CHILD FATALITY PREVENTION SYSTEM: CHILD MALTREATMENT DEATH DATA, 2016 - 2020

COLORADO
Department of Public Health & Environment

Introduction

The Child Fatality Prevention System (CFPS) is a statewide network that focuses on preventing child deaths. Housed at the Colorado Department of Public Health and Environment (CDPHE), CFPS consists of local review teams, a State Review Team, and the CFPS state support team at CDPHE. Local teams and the CFPS State Review Team include community members and field experts. These teams complete case reviews of infant, child, and youth deaths in Colorado to describe trends and patterns and create strategies to prevent future deaths. As part of the case review process, CFPS partners develop and share out recommendations for how to prevent child deaths annually.

The system reviews all deaths that occur in Colorado among infants, children, and youth under age 18. CFPS does not review deaths of Colorado residents that occur out of state. This is different from other reports of child death data and other Colorado government data sources. As a result, the data presented in this data brief might not match other statistics reported at both the state and national levels.

This data brief provides an overview of child maltreatment death data from CFPS. Additional CFPS data are available at: www.cochildfatalityprevention.com/p/reports.html.

For purposes of this brief, ***inequities*** are defined as systemic, avoidable, and unjust factors that prevent people from reaching their highest level of health. ***Disparities*** are differences in health outcomes between people related to social or demographic factors such as race, ethnicity, gender, sexual orientation, or geographic region. Measuring disparities helps measure our progress toward achieving equity.[1,2]

The impact of policies and systems on child deaths

Generations of social, economic, and environmental inequities contribute to the deaths of infants, children, and youth.[3] People exposed to these factors (outlined in the table below) experience additional harm, resulting in higher rates of death. When interpreting the data, it is critical to not lose sight of these systemic, avoidable, and unjust factors. Researchers work towards understanding how geography, race, ethnicity, 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 eliminate them. When limitations in the data system exist due to how data are collected, or because data are not collected, CFPS strives to provide additional context and research about how inequities impact child deaths. By changing policies and systems that create and perpetuate inequities, CFPS can reduce the number of child deaths that occur in Colorado. Examples of these inequities include, but are not limited to:

RURAL AND FRONTIER GEOGRAPHY	RACE AND ETHNICITY	SEXUAL ORIENTATION AND GENDER IDENTITY
Limited access to Level 1 trauma centers and mental and behavioral health services.[4] Increased stigma associated with mental illness and seeking help.[5] Longer response times by emergency medical services.[6] **→ These and other factors contribute to higher death rates in rural areas, including suicide[7] and passenger vehicle deaths.[8]**	Racism, discrimination, and historical trauma.[9,10] Limited access to high-quality education,[11] employment opportunities,[12] healthy foods,[13] culturally traditional foods,[14] and health care.[15] Chronic stress.[16] **→ These factors result in lasting health impacts for people of color that include infant mortality,[17] high rates of homicide and gun violence,[18] and increased motor vehicle deaths.[19]**	Discrimination, stigma, and bias.[20] Rejection from family, friends, and community.[21] Non-inclusive school curricula and anti-harassment policies.[22] Insufficient access to LGBTQ+-informed health care.[23] **→ This chronic social stress that LGBTQ+ children and youth experience influences health across the lifespan, including higher rates of suicide[24] and substance use.[25]**

Overview of Child Maltreatment Deaths

For the purpose of a public health-focused child fatality review process, child maltreatment is defined as an act or failure to act on the part of a parent or caregiver regardless of intent. This broad definition of child abuse and neglect acknowledges that infants, children, and youth die from child maltreatment in Colorado without ever having contact with the child welfare system.

Although Colorado's Children's Code (C.R.S. 19-1-103 (1)) and legal definitions of child abuse and child neglect serve as guidance for the system, CFPS teams make determinations of child maltreatment (abuse or neglect) based on available information from the case reviews and professional judgments. Additionally, these multidisciplinary review teams include representatives from departments of human services. The determination is the subjective opinion of the teams and does not trigger any prosecution or have any legal ramifications. As such, deaths classified as child maltreatment by CFPS teams will not be the same as official

counts of child abuse or child neglect deaths reported by the Colorado Department of Human Services (CDHS). Also, some of these deaths do not meet the criteria for review by the CDHS Child Fatality Review Team (CFRT) according to CFRT statutory review criteria.

What is the CDHS Child Fatality Review Team (CFRT)?
CFRT reviews incidents of fatal, near fatal, or egregious abuse or neglect determined to be a result of child maltreatment when the child or family had previous involvement with the child welfare system within the last three years. CFRT reviews the incident and identifies factors that may have led to it. CFRT assesses the sufficiency and quality of services state and local agencies provide to families and their prior involvement with the child welfare system. As a result of identified strengths, as well as systemic gaps and/or deficiencies, CFRT puts forth policy and practice recommendations that may help prevent future incidents of fatal, near fatal, or egregious abuse or neglect. These recommendations could also strengthen the systems that deliver services to children and families. CFRT and CFPS create a joint child maltreatment fatality prevention recommendation annually. For more information on CFRT, visit: cdhs.colorado.gov/child-fatality-reviews.

From 2016-2020, there were 249 deaths where child maltreatment caused and/or contributed to the circumstances of death among infants, children, and youth ages 0-17 in Colorado. Figure 1 displays the rates of child maltreatment deaths, as defined by CFPS, among Colorado residents under age 18 by year. The rate of child maltreatment deaths from 2016-2020 was 3.6 per 100,000 population. The rate of 3.3 per 100,000 population in 2020 was not statistically significantly different from the rate of 4.4 per 100,000 population observed in 2016. CFPS-identified child maltreatment deaths were trending upward in previous years, but observed a decrease between 2016 and 2019. CFPS will monitor this trend in coming years.

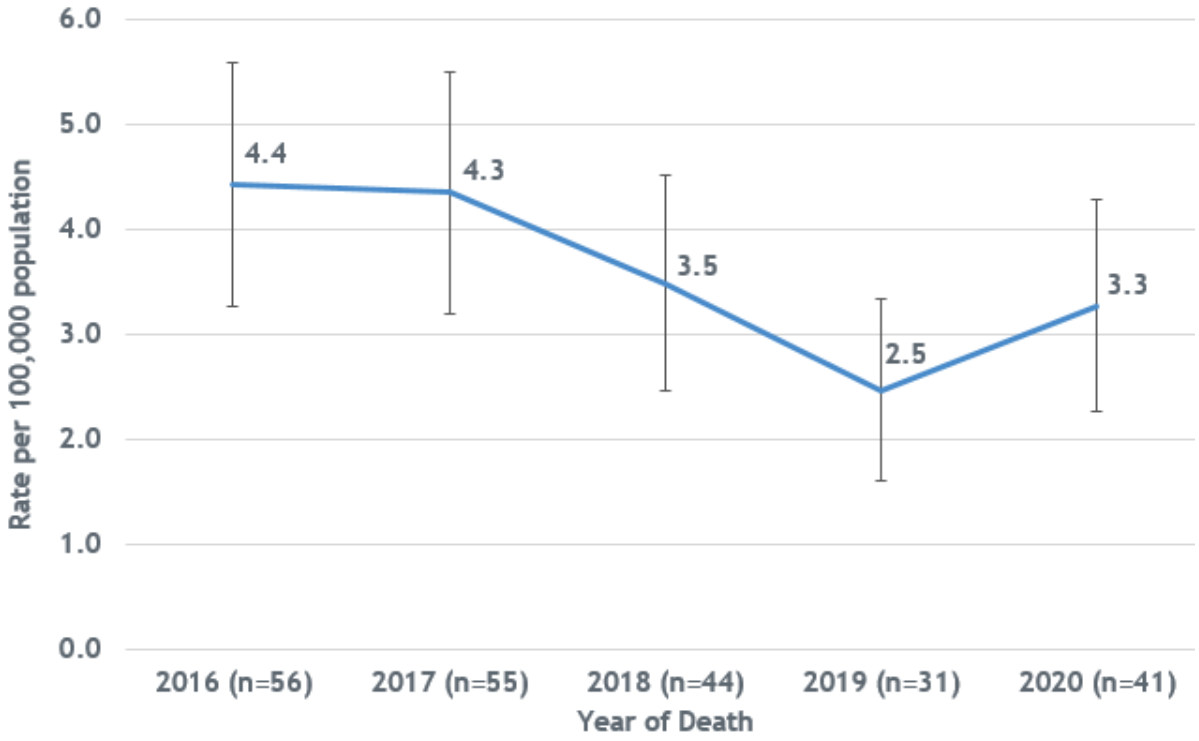
Child maltreatment and its identification according to the previously provided definition allows CFPS review teams great latitude when determining whether child maltreatment contributed to the events leading to death, as is common for public health child death review processes. Some of the increase in the rate of child maltreatment deaths in 2016 and 2017 may be attributed to improved guidance provided to local teams around identifying child abuse and neglect. Prior to 2014, the CFPS State Review Team identified all child maltreatment deaths substantiated by county departments of human or social services as child maltreatment deaths. Local teams began reviewing child deaths in 2014; however, they did not always identify cases that were substantiated by county departments of human services as child maltreatment. These observations prompted increased training to local teams about CFPS's role in identifying child maltreatment. For example, the CFPS state support team provided guidance to local teams to always identify cases as child maltreatment when the death is substantiated by county departments of human services.

However, the pattern of not identifying substantiated deaths as child maltreatment in CFPS has resurfaced in recent years. For example, local teams initially identified 48.1% (n=13) of

the 27 child maltreatment deaths substantiated by county departments of human services in 2020. The 14 deaths not identified by local teams were subsequently reclassified as child maltreatment by the CFPS state support team. The CFPS 2022 Legislative Report includes a data quality improvement recommendation to provide training to local teams about CFPS's role in identifying when child maltreatment caused or contributed to the deaths.

The data presented in this data brief include all deaths substantiated by county departments of human services. The data also include additional deaths not substantiated by county departments of human services but ruled as child maltreatment by CFPS review teams.

Figure 1. Rates of child maltreatment deaths occurring in Colorado among Colorado residents under age 18 by year, 2016-2020 (n=227)

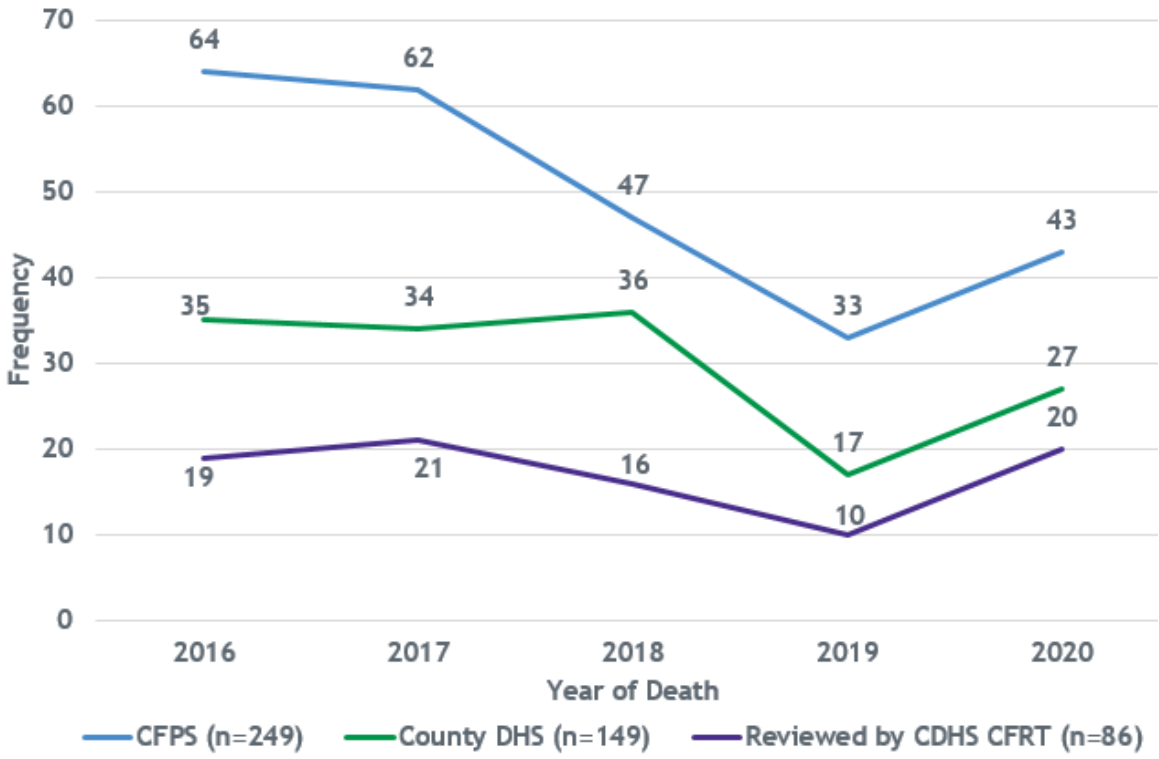


*Error bars represent 95% confidence limits for rates.

Colorado's yearly rate of child maltreatment deaths among infants, children, and youth under age 18 across the period trended higher than the national child maltreatment death rate. National estimates come from the National Child Abuse and Neglect Data System (NCANDS), which collects death data on a voluntary basis from child welfare agencies. As noted previously, the definitions of child abuse and neglect utilized by child welfare agencies is somewhat different than the guidance used by public health child death review systems like CFPS, and these definitions can also vary from state to state.[26,27] State and national comparisons of child maltreatment deaths should be interpreted cautiously, understanding the differences between the data systems.

Although CFPS review teams and county departments of human services define child abuse and neglect differently, county departments of human services substantiated 59.82% (n=149) of the 249 deaths CFPS identified as due to child maltreatment from 2016-2020. Additionally, 34.5% (n=86) of deaths met the statutory criteria for CDHS CFRT review (Figure 2). CFPS review teams alone identified the remaining 40.2% (n=100) as child maltreatment deaths. These 100 deaths were either not reported to county departments of human services or the incident did not meet the statutory definition of child maltreatment that guides CDHS' work.

Figure 2. Deaths occurring among those under age 18 in Colorado ruled child maltreatment by CFPS, substantiated by county departments, or reviewed by CDHS CFRT by year, 2016-2020



To learn more about how child maltreatment deaths determined solely by CFPS teams differ from those substantiated by county Departments of Human Services, view the CFPS report "*Identification of Child Maltreatment in Colorado Through Child Death Review, 2009-2018*."

Demographic Characteristics

Age

Of the 249 child maltreatment deaths CFPS identified from 2016-2020, 57.0% (n=142) occurred among children under age 5. Table 1 displays the rates of child maltreatment deaths CFPS

identified by age group. The highest rates of child maltreatment deaths were among children under age 5. The age-specific rate of child maltreatment deaths for children under age 1 was 25.3 per 100,000 population, over seven times the rate for all ages and over 14 times the rate for those ages 5-9. For children ages 1-4, the rate of child maltreatment deaths was 3.5 per 100,000 population, nearly two times the rate for children ages 5-9.

Table 1. Age-specific rates of child maltreatment deaths occurring in Colorado among Colorado residents under age 18 by age group, 2016-2020*

Age Group	n	Population	Rate**	95% Confidence Interval	
				Lower Limit	Upper Limit
All Ages	227	6,310,616	3.6	3.1	4.1
< 1 year	82	323,707	25.3	19.8	30.8
1 to 4	46	1,327,982	3.5	2.5	1.5
5 to 9	31	1,720,165	1.8	1.2	2.4
10 to 14	40	1,839,448	2.2	1.5	2.8
15 to 17	28	1,099,315	2.5	1.6	3.5

*As defined by the Colorado Child Fatality Prevention System.
**Per 100,000 Colorado residents.
Data source: Colorado Child Fatality Prevention System, Colorado State Demography Office.

Sex

Of the 249 child maltreatment deaths CFPS identified from 2016-2020, 54.2% (n=135) occurred among males. The rate of child maltreatment deaths was not significantly different between males (3.8 per 100,000 population) and females (3.4 per 100,000 population).

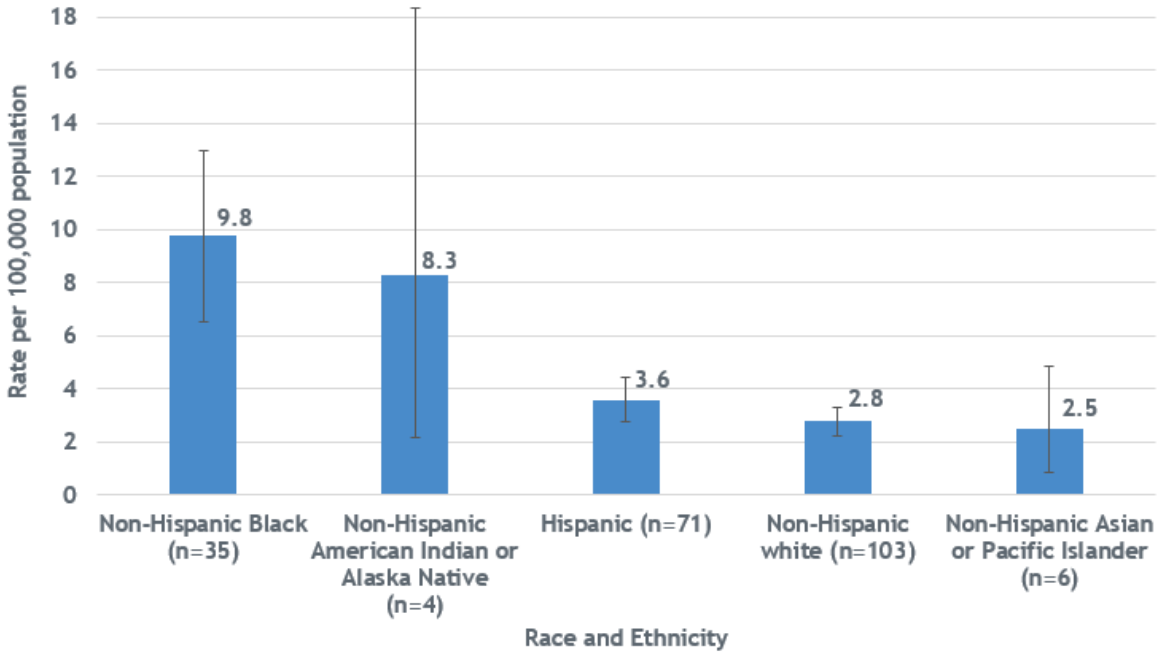
Race and Ethnicity

A note about terminology: Hispanic ethnicity as collected on the Colorado death certificate includes those that identify as Mexican, Mexican American, Chicano, Chicana, Puerto Rican, Dominican, Cuban, Central American, South American, Latin American, Spanish, and other Latin or Hispanic descent.[28] Additionally, "Latinx" and "Chicanx" are increasingly used gender inclusive terms, respecting those with a non-binary gender identity.[29,30] To ensure clarity, this report uses "Hispanic" throughout the data section to reflect how CFPS data are collected from the death certificate and to align with terminology used in cited literature and research.[31]

Between 2016 and 2020, the majority of infants, children, and youth who died by child maltreatment in Colorado were non-Hispanic white (45.0%, n=112), 31.3% (n=78) were of Hispanic origin, 14.5% (n=36) were non-Hispanic Black, 2.4% (n=6) were non-Hispanic American Indian or Alaska Native (AI/AN), and 2.4% (n=6) were non-Hispanic Asian or Pacific Islander.

There is a significant disparity in the rate of child maltreatment deaths by race and ethnicity in Colorado (Figure 3). The rate of child maltreatment deaths among non-Hispanic Black infants, children, and youth was 3.5 times higher (9.8 per 100,000 population) than for non-Hispanic whites (2.8 per 100,000 population) and 2.7 times higher than for Hispanic infants, children, and youth (3.6 per 100,000 population). Additionally, the rate of child maltreatment deaths among non-Hispanic AI/AN infants, children, and youth was 3.0 times higher (8.3 per 100,000 population) than for non-Hispanic white infants, children, and youth, although this difference is not statistically significant. These patterns are consistent with national data.[32]

Figure 3. Rates of child maltreatment deaths occurring in Colorado among Colorado residents under age 18 by race and ethnicity, 2016-2020 (n=227)



*Error bars represent 95% confidence limits for rates.

Traditionally, individual-level factors of caregivers have been shown to contribute to the racial differences in deadly child maltreatment, including low educational attainment, low income, inadequate employment, intimate partner violence, and history of abuse as a child.[33] However, studies examining these individual-level factors fail to fully explain the racial and ethnic differences in child maltreatment deaths. Instead, research highlights the role that

social determinants and contextual factors, particularly historical, community, and environmental inequities, play in child maltreatment prevention.[34] The purpose of highlighting the following research is to supplement and contextualize the racial and ethnic disparities observed in CFPS data in the rate of child maltreatment deaths.

The increased likelihood of child maltreatment deaths among AI/AN populations may stem from the historical loss of population, land, and culture that was endured by these communities.[35] This historical trauma includes the forcible removal of indigenous AI/AN people from their lands in the U.S., and the forcible transfer of children from their families to boarding schools designed to strip them of their culture.[36] This trauma shapes the current societal context and leads to substantial socioeconomic and health disparities, including increased child maltreatment.[37]

Racialized residential segregation can lead to the racial and ethnic disparities in various child fatalities including child maltreatment deaths. These disparities are largely driven by discriminatory federal, state, and local policies, such as redlining, that create unjust geographic divisions among racial and ethnic groups.[38] Racial segregation leads to neighborhood disadvantage by concentrating neighborhood poverty, increasing exposure to environmental stressors such as air pollutants, creating barriers to and fewer opportunities for a healthy lifestyle, limiting access to health services, and increasing housing and food insecurity.[39]

The consequences of residential segregation resulting from historical practices like redlining continue to reverberate throughout communities of color today. In the U.S., Hispanic families are significantly more likely to reside in segregated neighborhoods with higher rates of social isolation and lack of access to resources.[40,41] Similarly, Black families are likely to live in communities that are highly segregated with limited access to basic needs assistance, mental health and substance abuse treatment and opportunity for employment.[42] Data show 17.9% of AI/AN, 16.8% of Black, and 14.8% of Hispanic Coloradoans live below the poverty level, compared to 7.7% of non-Hispanic white Coloradans.[43] This structural injustice which many families of color unjustly experience may partly explain the disparities around child maltreatment deaths.

A significant amount of research documents that racial and ethnic minority populations are overrepresented in the child welfare system, compared with the general population. Studies have consistently found that Black infants, children, and youth are more likely to be the subject of child maltreatment reports and substantiations than non-Hispanic whites.[44] Possible explanations for this include 1) disparate needs of children and families of color, particularly due to higher rates of poverty, 2) racial bias and discrimination by caseworkers, mandatory reporters and the general public and 3) lack of resources for families of color in the child welfare system and other similar factors.[45]

AI/AN children have disproportionately been placed into out-of-home care compared to non-Hispanic white children in the child welfare system, a struggle since the beginning of colonization in the U.S.[46] The repeated documentation of systemic racism and bias confirms that since colonization, policies in the U.S. were designed to remove AI/AN children from their communities in an effort to undermine Indigenous nations and benefit white people.[47] From the perspective of Indian Child Welfare, this systemic racism is the primary cause of AI/AN disparities and overrepresentation in the child welfare system.[48]

Experiencing poverty may also amplify exposure to the social service system (e.g. financial or housing assistance) and increase exposure to mandatory reporters, an idea referred to as visibility or exposure bias.[49] As noted above, families of color inequitably and disproportionately experience poverty in the U.S. and Colorado. Research urges an emphasis on social factors such as poverty, as well as improving cultural competency within the child welfare system.

While progress has been made in understanding the overrepresentation of children and youth of color within the child welfare system,[50,51,52] it remains critical to identify, understand, and eradicate the life-long inequities that persist across racial and ethnic groups that contribute to child maltreatment.[53]

Geography

To calculate statistics by geographic location within the state, counties in Colorado are categorized as urban, rural, or frontier, according to standards applied by the Colorado Rural Health Center.[54] All counties that are not designated as parts of Metropolitan Areas are considered rural. Frontier counties are further classified as those with a population density of six or fewer persons per square mile. It is worth noting that these county designations are limited in that they do not account for the geographic nuance experienced by several large counties in Colorado (e.g., Arapahoe, El Paso, Larimer, Mesa) that have both populous urban centers and broad rural areas.

Between 2016 and 2020, the majority of Colorado residents under age 18 who died by child maltreatment in Colorado resided in an urban county (89.9%, n=204), 7.9% (n=18) lived in a rural county, and 2.2% (n=5) lived in a frontier county. The rate of child maltreatment deaths among infants, children, and youth residing in a frontier county (3.7 per 100,000 population) was the same as those residing in an urban county (3.7 per 100,000 population). Readers should interpret this data with caution, as the frontier rate represent very few deaths, decreasing the stability of the rates.

This rate data is inconsistent with national data showing higher child maltreatment rates in rural areas.[55] The exact factors contributing to urban-rural disparities are unclear. It is unknown whether the differences are due to better identification since caseworkers know families better in small, rural communities or actual higher rates of child maltreatment. In

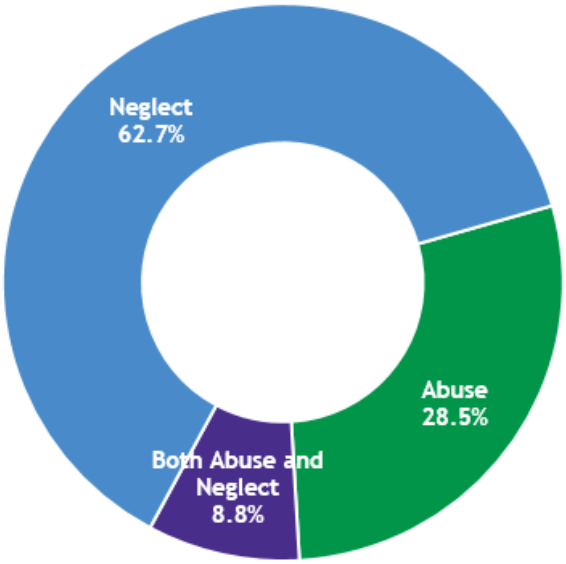
the event that maltreated children present to a hospital, some researchers believe that insufficient resources to respond to and address child maltreatment in rural areas may play a role. For instance, rural emergency departments are less likely to have a written child abuse policy and on-site abuse advocates when compared to urban emergency departments. There may also be fewer close relationships between rural emergency departments and community abuse assessment centers for consultation and follow-up after an emergency department visit.[56,57]

Rural communities are often confronted with lack of nearby services that support families and can help prevent child maltreatment, which is exacerbated by limited transportation options and long travel distances to access services.[58] For example, rural areas often have limited access to child care services.[59] Caregiver stress related to having unstable child care and unreliable emergency child care near home is associated with increased risk of child maltreatment.[60]

Child Maltreatment Types and Circumstances

Of the 249 child maltreatment deaths occurring between 2016 and 2020, neglect caused or contributed to 62.7% (n=156) of the deaths, abuse caused or contributed to 28.5% (n=71), and both abuse and neglect caused or contributed to 8.8% (n=22) (Figure 4).

Figure 4. Deaths occurring among those under age 18 in Colorado ruled child maltreatment by CFPS by type, 2016-2020 (n=249)

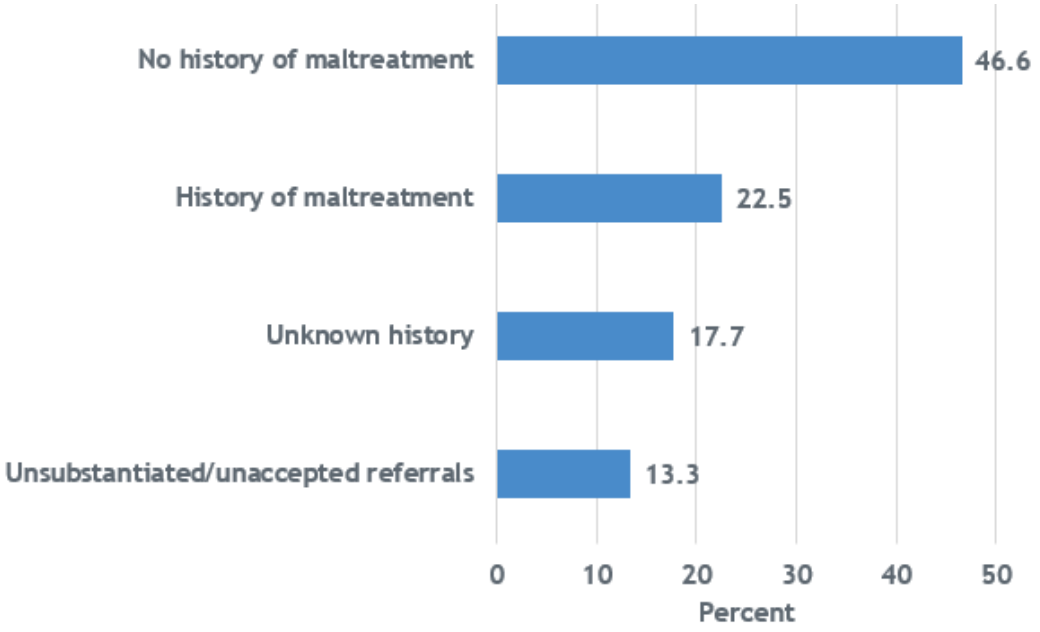


Among deaths classified as involving abuse (those classified as abuse or abuse and neglect, n=93), all involved physical abuse, including 43.0% (n=40) where abusive head trauma occurred and 36.6% (n=34) where other abusive injuries occurred (such as beating, kicking, gunshot injuries, and stabbing).

Among deaths classified as involving neglect (those classified as neglect or abuse and neglect, n=178), 62.9% (n=112) involved a failure to protect from hazards. This includes hazards in the sleep environment, fire hazards, unsecured medications or poisons, firearms, water hazards, and motor vehicle hazards. The next most common neglect categories were failure to provide supervision (32.6%, n=58), failure to seek or follow medical treatment (19.7%, n=35), failure to provide necessities (e.g., food, shelter; 15.7%, n=28), and emotional neglect (14.6%, n=26).

Experiences of child maltreatment, considered to be one of the significant Adverse Childhood Experiences (ACEs),[61] have a large impact on health throughout the lifespan[62] and are associated with further injury and violence.[63] Figure 5 displays information on the history of child maltreatment for infants, children, and youth who died. Approximately 22.5% (n=56) of the children who died had a CDHS-substantiated history of child maltreatment, 13.3% (n=33) had unsubstantiated or unaccepted referral(s), and 46.6% (n=116) had no known previous history of maltreatment. Information on the history of child maltreatment was missing or unknown for 17.7% (n=44) of the cases reviewed by CFPS. The CFPS 2022 Legislative Report includes a data quality improvement recommendation to provide training to local teams on best practices for collecting child maltreatment history to improve the system's understanding of the impact of child welfare history on child maltreatment deaths.

Figure 5. History of maltreatment for child maltreatment deaths occurring among those under age 18 in Colorado, 2016-2020 (n=249)

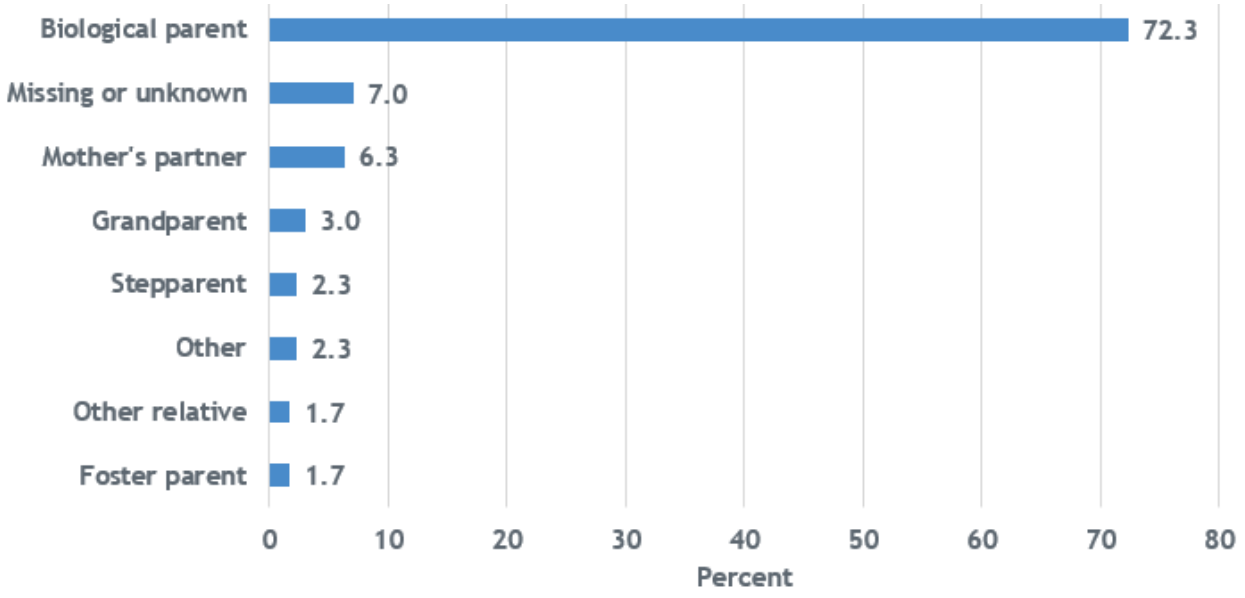


Perpetrators of Child Maltreatment

The CFPS review process can identify up to two perpetrators for each child maltreatment death reviewed (i.e. one perpetrator may have caused the death and another perpetrator may have substantially contributed to the death). From 2016-2020, 300 total perpetrators caused or contributed to 249 child maltreatment deaths. As shown in Figure 6, biological parents were most often the perpetrators of child abuse or neglect (72.3%, n=217) followed by the mother's partner (6.3%, n=19). When stratified by maltreatment type (abuse or neglect), the proportion of biological parents identified as perpetrators is higher for deaths involving neglect (79.2%, n=178), while the proportion where the mother's partner is identified is higher for deaths involving abuse (15.4%, n=18).

CFPS data about perpetrators of child maltreatment is consistent with national data, showing that the majority of children are maltreated by their biological parents.[64] The factors that increase the likelihood of perpetrating child maltreatment are complex.[65] Notably, it is important to consider the multitude of life stressors experienced by biological parents and caregivers that may contribute to child maltreatment.[66] These stressors include marital conflict, depression, financial stress, and the day-to-day demands of caring for one's children.[67,68] There are limitations to how CFPS collects and reports on data related to social and economic stressors experienced by a young person, their family, and their community. However, the National Fatality Review-Case Reporting System (NFR-CRS) added a life stressors section in its newest update, which will improve CFPS's ability to analyze and interpret this data in the future.

Figure 6. Perpetrators of child maltreatment deaths occurring among those under age 18 in Colorado by type, 2016-2020 (n=300)



People who behave violently are more likely to both continue being violent and commit additional forms of violence.[69] Among perpetrators of child maltreatment deaths in Colorado, 15.3% (n=46) had a known, previous history of child maltreatment as a perpetrator, 8.7% (n=26) had an unsubstantiated or unaccepted referral(s), and 33.3% (n=100) had no previous history of child maltreatment as a perpetrator. However, this information was missing or unknown for 42.7% (n=128) of the perpetrators.

Additionally, adults who have a history of either perpetrating or surviving intimate partner violence are at higher risk of perpetrating child maltreatment.[70,71] Among perpetrators of child maltreatment deaths in Colorado between 2016 and 2020, 15.7% (n=47) had a history of intimate partner violence as a perpetrator and 14.3% (n=43) as a victim. Information on the history of intimate partner violence was missing or unknown for 53.7% (n=161) of perpetrators listed.

Conclusion

From 2016 to 2020, child maltreatment was the second leading cause of death reviewed by CFPS among infants, children, and youth under age 18 in Colorado. The highest rates of child maltreatment death were observed among infants and children under age 5 and among non-Hispanic Black and non-Hispanic AI/AN infants, children, and youth. Child maltreatment deaths were most often due to neglect and perpetrated by a biological parent. This data brief also highlights the connection between early experiences of child maltreatment and future deaths. Upstream prevention strategies that address social and structural inequities can reduce deaths among infants, children, and youth due to child maltreatment. To learn more about the prevention strategies recommended by CFPS, view the 2022 Legislative Report (www.cochildfatalityprevention.com/p/reports.html). To learn even more about the inequities that contribute to child deaths, view the CFPS report "*The Role of Policies and Systems in Child Deaths in Colorado*."

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