



Health of Denver 2011

A REPORT ON THE
HEALTH STATUS
OF THE RESIDENTS OF
DENVER, COLORADO



ENVIRONMENTAL HEALTH
City and County of Denver
Promoting Healthy Communities



Denver Public Health
Promotion • Preparedness • Prevention • Protection

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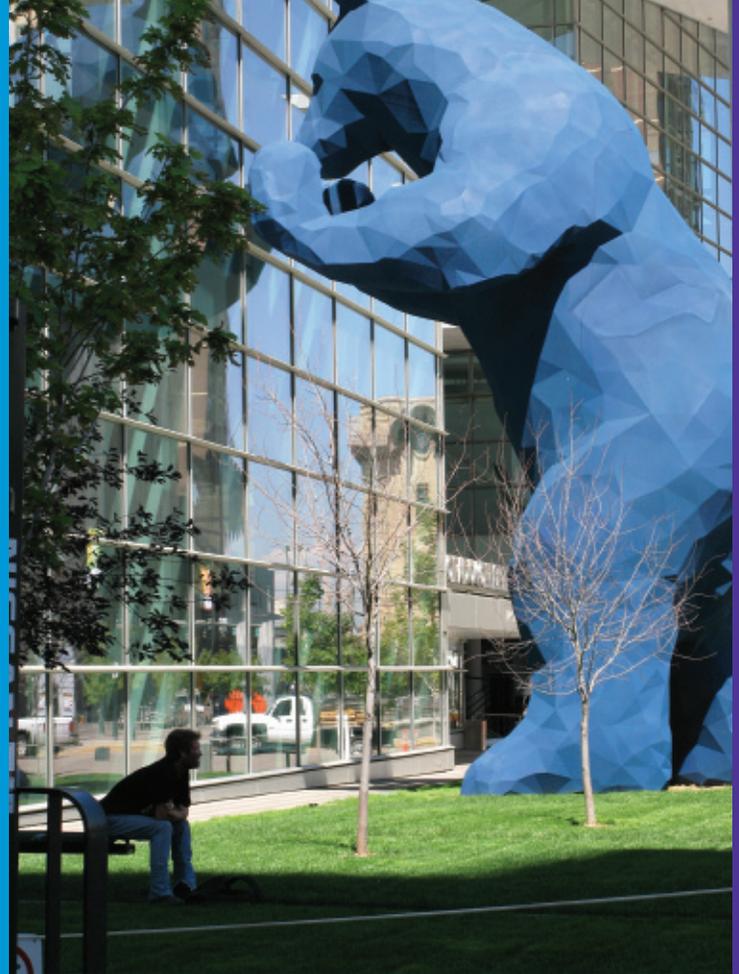
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Michael B. Hancock
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February 12, 2012

Dear Neighbors,

It's well known that Denver consistently ranks as one of the nation's healthiest cities. However, it's also important to note that health status can vary widely depending on the area of the City in which you reside.

Educational, economic and environmental factors all impact health. From the number of bike lanes on our streets, to the number of grocery stores within a square mile, the health and welfare of our residents is defined by and, inversely, defines the health and vitality of our city.

The *2011 Denver Health Status Report* is a comprehensive community health assessment that serves as the first step in the City's efforts to create a Public Health Improvement Plan. The information presented in this report reminds us that health is not just about health care. It's also about gathering and analyzing data to identify gaps and create sound policies that integrate health into the planning process for new projects and developments, while recognizing the importance of maintaining or improving our environment.

The report is also intended to be a call to action for policymakers, nonprofits, and Denver residents. While lack of access to healthcare is a growing problem in Denver and other cities around the country, we all have a responsibility for our own health and the health of our community. For policymakers and nonprofits, this includes ensuring we take a proactive approach to improving health, while following the best practices of successful models. For individuals, better health simply begins with the choices we make every day.

Over the next year, the City will be reaching out to engage the community and local partners in creating a Community Health Assessment. This includes reviewing the services the City provides, as well as identifying and working to close the gaps in the public health services system.

We look forward to hearing your feedback. With your help, we can truly make Denver a healthy place for all our citizens.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael B. Hancock".

Michael B. Hancock
Mayor

EXECUTIVE SUMMARY

The health of Denver in 2011 shows a lot of room for improvement. While some indicators, such as the rates of cardiovascular disease and violence, are improving, others, like obesity, are worsening. There are large disparities in health among different populations. Most important, though, is the fact that we know how to do better—expanded health coverage, more prevention activities and healthier lifestyles—and yet fall short in each area.

The cost of medical care in this country is by far the highest in the world and continues to increase rapidly. Despite the extraordinary amount spent on care, health outcomes in the United States are relatively poor. For example, life expectancy in the United States is lower and infant mortality is higher than in countries with comparable incomes. Higher medical costs and poor health hurt American families and businesses, and threaten local, state, and federal government budgets.

Health is complex and this report presents only a part of a larger picture. This report presents a high-level perspective of health in Denver, including successes and areas for improvement. The accompanying table provides highlights of the Health of Denver 2011 for 14 major health topics. The report itself is only a snapshot of an ongoing process to use data more effectively to improve health. One of the important outcomes from this report is the identification of key gaps in knowledge. As part of this process, new tools were developed that allow frequent and detailed evaluation of health data. In the future, health data will be made available to the public to increase participation in the improvement of health in Denver.

The nation's health status will never be as good as it can be as long as there are segments of the population with poor health status. The U.S. tolerates large disparities in many key health areas, thus our country's overall health is relatively poor. An essential part of improving overall health will be the identification of the root causes of health disparities and the development of specific interventions to address them. In the table, key disparities in each of the health topics are indicated.

Areas of Concern

Major areas of concern include access to health care, obesity, mental health, substance abuse, and tobacco use. Many of the ways to prevent common illnesses, such as the detection and treatment of high blood pressure, require access to medical care. Therefore, it is very concerning that access to health care has become even more limited in Denver. One in five adults lack health insurance and many have insurance that leaves them with a heavy burden of co-pays and limitations.

Obesity in Denver children and adults is increasing. This trend is a possible threat to recent improvements in cardiovascular disease. Obesity also increases the risk of diabetes and some forms of cancer. Mental illness and substance abuse are common among Denver's residents.

Denver's rate of suicide is well above the national average and access to mental health treatment is very limited. The continued abuse of alcohol and rising rates of prescription drug abuse are worrisome trends.

Although tobacco use in Denver is lower than the national average, exposure to tobacco smoke remains a major health problem. After decades of improvement, tobacco use in Denver has stabilized at about 20%. This is much higher than the Healthy People national goal of 12% for the year 2020. Tobacco is one of the major causes of cardiovascular disease, lung disease, and cancer. Decreasing tobacco use is the single most powerful tool we have to improve health in Denver.

Areas of Success

Public health in Denver has had some major successes. The most common causes of death in Denver, which include cardiovascular disease (heart attacks and strokes), cancer, and injuries, continue to decrease. Decreases in cancer death are linked to decreased tobacco use over the past 20 years and to improvements in screening tests to detect cancer or pre-cancer at earlier stages when treatment is more effective. The rates of homicides and deaths due to motor vehicle crashes have substantially improved as well.

Though not leading causes of death, there have been continued improvements in infectious diseases and the quality of the environment. The rate of new HIV infections is decreasing as effective treatment improves the health of those with HIV and decreases the risk of spreading HIV to others. Denver's air and water continue to improve, though continued vigilance is needed to protect residents from pollution. While there is much more work to be done, there have also been notable improvements in several aspects of the built environment. More Denverites are able to walk and ride bikes because of these improvements.

Moving Forward to Public Health Improvement Planning

An assessment of health is important, but it is only the first step in improving the health of Denver. In 2012, the City and County of Denver and Denver Health will be working with a broad range of stakeholders and reaching out to the general public to create a community health improvement plan. Through this partnership, health problems in Denver will be prioritized and specific action plans will be developed to address key causes of illness and death. Working together, we hope to make Denver the healthiest city in the nation.

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HEALTH TOPIC	NOTABLE TRENDS IN DENVER	KEY DISPARITIES
Access to health care	<ul style="list-style-type: none"> Increasing percentages of the population are uninsured or underinsured Limited coverage for oral care 	<ul style="list-style-type: none"> Hispanics and Native Americans/American Indians Lower income persons
Cardiovascular disease	<ul style="list-style-type: none"> Decrease in deaths due to heart attacks and strokes Rising rates of obesity could reverse progress in cardiovascular disease 	<ul style="list-style-type: none"> Blacks—greater frequency of high blood pressure and tobacco use; higher mortality from cardiovascular disease
Diabetes	<ul style="list-style-type: none"> Increasing percentage of the population affected by diabetes 	<ul style="list-style-type: none"> Hispanics and Blacks
Weight	<ul style="list-style-type: none"> Rising rates of obesity in adults and children Diet and exercise behaviors among youth somewhat improved 	<ul style="list-style-type: none"> Hispanics and Blacks Lower income persons
Maternal, child and adolescent health	<ul style="list-style-type: none"> Decreasing rates of teen births Stable infant mortality rate More data needed to assess child and youth health issues 	<ul style="list-style-type: none"> Hispanics—greater frequency of teen birth Blacks—higher infant mortality rate
Immunizations	<ul style="list-style-type: none"> High rates of coverage for children Continued cases of vaccine-preventable infections: pertussis, influenza, human papillomavirus (HPV) Data needed on population coverage for vaccines 	<ul style="list-style-type: none"> Detailed data not yet available
Infectious diseases	<ul style="list-style-type: none"> Decreases in new HIV infections and tuberculosis cases High rates of syphilis demonstrate ongoing high-risk sexual activity 	<ul style="list-style-type: none"> Men who have sex with men Blacks—higher rates of HIV and other sexually-transmitted infections Foreign-born persons—higher rates of tuberculosis
Environmental quality	<ul style="list-style-type: none"> Improvements in air and water quality Lead exposure in children continues to be a concern 	<ul style="list-style-type: none"> Children in west and north Denver (lead exposure)
Built environment	<ul style="list-style-type: none"> Improved infrastructure to support walking, bike-riding, public transportation Limited access to parks and healthy food impact health 	<ul style="list-style-type: none"> West and north Denver—less access to parks
Injury and violence	<ul style="list-style-type: none"> Decreased rates of homicide and motor vehicle crashes Alcohol use continues to play a major role in injury and violence 	<ul style="list-style-type: none"> Elderly—increased risk of serious injury from falls
Mental health	<ul style="list-style-type: none"> Consistently high rate of suicide, above national average Colorado ranks near the bottom in mental health funding 	<ul style="list-style-type: none"> White males—higher risk of suicide Lower income persons—higher rates of depression, poor mental health days
Substance abuse	<ul style="list-style-type: none"> Continued adverse health impacts from alcohol abuse Rising rates of prescription opiate abuse 	<ul style="list-style-type: none"> Native Americans/American Indians Whites and Hispanics (binge-drinking)
Tobacco	<ul style="list-style-type: none"> Rates of smoking among adults and youth above Healthy People 2020 national goals Tobacco sales to minors continues 	<ul style="list-style-type: none"> Lower income persons Youth Men who have sex with men
Cancer	<ul style="list-style-type: none"> Decreased lung cancer death rates Sub-optimal rates of screening for breast and colon cancer 	<ul style="list-style-type: none"> Lower income persons (lack of access to cancer screening)

INTRODUCTION

Process of Developing This Report

This biannual report was developed by Denver Public Health (DPH), a department of the Denver Health and Hospital Authority, and the Department of Environmental Health (DEH) at the City and County of Denver. The purposes of the report are to:

- Identify important health trends in Denver
- Show changes in health in Denver over time
- Compare health outcomes in Denver to the state of Colorado and to national goals
- Identify disparities in health in Denver

To produce this report, a core group of staff met over the past year. This group identified topics and data sources, engaged partners, and developed tools to assess health. A broad array of experts and community stakeholders participated in choosing the measures, identifying data sources, and recognizing key trends (see *Appendix 5*).

This report is divided into 14 topic areas. These include:

- Access to Health Care
- Cardiovascular Disease
- Diabetes
- Weight
- Maternal, Child, and Adolescent Health
- Immunizations
- Infectious Disease
- Environmental Quality
- Built Environment
- Injury and Violence
- Mental Health
- Substance Abuse
- Tobacco
- Cancer

National Context

American health care has traditionally focused on acute (and expensive) care in the hospital setting. In order to improve health while decreasing health care costs, the focus of health interventions needs to shift to the broader community. There are many opportunities to prevent illnesses or injuries. For example, some cities have been very successful in decreasing tobacco use through policy changes and taxes on tobacco. Decreasing exposure to tobacco smoke decreases the risks of heart attacks, lung disease, lung cancer, and other serious illnesses.

There are also many ways to diagnose illnesses at earlier stages when treatment is more effective and less expensive. For example, colon cancer is the second most common cause of cancer deaths. Screening for colon cancer with tests such as a colonoscopy decreases the risk of death due to colon cancer. It is estimated that 70% of illnesses and injuries can be prevented through cost-effective policies and access to high-quality primary health care.



Disparities in Health

If a health outcome is more common in certain subgroups of the population, there is a health disparity. Race or ethnicity, sex, age, education, income, and geographic location can all contribute to an individual's health. For example, death due to heart attack and stroke is more common among Blacks than persons of other races or ethnicities in Denver (see *Cardiovascular Disease*). There are many reasons for this health disparity in cardiovascular disease. Risk factors for heart attacks include high blood pressure, diabetes, and use of tobacco—all of which are more common among Blacks in Denver.

One of the most important health disparities is in access to health care, since many prevention strategies rely on access to primary medical care (such as detection and treatment of high blood pressure). Being uninsured is most common among Hispanics and Native Americans/American Indians in Denver

Health disparities also can be expressed as differences by race/ethnicity, age, income, educational level, country of birth, and geography within Denver. For example, tobacco use is more common among younger persons and those with lower incomes or less education (see *Tobacco*). Within Denver, smoking rates are higher, and is more common in the western and northern parts of the city, reflecting higher percentage of young people and higher rates of poverty in those neighborhoods. Understanding and addressing these disparities is critical to improving Denver's health.

INTRODUCTION

Social Factors

Data from the 14 topic areas demonstrate the impact of demographics and behavior on health. The health of an individual is influenced by personal choices and habits, such as diet, exercise, substance abuse, and smoking. These disparities can be related to a person's genetics or ability to get health care. Yet, studies show that social, community, and economic factors are much bigger contributors to health.¹ As a result, changing the social environment may have the largest impact on health in a population.

Local Data to Improve Local Public Health

To develop and implement effective health programs, we Denverites need accurate data to answer questions about population:

- What are the key health problems facing Denver?
- How are these health problems changing over time?
- Have previous prevention efforts and interventions worked to improve outcomes?
- Who needs these interventions the most?
- How is progress measured?

Detailed information is critical in understanding and addressing health disparities. This report assesses health problems by location and subpopulations of Denver when possible. Local data is still needed to assess the effectiveness of current and future health interventions in Denver.

Health of Denver 2011 provides a picture of the health of Denver residents. Data are presented for 14 key health outcomes. Clearly, these health outcomes are inter-related. For example, obesity is a major focus of the section on *Weight*. Exercise is related to obesity. Opportunities for exercise, such as distance from a park or recreation center, are covered in the section on the *Built Environment*. Obesity is also a key risk factor for Type 2 diabetes (see *Diabetes*). In turn, diabetes increases the risk of heart attacks and strokes (see *Cardiovascular Disease*).

In recognition of the many effects of our surroundings on health, this report has a new section on the *Built Environment*. Since the 2008 assessment, data sources have been expanded for many health outcomes. Other changes in the 2011 report include more detailed data, and data presented by geographic areas using maps by City Council districts or other local boundaries in Denver (i.e. neighborhood). This effort involved many new partners in to provide a more complete view of health within Denver.

A key part of improving health is the reduction of health disparities and an important goal of the 2011 report is to identify, quantify, and localize health disparities in Denver. Data are presented on disparities by income, race and ethnicity, age, education, and geographic area of Denver.

Photo courtesy of VISIT DENVER, The Convention & Visitors Bureau

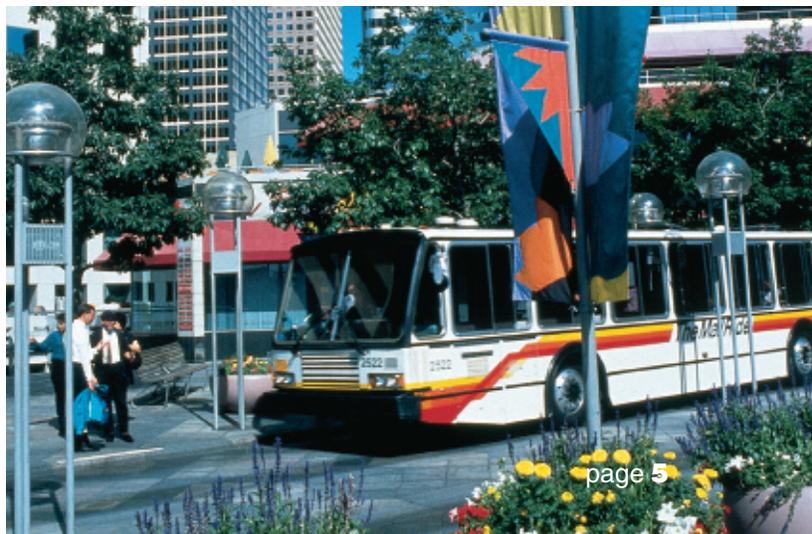
When possible, data are shown by the current City Council districts. Subdividing the data into the 11 districts provides a greater level of detail for many health problems.

Health of Denver 2011 reports population data in key health areas. This report is part of an ongoing process to use health data to identify problems, design interventions, and evaluate the effectiveness of those interventions. High-value public health requires partnerships and detailed, up-to-date data. Developing the 2011 report included the creation and use of tools for easy access to detailed health data. Denver Public Health (DPH) and Denver's Department of Environmental Health (DEH) are committed to developing online access to health data and tools to analyze those data. DPH and DEH look forward to working with City agencies, health care providers, community-based organizations, and individual citizens to better analyze the health status of Denver.

Next Steps: From Assessment to a Community Health Improvement Plan

Health of Denver 2011 provides a picture of the current health of Denver. The next step is to utilize this assessment as the basis for developing an action plan to improve Denver's health. In the next year, DPH and DEH will work with community members, governmental and non-profit agencies, health care providers, businesses, educators, and community-based organizations to identify key issues on which to focus health improvement efforts. Within those key areas, specific health goals and measures to assess progress toward those goals (metrics) will be developed. Finally, stakeholders will participate in developing policies, programs, and educational activities for the priority areas.

Through public support and specific plans to improve public health, we hope to improve the well-being of residents throughout our city. Experience in other urban areas has shown the power of public health efforts based in accurate data to improve health. Through careful assessment of health outcomes and focused strategies, Denver can become the healthiest city in the nation.



INTRODUCTION

An Overview of Denver's Population

PROFILE OF DENVER

The City and County of Denver is located in the center of the larger Denver metropolitan area. The population of Denver in the 2010 census was 600,158. This was an increase of 7.6% since 2000 (POPULATION PYRAMID).

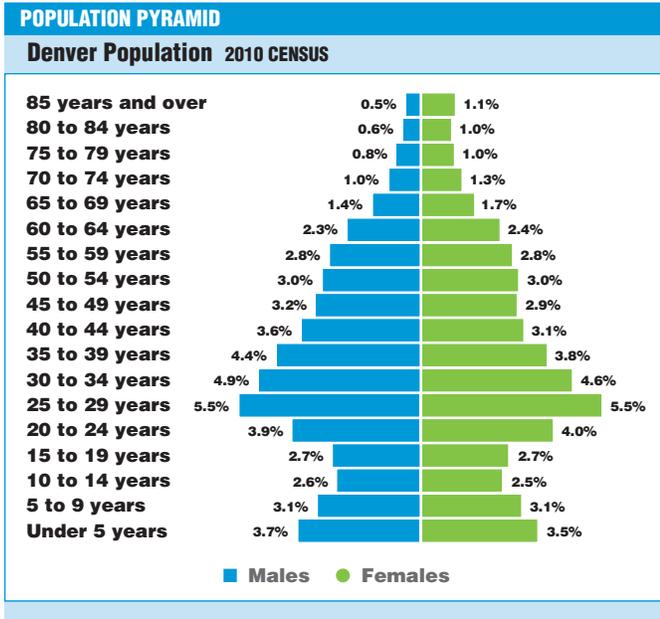
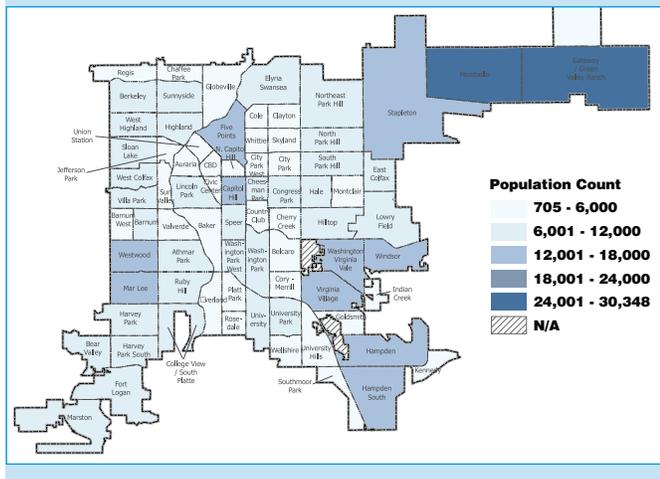


FIGURE 1
Neighborhood Population DENVER, 2010



Denver is subdivided into 80 official neighborhoods (FIGURE 1). The largest increases in population have been in the northeast part of the city, particularly the areas of the former Lowry Air Force base and former Stapleton International Airport (FIGURE 2).

Wherever possible, maps are presented to show how specific parts of Denver are affected by a health outcome. As data sets on health outcomes cannot be meaningfully subdivided by the 80 neighborhoods. Data on some health outcomes are presented by the 11 City Council districts (FIGURE 3).

SELECTED DENVER FACTS

Total 2010 Denver Population 600,158

GENDER

2010 Female 300,069 | 50.0%

RACE AND ETHNICITY

2010 Hispanic or Latino (of any race) 190,965 | 31.8%
 2010 White persons 413,696 | 68.9%
 2010 Black persons 61,435 | 10.2%
 2010 Asian persons 20,433 | 3.4%
 2010 American Indian/ Alaskan Natives persons 8,237 | 1.4%
 2010 Native Hawaiian and Pacific Islander persons 607 | 0.1%
 2010 Other race persons 71,191 | 11.9%
 2010 Multiple race persons 24,559 | 4.1%

AGE

2010 Persons over 65 years 36,293 | 6.0%
 2010 Median Age 33.7 years

FAMILIES AND HOUSEHOLDS

2010 Denver Families 128,082
 Average Family Size 3.15 persons
 Families making less than \$10,000 9,055 | 7.1%
 2010 Total Households 263,107
 2010 Average Household Income \$68,342
 Number of Linguistically Isolated Households (2005 to 2009) 19,511 | 7.9%

ENVIRONMENT AND EDUCATION

% of workers who took public transportation to work in 2010 18,479 | 6.2%
 Mean travel time to work in minutes in 2010 24.1 minutes
 % of population aged 25+ years without a high school diploma 15.7%

HEALTH CARE

Denver county residents on Medicaid in 2010 95,435 | 15.9%

INTRODUCTION

FIGURE 2
Neighborhood Population Change DENVER, 2000 - 2010

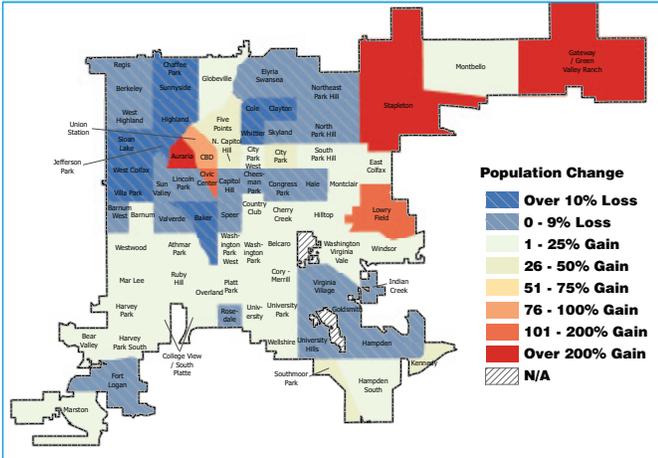


FIGURE 5
Education Level DENVER, 2010

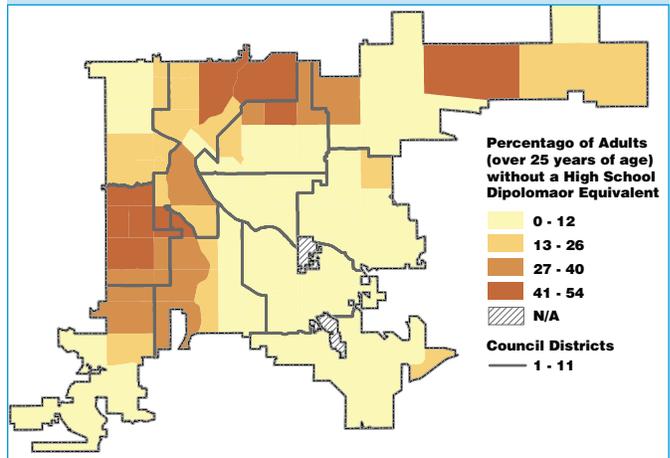


FIGURE 3
City Council Districts and Neighborhoods Overview DENVER, 2010

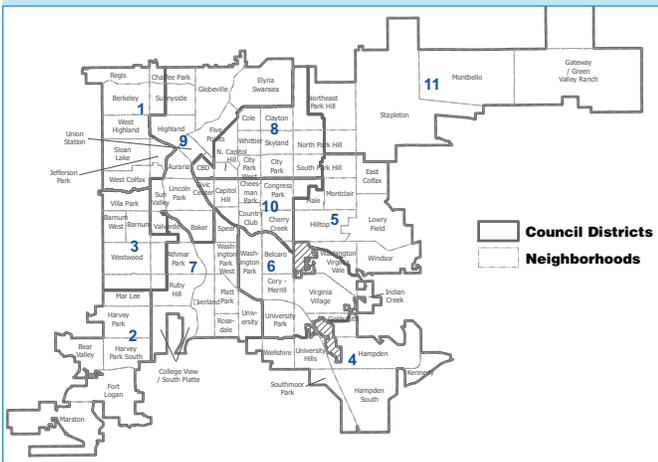
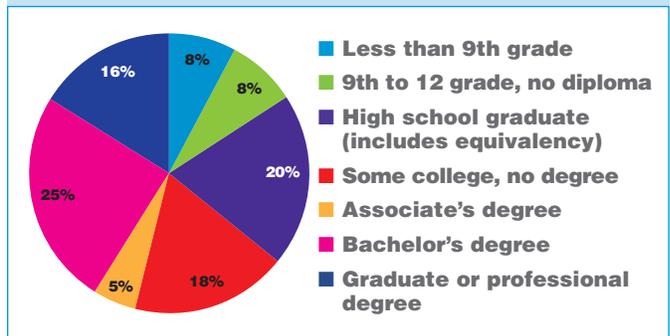
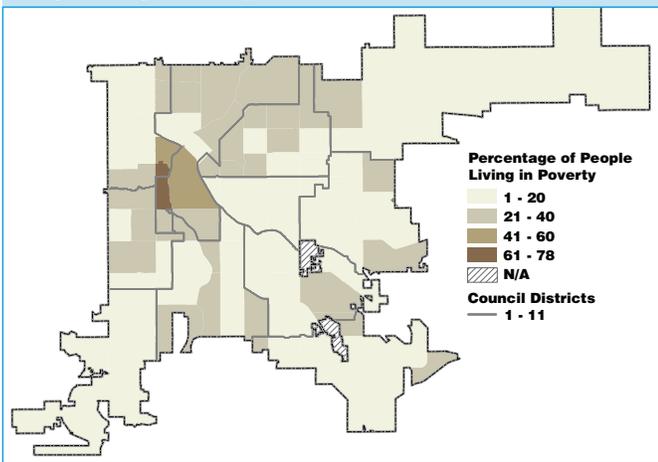


FIGURE 6
Educational Attainment of Persons Over 25 Years DENVER, 2010



SOURCE: American Community Survey

FIGURE 4
People Living in Poverty DENVER, 2010



Characteristics that are consistently associated with the largest differences in health indicators include income, gender, education, and race and ethnicity. In the U.S., education and wealth are the strongest predictors of health. People with more education have better access to employment, housing, childcare, recreational activities, nutrition, medical care, and safer and cleaner neighborhoods. Health promotion efforts must address these root causes of poor health to make a larger impact. Some areas in Denver have a high concentration of people that lack a high school degree (FIGURES 5 AND 6). This factor increases the likelihood of many health problems.

Denver has a very diverse population including a variety of racial and ethnic groups (SEE FIGURES 7 TO 10). Just as income and education can affect health, some racial and ethnic groups experience higher rates of certain diseases or disparate health outcomes (FIGURE 4).

INTRODUCTION

The terminology used to describe racial and ethnic groups can be confusing. The terms used in this report are consistent with categories used in the 2010 U.S. Census. Throughout this report, the term “Black” refers to persons who are black and of non-Hispanic origin, and “White” refers to white persons of non-Hispanic origin. Hispanic refers to persons of any race who are of Hispanic, Latino, or Spanish origin. The U.S. Census data are based on how a person self-identifies with a race or ethnicity.

Visit http://www.census.gov/schools/pdf/2010form_info.pdf to see the U.S. Census questionnaire.

Disparities can result when no one in a home is able to speak English, which is called linguistic isolation. This impacts whether someone is able to communicate with a health care provider or for other services. There are many homes in Denver that are linguistically isolated (SEE FIGURE 11).

FIGURE 7

Black, Non-Hispanic Population DENVER, 2010

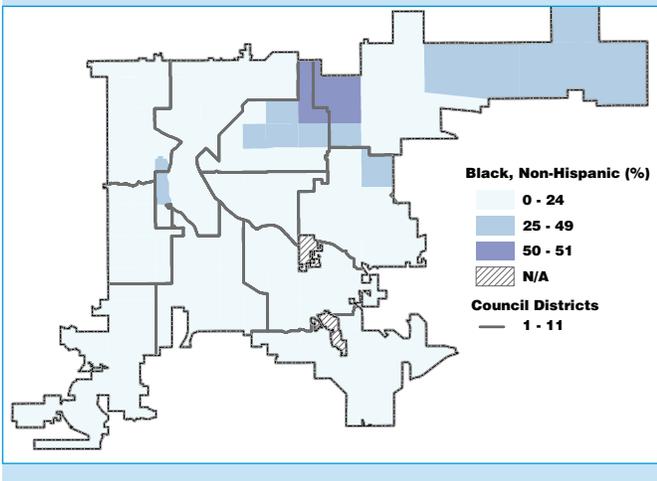


FIGURE 9

Hispanic Population DENVER, 2010

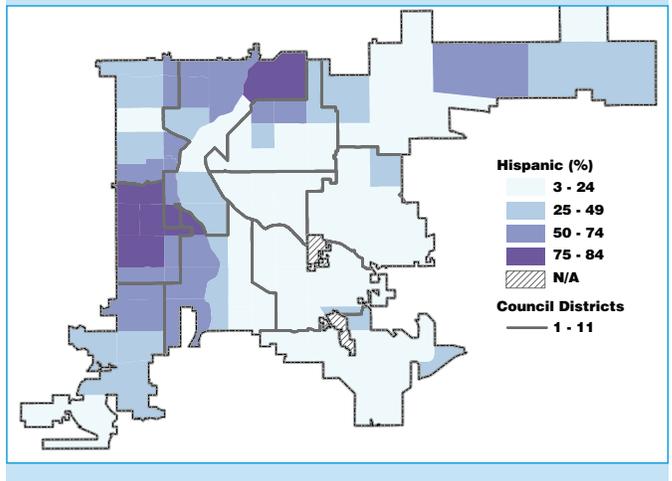


FIGURE 8

White, Non-Hispanic Population DENVER, 2010

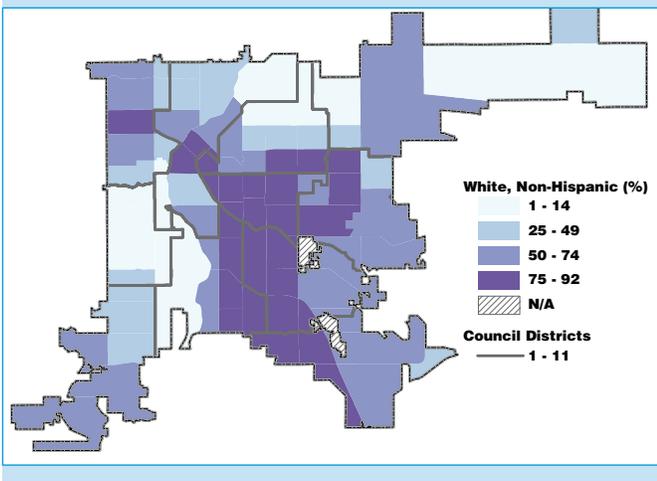
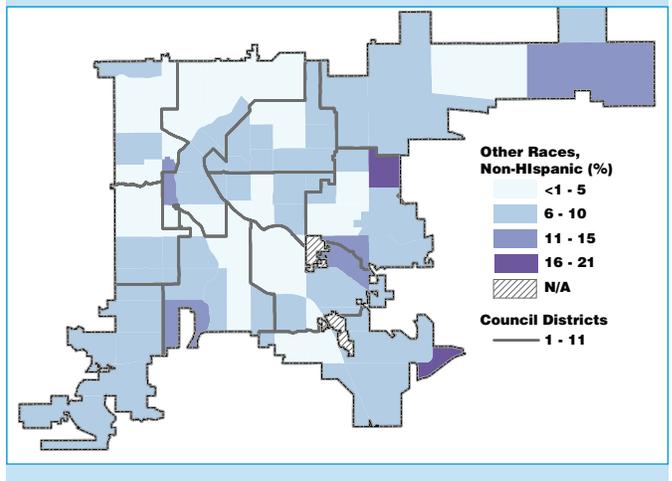


FIGURE 10

Asian and Other, Non-Hispanic Population DENVER, 2010



INTRODUCTION

FIGURE 11

Linguistic Isolation DENVER, 2010

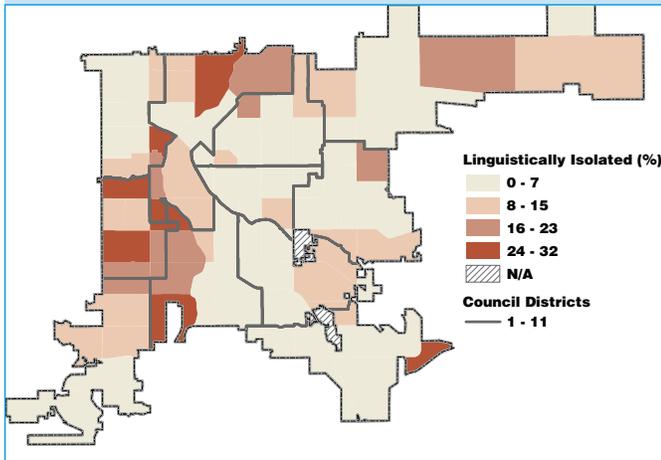
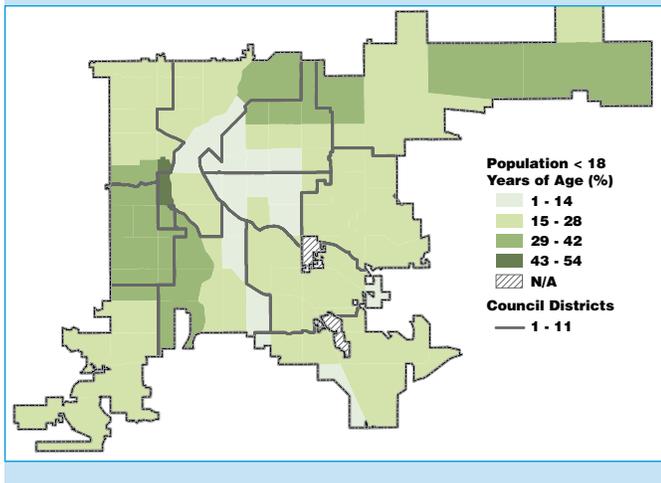


FIGURE 12

Youth Under 18 Years of Age DENVER, 2010



The average age of Denver's residents is 33.7 years. Different age groups are not geographically distributed evenly in Denver. These maps show the distribution and percentage of the population under 18 years and over 64 years of age in Denver (SEE FIGURES 12 AND 13). In Denver, time spent commuting to work varies by location (SEE FIGURE 14). In general, individuals who live closer to downtown spend less time commuting. For more information on this issue, see the *Built Environment* section of this report.

FIGURE 13

Aging Population, 65 Years of Age and Older DENVER, 2010

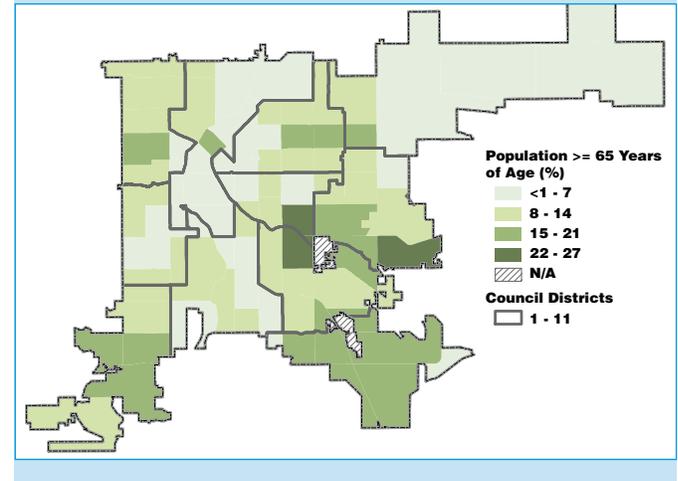
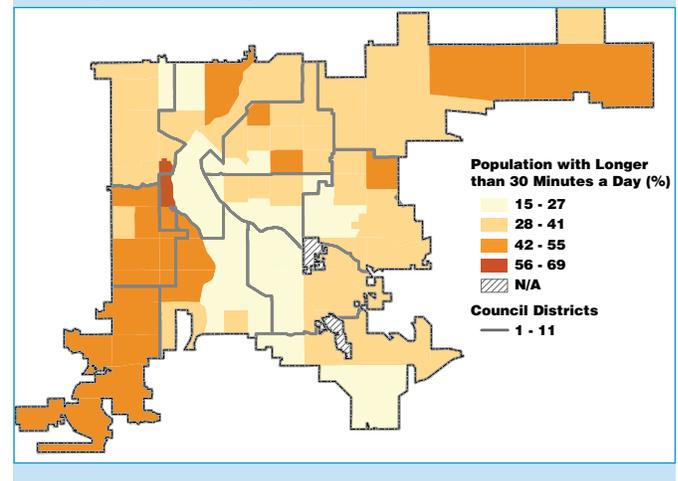


FIGURE 14

Time Spent Commuting to Work DENVER, 2005 - 2010



INTRODUCTION

LEADING CAUSES OF DEATH IN DENVER

The top 10 most common causes of death are influenced by behavioral and environmental factors (SEE FIGURE 15). Many factors contribute to the causes of death shown, including an individual's knowledge, health behaviors, income, education, and environment. The leading causes of death often vary by gender and age and are discussed further throughout this report. See *Appendix 1* for graphs on the leading causes of death by age group. All deaths can be attributed to a broad spectrum of reasons.

FIGURE 15
Common Causes of Death DENVER, 2006 - 2010

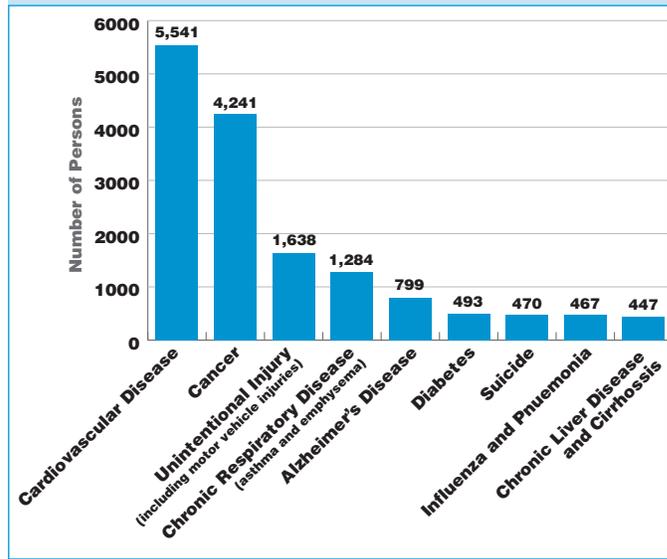


Photo courtesy of Downtown Denver Partnership



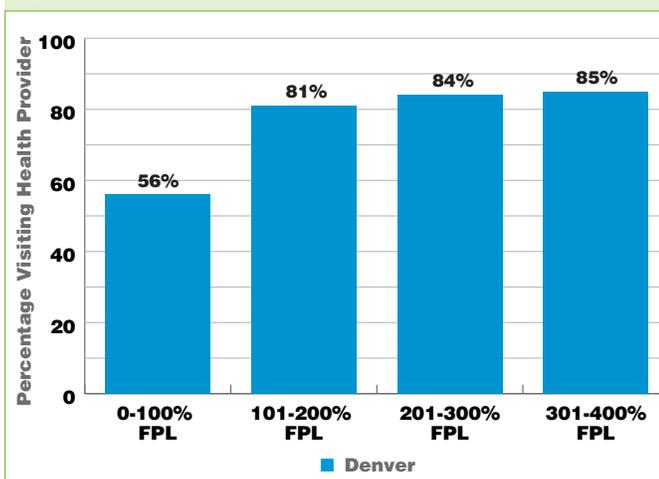
ACCESS TO HEALTH CARE

Overview

Denver has many health disparities. Access to health care and the ability to control or recover from an illness are not the same for everyone. Socioeconomic factors are important as poverty reduces access to care and impacts health status. Families with higher incomes are more likely to have health insurance benefits, receive care, and feel better about their health (FIGURES 1 AND 2).

FIGURE 1

Percentage who Visited a Provider in the Past 12 Months by Income Level* DENVER, 2008 AND 2009



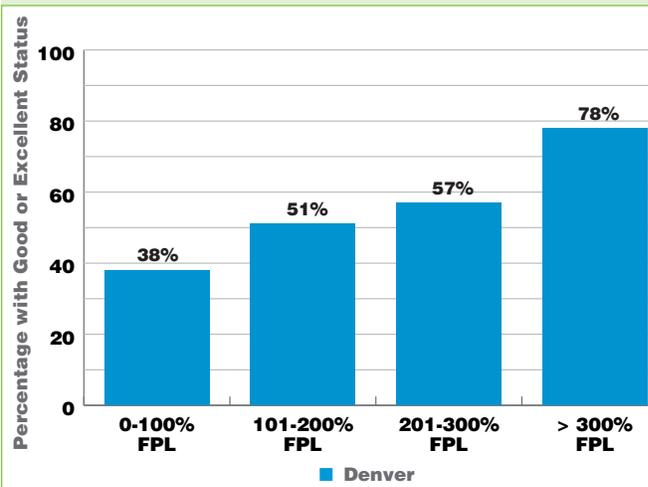
In 2011, the Federal Poverty Level (FPL) for a family of four was \$22,350 in gross yearly income. People living below 100% of that level are less likely to visit a provider. Income has a major effect on access to care through insurance status.

SOURCE: Colorado Household Survey

*Income is shown as a percentage of the Federal Poverty Level (FPL)

FIGURE 2

Percentage Self Reporting Health Status as Very Good or Excellent by Income Level* DENVER, 2008 AND 2009



As income increases, the percent of people reporting their health status as “very good or excellent” increases.

SOURCE: Colorado Household Survey

*Income is shown as a percentage of the Federal Poverty Level (FPL)

In recent surveys, more Denver residents (21%) lacked health insurance benefits as compared to elsewhere in Colorado (16%) (FIGURE 3). Hispanic, American Indian, and Alaskan Native communities were more likely to be uninsured (FIGURE 4). However, fewer uninsured people in Denver (32%) avoided medical care due to cost, as compared to Colorado (44%) (FIGURE 5). Access to safety-net clinics improves the likelihood that residents will seek care earlier and more frequently. The Colorado Indigent Care Program (CICP) supports increased access through safety-net clinics. Denver is among the highest CICP-funded counties in Colorado, supporting increased access and utilization (FIGURE 6). For CICP patients, Denver Health and its network of eight Federally

continued



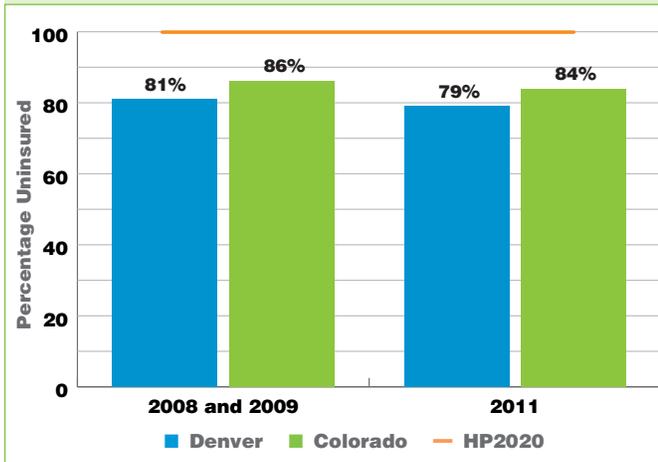
Cost Facts

- Health spending in the U.S. averaged \$8,086 per person in 2009. This equals \$2.5 trillion, or 18% of the U.S. economy. This is up from 13% of the GDP in 1990.⁴
- A middle-income family seeking individual coverage typically spends 22% of household income on health care. This is compared to 8% for employer-sponsored coverage. Family coverage premiums through an employer rose to \$15,073 in 2011, a 160% increase since 1999. On average, workers paid \$4,129 of that total in 2011. This is an almost 50% increase in worker contribution since 2005.⁵⁻⁷

ACCESS TO HEALTH CARE

FIGURE 3

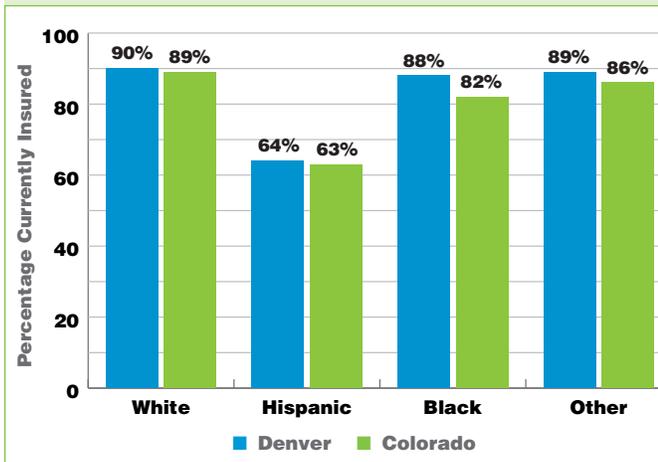
Percentage Currently Insured
DENVER AND COLORADO, 2008 - 2009



The percentage insured has increased over the past 2 years.
SOURCE: Colorado Household Survey and Colorado Health Access Survey

FIGURE 4

Percentage Currently Insured by Race and Ethnicity
DENVER AND COLORADO, 2009



Ability to access health care is often associated with access to health insurance. The proportion of people with no insurance is significantly higher for Hispanic populations when compared to other racial and ethnic groups.

SOURCE: Behavioral Risk Factor Surveillance System

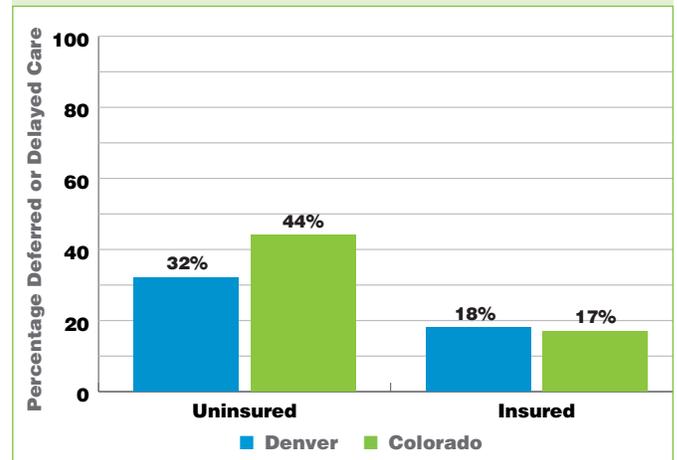
Qualified Health Centers provide access to both primary and specialty care services. However, access to CICIP-supported care through other safety-net providers often does not include comprehensive specialty care. For some people in Denver, specialty services are often difficult or impossible to obtain.

The Federal Poverty Level for a family of four is \$22,350 of income per year.² Poverty (living at or below 100% of the Federal Poverty Level) is greater in Denver (one in four) as compared to the rest of Colorado (one in five). Eligibility for CICIP and other insurance programs are determined by family income, but families with lower income are often unaware of these programs. Many children eligible for Child Health Plan Plus (CHP+) or Medicaid are not enrolled in these health benefit plans. In 2010, the Affordable Care Act was signed into law by President Obama. This Act will expand health insurance coverage by expanding eligibility to Medicaid and subsidizing the cost of purchasing health insurance among low-income families. The majority of these changes are to take place by 2014. Greater access to health care increases availability of preventive care and decreases illnesses and preventable deaths.

Access to dental insurance coverage is also related to income. Dental visits in the past 12 months increase with higher income (FIGURE 7). At the Federal Poverty Level income, dental coverage and care is limited. While brushing, flossing, and eating a balanced diet are important, regular dental visits can help spot oral health problems early when treatment is likely to be simpler and more affordable. Oral health is also an important part of overall health: recent research suggests an association between gum disease and serious health conditions such as heart disease, stroke and diabetes.³

FIGURE 5

Percentage Who Deferred or Delayed Care During Past 12 Months Due to Cost, DENVER AND COLORADO, 2008 - 2009



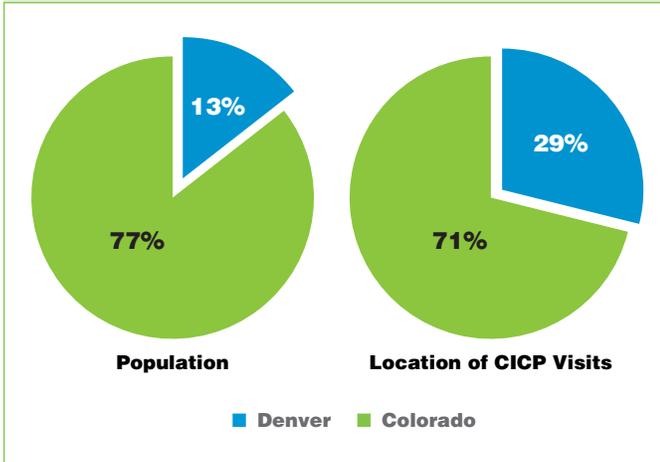
Insurance does not guarantee health care. Regardless of insurance status, many people choose to defer care (e.g., not fill a prescription or not go to a doctor or specialist). Among the uninsured, the deferral of care rate is lower in Denver than the rest of Colorado.

SOURCE: Colorado Household Survey

ACCESS TO HEALTH CARE

FIGURE 6

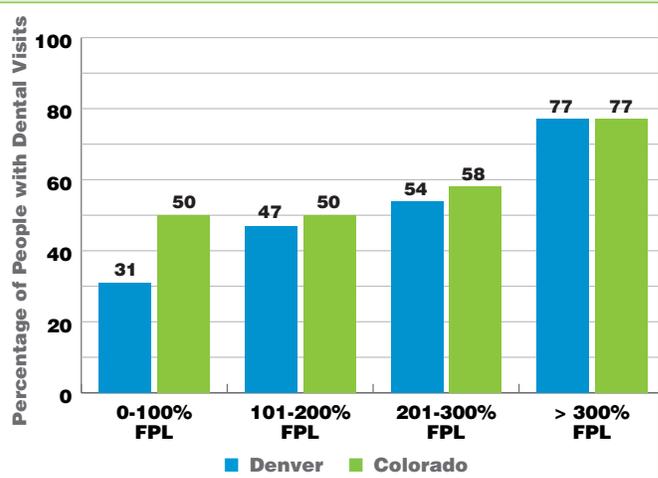
Use of Colorado Indigent Care Program (CICP)
DENVER AND COLORADO, FISCAL YEAR 2009 AND 2010



Denver actively enrolls and provides CICP services to residents. Of CICP recipients, 13% live in Denver but 29% of CICP visits and hospitalizations statewide are for Denver residents.
SOURCE: Department of Health Care Policy and Financing

FIGURE 7

Dental Visit in the Past 12 months by Income Level*
DENVER AND COLORADO, 2008 AND 2009



The percentage of people with a dental visit in the past 12 months increases with higher income.
SOURCE: Colorado Household Survey

*Income is shown as a percentage of the Federal Poverty Level (FPL)

Local Story

CICP: The Challenges of Specialty Care

CICP provides health care to residents who would otherwise have no access to care. A 75-year old female Denver CICP patient was seen at the Colorado Alliance for Health Equity and Practice, a safety-net clinic. She complained of shortness of breath when moving about. Her clinic accepted Colorado Indigent Care Program (CICP) funds so she was able to be seen, but they did not have a cardiologist on staff. The family searched unsuccessfully for two months to find a specialist that accepted CICP, or would agree to set up a payment plan. One evening, the patient was seen in the Emergency Department. By the end of that night, she was referred to a hospice and died shortly thereafter.



ACCESS TO HEALTH CARE

Comparison Story

Oregon: Does Medicaid Make a Difference?

In 2008, Oregon wanted to offer Medicaid to more residents.

Funds were available for only 10,000 more residents. Since

90,000 applied to receive Medicaid, government officials

decided to pick residents by lottery. This created a chance to

study how insurance affects health care use. It was discovered

that people who received Medicaid were more likely to go to

a clinic or see a doctor. They were also less depressed and better able to maintain financial stability. They

were more likely to use prescription drugs, or be admitted to a hospital. They felt better and were more likely

to say their health was good or excellent. Medicaid did what all insurance—homeowner's, auto, health—is

designed to do: shield people from financial catastrophe. Those with insurance were less likely to have an

unpaid bill sent to a collection agency. They were less likely to borrow money or fail to pay other bills because

they had to pay medical bills. Study findings showed what relief health insurance brings and how much health

insurance can improve health status.⁸



Did You Know

- In 2009-2010, Denver's school-based clinics had 8,622 users. These users had a total of 32,000 visits for medical, mental, and health education services. Of these, 19,442 were medical visits.⁹
- Almost 28% of pregnant women in Denver delay prenatal care, starting care after the recommended 1st trimester of pregnancy.¹⁰
- Annually, the U.S. pays \$2,500 to \$5,000 more per person on health care than in Japan and countries in Europe.⁷

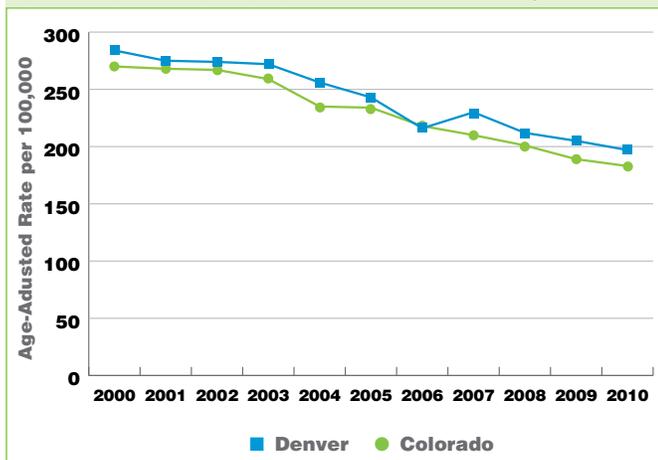
CARDIOVASCULAR DISEASE

Overview

Cardiovascular disease is Denver's leading cause of death. In 2010, 26% of Denver's deaths were from cardiovascular disease.¹¹ Cardiovascular disease includes diseases related to the heart and blood vessels such as heart attacks, strokes, or heart failure. Nationally and in Denver, cardiovascular disease-related death rates have decreased over time (FIGURE 1). This is particularly true for deaths due to strokes (FIGURE 2).

FIGURE 1

Cardiovascular Disease Deaths DENVER AND COLORADO, 2000 - 2010

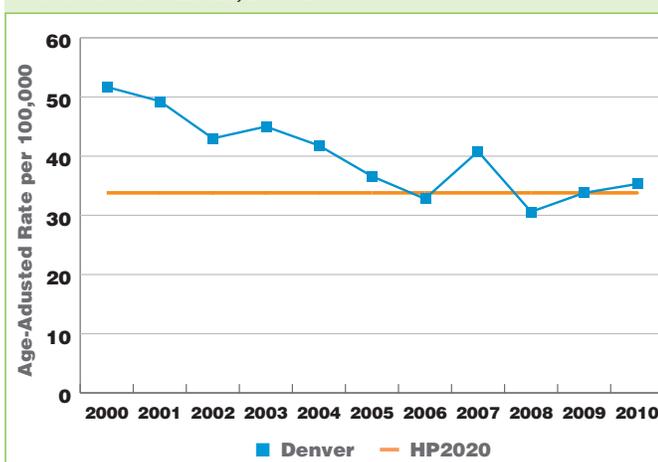


Cardiovascular disease deaths have been steadily declining for the past 10 years. This is likely due to better control of modifiable risk factors. Denver's cardiovascular disease death rates have consistently been slightly higher in the rest of the state.

SOURCE: Vital Statistics

FIGURE 2

Stroke Deaths DENVER, 2000 - 2010



The rate of deaths due to stroke has declined in Denver over the past 10 years. The rate is now near the Healthy People 2020 target.

SOURCE: Vital Statistics

Unlike some chronic diseases, cardiovascular disease is largely preventable. Common risk factors for cardiovascular disease include tobacco use or exposure to secondhand smoke, high blood pressure, high cholesterol, and diabetes. These can be treated or prevented and effective treatment decreases the risk of cardiovascular disease. Denver Community Health Services and Kaiser Permanente have nationally-recognized programs to improve treatment of cardiovascular disease risk factors. However, there are concerning trends in the frequency of cardiovascular disease risk factors in Denver.

Tobacco is the single largest preventable risk factor for cardiovascular disease. Tobacco use remains high in Denver (see *Tobacco*). Nearly 20% of Denver adults and 24% of Denver 11th graders smoke tobacco.^{12,13} As rates of obesity have increased in Denver (see *Weight*), so too have the rates of high blood pressure and diabetes (see *Diabetes*). Medications for high blood pressure, high cholesterol, and diabetes greatly lower cardiovascular disease risk. However, some Denver residents have limited health care access. More than 20% of Denver's adults lack health insurance and may not be diagnosed or treated for high blood pressure, high cholesterol, and diabetes (see *Access to Health Care*).¹⁴

continued

Cost Facts



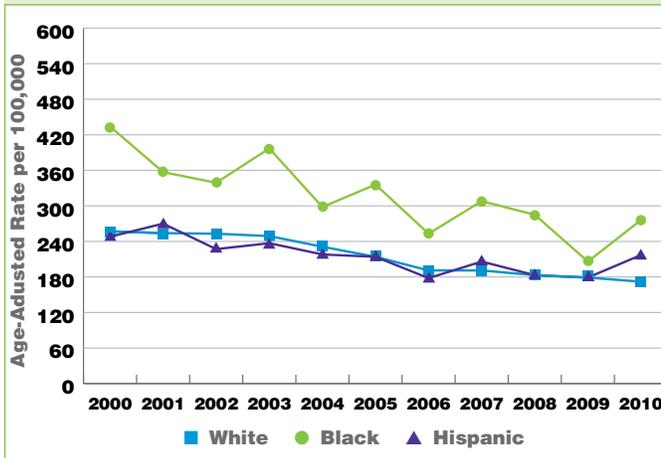
In the U.S. in 2010, cardiovascular disease cost an estimated \$444 billion. Treatment of cardiovascular diseases accounts for about \$1 of every \$6 spent on health care in this country.¹⁵

CARDIOVASCULAR DISEASE

Men and women of all racial and ethnic groups are at risk of cardiovascular disease. However, cardiovascular disease deaths rates are higher in Blacks and those living in north Denver (FIGURES 3 AND 4). There are also differences in the frequency of risk factors for cardiovascular disease by income, race and ethnicity, educational level, and area of Denver (FIGURE 5) (see *Tobacco* and *Weight*).

Denver recently received a Community Transformation Grant from the Centers for Disease Control and Prevention (CDC). This grant will fund activities to decrease tobacco use and exposure to secondhand smoke, increase exercise among Denver children and adults, improve access to healthy foods and parks, and improve the treatment of high blood pressure and high cholesterol. Thanks to these and other efforts, cardiovascular disease should continue to decrease in Denver.

FIGURE 3
Cardiovascular Disease Deaths by Race and Ethnicity
DENVER, 2000 - 2010

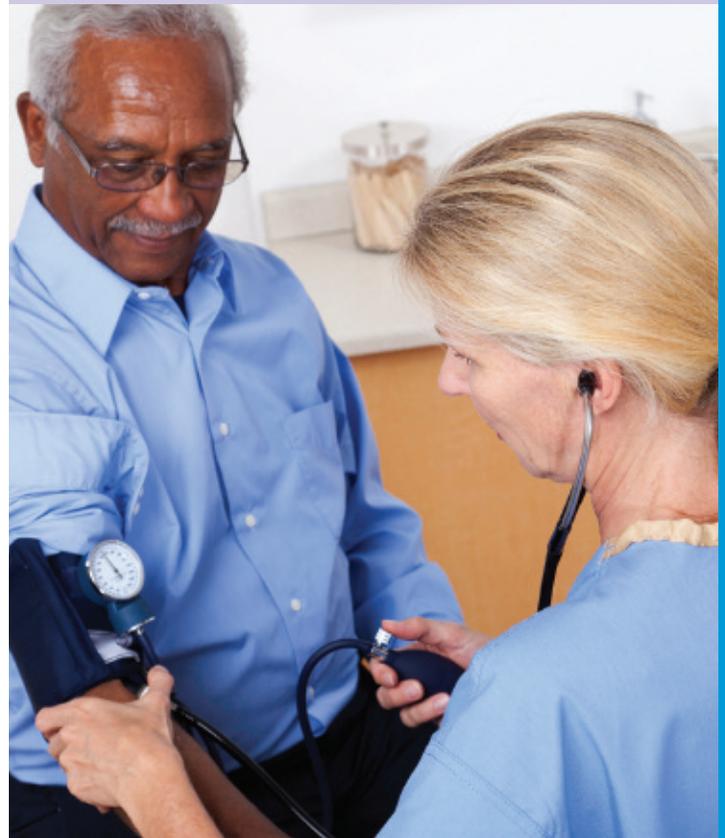


Blacks have a higher rate of cardiovascular disease-related death in Denver. Risk factors for cardiovascular disease include smoking, obesity, diabetes, and high blood pressure.
SOURCE: Vital Statistics

Local Story

Health Navigators

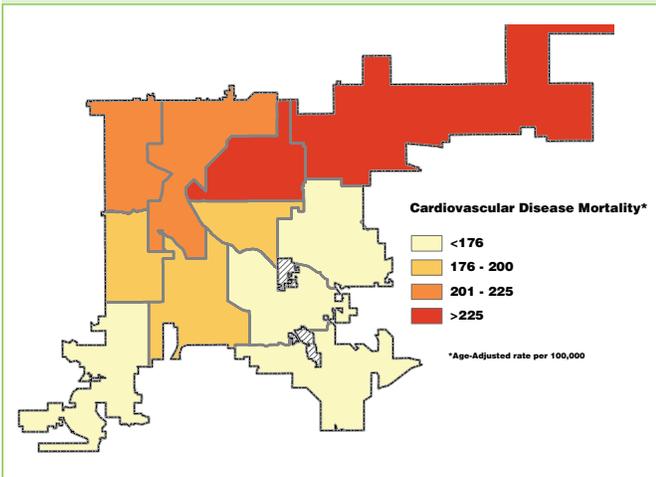
Health navigators, sometimes called patient navigators or community health workers, are trained to work with patients who are sick and often overwhelmed. Navigators coordinate doctors' appointments, assist patients to get in touch with doctors, arrange rides, help with insurance forms, and help patients prepare questions for the doctor. From 2007 to 2009, a Denver study used health navigators to reduce cardiovascular disease risk factors.¹⁶ In this study, low-income communities were targeted. Health navigators provided counseling and helped 340 participants access community recreation centers, health centers, and nutritional information. Results showed that those who received help from navigators reduced their cardiovascular disease risks more than a comparison group that did not receive services. Using navigators to educate and promote change can improve the health of Denver residents.



CARDIOVASCULAR DISEASE

FIGURE 4

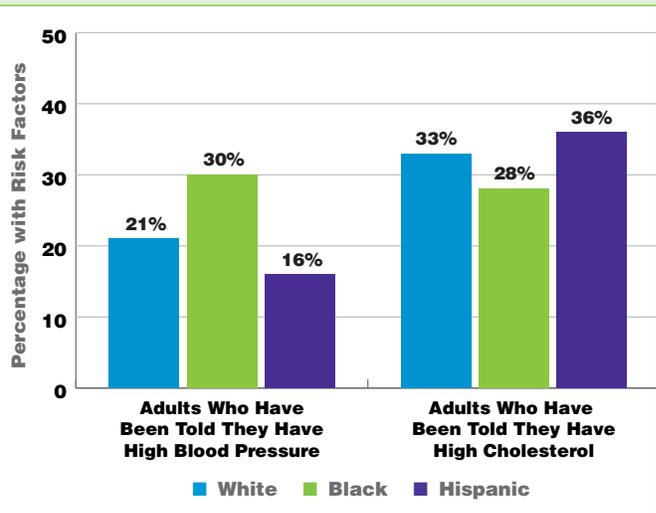
Cardiovascular Disease Deaths DENVER, 2010



Cardiovascular disease rates are not equal across Denver. Areas in the north have higher rates. These are areas with lower income and larger Black and Hispanic populations.
SOURCE: Vital Statistics

FIGURE 5

Cardiovascular Disease Risk Factors DENVER, 2005 - 2010



Black persons have a higher risk of high blood pressure than Whites and Hispanics. Of those who have had a cholesterol screening, Hispanics have a slightly higher risk than Whites and Blacks.
SOURCE: Behavioral Risk Factor Surveillance Survey

Comparison Story

Restaurant Menu Calorie Counts

In 2008, New York City became the first municipality in the U.S. to require chain restaurants to list calorie amounts on the menu. Since then California, Seattle, and a few other jurisdictions have also passed similar laws. A New York study compared people's eating habits in 2007 and 2009. Restaurant menu calorie counts had an impact on about one in six individuals. Those who looked at the calorie labels tended to reduce their food intake by about 100 calories. Several fast food chains began offering healthier and lower calorie menu items around the time the law was passed. This is one of several steps that can be taken to help reduce obesity and cardiovascular disease.¹⁷



Did You Know



- More than one in three U.S. adults (83 million) currently live with cardiovascular disease.¹⁸
- An estimated 935,000 heart attacks and 795,000 strokes occur each year in the U.S.¹⁵
- About one in two U.S. adults with high blood pressure do not have their blood pressure under control.^{15, 18}
- Nearly two in three U.S. adults with high cholesterol do not have their cholesterol under control.¹⁵
- Quitting smoking, reducing salt consumption, eating low fat foods, and increasing vegetable and fruit consumption all help to reduce the risk of cardiovascular disease.¹⁸
- All adults should be screened for high blood pressure, high cholesterol, and diabetes. Early detection and treatment can prevent cardiovascular disease.¹⁸

DIABETES

Overview

Diabetes is a disease in which the blood sugar level is abnormally high. Two types of diabetes exist. Type 1 diabetes develops when the body's immune system destroys the cells that regulate blood sugar. Type 1 diabetes accounts for 5% to 10% of all cases and there is no known prevention. Type 2 diabetes begins as insulin resistance, a disorder in which the cells do not use insulin properly and accounts for 90% to 95% of all cases. Type 2 diabetes is associated with obesity and physical inactivity. Diabetes can lead to serious complications including cardiovascular disease (see *Cardiovascular Disease*), kidney disease, blindness, nerve damage, limb amputation, skin damage and depression.¹⁹

As obesity has increased, the frequency of diabetes has also increased in the U.S. Currently, 25.8 million people are living with diabetes. The percentage of adults with diabetes in Colorado has doubled since 1990. More than 15% of Colorado adults aged 65 and older have diabetes.^{20, 21} More than 23,000 Denver residents are living with diagnosed diabetes, with the highest rates in the western and northern parts of the city (FIGURE 1). Diabetes deaths are also primarily in those same areas (FIGURE 2). The diabetes mortality rate within Denver during the past 10 years is very similar to the Colorado rate and shows no significant improvement or decline over time (FIGURE 3). Type 2 diabetes is more common among Blacks and Hispanics and the risk of death due to diabetes is also much higher in these groups (FIGURE 4).

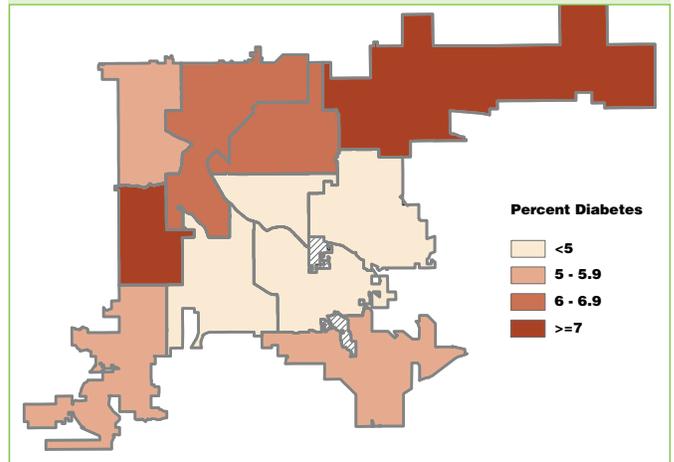


Cost Facts

- One in 10 U.S. health care dollars is spent on diabetes and its complications.²¹
- In 2007, the total U.S. annual cost of diabetes was estimated to be \$174 billion. Of this, \$116 billion were for direct medical expenses. Another \$58 billion was for indirect costs resulting from lost workdays, restricted activity, death, and disability.²¹
- In 2009, Denver metro area inpatient hospital charges for diabetes treatment were \$42 million.²³
- Medical costs for those with diabetes are 2.3 times higher than those without diabetes.²¹

FIGURE 1

Percentage of Adults Who Have Ever Been Told by a Doctor They Have Diabetes DENVER, 2005 - 2010

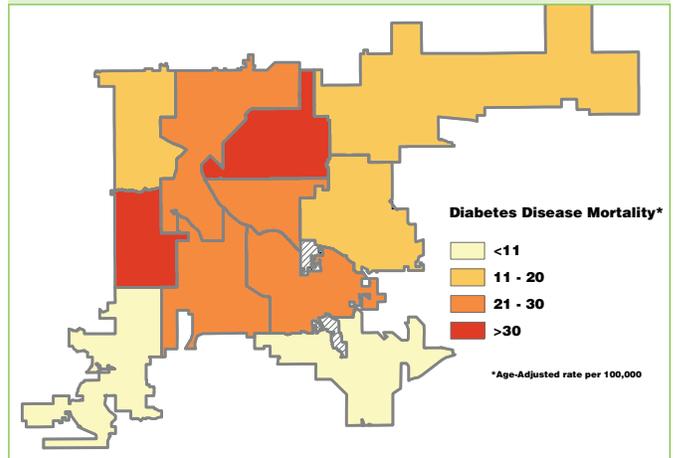


Diabetes rates are not equal across Denver. Areas in the north and west have higher rates. These are areas with lower income and more diverse populations.

SOURCE: Behavioral Risk Factor Surveillance System

FIGURE 2

Diabetes Disease Deaths DENVER, 2010



The number and rate of people dying from diabetes is not equal across Denver. The west and north central portions of the city have higher rates.

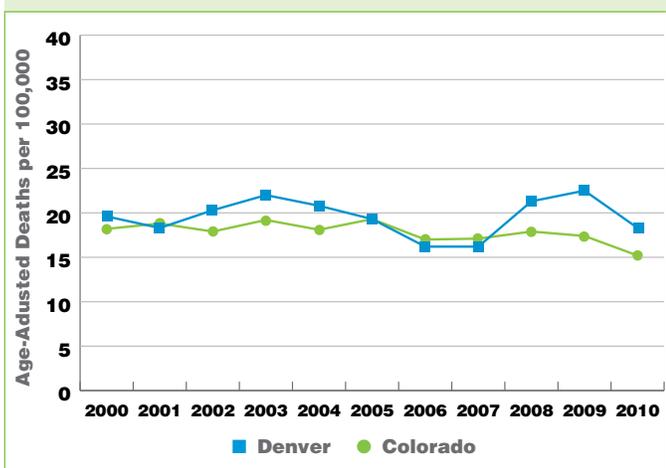
SOURCE: Vital Statistics

DIABETES

The problem of diabetes is even larger than these figures suggest. Diabetes is known as the “hidden” disease, because those with Type 2 diabetes can feel well despite having a high blood sugar level. An estimated seven million people in the U.S. have undiagnosed diabetes.²¹

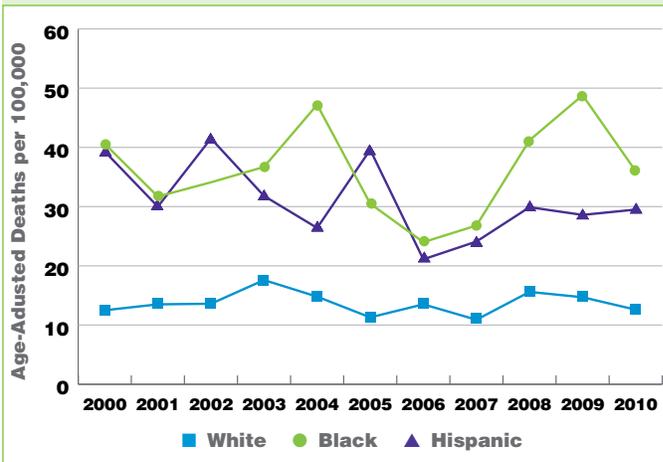
People with diabetes can control the disease and lower their risk of complications with diet, exercise, and medical treatment. Moderate weight loss and exercise can prevent or delay Type 2 diabetes among adults. A recent study found that an individual’s risk for diabetes declined by more than 30% by adding each low-risk lifestyle factor, including a healthier diet, more exercise, and avoiding alcohol and cigarettes.²²

FIGURE 3
Diabetes Deaths DENVER AND COLORADO, 2000 - 2010

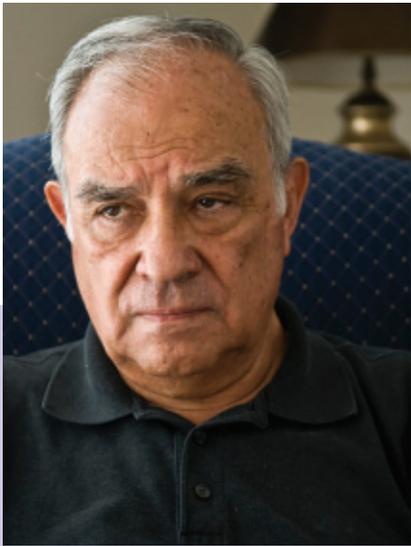


Diabetes deaths in Denver have been relatively stable for the past 10 years. The rates are similar to those for the entire state.
SOURCE: Vital Statistics

FIGURE 4
Diabetes Deaths by Race and Ethnicity DENVER, 2000 - 2010



Diabetes deaths are significantly higher for Hispanic and Black populations than White populations within Denver.
SOURCE: Vital Statistics



Local Story

Living with Diabetes

Mr. L had a family history of diabetes, was overweight, and was found once to have high blood pressure. However, he avoided doctors since he “felt fine” and had seen relatives put on dialysis by doctors treating their diabetes. Mr. L was eventually forced to go to the hospital when he suffered a heart attack. He was found to have advanced eye and kidney disease, likely a result of many years of untreated diabetes.

Ms. K attended a clinic in her mid-20’s because she was concerned about her family history of diabetes. Although she had no symptoms and was only mildly overweight, her blood sugar was elevated, putting her at risk for diabetes. She cut out sweetened beverages and began exercising for 30 minutes three times weekly. She visits her primary care physician every six months and continues to live free of diabetes 10 years later.

Comparison Story

The Chronic Disease Self-Management Program

Learning to live with a chronic disease can be difficult. To help, Stanford University developed the Chronic Disease Self-Management Program. This program is a six-week workshop held weekly in community settings.²⁴ Churches, community centers, libraries, hospitals, and recreation centers are gathering points. People with chronic health conditions meet and learn techniques on dealing with pain and appropriate medication use. Participants also learn about nutrition, exercise and strength-building, and improving communication. In addition to the class, participants receive a book and relaxation audio tape. After collecting data for more than 1,000 participants, the classes and materials improved some social and health measures. They also reduced the number of hospitalizations and medical visits, as well as costs. This program has expanded to locations throughout the U.S., including Colorado.



Did You Know

- One in 400 children or adolescents has diabetes in the U.S.²¹
- Diabetes is the leading cause of blindness, kidney failure, and lower-limb amputations.²¹
- Only 10% of people with diabetes have their disease well controlled through routine blood tests, medication, and blood pressure checks. Diabetes control includes controlling blood pressure, blood sugar levels, and cholesterol.²⁵

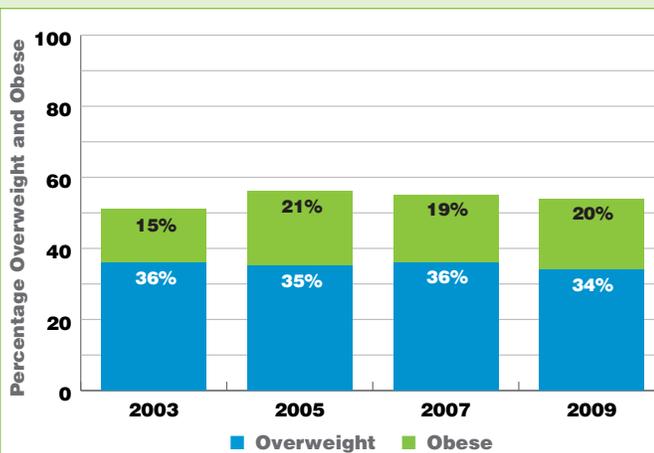
WEIGHT

Overview

Since 2003, the number of obese and overweight children and adults has increased in Denver. More than half the adults in Denver are now overweight or obese. Body mass index (BMI) combines height and weight to determine if someone is at a healthy or unhealthy weight for his or her height. A measure above 30 indicates obesity. From 1990 to 2009, the percentage of Denver adults who are obese more than doubled, from less than 10% to 20%. In 2009, an additional 35% of adults were overweight with a BMI of 25-29.9 (FIGURE 1). Obesity among children also increased rapidly over this same time period (FIGURE 2). Among Denver school children 5 to 18 years old, 33% of boys and 29% of girls were overweight or obese in 2009 (FIGURE 3).

FIGURE 1

Percentage of Overweight and Obese Adults DENVER, 2003 - 2009



While the trend seems to be stable or possibly decreasing for adults, more than one in two adults are overweight or obese. Denver exceeds the HP 2020 goal of having 30% or less people obese.

SOURCE: Behavioral Risk Factor Surveillance System

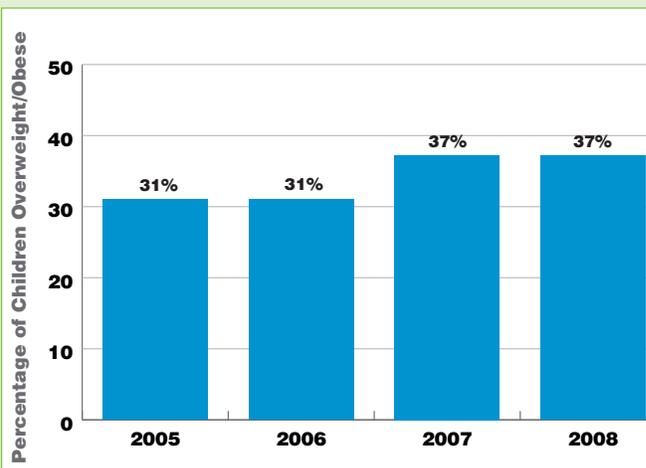
Overweight children, adolescents, and adults are at greater medical risk for diabetes, heart disease and certain cancers. Obese people often report poorer quality of life and have decreased lifelong earning potential.²⁶ Obese children are frequently bullied. The risk of obesity increases if a woman starts a pregnancy overweight or obese or gains excessive weight in pregnancy. Both mother and child are at a greater risk for diabetes and heart disease. Additionally, overweight and obese pregnant women have an increased risk of gestational diabetes, high blood pressure, and Caesarean sections.

Healthy eating and active living affect body mass index. Eating more fruits and vegetables and limiting calories from added sugars (e.g. sugar sweetened drinks) is recommended. Regular exercise can also help maintain a healthy weight. It is recommended that children should have at least 60 minutes of physical activity per day. Adults should exercise at least 150 minutes per week.²⁶ However, approximately 20% of Denver residents engage in no leisure-time physical activity and 74% consume fewer than five servings of fruits and vegetables per day.¹³

continued

FIGURE 2

Percentage of Overweight and Obese Children Ages 2 to 14 DENVER, 2005 - 2008



Childhood overweight and obesity is increasing with more than one in three fitting those body mass index measures.

SOURCE: Child Health Survey



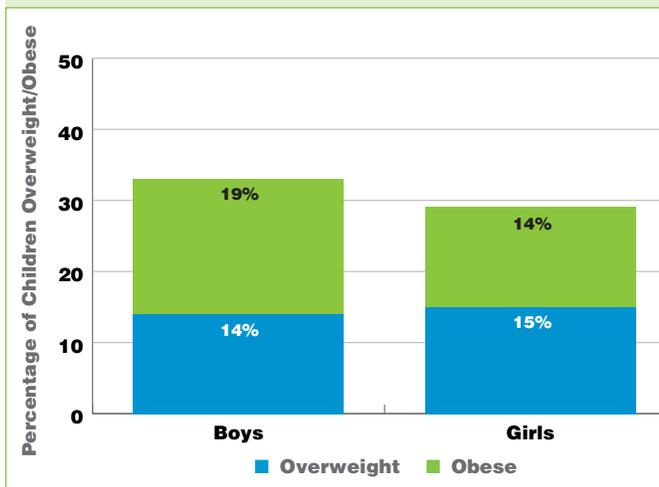
WEIGHT

Socioeconomic status affects access to a healthy diet and opportunities for exercise. Lower income adults eat fewer fruits and vegetables daily and engage in less physical activity (FIGURES 4 AND 5). Lower income adults are also more likely to be obese and overweight (FIGURE 4). While healthy behaviors are improving in high school students, fewer than one in four students eat the recommended number of fruits and vegetables and fewer than one in two exercise adequately every day (FIGURE 6).

Persons with lower incomes often suffer from food insecurity. They have limited or uncertain availability of nutritionally adequate and safe foods. In 2007, only 43% of eligible Denver residents received their Supplemental Nutrition Assistance Program (SNAP) funds. Denver has several large food deserts, defined as neighborhoods that lack access to grocery stores that sell healthy foods (FIGURE 7).

FIGURE 3

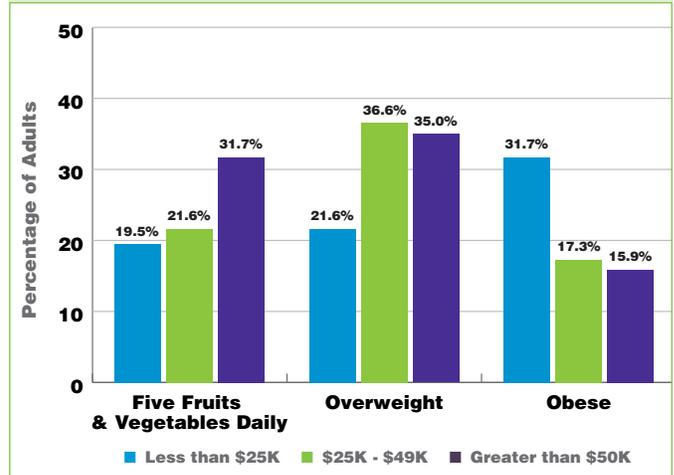
Percentage of Public School-Aged Children (5-18 years) Overweight and Obese DENVER, 2009



Body Mass Index (BMI) uses height and weight to help determine health. In 2009, 40,929 Denver Public School (DPS) students were assessed for BMI. Overweight and obesity were highly prevalent (33% of boys and 29% of girls). The Healthy People 2020 goal for obesity in children aged 2-19 years is 14.6%.
 SOURCE: Denver Public Schools

FIGURE 4

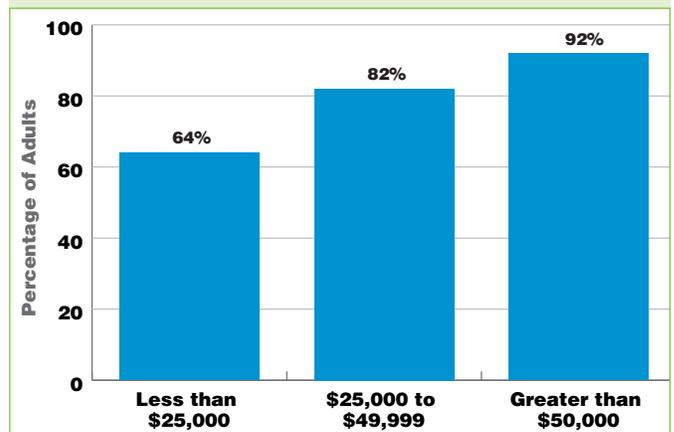
Percentage of Adults Consuming Five Fruits and Vegetables Daily, Overweight and Obesity by Income DENVER, 2009 AND 2010



Lower income Denver adults (>18 years old) were more likely to be obese and consumed less than five fruits and vegetables daily.
 SOURCE: Behavioral Risk Factor Surveillance System

FIGURE 5

Adult Participation in Physical Activities Outside of Regular Job DENVER, 2000 - 2010



In 2009-2010, physical activity was fairly common in Denver. People earning more income were more likely to exercise. Those earning less than \$25,000 were less likely to participate in physical activities. The Healthy People 2020 goal is a 10% improvement in exercise among adults.
 SOURCE: Behavioral Risk Factor Surveillance System

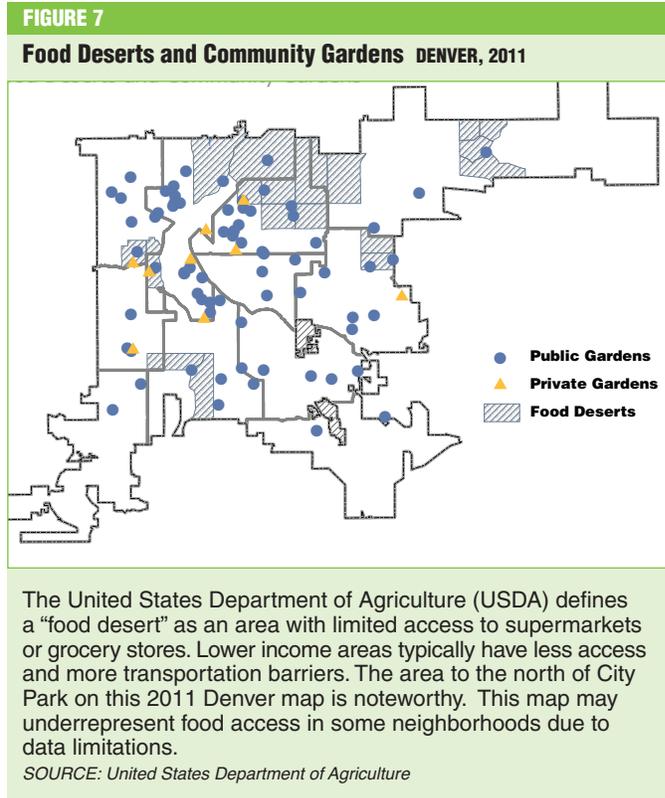
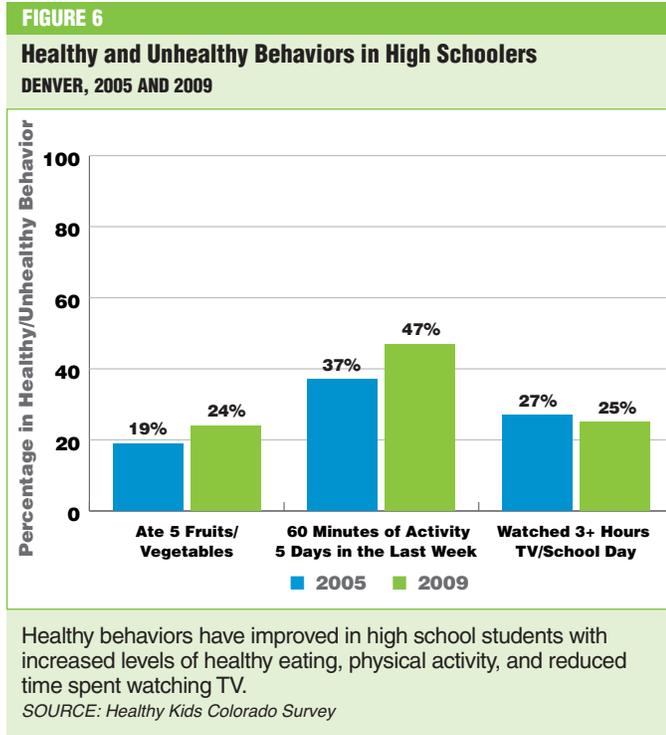


Cost Facts

In 2008, the Colorado cost of obesity across all resident adults averaged \$235 per adult. By 2018, it is expected to be \$864 per Colorado adult due to increased obesity prevalence.²⁷

Obesity impacts the economy by decreasing productivity. Obese workers have more missed days of work and are less efficient. In many businesses, obesity costs more than medical and drug expenses. Among full-time U.S. workers, 86% suffer from obesity or one or more chronic conditions. This costs the U.S. about \$153 billion annually due to missed work. Annually, U.S. companies spend about \$225 per employee on obesity.^{28, 29}

WEIGHT



Local Story

Tanya’s Story at Weigh and Win
 After having pictures taken with friends, I noticed how big I let myself get. My friend told me about this new program, *Weigh and Win* (www.weighandwin.com). I attended an introductory session, saw people just like me, and decided to join. I started with small goals as directed by the health coach. My very first goal was to get an alarm clock to get up for the gym! Daily text messages three times a day helped keep me on track. Another thing that really worked for me was the weekly grocery list. I am intimidated by big grocery stores and making healthy selections. So I now shop at smaller healthy grocery/farmers’ market-style stores. I am less tempted. For people who may be afraid of the higher costs in these grocery stores, my advice is that they try it out. [You would be] amazed how much money you save when you are not buying costly junk food! The scale does not lie, and it helps to get that motivation back. I love showing off the before and after pictures!

Permission to share granted from Tanya, 10/19/11

Denver has many areas where residents have to travel long distances to find a grocery store. These food deserts can be a significant barrier for people of lower incomes seeking healthy food. In a study of local stores in northeast Denver neighborhoods, there was a variation in access, price, and quality of fruits and vegetables. Using a standard list of 22 fruits and vegetables, nearly one in three stores no listed items yet all sold sweetened beverages. In 60 local food stores, the cost of purchasing five fruits and vegetables from the list ranged from \$4.11 to \$16.82. In addition to grocery stores, strategies to overcome food deserts include farmers’ markets, mobile fruit and vegetable vans, and corner market reforms.³³



Comparison Story

BMI Screening in Arkansas

Body Mass Index (BMI) is a number calculated from a person's weight and height. BMI is a relatively accurate indicator of body fat. It is used to screen for weight categories that may lead to health problems. Through a legislative mandate, Arkansas conducts annual BMI screenings for public school students.³⁰ The program engages school, clinical, public health, and community leaders. When the program was started, people were concerned that there would be negative impacts due to the testing requirement. However, once the program was in place, there was no teasing, use of diet pills, or excessive concerns about weight. While the risks of using BMI assessments in clinical or school-based settings must be recognized, they can be managed. BMI reporting has increased parents' information about their child's health. It has increased awareness of obesity among parents and their children. Linking reports with family strategies and community resources for healthy eating and active living and weight reduction can benefit all members of the family. The long-term data help to understand childhood and adolescent obesity in the state. Data are used to track progress made in combating this epidemic.



Did You Know

- Obesity is projected to be as high as one in three Americans by 2018.²⁸
- Many Colorado health care providers have adopted the “5-2-1-0” daily goals. This recommendation, part of the Colorado Clinical Obesity Prevention Guidelines, encourages 5 fruits and vegetables, no more than 2 hours of screen time, 1 hour of exercise, and 0 sweetened drinks for children and adolescents.³¹
- There are an increasing number of community gardens in Denver (FIGURE 6). Community gardens can promote healthier eating by increased access to fruit and vegetables. In Denver, people who worked in community gardens consumed five fruits and vegetables per day (56%) more than home gardeners (37%) and non-gardeners (25%).³²

MATERNAL, CHILD, AND ADOLESCENT HEALTH

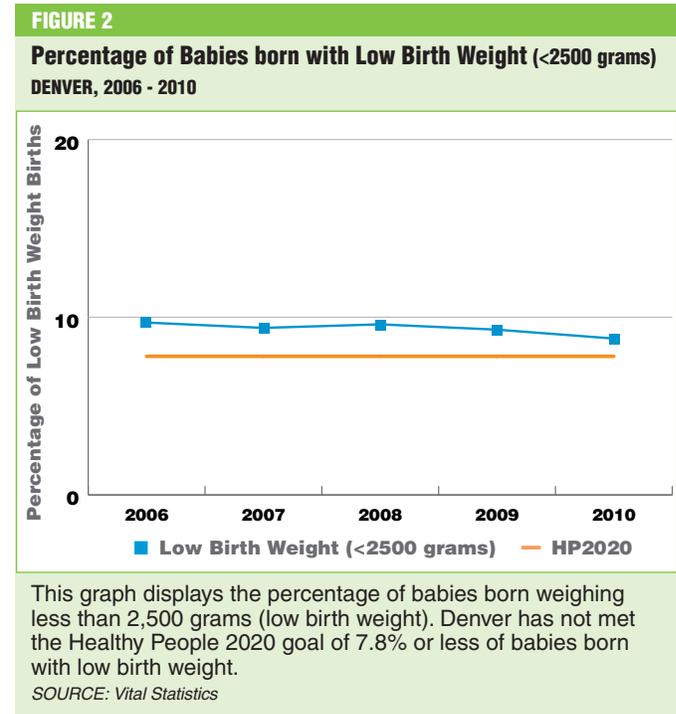
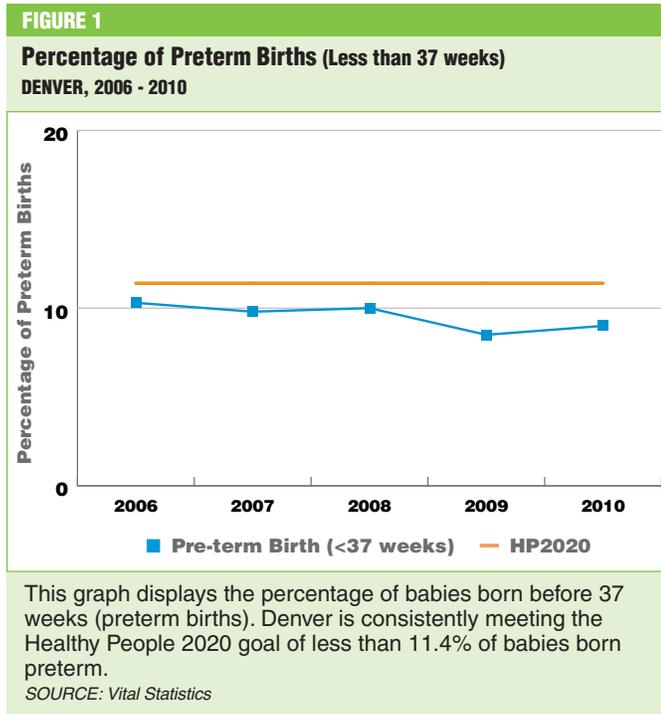
Overview

Biology, behavior, and society are connected to health throughout a person's life. Differences in economic status, behaviors, and social factors can impact health through generations. The health and well being of a mother, from childhood through adult life, directly affects the health and well being of her children.

Maternal, child, and adolescent health programs seek to improve the health of a mother and child throughout their lives. Preconception, pregnancy, early childhood, and adolescence are key development periods. Addressing health issues during these key periods can greatly improve the health of the individual, as well as the community. For example, one of the best things a mother can do for the health of her baby is to breast feed. To improve the health of Denver babies, maternal and child health programs attempt to promote breast feeding, decrease preterm births, and decrease the percentage of low birth weight babies (FIGURES 1 AND 2). Since 2006, Denver has met or exceeded the Healthy People 2020 goals for the percentage of preterm births. Infant deaths from risk factors or other causes are closely monitored and are more common in some areas of Denver (FIGURES 3 AND 4).

Unintended pregnancies and teen births can be risky for mothers and their babies and are common in Denver. Reducing unintended pregnancy and teen pregnancy (ages 15 to 19 years) while supporting teen mothers increases the health of mothers and babies (FIGURES 5 AND 6). Healthy People 2020 sets a goal for 56% of pregnancies to be intended and Denver has consistently exceeded that goal for the past five years (FIGURE 7). In Denver, Hispanic women have the highest rates of teen births and unintended pregnancies (FIGURE 6 AND 8). As a result, there are a number of programs that target this group. The Nurse-Family Partnership (NFP) is a public health program that supports families and reaches a number of Denver's teen moms. The NFP targets younger mothers (average age 17) during their first pregnancy and throughout the first two years of the child's life. NFP provides support and community resources through home visiting. Every NFP dollar invested in home visiting for new moms saves \$5.40.³⁵

continued



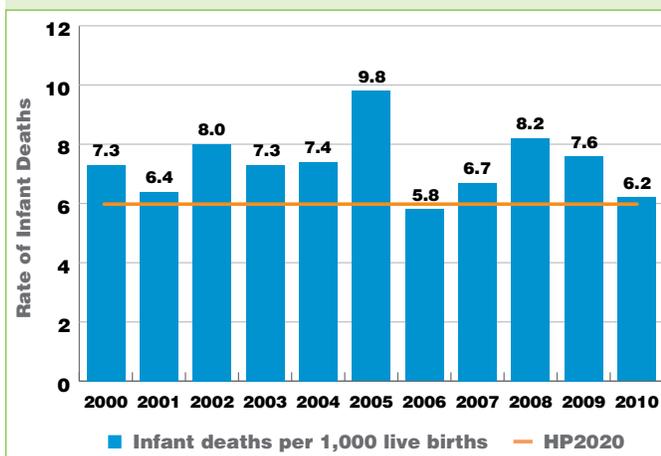
MATERNAL, CHILD, AND ADOLESCENT HEALTH

The health of a mother and father can impact the health of a child. If a mother or father is obese, the child is more likely to be overweight. Mothers who gain too much weight during their pregnancy are at an increased health risk later in life (FIGURE 9). If a child is overweight, she or he is more likely to become an overweight adult. If a child's parent smokes, she or he is more likely to smoke.^{36, 37}

The mental well being of the mother and the father can have a direct impact on the growth and development of the baby. Efforts should include monitoring the mother for pre- and post-partum depression (see *Mental Health*). These can affect the health of the child through adolescence and into adulthood. The health issues of adolescence are covered throughout this report, such as *Injury and Violence, Weight, Substance Abuse, and Tobacco*.

FIGURE 3

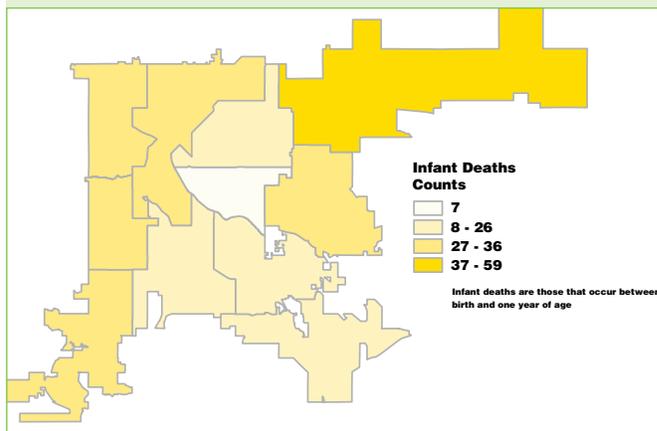
Rate of Infant Deaths (under 1 year) DENVER, 2000 - 2010



Fewer than 100 deaths occur each year in children under one year of age (infants). Since 2000, the rate in Denver has ranged from 5.8 to 9.8 deaths per 1,000 live births. Denver typically does not meet the Healthy People 2020 goal of 6.0 per 1,000 live births
SOURCE: Vital Statistics

FIGURE 4

Infant Deaths DENVER, 2006 - 2010

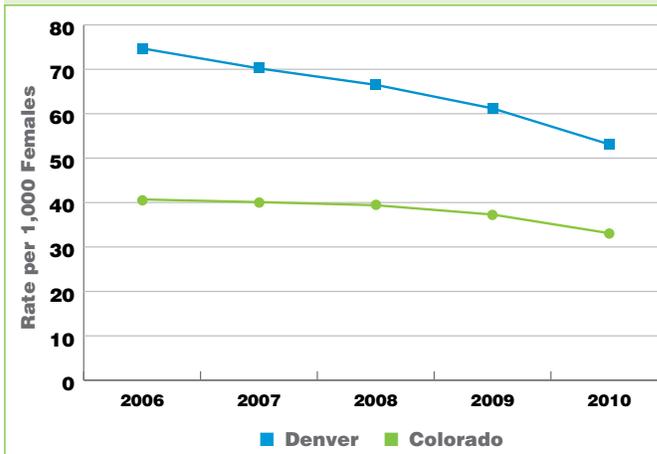


The number of infant deaths rates varies throughout Denver. Highest numbers of infant deaths are seen in the darkest color on this map.

SOURCE: SOURCE: Vital Statistics

FIGURE 5

Birth Rate for Teens (Ages 15-19) DENVER AND COLORADO, 2006 - 2010



Denver has a higher rate of teen births than Colorado. The rate of teen births has been steadily decreasing in Denver and Colorado.

SOURCE: Vital Statistics



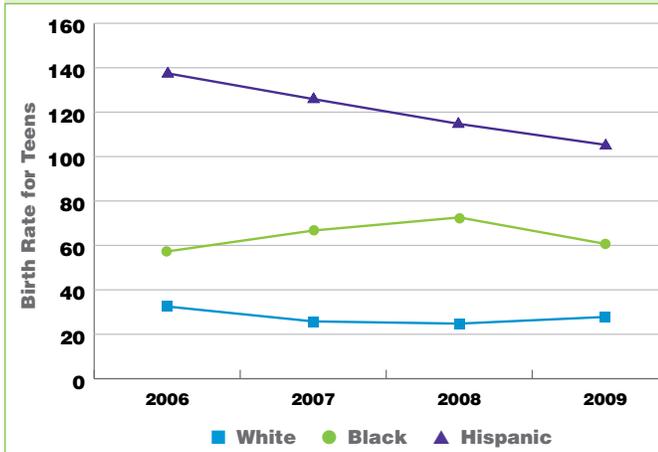
Cost Facts

Each year, almost half of babies born in the U.S. are a result of an unintended pregnancy (FIGURE 7). Having access to effective and affordable birth control may reduce unintended pregnancies. Every \$1 spent to avoid unintended pregnancies saves society \$3.74 in Medicaid costs.³⁹

MATERNAL, CHILD, AND ADOLESCENT HEALTH

FIGURE 6

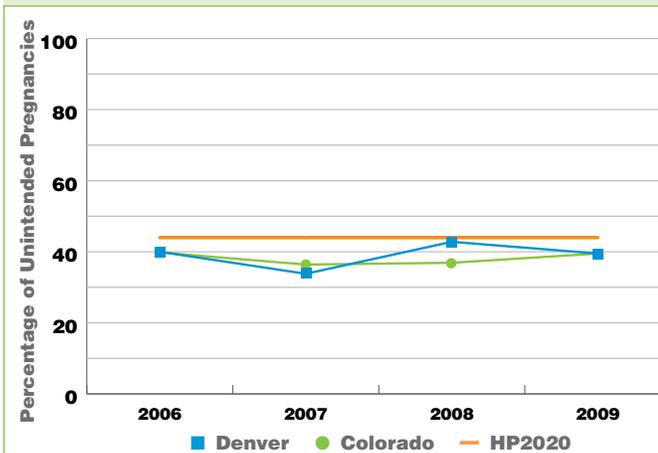
**Birth Rate for Teens (Ages 15-19) by Race and Ethnicity
DENVER, 2006 - 2009**



Teen birth rates vary by race and ethnicity in Denver. The rate among Hispanic teens is significantly higher than any other race and ethnicity, but has been steadily declining from 2006 to 2009.
SOURCE: Vital Statistics

FIGURE 7

**Percentage of Unintended Pregnancies
DENVER AND COLORADO, 2006 - 2009**



From 2006 to 2009, the percentage of unintended pregnancies in Denver was stable and similar to the percentage for Colorado, but above the Healthy People 2020 goal.
SOURCE: Pregnancy Risk Assessment Monitoring System

Local Story

Cavity Free at Three

Tooth decay is one of the most common diseases of childhood and poverty is a risk factor. Among Colorado kindergartners in schools in low income areas, 64% had a history of cavities and 32% had untreated tooth decay. More than half of children ages five to nine have at least one cavity or filling. Less than 5% of Colorado children under three years of age have ever seen a dentist. Cavity Free at Three is a Colorado-based oral health promotion program to prevent cavities for children under three years of age. The program has trained more than 1,150 Colorado child health care providers on how to teach oral health care to parents. At routine child visits, parents receive information about oral health and a toothbrush and toothpaste for the parent and child. To help prevent decay, fluoride treatment is applied to the child's teeth during the visit.

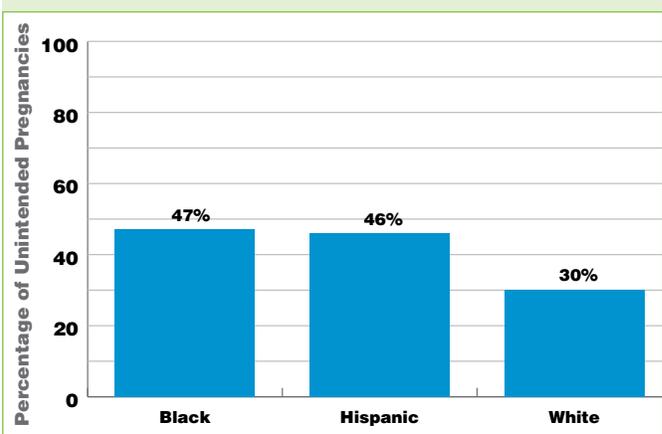
As one mom said, "I had no idea improving my child's teeth could be so easy."⁴⁰



MATERNAL, CHILD, AND ADOLESCENT HEALTH

FIGURE 8

**Percentage of Unintended Pregnancies by Race and Ethnicity
DENVER, 2006 - 2009**

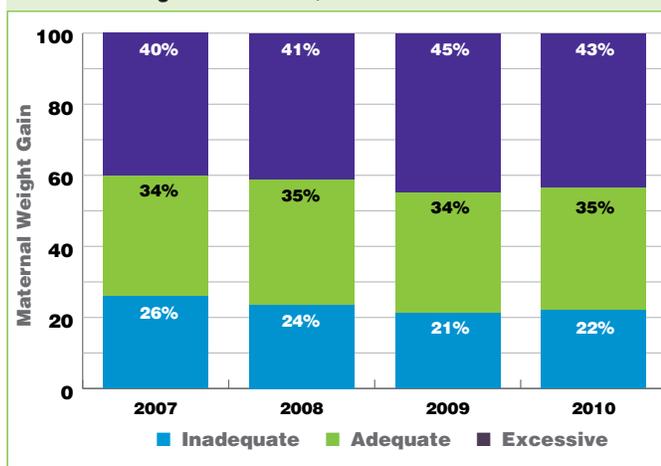


Unintended pregnancy varies by race and ethnicity of the mother. In Denver from 2006 to 2009, the highest percentage of unintended pregnancies was in Black and Hispanic women.
SOURCE: Pregnancy Risk Assessment Monitoring System

MATERNAL, CHILD, AND ADOLESCENT HEALTH

FIGURE 9

Maternal Weight Gain DENVER, 2007 - 2010



During a pregnancy, a physician advises mothers on how much weight gain is healthiest for the mom and baby. This graph shows the percentage of mothers who experience inadequate, adequate, or excessive weight gain during pregnancy in Denver from 2007 to 2010. Only one third of Denver mothers are gaining the recommended amount of weight.

SOURCE: Vital Statistics

Comparison Story

Help Me Grow

Connecting families to parenting resources as early as possible improves a child's health and success in school. Connecticut Help Me Grow is one program that identifies at-risk children and links families to services such as newborn home visits. This is done through a call center supported by Connecticut's departments of Public Health, Developmental Services, Education, and Social Services, and the Connecticut United Way/2-1-1.⁴

In Colorado, a comparable program is being developed. Colorado Help Me Grow (CHMG) will be a full-service parenting advice and resource hotline. It will serve families with children up to age 21. It will be similar to Denver's '311' hotline, which provides a one-call link to all city services. CHMG will connect parents to community-based programs and follow-up to ensure that parents are getting the services they need. Colorado Help Me Grow will greatly benefit the health of Denver families.



Did You Know

- The Denver Preschool Program (DPP), made possible by Denver voters and taxes, is helping families send their children to quality preschool. Nearly 75% of DPP children scored at or above average in reading and math in the spring of their preschool year. Teachers report significantly more positive behaviors and fewer behavioral problems among DPP children.⁴¹
- Last year, 1,757 Denver County children were referred to Denver Options for developmental screening. Half of those children were found to be eligible to receive early intervention services. The estimated government savings for a high-risk child that receives early intervention is \$12,000.⁴²
- A common indicator of poverty in a community is the percentage of school children who qualify for free or reduced price meals at school. In 2010, 73% of Denver Public School students were eligible for a free or reduced price lunch at school. Of these, 33% (279,275 children) were eligible for a free lunch.⁴⁴
- Drinking alcohol during pregnancy puts a baby at risk for permanent physical, mental, behavioral, and learning disabilities. The estimated lifetime cost of caring for a person with Fetal Alcohol Spectrum Disorder (FASD) is more than \$1.4 million.⁴⁵ It is estimated that at least 150 babies were born with FASD in Denver last year.¹⁰
- Colorado law does not mandate health education and there are no mandates for health education in Denver Public Schools. However, as of March 2011, 52% of Colorado schools individually required some type of health education.⁴⁶

IMMUNIZATION

Overview

Vaccines are one of the most cost-effective public health interventions. Vaccines prevent many serious infections and save millions of lives every year.⁴⁷ Over the last four decades, routine childhood immunizations in the U.S. have led to the eradication of polio and smallpox and to dramatic decreases in measles, mumps, rubella, and other infections. In 2008, 79% of Colorado children were fully vaccinated by age three (35 months).⁴⁸ That means that nearly eight out of 10 children in Colorado are protected from 14 infections. Two vaccines—hepatitis B and human papillomavirus vaccines—can also prevent some forms of cancer.⁴⁹

Now that these infections have become rare, parental concern has shifted from preventing disease to vaccine safety. Parents are required to immunize their children for school. However, a small percentage of parents choose not to protect their children with vaccines because of medical, religious, or philosophical reasons. There is evidence to suggest that the number of parents who refuse immunizations has steadily increased over the last decade. A recent Colorado study showed that children who have not received the pertussis vaccine because of parental refusal are 23 times more likely to catch whooping cough.⁴⁷ Unvaccinated children create a risk for outbreaks of vaccine-preventable infections such as hepatitis A and pertussis (FIGURE 1 AND 2).⁴⁷

continued

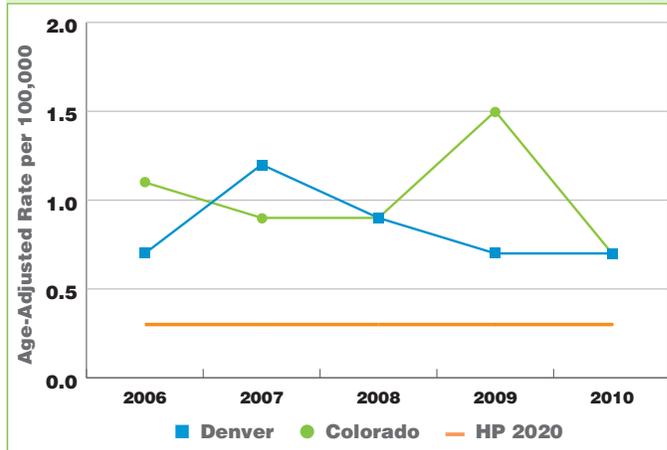
Cost Facts



Each dollar spent on vaccines can save \$10.20 in costs from treating the disease. The average case of whooping cough costs more than \$1,000 to treat compared to the cost of a vaccine, approximately \$50. In Denver in 2010, more than \$50,000 was spent treating the 58 cases that a vaccine could have prevented.^{50, 51}

FIGURE 1

Rate of Hepatitis A DENVER AND COLORADO, 2006 - 2010

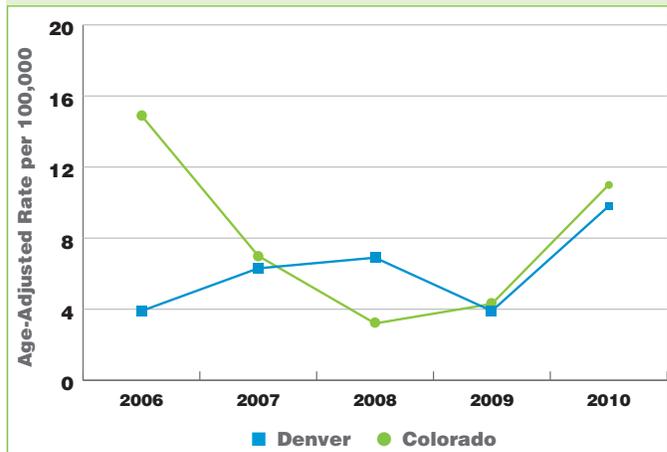


Hepatitis A is a virus spread by contaminated food and is preventable by vaccine. Local rates currently exceed the Healthy People 2020 goal of 0.3 cases per 100,000 people. This graph shows the age-adjusted rates of hepatitis A cases in Denver and Colorado from 2006 to 2010.

SOURCE: Colorado's Electronic Disease Reporting System

FIGURE 2

Rate of Pertussis DENVER AND COLORADO, 2006 - 2010



Pertussis or whooping cough is a serious disease that is common in Denver and in some cases, fatal. This graph shows the age-adjusted rate of pertussis cases in Denver per 100,000 residents from 2006 to 2010.

SOURCE: Colorado's Electronic Disease Reporting System

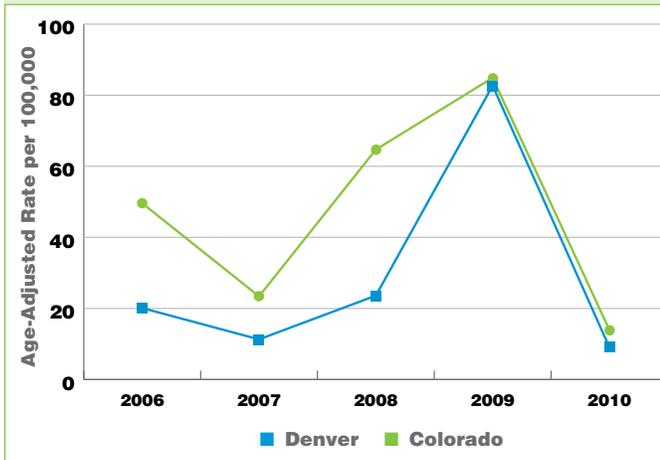
IMMUNIZATION

The more children who are vaccinated, the more diseases can be kept at bay. This is true for adults as well, and is especially important with influenza (flu). Flu is a common cause of serious illness that can lead to hospitalization and death (FIGURE 3). Annual flu vaccines prevent the spread of flu through a community. Vaccinating children and older adults (over 65) can improve the health of the entire population during flu season (FIGURE 4). However, Denver and Colorado have yet to meet the Healthy People 2020 goal of having 90% of seniors vaccinated.

Immunization programs play an important role in delivering vaccines to keep people healthy. Individuals need to be aware of the risks associated with choosing not to vaccinate. Ensuring children and adults are vaccinated is vital to the health of Denver.

FIGURE 3

Hospitalized Influenza Cases DENVER AND COLORADO, 2006 - 2010

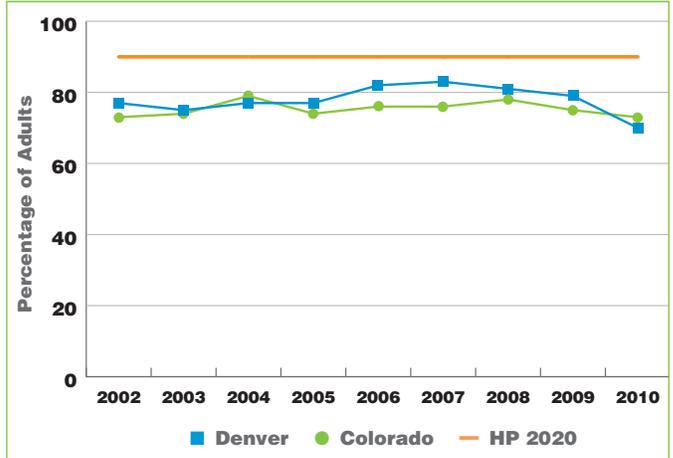


Influenza can cause serious illness among people who are infected. This graph shows the age-adjusted rate of people with influenza who were hospitalized in Denver and Colorado per 100,000 residents.

SOURCE: Colorado's Electronic Disease Reporting System

FIGURE 4

Percentage of Adults 65 and Older Vaccinated Annually Against Influenza DENVER AND COLORADO, 2000 - 2010



Adults over the age of 65 should receive a yearly influenza vaccine due to increased risk of developing complications from the disease. This graph shows the percentage of adults in Denver and Colorado vaccinated against influenza.

SOURCE: Behavioral Risk Factor Surveillance System

Local Story

Protecting Babies from Pertussis

Pertussis, or whooping cough, is a respiratory infection that spreads easily from person to person. A series of vaccine can protect against this disease (DTaP for kids and Tdap for adolescents and adults). Most pertussis deaths (85%) are in babies under three months of age. Babies usually get sick from people they spend time with the most, especially family members. To protect babies, a strategy called 'cocooning' has been supported by the Centers for Disease Control and Prevention (CDC). Parents and family members are vaccinated against pertussis to make a safe environment (cocoon) around the newborn baby. Another strategy for protecting babies from pertussis is to vaccinate the mother during the last few months of pregnancy.

Denver Health is piloting a program that offers pertussis vaccination to mothers before they go home from the hospital with their newborn. Vouchers for low-cost vaccination are provided to fathers and family members of the baby. Siblings of newborns are vaccinated in clinics and schools according to Colorado State Board of Health requirements. These efforts seem to be working: in 2010, Colorado ranked 2nd in the nation for teen Tdap vaccination rates.



Photo courtesy of Denver Zoo

Comparison Story

Vaccinating Health Care Workers Against Flu

One national strategy for reducing the spread of influenza (flu) is to vaccinate all health care staff against flu. Virginia Mason Medical Center (VMMC) in Seattle has required flu vaccinations of all staff for the last six years. Their program is a model endorsed by multiple hospitals in Denver and Colorado. Successful programs, like VMMC's, have activities to build interest in being vaccinated. Activities include mobile carts that bring the vaccine directly to all the hospital's floors and on-line education about flu. Staff who cannot be vaccinated must wear a protective mask during flu season. Thanks to this effort, VMMC is able to achieve a 99% staff vaccination rate through their "Save Lives—Immunize" program.⁵²



Did You Know

- Denver Public Health Department and Tri County Health Department provide vaccines to children through the "Shots For Tots" program. Every month, firefighters and Emergency Medical Technicians at a community center give vaccinations to children, and include a free tour of their fire truck.
- HPV vaccine series can prevent several types of cancer, including cervical cancer.⁴⁹ Denver's In School Immunization Program offers teens vaccines, including HPV, in select Denver middle schools. This protects students and provides an easy way for parents to get their children vaccinated.
- Many physicians do not report vaccines to the state registry. This makes it challenging to know how many children in Denver have received all the vaccines they need and to track the progress of vaccination programs.
- Nearly 90% of parents believe that vaccinations are a good way to protect children from disease. However, more than one-half of parents still have questions about vaccine safety. A Colorado partnership has started the Immunize for Good campaign to provide accurate, up-to-date information about the safety of vaccines.⁵³
- Zoster vaccine (the adult shingles shot) is now a covered benefit of Medicare Part D.⁵⁴
- Measles still occurs in children in the US. Nearly all measles cases in this country are 'imported' from visitors or from travel outside the U.S., making vaccination a key step to keeping children and communities healthy.⁵⁵

Recommended Immunization Schedule for Persons Ages 0 through 6 Years

VACCINE	Birth	1 Month	2 Months	4 Months	6 Months	12 Months	15 Months	18 Months	19-23 Months	2-3 Years	4-6 Years
Hepatitis B	Hep B	Hep B				Hep B					
Rotavirus			RV	RV	RV						
Diphtheria, Tetanus, Pertussis			DTaP	DTaP	DTaP		DTaP				DTaP
Haemophilus Influenzae Type B			Hib	Hib	Hib	Hib					
Pneumococcal			PCV	PCV	PCV	PCV				PPSV	
Inactivated Poliovirus			IPV	IPV		IPV					IPV
Influenza								Influenza (Yearly)			
Measles, Mumps, Rubella						MMR					MMR
Varicella						Varicella					Varicella
Hepatitis A							Hep A (2 doses)			Hep A Series	
Meningococcal										MCV4	

INFECTIOUS DISEASE

Overview

Infectious diseases are caused by viruses, bacteria, fungi and parasites. Some are transmitted from one person to another and called communicable diseases. When passed from person to person, infectious diseases can quickly affect the health of the whole population. Certain diseases must be reported to the health department to ensure the health of the community. Reporting systems collect data to show trends on where and when the disease occurs and helps to detect outbreaks.

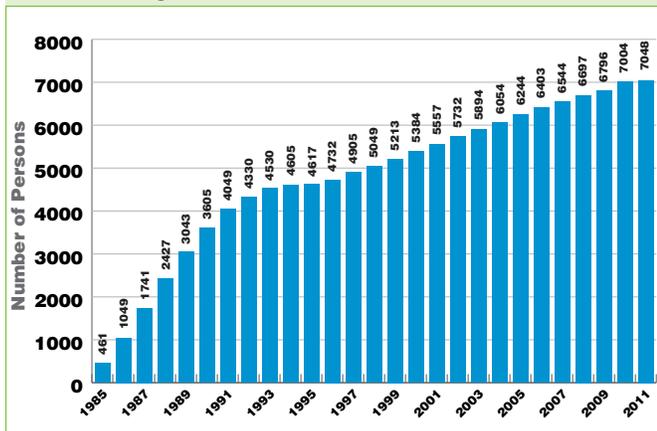
Denver is most impacted by influenza, HIV/AIDS, sexually transmitted infections, tuberculosis, and foodborne diseases. Many diseases that were once common causes of death and disability (polio, measles, and hepatitis A and B) are now preventable by vaccines (See *Immunization*).

Approximately 75% of Colorado’s HIV/AIDS cases are diagnosed in the Denver metropolitan area. There are over 7,000 people living with HIV or AIDS in Denver and new HIV infections occur every year (FIGURE 1). However, the number of newly-diagnosed cases of HIV in Denver has steadily decreased since 2005 (FIGURE 2). This is likely due to enhanced testing, linkage of newly-diagnosed persons to care, and use of effective treatment. Denver’s new HIV infections are concentrated in the central and north parts of the city (FIGURE 3).⁵⁶

Sexually transmitted infections can lead to impaired fertility, poor pregnancy outcomes, the spread of HIV, and cancer of the reproductive organs. Chlamydia has been increasing in Denver, which may be due to increased use of laboratory tests for this infection (FIGURE 4).

FIGURE 1

Persons Living with HIV or AIDS DENVER, 1985 - 2010

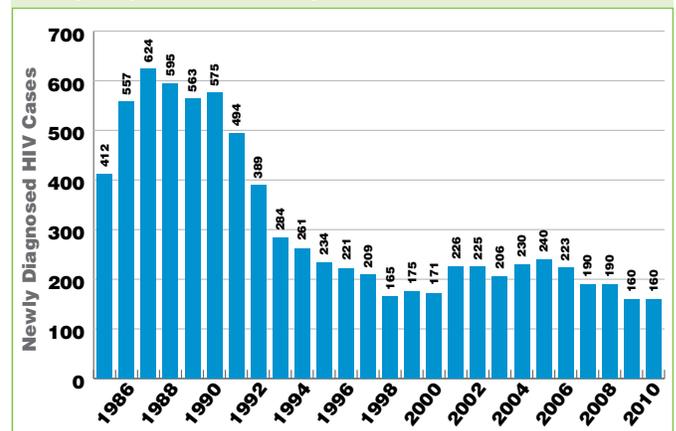


As testing and treatment for HIV/AIDS improves, an increasing number of people are living with AIDS. Death rates from AIDS are declining. In 2010, over 7,000 Denver residents were living with HIV/AIDS.

SOURCE: HIV and AIDS Reporting System

FIGURE 2

Newly Diagnosed HIV Cases per Year DENVER, 1985 - 2010



This graph shows the number of people diagnosed with HIV each year since 1985. HIV is a reportable illness and every new case is tracked by the county and the state. In 2010, 160 people in Denver were diagnosed with HIV, a dramatic reduction since the peak of the epidemic.

SOURCE: HIV and AIDS Reporting System



Cost Facts

Treating one case of active tuberculosis (TB) costs about \$6,000 in the U.S. and the total cost for one person diagnosed with active TB is estimated to be \$376,000. This includes the costs of spreading the disease to others, early death, and disability from lung damage. These costs can be reduced by early diagnosis and treatment of persons infected with TB who are not yet sick (called latent TB). The estimated cost to prevent active TB by treating latent TB is \$14,350. Increased screening, earlier diagnosis, and treatment of latent TB infection could help prevent active TB.⁵⁹

INFECTIOUS DISEASE

Tuberculosis is spread through the air from infected persons and can be fatal if not treated. Tuberculosis is decreasing in Denver, but remains above the Healthy People 2020 goal. Approximately 75% of cases diagnosed in Colorado are in the Denver metropolitan area (FIGURE 5).⁵⁷ Tuberculosis treatment takes at least six months and is most effective when the full course is completed. Tuberculosis is much more common among persons born outside of the United States (FIGURE 6).

Each year 48 million illnesses, 128,000 hospitalizations, and 3,000 deaths in the U.S. can be traced to foodborne disease (FIGURE 7).⁵⁸ In Denver, rates of foodborne disease are higher than the goal for the country. Foodborne diseases may affect large groups, can spread rapidly, and can be fatal. Even though the U.S. food supply is one of the safest in the world, organisms in the environment and those occurring naturally in food can cause problems with the food we eat. Recently an outbreak of Listeria, a bacteria found in the environment, was traced back to tainted food. Foodborne disease costs Americans billions of dollars each year and serves as a constant challenge for consumers, researchers, government, and industry.⁵⁸

Local Story

Linking HIV/AIDS Patients to Care

Andrew, a 28-year-old man, tested positive for HIV infection at Denver Public Health. He was introduced to a Linkage to Care counselor who scheduled his first doctor visit, offered emotional support, and gave him a free test to assess his health. Linkage to Care is the process that connects a person who tests positive for HIV or AIDS to support and medical treatment. The counselor listened to Andrew's fears and concerns about disclosing his status, long-term health, and access to health care. Andrew learned about his lab results and talked about the importance of regular care with his new clinician. Andrew also learned about the importance of not spreading this infection to others. After his session, the counselor took Andrew to the HIV Clinic where his health care and treatment began.

Without health insurance, many patients like Andrew would be worried about health care costs. Having a counselor increases the percentage of patients who return for regular health care. The counselor reviewed options and Andrew found out that he could afford health care and HIV medications. Denver Public Health provides this linkage service for any person who tests positive for HIV.

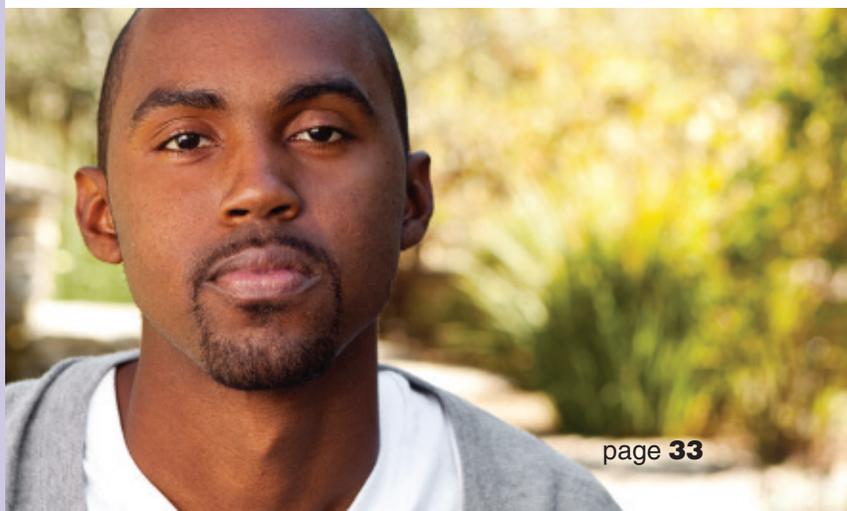
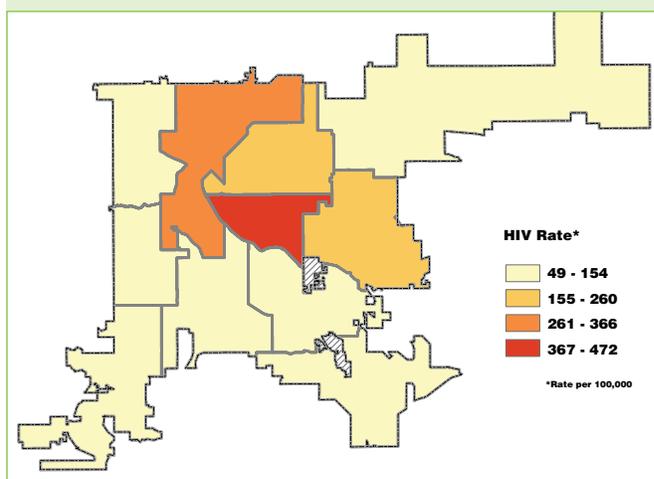
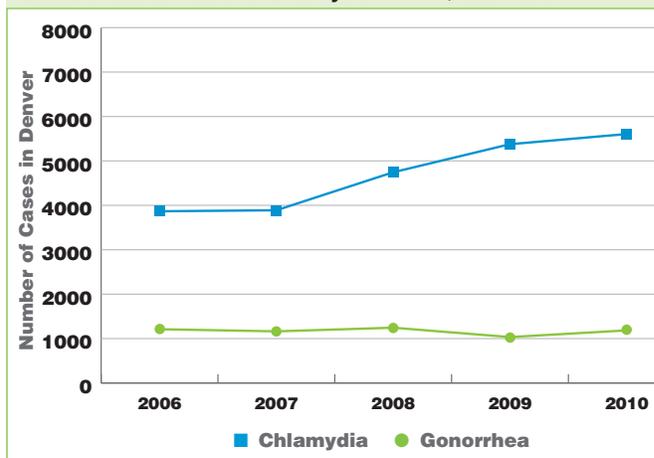


FIGURE 3
HIV Rate DENVER, 2006 - 2010



This map shows the rate of new HIV diagnoses from 2006 to 2010 per 100,000 people for each council district.
SOURCE: HIV and AIDS Reporting System

FIGURE 4
Cases of Gonorrhea and Chlamydia DENVER, 2006 - 2010

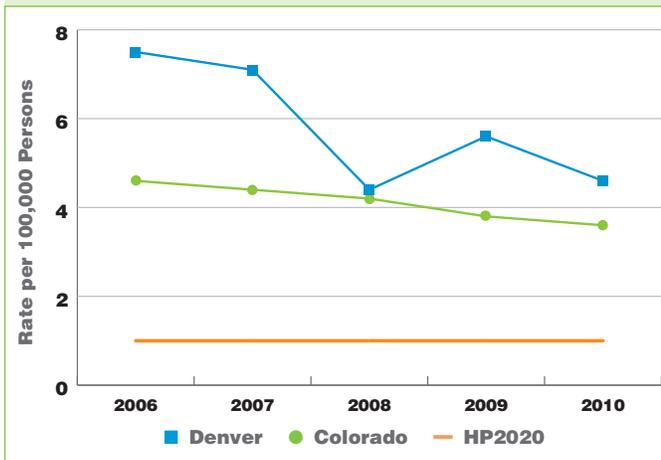


This graph shows the number of cases of Gonorrhea and Chlamydia diagnosed between 2006 and 2010. Chlamydia rates have been steadily increasing for the past several years, possibly due to increased testing.
SOURCE: Patient Reporting, Investigation and Surveillance Manager

INFECTIOUS DISEASE

FIGURE 5

**Rate of Active Tuberculosis (TB) Cases
DENVER AND COLORADO, 2006 - 2010**

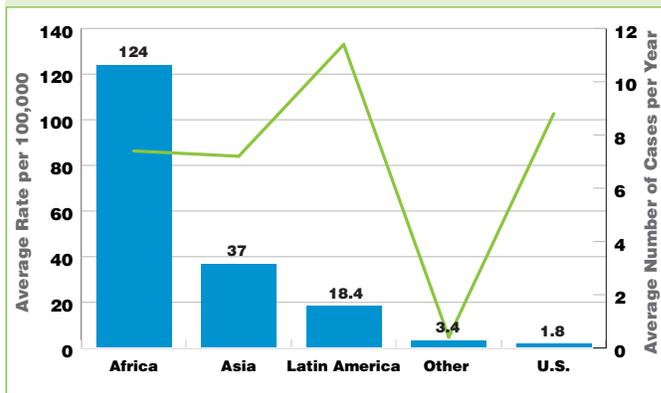


The TB case rate in Denver is higher than Colorado's and above the Healthy People 2020 goal of 1.0 cases per 100,000 population.

SOURCE: Denver Metro TB Program

FIGURE 6

**Average Annual Rate of Active Tuberculosis (TB) Cases by
Region of Birth DENVER, 2006 - 2010**



In Denver, individuals born in Africa had tuberculosis (TB) case rates 69 times greater than U.S.-born residents. Rates of individuals from Asia were 20 times higher and Latin America were 10 times higher than U.S.-born residents. Although the rate is highest in African-born individuals, more people are diagnosed annually from Latin America and the U.S.

SOURCE: Denver Metro TB Program, American Community Survey

Comparison Story

Bringing Awareness to Hepatitis C Virus (HCV)—the Hidden Epidemic

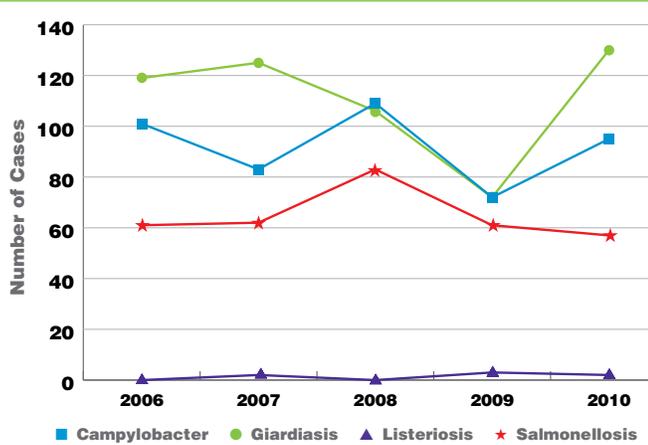
Hepatitis C Virus (HCV) is spread by contact with blood from an infected person or through sexual intercourse.⁶⁰ In the U.S., 3.2 million people are chronically infected with Hepatitis C Virus (HCV), making it the most common chronic viral infection in the country. Many people with chronic HCV do not know they are infected and may have no symptoms and could spread it to others. The most common risk factor for HCV infection in recent years is sharing needles or other equipment to inject drugs. Persons infected with HIV are at an increased risk for HCV infection also. Approximately 20% of the persons with HIV infection in Denver also have HCV. Long-term complications of HCV include liver scarring (cirrhosis) in about 20% of infected people, and liver cancer.⁶⁰

Tune Into Hep C (www.tuneintohepc.com) is a national campaign to increase awareness of HCV and encourage people to talk to their doctor and get tested. Musicians affected by HCV are speaking out to start a conversation between people and their doctors about HCV across the nation. HCV testing is important because HCV can be cured through long-term treatment (3-12 months).⁶⁰ Denver Public Health is piloting a new rapid screening test, recently approved by the FDA, that provides results within 20 minutes. This new test will increase identification and treatment of Hepatitis C.

INFECTIOUS DISEASE

FIGURE 7

Reported Cases of Foodborne and Waterborne Illness
DENVER, 2006 - 2010



Many foodborne diseases are reported and tracked by the county health department. The number of annual cases for four common foodborne illnesses are shown in this chart. Although Listeria was in the news in 2011, it causes less disease than other foodborne bacteria.

SOURCE: Colorado Electronic Disease Registry System



Did You Know

- Most foodborne illnesses go undiagnosed and are not reported to health departments. The Centers for Disease Control (CDC) estimates that 9.4 million illnesses are caused by 31 known foodborne pathogens.⁵⁸
- Newer blood tests exist to find out if someone has been infected with tuberculosis (TB). Treatment is available to prevent them from getting sick with active TB and spreading it to friends and family.⁶¹
- The best defense against cold and flu is good old-fashioned hand washing. Wash hands for approximately 20 seconds (long enough to sing “Happy Birthday” twice through!). If soap and water is not available, use an alcohol-based hand sanitizer.
- Listeria is a foodborne illness and Denver reported no cases in 2006 and 2008. A total of nine cases have been reported in Denver for 2011; six were associated with the multi-state outbreak linked to eating cantaloupe.⁶²
- There are 18 infectious diseases that can be prevented by vaccination (see *Immunizations*).



ENVIRONMENTAL QUALITY

Overview

Public and personal health is directly related to where we live, work, and play. The quality of our environment has a direct influence on human health and disease. The goal of environmental health is to assess, correct, control, and prevent environmental issues that may negatively affect the health of present and future generations.

This report focuses on air quality, water quality (recreational and drinking), food (see *Communicable Disease*), and contact with chemicals. By focusing on these issues, many preventable illnesses caused by environmental factors can be avoided. Other long-term issues include global climate change, preservation of habitats, and overall sustainability. All of these could have large impacts on our environmental health over time.

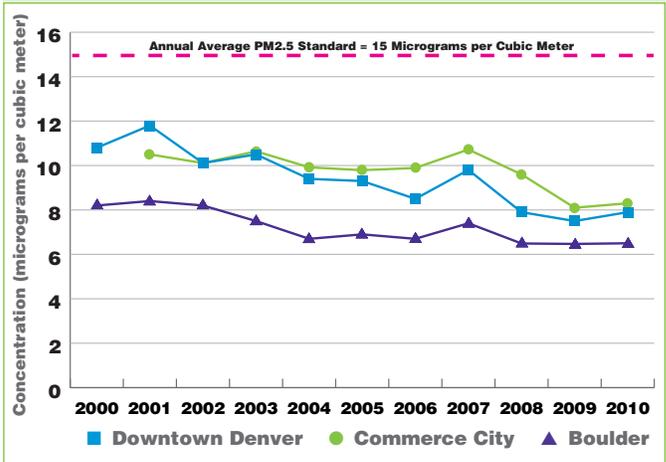
Air Quality

Air quality measures include ozone (a gas) and fine particulate matter (small particles). These contribute to respiratory illness, cardiovascular disease, and other diseases. Air pollution comes from a variety of sources. Stationary sources include factories, power plants, refineries, and dry cleaners. Mobile sources include cars, buses, planes, trucks, and trains. Other naturally occurring sources are windblown dust and wildland fires. Since 2005, Denver has actively attempted to reduce carbon dioxide emissions and the effects of climate change.⁶³

Air pollution in the Denver metropolitan area is both a local and regional issue. Pollutants emitted in one location impact air quality near the source as well as many miles downwind. The Denver metropolitan area is classified as not having met the standards for ozone levels. Ambient air quality standards (AAQS) define clean air and are established to protect even the most sensitive individuals in Denver communities (FIGURES 1 AND 2). In Denver, air pollution from motor vehicles is the main source of ambient air exposures. Many recent studies link proximity to high traffic roads with adverse health effects in children and adults.⁶⁴

FIGURE 1

Fine Particulate Matter (PM2.5) Trends METRO DENVER, 2000 - 2010

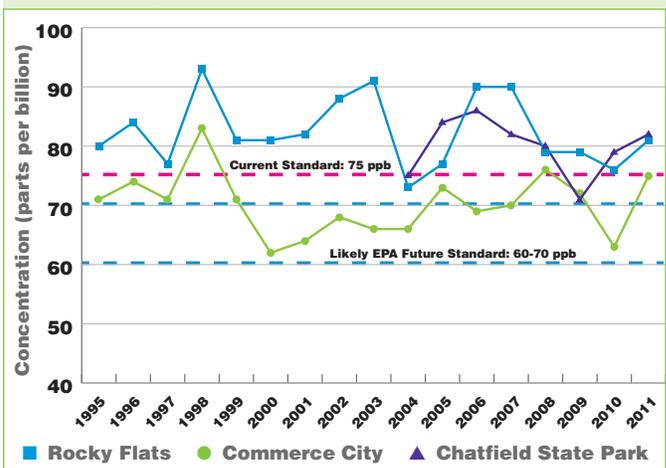


Fine particulate matter (particulate matter sized 2.5 micrometers or less [PM2.5]) levels have declined in Denver over the past decade. Pollution controls on cars, trucks, buses and power plants as well as cleaner fuels have helped reduce these levels.

SOURCE: Air Pollution Control Division's Technical Services Program, Colorado Department of Public Health and Environment

FIGURE 2

8-Hour Average Ozone Trends METRO DENVER, 1995 - 2011



This graph shows the metro Denver 8-hour average ozone trends at select sites. Reductions in ground level ozone have been difficult. Current efforts focus on reducing ozone-forming chemical emissions.

SOURCE: Air Pollution Control Division's Technical Services Program, Colorado Department of Public Health and Environment



Cost Facts

Emissions control programs focus on air pollution from factories and cars. These programs already provide air quality and health benefits. These benefits will grow over time as programs take their full effect. In 2020, the Clean Air Act Amendments are projected to prevent 230,000 early deaths. Over \$2 trillion of economic benefits will be gained from reduced premature deaths associated with air pollution.⁶⁷

ENVIRONMENTAL QUALITY

Water Quality

Water can expose people to illness by viruses, bacteria, or parasites. Water also may contain other chemicals or metals. Waterborne illnesses range from mild gastroenteritis to life-threatening disease. Illnesses caused by water are often under-reported due to lack of awareness. Local health departments work to educate their residents on ways to prevent such illnesses.

Local water bodies, like the South Platte River, are used by the public as recreational gathering places. Denver Environmental Health tracks the levels of *E. coli* bacteria in the water to protect recreational users (FIGURE 3).⁶⁵ *E. coli* is a large and diverse group of bacteria. Most strains of *E. coli* are harmless, but others can make people sick. Often, *E. coli* is used to determine if water is safe for drinking or swimming and whether other pollutants are present.

Healthy Homes and Lead Exposure

Housing conditions may also affect health. There are an estimated six million substandard housing units nationwide.¹⁴⁰ Health and safety concerns are related to substandard housing. Families may be exposed to lead, allergens, carbon monoxide, mold, pesticides, and radon. As with other health issues, some populations are disproportionately affected by health and housing concerns.

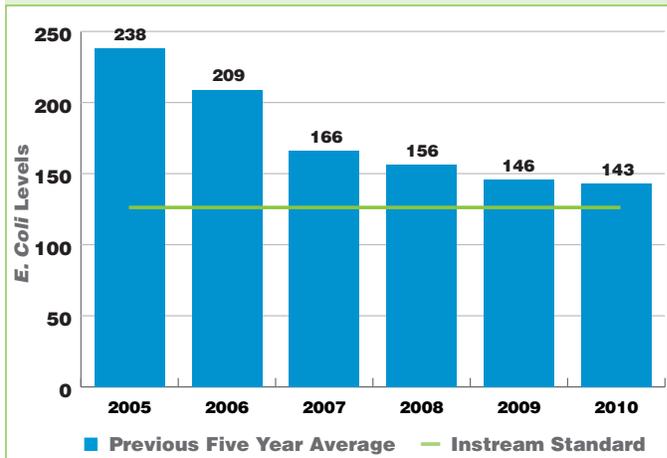
Deteriorating and chipping lead-based paint is often seen in older and less maintained houses. This is a common source of childhood lead exposure in Denver, as in many older cities. Health effects from lead exposure are a special concern for children under six years of age. The Centers for Disease Control and Prevention (CDC) has set a level of lead found in blood that is concerning, but has said there may be no 'safe' level.⁶⁶

Thus, preventing exposure is essential. Children from low income families, children of color, and those living in older housing are disproportionately affected by lead poisoning in the U.S. The map shows locations of Denver children with a blood lead test result greater than or equal to 5ug/dL (micrograms per deciliter) (FIGURE 4).



FIGURE 3

E. Coli Levels in the South Platte River DENVER, 2005 - 2010



During the summer, when recreational water use is greatest, river water samples are tested for *E. coli* bacteria every week. When *E. coli* levels are high, the City posts advisories at popular recreation spots to protect the health of users. While the mean levels (each averaged over 5 years) have dropped, additional progress must be made to achieve the stream standard.

SOURCE: Denver Department of Environmental Health

Local Story

Improving Water Quality in the South Platte River

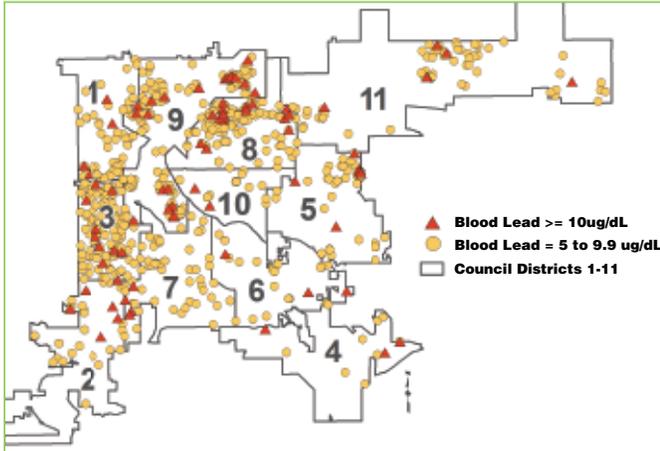
The South Platte River is a site that attracts recreational users, especially during the summer months. Multiple City and County of Denver agencies (Environmental Health, Public Works, and Parks and Recreation) are committed to improving water quality in Denver's

streams. These agencies focus on investigating, cleaning, and repairing nine priority storm sewer drainage basins. Discharging into the South Platte River, these basins contribute to pollution in the City's streams. Several basins have already shown marked improvement from these efforts.

ENVIRONMENTAL QUALITY

FIGURE 4

**Blood Lead Levels Children with a Result \geq 5ug/dL
DENVER, 2008 - 2010**



From 2008 to 2010, approximately 110 Denver children were reported as having blood lead levels of 10ug/dL or higher (the CDC level of concern). After testing, nearly 7% had elevated blood lead levels of 5ug/dL or greater.*Note: this map shows only individuals with levels of 5 ug/dL and above; testing is not done uniformly across Denver.

SOURCE: Environment Public Health Tracking Program, Colorado Department of Public Health and Environment

Comparison Story

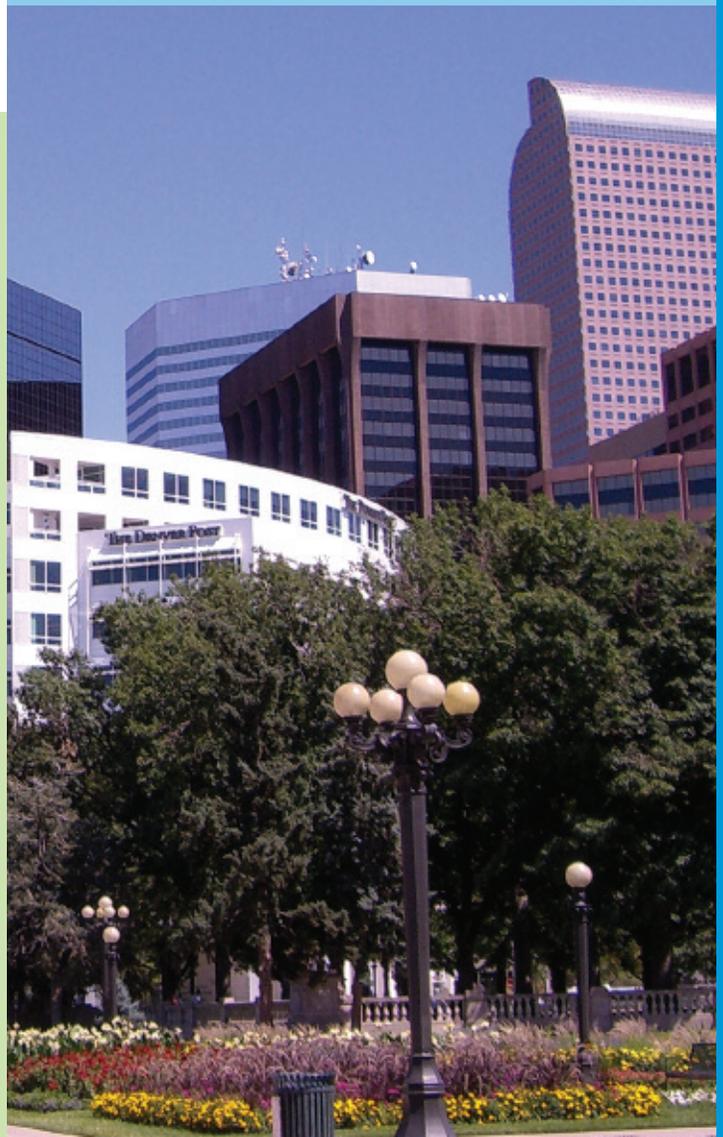
Increasing the Efficiency of Buildings

Several U.S. cities have implemented energy conservation ordinances for residential or commercial buildings. This includes San Francisco, CA; Berkeley, CA; Boulder, CO; Burlington, VT; and New York, NY.⁶⁸ The goal is to increase the energy and water efficiency in buildings when they are sold or undergoing major remodeling. For example, an energy conservation code might require upgraded ceiling insulation, sealed and insulated furnace ducts, insulated water heaters and hot water pipes, weather sealing around exterior doors, and improved lighting and water efficiency. The ordinances typically contain a spending cap that is set as a percentage of the sales price or renovation. The costs of the energy upgrades are recovered by savings on utility bills. In Denver, much of the building inventory is over 30 years old. An energy conservation ordinance is one way to meet long-term energy and emissions goals.



Did You Know

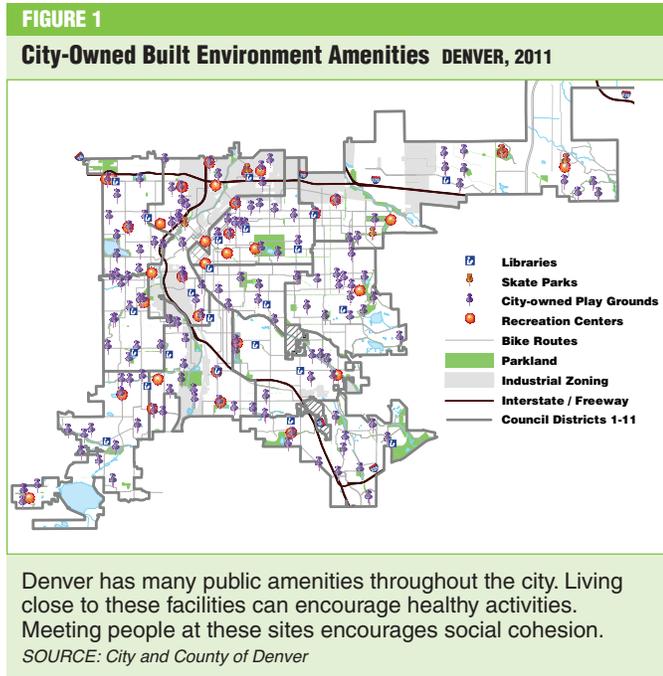
- In a 2009-2010 survey, 8.5% of Denver County residents reported themselves as having asthma, up from 6.5% in 2007-2008.¹³
- Denver is an area of high risk for radon exposure. In a limited sample of Denver, this cancer-causing radioactive gas was found above EPA's action level (4 picocuries/L) in 44% of homes.⁶⁹
- Denver's Department of Environmental Health (DEH) has been collecting surface water and sediment samples from the streams and lakes in Denver for more than 40 years.
- Denver is an active partner in the Green and Healthy Homes Initiative, a collaborative effort designed to help make homes healthy, safe, and sustainable.⁷⁰



BUILT ENVIRONMENT

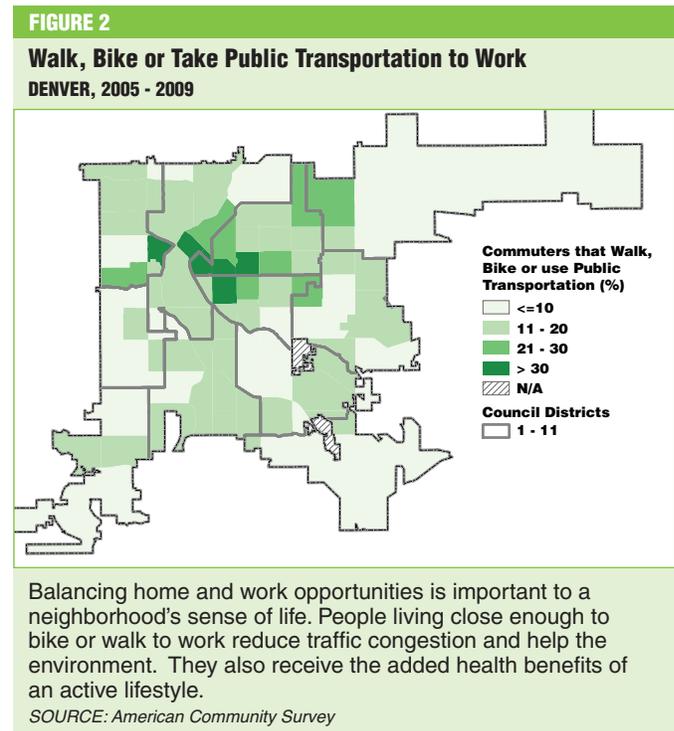
Overview

The built environment connects people with their community. Better community resources typically lead to a healthier lifestyle (FIGURE 1). Factors that affect how favorable a public area is for people to visit, play, or exercise include sidewalk quality, street safety, crime risk perception, and physical barriers like highways. The built environment includes many concepts: land use, public amenities, crime, transportation, and social cohesion. Each of these components can alter a person's relationship with the local environment and affect overall health.



Active living and built environment factors vary across Denver and are best evaluated at a local scale. For example, while some areas provide easy walking access to a grocery store, other areas require a vehicle to reach healthy food options. The environment influences whether a person walks, bikes, or takes public transportation to work (FIGURE 2). Unfortunately, in Denver there are few data to be able to effectively evaluate the built environment at the local scale. Furthermore, concepts such as social cohesion or the perception of safety are abstract and difficult to measure. The built environment does not affect all individuals in the same way. What may feel walkable to one person may be out of reach for another (FIGURE 3). Perceptions of safe and unsafe areas can vary greatly. The perception of an unsafe environment may prevent healthy behaviors (FIGURE 4). Perception is as important as reality (FIGURE 5).

continued



Cost Facts

Denver budgeted \$1.37 million for graffiti vandalism in 2010. By November, Public Works crews removed 4,594,500 square feet of graffiti. That was up 25% over the prior year.⁷⁴ The most heavily tagged areas in Denver were to the west (FIGURE 4). In particular, graffiti was heaviest in the areas from West Colfax to West Alameda Avenues, and Federal to Sheridan Boulevards. To help businesses and residents, Denver offers free graffiti removal assistance and free graffiti removal supplies.

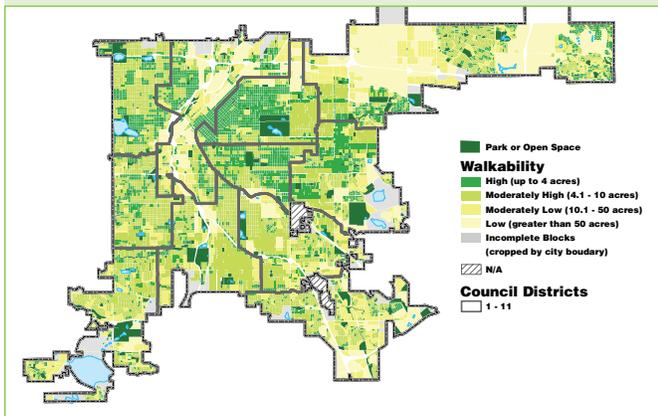
BUILT ENVIRONMENT

This section describes these concepts and shows differences among Denver communities. Local planning directly affects infrastructure, recreation opportunities, and business development. New policies focused on improving the built environment can greatly improve the health of a community.

In Denver, there are many positive characteristics related to the built environment. About 79% of residents in Denver live within half a mile walking distance of a park (FIGURE 6).⁷¹ Nearly 75% of children live within half a mile of a city-owned playground.⁷² The quality of a park is important, too (FIGURE 7). In 2006, Axum Park in northeast Park Hill was an underutilized park and the community pushed for renovations. A bond project allowed for more lighting, landscape changes, and paths that have created a vibrant community area that deters illicit activities. Due to the renovation, use of Axum Park by residents increased by a factor of five times.⁷³ With more recreation options, Denver residents can live healthier lives.

NOTE: For specific information regarding access to healthy foods and exercise habits, please see the Weight section.

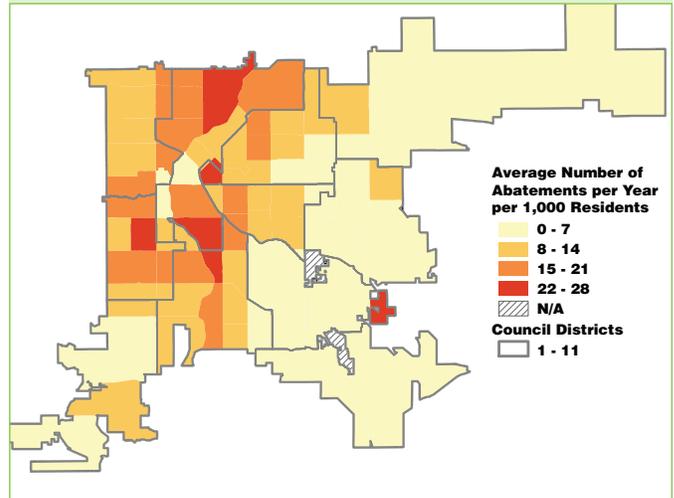
FIGURE 3
Walkability Measure Using City Block Size DENVER, 2009



Walking from your home to the neighborhood store or park promotes active living and reduces vehicle dependence. People living in poverty as well as younger and older people often do not drive a car. Walkability depends on several factors including safety, living near retail destinations, adequate sidewalks, and ambiance. Small block sizes are often associated with pedestrian-friendly areas. On the map above, areas in green are more walkable.

SOURCE: City and County of Denver's Community Planning and Development

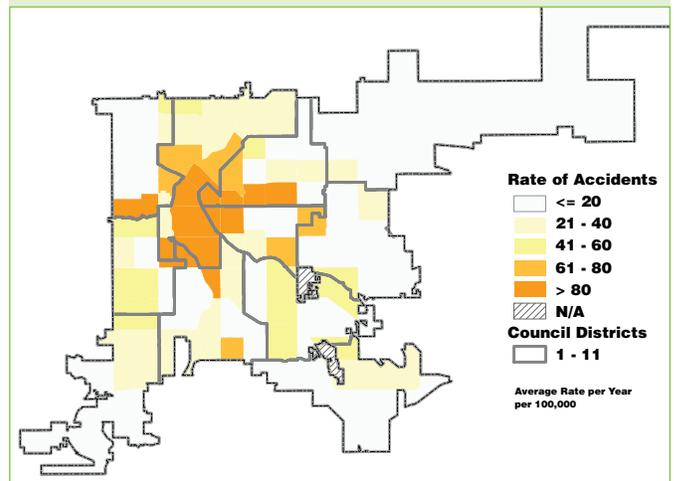
FIGURE 4
Graffiti Abatements DENVER, 2006 - 2010



Areas of high graffiti may have higher rates of criminal activity, or just be perceived to have higher crime rates. Graffiti can decrease the beauty of the neighborhood. Policies supporting local art and mural projects are a way to deter graffiti, improve social cohesion, and increase the beauty of an area.

SOURCE: City and County of Denver's Public Works Department, 2010 U.S. Census

FIGURE 5
Non-Fatal Pedestrian Accidents with Injuries DENVER, 2005 - 2010



The Healthy People 2020 target for pedestrian injuries on public roadways is no more than 20.3 per 100,000 people. Denver as a whole, and most council districts within Denver, are above that level. Some districts may have higher rates because there is a large daytime population in a business area. The yellow areas on the map are all above the Healthy People 2020 target.

SOURCE: City and County of Denver Public Works Department

BUILT ENVIRONMENT

Local Story

The Bike Depot in Park Hill

Established in 2008 through LiveWell Colorado's Park Hill Thriving Communities Program, the Bike Depot is a non-profit community bike shop located in Denver's Park Hill neighborhood. This organization allows any individual to earn a bike by taking bicycle safety and bike maintenance classes from volunteer mechanics.⁷⁵



The Bike Depot is an outstanding example of how community-based organizations work with residents in a fun environment that promotes active living. This non-profit increases access to bicycles, promotes safe, bike-friendly environments, and advocates for policies that promote bicycle access and use.

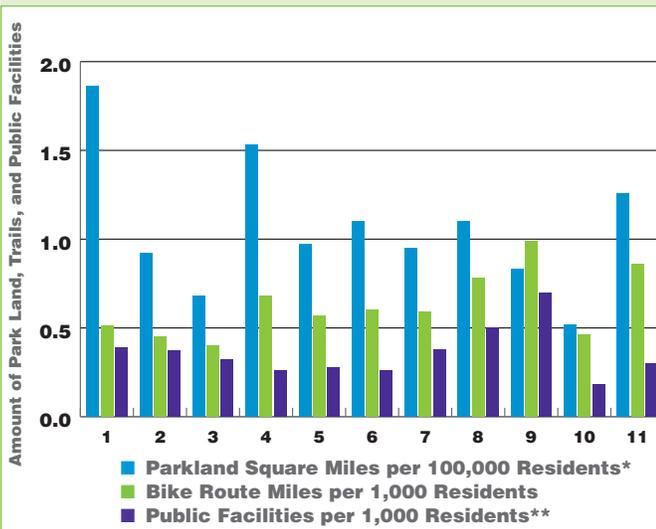
Not only does the Bike Depot envision a place where everyone has a bicycle, they envision a place where the built environment allows for safe bicycle riding and encourages better health for Denver residents. Their hard work has paid off. In 2011, between January and November:

- 496 people earned a bike
- 2,127 people participated in the Fix Your Bike program
- 313 people participated in various classes offered by the Bike Depot⁷⁵

These numbers have exceeded the Bike Depot's original goals for 2011!

FIGURE 6

Parkland, Trails, and Public Facilities by Council District
DENVER, 2011



The amount of parkland, bike trails, and public facilities varies by council district.

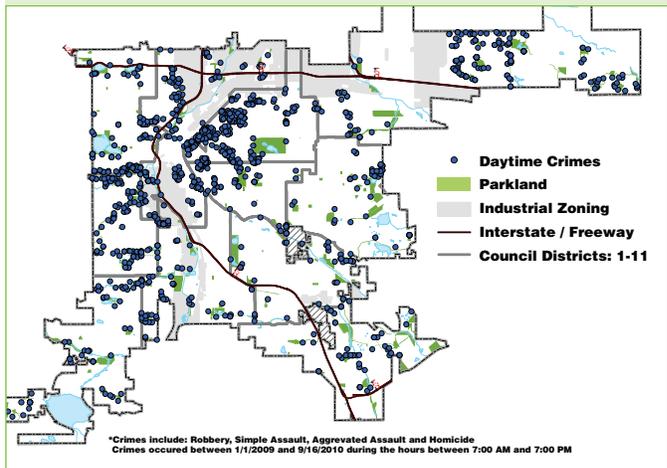
* Parklands represented in this analysis excludes fee-based facilities such as golf courses and the Botanic Gardens. In addition, ornamental and conservation lands managed by Denver Parks and Recreation such as parkways, medians, and river corridors were also excluded from this analysis.

** Public Facilities include Recreation Centers, Libraries, Play Grounds, and Skate Parks

SOURCE: City and County of Denver Parks and Recreation Department and Public Works

FIGURE 7

Daytime Crimes Against People within one-tenth of a Mile of Parkland Areas



Crime or the perception of crime, may deter people from engaging in outdoor activity. It is important to note that some areas may be more likely to report crimes than others. There is no simple solution to this issue. Encouraging more people to use an area may allow individuals to feel safer in numbers. Potential built environment solutions such as improved lighting or park amenities may encourage use.

SOURCE: Denver Police Department

BUILT ENVIRONMENT

Comparison Story

Using Streets to Improve Health

Multiple use streets allow for more physical activity and increased social connectedness. In urban environments, streets are a major part of the built environment. Streets designed for motor vehicle traffic can convert into other uses to build new active living spaces. In New York, one neighborhood temporarily converted a street to a Play Street during the summer months. The Play Street was closed to cars and provided children with a fun, safe place to play.⁷⁶

Closer to home, Colorado Springs officials put many of their city's roads on a "diet." On streets where there is excess capacity, the city uses the annual street resurfacing program to re-stripe existing roadways. Roads that were once four lanes were reduced to three to help create more pedestrian and bicycle-friendly streets.⁷⁴

Both of these examples show that multiple use streets allow for more physical activity and increase social interactions.



Did You Know



- Denver's bicycle commuting increased from 1.8% in 2009 to 2.2% in 2010. This is four times the national average and places Denver 6th out of 43 cities with populations above 400,000.⁷⁷
- Walking, using mass transit, or biking makes financial sense. In 2010, it cost on average \$8,588 to own and operate a new passenger car driven 15,000 miles per year.⁷⁸
- Out of the top 100 most populated cities, Denver ranks 34th in the number of city-owned parks per resident with 2.4 parks per 10,000 residents.⁷⁹
- Denver Moves is a plan for developing and improving the city's bike and pedestrian paths and infrastructure. The plan is to create safe, comfortable corridors that link neighborhoods, parks, employment centers, business districts, transit hubs, and other destinations in all parts of Denver.⁸⁰

INJURY AND VIOLENCE

Overview

Injuries take a huge toll on individuals, families and communities. The price is paid on many levels: pain, loss of income, health care costs, grief, and death. The good news is that many injuries are preventable. In Denver, deaths from injury have decreased, but are still but do not meet the Healthy People 2020 goal (FIGURE 1).

Intentional injuries result from purposeful acts, including physical assault, sexual assault, homicide, and suicide. Deaths from homicide have decreased in Denver (FIGURE 2). However, suicide remains a major public health problem. During 2010, suicide was the eighth leading cause of death in Denver and accounted for one in three injury deaths. Suicide attempts account for one in ten hospitalizations for injury.²³ More people die from suicide than from motor vehicle accidents (see *Mental Health* section for additional information on suicide).² Denver is also affected by assaults, the rate of which varies by location (FIGURE 3). In Colorado, assaults and violent acts are the second leading cause of work-related deaths.⁸² More than one in twenty injury hospitalizations in Denver are due to assaults. Sexual assault and bullying often go unreported. It is estimated that only one in six women in Colorado who are victims of a sexual assault reported it to law enforcement. Approximately two in three sexual assaults are committed by someone known by the victim.⁸¹ Violence reduces productivity, decreases property values, and disrupts services.

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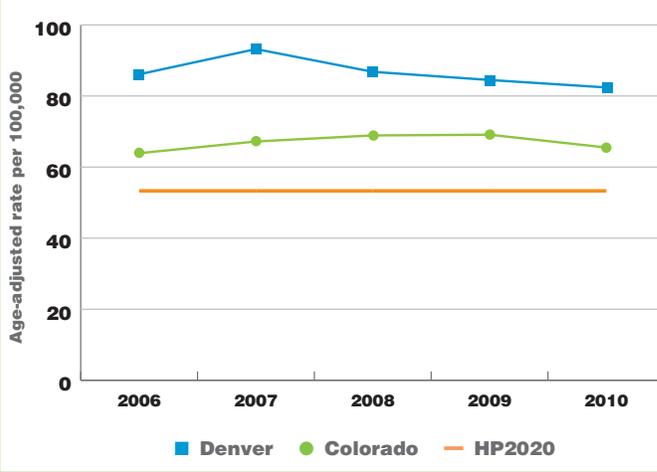


Cost Facts

In 2010, 1,008 adults aged 65 and older were admitted to the hospital for falls in Denver. Accidental falls are the leading cause of injury hospitalizations in Colorado for older adults. The average length of a hospital stay was almost five days, with an average cost of \$25,976.⁸⁶ This was for hospital-related expenses only and did not include expenses such as doctor's fees, home health care, and rehabilitation. Prevention is important in reducing these costs. This includes vision checks, exercises to improve balance, and home safety.

FIGURE 1

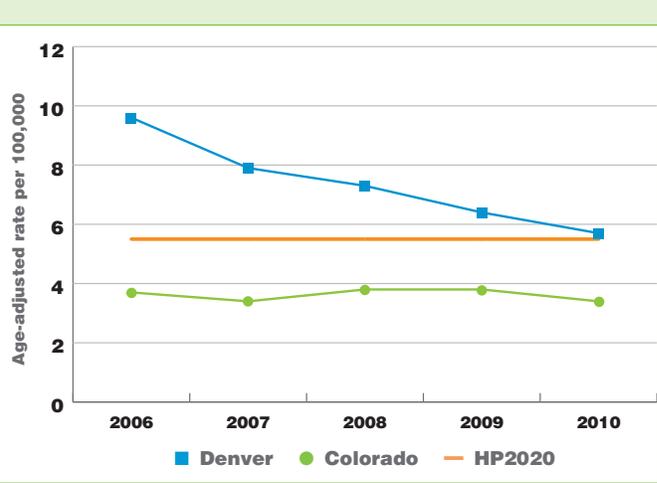
Injury Deaths DENVER AND COLORADO, 2006 - 2010



Injury deaths in Denver have decreased, but do not meet the Healthy People 2020 goal. The rate of injury deaths in Denver is higher than that of Colorado.
 SOURCE: Vital Statistics

FIGURE 2

Deaths Due to Homicide DENVER AND COLORADO, 2006 - 2009



The rate of homicides in Denver has decreased substantially. In 2010, the rate was 5.7 per 100,000, close to the Healthy People 2020 goal of 5.5 per 100,000.
 SOURCE: Vital Statistics

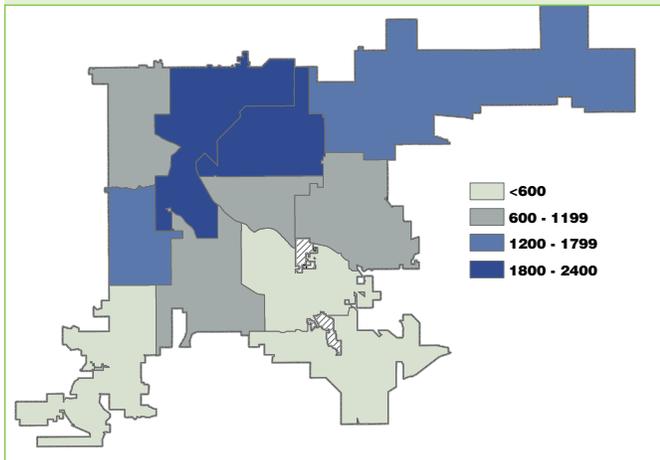
INJURY AND VIOLENCE

Unintentional injuries include transportation accidents, drowning, poisoning, falls, burns, and bites. Unintentional injuries were the third leading cause of death in Denver in 2010. The risk of hospitalizations due to falls increases with age (FIGURE 4). Over the past decade, Colorado has made efforts to reduce unintentional injuries due to motor vehicle accidents (FIGURE 5). In 1999, Colorado started a graduated driver’s license process for teens. In 2005, teen driver laws were strengthened. These included limits for teen drivers on the number and age of passengers, night driving, and texting while driving. In 2002, the Colorado Department of Transportation (CDOT) began the “Click it or Ticket Campaign” to increase seatbelt usage. In 2004, the Colorado legislature lowered the blood alcohol level from 0.1 to 0.08 for driving under the influence (DUI). Penalties were raised for drunk drivers and these funds were used to increase surveillance. All of these efforts have paid off (FIGURE 6). Almost all adults (91.1%) in Denver reported wearing seatbelts, which is nearing the Healthy People 2020 goal of 92.4% usage.¹³ The hospitalization rate due to motor vehicle accidents in Denver dropped with the biggest gains between 2006 and 2010 among those aged 15 to 19.²³

Many injuries have risk factors. For example, sexual assaults are closely linked to alcohol use.⁸³ Alcohol is also a leading factor in motor-vehicle related injuries among all ages, races, and ethnicities.⁸⁴ Poverty is a risk factor for intentional injuries. Members of the lesbian, gay, bisexual, transgender, and questioning (LGBTQ) community are often targets of bullying and violence.⁸⁵

Denver can reduce injuries through education and policy changes. Social and family support are crucial, especially among youth.

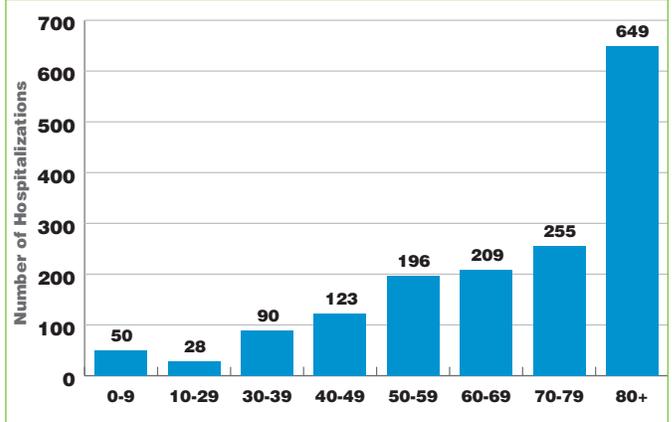
FIGURE 3
Number of Assault Victims DENVER, 2006 - 2010



The number of assaults in Denver is higher in north Denver. The highest number of assaults occurred in Council Districts 8 and 9.

SOURCE: Denver Police Department

FIGURE 4
Number of Hospitalizations Due to Falls by Age Group DENVER, 2010



Accidental falls increase with age, especially among those 80 years and older. Falls among the elderly often result in reduced quality of life, premature death, and increased medical costs.

SOURCE: Colorado Hospital Association

Local Story

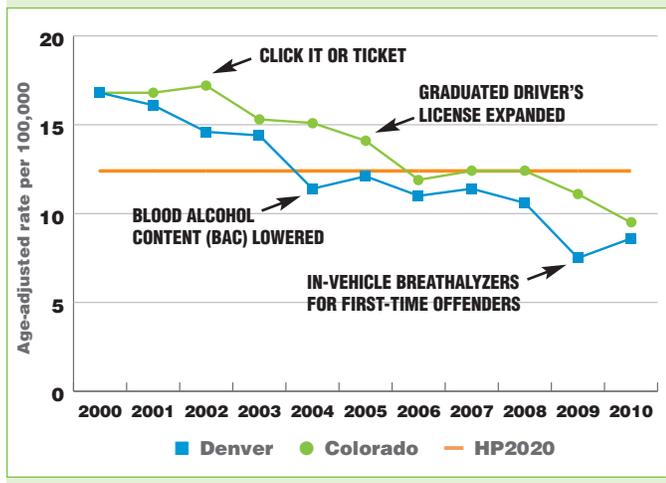
Keeping Youth in School

Students can be expelled from school for acts of violence or intentional injury. However, completing high school can be insurance for good health. People with less education are more likely to smoke, be obese, be physically inactive, and are at a greater risk for an early death.⁸⁷ Denver Public Schools (DPS) is helping students to graduate—even if they misbehave, are suspended, or are expelled.⁸⁸ The DPS Mental Health and Assessment Team works with schools to support interventions for violence, behavior issues, bullying, poor attendance, conflict management, and learning problems. In addition, if students have behavior issues and are expelled, DPS offers the opportunity for them to still graduate. Students can continue their schooling at the PREP Academy or transfer to another school. By keeping our youth in school, Denver’s overall health will improve.



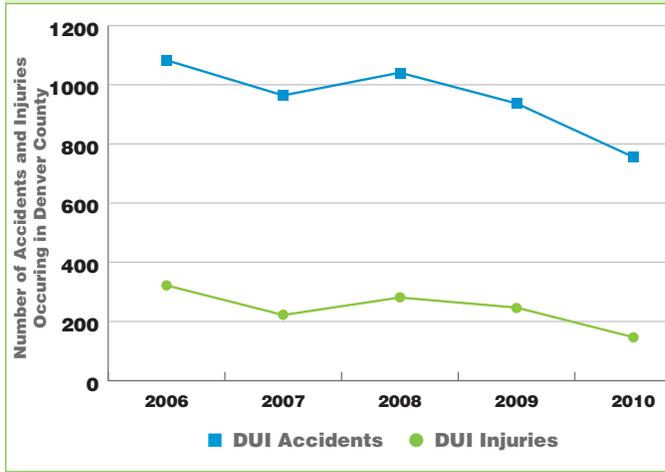
INJURY AND VIOLENCE

FIGURE 5
Motor Vehicle Accident Deaths DENVER AND COLORADO, 2000 - 2010



Motor vehicle deaths are steadily decreasing in Denver. This decrease is likely due to growing awareness, increased enforcement, and stricter traffic laws.
 SOURCE: Vital Statistics

FIGURE 6
Driving Under the Influence (DUI) Accidents and Injuries DENVER, 2006 - 2010



The number of DUI accidents and injuries has been decreasing in Denver. Estimated costs of a first-time DUI offense in Colorado are \$10,270. These costs include towing, legal fees, fines, and insurance increases.
 SOURCE: Denver Police Department



Comparison Story

Motorcycle Helmets—Saving Lives and Money

In 2010, 21 states had a helmet law for all motorcyclists. Another 27 states had a partial law, and three had no law.⁸⁹ Colorado's partial law requires riders and passengers under 18 years old to wear a helmet. In 2010, 207 Denver adults were admitted to the hospital for a motorcycle accident. Of these, 88 (43%) had a traumatic brain injury and eight (4%) died. The risk of brain injury among motorcyclists not wearing a helmet is 67% greater than that of helmeted motorcyclists. Additionally, hospital costs for motorcyclists not wearing a helmet are about 30% higher.⁹⁰ In 1992, California passed a helmet law for everyone. The year after the law was enacted, California had a 38% decrease in motorcycle deaths. In addition, those likely to sustain brain injury decreased by 34%. California has a 99% compliance rate in helmet use.⁹¹⁻⁹³



Did You Know

- At least 107 Coloradans died as a result of domestic violence from 2008 to 2010. In 2010, more than 3,300 domestic violence cases were filed in the municipal and state divisions of Denver County Court.⁹⁴
- In 2008, there were 4,597 lost-time worker's compensation claims in Denver, and an additional 12 fatal claims. Lost-time claims are claims for which an employee missed three or more work days or shifts due to illness or injury, or experienced permanent impairment.⁹⁵ It is estimated that there were an additional 15,000 claims with less than three lost workdays or shifts.
- In Colorado, transportation incidents are the leading cause of work-related fatalities. On average, about 15% of Colorado workers are employed in industries at an increased risk for mortality from all causes.⁹⁶
- Using a cell phone while driving, whether it is hand-held or hands-free, delays a driver's reactions as much as having a blood alcohol concentration at the legal limit of .08 percent.⁹⁷
- Did you know that you can get an \$82 ticket for not having a child in the proper car restraint? Tougher laws now require that children up to the age of eight be in a booster or car seat.⁹⁸

MENTAL HEALTH

Overview

A person's physical and psychological health are interrelated. Each affects the other and both are equally important. As more research shows the impact mental health has on physical health, there has been a renewed focus on treating mental health disorders.

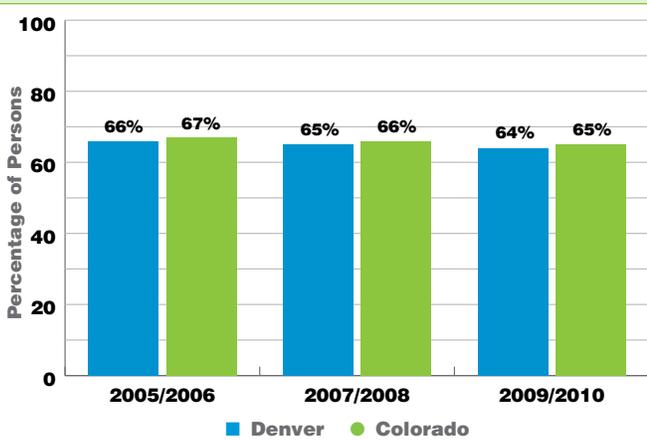
Mental health and substance use conditions are behavioral disorders. They affect the individual, their family, workplace, and community. People of all ages and backgrounds are affected by mental health disorders. Mental health problems affect the post-partum mother, the middle-aged working male, the homeless senior, and the high school star athlete.

Approximately one in four people will experience symptoms of mental health or substance abuse. In Denver, the number of self-reported poor mental health days varies by race and ethnicity (FIGURES 1 AND 2). Persons with lower incomes have more poor mental health days than those with higher incomes (FIGURE 3). Half of all lifetime cases of mental and substance use disorders begin before the age 14. One in five Coloradans need mental health services annually. Of those, less than one-third receive adequate care.⁹⁹

Suicide is the most severe outcome of mental health disorders. Denver and the entire state of Colorado have much higher rates of suicide as compared to the U.S (FIGURES 4). In 2009, Colorado's suicide rate was the highest recorded since 1988 at 18.4 per 100,000 people (940 suicides).¹⁰⁰ Denver's suicide rate that year was 17.4 per 100,000 (101 deaths).¹¹ The number of deaths from suicide was more than the number of deaths from homicide (41), motor vehicle injuries (44), and influenza and pneumonia (99).¹¹ For every suicide, six to eight people closely connected to the individual are directly affected by the death.¹⁰⁰ Suicide serves as an example of the "ripple effect" of behavioral health issues in terms of numbers of people affected and the overall cost of inadequate treatment.

FIGURE 1

Percentage of Persons Reporting Zero Days of Poor Mental Health (in the last month) DENVER AND COLORADO, 2005 - 2010



Mental Health has a consistent impact on Denver and Colorado. Since 2005, only two thirds of Denver and Colorado residents report zero poor mental health days in the past month.

SOURCE: Behavioral Risk Factor Surveillance System



Cost Facts

Mental illness is the leading cause of workforce disability in the U.S. It results in 217 million days of lost productivity. Substance use costs \$116 billion and untreated mental health conditions cost \$205 billion to society. This is more than many other chronic conditions, such as diabetes, asthma, and arthritis.¹⁰²

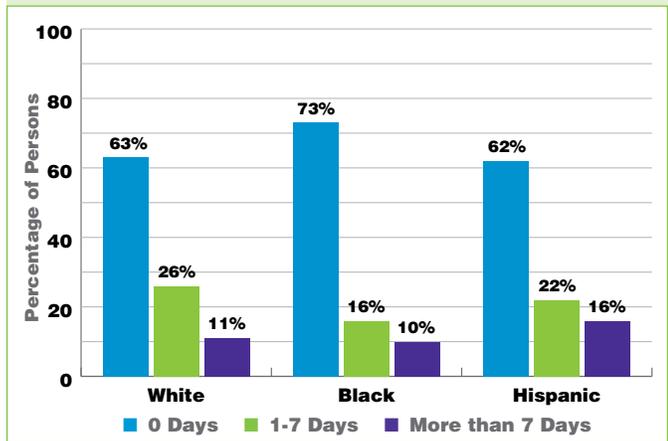
Untreated depression and alcohol use costs Colorado businesses \$2.3 billion per year. This equals \$484 per employee in 2008. When workers with depression were treated with prescription medicines, medical costs declined by \$882 per treated employee per year and absenteeism dropped by 9 days.¹⁰²

MENTAL HEALTH

Suicide risk factors include age (highest risk in persons age 40-50), sex (highest risk in men), and race and ethnicity (highest risk in Whites) (FIGURES 5 AND 6). Suicide rates vary in different areas of Denver. Central Denver has the highest suicide rates in the city (FIGURE 7). Finally, individuals with a family history of suicide are 2.5 times more likely to die by suicide than those without such a history.¹⁰¹

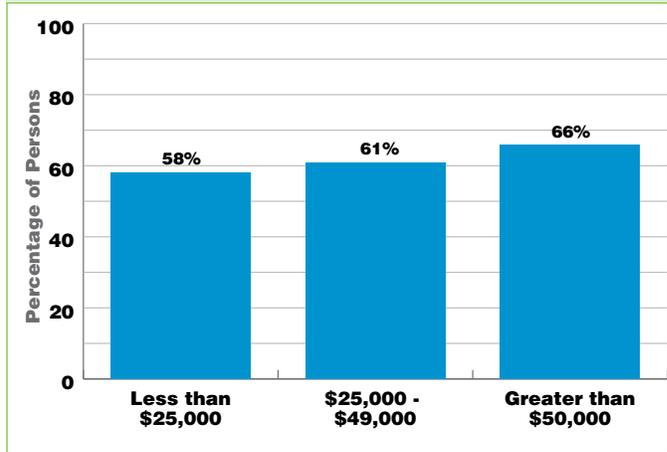
Treating psychological and behavioral problems is preventive and cost-effective. Integrating mental health screening into primary care for both adults and children is important. Incorporating screening into pre- and postnatal care for mothers is vital to the health of the baby. Resources allocated to assisting someone in achieve better mental health will bring a return far greater than the dollars which are spent.

FIGURE 2
Percentage of Persons Reporting Poor Mental Health Days (in the last month) by Race and Ethnicity DENVER, 2009 AND 2010



Research has linked mental health to race and ethnicity. Hispanics and Whites have more persons reporting poor mental health days than Blacks.
 SOURCE: Behavioral Risk Factor Surveillance System

FIGURE 3
Percentage of Persons Reporting Zero Days of Poor Mental Health (in the last month) by Income DENVER, 2009 AND 2010



Research has linked mental health to income and poverty. The percentage of Denver residents reporting zero poor mental health days in the past month is lower in persons with lower income and increases as income levels increase.
 SOURCE: Behavioral Risk Factor Surveillance System



MENTAL HEALTH

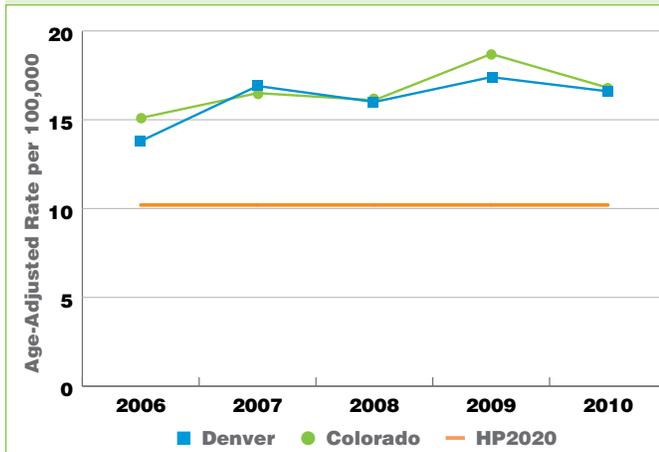
Local Story

Project CLIMB: Strengthening Families in Denver

In 2005, Project CLIMB began at Children's Hospital Colorado. CLIMB stands for Consultation Liaison in Mental Health and Behavior. Project CLIMB combines mental health, behavioral, and developmental support with other health services. Mental health providers work side by side with health care providers in their offices. Pediatricians learn to identify and treat common mental health concerns in children. The team offers on-site mental health services for children and their families. Services include depression screening for parents, developmental screening for young children, groups to support families of new babies, individual and family therapy, and referrals to community resources. Nearly 2,000 children and families have been seen at more than 4,000 visits. This program is truly strengthening Denver families.

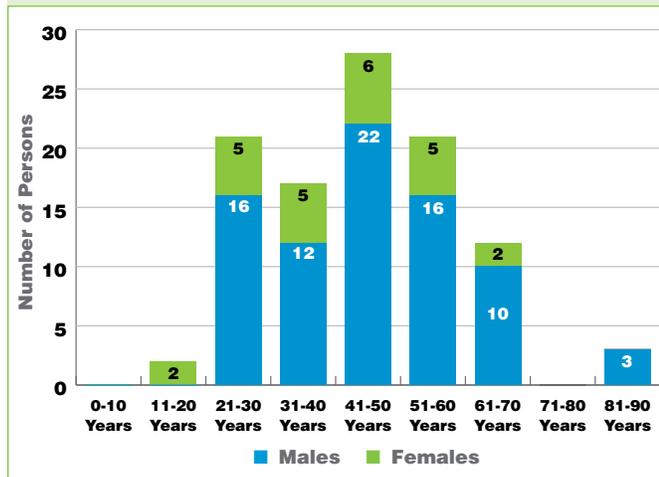
MENTAL HEALTH

FIGURE 4
Completed Suicides DENVER AND COLORADO, 2006 - 2010



Denver has a high rate of suicide, with a rate of 17.4 per 100,000 in 2009. The rate does not meet the Healthy People 2020 goal of 10.2 per 100,000 and the national average of 11.5 per 100,000. SOURCE: Vital Records

FIGURE 5
Completed Suicides by Age and Gender DENVER, 2010



Suicides in Denver occur more often in males than females. In 2010, the highest count of suicides was among males 41-50 years old. SOURCE: Denver Office of the Medical Examiner

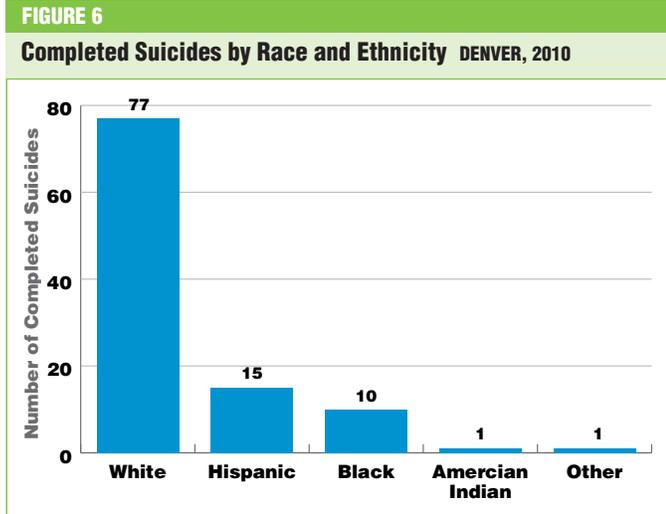
Comparison Story

The Colorado Springs Veterans Trauma Court

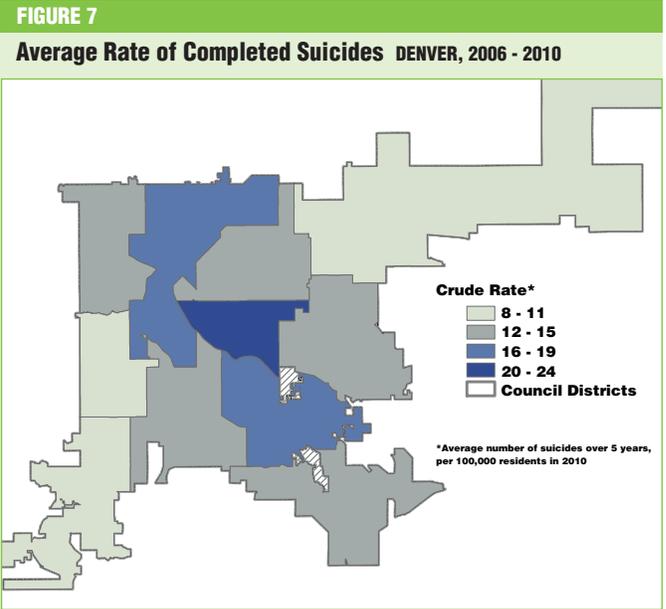
Many veterans have post-traumatic stress disorder (PTSD). Others have traumatic brain injuries (TBI). These injuries can result in reduced inhibitions and poor decision making. Some veterans experience increased impulsivity, decreased memory, increased anger, and increased substance abuse. In 2008, Colorado received a federal grant to divert veterans and other service members with PTSD and TBI into treatment rather than incarceration. The Colorado Springs Veterans Trauma Court has been operational for two years. Preliminary data show that overall health, everyday functioning, social connectedness, and symptoms of PTSD improve within six months of starting treatment. A focus of the program is to share lessons learned with other courts so that other veterans and their families can receive help for PTSD and TBI.¹⁰³



MENTAL HEALTH



Suicides are more common in specific populations. In 2010, Denver, suicides were most common in non-Hispanic whites (n=77).
 SOURCE: Denver Office of the Medical Examiner



Completed suicides occurred in all areas of Denver. The highest rate of suicides in Denver is in District 10.
 SOURCE: Denver Office of the Medical Examiner



Did You Know

- Denver Public School students in sixth, eighth, ninth, and eleventh grade students were asked if they felt depressed or sad most days in the past year. In response to the question, 31% of students answered “yes” and 15% answered “YES!”⁹
- The Denver Court to Community program has successfully provided treatment to over 300 incarcerated individuals with both mental illness and substance abuse. In the year following treatment in the program, participants had no physical and psychiatric hospitalizations. Additionally, there was a 67% reduction in arrests and jail days among participants, and 64% of participants became and remained abstinent from substances.¹⁰⁴
- In Denver County, it is estimated that more than 1,200 mothers will experience post-partum depression annually. Only 15% of these women will receive treatment. Treatment results in better health and improved social and mental development of the child.¹⁰⁵
- Depression symptoms may be reduced through exercise. Exercise builds confidence, increases social interaction, and helps manage stress.¹⁰⁶
- Colorado ranks 32nd nationally for publicly-funded mental health care and spends one-third of the national average on care for substance use disorders.¹⁰⁷

SUBSTANCE ABUSE

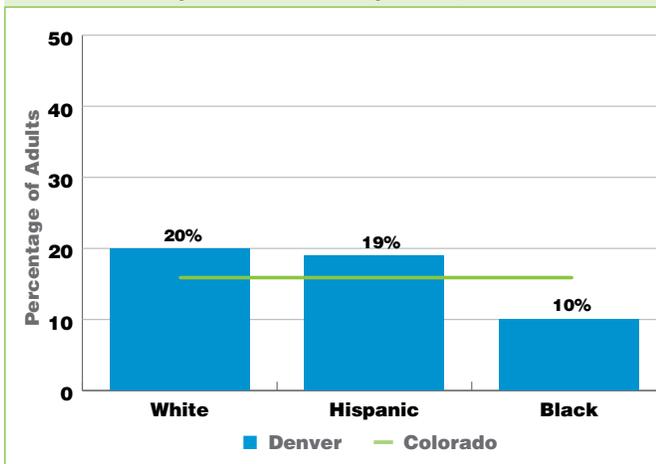
Overview

Substance abuse is one of the most widespread preventable causes of death and illness. This section focuses on the use of drugs and alcohol, with tobacco covered in its own section in this report (see *Tobacco*). In 2010, about 63,200 Denver residents were dependent on or abused drugs and/or alcohol (12.5% of the population ages 12 and over).¹⁰⁸ Nationally, alcohol consumption is the third leading lifestyle-related cause of death.¹⁰⁹ Alcohol continues to be the most heavily used and destructive drug in Denver (FIGURES 1 AND 2). It contributes to illness, disease, and accidental deaths. While illicit drug use is an ongoing concern, prescription drug abuse has increased dramatically in recent years (FIGURE 3). Additionally, perceptions and use of marijuana have changed in the Denver metropolitan area (FIGURE 4).

Substance use disorders are closely linked to other health issues, both mental and physical. There are high rates of mortality attached to alcohol and drugs (FIGURE 5). For example, between 77% and 93% of individuals in treatment for alcohol or other drugs also use tobacco, more than three times the national average.¹¹¹ People with a substance use disorder are twice as likely to have a co-occurring mood or anxiety disorder.¹¹⁰ Substance use is linked to other social and health issues including violence, crime, sexually transmitted infections, and poverty. Addressing excessive alcohol and drug use has the potential to impact a number of public health and safety measures.

FIGURE 1

Percentage of Adults Engaging in Binge Drinking of Alcohol in Past Month by Race and Ethnicity DENVER, 2009 AND 2010

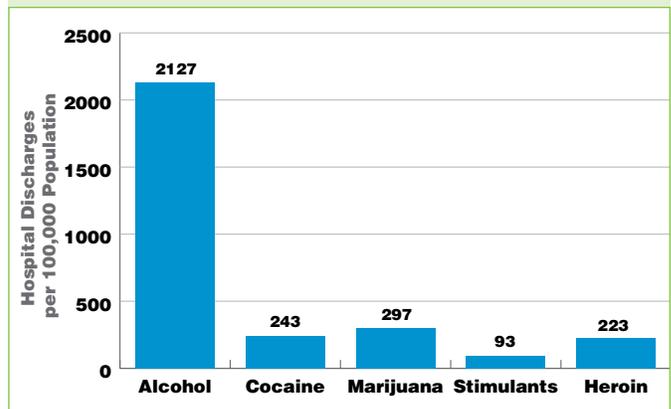


Binge drinking is defined as having five or more drinks on one occasion for men and four or more drinks for women. A higher percentage of Whites and Hispanics report binge drinking than Blacks.

SOURCE: Behavioral Risk Factor Surveillance System

FIGURE 2

Hospital Discharges Rate by Substance DENVER, 2010



Alcohol is responsible for the majority of substance related hospital visits, as shown here in hospital discharges.

SOURCE: Colorado Hospital Association

Cost Facts



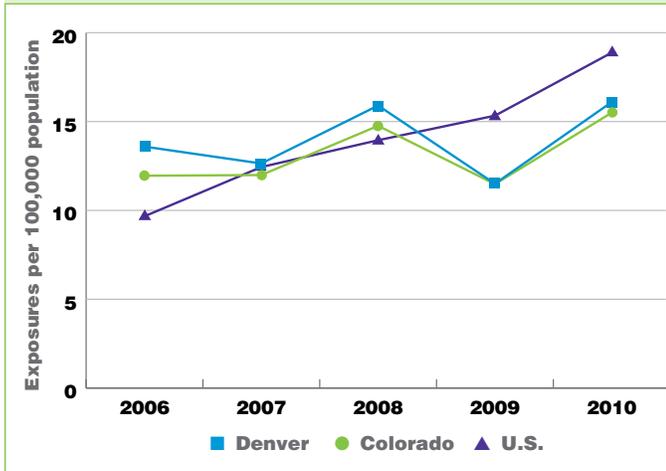
Substance abuse costs the nation \$467 billion annually. Denver's share of these costs totals almost \$884 million.¹¹³ Over 95% of these costs are to health care systems, social services, the criminal justice system, and education. Providing substance abuse treatment is a cost-effective intervention. The benefit-cost ratio for treatment is approximately 12:1.¹¹⁴ Most of these savings are in the areas of criminal justice and health care. It is estimated that if Denver appropriated an additional \$10 million to substance abuse treatment, it could reduce future costs by \$110 million.¹¹³

SUBSTANCE ABUSE

Many proven and effective ways exist to address mental health and substance use issues. Prevention programs, such as Strengthening Families (see Local Story), work with youth and families to reduce the likelihood that young children will begin using alcohol and drugs. Quality treatment can help those with substance use disorders transition to a healthy recovery. Treatment with medication-assisted therapies (MAT), such as buprenorphine, suboxone, vivitrol, and methadone, saves money and lives. MAT is a combination of medication, counseling, and behavioral therapy. MAT is proven to be cost-effective. Methadone saved Washington state \$230 per Medicaid member per month.¹¹² In a study conducted by the Substance Abuse and Mental Health Administration (SAMHSA), 16% of individuals were involved with drug dealing at the start of treatment with buprenorphine. Sixty days later, only 3% indicated they were involved in drug dealing.

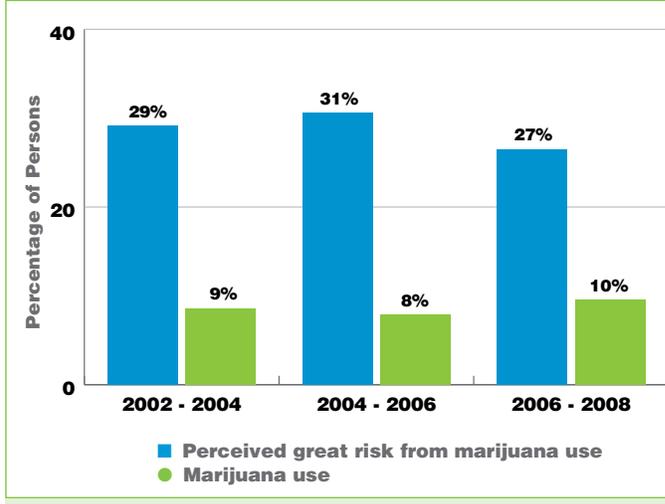
Substance abuse treatment admissions in Denver were increasing, but funding cuts have led to a recent downward trend (FIGURE 6). Treatment admissions in Denver are greatest for alcohol and vary widely by drug, race, and ethnicity (FIGURE 8). Policies and funding should be implemented to increase treatment options.

FIGURE 3
Intentional Exposure for all Prescription Opioids
DENVER, 2006 - 2010



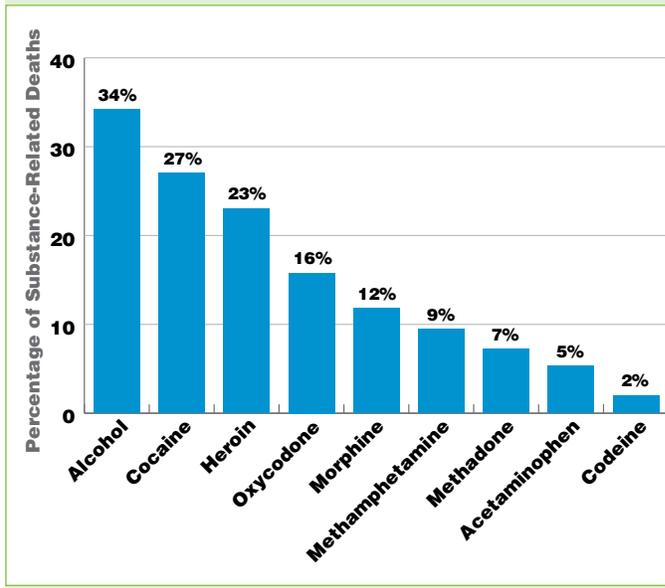
The rate of intentional exposure of prescription opioids increased nationally between 2006 and 2010. The rate in Denver also increased, but has fluctuated above and below the national average.
 SOURCE: Rocky Mountain Poison and Drug Center RADARS® System

FIGURE 4
Percentage of Persons Perceiving Great Risk from Marijuana Use and Use of Marijuana
DENVER METROPLITAN AREA, 2002 - 2008



Between 2002 and 2008, marijuana use increased as the perceived risk of marijuana decreased. This may be influenced by changes to the medical marijuana industry. Research is being conducted to determine the effects of medical marijuana on recreational use.
 SOURCE: National Survey on Drug Use and Health

FIGURE 5
Substance-Related Deaths DENVER, 2010



There were a total of 152 deaths that were related to alcohol and/or drugs in 2010. The most common substances found in individuals was alcohol, followed by cocaine (which has been decreasing since 2006), and heroin (which has been increasing since 2006).
 SOURCE: Denver Office of the Medical Examiner

SUBSTANCE ABUSE

Local Story

Strengthening Families Program

The Denver Office of Drug Strategy began implementing the Strengthening Families Program in 2007. A goal of the program is to reduce drug and alcohol use among youth. This program for parents and youth (10 to 14 years old) is offered in Denver schools and organizations. More than 300 families have completed the program, with 95% of those families identifying as Hispanic. More than 75% of the sessions were offered in Spanish. This program was started at Iowa State University and evaluation has shown that each dollar invested in the program yields a return of almost \$8 in benefits. The impact is captured by statements from parents and youth completing the program.¹¹⁵



“I learned how to respect and care about others.”

—YOUTH PARTICIPANT

“[I learned] how to handle peer pressure, how to handle stress, and when you can tell that you are loved.”

—YOUTH PARTICIPANT

“I love the way my kids are talking to me about everyday stress and getting along better.”

—PARENT PARTICIPANT

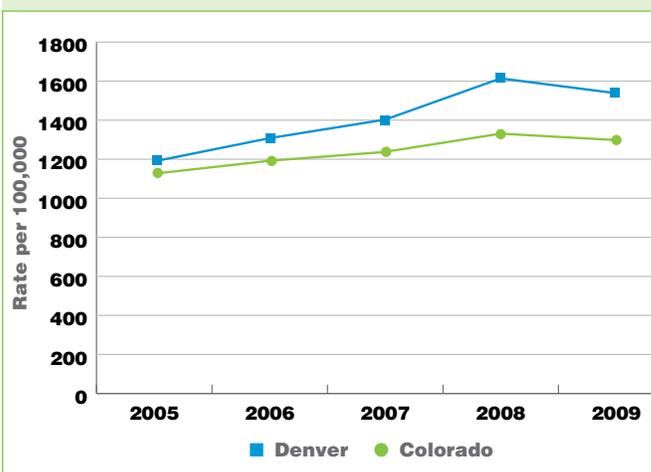
Comparison Story

Wet Housing for the Homeless

An estimated 5,000 homeless persons live in Denver, many with substance abuse issues.¹¹⁶ For some of these individuals, substance abuse treatment has not been effective. These individuals rotate through the emergency room and jail, costing taxpayers money. In Seattle and Minneapolis, a new approach called “wet housing” has been implemented. In a wet housing program, homeless persons with alcohol dependency are provided housing, support services, and a safe place to drink. A goal is to provide support for these individuals to “reduce their use of crisis services and ultimately their consumption of alcohol.”¹¹¹ A study found that the Seattle wet housing program saved taxpayers more than \$4 million dollars in the first year of operation. This amounted to a cost savings of 53%, or nearly \$2,500 per month per person in health and social services.¹¹⁷

FIGURE 6

Rate of Treatment Admissions DENVER AND COLORADO, 2005 - 2009



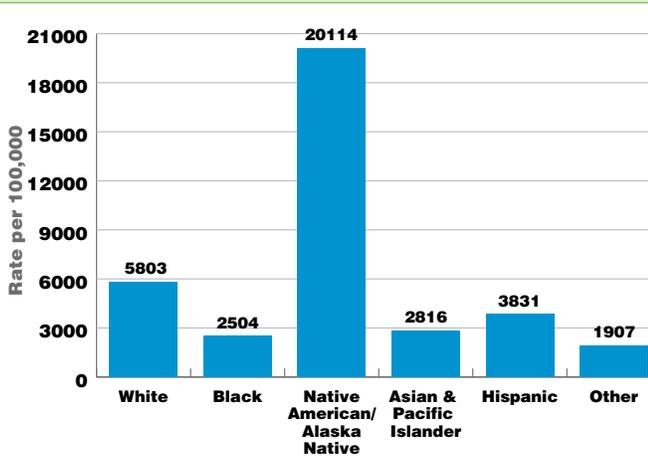
Denver has a higher rate of treatment admissions than Colorado, and admissions were increasing until 2008. Cutbacks in funding contributed to a decrease in admissions in 2009.

SOURCE: Drug/Alcohol Coordinated Data System

SUBSTANCE ABUSE

FIGURE 7

Rate of Treatment Admissions for Alcohol by Race and Ethnicity DENVER, 2010

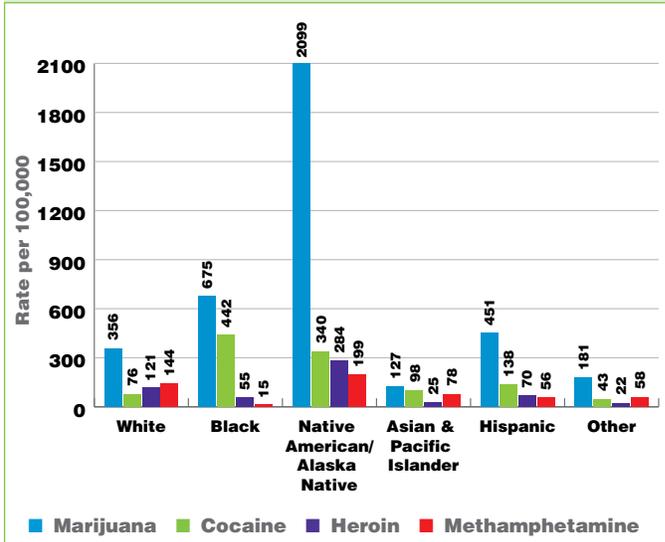


A majority of treatment admissions are for alcohol abuse. The rate of treatment admissions for alcohol is highest in Native Americans/Alaska Natives.

SOURCE: Drug/Alcohol Coordinated Data System

FIGURE 8

Rate of Treatment Admissions by Drug, Race, and Ethnicity DENVER, 2010



Drugs admissions vary by and race and ethnicity. Excluding alcohol, marijuana is the most common drug for treatment admissions across all races and ethnicities.

SOURCE: Drug/Alcohol Coordinated Data System



Did You Know

- Prescription drug use continues to increase in the U.S. The second national prescription take-back initiative took place in April 2011. In Colorado, 14,000 pounds of unused and expired medications were collected.
- Substance abuse and HIV/AIDS are closely linked. In Colorado, injection drug use accounts for about 16% of HIV cases. Non-injection drug abuse (alcohol, methamphetamine, cocaine) is also linked to HIV infection. Drug use is associated with poor health care access, poor retention in care, poor adherence to treatment, and increased risk of transmitting HIV to others.
- On average, a youth sees 23 alcohol ads per month. Research shows that youth drink 1% more alcohol for every additional alcohol ad seen.¹²⁰
- In 2008, 24% of Denver youth between sixth and eleventh grade reported that in the past 30 days, they rode in a vehicle with someone who had been drinking. Almost one in ten reported driving a car themselves after drinking.¹²
- The Colorado Prescription Drug Monitoring Program is managed by the Colorado Department of Public Health and Environment to help health care providers and pharmacists in treating their patients. The program can help reduce duplicate prescriptions and divert drug use.¹²¹

TOBACCO

Overview

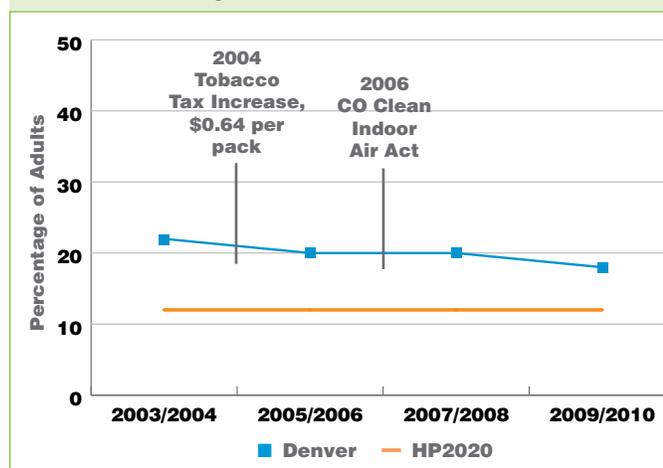
Tobacco use remains the leading cause of preventable premature death and illness in Denver. Decreasing tobacco use is the single most powerful tool we have to improve health in Denver.

In Denver, approximately 18% of people smoke.¹³ Between 2006 and 2010, over 10,000 people died in Denver from tobacco-related illnesses.¹¹ Recent policy efforts have attempted to reduce rates of smoking. These include a 2004 tobacco product tax increase and the 2006 Colorado Clean Indoor Air Act to reduce secondhand smoke exposure in public places. However, tobacco use among adults remains relatively stable in Denver and does not meet the Healthy People 2020 goal for the nation (12%) (FIGURES 1 AND 2).

Tobacco use is linked to several common diseases and causes of death. These include cardiovascular disease, cancer, chronic lung disease, and lung infection (FIGURE 3). Cigarette smoke contains more than 7,000 chemicals and compounds.¹²² Women who smoke during pregnancy put themselves and their unborn babies at increased risk for health problems (FIGURE 4).¹²³ Secondhand smoke harms the health of babies and children as their bodies are still developing. The risks of developing heart disease and lung cancer are increased by up to 30% in non-smokers exposed to tobacco smoke.¹²⁴ Smoking and breathing in secondhand smoke are linked to severe asthma and breathing problems.

FIGURE 1

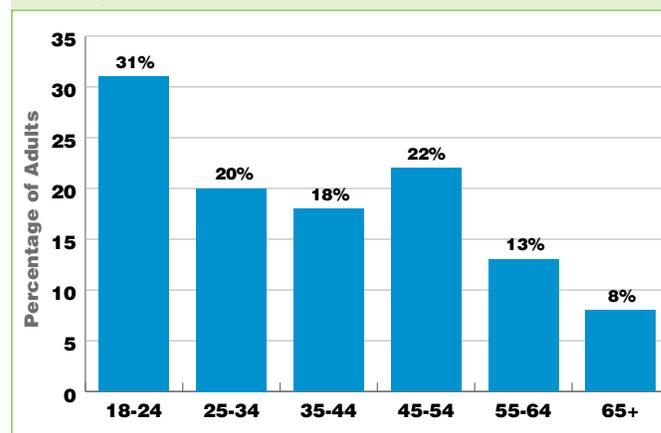
Tobacco use Among Adults DENVER, 2003 - 2010



The smoking rate in Denver adults has stayed relatively stable. Denver remains short of the Healthy People 2020 goal of 12%.
 SOURCE: Behavioral Risk Factor Surveillance System

FIGURE 2

Percentage of Adults Smoking Cigarettes by Age DENVER, 2009 AND 2010



Tobacco use varies by age and is highest among 18 to 24 year olds. The tobacco industry has heavily targeted this age group with marketing and promotions.

SOURCE: Behavioral Risk Factor Surveillance System

Cost Facts



Tobacco use costs society much more than the purchase price of a pack of cigarettes (currently approximately \$5). It is estimated to cost \$7.62 per pack of cigarettes to treat tobacco-related illnesses. The cost of lost wages due to early death, decreased productivity, and increased sick days adds another \$11.63 per pack.¹²⁷ The Campaign for Tobacco Free Kids estimates that each household in Colorado pays \$572 per year in increased taxes for publicly-funded health care for tobacco-related costs.¹²⁵

TOBACCO

Tobacco use is common among youth and youth have few barriers to buying tobacco. Every year, nearly 5,300 Colorado youth become daily smokers.¹²⁵ In a recent survey, 24% of eleventh graders in Denver smoked.¹² Ninety percent of adult smokers report having regularly used tobacco products before they graduated high school. Of Colorado's youth, 92,000 will die prematurely because of decisions made when they were younger.¹²⁵ Youth are at greater risk for tobacco addiction due to social pressures and industry product packaging and advertising that targets youth. Limiting both tobacco marketing and placement of advertising can reduce these pressures.

Disparities in tobacco use result in more tobacco-related disease in population subgroups. Ten groups have higher smoking rates:¹²⁶

- Black/African Americans
- Native American/American Indians
- Asian Americans and Pacific Islanders
- Lesbian, Gay, Bisexual, Transgender, Intersex, and Questioning
- Latinos and Hispanics
- People with low socioeconomic status (income)
- People with disabilities
- People with mental illnesses
- People with substance use disorders
- Chew and spit tobacco users

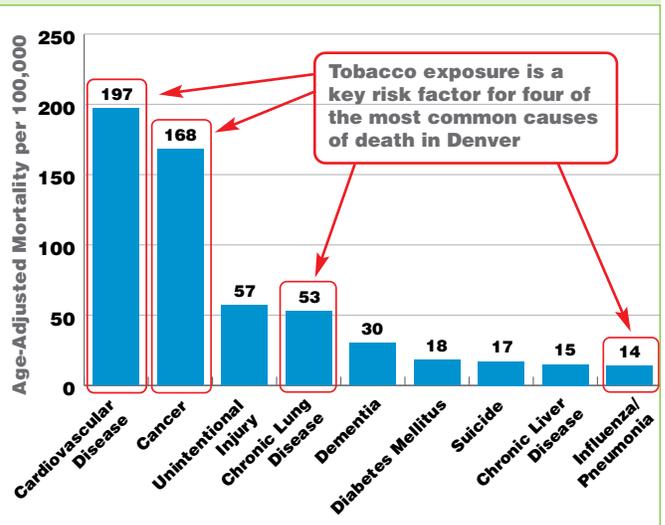
Tobacco industry marketing targets these same subgroups. Efforts to reduce smoking in Denver should focus on those most affected (FIGURES 5 AND 6).

Local Story

Smoke-free Hospitals and Nursing Homes

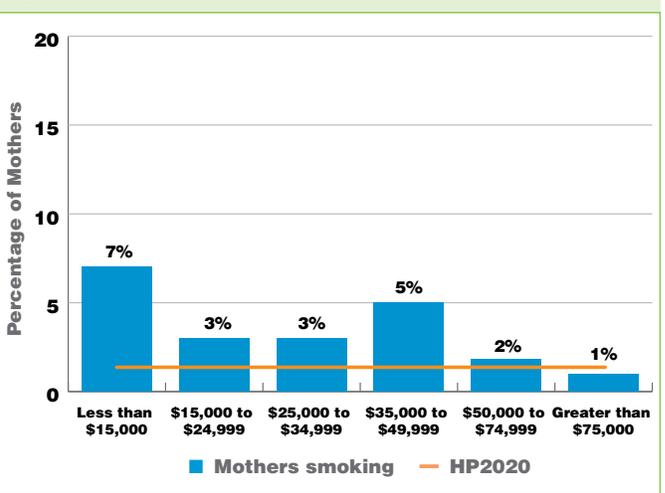
Smokers are absent from work more days per year than non-smokers. Tobacco-free worksite policies help users to quit smoking. It also means a cleaner environment, a positive company image, and lower health care costs. In 2008, seven Denver hospitals implemented tobacco-free policies to ban tobacco use on their campuses. Currently, more than 50 Colorado hospitals and nursing homes ban smoking and tobacco use on their property.¹²⁸ In 2008, Denver passed a law banning smoking on sidewalks around hospitals. These policies protect patients, visitors, and employees from breathing in secondhand smoke.

FIGURE 3
Tobacco and Common Causes of Death DENVER, 2010



Tobacco use is a major health risk factor. It is linked to four of the top causes of death in Denver: cardiovascular disease, cancer, chronic lung disease, and influenza/pneumonia.
SOURCE: Vital Statistics

FIGURE 4
Percentage of Mothers who Smoked During Pregnancy by Income DENVER, 2010



Smoking while pregnant increases the possibility of stillbirth, miscarriage, and low birth weight babies. Smoking during pregnancy is highest among low income groups. Sixty percent of women who reported smoking during pregnancy in 2010 had an income of <\$15,000.
SOURCE: Vital Records

Comparison Story

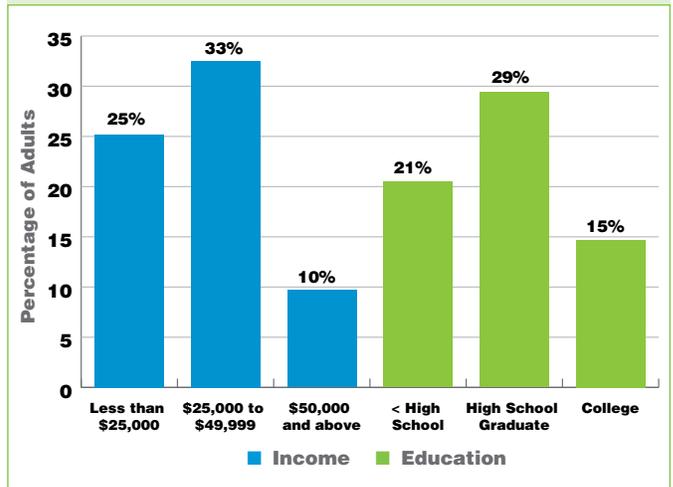
Tobacco Retailer Licensing

There are an estimated 680 tobacco retailers in Denver. Colorado is one of 14 states without a tobacco retailer license requirement.¹²⁹ Licensing would require all businesses to obtain a license to sell tobacco, tobacco products, or tobacco equipment. Licensing can reduce illegal tobacco sales to youth and increase compliance with local, state, and federal tobacco laws. In California, a study reviewed illegal sales rates in 31 communities before and after a strong licensing law was passed. These sales rates were determined by youth tobacco purchase surveys given by local agencies. Results showed that local tobacco retailer licensing laws reduced illegal sales to minors.¹³⁰ With licensing, state and local officials can better control the location and concentration of tobacco retailers. However, a licensing ordinance alone will not automatically decrease illegal sales rates. The study showed that proper education and enforcement about the local ordinance and state youth access laws were needed. Revenue generated from license fees would help pay for the identification, education, and monitoring of retailers, including compliance checks (FIGURE 7).



FIGURE 5

Percentage of Adults Currently Smoking by Income and Education DENVER, 2009 AND 2010

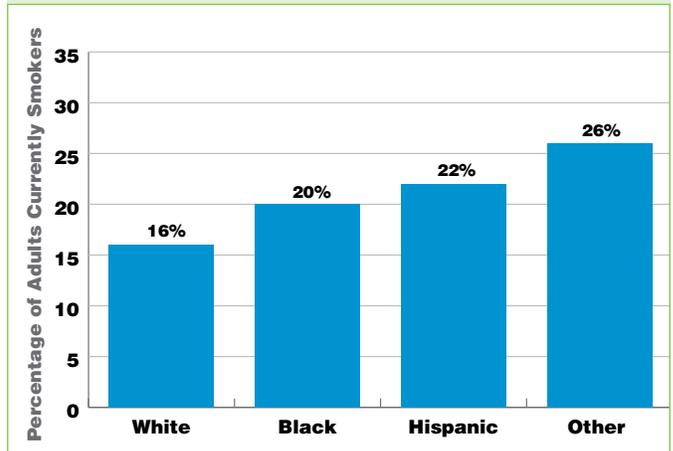


People of lower socioeconomic status and less education are more likely to smoke cigarettes. This trend is consistent for the past five years in Denver.

SOURCE: Behavioral Risk Factor Surveillance System

FIGURE 6

Current Smokers by Race and Ethnicity DENVER, 2009 AND 2010



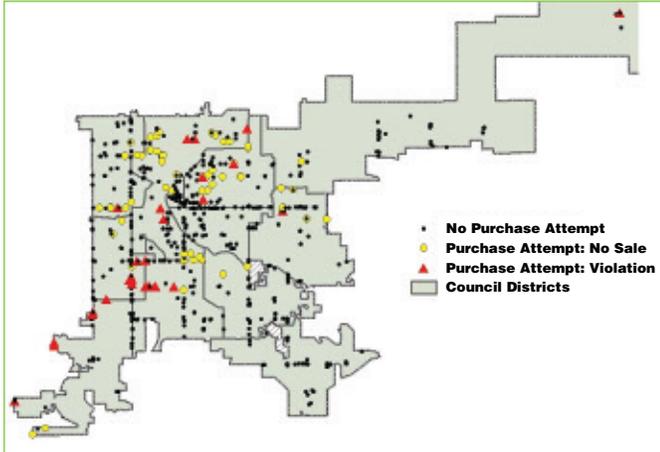
Some racial and ethnic groups have higher percentages of smokers. Black, Hispanics, and those reported as Other races have higher smoking rates than do White Denver residents. Tobacco use has decreased among Blacks over the past five years.

SOURCE: Behavioral Risk Factor Surveillance System

TOBACCO

FIGURE 7

Tobacco Retailers Purchase Attempts by Minors
DENVER, 2009



Some Denver tobacco retailers sell tobacco products to underage youth. Some areas of Denver have more illegal sales to minors than others.

SOURCE: Colorado Department of Revenue



Photo courtesy of VISIT DENVER, The Convention & Visitors Bureau



Did You Know

- Cigarettes contain toxic chemicals found in nail polish remover, toilet cleaner, and batteries. Secondhand smoke is toxic. Smoke from the end of the burning cigarette delivers a large dose of these toxic chemicals to anyone nearby.
- The earlier that a person starts smoking, the greater the likelihood is that he or she will become a lifelong smoker. Young adults, ages 18 to 24, are at high risk of becoming lifetime tobacco users and are directly targeted.¹³¹
- Quitting tobacco leads to decreased risk of many serious health problems. The Colorado Quitline helps people who want to quit smoking and live tobacco free. Call the Colorado Quitline at 1 800 QUIT NOW (1-800-784-8669) or visit the website at www.myquitpath.org.
- Colorado has a \$0.84 per pack cigarette tax and ranks 34th among the states for cigarette tax rates. Youth are more likely to live tobacco free as the cost of cigarettes increases.¹³²
- In Denver, 83% of residents have a rule that smoking is not allowed in the home. Learn how to make homes and multi-unit housing (apartments, condos, townhomes, etc.) tobacco- and smoke-free by calling Denver Public Health at 303-602-3700.¹³³

CANCER

Overview

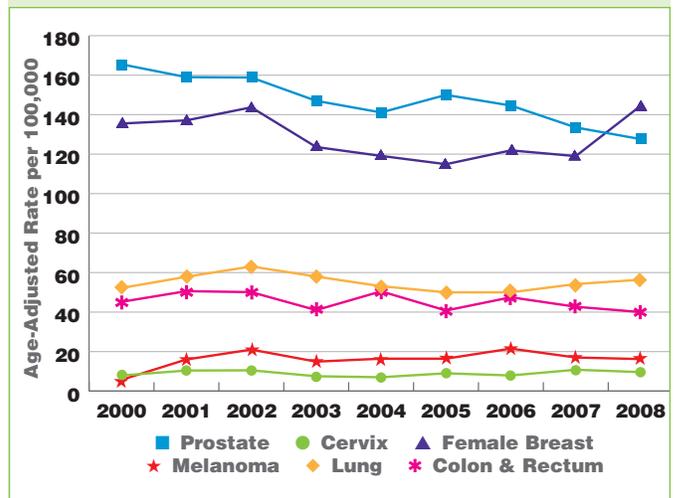
Cancer is a collection of diseases that result from abnormal and uncontrolled growth of cells. Everyone is susceptible to cancer and it can occur in any part of the body. Cancer is the second most common cause of death in Denver.¹¹ Other than skin cancer (most forms of which do not spread or cause death), the most common forms of cancer in Denver involve the prostate, breast, lung, and colon (FIGURE 1). While there are various treatments for cancer, treatment response and effectiveness varies depending on the type of cancer. For example, most forms of lung cancer are diagnosed when the disease has spread outside the lung. As a result, treatment response to lung cancer is often poor. Therefore, lung cancer is the most common cause of cancer-related death (FIGURE 2), even though other forms of cancer (prostate, breast) are more frequently diagnosed.

Some of the most common types of cancer are preventable. Exposure to tobacco smoke is by far the leading cause of lung and other forms of cancer (including, throat, esophageal, and bladder cancers). Tobacco cessation and prevention of secondhand smoke exposure dramatically decrease the risk of cancer and death. Vaccines can also prevent some forms of cancer. A highly effective vaccine for human papillomavirus (HPV), which has been known to cause cervical, anal, and some cancers of the throat, was recently approved. Additionally, the hepatitis B vaccination can prevent some forms of liver cancer.

Other kinds of cancer can be detected at an early stage through use of screening tests. For example, the Pap test can detect early stage cervical cancer. If diagnosed early enough, there is an increased likelihood it can be completely cured. It is unknown whether screening tests (such as, the blood PSA test) improve the prognosis for prostate cancer. Effective screening tests are also available for breast cancer (mammogram), colon cancer (colonoscopy), and skin cancer (examination by a doctor). Treatment of these forms of cancer is much more effective when the diagnosis is made before the cancer has spread to other parts of the body (FIGURE 3).

FIGURE 1

New Cancer Diagnoses DENVER, 2000 - 2008



This graph shows the rate of the more common cancers diagnosed in Denver residents from 2000-2008. Breast and prostate cancer are the most common cancers in Denver.

SOURCE: Colorado Central Cancer Registry

Cost Facts



Human papillomavirus (HPV) is a viral infection that can cause cervical cancer. HPV is one of the most common sexually transmitted infections, but can be prevented by vaccine. While cervical cancer from HPV can be detected early with a Pap smear, cost prevents many women from getting vaccinated or screened. The cost of screening is usually less than the cost of treatment and early detection is often associated with lower treatment costs. If all 12-year-old girls currently living in the United States were vaccinated, more than 1,300 deaths from cervical cancer would be prevented.¹³⁴

CANCER

Some forms of cancer are more common among population subgroups. The risk of most cancers increases with age. Prostate cancer is more common among Black men (FIGURE 3). Lack of access to health care is associated with diagnosis of cancer at more advanced and less treatable stages. Denver has not achieved national goals for breast and colon cancer. Hispanics and persons with incomes of less than \$25,000 per year have particularly low rates of cancer screening tests (FIGURES 5 AND 6).

Health care reform should improve quality and impact cost of health care for people with cancer and at risk for cancer. The federal program will eliminate copays for preventive services and require all health plans to cover cancer screening, treatment, and follow-up care.

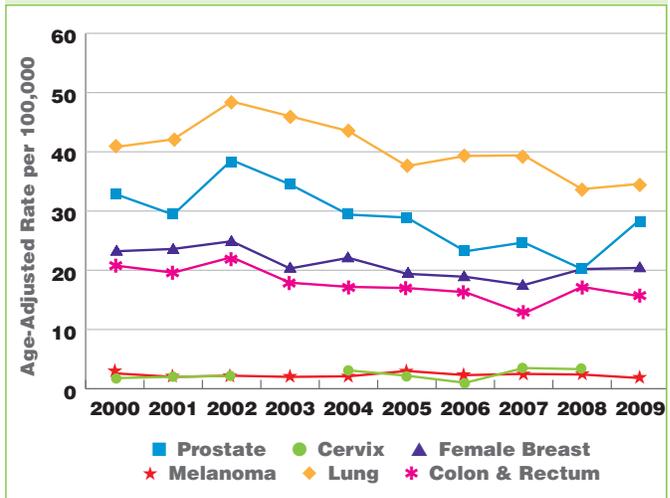
Local Story

Colorado Colorectal Screening Program

The Colorado Colorectal Screening Program (CCSP) screens for colorectal cancer, a cancer that starts in the large intestine (colon) or rectum. Screening tests are provided to lower income and uninsured individuals. Since the first test in January 2006, more than 13,300 colonoscopies (colorectal screening tests) have been completed. More than 110 cancers have been identified and it is estimated that 330 cancers have been prevented. Denver has eight partner sites in the program (SEE FIGURE 7 FOR LOCAL SCREENING RATES).¹³⁵

CCSP is funded by tobacco tax funds. Since July 2011, state budget cuts reduced program funding by 78%. CCSP shifted program services and began an annual take-home stool testing program in urban areas of the state. CCSP and screening sites in Denver are working together to continue providing access to colorectal screening services.¹³⁵

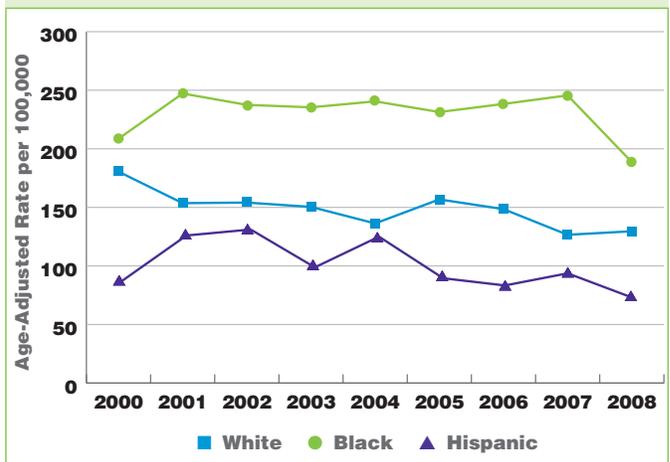
FIGURE 2
Cancer Death Rate DENVER, 2000 - 2009



This graph shows the rate of cancer deaths in Denver from six of the most common cancer types from 2000 to 2009. A majority of cancer deaths in Denver are from lung cancer, caused most often by smoking.

SOURCE: Vital Records

FIGURE 3
Prostate Cancer Incidence by Race and Ethnicity DENVER, 2000 - 2008



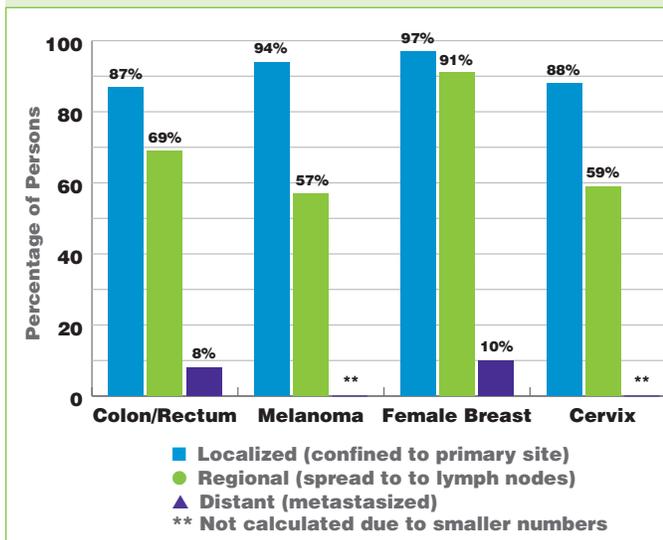
Black men continue to be at an increased risk for prostate cancer. This graph shows the rate of prostate cancer in White, Black, and Hispanic men in Denver.

SOURCE: Colorado Central Cancer Registry

CANCER

FIGURE 4

Five Year Survival Rate by Stage of Detection
DENVER, 2000 - 2005

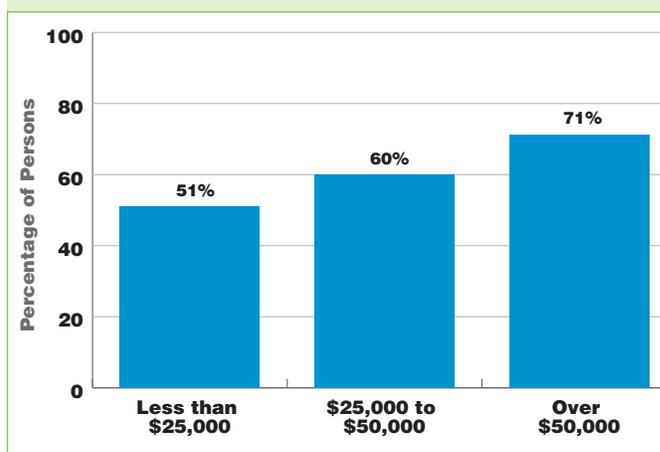


Cancers diagnosed at an early stage are often more treatable and are linked to higher survival rates. Survival to five years after diagnosis is affected by stage at diagnosis and how far the cancer has spread. Healthy People 2020 sets the goal that 72.8% of percent of persons with cancer are living five years after diagnosis.

SOURCE: Colorado Central Cancer Registry

FIGURE 5

Percentage of Persons Age 50 and Above Ever Screened for Colon Cancer* DENVER, 2010

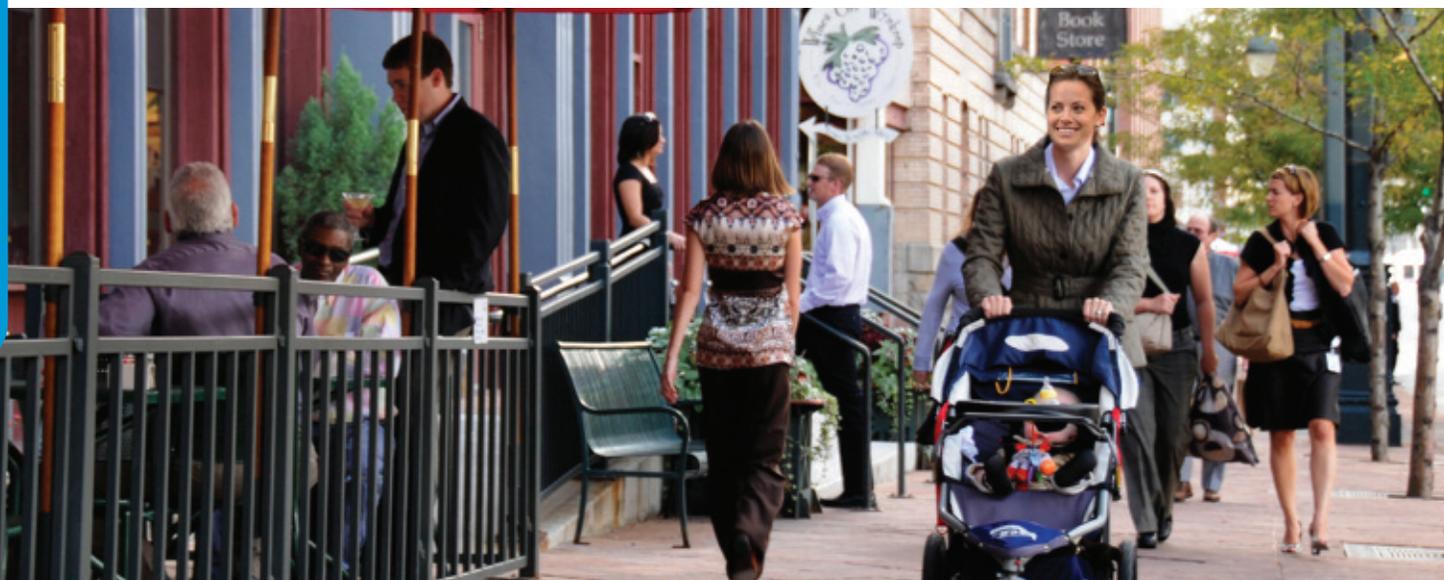


Colorectal cancer screening rates differ by annual household income. Households with lower annual income are less likely to have received screening for colon cancer.

SOURCE: Behavioral Risk Factor Surveillance System

*Colon cancer screening includes a sigmoidoscopy or a colonoscopy

Photo courtesy of Downtown Denver Partnership



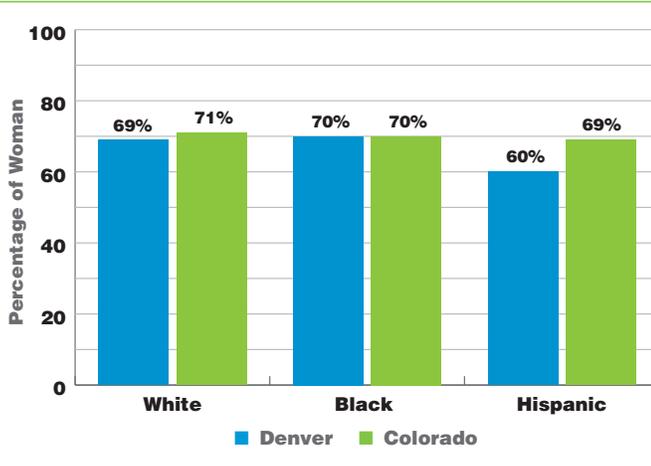
Comparison Story

Survivorship

A “cancer survivor” is someone who is living, but previously diagnosed with cancer. Cancer affects family members, friends, and caregivers of survivors. Cancer survivors face many challenges. Often, physical, social, spiritual, and financial challenges surface during diagnosis and treatment. The California Chapter of the American Cancer Society funds the Young Cancer Survivor Scholarship Program (YCSSP).¹³⁶ YCSSP provides funding to cancer survivors in need of financial aid for college. It allows cancer survivors to attend college by reducing the financial burden on families. The program improves the quality of life for young cancer patients and their families.

FIGURE 6

Percentage of Women Age 50 and Above Who Have Had Mammograms in the Past Two Years by Race and Ethnicity DENVER AND COLORADO, 2010

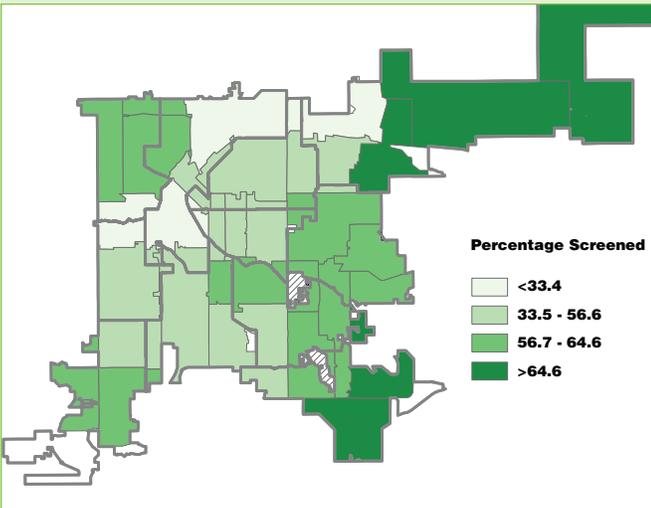


Mammograms can detect many breast cancers early. It is recommended that women over 50 receive a screening exam every two years.

SOURCE: Behavioral Risk Factor Surveillance System

FIGURE 7

Percentage of Persons Age 50 and Above Screened for Colorectal Cancer DENVER, 2006 - 2010



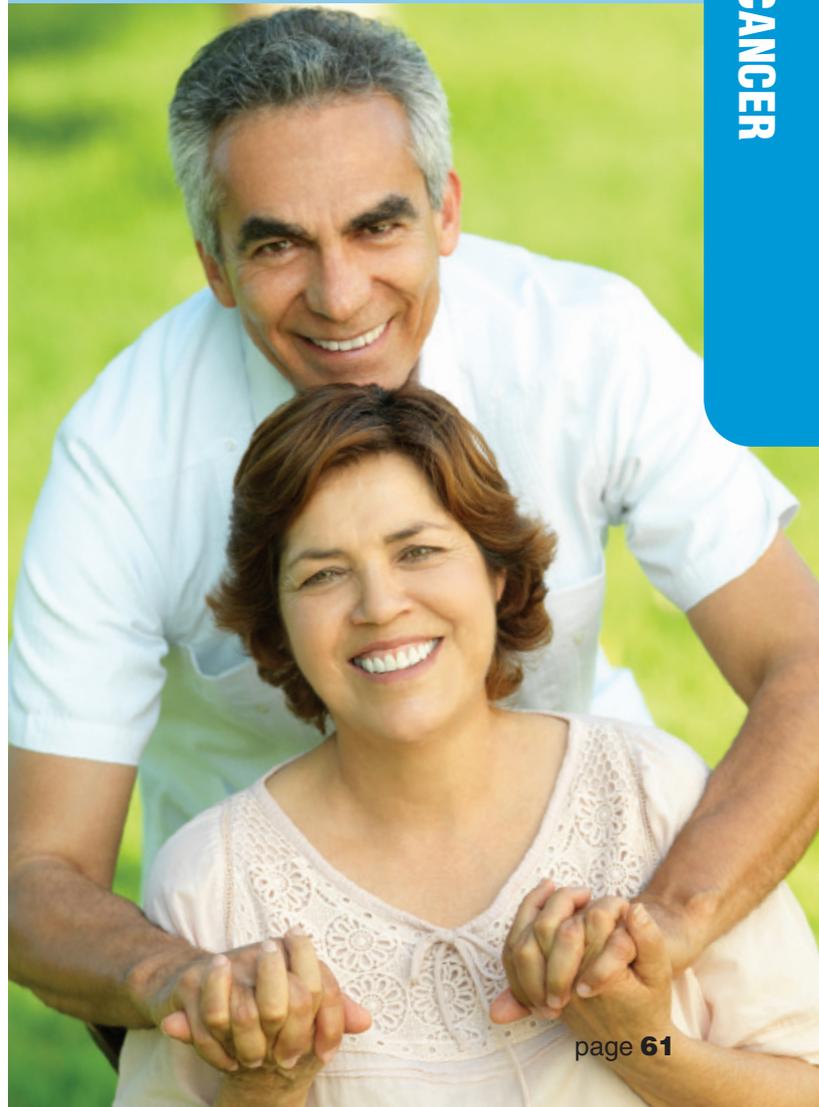
This map shows the percentage of people over 50 years who have received a colonoscopy or sigmoidoscopy.

SOURCE: Behavioral Risk Factor Surveillance System



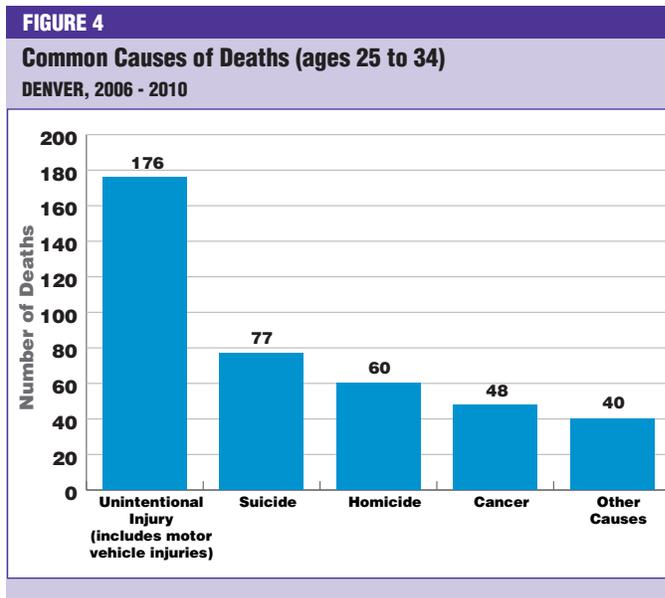
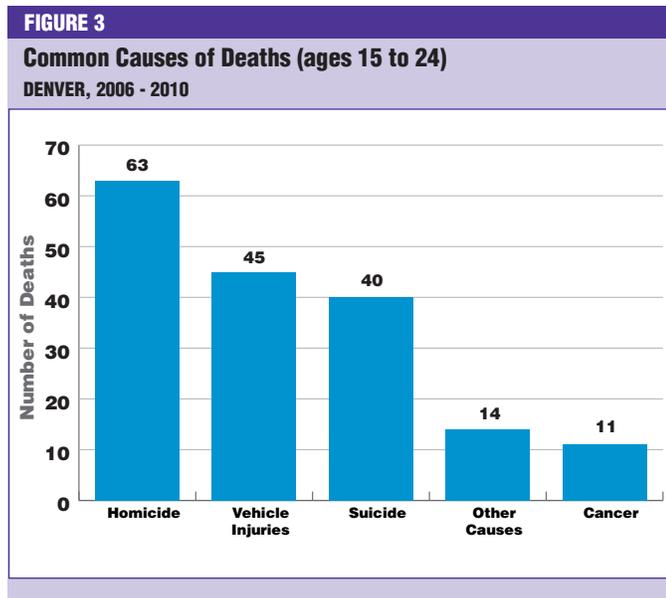
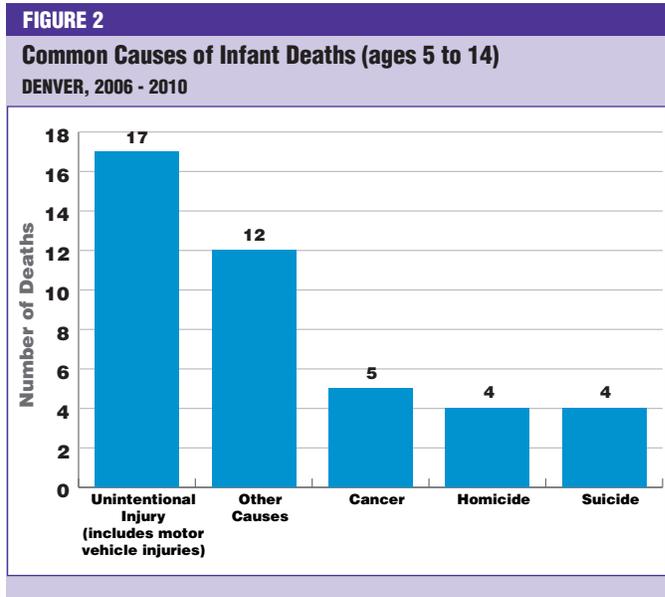
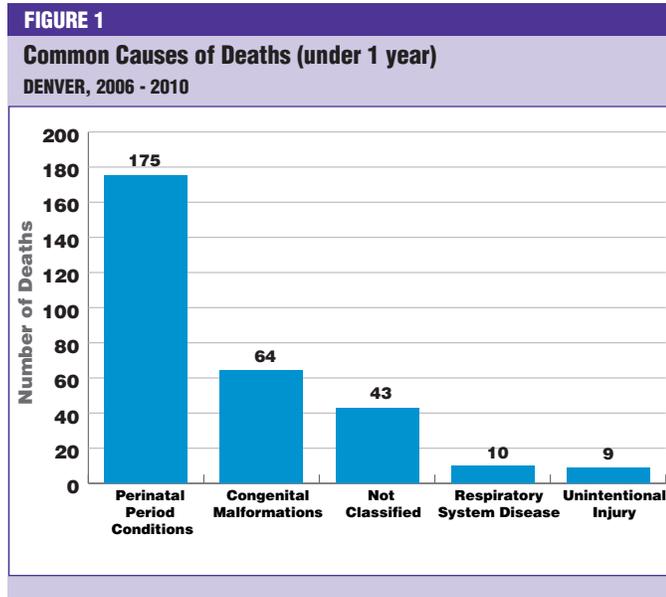
Did You Know

- The AMC Cancer Fund and 7News/Azteca channel are raising cancer awareness in Denver's Hispanic community. Through public service announcements, people learn about prevention and community services.¹³⁷
- Smoking damages nearly every organ in the human body. It is linked to at least 15 different cancers and accounts for approximately 30 percent of all cancer deaths.¹³⁸
- Today, a person who has been diagnosed with breast cancer in the earliest stages has a 98% chance of living at least five additional years, on average, compared to only 77% in 1982.¹³⁹



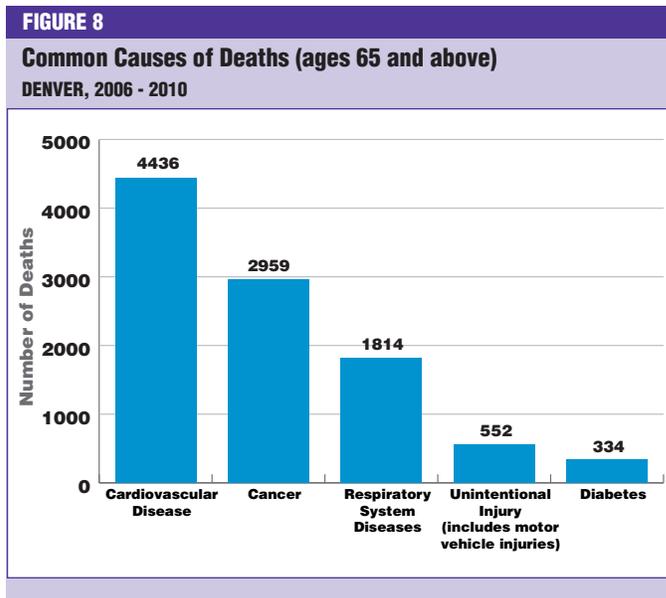
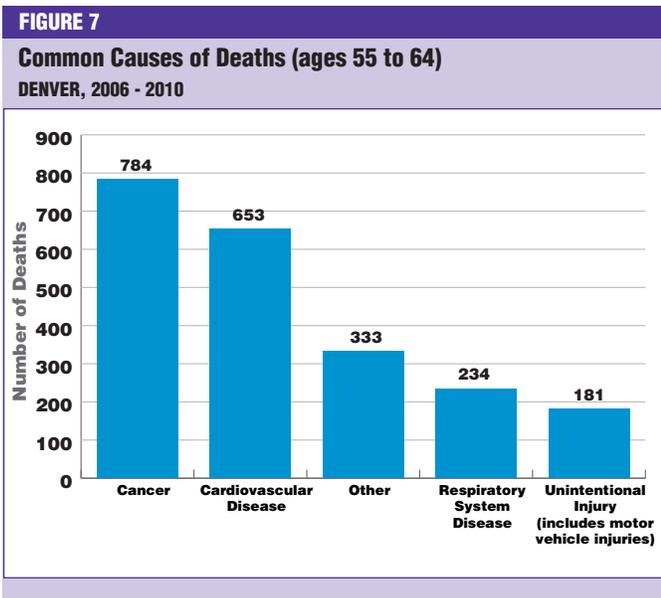
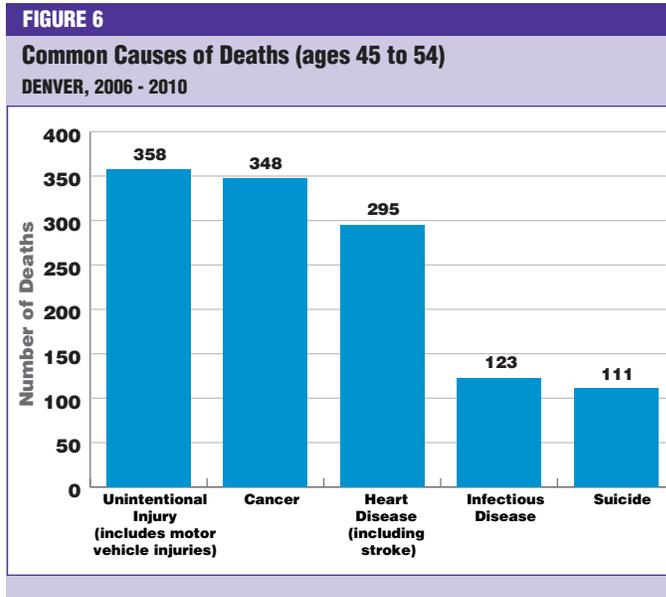
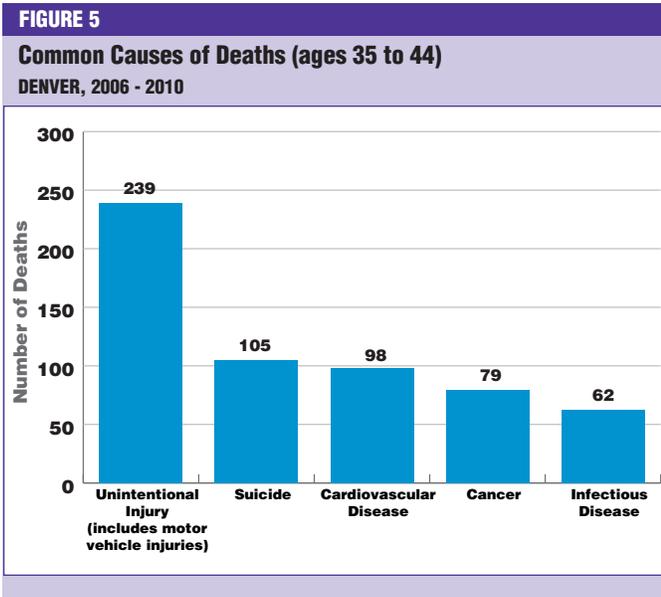
APPENDIX 1

Age-Specific Causes of Death



APPENDIX 1

Age-Specific Causes of Death



APPENDIX 2

Acronyms

ACS	American Community Survey	FASD	Fetal Alcohol Spectrum Disorder
AIDS	Acquired Immune Deficiency Syndrome	FDA	Food and Drug Administration
BMI	Body Mass Index	FPL	Federal Poverty Level
BRFSS	Behavioral Risk Factor Surveillance System	HKCS	Healthy Kids Colorado Survey
CCSP	Colorado Colorectal Screening Program	HCV	Hepatitis C Virus
CDC	Centers for Disease Control and Prevention	HIV	Human Immunodeficiency Virus
CDE	Colorado Department of Education	HPV	Human Papilloma Virus
CDOT	Colorado Department of Transportation	LGBTQ	Lesbian, Gay, Bisexual, Transgender and Questioning
CDPHE	Colorado Department of Public Health and Environment	MAT	Medication-Assisted Therapy
CEDRS	Colorado Electronic Disease Registry System	NFP	Nurse-Family Partnership
CHA	Colorado Hospital Association	NSDUH	National Survey on Drug Use and Health
CHAS	Colorado Health Access Survey	PM	Particulate Matter
CHP+	Child Health Plan Plus	PRAMS	Pregnancy Risk Assessment Monitoring System
CICP	Colorado Indigent Care Program	PRISM	Patient Reporting Investigation and Surveillance Manager
CLIMB	Consultation Liaison in Mental Health and Behavior	PSA	Prostate-Specific Antigen
COHS	Colorado Household Survey	PTSD	Post-Traumatic Stress Disorder
CV	Cardiovascular	RADARS	Researched Abuse, Diversion and Addiction-Related Surveillance
DACODS	Drug/Alcohol Coordinated Data System	REMS	Risk Evaluation and Mitigation Strategies
DC2C	Denver Court to Community	RMPDC	Rocky Mountain Poison and Drug Center
DEH	Department of Environmental Health	SAMHSA	Substance Abuse and Mental Health Administration
DPD	Denver Police Department	SNAP	Supplemental Nutrition Assistance Program
DPP	Denver Preschool Program	TB	Tuberculosis
DPS	Denver Public Schools	TBI	Traumatic Brain Injury
DTaP	Diphtheria, Tetanus, and Pertussis	Tdap	Tetanus, Diphtheria, and Pertussis
DUI	Driving Under the Influence	USDA	United States Department of Agriculture
eHARS	Electronic HIV and AIDS Reporting System	VMMC	Virginia Mason Medical Center
EMS	Environmental Management System	YCSSP	Young Cancer Survivor Scholarship Program
EMT	Emergency Medical Technician		
EPA	Environmental Protection Agency		

APPENDIX 3

About the Data

What are Population Data? Why should we use them?

Population data are used to describe a group of individuals. They capture the past, the current status, and can project how a health issue or disease might impact a population. This report describes the population of Denver. This information can be used to help identify health concerns and specific populations on which to focus health improvement efforts. Additionally, the data allow public health professionals to understand the impacts that behaviors and the environment have on individuals.

Age, race, ethnicity, gender, and geographic location are among many factors that can affect a person's risk for a certain health issue or disease. It can also affect the outcome of a health issue or disease. Population data in this report are often presented by age group, gender, or race and ethnicity to show differences in how populations are impacted by a health issue or disease.

Furthermore, the population characteristics of each city are different. Health and disease-related estimates can be adjusted to make the information more easily comparable to other populations. Throughout this report, charts and graphs will present counts, percentages (percent of that population with a health issue or disease), and age-adjusted rates. Each of these measures provides different perspectives about the data.

An example of comparing counts and percentages is illustrated below in Table 1. The table shows the number and percentage of people that are uninsured according to a recent survey. Denver has the highest number of uninsured people among the four counties listed in Table 1. Denver also has the largest population of these listed counties, but does not have the highest percentage of people uninsured (see purple boxes).

What is a rate?

This report describes the health status of Denver and how health status and conditions have changed over time. This report also compares Denver to both Colorado and targets set by the Healthy People 2020 goals. To show trends or make comparisons, we need to account for the fact that the number of health events depends in part on the number of people in the community. To account for growth in a community or to compare communities of different sizes, we use rates to provide the number of events per population unit. Rates consist of a numerator and denominator.

One example is the use of birth rates. Birth rates are calculated by dividing the number of births by the number of females in the population. The birth rate is reported as a rate per 1,000 females. The rate of births related illness (premature birth, low birth weight) is shown as a rate per 1,000 births (see *Maternal, Child, and Adolescent Health*).

Incidence and mortality rates help examine the pattern of health outcomes in communities of different sizes. This is the number of new cases or deaths divided by the size of the population. In chronic diseases and injuries, rates are usually expressed in terms of the number of cases or deaths per 100,000 people per year.

What is age-adjustment and why do it?

Almost all diseases or health outcomes vary depending on the age group. For example, the majority of chronic diseases, including most cancers, occur more often among older people. Age often determines the most common health problems in a community. In communities with similar populations, a community with an older population will have a higher rate of cancer than a community with a younger population.

TABLE 1
Uninsured Population in 4 Counties of Colorado 2010

	County Population	Number of People Uninsured	Percentage Uninsured
Denver County	600,158	115,844	19.3%
Adams County	441,603	98,328	22.3%
Arapahoe County	572,003	68,214	11.9%
Jefferson County	534,543	99,574	18.6%

SOURCE: Colorado Health Access Survey

APPENDIX 3

About the Data

Communities with more young children will have higher rates of bicycle injuries while communities with more elderly individuals will have higher cancer rates. Age-adjustment is a statistical method to remove the differences due to age so that the results are comparable among different geographical areas (communities, neighborhoods, cities, states).

How is age-adjustment done?

The process of age-adjustment changes the amount that each age group contributes to the overall rate in each community. This makes it so that the overall rates are based on the same age structure. By doing this, it can be determined if a population is being disproportionately affected by a health issue or disease. The age-adjustment rate is calculated by multiplying the crude rate (number of deaths or cases divided by the population for that age group) by a standardized age distribution weight determined from census data. The age-adjusted rates in this report use the U.S. 2000 Census population weights, which is the commonly accepted methodology.

For example, in 2010 there were 58 cases of pertussis (whooping cough) in Denver. This table shows how the number of cases is adjusted for the age of each person. Without age-adjusting, the rate of pertussis is 9.66 per 100,000 Denverites. After adjustment, the rate of pertussis in Denver is 9.82 per 100,000. The age-adjusted rate is adjusted slightly higher than the crude rate due to the age population differences in Denver as compared to the rest of the United States.

What are Causes of Death?

The causes of death or mortality were calculated from data collected by the county vital records office. Causes of death were determined from what was reported as the underlying cause of death listed on death certificates. The top 10 causes of death were determined by dividing the number of deaths from a specific cause by the total deaths in that time period to get a percentage. These were ranked from highest to lowest. There are many causes of death and these causes were grouped for the purpose of analysis. For example, deaths from gastrointestinal illness are grouped together in this analysis.

continued

TABLE 2

Statistical Age Group	2010 Denver Population	Number of Cases	Crude Rate*	Standard Age Distribution	Age Adjusted Rate*
Age 0 - 4 Years	43,515	33	75.84	0.069135	5.24
Age 5 - 9 Years	37,371	6	16.06	0.072533	1.16
Age 10 - 14 Years	30,365	5	16.47	0.073032	1.20
Age 15 - 19 Years	32,275	2	6.20	0.072169	0.45
Age 20 - 39 Years	219,701	8	3.64	0.282813	1.03
Age 40 - 59 Years	146,553	2	1.36	0.265139	0.36
Age 60 or Older	90,378	2	2.21	0.165179	0.37
Total	600,158	58	9.66	1.000000	9.82

* Rates shown are per 100,000 population

APPENDIX 3

Data Sources

The *Health of Denver 2011* utilized a number of sources for population data sources are described below.

Air Pollution Control Division's Technical Services Program

The Air Pollution Control Division Technical Services Program is responsible for the collection and analysis of air quality data throughout Colorado. Particulate and gaseous air monitors are distributed in most Colorado communities to track air quality trends and compliance with air quality standards. The program is also responsible for providing modeling analyses to determine the impacts various sources will have on air quality. Models are used to create and evaluate control plan strategies and to provide a basis for health risk assessments. For more information, visit <http://colorado.gov/airquality>.

American Community Survey

The American Community Survey (ACS) is an annual survey conducted by the U.S. Census department. The survey provides communities with current information to plan investments and services. The survey generates data that helps determine how more than \$400 billion in federal and state funds are distributed each year. It includes demographics on family and relationships, income and benefits, health insurance, education, veteran status, disabilities, employment, transportation, and cost of living. For more information about the ACS, visit www.census.gov/acs/www/about_the_survey/american_community_survey.

Behavioral Risk Factor Surveillance System Survey

The Behavioral Risk Factor Surveillance System (BRFSS) is a national survey conducted by the Centers for Disease Control and Prevention (CDC). It is conducted annually by trained interviewers. A random selection of Denver County adults (18 and over) are interviewed by telephone. Participation is voluntary and anonymous. The sample does not include institutionalized individuals and households without telephones. Data are weighted to represent the age, race and ethnicity, and gender distributions of adults in Denver. For more information, visit www.cdc.gov/brfss.

Colorado Central Cancer Registry,

The Colorado Central Cancer Registry is the statewide cancer surveillance program of the Colorado Department of Public Health and Environment (CDPHE). The program's goal is to reduce death and illness due to cancer by informing citizens and health professionals through statistics and reports on incidence, treatment and survival, and deaths due to cancer. The Registry is mandated by Colorado law and a regulation passed by the Colorado Board of Health. It receives financial support from the Colorado State General Fund and the Federal Centers for Disease Control and Prevention (National Program of Cancer Registries). Information is collected from all Colorado hospitals, pathology labs, outpatient clinics, physicians responsible for diagnosis and treatment, and State Vital Statistics. Data are registered on all malignant tumors, except basal and squamous cell carcinomas of the skin. All individual patient, physician, and hospital information is confidential as required by Colorado law. For more information, visit www.cdphe.state.co.us/pp/cccr.

Colorado Child Health Survey

The Colorado Child Health Survey was initiated in 2004 through a partnership between the Health Statistics Section of the CDPHE and several other programs and organizations. This survey is designed to fill the health data gap in Colorado that exists for children ages 1-14 years. A random digit dialing telephone survey method is used to reach the parents of young children. The BRFSS currently employs this method for Colorado adults. Once a respondent has completed the BRFSS, the interviewer inquires if they have a child in the target age range. If yes, they are asked to complete the child health survey. Participation is voluntary and anonymous. The survey provides information on children's physical activity, nutrition, access to health and dental care, behavioral health, school health, sun safety, injury, and other indicators. Approximately 1000 surveys are completed each year and data are weighted to represent the general population of children 1-14 years old. For more information, visit www.cdphe.state.co.us/hs/yrbs.

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Data Sources

Colorado Department of Revenue

The Department of Revenue is accountable for fulfilling state constitutional requirements for counties. The Department of Revenue is responsible for the assessment and collection of local taxes. The Department is also responsible for the disbursement of funds upon warrants drawn by the city auditor. The Department of Revenue is responsible for debt issuance, cash management, and portfolio investment. For more information, visit www.colorado.gov/revenue.

Colorado Electronic Disease Reporting System

The Colorado Electronic Disease Reporting System (CEDRS) is a secure Web-based disease reporting system. The system is used to fulfill statutory requirements for collecting, tabulating, and reporting communicable diseases designated by the Board of Health. Approximately 60 different diagnoses must be reported to state or local health departments. Reporting allows health departments to perform necessary follow-up and disease control activities to protect the public's health. For more information, visit www.coloradohealthinstitute.org/Data-You-Can-Request/Colorado-Electronic-Disease-Reporting-System-CEDRS.aspx.

Colorado Environmental Public Health Tracking

The Colorado Environmental Public Health Tracking program provides a Web-based surveillance system that features health and environmental data. Colorado Tracking is part of the National Environmental Public Health Tracking Network, created in partnership with the CDC. This network is to make data on environmental hazards, human exposure to those hazards, and health effects easier to find and use. For more information, visit www.coepht.dphe.state.co.us.

Colorado Health Access Survey

The Colorado Health Access Survey (CHAS) is the most complete survey of health care coverage, access, and use in Colorado. A random sample telephone survey is conducted of more than 10,000 households across the state. These data provide information that is representative of the over 5 million Coloradans. For more information on the CHAS, visit www.cohealthaccesssurvey.org.

Colorado Hospital Association

The Colorado Hospital Association (CHA) is the leading voice of the state's hospital community. CHA represents 95 hospitals and health systems throughout Colorado. CHA serves as a trusted, credible resource on health issues, hospital data, and trends for the media, policymakers, and the general public. Through CHA, Colorado's hospitals work together in their shared commitment to improving healthcare in Colorado. For more information, visit www.cha.com.

Colorado Household Survey

The 2008-2009 Colorado Household Survey (COHS) was a telephone survey of 10,000 randomly selected households in Colorado. It was initiated to collect information about the health insurance status of Coloradans. Funded by The Colorado Trust, COHS was an effort to more accurately assess the issues surrounding health insurance coverage in Colorado. A goal was to provide baseline information about health care coverage and access in anticipation of state and national health reform efforts. The Colorado Trust will continue the survey every other year and has renamed it the Colorado Health Access Survey. For more information, visit www.coloradohealthinstitute.org/COHS.aspx.

Denver Department of Environmental Health

The Department of Environmental Health's (DEH) mission is to promote healthy communities. The Department is responsible for providing environmental oversight and management, as well as public health promotion and outreach for the City and County of Denver. DEH partners with Denver Public Health to provide essential public health services for Denver's residents. For more information, visit www.denvergov.org/deh.

Denver Health and Hospital Authority

Denver Health and Hospital (DHHA) is Colorado's primary "safety net" institution, providing care for the uninsured. Twenty-five percent of all Denver residents, or approximately 170,000 individuals, received their health care at Denver Health in 2011. One of every three children in Denver is cared for by Denver Health physicians. For more information, visit www.denverhealth.org.

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Data Sources

Denver Metro TB Program

The Denver Metro TB Control Program prevents the spread of and provides treatment for (tuberculosis). The goal of the program is to eliminate TB as a public health problem seven-county Denver metro area, including Adams, Arapahoe, Boulder, Broomfield, Denver, Jefferson, and Douglas counties. For more information, visit denverhealth.org/Services/PublicHealth/TuberculosisTBClinic.aspx.

Denver Office of the Medical Examiner

The Denver Office of the Medical Examiner investigates deaths in the City and County of Denver that are required to be reported by Colorado statute. The office is responsible for the subsequent certification of the cause and manner of death. It is involved with the investigation of over 2,000 deaths annually in Denver. For more information, visit www.denvergov.org/coroner.

Denver Parks and Recreation Department

The Denver Parks and Recreation Department is dedicated to providing pleasant and exciting programs and facilities to its residents and visitors. The Department is dedicated to preserving and enhancing the historic architecture, boulevards and landscapes that define Denver as a world class city. For more information, visit www.denvergov.org/parksandrecreation.

Denver Police Department

The Denver Police Department (DPD) delivers high quality public safety services so all people may share a safe and healthy environment. The Data Analysis Unit of the DPD collects data on crimes against persons, crimes against property, public disorder, drug and alcohol offenses, white collar crimes, and all other offenses. For more information about the Denver Police Department, visit www.denvergov.org/police.

Denver Public Schools

Denver Public Schools (DPS) serves the residents of the City and County of Denver. DPS is committed to making Denver a national leader in student achievement, high school graduation, college and career preparation, and college matriculation. DPS is comprised of 73 Elementary, 16 K-8, 16 Middle, 12 traditional High, 30 Charter and 10 Alternative, including 6 intensive pathway schools. For more information, visit www.dpsk12.org.

Denver Public Works Department

The Department of Public Works provides for the delivery of high quality, cost effective, efficient, and safe services involving public infrastructure and facilities. These services are intended to enhance the quality of life in Denver. For more information, visit www.denvergov.org/dpw.

Department of Healthcare Policy and Financing, Medically Indigent and Colorado Indigent Care Program

The Department of Healthcare Policy and Financing administers the Medicaid and Child Health Plan Plus programs, as well as a variety of other programs for Colorado's low-income families, the elderly, and persons with disabilities. This report references the Fiscal Year 2009-10 Annual Report. For more information, visit www.colorado.gov/cs/Satellite/HCPF/HCPF/1197364086675.

Drug/Alcohol Coordinated Data System

The Drug/Alcohol Coordinated Data System (DACODS) is the primary client level data collection instrument used by the Division of Behavioral Health (DBH) of the Colorado Department of Human Services. DBH uses this information to monitor service quality, utilization and effectiveness, and to report to the legislature on treatment outcomes and service needs in Colorado. www.colorado.gov/cs/Satellite/CDHS-BehavioralHealth/CBON/1251581450340.

Enhanced HIV/AIDS Reporting System

eHARS is a Web-based HIV/AIDS surveillance system at the state and local health departments. The data are collected in documents such as case reports, lab reports, and death certificates. The health departments submit de-identified information electronically to the CDC on a monthly basis via a secure data network. For more information, visit <http://www.cdc.gov/hiv/topics/surveillance/resources/qa/generalqa.htm>.

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Data Sources

Environmental Epidemiology and Occupational Health

The Environmental Epidemiology and Toxicology Program provides assistance in environmental epidemiology, toxicology and health risk assessment for Colorado. Assistance is provided to all divisions within the CDPHE, other state agencies, local health agencies, and the public. Staff review, interpret and present information on physical, chemical, and toxicological properties and epidemiological characteristics of environmental contaminants that pose a potential or existing hazard to human health and the environment. The Program conducts surveillance and research to characterize and track occupational injuries, illnesses, hazards, and exposures that are specific to Colorado. For more information, visit www.cdphe.state.co.us/dc/envtox/ or www.cdphe.state.co.us/dc/OH.

Healthy Kids Colorado Survey

Endorsed by the Colorado Department of Education (CDE), the Healthy Kids Colorado Survey (HKCS) is administered by Denver Public Schools and provides information on the health and well-being of Denver's youth. Every other year, the survey is administered to 6th-12th grade students. Approximately 40 high schools representing urban, suburban, and rural areas of Colorado are randomly selected for the survey. The survey contains questions about health related behaviors, including safety, injury and violence, tobacco, alcohol, and other substance use, sexual behaviors, mental and physical health, and risk and protective factors. Data are adjusted for demographic characteristics (i.e. race/ethnicity, gender, and grade) and are weighted to represent the general population of DPS students. For more information on the HKCS 2009 State Report, visit www.cde.state.co.us/HealthAndWellness/download/CSHReport2009.pdf.

Healthy People 2020

Healthy People 2020 are a set of measurable disease prevention and health promotion objectives. The objectives were developed by experts in a wide variety of topics related to health. The national objectives are to be achieved by 2020. It is encouraged for individuals, groups, and organizations to use Healthy People 2020 to monitor community health improvement over time. For more information about Healthy People 2020, visit www.healthypeople.gov.

National Survey on Drug Use and Health

The National Survey on Drug Use and Health (NSDUH) provides national and state-level data on the use of tobacco, alcohol, illicit drugs (including non-medical use of prescription drugs) and mental health in the United States. NSDUH is an annual nationwide survey involving in-person interviews with approximately 70,000 randomly selected individuals aged 12 and older. For more information, visit <https://nsduhweb.rti.org>.

Patient Reporting, Investigation, and Surveillance Manager

The Patient Reporting, Investigation, and Surveillance Manager (PRISM) is a system that was developed by the Florida Department of Health and is used by the several State Public Health agencies including the CDPHE. PRISM collects data on sexually transmitted infections (STI), HIV, and viral hepatitis. Data are entered into the system by health departments. For more information, contact the HIV/STI or Viral Hepatitis divisions at CDPHE at <http://www.cdphe.state.co.us/dc/hivandstd/index.html> or <http://www.cdphe.state.co.us/dc/Hepatitis/index.html>.

Pregnancy Risk Assessment Monitoring System

The Pregnancy Risk Assessment Monitoring System (PRAMS) is a surveillance project of the CDC and state health departments. PRAMS collects data on maternal attitudes and experiences before, during, and shortly after pregnancy. Women are randomly selected from the birth certificate files and interviewed by mail and/or telephone. For more information about PRAMS, visit www.cdc.gov/prams/ or www.cdphe.state.co.us/hs/prams.

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Data Sources

Rocky Mountain Poison and Drug Control Center Researched Abuse, Diversion and Addiction-Related Surveillance System

The Researched Abuse, Diversion, and Addiction-Related Surveillance (RADARS) System is an independent, nonprofit operation of the Rocky Mountain Poison and Drug Center (RMPDC), a division of the Denver Health and Hospital Authority. RADARS is a prescription drug abuse, misuse, and diversion surveillance system that collects timely product- and geographically-specific data. The RADARS System measures rates of abuse, misuse, and diversion throughout the U.S., contributing to the understanding of trends and aiding the development of effective interventions. For more information, visit www.radars.org.

U.S. Census 2010

The U.S. Census attempts to collect data from every resident in the United States. It is mandated by Article I, Section 2 of the Constitution and takes place every 10 years. Data are collected on demographics, such as gender, race and ethnicity, and age. Each question helps to determine how more than \$400 billion in federal funding will be allocated to communities across the country. For more information, visit <http://2010.census.gov/2010census>.

Vital Statistics, Colorado Department of Public Health and Environment

The Vital Records office issues birth and death certificates. For birth certificates, data include the mother, father, and infant's demographics and weight. Death certificates capture information including the deceased person's demographics, cause(s) of death, and residence of death. All Denver deaths and births are included in the vital records data. For more information, visit <http://www.cdphe.state.co.us/hs/vs>.



APPENDIX 4

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