



**COLORADO CHILD  
FATALITY  
PREVENTION  
SYSTEM**

Unintentional Drowning Death Data,  
2013 - 2017



**COLORADO**  
Department of Public  
Health & Environment

# UNINTENTIONAL DROWNING DEATH DATA, 2013 - 2017

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## 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 unintentional drowning death data from CFPS. Additional CFPS data is available in a state-level overview, cause-specific data briefs and an interactive data dashboard at: [www.cochildfatalityprevention.com/p/reports.html](http://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.<sup>1</sup>

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.<sup>2</sup> In the United States, most residents grew up and continue to live in racially and economically segregated neighborhoods, which can lead to marginalization.<sup>3,4</sup> This marginalization of groups into segregated neighborhoods further impacts access to high-quality education,<sup>5</sup> employment opportunities,<sup>6</sup> healthy foods<sup>7</sup> and health care.<sup>8</sup> Combined, the economic injustices associated with residential, educational

and occupational segregation have lasting health impacts that include adverse birth outcomes, infant mortality,<sup>9</sup> high rates of homicide and gun violence<sup>10</sup> and increased motor vehicle deaths.<sup>11</sup>

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.

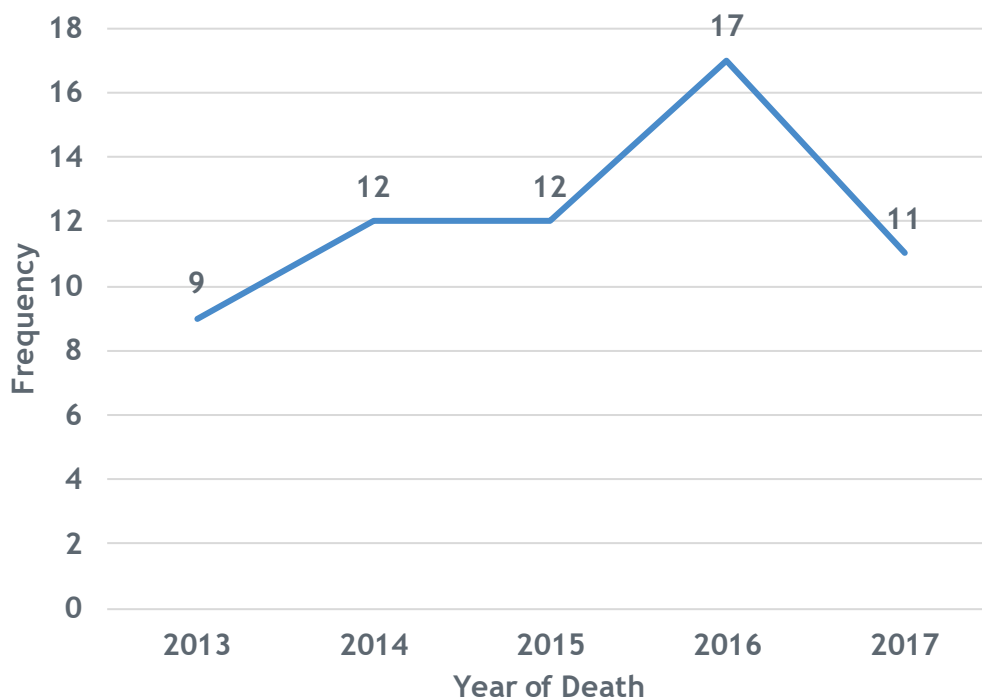
A note about terminology: While “Latinx” is becoming the preferred way to identify people of Latin descent, this report uses “Hispanic” throughout the data section to reflect how CFPS data is collected and to align with terminology used in cited literature and research.<sup>12</sup>

## OVERVIEW OF UNINTENTIONAL DROWNING DEATHS

From 2013-2017, 61 unintentional drowning deaths occurred among children and youth ages 0-17 in Colorado. Unintentional drowning deaths for the period ranged from nine deaths in 2013 to 17 in 2016, and averaged 12.2 per

year (Figure 1). The five-year incidence of unintentional drowning deaths for the period was 0.9 per 100,000 population. This rate did not change significantly from year to year for the period (data not shown).

Figure 1. Unintentional drowning deaths occurring among those under age 18 in Colorado by year, 2013-2017 (n=61)

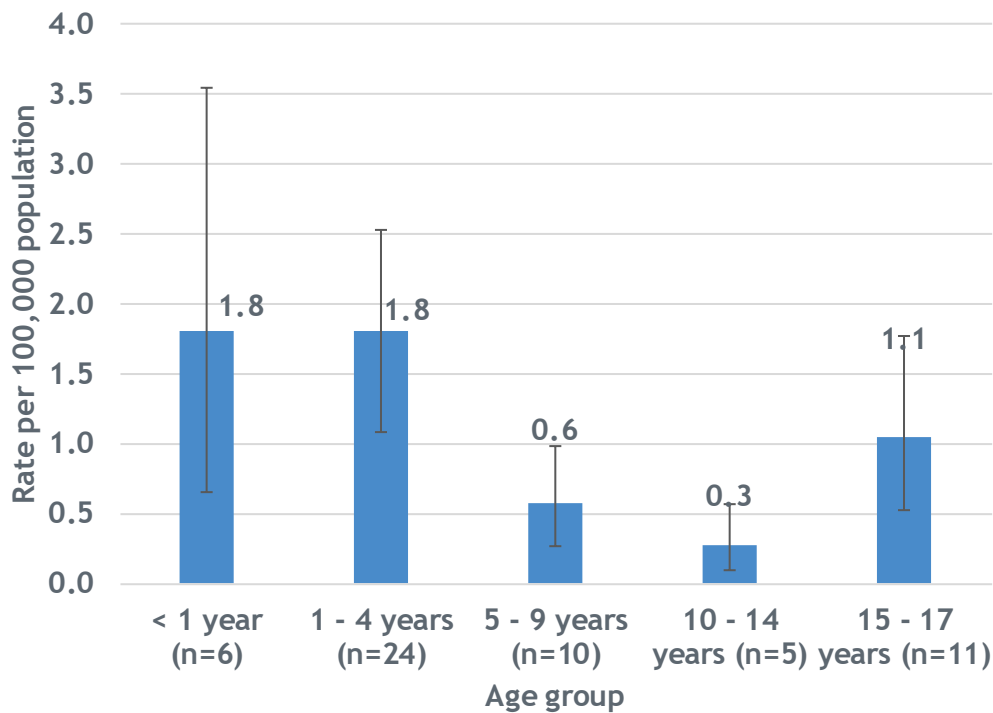


## DEMOGRAPHICS OF UNINTENTIONAL DROWNING DEATHS

Among those who died by unintentional drowning, 70.5 percent (n=43) were males. About 41.0 percent (n=25) were ages 1-4, 21.0 percent (n=13) were youth ages 15-17, and 19.7 percent (n=12) were children ages 5-9. There were statistically significant differences in rates across age groups, with the youngest age groups having significantly higher rates when compared to the older age groups. The highest rates were observed among infants (1.8

per 100,000 population), at six times the rate observed for children ages 10-14 (0.3 per 100,000 population). Additionally, the rate observed among children ages 1-4 years (1.8 per 100,000 population) is three times the rate of children ages 5-9 (0.6 per 100,000 population) (Figure 2). These rates are derived from small numbers and can vary substantially if additional events occur within a particular age group.

**Figure 2. Age-specific rates of unintentional drowning deaths occurring in Colorado among Colorado residents under age 18 by age group, 2013-2017 (n=61)**



\*Error bars represent 95% confidence limits for rates.

Of the 61 infants, children and youth who died by unintentional drowning, 49.2 percent (n=30) were non-Hispanic white and 37.7 percent (n=23) were of Hispanic origin. The rate of unintentional drowning death among

males (1.2 per 100,000 population) was double the rate among females (0.6 per 100,000 population), but this difference was not statistically significant (data not shown).

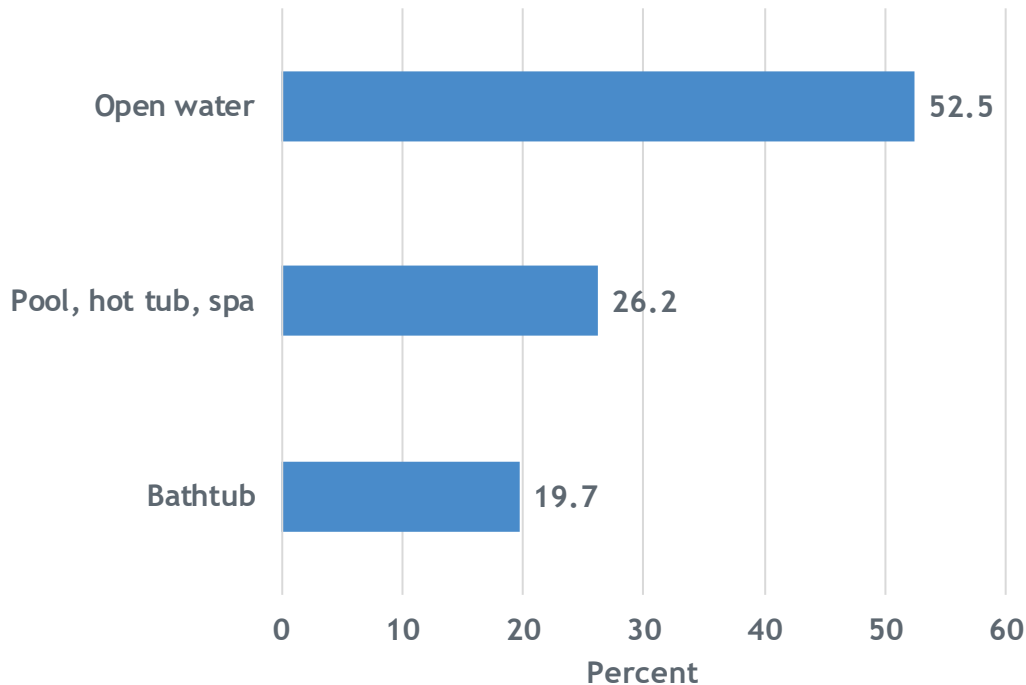
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## UNINTENTIONAL DROWNING CIRCUMSTANCES

Open water environments, including lakes, rivers, ponds, creeks, quarries, gravel pits and canals, were the most common drowning locations (52.5 percent, n=32),

followed by pools, hot tubs and spas (26.2 percent, n=16) and bathtubs (19.7 percent, n=12) (Figure 3).

**Figure 3. Location of unintentional drowning deaths occurring among those under age 18 in Colorado, 2013-2017 (n=61)**



About 87.5 percent (n=28) of those who died in open water and 100.0 percent (n=16) of those who died in a pool, hot tub or spa were not known to be wearing or using a personal flotation device, including U.S. Coast Guard approved jackets, cushions or lifesaving rings, or those not approved, such as swim rings, inner tubes or air mattresses. Seventy-five percent (n=9) of all bathtub drowning deaths occurred among children under age 5. A bathing aid was not used in 91.7 percent of these deaths (n=11). Of the 32 infants, children and youth who died in open water drowning deaths, 34.4 percent (n=11) were unable to swim. Of those who died in a pool, hot tub or

spa 62.5 percent (n=10) were unable to swim.

CFPS teams determined 26.2 percent (n=16) of unintentional drowning deaths met the criteria of child maltreatment (abuse or neglect). About 81.0 percent (n=13) of unintentional drowning deaths where child maltreatment was a factor occurred among children under age 5. Nearly all of the unintentional drowning deaths where child maltreatment contributed were due to neglect. Where child maltreatment was not identified as contributing to the death, 60.0 percent (n=27) occurred among children and youth ages 5-17.

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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## REFERENCES

1. Office of Health Equity, Colorado Department of Public Health and Environment, Statement on structural inequity. Retrieved from [www.colorado.gov/pacific/cdphe/statement-on-structural-inequity](http://www.colorado.gov/pacific/cdphe/statement-on-structural-inequity).
2. Bailey, Z. D., Krieger, N., Agénor, M., Graves, J., Linos, N., & Bassett, M. T. (2017). Structural racism and health inequities in the USA: evidence and interventions. *The Lancet*, *389*(10077), 1453-1463.
3. Pager, D., & Shepherd, H. (2008). The Sociology of Discrimination: Racial Discrimination in Employment, Housing, Credit, and Consumer Markets. *Annual Review of Sociology*, *34*, 181-209.
4. Williams, D. R., & Collins, C. (2016). Racial residential segregation: a fundamental cause of racial disparities in health. *Public Health Reports*, *116*(5), 404-16.
5. Williams, D. R., & Collins, C. (2016). Racial residential segregation: a fundamental cause of racial disparities in health. *Public Health Reports*, *116*(5), 404-16.
6. Collins, C. A., & Williams, D. R. (1999). Segregation and mortality: the deadly effects of racism?. In *Sociological Forum*, *14*(3), 495-523. Kluwer Academic Publishers-Plenum Publishers.
7. Larson, N. I., Story, M. T., & Nelson, M. C. (2009). Neighborhood environments: disparities in access to healthy foods in the US. *American journal of preventive medicine*, *36*(1), 74-81.
8. White, K., Haas, J. S., & Williams, D. R. (2012). Elucidating the role of place in health care disparities: the example of racial/ethnic residential segregation. *Health Services Research*, *47*(3pt2), 1278-1299.
9. Acevedo-Garcia, D., Lochner, K. A., Osypuk, T. L., & Subramanian, S. V. (2003). Future directions in residential segregation and health research: a multilevel approach. *American journal of public health*, *93*(2), 215-221.
10. Collins, C. A., & Williams, D. R. (1999, September). Segregation and mortality: the deadly effects of racism?. In *Sociological Forum* (Vol. 14, No. 3, pp. 495-523). Kluwer Academic Publishers-Plenum Publishers.
11. King, M. (2017). Under The Hood: Revealing Patterns Of Motor Vehicle Fatalities In The United States. *Publicly Accessible Penn Dissertations*. 2396. Retrieved on June 19, 2019 from: [repository.upenn.edu/edissertations/2396](http://repository.upenn.edu/edissertations/2396).
12. Office of Health Equity, Colorado Department of Public Health and Environment, Health Inequities Fact Sheet 2019: Latinx Coloradans Fact Sheet. Retrieved from: [drive.google.com/file/d/1z1b15A9hGaRxvx4XTTa9BiPnz5lwjvfr/view](https://drive.google.com/file/d/1z1b15A9hGaRxvx4XTTa9BiPnz5lwjvfr/view).