs for a single intervention to be adequate. Thus, a diverse array of interventions will be required to meet the particular local needs of the many unique communities in Missouri. Collaboration is essential if the activities outlined in this section are to be effective.

Youth Suicide Awareness and Prevention

The Missouri Department of Elementary and Secondary Education has developed a model policy for suicide awareness and prevention, utilizing a variety of organizations with expertise in youth and suicide prevention. The model policy includes resources that can be used for related training and professional development. Additional information can be found at **Missouri Youth Suicide Awareness and Prevention Model Policy**.

UNDETERMINED INJURY

In 2017, four Missouri children died of injuries whose manner could not be determined.

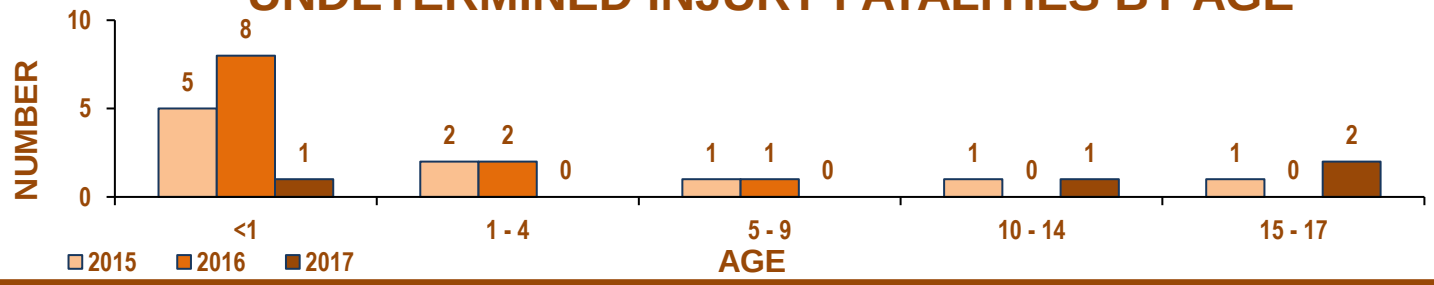
When a child dies, the cause of death is often evident, but the actual intent might not be readily determined. For example, when a teenager dies from suffocation, poisoning, pedestrian injury or vehicle crash, the difference between the event being intentional or unintentional is sometimes impossible to determine. Or, as another example, an apparent fire death can either have resulted from faulty wiring in a residence or by arson to cover up a homicide.

One of the main objectives of the child fatality review process is to assist those making the determination of how and why a child died, by providing a process that allows for a more thorough investigative, social and medical review of all known information surrounding the circumstances of death. Even after a thorough investigation and review, there are still some deaths where there is not enough information and/or evidence to prove either way that the death was intentional or unintentional. There were **four** injury deaths of undetermined manner.

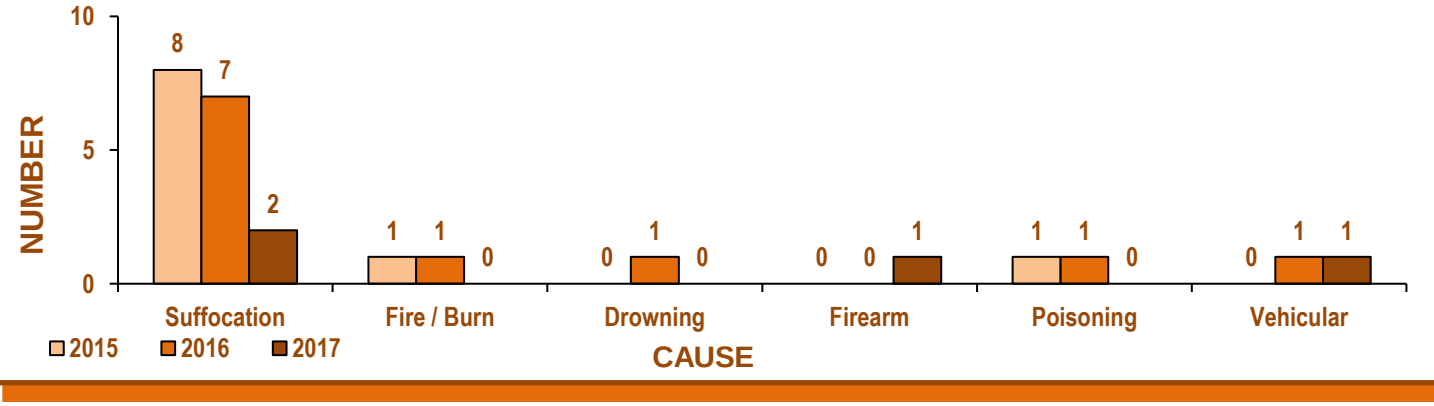
UNDETERMINED INJURY FATALITIES BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	4	2	1	White	8	7	4
Male	6	9	3	Black	2	4	0
	10	11	4		10	11	4

UNDETERMINED INJURY FATALITIES BY AGE



UNDETERMINED INJURY FATALITIES BY CAUSE

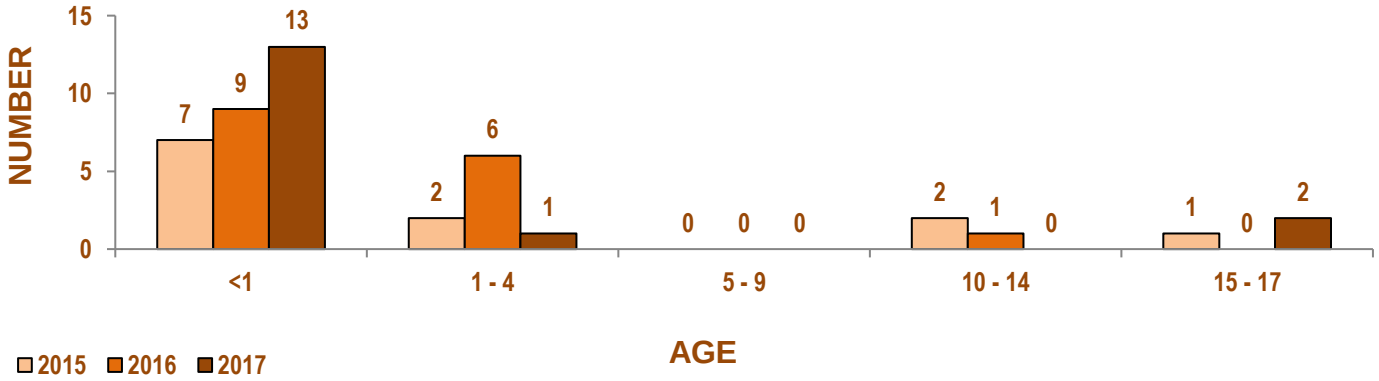


UNDETERMINED CAUSE AND MANNER

In 2017, there were 16 non-sleep-related Missouri children whose cause and manner of death could not be determined.

There were a total of 16 deaths whose cause and manner could not be determined in 2017. Ten of these deaths were discussed in the sleep-related death section. **Two** were teens between 15-17 years old, **one** was between one to four years old, and the remaining **13** were infants under one year of age. The CDC calls this category "Ill Defined and Unknown Cause of Mortality," and, in the case of infants, defines it as "The sudden death of an infant less than one year of age that cannot be explained, as a thorough investigation was not conducted and cause of death could not be determined."

UNDETERMINED CAUSE AND MANNER FATALITIES BY AGE



UNDETERMINED CAUSE AND MANNER BY SEX AND RACE

SEX	2015	2016	2017	RACE	2015	2016	2017
Female	7	3	6	White	7	13	7
Male	5	13	10	Black	4	2	9
				Multi-Racial	0	1	0
	12	16	16		12	16	16

THE PRACTICAL APPLICATION OF CHILD FATALITY REVIEW: PREVENTION OF CHILD FATALITIES

The death of a child is an emotional event that captures the attention of the public and creates a sense of urgency that deserves a well-planned and coordinated prevention response. Generally, successful prevention initiatives are realistic in scope and approach, clear and simple in their message, and based on evidence that they work.

State and local CFRP panels are remarkably dedicated and enthusiastic in initiating timely prevention activities that serve to raise awareness, educate parents and caretakers, influence public policy and involve the community in prevention initiatives.

At the state and national level, the sum of collected data is used to identify trends and patterns that require systemic solutions. Researchers in St. Louis, Kansas City and Columbia, as well as statewide prevention organizations, utilize Missouri CFRP de-identified data to gain new insights; i.e., research into sudden unexpected infant deaths, concluded that certain unsafe sleep arrangements occurred in the large majority of cases of sudden unexpected infant deaths diagnosed as SIDS, unintentional suffocation and cause undetermined. Research also demonstrates what CFRP panel members had suspected: infant deaths caused by unsafe sleep conditions were preventable. In Missouri and most other states, safe sleep campaigns, developed and implemented by a variety of public and private entities, include parent education and provide a safe crib to families in need. The Consumer Product Safety Commission and the American Academy of Pediatrics have also revised their safe sleep recommendations and product safety guidelines to reflect this knowledge gained.

Basic Principles

It is widely accepted among professionals in the field of injury prevention that the public health tools and methods used effectively against infectious and other diseases, and occupational hazards can also be applied to injury prevention. As a result, attention is given to the environment and to products used by the public as well as individual behavior. An epidemiologic approach to child fatalities and near-fatalities offers tools that can effectively organize prevention interventions and draws on expertise in surveillance, data analysis, research, public education and intervention. There are four steps that are interrelated:

- **An ongoing surveillance of child fatalities provides comparable data, documentation and monitoring over time. (What's the problem?)** The national-level, standardized case reporting tool and Internet- based data collection system is improving and protecting the lives of children and adolescents on both the state and national level. The collection of uniform data allows the opportunity for researchers to identify valuable state and national trends, risks, spikes and patterns.

- **Risk factor research identifies or confirms what is known about risk and protective factors that may have relevance for public policies and prevention programs. (What is the cause?)** In western New York, a hospital-based program was developed to educate all new parents about the dangers of shaking an infant, now known as abusive head trauma. This initiative effectively reduced the incidence of abusive head trauma in that region since its implementation. This program has been replicated throughout the country and proven equally successful. Several states have also passed legislation requiring this program for child care providers. In this way, prevention of abusive head trauma is being integrated in state and community systems that provide services and support to children and families.

- **Identification of evidence-based strategies that have proven effective or have high potential to be effective. (What works?)** Assessing effectiveness of a prevention strategy as it is implemented is difficult; however, the benefits in terms of funding and long-term cost are obvious. The Safe Sleep Initiative was based on research into sudden, unexpected infant deaths. University-based research groups, such as Harborview Injury Prevention and Research Center and the Childhood Injury Research Group at the University of Missouri provided evaluations of various injury prevention strategies. National organizations and governmental agencies, such as SAFE KIDS Worldwide, and the National Center for Injury Prevention at the CDC and the American Academy of Pediatrics provide research and prevention information.

- **Implementation of strategies where they currently do not exist. (How do you do it?)** Outcomes for prevention initiatives are generally functions of structure and duration. Prevention initiatives that are integrated into communities as state systems are sustainable and effective in the long term; i.e., child passenger restraint laws for motor vehicles and helmets for children riding bicycles. In many areas, schools include safety education for children and health care providers, who are in a unique position to assist in the prevention of child maltreatment and actively promote health and safety for children. Many state and local entities responsible for licensing child care providers are mandating education on safe sleep for infants and toddlers, and prevention of child abuse, including abusive head trauma as part of their curricula.

PREVENTION FINDINGS: THE FINAL REPORT

The difference between a fatal and nonfatal event is often only a few feet, a few inches, or a few seconds. In the past, most people believed that serious and fatal injuries were random or unavoidable events, or simply the result of individual carelessness. Fortunately, the science of injury prevention has focused on the environment and products used by the public, as well as individual behavior. As a result, unintentional injury-related death rates have declined dramatically over the last two decades. Injuries are now widely recognized as understandable, predictable and preventable.

A preventable child death is defined as one in which awareness or education by an individual or the community may have changed the circumstances that lead to the death. Legislation requires CFRP panels to complete a Final Report, summarizing their findings in terms of prevention messages and community-based prevention initiatives.

The death of a child is an emotional event that captures the attention of the community, creates a sense of urgency and a window of opportunity to respond to the questions, “What can we do?” County-based prevention activities serve to raise awareness, educate parents and caretakers, influence public policy and involve the community in prevention initiatives that protect and improve the lives of children. The initiatives highlighted below demonstrate how a few volunteer professionals are working together to measurably reduce or eliminate threats to the lives and wellbeing of countless Missouri children.

Media Campaign:

- A 14-year-old boy was swimming at a public swimming area at a local lake with two of his friends. He was not wearing a personal flotation device, while swimming out beyond the designated swimming area; He went underwater and did not resurface. To increase community awareness of recreational water safety, several articles were published in the local paper.

- A one-month-old child was sleeping in an adult bed with her father. The infant's father had been drinking the night before. A local media campaign was initiated providing information on safe-sleep practices, and parenting classes that offer cribs as incentives to attend classes.

Legislation, Law or Ordinance:

- A 17-year-old teen was a passenger in a car being driven by another teen. The car crossed the center line, overcorrected, ran off the road, struck an embankment and overturned, ejecting the decedent. All of the teens, including the driver, in the car were intoxicated. Recommendations were made to toughen enforcement, laws and ordinances regarding selling alcohol to minors.

- Parents, sibling and two-month-old baby were sleeping together in an adult bed. The infant was found unresponsive in between them when the parents awoke. Recommendations were made that a law be passed allowing for prosecution of parents who co-sleep with an infant.

Community Safety Project:

- A five-year-old child died in an apartment fire. The local county fire district developed and implemented a Fire Safety Educational Fair targeting the neighborhood in which the child lived. The community fair was held six weeks after the child's death.

Educational Activities in Schools:

- A one-month-old infant died while co-sleeping with his mother on a couch. The community decided to target the younger population by providing them with safe sleep information, when they are beginning to formulate their perceptions of raising and properly caring for children. Posters depicting what a safe sleep environment looks like, were installed in the high school family and consumer science classes.

- A twelve-year-old boy was riding an all-terrain vehicle (ATV) down a county road when the ATV left the road, hit a fence post and rolled over. The child was thrown from the ATV, and was not wearing a helmet. Warnings were added to the law enforcement / student safety programs at local schools, concerning the dangers of ATVs.

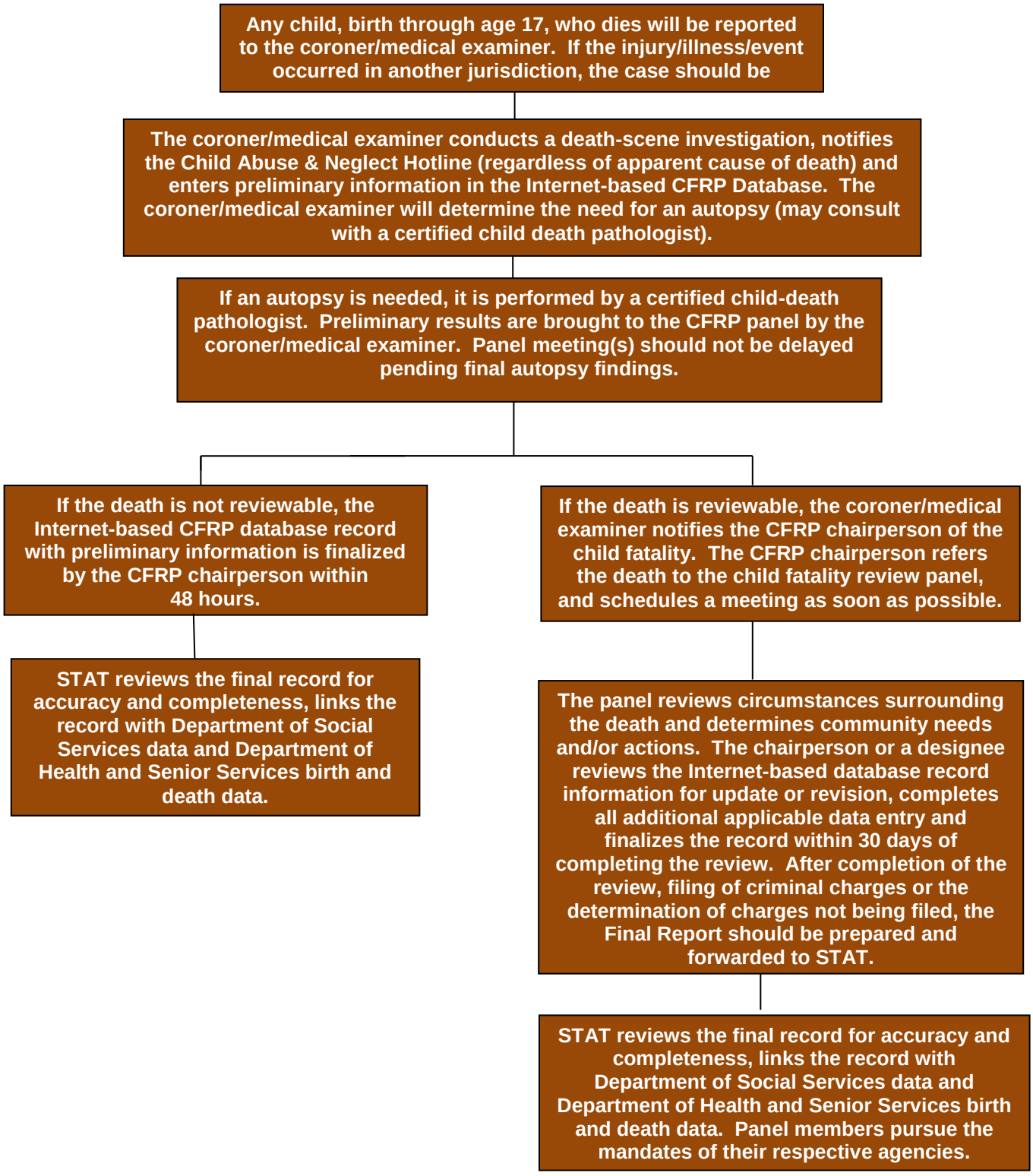
Education – Parent Education:

- A fourteen-year-old boy shot himself. He had no known mental issues. His father had noticed changes in the child's behavior, but thought nothing of it. Community education was provided regarding awareness of the signs of potential suicide.

Partnerships

Just as there are multiple disciplines involved in a local child fatality review, the state-level CFRP works with national, state and local agencies, and prevention partnership groups such as the National Center for Fatality Review and Prevention (NCFRP), Missouri Department of Health and Senior Services (DHSS), Missouri Children's Trust Fund (CTF), Missouri Department of Mental Health (DMH), Missouri Prevention Partners (MPP) and Missouri Injury and Violence Prevention Advisory Committee (MIVPAC), along with other county and local agencies to address identified risks of child injuries and fatalities statewide by coordinating efforts to provide prevention education and distribute prevention resources.

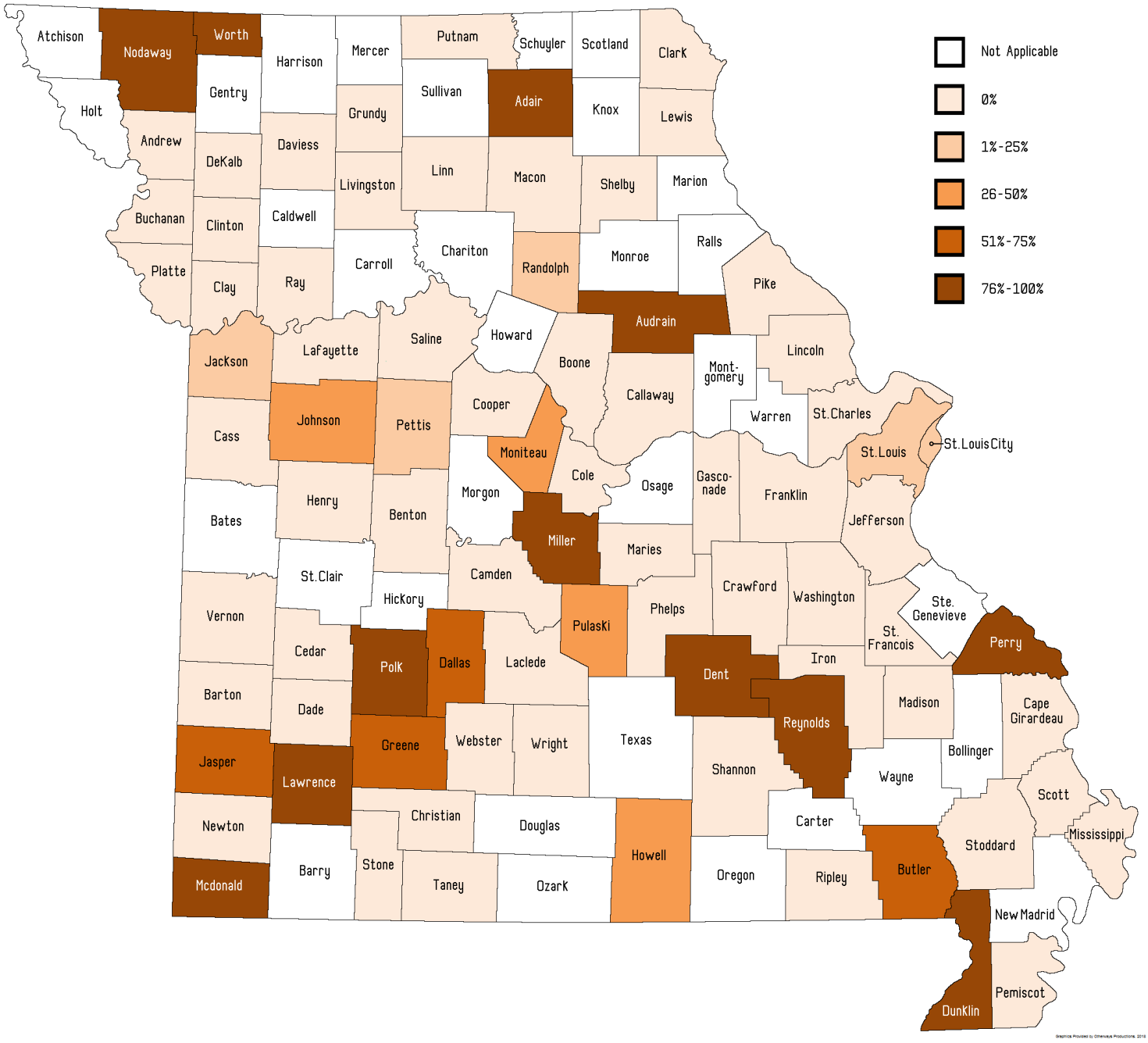
PROCESS FOR CHILD FATALITY REVIEWS



NOTE: Major metropolitan area CFRP panels are supported by Metro Case Coordinators, who coordinate exchange of information between panel members who meet on regularly scheduled monthly meetings, so those panels do not need to follow the above-listed time constraints.

Unfortunately, in 2017, there are a large percentage of reviewable cases that were not reviewed by the local county CFRP panels, or if the death was reviewed, the information was not entered into the National Fatality Review Case Reporting System.

PERCENTAGE OF REVIEWABLE DEATHS NOT REVIEWED BY COUNTY OF EVENT IN 2017



MISSOURI INCIDENT CHILD FATALITIES (AGE LESS THAN 18) BY AGE, SEX AND RACE 2015-2017

Age	All Deaths			Reviewed Deaths			Injury Deaths		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
0	559	575	571	153	145	129	88	100	96
1	36	43	31	24	22	17	17	13	14
2	27	27	29	19	16	19	15	11	18
3	20	18	24	10	13	13	10	10	11
4	11	15	17	6	8	11	7	7	9
5	17	9	11	13	6	5	11	4	2
6	14	12	12	11	5	3	8	3	3
7	8	10	7	5	8	3	3	8	3
8	10	9	14	6	6	7	5	5	6
9	12	11	12	6	2	5	4	2	6
10	9	5	21	3	3	11	3	3	12
11	16	8	14	5	2	7	4	1	4
12	9	14	22	5	8	11	4	10	8
13	18	10	18	9	8	13	11	6	13
14	24	17	18	13	13	9	12	12	8
15	19	31	32	16	25	22	16	22	21
16	31	33	44	23	17	35	26	25	41
17	67	54	58	57	44	42	56	47	44
TOTAL	907	901	955	384	351	362	300	289	319

Sex	All Deaths			Reviewed Deaths			Injury Deaths		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
Female	367	348	401	142	118	128	107	98	109
Male	540	553	553	242	233	234	193	191	210
Unknown	0	0	1						
TOTAL	907	901	955	384	351	362	300	289	319

Race	All Deaths			Reviewed Deaths			Injury Deaths		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
White	625	605	640	262	235	225	215	201	206
Black	237	256	275	105	99	129	72	76	106
Pacific Islander	1	2	3	0	1	2	1	0	1
American Indian	1	2	0	0	0	0	0	0	0
Asian	15	15	13	5	7	1	3	6	1
Multi-Racial	28	21	24	12	9	5	9	6	5
TOTAL	907	901	955	384	351	362	300	289	319

MISSOURI INCIDENT CHILD FATALITIES (AGE LESS THAN 18) BY COUNTY 2015-2017

County of Event	All Deaths			Reviewed Deaths			Injury Deaths		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
Adair	4	3	8	0	0	0	0	0	3
Andrew	0	3	2	0	3	1	0	3	1
Atchison	0	0	0	0	0	0	0	0	0
Audrain	2	4	2	2	2	0	1	2	0
Barry	0	7	1	0	0	0	0	3	0
Barton	0	1	2	0	1	2	0	0	0
Bates	0	1	0	0	0	0	0	1	0
Benton	3	1	2	2	0	1	2	0	1
Bollinger	1	0	0	1	0	0	1	0	0
Boone	35	27	45	8	5	9	5	4	7
Buchanan	8	9	16	7	6	10	4	5	10
Butler	13	3	12	8	1	2	5	1	5
Caldwell	0	1	0	0	1	0	0	1	0
Callaway	7	4	2	5	4	2	4	2	1
Camden	6	5	1	6	3	1	6	3	0
Cape Girardeau	8	11	13	5	7	3	0	4	1
Carroll	0	0	0	0	0	0	0	0	0
Carter	0	0	1	0	0	0	0	0	0
Cass	8	7	7	8	5	6	3	4	5
Cedar	3	0	4	2	0	4	0	0	3
Chariton	1	0	0	1	0	0	1	0	0
Christian	8	2	7	5	1	6	5	1	6
Clark	0	0	2	0	0	2	0	0	2
Clay	22	15	17	14	8	9	9	5	6
Clinton	1	1	3	1	1	2	1	0	2
Cole	4	5	10	1	3	5	0	2	2
Cooper	4	2	3	2	2	2	2	0	2
Crawford	3	2	4	3	2	4	1	2	3
Dade	2	0	2	1	0	2	1	0	2
Dallas	3	3	3	3	3	1	3	1	2
Daviess	4	2	1	3	2	1	3	2	1
DeKalb	1	1	1	0	0	1	0	1	1
Dent	4	1	1	2	1	0	3	0	1
Douglas	3	0	0	3	0	0	2	0	0
Dunklin	5	8	5	2	7	0	2	3	3
Franklin	10	15	9	6	10	4	6	5	4
Gasconade	1	1	1	1	1	1	1	1	1
Gentry	1	0	0	0	0	0	0	0	0
Greene	66	50	51	16	7	13	11	6	11
Grundy	6	4	2	5	1	1	4	1	1
Harrison	1	1	0	1	1	0	1	0	0
Henry	4	3	3	4	2	3	2	2	0

MISSOURI INCIDENT CHILD FATALITIES (AGE LESS THAN 18) BY COUNTY 2015-2017

County of Event	All Deaths			Reviewed Deaths			Injury Deaths		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
Hickory	1	0	0	1	0	0	1	0	0
Holt	0	1	0	0	0	0	0	0	0
Howard	1	2	1	1	2	0	1	2	0
Howell	4	3	7	2	2	3	2	2	4
Iron	2	1	1	2	1	1	2	1	1
Jackson	166	171	167	58	59	55	38	41	37
Jasper	8	12	13	3	6	3	5	6	9
Jefferson	16	13	16	11	12	10	8	11	8
Johnson	3	6	8	1	6	2	0	5	3
Knox	0	2	0	0	0	0	0	0	0
Laclede	4	7	1	3	6	1	0	1	0
Lafayette	6	2	4	5	1	4	5	2	2
Lawrence	2	2	4	0	0	0	0	1	4
Lewis	1	0	2	0	0	2	0	0	2
Lincoln	3	2	1	3	1	1	2	1	1
Linn	2	0	1	2	0	1	1	0	1
Livingston	2	1	1	1	1	1	1	1	1
McDonald	4	0	2	0	0	0	4	0	2
Macon	1	3	2	1	2	2	0	1	1
Madison	1	1	1	0	1	1	0	0	0
Maries	0	3	1	0	0	1	0	1	1
Marion	2	8	1	0	0	0	0	5	0
Mercer	0	0	0	0	0	0	0	0	0
Miller	1	1	1	0	1	0	0	1	1
Mississippi	3	0	2	1	0	2	0	0	2
Moniteau	0	3	4	0	3	2	0	3	4
Monroe	1	1	0	1	1	0	1	0	0
Montgomery	2	1	0	1	1	0	1	1	0
Morgan	3	1	1	3	1	0	1	1	0
New Madrid	1	1	0	1	1	0	1	1	0
Newton	10	15	17	4	4	9	4	5	9
Nodaway	1	3	3	1	1	0	1	1	1
Oregon	4	0	0	1	0	0	4	0	0
Osage	0	0	0	0	0	0	0	0	0
Ozark	1	2	2	0	2	2	1	2	2
Pemiscot	5	4	3	4	1	3	4	2	2
Perry	0	1	1	0	1	0	0	1	1
Pettis	2	7	6	1	3	4	1	3	4
Phelps	7	7	2	3	2	2	1	1	2

MISSOURI INCIDENT CHILD FATALITIES (AGE LESS THAN 18) BY COUNTY 2015-2017

County of Event	All Deaths			Reviewed Deaths			Injury Deaths		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
Pike	2	0	1	2	0	1	2	0	0
Platte	5	8	4	4	6	3	4	5	3
Polk	8	1	1	2	0	0	4	0	1
Pulaski	1	4	3	0	3	1	0	3	2
Putnam	0	1	2	0	0	2	0	0	2
Ralls	1	0	0	1	0	0	1	0	0
Randolph	4	0	5	3	0	2	3	0	3
Ray	0	0	2	0	0	2	0	0	1
Reynolds	1	1	1	1	0	0	1	1	1
Ripley	4	2	6	4	2	5	4	1	4
St. Charles	17	19	25	11	14	19	9	14	14
St. Clair	3	1	0	0	1	0	2	1	0
St. Francois	8	7	3	7	6	2	5	4	1
St. Louis County	140	131	152	49	37	44	42	31	37
Ste. Genevieve	0	0	1	0	0	0	0	0	0
Saline	1	3	3	1	2	2	1	1	1
Schuyler	0	4	0	0	2	0	0	3	0
Scotland	1	1	0	1	1	0	1	1	0
Scott	4	5	2	2	4	2	1	3	1
Shannon	1	0	1	0	0	1	1	0	1
Shelby	0	2	1	0	2	1	0	2	0
Stoddard	2	5	1	1	3	1	0	5	1
Stone	3	4	2	3	4	2	1	3	0
Sullivan	0	1	0	0	1	0	0	1	0
Taney	2	6	10	2	5	7	2	4	6
Texas	6	5	1	6	4	0	4	2	0
Vernon	4	5	2	2	3	2	2	0	1
Warren	3	2	1	3	2	0	3	1	0
Washington	1	4	2	1	3	2	1	3	1
Wayne	1	1	0	1	1	0	1	1	0
Webster	6	3	8	3	2	6	3	2	6
Worth	0	2	2	0	0	0	0	1	1
Wright	2	2	3	0	2	3	0	2	1
St. Louis City	154	181	191	31	29	42	23	26	38
STATE TOTAL	907	901	955	384	351	362	300	289	319