COLORADO CHILD FATALITY PREVENTION SYSTEM

Statewide Data Overview

COLORADO
Department of Public
Health & Environment

COLORADO CHILD FATALITY PREVENTION SYSTEM

STATEWIDE DATA OVERVIEW, 2013 - 2017

INTRODUCTION

The Child Fatality Prevention Act (Article 20.5 of Title 25, Colorado Revised Statutes) established the Child Fatality Prevention System (CFPS), a statewide, multidisciplinary, multi-agency effort to prevent child deaths. Although not codified in Colorado Revised Statutes (C.R.S.) until 2005, CFPS has been conducting retrospective reviews of child deaths in Colorado since 1989. CFPS applies a public health approach to prevent child deaths by aggregating data from individual child deaths, describing trends and patterns of the deaths and recommending prevention strategies. Child fatality prevention review teams and their partners implement and evaluate the identified strategies at the state and local levels with the goal of preventing similar deaths in the future.

The data presented within this data summary come from comprehensive, statutorily-mandated reviews of deaths among those under 18 years of age occurring in Colorado between 2013 and 2017. Local child fatality prevention review teams are responsible for conducting individual, case-specific reviews of deaths of children meeting the statutory criteria. Reviewable child deaths result from one or more of the following causes: undetermined causes, unintentional injury, violence, motor vehicle and other transportation-related, child maltreatment, sudden unexpected infant death (SUID) and suicide. During the 2018 fiscal year, local teams reviewed deaths that occurred in 2017.

The CFPS review process includes deaths of Colorado residents occurring in Colorado, as well as deaths of out-of-state residents who died in Colorado or were transported to a Colorado hospital and died. CFPS does not review deaths of Colorado residents that occur outside Colorado. These criteria are different from other reports of child fatality data and many other Colorado government data sources. As a result, the data presented in this topic-specific data brief may not match other statistics reported at both the state and national levels. This data brief provides an overview of the state-level data from CFPS. Additional CFPS data is available in cause-specific data briefs and an interactive data dashboard at: www.cochildfatalityprevention.com/p/reports.html.

STRUCTURAL INEQUITY

CDPHE acknowledges that generations-long social, economic and environmental inequities result in adverse health outcomes. They affect communities differently and have a greater influence on health outcomes than either individual choices or one's ability to access health care. Reducing health disparities through policies, practices and organizational systems can help improve opportunities for all Coloradans.[1]

Some families lose infants, children and youth to the types of deaths reviewed by CFPS not as the result of the actions or behaviors of those who died, or their parents or caregivers. Social factors such as where they live, how much money or education they have and how they are treated because of their racial or ethnic backgrounds can also contribute to a child's death.[2] In the United States, most residents grew up and continue to live in racially and economically segregated neighborhoods, which can lead to marginalization.[3,4] This marginalization of groups into segregated neighborhoods further impacts access to high-quality education,[5] employment opportunities,[6] healthy foods[7] and health care.[8] Combined, the economic injustices associated with residential, educational and occupational segregation have lasting health impacts that include adverse birth outcomes,

infant mortality,[9] high rates of homicide and gun violence[10] and increased motor vehicle deaths.[11]

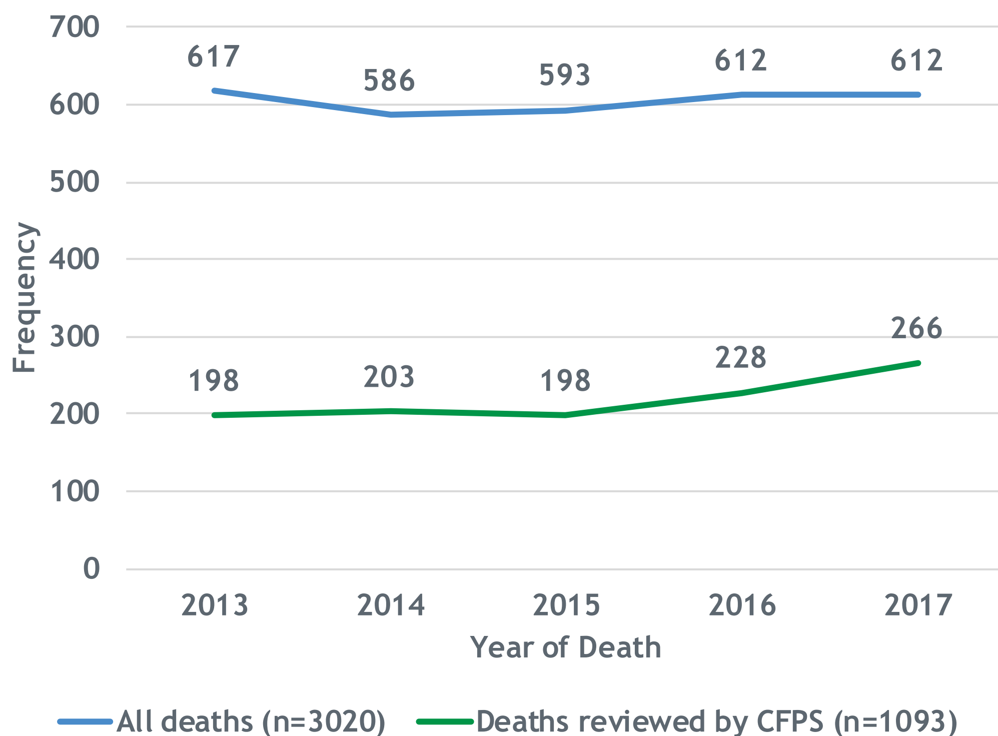
When interpreting the data, it is critical not to lose sight of these systemic, avoidable and unjust factors. These factors perpetuate the inequities that we observe in child deaths across populations in Colorado. Research is making progress in understanding how race and ethnicity, economic status, sexual orientation and gender identity correlate with health. It is critical that data systems like CFPS identify and understand the life-long inequities that persist across groups in order to eradicate them.

A note about terminology: While "Latinx" is becoming the preferred way to identify people of Latin descent, this report uses "Hispanic" throughout the data section to reflect how CFPS data is collected and to align with terminology used in cited literature and research.[12]

OVERVIEW OF CFPS DATA FROM 2013-2017

CFPS uses death certificates provided by the Vital Statistics Program within the Center for Health and Environmental Data at CDPHE to identify deaths among those under age 18 in Colorado. Of the 3,020 deaths from 2013 through 2017, 1,093 met the statutory criteria for CFPS child fatality review and received a thorough case review during the 2013 through 2018 calendar years. Figure 1 demonstrates the number of deaths in Colorado among those under age 18 from 2013 through 2017 and the number of deaths CFPS reviewed during this time period. Child deaths during this five-year period ranged from 586 in 2014 to 617 in 2013 and averaged 604 deaths per year. On average, 219 deaths per year met CFPS criteria and received a full review. In 2013, 198 deaths met the CFPS criteria for review, while 266 deaths met the criteria in 2017.

Figure 1. Total number of child deaths and child deaths reviewed by CFPS occurring among those under age 18 in Colorado by year, 2013-2017

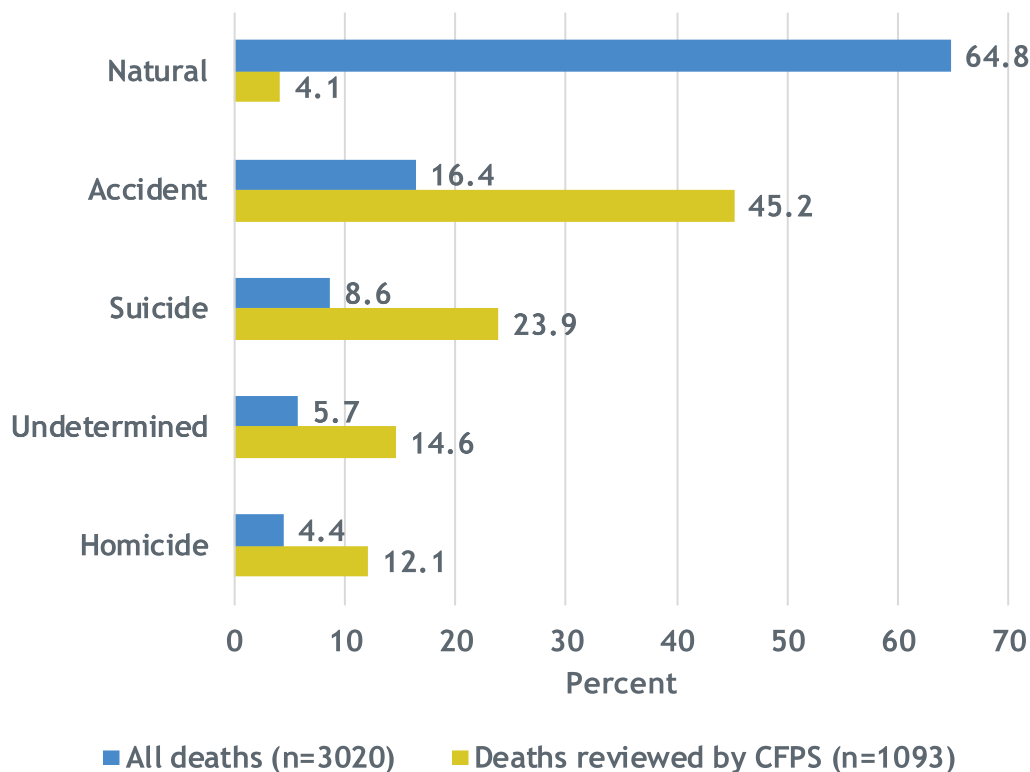


The overall number of deaths among infants, children and youth remained stable throughout the five-year period; however, the proportion of those deaths reviewed by CFPS increased in 2016 and 2017. The overall crude rate of death for deaths reviewed by CFPS for the period was 16.1 per 100,000 Colorado residents, ranging from 14.9 per 100,000 in 2013 to 18.9 per 100,000 population in 2017. While the upward trend in the rate across the period was not statistically significant, CFPS is monitoring this trend closely.

One major difference between deaths not reviewed by CFPS and those meeting the statutory criteria for CFPS review is the manner of death determined by coroners and medical examiners. The Colorado death certificate has five manners of death: natural, accident, suicide, homicide and undetermined. Manner of death is a classification made by a coroner, typically following a review of the circumstances surrounding the death and a thorough investigation. CFPS reviews approximately one of every three deaths. Those that CFPS does not review are most often deaths of natural manner due to a natural disease process. These natural deaths get a cursory review by CFPS to determine if there is a need to initiate a full review.

Figure 2 demonstrates that the majority of all deaths were determined to be natural (64.8 percent, n=1,958), accident (16.4 percent, n=494), suicide (8.6 percent, n=261), undetermined (5.7 percent, n=172) and homicide (4.4 percent, n=132). By contrast, for deaths reviewed by CFPS the most frequent manners of death were accident (45.2 percent, n=494), suicide (23.9, n=261), undetermined (14.6 percent, n=159), homicide (12.1 percent, n=132) and natural (4.1 percent, n=45).

Figure 2. All deaths and all deaths reviewed by CFPS occurring among those under age 18 in Colorado by manner of death, 2013-2017



Colorado coroners also determine cause of death, which is a specific injury or disease that resulted in the death (i.e., drowning, poisoning or a motor vehicle crash). Table 1 displays the leading causes of death occurring among those under age 18 in Colorado for the years 2013-2017. These leading causes of death included perinatal conditions (28.0 percent, n=846), congenital malformations (16.8 percent, n=506) and youth suicide (8.6 percent, n=261).

Table 1. Leading causes of death occurring among those under age 18 in Colorado, 2013-2017 (n=3020)

	n	Percent
Perinatal conditions	846	28.0
Congenital malformations	506	16.8
Suicide	261	8.6
Motor vehicle	231	7.7
Sudden unexpected infant death	216	7.2
Malignant neoplasms	137	4.5
Nervous system diseases	103	3.4

Data source: Vital Statistics Program, Colorado Department of Public Health and Environment. Prepared by the Child Fatality Prevention System.

For CFPS data analysis purposes, coroners may assign a death to one or more of the major cause of death categories when child maltreatment is indicated. For example, in the case of a youth known to be experiencing a mental health crisis who subsequently dies by suicide, the death may be coded as a death by suicide and a firearm death (depending on the means of death). This death may also be counted as a child maltreatment death if the professional opinion of the team identified child neglect where access to lethal means were not restricted.

Figure 3 shows the leading causes of death among children and youth under age 18 reviewed by CFPS for the years 2013-2017. Among these, the most frequent cause of death over the five-year period was youth suicide (n=261) followed by motor vehicle and other transportation-related deaths (n=237), consisting primarily of passenger vehicle deaths (n=160) and pedestrian deaths (n=38). Other leading causes of death included sudden unexpected infant death (SUID) (n=228); child maltreatment (n=223); firearm (n=168); unintentional drowning (n=61); homicide not due to child maltreatment (n=43); and unintentional overdose or poisoning (n=33) deaths. More details about the leading causes of death are available in cause-specific data briefs located at: www.cochildfatalityprevention.com/p/reports.html.

Figure 3. Leading causes of death for deaths occurring among those under age 18 in Colorado and reviewed by CFPS, 2013-2017 (n=1093)

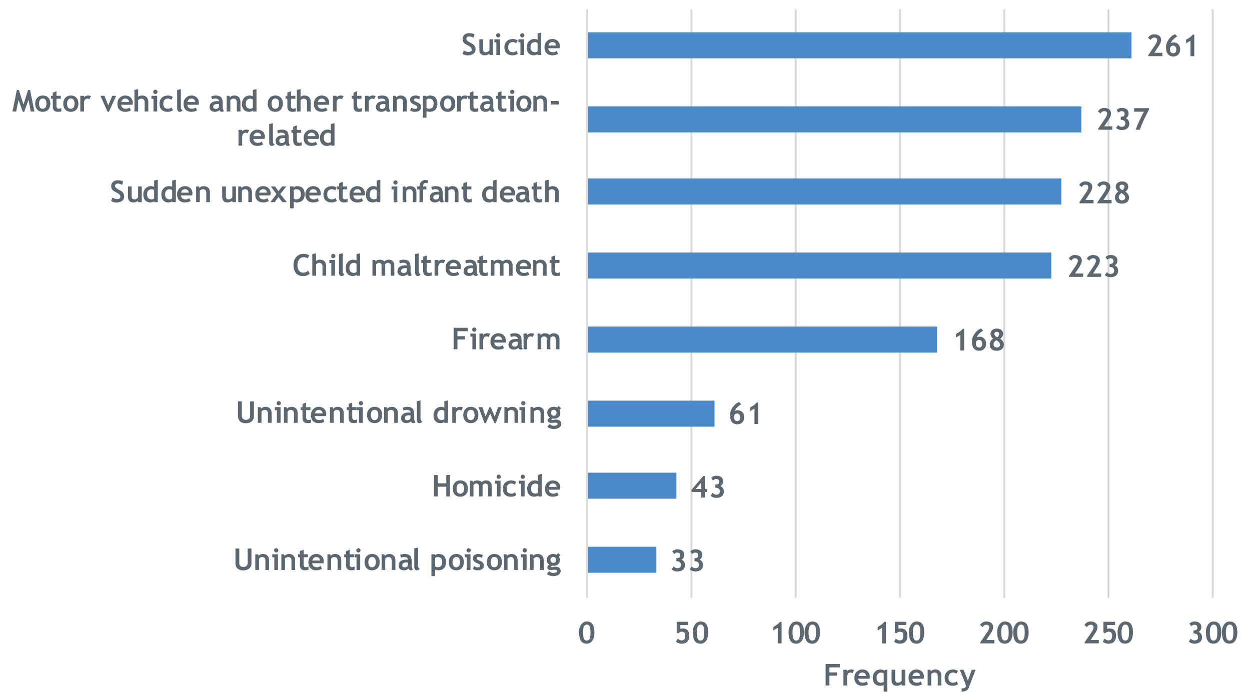
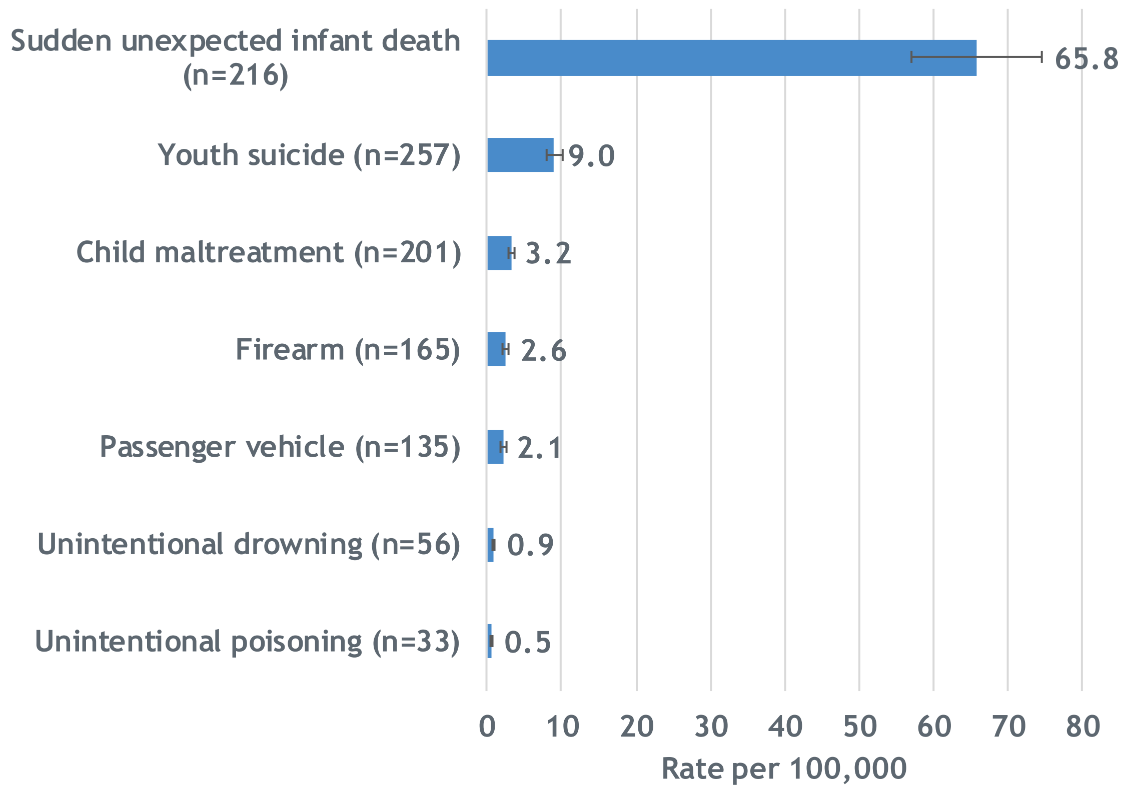


Figure 4 demonstrates the crude rates of death among Colorado residents for the leading causes of death identified by CFPS from 2013-2017. The highest rate of death was SUID, at 65.8 deaths per 100,000 live births in Colorado. This rate was more than seven times the rate of any other cause of death reviewed by CFPS. Suicide among youth ages 10-17 was the second highest rate at 9.0 deaths per 100,000 population, followed by child maltreatment at 3.2 per 100,000 population. These rates varied by age group, where the rate of child maltreatment among infants under age 1 (25.3 per 100,000 population, n=84) exceeds the rate of suicide among those ages 15-17 (16.7 per 100,000 population, n=174). Both represent the age categories with the highest rates for these causes of death.

Figure 4. Crude rates of death for child fatalities occurring in Colorado among Colorado residents under age 18 and reviewed by CFPS, 2013-2017



*Error bars represent 95% confidence limits for rates.

Figure 5 shows the leading causes of death by year of death. Youth suicide significantly increased across the period. Although the increase was not significant, motor vehicle and other transportation-related deaths trended upwards in recent years. CFPS will monitor these trends in coming years. More details about trends over time are available in cause-specific data briefs located at: www.cochildfatalityprevention.com/p/reports.html.

Figure 5. Leading causes of death occurring among those under age 18 in Colorado and reviewed by CFPS by year, 2013-2017 (n=1093)

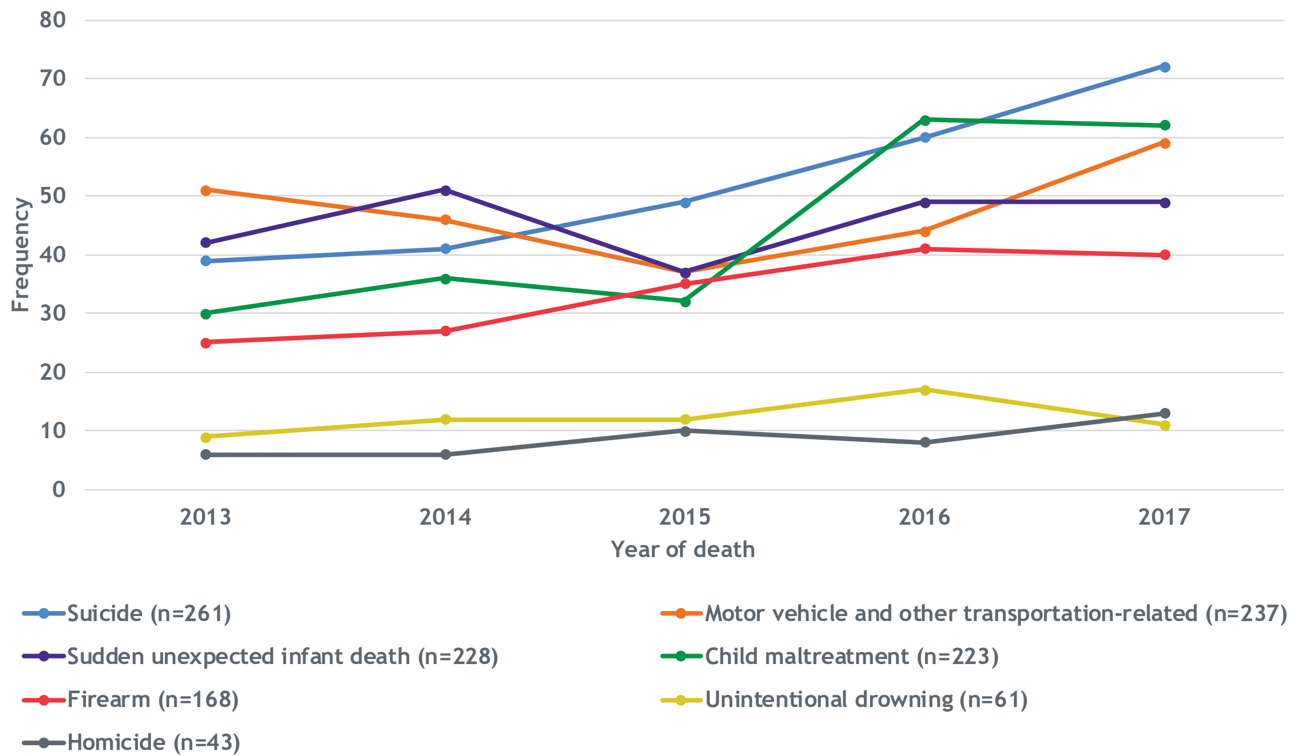


Table 2 displays the leading causes of death from 2013-2017 for deaths reviewed by CFPS occurring among those under age 18 in Colorado by age group. The leading causes for infants under age 1 (n=299) included SUID (76.2 percent, n=228), child maltreatment (30.1 percent, n=90) and unintentional drowning (2.0 percent, n=6). Among children ages 1-4 (n=149), the leading causes of death were child maltreatment (41.6 percent, n=62), unintentional drowning (16.8 percent, n=25) and motor vehicle or other transportation-related deaths (16.1 percent, n=24). Children ages 5-9 had the fewest deaths of any age category (n=88), with motor vehicle or other transportation-related deaths as the leading cause of death (48.9 percent, n=43), followed by child maltreatment (34.1 percent, n=30) and unintentional drowning (13.6 percent, n=12). For youth ages 10-14 (n=173), the leading causes of death included suicide (48.6 percent, n=84), motor vehicle or other transportation-related deaths (27.8 percent, n=48) and child maltreatment (12.1 percent, n=21). Finally, there were 384 deaths among youth ages 15-17. Leading causes for this age group included suicide (46.1 percent, n=177), motor vehicle or other transportation-related deaths (30.2 percent, n=116) and homicide (8.3 percent, n=32).

Table 2. Leading causes of death occurring among those under age 18 in Colorado and reviewed by CFPS by age group, 2013-2017*

	n	Percent
All (n =1093)		
Suicide	261	23.9
Motor vehicle and other transportation-related	237	21.7
Sudden unexpected infant death	228	20.9
Child maltreatment	223	20.4
Firearm	168	15.4
Age < 1 (n = 299)		
Sudden unexpected infant death	228	76.2
Child maltreatment	90	30.1
Unintentional drowning	6	2.0
Motor vehicle and other transportation-related	6	2.0
Other	8	2.7
Ages 1 - 4 (n = 149)		
Child maltreatment	62	41.6
Unintentional drowning	25	16.8
Motor vehicle and other transportation-related	24	16.1
Asphyxia	12	8.1
Fire	10	6.7

	n	Percent
Ages 5 - 9 (n = 88)		
Motor vehicle and other transportation-related	43	48.9
Child maltreatment	30	34.1
Unintentional drowning	12	13.6
Firearm	7	8.0
Fall or Crush	5	5.7
Ages 10 - 14 (n = 173)		
Suicide	84	48.6
Motor vehicle and other transportation-related	48	27.8
Child maltreatment	21	12.1
Firearm	38	22.0
Homicide	7	4.0
Ages 15 - 17 (n=384)		
Suicide	177	46.1
Motor vehicle and other transportation-related	116	30.2
Firearm	116	30.2
Homicide	32	8.3
Unintentional poisoning	26	6.8

Data source: Child Fatality Prevention System, Colorado Department of Public Health and Environment.

*Cause of death categories are not mutually exclusive. Totals may sum beyond 100%.

For more information and CFPS data, please contact the CFPS Support Team at the Colorado Department of Public Health and Environment:

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