THE ROLE OF SUBSTANCE USE IN CHILD FATALITY IN COLORADO

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COLORADO
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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 of people under age 18 occurring in Colorado between 2013 and 2017. Local child fatality prevention review teams are responsible for conducting individual reviews of deaths of children. Reviewable child deaths result from one or more of the following causes: undetermined causes, unintentional injury, violence, motor vehicle and transportation-related deaths, child maltreatment, sudden unexpected infant death (SUID), and suicide. During fiscal year 2018-19, 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 substance use data from CFPS. Additional CFPS data is available in a state overview, 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 (US), 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 in child deaths 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.

SCOPE OF BRIEF

CFPS collects information on substance use, substance use disorders, and mental health histories. Among other types of reports, this information is found in law enforcement, human services, school, and coroners' records. However, data from these records are often incomplete and can present an incomplete picture of the role of substance use in child fatalities across Colorado. Substance use information is subjective, as it originates from interviews with family members, friends, or others on scene at the time of the death investigation. While CFPS provides guidance on how to enter mental health and substance use information into the National Center for Fatality Review and Prevention (NCFRP) Case Reporting System, local teams must often make difficult decisions on how to interpret substance use patterns based on very limited information. Due to these limitations, data on substance use collected by CFPS is often subjective, incomplete, or missing. In order to conduct effective prevention, it is critical to understand the role that substance use plays in child fatality.

The risk factors for tobacco, alcohol, marijuana, and other drug use are multi-level and complex. Widespread availability,[12,13] perceived norms of substance use,[14] predisposition among youth to take risks,[15] and misperceptions of safety[16,17] may increase the likelihood of substance use among children, youth, and caregivers.

To prevent child fatalities, CFPS commits to understanding how substances, including alcohol, tobacco, marijuana, and prescription drugs, may contribute to the fatal circumstances leading to death among infants, children, and youth under age 18 in Colorado.

This brief raises awareness about the contextual and environmental factors that contribute to the landscape of substance use in Colorado. In this brief, information on the landscape of substance use in Colorado is followed by substance use data for several leading causes of death within CFPS. These highlights use CFPS data and other population data sources with a focus on inequities in sexual orientation, gender identity, race, and ethnicity.

OVERVIEW OF SUBSTANCE USE DATA

Nationally, data indicate that substance use plays a role in the leading causes of child fatalities, as explained below:

- **Youth Suicide Deaths:** The CDC identifies history of alcohol and substance use as significant risk factors for suicide.[18] Alcohol and illicit drug use increase suicide risk and regular cigarette smoking is associated with a greater risk of suicide attempts.[19,20,21]
- **Passenger Vehicle Deaths:** In 2017, 19% of children killed in traffic crashes in the US were by an alcohol impaired driver, with more than half of these drivers having a blood alcohol content greater than the legal limit of 0.08 g/dL.[22] These impaired drivers could be in a vehicle with the child or a vehicle other than the child's. Cannabis consumption is also associated with an increased risk of fatal motor vehicle crashes.[23]
- **Sudden Unexpected Infant Death (SUID):** Several studies found an association between caregiver alcohol and illicit drug use (both during and after pregnancy) and the increased risk of SUID and sudden infant death syndrome (SIDS).[24,25] Research also indicates that maternal smoking during pregnancy, smoke in the environment of an infant and third-hand smoke (residual contamination of the environment after a cigarette is extinguished) may lead to preterm birth, but also affect how easily an infant will wake from sleeping,[26] both risk factors for SUID.
- **Child Maltreatment Deaths:** Substance use within a family may contribute to child maltreatment.[27] In the US, infants, children, and youth whose caregivers use substances and misuse alcohol are three times more likely to be physically, emotionally, or sexually abused and four times more likely to be emotionally or physically neglected.[28,29]
- **Unintentional Poisoning or Overdose Deaths:** Research shows that young people who use substances are at increased risk of premature death, including by accidental poisoning or drug overdose.[30] Mortality rates among youth who use substances are several times that of the general population, largely due to unintentional overdose deaths.[31]

THE SUBSTANCE USE CLIMATE IN COLORADO

TOBACCO

Increasing tobacco taxes and prices is an effective way to reduce overall tobacco consumption and prevalence of tobacco use.[32] The price increase often encourages smokers to quit or reduce the daily amount smoked and dissuades young people from starting to smoke.

In January of 2005 in Colorado, a voter-approved excise tax on tobacco and tobacco products increased the price of a pack of cigarettes by 64 cents. After this tax was implemented, the number of packs of cigarettes sold in Colorado declined steadily.[33] However, Colorado has not raised the tax on tobacco products since 2005 and is currently ranked 39th in the nation for its cigarette tax at $0.84 per pack compared with a national average of $1.81.[34] All other tobacco products are taxed at 40% of the manufacturer's list price and liquid nicotine products are not included in the tax. In 2019, however, several cities and counties in Colorado asked voters to increase taxes on tobacco, including electronic cigarettes and vaping products. The proposed taxes were between $3 to $4 per pack of cigarettes and 40% on vaping supplies. Five cities and three counties passed these ballot measures.

Research shows that policies mandating retailers to be licensed to sell tobacco are instrumental in lowering rates of cigarette and e-cigarette use among youth and young adults.[35] However, Colorado is one of only 12 states that does not require a license to sell tobacco.[36] Implementing and enforcing tobacco retailer licensing for the sale of tobacco could reduce tobacco use in Colorado.

In Colorado, tobacco can be purchased by anyone 18 and older. Raising the legal age of sale of tobacco to 21 could reduce adverse maternal, fetal, and infant outcomes including preterm births, low birth weight, and sudden infant death and reduce exposure to secondhand smoke.[37]

Smoke-free policies are known to reduce exposure to secondhand smoke. The Colorado Clean Indoor Air Act (CCIAA) prohibits smoking and the use of electronic smoking devices in most workplaces and public places including schools, child care facilities, restaurants, and bars.[38]

OPIOIDS

From 2000 to 2018, Colorado lost 13,450 residents to drug overdose, and 44% of these deaths involved an opioid (either a prescription or heroin).[39] In 2012, the Colorado governor's office partnered with state agencies to generate a strategic plan to address the growing number of opioid deaths in Colorado and created the Colorado Consortium for Prescription Drug Abuse Prevention to implement effective programs, strategies, and policies to reduce opioid misuse and overdose.

During the 2014 legislative session, Colorado legislators passed a bill that aligned Colorado's Prescription Drug Monitoring Program (PDMP) with best practice strategies. This included allowing delegated access to PDMP records and unsolicited reporting to prescribers about individuals who might be visiting more than one doctor. The bill also allowed mandating registration for prescribers and pharmacists, daily reporting by pharmacies for every dispensed controlled substance, and granting the Colorado Department of Public Health and Environment (CDPHE) access to PDMP data for public health surveillance and population level analyses. Additionally, the Board of Pharmacy partnered with the Colorado Dental Board, Colorado Medical Board, and State Board of Nursing to adopt a policy for prescribing and dispensing opioids.

In 2017, the legislature created the bipartisan Opioid and Other Substance Use Disorders Interim Study Committee to study issues relating to opioid and substance use disorders in Colorado and to develop legislative options to address the gaps and hurdles to accessing prevention, intervention, harm reduction, treatment, and recovery resources. During the 2018 and 2019 legislative sessions, legislators passed eight bills to prevent opioid overdose and misuse. In 2018, Colorado enacted guidelines for prescribers to follow when issuing refills for opioid prescriptions, created a loan repayment program for behavioral health providers, changed insurance policies for Medicaid to increase access

to medication assisted treatments for opioid use disorders, and increased funding to school-based health centers to address substance misuse. In 2019, Colorado increased requirements for continuing education for physicians relating to substance use disorder and the PDMP, established a bulk naloxone purchasing fund to increase access to this medication that can reverse the effects of opioid use disorder, and expanded housing vouchers for individuals with substance use disorder, among other programs.

For more information on these and other policies being discussed or enacted to prevent and reduce substance misuse, please refer to the Opioid and Other Substance Use Disorders Interim Study Committee website.

MARIJUANA

Medical marijuana has been legal in Colorado since 2000. In 2012, Colorado became one of the first states to legalize retail marijuana for adults ages 21 years and over, with the first retail dispensaries opening in January 2014. As of September 2019, there are 455 medical marijuana centers and 574 retail marijuana stores in the state of Colorado.[40]

Legalized retail marijuana presents a shift in how we perceive and regulate marijuana, grouping marijuana with other legal substances like alcohol, tobacco and prescription drugs, as opposed to illicit drugs like cocaine and heroin. Colorado has a number of public health protections in place to mitigate potential negative impacts of legalization. Research shows that youth are price-sensitive to substances. To prevent underage youth access, Colorado's retail marijuana is taxed at 30%, one of the highest rates of all states that allow retail marijuana. The tax is comprised of a 15% sales tax on all sales of retail marijuana and retail marijuana-infused products, as well as a 15% excise tax.[41]

Additionally, hours of sale for retail marijuana are limited at the state level from 8 a.m. until midnight. However, store hours can be further limited at the local level by counties and municipalities. For example, retail marijuana stores in Denver must close by 10 p.m. Density and set-back restrictions for marijuana stores are not set at the state level, but many municipalities have enacted local restrictions to limit the number and location of retail marijuana stores. Every retail marijuana store must also adhere to strict security and surveillance requirements. All stores must have a security alarm system and locks on all entry points and windows that are continually on and monitored.

There are also strict packaging, advertising, and marketing laws that retail marijuana companies must follow in Colorado. Each item sold must be packaged in a child-resistant, opaque, and resealable container at the point of sale. There are explicit packaging requirements to prevent unintentional injury and warnings labels specific to pregnant or breastfeeding women. Advertising is restricted as well; retail marijuana businesses must be able to prove that 31% or less of the audience are under age 21 before advertising in print, television, or radio. As of January 2020, outdoor signage such as billboards, leaflets, and sidewalk signs are allowed for the promotion of retail marijuana businesses. Additional language regarding branding promotion was added to allow branding promotion in all forms of media statewide. Brand promotion will go into effect January 2020.

Marijuana and vaping were added to the Colorado Clean Indoor Air Act, in 2013 and 2019, respectively. Smoking and vaping of any substance (including marijuana) are prohibited in any indoor area, including libraries, theaters, museums, schools, restaurants, hotels, and grocery stores. However, in 2019, the Colorado legislature moved to exempt marijuana from the Colorado Clean Indoor Air Act in specific Marijuana Hospitality Businesses and Marijuana Hospitality and Sales Businesses. Smoking, vaping, and other consumption forms are legal to consume in these businesses. Since initial legalization in 2012, marijuana is illegal to consume in outdoor and federal spaces.

> When viewing substance use data, it is important to keep in mind the potential effects that legalization of recreational marijuana had on reporting bias. Marijuana may be the leading substance in reports of substance use/misuse in part due to heightened awareness and increased sensitivity that came during and after legalization of recreational marijuana.

ALCOHOL

Excessive alcohol use cost Colorado $5 billion in 2010[42] and contributes to almost five deaths each day.[43] In the last decade, alcohol became more available and affordable. In Colorado, the current alcohol excise tax is only $0.01 for a beer or a glass of wine and $0.03 for a cocktail with spirits, which ranks as one of the lowest state alcohol excise taxes in the country.[44] Total alcohol tax revenues in Colorado cover only a small proportion of the costs of excessive drinking. One study estimated that total alcohol taxes accounted for only 15% of the economic cost to government and only 7% of the total economic cost of excessive drinking in Colorado; these were the lowest percentages among all states in the study.[45] Increases in the price of alcohol can reduce excessive alcohol use and related harms, such as drunk driving fatalities.[46] Alcohol is currently available for sale seven days a week and up to nineteen hours per day and is not able to be taxed further by counties and municipalities in Colorado.[47]

Starting January 1, 2019, many grocery and convenience stores were able to sell full-strength beer,[48] and now individuals 18-20 years old can sell alcohol in any place that sells alcoholic beverages (e.g., restaurants, bars, grocery stores, liquor stores) in Colorado. A 1991 report published by the Inspector General states that allowing young people to sell or serve alcohol may result in easier youth access to alcohol.[49] According to a survey of high school students, many students are able to purchase alcohol from stores with young clerks and from stores where they know the clerk. Officials also recognize that youth who are employed at establishments selling alcohol are under pressure to sell to other youth.[50]

Additionally, many types of alcohol outlets will now be able to increase the number of liquor licenses they can obtain over time, which could increase the number of alcohol outlets in some communities relative to the population.[51]

Research shows that alcohol advertising and marketing have a significant impact on the decision to drink, especially for young people. Advertising and marketing influence youth and adult expectations and attitudes about alcohol use, which can create social norms and settings that promote underage and excessive drinking.[52] However, limiting alcohol advertising can reduce use. For example, one study estimated that a reduction in alcohol advertising can reduce adolescent drinking and binge drinking at a population-level.[53]

SUBSTANCE USE, SEXUAL ORIENTATION, AND GENDER IDENTITY

Lesbian, gay, bisexual, transgender, queer, and questioning (LGBTQ)* youth experience increased substance use when compared to their heterosexual and cisgender peers.[54,55] The inequities in substance use by sexual orientation and gender identity exist because heterosexual and cisgender norms dominate our culture and systems.[56] This social context results in LGBTQ people experiencing discrimination, stigma, and bias, including rejection from family, friends, and community, as well as limited access to LGBTQ informed healthcare.[57]

2017 data from the Healthy Kids Colorado Survey (HKCS)[58] shows that:

- 30.9% of lesbian, gay, or bisexual (LGB)** students reported past month marijuana use, compared with 18.2% of heterosexual students. The prevalence of past-month marijuana use for transgender students is more than twice as high as cisgender students (39.6% and 19.1%, respectively).
- 15.7% of LGB students reported past month cigarette smoking as compared with 5.9% of heterosexual students. Among transgender youth, 32.6% reported past month cigarette smoking. An estimated 6.6% of their cisgender peers reported past month cigarette smoking.
- 37.7% of LGB students reported drinking alcohol in the past month compared with 28.0% of heterosexual youth. Compared with 28.6% of cisgender students, about half of all transgender youth (50.5%) reported drinking alcohol in the past month.
- 8.6% of LGB students reported using a prescription drug (e.g., OxyContin, Ritalin, Xanax) in the past month without a prescription compared with 4.5% of their heterosexual peers. Transgender youth reported a prevalence of prescription drug use without a prescription in the past month that was six times higher than cisgender youth (28.3% versus 4.7%).

* Use of the LGBTQ acronym has evolved over time, and will likely continue to do so. This community includes other sexualities, sexes, and genders that aren't included in these few letters, including but not limited to, intersex, asexual, pansexual, agender, bigender, and gender queer.
** The HKCS asks high school students to self-identify as gay, lesbian, bisexual, or heterosexual, and if they self-identify as transgender or cisgender, or not sure for each category.

Defining Sexual Orientation and Gender Identity/Expression

- Sexual Orientation: A person's physical or emotional attraction to people of the same, neither, both, and/or opposite gender (e.g., heterosexual, bisexual, homosexual). For example, "heterosexual" describes people whose enduring physical, romantic, emotional, and/or spiritual attractions are to people of the opposite sex. A person's sexual orientation is distinct from a person's gender identity and expression.
- Gender Identity: A person's innate, deeply felt sense of identifying as male, female, or non-binary, regardless of the sex assigned at birth. Gender identity is distinct from sexual orientation. The term "cisgender" means someone's gender identity is the same as their sex assigned at birth. "Transgender" refers to a gender identity that is different from the sex assigned at birth.

In order to better understand these inequities and address the unique needs of LGBTQ people, it is critical to gather complete and standardized data about sexual orientation and gender identity. While CFPS does ask and attempt to collect information about the sexual orientation and gender identity of children and youth who die in Colorado, there are notable challenges for CFPS and other mortality data systems to accurately capture sexual orientation and gender identity information. In an effort to reduce barriers in collecting this information, local teams receive guidance and technical assistance on how to discuss sexual orientation and gender identity during fatality reviews. In addition, death investigators in Colorado should use the Suicide Death Investigation Form to improve collection of this information.

RACIAL AND ETHNIC INEQUITIES IN SUBSTANCE USE

The causes for racial and ethnic inequities in drug and alcohol use are complex. The inequities result from historically rooted patterns of racism and discrimination, as well as persistent structural racism.

People who self-report experiencing unfair treatment, racism, and discrimination have a greater risk for poor mental and physical health. The health effects of racial discrimination are many, and include increased drug and alcohol use. Substance use may serve as a means of coping with increased levels of stress from experiencing racial discrimination.[59,60] The association between discrimination and substance use occurs among many racial and ethnic groups in the US, including black,[61] Hispanic,[62] American Indian/Alaska Native,[63] and Asian[64] populations. For instance, unfair treatment and racial discrimination increases risk of smoking tobacco among black[65] and Asian American[66] youth and adults. Racial discrimination is also associated with a greater risk of problematic alcohol use among black and Hispanic populations[67] and prescription drug misuse among American Indian youth.[68]

This racial discrimination can occur at the individual level, with whites continuing to report that they discriminate against other racial and ethnic groups.[69]

Defining Structural Racism

The image of an iceberg is helpful for understanding the levels at which racism operates.[70] Above the water, the tip of the iceberg represents interpersonal acts of racism, such as a slur or an act of violence. Below the water lies structural racism, which is not always seen or acknowledged, and can be more dangerous and difficult to eliminate.

Systems, social forces, and institutions that generate and perpetuate inequities among racial and ethnic groups create structural racism. These structural mechanisms do not require individual action or intent. Rather, their mere existence guarantees and ensures the perpetuation of structural racism. Even if interpersonal racism was completely stopped, racial and ethnic inequities would remain unchanged due to the persistence of structural racism.[71]

Discrimination also occurs at the social level, with many audit studies revealing persistent racial discrimination in applying for insurance, renting apartments, obtaining employment and medical care, and purchasing homes and cars.

Beyond the individual-level effects from personal experiences of racism and discrimination on drug and alcohol use, structural racism also impacts substance use.

One facet of structural racism is racial residential segregation, the unjust geographic separation of racial and ethnic groups. This form of segregation is largely driven by discriminatory federal, state, and local policies, such as redlining.[72] Racial segregation leads to neighborhood-level disadvantages by concentrating 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.[73] The consequences of residential segregation resulting from historical practices like redlining are still reverberating throughout communities of color today.

Research suggests that racially segregated neighborhoods impact substance use behaviors of residents, particularly in predominantly black neighborhoods.[74] Communities of color residing in segregated neighborhoods are disproportionately focused on by alcohol advertisers[75] and have higher densities of retail alcohol outlets.[76] Similarly, tobacco marketing campaigns prioritize Asian and immigrant populations due to a higher prevalence of smoking behaviors.[77,78] Overall, research has found that neighborhood disadvantage, caused by structural racism, has contributed to drug use,[79] heavy drinking,[80] and alcohol-related problems.[81]

CFPS SUBSTANCE USE DATA HIGHLIGHTS

The following are selected substance use statistics from CFPS using aggregated data from 2013-2017. These data points are not exhaustive of all substance use information collected by CFPS.

YOUTH SUICIDE

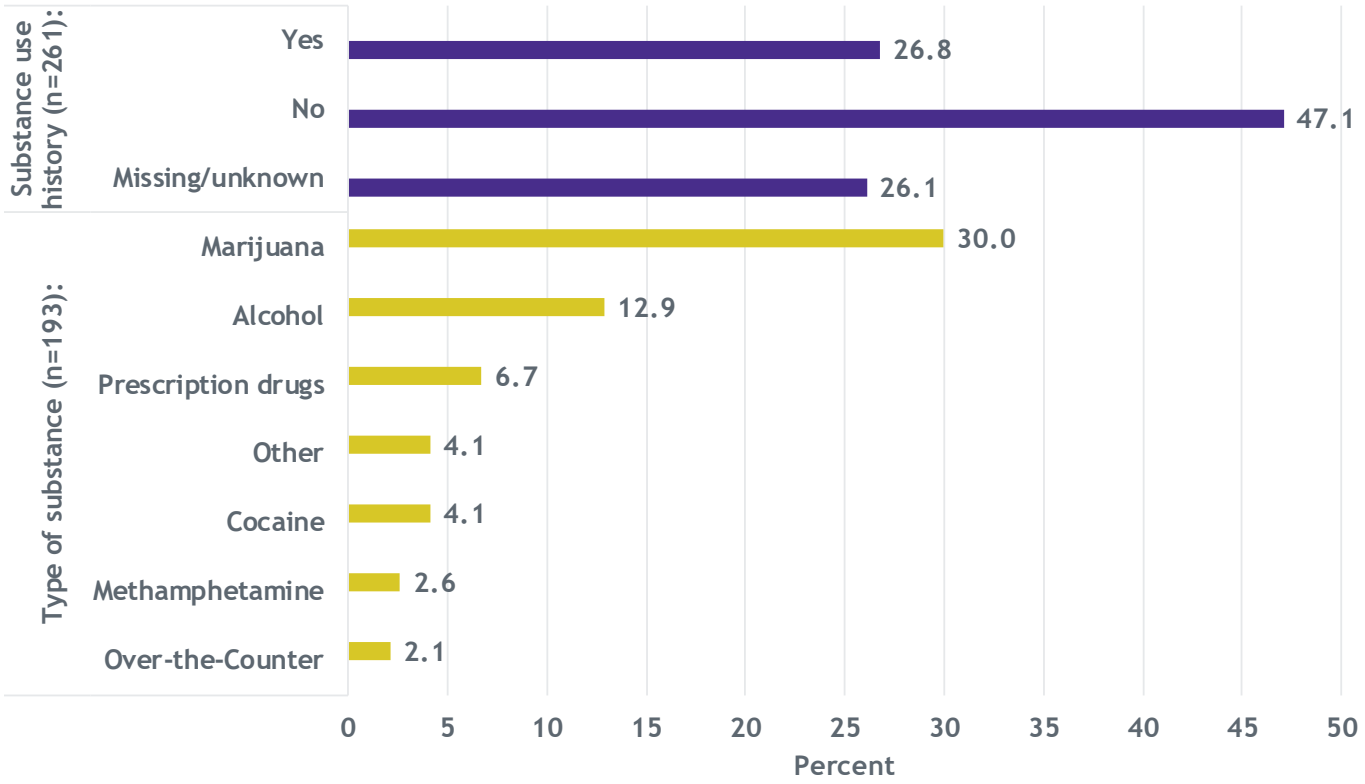
Among youth who died by suicide during this time period (n=261), 26.8% (n=70) were known to have used or misused substances previously. Information on substance use history was missing or unknown 26.1% (n=68) of the time (Figure 1).

Among those for whom a history of substance use or misuse was known (73.9%, n=193), 30.0% (n=58) had previously used or misused marijuana, 12.9% (n=25) had previously used or misused alcohol, and 6.7% (n=13) were noted to have previously used or misused prescription drugs.

LGBTQ Inequities

LGBTQ youth experience increased substance use, suicidal ideation, and suicide attempts, when compared to their heterosexual and cisgender peers. In addition to the substance use inequities discussed previously, 2017 HKCS data show that 44.8% of LGB students had seriously considered suicide in the past 12 months, a prevalence more than three times higher than that among heterosexual students (13.2%). Among transgender youth, 58.9% had seriously considered suicide in the past 12 months, compared to 16.3% of cisgender youth.[82] Chronic social stress that LGBTQ youth experience due to stigma and discrimination contribute to the inequities observed for substance use and suicidality.[83]

Figure 1. Youth suicide occurring among those ages 10-17 in Colorado by substance use history, 2013-2017



Racial and Ethnic Inequities

2017 HKCS data show that Native Hawaiian/Pacific Islander (NHPI), American Indian/Alaskan Native (AIAN), and multiracial youth in Colorado had significantly higher prevalence of cigarette smoking in the past month, and suicide attempts in the past year when compared to non-Hispanic white youth.[84]

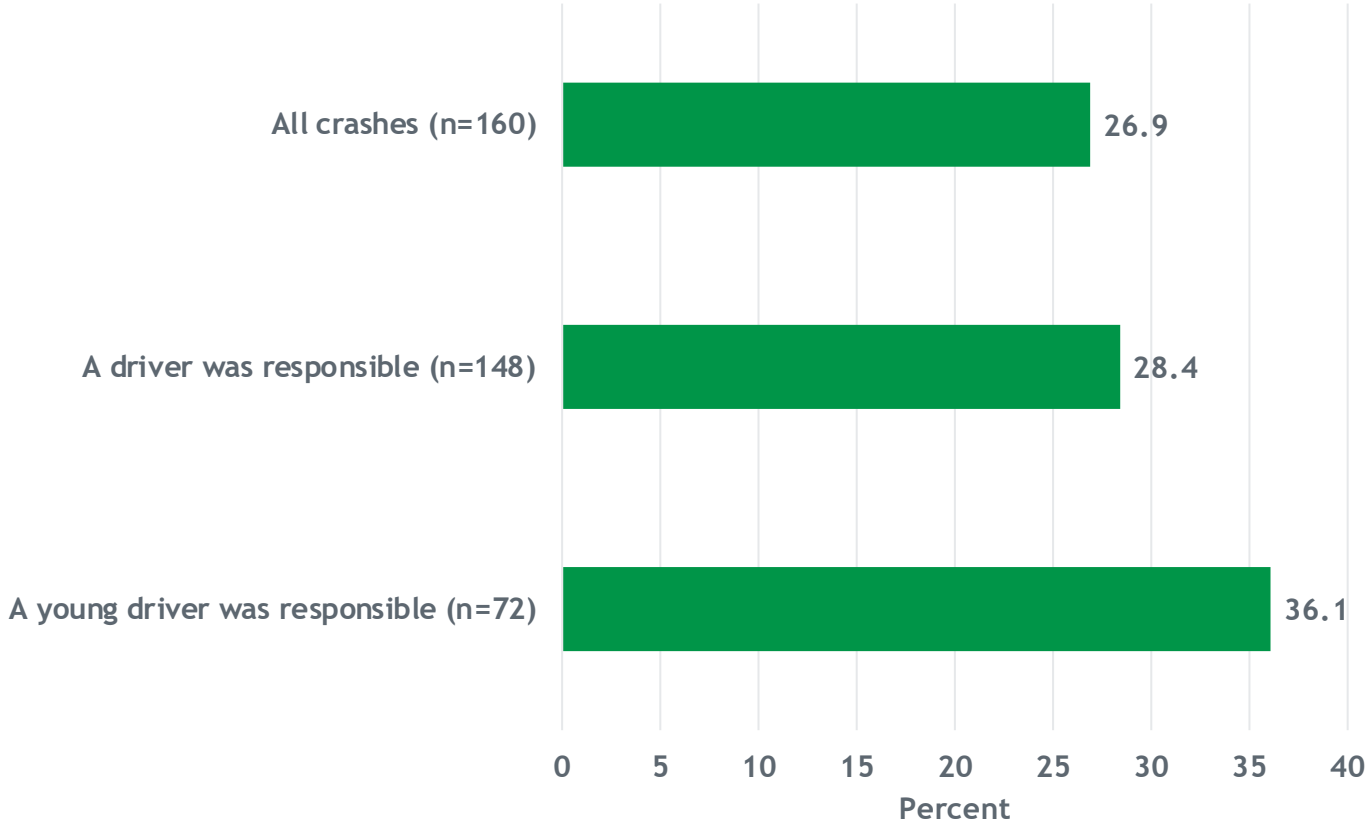
A recent national study found that NHPI, AIAN, and multiracial youth report higher substance use, depression, and suicidality when compared to non-Hispanic white youth.[85] The study found that current alcohol and cigarette use was associated with increased suicide attempts among youth in these racial and ethnic groups, and that substance use may predispose these young people toward suicidality.

The increased likelihood of substance use may stem from the historical loss of population, land, and culture endured by NHPI and AIAN populations. This historical trauma includes the forcible removal of indigenous AIAN people from their lands, and the forcible transfer of children from their families to boarding schools designed to strip them of their culture.[86] Paralleling indigenous AIANs, NHPI populations endured adverse colonization by the US and historical trauma that includes the overthrow of the Hawaiian monarchy and contamination of their lands and people by US military nuclear testing.[87] This trauma has shaped our current societal context and led to substantial socioeconomic and health inequities, including increased substance use and suicidality.

PASSENGER VEHICLE DEATHS

Drug or alcohol use was a reported cause of 26.9% (n=43) of all deadly passenger vehicle crashes (n=160) in Colorado among infants, children, and youth. Where a young driver under age 19 was determined to be responsible for causing the crash, drug or alcohol use was a reported cause in 36.1% (n=26) of the crashes (Figure 2).

Figure 2. Proportion of passenger vehicle deaths occurring among those under age 18 in Colorado where drug or alcohol use was a cause of the crash, 2013-2017



LGBTQ Inequities

Experiences of harassment related to real or perceived sexual orientation and gender identity are common for LGBTQ youth. This stigma and discrimination experienced by LGBTQ youth is associated with increased substance use and risky driving behaviors, when compared to their heterosexual and cisgender peers. 2017 HKCS data[88] show that:

- 8.6% of LGB students drove a vehicle when they had been drinking alcohol at least once during the past 30 days, compared to 5.0% of heterosexual students. Compared with 5.2% of cisgender students, 38.3% of all transgender youth reported drinking alcohol and driving in the past month.
- 12.1% of LGB students drove a vehicle when they had been using marijuana at least once during the past 30 days, compared to 8.5% of heterosexual students. Compared with 8.7% of cisgender students, 31.8% of all transgender youth reported using marijuana and driving in the past month.

Racial and Ethnic Inequities

Colorado observed a significant inequity in the rate of passenger vehicle deaths by race and ethnicity. The rate for Hispanic infants, children and youth (3.0 per 100,000 population) was significantly higher than non-Hispanic white (1.8 per 100,000 population) for the period.

Data from HKCS shows significant disparities in substance use and driving behaviors by race and ethnicity. In 2017 in Colorado:[89]

- 28.7% of NHPI and 17.3% of Hispanic students reported being a passenger to a driver drinking alcohol, compared to 14.8% of white students.
- 30.7% of NHPI, 8.2% of multiracial, and 6.5% of Hispanic students reported recently drinking and driving, compared to 5.0% of white students.

The increased prevalence of these impaired driving behaviors among Hispanic and multiracial youth may be due to racial residential segregation and living in neighborhoods with community risk factors for drinking alcohol, including concentrated poverty, increased billboard advertising, and higher alcohol outlet density. However, in addition to the generations of historical trauma noted previously, there is a scarcity of research about other factors contributing to the higher prevalence of impaired driving among NHPI youth.

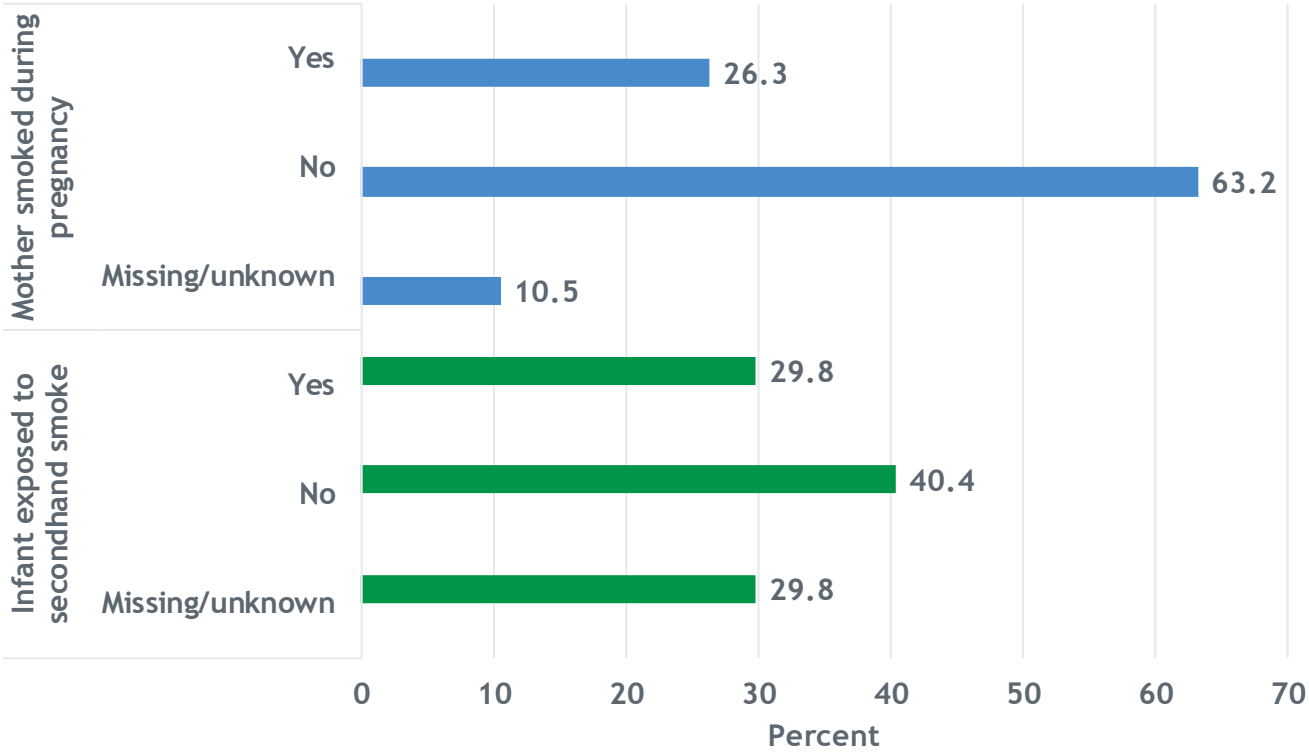
SUDDEN UNEXPECTED INFANT DEATH (SUID)

From 2013-2017, 413 total caregivers were identified for the 228 infants that died by SUID. Among caregivers, 24.9% (n=103) had a known history of substance use, and this information was missing or unknown 42.1% (n=174) of the time.

26.3% (n=60) of mothers who lost their infant to SUID during this time period smoked at any time during the pregnancy. Information on maternal smoking during pregnancy was missing or unknown for 10.5% (n=24) of all SUID reviewed (Figure 3).

Among the 228 SUID identified from 2013-2017, 29.8% (n=68) of infants were exposed to secondhand smoke. Information on secondhand smoke exposure was missing or unknown 29.8% (n=68).

Figure 3. SUID occurring in Colorado by selected smoking measures, 2013-2017 (n=228)



Racial and Ethnic Inequities

Colorado observed a significant inequity in the rate of SUID by race and ethnicity. The rate of SUID among non-Hispanic black infants was 3.2 times higher (188.9 per 100,000 live births) than for non-Hispanic white infants (59.7 per 100,000 live births).

Although substance use behaviors during pregnancy are associated with increased infant mortality, the increased mortality rate of black infants cannot be explained by these factors. Even when risk factors such as substance use during pregnancy are accounted for, the racial inequity in infant mortality continues to exist.[90]

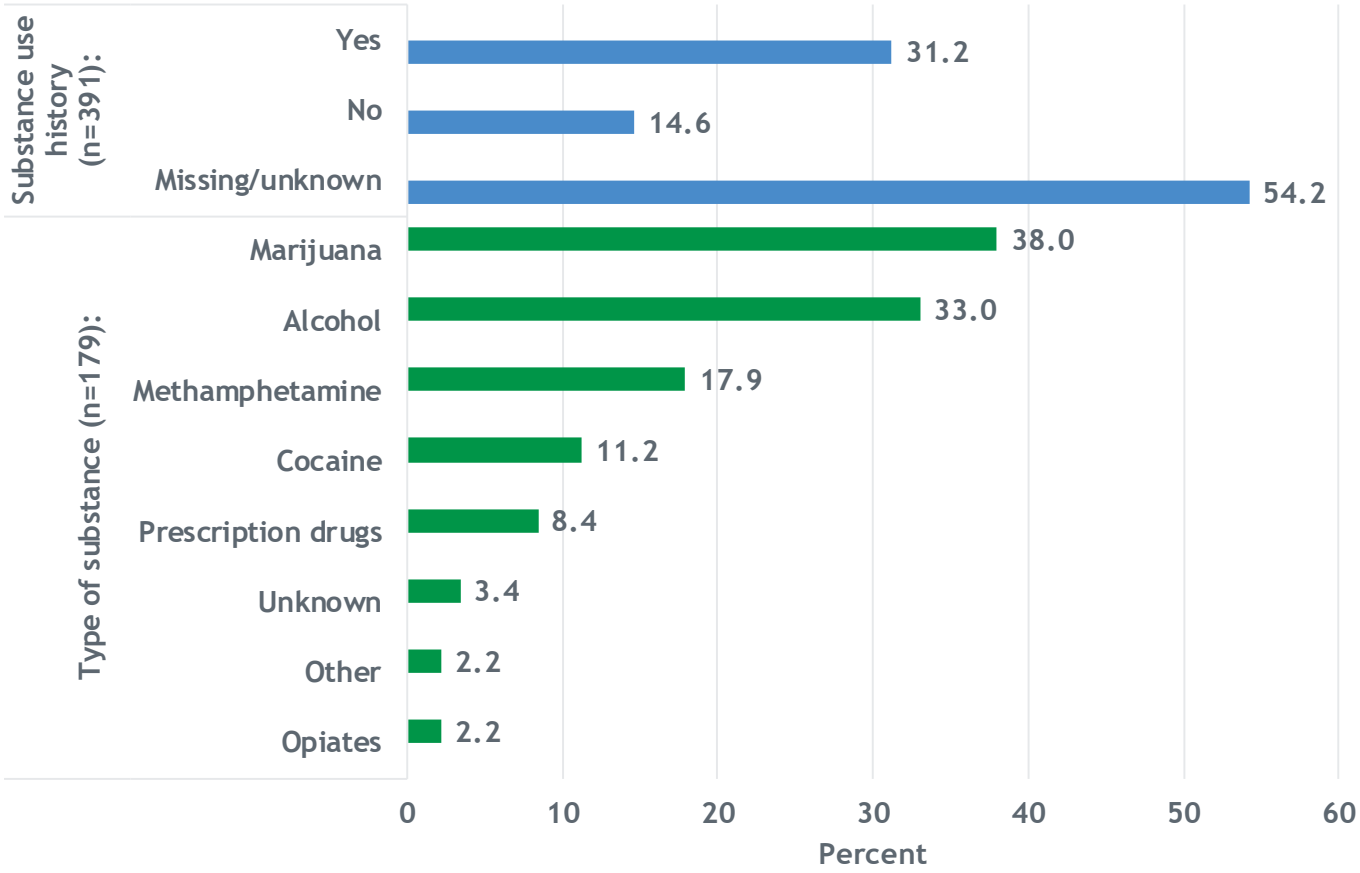
For black women, exposure to discrimination and racialized stress throughout the lifespan can negatively impact birth outcomes and infant mortality.[91] Additionally, structural racism, which consists of inequities in employment, education, and income, is associated with increased rates of infant mortality for black women but not white women.[92] Marketing tactics utilizing intentional targeting of some racial and ethnic groups and socio-demographic groups by the tobacco industry has further created and sustained a health burden within these communities.[93] Overall, racial inequities in infant mortality result from the social conditions facilitated by structural racism and discrimination, not from the behaviors of parents and caregivers.

CHILD MALTREATMENT DEATHS

From 2013-2017, 391 total caregivers were identified for the 223 infants, children, and youth that died by child maltreatment. Among caregivers, 31.2% (n=122) had a known history of substance use, and this information was missing or unknown 54.2% (n=212) of the time (Figure 4).

Among caregivers for whom a history of substance use or misuse was known (45.8%, n=179), 38.0% (n=68) had previously used or misused marijuana, 33.0% (n=59) had previously used or misused alcohol, 17.9% (n=32) had previously used or misused methamphetamine, 11.2% (n=20) had previously used or misused cocaine, and 8.4% (n=15) were noted to have previously used or misused prescription drugs.

Figure 4. Caregivers of child maltreatment decedents under age 18 in Colorado by substance use history, 2013-2017



Racial and Ethnic Inequities

There is a significant inequity in the rate of child maltreatment deaths by race and ethnicity in Colorado. The rate of child maltreatment deaths among non-Hispanic black infants, children, and youth was 4.1 times higher (10.7 per 100,000 population) than for non-Hispanic whites (2.6 per 100,000 population).

A significant amount of research has documented that families of color 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.[94] Possible explanations for this have included 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.[95] Studies have found little relationship between race and incidents of child maltreatment after controlling for poverty.[96] Instead, child abuse and neglect is strongly associated with poverty and other measures of economic well-being.[97]

Racialized residential segregation leads to concentrated neighborhood poverty and drives the racial and ethnic inequities in child maltreatment deaths. These inequities are largely driven by discriminatory policies, such as redlining, that create unjust social and geographic divisions among racial and ethnic groups.[98] The practice of redlining bases mortgage lending decisions on neighborhood aspects such as racial make-up and educational level, preventing people of color from living or purchasing homes in certain neighborhoods. Neighborhood history of redlining is a significant predictor of current high concentrations of alcohol outlets.[99] Research shows that increased availability of alcohol, measured by alcohol outlet density, or the number of retail alcohol stores for a population, is associated with higher neighborhood rates of child abuse and neglect.[100]

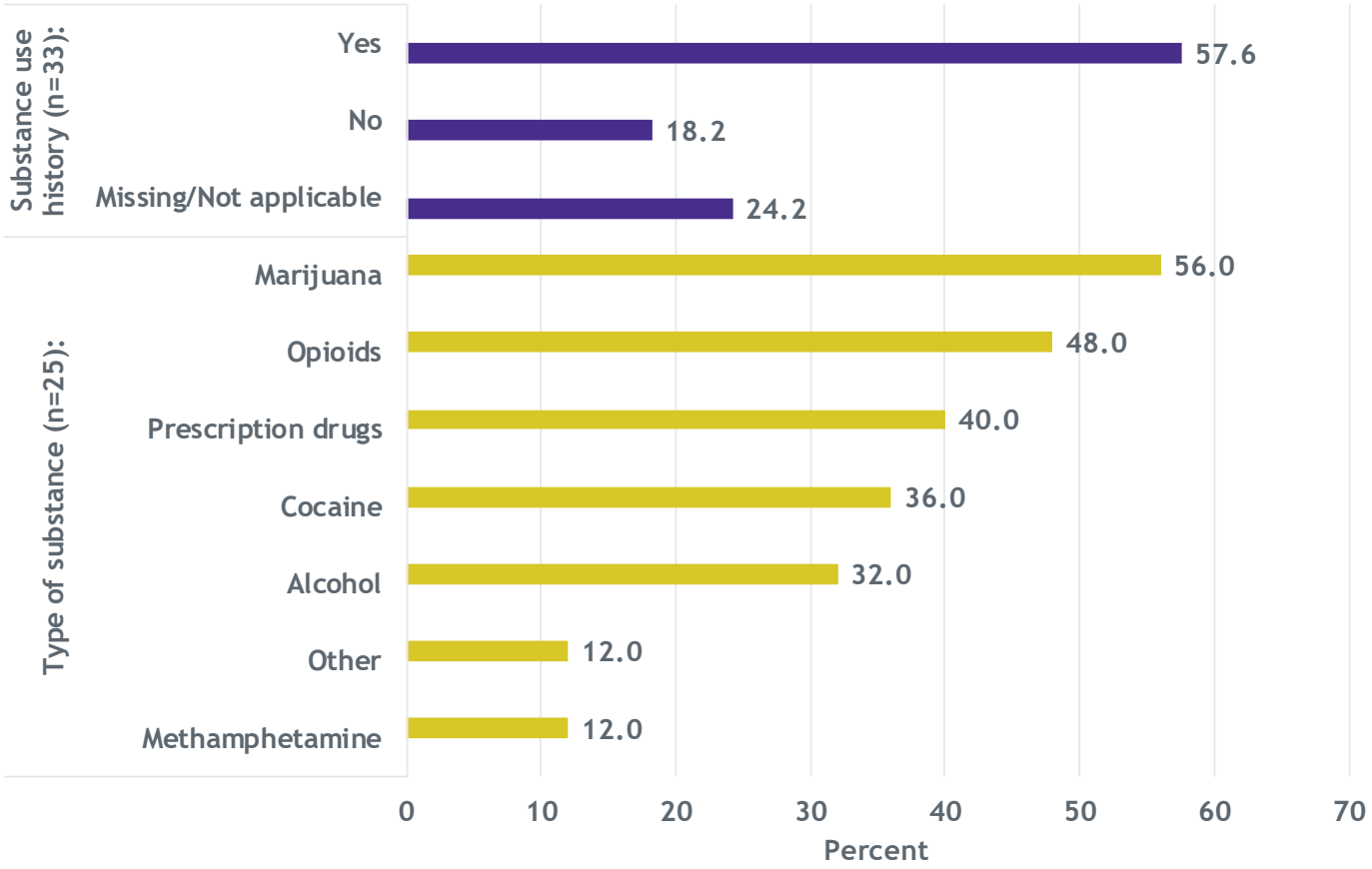
The racial inequities in child maltreatment deaths result from the social conditions facilitated by structural racism and discrimination, not from the behaviors or actions of specific racial groups or individuals in those groups.

UNINTENTIONAL POISONING OR OVERDOSE DEATHS

Among the 33 unintentional poisoning deaths occurring among those under age 18 in Colorado from 2013-2017, 57.6% (n=19) involved prescription drugs and 63.6% (n=21) involved illicit substances, including alcohol and other drugs, such as heroin, cocaine, synthetic cannabinoids or methamphetamine.

Of the 33 unintentional poisoning deaths, 57.6% (n=19) were indicated to have used or misused substances previously (Figure 5). Among those for whom a history of substance use or misuse was known (75.8%, n=25), 56.0% (n=14) had previously used or misused marijuana, 48.0% (n=12) had previously used or misused opioids, 40.0% (n=10) were noted to have previously used or misused prescription drugs, and 32.0% (n=8) had previously used or misused alcohol. Opioids are a category which represents both prescription (diverted and otherwise) and illicit opioids (i.e. heroin).

Figure 5. Unintentional poisoning or overdose deaths occurring among those under age 18 in Colorado by substance use history, 2013-2017



Of the substances used when these deaths occurred, none were stored in a locked, secure location, including many addictive and potentially lethal substances and medications. Storage information was missing or unknown for 57.6% (n=19) of these deaths, while 21.2% (n=7) were stored in other unlocked locations and 12.1% (n=4) were not stored and were rather found in an open area.

Best practices for safe substance storage at home:[101,102]

- Store all substances in a locked area.
- Keep substances in a child-proof container, such as with a locking safety cap on medication bottles or storing marijuana in child-resistant packaging from the store.
- Pick a storage place in your home that children and youth cannot reach or see.
- Put substances away after every use.
- Teach children, youth, and guests about substance safety.

CONCLUSION

The CFPS data presented here are highlights, are not exhaustive, and do not represent all substance use information collected by the system. Readers should interpret this data in the context of the substance use climate in Colorado detailed at the beginning of this report.

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