Exploring Health Equity in Colorado’s 10 Winnable Battles

This report is partially funded by the State Partnership Program to Improve Minority Health, U.S. Department of Health and Human Services, Office of Minority Health.
Acknowledgements

Authors
Jennifer Kincheloe
Principal
KincheloeHealth

Mauricio Palacio
Director
Office of Health Equity
Colorado Department of Public Health and Environment

Deanna J. Butler
Health Disparities Specialist/Program Evaluator
Office of Health Equity
Colorado Department of Public Health and Environment

Alyson Shupe
Section Chief
Center for Health and Environmental Information and Statistics
Colorado Department of Public Health and Environment

Cassi Clark Ward-Hunt
Research Intern
KincheloeHealth

Data Analysts
Eric Brown
Environmental Data Coordinator
Environmental Information Management Unit
Colorado Department of Public Health and Environment

Rebecca Crepin
Senior Data Analyst
Colorado Health Institute

Alicia Cronquist
Foodborne and Enteric Disease Epidemiologist
Disease Control and Environmental Epidemiology Division
Colorado Department of Public Health and Environment

Melanie Levy
Assistant Statistician
Statistical Support and Programming
The UCLA Center for Health Policy Research

Candace Vonderwahl
Viral Hepatitis Surveillance Coordinator
Disease Control and Environmental Epidemiology Division
Colorado Department of Public Health and Environment

Devon L. Williford
GIS Analyst
Geographic Information Services
Center for Health and Environmental Information and Statistics
Colorado Department of Public Health and Environment

Advisors
Meredith Towle
Coordinator/Epidemiologist
Occupational Health and Safety Surveillance Program
Disease Control and Environmental Epidemiology Division
Colorado Department of Public Health and Environment

Christian Valtierra
Assistant Director
Office of Diversity and Inclusion
University of Colorado Anschutz Medical Campus

Kieu O. Vu
Behavioral Risk Factor Surveillance System Coordinator
Center for Health and Environmental Information and Statistics
Colorado Department of Public Health and Environment

Hongjian Yu
Director, Statistical Support
The UCLA Center for Health Policy Research

Lorena Zimmer
Health Equity Coordinator
Office of Health Equity
Colorado Department of Public Health and Environment

Editor
Mark Salley
Communications Director
Community Relations Division
Colorado Department of Public Health and Environment

Photographer
Fola Akinyemi
Fola Doll Imaging
http://www.foladollimaging.com
# Table of Contents

Executive Summary ................................................................. 1  
Introduction .............................................................................. 1  
Findings ..................................................................................... 11  
  Clean Air ................................................................................. 11  
  Clean Water ............................................................................ 14  
  Infectious Disease Prevention ............................................ 16  
  Injury Prevention ........................................................................ 19  
  Mental Health and Substance Abuse .................................. 23  
  Obesity .................................................................................... 27  
  Oral Health ................................................................................. 32  
  Tobacco ..................................................................................... 34  
  Unintended Pregnancy ............................................................. 37  
Conclusion and Recommendations ........................................... 43  
Appendix A: Data Sources Used in This Report ....................... 47  
  2010 U.S. Census ................................................................. 47  
  The American Community Survey ..................................... 47  
  Behavioral Risk Factor Surveillance System ....................... 48  
  The Colorado Child Health Survey ....................................... 48  
  The Current Population Survey ............................................. 48  
  The Pregnancy Risk Assessment Monitoring System .......... 48  
  Reportable Health Conditions Surveillance Data ................. 48  
  Youth Risk Behavior Surveillance System ............................. 49  
Appendix B: Additional Data Resources ................................. 50  
  The Colorado Health Information Data Set .......................... 50  
  The Behavioral Risk Factor Surveillance System ................. 50  
  The National Center for Health Statistics ............................ 50  
Appendix C: Other Resources ................................................... 51  
  Federal and State Agencies .................................................... 51  
  Federal Laws ............................................................................. 52  
  Federal Reports ......................................................................... 52  
Works Cited ................................................................................ 53
Executive Summary

THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE) HAS IDENTIFIED 10 WINNABLE BATTLES — PUBLIC HEALTH AND ENVIRONMENTAL PRIORITIES WITH LARGE-SCALE IMPACTS ON HEALTH AND THE ENVIRONMENT, AND WITH KNOWN, EFFECTIVE STRATEGIES TO ADDRESS THEM. CDPHE is implementing a plan to achieve gains in these ten areas quickly. The Colorado 2013 Health Disparities Report provides baseline data and case studies on how various groups that traditionally have experienced social or economic obstacles to health are faring in the 10 areas identified as winnable battles. The purpose of the report is to identify strengths and disparities among groups and to inform efforts to achieve better health for all Coloradans, so that gains may be enjoyed equally.

This report differs from previous reports on health disparities in Colorado because it is organized around Colorado’s 10 Winnable Battles, and is designed to support CDPHE’s existing efforts in the 10 battle areas. Also, it is the first Health Disparities Report to include data on sexual minorities.

CDPHE selected measures for each of the 10 Winnable Battles to establish baseline data on the broader Colorado population, set goals, and track progress over time. CDPHE is engaged with public and private
partners across the state, and programs are in place to implement evidence-based strategies and meet the 10 Winnable Battle targets by 2016. For information on the 10 Winnable Battles, including base-line data, targets, and the programs CDPHE has established to address them, go to http://www.colorado.gov/cdphe/winnablebattles

**Data Limitations**

The 2013 Health Disparities Report uses the 10 Winnable Battles measures when possible, however, data on these indicators are not always available for subpopulations or, in some cases, they are not available for the entire state. When statewide data on subpopulations are not available, different measures, local data on subpopulations, or case studies within the scope of each Winnable Battle area are used. Thus, indicators for the 2013 Health Disparities Report are somewhat different from the 10 Winnable Battle measures used to track progress in the state as a whole. When a racial/ethnic group or sexual minority is not represented, it is only because the numbers were too small to generate stable estimates or the data do not exist.

Due to data limitations, this report uses the following broad racial and ethnic categories: Hispanic/Latino, White, African American/Black, Asian/Pacific Islander, and American Indian/Alaska Native. There is great diversity in language, culture, and ethnicity within each of these groups. The data presented in this report cannot reflect the disparities experienced among the different groups that make up the broader racial and ethnic categories.

---

**Colorado’s 10 Winnable Battles**

| 01 | Clean air |
| 02 | Clean water |
| 03 | Infectious disease prevention |
| 04 | Injury prevention |
| 05 | Mental health and substance abuse |
| 06 | Obesity |
| 07 | Oral health |
| 08 | Safe food |
| 09 | Tobacco |
| 10 | Unintended pregnancy |
Health Disparities and Health Equity

Health disparities\(^1\) still persist in Colorado, most notably among the poor, communities of color, people with limited English proficiency,\(^2\) sexual minorities, and others who may have experienced systematic discrimination or exclusion. Health status is partly determined by community factors, such as pollution, residential segregation, and the built environment—access to parks, good public transportation, and job opportunities (Institute of Medicine, 2012). Socioeconomic status has a marked influence on health, and race/ethnicity and income are inextricably intertwined (Institute of Medicine, 2012). In Colorado, Asian/Pacific Islanders and Whites have the highest household incomes of any racial or ethnic group ($62,287 and $57,630 respectively), and are the most likely to have college degrees (both 31 percent). It is not surprising that Whites and Asian/Pacific Islanders are also the most likely to report good to excellent health (both 91 percent).\(^3\) Hispanic/Latinos have the lowest household income ($38,450), are the least likely to graduate from college (7 percent), and are also the least likely to report good to excellent health (76 percent).

Recently, more attention has been given to health disparities related to sexual orientation and gender identity. Sexual minorities experience chronic stress as a result of stigmatization (Institute of Medicine, 2011). This minority stress is beyond what is experienced by the general population and has negative impacts on both physical and mental health (Lehavot, 2011). Lesbian, Gay, Bisexual, or Questioning (LGBQ) adolescents especially suffer. Eight percent of students in grades 9-12 in Boulder County identified themselves as LGBQ. These children did worse than their heterosexual peers on 58 health measures ranging from being the victims of rape to the number of meals eaten with their families each week.\(^4\)

---

1 Health disparities are differences in health status, access to care, and quality of care among groups that differ by race, ethnicity, sexual orientation, gender identity, physical ability, place of residence, socioeconomic status, or other factors that make groups vulnerable. Health equity is achieving the highest level of health for all people by eliminating social or economic obstacles to health, equalizing the conditions for health for all groups, especially for those who have experienced socioeconomic disadvantage or historical injustices. Health equity concerns those differences in population health that can be traced to unequal economic and social conditions and are systemic and avoidable – and thus inherently unjust and unfair.

2 Individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English are sometimes referred to as limited English proficient, or “LEP.” These individuals may be entitled to language assistance with respect to a particular type or service, benefit, or encounter (Federal Interagency Working Group on Limited English Proficiency (LEP), 2012).

3 It is important to understand the great diversity of cultures and ethnicities represented within the larger Asian/Pacific Islander group. These racial and ethnic subgroups may experience unique health disparities that are not necessarily evident from the statistics describing the larger group.

4 Source: The 2011 Boulder County Youth Behavior Risk Survey.
Key Findings

Below are findings that demonstrate health disparities within the 10 Winnable Battle areas in Colorado, looking at both race/ethnicity and sexual orientation. Some of them are from case studies or present data from Boulder County on LGBQ youth that may or may not be generalizable to the entire state. However, they provide a window into lives of disadvantaged groups, and are useful for informing program and policy development. In addition, they raise questions for further inquiry, and draw attention to data gaps.

01 Clean Air

- Due to higher levels of air pollution, living within 500 feet of a freeway is associated with an increased risk of asthma, impaired lung growth, atherosclerosis, low cognitive function, autism, Alzheimer disease, and lower IQ in children with prenatal exposure (Morgan, 2011). A case study found 79 percent of people living within 500 feet of a busy section of I-70 are Hispanic/Latino. This stretch of highway is located within the Children’s Corridor, a geographic area so strongly associated with high numbers of at-risk children that it is the center of a campaign by the Piton Foundation to make the neighborhoods more visible and actionable to the community (The Piton Foundation, 2011).

- Of the hundreds of elementary schools in the Denver Metro Area, two are situated within 500 feet of a major highway. Eighty-eight and 75 percent of the students at these two schools are Hispanic/Latino, even though Hispanic/Latinos comprise only 28 percent of elementary students statewide.

- Compared with other racial and ethnic groups, Hispanic/Latinos are the most likely to be employed in an outdoor occupation, one factor that can increase the impact of air pollution on an individual’s health.

---

5 For more information on The Children’s Corridor, go to http://www.denverchildrenscorridor.org.
02 Clean Water

- Sixty-four percent of people living in Colorado communities where drinking water exceeds the standard for radium and uranium are Hispanic/Latino. Hispanic/Latinos are more than twice as likely to drink bottled or vended water compared to Whites (30 percent versus 12 percent), yet are the group least able to afford it. Bottled water is not fluoridated and does not provide protection against dental decay.
03 Infectious Disease Prevention

- The Hepatitis B rate for Asian/Pacific Islanders in Colorado is almost 50 times higher than the rate for Whites and Hispanic/Latinos (148 versus 3 per 100,000 people).

- African Americans have the highest incidence of Hepatitis C in Colorado, with 96 cases per 100,000 people. The lowest rate is among Asian Pacific Islanders at 18 cases per 100,000.

- The HIV rate among African American/Black men in Colorado is over three times the rate among White men (1,200 versus 383 per 100,000 people). The rate among African American/Black women is nearly 16 times the rate for White women (472 versus 30).

04 Injury Prevention

- Seventeen percent of LGBQ students, grades 9-12, in Boulder County, rarely or never wore a seatbelt while riding as a passenger in a car, compared with only 6 percent of heterosexual students.

- Thirteen percent of Hispanic/Latino students, grades 9-12, rarely or never wore a seatbelt compared with only 5 percent of White students.

- Twenty-nine percent of LGBQ students, grades 9-12, in Boulder County, rode with a driver who had been drinking alcohol, while only 17 percent of heterosexual students did so.

- Twenty seven percent of Hispanic/Latino students, grades 9-12, rode with a driver who had been drinking alcohol compared with 20 percent of White Students.

05 Mental Health and Substance Abuse

- LGBQ teens are at higher risk than their heterosexual peers for suicide attempts and select factors associated with suicide. Thirty-seven percent of LGBQ students, grades 9-12 in Boulder County reported binge drinking, yet only 24 percent of heterosexual students did so. Over half (55 percent) of LGBQ students felt sad or hopeless, compared to less than a quarter (22 percent) of heterosexual students. LGBQ students were almost twice as likely to be harassed on school property (52 percent) compared with heterosexual students (27 percent). Nearly one third (32 percent) of LGBQ students attempted suicide, compared with only 4 percent of heterosexual students.
There are no significant differences in the rate of binge drinking, suicide attempts, feeling sad or hopeless, or being bullied on school property among students, grade 9-12, by race/ethnicity.

Less than half of Asian/Pacific Islander mothers reported that a health care provider talked to them about what to do if they felt depressed during pregnancy or after delivery, compared with three quarters of White and Hispanic/Latino mothers.

African American/Black adults are half as likely (8 percent) to binge drink compared with White (16 percent) and Hispanic/Latino adults (15 percent).

**06 Obesity**

Seventy-five percent of American Indian/Alaska Native adults are overweight or obese, compared with nearly two-thirds of African American/Black and Hispanic/Latino adults (64 percent and 61 percent respectively), and just over half of all White adults (54 percent).

Fifteen percent of Hispanic/Latino students, grades 9-12, are obese, three times the rate among White students (5 percent). Seventeen percent of Hispanic/Latino students, grades 9-12, are overweight, more than twice the rate among White students (8 percent).

LGBQ students in Boulder County are twice as likely to be obese (12 percent) compared with heterosexual students (6 percent), and nearly twice as likely to be overweight (17 percent) as their heterosexual peers (9 percent) (Figure 13).

---

6 Overweight is defined as ≥85th but ≤95th percentile for body mass index (BMI), based on sex-and age-specific reference data from the 2000 CDC growth charts. Obese is defined as ≥95th percentile for body mass index.
07 Oral Health

- Thirteen percent of Hispanic/Latino children have untreated cavities or decay, compared to only 5 percent of White children.

08 Safe Food

- Data on foodborne illness incidence was not analyzed for subpopulations in Colorado for this report.

09 Tobacco

- A striking 41 percent of LGBQ students in Boulder County reported being current smokers, compared with only 12 percent of heterosexual students.

- While 10 percent of White pregnant women smoked during the last three months of their pregnancy, only 4 percent of Hispanic/Latino women did so.

10 Unintended pregnancy

- Almost a third of births among Whites and Asians (32 percent and 31 percent respectively) result from unintended pregnancies, compared with more than half of African American/Black births (55 percent). American Indian/Alaska Natives have the second highest rate at 48 percent, followed by Hispanic/Latinos at 46 percent.

- Seventy-seven percent of sexually active White adults, aged 18-44, used effective birth control compared with only 64 percent of sexually active Hispanic/Latinos in the same age group.

- The lowest birth rate among girls aged 15-17 was found among Asian/Pacific Islanders at only six births per 100,000 girls, followed by Whites who had a rate of eight. Hispanic/Latinos had the highest rate at 42, followed by African American/Black at 25 and American Indian/Alaska Natives at 19.
Conclusion and Recommendations

Colorado’s 10 Winnable Battles are a call to action. Many of the disparities highlighted in this report stem from broader social issues such as differences in socioeconomic status, country of origin, and systematic discrimination and exclusion. The following steps can be taken to address the negative health outcomes from broader social forces.

■ Engaging communities of color, people with limited English proficiency, the LGBT communities, and other marginalized groups in policy development and implementation to promote health equity and reduce disparities. Health disparities cannot be addressed without input from the local community.

■ Support communities in identifying their assets, leaders, and resources to build strategies based on their strengths. Connect leaders and stakeholders of disenfranchised groups with policy makers and networks to increase their spheres of influence, and to impact policy and decisions that affect their communities.

■ Creating healthy neighborhoods, addressing pollution and the built environment itself—access to parks, good public transportation, and job opportunities.

■ Addressing data gaps, including new or better data on smaller racial and ethnic groups, sexual orientation, gender identity, and limited English proficiency that allow disparities to be identified and tracked.

■ Professional education and increased awareness, especially among health care providers and public health professionals, about health disparities and their root causes, including social and economic obstacles to health such as discrimination and limited English proficiency.

■ Enforcement of new and existing regulations, such as Title VI of the Civil Rights Act of 1964, and the Title VI regulations, prohibiting discrimination based on national origin, and Executive Order 13166 issued in 2000, which insures access to federally conducted and federally funded programs and activities for people with limited English proficiency.

These are not tasks that one agency can accomplish alone, but require partnering with: public agencies at the local, state, and federal levels; schools; neighborhoods; businesses; foundations; health care providers; the media; advocates; and community-based organizations.
Introduction

HEALTH DISPARITIES ARE DIFFERENCES IN HEALTH STATUS, ACCESS TO CARE, AND QUALITY OF CARE AMONG GROUPS THAT DIFFER BY RACE, ETHNICITY, SEXUAL ORIENTATION, GENDER IDENTITY, PHYSICAL ABILITY, PLACE OF RESIDENCE, SOCIO-ECONOMIC STATUS, OR OTHER FACTORS THAT MAKE GROUPS VULNERABLE. HEALTH EQUITY IS ACHIEVING THE HIGHEST LEVEL OF HEALTH
for all people by eliminating social or economic obstacles to health, equalizing the conditions for health for all groups, especially for those who have experienced socioeconomic disadvantage or historical injustices. Health equity concerns those differences in population health that can be traced to unequal economic and social conditions and are systemic and avoidable – and thus inherently unjust and unfair. CDPHE is committed to eliminating health disparities and promoting health equity and environmental justice.

Health status is partly determined by the circumstances in which people are born, grow up, live, work, and age, as well as the systems put in place to deal with illness (World Health Organization, 2012). Community environmental factors play an important role. These include neighborhood pollution and the built environment itself—access to parks, good public transportation, and job opportunities. A recent report from the Academy of Sciences states that residential segregation continues to be a problem for people of color living in low-income communities, and despite a general feeling that the United States is in a “post-racial” period, institutional racism and racial discrimination still exist. Their negative effects on health outcomes are well documented (Institute of Medicine, 2012). Living in poverty is a major risk factor for poor health outcomes. The current economic downturn has had—and will continue to have—serious effects on health, particularly for low-income families and people of color.

In Colorado, health disparities persist most notably among the poor, people with limited English proficiency, communities of color, and sexual minorities. Ninety four percent of Colorado adults with incomes at or above 400 percent of the federal poverty level (FPL) report having good to excellent health, compared with 92 percent of those between 200 and 399 percent of poverty, and only 78 percent of adults living below 200 percent of poverty. Ninety-one percent of Whites and Asians in Colorado report having good to excellent health. This number drops to 85 percent among American Indians/Alaska Natives, 83 percent for African American/Blacks and only 76 percent for Hispanic/Latinos. For the adult gay and lesbian population, this number is 85 percent, compared with 89 percent among other adults (Table 1).

---

7 Individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English can be limited English proficient, or “LEP.” These individuals may be entitled language assistance with respect to a particular type or service, benefit, or encounter (Federal Interagency Working Group on Limited English Proficiency (LEP), 2012). In 2010, 53.0 percent of immigrants age 5 and older in Colorado were LEP (Migration Policy Institute, 2012).

8 For a family of four, the federal poverty level (FPL) is $22,350. Thus, 400 percent FPL is $89,400 and 200 percent FPL is $44,700.

9 The sample size for gay and lesbian populations is small. Differences are not statistically significant.
Table 1: Colorado adults who report good to excellent health, by household income, race/ethnicity, and sexual orientation, 2009-2011.

<table>
<thead>
<tr>
<th>Federal Poverty Level</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 199% FPL</td>
<td>78%*</td>
</tr>
<tr>
<td>200 - 399% FPL</td>
<td>92%*</td>
</tr>
<tr>
<td>400% + FPL</td>
<td>94%*</td>
</tr>
</tbody>
</table>

**Race Ethnicity**

<table>
<thead>
<tr>
<th>Race Ethnicity</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>91%</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>76%*</td>
</tr>
<tr>
<td>African American/Black</td>
<td>83%*</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>91%*</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>85%*</td>
</tr>
</tbody>
</table>

**Sexual Orientation**

<table>
<thead>
<tr>
<th>Sexual Orientation</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gay or Lesbian</td>
<td>85%</td>
</tr>
<tr>
<td>Other</td>
<td>89%</td>
</tr>
</tbody>
</table>

* Differences are statistically significant at the 95 percent confidence level.
Socioeconomic status has a marked influence on health, and race/ethnicity is linked with income (Institute of Medicine, 2012). In Colorado, Whites and Asian/Pacific Islanders have the highest median household incomes at $62,287 and $57,630 respectively, and are the most likely to have a college degree at 31 percent (Table 2). It isn’t surprising they are the groups most likely to report good to excellent health (Table 1).10 Hispanic/Latinos are the least likely to graduate from high school, 32 percent, or college, 7 percent, and have the lowest household income at $38,450. They are the group least likely to report good to excellent health. African American/Blacks and American Indian/Alaska Natives fall in the middle on all three indicators, with similar household incomes, $38,530 and $38,031 respectively, and similar college graduation rates, 13 and 12 percent.

Table 2: Median household income and highest level of education completed, by race/ethnicity, Colorado, 2006-2010.

<table>
<thead>
<tr>
<th>Race/ethnicity</th>
<th>Median annual household income</th>
<th>Less than high school</th>
<th>High school diploma or GED</th>
<th>Vocational training</th>
<th>Four-year college degree or higher</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>$62,287</td>
<td>25%</td>
<td>38%</td>
<td>6%</td>
<td>31%</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>$38,450*</td>
<td>58%*</td>
<td>32%*</td>
<td>3%*</td>
<td>7%*</td>
</tr>
<tr>
<td>African American/Black</td>
<td>$38,530*</td>
<td>40%*</td>
<td>41%*</td>
<td>6%</td>
<td>13%*</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>$57,630*</td>
<td>32%*</td>
<td>33%*</td>
<td>4%*</td>
<td>31%</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>$38,031*</td>
<td>33%*</td>
<td>48%*</td>
<td>7%</td>
<td>12%*</td>
</tr>
</tbody>
</table>

* Differences are statistically significant at the 95 percent confidence level.

10 It is important to understand the great diversity of cultures and ethnicities represented within the larger Asian/Pacific Islander group. These racial and ethnic subgroups may experience unique health disparities that are not necessarily evident from the statistics describing the larger group.
The Colorado Department of Public Health and Environment (CDPHE) has identified 10 Winnable Battles — public health and environmental priorities with large-scale impacts on health and the environment, and with known, effective strategies to address them. CDPHE is implementing a plan to achieve gains in these 10 areas quickly, with the goal of improving health for all Coloradans.

Colorado’s 10 Winnable Battles

01 Clean air 06 Obesity
02 Clean water 07 Oral health
03 Infectious disease prevention 08 Safe food
04 Injury prevention 09 Tobacco
05 Mental health and substance abuse 10 Unintended pregnancy

The 10 Winnable Battles project represents an opportunity not only to improve health in the state, but also to identify health disparities and reduce or eliminate them through targeted, multilingual, culturally appropriate interventions. For detailed information on CDPHE’s 10 Winnable Battles, baseline data, targets, and the programs and strategies that CDPHE has employed to address them, go to http://www.colorado.gov/cdphe/winnablebattles.

The Colorado 2013 Health Disparities Report provides baseline data and case studies on how various groups that traditionally have experienced social or economic obstacles to health are faring in the 10 areas identi-
fied as winnable battles. The purpose of the report is to identify strengths and disparities among groups and to inform efforts to achieve better health for all Coloradans, so that gains may be enjoyed equally. It differs from previous reports on Colorado’s health disparities because it uses the 10 Winnable Battles as a framework in order to create synergy with CDPHE’s existing efforts. Also, it is the first to include data on sexual and gender minorities in addition to Whites, Hispanic/Latinos, African American/Blacks, Asian/Pacific Islanders, and American Indian/Alaska Natives.

CDPHE selected indicators for each of the 10 Winnable Battles to establish base-line measures, set goals, and track progress over time. Data on these indicators are not always available for subpopulations or, in some cases, they are not available for the entire state. The Colorado 2013 Health Disparities Report uses the 10 Winnable Battles measures, when possible. When data are not available, different indicators, data from Boulder County on LGBQ youth, and case studies within the scope of each Winnable Battle are used. Due to resource constraints, the scope of the report is limited to only a few indicators per winnable battle area, but additional data, including estimates by race/ethnicity, are available on the Colorado Health Information Data Set (CoHID) at http://www.chd.dphe.state.co.us/cohid/Default.aspx.

Capturing Diversity in Health Data

Colorado’s history has been characterized by diversity of color, culture, religion, and, implicitly, sexual orientation and identity. The ability to capture Colorado’s rich diversity in health data is limited. A myriad of culturally diverse groups must be combined into a few racial and ethnic categories that cannot fully reflect their differences. For example, not all Hispanic/Latino groups are alike. Some are immigrants. Some come from families that have lived in Colorado for many generations. Hispanic/Latinos from the Caribbean Islands are lumped together with individuals from Europe, South America, Central America, and North America. Likewise, members of the Asian/Pacific Islander group come from a variety of countries, cultures, and ethnic groups. The data in this report cannot capture disparities among groups within the larger racial and ethnic categories.

Individuals may have ancestors from multiple groups and may not identify with any one category. An individual may respond differently to questions about racial and ethnic identity in different situations and at different times, or may simply leave the question blank (Campbella, 2011).
Race and ethnicity data often are missing from administrative records, and, when present, do not always match with an individual’s self-reported race/ethnicity (Kressin, 2003). Inaccurate race and ethnicity data can distort measurements of differences among groups. Although population surveys remain our best means of generating health estimates for the state, they have a limited ability to collect data for groups that are small in number, such as Asians, who represent less than 4 percent of Colorado’s population, Native Americans, who represent less than 2 percent, and people who are lesbian or gay, who also represent less than 2 percent. When a racial or ethnic group is not represented in an analysis, it is because the numbers were too small to generate stable estimates.

Researchers calculate estimates for a population based on data collected from a sample drawn from that population. If a group comprises only a small percentage of the population, they may not be adequately captured in a random sample. Sometimes, researchers can obtain an adequate sample size for a minority population by combining multiple years of data. Even when multiple years of data are combined, sample sizes may still be too small to create sound estimates.

**Data Quality**

A point estimate generated from a population survey is a single number. A confidence interval is a range of numbers surrounding the point estimate. Ninety-five percent of the time, the true, unknown number (population parameter) falls within the confidence interval. If sample size is small, as is often the case with minority populations, confidence intervals may be too wide to be useful. An estimate with wide confidence intervals is considered unstable. Even when estimates meet minimum criteria for stability, a small sample size can mask differences among groups because the estimates they produce are less precise. This report excludes unstable estimates, because they can be misleading. When trending data over time, unstable estimates can vary dramatically from one year to the next when there is no actual change within the population. This can lead policy makers to the erroneous conclusion that a health indicator has improved or become worse.

---

12 CoHID uses a significance level of p=0.05, which results in a 95 percent confidence interval.
13 Coefficient of variation less than 30 percent and cell size greater than 50; level of p=0.05, which results in a 95 percent confidence interval.
14 For example, if the point estimate for the percent of Whites who eat chicken in Colorado is 50 percent, and the confidence interval is 25 to 75 percent, the true percent of Whites who eat chicken in Colorado could be anywhere from 25 percent to 75 percent. This estimate is too imprecise to be useful.
15 If data on chicken consumption is trended over time, one year the point estimate could be 25 percent and the next year 50 percent. Policy makers may mistakenly assume that chicken consumption among Whites has doubled in one year, when in fact, chicken consumption has remained unchanged.
In addition to being tested for stability, estimates in this report are tested for statistical significance; an assessment of how likely the estimates reflect true differences versus random chance. Because this is a report about health disparities and health equity, it excludes estimates between groups that are not statistically different unless noted. This means that if it is not 95 percent certain that two estimates are truly different, they are usually not included in the report.16

Sexual Minority Data

Sexual orientation and gender identity are important demographic factors, yet few surveillance systems collect these data, limiting our ability to study health risk factors among the lesbian, gay, bisexual, and transgender (LGBT) populations. Colorado has been a leader in collecting data on sexual orientation. Beginning in 2006, a question on sexual orientation has been included in the Colorado Behavioral Risk Factor Surveillance System, conducted by CDPHE. Boulder County has also taken further steps by including sexual orientation questions on its Youth Risk Behavior Survey (YRBS), a survey administered to high school students. One Colorado, a not-for-profit organization that advocates for the LGBT communities, surveyed a convenience (non-random) sample17 of over 1,300 LGBT people, including transgender and transsexual people (One Colorado Education Fund, 2012). These new data sources have enabled researchers to obtain a clearer, more accurate picture of the specific needs of this population.

Sexual Diversity in Colorado

An estimated 186,000 lesbian, gay, bisexual and transgender people make their homes in Colorado, including 12,000 transgender people (Gates G. J., 2011). Sexual minorities experience chronic stress as a result of stigmatization (Institute of Medicine, 2011). This minority stress is beyond what is experienced by the general population and has negative impacts on both physical and mental health (Lehavot, 2011). Access to quality, culturally responsive health care is an important determinant of health, yet, LGBT people report having difficulty finding welcoming health care providers, and often feel the need to hide their sexual orientation or gender identity in order to assure they will be treated with respect (One Colorado Education Fund, 2012). Transgender people are among the most vulnerable; over 50 percent of transgender people in a convenience sample had been refused service by

---

16 Here is an example. The point estimate for chicken eating among African American/Blacks is 25 percent, with a confidence interval of 10 to 40 percent. Although the point estimate for Whites and African American/Blacks are very different (50 percent versus 25 percent), the two confidence intervals substantially overlap (10 to 40 percent versus 25 to 75 percent). There is absolutely no evidence that the percent of African American/Blacks who eat chicken is different from the percent of White's that eat chicken. Thus, the point estimates can mislead policy makers into thinking there is a real difference. These estimates would be excluded from the report.

17 Convenience sampling is a sampling technique where subjects are selected because of their convenient accessibility and proximity to the researcher. It is the best available means to include populations that are very small in number, such as transgender people, who would not necessarily be included in a population-based survey.
a health care provider or their staff (One Colorado Education Fund, 2012).

Data from the US Census show that almost one-fourth of Colorado’s 12,500 same-sex partners are people of color, making them doubly vulnerable to discrimination and exclusion (Gates G., 2012).

This report uses estimates from the Boulder County YRBS because statewide data on LGBQ youth are not available. In the 2011 YRBS survey of 2,197 high school students\(^\text{18}\) in Boulder County, 8 percent of students identified themselves as Lesbian, Gay, Bisexual or Questioning (LGBQ). These youth were significantly worse off than their heterosexual peers on 58 health measures ranging from being the victims of rape to the number of meals eaten with their families each week.\(^\text{19}\)

---

18 The YRBS excludes teens who have left school, and is not generalizable to this population.
19 Source: The 2011 Boulder County Youth Risk Behavior Surveillance Survey.
Findings

CERTAIN POPULATIONS ARE DISPROPORTIONATELY EXPOSED TO AIR POLLUTION. THESE GROUPS OFTEN LIVE IN URBAN SETTINGS, HAVE LOW SOCIOECONOMIC STATUS AND INCLUDE A LARGE PROPORTION OF RACIAL AND ETHNIC MINORITIES (THE AMERICAN LUNG ASSOCIATION, 2001) (SANDBERG, 2000).

Many factors influence the impact of air pollution on an individual’s health including proximity to the source, time spent outside, and individual factors such as health, socioeconomic factors, asthma, and occupation (Morgan, 2011).

People at risk for a higher exposure to air pollution include those who work out-of-doors (The American Lung Association, 2001). In Colorado, 1.7 million people have a job that requires them to work outside, undercover or exposed to weather, from once per week to everyday. Nine percent of Hispanic/Latinos are employed in an outdoor occupation, almost twice the rate among African American/Blacks and American Indians/Alaska Natives (5 percent), three times the rate among Asian/Pacific Islanders (3 percent) and 50 percent greater than the rate among Whites (6 percent) (Figure 1).
People who live near busy roadways also have greater exposure to air pollution. Air quality measurements along freeways generally show pollutant levels to be several magnitudes higher than measurements taken at other area monitors. More than 100 major studies have been published over the last decade documenting the relationship between freeway pollution and health. Freeway pollution is associated with an increased incidence of asthma, impaired lung growth, atherosclerosis, low cognitive function, autism, Alzheimer disease, and lower IQ in children with prenatal exposure (Morgan, 2011). The majority of studies show that health effects begin along roadways that carry 20,000 or more vehicles per day. This has led some cities to restrict the construction of schools and residential units within 500 feet of freeways, the distance at which health effects are most acute.
It is beyond the scope of this report to collect state-wide data on the demographics of people who live by freeways. Instead, two case studies were conducted. The first looked at the race/ethnicity of children who attend schools located within 500 feet of a major highway within the Denver Metro Area. The second described the race/ethnicity of individuals who live within 500 feet of I-70 on the stretch between I-25 and Colorado Boulevard (Figure 2). This section of I-70 was selected because it’s one of the most heavily traveled highways in the state with up to 139,000 vehicles per day, almost seven times the 20,000 vehicle threshold determined to be dangerous. This stretch of highway is located within the Children’s Corridor, a geographic area so strongly associated with high numbers of at-risk children that it is the center of a campaign by the Piton Foundation to make the neighborhoods more visible and actionable to the community (The Piton Foundation, 2011).

Figure 2: Concentration of Hispanic/Latinos along a polluted strip of I-70 within the Children’s Corridor.

Total Hispanic/Latino population for Census Blocks containing residencies within 500 feet of I-70: 2,282/2,887 (79%).

For more information on The Children’s Corridor, go to www.denverchildrensconnector.org.
Of the hundreds of elementary schools in the Denver Metro Area, two are situated within 500 feet of a major highway — Westminster Elementary School and Swansea Elementary School. Students at both schools are disproportionately Hispanic/Latino, 75 percent and 88 percent respectively, compared with only 28 percent statewide.\(^{21}\) (data not shown).\(^{22}\)

There are 2,887 people that live in the census blocks inside this corridor (The United States Census, 2010). A disproportionate number of people living in census blocks within 500 feet of this stretch of I-70 are Hispanic/Latino, 79 percent, compared with only 21 percent, statewide. Seven percent are African American/Black (data not shown). Over-representation of people of color in residential areas with dangerously high pollution levels is linked to racial differences in health (R Morello-Frosch, 2002). While these disparities may partially be explained by income, such racial and ethnic differences often persist across economic strata (The American Lung Association, 2001).

**Clean Water**

**Uranium and Radium are radioactive metals that occur naturally in Colorado’s mineral-rich rock, and can dissolve into groundwater wells and surface water used for drinking water supplies. Long-term exposure to radium in drinking water is associated with increased cancer risk, and uranium exposure is linked to kidney disease (Guseva Canu, 2011).**

CDPHE is aggressively addressing air pollution from a variety of sources, including commercial and industrial sources, and motor vehicles. In addition, Colorado is targeting mercury and nitrogen oxide as part

\(^{21}\) Source: The Colorado Department of Public Health and Environment.

\(^{22}\) Data is not displayed in a table or chart.
of the 10 Winnable Battles. Currently available data are insufficient to measure the impact of these pollutants on various demographic groups, so mercury and nitrogen oxide indicators are not included here.

In 2011, 27 public drinking water systems, serving 21,206 residents in the state, had uranium or radium levels above the drinking water standards set by the Environmental Protection Agency, and these problems are not yet resolved.

The people in Colorado who are exposed to high levels of uranium or radium in drinking water live mostly in small, rural, and economically disadvantaged communities. Sixty-four percent of people living in these communities are Hispanic/Latino, compared with only 21 percent statewide. African American/Blacks and Asian/Pacific Islanders were proportionately represented, and Non-Hispanic/Latino Whites were underrepresented (data not shown).23

Using bottled water is a short-term solution when drinking water is unsafe. However, bottled water is not fluoridated, and thus does not protect against tooth decay. Purchasing bottled water creates both an environmental burden, and a financial burden for low-income people. Hispanic/Latinos, the group most likely to need bottled drinking water, have the lowest household income of any racial/ethnic group (Table 2). Hispanic/Latinos are more likely to drink bottled or vended water compared with Whites—30 percent versus 12 percent respectively. Fifty-seven percent of people who responded to the BRFSS survey in Spanish reported that they drink bottled water, compared with only 14 percent of English speakers (data not shown).24

Several treatment processes can remove radium and uranium from drinking water, including ion exchange, reverse osmosis, nanofiltration and co-precipitation (Clifford) (Guseva Canu, 2011). These technologies can be complicated and costly for small drinking water systems to operate and to maintain. CDPHE is working with affected public drinking water systems to install drinking water treatment processes or identify alternate drinking water sources, with the goal to assure that all Colorado residents and visitors will be served by public drinking water systems that meet all health-based standards.

23 Colorado Department of Public Health and Environment.
24 Source: The Colorado Behavioral Risk Factor Surveillance System. Estimates are statistically significant at the 95 percent confidence interval.
Viral Hepatitis

Hepatitis is a group of viral infections that affect the liver. Safe, effective vaccines are available for two of the most common types of hepatitis—A and B. There is no vaccine for hepatitis C. Viral hepatitis is the leading cause of liver cancer and the most common reason for a liver transplant.

Chronic Hepatitis B and associated liver cancer in Asian/Pacific Islanders is one of the most serious health disparities in the United States (Centers for Disease Control and Prevention, Division of Viral Hepatitis, 2012). An estimated 1 in 12 Asian/Pacific Islanders are living with chronic Hepatitis B, and most do not know it. In Colorado, the Hepatitis B rate for Asian/Pacific Islanders is 148 cases per 100,000 people, almost 50 times the rate for Whites and Hispanic/Latinos, which is only 3 cases per 100,000 people. The rates for African American/Blacks and American Indian/Alaska Natives are 55 and 10 respectively (Table 3). Most Asian/Pacific Islanders with Hepatitis B were infected as infants or young children, and the virus can pass from mother to child at birth. Nearly 70 percent of Asian/Pacific Islanders living in the US were born, or have parents who were born, in countries where Hepatitis B is common.
Hepatitis B is transmitted through activities that involve percutaneous (puncture through the skin) or mucosal contact with infectious blood or body fluids (e.g., semen, saliva). The best way to prevent Hepatitis B transmission is through vaccination, condom use, testing for the virus, and to avoid the sharing of needles.

Rates for hepatitis C are substantially higher for all racial and ethnic groups except Asian/Pacific Islanders, who have the lowest rate at 18 cases per 100,000 people. The highest rate is found among African American/Blacks at 96 per 100,000—over three times the rate among Whites (29). American Indian/Alaska Natives have the second highest rate at 46 per 100,000, followed by Hispanic/Latinos, who have a rate of 39 (Table 3).

### HIV/AIDS

The human immunodeficiency virus (HIV) is the virus that can lead to acquired immune deficiency syndrome (AIDS). AIDS severely damages a person’s immune system, making it difficult for the individual to fight disease and certain cancers. HIV is transmitted primarily through unprotected sex (including anal, vaginal, and oral sex), contaminated blood transfusions and hypodermic needles, and from mother to child during pregnancy, delivery, or breastfeeding. While current medications can dramatically improve the health of people living with HIV and slow progression from HIV infection to AIDS, at this time, there is no cure for HIV infection.

HIV/AIDS is a problem for all racial and ethnic groups in Colorado, yet African American/Blacks are disproportionately affected. As of June 2012, there were 1,200 cumulative HIV cases per 100,000 African American/Black men in Colorado—over three times the rate among White men, which was 383 (Figure 3). This dramatic disparity also is true among women. While only 30 White women per 100,000 were infected with HIV, 472 African American/Black women were infected, nearly 16 times the rate for Whites. American Indians/Alaska Natives had the second highest rate for women at 180. The rate for American Indian/Alaska Native men was 366. The HIV rate for Hispanic/Latino men and women were 344 and 53 respectively. Asian/Pacific Islanders had the lowest rates of HIV infections for both men, at 135, and women, at 26.

National studies demonstrate that much of the elevated HIV risk among African American/Blacks is a function of this population disproportionately living in poor, urban environments where as much as

---

**Table 3: Newly reported acute and chronic cases of Hepatitis B and Hepatitis C by race/ethnicity, Colorado, 2010.**

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Hepatitis B</th>
<th>Hepatitis C</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>3</td>
<td>29</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>3</td>
<td>39</td>
</tr>
<tr>
<td>African American</td>
<td>55</td>
<td>96</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>148</td>
<td>18</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>10</td>
<td>46</td>
</tr>
</tbody>
</table>

Source: The Viral Hepatitis Program, Disease Control and Environmental Epidemiology Division, Colorado Department of Public Health and Environment.
2 percent of the heterosexual population is infected (Centers for Disease Control, 2010). While African American/Blacks may be more likely to live in urban areas in Colorado, it would require additional research to determine whether this is a factor in HIV/AIDS prevalence among that group.

In addition to racial and ethnic disparities in HIV infection, there are disparities by sexual orientation. Seventy percent of new HIV infections between 2008 and 2012, and 72 percent of existing AIDS cases, were among men who have sex with men (MSM), including MSM who also use intravenous drugs (Source: Disease Control and Environmental Epidemiology Division, Colorado Department of Public Health and Environment) (data not shown).

Efforts to reduce the transmission of HIV are important for all groups in Colorado, but special efforts are needed to target high-risk populations such as African American/Blacks, MSM, and people living in poor, urban environments. The CDC provides information on successful, evidence-based HIV/AIDS prevention programs at http://www.cdcnpin.org/scripts/hiv/programs.asp.
Injury Prevention

Motor vehicle crashes are the leading cause of death for teens in the United States, and they are preventable. Teens can reduce their risk of injury or death by wearing seat belts and never driving or riding with a driver impaired by drugs or alcohol (Centers for Disease Control and Prevention, 2010).

Between 2008 and 2010 in Colorado, there were 158 motor vehicle deaths per 100,000 teens, aged 15 to 19, but there were no significant differences for death rates among different racial and ethnic groups. There were, however, differences in risk behaviors, which
can lead to crashes or injuries and deaths. Among students, grades 9 – 12, 13 percent of Hispanic/Latinos reported rarely or never wearing a seat belt when riding in a car driven by someone else, making them more vulnerable to crash injuries. Among White students, this number was only 5 percent (Figure 4).

**Figure 4: Seat belt use among students, grades 9-12, riding in a car driven by someone else, by race/ethnicity, Colorado, 2009.**

![Bar chart showing seat belt use by race/ethnicity](chart.png)

*Difference is statistically significant at the 95 percent confidence level.

Also striking are the differences in seatbelt use by sexual orientation. Seventeen percent of LGBQ students reported rarely or never wearing a seatbelt when riding in a car, compared with only 6 percent of heterosexual students (Figure 5).

Alcohol-impaired-driving accounts for 31 percent of driving fatalities nationwide (The NHSTA's National Center for Statistics and Analysis, 2011). Yet, almost a third (27 percent) of Hispanic/Latino students rode with a driver who had been drinking alcohol at least one time during the 30 days prior to the survey. The rate among White students was somewhat lower at 20 percent (Figure 6). The disparity was even greater by sexual orientation. Almost a third (29 percent) of LGBQ students drove with an alcohol-impaired driver, compared with only 17 percent of heterosexual students (Figure 7).
Figure 5: Students, grades 9-12, who report never or rarely wearing a seatbelt when riding in a car driven by someone else, by sexual orientation, Boulder County, 2011.

*Difference is statistically significant at the 95 percent confidence level.
Source: The 2011 Boulder County Youth Risk Behavior Survey.

Figure 6: Students, grades 9-12, who rode with a driver who had been drinking alcohol, within the last 30 days, by race/ethnicity, Colorado, 2011.

*Difference is significant at the 95 percent confidence level.
Figure 7: Students, grades 9-12, who rode with a driver who had been drinking alcohol, within the last 30 days, by sexual orientation, Boulder County, 2011.

*Difference is statistically significant at the 95 percent confidence level.

Source: The 2011 Boulder County Youth Risk Behavior Survey.
Suicide is the third leading cause of death among youth between the ages of 10 and 24. LGBQ teens are at higher risk than their heterosexual peers for suicide attempts and factors associated with suicide such as a depression, alcohol or drug abuse, and stressful life events.

In Boulder County, almost a third (32 percent) of LGBQ students, grades 9-12, attempted suicide during the 12 months prior to the survey, compared with only four percent of heterosexual students. Thirty-seven percent of LGBQ students reported at least one episode of binge drinking within the same time period, yet only 24 percent of heterosexuals did so.
Over half (55 percent) of LGBQ students felt sad or hopeless, compared to 22 percent among heterosexuals. LGBQ students were twice as likely to be harassed on school property (52 percent) compared with only 27 percent of heterosexuals (Figure 8).

![Figure 8: Risk factors for suicide among students, grades 9-12, by sexual orientation, Boulder County, 2011.](image)

*Difference is statistically significant at the 95 percent confidence level.
Source: The 2011 Boulder County Youth Risk Behavior Survey.

In Colorado, there are no significant differences in the rate of binge drinking, suicide attempts, feeling sad or hopeless, or being bullied on school property between Hispanic/Latino and White high school students (Source: The 2009 Colorado Behavioral Risk Factor Surveillance System) (data not shown).

Among adult men and women in Colorado, there are no significant differences in the rate of depression between Hispanic/Latinos and Whites (data not shown). There is a difference in the rates at which providers discuss depression with women during pregnancy and in the perinatal period. Almost three quarters (74 percent) of White mothers reported that a
health care provider talked to them about what to do if they felt depressed during pregnancy or after delivery. The rate among Hispanic/Latino women was not statistically different at 76 percent. However, less than half (47 percent) of Asian/Pacific Islander mothers received this information from their providers (Figure 9).

*Statistically significant difference at the 95 percent confidence level.

Depression is correlated with adverse health behaviors, including problem alcohol consumption. Binge drinking is the most common pattern of excessive alcohol use in the United States. The National Institute on Alcohol Abuse and Alcoholism defines binge drinking as a pattern of drinking that brings a person’s blood alcohol concentration to 0.08 grams percent or above. This typically happens when men consume five or more drinks, and when women consume four or more drinks, in about two hours (Centers for Disease Control and Prevention, 2012).

Binge drinking is associated with a host of health problems addressed in the 10 Winnable Battles,
including intentional and unintentional injuries, sexually transmitted disease, and unintended pregnancy (Centers for Disease Control and Prevention, 2012).

In Colorado, the rate of binge drinking varies among different racial and ethnic groups. Whites and Hispanic/Latinos binge drink at rates of 16 and 15 percent respectively—twice the rate among African American/Blacks, which is 8 percent (Figure 10).

*Figure 10: Binge drinking within the past 30 days, among adults by race/ethnicity, Colorado, 2009-2010.*

*Estimate is statistically different from the White reference group.*

During the past 20 years, there has been a dramatic increase in obesity in the United States and rates remain high. Obesity-related conditions include heart disease, stroke, type 2 diabetes and certain types of cancer—some of the leading causes of death (Centers for Disease Control and Prevention, 2010).

Although the obesity rate is lower in Colorado than any other state, 75 percent of American Indian/Alaska Native adults are overweight or obese. Nearly two-thirds of African American/Black and Hispanic/Latino adults (64 percent and 62 percent respectively) are obese or overweight, and just over half of all White adults (55 percent). Asian/Pacific Islander adults are the least likely to be overweight or obese at 43 percent (Figure 11).

Figure 11: Overweight and obesity among Colorado adults by race/ethnicity, 2009-2010.

*Estimates are statistically different from the White reference group at the 95 percent confidence level.
Obesity rates among Colorado adolescents also differ by race/ethnicity and by sexual orientation. Fifteen percent of Hispanic/Latino students, grades 9-12, are obese, three times the rate among White students (5 percent). Seventeen percent of Hispanic/Latino students are overweight, more than twice the rate among White students (8 percent) (Figure 12).

*Estimates are significantly different at the 95 percent confidence level. Overweight is defined as ≥85th but ≤ 95th percentile for body mass index (BMI), based on sex-and age-specific reference data from the 2000 CDC growth charts. Obese is defined as ≥95th percentile for BMI. Source: The 2011 Colorado Youth Risk Behavior Surveillance Survey.

LGBQ students in Boulder County are twice as likely to be obese (12 percent) compared with heterosexual students (6 percent), and nearly twice as likely to be overweight (17 percent) as their heterosexual peers (9 percent)(Figure 13).
Figure 13: Students in grades 9-12 who are overweight or obese, by sexual orientation, Boulder County, 2011.

*Estimates are significantly different at the 95 percent confidence level.
Source: The 2011 Boulder County Youth Risk Behavior Surveillance Survey.
Obese children and adolescents have a greater risk of social and psychological problems such as discrimination and poor self-esteem, which can continue into adulthood. Childhood obesity is linked with high blood pressure and high cholesterol, type 2 diabetes, breathing problems such as sleep apnea and asthma, joint problems and musculoskeletal discomfort. Obese children and adolescents are more likely to become obese adults (Centers for Disease Control and Prevention, 2012).

In Colorado, one third of Hispanic/Latino children aged 2-14, and over a third of African American/Black children (36 percent) are overweight or obese, compared with nearly a quarter (23 percent) of White children and just over a quarter (28 percent) of Asian/Pacific Islander children (Figure 14).

Figure 14: Obesity and overweight among children aged 2–14, by race/ethnicity, Colorado, 2008 - 2010.

*Estimates are statistically different from the White reference group at the 95 percent confidence level.
Breastfeeding is a protective factor against obesity in some children (D Bogen, 2004). The American Academy of Pediatrics recommends that mothers breast feed their infants exclusively for about six months, followed by continued breastfeeding as complementary foods are introduced, with continuation of breastfeeding for one year or longer as mutually desired by mother and infant (American Academy of Pediatrics, 2012).

In Colorado, 66 percent of White mothers still are breastfeeding their infant at the age of six months, compared with only 36 percent of Hispanic/Latino mothers (Figure 15).

Figure 15: Mothers still breastfeeding when their infant is six months of age, by race/ethnicity, Colorado, 2008-2010.

*Estimates are statistically different from the White reference group at the 95 percent confidence level.
POOR ORAL HEALTH CAN CAUSE NEEDLESS PAIN AND SUFFERING, COMPLICATIONS THAT CAN DEVASTATE OVERALL HEALTH AND WELL-BEING, AND FINANCIAL AND SOCIAL COSTS THAT SIGNIFICANTLY DIMINISH QUALITY OF LIFE (OFFICE OF THE SURGEON GENERAL, 2000). Untreated tooth decay causes pain and infections that may lead to problems such as difficulties eating, speaking, playing, and learning. Tooth decay is preventable. The combination of dental sealants and fluoride has the potential to nearly eliminate tooth decay in school-age children (centers for disease control and prevention, 2011). Geographic isolation, poverty, insufficient education, and limited english proficiency can create barriers to dental care that can result in oral health disparities.

In Colorado, there was no difference between Hispanic/Latinos and Whites in the percent of parents who reported their child, aged 1 to 14, went to a dentist by 12 months of age (data not shown). However, 13 percent of Hispanic/Latino children had untreated cavities or decay, while only 5 percent of White children did so (Figure 16). There also was no difference between Hispanic/Latinos and Whites in the percent of adults who had lost five or more teeth due to cavities (data not shown).
Figure 16: Children, aged 1-14, with untreated cavities or decay, Colorado, 2008-2010.

*Estimate is statistically different from the White reference group at the 95 percent confidence level.
Tobacco use is a pediatric epidemic in Colorado—16 percent of students, grades 9-12, smoke cigarettes. Nearly all tobacco use begins during youth and young adulthood. These young individuals progress from smoking occasionally to smoking every day. Of every three young smokers, only one will quit, and one of those remaining smokers will die from tobacco-related causes. Advertising and promotional activities by tobacco companies have been shown to cause the onset and continuation of smoking among adolescents and young adults, and may be targeted to members of racial and ethnic minority communities (Office of the Surgeon General, 2012).
In Colorado, there are no differences in smoking rates among students, grades 9 through 12, by race/ethnicity, nor are there differences by race/ethnicity in children's exposure to second hand smoke (data not shown). 

Sixteen percent of adults smoke, but there are no differences in smoking rates by race/ethnicity (data not shown). 

Between 2008 and 2010, there were differences in smoking rates among pregnant women by race/ethnicity. While 10 percent of White pregnant women smoked during the last three months of their pregnancy, only 4 percent of Hispanic/Latino women smoked (Figure 17). 

![Figure 17: Pregnant women who smoked in the last three months of pregnancy by race/ethnicity, 2008-2010.](image)

*Estimate is statistically different from the White reference group at the 95 percent confidence level.


---

26 Source: Colorado Child Health Survey, 2008-2010.
28 This represents a change from an analysis of the 2007-2008 Colorado BRFSS, which showed that among adults, 36 percent of American Indian/Alaska Natives, 22 percent of Hispanic/Latinos, and 26 percent of African American/Blacks smoked. All of these rates were statistically different from Whites, who had the lowest rate at 17 percent (Centers for Disease Control and Prevention, 2011). The changes in statistical significance are likely due to small sample sizes, which produce estimates with wide confidence intervals. Confidence intervals for American Indian/Alaska Natives in 2007-2008 overlap with estimates for the same group in 2009-2010. This is true for Asians, Hispanic/Latinos and African American/Blacks as well—although the overlap for Hispanic/Latinos and for African American/Blacks is small. Small overlaps of confidence intervals do not necessarily preclude statistical differences. The smoking rates among Hispanic/Latinos and African American/Blacks may have genuinely dropped, possibly due to changes in the economy, resulting in a decrease in disposable income. Hispanic/Latinos and African American/Blacks have lower average household income compared with Whites, and persons of low socioeconomic status are more responsive to changes in price than higher income populations (P Bader, 2011).

29 Difference in smoking rates among men and women by race/ethnicity may help explain this difference. Nationally, only 9 percent of Hispanic/Latino women smoke—less than half the rate for White women (20 percent), and 7 percentage points lower than the rate for Hispanic/Latino men (16 percent) (data not shown) (Centers for Disease Control and Prevention, 2011).
There are remarkable differences in smoking rates among students by sexual orientation in Boulder County. A striking 41 percent of LGBQ students reported being current smokers, compared with only 12 percent of heterosexual students (Figure 18).

**Figure 18: Cigarette use among students, grades 9 -12, by sexual orientation, Boulder County, 2011.**

* Difference is significant at the 95 percent confidence level.
Source: The 2011 Boulder County Youth Risk Behavior Survey.
An unintended pregnancy is a pregnancy that is mistimed, unplanned, or unwanted at the time of conception. Women of all ages may have unintended pregnancies, but some groups, such as adolescents, are at a higher risk. Family planning efforts that can help reduce unintended pregnancy include increasing access to contraception, particularly to the more effective and longer acting reversible forms of contraception, and increasing correct and consistent use of contraceptive methods overall among those who are sexually active but wish to delay or avoid pregnancy.
Among both teens and adults, unintended pregnancy is associated with an increased risk of problems for both the mom and baby. If a pregnancy is not planned before conception, a woman may not be in optimal health for childbearing (Centers for Disease Control and Prevention, 2012). Teen pregnancy and childbearing bring substantial social and economic costs through immediate and long-term impacts on teen parents and their children. Pregnancy and birth are significant contributors to high school dropout rates among girls. Only about 50 percent of teen mothers receive a high school diploma by 22 years of age, versus approximately 90 percent of women who had not given birth during adolescence (Centers for Disease Control and Prevention, 2012). The children of teenage mothers are more likely to have lower school achievement and drop out of high school, have more health problems, be incarcerated at some time during adolescence, give birth as a teenager, and face unemployment as a young adult.

In Colorado, almost a third of births among Whites and Asians (32 percent and 31 percent respectively) result from unintended pregnancies, compared with more than half of African American/Black births (55 percent). American Indian/Alaska Natives have the second highest rate at 48 percent, followed by Hispanic/Latinos at 46 percent (Figure 19).

Figure 19: Unintended pregnancies by race/ethnicity, Colorado, 2008-2010.

* Statistically Different from the Estimate for Whites at the 95 percent confidence level.
The difference in the percent of births that resulted from unintended pregnancies between Whites and Hispanic/Latinos is partially explained by the fact that 77 percent of sexually active White adults, aged 18-44, used effective birth control compared with only 64 percent of sexually active Hispanic/Latinos in the same age group effectively using birth control (Figure 20).

![Figure 20: Effective birth control use among sexually active adults, aged 18-44, by race/ethnicity, Colorado, 2009-2010.](image)

Estimates are statistically different at the 95 percent confidence level.

The story is somewhat different among adolescents. There was no statistically significant difference in birth control use among White and Hispanic/Latino students, grades 9-11. However, there was a marked difference in the teen birth rate (Births per 100,000 girls) by race and ethnicity. The lowest birth rate was found among Asian/Pacific Islanders at only six births per 100,000 girls, followed by Whites who had a rate of 8. Hispanic/Latinos had the highest rate at 42, followed by African American/Black at 25 and American Indian/Alaska Natives at 19 (Figure 21).30

---

30 Not all teen pregnancies result in live births. Some racial and ethnic groups may be more likely to terminate an unwanted pregnancy either due to cultural or religious values, or because they have better access to abortion services. This may partially account for there being no reported difference in birth control rates among adolescents by race/ethnicity, yet there was a sizable difference in birth rates. Also, these statistics for birth control use only include adolescents who remained in high school at the time of the survey. Teens who have left high school may have different patterns of contraception use, and pregnant and parenting girls, who implicitly did not use birth control effectively, are more likely to drop out.
Figure 21: Birth rate among girls, aged 15-17, by race/ethnicity, Colorado, 2008-2010.

* Statistically different from Whites.
Source: Health Statistics Section, Colorado Department of Public Health and Environment.
Conclusion and Recommendations

COLORADO’S 10 WINNABLE BATTLES ARE A CALL TO ACTION. MANY OF THE DISPARITIES HIGHLIGHTED IN THIS REPORT STEM FROM BROADER SOCIAL ISSUES SUCH AS DIFFERENCES IN SOCIOECONOMIC STATUS, PATTERNS OF IMMIGRATION, AND SYSTEMATIC DISCRIMINATION AND EXCLUSION. STEPS CAN BE TAKEN TO ADDRESS THE NEGATIVE HEALTH OUTCOMES FROM BROADER SOCIAL FORCES. THESE INCLUDE:

- Engaging communities of color, people with limited English proficiency, the LGBT communities, and other marginalized groups in policy development and implementation to promote health equity and reduce disparities. Health disparities cannot be addressed without input from the local community level.

- Support communities in identifying their assets, leaders, and resources to build strategies based on their strengths. Connect leaders and stakeholders of disenfranchised groups with policy makers and networks to increase their spheres of influence, and to impact policy and decisions that affect their communities.
- Addressing data gaps, including new or better data on smaller racial and ethnic groups, sexual orientation, gender identity, and limited English proficiency that allow disparities to be identified and tracked.

- Creating healthy neighborhoods, addressing pollution and the built environment itself—access to parks, good public transportation, and job opportunities.

- Needs assessment of vulnerable populations that experience disparities within each Winnable Battle area.

- Increasing the cultural and linguistic competence of individuals and programs delivering services within each Winnable Battle area.

- Professional education and increased awareness, especially among health care providers and public health professionals, about health disparities and their root causes, including social and economic obstacles to health such as discrimination and limited English proficiency.

- Public policy that promotes health equity.

- Voluntary self-regulation within the private sector to address disparities.

- Enforcement of new and existing regulations, such as Title VI of the Civil Rights Act of 1964, and the Title VI regulations, prohibiting discrimination based on national origin, and Executive Order 13166 issued in 2000, which insures access to federally conducted and federally funded programs and activities for people who are limited English proficient.

These are not tasks that one agency can accomplish alone, but require partnering with: public agencies at the local, state, and federal levels; neighborhoods; schools; businesses; foundations; health care providers; the media; advocates; and community-based organizations.

The Colorado Department of Public Health and Environment already has established partnerships and evidence-based strategies to reach the 10 Winnable Battle targets by 2016.
**Suggested Uses for this Report**

Use these data in:

- Presentations to educate people about health disparities and their root causes.
- Grant applications.
- Planning and setting priorities.
- Setting measurable objectives to develop programs to address these issues.
- Advancing your organization’s programs, policies and/or priorities.
Appendix A: Data Sources Used in This Report

2010 U.S. Census

The U.S. Census provides official population counts for people living in the United States, and provides information by variables including race, Hispanic origin, marital status, and income. It is conducted once every 10 years by mail and by Census workers walking through neighborhoods. It aims to survey every household in the nation.

Although the 2010 U.S. Census Bureau provides national data on up to 331 different racial and ethnic groups, these are typically collapsed into six categories. The Census Bureau collects race and Hispanic origin information following the U.S. Office of Management and Budget’s (OMB) standards for collecting and tabulating data on race and ethnicity. In October 1997, the OMB issued the current standards, which identify five racial groups: White, Black or African-American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander. The Census Bureau also utilized a sixth category - “some other race.” Respondents who reported only one race are shown in these six groups.

The American Community Survey

The American Community Survey (ACS) is a nationwide, continuous survey conducted by the U.S. Census Bureau and uses the OMB standards for collecting and tabulating data on race and ethnicity. It collects demographic, housing, social, and economic data every year using mailed questionnaires, telephone interviews and in-person household visits. It is a large survey,
and by combining multiple years of data, can provide estimates for small population groups and small geographic areas, down to the census tract level.

**Behavioral Risk Factor Surveillance System**

The Behavioral Risk Factor Surveillance System (BRFSS) is an annual state-based health survey of adults. It collects information on health risk behaviors, preventive health practices and health care access, primarily related to chronic disease and injury. It is a telephone survey that includes landline and cell phone samples. Combining multiple years of data, the Colorado BRFSS provides stable estimates for Whites, Hispanic/Latinos and, when sample size permits, African American/Blacks.

**The Colorado Child Health Survey**

The Colorado Child Health Survey is a follow-back survey to the BRFSS. Every year, BRFSS respondents who have a child between the ages of 1 and 14 are identified and are asked to complete a telephone survey about one of their children at a later date. Topics include health behaviors, access to health and dental care, and behavioral health. Combining multiple years of data, it provides stable estimates for Whites and Hispanic/Latinos.

**The Current Population Survey**

The Current Population Survey (CPS), sponsored jointly by the U.S. Census Bureau and the U.S. Bureau of Labor Statistics (BLS), is the primary source of labor force statistics for the population of the United States. It abides by the OMB standards for collecting and tabulating data on race and ethnicity. The CPS is the source of numerous high-profile economic statistics, including the national unemployment rate, and provides data on a wide range of issues relating to employment and earnings. The CPS also collects extensive demographic data that complement and enhance our understanding of labor market conditions in the nation overall, among many different population groups, in the states and in substate areas.

**The Pregnancy Risk Assessment Monitoring System**

The Pregnancy Risk Assessment Monitoring System (PRAMS) is a population-based survey of women who have recently given birth. It asks about the health behaviors and experiences of women before, during, and after pregnancy. Combining multiple years of data, stable estimates for Colorado are generally available for Whites and Hispanic/Latinos.

**Reportable Health Conditions Surveillance Data**

By law, physicians, hospitals or other healthcare providers must report cases of certain health conditions to THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT. Reportable health conditions include HIV/AIDS, sexually transmitted diseases, and hepatitis. Racial and ethnic categories may vary by data source, however data are often available for the following racial and ethnic groups:
White, African American/Black, Hispanic, Asian/Pacific Islander, American Indian/Alaska Native. Data for all groups may not be reported due to small numbers.

**Youth Risk Behavior Surveillance System**

The Youth Risk Behavior Surveillance System (YRBSS) includes a national school-based survey conducted by the CDC, as well as local surveys conducted by state, territorial, and local education and health agencies, and tribal governments. It monitors health-risk behaviors that contribute to the leading causes of death and disability among youth and adults. YRBSS also measures the prevalence of obesity and asthma among youth and young adults.

YRBSS collects race/ethnicity data for the following categories: American Indian/Alaska Native, Asian, African American/Black, Hispanic, Native Hawaiian/other Pacific Islander, White, and multiple races. However, even at the national level, estimates are not always available for smaller groups. In Colorado, stable estimates are available for Whites and Hispanic/Latinos.

The YRBSS does not include data on teens that have left school.
Appendix B: Additional Data Resources

The Colorado Health Information Data Set

The Colorado Health Information Data Set (CoHID) is an interactive web data tool that allows users to query eight different data sets with various health indicators for the state of Colorado. These data sets include birth data, death data, population estimates, behavioral risk factors, birth defect data, cancer incidence data, pregnancy risk assessment, and injury and hospitalizations, the Tobacco Attitudes and Behavior Survey, and the Colorado Household Survey.

Visit CoHID at http://www.chd.dphe.state.co.us/cohid/Default.aspx

The Behavioral Risk Factor Surveillance System

The CDC BRFSS website features a Web Enabled Analysis Tool (WEAT) that allows users to generate health estimates from the BRFSS data set for any state, and for the nation. Estimates for smaller subpopulations may not always be available at the state-level for every state. However, stable estimates for racial and ethnic sub-populations are generally available at the national level because the sample size is large.

Visit WEAT at http://apps.nccd.cdc.gov/s_broker/weatsql.exe/weat/index.hsql

The National Center for Health Statistics

The National Center for Health Statistics (NCHS) is the nation’s principal health statistics agency. It compiles health data for policy purposes, including data for racial and ethnic subpopulations. NCHS has two major types of data systems: systems based on populations, containing data collected through personal interviews or examinations; and systems based on records, containing data collected from vital and medical records. Links to these data systems can be found at http://www.cdc.gov/nchs/surveys.htm
Appendix C: Other Resources

Federal and State Agencies

Colorado Department of Public Health and Environment, Office of Health Equity
http://www.colorado.gov/cdphe/ohe

Colorado Department of Public Health and Environment 10 Winnable Battles
http://www.colorado.gov/cdphe/winnablebattles

CDC Office of Minority Health and Health Disparities
http://www.cdc.gov/omhd

US Department of Health and Human Services, Office of Minority Health
http://minorityhealth.hhs.gov

US Department of Health and Human Services Office for Civil Rights
http://www.hhs.gov/ocr

The Federal Interagency Working Group on Limited English Proficiency
http://www.lep.gov
Federal Laws

Title VI of the Civil Rights Act of 1964
Prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving federal financial assistance.

Executive Order 13166
Mandates improved access to services for individuals with limited English proficiency.
http://www.justice.gov/crt/about/cor/Pubs/eolep.php

Federal Reports


http://minorityhealth.hhs.gov/templates/content.aspx?ID=4375

Works Cited

Smoking Cessation Treatment Preferences, Intentions, and Behaviors Among a Large Sample of Colorado Gay, Lesbian, Bisexual, and Transgendered Smokers. (n.d.).


The 2010 Census.


