

# CHILD FATALITY PREVENTION SYSTEM: UNINTENTIONAL POISONING DEATH DATA, 2014 - 2018

---



**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 43 local review teams, a 46-member State Review Team, and the CFPS state support team at CDPHE. Local teams 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. The CFPS State Review Team develops recommendations for the legislature on how to prevent child deaths in an annual legislative report.

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 unintentional poisoning death data from CFPS. Additional CFPS data is available at: [www.cochildfatalityprevention.com/p/reports.html](http://www.cochildfatalityprevention.com/p/reports.html).

## The impact of policies and systems on child deaths

Generations of social, economic, and environmental inequities contribute to some families losing infants, children, and youth.<sup>1</sup> When interpreting the data, it is critical to not lose sight of these systemic, avoidable, and unjust factors. These factors perpetuate the disparities observed in child deaths in Colorado. 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, understand, and eliminate life-long inequities that persist across groups. When limitations in the data system exist due to how data is collected, or because data is 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:

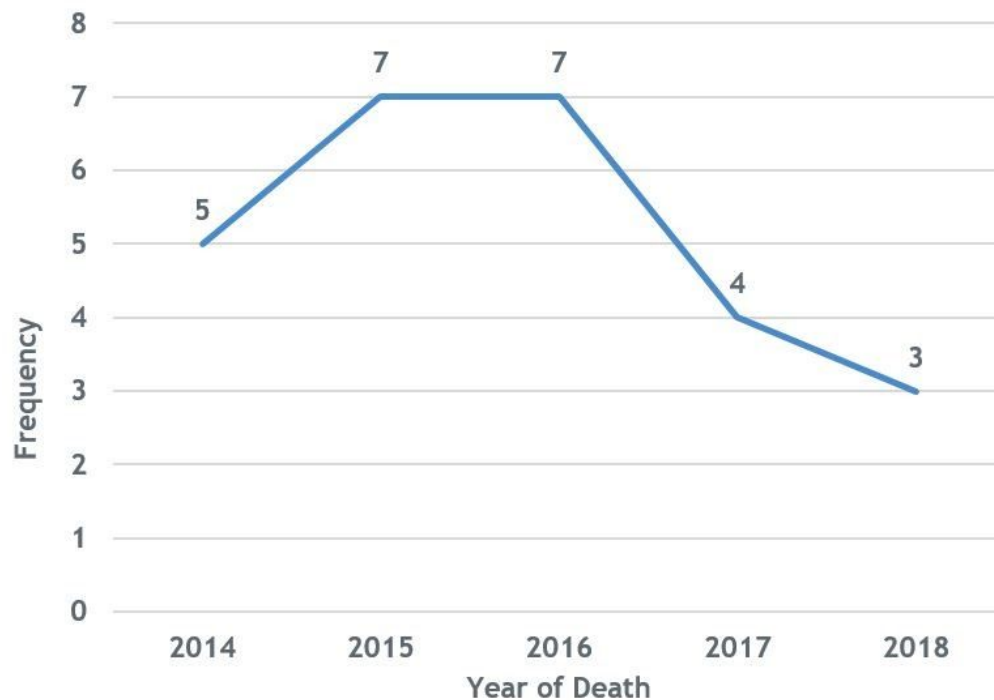
RURAL AND FRONTIER GEOGRAPHY	RACE AND ETHNICITY	SEXUAL ORIENTATION AND GENDER IDENTITY
<p>Limited access to Level 1 trauma centers and mental and behavioral health services.<sup>2</sup></p> <p>Increased stigma associated with mental illness and seeking help.<sup>3</sup></p> <p>Longer response times by emergency medical services.<sup>4</sup></p> <p>→ These and other factors contribute to higher death rates in rural areas, including suicide<sup>5</sup> and passenger vehicle deaths.<sup>6</sup></p>	<p>Historical trauma, racism, and discrimination.<sup>7,8</sup></p> <p>Limited access to high-quality education,<sup>9</sup> employment opportunities,<sup>10</sup> healthy foods,<sup>11</sup> culturally traditional foods,<sup>12</sup> and health care.<sup>13</sup></p> <p>Chronic stress.<sup>14</sup></p> <p>→ These factors result in lasting health impacts for people of color that include infant mortality,<sup>15</sup> high rates of homicide and gun violence,<sup>16</sup> and increased motor vehicle deaths.<sup>17</sup></p>	<p>Discrimination, stigma, and bias.<sup>18</sup></p> <p>Rejection from family, friends, and community.<sup>19</sup></p> <p>Non-inclusive school curricula and anti-harassment policies.<sup>20</sup></p> <p>Insufficient access to LGBTQ+-informed health care.<sup>21</sup></p> <p>→ This chronic social stress that LGBTQ+ children and youth experience influences health across the lifespan, including higher rates of suicide<sup>22</sup> and substance use.<sup>23</sup></p>

## Overview of Unintentional Poisoning Deaths

From 2014-2018, there were 26 unintentional poisoning deaths among infants, children, and youth in Colorado. Unintentional poisoning deaths include those of accidental and undetermined manners of death, as determined by the coroner. They can include deaths due to overdose by prescription, illicit, or over the counter drugs. They may also result from unintentional poisoning with other substances, such as household cleaners, carbon monoxide, plants, or pesticides.

Figure 1 demonstrates the number of unintentional poisoning deaths by year. Unintentional poisoning deaths ranged from a low of 3 in 2018 to a high of 7 in 2015 and 2016 and averaged about 5 deaths per year for the period. The rate of unintentional poisoning deaths for the period was 0.4 per 100,000 population. This rate did not change significantly from year to year and was not significantly different from the national rate of unintentional poisoning deaths over the same period (0.3 per 100,000 population).<sup>24</sup>

Figure 1. Unintentional poisoning and overdose deaths occurring among those under age 18 in Colorado by year, 2014-2018 (n=26)



## Demographic Characteristics

### Age

The majority of unintentional poisoning deaths occurred among youth ages 15-17 (80.8%, n=21). Too few deaths occurred among those under age 1, ages 1-4, ages 5-9, and ages 10-14 to report in accordance with applicable privacy standards. The rate of unintentional poisoning deaths among youth ages 15-17 was 1.9 per 100,000 population.

The focus of this brief is unintentional poisoning or overdose deaths among those under age 18. Particularly for youth ages 15-17, the stressors and contributing factors that lead to unintentional overdose may continue into young adulthood. The rate of unintentional overdose deaths for Colorado young adults ages 18-24 (12.9 per 100,000 population) is nearly seven-times the rate for Colorado youth ages 15-17.<sup>25</sup> It can be beneficial, from an overdose prevention perspective, to consider both youth and young adults when interpreting data and implementing overdose prevention strategies.

---

## Sex

Among those who died by unintentional poisoning, 69.2% (n=18) were males. The rate of unintentional poisoning death among males (0.6 per 100,000 population) was three times the rate among females (0.2 per 100,000 population), but this difference was not statistically significant.

## Sexual Orientation and Gender Identity

### Defining Sexual Orientation, Gender Identity, and Gender Expression

- **Sexual Orientation:** A person's physical or emotional attraction to people of the same, neither, both, and/or opposite gender. "Heterosexual," "bisexual," and "homosexual" are all sexual orientations. 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.
- **Gender Expression:** A person's characteristics and behaviors that are socially defined as either masculine or feminine, such as dress, grooming, and mannerisms. Social or cultural norms can vary widely and some characteristics accepted as masculine, feminine, or neutral in one culture may be different in another.

It is well-researched that lesbian, gay, bisexual, transgender, queer, and questioning (LGBTQ+) children and youth experience increased substance use and abuse, when compared to their heterosexual and cisgender peers.<sup>26,27</sup> The '+' in LGBTQ+ stands for other sexualities, sexes, and genders that are not included in these few letters, which can include intersex, asexual, pansexual, agender, bigender, and gender queer. The disparities in substance use by sexual orientation and gender identity exist because heterosexual and cisgender norms dominate our culture and systems.<sup>28,29,30</sup> 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 health care.<sup>31</sup>

In order to better understand these disparities 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. It is worth noting that during the time period when deaths that occurred from 2014-2018 were being reviewed, questions asking about sexual orientation and gender identity were inconsistently available in the National Fatality Review-Case

---

Reporting System (NFR-CRS), the data tool that CFPS uses. In April 2018, existing sexual orientation and gender identity questions were removed from the NFR-CRS. CFPS added Colorado-specific sexual orientation and gender identity questions in April 2019, and in April 2020, the National Center for Fatality Review and Prevention added sexual orientation and gender identity questions back into the NFR-CRS for all states. In addition, the NFR-CRS added a life stressors section in its newest update, which will improve CFPS’s ability to understand how stress due to sexual orientation and/or gender identity contributes to deaths among children and youth.

In an effort to reduce barriers in collecting this information, local child fatality prevention review teams receive guidance and technical assistance on how to discuss sexual orientation and gender identity during fatality reviews.

Although CFPS faces challenges in collecting data about sexual orientation and gender identity, there are other data sources in Colorado to provide information about substance use by sexual orientation and gender identity. The Healthy Kids Colorado Survey (HKCS) is Colorado’s only comprehensive survey on the health and well-being of young people. The purpose of HKCS is to better understand youth health and the factors that help young people make healthy choices.<sup>32</sup> The HKCS asks high school students to self-identify as lesbian, gay, bisexual (LGB), or heterosexual, and if they self-identify as transgender or cisgender, or not sure for each category.

2017 data from HKCS<sup>33</sup> shows that:

- 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%).

## 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.<sup>34</sup> Additionally, “Latinx” and “Chicanx” are increasingly used gender inclusive terms, respecting those with a non-binary gender identity.<sup>35,36</sup> To ensure clarity, this report uses “Hispanic” throughout the data section to reflect how CFPS data is collected from the death certificate and to align with terminology used in cited literature and research.<sup>37</sup>

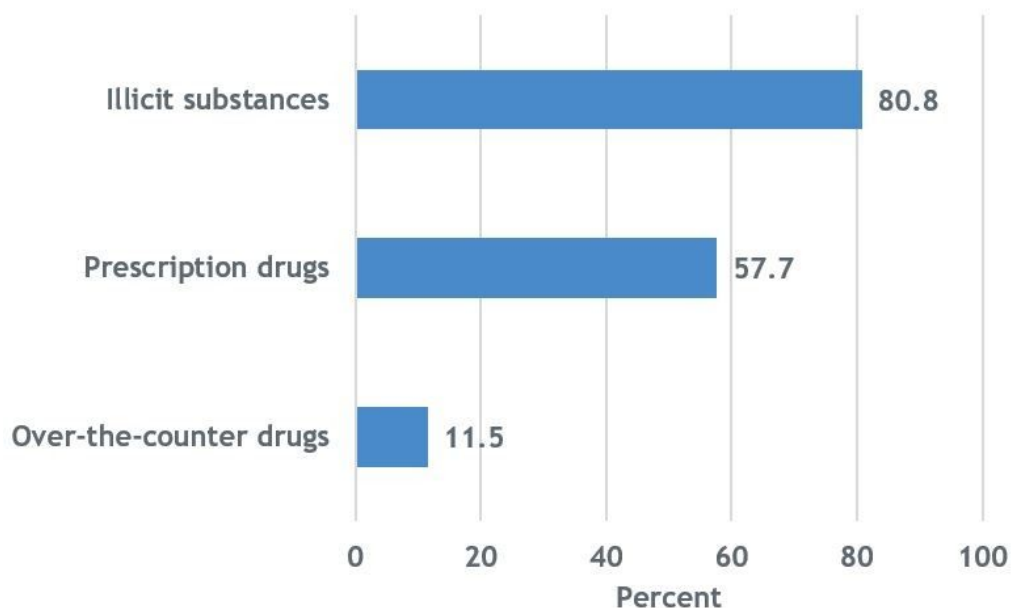
---

Of the 26 infants, children, and youth who died by unintentional poisoning, 46.1% (n=12) were non-Hispanic white, followed by Hispanic (38.5%, n=10) and non-Hispanic Black (11.5%, n=3). Differences in rates of unintentional poisoning deaths by race and ethnicity were not statistically significant.

## Unintentional Poisoning Death Circumstances

Among the 26 unintentional poisoning deaths occurring from 2014-2018, 80.8% (n=21) involved illicit substances, including alcohol and other drugs, such as heroin, cocaine, synthetic cannabinoids, or methamphetamine (Figure 2). Following illicit substances, 57.7% (n=15) involved prescription drugs and 11.5% (n=3) involved over-the-counter drugs. These substance categories are not mutually exclusive as more than one substance could have been identified at the time of investigation as contributing to the death.

**Figure 2. Unintentional poisoning and overdose deaths occurring among those under age 18 in Colorado by substance category, 2014-2018 (n=26)**



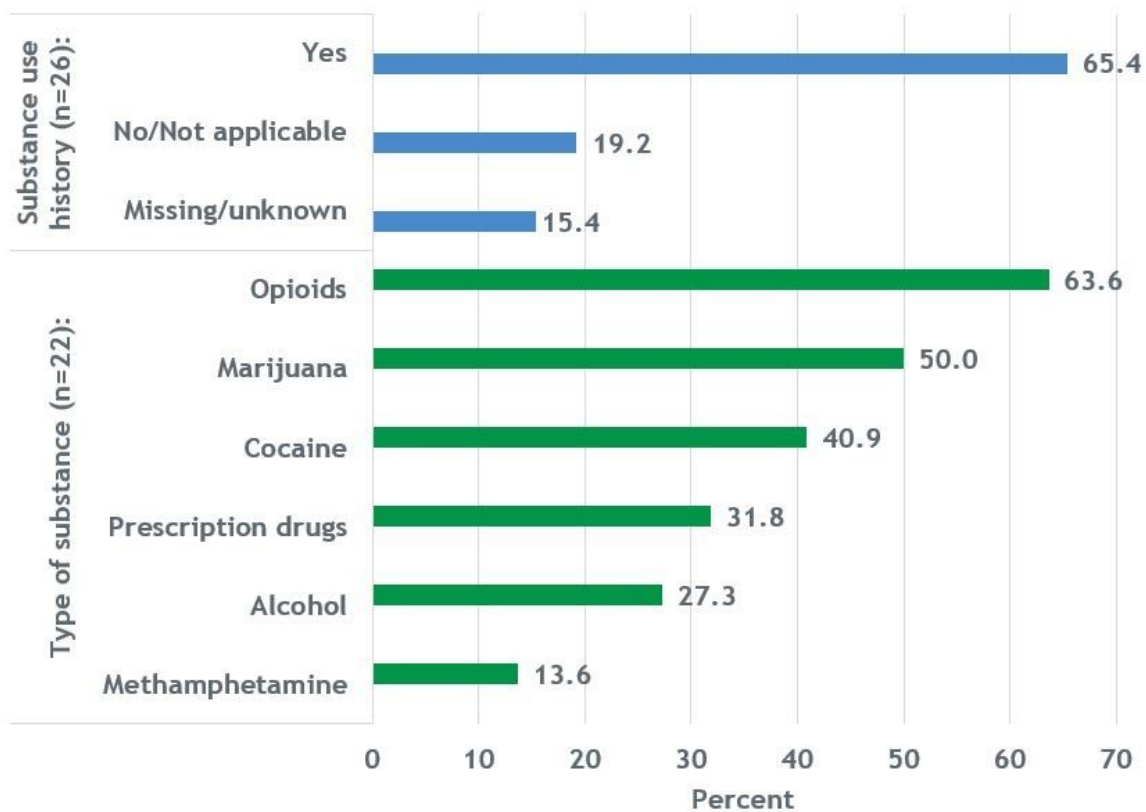
Among unintentional overdose or poisoning deaths involving illicit substances, 19.1% (n=4) involved cocaine, 14.3% (n=3) involved heroin, and 85.7% (n=18) involved other illicit substances such as opioids and methamphetamine. These illicit substance categories are not mutually exclusive as more than one substance could have been involved in an overdose death.

Among unintentional overdose or poisoning deaths involving prescription drugs, 73.3% (n=11) involved opioid pain relievers including methadone (20.0%, n=3). About 26.6% (n=4) of deaths

involved other prescription drugs such as antidepressants and benzodiazepines. These prescription drug categories are not mutually exclusive as more than one prescription medication class could have been involved in an overdose death.

Figure 3 displays the types of substances previously used or abused by those who died of unintentional poisoning or overdose deaths. Of the 26 unintentional poisoning or overdose deaths, 65.4% (n=17) were indicated to have used or abused substances previously. Among those for whom a history of substance use or abuse was known (84.6%, n=22), 63.6% (n=14) had previously used or abused opioids, 50.0% (n=11) had previously used or abused marijuana, 40.9% (n=9) had previously used or abused cocaine, 31.8% (n=7) had previously used or abused prescription drugs, and 27.3% (n=6) had previously used or abused alcohol. Opioids are a category which most likely represents both prescription (diverted and otherwise) and illicit opioids (i.e. heroin).

**Figure 3. Unintentional drug poisoning or overdose deaths occurring among those under age 18 in Colorado by substance use history, 2014-2018**

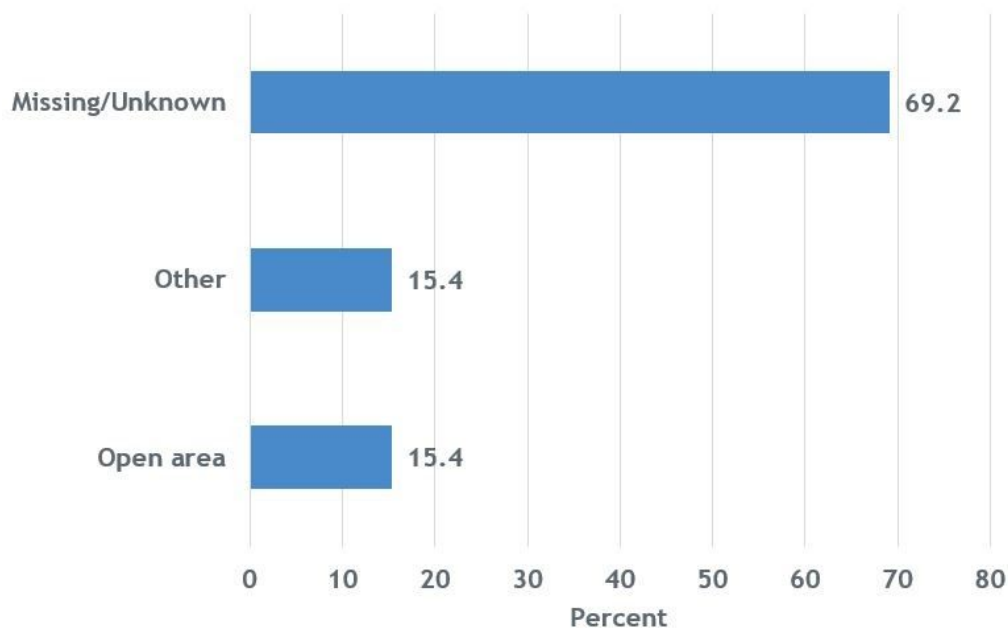




---

CFPS review teams also collect information on storage of substances causing unintentional poisoning deaths in Colorado. Figure 4 demonstrates the types of storage areas indicated for the 26 unintentional poisoning deaths from 2014-2018. Of these substances, none were stored in a closed, locked location. Storage information was missing or unknown for 69.2% (n=18) of these deaths, while 15.4% (n=4) were stored in other unsecured locations (e.g., under the mattress, desk drawer) and 15.4% (n=4) were not stored and were rather found in an open area.

**Figure 4. Unintentional poisoning or overdose deaths occurring among those under age 18 in Colorado by substance storage location, 2014-2018 (n=26)**



## Conclusion

From 2014 to 2018, unintentional poisoning was the eighth leading cause of death reviewed by CFPS among those under age 18 in Colorado. The highest unintentional poisoning rates were observed among youth aged 15-17. There were no significant differences in rates of unintentional poisoning deaths by race and ethnicity. The majority of unintentional poisoning deaths involved illicit substances, followed by prescription drugs and over-the-counter drugs. Additionally, nearly two-thirds of young people who died by unintentional poisoning were known to have previously used or abused substances. Upstream prevention strategies that address social and structural inequities can reduce unintentional poisoning deaths among infants, children, and youth. To learn more about the prevention strategies recommended by CFPS, view the 2020 Legislative Report ([www.cochildfatalityprevention.com/p/reports.html](http://www.cochildfatalityprevention.com/p/reports.html)).

---

For more information and CFPS data, please contact the CFPS Support Team at the Colorado Department of Public Health and Environment:  
Sasha Mintz, Child Fatality Prevention System Epidemiologist | [sasha.mintz@state.co.us](mailto:sasha.mintz@state.co.us)

## References

1. Bailey, Z. D., Krieger, N., Agénor, M., Graves, J., Linos, N., & Bassett, M. T. (2017). Structural racism and health inequities in the U.S.A.: evidence and interventions. *The Lancet*, 389(10077), 1453-1463.
2. Rost, K., Fortney, J., Fischer, E., & Smith, J. (2002). Use, quality, and outcomes of care for mental health: The rural perspective. *Medical Care Research and Review*, 59(3), 231-265.
3. Cantrell, C., Valley-Gray, S., & Cash, R. E. (2012). Suicide in rural areas: risk factors and prevention. *Rural Mental Health: Issues, Policies, and Best Practices*. New York, NY: Springer.
4. Mell, H. K., Mumma, S. N., Hiestand, B., Carr, B. G., Holland, T., & Stopyra, J. (2017). Emergency medical services response times in rural, suburban, and urban areas. *JAMA surgery*, 152(10), 983-984.
5. Cantrell, C., Valley-Gray, S., & Cash, R. E. (2012). Suicide in rural areas: risk factors and prevention. *Rural Mental Health: Issues, Policies, and Best Practices*. New York, NY: Springer.
6. Beck, L. F., Downs, J., Stevens, M. R., & Sauber-Schatz, E. K. (2017). Rural and urban differences in passenger-vehicle-occupant deaths and seat belt use among adults—United States, 2014. *MMWR Surveillance Summaries*, 66(17), 1.
7. Palacios, J. F., & Portillo, C. J. (2009). Understanding Native women's health: Historical legacies. *Journal of Transcultural Nursing*, 20(1), 15-27.
8. 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.
9. Williams, D. R., & Collins, C. (2016). Racial residential segregation: a fundamental cause of racial disparities in health. *Public Health Reports*, 116(5), 404-16.
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. Larson, N. I., Story, M. T., & Nelson, M. C. (2009). Neighborhood environments: disparities in access to healthy foods in the U.S. *American journal of preventive medicine*, 36(1), 74-81.
12. Greder, K., de Slowing, F. R., & Doudna, K. (2012). Latina immigrant mothers: Negotiating new food environments to preserve cultural food practices and healthy child eating. *Family and Consumer Sciences Research Journal*, 41(2), 145-160.

- 
13. 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.
  14. Williams, D. R., & Mohammed, S. A. (2013). Racism and health I: Pathways and scientific evidence. *American behavioral scientist, 57*(8), 1152-1173.
  15. 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.
  16. 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.
  17. 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](https://repository.upenn.edu/edissertations/2396).
  18. Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychological bulletin, 129*(5), 674.
  19. Kelleher, C. (2009). Minority stress and health: Implications for lesbian, gay, bisexual, transgender, and questioning (LGBTQ) young people. *Counselling psychology quarterly, 22*(4), 373-379.
  20. Sadowski, M. (2020). Safe is not enough: Better schools for LGBTQ students. *Harvard Education Press*.
  21. Kates, J., Ranji, U., Beamesderfer, A., Salganicoff, A., & Dawson, L. (2015). Health and access to care and coverage for Lesbian, Gay, Bisexual and Transgender (LGBT) individuals in the U.S.
  22. Hatzenbuehler, M. L., & Pachankis, J. E. (2016). Stigma and minority stress as social determinants of health among lesbian, gay, bisexual, and transgender youth: research evidence and clinical implications. *Pediatric Clinics, 63*(6), 985-997.
  23. Moazen-Zadeh, E., Karamouzian, M., Kia, H., Salway, T., Ferlatte, O., & Knight, R. (2019). A call for action on overdose among LGBTQ people in North America. *The Lancet Psychiatry, 6*(9), 725-726.
  24. Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2018 on CDC WONDER Online Database, released in 2020. Data are from the Multiple Cause of Death Files, 1999-2018, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <http://wonder.cdc.gov/ucd-icd10.html> on Feb 18, 2020 10:57:08 AM.
  25. Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2018 on CDC WONDER Online Database, released in 2020. Data are from the Multiple Cause of Death Files, 1999-2018, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <http://wonder.cdc.gov/ucd-icd10.html> on Apr 13, 2020 12:45:54 PM.

- 
26. Johns, M. M., Lowry, R., Andrzejewski, J., Barrios, L. C., Demissie, Z., McManus, T., ... & Underwood, J. M. (2019). Transgender identity and experiences of violence victimization, substance use, suicide risk, and sexual risk behaviors among high school students—19 states and large urban school districts, 2017. *Morbidity and Mortality Weekly Report*, 68(3), 67.
  27. Green, K. E., & Feinstein, B. A. (2012). Substance use in lesbian, gay, and bisexual populations: an update on empirical research and implications for treatment. *Psychology of Addictive Behaviors*, 26(2), 265.
  28. Hatzenbuehler, M. L., & Pachankis, J. E. (2016). Stigma and minority stress as social determinants of health among lesbian, gay, bisexual, and transgender youth: research evidence and clinical implications. *Pediatric Clinics*, 63(6), 985-997.
  29. Huebner, D. M., Thoma, B. C., & Neilands, T. B. (2015). School victimization and substance use among lesbian, gay, bisexual, and transgender adolescents. *Prevention Science*, 16(5), 734-743.
  30. Duncan, D. T., Hatzenbuehler, M. L., & Johnson, R. M. (2014). Neighborhood-level LGBT hate crimes and current illicit drug use among sexual minority youth. *Drug and alcohol dependence*, 135, 65-70.
  31. Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychological bulletin*, 129(5), 674.
  32. Overview: Healthy Kids Colorado Survey. Retrieved from: [drive.google.com/file/d/1i4aaIUyTN7G4lD1NgcPXuMEwPqg3hMi7/view](https://drive.google.com/file/d/1i4aaIUyTN7G4lD1NgcPXuMEwPqg3hMi7/view).
  33. Colorado Department of Public Health and Environment. (2017). Center for Health and Environmental Data. Adolescent Health Data: Healthy Kids Colorado Survey. Retrieved from [www.colorado.gov/cdphe/healthy-kids-colorado-survey-data](http://www.colorado.gov/cdphe/healthy-kids-colorado-survey-data). Accessed July 2019.
  34. Overview: Colorado Birth Certificates and Death Certificates, Vital Records. Retrieved from: [drive.google.com/file/d/1GqFYl473YSJp-gwj9bE5arvNzoQg3O9K/view](https://drive.google.com/file/d/1GqFYl473YSJp-gwj9bE5arvNzoQg3O9K/view).
  35. Padilla, Y. (2016, April 18). What does “Latinx” mean? A look at the term that’s challenging gender norms. Complex. Retrieved from [www.complex.com/life/2016/04/latinx](http://www.complex.com/life/2016/04/latinx).
  36. Salinas Jr, C., & Lozano, A. (2019). Mapping and recontextualizing the evolution of the term Latinx: An environmental scanning in higher education. *Journal of Latinos and Education*, 18(4), 302-315.
  37. 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/1z1b15A9hGaRxxv4XTTa9BiPnz5lwjvfr/view](https://drive.google.com/file/d/1z1b15A9hGaRxxv4XTTa9BiPnz5lwjvfr/view).