PREVENTING CHILD DEATHS IN MISSOURI

THE MISSOURI CHILD FATALITY REVIEW PROGRAM

ANNUAL REPORT FOR 2023

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State of Missouri

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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 provide the basis for identifying vulnerable children and responding in ways that protect and improve their lives. Decades of research have 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's 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. Optional members may be added at the discretion of the panel. If the death meets program criteria as referenced below, it is referred to the county's multidisciplinary Child Fatality Review Program (CFRP) 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 the potential need for services; identify and implement prevention interventions for the family and community and enhance multidisciplinary communications and coordination.

Of the roughly 1,000 child deaths annually in Missouri, approximately 40% merit review. To come under review, the cause of death 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 group for which an autopsy is mandatory by state statute.)

Statistical data on all child deaths are collected using 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 pattern 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 2023 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

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

Prosecuting Attorney

Kayla Womble
Missouri Office of Prosecution Services
Jefferson City

Medical Examiners

Keith Norton, M.D.
Southwest Missouri Forensics
Nixa

Lindsey Haldiman, M.D.
Jackson County Medical Examiner's Office
Kansas City

Coroner

Jim Akers
Butler County
Poplar Bluff

Kjersten Parn
Linn County
Brookfield

Law Enforcement

Chief Bill Carson
Maryland Heights Police
Maryland Heights

Public Health Service

Douglas Beal, M.D.
Forensic Pediatrician
Columbia

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Children's Division

Kara Wilcox
Department of Social Services
Jefferson City

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Virginia Wilson
Missouri University Health System
Columbia

Juvenile Courts

Jeff Hall
Adair County
Kirksville

Phillip Warren
Scott County
Sikeston

Additional Members

Emily Van Schenkhof
Missouri Children's Trust Fund
Jefferson City

Kelly Kuda
Missouri Office of Child Advocacy
Jefferson City

Jessica Seitz
Missouri Network Against Child Abuse
Jefferson City

Ryan Hart
Department of Social Services, 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's death requires a thorough examination of all relevant data, including historical information concerning the deceased child and their 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 lawfully be conducted unless the public is excluded.**

Each CFRP member should confine their 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 from civil liability 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, birth through age 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 are required to be present (four or more member disciplines).

Partnerships

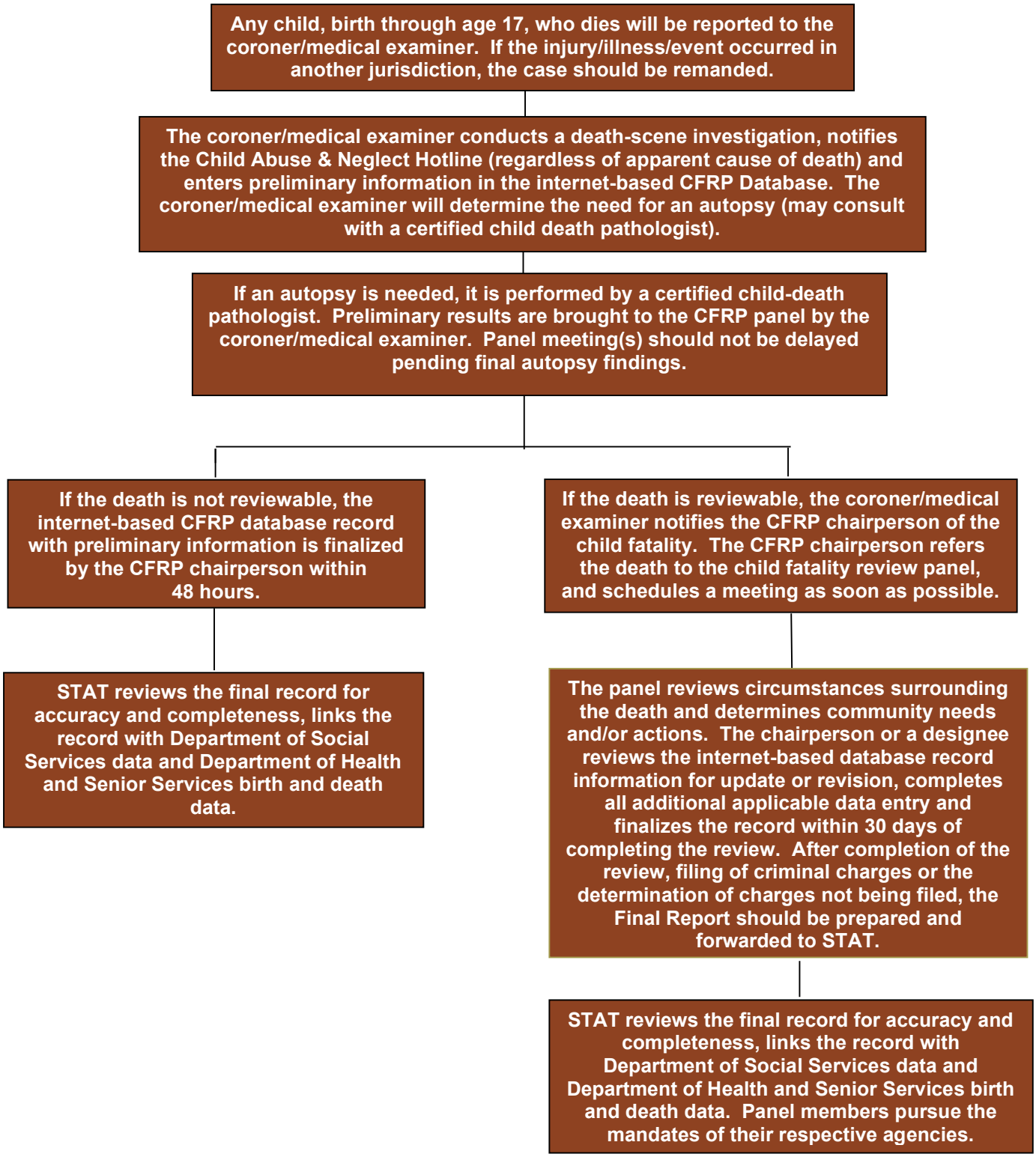
Just as there are multiple disciplines involved in a local child fatality review, the state-level CFRP works with national, state and local agencies, and prevention partnership groups. These groups include the National Center for Fatality Review and Prevention (NCFRP), Missouri Department of Health and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

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 is based upon the circumstances surrounding the death and determined by coroners and medical examiners in consultation with a 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 https://dss.mo.gov/stat/cpn.htm.

PROCESS FOR CHILD FATALITY REVIEWS



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 are evidence-based.

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 utilize Missouri CFRP de-identified data to gain new insights. Research into sudden unexpected infant deaths concluded that certain unsafe sleep arrangements occurred in most 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

Professionals in the field of injury prevention widely accept 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 (Mayo Foundation, 2017). 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 childcare 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 childcare providers are mandating education on the prevention of child abuse, including abusive head trauma, as well as education on safe sleep for infants and toddlers.

Missouri Child Fatalities

Missouri Child Fatalities refers to all children birth through age 17, 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 a "Missouri Child Fatality.") All illness, injuries, 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 that 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 CFRP 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 the death meets program criteria for review. The findings of this initial assessment are reported in the NCFRP CDR System.

- All child deaths that are unclear, unexplained, or of a suspicious circumstance (including 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 by the county CFRP chairperson or their designee, making any necessary corrections and/or additions, and all pertinent sections of the record are completed as appropriate.

- CFRP data compares 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 where appropriate.

- All deaths included in this CFRP Annual Report occurred in the calendar year **2023**, although some cases may not have been brought to county panel review until 2024.

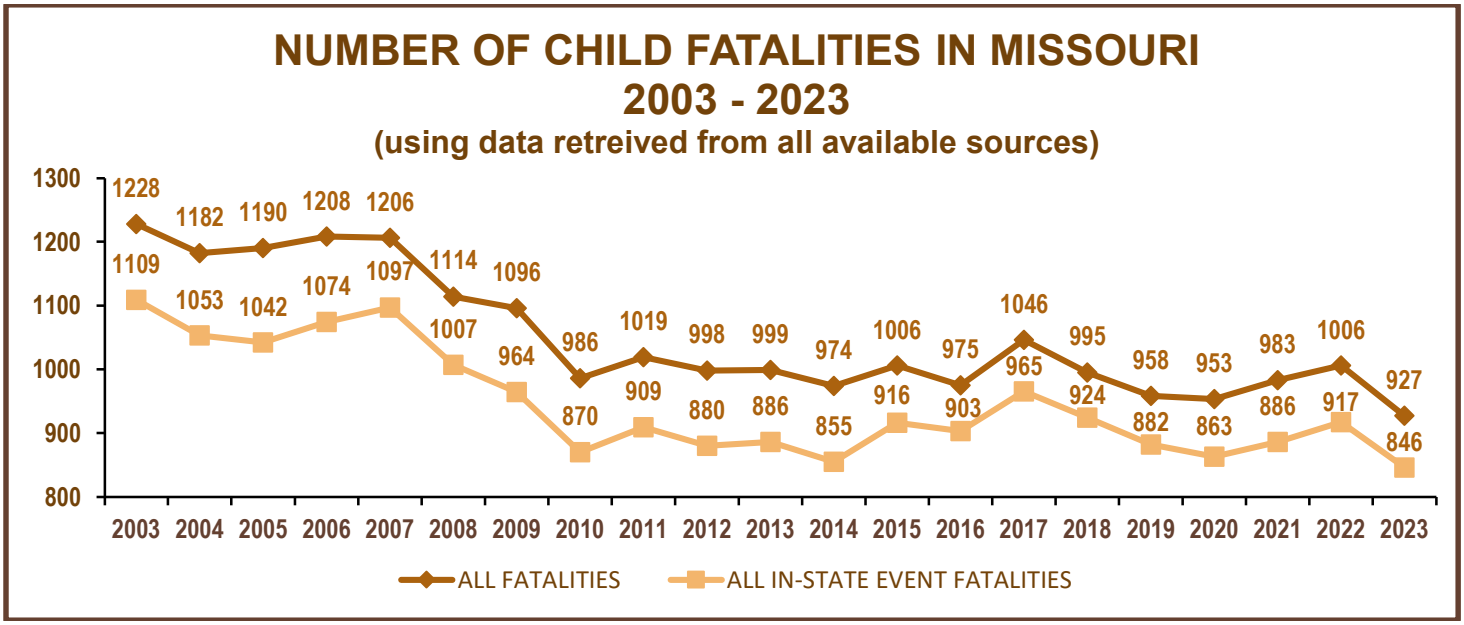
- **Eighty-one** Missouri Child Fatalities were due to events that occurred either in other states or on military installations in Missouri. Although documented in the NCFRP CDR System, these deaths are not considered Missouri Incident Fatalities and are not otherwise addressed in this report.

- Of the **415** Missouri Incident Fatalities with indication for review as reported in NCFRP CDR System, **all** deaths receive required CFRP panel review, and the panel findings were entered.

- The data for this report comes from the NCFRP CDR System information submitted by the county based CFRP panels.

- **One hundred percent** of the known deaths were entered into the NCFRP CDR System and **100%** of the required reviews were completed and entered.

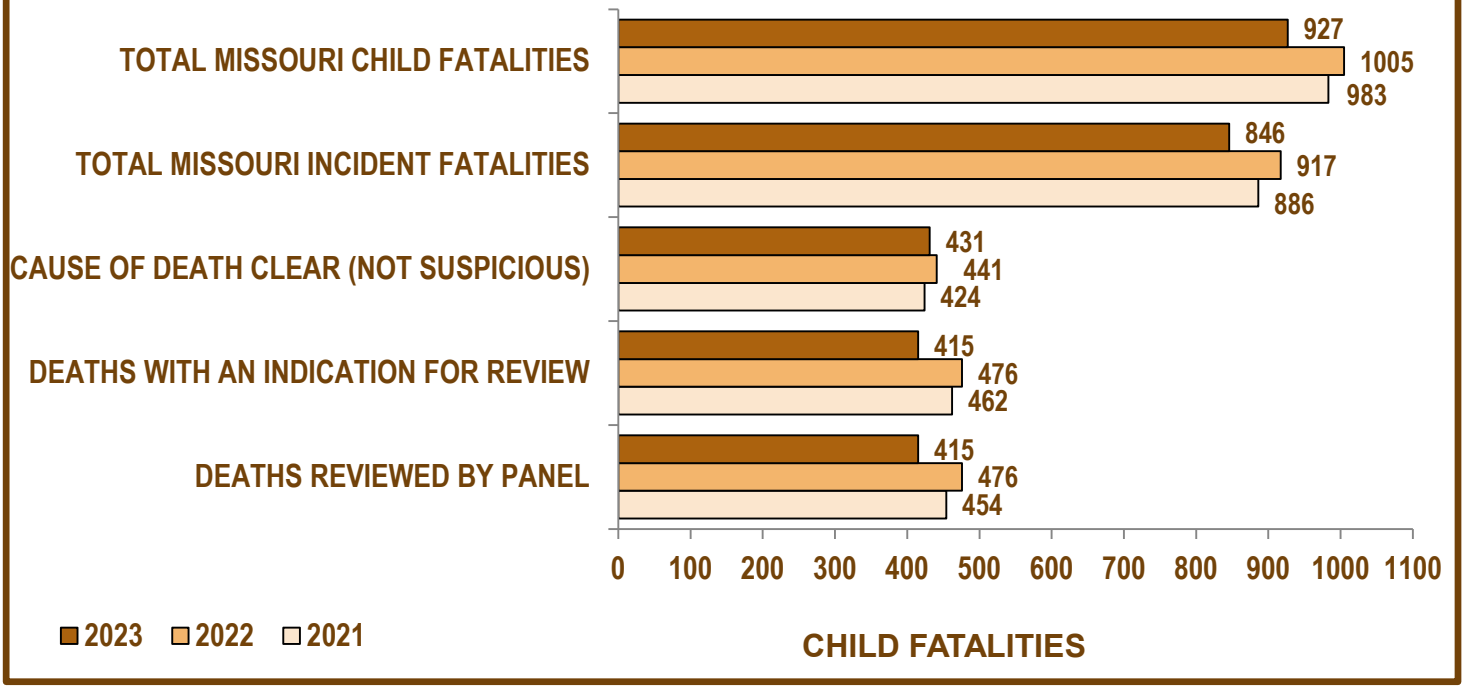
- There has been a **25%** reduction in overall child fatalities in Missouri since 2003, and a **24%** reduction in in-state event fatalities.



SUMMARY OF FINDINGS

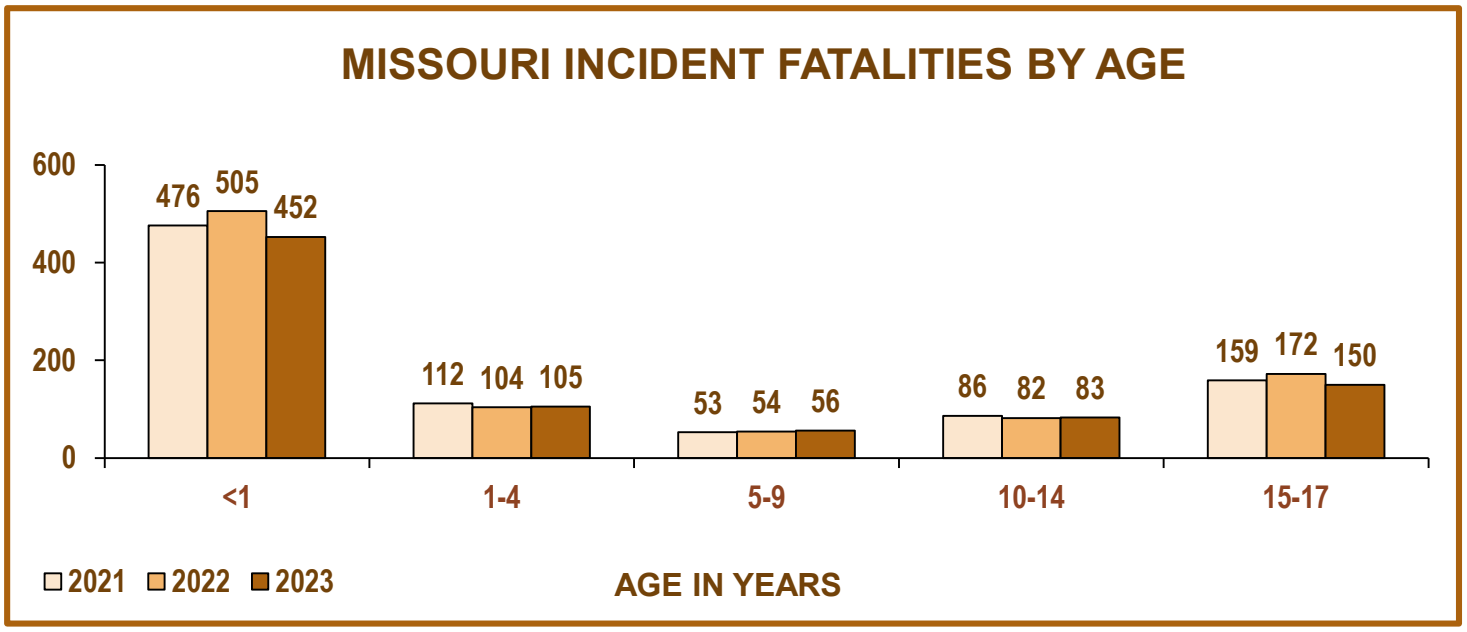
In 2023, CFRP received information on **927** child deaths of which **81** deaths were due to events occurring out-of-state or on military installations. This is a **78** death reduction from 2022. The remaining **846** deaths were determined to be Missouri Incident Fatalities and therefore subject to initial review. The coroner/medical examiners and county CFRP chairpersons determined **431** deaths did not meet criteria for detailed panel review. The remaining **415** deaths had indicators for review, of which **all** were reviewed by the county panels.

MISSOURI CHILD FATALITIES VS. MISSOURI INCIDENT FATALITIES



MISSOURI INCIDENT FATALITIES BY SEX AND RACE

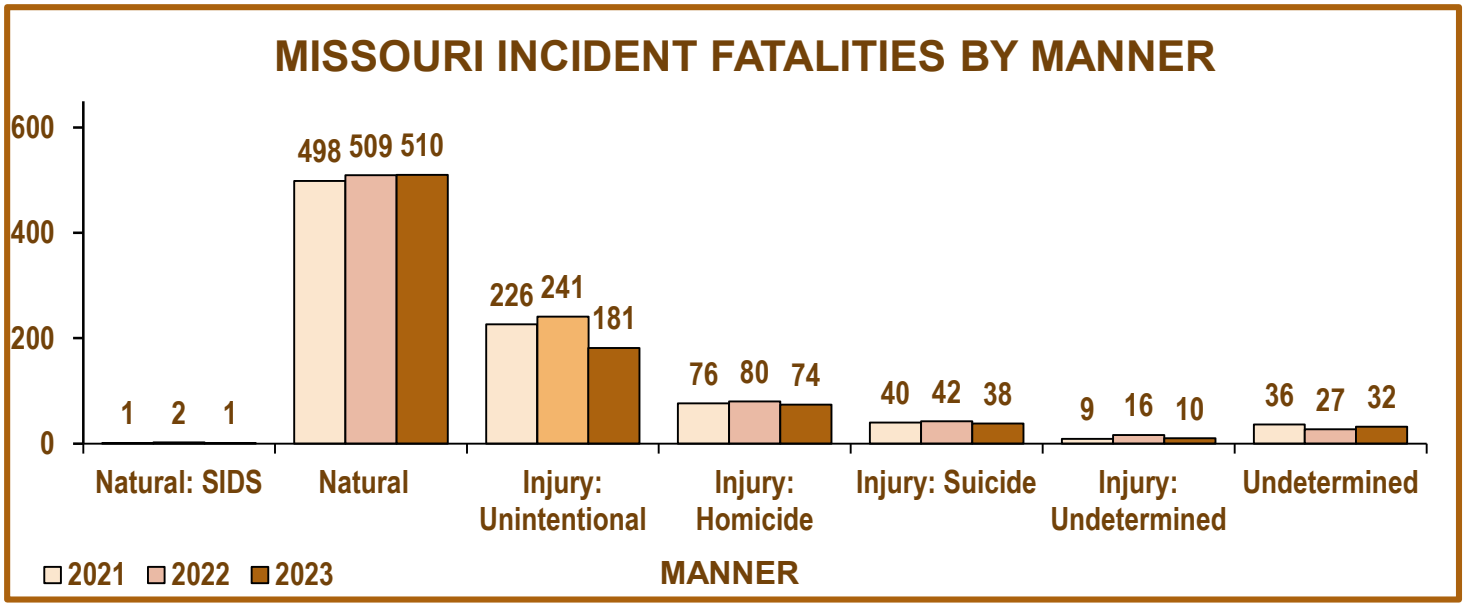
SEX	2021	2022	2023	RACE	2021	2022	2023
Female	350	373	349	White	579	608	531
Male	536	544	497	Black	240	260	254
				American Indian	0	4	1
				Alaskan Native	1	0	0
				Native Hawaiian	4	1	0
				Pacific Islander	6	6	4
				Asian	11	8	11
				Multi-Racial	45	30	45
	886	917	846		886	917	846



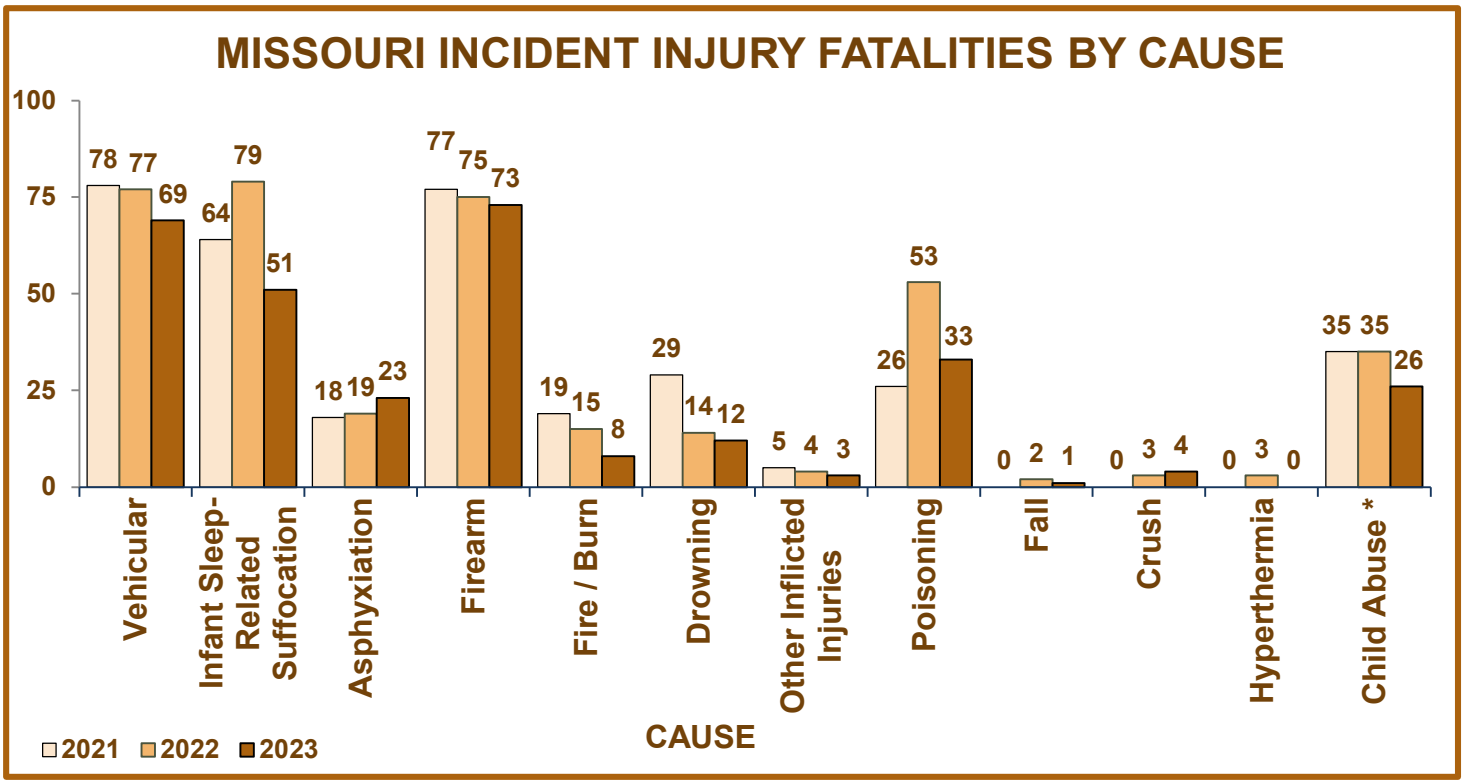
Missouri death certificates identify deaths by *manner of death* and *cause of death*. *Manners of death* are defined as:

- Natural: SIDS
- Natural
- Unintentional
- Injury: Homicide
- Injury: Suicide
- Injury: Undetermined
- 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* 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 cause and 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. For example, the death certificate may indicate SIDS as the *cause of death*, but from panel concerns related to unsafe bedding and/or sleep surface sharing, the panel 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.

NATURAL FATALITIES

In 2023, natural fatalities, excluding SIDS, were responsible for the deaths of 510 Missouri children, which was 60% of all Missouri Incident Fatalities.

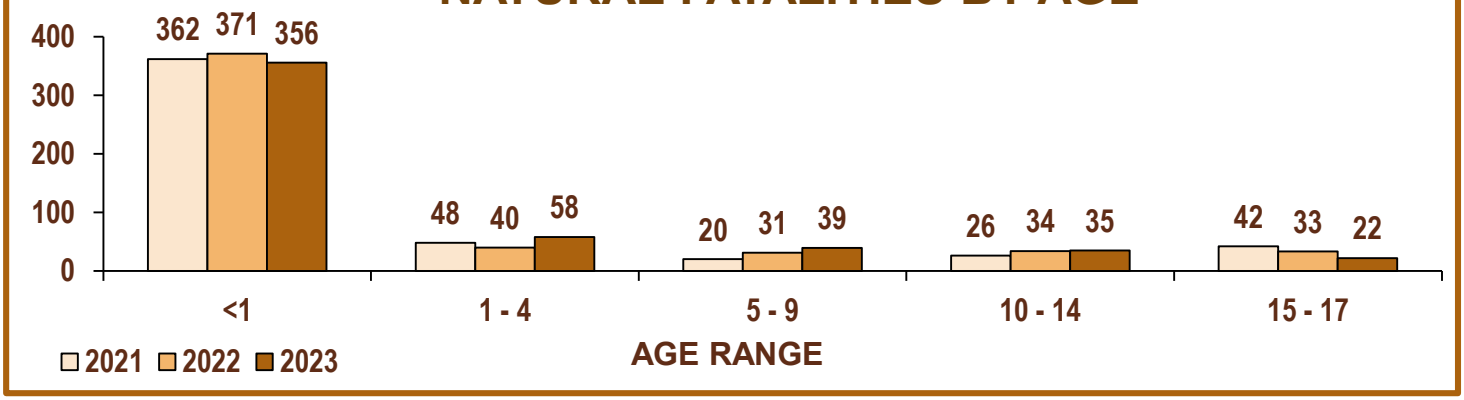
- Prematurity is the cause of 36% of all illness/natural deaths.
- Sixty percent of the babies who died from premature birth were white, 33% were black, and 7% were another race.
- The median gestational age of premature births was 24 weeks, and the median weight was 804 grams or 1 lb. 12 oz.
- Fifty-five percent of the premature babies died within one day of birth.
- The age of the mothers of premature babies ranges from 13 to 42 years.
- Fifty-four percent of the babies who died of prematurity were covered by Medicaid.

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

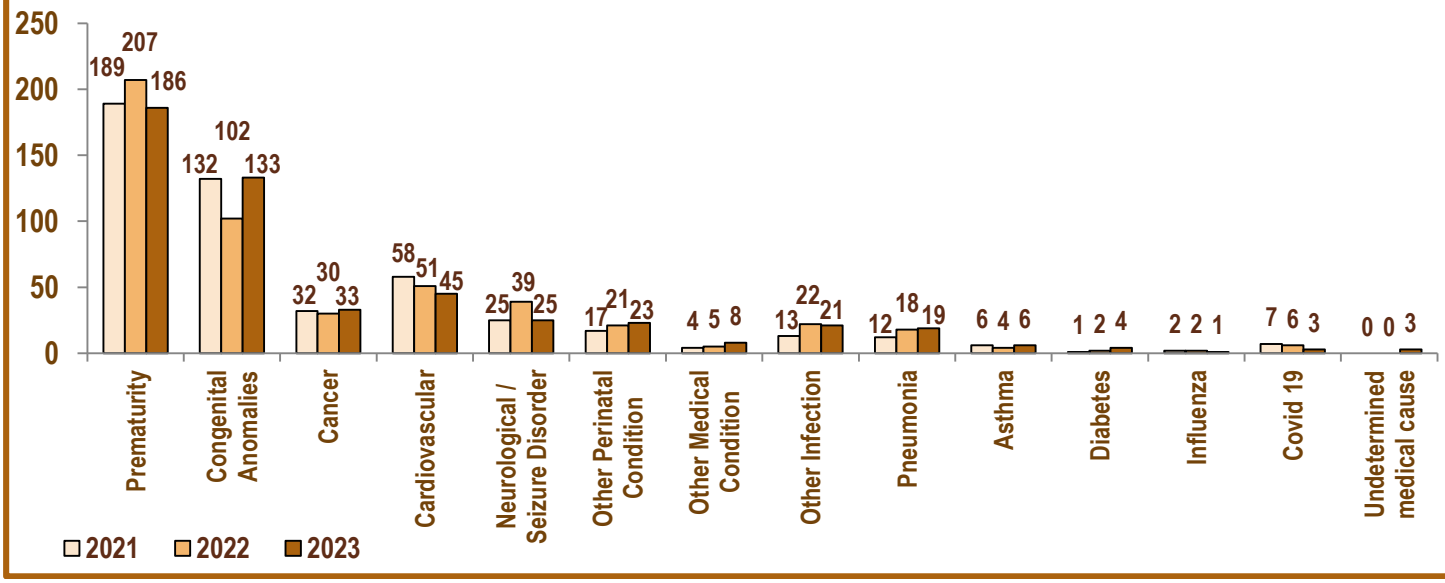
SEX	2021	2022	2023	RACE	2021	2022	2023
Female	208	245	239	White	334	358	337
Male	290	264	271	Black	117	122	135
				Alaskan Native	1	0	0
				American Indian	0	3	1
				Asian	8	5	8
				Native Hawaiian	3	1	0
				Pacific Islander	3	4	3
				Multi-Racial	32	16	26
	498	509	510		498	509	510

NATURAL FATALITIES BY AGE



Children die from a variety of medical conditions, but premature birth is the leading natural cause. In 2023, of the **510** natural deaths, **186** were from premature birth.

MEDICAL CONDITION CAUSING NATURAL FATALITIES



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.

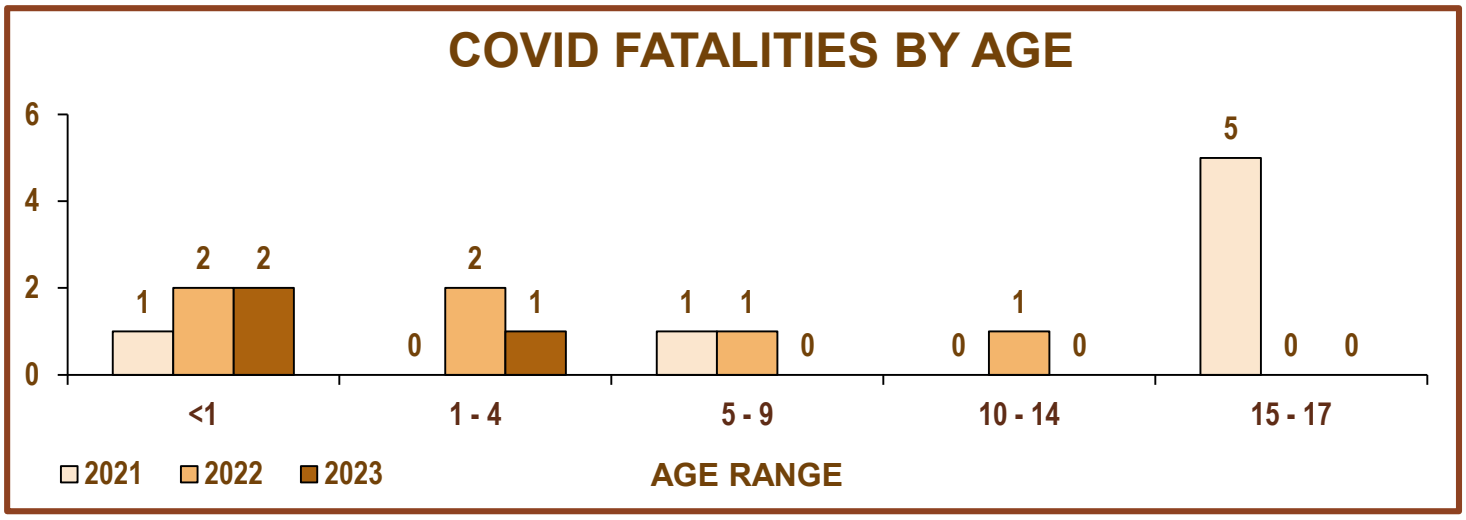
COVID 19

There were **three** child deaths directly attributed to Covid-19 in 2023. This number does not include any deaths that could be indirectly attributed to the pandemic, such as deaths caused by soon-to-be mothers missing prenatal appointments, etc.

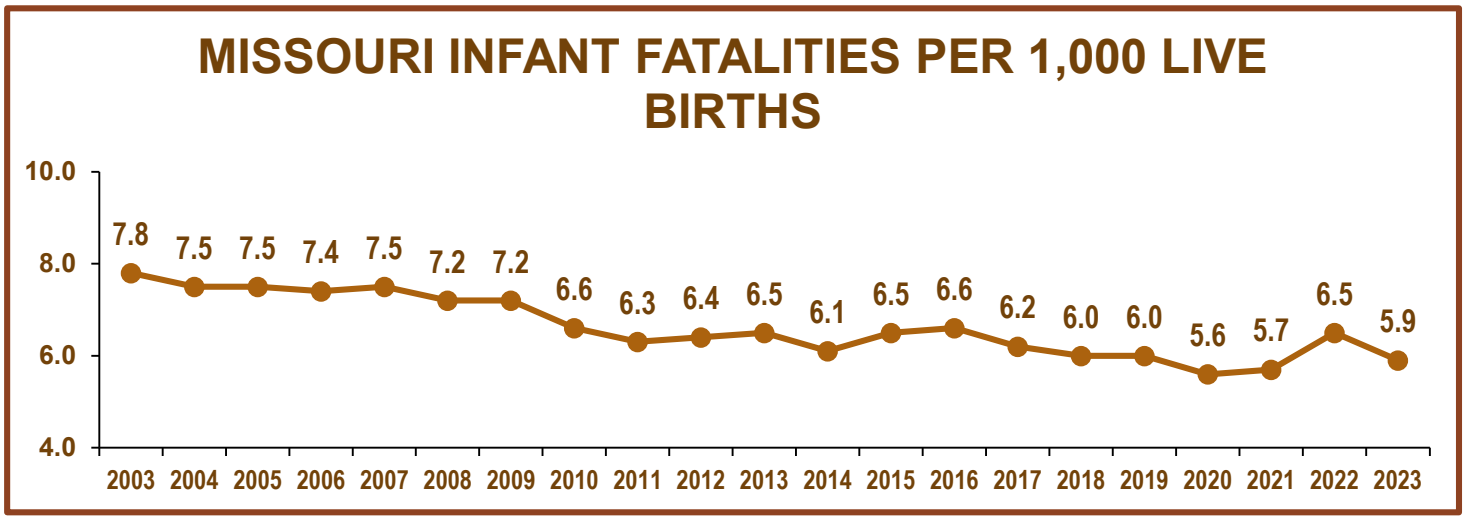
In early 2021, the National Center added a new Covid-19 section to the data reporting form. In four deaths, panels indicated the pandemic impacted their ability to conduct a review.

COVID 19 FATALITIES BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	2	2	2	White	4	4	1
Male	5	4	1	Black	2	0	0
				Asian	0	1	1
				Pacific Islander	0	1	0
				Multi-Racial	1	0	1
	7	6	3		7	6	3



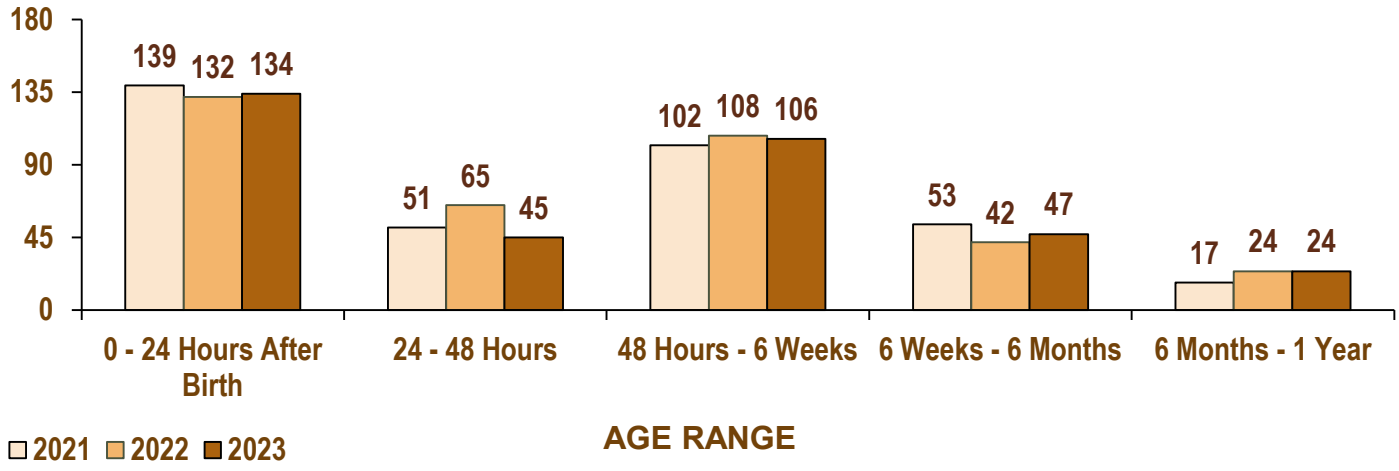
Infant Mortality



Nationally, the overall infant mortality rate is 5.47 deaths per 1,000 live births in 2023. Missouri's overall infant mortality rate is higher, at 5.9 deaths per 1,000 live births.

Infants less than one year of age comprise the majority of natural cause deaths at **356.** Of the **179** deaths that occurred within the first 48 hours, **134** occurred within 24 hours after birth.

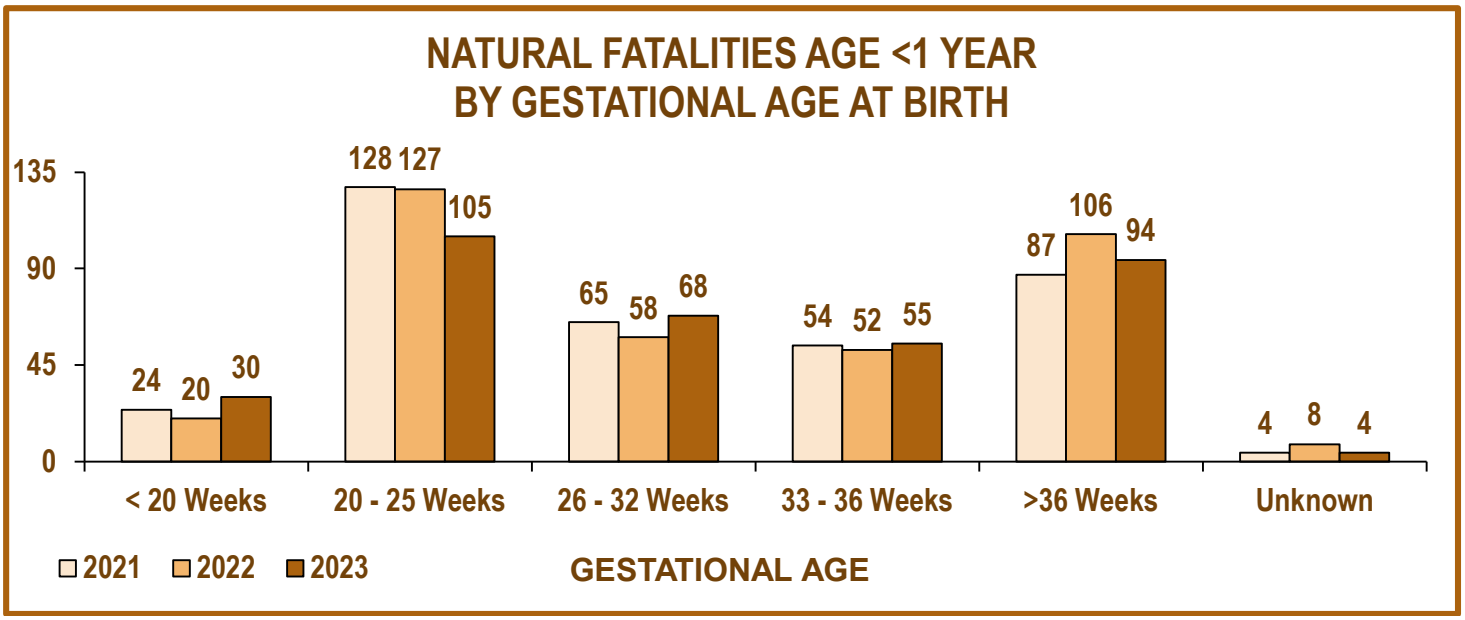
NATURAL FATALITIES AGE <1 YEAR BY AGE AT DEATH



NATURAL FATALITIES <1 YEAR BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	156	175	171	White	241	256	222
Male	206	196	182	Black	87	91	102
				American Indian	0	2	1
				Alaskan Native	1	0	0
				Native Hawaiian	2	1	0
				Pacific Islander	2	3	2
				Asian	5	4	5
				Multi-Racial	24	14	24
	362	371	356		362	371	356

Prematurity is one of the leading causes of death in the first month of life, and those who 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 (33 to 36 weeks gestation). Babies born late preterm, have a death rate three times higher than babies born at full term (Field, et al, 2016). Reducing the number of children born prematurely, even by just a few weeks, could save many infant lives. The CDC reports the 2023 national preterm rate is 10.41% of all births. Missouri's 2023 rate is higher – at 11% of all births.



There are three categories of premature births: very preterm, moderately preterm, and late preterm.

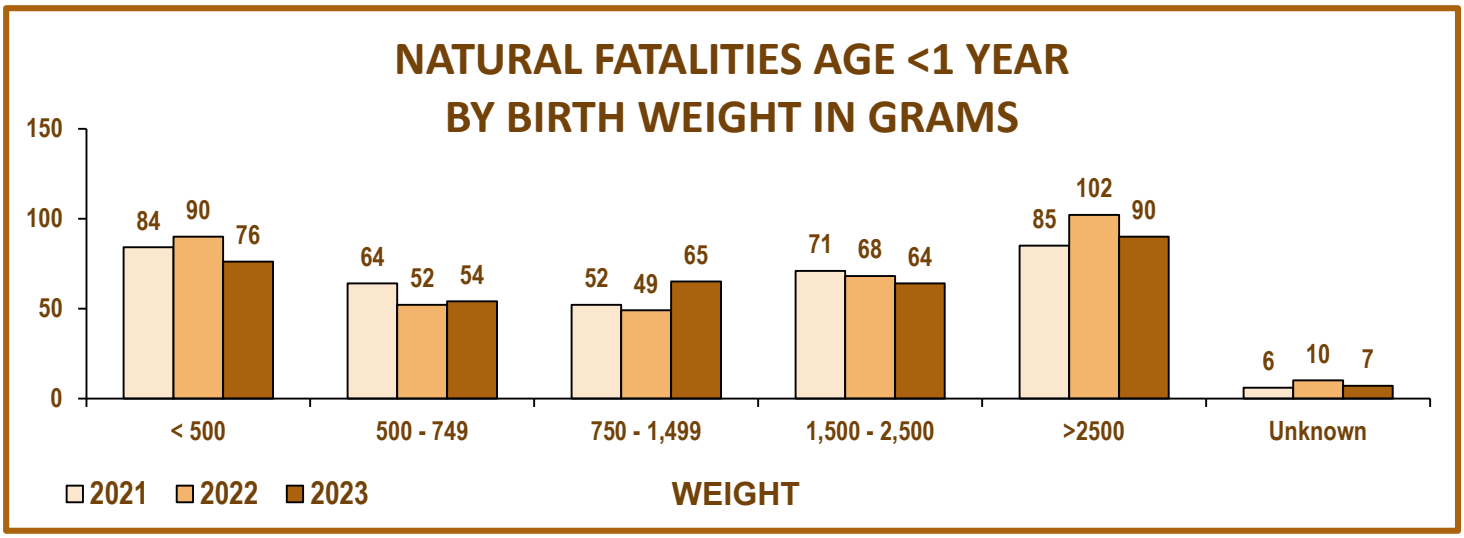
- **Very preterm** births occur at **25 weeks gestation or less**.
- **Moderately preterm** births occur between **26 and 32 weeks gestation**.
- **Late preterm births** occur between **33 and 36 weeks gestation**.

Of the **258** deaths of infants born preterm who died a natural death before their first birthday, **135** were born very preterm. *Very preterm* babies are usually born with severe health issues and are more unlikely to survive, **90** 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 one day (Echold, 2021) Prematurity was the direct cause of **125** very preterm infant deaths, the remainder died from congenital anomalies or other issues that happened during birth.

Sixty-eight of the preterm infants were born *moderately preterm.* **Twenty-two** of these infants died within the first 24 hours. **Sixteen** infants died between 2 and 7 days old, **thirty** lived longer than a week with **five** of these infants living three months or longer. **Forty-one** of the *moderately preterm* infants died from causes directly related to prematurity, **19** died from congenital anomalies, and the remainder died from cardiovascular anomalies, other infections and other perinatal conditions.

Of the **55** deaths of infants born in the *late preterm* range, **20** died within the first 24 hours, **10** lived between 2 and 7 days, **25** lived more than a week with **11** of these living for three months or longer. **Fourteen** *late preterm* deaths were directly related to prematurity, **20** were from congenital anomalies, and the remainder died from cardiovascular anomalies, pneumonia, other infections, neurological disorders, or perinatal conditions.

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 an LBW baby such as intrauterine growth restriction, mother’s age, or a multiple birth pregnancy. In 2023, **186** infants were reported to be born preterm who later died and **259** LBW children were reported during that same period. Some of these children were born in 2022 and died in 2023.



Babies born from multiple-birth pregnancies are more likely to be born small. **Eleven** 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 212 grams (7.47 ounces) and was born at 24 weeks gestation (Tewari, 2021).

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. **Twenty-four** mothers had medical complications such as diabetes or preeclampsia, and **29** used drugs or alcohol.

Seven of the children who died from natural causes within the first year of life were known to have had no prenatal care. **Four** of these children were known to have been born before the 37th week of gestation and **six** of the ten were born at low birth weight. **Four** of these children died from prematurity, **two** from congenital anomalies and the last one from cardiovascular issues.

SLEEP-RELATED INFANT FATALITIES

There were 89 infant deaths marked as sleep-related by the panels in 2023.

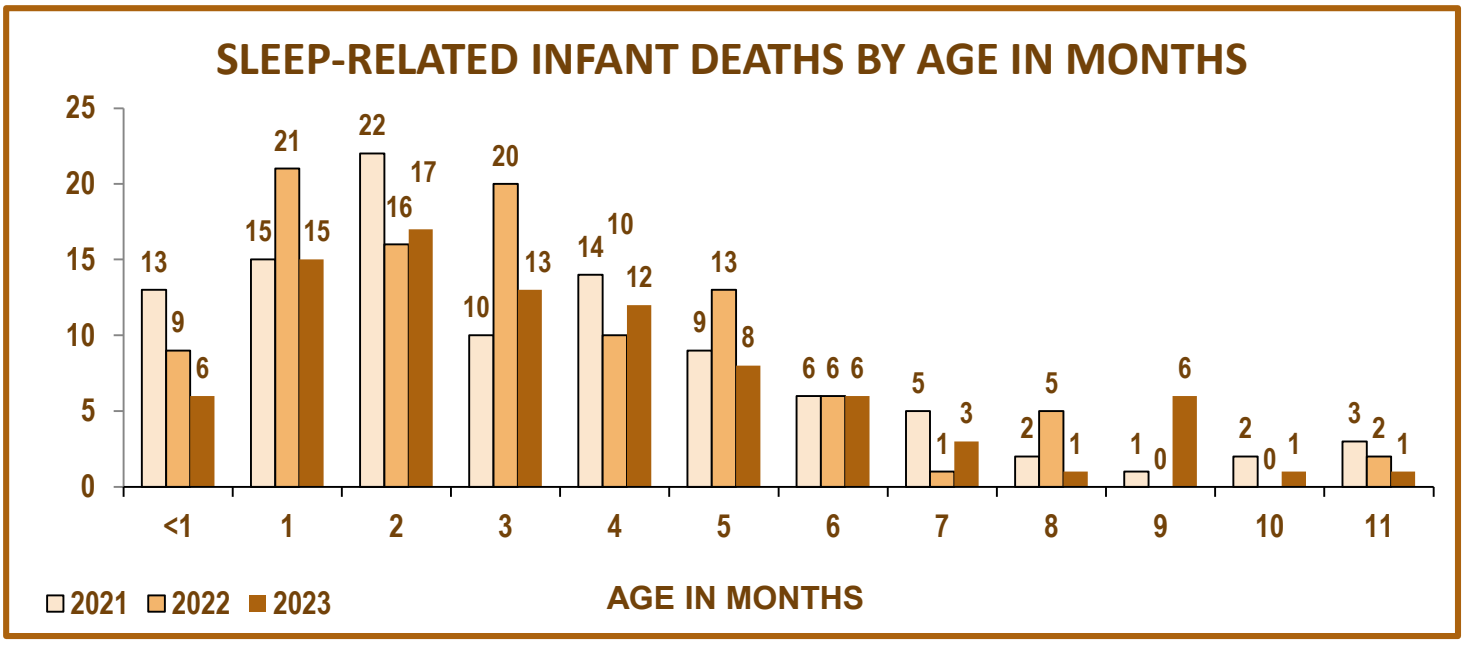
- Eighty-three percent of all infants who died from sleep-related issues were covered by Medicaid.
- Fifty-eight percent of the infants were sharing a sleep surface with one or more adults, children, or animals.
- The ages of the mothers ranged from 15-41 years with the average age being 27 years old.
- Fifty-six percent of the infants who died from sleep-related issues were white, 35% were black, 8% were multi-racial, and 1% were pacific islander.

Properly reporting all unsafe sleep fatalities must include more than just SIDS, suffocation, and undetermined cases in this section. First, some children who died of natural causes were found in unsafe sleep situations. In these cases, we cannot definitively rule out the unsafe sleeping arrangements as contributing to the death. Secondly, the deaths of some children who died of unsafe sleep have been ruled homicides due to other factors, such as a parent's drug or alcohol use. Since these deaths came at the hands of the parent or caretaker of the child, they have always been reported in the child abuse section. Due to the potential of the unsafe sleeping arrangement contributing to the death, we have determined those deaths should be included in the overall unsafe sleep numbers while also remaining in their appropriate section of the report: Illness/Natural or Child Abuse, etc.

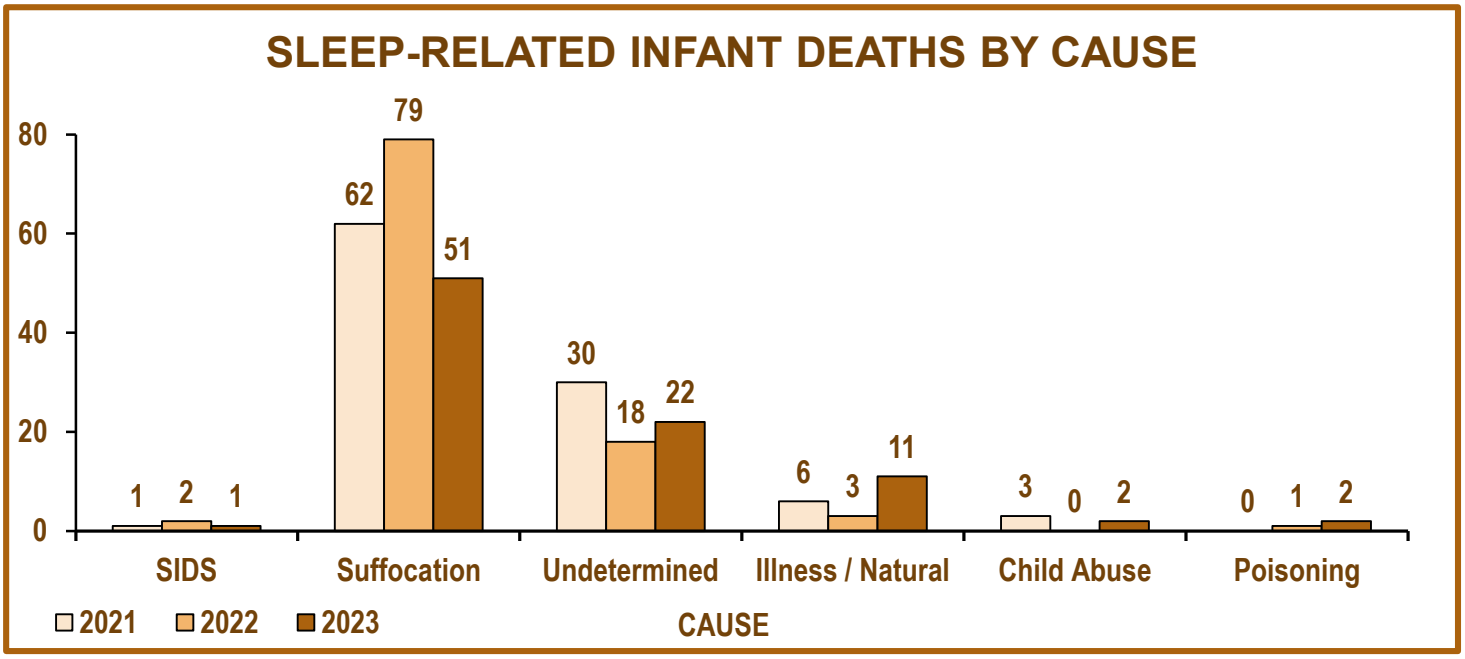
In 2023, of all infants who died from non-medical causes, **82%** were related to the infant's sleep environment. **Another way to look at it, is that we are losing one infant every two and a half days to deaths that could have been easily prevented.**

MISSOURI SLEEP-RELATED FATALITIES BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	47	41	40	White	52	66	50
Male	55	62	49	Black	41	32	31
				Asian	0	0	0
				Pacific Islander	3	1	1
				Multi-Racial	6	4	7
	102	103	89		102	103	89

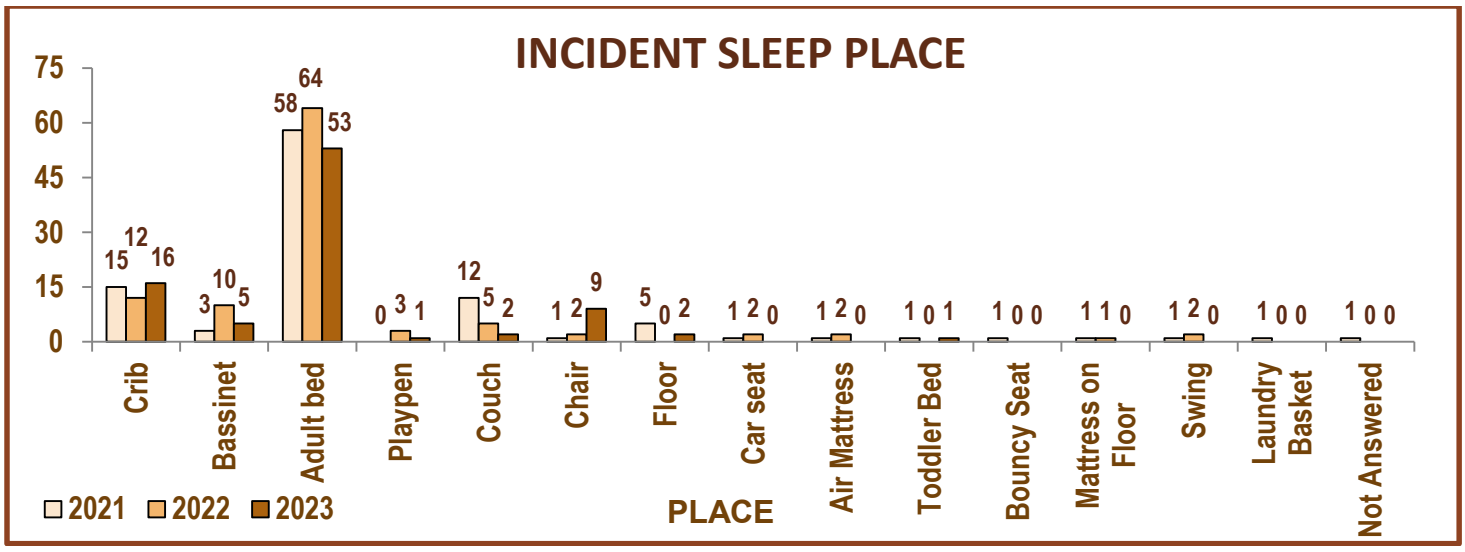


Sixty percent of the infant sleep-related deaths were determined to have been suffocation deaths by the certified child death pathologists and county panels.



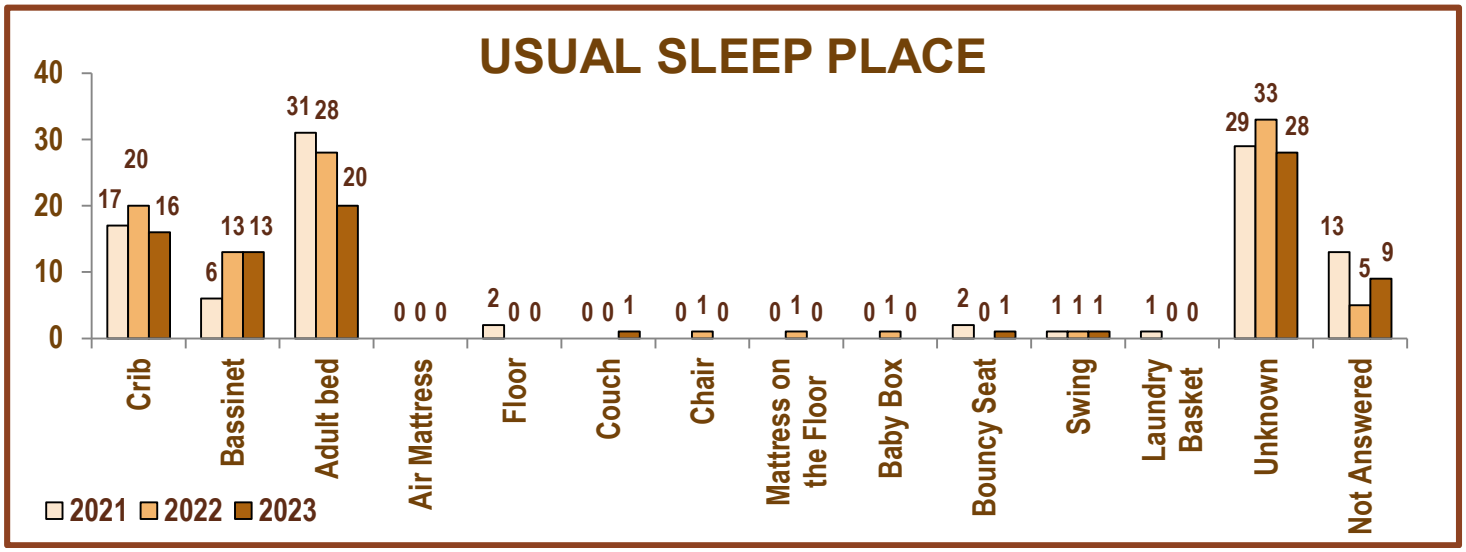
Fifty-two (58%) of all sleep-related infant deaths were known to have occurred while the infant was sleeping in an adult bed. In **42** of these deaths, the infant was sharing a sleep surface with an adult or other child. Of the other **10** deaths, **nine** died from becoming tangled in or face down into pillows or thick comforters, and **one** died from wedging.

But this isn't the whole picture, because there was a total of **52** deaths where the infant was sleeping with an adult, a child or animal, but not exclusively in an adult bed. In ten of these deaths, the infants weren't sleeping in an adult bed. **Six** infants were sleeping with someone else on a sofa, **one** infant was on an air mattress with their mother and **one** infant was sharing an "infant sleeper" (almost like a cat/dog bed made for infants) with their twin, and **two** other infants were sharing their cribs with other babies.



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 40% 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.

New parents are exposed to many challenges of the safe sleep message. Their parents or other relatives may tell them 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 to 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 or sleeping with parents in bed or on a sofa. It's hard to resist these messages, especially when a parent is 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.

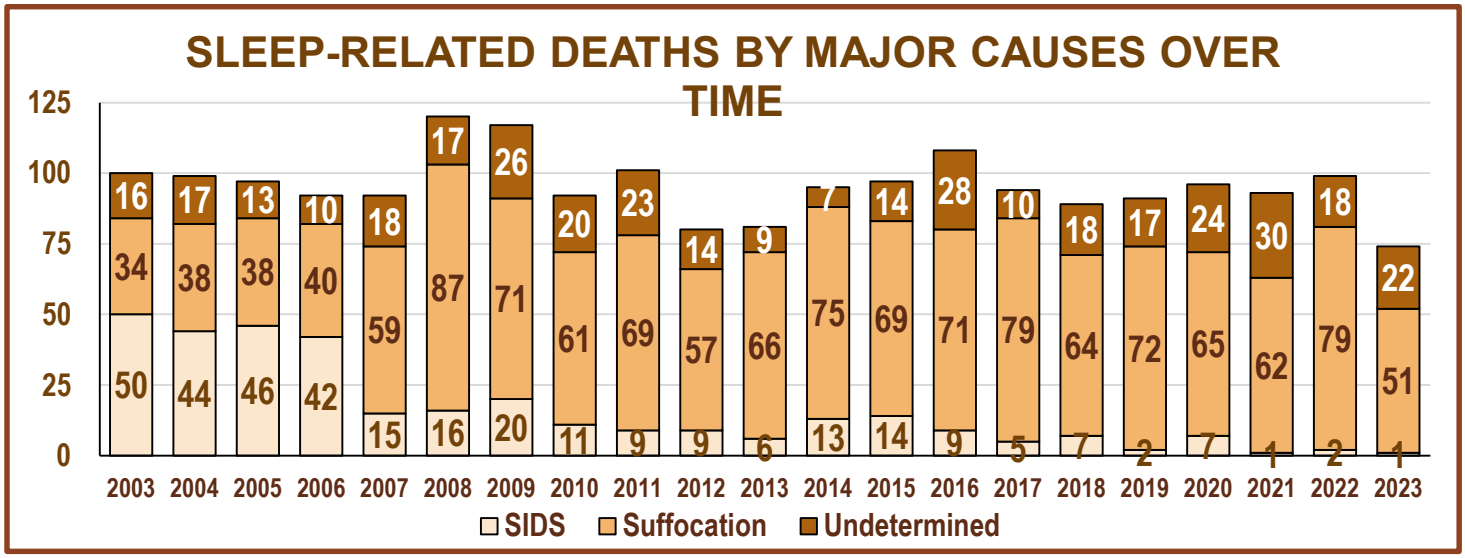


Another issue is that even when parents consistently put their child to sleep in a safe environment, other caregivers may not. A 2018 study by the University of Virginia Health System found that babies who died in their sleep were often placed in unsafe sleep positions while being watched by someone other than their parent. In Missouri in 2023 **16** of the **89** infants who died from unsafe sleep were known to

have been being watched by someone other than their parent: **five** by grandparents, **two** by a sibling, **five** by unlicensed babysitters, **two** acquaintance and **two** other relatives.

Historical Perspective

In 1993 there were 117 deaths attributed to SIDS in the State of Missouri. In that same year, four infants died from suffocation and five infant deaths were called undetermined. Due to a better understanding of the differences between SIDS and suffocation there has been a major change in the numbers by category, but there has only been a 20% drop in the total number of deaths.



NOTE: These numbers do not match the last section because this is just looking at the three major causes.

What can we do?

The safest place for an infant to sleep is alone, on their back, in a crib, and 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 Department of Social Services, the Department of Health and Senior Services and the Children's Trust Fund have created and published a flyer to help families and care providers learn what a safe sleep environment looks like: **https://ctf4kids.org/wp-content/uploads/2020/04/194048-SS-RC-FINAL-11-19.pdf**.

The ***Safe Cribs for Missouri*** program provide 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 Elementary and Secondary Education, Office of Childhood 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). For additional information about the ***Safe Cribs for Missouri*** program, visit **https://safesleep.mo.gov/dese-safe-cribs-for-missouri-program/** or call **573-526-7833** or **800-835-5465.**

SLEEP-RELATED INFANT SUFFOCATION

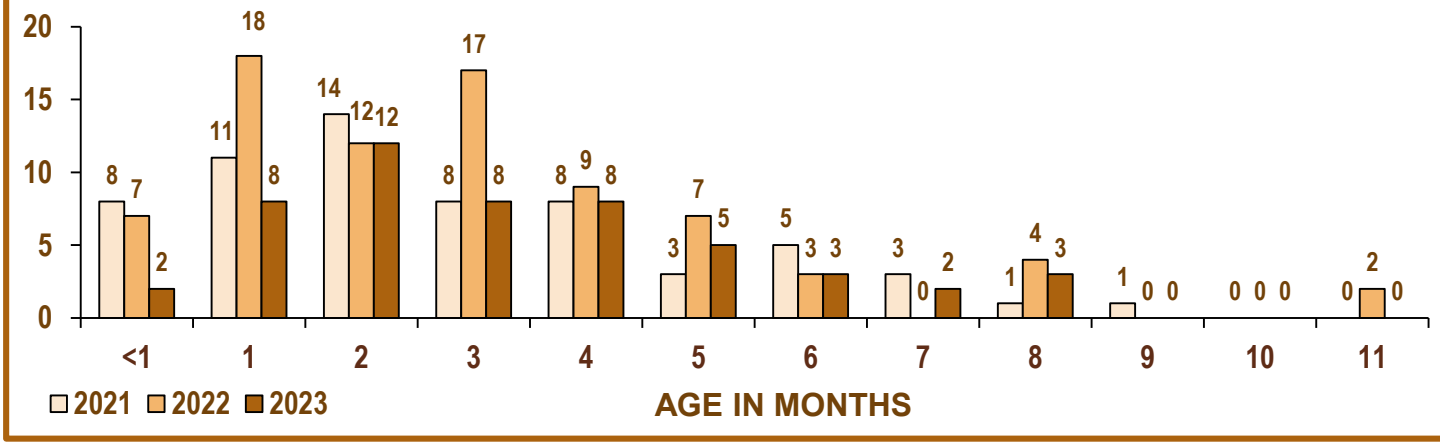
In 2023, 51 infants died from sleep-related suffocations.

Deaths by unintentional suffocation are much more prevalent among children under one year of age than in any other age range. In 2023, there were **55** total unintentional suffocation deaths, **51** of these were infants under one year of age**, all** of which were sleep-related.

SLEEP-RELATED INFANT SUFFOCATION BY SEX AND RACE

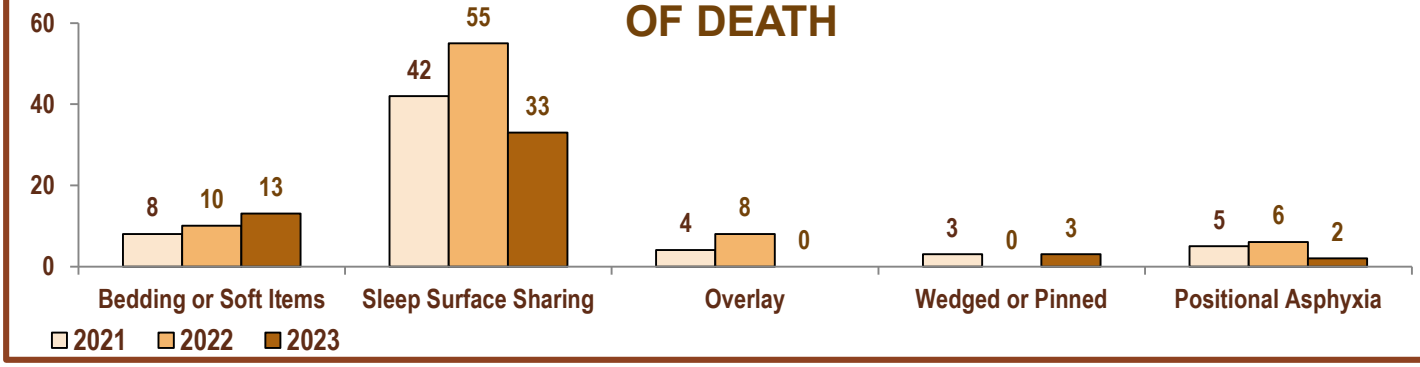
SEX	2021	2022	2023	RACE	2021	2022	2023
Female	33	31	22	White	33	50	30
Male	29	48	29	Black	25	24	17
				Asian	0	0	0
				Pacific Islander	1	1	1
				Multi-Racial	3	4	3
	62	79	51		62	79	51

SLEEP-RELATED INFANT SUFFOCATIONS BY AGE IN MONTHS



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

SLEEP-RELATED INFANT SUFFOCATIONS BY CAUSE OF DEATH

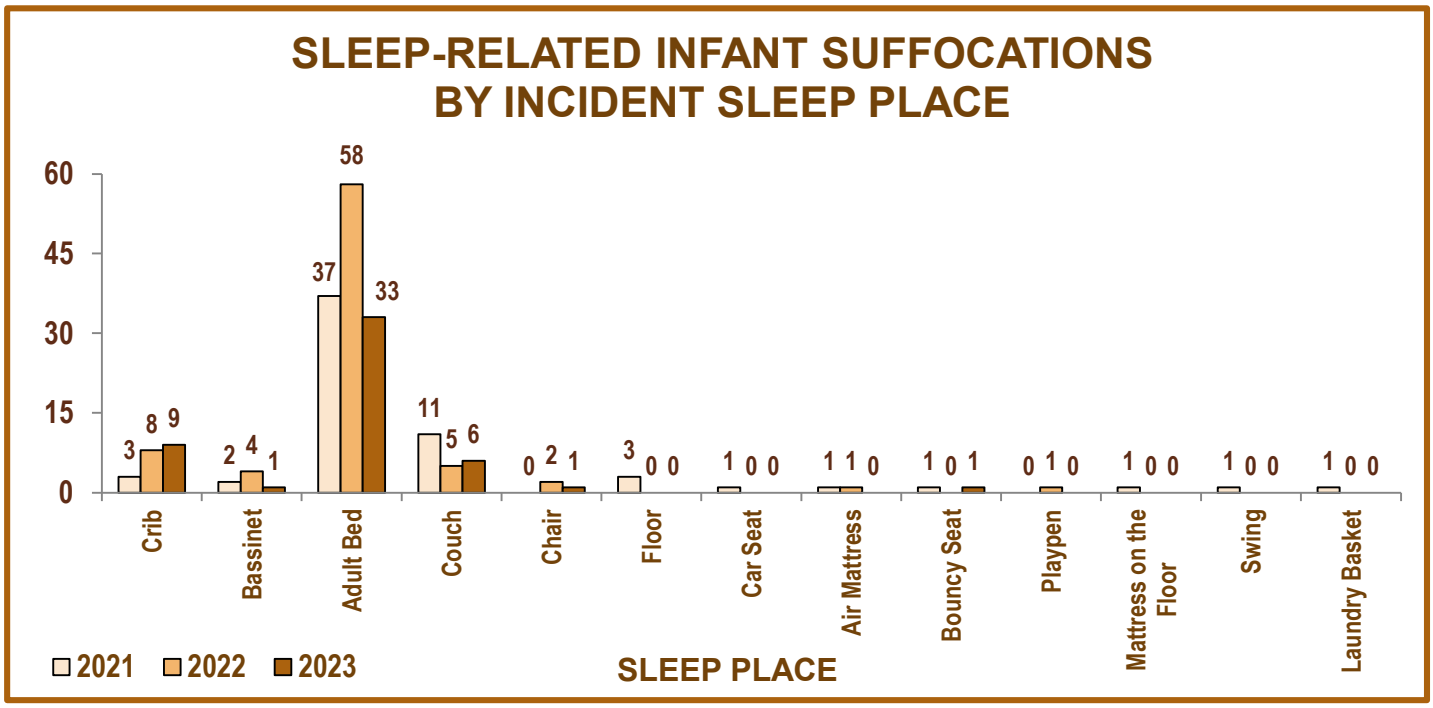


Accidental suffocation and strangulation in bed is the leading cause of infant injury deaths. There are several possible mechanisms which can cause sleep-related suffocations in infants, i.e., suffocation by soft bedding, overlay, wedging or entrapment.

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 they were overlying the infant when they awoke; or 2) the observations of another person. While there were **34** deaths where the child was sleeping with another person, none of them were determined to be overlay.

Thirteen infants died due to soft bedding; **seven** were in their cribs with blankets and/or pillows, **one** was placed to sleep in a bassinet, with a heavy blanket; **four** were on adult beds with blankets and pillows, and **one** was wrapped tightly in a blanket and placed face down on a sofa.

In **two** infant suffocations there was not enough information from the panel as to the child's location at the time of death. These deaths were listed as positional asphyxia on the death certificates, so that is the category we are leaving them in.



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, bassinet 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 (Moon, 2021). 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 **51** infants under one year of age that died of unintentional suffocation, **33** were sharing a sleep surface with one or more individuals; **27** of them were sleeping in an adult bed; **five** were sleeping on sofas; and **one** was sharing a crib with another child.

Risk Factors

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 (U.S. DHHS)

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

SLEEP-RELATED UNDETERMINED

In 2023, there were 22 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" (Miniño).

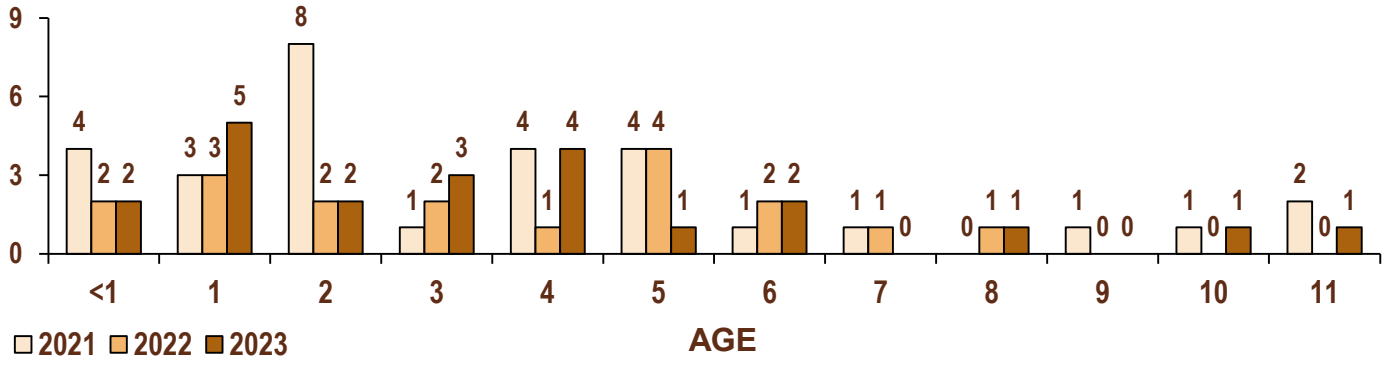
The Differences between Undetermined and SIDS Fatalities are:

- Sudden Unexpected Infant/Child Death (SUID/SUCD) covers deaths which were caused by many factors of which Undetermined and SIDS are just two. Other 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 conducted.

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

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	11	8	13	White	16	13	11
Male	19	10	9	Black	11	5	9
				Pacific Islander	2	0	0
				Multi-Racial	1	0	2
	30	18	22		30	18	22

MISSOURI SLEEP-RELATED DEATHS OF UNDETERMINED CAUSE AND MANNER BY AGE IN MONTHS



SUDDEN INFANT DEATH SYNDROME

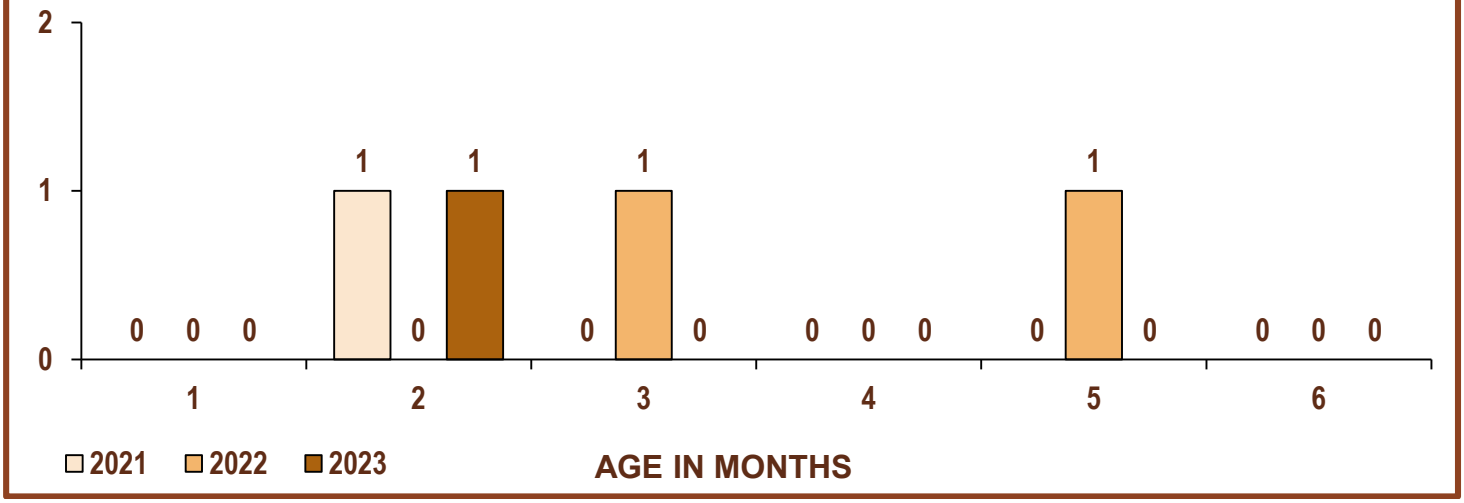
In 2023, one Missouri infant fatality was classified as Sudden Infant Death Syndrome (SIDS).

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 percent of infant fatalities classified as SIDS occur within the first six months of life, peaking at two to four months (Duncan, et al, 2018). 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	2021	2022	2023	RACE	2021	2022	2023
Female	0	1	0	White	1	1	1
Male	1	1	1	Black	0	1	0
	1	2	1		1	2	1

SIDS FATALITIES BY AGE



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. A study published in the Journal of Neuropathology & Experimental Neurology found that the brains of infants who die of SIDS have an abnormality in the part of their brain associated with arousal and autoresuscitation, which protects the child's brain oxygen status during sleep. When the brain of an infant without this abnormality detects low oxygen, it causes the child to move and gasp in air. A child with this abnormality does not react that way. (Haynes et al., 2023)

According to the National Institutes of Health, "most SIDS deaths occur in babies between 1 and 4 months of age," (*SIDS by Baby's Age Infographic (Text Alternative)* | *Safe to Sleep*®, n.d.) but this study has found a significant change to this in premature babies. The new study indicates the number of weeks from conception determines the most dangerous time for SIDS deaths rather than the number of weeks from birth. In other words, an infant born 2 months early will have their greatest risk between 3 and 6 months of age. (Haynes et al., 2023)

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 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.

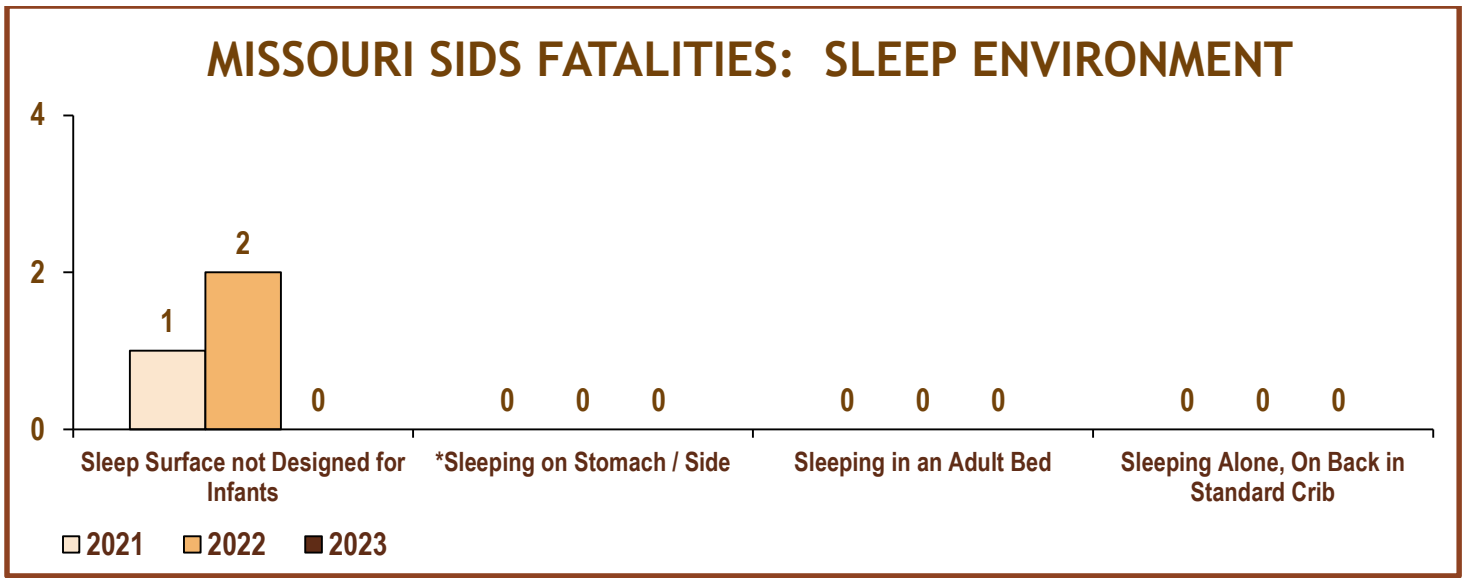
NOTE: Some manufacturers have made claims that their baby products will prevent or reduce the risk of SIDS. The FDA has never cleared or approved any devices to prevent or reduce the risk of SIDS. No scientific evidence has demonstrated that SIDS can be prevented using a positioner or other device; in fact, positioners have been found to increase the chance of infant suffocation (FDA). The **one** child who died of SIDS in 2023 was asleep in a bassinet which contained a sleep positioner.

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
- Fewer than 18 months between births
- Mother younger than 18
- Prenatal smoking
- Multiple births
- Late or no prenatal care
- Alcohol and substance use

Many deaths attributed to SIDS occur when children are found in potential high-risk environments from which they 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 most 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.



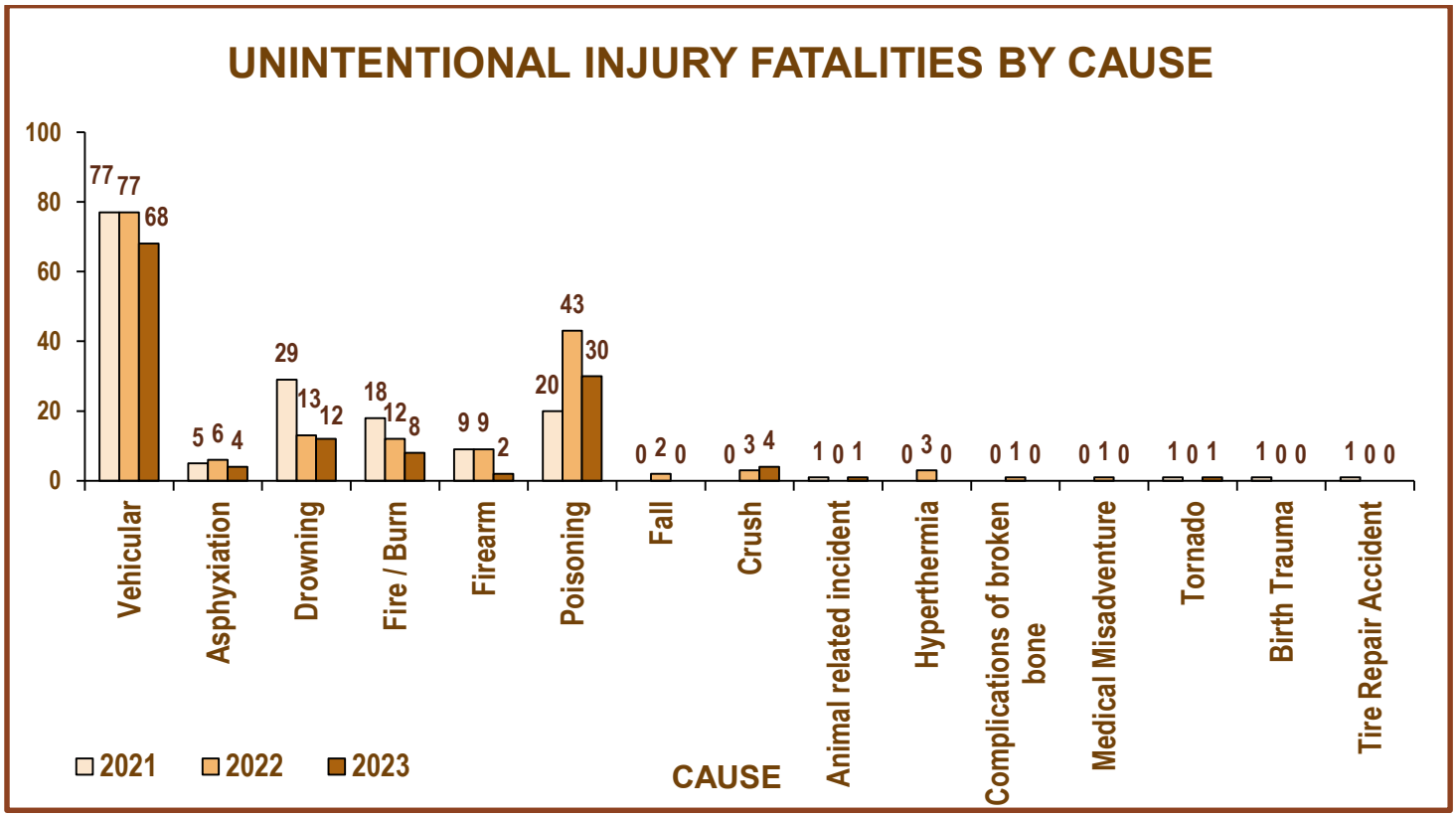
*NOTE: There is no information available on the child's sleeping position in the one 2023 SIDS death.

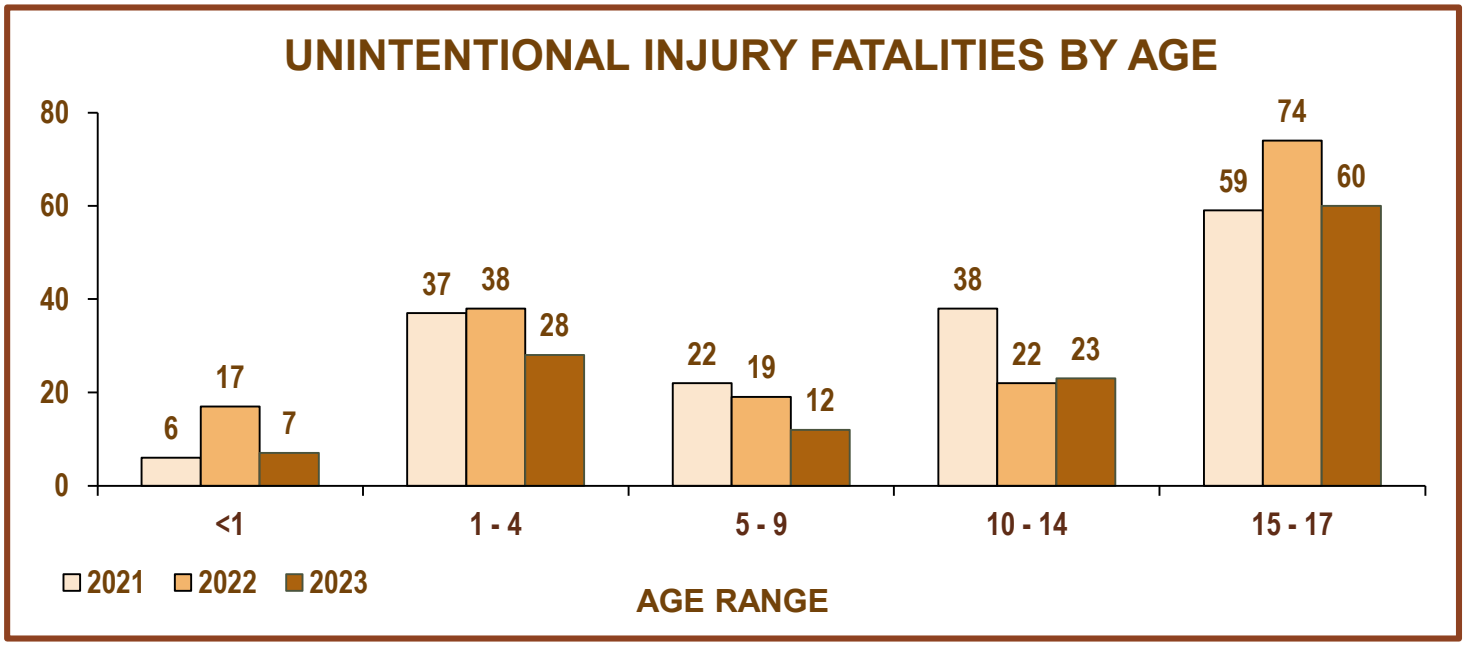
The safest place for an infant to sleep is in a standard crib with a fitted sheet, on their back, without soft bedding or toys of any kind. The **one** infant who died of SIDS in 2023 was asleep in a bassinet, but there was a sleep positioner in the bed.

UNINTENTIONAL INJURY FATALITIES

In 2023, there were 130 unintentional injury fatalities that do not fall under infant sleep-related suffocation deaths.

There were a total **181** unintentional injuries in Missouri in 2023, a significant drop from last year. **Fifty-one** of those deaths were addressed in the prior sleep-related section. Of the remaining, the leading causes of death are vehicular at **68**, poisoning at **30** and drowning at **12**.





UNINTENTIONAL INJURY FATALITIES BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	59	55	48	White	131	120	92
Male	103	115	82	Black	24	43	32
				Asian	0	1	2
				American Indian	0	1	0
				Native Hawaiian	1	0	0
				Pacific Islander	0	1	0
				Multi-Racial	6	4	4
	162	170	130		162	170	130

Unintentional Versus Accidental

The CFRP was implemented to identify the causes of child fatalities and strategies more accurately 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 unintentional 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.

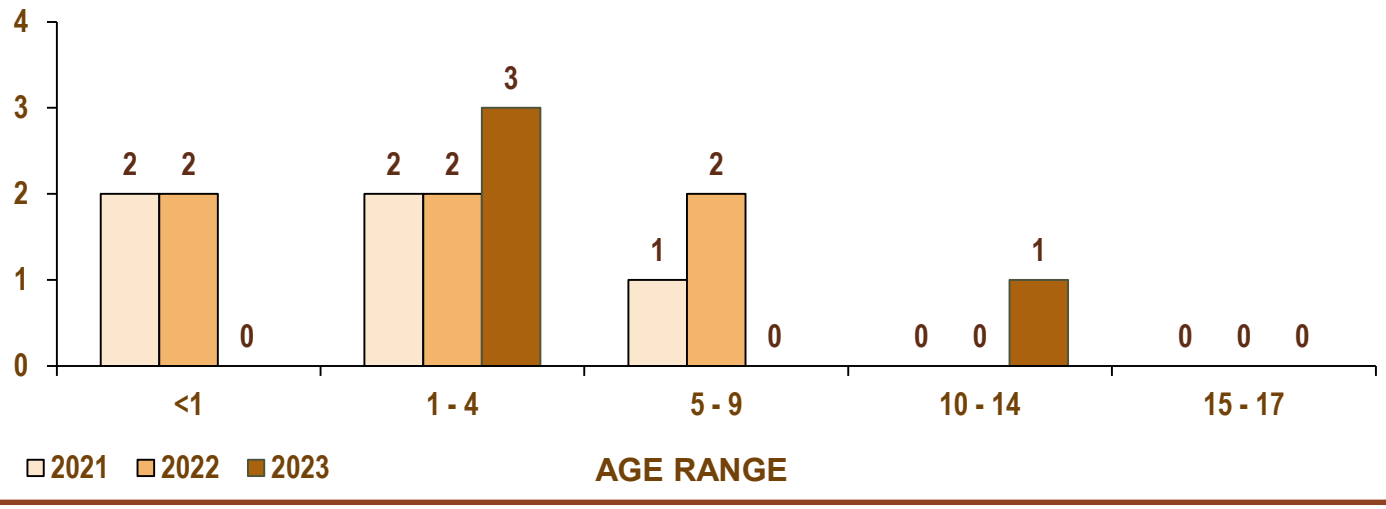
Leaving small children (less than six years of age) unsupervised around water or moving vehicles or allowing them to ride in the back of pickup trucks or on ATV's, allowing them to get their hands on firearms, letting them get hold of poisons, drugs or choking hazards, and placing babies in unsafe sleeping environments, are all ill-advised; yet, these actions resulted in the deaths of **85** children in 2023. Some people believe that vehicular crash deaths (a more appropriate term) cannot be prevented, but appropriate road signage/maintenance, following laws, avoiding distractions, giving kids driver education, and correctly using seatbelts and child safety seats save lives.

ASPHYXIATION

There were four non-infant-sleep-related asphyxiations in 2023.

There was a total of **55** unintentional suffocation deaths in 2023. **Fifty-one** asphyxiation deaths were discussed in the prior sleep-related infant death section.

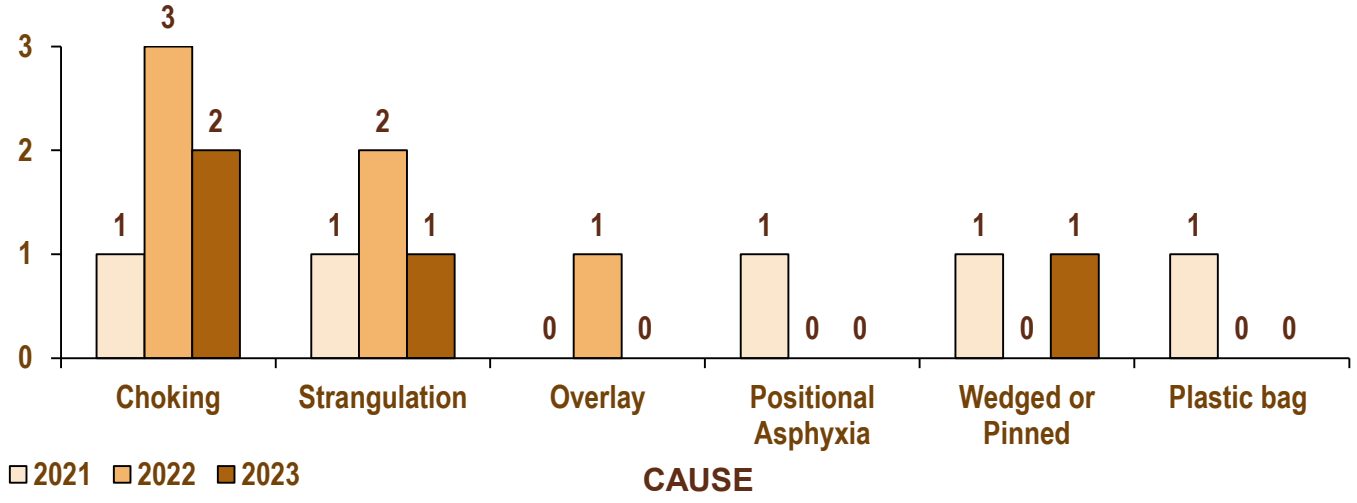
ASPHYXIATION BY AGE



ASPHYXIATION BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	0	4	2	White	3	5	4
Male	5	2	2	Black	2	1	0
				Multi-Racial	0	0	0
	5	6	4		5	6	4

ASPHYXIATION BY CAUSE



The pattern of deaths by unintentional suffocation differs by age. Infants usually die from sleep-related suffocations or choking on something they put in their mouth. They are also subject to wedging, getting themselves into places they don't have the strength to get themselves out of. In 2023 there was **one** infant who died from choking on a foreign object and **one** from getting their head wedged between a cushion and the edge of their crib.

Toddler deaths are often related to choking; entanglement or wedging. 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 (Child Safety Protection Act, 1994). To address asphyxiation 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. **One** three-year-old was strangled by a window blind cord.

Unintentional suffocation deaths in older children are often related to circumstances associated with choking, aspiration and/or strangulation. In 2023, **one** pre-teen died from choking on a bite of food.

MOTOR VEHICLE FATALITIES

There were 68 unintentional vehicle fatalities in 2023.

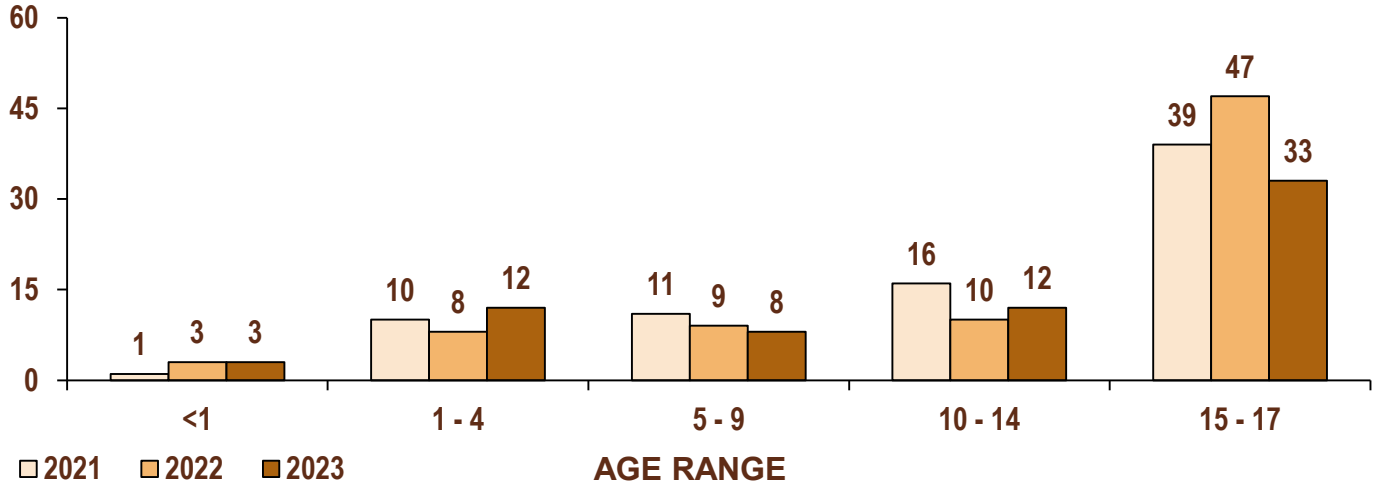
- Fifty-nine percent of the children who died from vehicle crashes were teenagers.
- Drivers made up 47.5% of teens who died from vehicle crashes, 42.5% were passengers, 7.5% were pedestrians and 2.5% the position could not be determined.
- Sixty-three percent of teens who died from vehicle crashes were male, and 37% female. Of the demographic 80% percent were White, and 20% were Black.
- Seventy-five percent of teen drivers and passengers were known to be unrestrained at the time of the crash, and another 10% were marked as unknown.

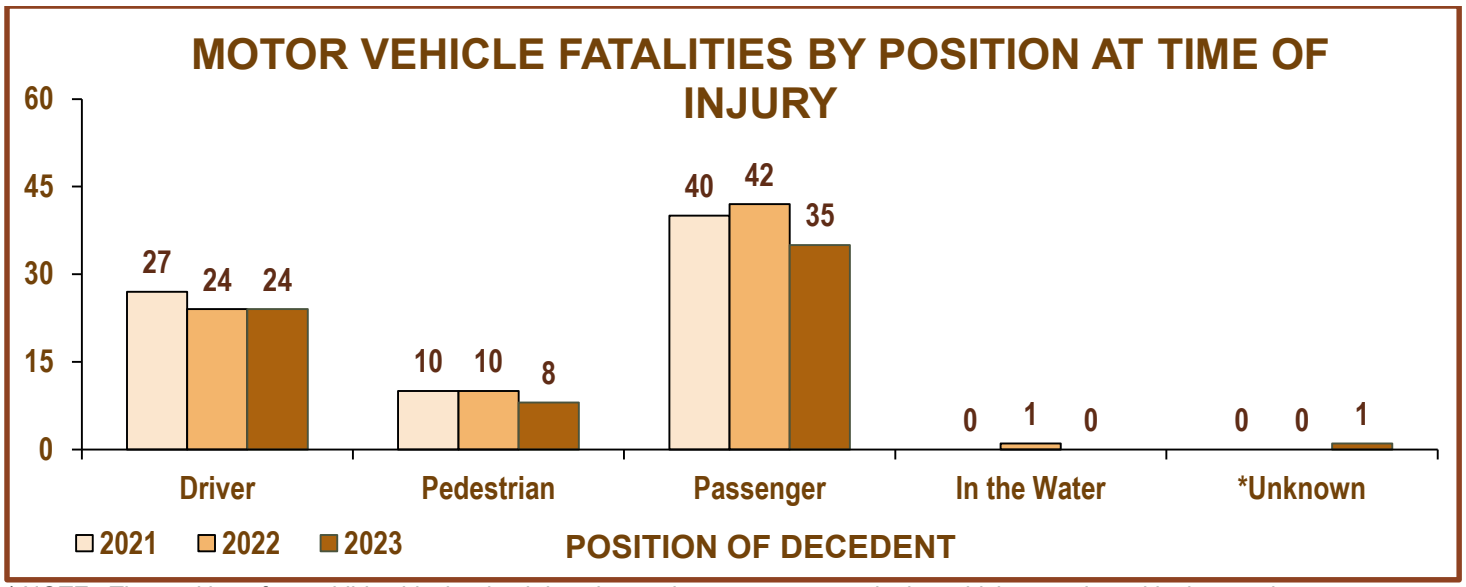
For the past six years, unintentional vehicle crashes have been the second leading cause of injury deaths for children. Motor vehicle fatalities include drivers and passengers, pedestrians who are struck, bicyclists, and occupants in any other form of transportation, including airplanes, boats, trains, and all-terrain vehicles. All **68** unintentional motor vehicle deaths were reviewed by local CFRP panels.

MOTOR VEHICLE FATALITIES BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	32	21	25	White	63	61	52
Male	45	56	43	Black	11	14	13
				Asian	0	0	2
				Native Hawaiian	1	0	0
				Multi-Racial	2	2	1
	77	77	68		77	77	68

MOTOR VEHICLE FATALITIES BY AGE





* NOTE: The position of one child vehicular death is unknown because everyone in the vehicle was ejected in the wreck.

Most vehicle crashes occur due to the actions of one or more persons, be it recklessness, impaired driving, inattention, or simply inexperience. In 2023, the number one cause of motor vehicle accidents was speeding, followed closely by recklessness.

CAUSE OF INCIDENT *			
SPEEDING	24	VEHICLE ROLLOVER	14
RECKLESSNESS	23	POOR SIGHT LINE	4
DRUG USE	7	POOR WEATHER	2
ALCOHOL USE	6	CAR CHANGING LANES	3
COMBINED DRUG AND ALCOHOL USE	8	POOR VISIBILITY	2
UNSAFE SPEED FOR CONDITIONS	16	BACK OR FRONT OVER	2
DRIVER INEXPERIENCE	15	OTHER CAUSES	1
DRIVER DISTRACTION	16	RACING	1
DRIVER ERROR	4	RAN A RED LIGHT	1
CELL PHONE USE	4	NOT ANSWERED	13
CARELESSNESS	23		

TYPE OF VEHICLES	
CAR	27
TRUCK	8
VAN	3
ATV / UTV	11
SUV	9
MOTORCYCLE	4
HORSE-DRAWN BUGGY	1
SEMI TRUCK	2
TRAIN	1
TRACTOR	2

LOCATION OF CRASH*	
HIGHWAY	19
RURAL ROAD	28
CITY STREET	12
FRONT YARD OF PROPERTY	1
OFF ROAD	4
DRIVEWAY	2
INTERSECTION	1
WORKPLACE	1
PARKING AREA	1
TRAIN TRACKS	1

ROAD CONDITION			
NORMAL	52	WET	2
SNOW	1	UNKNOWN	4
LOOSE GRAVEL	2	NOT ANSWERED	7

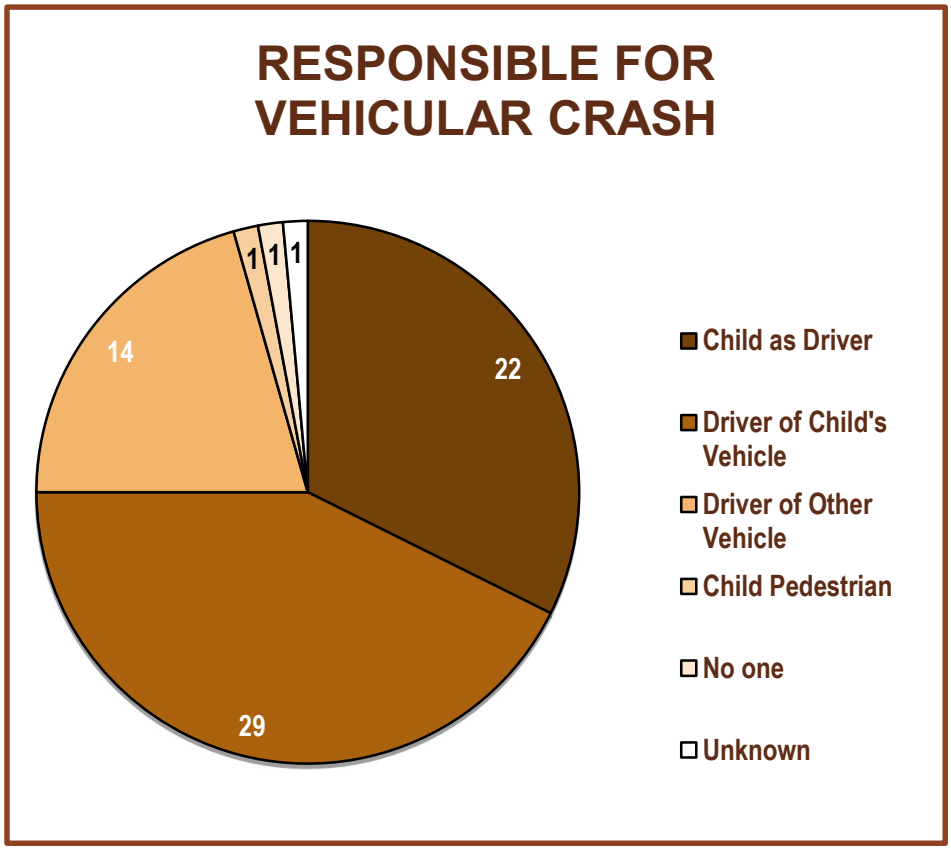
RESTRAINTS						
NOT APPLICABLE (PEDESTRIANS AND HORSE DRAWN BUGGY)						9
HELMETS (MOTORCYCLES, ATVS AND UTVS)	YES	1	NO	14		
FARM VEHICLE	YES	0	NO	1		
**PASSENGER VEHICLE – AGE 6 AND UNDER	YES	3	NO	8	NOT ANSWERED	1
PASSENGER VEHICLE – AGE 7 AND OVER	YES	7	NO	21	UNKNOWN	3

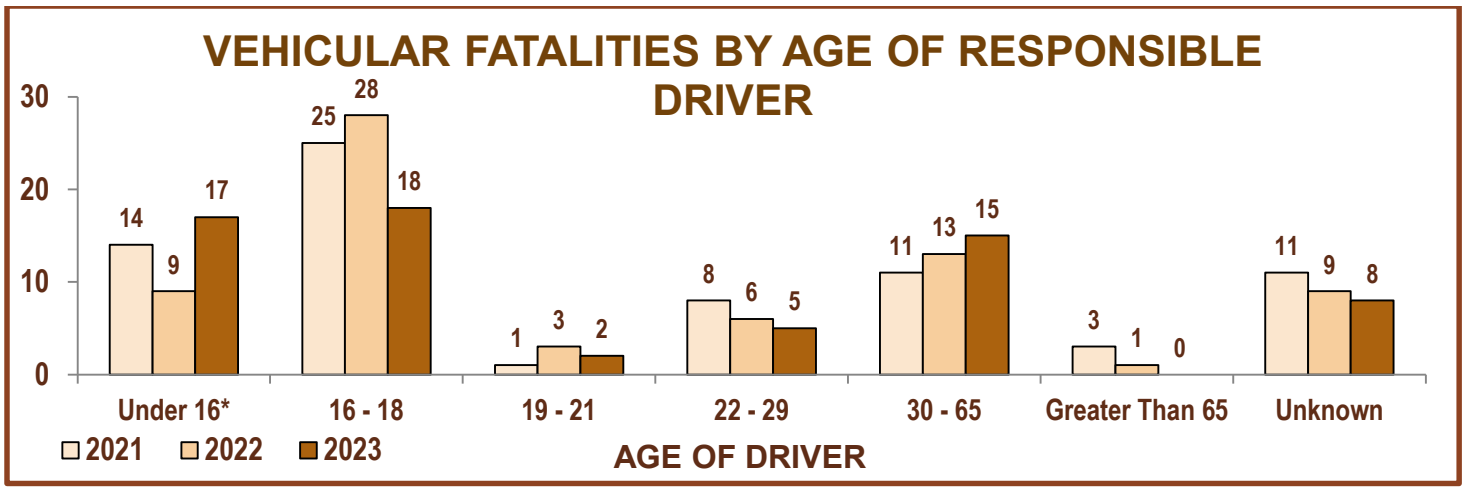
* A single crash may be the result of multiple causes and/or environmental conditions and as such, will have a total greater than the overall number of deaths

** Because there is no there's no specific age when a child is ready to move from a car seat to a booster seat, we have combined the children who should have been in car seats or boosters. Small children may need to stay in boosters past age 6 but it is a good cut off point.

Of the **68** reported motor vehicle fatalities, the driver of the child's vehicle was responsible for **65** of the crashes; **22** were caused by the teen/child as driver (note this includes the operators of ATVs and UTVs); and **14** were caused by the driver of another vehicle. There were **three** vehicular deaths where no "responsible driver" was found. **One** death was a pedestrian who, through their own actions, caused the accident that took their life. In **one** case the panel ruled no one was responsible and in the last death it is unknown if the child as driver or the child's driver was responsible as they were both ejected from the vehicle.

As compared to other drivers, a higher proportion of teenagers are responsible for their fatal crashes because of their own driving errors (Teen Driving, 2020). Of the **65** motor vehicle fatalities in which a driver was determined to be responsible for the accident, **35** were age 21 or younger, of which **18** were between 16 and 18 years old and **17** were below 16 years of age.





* This category includes drivers of ATVs and UTVs as well as underage and unlicensed drivers.

Driver and Passenger Fatalities

Of the **68** reported motor vehicle child fatalities in 2023, **59** involved drivers or 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 **26** of the **35** child passenger fatalities were known to be riding unrestrained. **Sixteen** of the **35** child passenger fatalities were under age five and **10** 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. This year the data seems to indicate that restraints were simply not used as 63% of the passengers under 5 were known to be unrestrained.

Of the **59** children who died while either driving or riding in a motor vehicle, **44**, or 75%, were known to be unrestrained at the time of the crash.

Of the **68** reported unintentional motor vehicle fatalities, **21** involved either a victim or a driver who was impaired. **Sixteen** children died because the driver of their vehicles was impaired. **Four** children died because they themselves were driving impaired and **one** child died where we do not know if they were a driver or passenger, but both people in that vehicle were impaired.

Teen drivers need time to develop driving skills. To help with this, Missouri has a Graduated Driver 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 **18** child fatalities in vehicle crashes that involved inclement weather and/or driving at unsafe speeds for road conditions. Educating teens on defensive driving can save lives. This includes education on 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.

Distracted driving is any activity that takes a person's attention away from the task of driving, be it eating, changing a radio station, or texting. As texting requires visual, manual, and cognitive attention from the driver, it is by far the most alarming distraction. Missouri has just passed a hands-free driving law which

prohibits all Missouri drivers from handheld cell phone use while driving. A total of **16** drivers were listed as being distracted while driving in 2023, **four** of these children were on their phones.

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, 46.4% of high school participants in the 2023 Youth Risk Behavior Survey indicated that they did not always wear a seat belt. (*Youth Risk Behavior Survey | CDC*, n.d.)
Fifteen percent of the participants admitted that within the last 30 days, they had ridden with a driver who had been drinking, and 4.2% of them said that they had driven while drinking within the same timeframe.

Seatbelts can reduce the risk of fatal motor vehicle injury by as much as 45% (Policy Impact, 2011). In 2023, there were **33** teenagers, age 15-17, that died in motor vehicle crashes; **14** were passengers, **16** were drivers, and **2** were pedestrians. **One** teen died in a crash where we do not know if the child was diving or not. Of the **31** teen driver and passenger deaths, **28** were known to be unrestrained at the time of the crash.

All-Terrain Vehicle/Utility Terrain Vehicle Fatalities

Eleven of the **68** reported motor vehicle fatalities involved all-terrain vehicles (ATVs) or utility-terrain vehicles (UTVs). 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. A UTV is a larger type of ATV designed to haul heavier loads and perhaps allow additional passengers. Most injuries associated with ATVs/UTVs occur when the driver loses control, the vehicle rolls over, or there is a crash 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. Only **one** of the **11** ATV/UTV-related child fatalities were known to have been wearing a helmet, **six** of them died from head trauma, and **five** died from blunt force trauma.

Many safety organizations recognize that children do not have the cognitive and physical abilities to drive or ride these vehicles safely. Missouri law requires that all children under the age of 18 wear helmets when riding on an ATV and states that no one under 16 is allowed to operate an ATV unless on a parent's land or accompanied by a parent. Also, passengers may not be carried with the exception being for agricultural purposes and ATVs designed to carry more than one person.

Pedestrian Fatalities

Eight motor vehicle fatalities involved child pedestrians. Of these children, **five** were less than five years old; **one** was between the ages of 10 and 14 and **two** were between 15 and 17.

- 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.

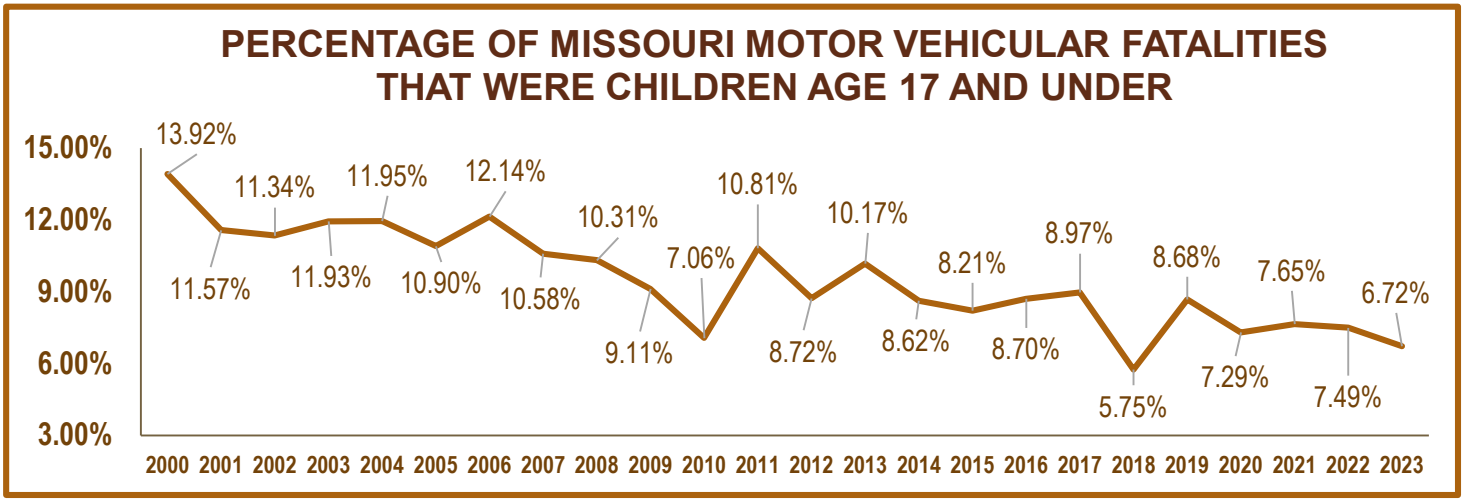
- Practical, skill-based pedestrian safety training efforts have demonstrated improvements in children's traffic behavior. Environmental modifications are also effective at reducing traffic-related pedestrian incidents.

While young children are vulnerable to pedestrian accidents due to their inexperience, teens are vulnerable due to their impulsiveness and risk-taking behavior, though younger children can be impulsive as well. In 2023. **one** 4-year-old boy died due to his own actions which put him in danger. Teens are especially in danger if they are in groups, or if they have been consuming alcohol.

Trends in Vehicular Fatalities

Since 2000, the annual number of overall vehicular fatalities in Missouri has dropped 15%. In comparison, the overall number of child fatalities from vehicle crashes has dropped by 55% in the same time frame. In 2000 almost 14% of the vehicle deaths in Missouri were of children ages 17 and under; by 2023 that had dropped to 3.72%.

There are many safety and prevention factors that have played a part in this reduction, including, but not limited to: improved passenger 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; Missouri's graduated driving law; 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.

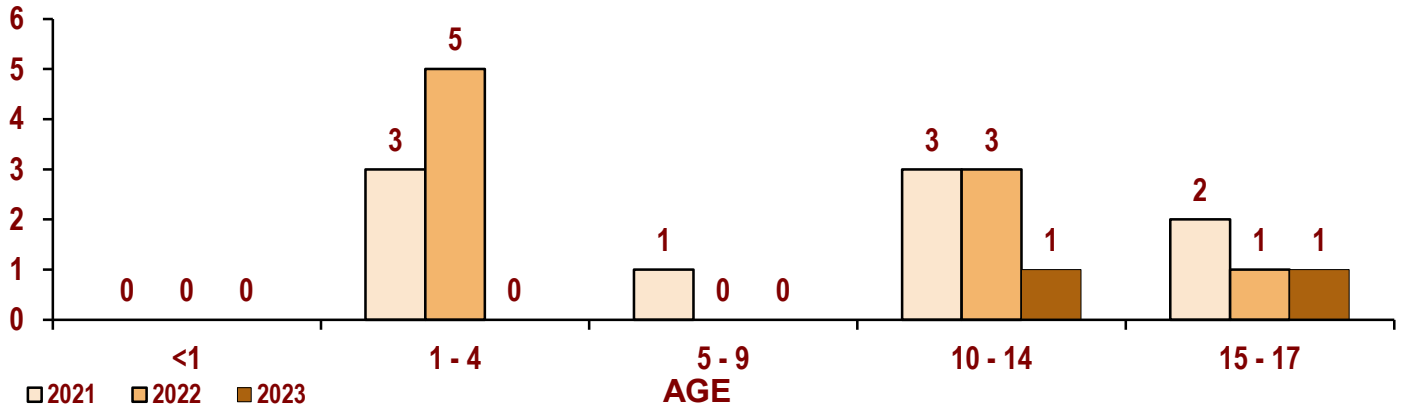
Education campaigns aimed at parents and caregivers should communicate ensuring adequate supervision when children are playing in areas near parked motor vehicles; never leaving children alone in a motor vehicle, even when they are asleep or restrained; keeping motor vehicles locked in a garage or driveway;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

FIREARM FATALITIES

In 2023, two Missouri children died of unintentional firearm injuries.

Unintentional firearm fatalities include firearm fatalities where there was an unexpected discharge of the weapon. This includes such actions as playing with the weapon, not expecting the weapon to be loaded and not identifying the weapon as not a toy. The manner of death in these incidents is **accidental** and excludes **homicide** and **suicide** firearm fatalities.

UNINTENTIONAL FIREARM FATALITIES BY AGE



FIREARM FATALITIES BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	1	2	1	White	7	4	1
Male	8	7	1	Black	1	5	1
				Multi-racial	1	0	0
	9	9	2		9	9	2

Both of the unintentional firearm deaths were from playing with a gun that the owners were unaware the child had accessed. **One** of the firearms was in a secure location but the owner was unaware the child could still access the firearm. The **single** remaining death was from a teen playing with a gun. In 2023, **both** unintentional firearm fatalites were from handguns.

Gun owners 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, accessible to children and with the safety off. In many cases, the person responsible for the child and/or firearm felt the weapon was “hidden”. Often in unintentional child firearm deaths, the “hiding” spot for the weapon is under a mattress, in a closet, or in a purse or bag. Children are curious and will notice this, meaning that the firearm is not hidden.

- Unintentional firearm deaths among children most often occur when children are unsupervised and out of school. An unsecured, unsupervised firearm and unsupervised child is a bad combination. Very small children should never be around firearms.

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 (Webster, 2001).

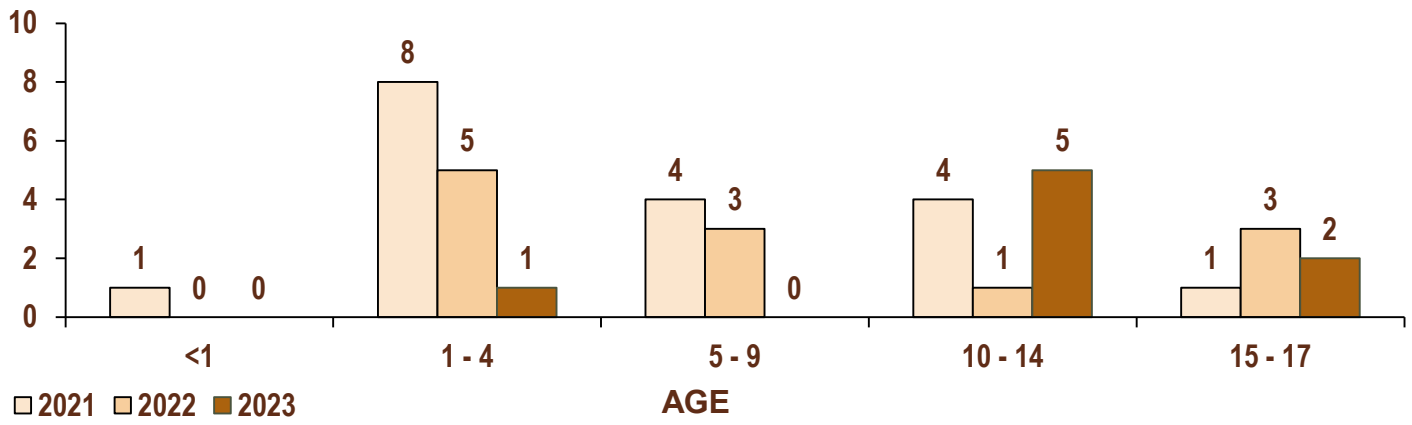
FIRE/BURN FATALITIES

In 2023, there were eight unintentional fire/burn deaths from six fires.

Fire/Burn Fatalities among Children

Four of the eight fire/burn fatalities were male and **four** were female. Only **one** of the fire/burn fatalities, was age four or younger. Young children have a less acute sense of danger or understanding of how to react to a fire quickly and properly or a 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. **All** of the fire/burn incidents were fire related. 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

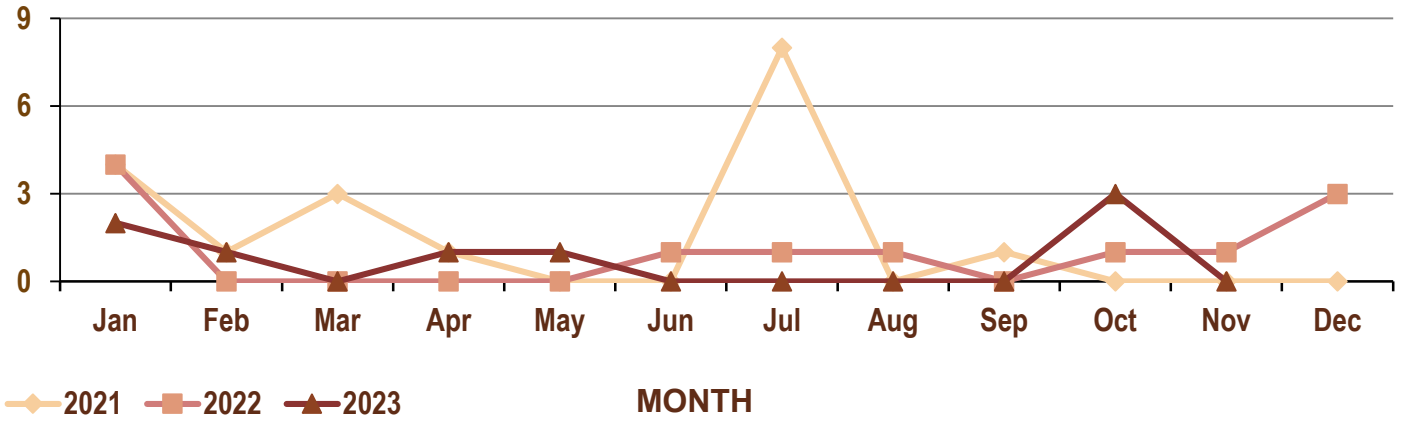


FIRE / BURN FATALITIES BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	7	6	4	White	16	9	8
Male	11	6	4	Black	2	3	0
	18	12	8		18	12	8

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, this due to the types of winter heating used, fire response times and distance to care facilities. (*Urban, Rural and In-between - FirefighterNation: Fire Rescue - Firefighting News and Community*, n.d.) 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 (Verzoni, 2017). In 2023, **six** of the fire deaths were in rural areas.

FIRE/BURN FATALITIES BY MONTH OF DEATH



Of the **seven** fatal structural fires reviewed, **none** were indicated to have smoke detectors. 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 injuries. Two-thirds of residential fires resulting in child deaths occur when a smoke detector is either not working or not present (CPSC). Having a working smoke detector is very important in reducing the chance of dying in a fire by nearly half. The U.S. Fire Administration through FEMA has information on types of smoke detectors, placement of the unit and maintenance schedules.

One was caused by an accelerant being poured on a fire pit.

SMOKE ALARM PRESENT	
Yes	0
No	4
Unknown	3
Not Applicable	1

SMOKE ALARM IN WORKING ORDER	
Yes	0
No	0
Unknown	0
Not Applicable	8

SOURCE OF FIRE	
Space heater	1
Gasoline	1
Wiring	4
Unknown	2

STRUCTURE	
Single Home	6
Trailer / Mobile Home	1
Not Applicable	1

WAS STRUCTURE A RENTAL PROPERTY	
Yes	1
No	6
Not Applicable	1

MULTIPLE CHILD DEATH FIRES	
Yes	3
No	5

FIRE STARTED BY PERSON	
Yes	1
No	5
Unknown	2

AGE OF PERSON STARTING FIRE	
Age	# of Deaths
17-year-old	1
Not Applicable	7

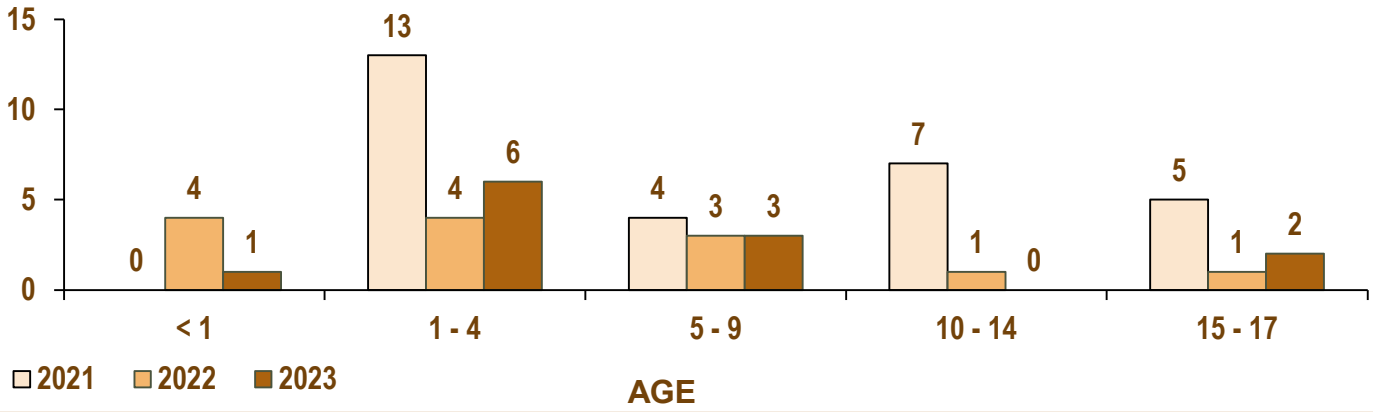
HISTORY OF SETTING FIRES	
Yes	0
No	0
Unknown	1

DROWNINGS

In 2023, 12 children drowned in Missouri.

Drowning is the process of experiencing respiratory impairment from submersion or immersion in liquid. According to the CDC, (Centers for Disease Control and Prevention, 2021), drowning kills more children aged 1-4 than any other unintentional cause and of ages 5-14 is second only to motor vehicle accidents. The CDC ranks Missouri, 1.42, slightly above the national average of 1.31 deaths per 100,000 people. Males are traditionally much more likely to die from drowning than females. Of the **12** children who drowned in Missouri, **seven** were age four and under, **three** were age five to nine, and **two** were age 15-17.

UNINTENTIONAL DROWNING DEATHS BY AGE

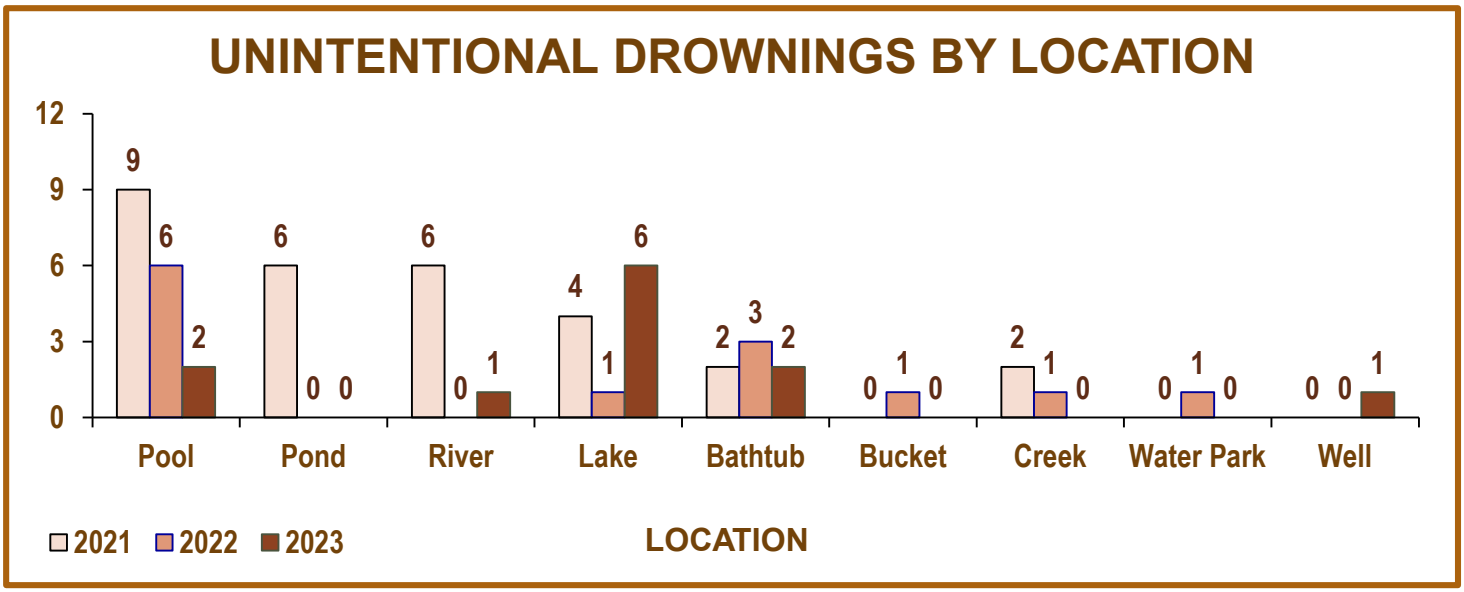


DROWNINGS BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	6	6	4	White	25	10	9
Male	23	7	8	Black	4	2	2
				Asian	0	1	1
	29	13	12		29	13	12

Young children can drown in as little as one inch of water; therefore, they are at risk of drowning in wading pools, bathtubs, 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 themselves when headfirst in a toilet or bucket. Vigilant supervision when bathing and removal of any items holding water in the child's area is recommended.

Older children are more likely to drown in open water locations such as creeks, lakes and rivers. Of the **twelve** children who drowned, **two** occurred in bathtubs, **two** occurred in swimming pools, hot tubs or spas, **seven** occurred in open water locations such as lakes, creeks, rivers and ponds, and **one** child drowned from falling into a well.



Drowning Safety

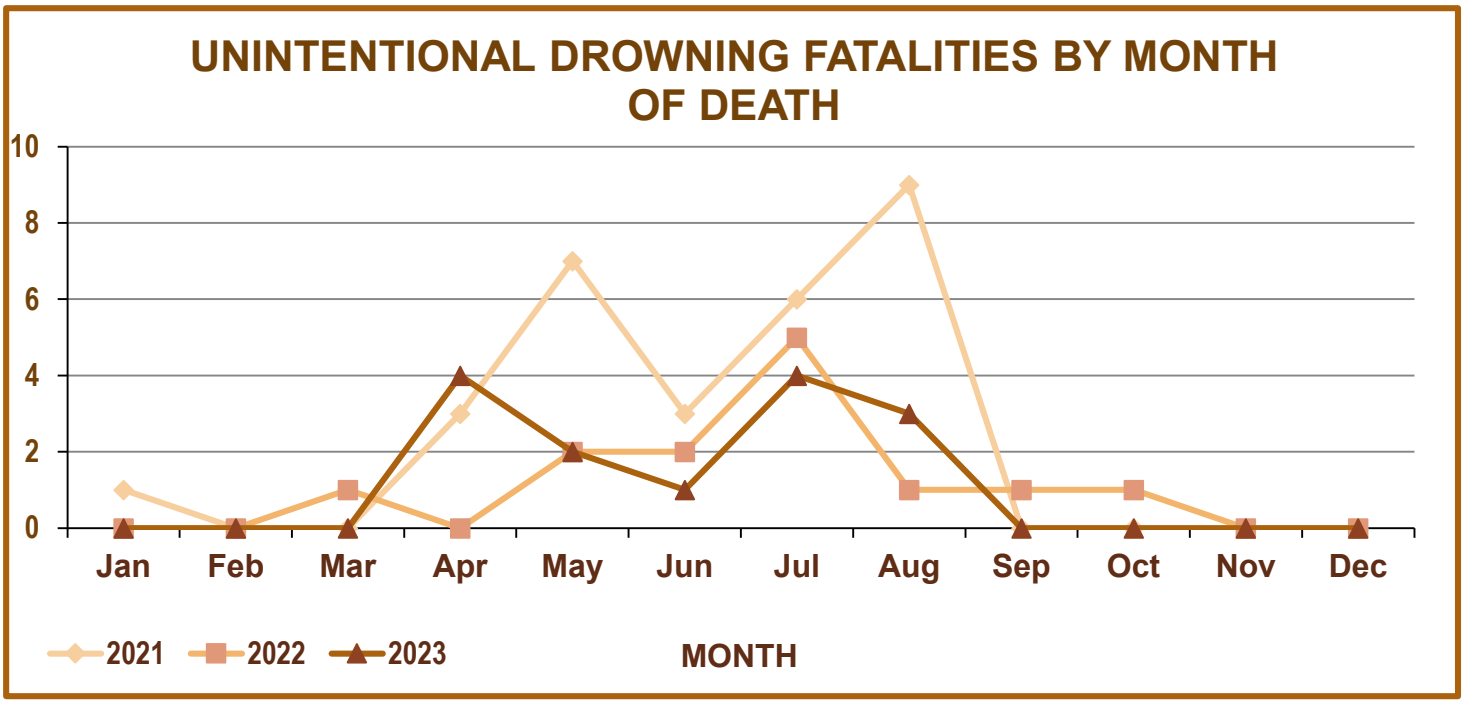
Drowning can occur quickly and silently in a matter of seconds, and typically occurs when a child is left unattended or there is a brief lapse in supervision. The amount of time it takes to send a few texts, lay out dinner, or retrieve something from the garage is all it takes. Adult supervision needs to be actively looking and listening at all times. The belief that a drowning victim will make lots of noise while thrashing around in the water, before drowning, is not accurate. This is sensationalized in TV and movies. Often times, the drowning victim is using all movements and focus in an attempt to not drown, with little to no sound or cries for help.

Bath seats, swim loungers and swim aids are **not** a substitute for adult supervision. Never leave any small child unattended in any circumstance.

Even good swimmers can drown. A cramp, an injury from water sports/diving/jumping or even swallowing water the wrong way 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 in the water and that children should never swim alone.

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, **none** of the children who drowned were 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.

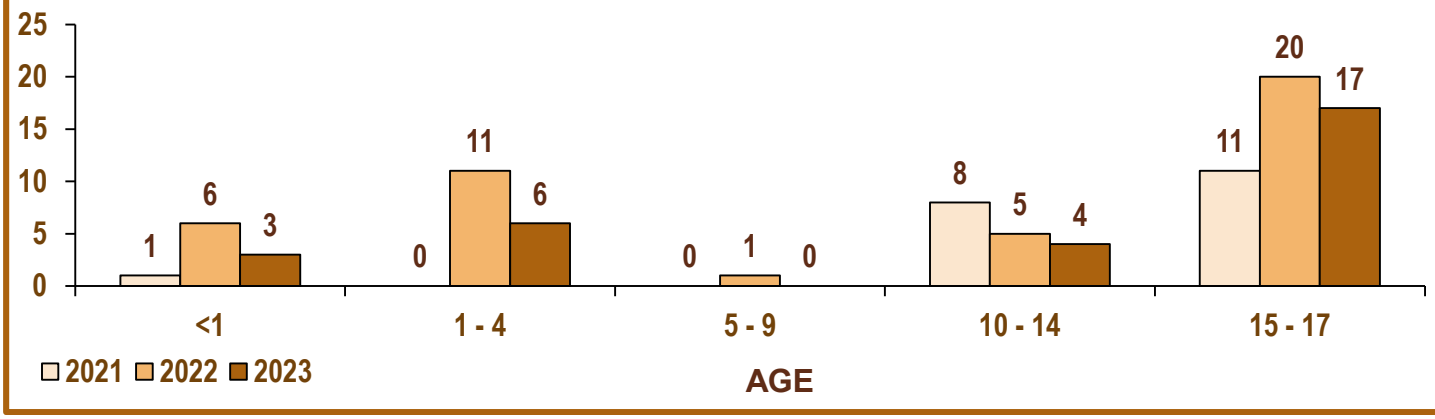

UNINTENTIONAL DROWNING FATALITIES BY MONTH OF DEATH
10
8
6
4
2
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2021
2022
2023
MONTH

POISONINGS

In 2023, 30 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, button cell batteries and water.

UNINTENTIONAL POISONING FATALITIES BY AGE



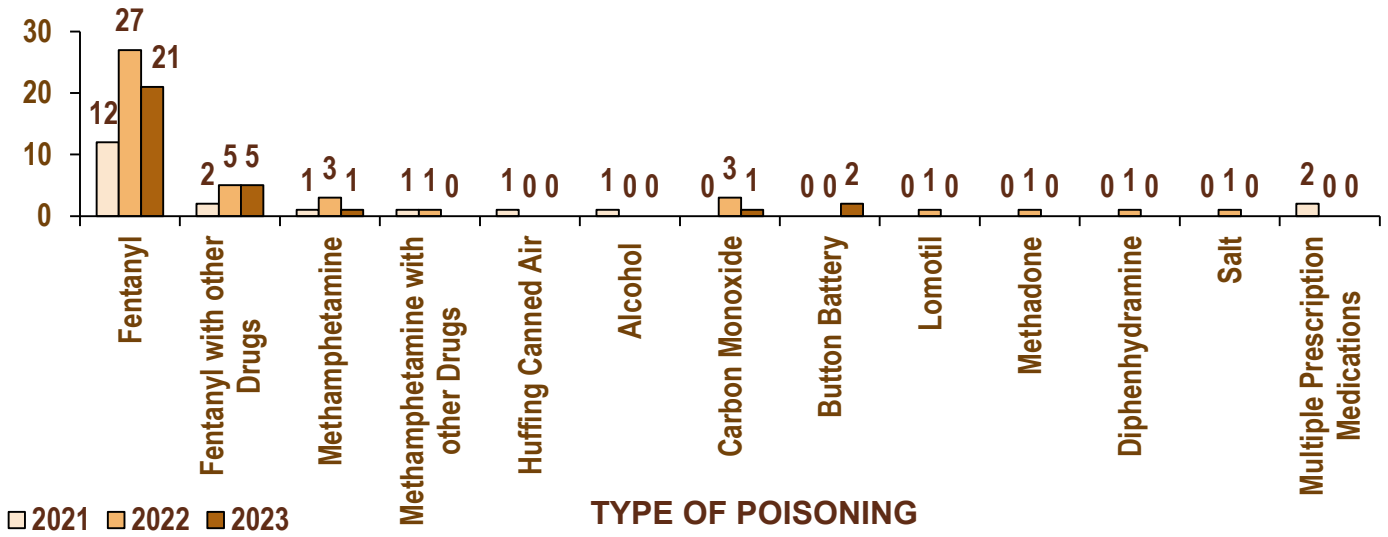
POISONING BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	11	12	9	White	14	25	15
Male	9	31	21	Black	3	15	13
				American Indian	0	1	0
				Multi-Racial	3	2	2
	20	43	30		20	43	30

In children under age five, unintentional medication overdoses are often caused by unsupervised accidental ingestion. There were **nine** children ages 5 and under, that died of poisoning in 2023. **Seven** died from fentanyl or fentanyl with other drugs, and **two** died from ingesting button batteries.

Twenty-one teens died of unintentional poisoning in 2023, **19** died from fentanyl or fentanyl with other drugs, **one** from Methamphetamine, and **one** from carbon monoxide.

POISONING FATALITIES BY TYPE OF POISON



In the United States, illicit drug use typically begins at junior high school age and increases through high school age (Miech, et al, 2020). According to the National Institute on Drug Abuse's Monitoring the Future Survey (MTF), almost half of all seniors (47%) have tried illicit drugs and that 22% of them had used within the last month. Alcohol use statistics are also grim, the MTF states that nearly three-fifths of 12th grade students (59%) have at least tried alcohol, and about three out of ten (29%) are current drinkers. Even among 8th graders, a quarter (25%) reported any alcohol use in their lifetime, and one in 13 (7.9%) is a current drinker (National Institute on Drug Abuse, 2020).

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.

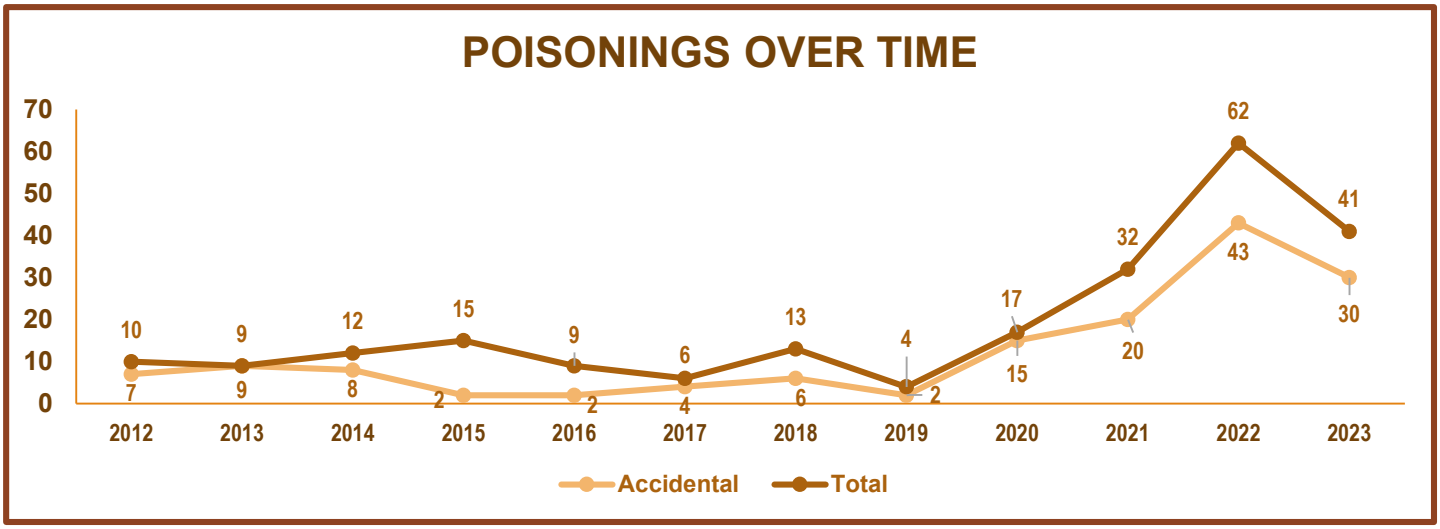
A continued poisoning issue for toddlers and young children are button cell batteries. Button cell batteries are small single celled batteries which range between 5 mm to 25 mm in diameter. The problem with these batteries is that they are easy to swallow without choking or coughing, which means unless someone sees the child 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. In 2023, **two** infants died from ingesting button cell batteries.

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 a 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.**

Historical Perspective

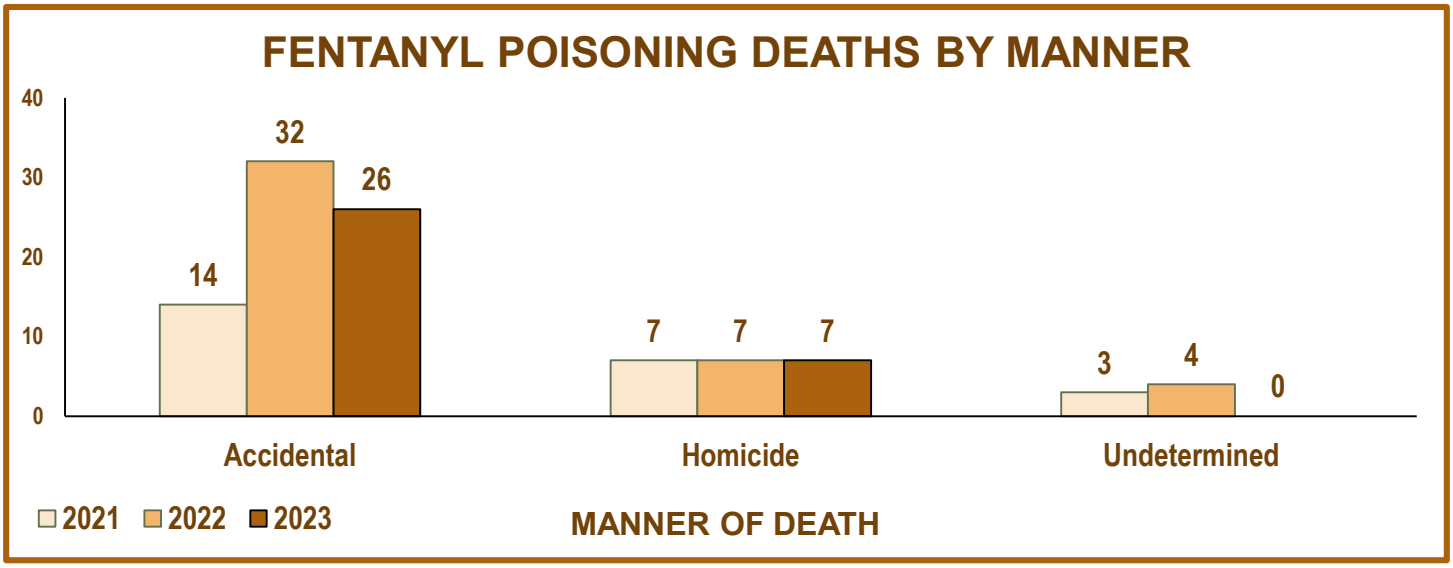
There has been an alarming increase in poisoning deaths over the last three years. For the seven years before 2020 there were an average of **11** poisoning deaths a year. 2022 saw a **563% increase** from that average. 2023 saw **a 34% reduction** from the 2022 high, but it is still significantly higher than the previous average.



POISONING – FOCUS ON FENTANYL

According to DEA Administrator Anne Milgram, "Fentanyl is the single deadliest drug threat our Nation has ever encountered. fentanyl is everywhere. From large metropolitan areas to rural America, no community is safe from this poison. We must take every opportunity to spread the word to prevent fentanyl-related overdose death and poisonings from claiming scores of American lives every day." (DEA, 2022)

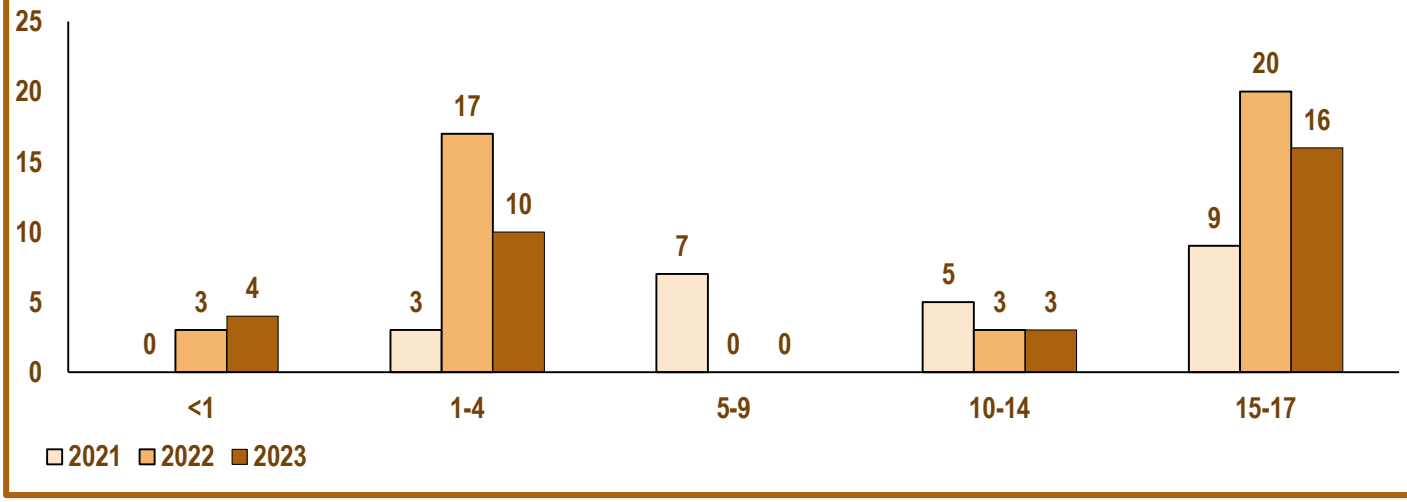
The accidental fentanyl poisoning death numbers are frightening, but it isn't the whole story. We lost a total of **33** children to fentanyl or fentanyl mixed with other drugs in 2023. **Seven** of these deaths were ruled homicide, and **26** accidentals. All these deaths are included the appropriate section of the report.



FENTANYL DEATHS BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	11	13	12	White	11	21	15
Male	13	30	21	Black	11	19	16
				Multi-Racial	2	3	2
	24	43	33		24	43	33

FENTANYL DEATHS BY AGE RANGE



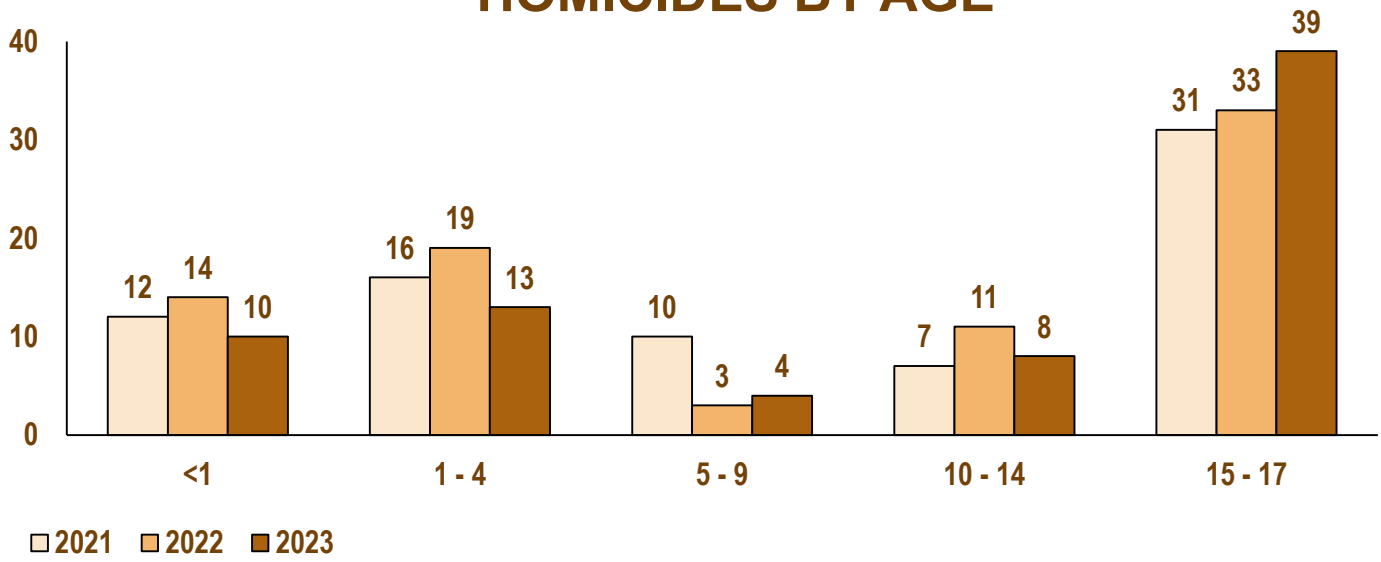
HOMICIDES

In 2023, homicide was listed as the death certificate manner of death for 74 Missouri children.

Non-Abuse 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 **48** such fatalities. Of those, the CFRP panels identified **nine** child deaths in which parental negligence was a contributing factor.

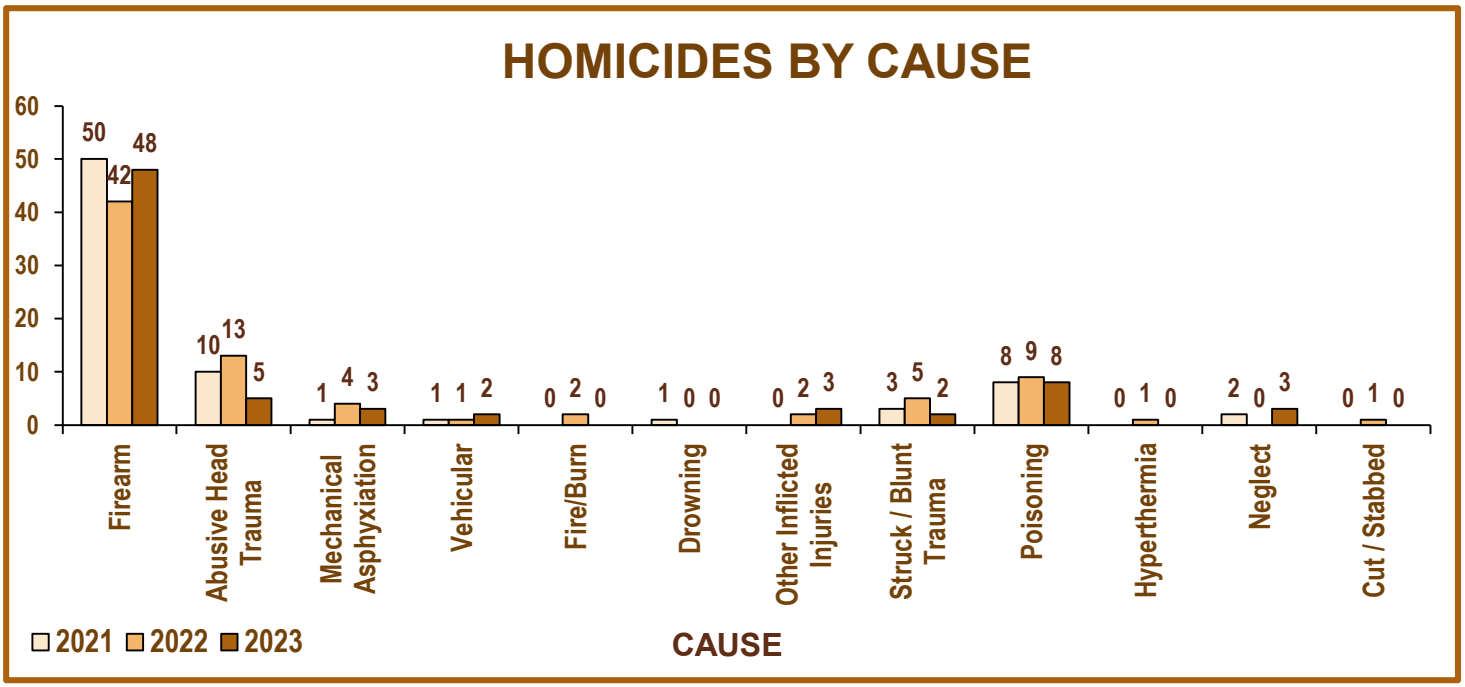
Fatal Child Abuse and Neglect: Child death resulting directly from inflicted physical injury and/or grossly negligent treatment by a parent or caretaker (as of 2018, this treatment is reported to CFRP as either lack of supervision or exposure to hazards), regardless of motive or intent. This includes, but is not limited to, children whose deaths were reported as homicide by death certificate. A total of **179** children were identified by CFRP panels, as victims of Fatal Child Abuse and/or Neglect; of those, **35** were reported by death certificate as Homicide, with **26** being considered "Child Abuse."

HOMICIDES BY AGE



HOMICIDES BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	24	16	15	White	19	23	20
Male	52	64	59	Black	56	52	51
				Asian	0	1	0
				Multi-Racial	1	4	3
	76	80	74	RACE	76	80	74


HOMICIDES BY CAUSE
60
50
40
30
20
10
0
50 42 48
10 13 5
1 4 3
1 1 2
0 2 0
1 0 0
0 2 3
3 5 2
8 9 8
0 1 0
2 0 3
0 1 0
Firearm
Abusive Head Trauma
Mechanical Asphyxiation
Vehicular
Fire/Burn
Drowning
Other Inflicted Injuries
Struck / Blunt Trauma
Poisoning
Hyperthermia
Neglect
Cut / Stabbed
2021 2022 2023
CAUSE

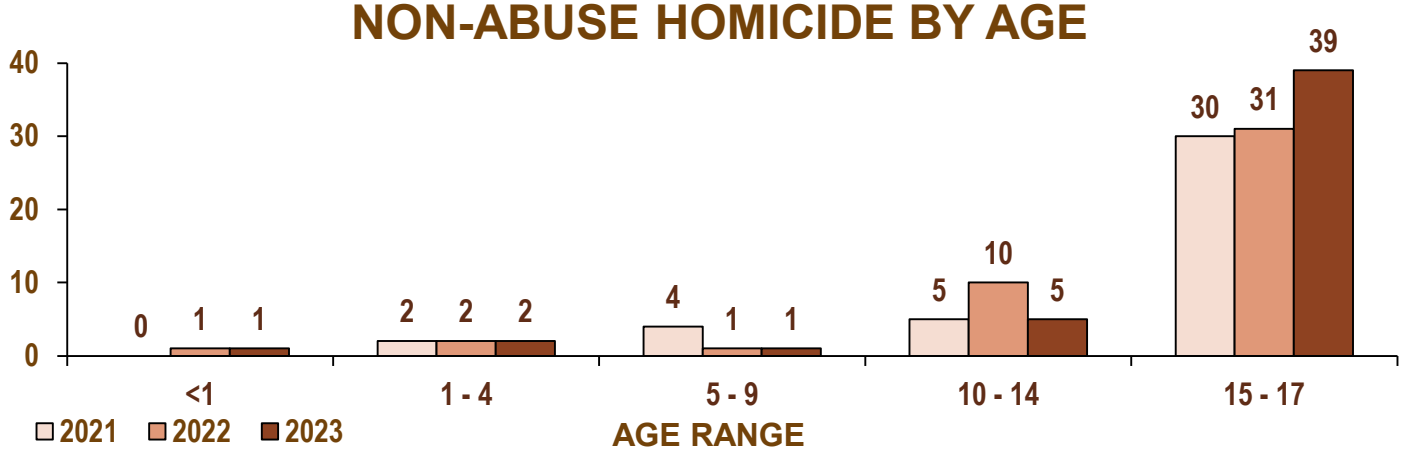
NON-ABUSE HOMICIDES

Of the 74 child homicides in Missouri in 2023, 48 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.

NON-ABUSE HOMICIDES BY SEX AND RACE

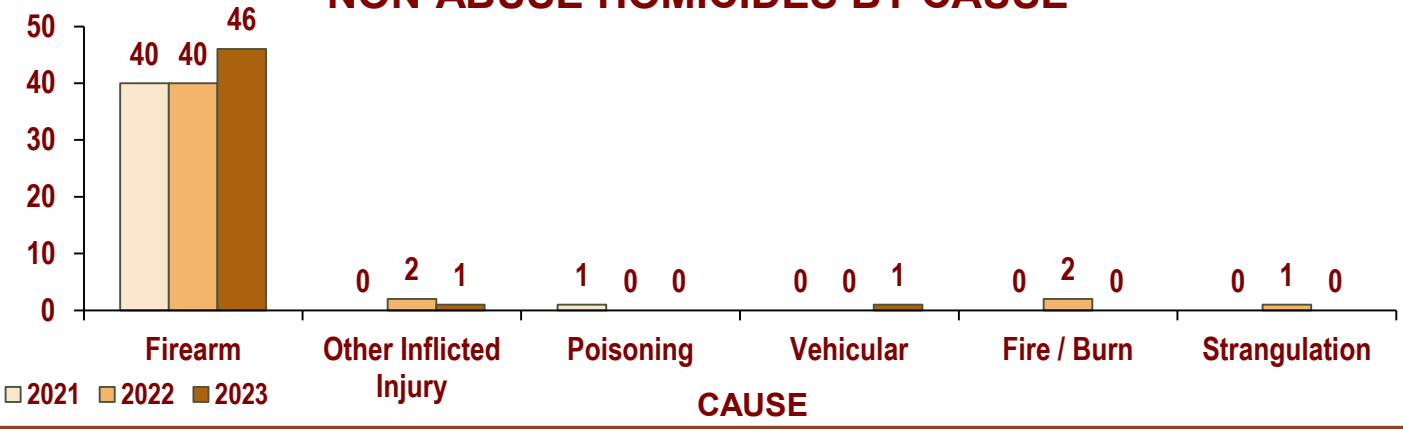
SEX	2021	2022	2023	RACE	2021	2022	2023
Female	8	4	3	White	7	8	14
Male	33	41	45	Black	34	35	34
				Asian	0	1	0
				Multi-Racial	0	1	0
	41	45	48		41	45	48

NON-ABUSE HOMICIDE BY AGE



Most of the victims of non-abuse homicides are teens between the ages of 15 and 17. And most of them are caused by other teens. Teenagers are known for pushing the boundaries and engaging in risk taking behavior that puts them in harm's way. The autonomy teens have due their age it presents special challenges in working with this age group. Conversations need to continue to develop strategies targeted to this age group that help prevent these behaviors that lead to these tragedies.

NON-ABUSE HOMICIDES BY CAUSE



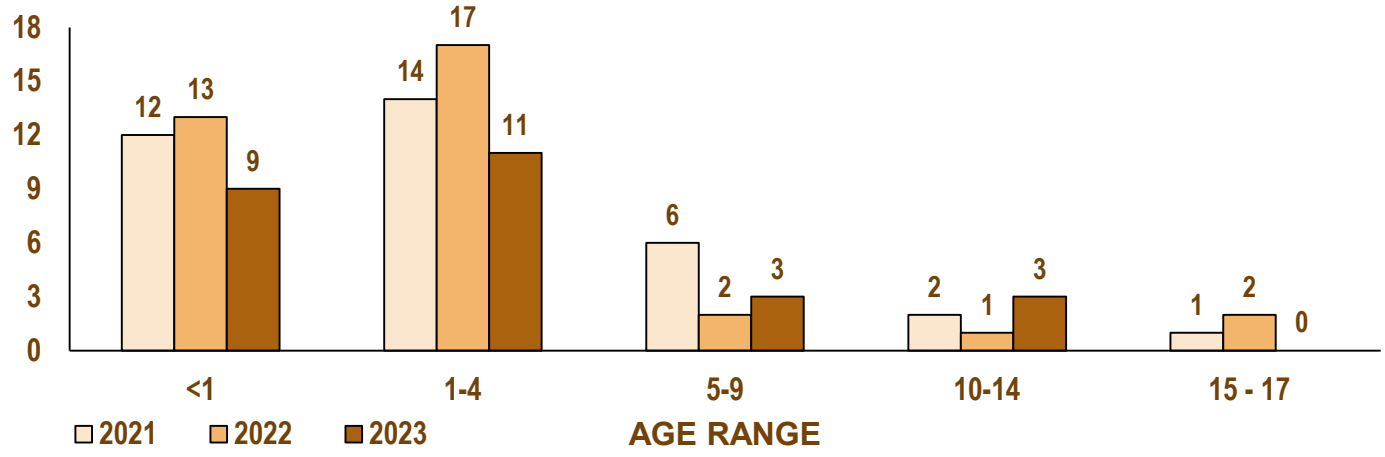
CHILD ABUSE HOMICIDES

In 2023, 26 Missouri children died from inflicted injury at the hands of a parent or caretaker.

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 2023, **20** of the **26** 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, **nine** were infants under the age of one year.

CHILD ABUSE FATALITIES BY AGE



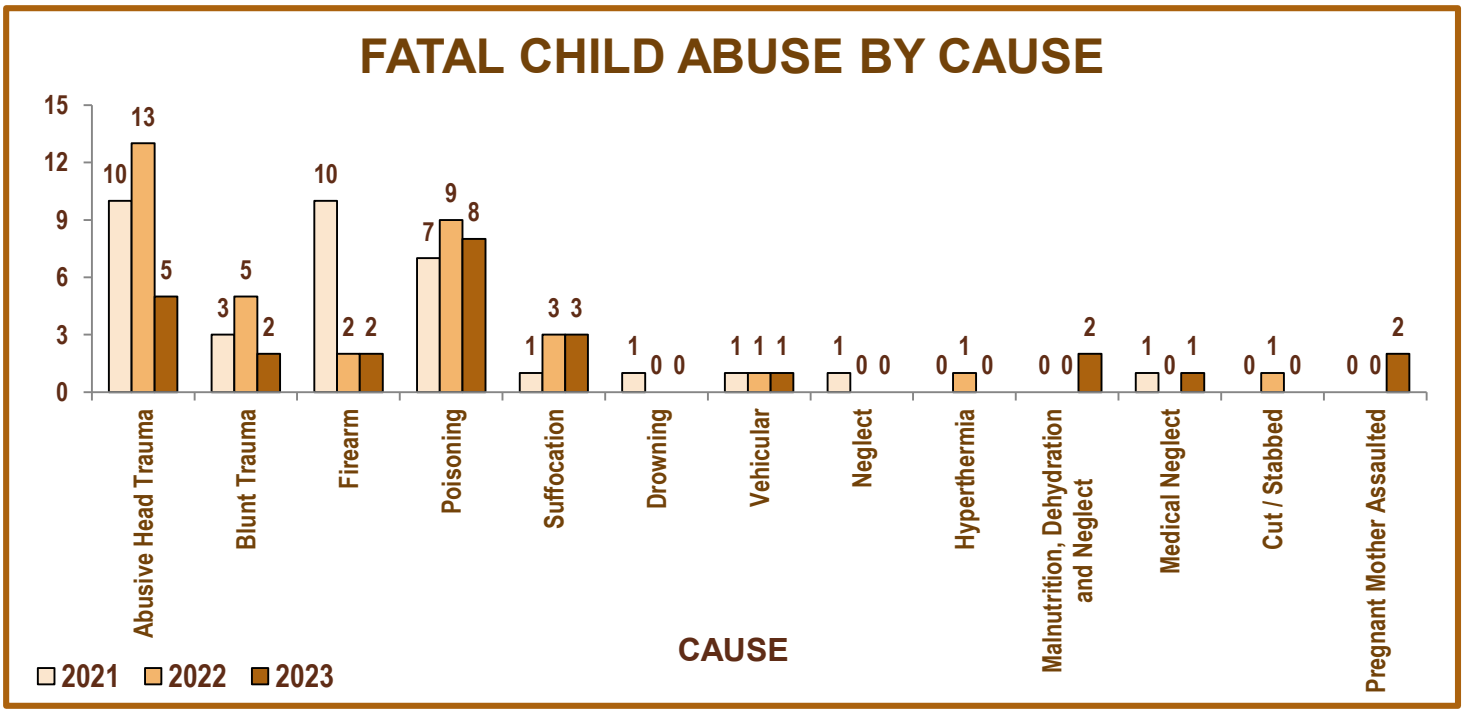
* In 2021, four children died who were shaken as infants. Two nine-year-olds, one 6-year-old and one 4-year-old. 2022 had three additional delayed abusive head trauma deaths, one 2-year-old, one 4-year-old, and one 13-year-old. In 2023 there were two more delayed abusive head trauma deaths, one child was 3 and the other 13 when they passed.

FATAL CHILD ABUSE BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	16	12	12	White	12	15	6
Male	19	23	14	Black	22	17	17
				Multi-Racial	1	3	3
	35	35	26		35	35	26

Eight of the 26 child abuse deaths were caused by poisoning. **One** child died from methamphetamine, the other **seven** died from fentanyl. In each of these cases the child was exposed to the drug by a parent or caregiver who failed to keep the said substances away from the children.

Fentanyl is particularly dangerous for infants and small children as the first symptom of exposure is drowsiness. Parents or caregivers who are not aware that the child was exposed to the drug will most likely just put them to bed. However, fentanyl slows and eventually stops their breathing, meaning they die quietly in their sleep. In all eight of the poisoning child abuse deaths the child was found unresponsive in bed in the morning.



Abusive Head Trauma

Of the **26** Missouri children who died from inflicted injury at the hand of a parent or caretaker in 2023 **five** were victims of abusive head trauma, formerly known as Shaken Baby Syndrome.

Infants are particularly vulnerable to abusive head trauma injuries, because of their unique physical and behavioral 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.

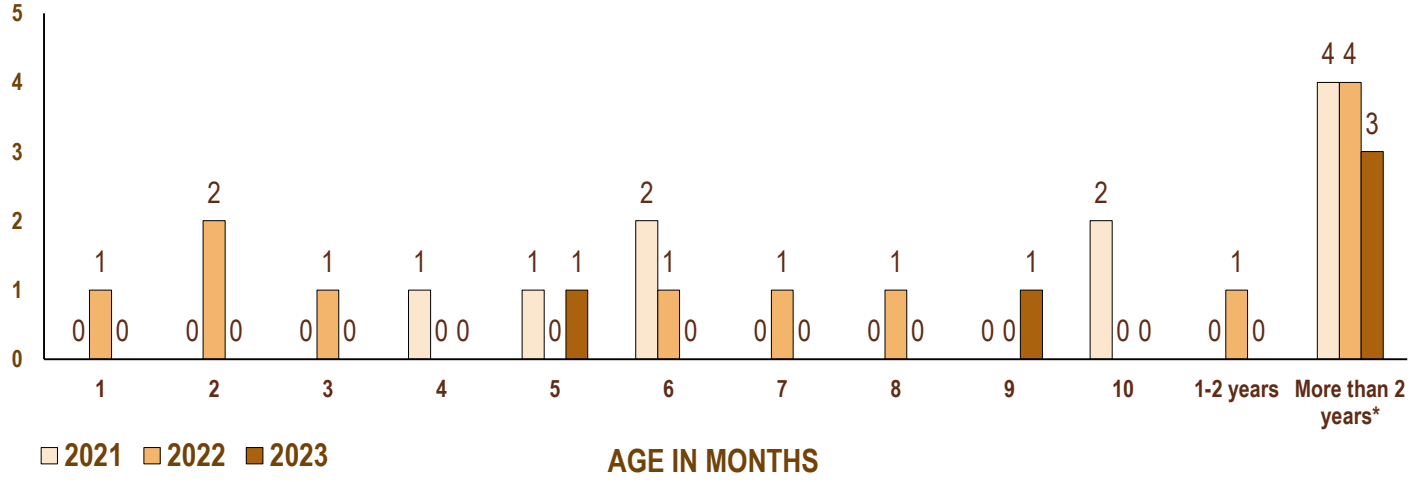
Pediatric abusive head trauma is defined as an injury to the skull or intracranial contents of an infant or young child under five years of age, due to inflicted blunt impact and/or violent shaking. The signs and symptoms that a child exhibits after having been subjected to this kind of trauma range 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 Mary Case, M.D., St. Louis County Medical Examiner and Forensic Pathologist, who has conducted significant research on the topic, up to 30% of children who suffer abusive head injuries die, 30-50% suffer significant cognitive or neurological deficits of which 30% may recover (Case, 2007). Data also indicates that babies who appear well at discharge may show evidence of cognitive or behavioral difficulties later on, possibly by school age. **One** of the children who died from Abusive Head Trauma was injured as an infant and died in 2023.

ABUSIVE HEAD TRAUMA BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	4	4	1	White	4	7	2
Male	6	9	4	Black	5	5	3
				Multi-Racial	1	1	0
	10	13	5		10	13	5

ABUSIVE HEAD TRAUMA BY AGE



* In 2021 four children died who were shaken as infants and lived to be from 5 to 13 years old. In 2022 there were an additional four children who were shaken as infants who lived to be from 4 to 13 years old. In 2023, there were two children who were shaken as infants, one lived to be 3 and the other 13 years old.

Only **two** of the **five** children who died from abusive head trauma in 2023 were under one year of age. **One** child was assaulted at the age of 3. **Two** others lived for years in vegetative states from the time they were injured as infants until their deaths in 2023.

Young parents, unstable family conditions, low socioeconomic status, 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 (Barr). While some babies cry more than others, all infants go through this same pattern.

The triggering event in **three** of the abusive head trauma deaths was crying, **one** death was triggered by potty-training issues. This question was marked as unknown in the other **one** case.

Two of the perpetrators of abusive head trauma fatalities in Missouri in 2023 were the child's biological fathers, and **three** were the child's biological mothers.

FATAL CHILD ABUSE AND NEGLECT

In 2023, 179 Missouri children were victims of Fatal Child Abuse and Neglect, of which, 35 were reported as homicide by death certificate.

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 Missouri's 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). Its 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. Children's Division is also responsible for protecting any other children in the household, including 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 that a child was abused or neglected, or when the finding is court-adjudicated. An

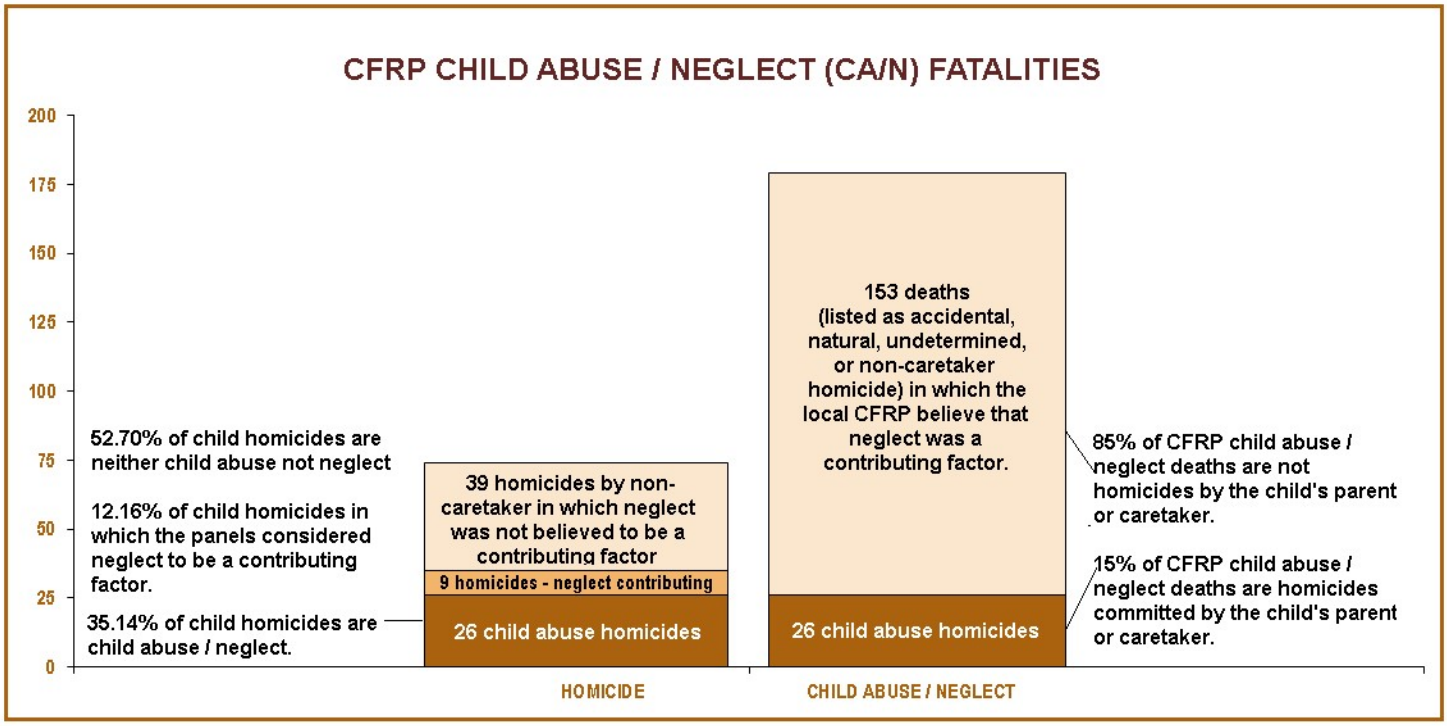
example would be an unsupervised toddler who was run over in the driveway of her home. That death would be included as a pedestrian fatality in this CFRP Annual Report, with Inadequate Care as a contributing factor. In incidents, Children's Division may determine that there was a *preponderance of evidence* 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

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 1991, 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.

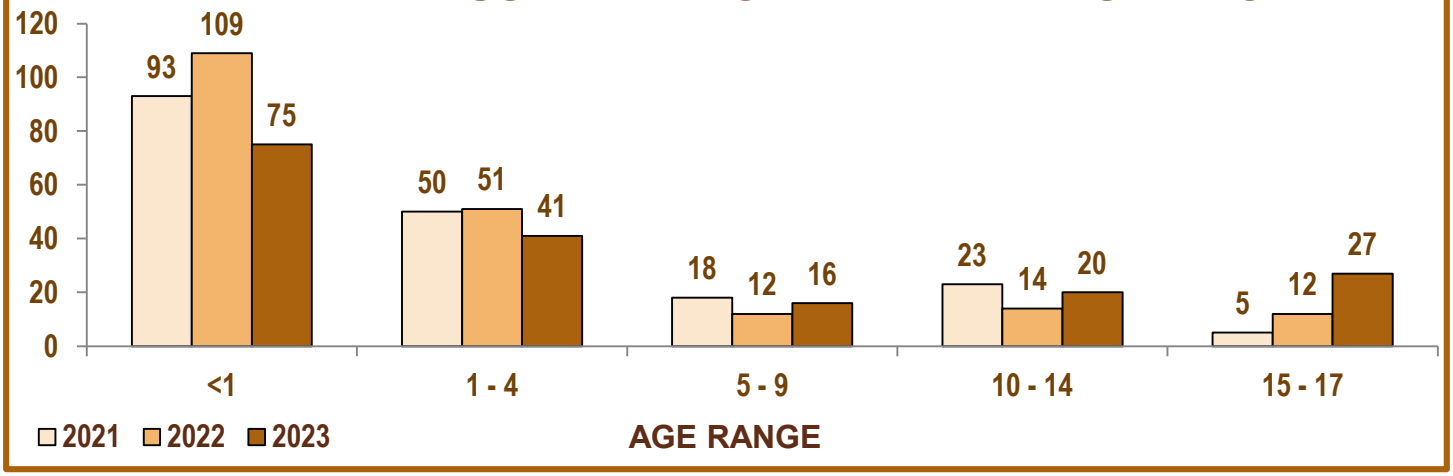
The CFRP defines fatal abuse and neglect as child deaths resulting directly from inflicted physical injury and/or grossly negligent treatment and exposure to hazards by a parent or caretaker, regardless of motive or intent. This number includes, but is no longer limited to, children whose deaths were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

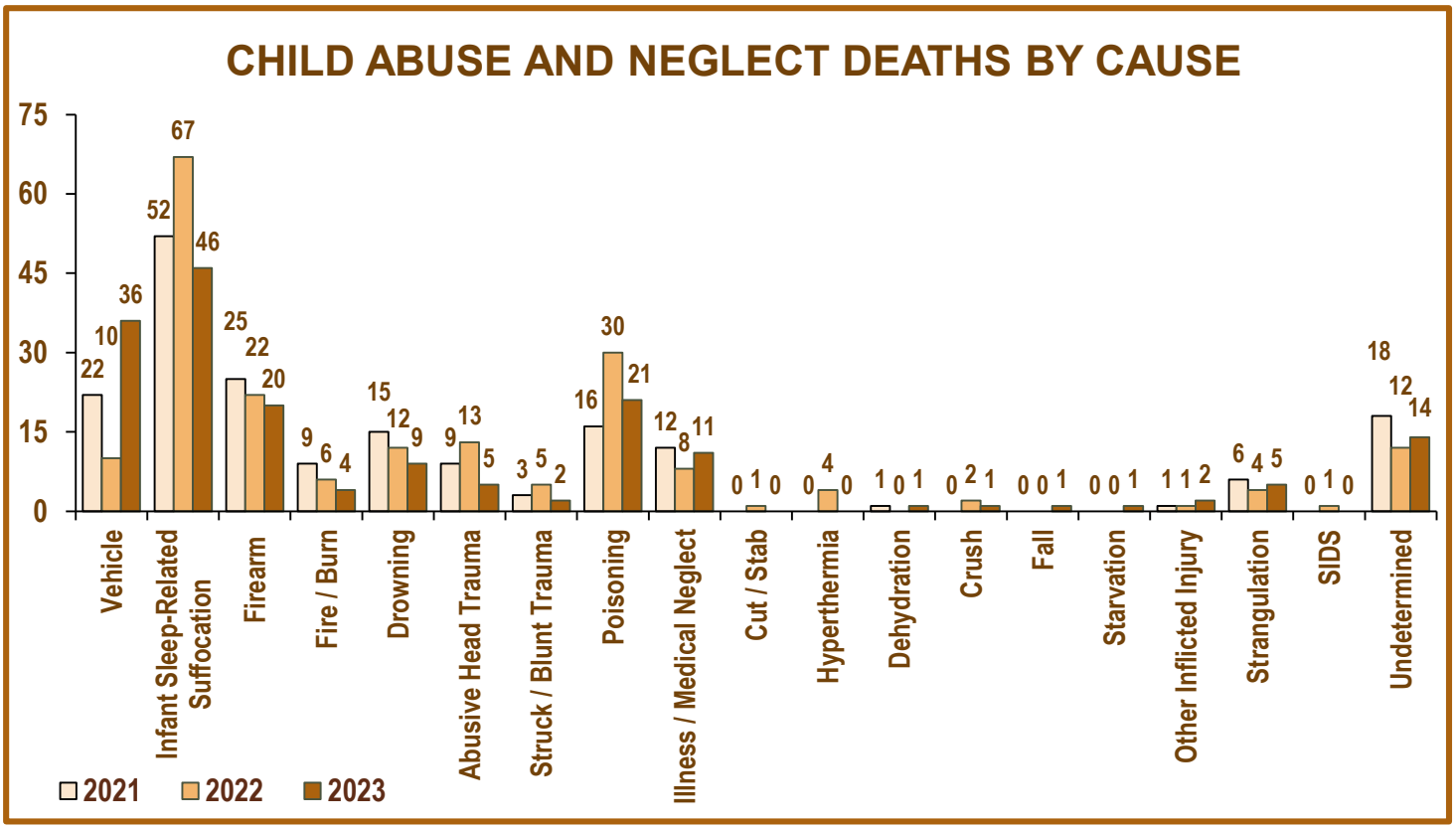


CHILD ABUSE AND NEGLECT FATALITIES BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	79	73	68	White	115	109	102
Male	110	125	111	Black	63	79	65
				Asian	1	1	1
				Alaskan Native	1	0	0
				Pacific Islander	2	2	1
				Multi-Racial	7	7	10
	189	198	179		189	198	179

CHILD ABUSE AND NEGLECT FATALITIES BY AGE





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 for 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 or 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; parental gang or drug activity; 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 **179** Missouri children. Of those, **35** were designated as Homicide by death certificate – **26** were discussed in **Child Abuse Homicides** and **nine** are included in the **Non-Abuse Homicides** section. For data purposes, all fatal child neglect deaths are included in the appropriate data section, **Natural Causes**, **Unintentional Injury**, **Homicide** or **Suicide**.

NEGLECT FATALITIES BY CAUSE OF DEATH AND MANNER OF NEGLECT

Total Child Fatalities	Cause	*Gross Negligent Treatment that Contributed to the Fatality		
		Child neglect	Poor / Absent Supervision	Exposure to Hazards
1	Crush	0	1	0
9	Drowning	0	7	2
1	Fall	1	0	0
4	Fire/Burn	0	1	3
10	Firearm	1	3	6
10	Illness / Natural Cause	2	4	5
13	Poisoning	0	2	11
2	Strangulation	0	1	1
46	Infant Sleep-Related Suffocation	1	1	44
14	Undetermined	0	1	13
34	Vehicular	1	8	24
Total Child Neglect Deaths - 144		6	29	109

On the National Database, counties are asked to break down the type of neglect the child was exposed to into one of three categories.

- **Child neglect:** This is where the parent or guardian fails to provide adequate care to a child. This category covers such things as failure to provide medical care, allowing the child to run in gangs or be active in drug sales, or failure to use a car seat that had been provided.

- **Poor / Absent Supervision:** This is where a parent or guardian fails to watch a child and keep them out of harm's way. This category includes not watching a small child around water, letting kids play with guns, not making sure the supervisor has a child's medications, allowing kids to get a hold of drugs, not ensuring kids are kept away from items they can smother in or strangle on, allowing young kids to use ATV's unsupervised, or leaving matches or lighters around where small children may find and play with them.

- **Exposure to hazards:** This is where a parent or guardian fails to take care of hazardous situations, which in turn leads to a child's death. This covers such things as owning a pool with no fences or barriers, having loaded handguns where small children can find them, taking drugs while pregnant, placing infants in unsafe sleep situations, failure to restrain in a vehicle, drinking and driving while a child is in the car, or driving into water covering the road.

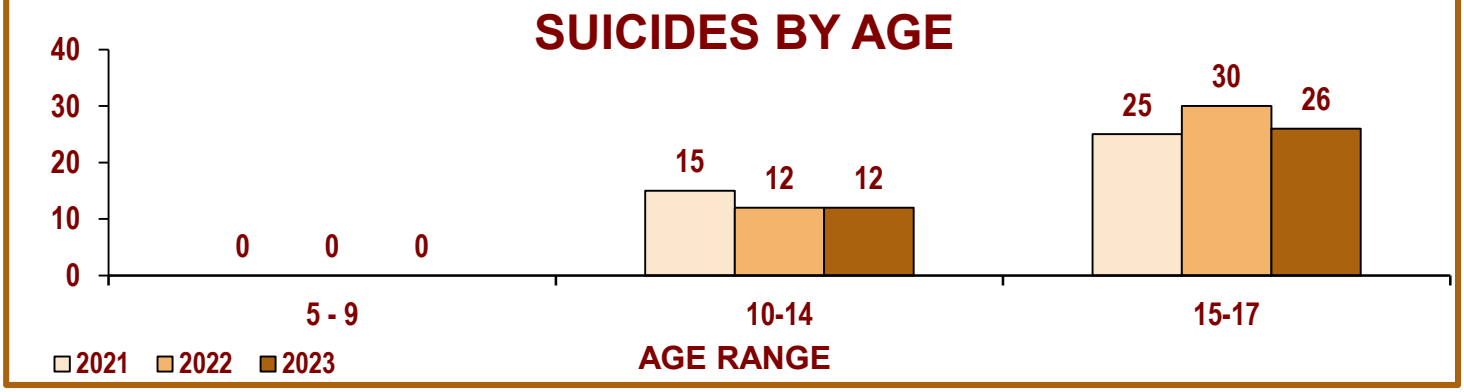
SUICIDES

In 2023, 38 Missouri children died by suicide.

- Twenty-nine percent of the children who died by suicide had a known history of maltreatment as a victim.
- Thirty-seven percent of the children who died by suicide were reported have had a history of mental health services or medication.
- Sixty-six percent of child suicide victims had a recent personal crisis.
- Forty-five percent of the children who died by suicide were receiving Medicaid.

According to Missouri Department of Mental Health, for over a decade the suicide rate in Missouri has been higher than the national rate (Missouri Institute of Mental Health, 2015). In 2023, Missouri's provisional suicide rate is 17.8 per 100,000, which is significantly higher, when compared to the national provisional rate of 14.7 per 100,000 according to the CDC. In 2023, **38** children died of self-inflicted injuries; **26** were ages 15-17; and **12** were children ages 10-14.

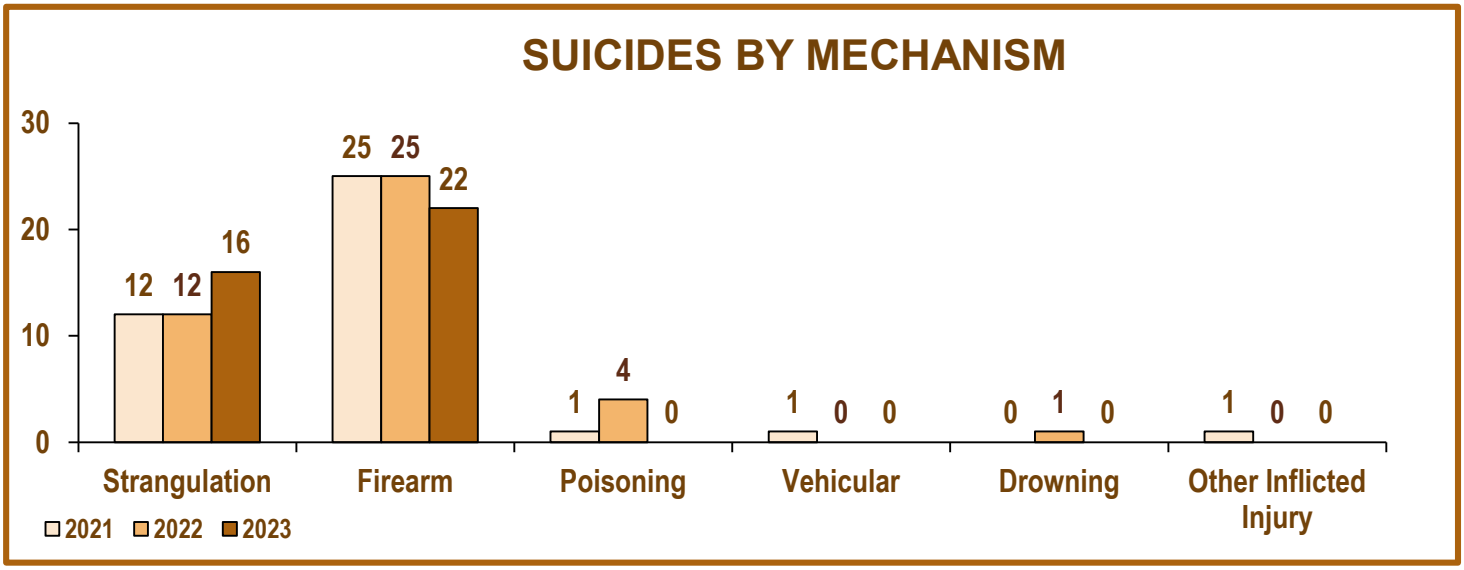
The 2023 Youth Risk Behavioral Survey (YRBS) found that 25.6% of high school students in Missouri reported they seriously considered suicide. (*Youth Risk Behavior Survey | CDC*, n.d.) It also stated that 16.8% of all students actually made a suicide plan. Many more students attempt suicide than those that succeed, 8.7% of the students surveyed stated they had attempted suicide. Nationally the suicide attempt rate for females is double than that of males, but more males complete suicide than females. In Missouri in 2023, males died by suicide at three times the rate of females, representing 78% of all child suicides in the state.



SUICIDES BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	10	12	8	White	35	32	33
Male	30	30	30	Black	1	7	4
				Asian	3	1	0
				Multiracial	1	2	1
	40	42	38		40	42	38

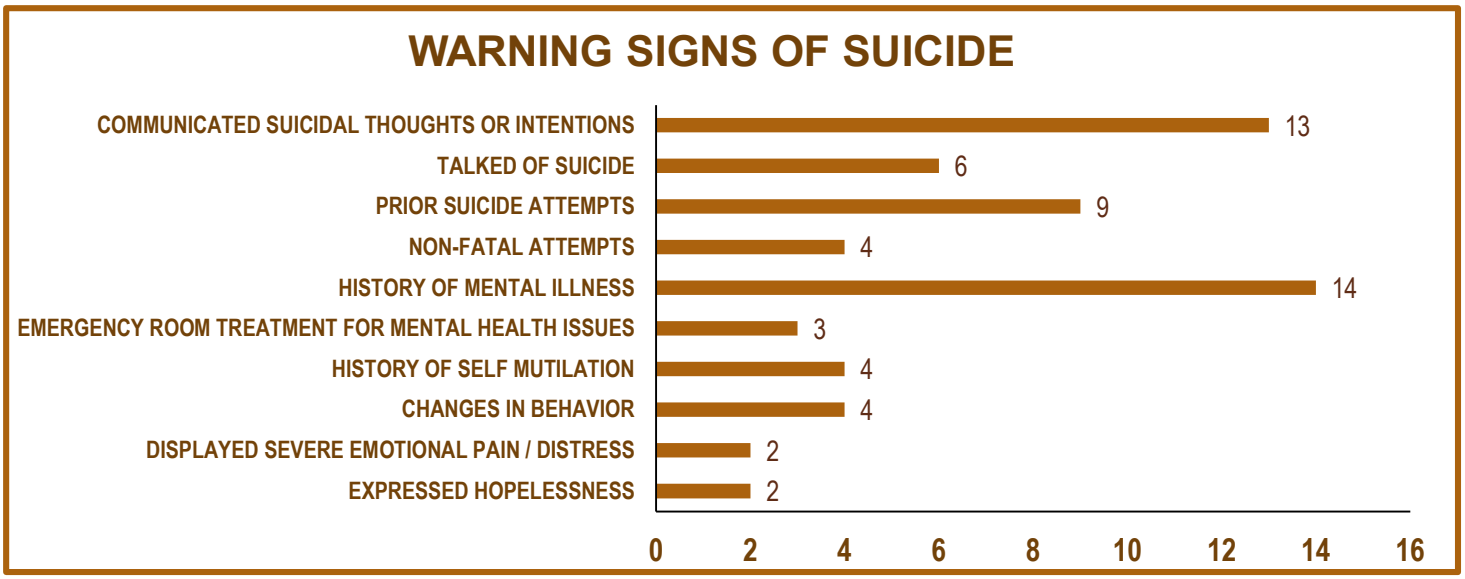
Firearms and strangulation are the most common mechanisms of suicide among Missouri children.



Suicide is many times brought about due to a personal crisis. **Thirty-one** of the children, who died by suicide in 2023, had recent history of one or more personal crises.

RECENT HISTORY OF PERSONAL CRISES			
Job problems	1	Witnessed Violence	1
Pregnancy	1	Family discord	2
Argument with parents	3	Parents' divorce	5
Parent's incarceration	2	Relationship breakup	3
Argument with significant other	5	Argument with friends	2
Social isolation	2	Bullying as a victim	4
Bullying as a perpetrator	1	Gender identification	1
Sexual orientation	1	School failure	2
Other school problems	6	Texting	2
Restrictions from technology	1	Social media	1
Previous Abuse	3	Domestic violence	3

Suicide is rarely a spontaneous decision, and most people give warning signs that they are contemplating taking their own lives. Of the **38** Missouri children who died by suicide in 2023, **25** were known to have displayed one or more warning signs.



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 their development. The CDC tells us understanding the interactive relationship between risk and protective factors in suicidal behavior continues to be studied and drives the development of interventions (CDC, 2019). 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:

Risk Factors

- Family history of suicide
- Family history of child maltreatment
- Previous suicide attempt(s)
- History of mental disorders, particularly clinical depression
- History of alcohol and substance abuse
- Feelings of hopelessness
- Impulsive or aggressive tendencies
- Cultural and religious beliefs (ex., belief that suicide is a noble resolution of a personal dilemma)
- Local epidemics of suicide
- Isolation, a feeling of being cut off from other people.
- Barriers to accessing mental health treatment.
- Loss (relational, social, work, or financial)
- Physical illness
- Easy access to lethal methods
- Unwillingness to seek help because of the stigma attached to mental health and substance abuse disorders, or to suicidal thoughts.

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 abuse disorders
- Easy access to a variety of clinical interventions and support for help-seeking
- Family and community support (connectedness)
- Support from ongoing medical and mental health care relationships
- Skills in problem solving, conflict resolution and nonviolent ways of handling disputes.
- Cultural and religious beliefs that discourage suicide and support instincts for 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. The plan emphasizes 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 is 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 https://dese.mo.gov/media/pdf/dese-youth-suicide-awareness-and-prevention-model-policy_03_18.

UNDETERMINED MANNER: INJURY

In 2023, ten Missouri children died of injuries whose manner could not be determined.

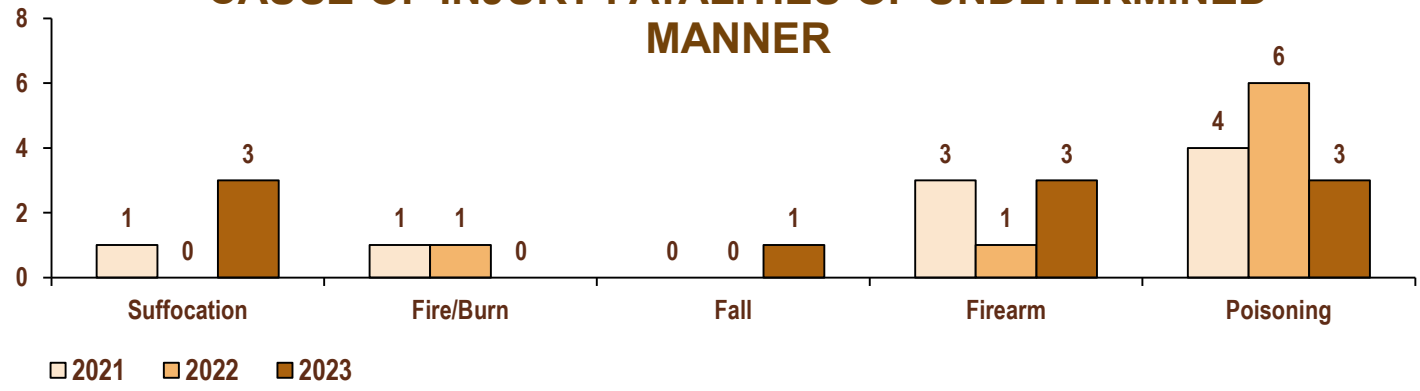
When a child dies, the cause of death is often evident, but the actual intent might not be readily determined. For example, when a teenager dies from suffocation, poisoning, pedestrian injury or vehicle crash, the difference between the event being intentional or unintentional is sometimes impossible 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. In 2023, there were **10** injury deaths of undetermined manner.

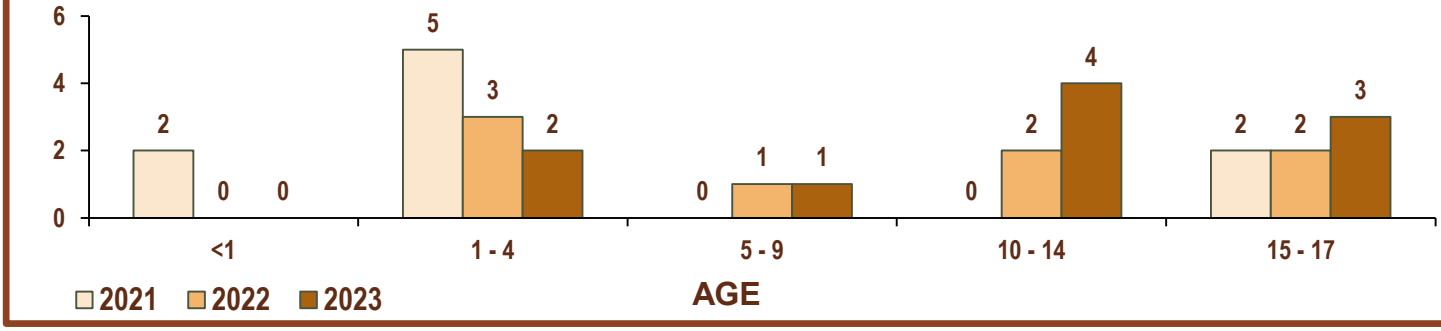
UNDETERMINED INJURY BY SEX AND RACE

SEX	2021	2022	2023	RACE	2021	2022	2023
Female	3	2	1	White	4	5	3
Male	6	6	9	Black	5	3	4
				Multi-Racial	0	0	3
	9	8	10		9	8	10

CAUSE OF INJURY FATALITIES OF UNDETERMINED MANNER



UNDETERMINED INJURY DEATHS BY AGE

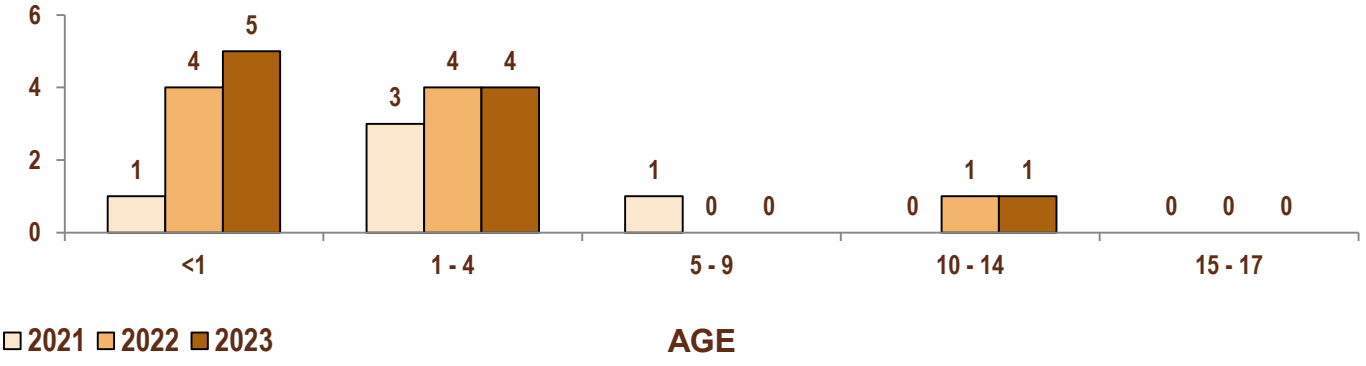


UNDETERMINED CAUSE AND MANNER

In 2023, there were ten non-sleep-related Missouri children whose cause and manner of death could not be determined.

There was a total of 32 deaths whose cause **and** manner could not be determined in 2023. Twenty-two of these deaths were discussed in the sleep-related death section. 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	2021	2022	2023	RACE	2021	2022	2023
Female	2	3	3	White	4	6	4
Male	3	6	7	Black	1	3	2
				Asian	0	0	1
				Multi-Racial	0	0	3
	5	9	10		5	9	10

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. RSMo 210.192 requires CFRP panels to complete a Final Report, summarizing their findings in terms of prevention messages and community-based prevention initiatives. Unlike the details of the panel meeting itself, these messages and initiatives are open records that can be shared freely across the state to assist other counties in their prevention efforts. These findings can also be entered directly in to the NCFRP CDR System.

A child's death can capture the attention of the community and create a sense of urgency and a window of opportunity to respond to the question, "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.

Unsafe Sleep:

- Henry County CFRP recommends training for law enforcement on scene investigation procedures that need to be followed in sudden and unexpected infant deaths.
- The St. Louis County CFRP recommends more unannounced home visits for licensed foster care home to make sure the children are safe.
- The Johnson County CFRP recommends continuing education on safe sleep and not being impaired while caring for infants/children that are dependent solely on their caretaker.

Unintentional Injury:

- Adair County CFR Panel, working with a public safety program, started a campaign to encourage the community to wear seatbelts at all times, even in recreational vehicles.
- The Lincoln County CFR Panel partnered with the Department of Health and Senior Services (DHSS) and Safe-Kids to create community education about farm safety. DHSS hosted an event to talk to the community about the dangers of kids riding on tractors and big farm equipment. They also created poster to hang at feed stores / co-ops / mercantile to try and prevent tractor-related child fatalities in the community.
- Oregon County CFR Panel proposes a media campaign to remind people to assure that all kids are safely inside when a vehicle is leaving the driveway. This information is important for anyone with children that are mobile or will be mobile in the future.

- Webster County CFR Panel decided to conduct a campaign in their community to raise awareness to fire safety and other high-risk areas to cover that keep kids safe. They will discuss driving safe seep, drug awareness, fire safety plans, etc.

- The St. Louis City CFR Panel states that guns should always be kept out the reach of children. They advise that there are multiple agencies in the area that give away gun locks for free, no questions asked.

- St Charles County CFR Panel endorses continued water safety education in the community. They recommend swimming lessons for younger children and infants and continued education and awareness that family parties / event can be dangerous times for young children because of lapses in supervision.

- The Buchanan County CFR Panel recommends continuing with education on the dangers of fentanyl and that they never really know what they are getting when they buy drugs. They are also recommending harsher punishments for people caught dealing fentanyl.

- St. Louis County CFR Panel suggests creating a campaign to education parents and caregivers about the dangers of button batteries and how they are commonly found in children and baby toys.

Child Abuse:

- Carter County CFR Panel urge medical professionals to call the CAN hotline if they believe there is neglect. Parent's may not know about the about the services / resources available in the community or may fear that they will "get into trouble" for seeking help.

- St Charles County CFR Panel recommends removal of children from homes where parents abuse substances. A parent who is under the influence of drugs / alcohol is not capable of providing adequate care to a child.

Homicides:

- Lincoln County CFR Panel endorses the teaching of safe and healthy relationship skills and schools and increasing support services of interpersonal violence in the community.

- St. Louis City CFR Panel notes that recreation centers have been opened in response to youth violence and an ambassador program has been implemented to intervene when teens are out in the streets. The community also wishes to enact curfew laws but law enforcement doesn't think they will be able to enforce them.

Suicides:

- The Oregon County CFR Panel proposes additional education for parents on how to make sure their depressed children take their meds.

- Lincoln County CFR Panel recommends continued suicide prevention and postvention in schools as well as PSAs to the public about the importance of their children not knowing the code to the gun safe. Because gun safes to not keep children safe it they know how to get into them.

MISSOURI INCIDENT CHILD FATALITIES (AGE LESS THAN 18) BY AGE, SEX AND RACE 2021-2023

	All Deaths			Reviewed Deaths			Injury Deaths		
Age	2021	2022	2023	2021	2022	2023	2021	2022	2023
0	476	505	452	139	154	123	82	111	68
1	38	45	44	26	37	24	18	24	16
2	31	25	32	22	19	26	17	16	15
3	26	20	18	22	14	12	15	11	8
4	17	13	11	10	9	4	10	8	4
5	11	8	16	7	4	11	7	2	8
6	13	14	18	9	9	8	9	6	3
7	6	10	11	6	6	10	5	4	4
8	9	10	4	7	5	1	4	4	0
9	14	12	7	9	8	4	7	7	2
10	13	9	9	9	5	5	6	3	4
11	16	11	12	9	8	8	8	6	6
12	13	15	16	10	10	9	10	7	8
13	19	11	20	18	10	10	16	9	7
14	25	36	26	21	25	24	20	22	22
15	43	39	42	35	30	35	31	27	35
16	43	58	49	32	49	42	27	46	39
17	73	76	59	63	68	58	59	67	54
TOTAL	886	917	846	454	470	414	351	380	303

	All Deaths			Reviewed Deaths			Injury Deaths		
Sex	2021	2022	2026	2021	2022	2023	2021	2022	2023
Female	350	373	349	172	155	139	129	117	94
Male	536	544	497	282	315	275	222	263	209
TOTAL	886	917	846	454	470	414	351	380	303

	All Deaths			Reviewed Deaths			Injury Deaths		
Race	2021	2022	2023	2021	2022	2023	2021	2022	2023
White	579	608	531	282	294	240	223	231	178
Black	240	260	254	139	153	146	111	129	108
Pacific Islander	6	6	4	5	4	1	1	2	1
American Indian	0	4	1	0	1	0	0	1	0
Asian	11	8	11	4	4	5	3	3	2
Alaska Native	1	0	0	1	0	0	0	0	0
Native Hawaiian	4	1	0	2	0	0	1	0	0
Multi-Racial	45	30	45	21	14	22	12	14	14
TOTAL	886	917	846	454	470	414	351	380	303

MISSOURI INCIDENT CHILD FATALITIES (AGE LESS THAN 18) BY COUNTY 2021-2023

County of Event	All Deaths			Reviewed Deaths			Injury Deaths		
	2021	2022	2023	2021	2022	2023	2021	2022	2023
Adair	3	3	4	3	1	3	2	0	3
Andrew	1	1	1	0	1	1	0	1	1
Atchison	1	0	0	1	0	0	1	0	0
Audrain	3	4	1	1	1	1	1	1	1
Barry	3	6	6	1	4	2	1	2	2
Barton	2	4	1	2	4	1	2	4	0
Bates	0	1	1	0	1	0	0	1	0
Benton	4	4	2	4	4	2	2	2	1
Bollinger	2	4	1	1	4	1	0	2	1
Boone	30	37	37	6	10	15	5	13	10
Buchanan	21	8	13	13	6	9	11	5	7
Butler	4	12	3	1	10	3	0	7	1
Caldwell	3	1	0	2	0	0	2	0	0
Callaway	3	4	0	3	4	0	2	4	0
Camden	5	5	3	2	3	3	1	3	3
Cape Girardeau	9	15	12	4	6	4	4	5	4
Carroll	1	3	1	1	1	1	0	1	1
Carter	1	1	1	1	1	1	1	1	1
Cass	3	8	5	3	4	3	2	4	3
Cedar	1	1	0	1	0	0	1	0	0
Chariton	0	1	1	0	1	1	0	1	1
Christian	6	10	5	6	8	4	3	5	4
Clark	2	0	0	2	0	0	2	0	0
Clay	21	23	19	16	13	8	13	9	4
Clinton	2	0	3	2	0	2	2	0	1
Cole	3	5	9	3	3	3	2	2	2
Cooper	0	3	0	0	1	0	0	2	0
Crawford	2	4	1	1	1	1	2	1	0
Dade	1	2	1	1	2	0	1	1	0
Dallas	4	0	1	4	0	0	3	0	0
Daviess	0	1	0	0	1	0	0	1	0
DeKalb	0	1	1	0	1	1	0	1	1
Dent	3	1	0	3	1	0	2	1	0
Douglas	1	1	1	1	1	1	1	0	1
Dunklin	1	4	4	1	4	4	0	1	1
Franklin	10	13	9	9	8	7	7	6	3
Gasconade	2	2	0	2	1	0	1	1	0
Gentry	1	0	1	0	0	1	0	0	1
Greene	42	49	53	14	21	18	11	17	14
Grundy	4	0	2	1	0	2	1	0	2
Harrison	1	1	0	0	1	0	0	1	0
Henry	3	0	4	2	0	3	2	0	2

MISSOURI INCIDENT CHILD FATALITIES (AGE LESS THAN 18) BY COUNTY 2021-2023

County of Event	All Deaths			Reviewed Deaths			Injury Deaths		
	2021	2022	2023	2021	2022	2023	2021	2022	2023
Hickory	1	1	2	1	1	1	1	1	1
Holt	0	1	0	0	1	0	0	1	0
Howard	2	0	1	2	0	0	1	0	0
Howell	2	11	5	1	7	3	1	5	2
Iron	1	3	0	1	3	0	1	3	0
Jackson	173	151	169	81	76	78	60	55	50
Jasper	11	10	7	5	6	5	4	4	2
Jefferson	15	12	9	14	7	5	11	8	2
Johnson	5	6	6	2	4	4	1	1	3
Knox	1	0	0	1	0	0	0	0	0
Laclede	6	8	1	5	7	0	2	3	0
Lafayette	3	3	3	3	3	3	2	3	3
Lawrence	5	9	3	0	5	3	5	2	3
Lewis	3	1	0	2	1	0	2	1	0
Lincoln	4	3	8	4	3	8	3	3	8
Linn	1	1	1	1	1	1	1	0	1
Livingston	5	1	1	4	1	1	3	1	1
McDonald	6	3	3	6	3	3	5	3	1
Macon	1	0	2	1	0	2	1	0	1
Madison	0	2	3	0	1	2	0	0	1
Maries	1	1	2	1	1	2	1	1	2
Marion	3	5	3	2	5	2	2	4	1
Mercer	0	0	1	0	0	0	0	0	0
Miller	1	1	2	0	1	2	0	1	1
Mississippi	2	4	1	2	3	1	1	2	1
Moniteau	2	2	2	2	1	1	0	1	1
Monroe	0	0	0	0	0	0	0	0	0
Montgomery	0	0	1	0	0	1	0	0	1
Morgan	3	5	0	1	4	0	0	3	0
New Madrid	3	3	3	3	3	3	3	3	2
Newton	15	21	5	8	8	0	5	5	0
Nodaway	1	0	0	1	0	0	1	0	0
Oregon	2	0	2	2	0	2	2	0	2
Osage	0	2	0	0	2	0	0	2	0
Ozark	1	2	0	0	2	0	0	0	0
Pemiscot	5	3	2	5	3	2	5	3	2
Perry	3	3	2	1	2	1	1	2	1
Pettis	6	6	4	4	4	4	3	4	3
Phelps	7	10	5	4	4	4	2	3	4

MISSOURI INCIDENT CHILD FATALITIES (AGE LESS THAN 18) BY COUNTY 2021-2023

County of Event	All Deaths			Reviewed Deaths			Injury Deaths		
	2021	2022	2023	2021	2022	2023	2021	2022	2023
Pike	1	0	4	1	0	4	1	0	2
Platte	9	9	8	6	2	6	4	2	5
Polk	6	4	3	4	1	1	3	1	0
Pulaski	2	4	2	2	3	2	2	3	1
Putnam	0	0	0	0	0	0	0	0	0
Ralls	3	0	2	1	0	2	1	0	2
Randolph	5	1	1	4	1	1	2	1	0
Ray	1	1	4	1	1	4	1	1	3
Reynolds	0	0	1	0	0	1	0	0	1
Ripley	2	1	2	2	0	2	2	0	2
St. Charles	14	34	19	6	20	13	3	15	8
St. Clair	0	0	0	0	0	0	5	0	0
St. Francois	8	3	7	6	2	5	48	2	3
St. Louis County	140	129	123	65	65	56	0	58	49
Ste. Genevieve	2	0	3	1	0	3	1	0	3
Saline	1	2	2	1	1	0	1	1	0
Schuyler	0	0	0	0	0	0	1	0	0
Scotland	1	1	0	1	0	0	2	0	0
Scott	5	2	4	2	2	2	1	1	2
Shannon	1	0	0	1	0	0	0	0	0
Shelby	0	0	0	0	0	0	0	0	0
Stoddard	4	3	5	3	2	4	3	2	2
Stone	2	2	4	2	1	2	1	1	2
Sullivan	0	0	1	0	0	1	0	0	1
Taney	4	7	7	4	6	4	4	5	3
Texas	3	2	0	3	2	0	3	2	0
Vernon	3	3	1	2	1	1	1	1	0
Warren	2	7	0	2	3	0	2	2	0
Washington	1	0	3	1	0	3	1	0	2
Wayne	0	2	0	0	2	0	0	2	0
Webster	6	3	11	4	2	7	2	2	7
Worth	0	2	0	0	1	0	0	1	0
Wright	8	3	2	5	0	2	5	0	0
St. Louis City	143	155	161	36	48	38	30	43	29
STATE TOTAL	886	917	846	454	470	414	351	380	303

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