



# Arizona Child Fatality Review Team

## Thirtieth Annual Report

November 15, 2023

Mission: To reduce preventable child fatalities in Arizona through a systematic, multi-disciplinary, multi-agency, and multi-modularity review process. Prevention strategies, interdisciplinary training, community-based education, and data-driven recommendations and derived from this report to aid legislation and public policy.



## Table of Contents

<b><i>Glossary:</i></b> .....	<b>8</b>
<b><i>Letter from the Chair of the CFR Team:</i></b> .....	<b>12</b>
<b><i>Executive Summary</i></b> .....	<b>13</b>
<b><i>Thirtieth Annual Report Highlights</i></b> .....	<b>16</b>
Recommendation Highlights:.....	17
<b><i>Section 1: Overall Demographics</i></b> .....	<b>18</b>
Child Mortality (0-17 Years of Age) .....	19
Infant Mortality (Less than 1 Year of Age).....	22
Child Mortality (1-17 Years of Age) .....	26
<b><i>Section 2: Preventable Deaths</i></b> .....	<b>29</b>
<b><i>Section 3: Manner of Death</i></b> .....	<b>34</b>
Accidental Injury Deaths.....	35
Homicides.....	39
Natural Deaths .....	43
Suicides .....	47
Undetermined Deaths .....	51
<b><i>Section 4: Causes of Death</i></b> .....	<b>55</b>
Drowning Deaths.....	56
Firearm Injury Deaths .....	60
Infectious Disease-Related Deaths.....	66
Congenital Syphilis Deaths.....	70
COVID-19 Related Deaths .....	71
Motor Vehicle Crash (MVC) Deaths.....	74
Neglect/Abuse Deaths .....	79
Prematurity Deaths .....	85
Substance Use-Related Deaths .....	88
Sudden Unexpected Infant Deaths (SUID).....	93
<b><i>Section 5: Prevention Recommendations</i></b> .....	<b>97</b>
Introduction to Prevention Recommendations .....	98
Drowning Death Prevention Recommendations .....	99
Firearm Injury Death Prevention Recommendations.....	101
Infectious Disease Prevention Recommendations.....	102
Motor Vehicle Crash Death Prevention Recommendations .....	103
Neglect/Abuse Death Prevention Recommendations.....	106

<b>Prematurity Death Prevention Recommendations .....</b>	<b>108</b>
<b>Substance Use-Related Death Prevention Recommendations .....</b>	<b>110</b>
<b>Suicide Prevention Recommendations.....</b>	<b>113</b>
<b>Sudden Unexpected Infant Death (SUID) Prevention Recommendations .....</b>	<b>115</b>
<b>Section 6: Appendix.....</b>	<b>118</b>
<b>Appendix A: Additional Neglect/Abuse Data 2018-2022 .....</b>	<b>119</b>
Disclaimer for the Department of Child Safety (DCS)/ Child Protective Services (CPS): .....	119
Department of Child Safety (DCS) Definition of Abuse/Neglect: .....	119
<b>Appendix B: Resources .....</b>	<b>121</b>
<b>Appendix C: State and Local CFRP Teams .....</b>	<b>122</b>
Arizona Department of Health Services, State CFRP Team:.....	122
Arizona Department of Health Services, State Subcommittee Neglect/Abuse CFRP Team: .....	123
Arizona Department of Health Services, State Subcommittee SUID CFRP Team: .....	124
Coconino County, CFRP Team:.....	125
Gila County, CFRP Team:.....	126
Graham & Greenlee Counties, CFRP Team: .....	127
Maricopa County, CFRP Team:.....	128
Mohave & La Paz Counties, CFRP Team:.....	131
Navajo & Apache Counties, CFRP Team:.....	132
Pima, Cochise, & Santa Cruz Counties, CFRP Team: .....	134
Pinal County, CFRP Team: .....	136
Yavapai County, CFRP Team: .....	137
Yuma County, CFRP Team:.....	138
<b>Appendix D: References.....</b>	<b>139</b>

## Dedication:

We dedicate this report to the memory of those children and families represented within these pages, whose stories inspire us to continue working to improve health for all children in Arizona.

## Acknowledgements:

The Arizona Department of Health Services (ADHS) would like to acknowledge Dr. Mary Rimsza, MD, founding member and Chair of the Arizona Child Fatality Review Program (CFRP), Susan Newberry, MEd founding member and Arizona CFRP Contractor, and Jessica Perfette, MPH, 2019-2023 CFR Program Manager; their time and commitment to this committee has supported ADHS in initiating the Child Fatality Review Program and conducting ongoing reviews of child and infant mortalities in Arizona.

ADHS would also like to acknowledge the 10 local CFRP teams and their coordinators in Arizona, whose persistent efforts, conducted 100% of child fatality reviews to aid in prevention recommendations. A full list of CFRP members can be found in Appendix C. Members who have served for ten or more years with the program are noted with a star next to their name. Because of their dedicated time and volunteer commitment to the program, all child deaths in Arizona are reviewed to determine steps, if any, that could have prevented the child's death from occurring. It is because of their expertise and many years of experience with the program that this report is made possible.

Lastly, the CFRP acknowledges the twenty-two Native Nations who have stewarded this Land since time immemorial, and recognizes their people, culture, and history.

ADHS aspires to present data humbly, recognizing numbers never tell the whole story. We strive to work with individuals and communities to learn and share their stories to improve collective understanding. Knowing that people across life circumstances have inequitable opportunities to achieve optimal health, we commit to pair numbers and stories to inform policy and systems change to improve health for all.

## Photography Credit:

The following photographer took the image on the front cover and section covers: Adam Schallau, available here: <https://adamschallau.com/gallery/grand-canyon-black-white/>.

## Submitted To:

The Honorable Katie Hobbs, Governor, State of Arizona  
 The Honorable Warren Petersen, President, Arizona State Senate  
 The Honorable Ben Toma, Speaker, Arizona State House of Representatives

This report is provided as required by A.R.S. §36-3501.

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## Intended Audience:

This is a technical report on the analysis of the incidence and causes of infant and child deaths in Arizona. This report is aimed primarily at those actively involved in the care of and improvement to child and infant health, including healthcare providers, policymakers, participating agencies, schools, community-based organizations, researchers, families and caregivers, and other stakeholders. The key findings presented in this report should assist in the identification of future targets for intervention and guide effective and evidence-based efforts towards the reduction of preventable deaths for our Arizona children.

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This publication can be made available in alternative formats. Contact the CFRP at (602) 542-1875 (voice) or individuals with hearing or speech challenges, call 711 for Relay. For questions, contact [bwch.oae@azdhs.gov](mailto:bwch.oae@azdhs.gov).

## Disclaimers to the Annual Report:

### Public Health and Vital Statistics:

This report's data may differ from those published by the Business Intelligence Office (BIO). BIO only reports data on Arizona residents whereas the CFRP investigates and reports on the death of all children who die in Arizona regardless of state residency.

### Department of Child Safety (DCS) / Child Protective Services (CPS):

Data in this report may differ from the data published by the Department of Child Safety / Child Protective Services as the CFRP and DCS/CPS have different definitions of child neglect/abuse. The CFRP works closely with DCS/CPS to further improve our surveillance of child neglect/abuse. A more detailed explanation, including the DCS definition of abuse and neglect, can be found in Appendix A.

### Race/Ethnicity Referencing:

Due to spacing issues, figures throughout the report will refer to the following race/ethnicity groups: American Indian, Asian, Black, Hispanic, and White. However, please note that American Indians include Alaska Natives, Asian includes Pacific Islanders, Black includes African American, and Hispanic includes Latinos. All text accompanying the figures will be all-inclusive. This year's report continues with the method of combining, or bridging, race/ethnicity for individuals identified as both Hispanic and one other race introduced in the 2012 Arizona Health Status and Vital Statistics Report. This method allows us to match the categories of race/ethnicity used by the Arizona Department of Administration to create the population projections used as denominators in this report, as well as to create more meaningful racial/ethnic categories by placing individuals identified with both race and ethnicity into the group representing a smaller proportion of Arizona's population.

### Racial Disparities:

Although portions of the report show progress in reducing child deaths in Arizona overall, racial disparities in mortality remain and have increased in recent years. American Indian and Black children are disproportionately affected by mortality at greater levels than White and Hispanic children despite both groups representing small proportions of the total Arizona Population. Further investigation of these disparities can lead to evidence-based tailored public health programs and interventions to improve mortality rates for Arizona's American Indian and Black communities.

### Prevention Recommendations:

The prevention recommendations included in this report are developed by the CFRP State Team and do not necessarily reflect the official views of the Arizona Department of Health Services (ADHS) or the State of Arizona. The local review team recommendations and a literature review conducted by the CFRP make up the recommendations that are presented to the CFRP State Team for inclusion in this report.

### Urban and Rural Area Designation:

For the purpose of this report, the following are Arizona's urban areas: Phoenix-Scottsdale-Mesa Metropolitan Statistical Area (Maricopa and Pinal Counties), Tucson Metropolitan Statistical Area (Pima County), and Yuma Metropolitan Statistical Area (Yuma County). The remaining counties (Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Mohave, Navajo, Santa Cruz, and Yavapai) comprises Arizona's rural areas.

#### Infant Mortality Rate & Sudden Unexpected Infant Death Mortality Rate Reporting:

In previous reports, the population denominator used to calculate infant mortality rates and sudden unexpected infant death mortality rates included the number of live births in Arizona among Arizona residents in the reported year. However, as determined by Arizona State statute (36-3501), CFRP investigates and reports the deaths of all children who die in Arizona regardless of state residency. To ensure rates were calculated correctly, the population denominator has been re-calculated to include live births in Arizona regardless of state residency. This has resulted in changing both the infant mortality rates and sudden unexpected infant death mortality rates from 2013 and onward. As such, the infant mortality rates and sudden unexpected infant death mortality rates reported in this report will not match the previously reported numbers. Ensuring the population denominator is properly identified gives a more accurate representation of the infant mortality rates and sudden unexpected infant death mortality rates.

#### Prematurity Mortality Rate Reporting:

In previous reports, the population denominator used to calculate prematurity mortality rate included the number of premature births in Arizona among Arizona residents in the reported year. However, as determined by Arizona State statute (36-3501), CFRP investigates and reports the deaths of all children who die in Arizona regardless of state residency. To ensure our rates were calculated correctly, the population denominator has been re-calculated to include premature births in Arizona regardless of state residency. This has resulted in changing the prematurity mortality rates from 2013 and onward. As such, the prematurity mortality rates reported in this report will not match the previously reported numbers. Ensuring the population denominator is properly identified gives a more accurate representation of the prematurity mortality rate.

#### Congenital Syphilis Rate Reporting:

This report's data may differ from those published by the Office of Disease Integration and Services (ODIS) at the Arizona Department of Health Services (ADHS). ODIS uses the ADHS STDCP surveillance system, PRISM (Patient Reporting Investigation Surveillance Manager), to conduct surveillance and monitor sexually transmitted diseases trends in Arizona. The CFRP investigates all child deaths identified through a vital records report and records received by local teams. These approaches differ and therefore the information is not comparable.

#### Data Suppression:

In order to protect the identity of individuals and their families, non-zero count less than six are suppressed. Percentages are not calculated for suppressed counts.

## Glossary:

**Accident** – An injury that occurred when there was no intent to cause harm or death, an unintentional injury.

**ADE** – Arizona Department of Education

**ADES** – Arizona Department of Economic Security

**ADCS** – Arizona Department of Child Safety (formerly child protective services under Arizona Department of Economic Security).

**ADHS** – Arizona Department of Health Services

**Adverse Childhood Experiences (ACEs)** – Potentially traumatic events that occurred before the age of 18 years. ACEs can include violence, abuse, and growing up in a family with mental health or substance use problems. Toxic stress from ACEs can affect brain development and how the body responds to stress.

**Cause of death** – The illness, disease, or injury responsible for the death. Examples of natural causes of death include heart defects, asthma, and cancer. Examples of injury-related causes include blunt force impact, burns and drowning.

**CFR Data Form** – A standardized form, approved by the State CFR Team, required for collecting data on all child fatality reviews.

**CFR State Program** – Established in the ADHS, provides administrative and clerical support to the State Team; provides training and technical assistance to Local Teams; and develops and maintains the CFR data program.

**Choking** – The inability to breathe because the trachea (airway) is blocked, constricted, or swollen shut.

**Chronic Condition** – an impairment or illness that has a substantial long-term effect on the child's day-to-day function or health including medical, orthopedic, cognitive, sensory, mental health, and substance use disorder.

**Confidentiality Statement** – A form, which must be signed by all review process participants, that includes statute information regarding the confidentiality of data reviewed by local child fatality teams.

**Congenital Syphilis** – A disease that occurs when a mother who has syphilis, a sexually transmitted infection, passes the infection on to her baby during pregnancy.

**COVID-19** – A disease caused by the SARS-CoV-2 virus. A COVID-19 death is when COVID 19 was the immediate or underlying cause of death.

**Drowning death** – Death from an accidental or intentional submersion in a body of water.



**Fentanyl** – Potent synthetic opioid drug for use as an analgesic (pain relief) and anesthetic. It is approximately 50 times stronger than heroin and 100 times stronger than morphine. (please see the definition for Opioid)

**Firearm injury death** – Death caused by an injury resulting from the penetrating force of a bullet or other projectile shot from a powder-charged gun.

**Fire/flame death** – Death caused by injury from severe exposure to flames or heat that leads to tissue damage or from smoke inhalation to the upper airway, lower airway, or lungs.

**Homicide** – Death resulting from injuries inflicted by another person with the intent to cause fear, harm, or death.

**IHS** – Indian Health Services

**Infant** – A child who is less than one year of age.

**Infectious disease-related death** – Death in which an infectious disease caused or contributed to the death. An infection is caused by organisms (such as bacteria, virus, and fungi) that sometimes can be passed, directly or indirectly, from one person to another making it contagious (communicable).

**Intentional injury** – An injury that is the result of the intentional use of force or purposeful action against oneself or others. Intentional injuries include interpersonal acts of violence intended to cause harm, criminal negligence, or neglect (i.e., homicide) and self-directed behavior with intent to kill oneself (i.e., suicide).

**Local CFR Team** – A multi-disciplinary team authorized by the State CFR Team to conduct reviews of child deaths within a specific area, i.e., county or other geographic area.

**Low Birthweight** – A term used to describe babies who are born weighing less than 2,500 grams (5 pounds, 8 ounces).

**Manner of death** – The circumstances of the death as determined by CFR teams by postmortem examination, death scene investigation, police reports, medical records, or other sources. Manner of death categories includes natural, accident (i.e., unintentional injury), homicide (i.e., intentional injury), suicide (i.e., intentional injury), and undetermined.

**Motor vehicle crash (MVC) death** – Death caused by injuries from a motor vehicle incident, including injuries to motor vehicle occupant(s), pedestrian(s), pedal cyclist(s) or another person.

**Natural Death** – Death classified as natural death due to a medical condition.

**Neglect** – Failure to provide appropriate and safe supervision, food, clothing, shelter, and/or medical care when this causes or contributes to the death of the child.

**Neglect/Abuse Death** – A death in which an act of neglect, physical abuse, sexual abuse, or emotional abuse against a child contributed to their death (please see the definitions for physical abuse, neglect, and perpetrator).

**Opioid** – Class of drugs that include the illicit drug heroin, synthetic opioids such as fentanyl, and pain relievers available by prescription, such as oxycodone (OxyContin®), hydrocodone (Vicodin®), codeine, morphine, and many others.

**Perpetrator** – Individual identified as a possible perpetrator of physical, sexual, or emotional abuse, or neglect. Caregiver may include individual providing supervision of the child including parents, parent’s boyfriend/girlfriend, friend, neighbor, childcare provider, or other household member.

**Physical abuse** – This means the infliction of physical harm, whether or not the inflictor planned to carry out the act or inflicted harm. The abuse may have occurred on or around the time of death, but also includes any abuse that occurred previously if that abuse contributed to the child’s death. NOTE: Firearm injury deaths inflicted by a parent, guardian or caregiver are included in this type of abuse and neglect.

**Prematurity death** – A death that was due to premature birth (less than 37-week gestation) of an infant that had no underlying medical conditions that would have resulted in the death. Perinatal conditions are included in this category if the birth was premature.

**Preventable death** – A child’s death is considered preventable if the community or an individual could have done something that would have changed the circumstances leading to the child’s death. A death is preventable if reasonable medical, educational, social, legal, or psychological intervention could have prevented the death from occurring. The community, family, and individual’s actions (or inactions) are considered when making this determination.

**Record Request Forms** – A form required to request records for conducting a team review.

**Sleep-related death** – A unique grouping of infant injury deaths inclusive of select injury causes (accidental suffocation in bed, unspecified threat to breathing, and undetermined causes) in which the infant was last known to be asleep when last seen alive.

**Substance use** – The CFRP defines substance use-related deaths as deaths in which substance use was found as a direct or contributing factor leading to child deaths. The substances used could include illicit drugs, prescription drugs, and/or alcohol. To identify substance use as a factor, each case was reviewed to determine if any individual involved in the death of a child used substances such as illicit drugs, prescription drugs, and/or alcohol. The individual could have been the child’s parent or caretaker, an acquaintance, a stranger, or the child, and the substance use occurred proximate to the time of the incident leading to the death.

**Suffocation** – Oxygen deprivation by mechanical obstruction to the passage of air into the lungs, usually at the level of the nose, or mouth.

**State CFRP Team** – Established by A.R.S. 36-3501 et seq., the State CFRP Team provides oversight to Local CFRP teams, they prepare an annual report of review findings and develop recommendations to reduce preventable child deaths.











**Strangulation** – Mechanical constriction of neck structures.

**Substance Exposed Newborn (SEN)** – Identification of whether an infant was delivered exposed to a substance should be determined by the childbearing parent's history; clinical presentation of the newborn; and laboratory testing of biological specimens (i.e., urine, blood, oral fluid, sweat, hair, and breast milk), neonatal matrices (i.e., urine, meconium, hair, and umbilical cord blood and tissue), and/or matrices from both the childbearing parent and neonate (i.e., placenta and amniotic fluid).

**Sudden Unexpected Infant Death (SUID)** – Death of a healthy infant who is not initially found to have any underlying medical condition that could have caused their death. It includes the deaths that might have previously been categorized as "crib deaths" if the death occurred during sleep, however not all these deaths are sleep related. Most of the SUIDs are due to suffocation and unsafe sleep environments.

**Suicide** – A death that is due to a self-directed intentional behavior where the intent is to die because of that behavior.

**Symbols on Highlight Pages** – Below is the definition of the symbols on the highlights page that is found on the first page of each cause and manner of death:

	Number of deaths.
	Change in rate from previous year to current year.
	Percentage of death that is preventable.
	Top 3 causes of death.
	Gender breakdown of death.
	Age breakdown of death.
	Race/Ethnicity disproportionately affected (if applicable).
	Substance Use information (if applicable).
	Top 3 risk factors that contribute to death.
	Example prevention recommendation for each stakeholder group (Patient/Family/Caregiver; Provider/Healthcare Facilities, Policy Makers/Participating Agencies/Schools, and Community-Based Organizations). Additional recommendations found in Section 5.

**Undetermined** – A death in which the CFR Team is unable to determine if the manner of death was natural, accident, homicide, or suicide. Death may be listed as undetermined because there is insufficient information available for review.

## Letter from the Chair of the CFR Team:

Last year, 875 children died in Arizona and 45% of these deaths were determined to be preventable. The most common causes of these preventable deaths were motor vehicle crashes (MVCs), suffocation, firearm injuries, poisoning, and drowning. In 2022, 100% of the deaths due to suicide, homicide, and accidental injury were determined to be preventable. Throughout this report we have made recommendations to prevent these deaths. For example, MVC deaths can be prevented by using seat belts and child safety restraints, infant suffocation deaths can be prevented by using safe sleep practices and drowning deaths can be prevented by increasing access to swim lessons for all children. Targeting prevention programs to communities at highest risk is critical to reducing the racial and ethnic disparities associated with these preventable deaths. For example, while Black children are only 6% of the child population, 27% of all drowning deaths were Black children. Similarly, only 5% of the child population is American Indian, but 14% of all motor vehicle crash deaths were American Indian children.

In 2022, ten percent of all Arizona child deaths were due to infectious diseases. There were 17 COVID-19 deaths, 14 deaths due to pneumonia and 32 deaths due to other infections (i.e., influenza, congenital syphilis, RSV, meningitis). Many of these deaths could have been prevented by immunizations. Since the advent of COVID-19 vaccinations, child deaths in Arizona from COVID-19 have decreased from 32 deaths in 2021 to 17 deaths in 2022. Last year, nine infants in Arizona died from congenital syphilis. This infection can cause miscarriage, prematurity, and death shortly after birth. Screening and antibiotic treatment could have prevented these deaths.

Substance use (i.e., alcohol, marijuana, methamphetamines, opioids) caused or contributed to 163 child deaths in 2022 and 100% of these deaths were determined to be preventable. Parental substance use history was a risk factor in 98 of the 146 neglect/abuse deaths. 34 Arizona children died from fentanyl poisoning in 2022 and eight of these children were less than 5 years old. Substance use deaths can be prevented by increasing access to naloxone, fentanyl testing and treatment programs.

Sudden Unexpected Infant Death (SUID) is the death of a healthy infant who is not initially found to have any underlying medical condition that could have caused their death. Most of these deaths are due to suffocation in unsafe sleep environments. There were 74 SUID deaths in 2022 and 96% of these deaths were preventable. In 97% of these deaths the infant was sleeping in an unsafe environment. These tragic deaths can be prevented by always putting infants to sleep Alone on their Back, in a Crib. Parents should avoid using products for sleep that are not specifically marketed for infant sleep (i.e., rocking sleepers, nursing pillows, infant loungers).

I would like to thank Arizona Department of Health Services, Arizona Chapter, American Academy of Pediatrics and all our local and state fatality team volunteers for their support of the CFR program and its mission to prevent child deaths in Arizona.

Sincerely,



Mary Ellen Rimsza, MD FAAP

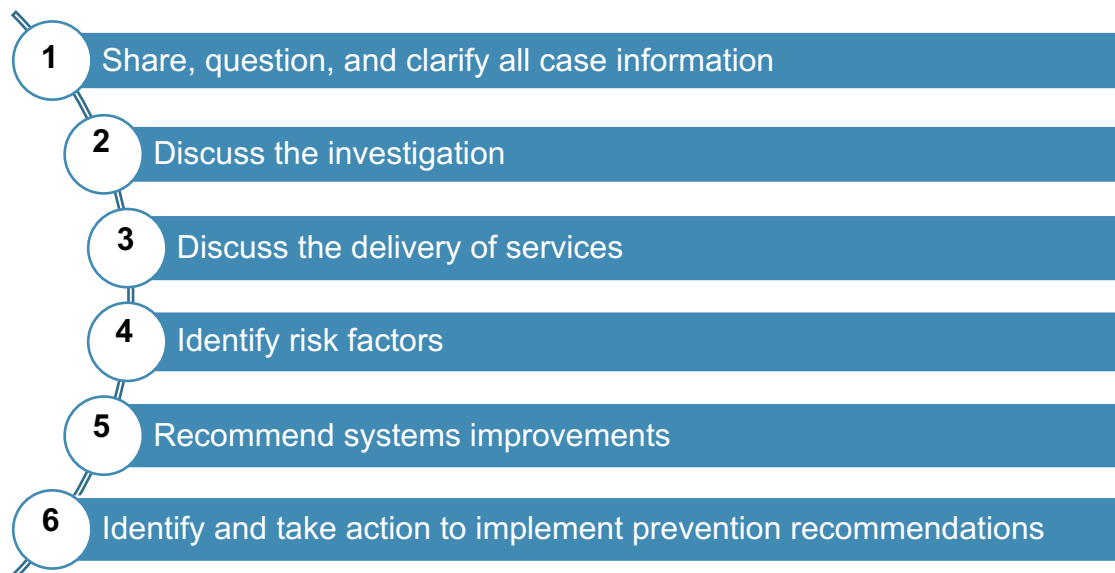
## Executive Summary

The Arizona Child Fatality Review Program (CFRP) annually conducts a comprehensive review of every child less than 18 years of age who died in Arizona, including all deaths due to injuries or medical conditions. While most deaths due to medical conditions are not preventable, deaths due to intentional (suicides, homicides) and unintentional injuries (drowning, suffocation, motor vehicle crashes) are preventable and vary by age. Historical data shows that infants are most often injured by suffocation resulting from an unsafe sleep environment, toddlers are more likely to drown, and older children are more vulnerable to motor vehicle or firearm injury. Analyzing risk factors allows injuries to be anticipated and thus prevented when the appropriate protective measures are in place.

The CFRP was established to review all possible factors surrounding a child's death. The intent of the program is to identify ways of reducing preventable fatalities. Legislation was passed in 1993 (A.R.S. § 36-342, 36- 3501) authorizing the creation of the CFRP. In 1994, the review process and data collection began. Today 10 local teams conduct initial reviews with oversight from the State Team and its two subcommittees.

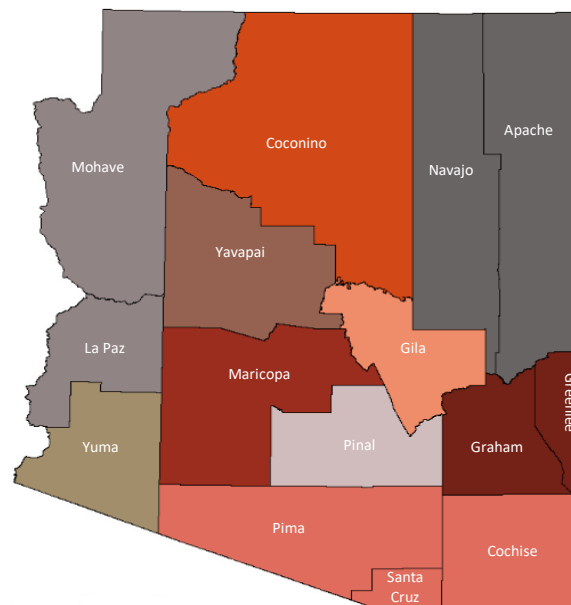
This report utilizes descriptive statistics and trend analyses to present summary information about child fatalities as well as the leading causes under each manner of death by factors such as age, sex, and race/ethnicity. The demographic and prevention information in this report is used to help broadly inform public health initiatives and the community. Recommendations for prevention are decided upon by both state and local review teams based on the information collected and reviewed on each child's death.

The CFRP follows the National Center for Child Death Review steps to conduct effective review meetings<sup>1</sup>:



### Review Process

Arizona has 10 local CFR Teams that complete reviews at the community level. Second level reviews of SUID and Neglect/Abuse deaths are done at the state level by subcommittees of the State Team. The review process begins when the death of a child less than 18 years old is identified through a vital records report. The CFRP sends a copy of the death certificate to a local CFR team based in the county where the deceased child lived. If the child was not a resident of Arizona, the local team in the county where the death occurred will conduct the review. Information collected during the review is then entered into the National Child Death Review Database that is managed by the National Child Fatality Review and Prevention (National Center) in the Michigan Public Health Institute. The resulting dataset is used to produce the statistics found in this annual report.



\*Same color in map = Same review team

### Local CFR Team Membership

The CFRP partners with local county health departments, academia, and non-profit organizations to establish review teams. These teams are located throughout the state and membership includes (A.R.S. § 36-3502):

- County attorney's office
- County health department
- County medical examiner's office
- Department of Child Safety (DCS)
- Domestic violence specialist
- Local law enforcement
- Parent
- Pediatrician or family physician
- Psychiatrist or psychologist

### Report Statistics

The descriptive statistics in this report summarize the information about child deaths by manner, cause, age, sex, race/ethnicity, and risk factors. Frequencies percentages, rates and cross-tabulation tables are shown throughout the report. Rate is a measure of the frequency of some event (i.e., death) in relation to a unit of population during a specified time period such as a year; events in the numerator of the year occur to individuals in the denominator. Rates express the likelihood (or risk) of the event in the specified population during a particular time and are generally expressed as units of population in the denominators (per 1,000, 10,000, 100,000 and so forth). The rates were calculated using the following denominators: the number of live births (specific to infant mortality and sudden unexpected infant deaths), number of premature live births (specific to prematurity mortality), and children (0-17) population estimates from the Arizona Office of Economic Opportunity for all other groups. The demographic and prevention information represented in this report is primarily used to help broadly inform public health initiatives and the community.

### Manner of Death vs. Cause of Death

In this report, the manner of death includes natural (i.e., cancer), accident (i.e., unintentional car crash), homicide (i.e., assault), suicide (i.e., self-inflicted intentional firearm injury), and undetermined. The cause of death refers to the injury or medical condition that resulted in death (i.e., firearm injury, pneumonia, cancer). The manner of death is not the same as the cause of death but specifically refers to the intentionality of the cause. For example, if the cause of death was a firearm injury, then the manner of death may have been intentional or accidental. If it was intentional, then the manner of death was suicide or homicide. If the injury was unintentional, then the manner of death was an accident. In some cases, there was insufficient information to determine the manner of death, even though the cause was known. For example, it may not have been clear that a firearm injury was due to an accident, suicide, or homicide; and in these cases, the manner of death was listed as undetermined.

### Limitations

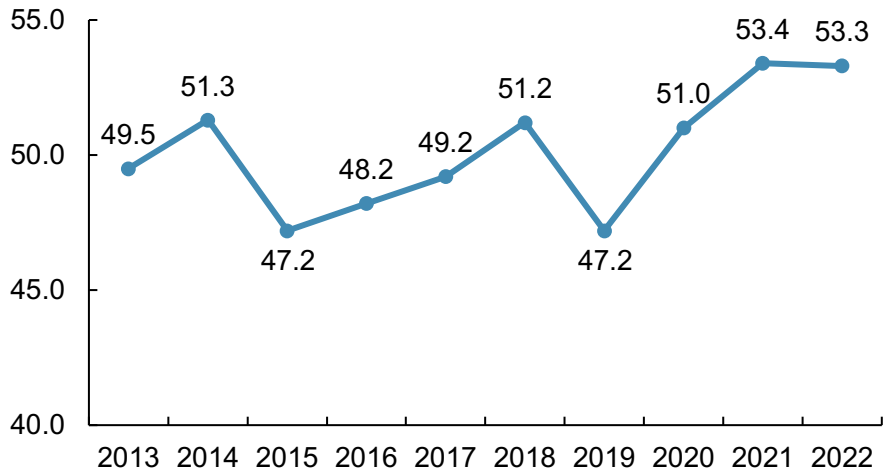
It is important to note that the report has certain limitations. While every child's death is important, the small numbers in some areas of preventable deaths reduce the ability to examine some trends in detail. The numbers are used to inform public health efforts in a broader sense, but the sample size reduces the ability to make true statements about statistical significance in any differences or causal relationships. It is also of note that much of the collected data is done through qualitative methods such as the collection of witness reports on child injury deaths. This means that there is always the potential for bias when the information is taken. Other variables that may not be captured on the death certificate or other typical records may include family dynamics, mental health issues, or other hazards.

Additionally, data is based upon vital records information and information from local jurisdictions. Arizona has a medical examiner system with each county having its own jurisdiction. Law enforcement also varies around the state. Arizona is home to 22 different American Indian tribes each of whom has their own sovereign laws and protocols. Jurisdiction and records sharing for each tribal government vary. These intricate relationships and individual jurisdictions mean that sources and information may vary to review each case.

# Thirtieth Annual Report Highlights

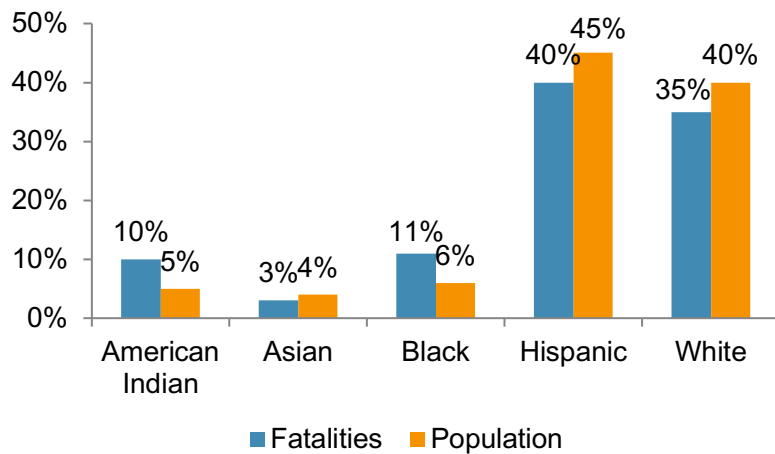
<b>Total Deaths</b> <b>875</b> (Out of State Residents: 27)
<b>Preventable Deaths</b> <b>390</b> (45% of all deaths)
<b>Deaths Under 1 Year</b> <b>479</b> (55% of all deaths)
<b>Neglect/Abuse Deaths</b> <b>146</b> (17% of all deaths)

Mortality Rate per 100,000 Children, Ages 0-17 Years, Arizona, 2013-2022<sup>2-11</sup>



Natural Causes	Accidents	Homicides	Suicides	Undetermined
<b>62%</b>	<b>25%</b>	<b>6%</b>	<b>5%</b>	<b>3%</b>
539 child deaths	215 child deaths	49 child deaths	46 child deaths	26 child deaths

Percentage of Deaths among Children by Race/Ethnicity, Compared to the Population, Ages 0-17 Years (n=875)<sup>2</sup>



**Top 5 Leading Causes of Death:**

1. Prematurity (n=208)
2. Congenital Anomaly (n=115)
3. Motor Vehicle Crash (n=81)
4. Suffocation (n=61)
5. Firearm Injury (n=59)

Substance use was involved in **1 out of every 5** child fatalities

Males were victim to **81%** of firearm injury deaths

**82%** of children who died of neglect/abuse were less than five years of age

**97%** of the Sudden Unexpected Infant Deaths (SUIDs) occurred in an unsafe sleep environment

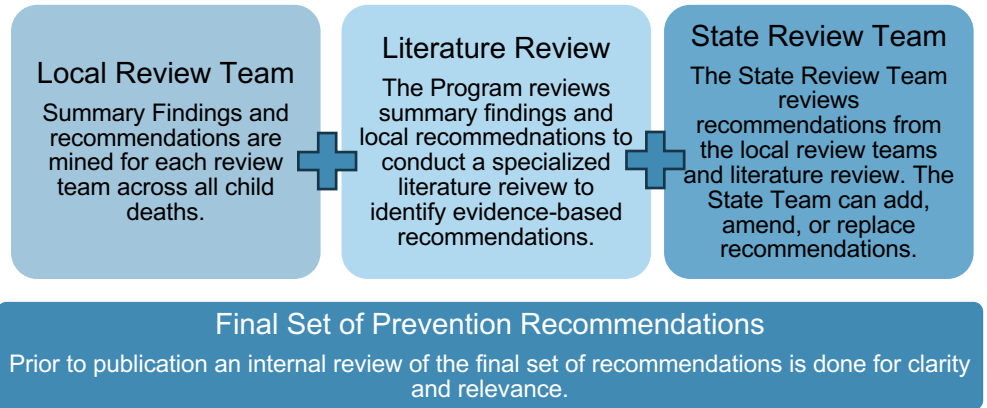


### Recommendation Highlights:

In response to the summary data in the report, the State CFR Team makes evidence-based recommendations to prevent child fatalities. Highlighted recommendations are from manners/causes of deaths that report an increase between 2022-2023 including the following:

- Some **firearm injury deaths** prevention recommendations include removing firearms from households with children, proper storage of all firearms which requires keeping the firearm unloaded and locked in a safe with the ammunition stored separately, incorporating age-appropriate firearm safety workshops, and promoting positive parenting strategies in the home.
- Some **motor vehicle crash (MVC) death** prevention recommendations include requiring children younger than 13 years to ride in the rear seats of vehicles, continue promoting the importance of safety seats for children and provide parents with education and information on the locations of certified seat installers, increasing awareness about proper vehicle restraint use and the risks associated with driving under the influence, and ensuring that helmets are worn when required.
- Some **neglect/abuse deaths** prevention recommendations include the expansion of the DCS Workforce Resilience program, increasing home visiting programs through the state, increasing awareness of Adverse Childhood Experiences (ACEs), and increasing awareness and support for the All-Babies Cry Program.
- **Prematurity** was identified as the most common cause of death among neonates. Some prevention recommendations include avoiding using substances such as drugs or alcohol during pregnancy because it increases the risk of preterm birth and other complications, encouraging regular prenatal care, increasing the availability of affordable health insurance and awareness of AHCCCS coverage up to one year postpartum, and increasing availability of home visiting programs.
- Some **Sudden Unexpected Infant Deaths (SUIDs)** prevention recommendations include educating parents on safe sleeping environments and the dangers associated with the use of products for sleep that are not specifically marketed for infant sleep and recalled items. Infants should be placed on their backs for every sleep on a firm, flat, non-inclined sleep surface. Alone, on my Back, in a Crib (ABCs) is the safest sleeping practice for an infant until it is one year of age. Infants should always sleep on a separate surface. Additionally, home visiting programs and WIC services for infants following birth for up to one year should be increased among the state.

A more detailed list of these prevention recommendations begins in **Section 5**.



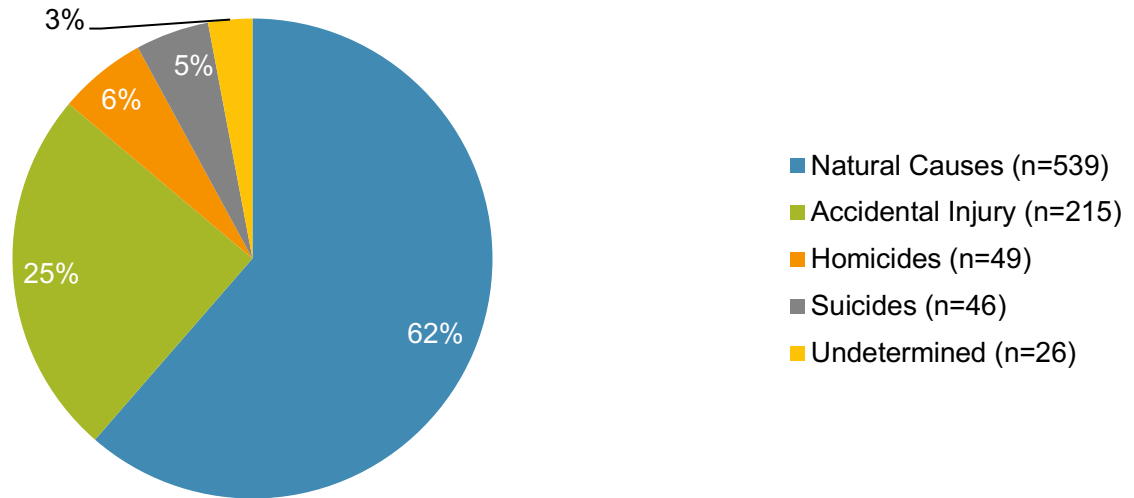


# Section 1: Overall Demographics

## Child Mortality (0-17 Years of Age)

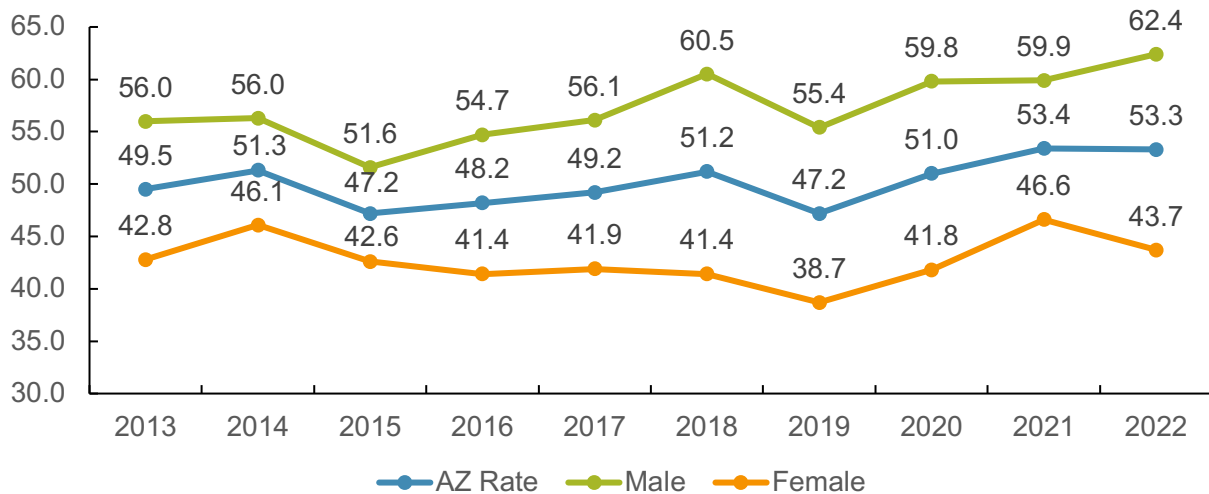
The majority of child deaths were from natural causes (62%), followed by accidental injury deaths (25%) (Figure 1).

**Figure 1. Number and Percentage of Deaths among Children by Manner of Death, Ages 0-17 Years, Arizona, 2022 (n=875)**



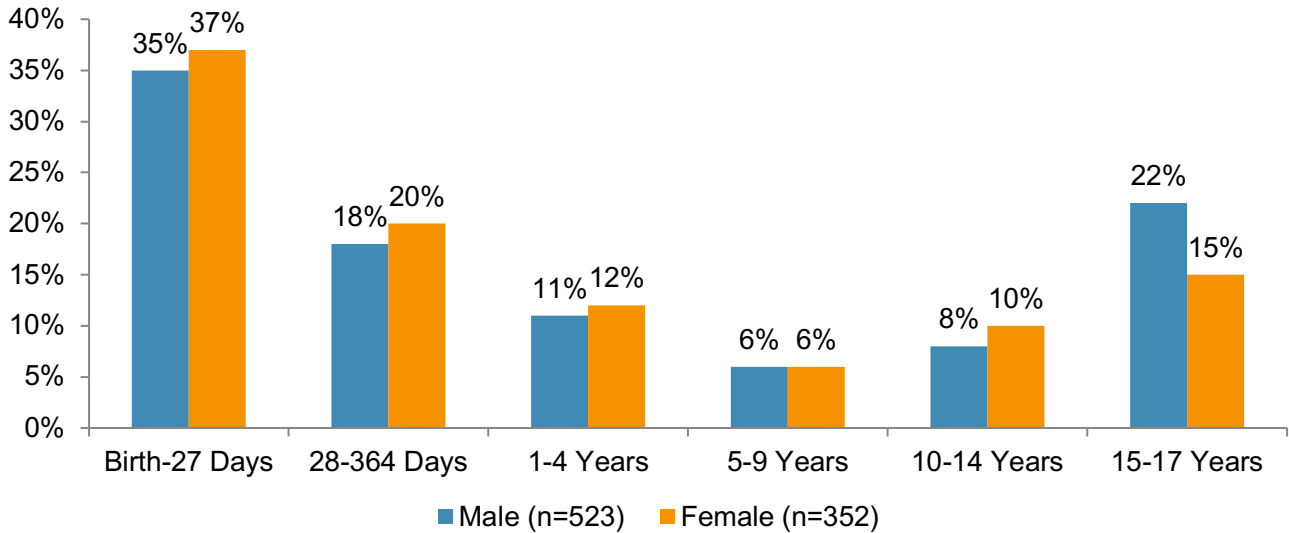
Arizona’s child mortality rate has remained relatively stable since 2013. Arizona’s child mortality rate decreased by 0.3% from 53.4 deaths per 100,000 children in 2021 to 53.3 deaths per 100,000 children in 2022. The male child mortality rate is consistently higher than the female child mortality rate (Figure 2).

**Figure 2. Mortality Rate per 100,000 Children, Ages 0-17 Years, Arizona, 2013-2022 (n=875)<sup>2-11</sup>**



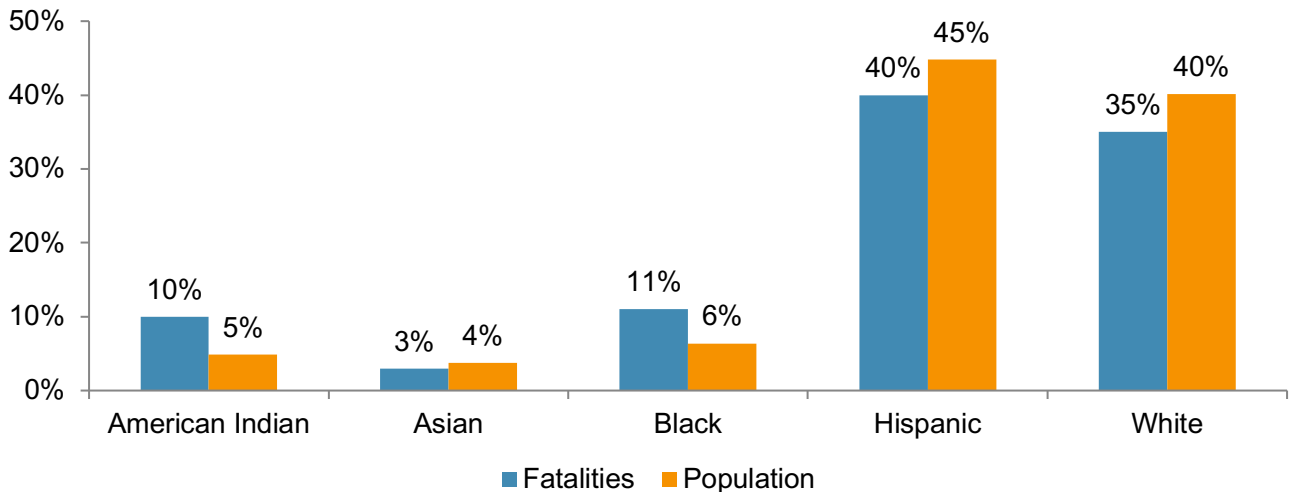
Sixty percent of child deaths were males while 40% were females. The highest percentage of male deaths were among children birth to 27 days old (35%) and 15 to 17 years old (22%). The highest percentage of female deaths were among children birth to 27 days old (37%) and 28 to 364 days old (20%) (Figure 3).

**Figure 3. Percentage of Deaths among Children by Age Group and Sex, Ages 0-17 Years, Arizona, 2022 (n=875)**



Black and American Indian children made up 11% and 10% of child deaths, respectively, but only make up 6% and 5% of the total child population. The largest number of child deaths were among Hispanic children (40%), followed by White children (35%) (Figure 4).

**Figure 4. Percentage of Deaths among Children by Race/Ethnicity, Ages 0-17 Years, Compared to Population, Arizona, 2022 (n=875) <sup>2</sup>**



The majority of child deaths, in Arizona, occurred in children residing in Arizona urban counties (83%) (Table 1). Twenty-seven reported deaths occurred in children that resided outside of Arizona (3%).

**Table 1. Number and Percentage of Deaths among Children by Residency, Ages 0-17 Years, Arizona and Out of State, 2022 (n=875)**

Residency	Number	Percent
Arizona Urban Counties	724	83%
Arizona Rural Counties	124	14%
Out of State	27	3%

Prematurity was the leading cause of death for infants 0-27 days while suffocation was the leading cause of death among infants 28 days to less than 1 year of age (Table 2). Among children ages 1-4 years, drowning was the leading cause of death. Among children ages 5-9 years and 10-14 years, motor vehicle crash was the leading cause of death. Among children 15-17 years, firearm injury was the leading cause of death.

**Table 2. Top 5 Leading Causes of Child Death by Age Group, Arizona, 2022**

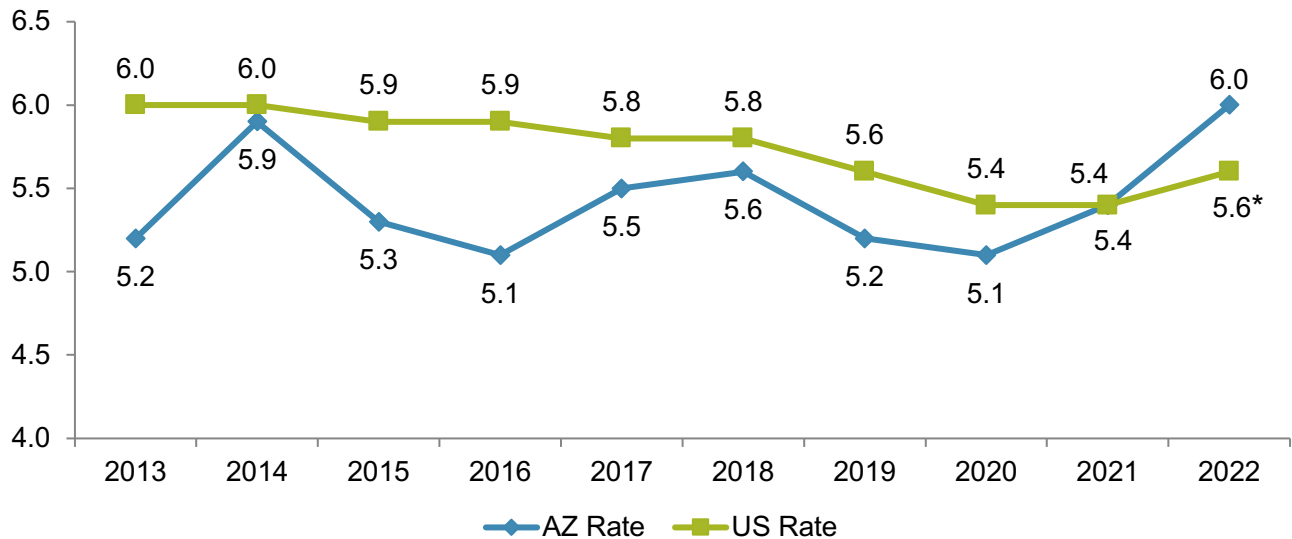
Age Group	Leading Causes of Child Death				
	1	2	3	4	5
0-27 Days (n = 315)	Prematurity (n = 187)	Congenital Anomaly (n = 70)	Cardiovascular (n = 16)	Perinatal Condition (n = 13)	Other Infection (n = 9)
28 Days - <1 Year (n = 164)	Suffocation (n = 55)	Congenital Anomaly (n = 27)	Prematurity (n = 19)	Undetermined (n = 15)	Cardiovascular (n = 13)
1-4 Years (n = 101)	Drowning (n = 24)	MVC (n = 10)	Congenital Anomaly (n = 8)	Poisoning (n = 8)	Cancer (n = 7)
5-9 Years (n = 53)	Motor Vehicle Crash (n = 16)	Cancer (n = 8)	Neurological/ Seizure Disorder (n = 7)	Firearm Injury (n < 6)	Congenital Anomaly (n < 6)
10-14 Years (n = 76)	Motor Vehicle Crash (n = 18)	Firearm Injury (n = 9)	Cancer (n = 8)	Neurological/ Seizure Disorder (n = 7)	Poisoning & Congenital Anomaly (n < 6)*
15-17 Years (n = 166)	Firearm Injury (n = 44)	MVC (n = 32)	Poisoning (n = 28)	Strangulation (n = 17)	Cancer (n = 15)
<b>All Deaths (N = 875)</b>	<b>Prematurity (n = 208)</b>	<b>Congenital Anomaly (n = 115)</b>	<b>Motor Vehicle Crash (n = 81)</b>	<b>Suffocation (n = 61)</b>	<b>Firearm Injury (n = 59)</b>

\*Poisoning and Congenital Anomalies had the same number of child deaths.

## Infant Mortality (Less than 1 Year of Age)

Arizona's infant mortality rate has been fluctuating since 2013. Since 2021, Arizona's infant mortality rate has increased 11% from 5.4 deaths per 1,000 live births to 6.0 deaths per 1,000 live births. Sudden Unexpected Infant Deaths (SUIDs) and neglect/abuse deaths are large contributors to the increase (See the SUID and neglect/abuse sections for more information).

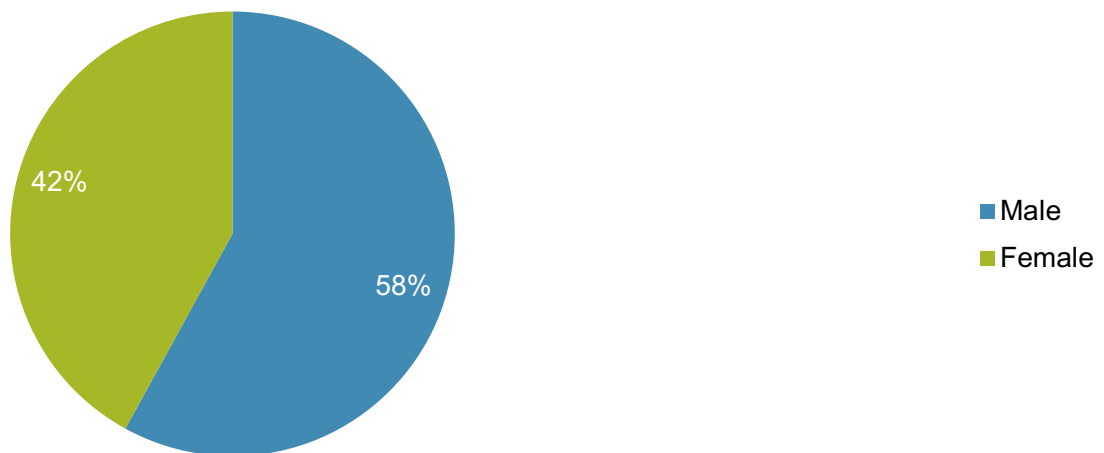
**Figure 5. Infant Mortality Rate per 1,000 Live Births, Less than 1 Year of Age, Arizona & U.S., 2013-2022** <sup>12-32, 131</sup>



\*Preliminary infant mortality rate as reported by the National Center for Health Statistics, National Vital Statistics System.

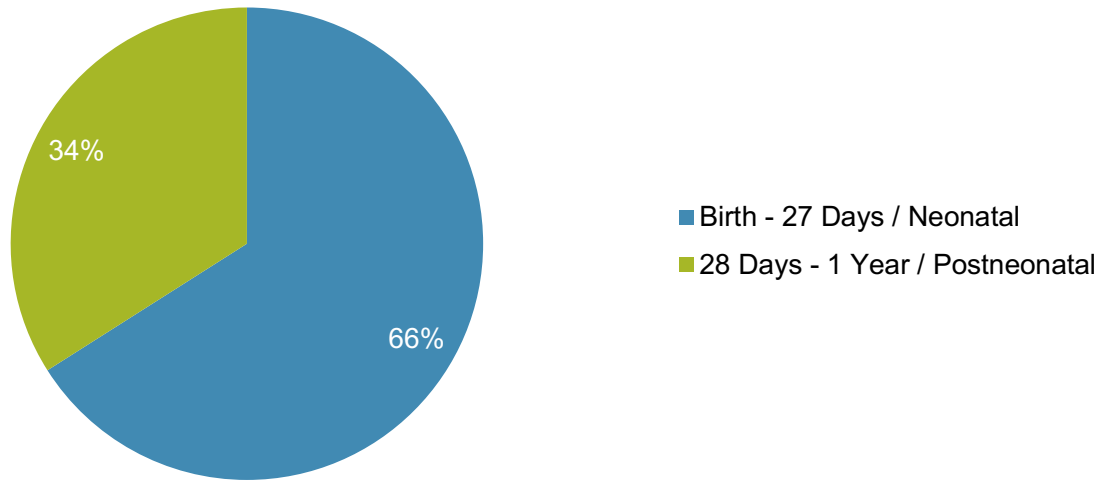
The majority of infant deaths were male (58%) (Figure 6).

**Figure 6. Percentage of Infant Deaths by Sex, Less than 1 Year of Age, Arizona, 2022 (n=479)**



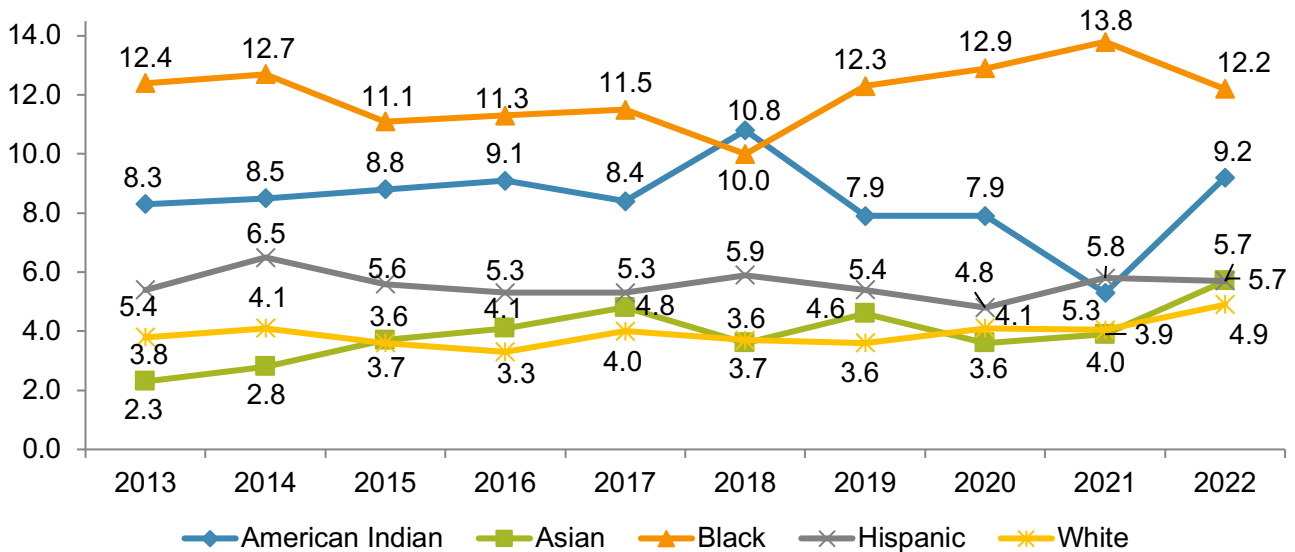
The majority of infant deaths occurred in neonatal infants (66%) (Figure 7).

Figure 7. Percentage of Infant Deaths by Age Group, Less than 1 Year of Age, Arizona, 2022 (n=479)



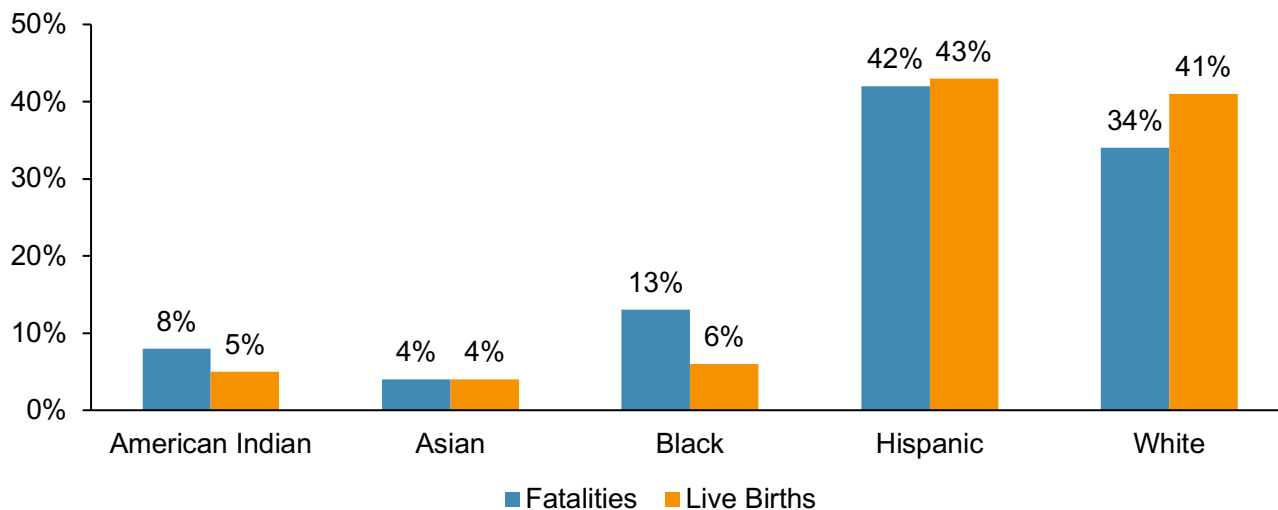
Black and American Indian infants have consistently had higher rates of infant mortality since 2013. In 2022, the infant mortality rates for Black and American Indian were 12.2 and 9.2 deaths per 1,000 live births, respectively. In comparison, the infant mortality rates for Hispanic and White infants were 5.7 and 4.9 deaths per 1,000 live births. All infant mortality rates, except for Black and Hispanic infants, increased, with the highest rate increase being for American Indian infants of 75% from 2021 to 2022 (Figure 8).

Figure 8. Infant Mortality Rates per 1,000 Live Births by Race/Ethnicity, Less than 1 Year of Age, Arizona, 2013-2022<sup>30-32</sup>



Black and American Indian children made up 8% and 13% of infant deaths, respectively, but only make up 5% and 6% of the live births in Arizona. The largest number of infant deaths were among Hispanic children (42%) followed by White children (34%) (Figure 9).

**Figure 9. Percentage of Infant Deaths per 1,000 Live Births by Race/Ethnicity, Less than 1 Year of Age, Arizona, 2022 (n=479) <sup>30</sup>**



The majority of infant deaths, in Arizona, occurred in infants residing in Arizona urban counties. Low birthweight (64%) followed by poverty (57%) were the main leading risk factors of infant deaths among infants living in Arizona's urban counties. Among infants living in Arizona's rural counties, poverty (66%) was the number one risk factor for death followed by low birthweight (53%). Maternal infection and exposure to substances in utero were risk factors in 29% and 25% of infants in rural counties, respectively. Amongst all infant deaths, low birthweight was the leading risk factor among 63% of cases. Maternal infection and exposure to substances in utero were risk factors in 14% and 12% of all infant deaths, respectively (Table 3). The prevalence of poverty, maternal infection, and exposure to substances in utero being risk factors of infant deaths increased 2%, 1%, and 1%, respectively, from 2021 to 2022 (not shown).

**Table 3. Leading Risk Factors of Infant Death by Urban/Rural, Less than 1 Year of Age, Arizona and Out of State, 2022**

Location	Leading Risk Factors of Infant Death, Less than 1 Year of Age*				
	1	2	3	4	5
Urban (n = 406)	Low Birthweight (64%)	Poverty (57%)	Parent Substance Use History (17%)	Unsafe Sleep Environment (14%)	CPS History with Family (14%)
Rural (n = 73)	Poverty (66%)	Low Birthweight (53%)	Parent Substance Use History (40%)	Maternal Infection (29%)	Exposure to Substances in Utero (25%)
<b>Infant Deaths (n = 479)</b>	<b>Low Birthweight (63%)</b>	<b>Poverty (59%)</b>	<b>Parent Substance Use History (20%)</b>	<b>Maternal Infection (14%)</b>	<b>Exposure to Substances in Utero (12%)</b>

\*More than one risk factor may have been identified for each death.



The leading cause of infant deaths was prematurity (43%) followed by congenital anomaly (20%) and suffocation (12%) (Table 4).

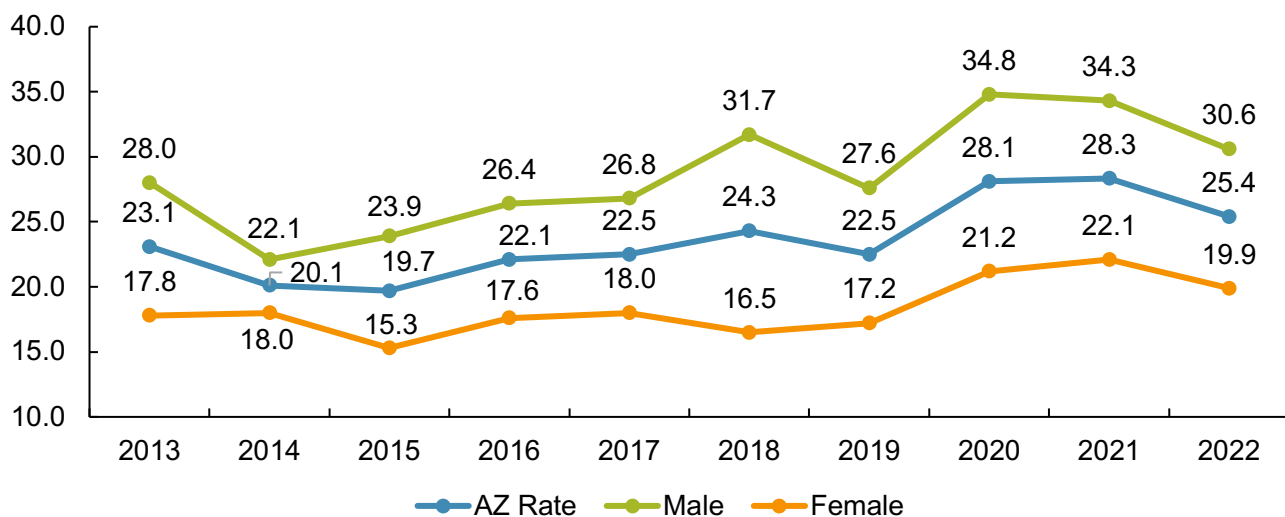
**Table 4. Cause of Infant Death, Less than 1 Year of Age, Arizona, 2022 (n=479)**

Causes of Death	Number	Percent
Prematurity	206	43%
Congenital Anomaly	97	20%
Suffocation	58	12%
Cardiovascular	29	6%
Other Infection	17	4%
Undetermined	17	4%

## Child Mortality (1-17 Years of Age)

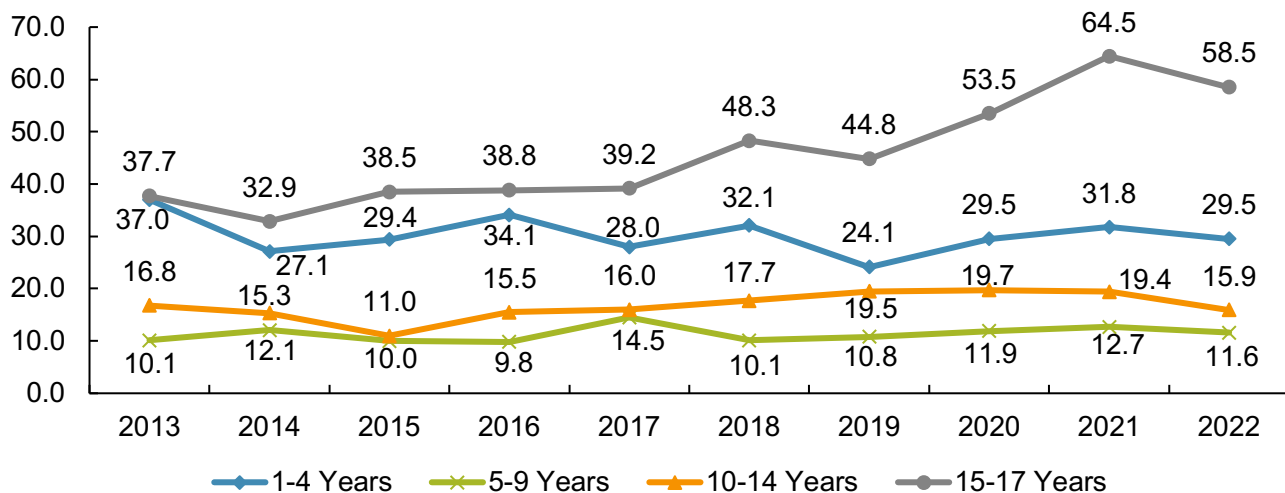
Arizona’s child mortality rate decreased 11% from 28.3 deaths per 100,000 children in 2021 to 25.4 deaths per 100,000 children in 2022. Both the male and female child mortality rate has decreased 11% and 10% respectively from 2021 to 2022. Males have consistently had a higher child mortality rate compared to females since 2013 (Figure 10).

**Figure 10. Mortality Rates per 100,000 Children, Ages 1-17 Years, Arizona, 2013-2022**  
3-11.33



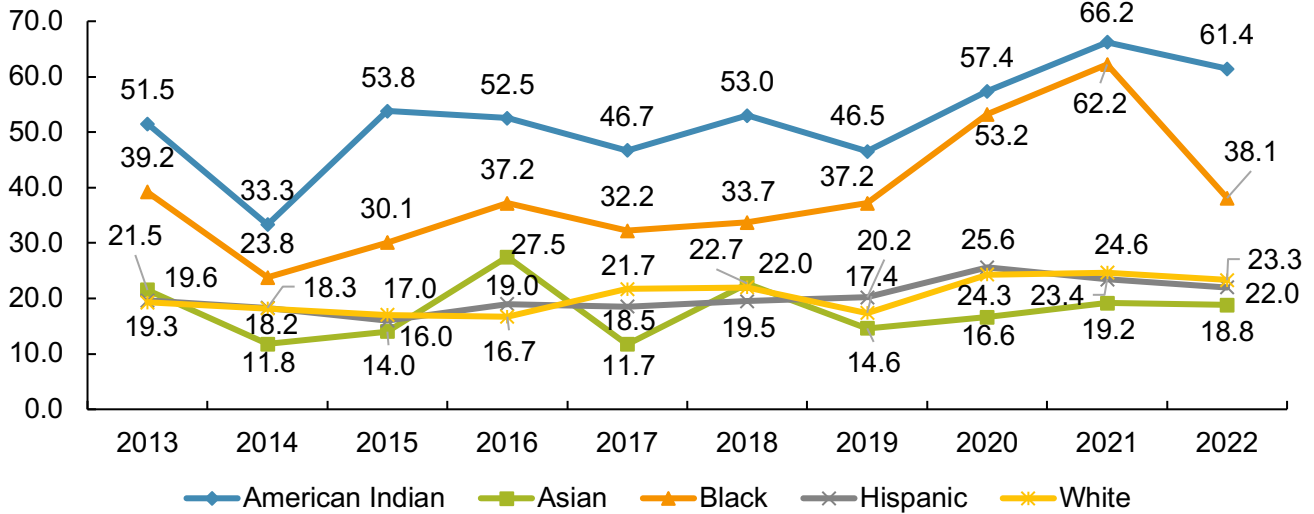
All age groups experienced a decrease in mortality rate from 2021 to 2022. Children ages 15-17 years experienced the greatest decrease of 9% from 64.5 deaths per 100,000 children in 2021 to 58.5 deaths per 100,000 children in 2022 (Figure 11).

**Figure 11. Mortality Rates per 100,000 Children by Age Group, Ages 1-17 Years, Arizona, 2013-2022**<sup>33</sup>



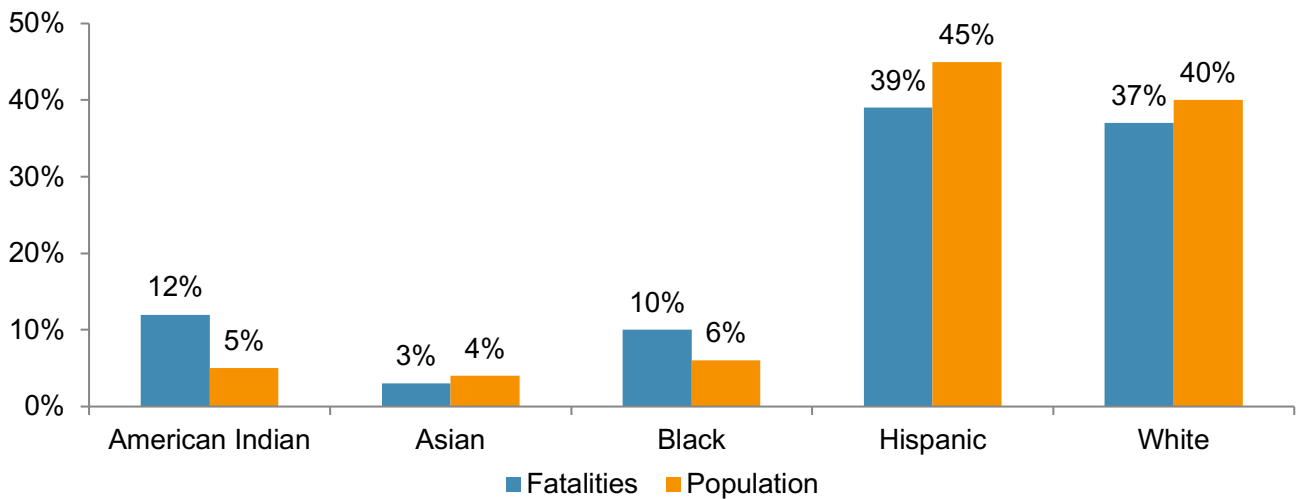
The mortality rate for all racial groups decreased from 2021 to 2022. American Indian and Black children consistently had higher rates of child mortality since 2013. In 2022, the child mortality rate for American Indian and Black children was 61.4 and 38.1 deaths per 100,000 children and had a 7% and 38% decrease, respectively (Figure 12).

**Figure 12. Mortality Rates per 100,000 Children by Race/Ethnicity, Ages 1-17 Years, Arizona, 2013-2022** <sup>33</sup>



American Indian and Black children made up 12% and 10% of child deaths ages 1-17 years, respectively, but only comprised 5% and 6% of the total child population ages 1-17 years. The largest number of deaths were among Hispanic children (39%), followed by White children (37%) ages 1-17 years (Figure 13).

**Figure 13. Percentage of Deaths among Children by Race/Ethnicity, Ages 1-17 Years, Compared to Population, Arizona, 2022** <sup>33</sup>



Chronic condition was the leading risk factor of child death among children ages 1-17 years regardless of the county they resided in. (Table 5).

**Table 5. Leading Risk Factors of Child Death among Children by Urban/Rural, Ages 1-17 Years, Arizona and Out of State, 2022**

Location	Leading Risk Factors of Child Death, Ages 1-17*				
	1	2	3	4	5
Urban (n = 335)	Chronic Condition (47%)	CPS History with Family (44%)	Substance Use (30%)	History of Trauma/ Violence (27%)	Parent Substance Use History (25%)
Rural (n = 61)	Chronic Condition (41%)	Child Relationships (36%)	CPS History with Family (34%)	Poverty (33%)	Parent Substance Use History (33%)
<b>Ages 1-17 Deaths (n = 396)</b>	<b>Chronic Condition (46%)</b>	<b>CPS History with Family (42%)</b>	<b>Substance Use (30%)</b>	<b>History of Trauma/ Violence (27%)</b>	<b>Parent Substance Use History (26%)</b>

\*More than one risk factor may have been identified for each death.



## Section 2: Preventable Deaths

The main purpose of the CFRP is to identify preventable factors in a child's death. Throughout the report, the term "preventable death" is used. Each multi-disciplinary team is composed of professionals who review the circumstances of a child's death by reviewing records ranging from autopsies to law enforcement reports. The team then determines if there were any preventable factors present prior to the death. They assigned one of the following three determinations to describe preventability: 1) Yes, probably; 2) No, probably not; and 3) Team could not determine. A determination is based on the program's operational definition of preventability in a child's death.

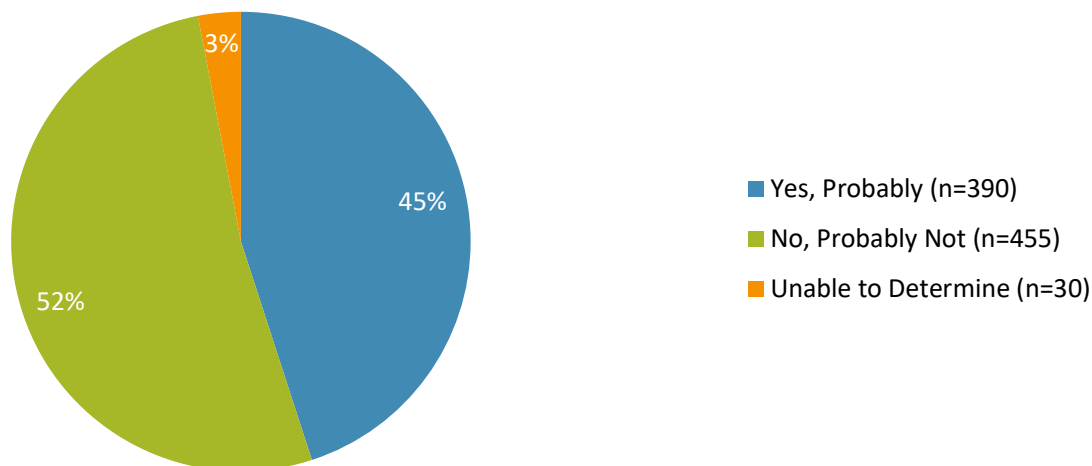
**A child's death is considered preventable if the community (i.e., education, legislation, etc.) or an individual could reasonably have done something that would have changed the circumstances that led to the child's death.**

"Yes, probably," means that some circumstance or factor related to the death could probably have been prevented. "No, probably not" indicates that everything reasonable was most likely done to prevent the death, but the child would still have died. A designation of "Team could not determine" means that there was insufficient information for the team to decide upon preventability.

When discussing all deaths, the report is referring to all 875 child deaths that took place in 2022. When the text refers to preventable deaths these are the fatalities that the review teams deemed to be preventable. Much of the data discussed in this report are based on those fatalities determined as preventable by the teams. This is important so that efforts are targeted to the areas where prevention initiatives will be most effective.

In 2022, local review teams determined that 390 child deaths were preventable (45%), 455 child deaths were probably not preventable (52%), and teams could not determine the preventability in 30 (3%) of the deaths (Figure 14).

**Figure 14. Number and Percentage of Deaths among Children by Preventability, Ages 0-17 Years, Arizona, 2022 (n=875)**



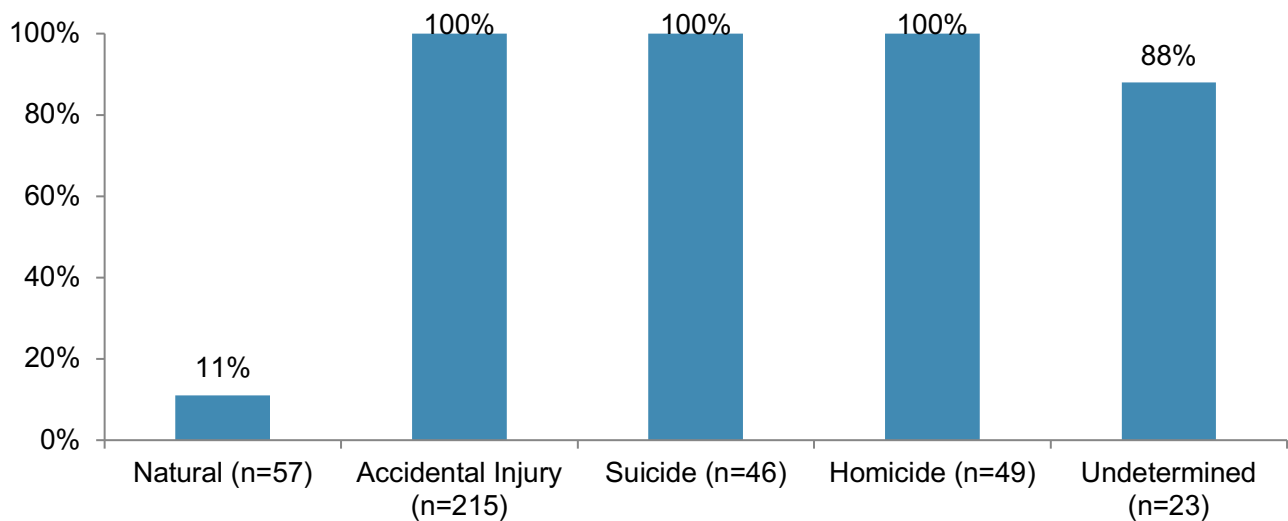
The leading cause of preventable deaths was motor vehicle crash deaths (21%) followed by suffocation (16%) and firearm injury deaths (15%) (Table 6).

**Table 6. Leading Causes of Preventable Deaths among Children, Ages 0-17 Years, Arizona, 2022**

Leading Causes of Death	Number	Percent
Motor Vehicle Crash	81	21%
Suffocation	61	16%
Firearm Injury	59	15%
Poisoning	42	11%
Drowning	30	8%

Local review teams determined that 11% of natural deaths (n=57), 100% of accidental injury deaths (n=215), 100% of suicides (n=46), 100% of homicides (n=49) and 88% of undetermined manner of deaths (n=23) were preventable (Figure 15).

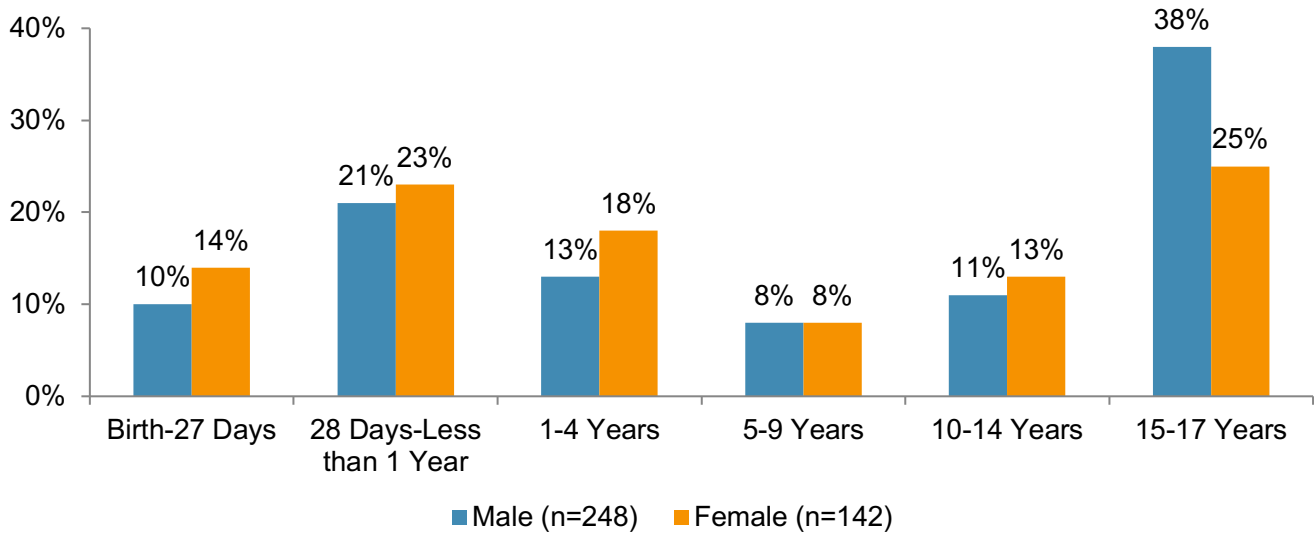
**Figure 15. Number and Percentage of Preventable Deaths among Children by Manner of Death, Ages 0-17 Years, Arizona, 2022 (n=390)**



The largest number of preventable deaths occurred in children ages 15-17 years (33%) followed by children ages 28 days to less than 1 year of age (22%) (not shown).

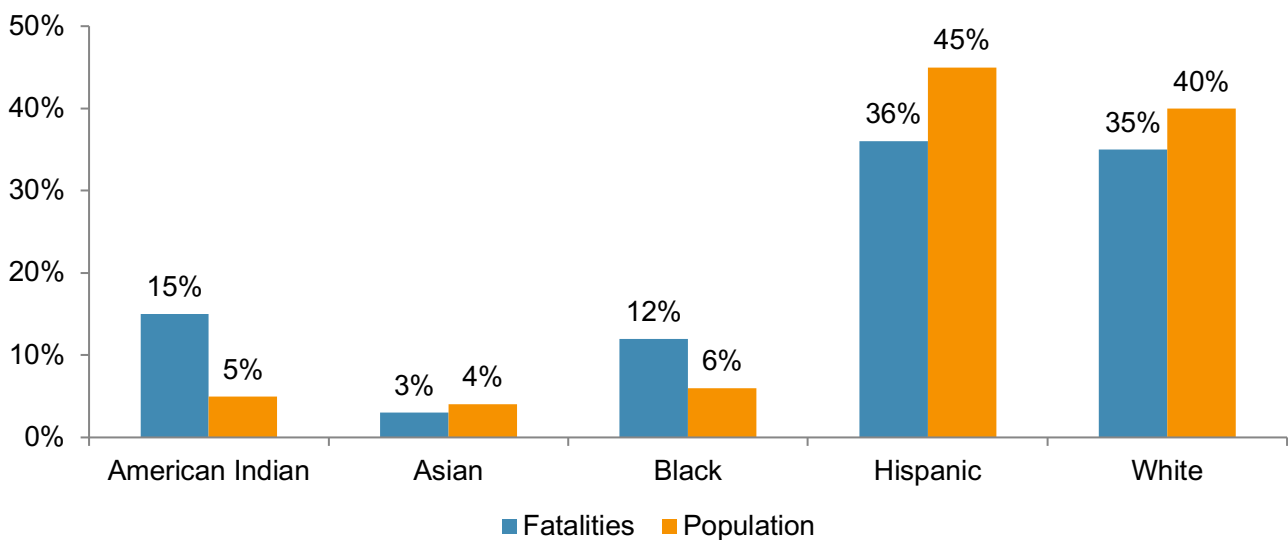
Male children ages 15-17 years made up a large proportion of male preventable deaths (38%). The largest percentage of female preventable deaths occurred in female children ages 15-17 years (25%) followed by female children ages 28 days to less than 1 year of age (23%) (Figure 16).

**Figure 16. Percentage of Preventable Deaths among Children by Age Group and Sex, Ages 0-17 Years, Arizona, 2022 (n=390)**



American Indian and Black children made up 15% and 12% of preventable child deaths, respectively, but only comprised 5% and 6% of the total child population. The largest number of preventable child deaths were among Hispanic (36%) and White (35%) children (Figure 17).

**Figure 17. Percentage of Preventable Deaths among Children by Race/Ethnicity, Ages 0-17 Years, Compared to the Population, Arizona, 2022 (n=390) <sup>2</sup>**





Parent substance use history (61%) was the leading risk factor of preventable deaths for infants 0-27 days while unsafe sleep environment (81%) was the leading risk factor of preventable deaths among infants 28 days to less than 1 year of age (Table 6). Among children ages 1-4, lack of supervision (65%) was the leading risk factor of preventable deaths. CPS History with Family (53%) was the leading risk factor of preventable deaths among children ages 5-9 years and 10-14 years. Among children 15-17 years, substance use (60%) was the leading risk factor of preventable death.

The most prevalent risk factor of preventable deaths among all ages was CPS History with family (46%) followed by substance use (42%) (Table 7). As a note, more than one risk factor may have been identified for each death.

**Table 7. Leading Risk Factors of Preventable Deaths among Children by Age Group, Arizona, 2022**

Age Group	Leading Risk Factors of Preventable Child Deaths*				
	1	2	3	4	5
0-27 Days (n = 44)	Parent Substance Use History (n = 27)	Substance Use (n = 26)	Poverty (n = 25)	CPS History with Family (n = 21)	Maternal Infection (n = 13)
28 Days - <1 Year (n = 84)	Unsafe Sleep Environment (n = 67)	Poverty (n = 60)	Parent Substance Use History (n = 44)	CPS History with Family (n = 36)	Substance Use (n = 20)
1-4 Years (n = 57)	Lack of Supervision (n = 37)	Parent Substance Use History (n = 24)	CPS History with Family (n = 23)	Poverty (n = 19)	Inability to Swim (n = 17)
5-9 Years (n = 30)	CPS History with Family (n = 16)	History of Trauma/Violence (n = 12)	Parent Substance Use History (n = 11)	Poverty (n = 11)	Lack of Seatbelt Restraint (n = 10)
10-14 Years (n = 46)	CPS History with Family (n = 21)	Substance Use (n = 16)	Child Relationship Issues (n = 15)	History of Trauma/Violence (n = 14)	Issues at School (n = 13)
15-17 Years (n = 129)	Substance Use (n = 78)	CPS History with Family (n = 63)	Child Relationship Issues (n = 55)	History of Trauma/Violence (n = 48)	Child's Chronic Condition (n = 45)
<b>Preventable Deaths (N = 390)</b>	<b>CPS History with Family (n = 180)</b>	<b>Substance Use (n = 163)</b>	<b>Parent Substance Use History (n = 149)</b>	<b>Poverty (n = 149)</b>	<b>Child Relationship Issues (n = 106)</b>

\*More than one risk factor may have been identified for each death.



# Section 3: Manner of Death

ALSH

## Accidental Injury Deaths

An injury that occurred when there was no intent to cause harm or death, an unintentional injury. See the Glossary for further explanation.



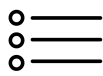
There were 215 accidental injury deaths in 2022, 25% of all child deaths.



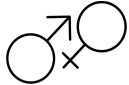
The accidental injury death rate decreased by 11% from 14.7 deaths per 100,000 children in 2021 to 13.1 deaths per 100,000 children in 2022.



100% of accidental injury deaths were preventable.



#1 cause: Motor Vehicle Crash (n = 78)  
 #2 cause: Suffocation (n = 61)  
 #3 cause: Poisoning (n = 34)



Of the accidental injury deaths, 64% were male and 36% were female.



30% of accidental injury deaths occurred in infants (less than 1 year of age).



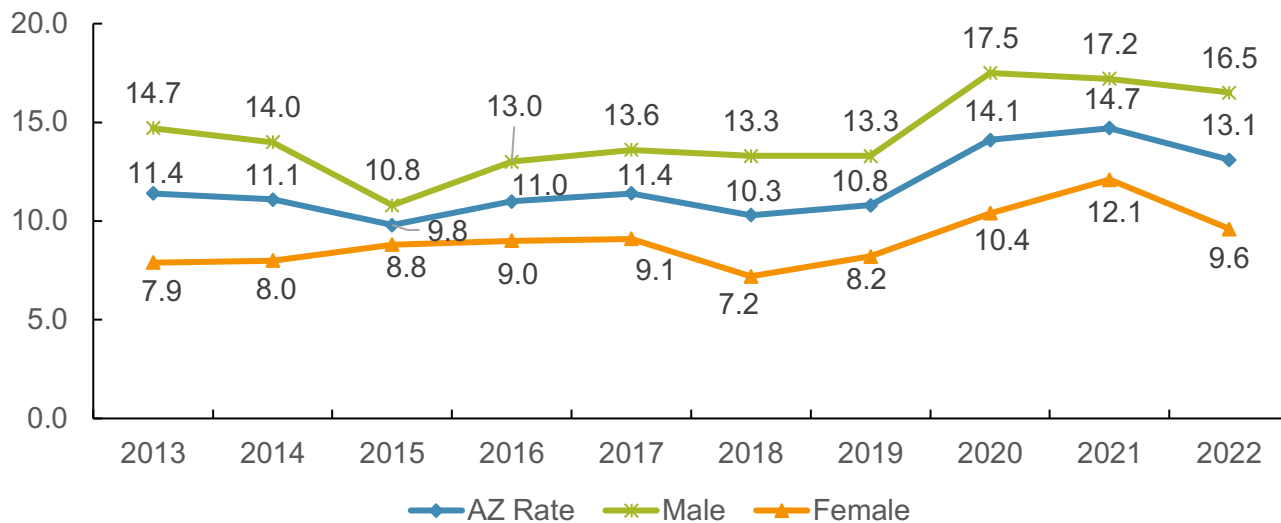
American Indian and Black children were disproportionately affected. American Indian children made up 13% of accidental injury deaths but only make up 5% of the total population. Similarly, Black children made up 12% of accidental injury deaths but only make up 6% of the total population.



#1 Risk Factor: CPS History with Family (43%)  
 #2 Risk Factor: Poverty (38%)  
 #3 Risk Factor: Substance Use (38%)

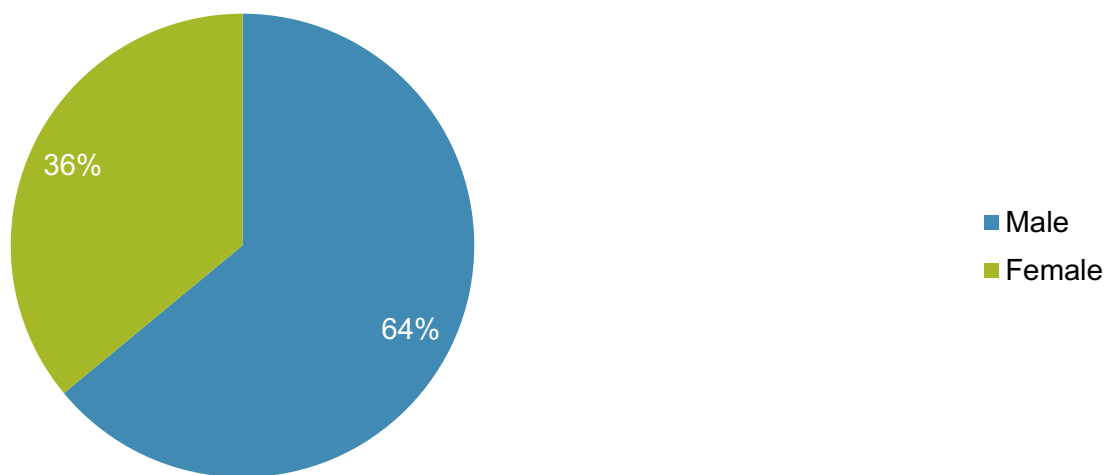
Overall, Arizona’s accidental injury mortality rate decreased by 11% from 14.7 deaths per 100,000 children in 2021 to 13.1 deaths per 100,000 children in 2022. Males have consistently had a higher accidental injury mortality rate compared to females. Both the male and female mortality rate decreased from 2021 to 2022 (Figure 18).

**Figure 18. Mortality Rate per 100,000 Children due to Accidental Injury by Sex, Ages 0-17 Years, Arizona, 2013-2022** <sup>2-11</sup>



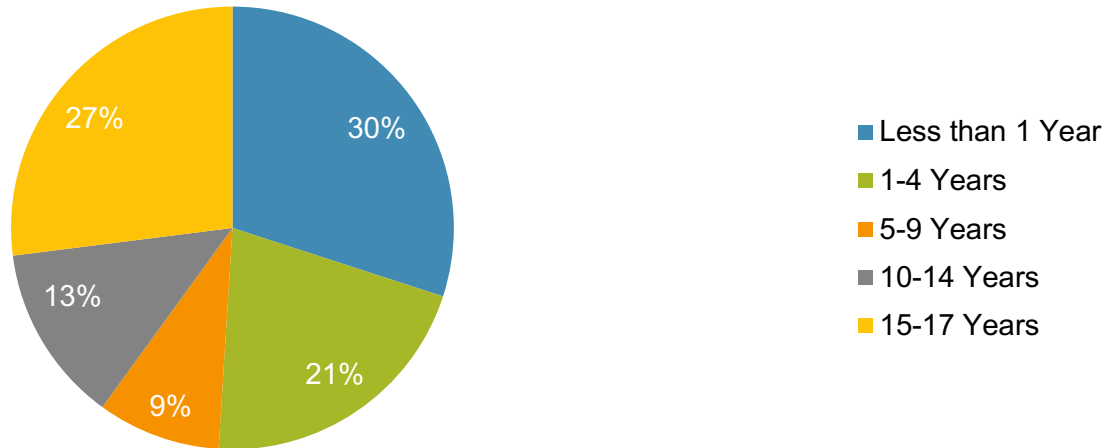
The majority of accidental injury deaths occurred among males (64%) (Figure 19).

**Figure 19. Percentage of Accidental Injury Deaths among Children by Sex, Ages 0-17 Years, Arizona, 2022 (n=215)**



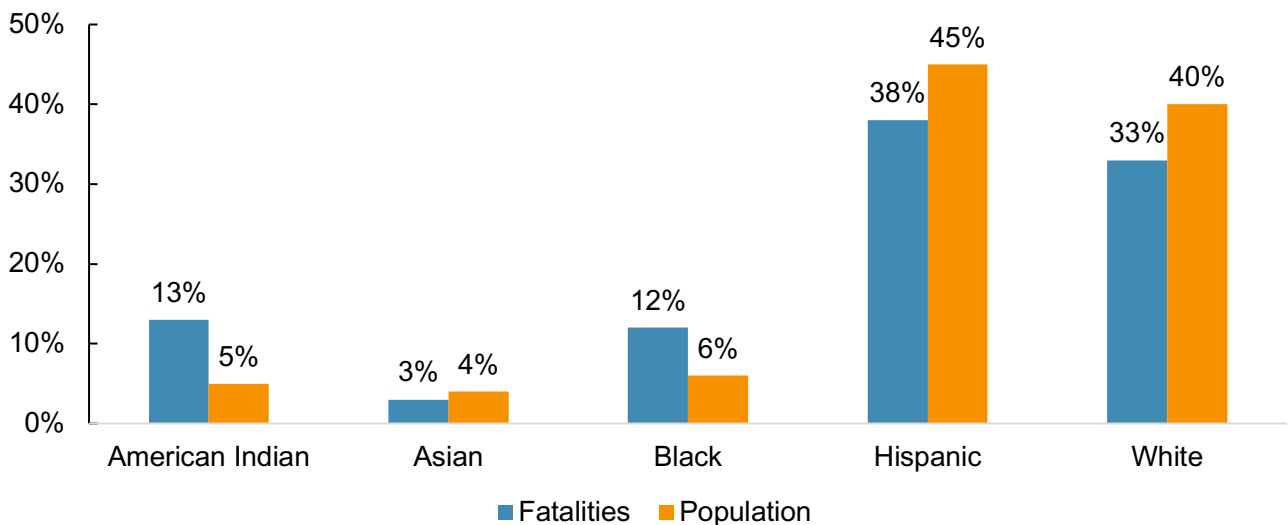
The largest number of accidental injury deaths occurred among children less than 1 year of age (30%) followed by children ages 15-17 years (27%) (Figure 20).

**Figure 20. Percentage of Accidental Injury Deaths among Children by Age Group, Ages 0-17 Years, Arizona, 2022 (n=215)**



American Indian and Black children made up 13% and 12% of accidental injury deaths, respectively, but only comprised of 5% and 6% of the total child population. The largest number of accidental injury deaths were among Hispanic (38%) and White (33%) children (Figure 21).

**Figure 21. Percentage of Accidental Injury Deaths among Children by Race/Ethnicity, Ages 0-17 Years, Compared to Population, Arizona, 2022 (n=215) <sup>2</sup>**



Among accidental injury deaths, motor vehicle crash (36%) was the leading cause of death for children ages 0-17 years (Table 8).

**Table 8. Cause of Accidental Injury Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=215)**

Causes of Death	Number	Percent
Motor Vehicle Crash	78	36%
Suffocation	61	28%
Poisoning	34	16%
Drowning	29	13%
Firearm Injury	7	3%
Other Injury (i.e., choking, fire, fall, etc.)	6	3%

While there are numerous preventable risk factors that contribute to accidental injury deaths, CPS History with Family (43%) was the most identified risk factor followed by poverty (38%) and substance use (38%) (Table 9).

**Table 9. Leading Risk Factors of Accidental Injury Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=215)**

Risk Factors*	Number	Percent
CPS History with Family	93	43%
Poverty	82	38%
Substance Use	82	38%
Parent Substance Use History	77	36%
Lack of Supervision	65	31%
*More than one risk factor may have been identified in each death.		

## Homicides

Death resulting from injuries inflicted by another person with the intent to cause fear, harm, or death.



There were 49 homicides in 2022, 6% of all child deaths.



The homicide death rate increased by 3% from 2.9 deaths per 100,000 children in 2021 to 3.0 deaths per 100,000 children in 2022.



100% of homicides were preventable.



#1 cause: Firearm Injury (n = 33)

#2 cause: Blunt Force Injury (n = 10)

#3 cause: Stabbing (n < 6)



Of the homicides, 65% were male and 35% were female.



53% of homicides occurred in children ages 15-17 years.



American Indian and Black children were disproportionately affected.

American Indian children made up 14% of homicides but only make up 5% of the total population. Similarly, Black children made up 14% of homicides but only make up 6% of the total population.



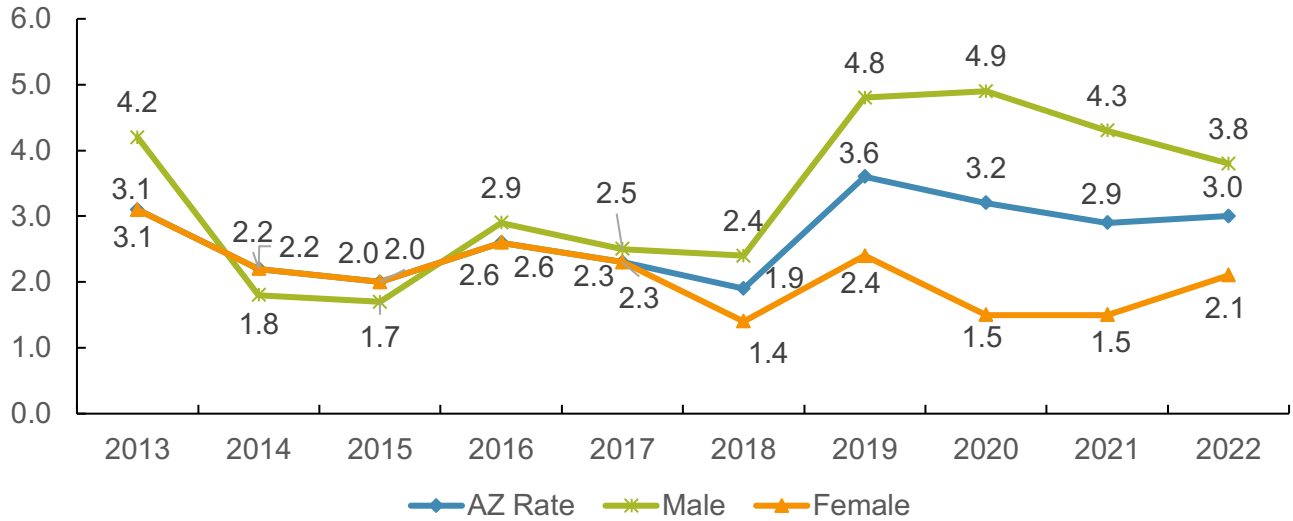
#1 Risk Factor: Access to Firearms (67%)

#2 Risk Factor: CPS History with Family (63%)

#3 Risk Factor: Substance Use (49%)

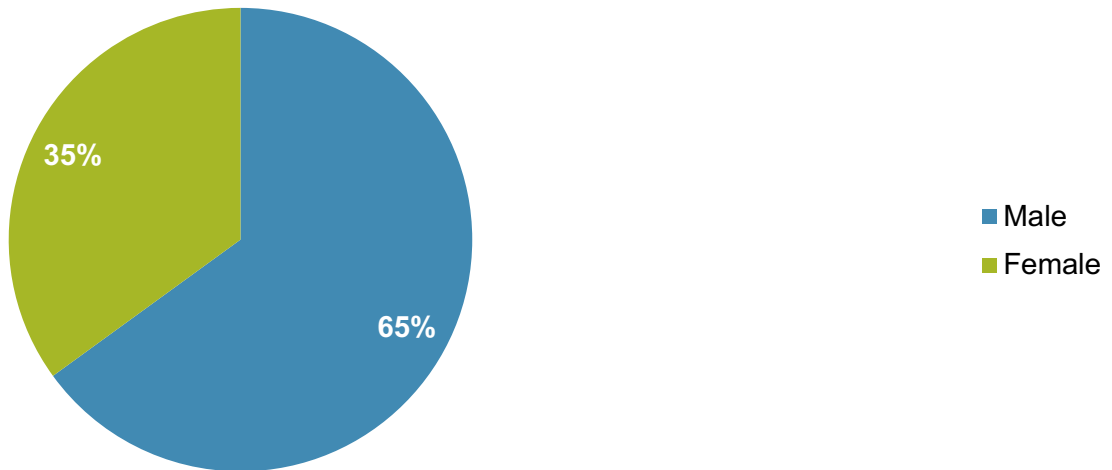
Arizona’s child homicide rate increased by 3% from 2.9 deaths per 100,000 children in 2021 to 3.0 deaths per 100,000 children in 2022. Since 2016, males have had a higher homicide rate compared to females (Figure 22).

**Figure 22. Mortality Rate per 100,000 Children due to Homicide by Sex, Ages 0-17 Years, Arizona, 2013-2022**<sup>2-11</sup>



The majority of homicide deaths occurred among males (65%) (Figure 23).

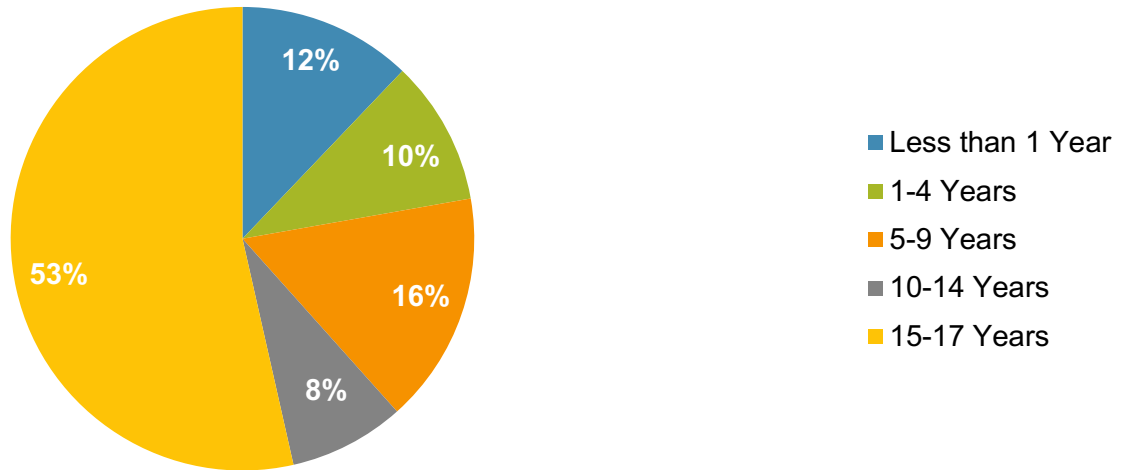
**Figure 23. Percentage of Homicides among Children by Sex, Ages 0-17 Years, Arizona, 2022 (n=49)**





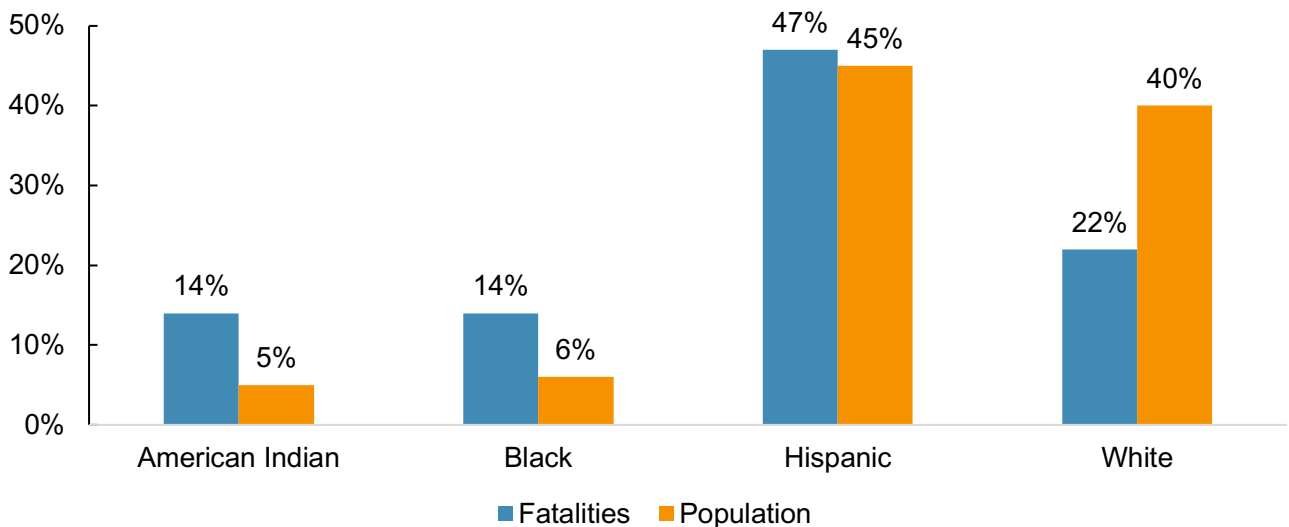
The majority of homicide deaths of children were among those ages 15-17 years (53%), followed by those 5-9 years of age (16%) (Figure 24).

**Figure 24. Percentage of Homicides among Children by Age Group, Ages 0-17 Years, Arizona, 2022 (n=49)**



American Indian and Black children each made up 14% of homicides, but only comprised of 5% and 6% of the total child population. Similarly, Hispanic children made up 47% of homicides but only comprised of 45% of the total child population. The largest percentage of homicides were among Hispanic (45%) children (Figure 25).

**Figure 25. Percentage of Homicides among Children by Race/Ethnicity, Ages 0-17 Years, Compared to Population, Arizona, 2022 (n=49)\*<sup>2</sup>**



\*Data for Asian children suppressed due to counts less than 6.

Among homicides, firearm injury (67%) was the leading cause of death for children ages 0-17 years followed by blunt force injury (20%), stabbing and other injuries (Table 10).

**Table 10. Cause of Homicides among Children, Ages 0-17 Years, Arizona, 2022 (n=49)**

Cause of Death	Number	Percent
Firearm Injury	33	67%
Blunt Force Injury	10	20%
Stabbing	*	*
Other Injury	*	*

\*Number/Percentage suppressed due to count less than 6.

Strangers and fathers (22%) were the most commonly identified perpetrator of child homicides (Table 11).

**Table 11. Number and Percentage of Homicides among Children by Perpetrator, Ages 0-17 Years, Arizona, 2022 (n=49)**

Perpetrator**	Number	Percent
Stranger	11	22%
Father	11	22%
Other (i.e., grandparents, siblings, relative, parent's partner)	10	20%
Mother	8	16%
Acquaintance	7	14%
Unknown	*	*

\*Number/Percentage suppressed due to count less than 6.

\*\*There may be more than one perpetrator in each death.

While there are numerous preventable risk factors that contribute to homicides, access to a firearm was the most commonly identified risk factor (67%) (Table 12).

**Table 12. Leading Risk Factors of Homicides among Children, Ages 0-17 Years, Arizona, 2022 (n=49)**

Risk Factors*	Number	Percent
Access to Firearms	33	67%
CPS History with Family	31	63%
Substance Use	24	49%
Child History of Trauma	23	47%
Criminal Activity	22	45%

\*More than one risk factor may have been identified in each death.

## Natural Deaths

In Arizona and nationally, deaths classified as natural deaths due to a medical condition account for the largest percentage of child deaths every year. See the Glossary for further explanation.



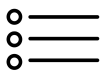
There were 539 natural deaths in 2022, 62% of all child deaths.



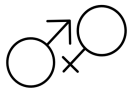
The natural death rate increased by 4% from 31.6 deaths per 100,000 children in 2021 to 32.8 deaths per 100,000 children in 2022.



11% of natural deaths were preventable.



#1 cause: Prematurity (n = 208)  
 #2 cause: Congenital Anomaly (n = 115)  
 #3 cause: Cardiovascular (n = 41)



Of the natural deaths, 56% were male and 44% were female.



73% of natural deaths occurred in infants (less than 1 year of age).



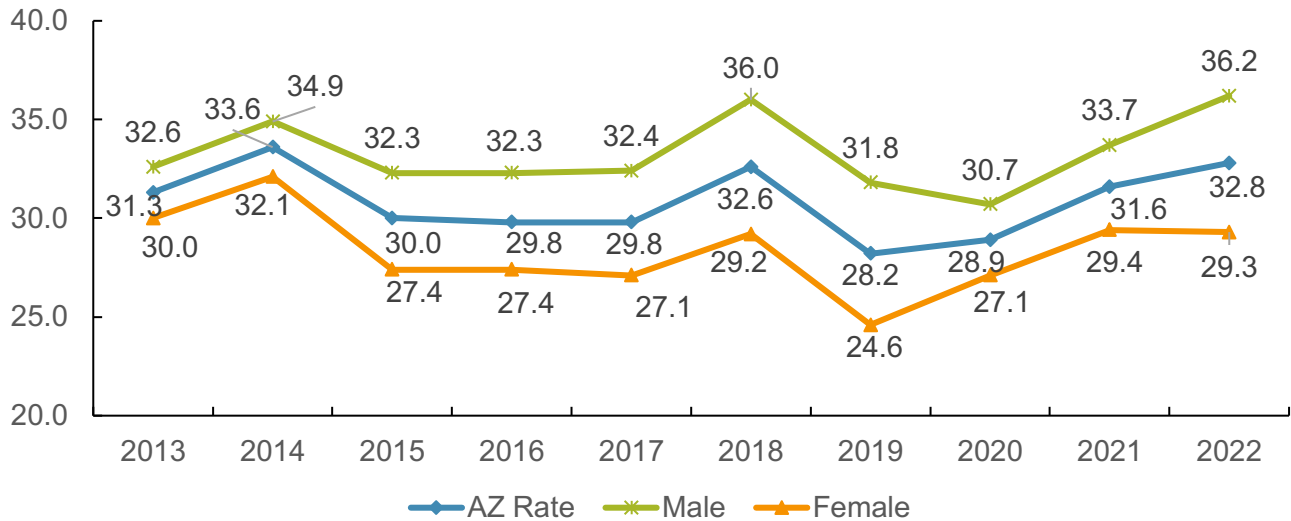
Black children were disproportionately affected. Black children made up 11% of natural deaths but only make up 6% of the total population.



#1 Risk Factor: Poverty (49%)  
 #2 Risk Factor: Chronic Conditions (43%)  
 #3 Risk Factor: CPS History with Family (16%)

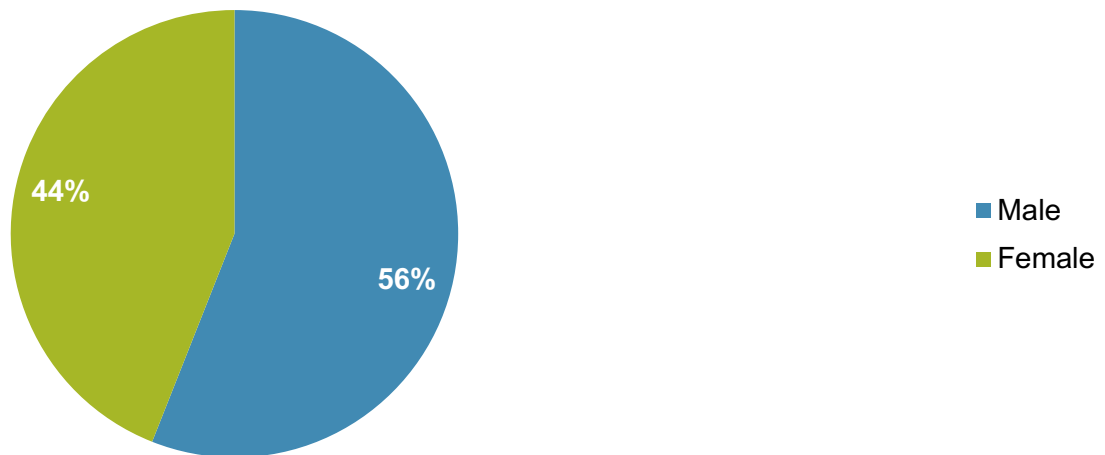
Arizona's natural child mortality rate increased by 4% from 31.6 deaths per 100,000 children in 2021 to 32.8 deaths per 100,000 children in 2022. Males have consistently had a higher natural mortality rate compared to females (Figure 26).

**Figure 26. Mortality Rate per 100,000 Children due to Natural Causes by Sex, Ages 0-17 Years, Arizona, 2013-2022**<sup>2-11</sup>



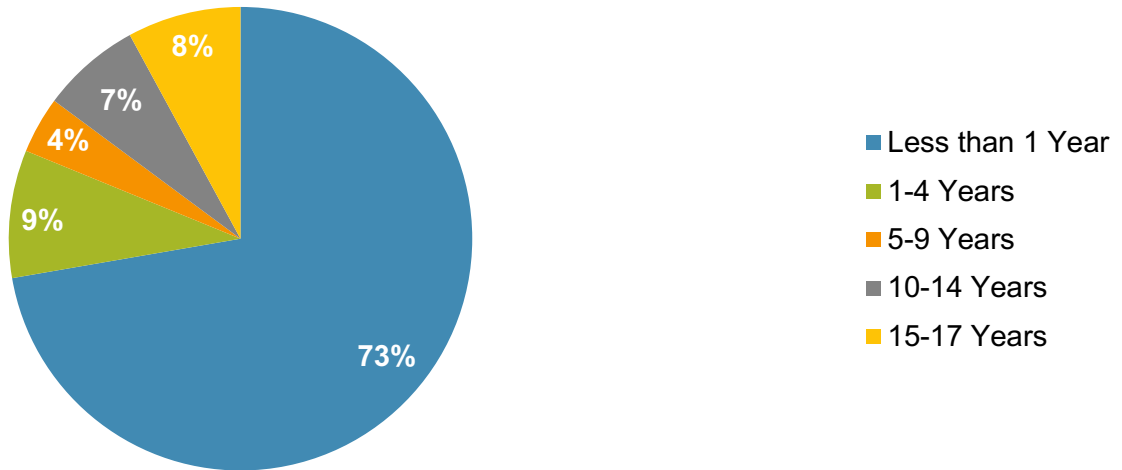
The majority of natural deaths occurred among male children (56%) (Figure 27).

**Figure 27. Percentage of Natural Deaths among Children by Sex, Ages 0-17 Years, Arizona, 2022 (n=539)**



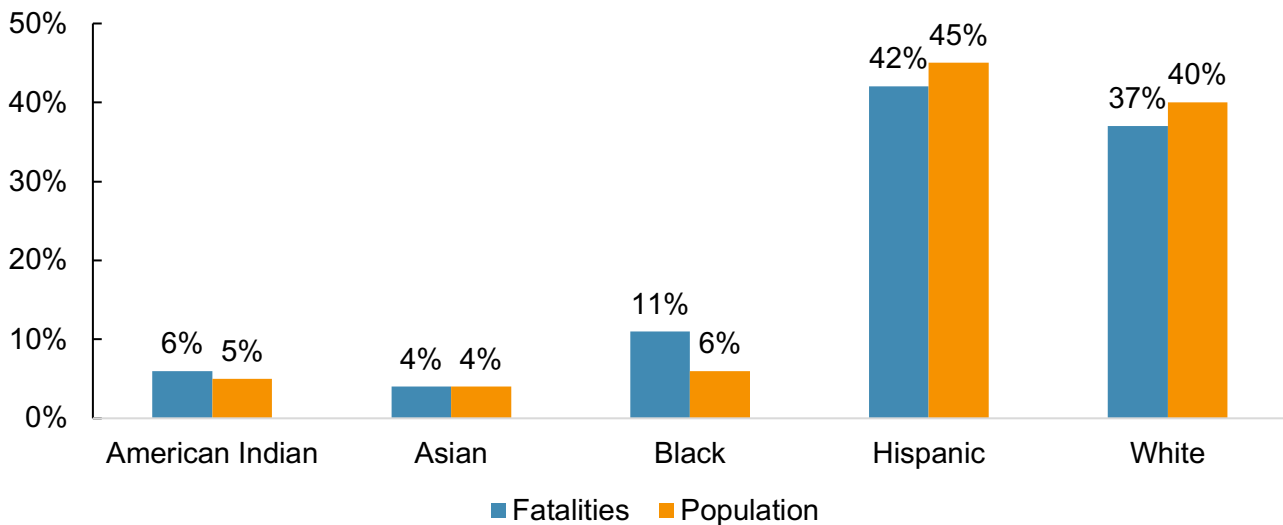
The majority of natural deaths occurred among infants less than 1 year of age (73%) followed by children 1-4 years of age (9%) (Figure 28).

**Figure 28. Percentage of Natural Deaths among Children by Age Group, Ages 0-17 Years, Arizona, 2022 (n=539)**



Black children made up 11% of natural deaths, but only comprised 6% of the total child population. The largest number of natural deaths were among Hispanic (42%) and White (37%) children (Figure 29).

**Figure 29. Percentage of Natural Deaths among Children by Race/Ethnicity, Ages 0-17 Years, Compared to Population, Arizona, 2022 (n=539) <sup>2</sup>**



Among natural deaths, prematurity (39%) was the leading cause of death for children ages 0-17 years (Table 13).

**Table 13. Cause of Natural Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=539)**

Causes of Death	Number	Percent
Prematurity	208	39%
Congenital Anomaly	115	21%
Cardiovascular	41	8%
Cancer	39	7%
Neurological/Seizure Disorder	32	6%
Other Infection	32	6%
Other Medical Condition	26	5%
COVID-19	17	3%
Pneumonia	16	3%
Other Perinatal Condition	13	2%

The most commonly identified risk factor for natural deaths among children ages 0-17 years was poverty (49%) followed by the presence of a chronic condition (43%) (Table 14).

**Table 14. Leading Risk Factors of Natural Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=539)**

Risk Factors*	Number	Percent
Poverty	264	49%
Chronic Conditions	232	43%
CPS History with Family	85	16%
Maternal Infection During Pregnancy	56	10%
Inadequate Medical Treatment	35	6%
*More than one risk factor may have been identified in each death.		

## Suicides

A death that is due to a self-directed intentional behavior where the intent is to die because of that behavior. See the Glossary for further explanation.



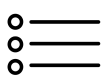
There were 46 suicides in 2022, 5% of all child deaths.



The suicide death rate remained consistent from 5.9 deaths per 100,000 children, aged 10-17 years, in 2021 to 5.9 per 100,000 children, aged 10-17 years, in 2022.



100% of suicides were preventable.



#1 cause: Strangulation (n = 21)  
#2 cause: Firearm Injury (n = 16)  
#3 cause: Poisoning (n = 7)



Of suicides, 69% were male and 31% were female.\*\*



82% of suicides occurred in children ages 15-17 years.\*\*



White children were disproportionately affected. White children made up 49% of suicides but only make up 41% of the total population.\*\*



#1 Risk Factor: Recent Warning Signs (80%)  
#2 Risk Factor: Child Relationship Issues (70%)  
#3 Risk Factor: Child's Mental Health/Substance Use Disorder (59%)

*Patient/Family/Caregiver:* \*

- Teach adolescents about technology and empower them to be responsible online participants at the appropriate age.<sup>125</sup>

*Provider/Healthcare Facilities:* \*

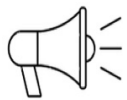
- Adapt services to better address adverse childhood experiences (ACEs) and train more professionals in trauma-informed care.<sup>123</sup>

*Policy Makers/Participating Agencies/Schools:* \*

- Increase access to effective mental health care for Arizonans by adopting the Zero Suicide model statewide. Implement communication strategies using traditional and new media for school personnel that promotes suicide prevention, emotional well-being, and mental health.<sup>112, 116, 122</sup>

*Community-Based Organizations:* \*

- Increase awareness of the 988 hotline which anyone can call or text or chat with online at 988lifeline.org if they are worried about a loved one who may need crisis support.<sup>128</sup>

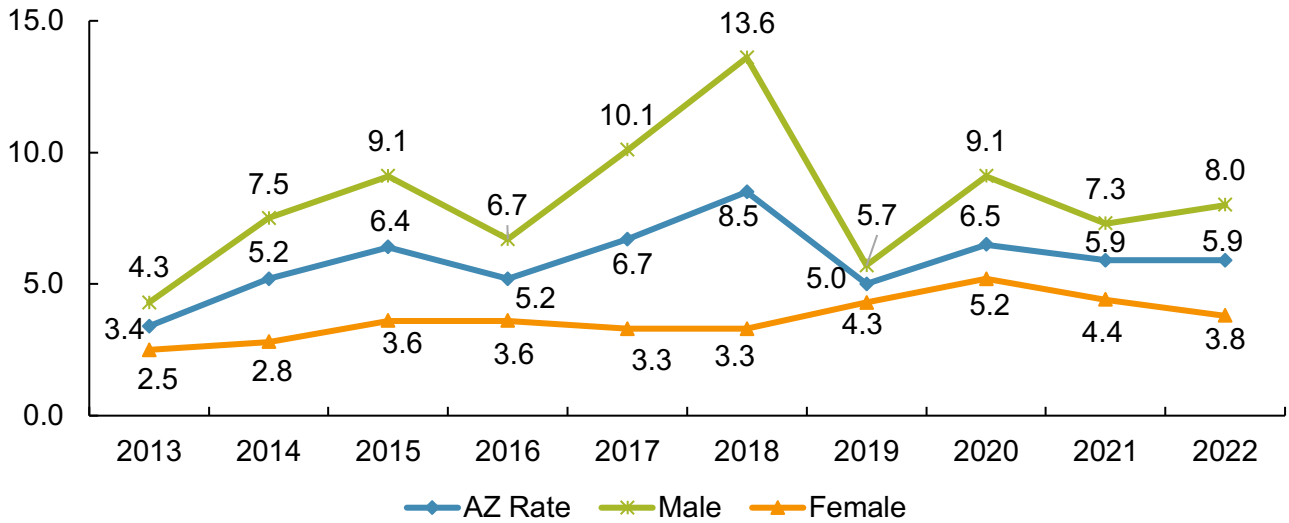


\*See the Suicide Prevention Recommendations for additional evidence-based recommendations.

\*\*Data for children under the age of 10 suppressed due to counts less than 6

Arizona’s child suicide rate remained consistent from 5.9 deaths per 100,000 children in 2021 to 5.9 deaths per 100,000 children ages 10-17 years, in 2022. Males have consistently had a higher suicide rate compared to females (Figure 30).

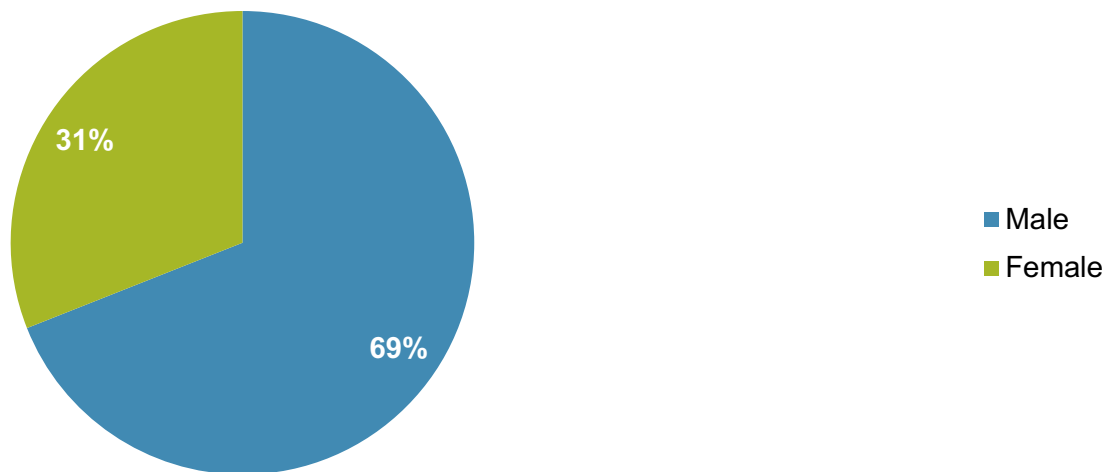
**Figure 30. Mortality Rate per 100,000 Children due to Suicide by Sex, Ages 10-17 Years, Arizona, 2013-2022\***<sup>34-37</sup>



\*Data for children under the age of 10 suppressed due to counts less than 6

The majority of suicide deaths in children ages 10-17 years, occurred among males (69%) (Figure 31).

**Figure 31. Percentage of Suicides among Children by Sex, Ages 10-17 Years, Arizona, 2022 (n=45)\***

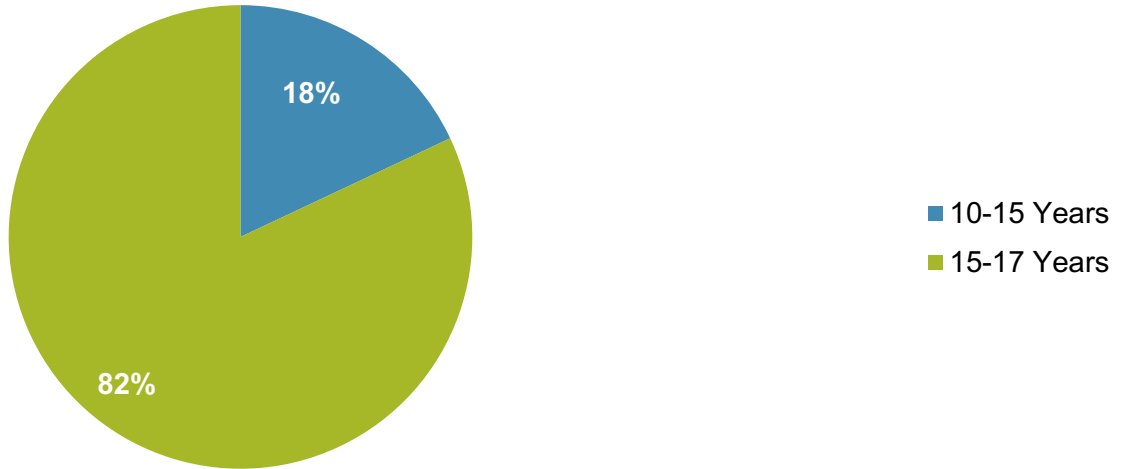


\*Data for children under the age of 10 suppressed due to counts less than 6



The majority of suicides occurred among children ages 15-17 years (82%) (Figure 32).

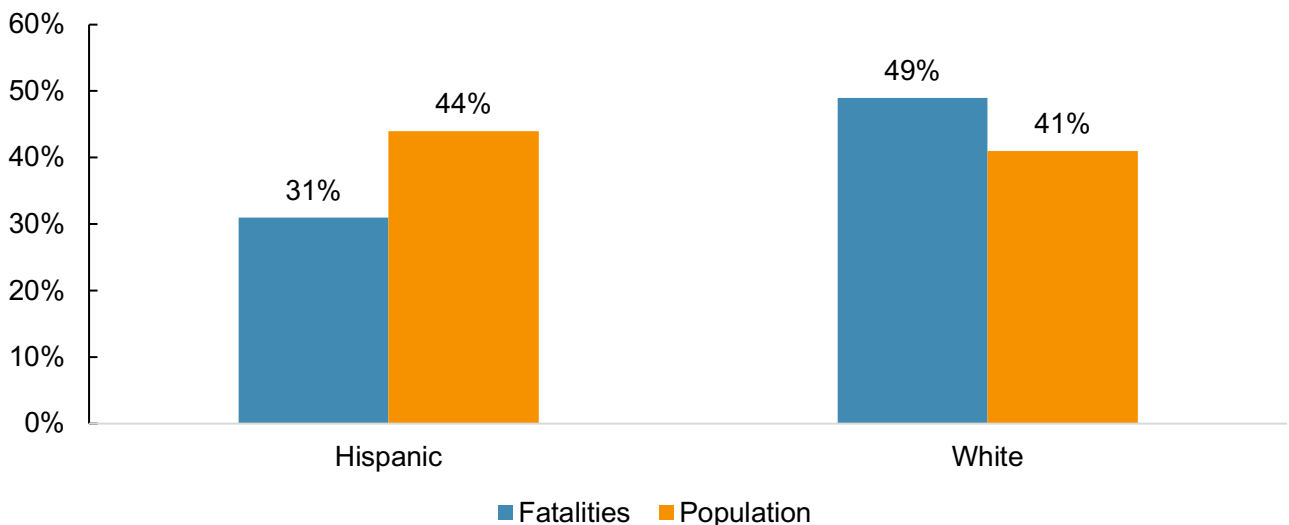
**Figure 32. Percentage of Suicides among Children by Age Group, Ages 10-17 Years, Arizona, 2022 (n=45)\***



\*Data for children under the age of 10 suppressed due to counts less than 6

White children made up 49% of suicides but only 41% of the total child population ages 10-17 years. The largest percentage of suicides were among White (49%) children (Figure 33).

**Figure 33. Percentage of Suicides among Children by Race/Ethnicity, Ages 10-17 Years, Compared to Population, Arizona, 2022 (n=45)\*,^34**



\*Data for American Indian, Asian, and Black children suppressed due to counts less than 6.

^Data for children under the age of 10 suppressed due to counts less than 6.

Among suicides, strangulation (46%) was the leading cause of death for children ages 5-17 years followed by firearm injury deaths (35%) and poisonings (15%) (Table 15).

**Table 15. Cause of Suicides among Children, Ages 5-17 Years, Arizona, 2022 (n=46)**

Cause of Death	Number	Percent
Strangulation	21	46%
Firearm Injury	16	35%
Poisoning	7	15%
Motor Vehicle Crash	*	*

\*Number/Percentage suppressed due to count less than 6.

While there are numerous risk factors that can contribute to suicide, the most commonly identified risk factor were recent (within 30 days of the child's death) suicide warnings (80%), child relationship issues (70%), and child's mental health/substance use disorder (59%) (Table 16).

**Table 16. Leading Risk Factors of Suicides among Children, Ages 5-17 Years, Arizona, 2022 (n=46)**

Risk Factors*	Number	Percent
Recent Suicide Warning	37	80%
Child Relationship Issues	32	70%
Mental Health/Substance Use Disorder	27	59%
Prior Suicide Attempt	26	57%
Substance Use	24	52%

\*More than one risk factor may have been identified in each death.

## Undetermined Deaths

A death that the CFR State Team, after review of all available documents is unable to decide whether the manner of death was natural, accident, homicide, or suicide. See the Glossary for further explanation.



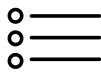
There were 26 deaths with an undetermined manner in 2022, 3% of all child deaths.



The undetermined manner death rate increased by 11% from 1.4 deaths per 100,000 children in 2021 to 1.6 deaths per 100,000 children in 2022.

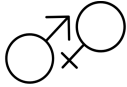


88% of undetermined manner deaths were preventable.



#1 cause: Undetermined (n = 19)

#2 cause: Other (i.e., Firearm, Strangulation, Poisoning) (n = 7)



Of the undetermined manner deaths, 69% were male and 31% were female.



65% of undetermined manner deaths occurred in infants (less than 1 year of age).



American Indian children were disproportionately affected. American Indian children made up 35% of undetermined manner of deaths but only make up 5% of the total population.



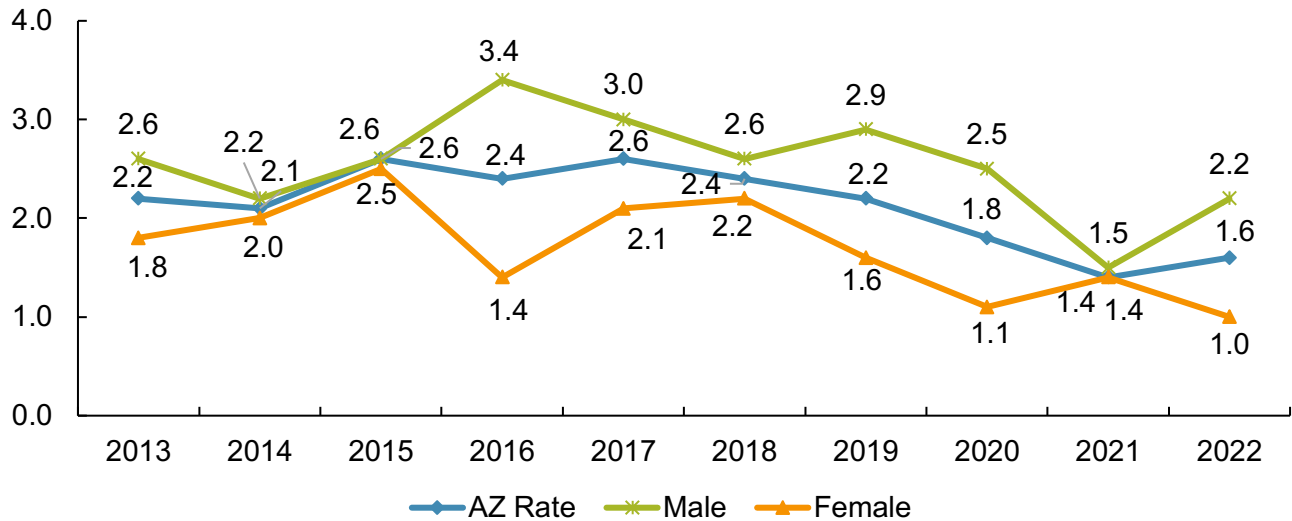
#1 Risk Factor: Poverty (54%)

#2 Risk Factor: Unsafe Sleep Environment (54%)

#3 Risk Factor: Parent Substance Use History (50%)

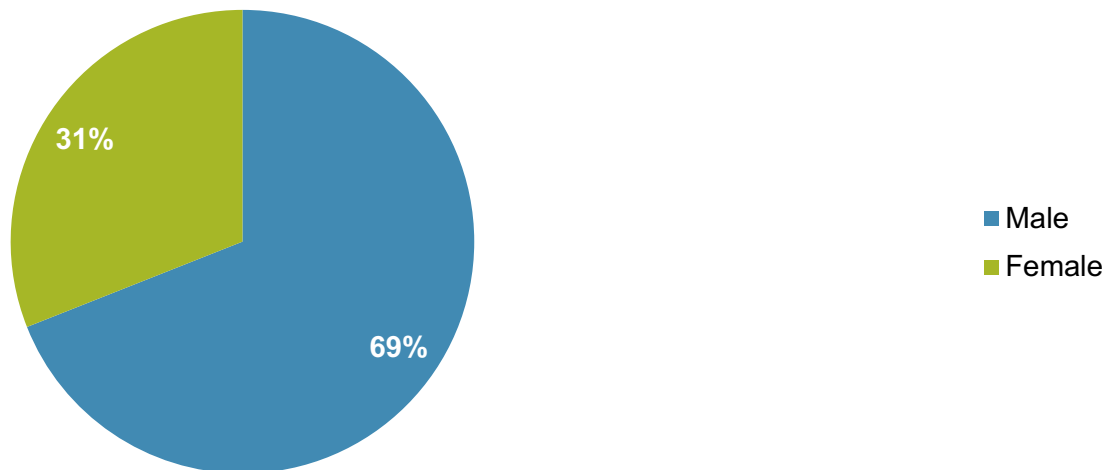
Arizona's undetermined manner of death rate has increased by 11% from 1.4 deaths per 100,000 children in 2021 to 1.6 deaths per 100,000 children in 2022. Males have consistently had a higher undetermined manner of death rate compared to females (Figure 34).

**Figure 34. Mortality Rate per 100,000 Children due to Undetermined Death by Sex, Ages 0-17 Years, Arizona, 2013-2022<sup>2-11</sup>**



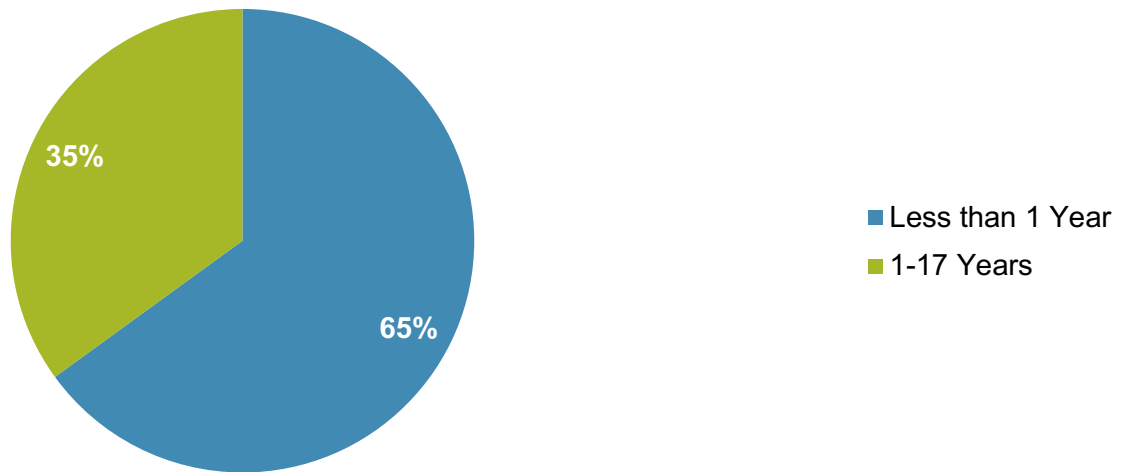
The majority of undetermined manner of deaths occurred among males (69%) (Figure 35).

**Figure 35. Percentage of Undetermined Deaths among Children by Sex, Ages 0-17 Years, Arizona, 2022 (n=26)**



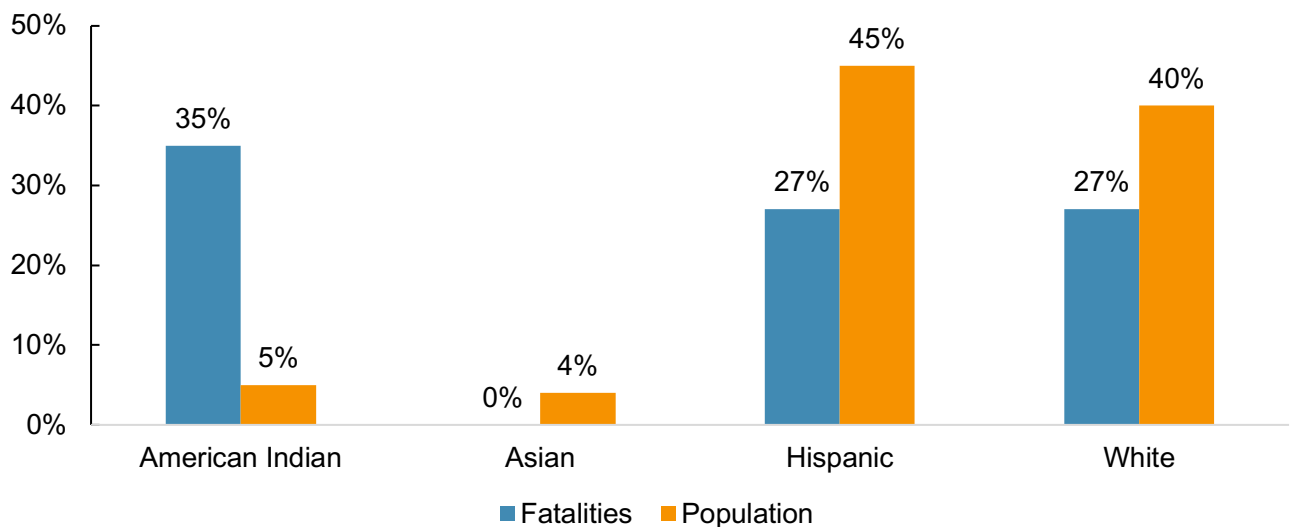
The majority of undetermined manner of deaths occurred among infants less than 1 year of age (65%) (Figure 36).

**Figure 36. Percentage of Undetermined Deaths among Children by Age Group, Ages 0-17 Years, Arizona, 2022 (n=26)**



American Indian children made up 35% of undetermined manner of deaths but only comprised 5% of the total child population. The largest number of undetermined manner of deaths were among American Indian (35%) children. Asian children experienced no undetermined manner of deaths in 2022 in Arizona (Figure 37).

**Figure 37. Percentage of Undetermined Deaths among Children by Race/Ethnicity, Ages 0-17 Years, Compared to Population, Arizona, 2022 (n=26)\*<sup>2</sup>**



\*Data for Black children suppressed due to counts less than 6.

Among undetermined manner deaths, undetermined (73%) was the leading cause of death for children ages 0-17 years (Table 17).

**Table 17. Cause of Undetermined Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=26)**

Cause of Death	Number	Percent
Undetermined	19	73%
Other (i.e., firearm, strangulation, poisoning)	7	27%

The most commonly identified risk factor for undetermined manner of deaths was poverty (54%) and unsafe sleep environment (54%) (Table 18).

**Table 18. Leading Risk Factors of Undetermined Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=26)**

Risk Factors**	Number	Percent
Poverty	14	54%
Unsafe Sleep Environment	14	54%
Parent Substance Use History	13	50%
CPS History with Family	12	46%
Lack of Supervision	*	*
*Number/Percentage suppressed due to count less than 6.		
**More than one risk factor may have been identified in each death.		



# Section 4: Causes of Death

## Drowning Deaths

Death from an accidental or intentional submersion in a body of water. See the Glossary for further explanation.



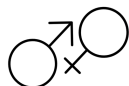
There were 30 drowning deaths in 2022, 3% of all child deaths.



The drowning death rate decreased by 33% from 2.7 deaths per 100,000 children in 2021 to 1.8 deaths per 100,000 children in 2022.



100% of drowning deaths were preventable.



Of the drowning deaths, 67% were male and 33% were female.



83% of drowning deaths occurred in children less than 5 years of age.



Black children were disproportionately affected. Black children made up 27% of drowning deaths but only make up 6% of the total population.



#1 Risk Factor: Lack of Supervision (97%)

#2 Risk Factor: Inability to Swim (57%)

#3 Risk Factor: Lack of Pool Barrier (43%)

*Patient/Family/Caregiver:* \*

- Ensure that children are not left unattended near pools or large body of waters.<sup>57-60</sup>

*Provider/Healthcare Facilities:* \*

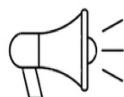
- Provide families with evidence-based drowning prevention education and pool barrier code information.

*Policy Makers/Participating Agencies/Schools:* \*

- Ensure public pools and businesses with pools have a proper pool enclosure and are up to code.<sup>57-60</sup>

*Community-Based Organizations:* \*

- Increase public awareness of the dangers for children at all ages in various languages.<sup>56,57</sup>

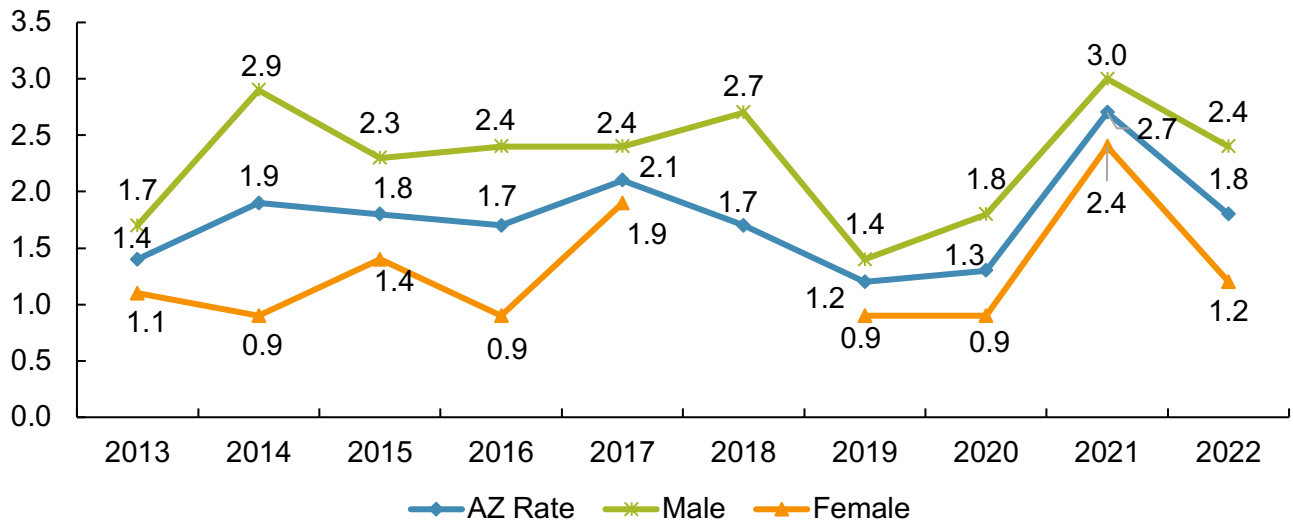


\*See the Drowning Death Prevention Recommendations for additional evidence-based recommendations.



Overall, Arizona’s drowning rate has fluctuated since 2013. Arizona’s drowning rate decreased by 33% from 2.7 deaths per 100,000 children in 2021 to 1.8 deaths per 100,000 children in 2022. Males have consistently had a higher drowning rate compared to females. Both male and females experienced a decrease in drowning death rate from 2021 to 2022 (Figure 38).

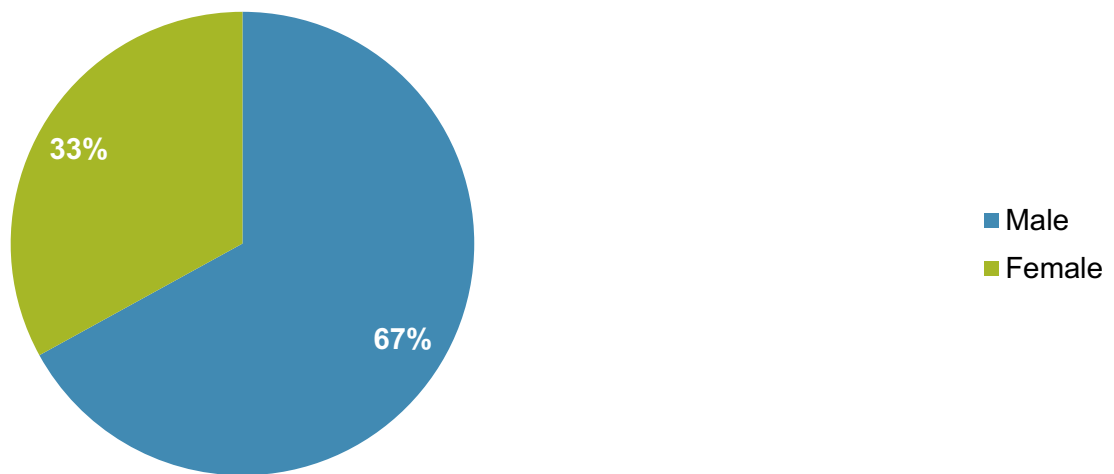
**Figure 38. Mortality Rate per 100,000 Children due to Drowning by Sex, Ages 0-17 Years, Arizona, 2013-2022\*2-11**



\*2018 data on female children not included due to a small sample size.

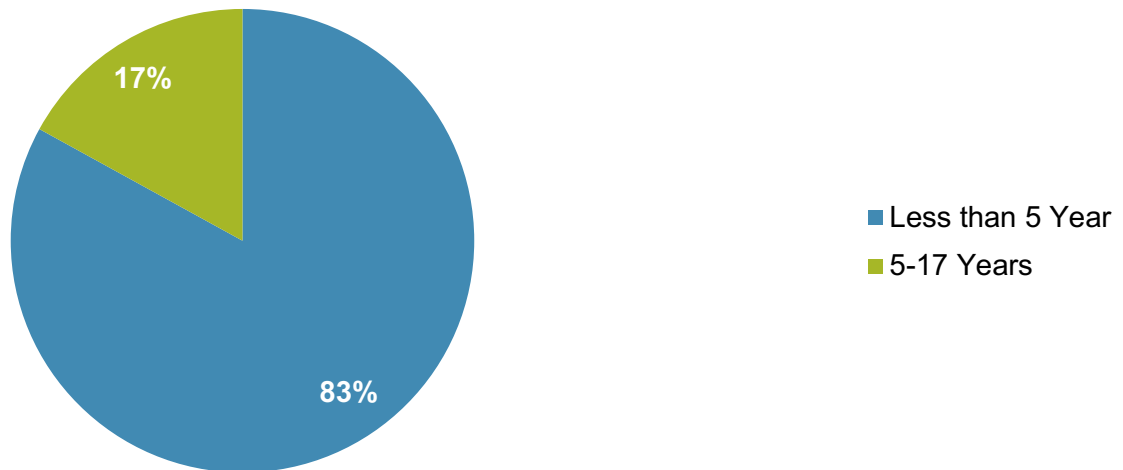
The majority of drowning deaths occurred among males (67%) (Figure 39).

**Figure 39. Percentage of Drowning Deaths among Children by Sex, Ages 0-17 Years, Arizona, 2022 (n=30)**



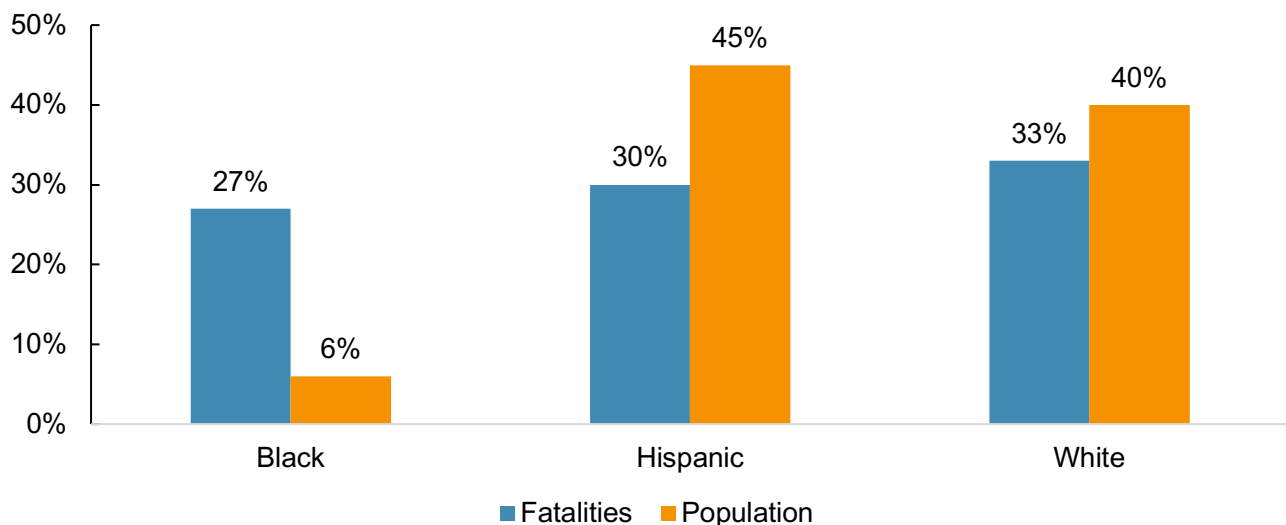
The majority of drowning deaths occurred among children less than 5 years (83%) (Figure 40).

**Figure 40. Percentage of Drowning Deaths among Children by Age Group, Ages 0-17 Years, Arizona, 2022 (n=30)**



Black children made up 27% of drowning deaths but only comprised 6% of the total child population. The largest number of drowning deaths were among White (33%) and Hispanic (30%) children (Figure 41).

**Figure 41. Percentage of Drowning Deaths among Children by Race/Ethnicity, Ages 0-17 Years, Compared to Population, Arizona, 2022 (n=30)\*<sup>2</sup>**



\*Data for American Indian and Asian children suppressed due to counts less than 6.

The majority of drowning deaths occurred in pools, hot tubs, or spas (67%) (Table 19).

**Table 19. Number and Percentage of Drowning Deaths among Children by Location, Ages 0-17 Years, Arizona, 2022 (n=30)**

Location	Number	Percent
Pool, Hot Tub, Spa	20	67%
Bathtub	6	20%
Open Water/Pond	*	*
Other	*	*

\*Number/Percentage suppressed due to count less than 6.

While there are numerous risk factors that contribute to drowning, lack of supervision (97%) was the most commonly identified risk factor followed by the child's inability to swim (57%) and the lack of a pool barrier (43%) (Table 20).

**Table 20. Leading Risk Factors of Drowning Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=30)**

Risk Factors*	Number	Percent
Lack of Supervision	29	97%
Inability to Swim	17	57%
Lack of Pool Barrier	13	43%
Poverty	12	40%
CPS History with Family	8	27%

\*More than one risk factor may have been identified in each death.

The child's parent was the individual who was responsible for supervision in the majority of drowning deaths (76%). The child was not in sight of the supervisor in 97% of these drownings (Table 21).

**Table 21. Responsible Supervisor during Drowning Incidents Requiring Supervision among Children, Ages 0-17 Years, Arizona, 2022 (n=29)**

Responsible Supervisor	Number	Percent
Parent	22	76%
Other (i.e., other relative, babysitter)	7	24%

## Firearm Injury Deaths

Death caused by an injury resulting from the penetrating force of a bullet or other projectile shot from a powder-charged gun. See the Glossary for further explanation.



There were 59 firearm injury deaths in 2022, 7% of all child deaths.



The firearm injury death rate increased by 4% from 3.5 deaths per 100,000 children in 2021 to 3.6 deaths per 100,000 children in 2022.



100% of firearm injury deaths were preventable.



Of the firearm injury deaths, 81% were male and 19% were female.



75% of firearm injury deaths occurred in children ages 15-17 years.



Black and American Indian children were disproportionately affected. Black children made up 14% of firearm injury deaths but only make up 6% of the total population. Similarly, American Indian children made up 10% of firearm injury deaths but only make up 5% of the total population.



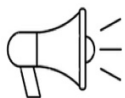
#1 Risk Factor: Access to Firearms (100%)  
 #2 Risk Factor: Firearm not Stored Properly (66%)  
 #3 Risk Factor: CPS History with Family (63%)

*Patient/Family/Caregiver:* \*

- Gun owners should practice safe storage of their firearms which requires keeping the gun unloaded and locked in a safe.<sup>62,63</sup>

*Provider/Healthcare Facilities:* \*

- Provide firearm safety counseling and distribute free firearm cables, if available, at well-child visits to firearm owners.<sup>64</sup>



*Policy Makers/Participating Agencies/Schools:* \*

- Schools should develop interventions to prevent firearm violence among children. They can also connect families to resources like parental training and provide a place for students to participate in conflict resolution curriculum.<sup>65,67</sup>

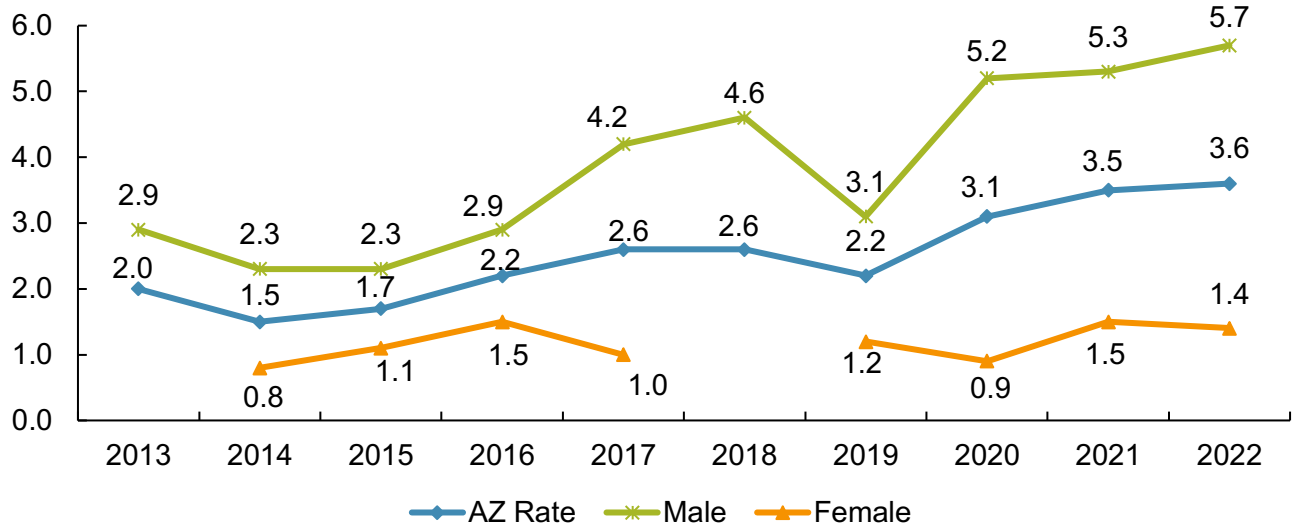
*Community-Based Organizations:* \*

- Incorporate age-appropriate firearm safety workshops for children, youth, and teens.

\*See the Firearm Injury Death Prevention Recommendations for additional evidence-based recommendations.

Overall, Arizona's firearm injury mortality rate has increased since 2014. Males have consistently had a higher firearm injury mortality rate compared to females. Arizona's firearm injury mortality rate increased by 4% from 3.5 deaths per 100,000 children in 2021 to 3.6 deaths per 100,000 children in 2022 (Figure 42).

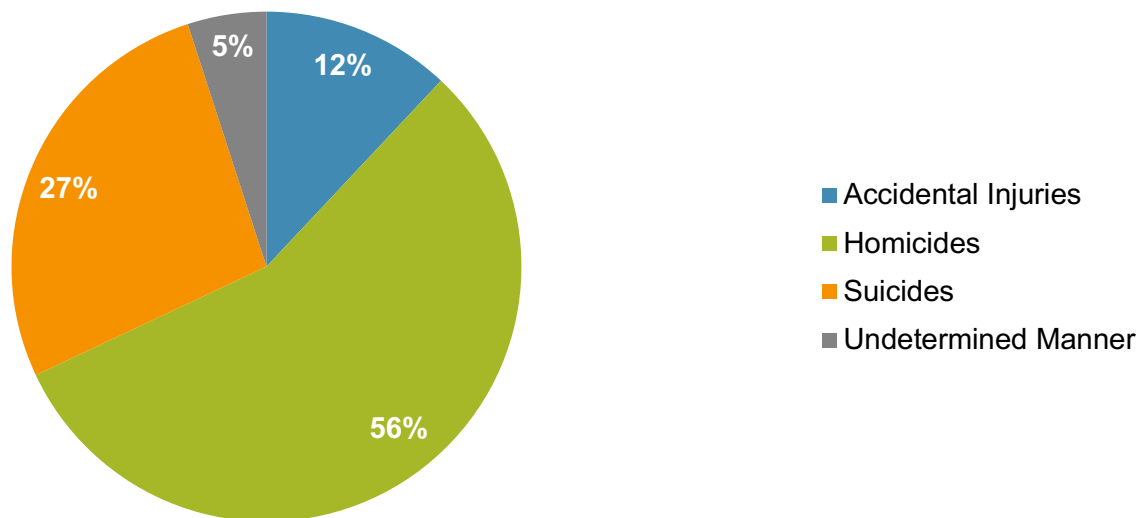
**Figure 42. Mortality Rate per 100,000 Children due to Firearm Injury by Sex, Ages 0-17 Years, Arizona, 2013-2022\*<sup>2-11</sup>**



\*2013 and 2018 data on female children not included due to small sample size.

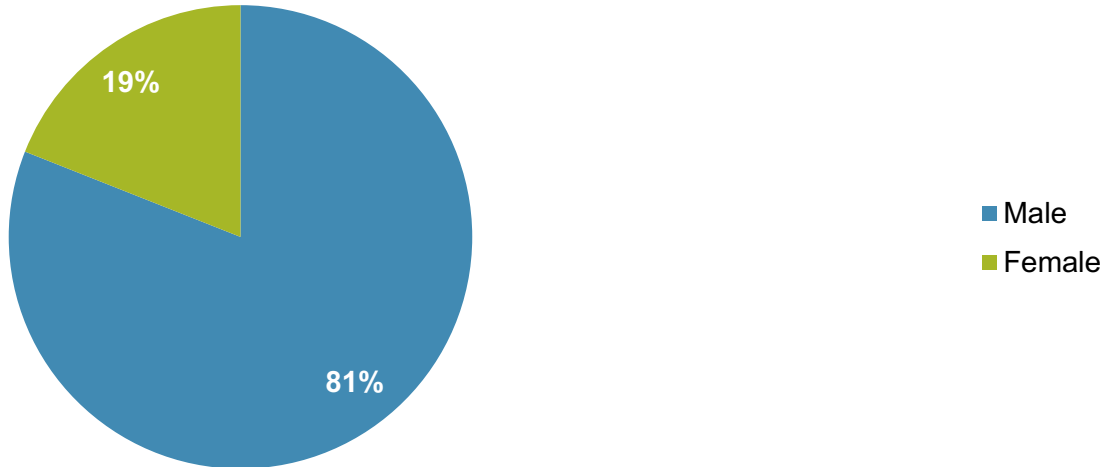
The majority of firearm injury deaths were homicides (56%), followed by suicides (27%) and accidental injuries (12%) (Figure 43).

**Figure 43. Percentage of Firearm Injury Deaths among Children by Manner of Death, Ages 0-17 Years, Arizona, 2022 (n=59)**



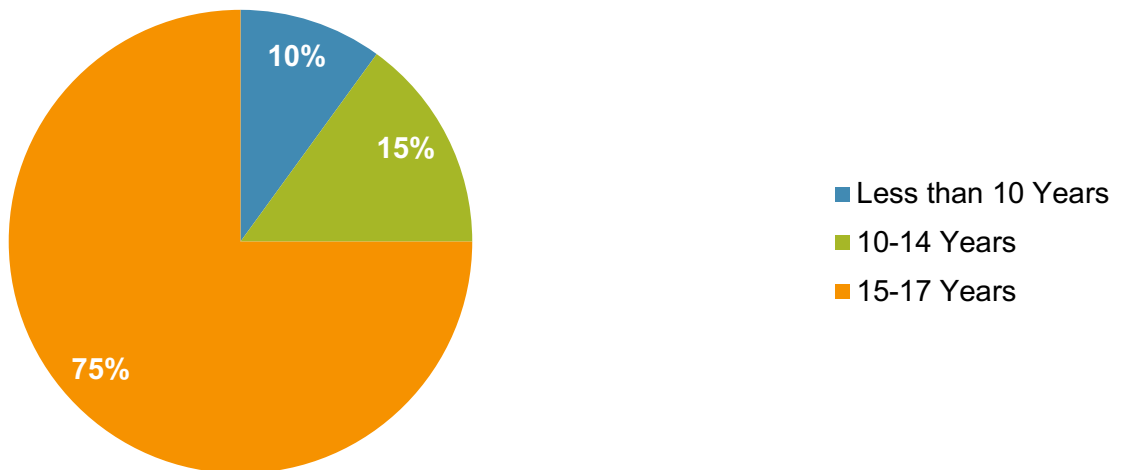
The majority of firearm injury deaths occurred among males (81%) (Figure 44).

**Figure 44. Percentage of Firearm Injury Deaths among Children by Sex, Ages 0-17 Years, Arizona, 2022 (n=59)**



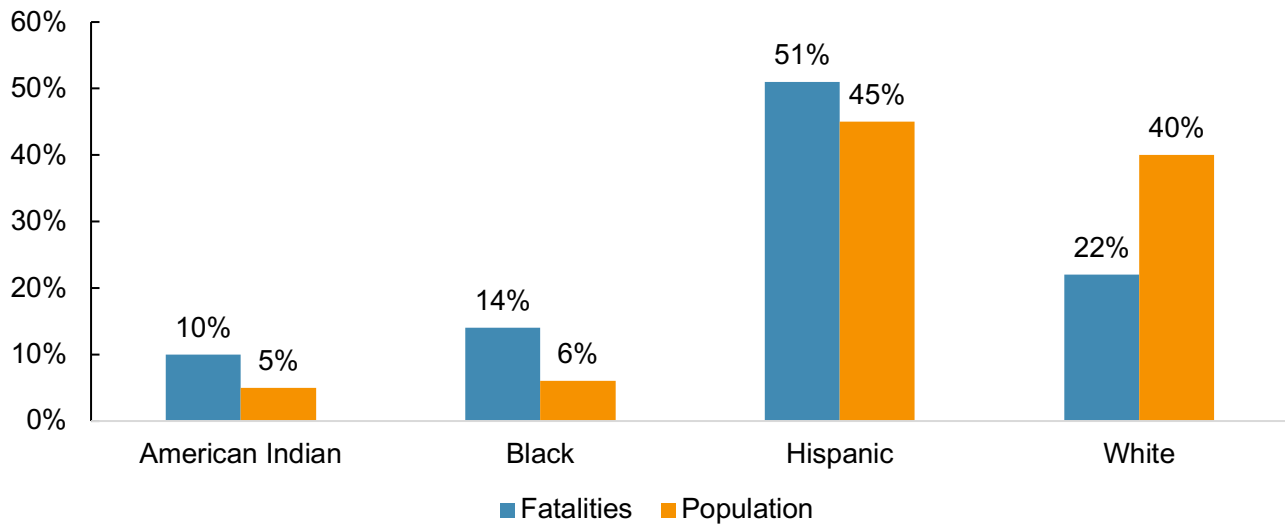
The majority of firearm injury deaths occurred among children ages 15 to 17 years (75%), followed by children ages 10 to 14 years (15%) (Figure 45).

**Figure 45. Percentage of Firearm Injury Deaths among Children by Age Group, Ages 0-17 Years, Arizona, 2022 (n=59)**



Black and American Indian children made up 14% and 10% of firearm injury deaths, respectively, but only comprised 6% and 5% of the total child population. Additionally, Hispanic children made up 51% of firearm injury deaths but only comprised 45% of the total child population. Hispanic children also made up the majority of firearm injury deaths (51%) (Figure 46).

**Figure 46. Percentage of Firearm Injury Deaths among Children by Race/Ethnicity, Ages 0-17 Years, Compared to Population, Arizona, 2022 (n=59)\*<sup>2</sup>**



\*Data for Asian children suppressed due to counts less than 6.

While there are numerous preventable risk factors that contribute to firearm injury deaths, access to firearms (100%) was the most identified risk factor. This is followed by the firearm not being stored properly (66%) and CPS History with the family (63%) (Table 22).

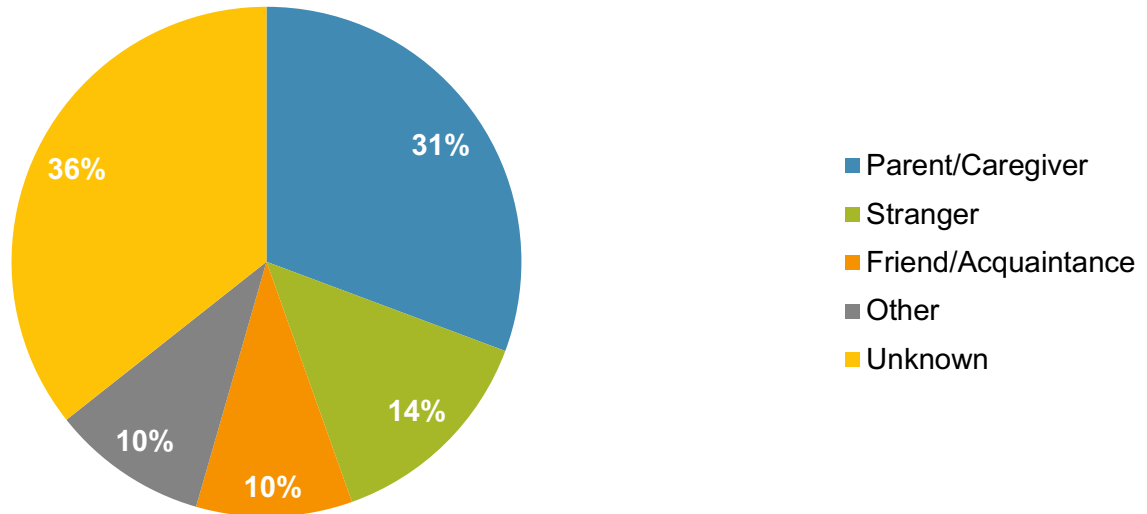
**Table 22. Leading Risk Factors of Firearm Injury Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=59)**

Risk Factors*	Number	Percent
Access to Firearms	59	100%
Firearm not Stored Properly	39	66%
CPS History with Family	37	63%
Substance Use	31	53%
Criminal Act	16	27%

\*More than one risk factor may have been identified in each death.

In 36% of firearm injury deaths, the owner of the firearm could not be identified. The child's parent/caregiver as the owner accounted for 31% of the firearm injury deaths (Figure 47).

**Figure 47. Distribution of Ownership for Firearms Involved in Firearm Injury Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=59)**



In 31% of firearm injury deaths, the firearm user was the child themselves (Table 23).

**Table 23. Firearm User Involved in Firearm Injury Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=59)**

Person Using Firearm	Number	Percent
Self	18	31%
Friend/Acquaintance	11	19%
Stranger	11	19%
Relative	9	15%
Other (i.e., gang rival, law enforcement)	*	*
Unknown	*	*

\*Number/Percentage suppressed due to count less than 6

Of the firearm injury deaths, 83% involved a handgun (Table 24).

**Table 24. Types of Firearms Used in Firearm Injury Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=59)**

Type of Firearm	Number	Percent
Handgun	49	83%
Other (i.e., rifles, shotguns)	6	10%
Unknown	*	*

\*Number/Percentage suppressed due to count less than 6.



The majority of firearm injury deaths occurred in urban counties in Arizona (92%) (Not shown). More specifically, majority of firearm injury deaths occurred within a home, including the child's home or a friend's/relative's home (61%) (Table 25).

**Table 25. Number and Percentage of Firearm Injury Deaths among Children by Location, Ages 0-17 Years, Arizona, 2022 (n=59)**

Location*	Number	Percent
Child's Home	24	41%
Other Location (i.e., roads, sidewalks, etc.)	24	41%
Friend/Relative Home	12	20%

\*More than one location may have been identified for each death.

In 31% of firearm injury deaths, the firearm was used for self-harm (Table 26).

**Table 26. Uses of Firearm Involved in Firearm Injury Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=59)**

Use of Firearm**	Number	Percent
Self-Harm	18	31%
Child was a Bystander	12	20%
Argument	10	17%
Playing with Firearm	10	17%
Showing to Others	7	12%
Drug Deal	*	*
Criminal Activity	*	*
Other (i.e., child abuse, self defense, gang violence)	*	*

\*Number/Percentage suppressed due to count less than 6.

\*\*More than one use may have been identified in each death.

## Infectious Disease-Related Deaths

Infectious disease-related deaths are deaths in which an infectious disease caused or contributed to the death. Infectious diseases are illnesses caused by germs (such as bacteria, virus, and fungi) that enter the body, multiply, and can cause an infection. Some infectious diseases are contagious (or communicable), meaning they can spread from one person to another. See the Glossary for further explanation.

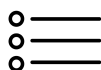
This section includes the previously reported COVID-19 deaths along with additional infectious disease-related deaths.



There were 87 infectious disease-related deaths in 2022, 10% of all child deaths.



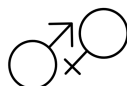
21% of infectious disease-related deaths were preventable.



#1 cause: Other Infections (n = 32)

#2 cause: COVID-19 (n = 17)

#3 cause: Prematurity (n = 17)



Of the infectious disease-related deaths, 54% were male and 46% were female.



56% of infectious disease deaths occurred in infants (less than 1 year of age).



American Indian children were disproportionately affected. American Indian children made up 16% of infectious disease-related deaths but only make up 5% of the total population.



#1 Risk Factor: Poverty (47%)

#2 Risk Factor: Chronic Disability/Illness (39%)

#3 Risk Factor: Maternal Infection (26%)

*Patient/Family/Caregiver: \**

- Obtain COVID-19 vaccinations for all eligible infants, children, and adolescents. This includes primary series and/or booster doses as recommended by the American Academy of Pediatrics and the CDC.<sup>50</sup>

*Provider/Healthcare Facilities: \**

- Emphasize the need of getting tested and/or treated immediately if an individual has symptoms consistent with syphilis or STIs as stated by the Centers for Disease Control and Preventions.<sup>129,130</sup>

*Policy Makers/Participating Agencies/Schools: \**

- Follow the current American Academy of Pediatrics and Centers for Disease Control and Preventions COVID-19 guidance.<sup>52</sup>

*Community-Based Organizations: \**

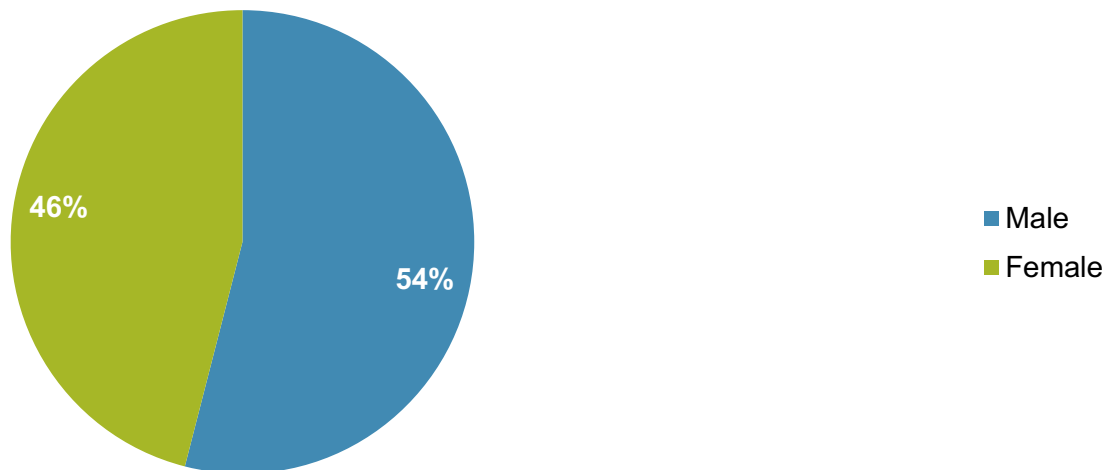
- Regardless of vaccination status, community members should isolate from others when they have COVID-19.<sup>55</sup>



\*See the Infectious Disease Prevention Recommendations for additional evidence-based recommendations.

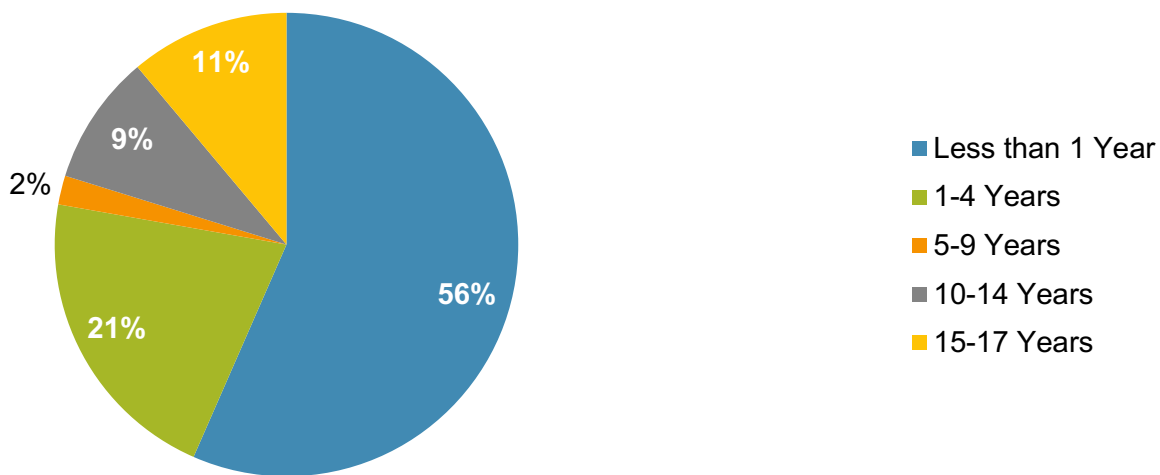
The majority of infectious disease-related deaths occurred among males (54%) (Figure 48).

**Figure 48. Percentage of Infectious Disease-Related Deaths among Children by Sex, Ages 0-17 Years, Arizona, 2022 (n=87)**



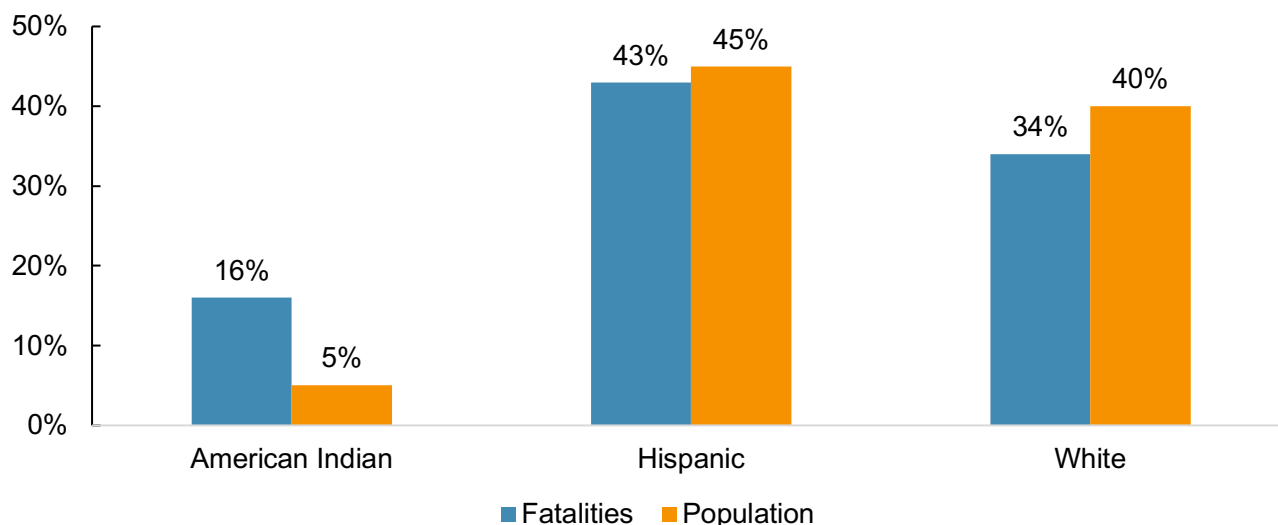
The majority of infectious disease-related deaths occurred among children less than 1 year of age (56%) (Figure 49).

**Figure 49. Percentage of Infectious Disease-Related Deaths among Children by Age Group, Ages 0-17 Years, Arizona, 2022 (n=87)**



American Indian children made up 16% of infectious disease-related deaths but only comprised 5% of the total child population. The largest number of infectious disease-related deaths were among Hispanic (43%) and White (34%) children (Figure 50).

**Figure 50. Percentage of Infectious Disease-Related Deaths among Children by Race/Ethnicity, Ages 0-17 Years, Compared to Population, Arizona, 2022 (n=87)\*<sup>2</sup>**



\*Data for Asian and Black children suppressed due to counts less than 6.

Among infectious disease-related deaths, other infections (i.e., influenza, congenital syphilis, RSV, Meningitis) (37%), COVID-19 (20%), and Prematurity (20%) were the leading causes of death for children ages 0-17 years (Table 27). Congenital Syphilis and COVID-19 are further analyzed below.

**Table 27. Cause of Infectious Disease-Related Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=87)**

Cause of Death	Number	Percent
Other Infections (i.e., Influenza, Congenital Syphilis, RSV, Meningitis)	32	37%
COVID-19	17	20%
Prematurity**	17	20%
Pneumonia	14	16%
Other Medical Conditions (i.e., Congenital Anomaly, Cardiovascular, Cancer)	*	*
Undetermined	*	*

\*Number/Percentage suppressed due to count less than 6.

\*\*Prematurity as a cause of death refers to the infection that contributed to the prematurity.

While there are numerous preventable risk factors that contribute to infectious disease-related deaths among children ages 0-17 years, poverty (47%) was the most identified risk factor followed by chronic conditions (39%) and maternal infection during pregnancy that complicated the child's health (26%) (Table 28).

**Table 28. Leading Risk Factors of Infectious Disease-Related Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=87)**

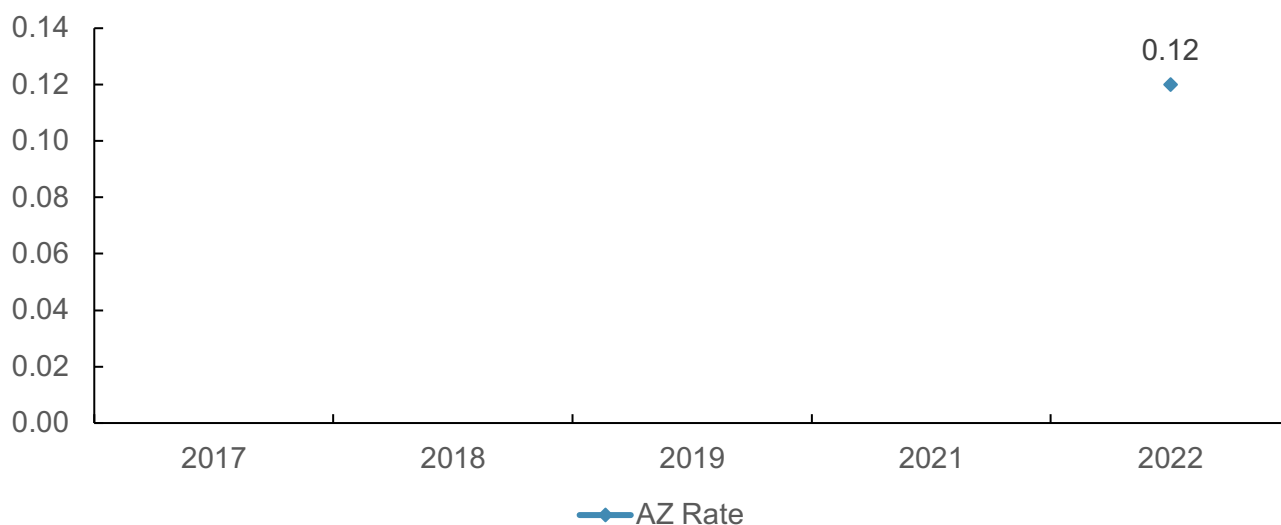
Risk Factors*	Number	Percent
Poverty	41	47%
Chronic Condition	34	39%
Maternal Infection	23	26%
CPS History with Family	21	24%
Substance Use	8	9%
*More than one use may have been identified in each death.		

## Congenital Syphilis Deaths

Congenital Syphilis is a systemic infection that occurs when the pregnant person infected with *treponema pallidum* (syphilis) transmits the bacterium to the baby and causes death. See the Glossary for further explanation.

Nationally, congenital syphilis-related deaths have increased 464% since 2001 with 220 congenital syphilis-related stillborn and infant deaths in 2021.<sup>49</sup> In Arizona, the CFRP identified 11 cases with congenital syphilis, nine of which were related to death. This is a much higher number than previous years ( $n < 6$ ). The Arizona Congenital Syphilis mortality rate was 0.12 deaths per 1,000 live births in 2022 (Figure 51).

**Figure 51. Mortality Rate per 1,000 Live Births due to Congenital Syphilis, Less than 1 year of Age, Arizona, 2017-2022\***<sup>30-32</sup>



\*2017-2021 data on congenital syphilis mortality rate are not included due to a small sample size.

While there are numerous risk factors that contribute to Congenital Syphilis deaths, no prenatal care (78%) and CPS history with family (67%) were the most commonly identified risk factors (Table 29).

**Table 29. Leading Risk Factors of Congenital Syphilis Deaths among Children, Arizona, 2022 (n=9)**

Risk Factors**	Number	Percent
No Prenatal Care	7	78%
CPS History with Family	6	67%
Substance Use	*	*
Poverty	*	*

\*Number/Percentage suppressed due to count less than 6.  
 \*\*More than one risk factor may have been identified in each death.

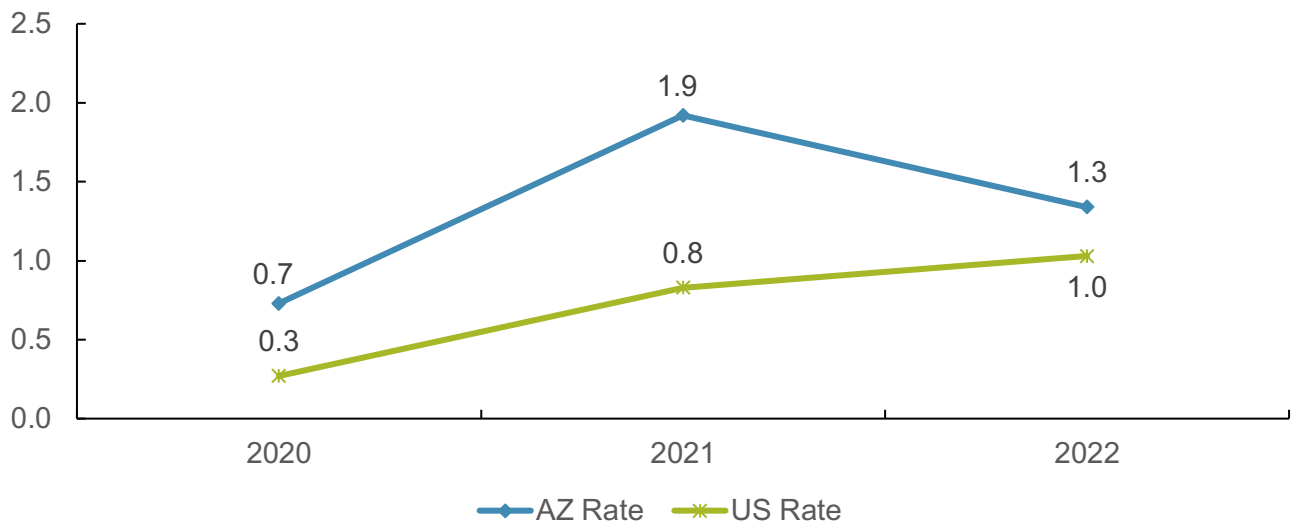
## COVID-19 Related Deaths

COVID-19 is a disease caused by SARS-CoV-2. COVID-19 was diagnosed at autopsy, or the child was suspected to have COVID-19, or the birthing parent contracted COVID-19 during pregnancy. The CFRP and the Chair of the State CFR Team additionally reviewed all child deaths to determine COVID-19 relatedness and completed the national module to determine COVID-10 relatedness. The COVID-19 Related Deaths module includes five questions intended to capture system changes, interruptions, and barriers that families may have experienced in the 12 months before the child's death. Additional information on the COVID-19 related death module in the reporting system can be found [here](#). See the Glossary for further explanation.

The CFRP identified 22 child deaths that were related to COVID-19.

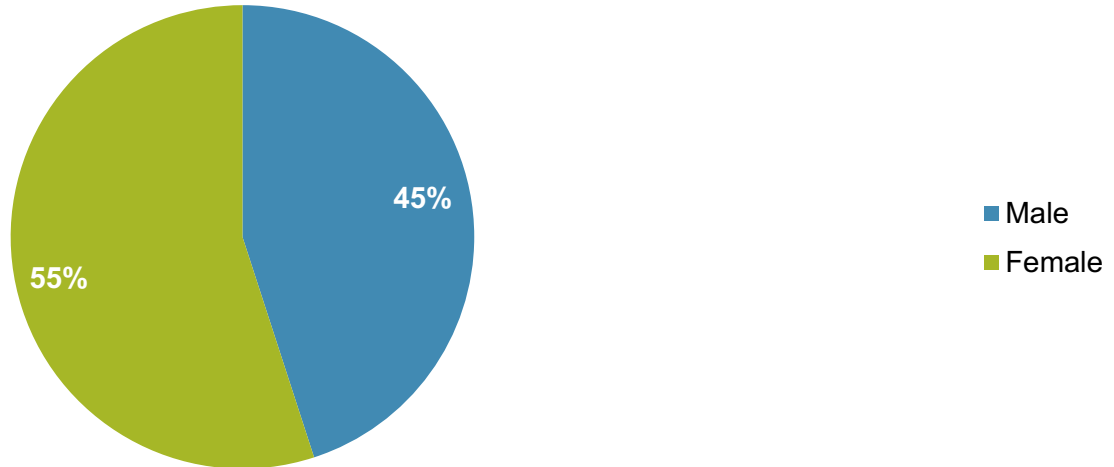
The Arizona COVID-19 mortality rate was 1.3 deaths per 100,000 children (0-17 years) while the U.S. COVID-19 mortality rate was 1.0 deaths per 100,000 children (0-17 years). Arizona's COVID-19 mortality rate decreased 30.2% from 1.9 deaths per 100,000 children in 2021 to 1.3 deaths per 100,000 children in 2022 (Figure 52).

**Figure 52. Mortality Rate per 100,000 Children due to COVID-19, Arizona Rate compared to the U.S. Rate, Ages 0-17 Years, Arizona, 2020-2022** <sup>2-4,48</sup>



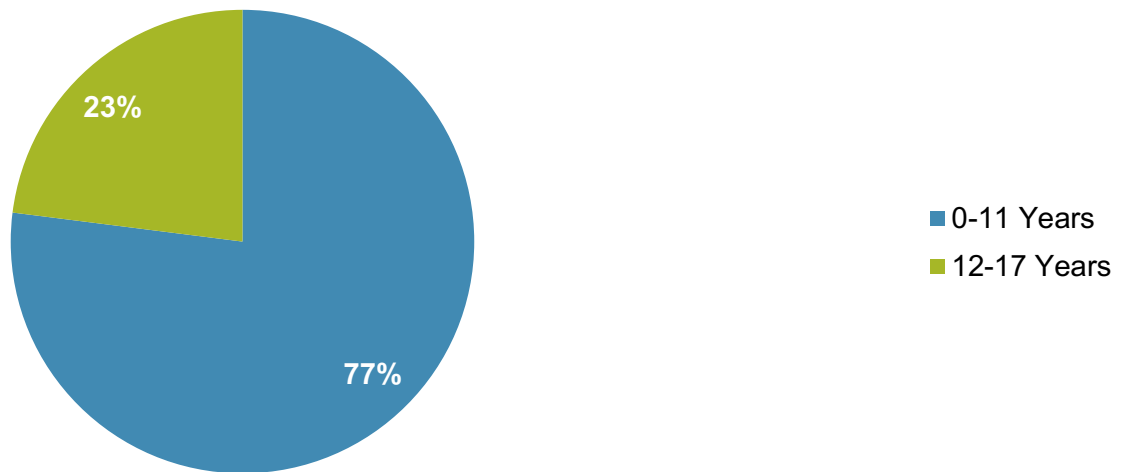
Of the COVID-19 deaths, 55% were among females (Figure 53).

**Figure 53. Percentage of COVID-19 Deaths among Children by Sex, Ages 0-17 Years, Arizona, 2022 (n=22)**



The majority of COVID-19 deaths occurred among children ages birth through 11 years (77%) (Figure 54).

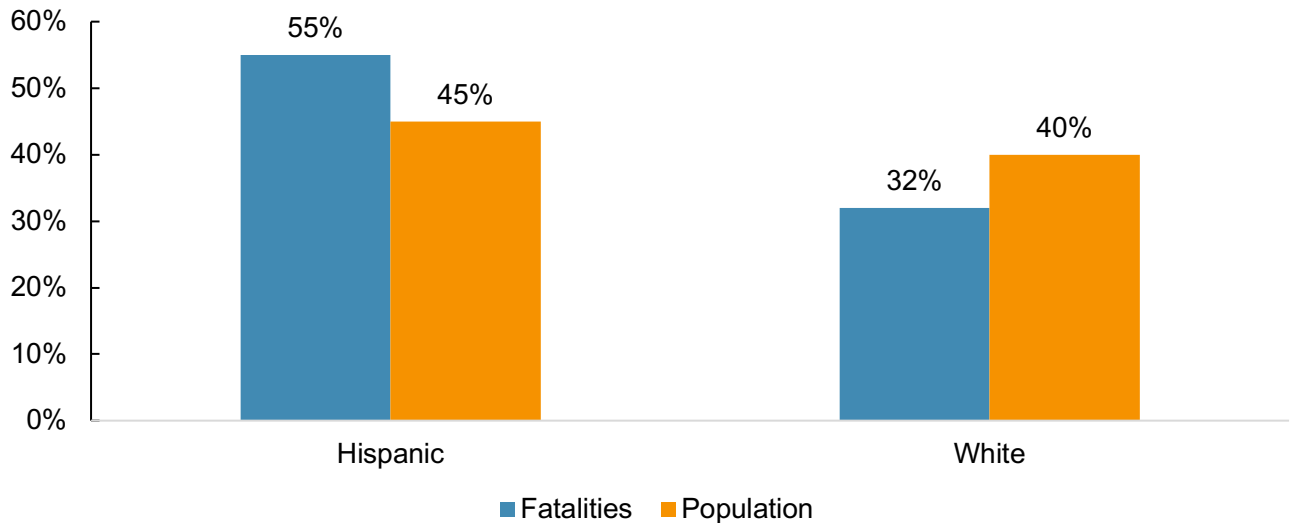
**Figure 54. Percentage of COVID-19 Deaths among Children by Age Group, Ages 0-17 Years, Arizona, 2022 (n=22)**





Hispanic children made up 55% of COVID-19 deaths but only comprised 45% of the total child population (Figure 55).

**Figure 55. Percentage of COVID-19 Deaths among Children by Race/Ethnicity, Ages 0-17 Years, Compared to Population, Arizona, 2022 (n=22)\*<sup>2</sup>**



\*Data for American Indian, Asian, and Black children suppressed due to counts less than 6.

While there are numerous risk factors that contribute to direct COVID-19 deaths, poverty (64%) and known COVID-19 exposure (64%) were the most commonly identified risk factors (Table 30).

**Table 30. Leading Risk Factors of COVID-19 Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=22)**

Risk Factors**	Number	Percent
Poverty	14	64%
Known COVID-19 Exposure	14	64%
Chronic Conditions	10	45%
CPS History with Family	*	*

\*Number/Percentage suppressed due to count less than 6.

\*\*More than one risk factor may have been identified in each death.

## Motor Vehicle Crash (MVC) Deaths

Death caused by injuries from a motor vehicle incident, including injuries to motor vehicle occupant(s), pedestrian(s), pedal cyclist(s) or another person. See the Glossary for further explanation.



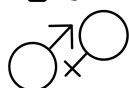
There were 81 MVC deaths in 2022, 9% of all child deaths.



The MVC death rate increased by 11% from 4.5 deaths per 100,000 children in 2021 to 4.9 deaths per 100,000 children in 2022.



100% of MVC deaths were preventable.



Of the MVC deaths, 64% were male and 36% were female.



40% of MVC deaths occurred in children ages 15-17 years.



American Indian children were disproportionately affected. American Indian children made up 15% of MVC deaths but only make up 6% of the total population.



#1 Risk Factor: Lack of Seatbelt Restraint (51%)

#2 Risk Factor: CPS History with Family (38%)

#3 Risk Factor: Reckless Driving (37%)

*Patient/Family/Caregiver: \**

- Follow the 4 evidence-based recommendations provided by the American Academy of Pediatrics (AAP) for best practices in the choice of a child restraint system to optimize safety in passenger vehicles for children.<sup>69</sup>

*Provider/Healthcare Facilities: \**

- Continue promoting the importance of safety seats for children and provide parents with education and information on the locations of certified seat installers. Provide training in how to install car safety seats to parents and caregivers.<sup>69,71</sup>

*Policy Makers/Participating Agencies/Schools: \**

- Require all children younger than 13 years to be riding in the rear seats of vehicles.<sup>76</sup>

*Community-Based Organizations: \**

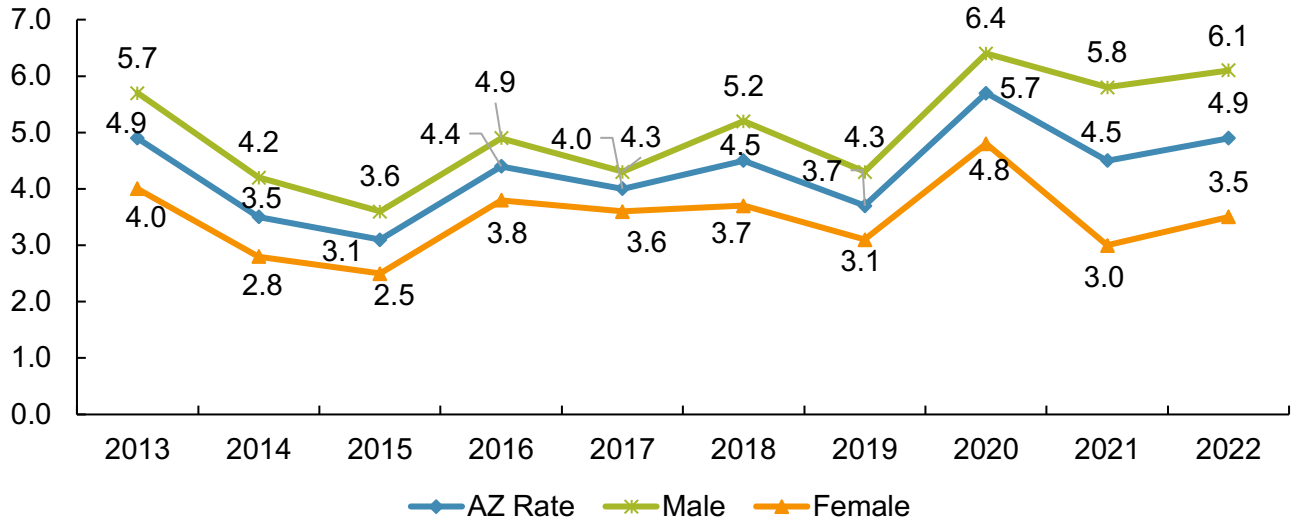
- Provide parent/caregiver education about proper vehicle restraint use and the risks associated with driving under the influence.

\*See the Motor Vehicle Crash Death Prevention Recommendations for additional evidence-based recommendations.



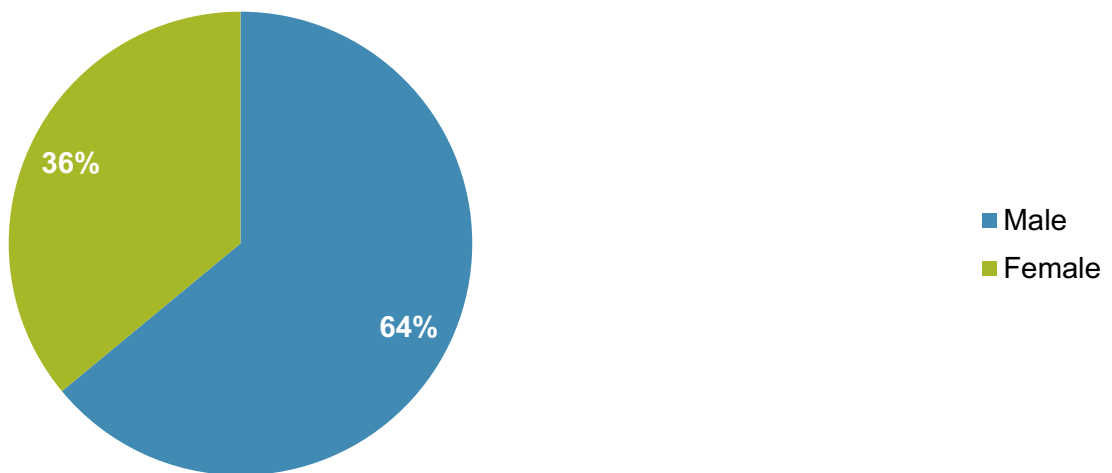
The MVC mortality rate has fluctuated since 2013. Males have consistently had a higher MVC mortality rate compared to females. Arizona's MVC mortality rate increased by 11% from 4.5 deaths per 100,000 children in 2021 to 4.9 deaths per 100,000 children in 2022 (Figure 56).

**Figure 56. Mortality Rate per 100,000 Children due to Motor Vehicle Crashes by Sex, Ages 0-17 Years, Arizona, 2013-2022**<sup>2-11</sup>



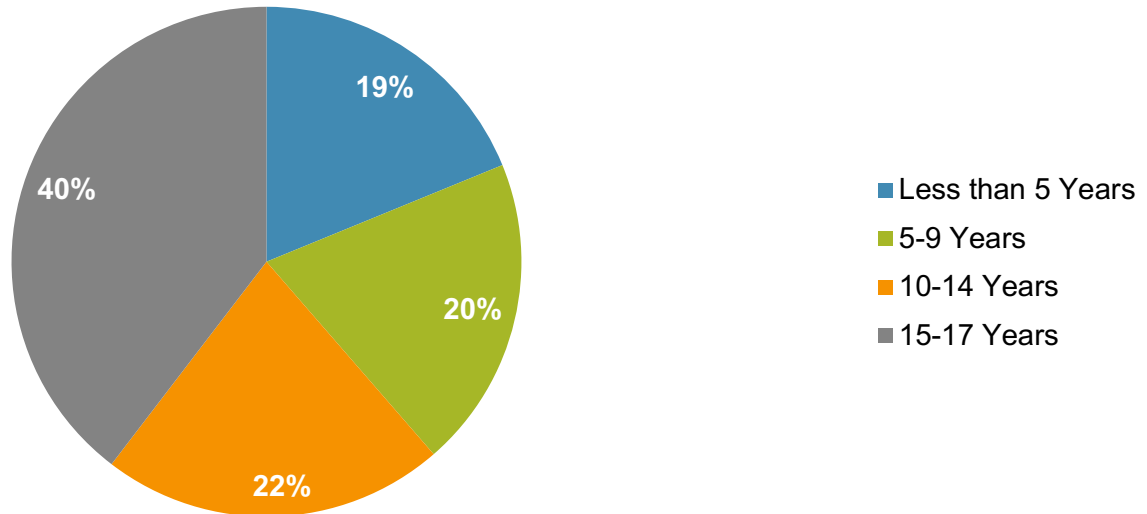
The majority of MVC deaths occurred among males (64%) (Figure 57).

**Figure 57. Percentage of Motor Vehicle Crash Deaths among Children by Sex, Ages 0-17 Years, Arizona, 2022 (n=81)**



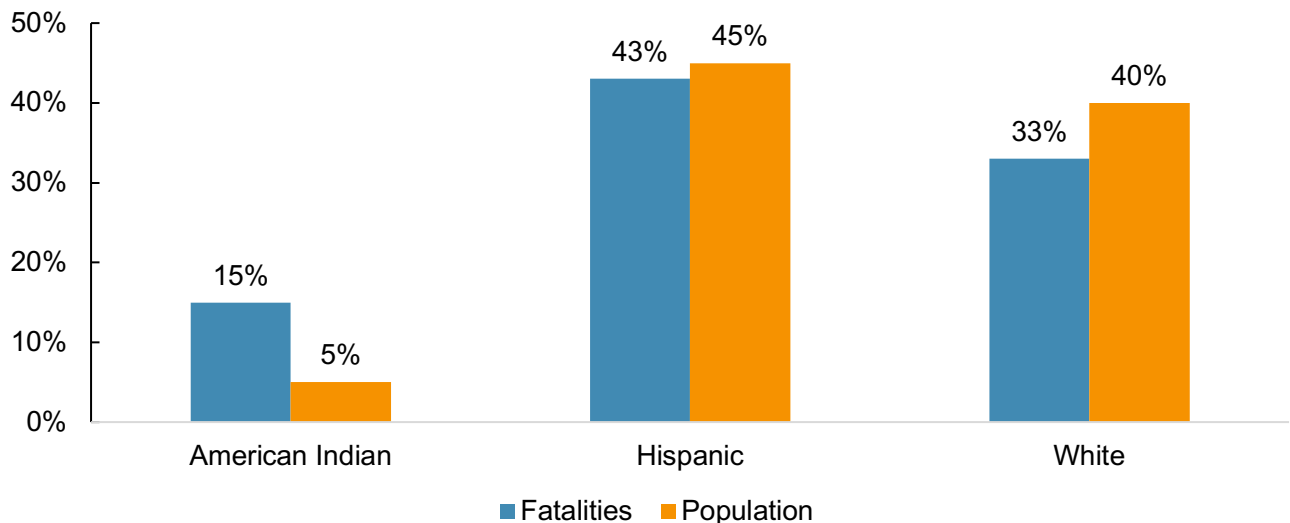
The highest number of MVC deaths occurred among children ages 15 to 17 years (40%) followed by children ages 10 to 14 years (22%) (Figure 58).

**Figure 58. Percentage of Motor Vehicle Crash Deaths among Children by Age Group, Ages 0-17 Years, Arizona, 2022 (n=81)**



American Indian children made up 15% of MVC deaths but only comprised 5% of the total child population. The largest number of MVC deaths were among Hispanic (43%) children (Figure 59).

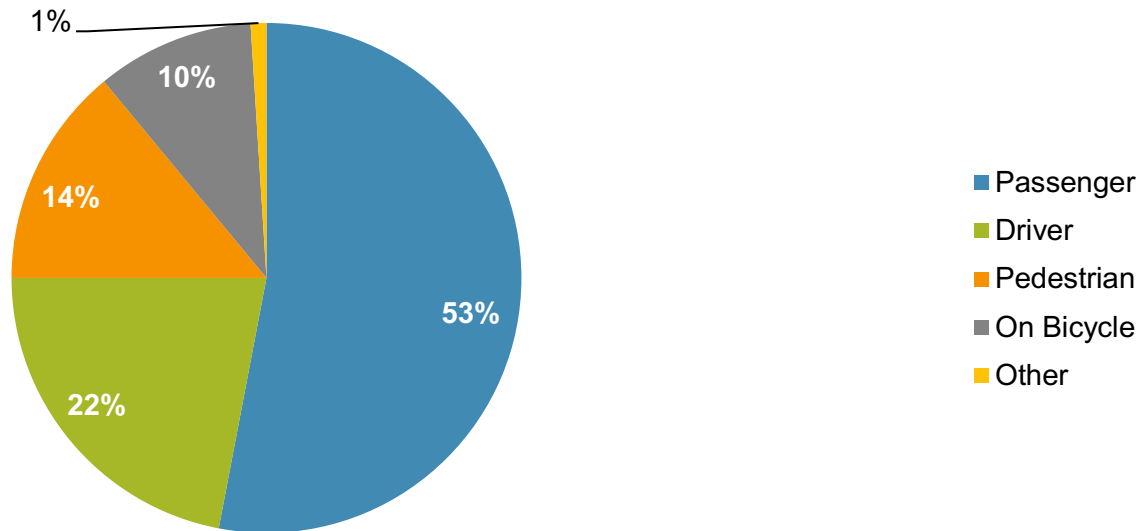
**Figure 59. Percentage of Motor Vehicle Crash Deaths among Children by Race/Ethnicity, Ages 0-17 Years, Compared to Population, Arizona, 2022 (n=81)\*<sup>2</sup>**



\*Data for Asian and Black children suppressed due to counts less than 6.

In the majority of MVC deaths, the child was the passenger (53%) (Figure 60).

**Figure 60. Percentage of Motor Vehicle Crash Deaths among Children by Location of Child in Accident, Ages 0-17 Years, Arizona, 2022 (n=81)**



The largest number of motor vehicle crash deaths among children occurred in a car (32%) followed by a sports utility vehicle (16%). Nine percent of motor vehicle crash deaths occurred in an All-Terrain Vehicle (ATV) or Truck (Table 31).

**Table 31. Number and Percentage of Motor Vehicle Crash Deaths among Children by Type of Vehicle, Ages 0-17 Years, Arizona, 2022 (n=81)**

Type of Vehicle	Number	Percent
Car	26	32%
Sport Utility Vehicle	13	16%
None	11	14%
Bicycle	8	10%
All-Terrain Vehicle (ATV)	7	9%
Truck	7	9%
Motorcycle	*	*
Other (i.e., unknown, van, recreational)	*	*

\*Number/Percentage suppressed due to count less than 6.

While there are numerous risk factors that contribute to MVC deaths, the most commonly identified risk factors were lack of seatbelt restraint (51%), CPS history with family (38%), and reckless driving (37%) (Table 32).

**Table 32. Leading Risk Factors of Motor Vehicle Crash Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=81)**

Risk Factors*	Number	Percent
Lack of Seatbelt Restraint	41	51%
CPS History with Family	31	38%
Reckless Driving	30	37%
Substance Use	26	32%
Criminal Activity	24	30%
*More than one risk factor may have been identified in each death.		

## Neglect/Abuse Deaths

An act of neglect or physical, emotional, or sexual abuse against a child. See the Glossary for further explanation.



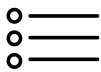
There were 146 neglect/abuse deaths in 2022, 17% of all child deaths. 90% of neglect/abuse deaths were classified as neglect or neglect and abuse.



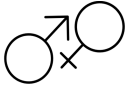
The neglect/abuse death rate increased by 12% from 7.9 deaths per 100,000 children in 2021 to 8.9 deaths per 100,000 children in 2022.



100% of neglect/abuse deaths were preventable.



#1 cause: Suffocation (n = 44)  
#2 cause: Drowning (n = 15)  
#3 cause: Prematurity (n = 15)



Of the neglect/abuse deaths, 59% were male and 41% were female.



60% of neglect/abuse deaths occurred in infants (less than 1 year of age).



Black and American Indian children were disproportionately affected. Black children made up 18% of neglect/abuse deaths but only make up 6% of the total population. Similarly, American Indian children made up 23% of neglect/abuse deaths but only make up 5% of the total population.



#1 Risk Factor: Parent Substance Use History (67%)  
#2 Risk Factor: Poverty (62%)  
#3 Risk Factor: CPS History with Family (59%)

*Patient/Family/Caregiver:* \*

- Increase awareness of the risks for child neglect/abuse associated with substance use, including marijuana, during pregnancy including premature birth, and other complications.

*Provider/Healthcare Facilities:* \*

- Increase awareness of adverse childhood experiences (ACEs) as they can have lasting, negative effects on health, wellbeing, and opportunity.<sup>85</sup>



*Policy Makers/Participating Agencies/Schools:* \*

- Increase public education on how and when to report suspected child abuse and neglect so that any individual who knows about a child who is being abused or neglected can act by calling 911 in an emergency or the Arizona Child Abuse Hotline (1-888-SOS-CHILD).<sup>84</sup>

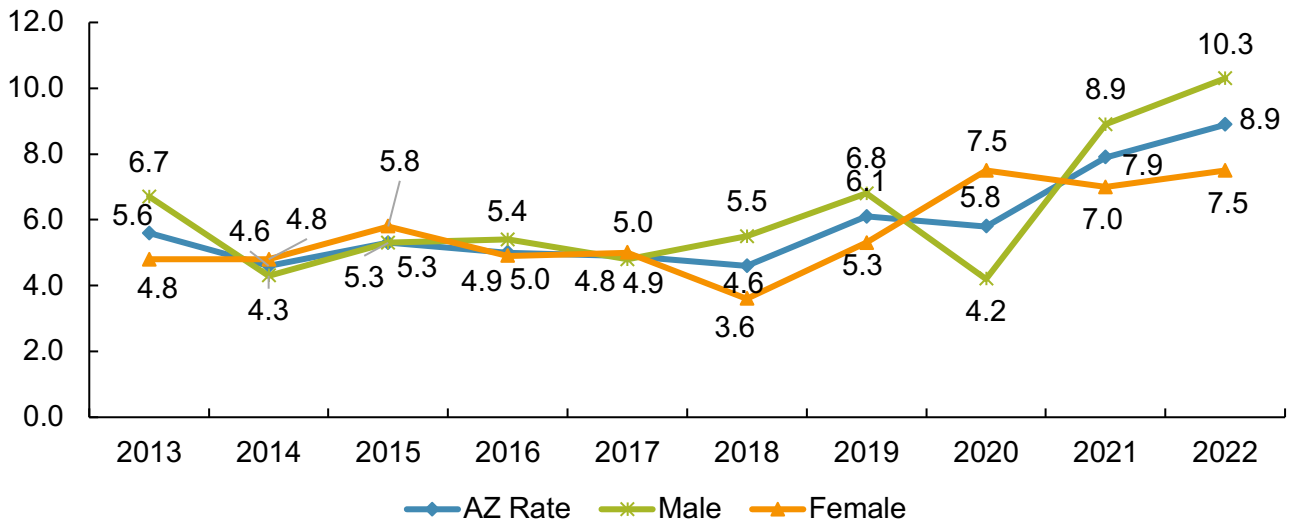
*Community-Based Organizations:* \*

- Establish Community-Based Child Abuse Prevention (CBCAP) programs. These programs strengthen families while promoting a safe and healthy environment for raising children.<sup>79</sup>

\*See the Neglect/Abuse Death Prevention Recommendations for additional evidence-based recommendations.

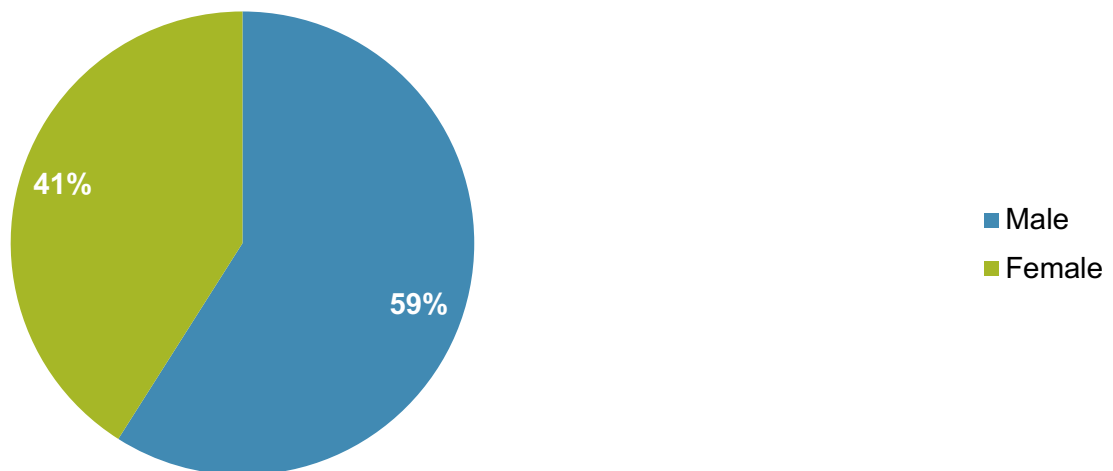
Overall, Arizona's neglect/abuse mortality rate has increased since 2014. Arizona's neglect/abuse mortality rate increased by 12% from 7.9 deaths per 100,000 children in 2021 to 8.9 deaths per 100,000 children in 2022. Arizona's male neglect/abuse mortality rate has increased 16% from 8.9 deaths per 100,000 children in 2021 to 10.3 deaths per 100,000 children in 2022 (Figure 61).

**Figure 61. Mortality Rate per 100,000 Children due to Neglect/Abuse by Sex, Ages 0-17 Years, Arizona, 2013-2022**<sup>2-11</sup>



The majority of neglect/abuse deaths occurred among male children (59%) (Figure 62).

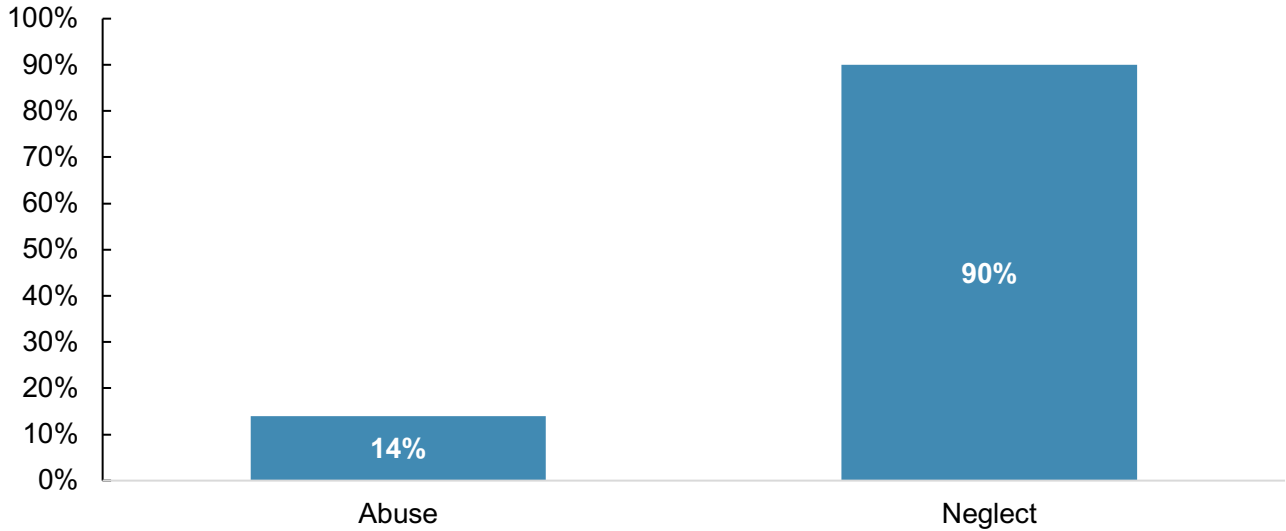
**Figure 62. Percentage of Neglect/Abuse Deaths among Children by Sex, Ages 0-17 Years, Arizona, 2022 (n=146)**





In 2022, 90% of all neglect/abuse deaths involved neglect and 14% involved abuse. In some deaths, the child was a victim of both neglect and abuse (Figure 63).

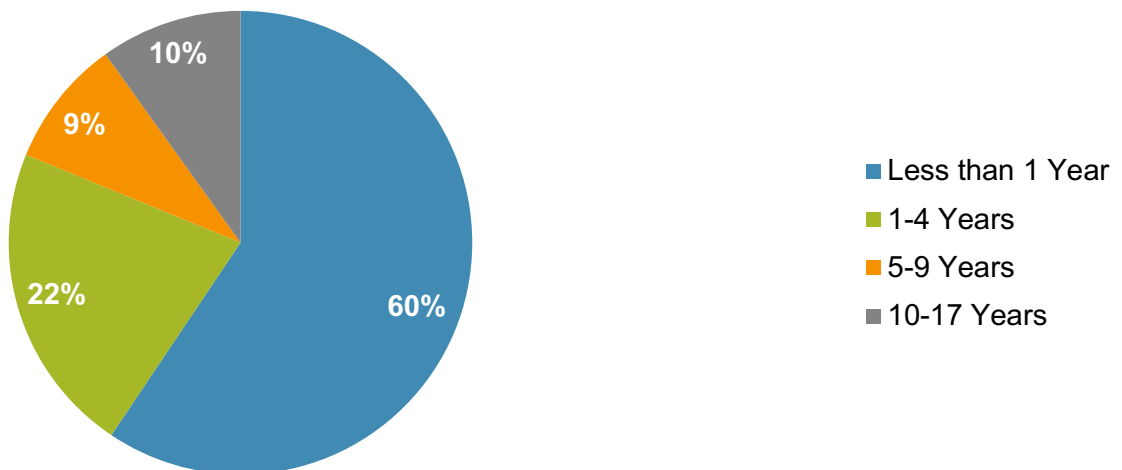
**Figure 63. Percentage of Neglect/Abuse Deaths among Children by Abuse and Neglect, Ages 0-17 Years, Arizona, 2022 (n=146)\***



\*Totals do not equal 100% as abuse and neglect may have both been involved.

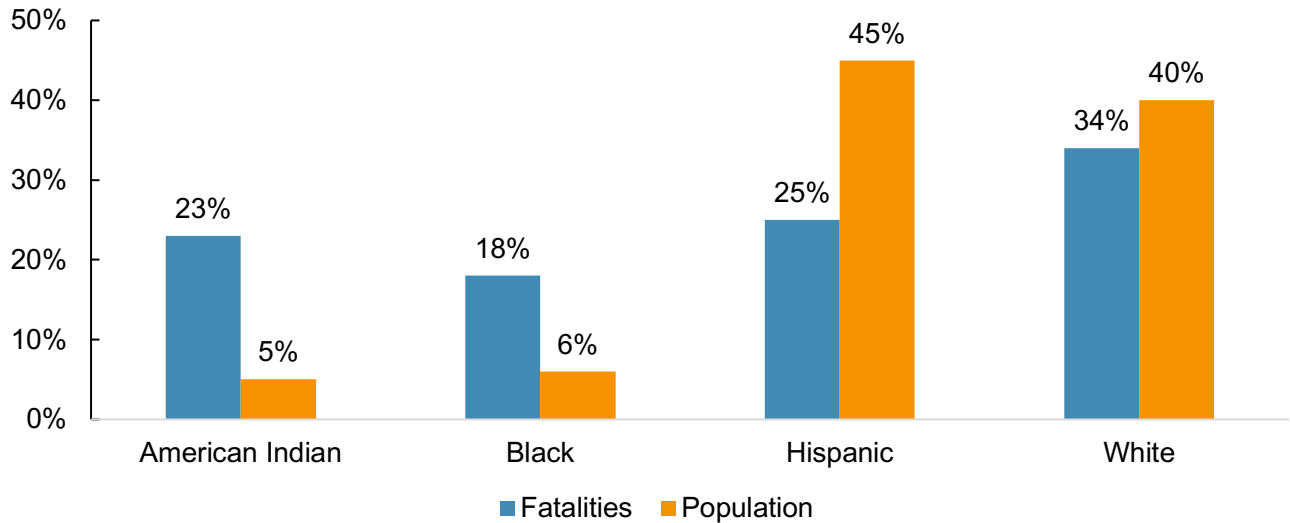
The majority of neglect/abuse deaths occurred among infants less than 1 year of age (60%), followed by children ages 1-4 years (22%) (Figure 64).

**Figure 64. Percentage of Neglect/Abuse Deaths among Children by Age Group, Ages 0-17 Years, Arizona, 2022 (n=146)**



American Indian and Black children made up 23% and 18% of neglect/abuse deaths, respectively, but only comprised 5% and 6% of the total child population. The largest percentage of neglect/abuse deaths were among White (34%) children (Figure 65).

**Figure 65. Percentage of Neglect/Abuse Deaths among Children by Race/Ethnicity, Ages 0-17 Years, Compared to Population, Arizona, 2022 (n=146)\*<sup>2</sup>**



\*Data for Asian children suppressed due to counts less than 6.

The child's mother was a perpetrator in 75% of neglect/abuse deaths, and the child's father was a perpetrator in 30% of the neglect/abuse deaths (Table 33).

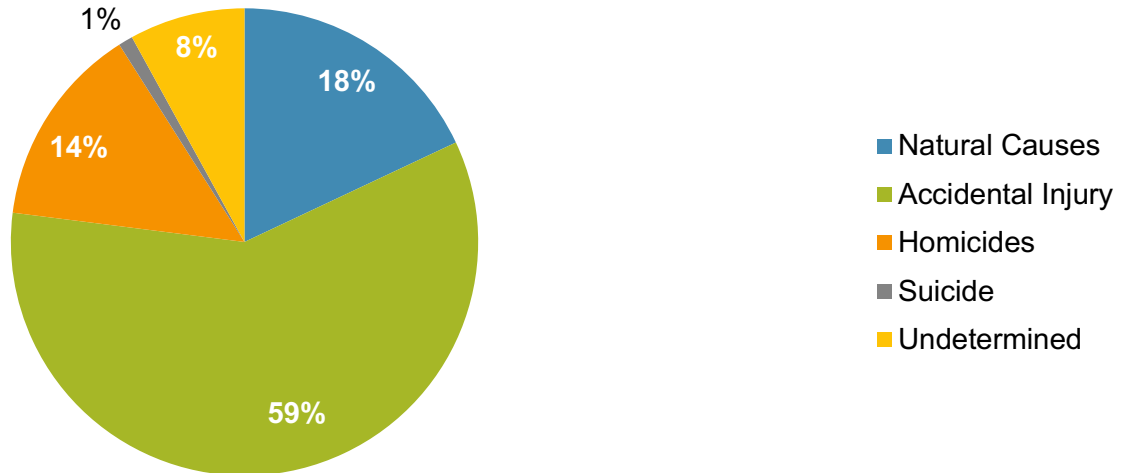
**Table 33. Number and Percentage of Neglect/Abuse Deaths among Children by Perpetrator, Ages 0-17 Years, Arizona, 2022 (n=146)**

Perpetrator*	Number	Percent
Mother	109	75%
Father	44	30%
Other Relative	17	12%
Other (i.e., parent's partner, stepparent, babysitter)	15	10%

\*There may be more than one perpetrator in each death.

The majority of neglect/abuse deaths were due to accidental injuries (59%) followed by natural causes (18%) (Figure 66).

**Figure 66. Percentage of Neglect/Abuse Deaths among Children by Manner of Death, Ages 0-17 Years, Arizona, 2022 (n=146)**



Among all neglect/abuse deaths, suffocation was the leading cause of death (30%) (Table 34).

**Table 34. Cause of Neglect/Abuse Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=146)**

Cause of Death	Number	Percent
Suffocation	44	30%
Drowning	15	10%
Prematurity	15	10%
Motor Vehicle and Other Transport	14	10%
Poisoning	13	9%
Other Medical (i.e., malnutrition, diabetes, COVID-19, etc.)	12	8%
Blunt Force Injury	10	7%
Undetermined	9	6%
Firearm Injury	8	5%
Other Injury (i.e., choking, stabbing, etc.)	6	4%

While there are numerous preventable risk factors that contribute to neglect/abuse deaths among children, parent substance use history (67%) was the most identified risk factor. In 59% of child neglect/abuse deaths, the child's family had prior involvement with a Child Protective Service (CPS) agency; 62% of these were unrelated to the decedent child. Eighteen percent of child neglect/abuse deaths had an open CPS case with a CPS agency at the time of the death (Table 35).

**Table 35. Leading Risk Factors of Neglect/Abuse Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=146)**

Risk Factors*	Number	Percent
Parent Substance Use History	98	67%
Poverty	90	62%
CPS History with Family	86	59%
Substance Use	71	49%
Lack of Supervision	35	24%
*More than one risk factor may have been identified in each death.		

Seventy-one cases (49%) of neglect/abuse deaths involved substance use (Table 35). Of those, marijuana was the most identified substance contributing to 18% of child neglect/abuse deaths followed by methamphetamine (17%) and opioid (17%) (Table 36).

**Table 36. Number and Percentage of Substance Type Identified in Neglect/Abuse Deaths among Children, Ages 0-17 Years, Arizona, 2022**

Substance Type**	Number	Percent
Marijuana	27	18%
Methamphetamine	25	17%
Opioid	25	17%
Alcohol	24	16%
Other (i.e., prescription drugs, cocaine)	*	*
*Number/Percentage suppressed due to count less than 6.		
**More than one substance may have contributed to each death.		

## Prematurity Deaths

Death of an infant born before 37 weeks gestation and the cause of death was related to the premature birth. See the Glossary for further explanation.



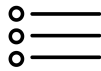
There were 208 prematurity deaths in 2022, 24% of all child deaths.



The prematurity death rate increased by 1% from 26.0 deaths per 1,000 premature births in 2021 to 26.3 deaths per 1,000 premature births in 2022.

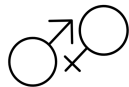


12% of prematurity deaths were preventable.



#1 cause: Prematurity (n = 182)

#2 cause: Perinatal Condition (n = 26)



Of the prematurity deaths, 62% were male and 38% were female.



Black and Hispanic children were disproportionately affected. Black children made up 14% of prematurity deaths but only make up 8% of the premature births. Additionally, Hispanic children made up 47% of prematurity deaths but only made up 42% of premature births.



#1 Risk Factor: Poverty (57%)

#2 Risk Factor: Premature Rupture of Membranes (PROM) (37%)

#3 Risk Factor: Preterm Labor (23%)

*Patient/Family/Caregiver: \**

- Pregnant people should avoid smoking nicotine, drinking alcohol, using marijuana and drugs because it increases the risk of preterm birth or other complications.<sup>86</sup>
  - Pregnant people who smoke tobacco should be referred to the Arizona Smokers Helpline (ASHLine / 1-800-556-6222).
  - Pregnant people with substance use disorder should be referred to the Opioid Assistance Referral Line (OAR Line).

*Provider/Healthcare Facilities: \**

- Encourage regular prenatal care which can help prevent complications and inform pregnant people about important steps they can take to protect their infant and ensure a healthy pregnancy, especially for pregnant people who use substances.<sup>87</sup>

*Policy Makers/Participating Agencies/Schools: \**

- Increase the availability of affordable health insurance for people of reproductive age.

*Community-Based Organizations: \**

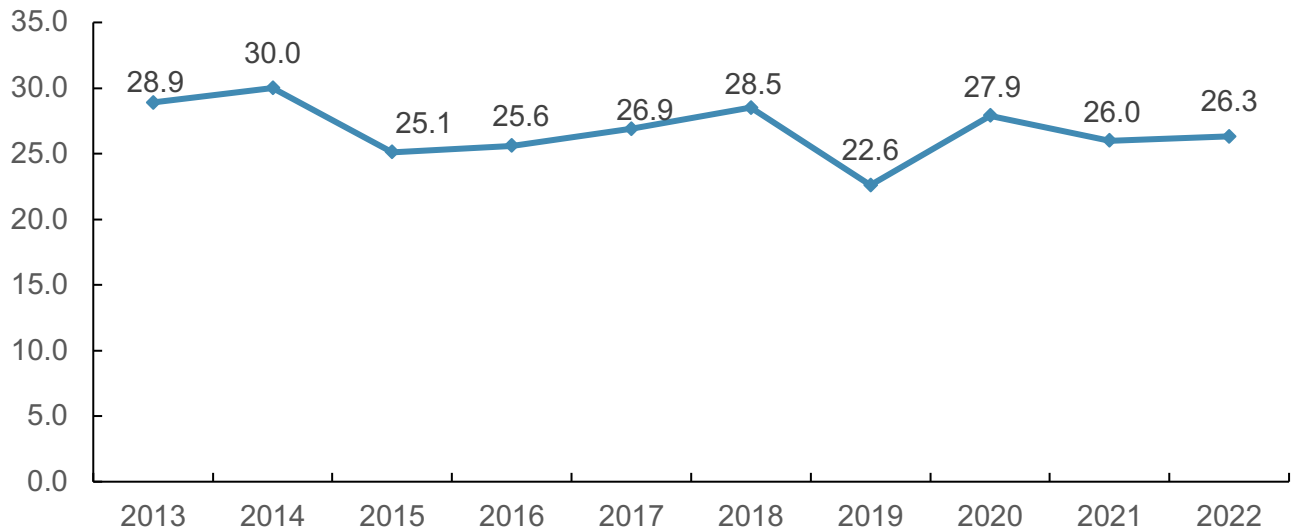
- Increase awareness of the ADHS-issued standing order from July 2023 for self-administered hormonal contraception, especially in communities with limited provider availability or maternity care deserts.<sup>91</sup>



\*See the Prematurity Death Prevention Recommendations for additional evidence-based recommendations.

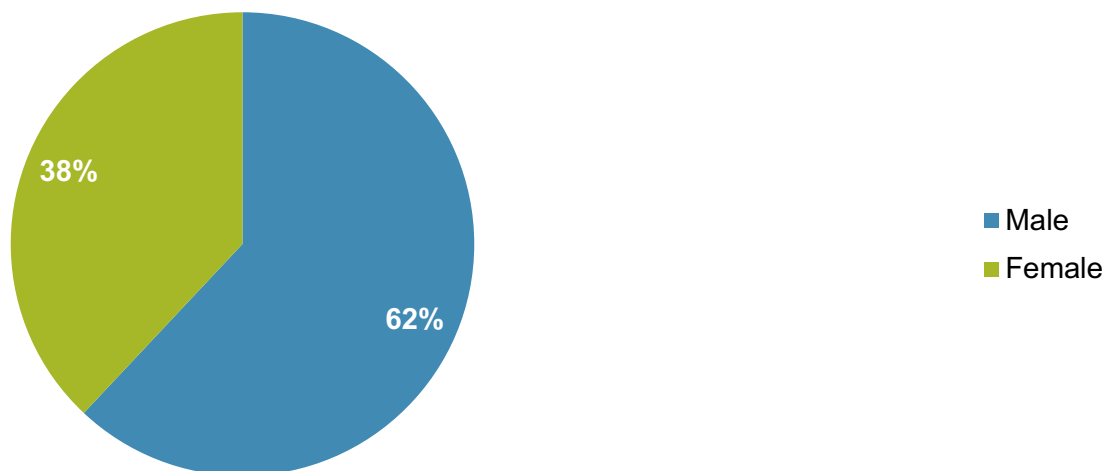
The prematurity mortality rate includes those who were identified as dying of prematurity (<37 weeks' gestation) but also includes children who died of other perinatal conditions which lead to premature births. Arizona's prematurity mortality rate increased by 1% from 26.0 deaths per 1,000 premature births in 2021 to 26.3 deaths per 1,000 premature births in 2022 (Figure 67).

**Figure 67. Mortality Rate per 1,000 Premature Births due to Prematurity, Less than 1 Year of Age, Arizona, 2013-2022** <sup>38-47</sup>



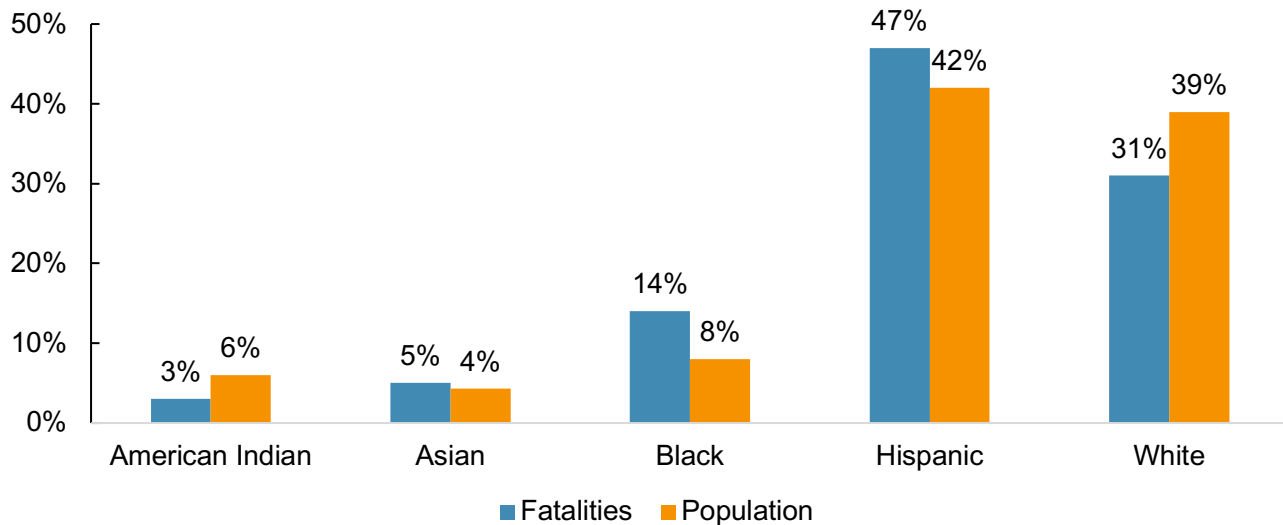
The majority of premature deaths occurred among males (62%) (Figure 68).

**Figure 68. Percentage of Prematurity Deaths by Sex, Less than 1 Year of Age, Arizona, 2022 (n=208)**



Black and Hispanic infants made up 14% and 47% of prematurity deaths, respectively, but only comprised 8% and 42% of premature births. The largest percentage of prematurity deaths were among Hispanic (47%) children (Figure 69).

**Figure 69. Percentage of Prematurity Deaths by Race/Ethnicity among Infants, Less than 1 Year of Age, Compared to Percentage of Premature Births, Arizona, 2022 (n=208)**<sup>47</sup>



While there are numerous risk factors that can contribute to prematurity deaths, the most commonly identified risk factors were poverty (57%), premature rupture of the membrane (PROM) (37%), and preterm labor (23%) (Table 37). 95% of prematurity deaths had low birth weight (not shown).

**Table 37. Leading Risk Factors for Prematurity Deaths, Less than 1 Year of Age, Arizona, 2022 (n=208)**

Risk Factors*	Number	Percent
Poverty	118	57%
Premature Rupture of Membrane (PROM)	76	37%
Preterm Labor	48	23%
Maternal Infection	37	18%
No Prenatal Care	31	15%

\*More than one risk factor may have been identified in each death.

## Substance Use-Related Deaths

Substance use-related deaths are where the child or any individual involved in the death of the child used or abused substances, such as alcohol, illegal drugs, and/or prescription drugs and this substance use was a direct or contributing factor in the child's death. See the Glossary for further explanation.



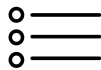
There were 163 substance use-related deaths in 2022, 19% of all child deaths.



The substance use-related death rate decreased by 9% from 10.9 deaths per 100,000 children in 2021 to 9.9 deaths per 100,000 births in 2022.



100% of substance use-related deaths were preventable.



#1 cause: Poisoning (n = 41)  
#2 cause: Firearm Injury (n = 31)  
#3 cause: Motor Vehicle Crash (n = 26)



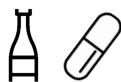
Of the substance use-related deaths, 67% were male and 33% were female.



48% of substance use-related deaths occurred in children ages 15-17 years.



American Indian and Black children were disproportionately affected. American Indian children made up 16% of substance use-related deaths but only make up 5% of the total population. Similarly, Black children made up 12% of substance use-related deaths but only make up 6% of the total population.



Of the 41 poisoning deaths, 34 were opioid overdoses and fentanyl was responsible for all of the opioid poisonings. Of the 34 opioid poisonings, 8 were among children less than 5 years of age.



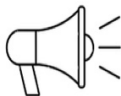
#1 Risk Factor: CPS History with Family (63%)  
#2 Risk Factor: Parent Substance Use History (56%)  
#3 Risk Factor: Poverty (40%)

*Patient/Family/Caregiver:* \*

- Families should follow the American Academy of Pediatrics tips for keeping medications out of the hands of children and adolescents.<sup>105</sup>

*Provider/Healthcare Facilities:* \*

- Implement universal screening for substance use and mental health issues during adolescent well visits.<sup>95,96,99</sup>



*Policy Maker/Participating Agencies/Schools:* \*

- Expand access to services for people with unstable housing and those that are experiencing homelessness because they are at higher risk for substance use.

*Community-Based Organizations:* \*

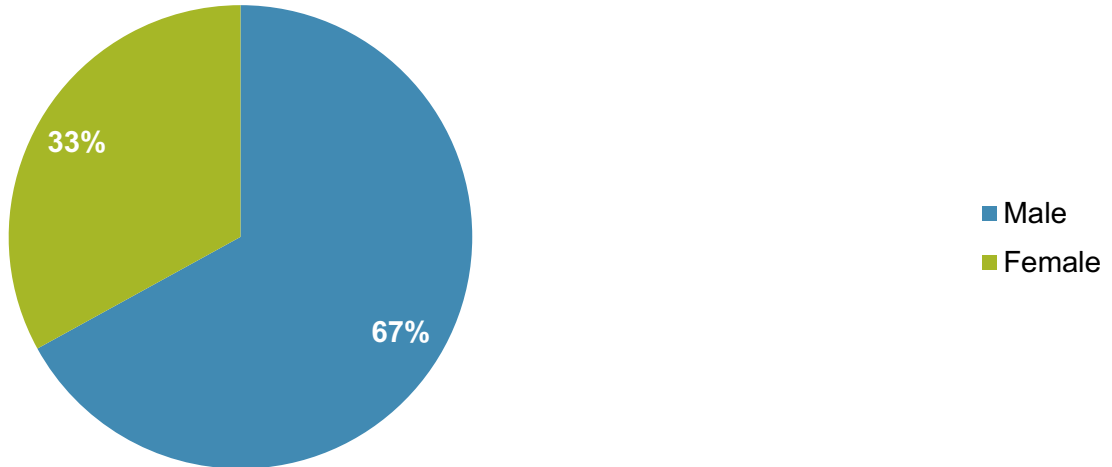
- Education for parents and caregivers about how to properly respond to a child's potential substance abuse/use i.e., seeking treatment, community resources (mental health, addiction treatment)

\*See the Substance Use-Related Death Prevention Recommendations for additional evidence-based recommendations.



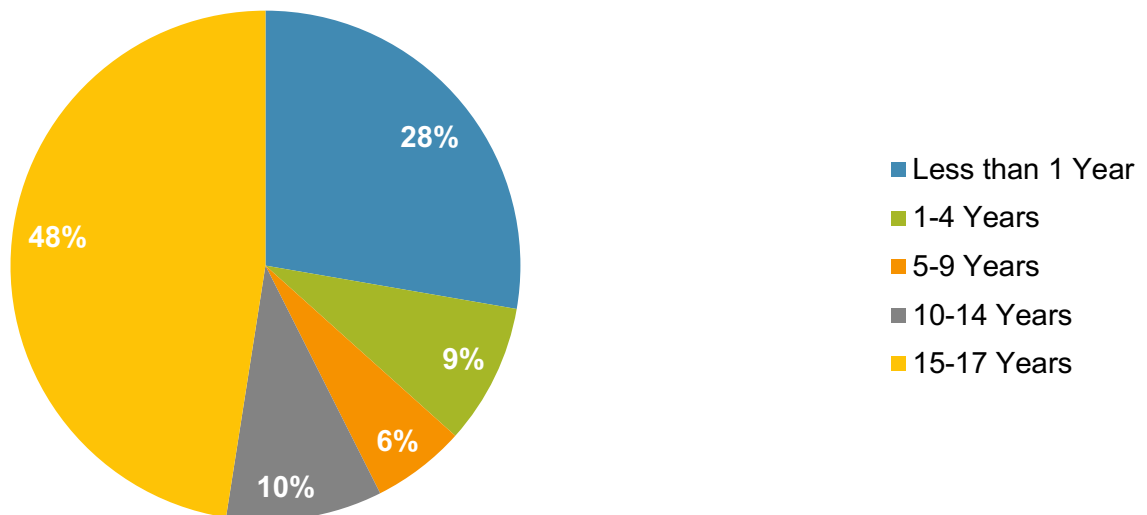
The majority of substance use related deaths occurred among males (67%) (Figure 70).

**Figure 70. Percentage of Substance Use-Related Deaths among Children by Sex, Ages 0-17 Years, Arizona, 2022 (n=163)**



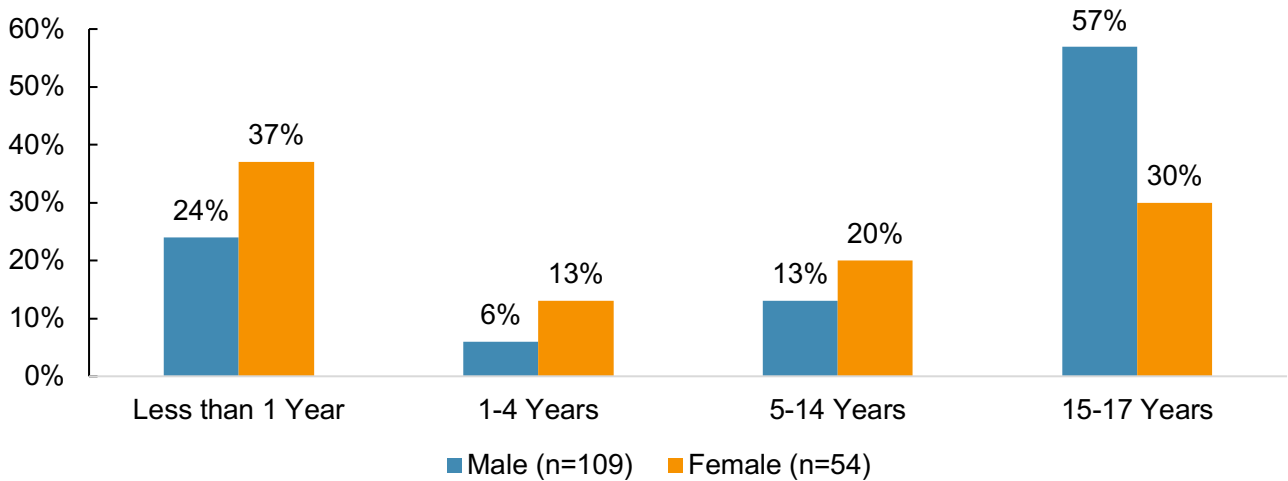
The largest number of substance use deaths occurred among children ages 15 to 17 years (48%) followed by infants less than 1 year of age (28%) (Figure 71).

**Figure 71. Percentage of Substance Use-Related Deaths among Children by Age Group, Ages 0-17 Years, Arizona, 2022 (n=163)**



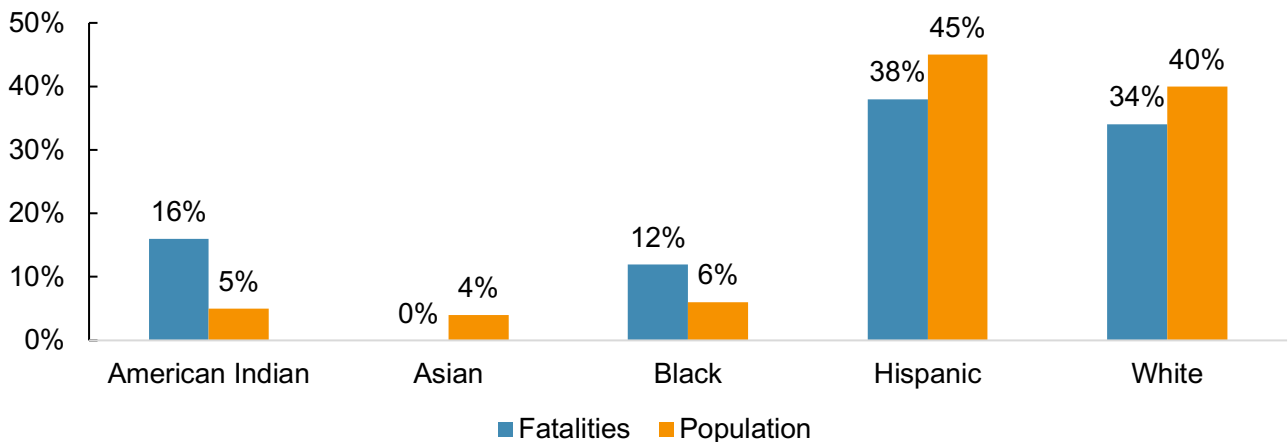
The largest percentage of substance use related deaths occurred in children ages 15-17 years (48%) followed by children ages less than 1 year (28%) (not shown). The majority of substance use deaths among male children occurred in ages 15-17 years (57%). The largest percentage of substance use deaths among female children occurred in ages less than 1 year (37%) (Figure 72).

**Figure 72. Percentage of Substance Use Related Deaths among Children by Age Group and Sex, Ages 0-17 Years, Arizona, 2022 (n=163)**



American Indian and Black children made up 16% and 12% of substance use related deaths, respectively, but only comprised 5% and 6% of the total child population. The largest number of substance use related deaths were Hispanic (38%) and White (34%) children. Asian children experienced no substance use related deaths in 2022 in Arizona (Figure 73).

**Figure 73. Percentage of Substance Use-Related Deaths among Children by Race/Ethnicity, Ages 0-17 Years, Compared to Population, Arizona, 2022 (n=163) <sup>2</sup>**



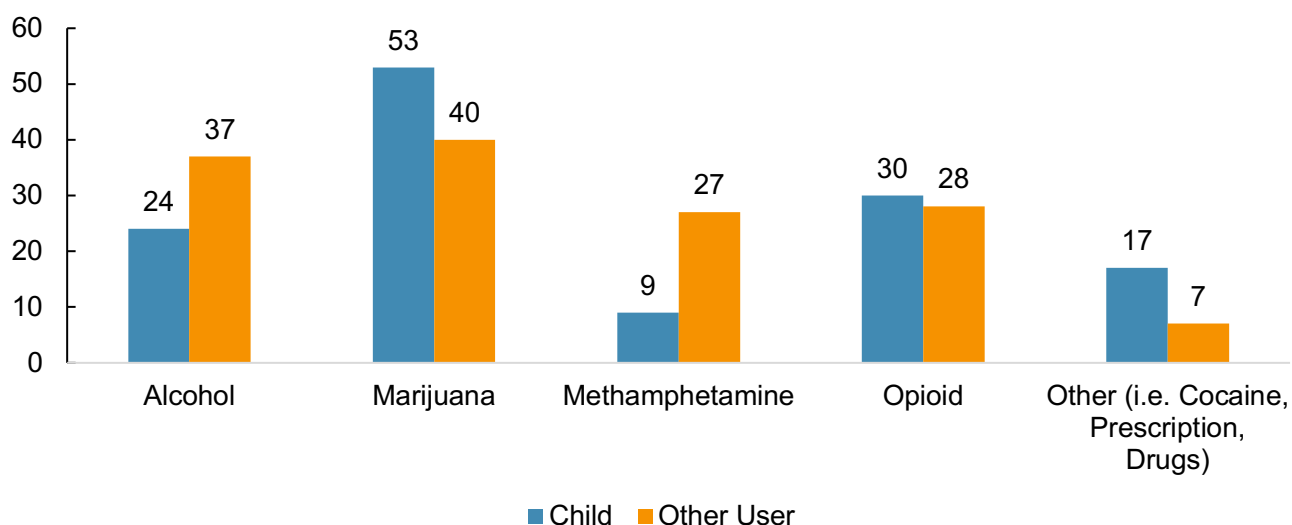
Among substance use related deaths, poisoning (25%) was the leading factor that caused or contributed to the death for children ages 0-17 years. Of the 41 poisoning deaths, 34 (83%) were opioid overdoses and fentanyl was responsible for all opioid poisonings. Of the 34 opioid poisonings, eight were among children less than 5 years of age (Table 38).

**Table 38. Cause of Death where Substance Use was a Direct or Contributing Factor among Children, Ages 0-17 Years, Arizona, 2022 (n=163)**

Cause of Death	Number	Percent
Poisoning	41	25%
Firearm Injuries	31	19%
Motor Vehicle Crash	26	16%
Prematurity	16	10%
Suffocation	15	9%
Other Medical Causes	12	8%
Strangulation	11	7%
Other Injury Causes	8	5%
Undetermined Cause	*	*
*Number/Percentage suppressed due to count less than 6.		

Local review teams identified the type of substances used by the child or by other individuals, contributing to the death. In half of substance use related deaths; the child was using alcohol or drugs. Marijuana was the most common substance used by the child and by other individuals, followed by opioid and alcohol. There may be more than one substance and more than one individual using a substance in a death (Figure 74).

**Figure 74. Number of Substances Identified as Causing or Contributing to Child Deaths, by the Child or Other User, Ages 0-17 Years, Arizona, 2022 (n=163)\***



\*More than one substance may have been identified for each death.

While there are numerous risk factors that can contribute to substance use related deaths, the most commonly identified risk factors were CPS History with Family (63%), Parent Substance Use History (56%), and Poverty (40%) (Table 39).

**Table 39. Leading Risk Factors of Substance Use-Related Deaths among Children, Ages 0-17 Years, Arizona, 2022 (n=163)**

Risk Factors*	Number	Percent
CPS History with Family	102	63%
Parent Substance Use History	92	56%
Poverty	66	40%
Child Relationship Issues	62	38%
Child History of Trauma	58	36%
*More than one risk factor may have been identified in each death.		

## Sudden Unexpected Infant Deaths (SUID)

A sudden unexpected death of an infant (less than 1 year of age) is where the cause of death was not apparent prior to a death investigation. Most of the SUIDs are due to suffocation and unsafe sleep environments, but not all SUIDs are unsafe sleep related. See Glossary for further explanation.



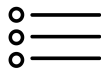
There were 74 SUIDs in 2022, 8% of all child deaths.



The SUID rate increased by 13% from 0.82 deaths per 1,000 live births in 2021 to 0.92 deaths per 1,000 live births in 2022.



96% of SUIDs were preventable.



#1 cause: Suffocation (n = 58)  
#2 cause: Undetermined causes (n = 15)  
#3 cause: Other causes (n < 6)



Of the SUIDs, 61% were male and 39% were female.



7% of SUIDs occurred in neonates (infants less than 28 days).  
93% of SUIDs occurred in post-neonates (infants 28 days and older but less than 1 year of age).



American Indian and Black children were disproportionately affected. American Indian children made up 14% of SUIDs but only make up 5% of the live birth population. Similarly, Black children made up 14% of SUIDs but only make up 6% of the live birth population.



#1 Risk Factor: Unsafe Sleep Environment (97%)  
#2 Risk Factor: Objects in Sleep Environment (84%)  
#3 Risk Factor: Unsafe Sleep Location (80%)

*Patient/Family/Caregiver: \**

- Ensure infants are in a safe sleeping environment: Alone, on my Back, in a Crib (ABCs) is the safest sleeping practice for an infant until it is 1 year of age.<sup>106,107</sup>

*Provider/Healthcare Facilities: \**

- Increase awareness that parents should avoid alcohol, marijuana, opioids, and illicit drug use during pregnancy and after birth. Parents and caregivers should also be encouraged to not smoke during pregnancy, and not smoke or allow smoke to be around the baby.<sup>111</sup>



*Policy Makers/Participating Agencies/Schools: \**

- Increase the availability of WIC services and home visits because they can help families feel less isolated and teach them safe sleeping practices.<sup>106,107</sup>

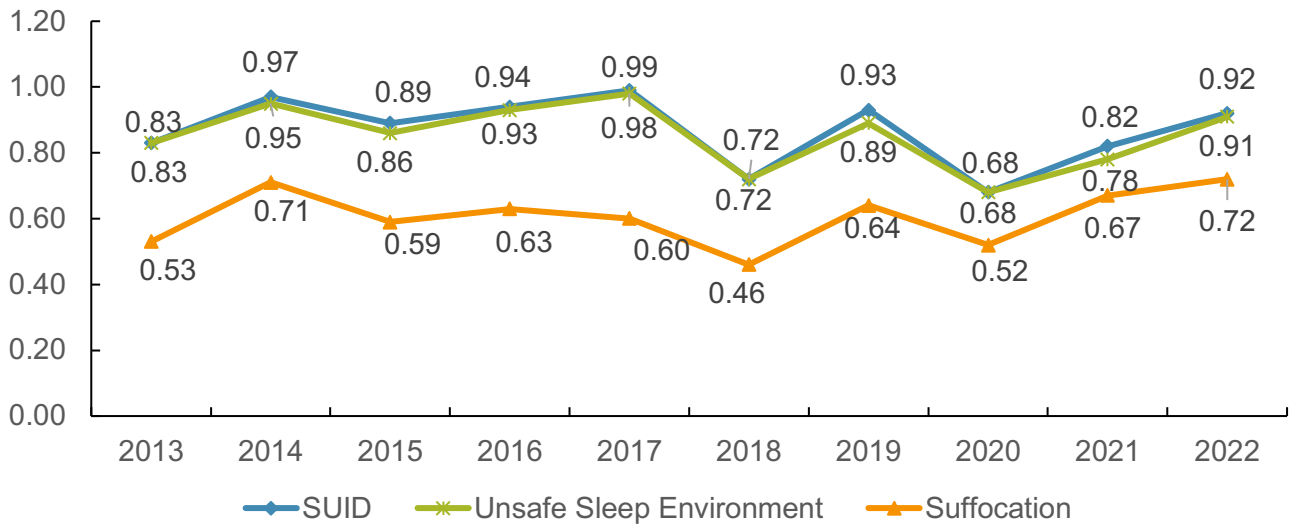
*Community-Based Organizations: \**

- Provide education on the dangers associated with the use of products for sleep that are not specifically marketed for infant sleep and recall items.<sup>110</sup>

\*See the Sudden Unexpected Infant Death Prevention Recommendations for additional evidence-based recommendations.

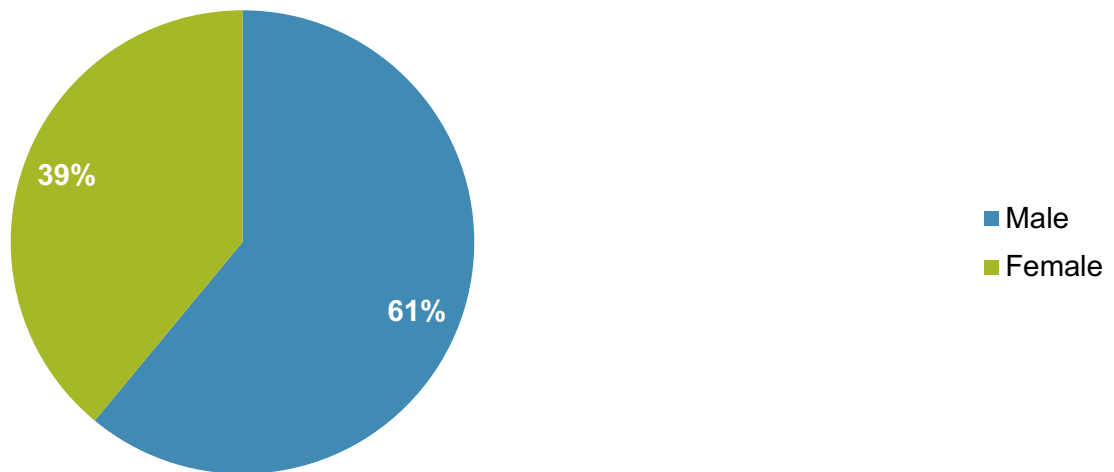
Arizona’s SUID mortality rate increased by 13% from 0.82 deaths per 1,000 live births in 2021 to 0.92 deaths per 1,000 live births in 2022. Additionally, Arizona’s unsafe sleep environment mortality rate and suffocation mortality rate have increased from 2021 to 2022 (Figure 75).

**Figure 75. Mortality Rate per 1,000 Live Births due to Sudden Unexpected Infant Death, Unsafe Sleep Environment, and Suffocation, Less than 1 Year of Age, Arizona, 2013-2022** <sup>30-32</sup>



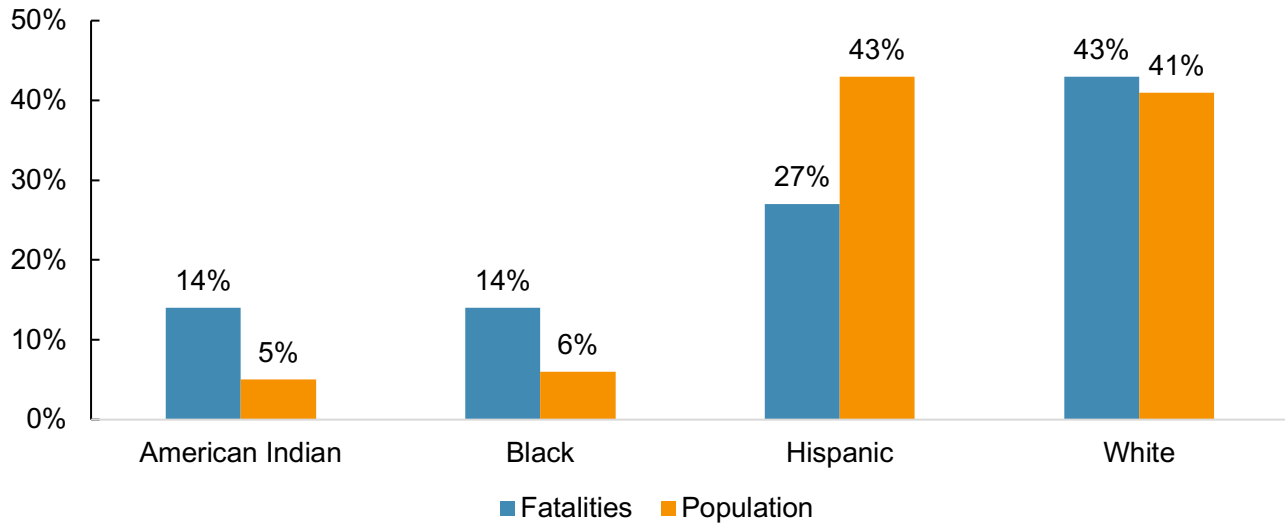
The majority of SUIDs were among males (61%) (Figure 76).

**Figure 76. Percentage of Sudden Unexpected Infant Deaths among Infants by Sex, Less than 1 Year of Age, Arizona, 2022 (n=74)**



American Indian and Black children made up 14% of Sudden Unexpected Infant Deaths each, but only comprised 5% and 6% of the total live birth population. Additionally, White children made up 43% of Sudden Unexpected Infant Deaths and comprised 41% of the total live birth population. The largest number of Sudden Unexpected Infant Deaths were among White children (43%) (Figure 77).

**Figure 77. Percentage of Sudden Unexpected Infant Death among Infants by Race/ Ethnicity, Less than 1 Year of Age, Compared to Live Births, Arizona, 2022 (n=74)\*<sup>30-32</sup>**



\*Data for Asian children suppressed due to counts less than 6.

Of the 74 SUIDs in 2022, 78% were due to suffocation (Table 40).

**Table 40. Cause of Sudden Unexpected Infant Death among Infants, Less than 1 Year of Age, Arizona, 2022 (n=74)**

Cause of Death	Number	Percent
Suffocation	58	78%
Undetermined Cause	15	20%
Other	*	*

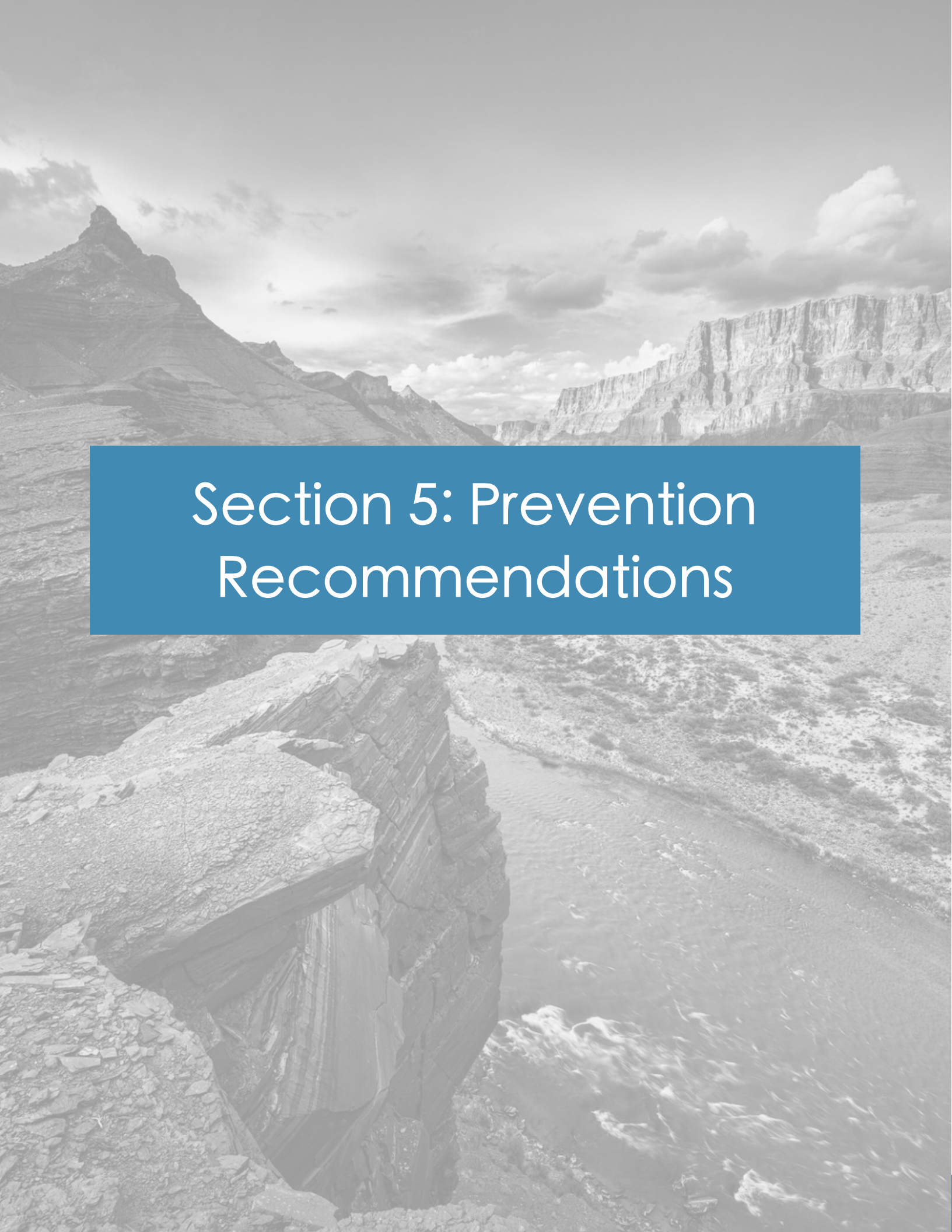
\*Number/Percentage suppressed due to count less than 6.

While there are numerous risk factors that can contribute to SUID, the leading risk factor was an unsafe sleep environment (97%) followed by objects in the sleep environment (84%) (Table 41).

**Table 41. Leading Risk Factors for Sudden Unexpected Infant Deaths among Infants, Less than 1 Year of Age, Arizona, 2022 (n=74)**

Risk Factors*	Number	Percent
Unsafe Sleep Environment	72	97%
Objects in Sleep Environment	62	84%
Unsafe Sleep Location	59	80%
Poverty	53	72%
Bedsharing	39	53%
*More than one risk factor may have been identified in each death.		





# Section 5: Prevention Recommendations

## Introduction to Prevention Recommendations

Given the outcomes presented in Sections 1-4, the State CFRP, in conjunction with the local CFR teams, identified the following recommendations to prevent these outcomes in the future. The recommendations are presented in four categories that align with the various stakeholders involved in the care of an improvement to child and infant health, including healthcare providers, policy makers, participating agencies, schools, community-based organizations, researchers, families and caregivers, and other stakeholders.

These recommendations were initially derived from the recommendations made during the local CFR team's case reviews. Local CFR staff completed qualitative analysis on all recommendations made for 2021-2022 deaths and presented the initial synthesized recommendations to the State CFR team. Following presentations of aggregate CFR data, the State CFR team added to and adjusted the list recommendations based on overarching findings and observations from these analyses. It is also important to note that while some data associated with these recommendations may be suppressed in Sections 1-4 due to numbers being less than six, the recommendations are not suppressed in this section.

The intent of these recommendations is that, through widespread dissemination, partners and key stakeholders across the state will consider them for implementation. In some cases, the recommendations may currently be in practice. This is particularly true for some of the policy or practice recommendations geared towards payers, such as the Arizona Health Care Cost Containment System (AHCCCS), which has already implemented several of the models included in these recommendations.

## Drowning Death Prevention Recommendations

### Patient/Family/Caregiver

- Ensure that children are not left unattended near pools or pool areas. There should be a focused adult supervisor that is responsible for watching children that are in or around open water, pools, and spas. This is especially true for high-risk groups such as families with young children and children with special needs.<sup>57-60</sup>
  - Adult supervision is the key in preventing children from drowning. These points should continue to be reiterated and drowning prevention education should be expanded.
- Those with pools need to ensure that they are enclosed on all four sides by a wall, fence, or barrier to ensure restricted access to young children. Pool enclosures need to be at least 5 feet tall and 20 inches from the water's edge and have a gate at least 54 inches above the floor that swings away from the pool. The gate should have a self-closing/latching mechanism.<sup>57-60</sup>
  - These specifications can reduce the chance of children having unsupervised time around water.
- Those with pools should ensure there is no openings in pool enclosures that are wide enough for a child to get through or under. There should also be no protrusions, like handholds, which can be used to climb the enclosure.<sup>57-60</sup>
  - This will prevent small children from overcoming the boundary that is in place to protect them.
- Provide constant supervision for children under 4 years of age during bath time.<sup>61</sup>
- If possible, teach children to swim after the age of 1.<sup>57,59</sup>
  - This is one of the most effective interventions that can reduce child drowning.
- Ensure that children are wearing properly fitted coast guard approved life jackets when on a boat, dock, or near bodies of water.<sup>59</sup>
  - Inflatable swimming aids and personal flotation devices are not a substitute for a life jacket.

### Provider/Healthcare Facilities

- Emphasize the importance of constant supervision for children under 4 years of age during bath time and how rapidly a drowning can occur.<sup>61</sup>
- Provide education based on water safety prevention measures with families who present at the hospital with a near-drowning incident.
- Provide families with evidence-based drowning prevention education and barrier code information.<sup>57-60</sup>
- Inform parents that inflatable swimming aids and personal flotation devices are not a substitute for a life jacket.<sup>59</sup>
- Increase awareness and caregiver education about pool safety with a special focus on high-risk groups such as families with young children and children with special needs.

### Policy Makers/Participating Agencies/Schools

- Create a state fund to assist families with pool safety devices and swim classes if they cannot afford them.
- Given the disproportionately high number of deaths among Black and American Indian children, the state should partner with impacted populations to increase information, education, and outreach.
- Partner with home rental companies to encourage enhanced safety features for renters with children. This could include information regarding pool fencing, alarms,

and other safety features. Increase education and community awareness on water safety ABCs in multiple languages.

- Emphasize the importance of constant supervision for children under 4 years of age during bath time and how rapidly a drowning can occur.<sup>61</sup>
- Increase access to affordable swim lessons throughout the state.
- Provide safety regulations regarding wearing a properly fitted coast guard approved life jacket when on a boat, dock, or near bodies of water.<sup>59</sup>
- Ensure public pools and businesses with pools have a proper pool enclosure and are up to code.<sup>57-60</sup>
  - Pools need to be enclosed on all four sides by a wall, fence, or barrier to ensure restricted access to young children. Pool enclosures need to be at least 5 feet tall and 20 inches from the water's edge and have a gate at least 54 inches above the floor that swings away from the pool. The gate should have a self-closing/latching mechanism. There should be no openings in pool enclosures that are wide enough for a child to get through or under. There should also be no protrusions, like handholds, which can be used to climb the enclosure.<sup>57-60</sup>

#### **Community-Based Organizations**

- Increase public awareness of the dangers of drowning for children at all ages in various languages.<sup>56,57</sup>
- Ensure that children are not left unattended near pools or pool areas. There should be a focused adult supervisor that is responsible for watching children that are in or around open water, pools, and spas. This is especially true for high-risk groups such as families with young children and children with special needs.<sup>57-60</sup>
  - Adult supervision is the key in preventing children from drowning. These points should continue to be reiterated.
- Ensure public pools and businesses with pools have a proper pool enclosure and are up to code.<sup>57-60</sup>
  - Pools need to be enclosed on all four sides by a wall, fence, or barrier to ensure restricted access to young children. Pool enclosures need to be at least 5 feet tall and 20 inches from the water's edge and have a gate at least 54 inches above the floor that swings away from the pool. The gate should have a self-closing/latching mechanism. There should be no openings in pool enclosures that are wide enough for a child to get through or under. There should also be no protrusions, like handholds, which can be used to climb the enclosure.<sup>57-60</sup>
    - These specifications can reduce the chance of children having unsupervised time around water.
    - This will prevent small children from overcoming the boundary that is in place to protect them.
- Increase access to affordable swim lessons throughout the state.
  - Teaching children to swim after the age of 1 is one of the most effective interventions that can reduce child drowning.<sup>57,59</sup>
- Provide families with the education and resources to ensure their children wear properly fitted coast guard approved life jackets when on a boat, dock, or near bodies of water.<sup>59</sup>
- Provide families with evidence-based drowning prevention education and barrier code information.

- Increase awareness and caregiver education about pool safety with a special focus on high-risk groups such as families with young children and children with special needs.

## Firearm Injury Death Prevention Recommendations

### Patient/Family/Caregiver

- Gun owners should practice safe storage of their firearms, which requires keeping the gun unloaded and locked in a safe.<sup>62,63</sup>
  - The most effective way to prevent firearm-related deaths in children.<sup>62-64</sup>
  - The presence of firearms in a household increases the risk for suicide among adolescents. Parents of all adolescents should remove all firearms, especially if there is a history of mental health issues or substance use issue.<sup>63</sup>
  - Ammunition should be locked up and stored separately from the firearm. This practice significantly reduces the risk of gun injury or death.<sup>62,63</sup>
- Promote positive parenting strategies in the home (increased supervision for children in distress, risks of isolation for children in distress, alternatives to restricting technology, how to handle behaviors and discipline).

### Provider/Healthcare Facilities

- Provide firearm safety counseling and distribute free firearm cables, if available, at well-child visits to firearm owners.<sup>64</sup>
  - The presence of firearms in a household increases the risk for suicide among adolescents. Parents of all adolescents should be counselled to remove all firearms, especially if there is a history of mental health issues or substance use issue.<sup>63</sup>
- Mental health materials should be present and available in a pediatrician's office. Screening for substance abuse and mental health concerns should be done during well-child visits.<sup>62,63,65</sup>
- Increase access to and use of quality and affordable mental health care within the community.

### Policy Makers/Participating Agencies/Schools

- Increase funding, access and use of quality and affordable youth mental health programs and intervention programs within the community.
- Increase policy and legislation limiting youth access to firearms.
- Schools should develop interventions to prevent firearm violence among children. They can also connect families to resources like parental training and provide a place for students to participate in conflict resolution curriculum.<sup>65,67</sup>
  - Interventions at schools can prevent firearm violence among children. They can also connect families to resources like parental training and provide a place for students to participate in conflict resolution curriculum.<sup>65,67</sup>

### Community-Based Organizations

- Increase public awareness that the most effective way to prevent firearm-related deaths in children and adolescents is to remove all firearms in households.<sup>62-64</sup>
  - The presence of firearms in a household increases the risk for suicide among adolescents. Parents of all adolescents should be counselled to remove all firearms, especially if there is a history of mental health issues or substance use issue.<sup>62-64</sup>
- Sponsor firearm safety events because of their potential to reach a population with a high prevalence of firearm ownership.<sup>65,66</sup>

- These types of events could increase the number of firearm owners that are receiving safe storage practice training and education.
- Incorporate age-appropriate firearm safety workshops for children and youth.
- Provide parent education on positive parenting strategies (increased supervision for children in distress, risks of isolation for children in distress, alternatives to restricting technology, how to handle behaviors and discipline).
- Increase community/diversion programs and activities for children and youth.
- Increase community awareness and parent/caregiver education on utilizing the Asking Saves Kids (ASK) initiative to ask questions and discuss firearm possession/storage before allowing children to stay in other homes.

## Infectious Disease Prevention Recommendations

### Patient/Family/Caregiver

- Obtain COVID-19 vaccinations for all eligible individuals (including infants, children, and adolescents). This includes receiving the primary series and/or booster doses as recommended by the American Academy of Pediatrics and the Center for Disease Control and Prevention (CDC).<sup>50</sup>
- Individuals who have symptoms consistent with COVID-19 should be tested immediately and follow the current American Academy of Pediatrics and Centers for Disease Control and Preventions COVID-19 guidance.<sup>51, 54</sup>
- Regardless of vaccination status, family members should isolate from others when they have COVID-19.<sup>55</sup>
- If you are pregnant, talk to your provider about getting tested for syphilis during your first prenatal visit, early in your third trimester, and at delivery.<sup>129,130</sup>
  - If you are a person of child-bearing potential and you don't plan on having children in the near future, talk to your doctor about long-acting birth control.
- Use condoms when having any type of sex to help prevent the spread of STIs.<sup>130</sup>

### Provider/Healthcare Facilities

- Promote vaccination and vaccine confidence through ongoing, proactive messaging (i.e., reminder recall, vaccine appointment/clinics) and use existing patient visits as an opportunity to promote and provide COVID-19 vaccine and education.<sup>50</sup>
- Emphasize the need of getting tested immediately if an individual has symptoms consistent with COVID-19. Based on results, they should follow the current American Academy of Pediatrics and Centers for Disease Control and Preventions COVID-19 guidance.<sup>51, 54</sup>
- If there are any additional questions or concerns, please follow the current American Academy of Pediatrics and Centers for Disease Control and Preventions COVID-19 guidance.<sup>52</sup>
- Screen all pregnant women at first prenatal visit, third trimester, and delivery, for syphilis, regardless of risk.<sup>129,130</sup>
  - Perform opt-out screening for syphilis in men.
- Promote use of condoms when having any type of sex. Provide STI education if needed.<sup>130</sup>

### Policy Makers/Participating Agencies/Schools

- Follow the current American Academy of Pediatrics and Centers for Disease Control and Preventions COVID-19 guidance.<sup>52</sup>

- Emphasize the need of getting tested and/or treated immediately if an individual has symptoms consistent with syphilis or STIs as stated by the Centers for Disease Control and Preventions.<sup>129,130</sup>

#### **Community-Based Organizations**

- Promote vaccination and vaccine confidence through ongoing, proactive messaging.<sup>50</sup>
- Emphasize the need of getting tested immediately if an individual has symptoms consistent with COVID-19. Based on results, they should follow the current American Academy of Pediatrics and Centers for Disease Control and Preventions COVID-19 guidance.<sup>51, 54</sup>
- Regardless of vaccination status, community members should isolate from others when they have COVID-19.<sup>55</sup>
- Emphasize the need of getting tested and/or treated immediately if an individual has symptoms consistent with syphilis or STIs as stated by the Centers for Disease Control and Preventions.<sup>129,130</sup>
- Promote use of condoms when having any type of sex.<sup>130</sup>

## Motor Vehicle Crash Death Prevention Recommendations

### **Patient/Family/Caregiver**

- Continue promoting the importance of safety seats for children and provide parents with education and information on the locations of certified seat installers. Provide training in how to install car safety seats to parents and caregivers.<sup>69,71</sup>
  - Child safety seats and seat belts not only save lives and increase safety for little ones, but child safety seats are required by Arizona law. Children younger than 8 years old and shorter than 4 feet 9 inches must be properly secured in a safety or booster seat.<sup>76</sup>
- Educate children, parents, and caregivers on safe pedestrian practices, avoiding distracted walking, and awareness on proper use of crosswalks.<sup>68,69</sup>
  - Especially at night with low visibility.
- Encourage drivers to be aware of cyclists and pedestrians, especially at night when visibility is impaired.<sup>70,72</sup>
  - Cyclists should wear high-visibility clothing during the day and reflectors and lights at night. Cyclists should also ride defensively and avoid distractions like music or texting.<sup>70,72</sup>
    - These precautions help cyclists stay visible and alert which can help prevent a crash.
- Follow the 4 evidence-based recommendations provided by the American Academy of Pediatrics (AAP) for best practices in the choice of a child restraint system to optimize safety in passenger vehicles for children.<sup>69</sup>
  - Rear-facing car safety seats as long as possible
  - Forward-facing car safety seats from the time they outgrow rear-facing seats for most children through at least 4 years of age
  - Belt-positioning booster seats from the time they outgrow forward-facing seats for most children through at least 8 years of age
  - Lap and shoulder seat belts for all who have outgrown booster seats and all children younger than 13 years to ride in the rear seats of vehicles
- Ensure that children under the age of 16 do not ride an ATV. If done, ensure that the child wears a helmet, does not ride with or as a passenger, stays off and does not

cross public roads, does not ride it at night, does not ride it under the influence, and uses an ATV that is the right size for the driver.<sup>77</sup>

- Ensure that children under the age of 6 years do not operate an ATV nor be a passenger in the vehicle.<sup>77</sup>

#### **Provider/Healthcare Facilities**

- Continue promoting the importance of safety seats for children and provide parents with education and information on the locations of certified seat installers. Provide training in how to install car safety seats to parents and caregivers.<sup>69,71</sup>
  - Child safety seats and seat belts not only save lives and increase safety for little ones, but child safety seats are required by Arizona law. Children younger than 8 years old and shorter than 4 feet 9 inches must be properly secured in a safety or booster seat.<sup>76</sup>
- Encourage families to follow the 4 evidence-based recommendations provided by the American Academy of Pediatrics (AAP) for best practices in the choice of a child restraint system to optimize safety in passenger vehicles for children:<sup>69</sup>
  - Rear-facing car safety seats as long as possible
  - Forward-facing car safety seats from the time they outgrow rear-facing seats for most children through at least 4 years of age
  - Belt-positioning booster seats from the time they outgrow forward-facing seats for most children through at least 8 years of age
  - Lap and shoulder seat belts for all who have outgrown booster seats and all children younger than 13 years to ride in the rear seats of vehicles

#### **Policy Makers/Participating Agencies/Schools**

- Enforce the usage of helmets when riding a motorcycle/bicycle.<sup>74</sup>
  - Motorcycle helmet laws that apply to all riders have been shown to reduce deaths and injuries.<sup>74</sup>
  - The State of Arizona requires riders who are 17 and younger to wear helmet when riding a motorcycle.<sup>74</sup>
  - Moped motorcycles, defined by the state as having an engine displacement of 50cc or less, brake horsepower of 1.5 or less, and max speed of 25 mph are not covered in this requirement.<sup>74</sup>
- Require training/certification for adolescents operating off-road vehicles.<sup>77</sup>
  - Ensure that children under the age of 6 years do not operate an ATV nor be a passenger in the vehicle.<sup>77</sup>
- Improve enforcement of helmet laws for children who are 17 and younger operating on and off-highway vehicles.<sup>75</sup>
- Implement systems that encourage crosswalk use (i.e., relocate bus stops closer to crosswalks).
- Increase use of protected turn signals in intersections, especially large high-traffic intersections and intersections with high incidences of failure to yield left-turn accidents.
- Require cities to maintain proper visibility at intersections through monitored landscaping and maintenance. (i.e., trim trees and bushes at intersections to improve visibility; paved or designated well-lit sidewalks to local parks and bus stops.)
- Increase the number of red-light cameras in high population areas.<sup>71,73</sup>
  - Red light cameras are associated with a significant reduction in mortality from motor vehicle crashes among children.
- Require all children younger than 13 years to be riding in the rear seats of vehicles.



- Child safety seats and seat belts not only save lives and increase safety for little ones, but child safety seats are required by Arizona law. Children younger than 8 years old and shorter than 4 feet 9 inches must be properly secured in a safety or booster seat.<sup>76</sup>
- Introducing school and community based structural programs to provide education on safe driving, how not to drive under the influence, and how to be properly restrained.
- Improve enforcement of helmet laws for children who are 17 and younger operating on school grounds.
- DCS should strengthen relationships with stakeholders to increase utilization of the Child Passenger Restraint Fund to supply families in need with car seats for their children.

### Community-Based Organizations

- Educate children, parents, and caregivers on safe pedestrian practices, avoiding distracted walking, and awareness on proper use of crosswalks.<sup>68,69</sup>
  - Especially at night with low visibility.
- Encourage drivers to be aware of cyclists, especially at night when visibility is impaired.<sup>70,72</sup>
  - Cyclists should wear high-visibility clothing during the day and reflectors and lights at night. Cyclists should also ride defensively and avoid distractions like music or texting.<sup>70,72</sup>
    - These precautions help cyclists stay visible and alert, which can help prevent a crash.
- Provide parent/caregiver education about proper vehicle restraint use and the risks associated with driving under the influence.
- Continue promoting the importance of safety seats for children and provide parents with education and information on the locations of certified seat installers. Provide training in how to install car safety seats to parents and caregivers.<sup>69,71</sup>
  - Child safety seats and seat belts not only save lives and increase safety for little ones, but child safety seats are required by Arizona law. Children younger than 8 years old and shorter than 4 feet 9 inches must be properly secured in a safety or booster seat.<sup>76</sup>
- Encourage families to follow the 4 evidence-based recommendations provided by the American Academy of Pediatrics (AAP) for best practices in the choice of a child restraint system to optimize safety in passenger vehicles for children.<sup>69</sup>
  - Rear-facing car safety seats as long as possible
  - Forward-facing car safety seats from the time they outgrow rear-facing seats for most children through at least 4 years of age
  - Belt-positioning booster seats from the time they outgrow forward-facing seats for most children through at least 8 years of age
  - Lap and shoulder seat belts for all who have outgrown booster seats and all children younger than 13 years to ride in the rear seats of vehicles
- Ensure that children under the age of 16 do not ride an ATV. If done, ensure that the child wears a helmet, does not ride with or as a passenger, stays off and does not cross public roads, does not ride it at night, does not ride it under the influence, and uses an ATV that is the right size for the driver.<sup>77</sup>
- Ensure that children under the age of 6 years do not operate an ATV nor be a passenger in the vehicle.<sup>77</sup>

## Neglect/Abuse Death Prevention Recommendations

### Patient/Family/Caregiver

- Employ different approaches to prevent ACEs and neglect/abuse, such as strengthening household financial security, public education campaigns, and providing high quality childcare, afterschool programs, family-centered treatment for substance use disorders amongst others.<sup>85</sup>
- Ensure proper vehicle restraint use and the risks associated with driving under the influence.
- Ensure how and when to report suspected child abuse and neglect so that any individual who knows about a child who is being abused or neglected can act by calling 911 in an emergency or the Arizona Child Abuse Hotline (1-888-SOS-CHILD).<sup>84</sup>
- Increase awareness of the risks associated with substance use, including marijuana, during pregnancy including premature birth, and other complications.

### Provider/Healthcare Facilities

- Disseminate online factsheets on healthy parenting published by Child Welfare Information Gateway to parents and other caregivers.<sup>78</sup>
  - The website is run by the U.S. Department of Health & Human Services and provides knowledge on healthy parenting.<sup>78</sup>
- Disseminate to community members online factsheets on recognizing the signs of potential child maltreatment.<sup>78</sup>
- Increase awareness on how and when to report suspected child abuse and neglect so that any individual who knows about a child who is being abused or neglected can act by calling 911 in an emergency or the Arizona Child Abuse Hotline (1-888-SOS-CHILD).<sup>84</sup>
- Increase utilization of mental health professionals to respond to emergency calls where mental health issues may be a factor.
- Increase the availability of affordable and accessible substance use treatment healthcare and telehealth care for families and children.
- Increase availability of services for victims of domestic and interpersonal violence, raise awareness about available resources and support and how/where to seek help.
- Provide parent/caregiver education about proper vehicle restraint use and the risks associated with driving under the influence.
- Increase awareness of adverse childhood experiences (ACEs) as they can have lasting, negative effects on health, wellbeing, and opportunity.<sup>85</sup>
  - ACEs and their associated harms are preventable. Creating and sustaining safe, stable, nurturing relationships and environments for all children and families can prevent ACEs and help all children reach their full health and life potential.<sup>85</sup>

### Policy Makers/Participating Agencies/Schools

- Arizona should invest in the financial wellbeing of families, including increasing access to concrete supports like food, housing, and childcare.
  - Research shows this reduces both poverty-related neglect and the need for foster care.
- Establish Community-Based Child Abuse Prevention (CBCAP) programs.<sup>79</sup>

- These programs strengthen families while promoting a safe and healthy environment for raising children.<sup>79</sup>
- The Workforce Resilience program at DCS should be expanded to help provide support for employees that may be suffering from secondary trauma or burnout.<sup>80,81</sup>
  - By supporting employees, DCS can provide a way for them to process trauma and remain effective in reducing child maltreatment.<sup>80,81</sup>
- Engage federal partners to secure funding for the implementation of a national child abuse and neglect database to better track out-of-state DCS involvement with the child and/or family.
- Home visiting programs throughout the state should be increased.<sup>82</sup>
  - Home visits are associated with a decrease in substantiated reports of child abuse and neglect.<sup>82</sup>
- State agencies and community-based organizations should collaborate to increase awareness and support the All-Babies Cry Program.<sup>83</sup>
- State agencies should support community-based efforts to develop, operate, expand, enhance, and coordinate initiatives, programs, and activities to prevent child abuse and neglect. They should also support the coordination of resources and activities to strengthen and support families to reduce the likelihood of child abuse and neglect among diverse populations.<sup>79</sup>
- Increase awareness on how and when to report suspected child abuse and neglect so that any individual who knows about a child who is being abused or neglected can act by calling 911 in an emergency or the Arizona Child Abuse Hotline (1-888-SOS-CHILD).<sup>84</sup>
- Increase the availability of affordable and accessible substance use treatment healthcare and telehealth care for families and children.
- Increase the ability of family courts to provide resources for counseling/therapy to families going through custody proceedings.
- Increase availability of services for victims of domestic and interpersonal violence, raise awareness of available resources and support and how/where to seek help.

#### **Community-Based Organizations**

- Disseminate online factsheets on healthy parenting published by Child Welfare Information Gateway to parents and other caregivers.<sup>78</sup>
  - The website is run by the U.S. Department of Health & Human Services and provides knowledge on healthy parenting.<sup>78</sup>
- Disseminate to community members online factsheets on recognizing the signs of potential child maltreatment.<sup>78</sup>
- Establish Community-Based Child Abuse Prevention (CBCAP) programs.<sup>79</sup>
  - These programs strengthen families while promoting a safe and healthy environment for raising children.<sup>79</sup>
- Increase public education on how and when to report suspected child abuse and neglect so that any individual who knows about a child who is being abused or neglected can act by calling 911 in an emergency or the Arizona Child Abuse Hotline (1-888-SOS-CHILD).<sup>84</sup>
- Increase awareness of the risks associated with substance use, including marijuana, during pregnancy including premature birth, and other complications.
- Increase awareness of adverse childhood experiences (ACEs) as they can have lasting, negative effects on health, wellbeing, and opportunity.<sup>85</sup>
  - ACEs and their associated harms are preventable. Creating and sustaining safe, stable, nurturing relationships and environments for all children and

families can prevent ACEs and help all children reach their full health and life potential.<sup>85</sup>

- Increase availability of services for victims of domestic and interpersonal violence, raise awareness of available resources and support and how/where to seek help.
- Provide parent/caregiver education about proper vehicle restraint use and the risks associated with driving under the influence.

## Prematurity Death Prevention Recommendations

### Patient/Family/Caregiver

- Pregnant women should avoid smoking nicotine, drinking alcohol, using marijuana and drugs because it increases the risk of preterm birth or other complications.<sup>86</sup>
  - Pregnant people who smoke tobacco should be referred to the Arizona Smokers Helpline (ASHLine / 1-800-556-6222).<sup>86</sup>
  - Pregnant people with substance use disorder should be referred to the Opioid Assistance Referral Line (OAR Line).<sup>86</sup>
- Receive pre-pregnancy care visit with a healthcare provider for women of reproductive age.<sup>86</sup>
- Receive routine prenatal care, which can help prevent complications and inform women about important steps they can take to protect their infant and ensure a healthy pregnancy, especially for pregnant women who use substances.<sup>87</sup>
- Increase new mothers' awareness of the availability of AHCCCS coverage up to one year postpartum for women.<sup>88</sup>
- People who are pregnant, breastfeeding, trying to get pregnant now, or those who might become pregnant in the future are recommended to obtain the COVID-19 vaccine.<sup>89</sup>
  - This recommendation includes getting boosters when it is time to get one.<sup>89</sup>

### Provider/Healthcare Facilities

- Increase awareness of the ADHS-issued standing order from July 2023 for self-administered hormonal contraception, especially in communities with limited provider availability or maternity care deserts.<sup>91</sup>
- Increase availability and accessibility of affordable quality mental health and substance use treatment services.<sup>87</sup>
- Increase awareness for people of reproductive age of the benefits of a pre-pregnancy care visit with a healthcare provider.<sup>86</sup>
- People at risk for preterm delivery need to be identified and offered access to effective treatments to prevent preterm birth.<sup>90</sup>
- Improve the management of chronic conditions before/during pregnancy.<sup>90</sup>
- Increase the mother's awareness that shorter interpregnancy intervals, especially <6 months, are associated with an increased risk of late-preterm delivery.<sup>86</sup>
- Encourage regular prenatal care, which can help prevent complications and inform women about important steps they can take to protect their infant and ensure a healthy pregnancy, especially for pregnant women who use substances.<sup>87</sup>
- Increase new mothers' awareness of the availability of AHCCCS coverage up to one year postpartum for women.<sup>88</sup>
- Increase education and community awareness of the risks of smoking nicotine, drinking alcohol, using marijuana and drugs during pregnancy because it increases the risk of preterm birth or other complications.<sup>86</sup>

- Pregnant people who smoke tobacco should be referred to the Arizona Smokers Helpline (ASHLine / 1-800-556-6222).<sup>86</sup>
- Pregnant people with substance use disorder should be referred to the Opioid Assistance Referral Line (OARLine).<sup>86</sup>
- People who are pregnant, breastfeeding, trying to get pregnant now, or those who might become pregnant in the future are recommended to obtain the COVID-19 vaccine.<sup>89</sup>
  - This recommendation includes getting boosters when it is time to get one.<sup>89</sup>
- Partner with professional medical organizations to emphasize the importance of testing women of child-bearing age, especially those pregnant at the 1st and 3rd trimester, and at the delivery, for syphilis.<sup>90</sup>
  - Prevent, detect, and treat maternal sexually transmitted infections, especially syphilis.<sup>90</sup>
- Improve access to treatment of STIs for pregnant people.<sup>90</sup>
- Expand the use of innovative approaches to increasing access to prenatal care services such as group prenatal care and telemedicine for rural and dispersed populations.<sup>90</sup>
- Prevent unintended pregnancies and achieve optimal birth spacing by addressing barriers in provider and patient knowledge, availability, and costs to ensure the most efficacious contraception method is accessible, including long-acting reversible contraception.<sup>90</sup>

#### **Policy Makers/Participating Agencies/Schools**

- Increase awareness of the ADHS-issued standing order from July 2023 for self-administered hormonal contraception, especially in communities with limited provider availability or maternity care deserts.<sup>91</sup>
- Sustain the Title V Family Planning and other family planning programs in Arizona to continue to emphasize the importance of a reproductive life plan and increase access to effective contraceptive methods throughout the state.<sup>90</sup>
- Increase availability and accessibility of affordable quality mental health and substance use treatment services.<sup>87</sup>
- Encourage home visiting programs to help women take steps toward a healthy pregnancy before they even get pregnant.<sup>86</sup>
- Increase new mothers' awareness of the availability of AHCCCS coverage up to one year postpartum for women.<sup>88</sup>
- Increase availability and accessibility of affordable quality family planning and parenting services/support.
- Increase awareness on the risk factors and signs of premature labor via statewide-centered campaigns.
- Increase the availability of affordable health insurance for women of reproductive age.<sup>88</sup>
- Prevent unintended pregnancies and achieve optimal birth spacing by addressing barriers in provider and patient knowledge, availability, and costs to ensure the most efficacious contraception method is accessible, including long-acting reversible contraception.<sup>90</sup>

#### **Community-Based Organizations**

- Increase awareness of the ADHS-issued standing order from July 2023 for self-administered hormonal contraception, especially in communities with limited provider availability or maternity care deserts.<sup>91</sup>

- Increased education and awareness on the benefits of a pre-pregnancy care visit with a healthcare provider among reproductive-aged women.<sup>86</sup>
- Increase the mother's awareness that shorter interpregnancy intervals, especially <6 months, are associated with an increased risk of late-preterm delivery.<sup>86</sup>
- Encourage regular prenatal care which can help prevent complications and inform women about important steps they can take to protect their infant and ensure a healthy pregnancy, especially for pregnant women who use substances.<sup>87</sup>
- Increase new mothers' awareness of the availability of AHCCCS coverage up to one year postpartum for women.<sup>88</sup>
- Increase availability and accessibility of affordable quality family planning and parenting services/support.
- Increase education and community awareness of the risks of smoking nicotine, drinking alcohol, and using marijuana as well as drugs during pregnancy because it increases the risk of preterm birth or other complications.<sup>86</sup>
  - Pregnant people who smoke tobacco should be referred to the Arizona Smokers Helpline (ASHLine /1-800-556-6222).<sup>86</sup>
  - Pregnant people with substance use disorder should be referred to the Opioid Assistance Referral Line (OARLine).<sup>86</sup>
- Increase awareness on the risk factors and signs of premature labor via community-centered campaigns.
- Prevent unintended pregnancies and achieve optimal birth spacing by addressing barriers in provider and patient knowledge, availability, and costs to ensure the most efficacious contraception method is accessible, including long-acting reversible contraception.<sup>90</sup>

## Substance Use-Related Death Prevention Recommendations

### Patient/Family/Caregiver

- Educate adolescents and family members on the risks associated with legal substance use (i.e., marijuana),
- Increase adolescents' awareness of the risks of opioid use, especially fentanyl, and how to respond to and identify signs of an overdose.
- Use of home drug deactivation kits to properly dispose of prescription drugs, pills, patches, liquids, creams, and films to reduce the risk of drug misuse and diversion.<sup>104</sup>
- Families should follow the American Academy of Pediatrics tips for keeping medications out of the hands of children and adolescents.<sup>105</sup>
  - Store all medications in a cupboard or high shelf, well out of a child's sight. In about half of over-the-counter medication poisonings, the child climbed onto a chair, toy, or other object to reach the medication.
  - Keep medicines in their original containers, with child-safety caps.
  - If there are controlled substances (like prescription pain medications or ADHD medicine) consider using a locked box for extra safety.
  - Keep track of how many pills are in the bottle and write the start date on the label. This way, if a spill occurs, you will know if any are missing.
  - When giving your child medicine, lean over a counter or table. This helps contain any accidental spills.

- Any medication can be dangerous, so treat all products with the same respect. We worry about opioids, but some blood pressure and diabetes medications can be fatal to a toddler who swallows only one pill.
- If a medication spills, vacuum or sweep the area as an extra precaution to ensure nothing is missed.
- Dispose of unused medications—especially opioids—at pharmacies, drug "take back" programs, or doctors' offices
- Know basic first aid and keep the Poison Center Number (1-800-222-1222) stored in your phone.
- Get into the practice of safe medication storage, starting as soon as your baby is born.
- Educate family members about how to properly respond to a child's potential substance abuse/use i.e., seeking treatment, community resources (mental health, addiction treatment).
- Families with loved ones who struggle with opioid addiction should have naloxone nearby; ask their family member to carry it; and let friends know where it is.<sup>100</sup>

#### **Provider/Healthcare Facilities**

- Health care providers should adapt services to better address ACEs and train more professionals in trauma-informed care.<sup>92-95</sup>
- Improve continuity care following inpatient discharge or after treatment ends.
- Increase availability and accessibility of affordable quality substance use/abuse treatment services and behavioral health services for families, children, and youth.
- Implement universal screening for substance use and mental health issues during adolescent well visits.<sup>95,96,99</sup>
- To reduce overdose deaths, clinicians should be encouraged to co-prescribe naloxone to patients who are at risk for opioid overdose, this includes patients who are prescribed benzodiazepines.<sup>100,101</sup>
- Increase education for parents and adolescents on the risks associated with legal substance use (i.e., marijuana).
- Provide education to community members on how to properly store prescription medications/drugs using the American Academy of Pediatrics tips for keeping medications out of the hands of children and adolescents.<sup>105</sup>
- Improve access to medication-assisted treatment of opioid addiction in adolescents.<sup>96</sup>
  - Pediatricians be encouraged to offer these treatments or referrals for treatment to adolescents with severe opioid use disorders.<sup>98</sup>
- Improve access to personalized substance use disorder treatment plans.<sup>92,96</sup>
  - Forming treatment plans based on individuals' strengths because it can keep children engaged in their care and increase the likelihood of a successful treatment and better health outcomes.<sup>92,96</sup>
- Increase access to home drug deactivation kits to properly dispose of prescription drugs, pills, patches, liquids, creams, and films to reduce the risk of drug misuse and diversion.<sup>104</sup>
- Support adequate resources for persons at risk for opioid-related overdose deaths.<sup>96</sup>
- Education for parents and caregivers about how to properly respond to a child's potential substance abuse/use i.e., seeking treatment, community resources (mental health, addiction treatment).

- Educate parents and caregivers about the availability and how to access and use Naloxone for individuals at risk for opioid overdose.

#### **Policy Makers/Participating Agencies/Schools**

- Coordinate statewide opioid prevention activities and increase the number of campaigns and websites that have social connection messages.<sup>97</sup>
  - Social connection messages advocate the importance of interpersonal relationships and the negative health impacts of social isolation.<sup>97</sup>
- Improve follow-up for substance use at time of birth by DCS/ Tribal Division Social Services.
- Increase availability and accessibility of affordable quality substance use/abuse treatment services and behavioral health services for families, children, and youth.
- Increase education for parents and adolescents on the risks associated with legal substance use (i.e., marijuana).
- Improve referral services of birthing parents who have been identified as substance users at the time of birth by DCS to the Arizona Family F.I.R.S.T (AFF) program.
- Expand access to services for people with unstable housing and those who are experiencing homelessness because they are at higher risk for substance use.
- Support the implementation of harm reduction strategies to reduce drug overdoses and poisonings.<sup>103</sup>
  - This can include provision of sterile syringes, naloxone distribution, fentanyl testing, overdose prevention and education, including safer drug use education, and other activities that can lessen the risk of adverse outcomes associated with using drugs.<sup>103</sup>
  - Harm reduction programs also offer critical linkages to treatment for substance use disorders (SUDs) and other resources for populations with less access to care.<sup>102</sup>
- Increase access to home drug deactivation kits to properly dispose of prescription drugs, pills, patches, liquids, creams, and films to reduce the risk of drug misuse and diversion.<sup>104</sup>

#### **Community-Based Organizations**

- Expand access to services for people with unstable housing and those who are experiencing homelessness because they are at higher risk for substance use.
- Increase the availability of naloxone training to reduce overdose deaths.<sup>92</sup>
  - Overdose fatalities in large populations can be prevented by expanding access to naloxone. Outreach and education programs to communities, persons at risk for opioid-related overdose and their friends, and family members can improve access to naloxone, which can reverse potentially lethal opioid overdoses.<sup>96</sup>
- Improve communication and education on the awareness of prescription drug misuse and health issues associated with substance use.<sup>92,94</sup>
  - Forms of communication like blogs, newsletters, and op-ed articles can raise awareness of the dangers of substance use in their community.<sup>94</sup>
- Increase awareness of availability and how to access and use Naloxone for individuals at risk of an opioid overdose.<sup>92</sup>
- Increase education for parents and adolescents on the risks associated with legal substance use (i.e., marijuana).
- Provide education to community members on how to properly store prescription medications/drugs using the American Academy of Pediatrics tips for keeping medications out of the hands of children and adolescents.<sup>105</sup>



- Increase access to home drug deactivation kits to properly dispose of prescription drugs, pills, patches, liquids, creams, and films to reduce the risk of drug misuse and diversion.<sup>104</sup>
- Support adequate resources for persons at risk for opioid-related overdose deaths.<sup>96</sup>
- Education for parents and caregivers about how to properly respond to a child's potential substance abuse/use i.e., seeking treatment, community resources (mental health, addiction treatment).

## Suicide Prevention Recommendations

### Patient/Family/Caregiver

- Increase awareness of the 988 hotline, which anyone can call or text or chat with online at 988lifeline.org if they are worried about a loved one who may need crisis support.<sup>128</sup>
- Safely store prescription medications/drugs out of reach of children.<sup>105</sup>
- Reduce access to lethal means in the household of adolescents that are at risk of suicide or expressing suicidal thoughts. This includes removing firearms from the house and securing medications.<sup>114,117,118</sup>
  - The presence of a firearm in the house significantly increases the risk of suicide for adolescents.<sup>114,119</sup>
- Encourage to meet children's teachers and school counselors to keep up to date with their kids' lives. This can help prevent bullying and keep parents connected to their children.<sup>120,121</sup>
  - Kids who are bullied are at a higher risk for suicide.<sup>112, 114, 120, 121</sup>
  - Cyberbullying can have a significant negative impact on mental health like traditional bullying. There is an increase in suicide attempts for both victims and perpetrators of cyberbullying.<sup>114</sup>
- Teach adolescents about technology and empower them to be responsible online participants at the appropriate age.<sup>125</sup>
  - This can be done by monitoring their social media use, providing education on how to safely browse the web, and/or have algorithms in place on all social media platforms to screen for posts/videos of concern.
- Improve knowledge, reduce stigmatizing attitudes, and increase first aid actions towards people with mental health and substance use challenges.<sup>112, 113, 117, 118, 124</sup>

### Provider/Healthcare Facilities

- Improve continuity of care following inpatient discharge or after treatment ends.
- Provide education on proper storage of prescription medications/drugs.<sup>105</sup>
- Increase awareness of the 988 hotline, which anyone can call or text or chat with online at 988lifeline.org if they are worried about a loved one who may need crisis support.<sup>128</sup>
- Educate parents/families/caregivers that the presence of a firearm in the house significantly increases the risk of suicide for adolescents.<sup>114, 119</sup>
- Increase access to medical and mental health care via telemedicine.
- Promote and deliver resources to families available from the Arizona Suicide Coalition.<sup>126</sup>
  - Parents and caregivers have an important role to help prevent adolescents' suicides. They need to be provided with the appropriate tools and guidance to be prepared to offer caring, non-judgmental support for their child's needs.<sup>127</sup>

- Adapt services to better address adverse childhood experiences (ACEs) and train more professionals in trauma-informed care.<sup>123</sup>

#### **Policy Makers/Participating Agencies/Schools**

- Provide education on proper storage of prescription medications/drugs.<sup>105</sup>
- Increase access to effective mental health care for Arizonans by adopting the Zero Suicide model statewide. Implement communication strategies using traditional and new media for school personnel that promotes suicide prevention, emotional well-being, and mental health.<sup>112,116,122</sup>
- Increase awareness of the 988 hotline, which anyone can call or text or chat with online at 988lifeline.org if they are worried about a loved one who may need crisis support.<sup>128</sup>
- Schools should:<sup>112-115</sup>
  - Have a suicide management protocol and be aware of resources like the suicide prevention toolkits developed by the Substance Abuse and Mental Health Services Administration and the American Foundation for Suicide Prevention.<sup>112-115</sup>
  - Provide appropriate mental health services for students at risk for suicide. If the school cannot provide the services, then they should identify mental health providers to whom students can be referred to.<sup>112-115</sup>
  - Educate staff members on the effects that suicide contagion can have in a student population. Adolescents are vulnerable to suicide contagion, and it is important for schools to not glamorize, simplify, or romanticize the death of a student.<sup>112-115</sup>
  - Be aware that the most effective school- based interventions to prevent suicide use simultaneous complementary strategies. Simultaneous interventions involving parents, changing the school environment, and improving students' individual skills have been effective.<sup>122</sup>
- Increase communication between tribal and non-tribal entities/resources to bridge gaps in the availability of mental health services for children.
- Adapt services to better address adverse childhood experiences (ACEs) and train more professionals in trauma-informed care.<sup>123</sup>

#### **Community-Based Organizations**

- Provide education on proper storage of prescription medications/drugs.
- Increase awareness of the 988 hotline, which anyone can call or text or chat with online at 988lifeline.org if they are worried about a loved one who may need crisis support.<sup>128</sup>
- Increase public awareness of risk factors and warning signs for suicide and connect people in crisis to care.<sup>112, 113, 117, 118</sup>
- Educate parents/families/caregivers that the presence of a firearm in the house significantly increases the risk of suicide for adolescents.<sup>114, 119</sup>
- Promote and deliver resources to families available from the Arizona Suicide Coalition.<sup>126</sup>
  - Parents and caregivers have an important role to help prevent adolescents' suicides. They need to be provided with the appropriate tools and guidance to be prepared to offer caring, non-judgmental support for their child's needs.<sup>127</sup>
- Youth serving organizations should receive training on youth mental health first aid to better support youth experiencing mental health distress and refer appropriate professional help.<sup>124</sup>

- Promote non-school youth partnerships (i.e., Boys and Girls Club).

## Sudden Unexpected Infant Death (SUID) Prevention Recommendations

### Patient/Family/Caregiver

- Ensure infants are in a safe sleeping environment:<sup>106,107</sup>
  - Infants should be placed on their back to sleep for every sleep on a firm, flat, non-inclined sleep surface.<sup>106,107</sup>
    - Alone, on my Back, in a Crib (ABCs) is the safest sleeping practice for an infant until it is 1 year of age.<sup>106,107</sup>
  - The ideal safe sleeping environment for an infant requires a firm sleeping surface with only a fitted sheet and no additional bedding.<sup>106,107</sup>
    - The area should also be void of any toys, cushions, hanging cords, or any other items that pose a potential risk of suffocation or strangulation.<sup>106,107</sup>
  - Any alternative sleep surface should adhere to the most current CPSC rule that any infant sleep product must meet existing federal safety standards for cribs, bassinets, play yards, and bedside sleepers.<sup>110</sup>
- New mothers should be encouraged to breastfeed because any amount of breastfeeding is associated with a reduced risk of SUID.<sup>106,108</sup>
- Parents and caregivers should be encouraged to avoid alcohol, marijuana, opioids, and illicit drug use during pregnancy and after birth. They should also not smoke during pregnancy, and not smoke or allow smoke to be around the baby.<sup>111</sup>
  - Parents should be referred to the Arizona Smokers Helpline (ASHLine / 1-800-556-6222).<sup>111</sup>
- Pregnant people should enter prenatal care early in their pregnancy.<sup>109</sup>
  - Regular prenatal care for women is associated with a lower risk of sleep related deaths for their children.<sup>109</sup>
- Education on the dangers associated with the use of products for sleep that are not specifically marketed for infant sleep. Examples include rocking sleepers, nursing pillows, and infant loungers.<sup>110</sup>
  - Importance should also be given to recall items and how to properly buy products for their infants, even from a second-hand store.

### Provider/Healthcare Facilities

- Educate parents on safe sleeping environments at every well-child visit until the baby turns 1.<sup>106,107</sup>
  - Infants should be placed on their back to sleep for every sleep on a firm, flat, non-inclined sleep surface.<sup>106,107</sup>
    - Alone, on my Back, in a Crib (ABCs) is the safest sleeping practice for an infant until it is 1 year of age.<sup>106,107</sup>
  - The ideal safe sleeping environment for an infant requires a firm sleeping surface with only a fitted sheet and no additional bedding.<sup>106,107</sup>
    - The area should also be void of any toys, cushions, hanging cords, or any other items that pose a potential risk of suffocation or strangulation.<sup>106,107</sup>
  - Any alternative sleep surface should adhere to the most current CPSC rule that any infant sleep product must meet existing federal safety standards for cribs, bassinets, play yards, and bedside sleepers.<sup>110</sup>

- Encourage pediatricians, midwives, doulas, and/or obstetricians to start initial training on safe sleeping practices before a child is born.<sup>106,107</sup>
- Develop a mandatory training program and curriculum on safe sleeping practices for providers.<sup>106,107</sup>
  - It is associated with more parents adhering to the practices when they observe staff perform them.
- Introduce a statewide hospital policy that requires parents to receive safe sleep information prior to discharge and sign off that they understood the material.<sup>106,107</sup>
- Encourage new mothers to breastfeed because any amount of breastfeeding is associated with a reduced risk of SUID.<sup>106,108</sup>
- Increase pregnant women's access to prenatal care early in their pregnancy and their awareness of the importance of prenatal care.<sup>109</sup>
  - Prenatal care is associated with a lower risk of SUID for their children.<sup>109</sup>
- Increase awareness that parents should avoid alcohol, marijuana, opioids, and illicit drug use during pregnancy and after birth. Parents and caregivers should also be encouraged to not smoke during pregnancy, and not smoke or allow smoke to be around the baby.<sup>111</sup>
  - Parents should be referred to the Arizona Smokers Helpline (ASHLine / 1-800-556-6222).<sup>111</sup>
- Provide caregivers and family members with education on the dangers associated with the use of products for sleep that are not specifically marketed for infant sleep. Examples include rocking sleepers, nursing pillows, and infant loungers.<sup>110</sup>
  - Importance should also be given to recall items and how to properly buy products for their infants, even from a second-hand store.
- Increase availability and accessibility of affordable quality mental health and substance use treatment services.

#### **Policy Makers/Participating Agencies/Schools**

- Encourage pediatricians, midwives, doulas, and/or obstetricians to start initial training on safe sleeping practices before a child is born.<sup>106,107</sup>
- Develop a mandatory training program and curriculum on safe sleeping practices for providers.<sup>106,107</sup>
  - It is associated with more parents adhering to the practices when they observe staff perform them.
- Introduce a statewide hospital policy that requires parents to receive safe sleep information prior to discharge and sign off that they understood the material.<sup>106,107</sup>
- Increase the availability of WIC services and home visits because they can help families feel less isolated and teach them safe sleeping practices.<sup>106,107</sup>
  - Increase awareness of the WIC Program and availability of virtual services for families. The availability of virtual services allows families to participate in appointments from the comfort of their home. It also removes barriers that required them to travel to clinics and transport children for appointments.
- Establish or fund a program that helps low-income families afford a crib that can reduce the frequency of bed-sharing. Bed-sharing is associated with a significantly increased risk of sleep related deaths.<sup>106,107</sup>
- Increase home visiting programs for infants following birth for up to one year.
- Provide caregivers and family members with education on the dangers associated with the use of products for sleep that are not specifically marketed for infant sleep. Examples include rocking sleepers, nursing pillows, and infant loungers.<sup>110</sup>

- Importance should also be given to recall items and how to properly buy products for their infants, even from a second-hand store.
- Increase availability and accessibility of affordable quality mental health and substance use treatment services.

### Community-Based Organizations

- Educate parents on safe sleeping environments in multiple languages:<sup>106,107</sup>
  - Infants should be placed on their back to sleep for every sleep on a firm, flat, non-inclined sleep surface.<sup>106,107</sup>
    - Alone, on my Back, in a Crib (ABCs) is the safest sleeping practice for an infant until it is 1 year of age.<sup>106,107</sup>
  - The ideal safe sleeping environment for an infant requires a firm sleeping surface with only a fitted sheet and no additional bedding.<sup>106,107</sup>
    - The area should also be void of any toys, cushions, hanging cords, or any other items that pose a potential risk of suffocation or strangulation.<sup>106,107</sup>
  - Any alternative sleep surface should adhere to the most current CPSC rule that any infant sleep product must meet existing federal safety standards for cribs, bassinets, play yards, and bedside sleepers.<sup>110</sup>
- Encourage new mothers to breastfeed because any amount of breastfeeding is associated with a reduced risk of SUID.<sup>106,108</sup>
- Establish programs that help low-income families afford a crib which can reduce the frequency of bed-sharing because bed-sharing is associated with a significantly increased risk of SUID.<sup>106,107</sup>
- Facilitate early entry into prenatal care.<sup>109</sup>
  - Prenatal care is associated with a lower risk of SUID for their children.<sup>109</sup>
- Increase awareness that parents should avoid alcohol, marijuana, opioids, and illicit drug use during pregnancy and after birth. Parents and caregivers should also be encouraged to not smoke during pregnancy, and not smoke or allow smoke to be around the baby.<sup>111</sup>
  - Parents should be referred to the Arizona Smokers Helpline (ASHLine / 1-800-556-6222).<sup>111</sup>
- Provide caregivers and family members with education on the dangers associated with the use of products for sleep that are not specifically marketed for infant sleep. Examples include rocking sleepers, nursing pillows, and infant loungers.<sup>110</sup>
  - Importance should also be given to recall items and how to properly buy products for their infants, even from a second-hand store.
- Increase availability and accessibility of affordable quality mental health and substance use treatment services.
- Continue to provide families with safe sleep training and provide resources such as cribs and sleep sacks for those families that are unable to provide a safe sleep environment for their babies.<sup>111</sup>
- Provide community resources for parents on finding accessible, affordable, and qualified childcare.

A grayscale photograph of a rugged mountain landscape. In the foreground, a river flows through a canyon, with white water rapids visible. The riverbank is rocky and sparsely vegetated. In the middle ground, a large, layered rock formation, possibly a cliff face, dominates the left side. The background features more mountain ranges under a cloudy sky. A solid blue rectangular box is overlaid on the center of the image, containing the text "Section 6: Appendix" in white, sans-serif font.

# Section 6: Appendix

## Appendix A: Additional Neglect/Abuse Data 2018-2022

### Disclaimer for the Department of Child Safety (DCS)/ Child Protective Services (CPS):

- Local CFRP team attempt to obtain records from child protective services (CPS) agencies, including the Department of Child Safety (DCS) and CPS agencies in other jurisdictions, such as tribal authorities and agencies in other states.
- Review teams consider a family as having previous involvement with a CPS agency if the agency investigated a report of neglect/abuse for any child in the family before the incident leading to the child's death.
- Unsubstantiated reports of neglect/abuse are also included in this definition; however, calls to DCS that did not meet the criteria to be made into a report, and were taken as "information only," are not included in the CFRP annual report.

### Department of Child Safety (DCS) Definition of Abuse/Neglect:

Definitions of abuse and neglect observed by DCS are set in the Arizona Revised Statutes Title 8. Child Safety 8-201; Section 2 and Section 25:

- Section 2: "Abuse" means the infliction or allowing of physical injury, impairment of bodily function or disfigurement or the infliction of or allowing another person to cause serious emotional damage as evidenced by severe anxiety, depression, withdrawal or untoward aggressive behavior and which emotional damage is diagnosed by a medical doctor or psychologist and is caused by the acts or omissions of an individual who has the care, custody and control of a child. Abuse includes:
  - (a) Inflicting or allowing sexual abuse pursuant to §13-1404, sexual conduct with a minor pursuant to §13-1405, sexual assault pursuant to §13-1406, molestation of a child pursuant to §13-1410, commercial sexual exploitation of a minor pursuant to §13-3552, sexual exploitation of a minor pursuant to §13-3553, incest pursuant to §13-3608 or child sex trafficking pursuant to §13-3212.
  - (b) Physical injury that results from permitting a child to enter or remain in any structure or vehicle in which volatile, toxic or flammable chemicals are found or equipment is possessed by any person for the purpose of manufacturing a dangerous drug as defined in §13-3401.
  - (c) Unreasonable confinement of a child.
- Section 25: "Neglect" or "neglected" means:
  - (a) The inability or unwillingness of a parent, guardian or custodian of a child to provide that child with supervision, food, clothing, shelter or medical care if that inability or unwillingness causes unreasonable risk of harm to the child's health or welfare, except if the inability of a parent, guardian or custodian to provide services to meet the needs of a child with a disability or chronic illness is solely the result of the unavailability of reasonable services.
  - (b) Permitting a child to enter or remain in any structure or vehicle in which volatile, toxic or flammable chemicals are found or equipment is possessed by any person for the purposes of manufacturing a dangerous drug as defined in §13-3401.

- (c) A determination by a health professional that a newborn infant was exposed prenatally to a drug or substance listed in §13-3401 and that this exposure was not the result of a medical treatment administered to the mother or the newborn infant by a health professional. This subdivision does not expand a health professional's duty to report neglect based on prenatal exposure to a drug or substance listed in §13-3401 beyond the requirements prescribed pursuant to §13-3620, subsection E. The determination by the health professional shall be based on one or more of the following:
  - (i) Clinical indicators in the prenatal period including maternal and newborn presentation.
  - (ii) History of substance use or abuse.
  - (iii) Medical history.
  - (iv) Results of a toxicology or other laboratory test on the mother or the newborn infant.
- (d) Diagnosis by a health professional of an infant under one year of age with clinical findings consistent with fetal alcohol syndrome or fetal alcohol effects.
- (e) Deliberate exposure of a child by a parent, guardian or custodian to sexual conduct as defined in §13-3551 or to sexual contact, oral sexual contact or sexual intercourse as defined in §13-1401, bestiality as prescribed in §13-1411 or explicit sexual materials as defined in §13-3507.
- (f) Any of the following acts committed by the child's parent, guardian or custodian with reckless disregard as to whether the child is physically present:
  - (i) Sexual contact as defined in §13-1401.
  - (ii) Oral sexual contact as defined in §13-1401.
  - (iii) Sexual intercourse as defined in §13-1401.
  - (iv) Bestiality as prescribed in §13-1411.



## Appendix B: Resources

**Childcare:** If in need of safe childcare, parents and caregivers can contact these agencies: Arizona Childcare Resource & Referral (1-800-308-9000) or the Association for Supportive Childcare (1-800-535-4599) for assistance. These agencies will match parents seeking childcare with appropriate community resources.

**Childcare:** Childcare Resource and Referral (CCR&R) meets a need that no one else does by providing the bridge between parents, providers, community leaders, and policymakers about anything related to childcare in Arizona. Funding provided by the Arizona Department of Economic Security's Childcare Administration through federal Childcare Development Block Grant funds. Visit [arizonachildcare.org](http://arizonachildcare.org) for more information.

**COVID-19:** The Arizona Department of Health Services (<https://www.azdhs.gov/covid19/index.php> or 1-602-542-1025) provides up-to-date information regarding the COVID-19 Pandemic and offers additional services regarding testing, vaccines, among other community resources.

**Drowning:** To prevent drowning, parents and other caregivers should designate at least one responsible adult to monitor the pool area when children are present. They should also not rely solely on flotation devices to protect the child from drowning. Continue to use "touch supervision," where the adult can always reach out and touch the child. Have children wear life jackets in and around natural bodies of water, such as lakes or the ocean, even if they know how to swim. Life jackets can be used in and around pools for young swimmers too.

**Neglect/Abuse:** Report suspected abuse or neglect by parents or caregivers to the Department of Child Safety at 1-888-SOS-CHILD (1-888-767-2445) and to law enforcement agencies.

**Parent Helpline:** If feeling stressed or overwhelmed, parents and caregivers can seek assistance through the National Parent Helpline at 1-855-427-2736, the Birth to Five Helpline at 1-877-705-KIDS (Available Monday-Friday 8:00 am to 8:00 pm), the Fussy Baby Helpline at 1-877-705-KIDS ext. 5437 (Available Monday-Friday 8:00 am to 8:00 pm or Child help National Child Abuse Hotline at 1-800-4-A-CHILD (24 hours, 7 days per week). These resources offer crisis intervention, information, literature, and referrals to thousands of emergencies, social service, and support resources. All calls are confidential.

**Poisoning:** Save the Poison Help line in your phone: 1-800-222-1222. Put the toll-free number for the Poison Control Center into your home and cell phones. The Arizona Department of Health Services provides Arizona's Opioid Prescribing Guidelines <https://www.azdhs.gov/documents/audiences/clinicians/clinical-guidelinesrecommendations/prescribing-guidelines/az-opioid-prescribing-guidelines.pdf>

**Teen Counseling Hotline:** Teen Lifeline provides a Peer Counseling Hotline for teens in crisis: 602-248-8336 (TEEN) for Maricopa County or statewide 800-248-8336 (TEEN).

## Appendix C: State and Local CFRP Teams

### Arizona Department of Health Services, State CFRP Team:

#### Chairperson:

Mary Ellen Rimsza, MD, FAAP  
American Academy of Pediatrics

#### Members:

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Administrative Office of the Courts

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Navajo Maternal and Child Health Projects  
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Arizona Chapter of the American Academy of Pediatrics

Members:

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Arizona Chapter of the American Academy  
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CFRP Contractor

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Arizona Department of Child Safety OLR

Alex Schutte  
Arizona Department of Child Safety

Stephanie Zimmerman, MD  
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Arizona Department of Health Services, State Subcommittee SUID CFRP Team:

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Coconino County, CFRP Team:

## Chairperson:

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 Injury Prevention Program Manager  
 Coconino County Health & Human  
 Services

## Co-Chair:

Larry Czamecki, MD  
 Coconino County  
 Medical Examiner

## Members:

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Brian Fuller  
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Diana Hu, MD  
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## Appendix D: References

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