Arizona Child Fatality Review Program

Twenty-Fifth Annual Report

November 15, 2018

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

Twenty-Fifth Annual Report

November 15, 2018

Last year, 806 children died in Arizona and the Arizona Child Fatality Review (CFR) Program local teams determined that 42% (337of these deaths) could have been prevented. In this report, we summarize our findings from exhaustive reviews of each of these 806 deaths to help prevent child deaths in Arizona.

One of the key findings in this year's report was a 9% increase in accidental deaths from 2016 to 2017. Thirty-one percent of these deaths occurred in infants less than one year old. The most common cause of infant deaths was unsafe sleep suffocation often associated with bed sharing. The CFR program continues to recommend that infants be put to sleep alone, on their back and in a crib to prevent these tragedies.

Deaths due to suicide and firearm deaths also increased from 2016 to 2017 and all these deaths were determined to be preventable. In 2017, 42% of the suicide deaths and 44% of the homicide deaths were due to firearms injuries. Over the last six years, the firearm mortality rate has steadily increased. Sixty-three percent of the firearm deaths occurred in the child's home. Fifty-one percent of these deaths involved guns owned by parents.

In 2017, substance use was a direct or contributing factor in 136 child deaths; 50 of these deaths occurred in children less than one year of age. In 46% of substance use related deaths, the child's parent was the substance user.

Preventability

In 2017, **806** children under the age of 18 years died in Arizona. Arizona Child Fatality Review Teams reviewed 100% of these deaths and determined **42%** could have been prevented (**n=337**).

Teams determined that 100% of the following deaths were preventable:

- ✓ Homicides
- ✓ Maltreatment
- ✓ Suicides
- ✓ Accidental deaths

This is the CFR program's 25th report. I would like to thank all of our volunteers, the Arizona Department of Health Services, and the Arizona Chapter of the American Academy of Pediatrics for their support of the CFR program and its mission to prevent child deaths in Arizona.

Mary Ellen Rimsza, MD
Chair, Arizona CFR State Team, Maricopa County CFR Team

Submitted to:

The Honorable Douglas A. Ducey, Governor, State of Arizona

The Honorable Steve Yarbrough, President, Arizona State Senate

The Honorable J.D. Mesnard, Speaker, Arizona State House of Representatives

This report is provided as required by A.R.S. §36-3501.C.3

Prepared by:

Arizona Department of Health Services – Office of Injury Prevention

Jessica Perfette, MPH, Child Fatality Review Program Manager

Tomi St. Mars MSN, RN, FAEN, Office Chief

Kyle Gardner, MSPH, CHES, Injury Epidemiologist

Teresa Garlington, Administrative Secretary II

 This publication was supported by a Cooperative Agreement Number: 5 NU58DP006122-02-00 funded by the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent official views of the Centers for Disease Control and Prevention or the Department of Health and Human Services.

Acknowledgments

We would like to kindly acknowledge the following individuals, organizations, and agencies for their tireless efforts to help reduce child deaths and make Arizona communities safer for all Arizona residents and visitors.

- Susan Newberry, Maricopa County CFR Coordinator, who is responsible for coordinating the reviews of more than 60% of all child deaths occurring annually in Arizona. Susan has spent more than 40 years as a dedicated champion for children. She tirelessly devotes her time and energy to creating and maintaining effective collaboration, cooperation and communication among team members. Susan was critical to the success of the organization during the absence of a program manager and demonstrated her commitment to the program through training this new employee with her expert knowledge and skills.

- Margaret Strength, Arizona Department of Child Safety, whose tireless commitment, provided an invaluable amount of information to the review teams and the program office. She bridged the gap for obtaining records in a timely manner for all the local coordinators around the state, which is a testament to her care of all Arizona's children.

- The 10 local CFR teams and their coordinators in Arizona, who conducted 100% of child fatality reviews to aid in prevention recommendations. Because of their hard work and dedication to the program, over the last 25 years the CFR program has overall continued to decrease preventable deaths for our Arizona children. Thank you for your continued support and commitment.

- All agencies (e.g. hospitals, physicians, medical examiners, child protective service agencies, fire department and law enforcement) that promptly provided the CFR program with the records needed for teams to conduct effective reviews. Informed child fatality reviews are only possible when the teams have accurate and detailed information to review.

Table of Contents

Executive Summary

The Arizona Child Fatality Review (CFR) program began collecting data in 1994 and has been conducting reviews of all child fatalities occurring within the state since. This statutorily driven program begins the review process at the local level where teams of multi-disciplinary professionals volunteer their time to meet and discuss child death cases. Reviews are conducted to analyze the manner and cause of each death with the intent to identify key factors of preventability. The state team meets annually to review the results of the local team's findings, discuss areas of prevention and approve an annual report. The Department of Health Services provides assistance to both the state and local teams, manages the CFR database, and provides administrative support to the program through community partnerships.

While the number of deaths has increased since last year; overall numbers have decreased in the past five years. The number of child deaths deemed preventable in 2017 has increased in the following categories: accidents (e.g. motor vehicle and accidental asphyxia) and suicides.

Local teams found that in 2017, 42% of all deaths could have been prevented. This conclusion is drawn from in depth reviews conducted by local CFR teams. These teams examined the factors surrounding the deaths of all children less than 18 years old who died in their community in 2017. To determine the causes and preventability of each child's death, teams spend many hours each year reviewing records, providing their expertise and identifying recommendations for prevention. Their hard work results in the information within this report based upon a total of 806 deaths reviewed in 2017.

By identifying preventable child deaths, the CFR program serves as a resource to help communities reduce the risk factors that are associated with child deaths, promote the protective steps that may prevent a death and improve outcomes for Arizona's children. Each child's death is a tragedy not only for the family but for society as a whole. Everyone, regardless of age, race, or position, can help prevent a child death. While much work has been done to prevent child deaths over the past twenty years, more work is needed.

Many people may not consider themselves prevention agents, but everyone has the ability to contribute through the various programs available in our society. Some examples of these programs include law enforcement officers who serve as car seat safety technicians, social workers who provide valuable insight into the signs and symptoms of abuse or neglect, parents who simply take the time to speak with their child about their daily stresses. Through the combined contributions of individuals, we collaboratively provide a positive impact on society as a whole.

This annual report provides recommendations which help to prevent further child deaths. The state CFR team recommendations are supported by the findings from the review of the data. Found in the body of the report are recommendations for individuals, communities, first responders, elected officials and the public.

Report Highlights

Natural Deaths (Deaths due to Medical Conditions)

- Natural deaths increased 1% from 2016 (n= 484) to 2017 (n= 489), and accounted for 61% of all child deaths in Arizona.
- Five percent (n=26) of the natural deaths were determined by the team to be preventable and these deaths accounted for 5% of all deaths.
- Prematurity accounted for 37% (n=180) of all natural deaths.
- Congenital anomalies, perinatal conditions, infections, cancer, neurological disorders and cardiovascular diseases were the leading causes of natural death.
- Twenty-five percent (n=121) of children who died from natural causes were less than 1 year old.
- White Hispanic, African American and American Indian deaths were disproportionately higher than the percentages of the population they comprise.

Unintentional Injury Deaths (Deaths due to Accidents)

- Unintentional injury deaths increased 4% from 2016 (n=179) to 2017 (n=187) and comprised 23% of all child deaths.
- CFR state team determined all unintentional injury deaths (n=187) were preventable and these deaths made up 55% of all preventable deaths.
- The leading cause of unintentional injury deaths was motor vehicle crashes and other transport injuries which accounted for 35% of unintentional deaths.
- Thirty-one percent (n=58) of unintentional injury deaths occurred among children less than one year old.
- Boys accounted for sixty-one percent (n=114) of all unintentional injury deaths.
- African American and American Indian deaths were disproportionately higher than the percentages of the population they comprise.

Prematurity

- Deaths due to prematurity increased 11% from 2016 (n=162) to 2017 (n=180).
- Four percent (n=7) of prematurity deaths were determined to be preventable and made up 2% of all preventable deaths.

- Seventy-nine percent (n=143) of the deaths due to prematurity were associated with medical complications during pregnancy. Examples include placental abruption, pre-eclampsia, advanced maternal age, diabetes, and preterm labor.
- Eighty-nine percent (n=160) of prematurity deaths were born before the 28th week of pregnancy (classified as extreme prematurity).
- Seventeen percent (n=24) of pregnant mothers had no prenatal care, a decrease of 35% (n=37) in 2016 and 47% (n=46) in 2015.

Sudden Unexpected Infant Deaths (SUID) and Sleep Related Suffocation Deaths

- SUID increased by 5% from 2016 (n=80) to 2017 (n=84) and accounted for 10% of all child deaths in Arizona.
- Ninety-nine percent (n=83) of SUID were preventable and these deaths accounted for 24% of all preventable deaths.
- The number of unsafe sleep deaths increased 5% from 2016 (n= 79) to 2017 (n=83).
- In sixty percent (n=50) of SUID, infants were bed sharing with adults and/or other children.
- Sixty-one percent (n=51) of SUID were determined to be due to suffocation. In 35% (n=29) of SUID, the cause could not be determined either due to lack of information to make a determination or the presence of other contributing factors.
- African American and American Indian infant deaths were disproportionately higher than the population they comprise.

Maltreatment Deaths (Deaths due to Child Abuse and Neglect)

- Child fatalities due to maltreatment decreased 4% from 2016 (n=82) to 2017 (n=79) and accounted for 10% of all child deaths in Arizona.
- All maltreatment deaths were determined by the team to be preventable and these deaths made up 24% of all preventable deaths among children.
- Blunt force trauma deaths accounted for twenty-two percent (n=17) of maltreatment deaths.
- Seventy-one percent (n=56) of children who died due to maltreatment were less than 5 years old.
- Child neglect caused or contributed to 72% of the deaths (n=57).
- In 73% (n=58) of maltreatment deaths, the perpetrator was the child's mother or father.
- Substance use was a factor in 65% (n=52) of maltreatment deaths.
- African American and American Indian deaths were disproportionately higher than the population they comprise.

Motor Vehicle Crash (MVC) and Other Transport Deaths

- Motor vehicle crash (MVC) and other transportation deaths decreased 8% from 2016 (n= 71) to 2017 (n= 65) and accounted for 8% of all child deaths in 2016.
- Motor vehicle crash deaths made up 97% of all transport related deaths.
- All transport deaths were determined by the team to be preventable and these deaths made up 19% of all preventable deaths among children.
- Thirty-eight percent of motor vehicle crash deaths (n=25) occurred among children 15 through 17 years of age.
- The number of motor vehicle and other transport deaths decreased 61% from 2016 (n=23) to 2017 (n=9) among children birth through 4 years of age.
- The number of motor vehicle and other transport deaths increased 129% from 2016 (n=7) to 2017 (n=16) among children 5 through 9 years of age.
- Passengers accounted for 51% of motor vehicle crash deaths among children.
- American Indian and African American deaths were disproportionately higher than the percent of population they comprise.

Homicides

- Homicides decreased 10% from 2016 (n=42) to 2017 (n=38) and accounted for five percent of all child deaths.
- All of the homicide deaths were determined by the team to be preventable, and these deaths made up 11% of all preventable deaths among children.
- Sixty-eight percent (n=26) of the homicide deaths were due to child abuse/neglect.
- Blunt force trauma (n=18) and firearm related injury (n=16) were the most common methods used to carry out homicides.
- Fifty percent of homicide deaths (n=19) occurred among children less than 4 years of age.
- Parents were the perpetrator in forty-seven percent (n=18) of the homicide deaths.
- African American and White Hispanic deaths were disproportionately higher than the percent of population they comprise.

Suicides

- Child suicides increased 32% from 2016 (n=38) to 2017 (n=50) and accounted for 6% percent of all child deaths.

- All of the suicide deaths were determined by the team to be preventable and these deaths made up 15% of all preventable deaths among children.
- A history of family discord was the most commonly identified preventable factor in suicides followed closely by a history of recent break-up, drug/alcohol use and an argument with a parent.
- Sixty-eight percent (n=34) of suicide deaths occurred in children 15 through 17 years of age.
- American Indian and Asian deaths were disproportionately higher than the percent of population they comprise.

Firearm Deaths

- Firearm deaths increased 19% from 2016 (n=36) to 2017 (n=43) and accounted for five percent of all child deaths.
- All of the firearms deaths were determined by the team to be preventable and these deaths made up 13% of all preventable deaths among children.
- Suicides and homicides accounted for 88% of firearm-related deaths in 2017. Fifty-one percent of firearm related deaths were a result of suicide (n=22) and 37% of firearm related deaths were homicides (n=16).
- Substance abuse was identified as a preventable factor in 60% (n=26) of firearm related deaths.
- Sixty-three percent (n=27) of firearm related deaths occurred in children 15 through 17 years of age.
- Sixty-three percent (n=27) of firearm related deaths occurred in the child's home.

Drowning Deaths

- Drowning deaths increased 30% from 2016 (n=27) to 2017 (n=35) and accounted for 4% of all child deaths.
- All of the drownings deaths were determined by the team to be preventable and these deaths made up 10% of all preventable deaths among children.
- Fifty-seven percent (n=20) of drowning deaths occurred in children 1 through 4 years of age.
- Sixty-three percent (n=22) of the deaths occurred in a pool or hot tub.
- Lack of supervision was a factor in 69% (n=24) of drowning deaths.
- White Hispanic deaths were disproportionately higher than the percent of population they comprise.

Substance Use Related Deaths

- Substance use was a factor in 17% of all child fatalities (n=136).
- Sixty-five percent (n=88) of substance use related deaths were male.
- In 49% of substance use related deaths (n=67), the parent was misusing or abusing alcohol or drugs.
- In 31% of substance use related deaths (n=42), the child who died was misusing or abusing drugs.
- Forty percent of substance use related deaths (n=55) resulted in deaths due to unintentional injuries.
- Males were 1.8 times more likely to experience a substance use related death.
- Adolescents, 15 through 17 years of age, had the highest risk of experiencing a substance use related death (34%, n=46).

Disparities

- Deaths continued to be disproportionately higher among some race/ethnicities in Arizona during 2017 and varied by cause and/or manner of death.
- White Hispanic children were disproportionately more likely to die from natural causes including prematurity and drowning.
- African American children were disproportionately more likely to die from natural causes including prematurity, unintentional injuries, SUID, and maltreatment related deaths.
- American Indian children were disproportionately more likely to die from unintentional injuries, maltreatment, and suicides.
- Asian children were disproportionately more likely to die from suicide and natural causes including prematurity.
- White, non-Hispanic children comprised higher percentages of suicides and firearm related deaths.

Future Actions for Prevention

The following is a summary of the overarching prevention recommendations found in the report:

- Promote public awareness of healthy behaviors prior to pregnancy for women of reproductive age, especially if they are at high risk for pregnancy complications.
- There were 136 preventable substance use deaths. Support sufficient funding for behavioral health services and substance abuse prevention and treatment programs for children, youth and their families.
- Fifty-one deaths occurred due to suffocation. Promote safe sleep education on the dangers of bed sharing (50 infants died co-sleeping with an adult and/or other child) and the "ABCs of Safe Sleep". The ABCs recommend babies should sleep Alone, on their Back, and in a Crib to prevent sleep suffocation.
- There were 50 preventable suicides. Support and implement community suicide prevention and awareness programs.
- There were 35 preventable drowning deaths. Promote community and family awareness about drowning risks through public awareness campaigns that address the need for age-appropriate supervision of infants and children near water and barriers to young children's access to pools.

Glossary

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

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

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

Drowning death - Child dies from an accidental or intentional submersion in a body of water.

Firearm related 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.

Injuries in-or-around the home related death – These are unintentional or undetermined deaths that occur in-or-around the home environment (e.g. bedroom, driveway, and yard).

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 younger than one year of age.

Intentional injury – Injury resulting from 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 (e.g., homicide) and self-directed behavior with intent to kill oneself (e.g., 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, reservation or other geographic area.

Maltreatment – An act of physical abuse or neglect against a child (please see the Technical Appendix and definitions for physical abuse, neglect, and perpetrator).

Manner of death – The circumstances of the death as determined by postmortem examination, death scene investigation, police reports, medical records, or other reports. Manner of death categories include: natural, accident (e.g., unintentional), homicide (e.g., intentional), suicide (e.g., intentional), therapeutic complication and undetermined. In this report, manner is used interchangeably with "intent" or "type."

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

Neglect - This is defined as the 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.

Perpetrator - Individual identified as possible perpetrator of physical, sexual or emotional abuse, or neglect. Caregiver may include individual providing supervision of child including parent's boyfriend/girlfriend, friend, neighbor, child care 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 will include any abuse that occurred previously if that abuse contributed to the child's death.
NOTE: Shooting deaths by a parent, guardian or caregiver will also be identified as this type of maltreatment.

Prematurity death - A death that was due to a premature birth (less than 37-week gestation) and there were no underlying medical conditions that resulted in the death.

Preventable death - A child's death is considered to be 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 the purpose of conducting a team review.

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

Substance use – The CFR program defines substance use related deaths as deaths where substance use was found as a direct or contributing factor leading to child deaths. To identify substance use as a factor, each case was reviewed and determined whether **any** individual involved in the death of a child, including the child's parent or caretaker, an acquaintance, stranger, or the child during or about the time of the incident leading to the death, used or abused substances, such as illegal drugs, prescription drugs, and/or alcohol.

Suffocation/Asphyxia death – Death resulting from inhalation, aspiration or ingestion of food or other object that blocks the airway or causes suffocation; intentional or accidental mechanical suffocation, including, strangulation or lack of air in a closed place.

State CFR Team - Established by A.R.S. 36-3501 et seq., the state CFR team provides oversight to local CFR teams. They prepare an annual report of review findings, and develop recommendations to reduce preventable child deaths.

Suicide – Death from self-directed intentional behavior where the intent is to die as a consequence of that behavior.

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 the death. It includes the deaths that might have previously been categorized as "crib deaths" if the death occurred during sleep, however not all of these deaths are sleep related. Most of the SUIDs are due to suffocation and unsafe sleep environments.[1]

Undetermined – Deaths that the medical examiner is unable to decide whether the manner of death was natural, accident, homicide, or suicide. A death may be listed as undetermined due to lack of or conflicting information, or because it is not clear if it was an intentional or an unintentional injury.

Unintentional injury (Accidents) – This is when an injury occurred where there was no intent to cause harm or death; an injury that was not intended to take place. This is also often referred to as an "accident."

[1] See the Technical Appendix for further explanation of SUIDs and its subcategories.

Introduction

Injuries and medical conditions are among the leading causes of death for Arizona's children. Unlike diseases, most injuries do not occur randomly. A thorough examination of each death reveals factors that are both predictable and preventable. 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 related injury. Analyzing risk factors allow injuries to be anticipated and prevented when the appropriate protective measures are in place.

The Arizona Child Fatality Review (CFR) Program was established to review all possible factors revolving around a child's death. The intent of the program is to identify ways of reducing or eliminating preventable fatalities for future generations. Legislation was passed in 1993 (A.R.S. § 36-342, 36- 3501) authorizing the creation of the CFR Program. In 1994 the review process and data collection began. Today there are 10 local teams that conduct initial reviews with oversight from the State Team and its two committees.

This report provides a comprehensive review of fatalities occurring in Arizona among children and youth through 17 years of age. Descriptive statistics and trend analysis are used to present summary information about cases as well as the leading causes under each manner of death by factors such as age, gender and race/ethnicity. Demographic and prevention information represented in the report are 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 upon the information collected and reviewed on each child death.

Conducting a Case Review

According to the National Center for Child Death Review, there are six basic steps to conduct an effective review meeting:

1) Share, question, and clarify all case information.
2) Discuss the investigation.
3) Discuss the delivery of services (to family, friends, schoolmates, community).
4) Identify risk factors (preventable factors or contributing factors).
5) Recommend systems improvements (based on any identified gaps in policy or procedure).
6) Identify and take action to implement prevention recommendations.

Methods

Arizona has 10 local CFR teams who complete reviews at the county level. Second level reviews of SUID and Maltreatment Deaths are done at the state level by committees of the state team. The review process begins when the death of a child under 18 years old is identified through a vital records report. The CFR program sends a copy of the death certificate to the local CFR team in the deceased child's county of residence. If the child is not a resident of Arizona, the local team in the county where the death occurred will conduct the review. These teams are located throughout the state and membership includes local representatives from the Arizona Department of Child Safety (DCS), the county medical examiner's office, the county health department, local law enforcement, and the county attorney's office. Membership also includes a pediatrician or family physician, a psychiatrist or psychologist, a domestic violence specialist, and a parent.[2] Information collected during the review is then entered into the National Child Death Review Database. The resulting dataset is used to produce the statistics found in this annual report.

Descriptive statistics are used in the report to present summary information about cases, as well as the leading causes of death by manner, age, gender, and race/ethnicity. Frequencies and cross-tabulation tables are shown throughout the report. Since most of the counts are small, tests for statistical significance are not done. The demographic and prevention information represented in this report are primarily used to help broadly inform public health initiatives and the community.

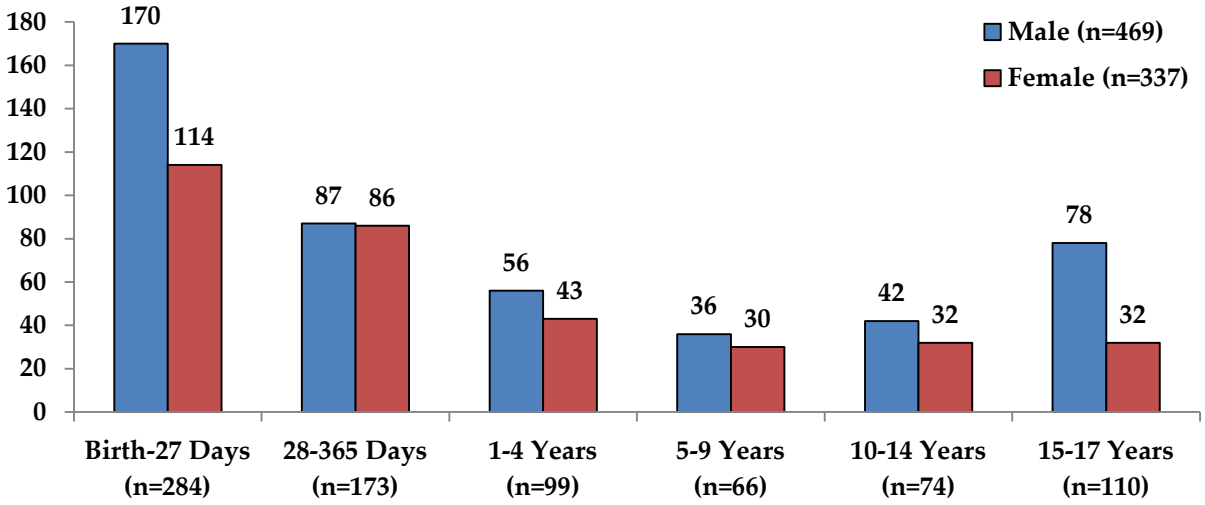
In Arizona, the cause of death refers to the injury or medical condition that resulted in death (e.g. firearm-related injury, pneumonia, cancer). Manner of death includes natural (e.g., cancer), accident (e.g., unintentional car crash), homicide (e.g., assault), suicide (e.g., self-inflicted, intentional firearm injury), and undetermined. Manner of death is not the same as cause of death, but specifically refers to the intentionality of the cause. For example, if the cause of death was a firearm-related injury, then the manner of death may have been intentional or unintentional. If it was intentional, then the manner of death was suicide or homicide. If it 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. It may not have been clear that a firearm death was due to an accident, suicide or homicide; and in these cases the manner of death was listed as undetermined.

[2] For a full list of participants see the Appendix of State and Local CFR Teams.

Demographics

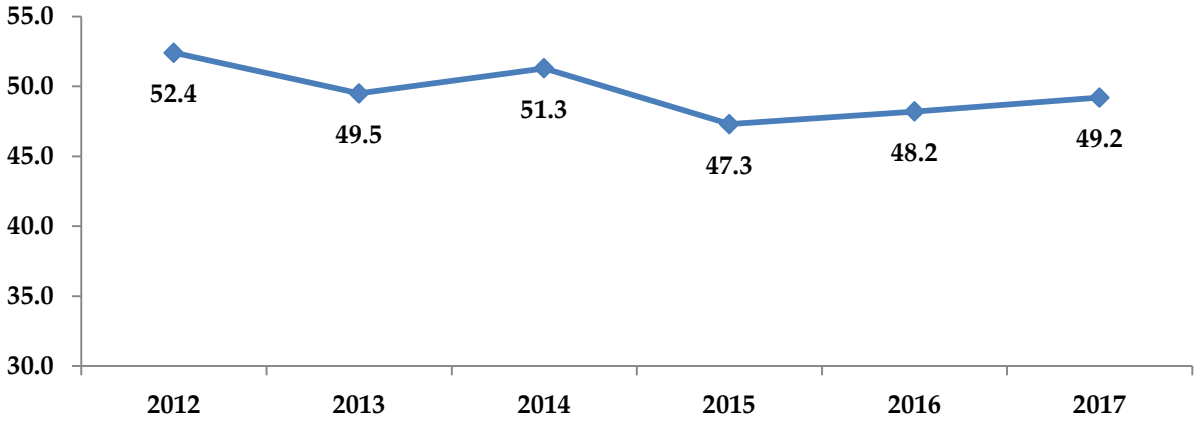
During 2017, there were 806 fatalities among children younger than 18 years of age in Arizona, an increase from the 783 deaths in 2016. Males accounted for 58% of deaths (n=469) and females comprised the remaining 42% (n=337) (Figure 1).

Figure 1. Number of Deaths among Children Ages 0-17 Years, by Age Group and Sex, Arizona, 2017 (n=806)



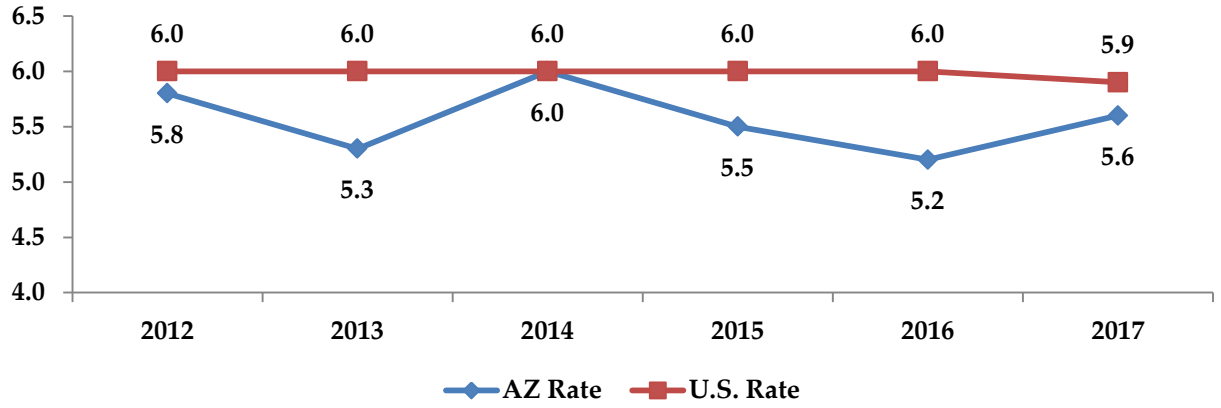
The Arizona child mortality rate increased 2% from 2016 (48.2 deaths per 100,000 children) to 2017 (49.2 deaths per 100,000 children) (Figure 2). Over the last 6 years, the mortality rate has decreased 6.1% overall from 2012 (52.4 deaths per 100,000 children) to 2017 (49.2 deaths per 100,000 children).

Figure 2. Mortality Rates per 100,000 Children, Ages 0-17 Years, Arizona, 2012-2017



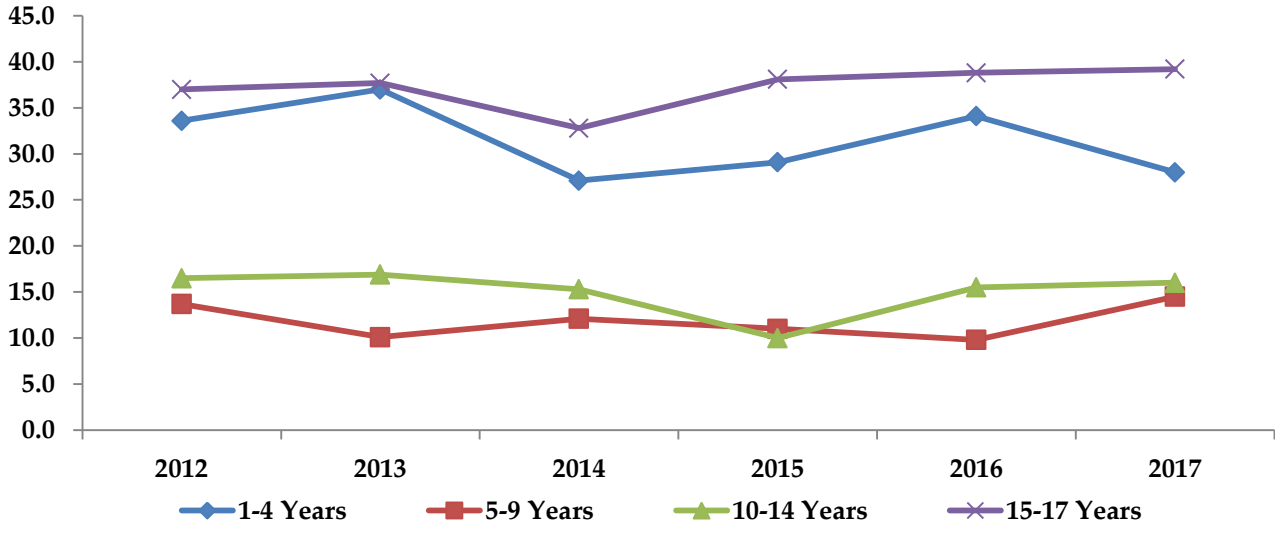
The infant mortality rate increased 7.7% from 5.2 deaths per 1,000 live births in 2016 to 5.6 deaths per 1,000 live births in 2017. Figure 3 illustrates Arizona's infant mortality rate compared to the U.S. mortality rate from 2012-2017. Arizona consistently had lower infant mortality rates than the U.S. except in 2014 (Figure 3).

Figure 3. Infant Mortality Rates per 1,000 Live Births, Less than 1 Year Old, Arizona & U.S., 2012-2017[3]



Over the last decade, the Arizona child mortality rate decreased in every age group. In 2017, the mortality rates for children 5 through 9 years of age, 10 through 14 years of age, and 15 through 17 years of age increased while the mortality rate for children aged 1 through 4 years from the last year decreased (Figure 4).

Figure 4. Mortality Rates per 100,000 Children, Ages 1-17 Years, by Age Group, Arizona, 2012-2017

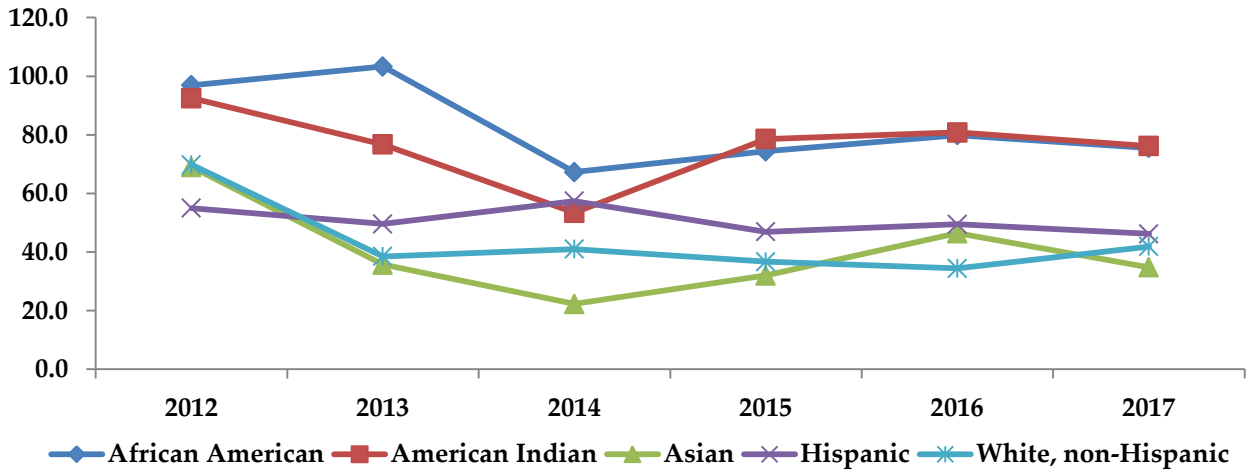


[3] Infant Mortality contains all babies less than 1 year of age.

Figure 5 shows the child mortality rates for the last six years by race and ethnicity. While there is some yearly fluctuation of the rates within each of the five categories, the graph illustrates that African American and American Indian children consistently maintain higher rates of death compared to other races/ethnicities.

Though the graph below indicates the rates for African American and American Indian children have decreased significantly from 2013 to 2014, the population estimate methodology changed in 2014 and therefore changed the denominators used to calculate the mortality rates. The change in the race/ethnicity population denominators may have contributed to the increases in White, non-Hispanic and White Hispanic mortality rates between 2013 and 2014 as well (see table 70 in the appendix for population denominators by race/ethnicity).

Figure 5. Mortality Rates of Children Ages 0-17 Years, by Race/Ethnicity Group, per 100,000 Children, Arizona, 2012-2017[4]

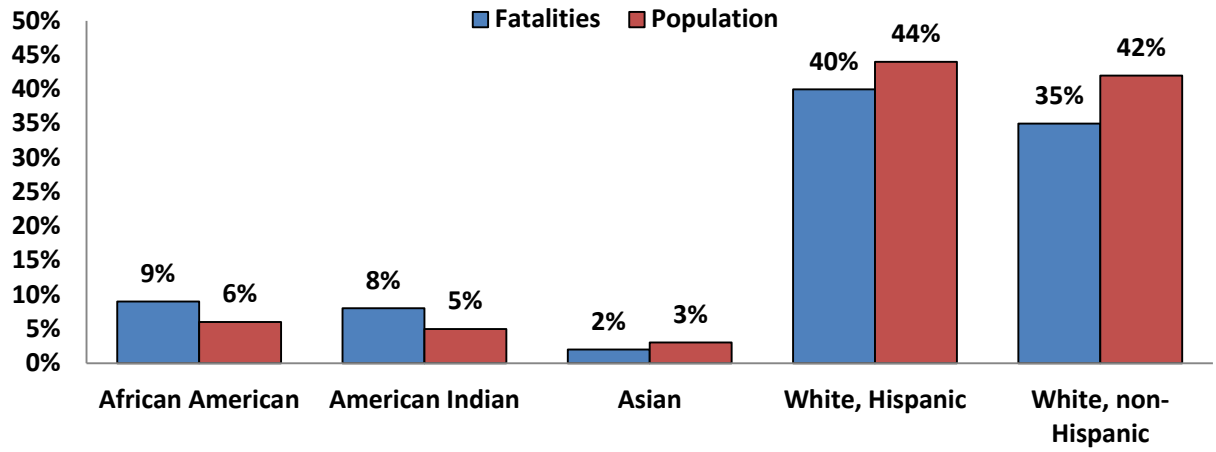


African American children comprised 6% of the Arizona child population in 2017 but made up 9% of all child fatalities. American Indian children comprised 8% of all children fatalities in 2017, but only made up 10% of the total child population (Figure 6).

Though White, non-Hispanic children made up a significantly lower percentage of deaths than the percentage of the population they represent, there are some categories in which they were overrepresented compared to other race/ethnicities. Figure 6 includes disparity information by race/ethnicity compared to their population.

[4]Does not include the 41 fatalities that are 2 or more race/ethnicity.

Figure 6. Percentage of Deaths among Children, Ages 0-17 Years by Race/Ethnicity Group Compared to Population, Arizona, 2017 (n=765) [5]



Preventable Deaths

The main purpose of the CFR program is to identify preventable factors in a child's death. Throughout the report the term "preventable death" is used. Each multi-disciplinary team is made up of professionals who review the circumstances of a child's death using records ranging from autopsies to law enforcement reports. The team then determines if there were any preventable factors present prior to the death. They used one of the following three labels to determine preventability: 1) Yes, probably 2) No, probably not 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 to be preventable if the community (education, legislation, etc.) or an individual could reasonably have done something that would have changed the circumstances that led to the child's death.

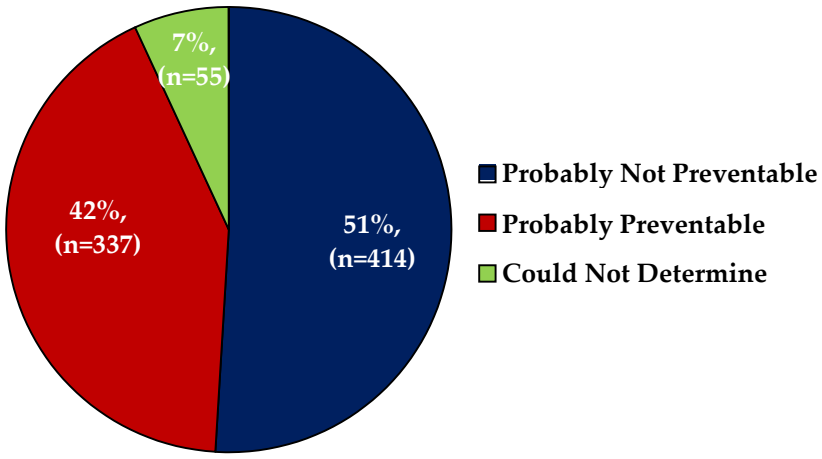
"Yes, probably" means that some circumstance or factor related to the death could probably have been prevented. "No, probably not" indicates that everything reasonable was most likely done to prevent the death, but the child would still have died. A designation of "Team could not determine" means that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

[5] Does not include the 41 fatalities that are 2 or more race/ethnicity.

When discussing all deaths, the report is referring to the total 806 child deaths that took place in 2017. When the text refers to preventable deaths, these are the fatalities that the review teams deemed to be preventable. The majority 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.

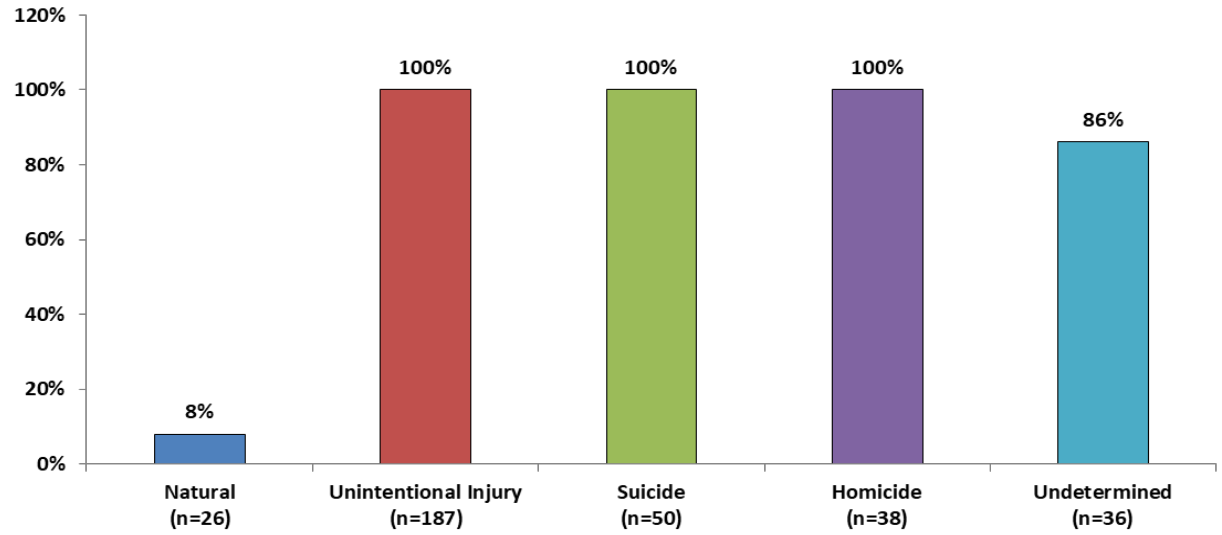
In 2017, CFR teams determined 337 child deaths were probably preventable (42%) and 414 child deaths were probably not preventable (51%). Teams could not determine the preventability in 55 deaths (7%) (Figure 7).

Figure 7. Number and Percentage of Deaths among Children Ages 0-17, by Preventability, Arizona, 2017 (n=806)



CFR teams determined 100% of the unintentional injury deaths were preventable (n=187), 100% of homicides were preventable (n=38), and 100% of suicides were preventable (n=50). Only 8% of natural deaths were determined to have been preventable (n=26) (Figure 8).

Figure 8. Number and Percentage of Preventable Deaths for Children Ages 0-17 Years, by Manner, Arizona, 2017 (n=337)



Preventability varies by age group. Children between the ages of birth through 27 days old had the lowest percentage of preventable deaths (6%, n=23). The highest percentage of preventable deaths was among youth between the ages of 28-365 days years old (29%, n=97), and children 15 through 17 years of age (27%, n=90) (Figure 9).

Figure 9. Percentage of Preventable Deaths for Children Ages 0-17 Years, by Age Group, Arizona, 2017 (n=337)

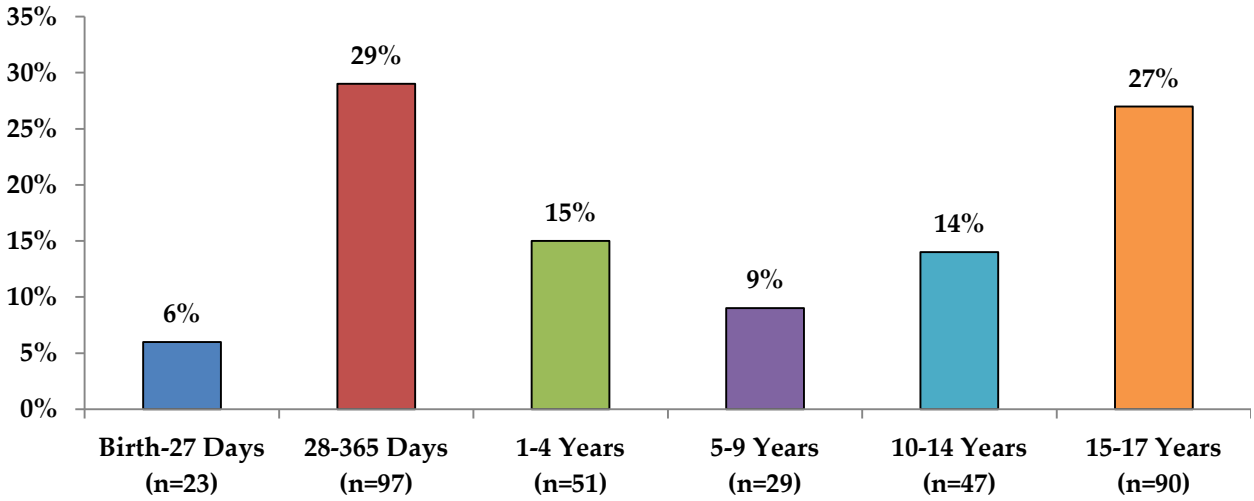


Table 1 shows the leading five causes of death for children by age group in Arizona. These boxes are listed in order of the leading causes of preventable injury deaths. Two of the top causes were suffocation, which was the most common cause of preventable death in infants, and firearm related injury, which was the most common cause of preventable death for teens 15 through 17 years of age. Motor vehicle crashes were the most common cause of preventable death among children 10 through 14 years old, and drownings was the most common cause of preventable death for children 1 through 4 years old.

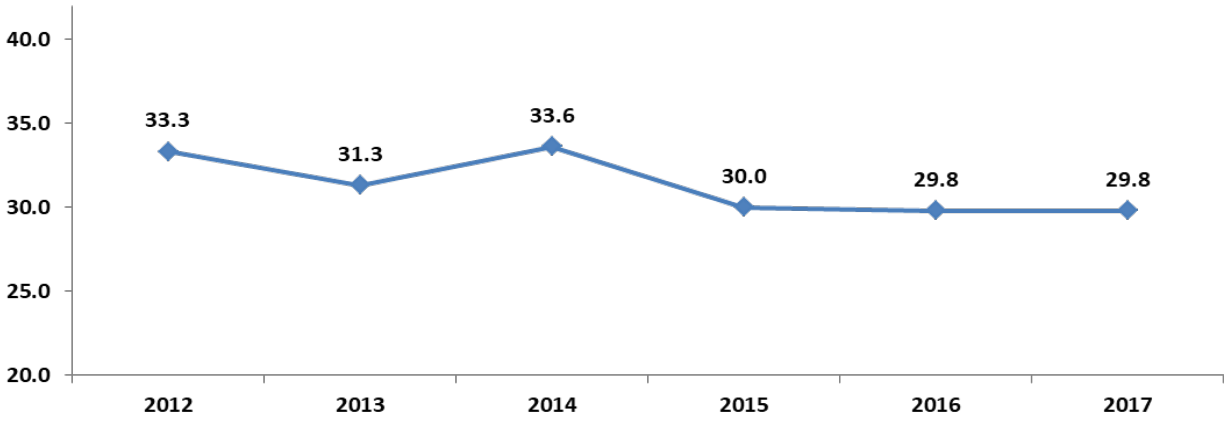
Table 1. Top 5 Leading Causes of Death by Age Group, Arizona, 2017

0-27 Days n=284	28-365 Days n=173	1-4 Years n=99	5-9 Years n=66	10-14 Years n=74	15-17 Years n=110	All Deaths n=806
Prematurity n= 158	Suffocation n= 46	Drowning n= 20	Cancer n= 17	Motor Vehicle Crash & Other Transport n= 15	Firearm Injury n= 27	Prematurity n= 180
Congenital Anomaly n= 44	Undetermined n= 27	Cancer n= 10	Motor Vehicle Crash & Other Transport n= 16	Firearm Injury n= 10	Motor Vehicle Crash & Other Transport n= 25	Congenital Anomaly n= 87
Other Perinatal Condition n= 40	Congenital Anomaly n= 24	Undetermined n= 9	Drowning n= 7	Neurological/ seizure disorder n= 9	Hanging n= 18	Motor Vehicle Crash & Other Transport n= 65
Neurological/ seizure disorder n= 11	Prematurity n= 19	Congenital Anomaly n= 10	Cardiovascular n= 6	Hanging n= 8	Poisoning n= 10	Suffocation n=51
Cardiovascular n= 11	Cardiovascular n= 12	Motor Vehicle Crash & Other Transport n= 6	Infection n= <6	Cancer n= 6	Cancer n= 6	Perinatal Condition n=44

Natural Deaths

In Arizona, as well as nationally, deaths classified as natural deaths due to a medical condition account for the largest percentage of child deaths every year. Natural deaths increased 10% from 2016 (n=484) to 2017 (n=489). Prematurity accounted for 37% (n=180) of natural deaths; congenital anomalies accounted for 18% of natural deaths (n=87). Infants 0 through 27 days old composed 56% of all natural deaths (n=274). White Hispanic children accounted for 42% (n=207) of natural deaths and were overrepresented compared to the 44% of the population they compose. White, non-Hispanic children made up 33% (n=163) of the deaths. Prematurity (n=180), congenital anomalies (n=87), and perinatal conditions (n=44) were the leading causes of natural death.

Figure 10. Mortality Rates Due to Natural Causes per 100,000 Children, Ages 0-17 Years, Arizona, 2012-2017

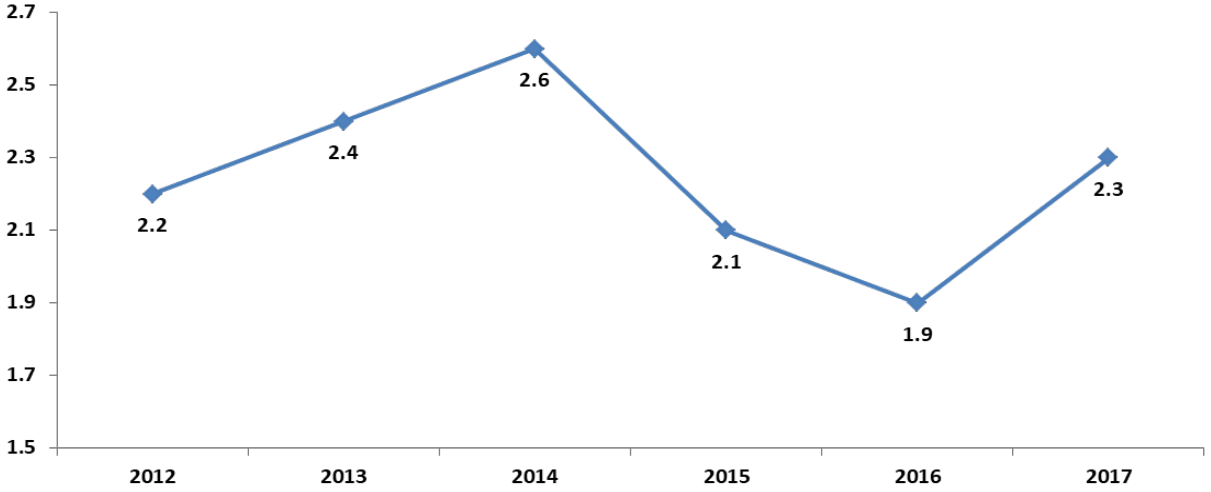


Prematurity

For the purposes of this report, a death due to prematurity is when the infant was born before 37 weeks gestation and the infant did not have a lethal congenital malformation or other perinatal condition that was the primary cause of death. In 2017, twenty-two percent (n=180) of all Arizona child deaths were due to prematurity. When a premature birth is the result of a perinatal condition, the cause of death is classified as a perinatal condition rather than prematurity.

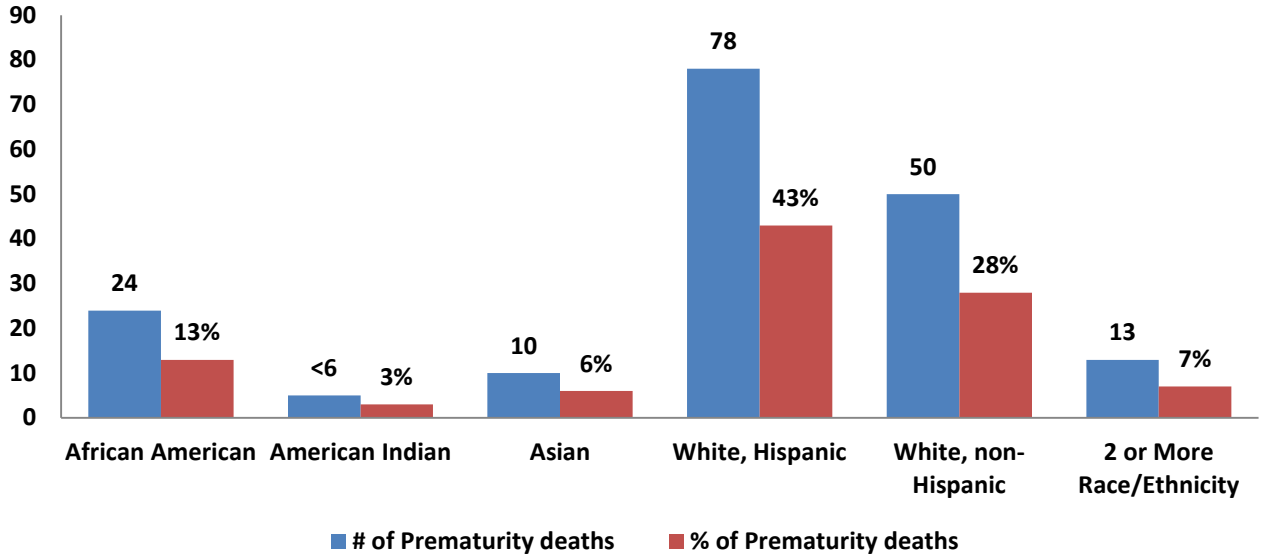
Over the last six years, the prematurity rate has varied between 2.6 to 1.9 deaths per 1,000 live births. The prematurity rate reached its lowest point in 2016.

Figure 11. Prematurity Mortality Rate per 1,000 Live Births, Less than 1 Year Old, Arizona, 2012-2017



In 2017, White Hispanic children remain at the highest risk in Arizona for prematurity related death. Forty-three percent (n=78) of the prematurity related deaths were White Hispanic infants, compared to making up only 40% of the total birth population in 2017. Though the numbers are smaller, the percentage of African American, American Indian and Asian child deaths had an even greater disparity based on the percentage of the population they represent (Figure 12).

Figure 12. Percentage of Child Deaths due to Prematurity by Race/Ethnicity Group, Arizona 2017 (n=180)



Prevention

Determining the exact cause of premature birth can be difficult. This report identifies the preventable risk factors that are known to be associated with premature births for each of the infant cases reviewed. The steady decrease in the prematurity rate supports continued surveillance into the variety of risk and protective factors associated with prematurity. Some of the most common risk factors are medical complications, late prenatal care or the absence of prenatal care, the overall health of the mother, socioeconomic status, gestational age, substance use or abuse by the mother or her partner, mother's age, and domestic violence in the home.

In 2017, the most common risk factors for prematurity deaths included preterm labor (65%, n=120) and no prenatal care (17%, n=24). The viability or survival rate of premature infants also depends on the gestational age at birth. When infants are less than 28 weeks of gestation at birth they are classified as extreme prematurity. Extreme prematurity accounted for 89% of prematurity deaths (n=160) (Table 2).

Lack of prenatal care is a serious risk factor for premature birth. In seventeen percent (n=24) of the prematurity deaths the mother reported that she did not receive any prenatal care. Over the last three years, mothers who did not receive any prenatal care has steadily declined, a decrease of 35% (n=37) in 2016 and 47% (n=47) in 2015. However, access to prenatal care has been progressively increasing since 2015. In 7% of the prematurity deaths, the mother was 16 through 19 years of age at the time of the birth (n=13). Forty-three percent of the mothers were 20 through 29 years of age (n=78); thirty-eight percent were 30 through 39 years of age (n=68), and two percent of mothers were 40 years and older (n=<6). In 4% of the cases, the age of the mother was unknown (n=7).

Ten percent of mothers had less than a high school education (n=18), thirty-six percent attended high school (n=65), thirty-nine percent attended some college (n=70), nine percent were post-graduates (n=16), and for another six percent the mothers educational status was unknown (n=11).

Table 2. Risk Factors for Prematurity Deaths, Arizona, 2017

Factor*	Number	Percent
Extreme Prematurity (born < 28 weeks of pregnancy)	160	89%
Preterm Labor	120	65%
No Prenatal Care	24	17%
Cervical Insufficiency	13	7%
Chorioamnionitis (bacterial infection)	21	11%
*More than one factor may have been identified for each death		

One of the difficulties in adequately managing and preventing a premature birth is that the etiology often is multifactorial, leaving no single intervention strategy as best effective.
However, studies have shown that the post neonatal period mortality rate is high for children in the U.S., and babies born to lower income mothers are at highest risk of death.[6] There are several protective factors that can help including good preconception health, early access to prenatal care, and community awareness about good health practices. Strengthening these can help reduce incidence and target prevention efforts to improve birth outcomes for groups at higher risk.[7] Some common maternal health conditions that may lead to pre-term birth include obesity, high blood pressure, and diabetes.[8]

Prematurity Prevention Recommendations

- To have a healthy baby, take care of your health before and during pregnancy by maintaining a healthy weight, adopting healthy eating habits, and avoiding smoking, alcohol and other drugs.
- 17% of mother's did not seek prenatal care. Seek prenatal care as soon as you become pregnant.
- Ensure that all Arizona women of child bearing age have access to quality and affordable health care.

6 http://economics.mit.edu/files/9922

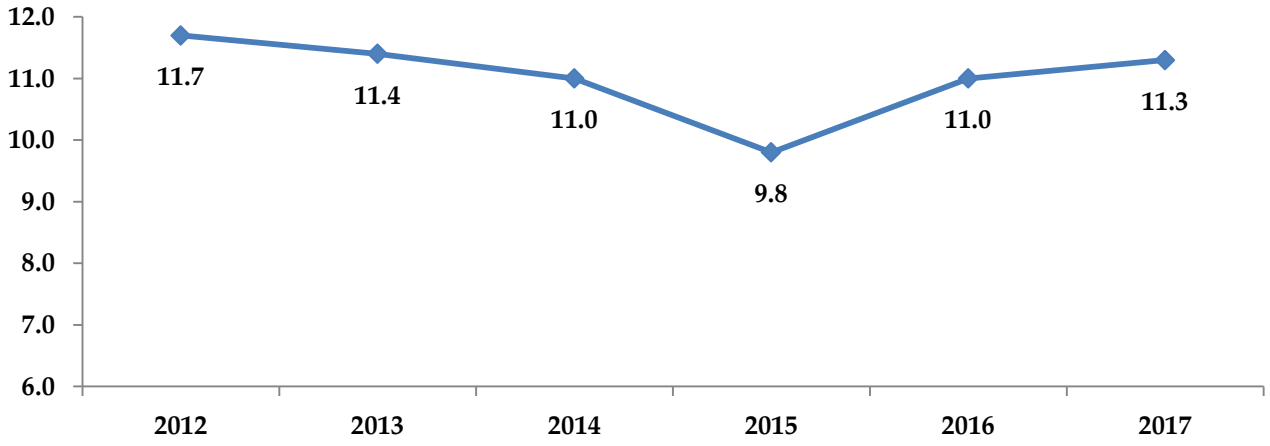
7 http://www.amchp.org/Transformation-Station/Documents/AMCHP%20Preconception%20Issue%20Brief.pdf

8 https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pregcomplications.htm

Unintentional Injury (Deaths Due to Accidents)

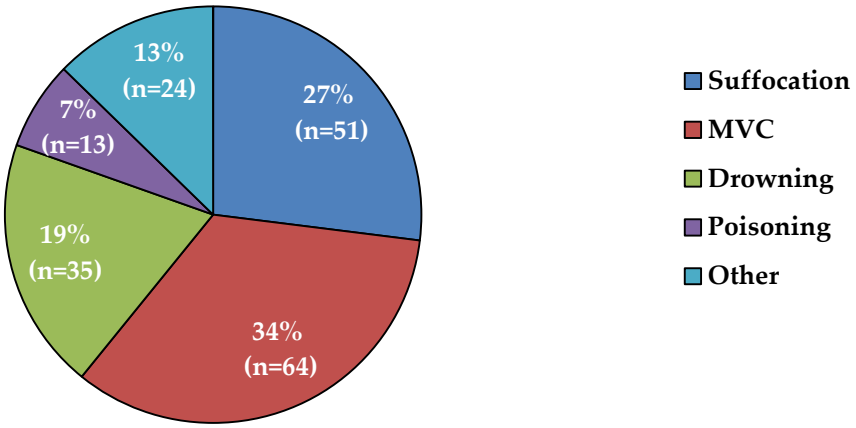
The mortality rate for unintentional injury deaths increased 4% from 2016 (n=179) to 2017 (n=187) (Figure 13). Over the last 6 years, the unintentional mortality rate varied from 9.8 to 11.7 deaths per 100,000 children. Thirty-one percent of unintentional injury deaths occurred in children less than one year of age (n=58).

Figure 13. Unintentional Injury (Accident) Mortality Rates per 100,000 Children, Ages 0-17 Years, Arizona, 2012-2017



In 2017, motor vehicle crashes (MVC) and suffocation were the leading causes of unintentional injury deaths and accounted for 61% of these deaths. Other injuries include drownings, falls, fire/burn, or firearm injuries (Figure 14).

Figure 14. Leading Causes of Unintentional Injury (Accident) Deaths for Children Ages 0-17 Years, Arizona, 2017 (n=187)

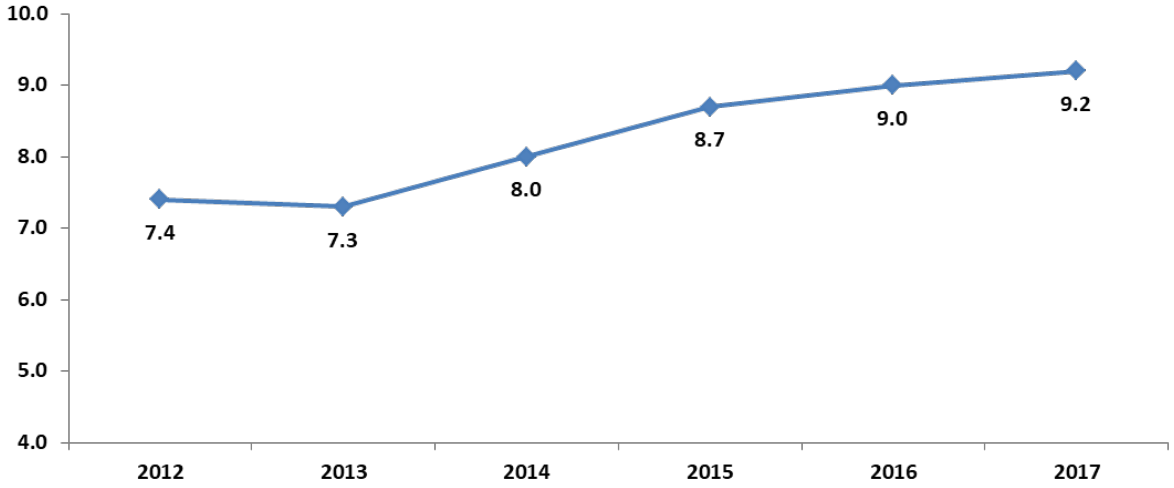


Injury Deaths In-or-Around the Home

Injury deaths in-or-around the home are unintentional or undetermined deaths that occur in-or-around the home environment (e.g. bedroom, driveway, and yard). Although other deaths due to suicide, natural causes, or homicide may also occur in the home environment, these categories are not included in this section. Injury deaths in-or-around the home increased 3% from 2016 (n=146) to 2017 (n=151).

Injuries in-or-around the home accounted for 18% of all Arizona child fatalities. Over the last six years, the injuries in-or-around the home mortality rate has gradually increased and varied between 7.3 and 9.2 deaths per 100,000 children. In 2014, the methodology for determining injury deaths in-or-around the home changed. However, over the last four years, the injury deaths have steadily increased.

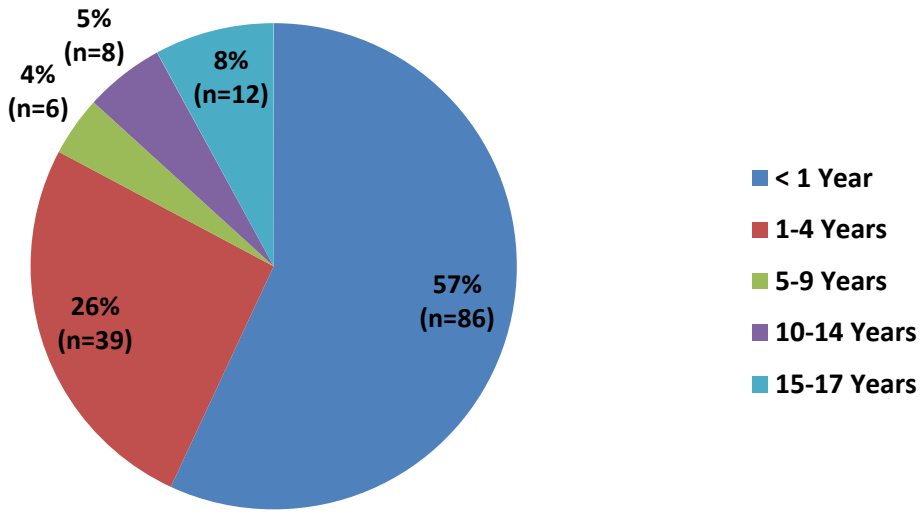
Figure 15. Injury In-or-Around the Home Mortality Rate per 100,000 Children, Ages 0-17 Years, Arizona, 2012-2017



Prevention

In 2017, children less than 10 years of age accounted for 87% of injury deaths in-or-around the home (n=131); and 57% of these deaths were infants less than one year (n=86) (Figure 16). Males (65%, n=93) were 1.7 times more likely to experience an injury death in-or-around the home than females (38%, n=58). A majority of these deaths were among White, non-Hispanic and White Hispanic children. White, non-Hispanic children (n=58) made up 38% of injury deaths in-or-around the home; 34% were White Hispanic children (n=51); 14% were African American children (n=21); and American Indian children (n=10) made up 7%.

Figure 16. Number and Percentage of Injury Deaths In-or-Around the Home for Children Ages 0-17 Years, by Age Group, Arizona, 2017 (n= 151)



The most common cause of death was suffocation (n=50), accounting for 33% of fatalities. Undetermined deaths (n=36) made up 24%, and drowning incidents (n=27) accounted for 18% of injury deaths in-or-around the home (Table 3).

Table 3. Number and Percentage of Injury Deaths In-or-Around the Home, by Cause, Arizona, 2017 (n=151)

Cause	Number	Percent
Suffocation	50	33%
Undetermined	36	24%
Drowning	27	18%
Fire, burn, or electrocution	6	4%
Poisoning	14	9%
Other Injury	18	12%

The most commonly identified preventable factors for injuries in-or-around the home for infants were unsafe sleep environments (54%, n=81), lack of supervision (23%, n=35), and bed-sharing (31%, n=47) (Table 4).

Table 4. Preventable Factors for Injury Deaths In-or-Around the Home, Arizona, 2017

Factor*	Number	Percent
Unsafe sleep environment	81	54%
Lack of supervision	35	23%
Bed-sharing	47	31%
Substance use	48	32%
Access to water	26	17%
*More than one factor may have been identified for each death		

There are a variety of protective factors that can be implemented to reduce these types of deaths. This includes educating families about the dangers of unsafe sleep environments and the importance of placing children on their back to sleep, explaining the risks of bed sharing, having proper pool fencing, and providing adequate supervision to young children.

Injury Prevention Recommendations in the Home Setting

Prevent Infant Sleep Suffocation

- Encourage pregnant women to quit smoking and to provide a smoke-free environment for their babies after birth.

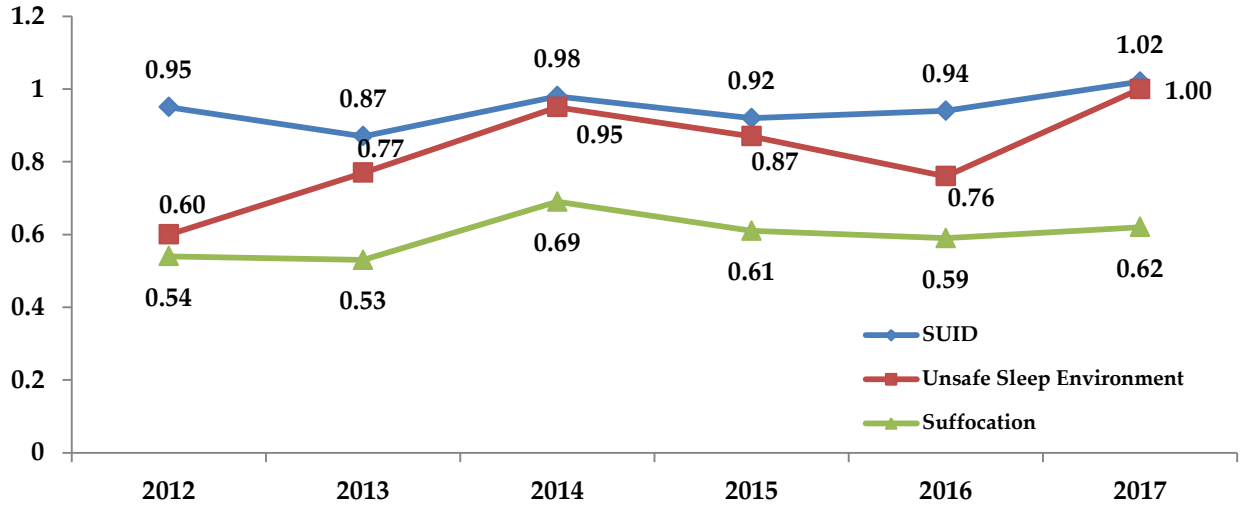
Prevent Injuries In-or-Around the Home

- Check smoke alarm batteries every 6 months to make sure they are working.
- Install safety gates to keep children from falling down staircases and window guards or stops to prevent falls from windows.
- Make sure that all medications, including vitamins and adult medicines, and other poisonous items are stored in a locked cabinet, or out of sight and reach of children.
- Supervise young children in the bathtub or around water with your full and undivided attention.
- Install a four–sided isolation fence, with self–closing and self–latching gates, around backyard swimming pools that completely separates the house and play area from the pool.
- Secure TVs and furniture to the wall using mounts, brackets, braces, anchors or wall straps to prevent tip-overs.
- Avoid heatstroke-related injury and death by never leaving your child alone in a car, not even for a minute. Always lock your doors and trunks – even in your garage, and keep your keys/key fobs out of children's reach.

Sudden Unexpected Infant Death (SUID) and Sleep Related Suffocation Deaths

SUID is defined as the death of a healthy infant who is not initially found to have any underlying medical condition that could have caused their death. It includes deaths that might have previously been categorized as "crib deaths" if the death occurred during sleep. Many SUID cases are due to suffocation and unsafe sleep environments, but not all SUID cases are unsafe sleep related. The number of SUID cases increased 5% from 2016 (n=80) to 2017 (n=84). Over the last 6 years, the SUID mortality rates varied between 0.87 to 1.02 deaths per 1,000 live births. The mortality rates for unsafe sleep environment and suffocation have also both increased and varied 0.60 to 1.0 deaths and 0.53 to 0.69 deaths per 1,000 live births, respectively.

Figure 17. Mortality Rates due to Sudden Unexpected Infant Death (SUID), Unsafe Sleep Environments, and Suffocation per 1,000 Live Births, Less than 1 Year Old Arizona, 2012-2017



In 2017, males accounted for 61% of SUID (n=51). White, non-Hispanic children accounted for 33% of SUID (n=28); White Hispanic children accounted for 32% of SUID (n=27); African American children accounted for 19% of SUID (n=16); two or more race/ethnicity accounted for 8% of SUID (n=7); American Indian children accounted for 6% of SUID and Asian children accounted for <6% of SUID.

Prevention

Local CFR teams determined 83 of the SUID deaths were preventable (99%), and these deaths accounted for 24% of all preventable deaths. The most commonly identified cause of SUID was sleep suffocation (61%, n=51). In 35% (n=29) the cause could not be determined. Although these deaths were most likely suffocation, teams would identify the cause of death as "undetermined" if there was not sufficient information available to conclusively identify the cause of death as suffocation (Table 5). The major risk factors in many SUIDs are situations where an infant is placed to sleep on his/her stomach or side; on an unsafe sleeping surface, such as an adult mattress, couch, or chair; with soft objects, pillows, or loose coverings in a sleep environment; and when bed-sharing with an adult or other child.

Table 5. Number and Percentage of Sudden Unexpected Infant Deaths, by Cause, Arizona, 2017 (n=84)

Cause	Number	Percent
Suffocation	51	61%
Probable Suffocation	33	39%

An unsafe sleep environment, including placement of infant in an unsafe sleep position, was associated with 99% of SUID fatalities (n=83) (Table 6). Bed-sharing with adults (92%, n=46) or other children (30%, n=15) accounted for 60% of SUID fatalities (n=50). Other factors of SUID fatalities include 83% died due to unsafe bedding or toys, 37% died while sleeping on their side or stomach, and 32% of infants died while sleeping where substance use was a contributing factor. The local teams determined 100% of unsafe sleep fatalities (n=83) were preventable.

Table 6. Preventable Factors for Sudden Unexpected Infant Deaths, Arizona, 2017

Factor*	Number	Percent
Unsafe sleep environment	83	99%
Bed-sharing	50	60%
-With adult	46	92%
-With child	15	30%
Sleep Position	31	37%
-On stomach	16	52%
-On side	15	48%
Substance use	27	32%
*More than one factor may have been identified for each death		

These deaths could have potentially been prevented by using safe sleep practices. Safe sleep practices include placing young infants to sleep in a crib, on their back instead of on their side or stomach. Always use a firm sleep surface and keep soft objects as well as loose bedding out of the crib. In 2016, the American Academy of Pediatrics expanded their recommendations for a safe sleep environment. This included a shift from focusing only on SUID to focusing on a safe sleep environment that can reduce the risk of all sleep related infant deaths, including SUID. The recommendations include supine positioning, use of a firm sleep surface, breastfeeding, room-sharing without bed-sharing, routine immunizations, consideration of using a pacifier and avoidance of soft bedding.[9]

Preventing Sleep Related Suffocation Death

- Parents and caregivers should always practice "The ABC's of Safe Sleep" by placing babies to sleep Alone, on their Backs, and in a Crib. Especially after feeding.
- Teach parents and caregivers to keep soft objects, such as crib bumpers, pillows, and loose bedding out of the baby's crib or bassinette.
- Teach parents, caregivers and health care providers to reinforce safe sleep practices.
- Health care providers, staff in newborn nurseries and NICU's should establish policies that endorse and model the ABC's of Safe Sleep recommendations from birth.
- Support public awareness campaigns and distribution of resources regarding the risk factors associated with sudden unexplained and sleep related infant deaths.
- Support the use of the Arizona Unexpected Infant Death Investigation Checklist by law enforcement, first responders, and medical investigators through regular training.

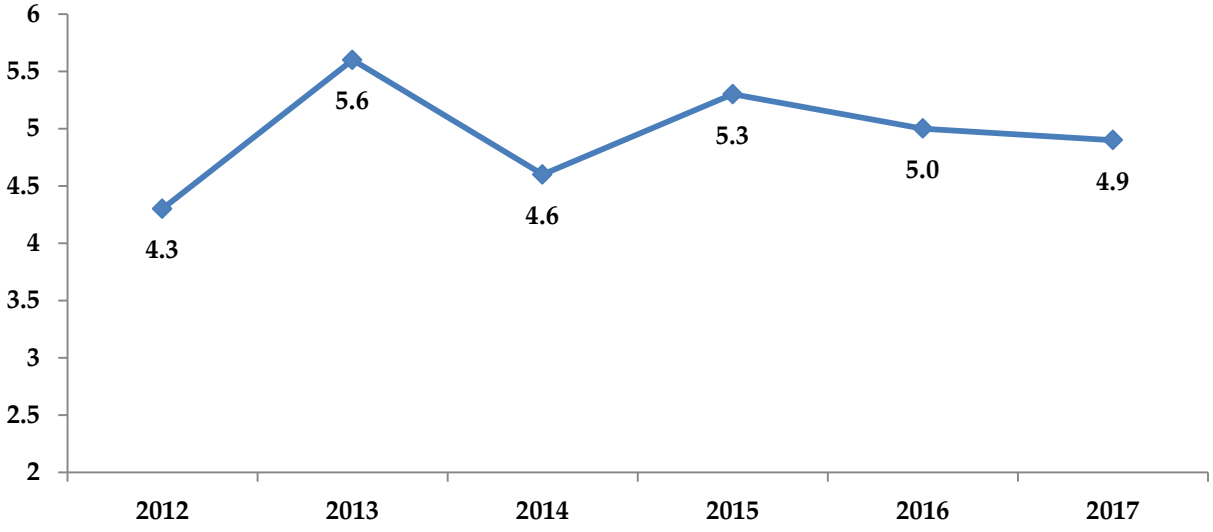
[9] http://pediatrics.aappublications.org/content/early/2016/10/20/peds.2016-2938

Maltreatment Deaths (Deaths due to Child Abuse and Neglect)

Ten percent (n= 79) of Arizona child fatalities in 2017 were due to maltreatment. From 2016 to 2017 the mortality rate due to maltreatment decreased 2% from 5.0 deaths per 100,000 children to 4.9 deaths per 100,000 children (Figure 18). In 2016, 82 children died due to maltreatment compared to 79 in 2017. In 2017, physical abuse such as blunt force trauma, or use of firearm weapon caused or accounted for 34% of maltreatment deaths (n=27) among children. Child neglect caused or accounted for 72% of the maltreatment deaths (n=57). Both physical abuse and neglect may have been present in a child's death. It is important to note that while there have been some fluctuations in the rates between the years, the overall mortality rate due to maltreatment has continued to increase since 2012.[10]

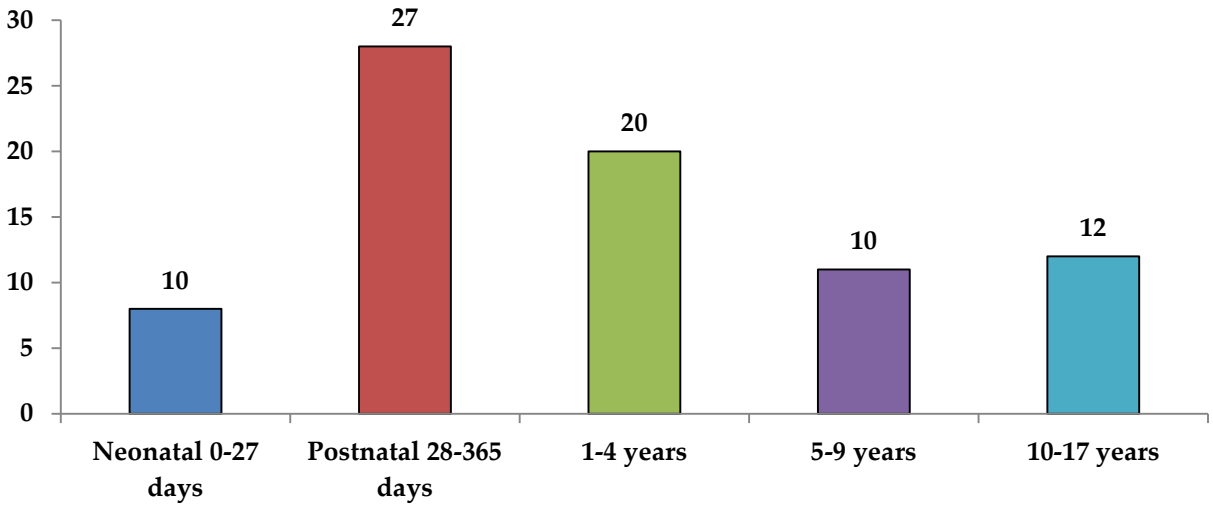
Males represented 51% of the maltreatment deaths. Thirty-four percent (n=27) of children who died due to maltreatment were White Hispanic, 37% (n=29) were White, non-Hispanic, 15% (n=12) were African American, 11% (n=9) were American Indian, and 3% were among children who race/ethnicity group is multiple race or unknown. Seventy-two percent of the children who died from maltreatment were less than five years old (n=57).

Figure 18. Mortality Rates due to Maltreatment per 100,000 Children, Ages 0-17 Years, Arizona, 2012-2017



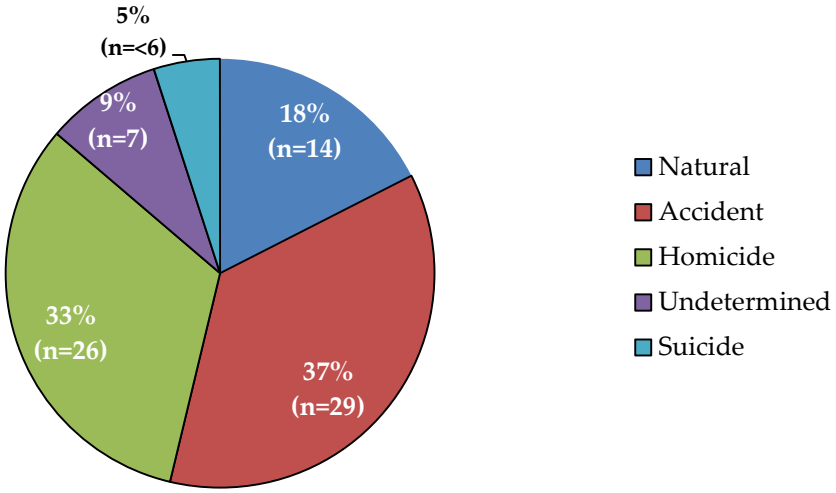
[10] Please see the Technical Appendix for a full explanation and definition on maltreatment.

Figure 19. Percentage of Maltreatment Deaths for Children Ages 0-17 Years, by Age Group, Arizona, 2017 (n=79)



In 2017, the leading manner of death for maltreatment fatalities in Arizona was unintentional injuries. Accidents resulted in 37% (n=29) of unintentional injuries. Homicides comprised 33% (n=26) of the maltreatment deaths. Eighteen percent (n=14) of maltreatment deaths were categorized as a natural manner (Figure 20). Examples of maltreatment deaths due to a natural manner of death include prenatal substance use resulting in premature birth or a caregiver's failure to obtain medical care.

Figure 20. Number and Percentage of Maltreatment Deaths for Children Ages 0-17 Years, by Manner, Arizona, 2017 (n=79)



Blunt/sharp force trauma, drowning, firearm injury, and suffocation were the leading causes of maltreatment related deaths among children in Arizona (Table 7).

Table 7. Maltreatment Deaths Among Children by Top Causes of Death, Arizona, 2017 (n=79)		
Cause	Number	Percent
Blunt/sharp Force Trauma	17	21%
Drowning	10	13%
Firearm Injury	10	13%
Suffocation	6	8%
*Does not include MVC, undetermined, poisoning, or other perinatal conditions		

Of the 79 maltreatment deaths, 77% of deaths (n=61) involved only one perpetrator, and 23% of deaths (n=18) involved two perpetrators. Overall, the child's mother made up 39% (n=37) of perpetrators in maltreatment deaths, and the child's father accounted for 36% of deaths (n=34) (Table 8).

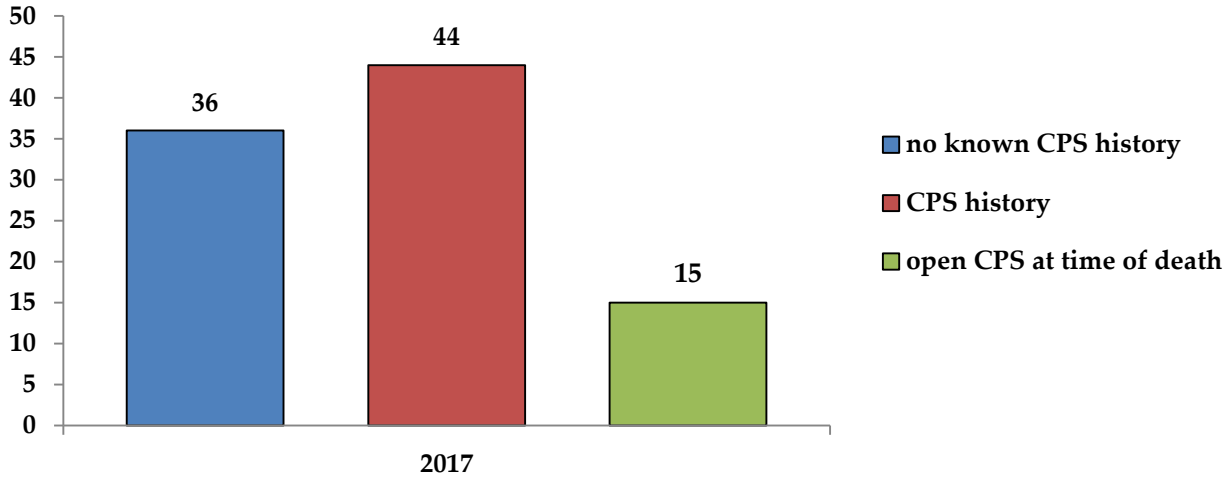
Table 8. Number and Percentage of Perpetrators Involved in Maltreatment Deaths Among Children, by Perpetrator Type, Arizona, 2017 (n=95)		
Perpetrator*	Number	Percent
Mother	37	39%
Father	34	36%
Parent's Partner	13	14%
Relative (Sibling, Grandparent, Cousin, etc.)	8	8%
Other Caregiver (Babysitter, Childcare, etc.)	<6	3%
*There may be more than one perpetrator for each death		

Child Protective Services Involvement with Families of Children Who Died Due to Maltreatment

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

In 2017, 56% (n=44) of the 79 children who died from maltreatment were from families with prior involvement with a CPS agency. Among the families who had prior involvement with CPS, 34% (n=15) of families had an open case at the time of the child's death, and 82% (n=36) of families had no history of CPS involvement (Figure 21). The number of children from families with prior CPS involvement decreased from 51 in 2016 to 44 in 2017. The number of families with an open CPS case at the time of the child's death increased 5% from 2016 (n=11) to 2017 (n=15).

Figure 21. Maltreatment Deaths: involvement with any child protective services agency, Arizona, 2017



The Department of Child Safety should assess the findings and recommendations in this report as it plans for the implementation of the Family First Prevention Services Act (FFA) that passed in February 2018. Among a host of other provisions, the FFA brings more funding opportunities for safe care of children in their own homes, particularly those who are the subject of entering foster care.

Prevention

Child maltreatment is any act or series of acts of commission or omission by a parent or other caregiver (e.g., clergy, coach, and teacher) that results in harm, potential for harm, or threat of harm to a child. There are several modifiable risk factors that exist when a child is at risk for maltreatment. These factors, usually in combination, may involve the parent or caregiver, the family, the child or the environment.[11]

- *Parent or caregiver factors*: personality characteristics and psychological well-being, having a history of maltreatment as a victim and/or perpetrator, history or patterns of substance use/abuse,

[11] https://www.childwelfare.gov/pubpdfs/2011guide.pdf

incorrect attitudes and/or knowledge about caring for a child, i.e., adequate nutrition, safe sleep practices, and age

- *Family factors*: marital discord, domestic violence, single parenthood, unemployment, financial problems, and stress
- *Child factors*: child's age and level of development, disabilities, and problem behavior
- *Environmental factors*: poverty and unemployment, social isolation and lack of social support and community violence

One hundred percent of child maltreatment deaths were determined to have been preventable (n=79). The CFR teams identified preventable factors in each of these deaths. The most common preventable factor was substance use or abuse, which was associated with 65% (n=52) of the deaths. An unsafe sleep environment accounted for 16% (n=13) of maltreatment deaths; lack of supervision accounted for 13% (n=10) (Table 9). More than one factor may have been identified for each death.

Table 9. Preventable Factors for Maltreatment Deaths Among Children, Arizona, 2017

Factor*	Number	Percent
Substance Use	52	65%
Lack of Supervision	10	13%
Unsafe Sleep Environment	13	16%
Access to Water	10	13%
Access to Firearms	10	13%
*More than one factor may have been identified for each death		

When a child is at risk for maltreatment, there are a number of protective factors that can be strengthened to reduce the risk. These include mentally healthy caregivers, a healthy relationship with a parent or caregiver, parental resilience and strong social connections.

Child Abuse and Neglect (Maltreatment) Prevention Recommendations

- Support sufficient funding for quality, timely behavioral health treatment and substance abuse services for parents and their children.
- Support the Child Care Development Block Grant and immediately access all available federal funds for child care to enhance accessibility and quality for low income parents.
- Ensure there is sufficient funding for the Arizona Department of Child Safety, Juvenile Court System, Attorney General's Office and community-based services to effectively prevent and respond to child abuse and neglect.

- To reduce child deaths, Arizona should participate in the newly enacted Family First's Prevention-Services Program and utilize this funding to support programs that can help children at risk of entering foster care stay safely with their family with appropriate services, interventions, and oversight.
- Encourage the Arizona Congressional Delegation to support the development of a national child abuse registry that can provide critical information on past episodes of abuse and neglect that occurred in tribal entities and outside of Arizona.
- All health care providers should implement the American Academy of Pediatrics recommendations to integrate postpartum depression screening.

Motor Vehicle Crash and Other Transport Deaths

Since 2012, motor vehicle crash (MVC) and other transport deaths among children were gradually declining. Subsequently, motor vehicle crash and other transport deaths decreased 8% from 2016 (n=71) to 2017 (n=65) and accounted for 8% of all child deaths in Arizona. From 2012-2017, the motor vehicle crash and other transport mortality rate varied from 3.1 to 5.4 deaths per 100,000 children (Figure 22). Motor vehicle crashes alone accounted for 97% of transportation related deaths among children, a 3% increase from 2016 (n=61) to 2017 (n=63) (Figure 23).

There are several risk factors that are associated with these deaths.

- Improperly or unrestrained children, are at increased risk of severe injury or death in the event of a motor vehicle crash
- Cyclists, motorcyclists or motorcycle passengers not wearing helmets are at greater risk of severe head injury or death
- Substance use/abuse by both children and adults
- Poor supervision
- Driver inexperience
- Excessive speed, red-light running, distracted driving, and reckless driving

Figure 22. Mortality Rate Due to Motor Vehicle Crashes (MVC) and Other Transport per 100,000 Children, Ages 0-17 Years, Arizona, 2012-2017

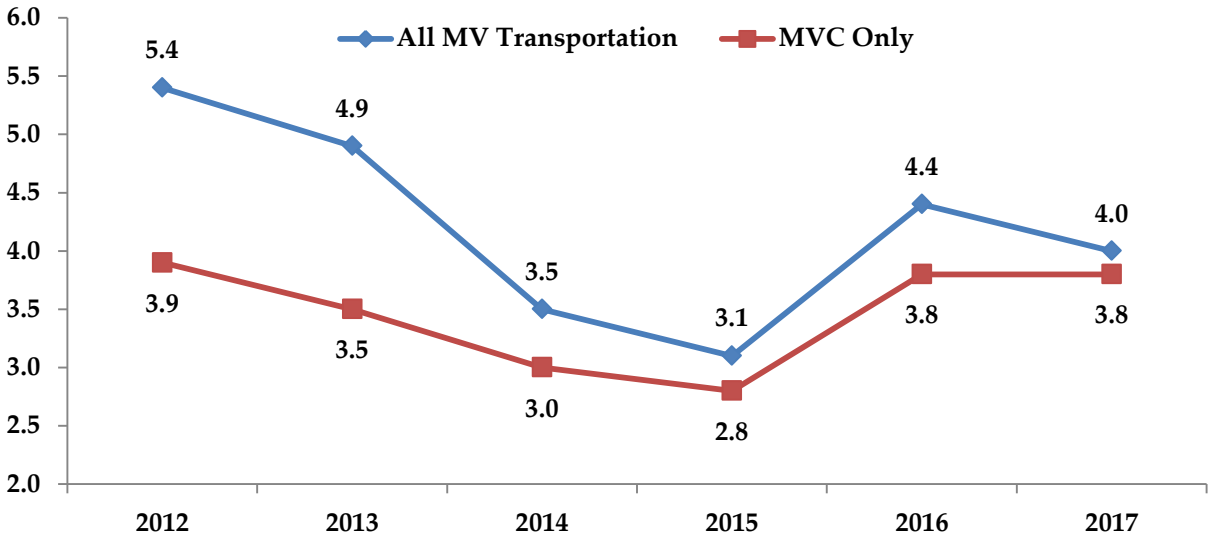
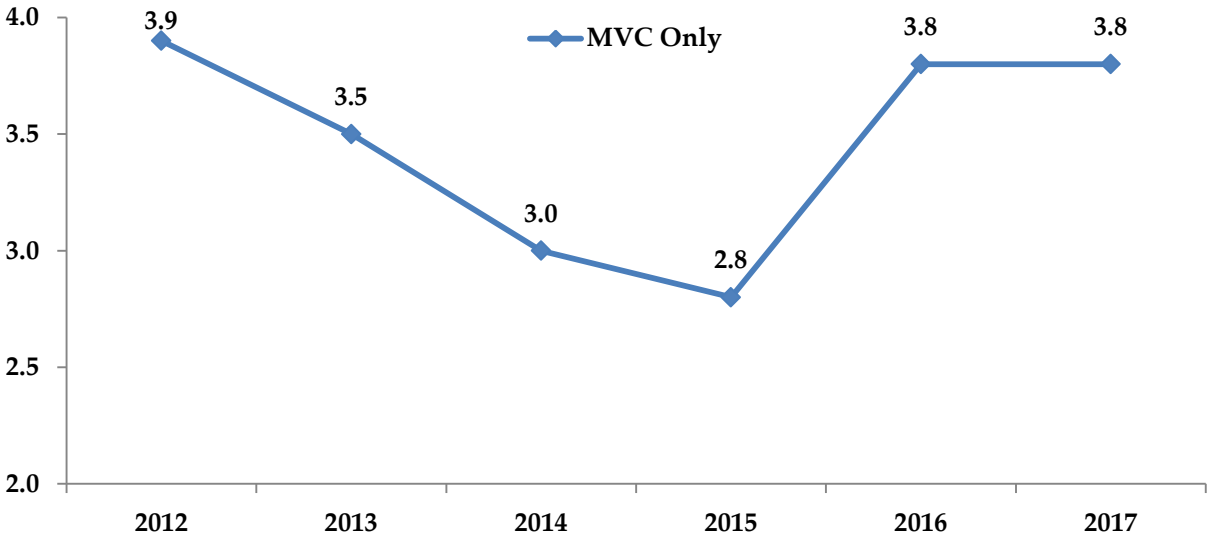


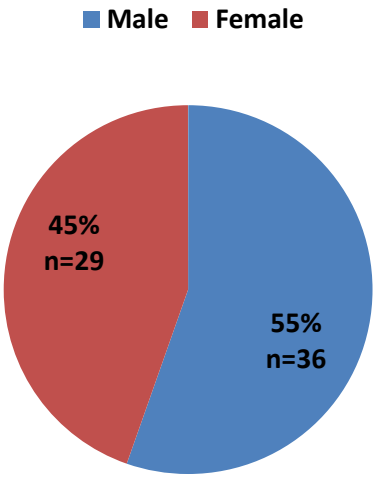
Figure 23. Mortality Rate Due to Motor Vehicle Crashes (MVC) per 100,000 Children, Ages 0-17 Years, Arizona, 2012-2017



Prevention

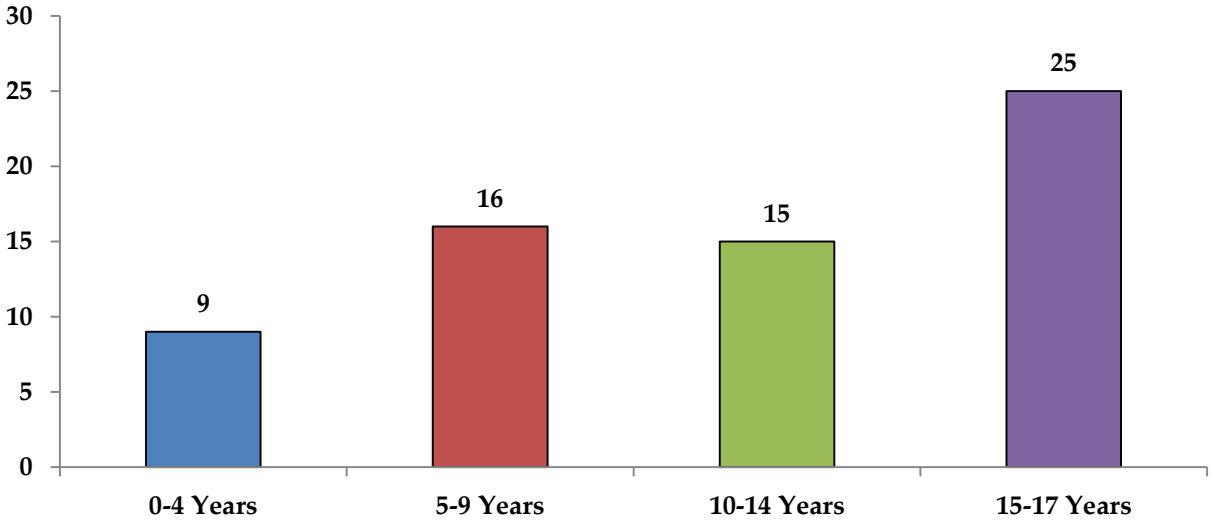
In 2017, local CFR teams determined that all of the motor vehicle crash and other transport fatalities were preventable (n=65) and accounted for 19% of all preventable deaths. Among these fatalities, certain groups still carry a larger part of the mortality burden and may benefit from targeted prevention initiatives. American Indian (17%, n=11) children represented a higher percentage of motor vehicle crash and other transport deaths when compared to their percentage of population in Arizona. Males (55%, n=36) contributed to the majority of motor vehicle crash and other transport fatalities (Figure 24).

Figure 24. Percentage of Motor Vehicle and Other Transport Deaths by Gender, Arizona, 2017 (n=65)



Teenagers 15 through 17 years of age constituted 38% (n=25) of all motor vehicle crash and other transport fatalities (Figure 25). The second highest age group was those 5 through 9 years of age, which accounted for 25% (n=16) of all transport fatalities followed by children 10 through 14 years of age accounting for 23% (n=15) of transports deaths.

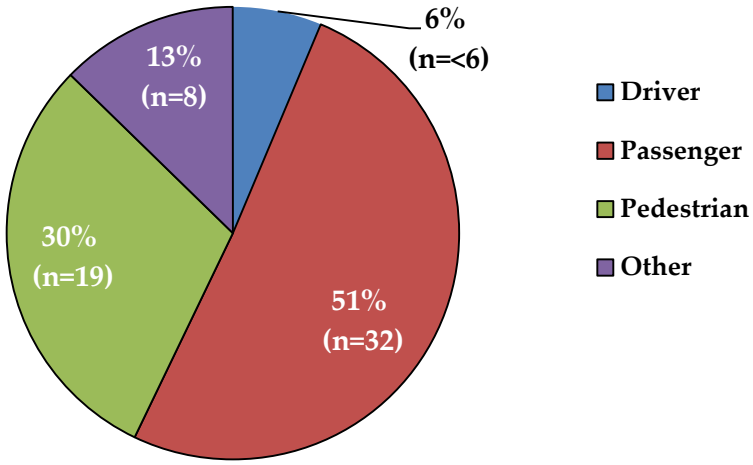
Figure 25. Number of Motor Vehicle and Other Transport Deaths, Ages 0-17 Years, by Age Group, Arizona, 2017 (n=65)



White Hispanic children (n=25) accounted for 38% of all motor vehicle and other transport deaths, 35% were White, non-Hispanic children (n=23), 17% were American Indian children (n=11), and African American children (n=<6) accounted for 8% of all transport fatalities. Of the children who died from motor

vehicle crash and other transport deaths, 52% were vehicle passengers, 25% were pedestrians and 6% were drivers. Passenger fatalities were more likely to occur among children 10 through 14 years of age (n=11), 5 through 9 years of age (n=10), and 15 through 17 years of age (n=8). Pedestrian fatalities were more likely to occur among children 15 through 17 years of age (n=7). Driving fatalities were also more likely to occur among children 15 through 17 years of age (n=<6). The majority of all motor vehicle and other transport deaths occurred in urban/suburban areas (55%, n=36) closely followed by rural/frontier areas (40%, n=26).

Figure 26. Number and Percentage of Motor Vehicle Crash Deaths, Ages 0-17 Years, by Occupant, Arizona, 2017 (n=63)



All-terrain vehicles (ATV) accounted for 8% of all transport deaths. The operator or driver of the motorized vehicle accounted for 20% of ATV fatalities, while passengers accounted for 60% of ATV deaths. The majority of ATV deaths were among White Hispanic children.

The highest number of transport related deaths was due to lack of vehicle restraint. Additional preventable risk factors associated with transport related deaths in Arizona include speeding, reckless driving, driver inexperience, driver distraction, and substance use (impairment) (Table 10).

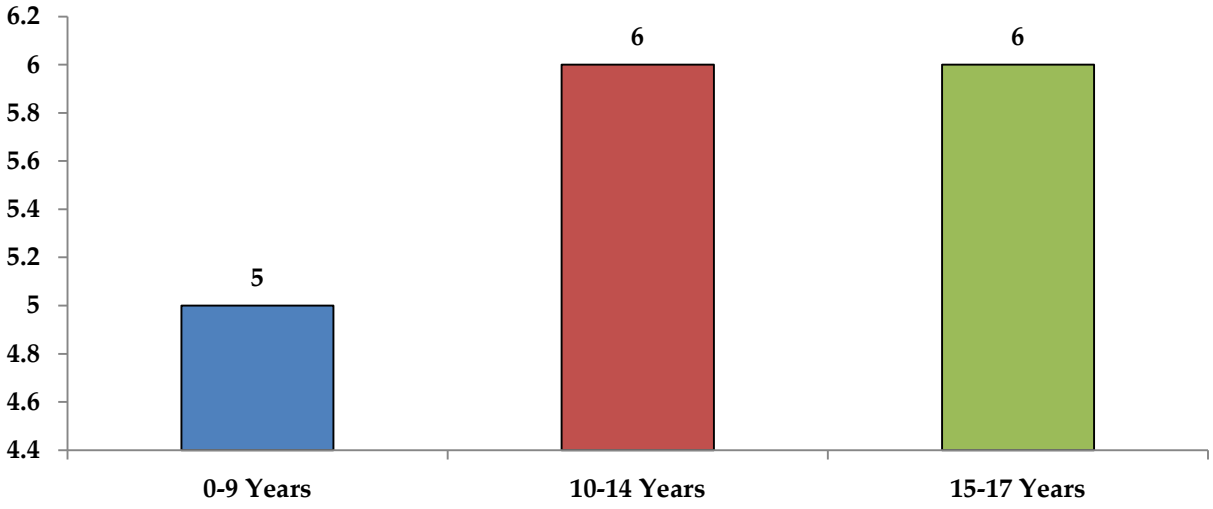
Table 10. Preventable Factors for Transportation Related Deaths Among Children, Arizona, 2017

Factor*	Number	Percent
Excessive driving speed	20	31%
Lack of vehicle restraint	17	26%
Driver inexperience	12	18%
Reckless driving	18	28%
Substance use (Impairment)	8	12%
Driver distraction/ Driver fatigue	7	11%
*More than one factor may have been identified for each death		

Local CFR teams determined all of the motor vehicle crash and other transportation deaths were preventable, and they accounted for 22% of all preventable deaths. Preventable factors include strengthening protective factors such as using proper child restraints every time a vehicle is in operation, not driving while impaired, and following passenger safety guidelines as well as established motor vehicle laws. The continuation of targeted education and awareness efforts to the most at risk populations is essential.

Seventeen children were known to have been improperly restrained or unrestrained in vehicles (26%) (Figure 27). This indicates that while child safety restraint laws have reduced the number of motor vehicle crash fatalities, further prevention efforts are still needed to require older children to buckle up.

Figure 27. Number of MVC and Other Transport Deaths with Improper or Unknown Restraint Use, Ages 0-17 Years, by Age Group, Arizona, 2017 (n=17)



Motor Vehicle and Other Transportation Prevention Recommendations

- Properly secure children in the appropriate child safety restraints per height and weight when operating a motor vehicle. The American Academy of Pediatrics recommends children remain in a rear-facing car seat as long as possible, until they reach the highest weight or height allowed by their seat.
- Model good behavior by always wearing a seatbelt and never operate a vehicle while distracted or under the influence of alcohol or other drugs that impair driving.
- Parents should establish written teenager-parent contracts that place restrictions on the teen driver.
- Expand distracted driving laws to include the prohibition of texting while driving for all drivers.

- Enact a primary seat belt law to allow law enforcement officers to cite a driver and occupants for not wearing a seat belt in the absence of other traffic violations.
- Strengthen the graduated driver licensing system to build driving skills and experience among new drivers.
- Law enforcement officers should educate the community regarding the consequences of driving under the influence while continuing rigorous DUI enforcement.
- Promote awareness about child passenger and motorized vehicle safety and encourage participation in events such as car-seat checkups, safety workshops, and sports clinics.

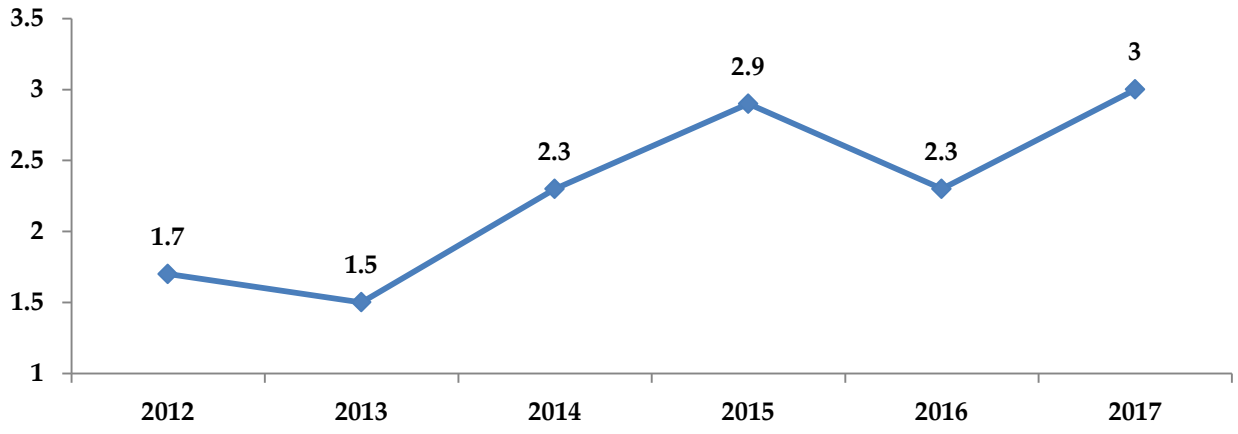
Suicides

Suicides increased 32% from 2016 (n=38) to 2017 (n=50) and accounted for 6% of all child deaths. Over the last six years, the mortality rate varied from 1.5 to 3 deaths per 100,000 children.

There are number of identifiable risk factors associated with suicide deaths.

- Behavioral health issues and disorders, particularly mood disorders, depressant and anxiety disorders
- Substance use and abuse
- Impulsive and/or aggressive tendencies
- History of trauma or abuse
- Major physical illnesses
- Family history of suicide and previous suicide attempts
- Easy access to lethal means
- Lack of social support and a sense of isolation
- Stigma associated with asking for help
- Lack of health care, especially mental health and substance abuse treatment

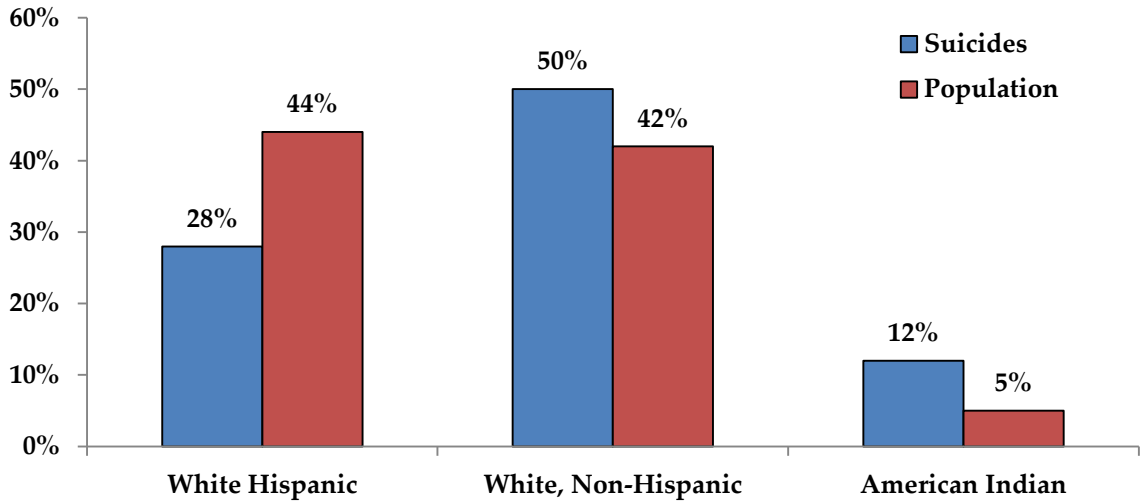
Figure 28. Mortality Rates due to Suicide per 100,000 Children, Ages 0-17 Years, Arizona, 2012-2017



A majority of suicide deaths occurred in males and the trend continued in 2017. Males comprised 76% of the suicide deaths (n=38) compared to 24% of suicide deaths (n=12) among females. The distribution of suicide by race/ethnicity varies year by year. White, non-Hispanic children made up 50% of the suicide deaths (n=25) and White Hispanic children accounted for an additional 28% of suicide deaths (n=14) (Figure 29).

America Indian children were overrepresented compared to their population and accounted for approximately 12% of the suicide deaths (n=6).

Figure29. Percentage of Suicide Deaths by Race/Ethnicity Group, Compared to Populations, Arizona, 2017 (n=50)



Youth ages 15 through 17 years remained at highest risk for suicide death accounting for 68% of suicides deaths (n=34), while children 10 through 14 years of age made up 32% of suicide deaths (n=16).

Fifty percent of suicide deaths were carried out by strangulation (n=25) and firearm injuries made up another 44% of deaths (n=22). Other injuries such as poisoning, cut/pierce, and fall also contribute to suicide deaths.

Prevention

As with other categories of death, understanding the circumstances, risk factors, and events leading up to suicide aids in developing appropriate interventions for future prevention efforts. Several risk factors were identified by local CFR teams that may have contributed to the child's despondency prior to the suicide. The most common factors noted were that children had a history of family discord (20%), were known to have a history of substance use (14%) and had an argument with parent (16%) (Table 11).

Table 11. Factors That May Have Contributed to the Child's Despondency Prior to Suicide, Arizona, 2017	
Factor*	Percent
History of family discord	20%
History of substance use	14%
Argument with parent	16%
History/recent break-up	18%
History of parent divorce	4%
Failure in school	2%
History of problems with the law	2%
Argument with boyfriend or girlfriend	6%
Victim of bullying	10%
*More than one factor may have been identified for each death	

For many of the child suicides, important information regarding risk factors was unknown or unavailable to review teams, even after law enforcement records were available.

Local review teams determined all suicides were preventable. Of the top preventable risk factors for child suicides, signs of suicide (26%, n=13) and substance use (14%, n=7) were the most commonly identified (Table 12).

Table 12. Preventable Factors for Child Suicides, Arizona, 2017		
Factor*	Number	Percent
Signs of Suicide	13	26%
Substance Use	7	14%
*More than one factor may have been identified for each death.		

There are ways to help children, youth, and their families strengthen protective factors and prevent suicide. Some of these factors include seeking early treatment of effective clinical care for mental, physical and substance abuse issues; restricting access to lethal means of suicide; building strong family and support connections; gaining and retaining skills in problem solving, conflict resolution and stress management; having family, friends, and acquaintances taking any discussion of suicide seriously and seeking help.

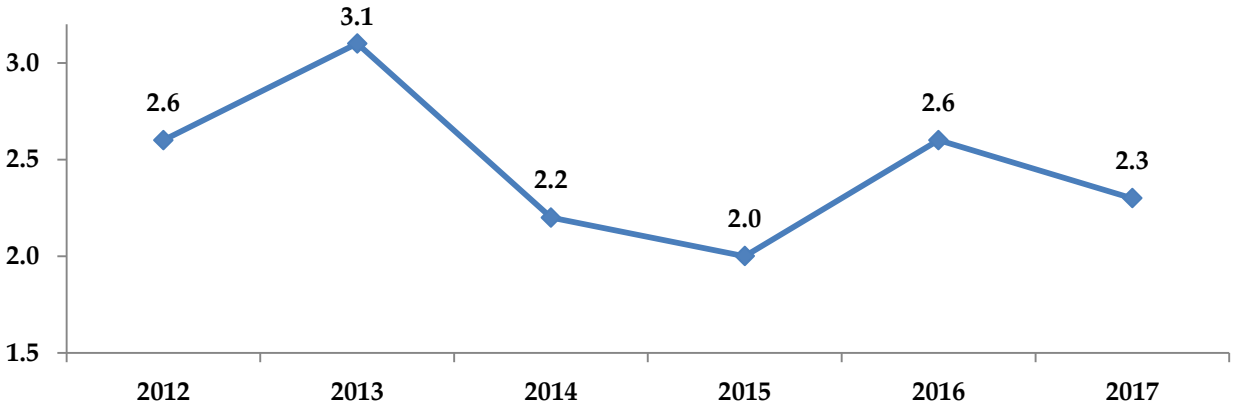
Suicide Prevention Recommendations

- Support funding and training to schools, communities, clinical and behavioral health services providers on the prevention of suicide, bullying, and related behaviors.
- Monitor children with known behavioral problems (substance abuse and delinquency) or possible mental disorders (depression or impulse control problems) for signs and symptoms of suicide and immediately seek treatment and care.
- Enact a state model policy to create anti-bulling policies for every school district.
- Educate families about the consequences of family discord.
- Completely remove firearms from homes where individuals are showing signs of mental health issues, depression, substance abuse, or suicide.
- Monitor your child's social media for any talk about suicide and take immediate action. Encourage social media organizations to develop opportunities to flag information that might indicate suicidal thinking and respond with crisis information resources.
- Support funding for quality behavioral health and substance use assessment and treatment services for youth and their families**.**
- Support training for all health care providers on the recognition, assessment, and management of risk factors, warning signs, and the delivery of effective clinical care for people with suicide risk.

Homicides

In 2017, 38 children were victims of homicide in Arizona, accounting for 5% of all child deaths. The mortality rate for homicide decreased from 2.6 to 2.3 from 2016 to 2017 (Figure 30). Over the last 6 years, the homicide mortality rate has remained relatively static.

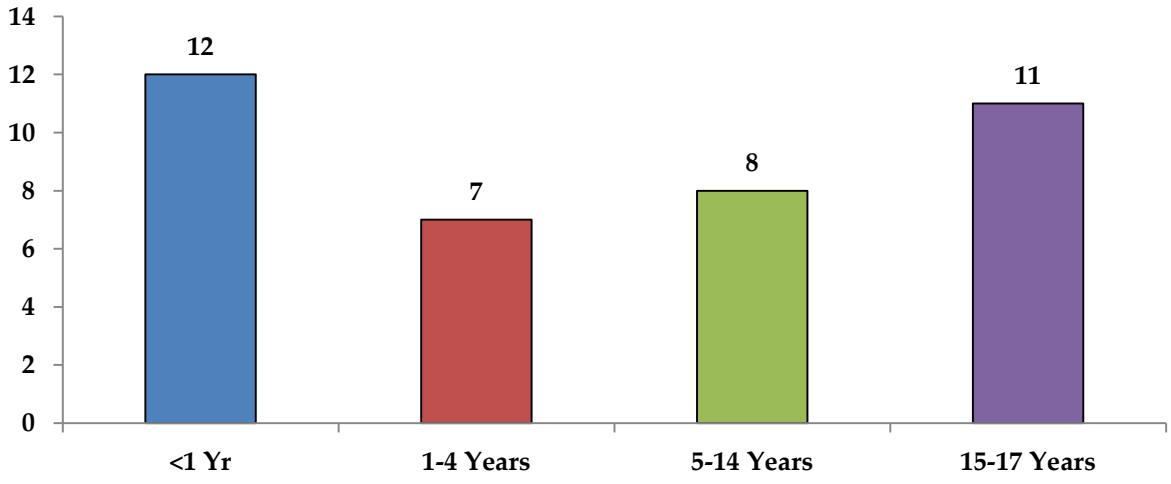
Figure 30. Mortality Rate due to Homicides per 100,000 Children, Ages 0-17 Years, Arizona, 2012-2017



In 2017, males (55%, n=21) were more likely to be victims of homicide than females (45%, n=17). White Hispanic and White, non-Hispanic children experienced the highest number of child homicides accounting for 79% (n=30) of deaths.

Children 15 through 17 years of age had the highest number of homicide deaths (n=11) along with children aged 28-365 days (n=12) (Figure 31).

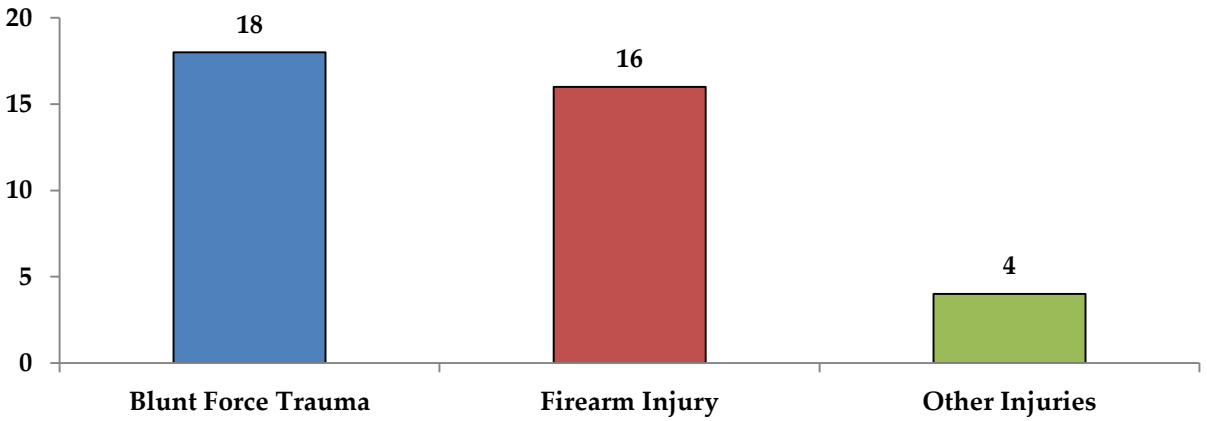
Figure 31. Number of Homicides for Children Ages 0-17 Years, by Age Group, Arizona, 2017 (n=38)



Prevention

Local teams review the unique circumstances surrounding each child homicide to determine any patterns in the causes of death and identity of the perpetrator. Since each homicide is a tragic event, these reviews provide the ability to learn from past experiences by attempting to understand how to prevent future occurrences. In 2017, blunt force trauma was used to commit 47% (n=18) of homicide deaths in children. Firearms was used to commit another 42% (n=16) of homicide deaths in children (Figure 32).

Figure 32. Number of Homicides for Children Ages 0-17 Years, by Cause of Death, Arizona, 2017 (n=38)



Of the 38 homicide deaths, 92% were committed by a known aggressor. Forty-seven percent of perpetrators were identified as the child's parents (n=18). There were several cases where more than one perpetrator was involved in the homicide death of the child. Also, there were several cases where the perpetrator killed more than one child (Table 13).

Table 13. Homicides Among Children by Perpetrator, Arizona, 2017 (n=38)

Perpetrator*	Number	Percent
Father	13	34%
Mother	<6	13%
Parent's Partner	7	18%
Friend/Acquaintance	7	18%
Relative (Sibling, Grandparent, Cousin, etc.)	<6	8%
*There may be more than one perpetrator for each death		

All homicide deaths were determined by the team to be preventable and these deaths made up 11% of all preventable deaths among children. Identifying high-risk factors in homicide provides prevention points such as gender, the role of substance use, access to firearms, domestic violence and mental health. The most common preventable factor was drug involvement, followed by alcohol use and access to firearms (Table 14).

Table 14. Preventable Factors for Child Homicides, Arizona, 2017		
Factors*	Number	Percent
Substance Abuse	20	53%
Access to Firearms	16	42%
Lack of Supervision	<6	11%
*More than one factor may have been identified for each death		

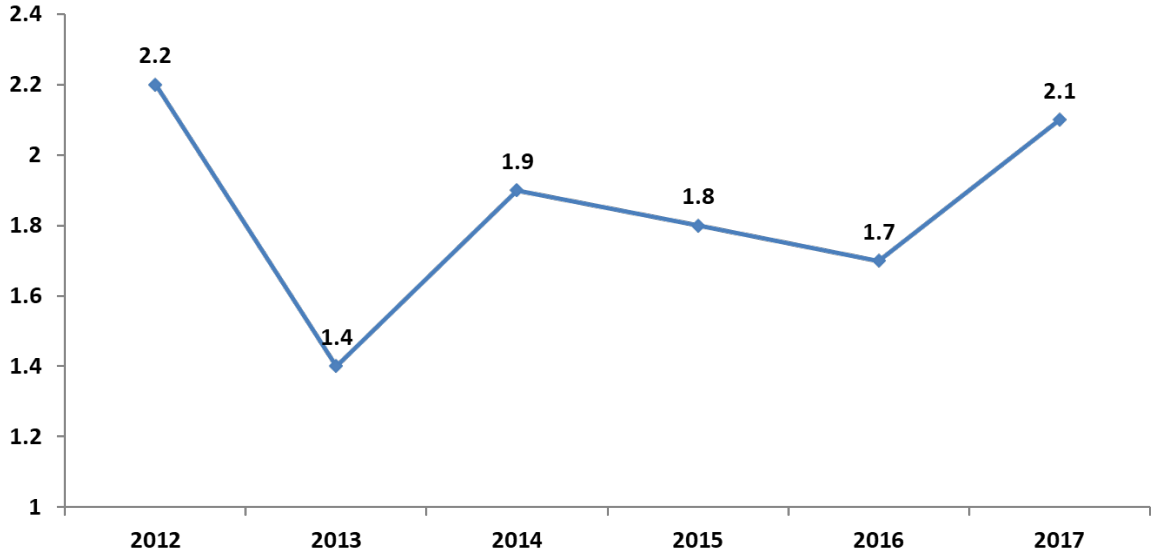
Homicide Prevention Recommendations

- Support sufficient funding for behavioral health and substance abuse assessment and treatment services for children, youth and their families.
- Completely remove firearms from homes where household members are showing signs of mental health issues, hostility, depression or substance abuse.

Drowning Deaths

Drowning accounted for 35 child deaths and 4% of all child deaths in Arizona in 2017. This was a 30% increase from the 27 child deaths in 2016. Over the last 6 years, the drowning rate was at its highest in 2012 and at its lowest in 2013. From 2014 to 2016, drowning mortality rate steadily decreased. However in 2017, the drowning mortality rate increased significantly (Figure 33).

Figure 33. Mortality Rate due to Drowning per 100,000 Children, Ages 0-17 Years, Arizona, 2012-2017



Prevention

Drowning is a highly preventable cause of death with identifiable risk factors that can be recognized and addressed.

- *Sex*: males are twice as likely to drown as girls
- *Age*: children under the age of five are at highest risk for drowning
- Substance use or abuse: either by the caregiver or child
- Access to water: residential pools not adequately fenced

In 2017, review teams determined all of the drowning deaths (n=35) were preventable and these deaths made up 4% of all preventable deaths. There are three main preventable factors associated with child drowning in Arizona (Table 15). Access to water was the most commonly identified factor in 80% of the drowning fatalities (n=28), followed by lack of supervision which accounted for 69% of drowning fatalities (n=24).

Table 15. Preventable Factors for Child Drowning, Arizona, 2017		
Factor*	Number	Percent
Lack of supervision	24	69%
Access to water	28	80%
Drugs and/or alcohol	<6	14%
*More than one factor may have been identified for each death		

The group at highest risk of drowning are children aged 1 through 4 years old, accounting for 57% of the drowning deaths in 2017 (n=20). Males composed 57% of drowning deaths. White, non-Hispanic children made up 34% of drowning deaths (n=12), followed by White Hispanic children who composed an additional 49% of the drowning deaths (n=17).

Sixty-three percent (n=22) of children drowned in a pool, hot tub or spa. The second most prevalent place for drowning deaths was in open bodies of water (Table 16).

Table 16. Location of Child Drowning Fatalities, Arizona, 2017 (n=35)		
Location	Number	Percent
Pool/hot tub/spa	22	63%
Open Water	7	20%
Other (Bathtub, etc.)	6	17%

Vigilance in promoting protective factors must continue as drowning fatalities in Arizona begin to climb. Prevention strategies include removing the hazard by draining unnecessary accumulations of water i.e. pools and bathtubs; creating barriers by building and maintaining fencing around pools and other bodies of water when possible; and protecting children at risk. Promoting learning to swim, training lifeguards and practicing proper supervision protect children near water.

Lack of supervision and access to water are the leading risk factors in drowning deaths, so prevention efforts need to continue to promote proper supervision of young children around water and “touch supervision” of young non-swimmers. Touch supervision is defined as the adult who is responsible for supervising the non-swimmer remain within an arm’s length of the child being supervised.

Drowning Prevention Recommendations

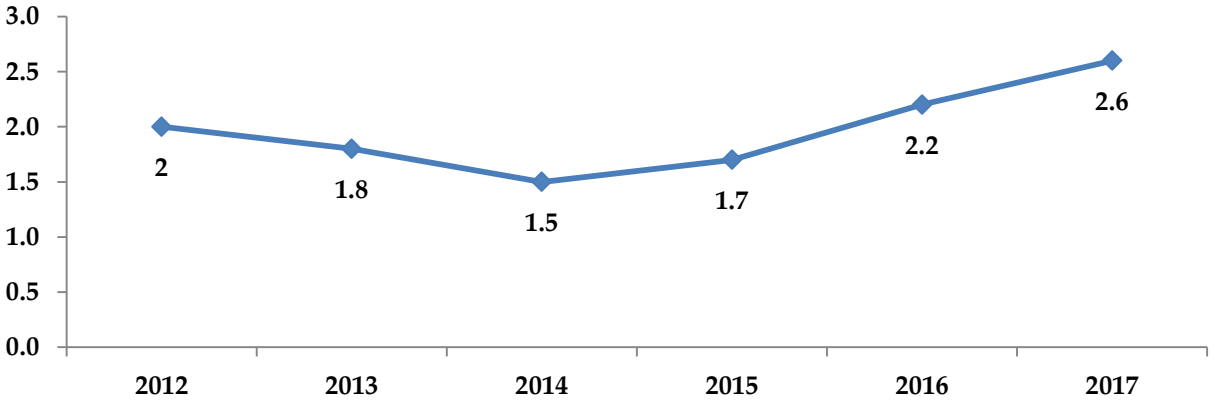
- Encourage high quality swim lessons at an early age, as early as 3 months old if it is in a parent-child class, with qualified infant instructors.
- Never leave a young child alone and without "touch" supervision around all bodies of water including the bathtub.
- Designate at least one responsible adult to monitor the pool area when children are present.
- Support public drowning prevention education including public service announcements.
- Learn child and infant CPR. Promote CPR education for parents and all caregivers, especially baby sitters and siblings.
- In teaching CPR for drowning, emphasize the traditional "**ABC**" approach: open the **Airway**, promptly give mouth-to-mouth rescue **Breaths**, then proceed with chest **Compressions.**
- Install four-sided isolation fence with self-closing and self-latching gates around public and private swimming pools. Pool fences should completely separate the pool from the house and the child's backyard play area.
- Rely on multiple layers of protection to keep young children from accessing pools but realize all barriers can be defeated or fail.
- Have children wear life jackets in and around natural bodies of water, such as rivers and lakes, even if they know how to swim. Life jackets, not floaties, can be used in and around pools for young swimmers too.
- Strengthen legislation and ordinances regarding proper pool fencing and barriers.

Firearm Related Deaths

Firearm related fatalities increased by 19% from 2016 (n=36) to 2017 (n=43). In 2017, firearm related deaths accounted for 5% of all deaths. Over the last six years, the firearm mortality rate has steadily increased (Figure 34).

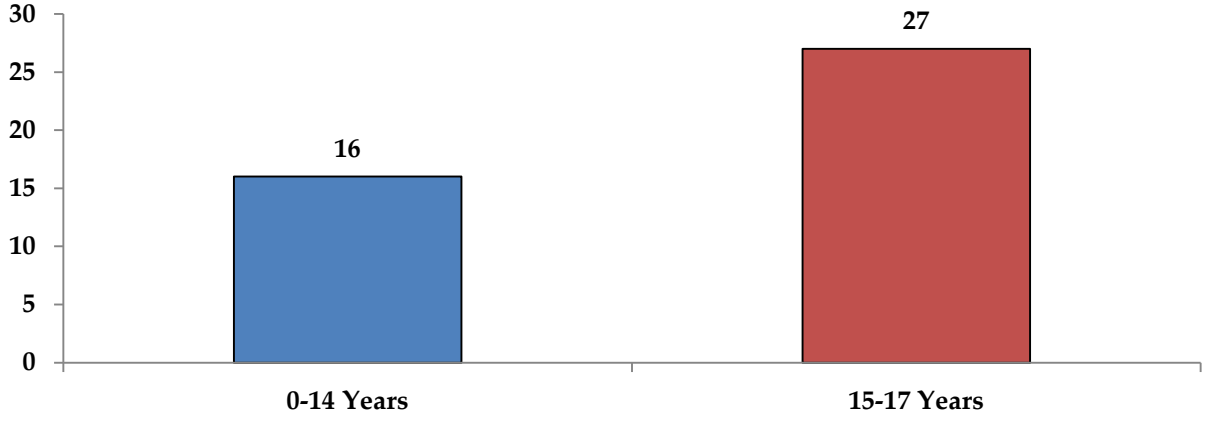
Males were the victims (n=35) of 81% of firearm related fatalities compared to the 19% of female victims (n=8). White, non-Hispanic children were the most affected by firearm fatalities representing 51% of the deaths.

Figure 34. Mortality Rates due to Firearms per 100,000 Children, Ages 0-17 Years, Arizona, 2012-2017



In 2017, children 15 through 17 years old accounted for 63% of firearm related deaths (n=27) (Figure 35).

Figure 35. Number of Firearm Related Deaths for Children Ages 0-17 Years, by Age Group, Arizona, 2017 (n=43)



Suicides and homicides accounted for 88% of firearm-related deaths in 2017. Fifty-one percent of firearm related deaths were a result of suicide (n=22) and 37% of firearm related deaths were homicides (n=16). Sixty-three percent of firearm related deaths occurred in the child's home (n=27). Handguns accounted for 86% of the firearm related fatalities in 2017 (n=37) (Table 17).

Table 17. Types of Firearms Involved in Child Deaths, Arizona, 2017 (n=43)		
Type	Number	Percent
Handgun	37	86%
Other	6	14%

Fifty-one percent of firearm related deaths involved guns owned by parents and nineteen percent of firearm related deaths involved guns owned by a friend or acquaintance (Table 18).

Table 18. Owners of Firearms Involved in Child Deaths, Arizona, 2017 (n=43)		
Owner	Number	Percent
Parent	22	51%
Friend/Acquaintance	8	19%
Unknown	<6	12%
Other	<6	9%

In a majority of firearm related deaths, the storage location of the firearm was not stored or in an unlocked cabinet (37%, n=16). Thirteen of the firearms were stored in an unknown location (30%) (Table 19).

Table 19. Locations of Firearms Involved in Child Deaths, Arizona, 2017 (n=43)		
Location	Number	Percent
Not Stored/Unlocked cabinet	16	37%
Unknown	13	30%
Other	6	14%
Locked Cabinet	<6	9%

Prevention

All of the firearm related deaths were determined to be preventable by review teams. Firearm related deaths made up 13% of all preventable deaths. Substance use was a risk factor identified in 60% of firearm related deaths (n=26) (Table 20).

Firearm-Related Death Prevention Recommendations

- Owners should store all firearms in a safe condition; locked, out of reach and sight of children, and unloaded with ammunition stored separately.
- Collaborate with the firearm injury prevention programs by holding community events promoting gun safety education.

Substance Use Related Deaths

The CFR program defines substance use related deaths as deaths 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.

To identify substance use related deaths, the CFR teams reviewed the records on each death for information on substance use by the child, the child's parents or other caretakers, or others who were involved in the incidents leading to the death.

In 2017, substance use was a factor in 17% of all child fatalities (n=136). Forty percent of substance use related deaths (n=55) resulted in deaths due to unintentional injuries followed by 19% of deaths due to suicide (n=26) (Figure 36). Children 15 through 17 years had the highest risk of experiencing a substance use related death (34%, n=46).

Figure 36. Number and Percentage of Deaths for Children Ages 0-17 Years, where Substance Use was found as a Direct or Contributing Factor leading to Death, by Manner, Arizona, 2017 (n=136)

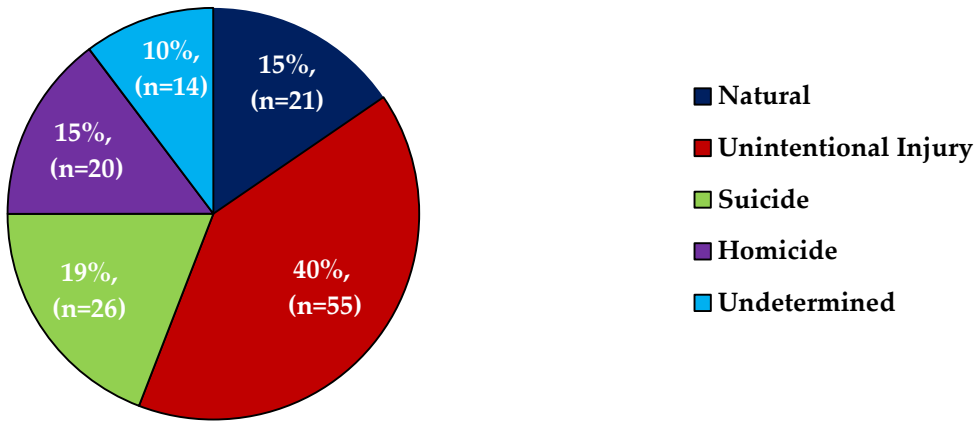
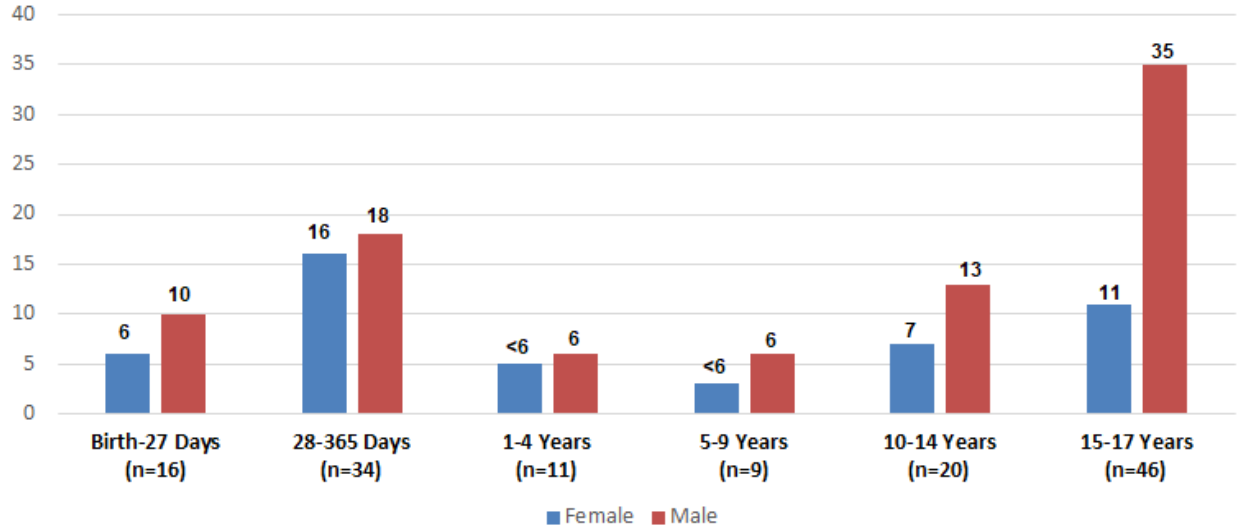


Figure 37. Percentage of Deaths, where Substance Use was a Direct or Contributing Factor to Death of Children Ages 0-17 Years, by Age Group & Sex, Arizona, 2017 (n=136)



Of the substance use related deaths where substance use was found to be a direct or contributing factor in the child's death, 19% of these deaths (n=26) were due to firearm injury, 13% of these deaths (n=17) were due to motor vehicle crashes and other transport, 11% of these deaths (n=15) were due to poisoning and hanging, and 10% of these deaths (n=14) were due to suffocation (Table 21).

Table 20. Number and Percentage of Deaths where Substance Use was a Direct or Contributing Factor to the Death of Children, Arizona, 2017

Cause	Number	Percent
Firearm Injury	26	19%
MVC/Transport	17	13%
Poisoning	15	11%
Hanging	15	11%
Suffocation	14	10%
Blunt Force Trauma	8	6%
Other Perinatal Condition	6	4%
Undetermined	10	7%
Medical*	11	8%
*Excluding SIDS and prematurity		

Of the substance use related deaths, marijuana was identified in 46% of deaths (n=62); alcohol was identified in 32% of deaths (n=43); opiates were identified in 18% (n=24); and methamphetamine was identified in 24% of deaths (n=32). In some cases, more than one drug was found to be a direct or contributing factor in the death of a child (Table 22).

Table 21. Substances found as a Direct or Contributing Factor to Child Deaths, Arizona, 2017		
Substance Used*	Number	Percent
Marijuana	62	46%
Alcohol	43	32%
Other (Includes Unknown, Non-Opioid Prescription, or other Illegal Drugs not Listed in this Table)	31	23%
Methamphetamine	32	24%
Opiate (Includes Opioid Prescription or Heroin)	24	18%
Cocaine	12	9%
*More than one substance may have been identified for each death		

Majority of substance use related deaths involved the child or the child's parent as the main user contributing to the death of the child. In 49% of substance use related deaths (n=67), the parent was misusing or abusing alcohol or drugs. Among substance use related deaths, where substance use was found as a direct or contributing factor to the child death, marijuana (46%, n=62) and alcohol (32%, n=43) were the most common substance identified. Other substance use related deaths include methamphetamine (24%, n=32) and opioids (18%, n=24).

Substance Use Prevention Recommendations

- Increase funding to support substance use prevention and community education on how to identify early symptoms of substance abuse in all communities in Arizona.
- Encourage health care providers to screen all children and adults for alcohol misuse and substance use.
- Provide affordable and accessible counseling and other interventions to substance users.
- Store all prescription medications in a locked cabinet and discard unused medications safely and properly when they are no longer being taken.

Technical Appendix

Classifications

Injury deaths: Death certificates of all persons who died in Arizona are collected and maintained by the ADHS Bureau of Population Health and Vital Statistics. For the years 2012 through 2017, all deaths of Arizona residents and out-of-state residents aged birth through 17 were identified by underlying cause of death with International Classification of Disease codes, Version 10 (www.who.int/classifications/icd/en/). CFR local teams take the demographic and incident information from death certificates of children and youth aged birth through 17 for the purpose of completing comprehensive reviews and subsequent aggregate data analysis. To categorize injury, intent, and mechanism, teams followed a guideline similar to the National Center for Health Statistics ICD-10 external cause of injury matrix available at: (www.cdc.gov/nchs/injury/injury_matrices.htm). Deaths caused by injuries, where the intent is known, are identified using the definitions below and the related ICD-10 codes:

Unintentional injury: An injury or poisoning fatality that took place without any intent to cause harm or death to the victim, also referred to as an accident. These are identified using ICD-10 codes V01-X59.

Homicide: An intentional injury resulting in death from the injuries inflicted by an act of violence carried out by another individual whose action was intended to cause harm, fear, and/or death. Homicide deaths are identified using ICD-10 codes X85-Y09.

Suicide: An injury death caused by an individual's purposeful intent to die as a result of their actions. Suicides are identified using ICD-10 codes X60-X84.

Undetermined injury death: These can be injury death in which investigators and medical examiners have insufficient information available to fully determine a cause and/or manner of death. Undetermined injury deaths are identified using ICD-10 codes Y10–Y34.

***Maltreatment*:** Maltreatment is a form of child abuse and neglect, an act or failure to act on the part of the parent or caregiver of a child resulting in the serious physical or emotional harm of the child. Some of the most common injuries CFR teams encounter while reviewing maltreatment cases involve physical abuse which includes internal abdominal and blunt force head injuries leading to a fatality. When reviewing neglect cases, CFR teams determine if parents or caregivers failed to provide the child's daily necessities

including clothing, food, safe shelter, medical care and appropriate supervision. Deaths attributed to neglect are typically failure to thrive, accidents resulting from unsafe environments, and prenatal substance exposure. The circumstances surrounding maltreatment deaths can vary greatly. Some maltreatment fatalities are the result of long-term abuse and neglect both unintentional and intentional, however some cases result of a single incident.

To gain greater understanding of the contribution of abuse and neglect to child mortality, the Arizona CFR teams answer several questions regarding maltreatment during a review.
Classification of a death due to maltreatment must meet the following four conditions:

1. Was there "An act or failure to act by a parent, caregiver, or other person as defined under State law which results in physical abuse, neglect, medical neglect, sexual abuse, emotional abuse, or an act or failure to act which presents an imminent risk of serious harm to a child" as it applied to the circumstances surrounding the death? (From the U.S. Department of Health and Human Services definition of maltreatment).
2. The relationship of the individual accused of committing the maltreatment to the child must be the child's parent, guardian, or caretaker.
3. A team member, who is a mandated reporter, would be obligated to report a similar incident to the appropriate child protective services agency.
4. Was there an act or failure to act during critical moments that caused or contributed to the child's death?

The program also reports deaths classified as maltreatment in other categories by manner and cause of death. For example, one classifies a death from abusive head trauma caused by the use of a blunt force object as a homicide and a maltreatment death. Teams may also classify an accidental or natural death as a maltreatment death if the team concludes a caretaker's negligence or actions contributed to or caused the fatality. For example, the death of a child in a motor vehicle crash due to the actions of a parent who drove while intoxicated would be considered a maltreatment fatality.

Examples of neglect contributing to a child's death include, but are not limited to the following:

- Any death in which intoxication by drugs (prescription, over-the-counter, legal or illegal) or alcohol of the parent, guardian, or caregiver contributed to the death.
- Sleep related deaths when a parent/guardian/caregiver bed-sharing with or places an infant into an unsafe sleep environment while under the influence of drugs (prescription, over-the-counter, legal

or illegal) or alcohol, or knowingly allows a child to be placed into an unsafe sleep environment under the care of someone under the influence of drugs (prescription, over-the-counter, legal or illegal) or alcohol.

- Natural deaths when medical neglect contributed to the death including failure to comply with a prescribed treatment plan, failure to obtain treatment, and/or failure to provide necessary medications e.g. an asthma related death where a caregiver did not provide the child with an inhaler.
- Prenatal exposure to illicit drug use or alcohol that causes or contributes to the death of the child e.g. a child born prematurely due to prenatal drug exposure to methamphetamines.
- Motor Vehicle Crash:
  - Parent/caregiver/supervisor drives under the influence of alcohol or drugs (prescription, over-the-counter, legal or illegal) with child passenger or knowingly allows child to be a passenger with driver under the influence.
  - If a child under the age of six years was a passenger and was not properly restrained (situations where a child was placed in the right type of restraint but the seat may not have been properly installed are not included as maltreatment).
  - Parent/caregiver/supervisor drives recklessly with child passenger and it was related to the child's death.
- Drowning:
  - Parent/caregiver/supervisor leaves a child near or in a body of water such as a pool, lake, or river without sober and inadequate adult supervision. This is if the child's age, mental capacity, or physical capacity puts the child at risk of drowning e.g. child is under the age of 5, and/or is unable to swim.
  - Parent/caregiver/supervisor leaves infant or toddler in a tub, unsupervised.
- Gunshot wound when a parent/caregiver/supervisor leaves a loaded weapon unsecure where a child would have access to the weapon.
- Exposure when a parent/caregiver/supervisor leaves young a child/infant alone in a car or outdoors.
- Poisoning when a parent/caregiver/supervisor allows medication or dangerous household products to be accessible to a child or teen with known behavioral health issues e.g. If there is a teen in the household with history of substance abuse or suicidal ideation and prescription medication, such as opiates, are not in a secured location.
- Suicide when a parent/caregiver/supervisor failed to secure hazards e.g. unsecured weapon, prescription drugs or did not seek care for the child when aware of any suicidal ideation.

Reporting: The number of child maltreatment deaths presented in this report is not comparable to child maltreatment deaths reported by the Arizona Department of Child Safety (DCS) (Formerly Arizona Department of Economic Security Child Protective Services) for the National Child Abuse and Neglect Data System (NCANDS). NCANDS includes maltreatment deaths identified through child protective services investigations, and because some maltreatment deaths identified by local CFR teams may not have been reported to child protective services agencies or were within the jurisdiction of Tribal Nations or other states, these deaths would not be included in DCS' annual report to NCANDS. However, when a local CFR team identifies a death due to maltreatment not previously reported to a child protective services agency, the local CFR Program notifies child protective services of the team's assessment so they can initiate an investigation.

Per A.R.S. § 8-807, DCS is required to post information on child fatalities due to abuse or neglect by the child's parent, custodian or caregiver. This information is posted after a final determination of the fatality due to abuse or neglect has been made by DCS. The determination is made by either a substantiated finding or specific criminal charges filed against a parent, guardian or caregiver for causing the fatality or near fatality.

Sudden unexpected infant deaths and sleep related suffocation deaths: In Arizona, all sudden unexpected infant deaths (SUID) are determined using a protocol based on the CDC's SUID guidelines. Based upon these guidelines, review teams will follow the protocol to determine if unsafe factors were in place at the time of the child's death. If any such factors are identified, then the death will be classified as one of the following:

(1) With sufficient evidence that supports the infant's airway was obstructed, it will be deemed as asphyxia or suffocation with an accidental manner;

(2) If there is not enough evidence to determine intent, but the cause of death of suffocation is clear then it will be labeled with an undetermined manner of death.

(3) If all evidence is reviewed and cause of death is suspected, but there is not enough information to fully determine the cause or manner then the death will be labeled as undetermined for both cause and manner.

Sleep related injury deaths in this report are identified by reviewing all potential cases of children less than one year of age, with causes and manners of death using the ICD-10 codes of W75, W84 (suffocation injuries) and Y33, Y34 (injuries of undetermined cause and intent). In addition, some

natural cause of death if the death was sudden and unexpected and the infant was in a sleep environment. A death is considered to be sleep related if the child was found in a sleep environment or the last time they were seen alive was while they were asleep.

Limitations: 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 Native American tribes each of whom has their own sovereign laws and protocols. Jurisdiction and records sharing for each tribal government varies. These intricate relationships and individual jurisdictions mean that sources and information may vary.

Factors impacting protocols to certify SUID and sleep related deaths include death scene investigation by trained investigators and law enforcement, completion of the death scene investigation form, and the final determination of death by a certified forensic pathologist. The Arizona CFR program works to mitigate these limitations by providing statewide training to law enforcement on the statutorily required Arizona Infant Death Checklist, and completing both local and state level reviews of all identified SUID cases. In 2017, of the 84 deaths where a death scene investigation was completed, authorities filled out an infant death checklist in 74 of the cases. The cases in this report use the final cause and manner of death that are determined by the state SUID Review Team. This expert panel reviews all available information to determine the classification. However, the use of this methodology accounts for the differences between the numbers in the report and the numbers reported by vital records and medical examiners.

Limitations of the overall data: It is significant to note that the report has certain limitations. While every child 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.

CFR team meetings: Local CFR team review meetings are closed to the public. All team members must sign a confidentiality statement before participating in the review process. The confidentiality statement specifically defines the conditions of participation and assures that members will not divulge information

discussed in team meetings. To further maintain confidentiality, identifying information in data and research reports are omitted.

All cases reviewed by the CFR team are kept completely confidential. Information shared in the meetings is protected under ARS 36-3502 and shall not be shared with anyone outside the meeting. Every effort is made in this report to keep information private, and is intended only to provide summary statistics of all child deaths in Arizona.

The state CFR team reviews the data from the local review teams, including the local review team recommendations, to develop recommendations for the annual report.

Review Process

Local teams conduct case reviews throughout the year. Once the local team coordinator or chairperson receives the death certificate they send out requests for relevant documents, which may include the child's autopsy report, hospital records, DCS records, law enforcement reports, and any other information that may provide insight into the circumstances surrounding the child's death. Additionally, the birth certificate is reviewed if the child was younger than one year of age at the time of their death. Legislation requires that hospitals and state agencies release this information to the Arizona CFR Program's local teams. **Note: Statute requires team members to maintain confidentiality and they are prohibited from contacting the child's family for any reason.**

During the review, team members from representing agencies provide information on each case as applicable. If an agency representative is unable to attend, the pertinent information is collected by the local team coordinator and presented at the review meeting.

Information collected during the review is then entered into the National Child Death Review Database (CDR). This database is a comprehensive tool that provides the ability to enter the many variables resulting from each case review. Some of the detailed case information captured includes the demographics of the child, caregiver information, information concerning the supervisor of the child when the fatality occurred, incident information, investigation of the incident, cause and manner of the death and any other circumstances surrounding the fatality.

The CDR database is regularly reviewed and updated by the National Center and the state CFR program office to ensure it is as effective as possible in capturing the most relevant information for preventing future fatalities. This data is put through a system of quality assurance checks by the state CFR program

office and the resulting dataset is used to produce the statistics found in this report.

The State Team meets annually to review the analysis of these findings. State Team membership is statutorily driven and requires representatives from a variety of community and governmental agencies including:

- Attorney's General Office
- Bureau of Women's and Children's Health in the Arizona Department of Health Services
- Division of Behavioral Health in the Arizona Department of Health Services
- Arizona Health Care Cost Containment System
- Division of Developmental Disabilities in the Arizona Department of Economic Security
- Department of Child Safety
- Governor's Office of Youth, Faith, and Family
- Administrative Office of the Courts
- Parent assistance office of the Supreme Court
- Arizona Chapter of the American Academy of Pediatrics
- Medical Examiner who is a forensic pathologist
- Maternal Child Health Specialist who works with members of Tribal Nations
- Private nonprofit organization of Tribal Governments
- The Navajo Nation
- United States Military Family Advocacy Program
- Prosecuting Attorney's Advisory Council
- Law Enforcement Officer's Advisory Council with experience in child homicide
- Association of County Health Officers
- Child Advocates not employed by the state or a political subdivision of the state
- A member of the public

The statute authorizes the State Team to study the adequacy of existing statutes, ordinances, rules, training and services to determine the need for changes. The statute also charges the State Team to educate the public regarding the incidence and causes of child fatalities as well as the public's role in preventing these deaths. Adoption of the recommendations has often occurred as a result of the experience and expertise of the team. Reviewing 100 percent of the deaths allows for multi-year outcome comparisons and trend identification.

In Arizona, the cause of death refers to the injury or medical condition that resulted in death (e.g. firearm-related injury, pneumonia, cancer). Manner of death is not the same as cause of death, but specifically refers to the intentionality of the cause. For example, if the cause of death was a firearm related injury, then the manner of death may have been intentional or unintentional. If it was intentional, then the manner of death was suicide or homicide. If it 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. It may not have been clear that a firearm death was due to an accident, suicide, or homicide, and in these cases, the manner of death was listed as undetermined.

After a person dies, the county medical examiner or other appointed medical authority will determine both a cause and manner of death and write it on the deceased's death certificate. **However, it is important to note since CFR teams review all records related to a fatality, because of this comprehensive, multidisciplinary approach, the teams' determinations of cause and manner of death may differ from those recorded on the death certificate. Their determination of cause and manner are what is used in this report.**

In the report, deaths are counted once in each applicable section based upon team consensus of the cause and manner of death. For example, a homicide involving a firearm injury perpetrated by an intoxicated caregiver would be counted in the sections addressing firearm injuries, homicides and maltreatment fatalities. Frequencies and cross-tabulations are used, but due to the small sample size, tests for statistical significance are not always done. In several instances the subset of cases discussed in the report are too small to make accurate statements about statistical significance.

All cases reviewed by the Child Death Review Team are kept completely confidential. Information shared in the meetings is protected under ARS 36-3502 and cannot be shared with anyone outside the meeting. Every effort is made in this report to keep information private, and is intended only to provide summary statistics and trends of all child deaths taking place in Arizona.

Appendix of Summary Tables

The following section of this report provides additional data tables for both individual and agency use. These tables can be used as reference to guide prevention efforts within their respective organizations. The CFR program completed reviews for 100 percent of Arizona's child fatalities from 2012 through 2017 and included the data for comparative analysis. [12]

Table 21. Number and Percentage of Deaths Among Children by Age Group, AZ, 2012- 2017

	2012		2013		2014		2015		2016		2017	
Age Group	#	%	#	%	#	%	#	%	#	%	#	%
0-27 Days	325	38%	298	37%	341	41%	287	38%	299	38	284	35
28-365 Days	171	20%	156	19%	183	22%	178	23%	144	18	173	21
1-4 Years	120	14%	130	16%	95	11%	101	13%	117	15	99	12
5-9 Years	63	7%	47	6%	56	7%	51	7%	45	6	66	8
10-14 Years	75	9%	77	9%	70	8%	46	6%	71	9	74	9
15-17 Years	100	12%	103	13%	89	11%	104	13%	107	14	110	14
Total	854		811		834		768		783		806	

Table 22. Mortality Rates per 100,000 Population Among Children by Age Group, AZ, 2012- 2017

Age Group	2012	2013	2014	2015	2016	2017
<1 Year*	5.8	5.3	6.0	5.5	5.2	5.6
1-4 Years	33.6	37.0	27.1	29.1	34.1	28
5-9 Years	13.7	10.1	12.1	11.0	9.8	14.5
10-14 Years	16.5	16.9	15.3	10.0	15.5	16
15-17 Years	37.0	37.7	32.5	38.1	38.8	39.2
Total	52.4	49.5	51.3	47.3	48.2	49.2
*Neonatal/post-natal periods deaths are combined and represent infant mortality rate per 1,000 births						

Table 23. Number and Percentage of Deaths Among Children by Race/Ethnicity Group, AZ, 2012- 2017

	2012		2013		2014		2015		2016		2017	
Race/Ethnicity Group	#	%	#	%	#	%	#	%	#	%	#	%
African American	73	9	78	10	75	9	68	9	75	10	74	9
American Indian	91	11	76	9	66	8	68	9	70	9	65	8
Asian	30	4	16	2	14	2	17	2	25	3	20	2
White Hispanic	376	44	343	42	366	44	332	43	350	45	321	40
White, non-Hispanic	268	31	280	35	285	34	253	33	235	30	285	35
2 or more Race/Ethnicity	16	2	18	2	28	3	30	4	28	4	41	5
Total	854		811		834		768		783		806	

[12] For all tables in this Appendix, data with a count less than six are denoted as <6 and are suppressed due to concern with individual identification.

Table 24. Mortality Rates per 100,000 Children by Race/Ethnicity Group, AZ, 2012- 2017						
Race/Ethnicity Group*	2012	2013	2014	2015	2016	2017
African American	96.9	103.3	67.3	74.4	79.9	75.5
American Indian	92.5	76.7	53.4	78.6	80.8	76.2
Asian	69.0	35.7	22.3	32.0	46.4	34.8
White Hispanic	55.0	49.6	57.7	46.9	49.5	46.2
White, non-Hispanic	36.8	38.5	41.0	36.7	34.4	41.9
*Includes 2 or more/race ethnicity						

Table 25. Number and Percentage of Deaths Among Children by County of Residence, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
County	#	%	#	%	#	%	#	%	#	%	#	%
Apache	9	1	17	2	15	2	17	2	24	3	9	1
Cochise	17	2	14	2	12	1	15	2	13	2	16	2
Coconino	20	2	17	2	14	2	20	3	17	2	17	2
Gila	14	2	9	1	12	1	6	<1	7	1	13	2
Graham	6	1	7	<1	6	1	<6	<6	<6	<6	<6	<1
Greenlee	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<1
La Paz	8	1	<6	<6	<6	<6	<6	<6	<6	<6	<6	<1
Maricopa	500	59	477	59	501	60	445	58	488	62	502	62
Mohave	21	2	15	2	24	3	19	2	13	2	16	2
Navajo	28	3	23	3	20	2	21	3	13	2	25	3
Pima	91	11	102	13	112	13	85	11	91	12	82	10
Pinal	48	6	46	6	46	6	52	7	38	5	46	6
Santa Cruz	9	1	<6	<1	<6	<1	<6	<1	6	1	<6	<1
Yavapai	24	3	20	2	21	3	20	3	20	3	19	2
Yuma	26	3	27	3	26	3	34	4	22	3	22	3
Outside AZ	32	4	25	3	19	2	24	3	26	3	27	3
Total	854		810		834		768		783		806	

Counts <6 have been suppressed

Table 26. Mortality Rates per 100,000 Children by Cause of Death, AZ, 2012- 2017						
Cause	2012	2013	2014	2015	2016	2017
Injury In-or-Around the Home	7.4	7.3	8.0	8.7	9.0	9.2
Maltreatment	4.3	5.6	4.6	5.3	5.0	4.9
MVC/Transport	3.9	3.5	3.0	2.8	4.4	4.0
Homicide	2.6	3.1	2.2	2.0	2.6	2.3
Suicide	1.7	1.5	2.3	2.9	2.3	3
Firearms	2.0	1.8	1.5	1.7	2.2	2.6
Drowning	2.2	1.4	1.9	1.8	1.7	2.1
SUID*	0.95	0.87	0.98	0.91	0.94	1.02
*SUID rates are per 1,000 births						

Table 27. Number of Child Deaths by Age Group and Manner, AZ, 2017							
Manner	Birth-27 Days	28-365 Days	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total
Natural	274	81	47	38	28	21	489
Unintentional/Accident	<6	53	37	24	25	43	187
Homicide	<6	11	7	<6	<6	11	38
Suicide	<6	<6	<6	<6	16	34	50
Undetermined	<6	28	8	<6	<6	<6	42
Total	284	173	99	66	74	110	806

Counts <6 have been suppressed

Table 28. Number and Percentage of Deaths Among Children Birth Through 17 Years by Manner, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Manner	#	%	#	%	#	%	#	%	#	%	#	%
Natural	542	63	513	63	546	66	487	64	484	62	489	61
Unintentional/ Accident	190	22	186	23	180	22	160	21	179	23	187	23
Undetermined	45	5	36	5	34	4	42	5	40	5	42	5
Homicide	43	5	51	6	36	4	32	4	42	5	38	5
Suicide	33	4	25	3	38	5	47	6	38	5	50	6
Total	853		811		834		768		783		806	

Table 29. Number of Deaths Among Children Birth to 17 Years by Cause and Manner, AZ, 2017						
Cause	Natural	Accident	Suicide	Homicide	Undetermined	Total
Medical*	304	0	0	0	0	304
Prematurity	180	0	0	0	0	180
MVC/Transport	0	64	<6	0	0	65
Suffocation	0	51	0	0	0	51
Undetermined	<6	0	0	<6	37	42
Firearm	0	<6	22	16	<6	43
Drowning	0	35	0	0	0	35
Blunt Force Trauma	0	0	<6	18	0	19
Poisoning	0	13	<6	0	<6	16
Fire/Burn	0	<6	0	0	<6	6
Fall/Crush	0	<6	0	0	0	<6
Other Injury	0	6	0	<6	0	7
Total	488	182	25	35	42	773
*Excluding SIDS/prematurity						

Counts <6 have been suppressed

Table 30. Number and Percentage of Deaths Among Children Birth Through 17 Years by Cause, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Cause	#	%	#	%	#	%	#	%	#	%	#	%
Medical*	353	41	303	37	326	39	310	40	320	41	305	38
Prematurity	192	22	210	26	222	27	177	23	162	21	180	22
MVC/Transport	88	10	80	10	57	7	50	6	71	9	65	8
Suffocation	53	6	48	6	72	9	65	8	55	7	51	6
Firearm	32	4	29	4	25	3	28	4	36	5	43	5
Drowning	36	4	23	3	31	4	30	4	27	3	35	4
Blunt Force Trauma	19	2	28	3	19	2	11	1	20	3	19	2
Strangulation	20	2	18	2	14	2	17	2	24	3	<6	<1
Undetermined	40	5	35	4	31	4	43	6	41	5	42	5
Other Non-Medical	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6
Poisoning	7	1	14	2	9	1	15	2	13	2	16	2
Fire/burn	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	6	<1
Exposure	<6	<6	<6	<6	<6	<6	6	1	<6	<6	<6	<1
Fall/crush	<6	<6	<6	<6	7	<1	<6	<6	<6	<6	<6	<1
Other Injury	<6	<6	<6	<6	8	1	12	2	<6	<6	7	<1
SIDS	0	0	<6	<6	0	0	0	0	0	0	0	<1
Total	853		811		834		768		783		806	
*Excluding SIDS and prematurity												

Counts <6 have been suppressed

Table 31. Number and Percentage of Natural Deaths Among Children by Age Group, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Age Group	#	%	#	%	#	%	#	%	#	%	#	%
0-27 Days	315	58	289	56	332	61	279	58	290	60	274	56
28-365 Days	84	16	79	15	89	16	94	19	53	11	81	17
1-4 Years	57	11	62	12	40	7	40	8	53	11	47	10
5-9 Years	37	7	25	5	29	5	26	5	29	6	38	8
10-14 Years	36	6	36	7	37	7	20	4	34	7	28	6
15-17 Years	13	2	22	4	19	4	27	6	25	5	21	4
Total	542		513		546		487		484		489	

Table 32. Number and Percentage of Natural Deaths Among Children by Race/Ethnicity Group, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Race/Ethnicity Group	#	%	#	%	#	%	#	%	#	%	#	%
African American	48	9	52	10	48	9	42	9	35	7	40	8
American Indian	45	8	38	7	34	6	40	8	38	8	35	7
Asian/Pacific Islander	20	4	10	2	12	2	14	3	19	4	18	4
White Hispanic	266	49	234	46	252	46	235	48	236	49	207	42
White, non-Hispanic	152	28	169	33	178	33	133	27	137	28	163	33
2 or more Race/Ethnicity	11	2	10	2	22	4	23	5	19	4	26	5
Total	542		513		546		487		484		489	

Counts <6 have been suppressed

Table 33. Number and Percentage of Unintentional (Accident) injury deaths Among Children by Age Group, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Age Group	#	%	#	%	#	%	#	%	#	%	#	%
0-27 Days	<6	<6	6	3	6	3	<6	3	8	4	<6	3
28-365 Days	48	25	44	23	63	35	53	33	54	30	53	28
1-4 Years	39	21	46	25	36	20	39	24	47	27	37	20
5-9 Years	22	12	20	11	21	12	18	11	10	6	24	13
10-14 Years	27	14	24	13	17	9	12	8	22	12	25	13
15-17 Years	50	26	46	25	37	21	33	21	38	21	43	23
Total	190		186		180		160		179		187	

Counts <6 have been suppressed

Table 34. Number and Percentage of Unintentional (Accident) injury deaths Among Children by Race/Ethnicity Group, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Race/Ethnicity Group	#	%	#	%	#	%	#	%	#	%	#	%
African American	13	7	15	8	18	10	12	8	26	15	18	10
American Indian	24	13	21	11	25	14	17	11	17	10	19	10
Asian	7	4	<6	<6	<6	<6	<6	<6	<6	<6	<6	<1
White Hispanic	69	36	70	38	71	39	62	39	71	40	71	38
White, non-Hispanic	75	39	70	38	62	34	60	38	58	33	70	37
2 or more Race/Ethnicity	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	8	4
Total	190		186		180		160		179		187	

Counts <6 have been suppressed

Table 35. Number and Percentage of Injury Deaths In-or-Around the Home Among Children by Age Group, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Age Group	#	%	#	%	#	%	#	%	#	%	#	%
Birth-365 Days	76	63	73	61	92	71	87	61	85	58	86	57
1-4 Years	7	22	33	28	21	16	30	21	38	26	39	26
5-9 Years	7	6	<6	<6	6	5	6	4	<6	<6	6	4
10-14 Years	<6	<6	<6	<6	6	5	<6	<6	7	5	8	5
15-17 Years	8	7	11	9	<6	<6	15	11	12	8	12	8
Total	121		120		130		142		146		151	

Counts <6 have been suppressed

Table 36. Number and Percentage of Injury Deaths In-or-Around the Home Among Children by Race/Ethnicity Group, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Race/Ethnicity Group	#	%	#	%	#	%	#	%	#	%	#	%
African American	11	9	13	11	14	11	11	8	20	14	21	14
American Indian	11	9	12	10	14	11	14	10	15	10	10	7
Asian	<6	<6	<6	<6	0	0	<6	<6	<6	<6	0	0
White Hispanic	44	36	40	33	52	40	51	36	48	33	51	34
White, non-Hispanic	50	41	50	42	47	36	58	41	56	39	58	38
Total	121		120		130		142		146		151	

Counts <6 have been suppressed, does not include 2 or more race/ethnicity

Table 37. Number of Sudden Unexplained Infant Deaths Among Children by Age Group, AZ, 2012- 2017						
Age Group	2012	2013	2014	2015	2016	2017
< 1 year	81	74	85	78	80	84

Table 38. Number and Percentage of Sudden Unexplained Infant Deaths Among Children by Race/Ethnicity Group, AZ, 2012-2017												
	2012		2013		2014		2015		2016		2017	
Race/Ethnicity Group	#	%	#	%	#	%	#	%	#	%	#	%
African American	8	10	11	15	8	9	7	9	12	15	16	19
American Indian	7	9	6	8	9	11	<6	<6	8	10	5	6
Asian	<6	<6	0	0	0	0	0	0	<6	<6	<6	1
White Hispanic	31	38	22	30	36	42	32	42	24	30	27	32
White, non-Hispanic	31	38	34	46	29	34	30	39	31	39	28	33
2 or more Race/Ethnicity	<6	<6	<6	<6	<6	<6	<6	6	<6	<6	7	8
Total	81		74		85		77		79		84	

Counts <6 have been suppressed

Table 39. Number and Percentage of Maltreatment Deaths Among Children by Age Group, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Age Group	#	%	#	%	#	%	#	%	#	%	#	%
0-27 Days	9	13	13	14	10	13	10	11	13	16	10	13
28-365 Days	23	33	29	32	26	35	29	33	22	27	27	34
1-4 Years	23	33	31	34	23	31	31	36	28	34	20	25
5-9 Years	7	10	<6	<6	9	12	8	9	10	12	10	13
10-14 Years	<6	<6	11	12	7	9	<6	<6	<6	<6	7	9
15-17 Years	<6	<6	<6	<6	0	0	6	7	<6	<6	<6	6
Total	69		92		75		87		82		79	

Counts <6 have been suppressed

Table 40. Number and Percentage of Maltreatment Deaths Among Children by Race/Ethnicity Group, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Race/Ethnicity	#	%	#	%	#	%	#	%	#	%	#	%
African American	<6	<6	11	12	8	11	11	13	18	22	12	15
American Indian	13	19	15	16	8	11	13	15	9	12	9	11
Asian	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<1
White Hispanic	29	42	34	37	29	39	31	36	28	33	27	34
White, non-Hispanic	21	30	27	29	29	39	31	36	22	28	29	37
2 or more Race/Ethnicity	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<1
Total	69		92		75		87		82		79	

Counts <6 have been suppressed

Table 41. Number and Percentage of Motor Vehicle Deaths Among Children by Age Group, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Age Group	#	%	#	%	#	%	#	%	#	%	#	%
0-27 Days	<6	<6	0	0	0	0	<6	<6	<6	<6	<6	<1
28-365 Days	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<1
1-4 Years	11	13	18	23	10	18	13	26	19	27	6	9
5-9 Years	12	14	17	21	12	21	9	18	7	10	16	25
10-14 Years	21	24	20	25	9	16	8	16	17	24	15	23
15-17 Years	38	43	24	30	25	44	18	36	24	34	25	38
Total	88		80		57		50		71		65	

Counts <6 have been suppressed

Table 42. Number and Percentage of Motor Vehicle and Other Transport Deaths Among Children by Race/Ethnicity Group, AZ, 2012- 2017

	2012		2013		2014		2015		2016		2017	
Race/Ethnicity Group	#	%	#	%	#	%	#	%	#	%	#	%
American Indian	18	21	12	15	10	18	12	24	11	24	11	17
White Hispanic	32	36	28	35	23	40	20	40	34	40	25	38
White, non-Hispanic	29	33	29	36	17	30	10	20	15	20	23	35
Other	9	10	11	14	7	12	8	16	11	16	6	9
Total	88		80		57		50		71		65	

Counts <6 have been suppressed

Table 43. Number and Percentage of Suicides Among Children by Age Group, AZ, 2012- 2017

	2012		2013		2014		2015		2016		2017	
Age Group	#	%	#	%	#	%	#	%	#	%	#	%
<10 Years	0	0	<6	<6	0	0	0	0	<6	3	0	0
10-14 Years	9	27	8	32	11	29	12	26	9	24	16	32
15-17 Years	24	73	17	68	27	71	35	74	28	74	34	68
Total	33		25		38		47		38		50	

Counts <6 have been suppressed

Table 44. Number and Percentage of Suicides Among Children by Race/Ethnicity Group, AZ, 2012- 2017

	2012		2013		2014		2015		2016		2017	
Race/Ethnicity Group	#	%	#	%	#	%	#	%	#	%	#	%
African American	<6	<6	<6	<6	0	0	<6	<6	<6	<6	<6	<1
American Indian	9	27	<6	20	<6	8	<6	11	8	21	6	12
White Hispanic	<6	15	8	32	13	34	10	31	13	34	14	28
White, non-Hispanic	17	52	9	36	21	55	30	28	12	32	25	50
Other	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<1
Total	33		25		38		47		38		50	

Counts <6 have been suppressed

Table 45. Number and Percentage of Homicides Among Children by Age Group, AZ, 2012- 2017

	2012		2013		2014		2015		2016		2017	
Age Group	#	%	#	%	#	%	#	%	#	%	#	%
0-27 Days	<6	<6	<6	<6	0	0	0	0	0	0	<6	<1
28-365 Days	10	23	7	14	7	19	<6	9	8	21	11	29
1-4 Years	17	40	16	31	14	39	18	56	10	23	7	18
5-9 Years	<6	<7	<6	<6	<6	14	<6	<16	<6	<12	<6	8
10-14 Years	<6	<6	9	18	<6	11	<6	<6	<6	<12	<6	13
15-17 Years	9	21	16	31	6	17	<6	<16	15	35	11	29
Total	43		51		36		32		42		38	

Counts <6 have been suppressed

Table 46. Number and Percentage of Homicides Deaths Among Children by Race/Ethnicity Group, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Race/Ethnicity Group	#	%	#	%	#	%	#	%	#	%	#	%
African American	<6	<12	<6	<6	<6	<12	9	28	10	24	<6	11
American Indian	<6	<12	9	18	<6	<12	<6	<12	<6	<6	<6	<1
Asian	<6	<6	0	0	0	0	0	0	<6	<6	0	0
White Hispanic	19	44	23	45	18	50	10	31	19	45	15	39
White, non-Hispanic	12	28	14	27	10	28	9	28	9	21	15	39
2 or more Race/Ethnicity	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<1
Total	43		51		36		32		42		38	

Counts <6 have been suppressed

Table 47. Number and Percentage of Drowning Deaths Among Children by Age Group, AZ, 2011- 2016												
	2012		2013		2014		2015		2016		2017	
Age Group	#	%	#	%	#	%	#	%	#	%	#	%
0-27 Days	0	0	0	0	0	0	0	0	0	0	0	0
28-365 Days	<6	<15	0	0	<6	<6	<6	<7	<6	<6	<6	<1
1-4 Years	18	50	19	83	18	58	20	67	21	78	20	57
5-9 Years	<6	<15	<6	<6	<15	13	6	20	<6	<6	7	2
10-14 Years	<6	<15	0	0	<6	13	<6	<6	0	0	<6	11
15-17 Years	<6	<15	<6	13	<6	10	<6	<6	<6	15	<6	<1
Total	36		23		31		30		27		35	

Counts <6 have been suppressed

Table 48. Number and Percentage of Drowning Deaths Among Children by Race/Ethnicity Group, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Race/Ethnicity Group	#	%	#	%	#	%	#	%	#	%	#	%
African American	<6	8	<6	<6	6	19	<6	<13	<6	<8	<6	11
American Indian	<6	11	0	0	<6	<6	0	0	<6	<6	<6	<1
Asian	<6	8	<6	13	0	0	0	0	<6	<6	0	0
White Hispanic	9	25	14	61	7	23	10	33	9	33	17	49
White, non-Hispanic	17	47	<6	22	17	55	16	53	14	52	12	34
2 or more Race/Ethnicity	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<1
Total	36		23		31		30		27		35	

Counts <6 have been suppressed

Table 49. Number and Percentage of Firearm-Related Deaths Among Children by Age Group, AZ, 2012- 2017

	2012		2013		2014		2015		2016		2017	
Age Group	#	%	#	%	#	%	#	%	#	%	#	%
<10 Years	<6	<20	< 6	10	<6	<20	<6	11	<6	<12	6	14
10-14 Years	<6	<20	< 6	17	6	24	6	21	<6	<12	10	23
15-17 Years	22	69	21	72	14	56	19	68	29	81	27	63
Total	32		29		25		28		36		43	

Counts <6 have been suppressed

Table 50. Number and Percentage of Firearm-Related Deaths Among Children by Race/Ethnicity Group, AZ, 2012- 2017

	2012		2013		2014		2015		2016		2017	
Race/Ethnicity Group	#	%	#	%	#	%	#	%	#	%	#	%
African American	<6	10	<6	<7	<6	<6	<6	<6	6	17	<6	12
American Indian	<6	<6	<6	<6	<6	<6	<6	<16	<6	<6	0	0
Asian	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	0	0
White Hispanic	9	28	15	52	10	40	6	21	19	53	13	30
White, non-Hispanic	18	56	9	31	14	56	18	64	8	22	22	51
2 or more Race/Ethnicity	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	7
Total	32		29		25		28		36		43	

Counts <6 have been suppressed

Appendix of Child Deaths by Age Group

The following section of this report provides data on the cause and manner of child deaths by age group. Individuals and agencies can use the information provided for each age group to guide prevention efforts within each stage of child development. For the past ten years, teams' completed review of 100 percent of Arizona child fatalities and data from 2012 through 2017 are included in the following tables to provide comparison data. [13]

Table 51. Number of Deaths Among Children Ages Birth Through 27 Days by Cause and Manner, AZ, 2017

Cause	Natural	Accident	Suicide	Homicide	Undetermined	Total
Medical*	115	0	0	0	0	115
Prematurity	158	0	0	0	0	158
MVC/Transport	0	<6	0	0	0	<6
Suffocation	0	<6	0	0	0	<6
Undetermined	<6	0	0	0	<6	<6
Other	0	0	0	<6	0	<6
Total	274	<6	0	<6	<6	284
*Excluding SIDS and prematurity						

Counts<6 have been suppressed

Table 52. Number and Percentage of Deaths Among Children Ages Birth Through 27 Days by Cause, AZ, 2012- 2017

	2012		2013		2014		2015		2016		2017	
Cause	#	%	#	%	#	%	#	%	#	%	#	%
Prematurity	172	53	188	63	195	57	152	52	145	48	158	56
Medical*	143	44	102	34	138	40	128	44	145	48	115	40
Undetermined	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	2
SIDS	0	0	<6	<6	0	0	0	0	0	0	0	0
MVC/Transport	<6	<6	<6	<6	0	0	<6	<6	<6	<6	<6	<1
Other	0	0	<6	<6	<6	<6	<6	<6	<6	<6	0	0
Suffocation	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	1
Exposure	0	0	<6	<6	0	0	0	0	0	0	0	0
Drowning	0	0	<6	<6	0	0	0	0	0	0	0	0
Total	325		298		341		288		299		284	
*Excluding SIDS and Prematurity												

Counts <6 have been suppressed

[13] For all tables in this Appendix, 2016 data with a count less than six are denoted as <6 and are suppressed due to concern with individual identification.

Table 53. Number and Percentage of Deaths Among Children Ages Birth Through 27 Days by Manner, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Manner	#	%	#	%	#	%	#	%	#	%	#	%
Natural	315	58	289	97	332	97	280	97	290	97	274	96
Undetermined	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	1
Accident	<6	<6	6	2	6	2	<6	<6	8	3	<6	2
Homicide	<6	<6	<6	<6	0	0	0	0	0	0	<6	1
Suicide	0	0	<6	<6	0	0	0	0	0	0	0	0
Total	325		298		341		288		299		284	

Counts <6 have been suppressed

The Post-Neonatal Period, 28 Days through 365 Days

Table 54. Number of Deaths Among Children Ages 28 Days Through 365 Days by Cause and Manner, AZ, 2017						
Cause	Natural	Accident	Suicide	Homicide	Undetermined	Total
Suffocation	0	46	0	0	0	46
Medical	62	0	0	0	0	62
Prematurity	19	0	0	0	0	19
Blunt Force Trauma	0	0	0	8	0	8
MVC/Transport	0	<6	0	0	0	<6
Drowning	0	<6	0	0	0	<6
Exposure	0	0	0	0	0	0
Underdetermined	0	<6	0	0	26	28
Other	0	<6	0	<6	<6	6
Total	81	53	0	11	28	

Counts <6 have been suppressed

Table 55. Number and Percentage of Deaths Among Children Ages 28 Days Through 365 Days by Cause, AZ, 2012- 2017

	2012		2013		2014		2015		2016		2017	
Cause	#	%	#	%	#	%	#	%	#	%	#	%
Suffocation	44	26	41	26	59	32	51	29	46	32	46	27
Medical	68	40	60	38	64	35	68	38	37	26	62	36
Undetermined	26	15	26	17	23	13	27	15	29	20	27	16
Prematurity	17	10	18	12	25	14	25	14	16	11	19	11
Blunt Force Trauma	6	4	6	4	6	3	<6	<6	8	6	8	5
MVC/Transport	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	1
Drowning	<6	2	0	0	<6	<6	<6	<6	<6	<6	<6	1
Firearm	<6	<6	<6	<6	<6	<6	0	0	0	0	<6	1
Exposure	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<1
Strangulation	<6	<6	<6	<6	0	0	0	0	0	0	0	0
Poisoning	0	0	0	0	0	0	<6	<6	0	0	<6	2
Fire/Burn	0	0	0	0	<6	<6	0	0	0	0	0	0
SIDS	0	0	0	0	0	0	0	0	0	0	0	0
Other Injury	0	0	0	0	0	0	0	0	<6	<6	<6	<1
Fall/Crush	0	0	0	0	0	0	0	0	0	0	0	0
Total	171		156		183		178		144		173	

Counts <6 have been suppressed

Table 56. Number and Percentage of Deaths Among Children Ages 28 Days Through 365 Days by Manner, AZ, 2012- 2017

	2012		2013		2014		2015		2016		2017	
Manner	#	%	#	%	#	%	#	%	#	%	#	%
Natural	84	49	79	51	89	49	94	53	53	37	81	47
Accident	48	28	44	28	63	34	53	30	53	37	53	31
Undetermined	29	17	26	17	24	13	28	16	29	20	28	16
Homicide	10	6	7	4	7	4	<6	<6	9	6	11	6
Suicide	0	0	<6	<6	0	0	0	0	0	0	0	0
Unknown	0	0	<6	<6	0	0	0	0	0	0	0	0
Total	171		156		156		178		144		173	

Counts <6 have been suppressed

Children, One through Four Years of Age

Table 57. Number of Deaths Among Children Ages One Through Four Years by Cause and Manner, AZ, 2017

Cause	Natural	Accident	Suicide	Homicide	Undetermined	Total
Medical*	42	0	0	0	0	42
Drowning	0	20	0	0	0	20
MVC/Transport	0	6	0	0	0	6
Undetermined	<6	<6	0	0	6	11
Blunt Force Trauma	0	0	0	<6	0	5
Prematurity	<6	0	0	0	0	2
Strangulation	0	0	0	0	0	0
Suffocation	0	<6	0	0	<6	1
Poisoning	0	<6	0	0	<6	3
Other Injury	0	<6	0	<6	<6	3
Other Non-Medical	0	0	0	0	0	0
Exposure	0	0	0	0	0	0
Total	47	37	0	7	8	99
*Excluding SIDS and Prematurity						

Counts <6 have been suppressed

Table 58. Number and Percentage of Deaths Among Children Ages One Through Four Years by Cause, AZ, 2012- 2017

	2012		2013		2014		2015		2016		2017	
Cause	#	%	#	%	#	%	#	%	#	%	#	%
Medical*	57	48	62	48	40	42	40	40	50	43	42	42
Drowning	18	15	19	15	18	19	20	20	21	18	20	20
MVC/Transport	11	9	18	14	10	11	13	13	19	16	6	6
Undetermined	<6	<6	6	5	26	4	<6	<6	8	7	9	9
Blunt Force Trauma	9	8	14	11	10	11	9	9	6	5	<6	5
Firearm	<6	<6	<6	<6	<6	1	0	0	<6	<6	<6	3
Poisoning	<6	<6	<6	<6	0	0	<6	<6	<6	<6	<6	3
Fire/burn	<6	<6	<6	<6	0	0	0	0	<6	<6	<6	1
Fall/crush	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	3
Strangulation	<6	<6	<6	<6	0	0	<6	<6	<6	<6	0	0
Prematurity	<6	<6	<6	<6	<6	<6	0	0	<6	<6	<6	2
Suffocation	<6	<6	<6	<6	<6	<6	6	6	<6	<6	<6	1
Other Injury	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	3
Other non-Medical	<6	<6	<6	<6	<6	<6	<6	<6	0	0	0	0
Total	120		130		95		101		117		99	
*Excluding SIDS and Prematurity												

Counts <6 have been suppressed

Table 59. Number and Percentage of Deaths Among Children Ages One Through Four Years by Manner, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Manner	#	%	#	%	#	%	#	%	#	%	#	%
Natural	57	48	62	48	40	42	40	40	53	45	47	47
Accident	39	33	46	35	36	38	39	39	47	40	37	37
Homicide	17	14	16	12	14	15	18	18	10	9	7	7
Undetermined	7	6	6	5	<6	5	<6	<6	7	6	8	8
Suicide	0	0	<6	<1	0	0	0	0	0	0	0	0
Unknown	0	0	<6	<1	0	0	0	0	0	0	0	0
Total	106		120		130		95		101		99	

Counts <6 have been suppressed

Children, 5 through 9 Years of Age

Table 60. Number of Deaths Among Children Ages Five Through Nine Years by Cause and Manner, AZ, 2017						
Cause	Natural	Accident	Suicide	Homicide	Undetermined	Total
Medical*	37	0	0	0	0	37
MVC/Transport	0	16	0	0	0	16
Firearm	0	0	0	<6	0	<6
Drowning	0	7	0	0	0	7
Undetermined	<6	0	0	0	0	<6
Fire/Burn	0	0	0	0	<6	<6
Exposure	0	0	0	0	0	0
Strangulation	0	0	0	0	0	0
Fall/Crush	0	0	0	0	0	0
Other Injury	0	<6	0	<6	0	<6
Total	38	24	0	<6	<6	66
*Excluding SIDS and prematurity						

Counts <6 have been suppressed

Table 61. Number and Percentage of Deaths Among Children Ages Five Through Nine Years by Cause, AZ, 2012-2017												
	2012		2013		2014		2015		2016		2017	
Cause	#	%	#	%	#	%	#	%	#	%	#	%
Medical	37	59	24	51	30	54	25	49	29	64	37	56
MVC/Transport	12	19	17	36	12	21	9	18	7	16	16	24
Drowning	<6	<6	<6	<6	<6	<6	9	12	<6	<6	7	11
Firearm	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	2
Blunt Force Trauma	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	2
Fire/Burn	<6	<6	<6	<6	<6	<6	<6	<6	0	0	<6	2
Strangulation	0	0	<6	<6	<6	<6	0	0	<6	<6	0	0
Other	0	0	<6	<1	<6	<2	<6	2	0	0	0	0
Undetermined	<6	<6	<6	<6	0	0	<6	<6	0	0	0	0
Fall/Crush	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	0	0
Prematurity	0	0	<6	<1	0	0	0	0	0	0	<6	2
Suffocation	0	0	<6	<6	<6	<6	0	0	0	0	0	0
Poisoning	0	0	<6	<6	0	0	0	0	0	0	0	0
Total	63		47		56		51		45		66	
*Excluding SIDS and Prematurity												

Counts <6 have been suppressed

Table 62. Number and Percentage of Deaths Among Children Ages Five Through Nine Years by Manner, AZ, 2012-2017												
	2012		2013		2014		2015		2016		2017	
Manner	#	%	#	%	#	%	#	%	#	%	#	%
Natural	37	59	25	53	29	52	26	51	29	64	38	58
Accident	22	35	20	43	21	38	18	35	10	22	24	36
Undetermined	<6	<6	<6	<6	<6	<6	<6	<6	0	0	<6	1
Homicide	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	5
Suicide	0	0	0	0	0	0	0	0	<6	<6	0	0
Total	63		47		56		51		45		66	

Counts <6 have been suppressed

Children, 10 through 14 Years of Age

Table 63. Number of Deaths Among Children Ages 10 Through 14 Years by Cause and Manner, AZ, 2017						
Cause	Natural	Accident	Suicide	Homicide	Undetermined	Total
Medical*	28	0	0	0	0	28
MVC/Transport	0	15	0	0	0	15
Strangulation	0	<6	7	0	0	8
Firearm Injury	0	0	9	<6	0	10
Poisoning	0	<6	0	0	0	<6
Other Injury	0	<6	0	<6	0	7
Undetermined	0	0	0	<6	0	<6
Exposure	0	0	0	0	0	0
Drowning	0	<6	0	0	0	<6
Suffocation	0	0	0	0	0	0
Total	28	25	16	<6	0	

Counts <6 have been suppressed

Table 64. Number and Percentage of Deaths Among Children Ages 10 Through 14 Years by Cause, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Cause	#	%	#	%	#	%	#	%	#	%	#	%
Medical*	35	47	34	44	36	51	19	41	34	48	28	38
MVC/Transport	21	28	20	26	9	13	8	17	17	24	15	20
Strangulation	7	9	7	9	<6	<6	<6	<6	9	13	<6	11
Firearm	<6	<6	<6	6	6	9	6	13	<6	<6	10	14
Other Injury	0	0	<6	<6	<6	<6	<6	<6	<6	<6	0	0
Fall/Crush	0	0	<6	<6	<6	<6	<6	<6	<6	<6	0	0
Poisoning	0	0	<6	<6	<6	<6	<6	<6	<6	<6	<6	1
Blunt Force Trauma	0	0	<6	<6	<6	<6	0	0	<6	<6	<6	4
Exposure	0	0	<6	<6	0	0	<6	<6	0	0	0	0
Suffocation	<6	<6	<6	<6	<6	<6	<6	<6	0	0	0	0
Drowning	<6	<6	<6	<6	<6	<6	<6	<6	0	0	<6	5
Undetermined	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	1
Fire/burn	<6	<6	<6	<6	<6	<6	0	0	0	0	<6	5
Total	75		77		70		46		71		74	
*Excluding SIDS and Prematurity												

Counts <6 have been suppressed

Table 65. Number and Percentage of Deaths Among Children Ages 10 Through 14 Years by Manner, AZ, 2012- 2017												
	2012		2013		2014		2015		2016		2017	
Manner	#	%	#	%	#	%	#	%	#	%	#	%
Natural	36	48	36	47	37	53	20	44	34	48	28	38
Accident	27	36	24	31	17	24	12	26	22	31	25	34
Suicide	9	12	8	20	11	16	12	26	9	13	16	22
Homicide	<6	3	9	23	<6	<6	<6	<6	<6	6	<6	6
Undetermined	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	0	0
Total	75		77		70		46		71		74	

Counts <6 have been suppressed

Children, 15 through 17 Years of Age

Table 66. Number of Deaths Among Children Ages 15 Through 17 Years by Cause and Manner, AZ, 2017						
Cause	Natural	Accident	Suicide	Homicide	Undetermined	Total
Firearm	0	<6	13	10	<6	27
Medical*	21	0	0	0	0	21
MVC/Transport	0	24	<6	0	0	25
Strangulation	0	0	18	0	0	18
Poisoning	0	9	<6	0	0	10
Drowning	0	<6	0	0	0	<6
Undetermined	0	0	0	0	0	0
Fire/Burn	0	0	0	0	0	0
Other Injury	0	<6	<6	<6	0	<6
Fall/Crush	0	<6	0	0	0	<6
Exposure	0	0	0	0	0	0
Suffocation	0	0	0	0	0	0
Total	21	43	34	11	<6	110
*Excluding SIDS and prematurity						

Counts < 6 have been suppressed

Table 67. Number and Percentage of Deaths Among Children Ages 15 Through 17 Years by Cause, AZ, 2012- 2017

	2012		2013		2014		2015		2016		2017	
Cause	#	%	#	%	#	%	#	%	#	%	#	%
Firearm	22	22	21	20	14	16	19	18	29	27	27	25
Medical*	13	13	21	20	18	20	25	24	25	23	21	19
MVC/Transport	38	38	24	23	25	28	18	17	24	22	25	23
Strangulation	9	9	10	10	9	10	11	11	13	12	18	16
Poisoning	6	6	12	12	7	8	11	11	8	7	10	9
Other	<6	<6	<6	<6	<6	<6	8	8	<6	<6	<6	3
Exposure	0	0	<6	<6	<6	<6	<6	<6	0	0	0	0
Drowning	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	2
Undetermined	<6	<6	<6	<6	0	0	<6	<6	<6	<6	0	0
Fall/Crush	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	2
Blunt Force Trauma	<6	<6	<6	<6	0	0	0	0	<6	<6	<6	1
Fire/Burn	0	0	<6	<6	<6	<6	<6	<6	<6	<6	0	0
Suffocation	<6	<6	<6	<6	<6	<6	<6	<6	0	0	0	0
Total	100		103		89		104		107		110	

*Excluding SIDS and Prematurity

Counts <6 have been suppressed

Table 68. Number and Percentage of Deaths Among Children Ages 15 Through 17 Years by Manner, AZ, 2012- 2017

	2012		2013		2014		2015		2016		2017	
Manner	#	%	#	%	#	%	#	%	#	%	#	%
Accident	50	50	46	45	37	42	33	32	38	36	43	39
Suicide	24	24	17	17	27	30	35	34	28	26	34	31
Natural	13	13	22	21	19	21	28	26	25	23	21	19
Homicide	9	9	16	16	6	7	<6	<6	15	14	11	10
Undetermined	<6	<6	<6	<6	0	0	<6	<6	<6	<6	<6	1
Unknown	<6	<6	<6	<6	0	0	0	0	0	0	0	0
Total	100		103		89		105		107		110	

Counts < 6 have been suppressed

Appendix of Population Denominators for Arizona Children

The population denominators shown below were used in computing the rates presented in this report. Denominators for 2012 through 2017 were provided by the Arizona Department of Health Services Bureau of Public Health Statistics.

Population estimates for 2014 and forward were modified from previous years by applying county level demographic proportions in the census estimates for 2013 to the 2014 county population totals published by ADOA Department of Demography. This was done to determine the county-level proportions by race/ethnicity, gender, and age.

Table 69. Population of Children Ages Birth Through 17 Years by County of Residence, AZ, 2012- 2017

County	2012	2013	2014	2015	2016	2017
Apache	21,843	21,493	21,271	21,132	20,848	20,925
Cochise	30,434	30,621	29,190	28,906	28,463	28,282
Coconino	31,310	31,463	31,097	30,902	30,498	30,504
Gila	11,317	11,351	11,062	11,091	11,085	11,215
Graham	10,623	10,818	10,871	10,874	10,693	10,683
Greenlee	2,408	3,016	2,952	2,967	2,950	3,100
La Paz	3,685	3,708	3,682	3,693	3,639	3,724
Maricopa	1,008,347	1,015,472	1,016,044	1,021,299	1,023,035	1,034,888
Mohave	40,338	39,786	39,076	38,404	37,694	37,653
Navajo	31,551	31,463	30,868	30,682	30,463	30,406
Pima	223,677	223,639	222,413	2,208,66	219,206	219,613
Pinal	102,591	103,403	99,111	99,049	98,531	100,282
Santa Cruz	14,396	14,369	14,304	14,243	14,065	14,238
Yavapai	39,602	39,417	38,243	37,841	37,671	37,643
Yuma	56,415	57,367	56,542	56,255	55,887	56,269
Total	1,628,539	1,637,386	1,626,726	1,628,204	1,624,728	1,639,425

Table 70. Population of Children Ages 0 through 17 by Race/Ethnicity, AZ, 2012- 2017

Race/Ethnicity	2012	2013	2014	2015	2016	2017
African American	75,371	75,491	111,448	91,399	93,897	95,365
American Indian	98,426	99,014	123,657	86,548	86,600	88,123
Asian	43,453	44,838	62,673	53,073	53,827	54,545
White Hispanic	683,843	691,459	634,110	707,456	706,954	720,700
White, non-Hispanic	727,446	726,558	694,838	689,731	683,450	680,692
Total	1,628,539	1,637,386	1,626,726	1,628,204	1,624,728	1,639,425

Table 71. Population of Children Ages 0 Through 17 Years by Age Group, AZ, 2012- 2017						
Age Group	2012	2013	2014	2015	2016	2017
<1 Year	87,184	89,196	84,342	86,222	86,540	88,121
1-4 Years	356,828	351,077	350,065	346,443	343,263	353,344
5-9 Years	459,232	464,622	462,931	463,564	460,863	456,385
10-14 Years	454,826	459,528	458,488	458,966	457,960	461,239
15-17 Years	270,469	272,963	270,900	273,009	276,102	280,336
Total	1,628,539	1,637,386	1,626,726	1,628,204	1,624,728	1,639,425

Table 72. Number of Resident Births, AZ, 2012- 2017					
2012	2013	2014	2015	2016	2017
85,675	84,963	86,648	85,024	84,404	81,460

Table 73. Number of Births by Race/Ethnicity, AZ, 2012- 2017						
Race/Ethnicity	2012	2013	2014	2015	2016	2017
African American	4,674	4,726	4,522	4,361	4,388	4,595
American Indian	5,547	5,476	5,145	4,984	5,030	4,866
Asian	4,674	3,466	3,169	3,235	3,350	3,327
White Hispanic	33,030	33,075	33,715	34,264	33,874	33,191
White, non-Hispanic	38,800	38,220	40,097	38,180	37,762	35,685
Total	85,675	84,963	86,648	85,024	84,404	81,664

References

American Academy of Pediatrics. (2018). Swim Safety Tips from the American Academy of Pediatrics. Retrieved September 21, 2018, from https://www.aap.org/en-us/about-the-aap/aap-press-room/news-features-and-safety-tips/Pages/Swim-Safety-Tips.aspx

American Heart Association. (2018). Part 10: Special Circumstances of Resuscitation – ECC Guidelines. Retrieved from https://eccguidelines.heart.org/index.php/circulation/cpr-ecc-guidelines-2/part-10-special-circumstances-of-resuscitation/

American Foundation for Suicide Prevention. (2018, June 27). After a Suicide: A Toolkit for Schools. Retrieved October 12, 2018, from https://afsp.org/our-work/education/after-a-suicide-a-toolkit-for-schools/

American Academy of Pediatrics. (2018, August 30). AAP Updates Recommendations on Car Seats for Children. Retrieved from https://www.aap.org/en-us/about-the-aap/aap-press-room/Pages/AAP-Updates-Recommendations-on-Car-Seats-for-Children.aspx

Arizona Department of Education. (2018). Bullying Prevention. Retrieved from hwww.azed.gov/shs/other/

Arizona Department of Health Services, & Flood, T. (2017, January 31). Why Focus On Drowning?|Leading Causes of Death among Arizona Preschoolers. Retrieved September 20, 2018, from https://www.azdhs.gov/documents/preparedness/public-health-statistics/publications/az-leading-causes-death-2010-2015.pdf

Arizona Department of Transportation. (2018). Driver Services|Teen Drivers|Graduated Driver License. Retrieved from https://www.azdot.gov/motor-vehicles/driver-services/teen-drivers/graduated-driver-license

Arizona Health Care Cost Containment System. (2018). Working to End Suicide in Arizona. Retrieved from https://www.azahcccs.gov/AHCCCS/ProgramPlanning/EndSuicide/

Arizona Health Care Cost Containment System. (2018). An End to Suicide in Arizona 2018 State Plan.

Retrieved from https://www.azahcccs.gov/AHCCCS/Downloads/Plans/2018AZSuicidePreventionPlan.pdf

Education Development Center. (2018). Zero Suicide - In Health and Behavioral Healthcare. Retrieved from http://zerosuicide.com/

National Suicide Prevention Lifeline. (n.d.). 1-800-273-8255. Retrieved from http://www.suicidepreventionlifeline.org/

Substance Abuse and Mental Health Services Administration. (2012, June 1). Preventing Suicide: A Toolkit for High Schools|SAMHSA. Retrieved from http://store.samhsa.gov/product/Preventing-Suicide-A-Toolkit-for-High-Schools/SMA12-4669

Resources

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

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.

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 Child Care (1-800-535-4599) for assistance. These agencies will match parents seeking childcare with appropriate community resources.

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

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.

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 Childhelp 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 emergency, social service, and support resources. All calls are confidential.

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

The Winslow High School class of 1964 founded Navajo Newborns Need Safety Seats to provide all Navajo mothers in their community with car safety seats for their newborns.

Families First Prevention Service Act. For more information visit http://www.ncsl.org/research/human-services/family-first-prevention-services-act-ffpsa.aspx

Arizona Department of Health Services Dump the Drugs AZ. Find drop box locations to dispose unused or unwanted prescription drugs. This application displays all drop off locations in Arizona and enables the user to enter their address to receive directions to the location closest to them. For more information visit: https://azdhs.gov/gis/dump-the-drugs-az/

Appendix of State and Local CFR Teams

Arizona Department Health Service, State CFR Team

Chairperson:
Mary Ellen Rimsza, MD, FAAP
American Academy of Pediatrics

Members:

David K. Byers
Deidre Calcoate (proxy)
Administrative Office of the Courts

Deidre Calcoate
State CASA Program Manager
Administrative Office of the Courts

Maria Christina-Fuentes
Governor's Office for Children, Youth and Families

Cdr. Stacey Dawson
Phoenix Indian Medical

Tim Flood, MD
Marguerite Sagna (Proxy)
Arizona Department of Health Services

David Foley
Navajo Tribe Representative

Diana Gomez, MPH
Yuma County Department of Public Health Services

Jeff Hood
Robert D. Jones (Proxy)
Arizona Department of Juvenile Corrections

Joanna K. Kowalik
Cody Conklin-Aguilara, MD (Proxy)
Arizona Department of Economic Security

Jakenna Lebsock
Clinical Administrator
Eric Tack, MD (Proxy)
AHCCCS Division of Behavioral Health

Gaylene Morgan
Office of the Attorney General

Susan Newberry, Med
Karen Kline (Proxy)
Maricopa County CFR Team

Flor Olivas
ITCA Tribal Epidemiology Center

Mark K. Perkovich
Law Enforcement (AZ POST)

Beth Rosenberg
Director of Child Welfare & Juvenile Justice Children's Action Alliance

Christi Shelton
Arizona Department of Child Safety

Patricia Tarango, MS
Tomi St. Mars, MSN, RN (proxy)
Arizona Department of Health Services Bureau of Women's and Children's Health

Hilary Weinberg
Arizona Prosecuting Attorney's Advisory Council

Nicola Winkel, MPA
Shruti Shah (proxy)
Arizona Coalition for Military Families

David Winston, MD, PhD
Forensic Pathologist
Pima County Forensic Science Center

Coconino County, CFR Team

Chairperson:
Heather Williams
Injury Prevention Program Manager
Coconino County Public Health Services

Co-Chair:
Larry Czarnecki, MD
Coconino County
Medical Examiner

Members:

Bill Ashland RN
EMS Flagstaff Medical Center

Glen Austin, MD
Pediatrician, Flagstaff Pediatric Care

Orlando Bowman
Navajo Nation Criminal Investigator

Corey Cooper
Health Educator Coconino County Public Health Services District

Kristen Curtis, Admin Specialist
Coconino County Public Health Services District

Jim Driscoll
Sheriff, Coconino County Sheriff's Office

Deborah Fresquez Coconino County Victim/Witness Services

Brian Fuller
Federal Bureau of Investigations

Aaron Goldman
Psychiatrist, Victoria Tewa

Diana Hu, MD
Tuba City Regional Health Care Corporation

Shannon Johnson
Tuba City Regional Medical Center Trauma

Jane Nicoletti-Jones
Coconino County Attorney

John Philpot, Major
Arizona Department of Public Safety

Casey Rucker
Detective Flagstaff Police Department

Cindy Sanders, BSN, RN
Flagstaff Medical Center NICU

Gila County, CFR Team

Chairperson:
Edna Welsheimer
Executive Director, Time Out Shelter

Coordinator:
Kathleen Kelly, RN

Members:

Diana Acuna-Lopez
Globe DCS

Karen Aguero
Women Infants Children

Judy Alexander
CASA Coordinator

Robert Armenta
Globe High School Principal

Lori Alverez, RN
Director, San Carlos ER Nursing

Deseree Barbee
Psychologist, Globe Behavioral Health

Charlene Becker
Globe Teen Outreach Pregnancy Services

Victoria Began
CEO San Carlos Hospital

Alejandro Benally
Globe Chief of Police

Gabrielle Bibars
Psychologist, Payson School District

Alex Brothers
Cobre Valley ER Director

Susan Campbell
Counselor, Payson School District

Rachel Cliburn
Director, Gila County Public Health

Kathleen Conlon, RN
Director, San Carlos Apache Health

Tiffany Crawford
AZ Behavioral Health, Globe-OP

Kristin Crowley
Gila Community College

Aja DeZeew
Globe High School Counselor

Patti Dremler
CASA Coordinator

Dr. Diana Easton
Payson Family Medicine

Donald Engler
Payson Chief of Police

Liz Fetterman
Payson Child Help

Robert Folker
Globe Chief of Police

Carolyn Gillis
Globe Safe House

Katie Guglietta, RN
Payson Clinic

Sherry Hains
Chief Prosecutor San Carlos First Things First Globe

Mary Jarvis
Tonto Apache Tribe Sheriff

Samantha Jerome
Supervisor Payson WIC

Jerry Jennex
Globe Unified School District Superintendent

Michael Jernigan
San Carlos Apache Health ER

Lieutenant Justin Keeling
Globe Police Department

Dia Lapriel
Director, San Carlos Medical Center

Emily Leverance
Globe CASA

Karri Macri
Globe Behavioral Health

Tracey Manigault
Psychologist, Payson School District

Tammy McPeak
Nursing Combre Valley Medical Center

Leann Olson, MD
Payson Banner Hospital ER
Ken Padilla
Department of Child Safety Investigator

Perry Ross
Director SOC Services San Carlos Reservation

Renee Salazar
Catholic Community Services of Southern Arizona Department of Health Services

Shelly Soroka
Payson Child Help

Veronica Stedman, RN
Director, Banner Payson ER

Jason Stein
Director, Gila County DPS

Linda Timmer
Director, Payson Time Out Shelter

Tilla Warner
Child Help

James West
American Red Cross Disaster Team

Cherrill Williams
San Carlos EMS Supervisor

Steve Wolf
San Carlos Medical Center

Graham County, & Greenlee County, CFR Team

Chairperson/Coordinator:
Brandie Lee
CASA of Graham County

Members:

Brian Douglas
Health Director Graham County Health Department

Melissa Lunt, RN Graham County Health Department

Victoria Torres
Department of Child Safety Supervisor

Maricopa County, CFR Team

Chairperson:
Mary Ellen Rimsza, MD, FAAP

Coordinator:
Susan Newberry, M.Ed.

Assistant Coordinator:
Arielle Unger, BS

Members:

Angelica M Baker
Phoenix Children's Hospital

Sergeant Jason Aurellius
Phoenix Police Department

Sarah Barrett, MPH
Maricopa County Department of Public Health

Ilyssa Bain, MSN, RN CPEN
Banner Health System

Wendy Bernatavicius, MD
Phoenix Children's Hospital

John Bobola
US Consumer Product Safety Commission

Sergeant Jesse Boggs
Chandler Police Department

Megan Carey, MC
Department of Child Safety

Kimberly Choppi, MSN-Ed, RN CPEN
Maricopa Integrated Health System

Shawn Cox, LCSW
Victim Services Division Chief
Maricopa County Attorney's Office

Frances Baker Dickman, PhD, JD

Paul S. Dickman, MD
Phoenix Children's Hospital
University of Arizona College of Medicine
Phoenix Children's Hospital

Ilene Dode, PhD, LPD
CEO Emeritus

Michelle Fingerman, MS
Director, Childhelp National Child Abuse Hotline

Elisha Franklin, MC, LASAC
Chicanos Por La Causa

John Fraleigh, BSN, RN, CFRN
Banner Estrella Hospital

Mary Gibson, CFRN
Native Air

Merideth Gradowski, RN, BSN, CPEN
Dignity Health, Chandler Regional Medical Center

Dyanne Greer, MSW, JD
Deputy County Attorney
Family Violence Bureau
Maricopa County Attorney's Office

Sergeant Brian Hansen
Phoenix Police Department

Ryan Herold, RN
Mesa Fire and Medical Department

Brett Hurliman, MD
Phoenix Children's Hospital

Tiffaney Isaacson
Sr Injury Prevention Specialist
Phoenix Children's Hospital

Larel Jacobs, MC
Childhelp National Child Abuse Hotline

Jeffrey Johnston, MD
Maricopa County Chief Medical Examiner

A. Min Kang, MD, MPhil, FAAP
University of Arizona College of Medicine-Phoenix
Banner Poison and Drug Information Center
Phoenix Children's Hospital

Justin Kern
Assistant Director Aquatics and Safety Education
Arizona State University

Karin Kline, MSW
Arizona State University
Center for Child Well-Being

Crystal Langlais, MPH
Phoenix Children's Hospital

Detective Chris Loeffler
Phoenix Police Department

Sergeant Eric Lumley
Phoenix Police Department

Peggy McKenna, MSC, MFT
Arizona Department of Child Safety

Sandra McNally, MA, LISAC
La Frontera Arizona, EMPACT Suicide Prevention Center

Casey Melsek, MSW, CPM
Arizona Department of Child Safety

Detective Keith Moffitt
Phoenix Police Department

Kimberly Pender
Office of Child Welfare Investigations
Arizona Department of Child Safety

Leslie Quinn, MD, FAAP
Banner Health System
Cardon Children's Medical Center

Leah Reach, BSHS

Julie M. Rhodes
Assistant Attorney General
Arizona Attorney General's Office

Louise Roskelley

Lauren Savaglio, MS
Arizona State University

Fred Santesteban

Michele F. Scott, MD
Phoenix Children's Hospital

James Simpson
Southeast Section Chief Counsel
Child and Family Protection Division Arizona Attorney General's Office

David Solomon, MD
Phoenix Children's Hospital

Jennifer Soloman, MSW
Childhelp National Child Abuse Hotline

Julie Soto, MC
Mercy Maricopa Integrated Care

Margaret Strength, MSW
Arizona Department of Child Safety

Katrina Taylor
Childhelp National Child Abuse Hotline

Denis Thirion, MA
La Frontera Arizona, Empact Suicide Prevention Center

Marcella Valenzuela
Confirmation Supervisor
TASC Solutions

Blanca Villasenor
Sr. Injury Prevention Specialist
Phoenix Children's Hospital

Mary G Warren, PhD, MMH-E
Prevent Child Abuse Arizona

Stephanie Zimmerman, MD
Phoenix Children's Hospital

Mohave County, & La Paz County CFR Team

Chairperson:
Vic Oyas, MD
Havasu Rainbow Pediatrics

Coordinator:
Anna Scherzer
Mohave County Department of Public Health

Members:

Dawn Abbott
Mohave Mental Health Clinic, Inc.

Sara Colbert
Mohave County Probation Department

Natalie Eggers
Mohave County Probation Department

Detective Todd Foster
Kingman Police Department

Heather Miller
Kingman Regional Medical Center

Archaius Mosley, MD
Mohave County Medical Examiner's Office

Lorrie Muriel
Colorado River Funeral Services

Susan Plourde
Mohave County Medical Examiner's Office

Lieutenant Nick Sessions
Bullhead City Police Department

Sergeant Mike Thompson
Parker City Police Department

Debra Walgren, M.Ed.,
CPM Arizona DPS

Navajo County, CFR Team

Chairperson:
Janelle Linn, RN
Navajo County Public Health Services

Coordinator:
Abbi Cluff, RN
Navajo County Public Health Services

Members:

Tom Barela, MD
Retired Pediatrician

Kenneth Brown
WMAT Social Services

Trent Clatterbuck
Lead Medical Examiner Investigator, ABMDI Certified, Navajo County Medical Examiner's Office

Roxanne Padilla
Navajo County Attorney's Office
Victim Services Manager

Kateri Piecuch
Arizona Department of Economic Security Administration for Children, Youth, and Families

Danielle Poteet, RN
Summit Regional Medical Center
ER and Injury Prevention

Gregory Sehongva
Tribal Public Health Technician
Hopi Nation Indian

Scott Self
Assistant Medical Examiner Investigator Navajo County Medical Examiner's Office

Dr. Jerry Sowers, DO
Retired Family Practice Physician

Amy Stradling
Navajo County Public Health
Injury Prevention

Andrea Tsatoke, MPH
Indian Health Services District
Injury Prevention Coordinator

Pima County, Cochise County, & Santa Cruz County CFR Team

Chairperson:
Dale Woolridge, MD
Department of Emergency Medicine
University of Arizona

Coordinator:
Becky Lowry
University of Arizona

Members:

Nicole Abdy, MD
Department of Pediatrics
University of Arizona

Albert Adler, MD Indian Health Services

Carol Baker, RN
Pima County Health Department

Kathy Benson, RN
Retired School Nurse

Kathy Bowen, MD
Pediatrician

Kate Butcher
Victim Services
Pima County Attorney's Office

Mary Castro
Investigator of Child Welfare

Christine Chacon
Casa de los Ninos

Amy Chapman
Asst. Attorney General
Child & Family Protection Division
Office of the Attorney General

Detective Josh Cheek
Tucson Police Department

Jennifer Chen, MD
Office of the Medical Examiner

Rosanna Cortez
Victim Compensation Program Coordinator
Victim Services, Pima County Attorney's Office

Rachel Cramton, MD
Department of Pediatrics
University of Arizona

Detective Lisa Davilla
Tucson Police Department

Rajesh Dadani, MD
Banner/UMC Neonatology

Lisa Emery
Arizona DHS Child Care Licensing

Amy Gomez
Victim Services Liaison Emerge

Lori Groenewold, MSW
Children's Clinics for Rehabilitation

Karen Harper
Southern Arizona Child Advocacy Center

Captain Ryder Hartley
Northwest Fire Department

Sharon Hitchcock, RN
College of Nursing
University of Arizona

Kim Janes
Division Manager
Pima County Health Department

Detective James Johnston
Tucson Police Department

Mehmet Karliyil, MD
Tucson Medical Center

Susan Kincaid, RN, BSN, CEN
Trauma Outreach & Injury Prevention Coordinator
Banner/UMC Tucson

Tracy Koslowski
Public Education/Information Manager Drexel Heights Fire Department

Chan Lowe, MD
Department of Pediatrics
University of Arizona

Mary McDonald, RN BSN
Pre-hospital Manager
Tucson Fire Department

Sgt. Cindy Mechtel
Tucson Police Department

Brenda Neufeld, MD
Indian Health Services

Susanne Olkkola
Department of Emergency Medicine UA College of Medicine

Marie Olson, MD
Pediatric Hospitalist
University of Arizona

Beth Ratcliff
Pediatric ED Manager
Tucson Medical Center

Emily Rebro
Pima County Health Department

Leah Robeck, MSW
Division of Children, Youth and Families Arizona Department of Economic Security

Sue Rizzi, RN
Pima Community College

Pepper Sprague
Retired Teacher

Detective Rhonda Thrall
Tucson Police Department

Commander Donald Williams
US Public Health Services
Indian Health Services

Krista Young, MD
Indian Health Services

Melissa Zukowski, MD
Medical Director, Pediatric Emergency Department, Banner/UMC Tucson

Pinal County, CFR Team

Chairperson/Coordinator:
Lindsey Wicks
Pinal County Public Health Services

Members:

Melissa Alcala
Pinal County Attorney's Office-Family Advocate Centers

Celena Anstead
Pinal County Juvenile Court

Elizabeth Antone
Gila River Indian Community

Roger Belvins
Banner Health Hospital

Breanna Boland
Casa Grande Alliance

Graham Briggs
Pinal County Public Health-Epidemiology

Aimee Cantu
Department of Child Safety

Wyatt Carpenter
Law Enforcement

Maria Chico
Suspected Child Abuse and Neglect-Cardon

Ty Coleman
Detective, Coolidge Police Department

Alicia Cruz
Pinal County Public Health- Vital Records

Linda Devore
Retired Educator

Paul Dudish
Detective, Pinal County Sheriff's Office

Christina Floyd
Gila River Indian Community Director

Christopher Fox
Casa Grande Police Department

Jabette Franco
Pinal County Public Health-Infectious Diseases and Epidemiology Section

Brian Fuller
Federal Bureau of Investigations

Sharon Girard
Retired Physician's Assistant

Ramon Gonzales
Detective, Pinal County Sheriff's Office

Clancey Hill
Pinal County Public Health-Epidemiology

Cori Kelly
Pinal County Public Health-Administration

Andrea Lee
Department of Child Safety

David Linehan
Casa Grande Police Department

Marybeth McGrann
Department of Child Safety Manager

Shauna McIsaac, MD
Director, Pinal County Public Health

Jimmy Orozco
Gila River Police Department

Sonia Ortega
Pinal County Sheriff's Office

Ashley Pina
Gila River Police Department

Robert Pisano
Detective, Pinal County Sheriff's Office

Leslie Quinn, MD
Banner Health

Cecilia Quiroz
Gila River Indian Community

Gina Ramirez
Victim Advocate

Griselda Razo
Pinal County Public Health

Juan Sanchez
Military Deployment 2019

Barbara Schaffer, RN
Casa Grande Banner Health Hospital

Nick Schweers
Pinal County Public Health-Infectious Diseases and Epidemiology Section

Kristen Sharifi
Pinal County Attorney's Office

Scott Smith
Pinal County Adult Probation

Tascha Spears
Family Advocacy Centers Director, Pinal County Attorney's Office

Valorie Stading
Pinal County Medical Examiner

Laura Stewart
Identification Technician, Casa Grande Police Department

Letitia Sullivan
Retired Midwife

Alex Tanase, MD
Sunshine Pediatrics

Nancy Vega
Community Alliance Against Family Abuse

Jan Vidimos
School Health Liason Manager, Pinal County Public Health

Reyna Villegas
Pinal County Public Health-School Health Liaison

Ashley Walker
Detective, Coolidge Police Department

Eugene Ward
Casa Grande Police Department

Tyesha Wood
Law Enforcement Gila River Indian Community

Sharon Woodard
Victim Advocate

Rachel Zenuk, MPH
E & O Director, Pinal County Public Health

Yavapai County, CFR Team

Chairperson:
Kathy McLaughlin
Citizen Advocate

Coordinator:
Stacey Gagnon, RN, BSN
Yavapai County Community Health Services

Administrative Specialist:
Carol Espinosa
Yavapai County Community Health Services

Members:

Julie Bloss
Department Child Safety

Jerry Bruen
Yavapai County Attorney's Office

Sue Carlson
Mental Health/ Counselor

Karen Dansby
Pediatrician Consultant

Joan Drydyk
Community Member

Barbara Jorgenson, RN
Newborn Intensive Care Program Home Visitor
Yavapai County Community Health Services

Henry Kaldenbaugh, MD
Pediatrician

Dawn Kimsey
Department Child Safety

Joseph Lopez
Yavapai County Medical Examiner's Office

Dennis McGrane
Yavapai County Attorney

Officer M. J. Williams
Prescott Valley Police Department

Missy Sikora
Yavapai Family Advocacy Center

Yuma County, CFR Team

Chairperson:
Patti Perry, MD
Yuma Regional Medical Center

Coordinator:
Ryan Butcher
Yuma County Health District

Members:

Megan Barry, RN
Yuma Regional Medical Center

Lieutenant Jay Carlson
Yuma County Sheriff's Office

Christina Colarossi
Intern for Dr. Perry

Mike Erfert
Public City of Yuma Fire Department

Maria Estrada
Department of Child Safety
Program Specialist

Alan Herrera
Medical Examiner
Investigator/Deputy, Yuma County Sheriff's Office

Martin Loaiza
Behavioral Analysis Counseling & Consulting

Mary Megui
Department of Child Safety
Program Manager

Emily Regan
Intern for Dr. Perry

Chip Schneider
Family Child Advocate
Amberly's Place

Jennifer Stanton, RN
Director, Yuma Regional Medical Center

Sergeant Nathan Williams
Police Officer Yuma Police Department