



# Racial and Ethnic Health Disparities in Colorado 2009

Office of Health Disparities  
Colorado Department of Public Health and Environment



All Coloradans will have an equal opportunity to be healthy regardless of race and ethnicity.

# Racial and Ethnic Health Disparities in Colorado 2009

## Office of Health Disparities, Colorado Department of Public Health and Environment

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*The Office of Health Disparities is a state program of multi-cultural health professionals dedicated to eliminating racial and ethnic health disparities in Colorado by fostering systems change and capacity building through multi-sectoral collaborations.*

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# Executive Summary

OVER THE PAST 50 YEARS, the United States has benefited greatly from advances in medicine, environmental protection, disease-control and health-promotion strategies. Improved technologies within the medical, public health and environmental fields have resulted in increased life expectancy and a better quality of life. However, all racial and ethnic groups have not benefited equally from these advances. Communities of color are disproportionately affected by disease, disability and death. These differences in health status among groups are known as health disparities and are present at the national, state and local levels.

This is the third report prepared by the Colorado Department of Public Health and Environment to examine racial and ethnic health disparities in Colorado. The first health disparities report was published in 2001 by the Colorado Turning Point Initiative in cooperation with the Colorado Minority Health Forum. The Turning Point Initiative coordinated the development and implementation of a public health improvement plan, which identified the elimination of health disparities as a high priority for the Turning Point Initiative. The 2001 report was a profile of health disparities among communities of color in Colorado and included an executive summary and overview of the state's population, health indicators by race and ethnicity, factors that contribute to health disparities and recommendations for the elimination of health disparities in Colorado.<sup>1</sup> A second, more comprehensive report was published in 2005.<sup>2</sup> The bulk of the 2005 report focused on 29 indicators of health status for four Colorado communities of color. It also included discussions of mental health, determinants of health and the cost of health disparities and recommended measures for reducing health disparities. The most recent data included in the 2005 report are for 2002.

The 2009 report updates and expands on the findings of the 2005 report while retaining a focus on Colorado's four major communities of color: Hispanics/Latinos, African-Americans/Blacks, American Indians and Asians/Pacific Islanders.\* New features include

- more information on the characteristics of each group, including demographic and social differences within each broader community of color;

- an updated discussion of the relationship of social and environmental determinants of health to health disparities;
- new material on immigrants and health disparities and the importance of culturally competent care and services to improving the health of Colorado's diverse population;
- a summary of promising initiatives undertaken by public and private organizations in Colorado to reduce documented health disparities; and
- a detailed discussion of the strengths and weaknesses of the data sources used in this report.

Most important, this report expands the number of Colorado indicators from an average of 14 per group/community in the 2005 report to an average of 40 in this report.

National data show a discouraging pattern that is evident in this report as well. Despite increased attention to health disparities at the national, state and community levels, relatively little progress has been made in achieving the vision of the Healthy People 2010<sup>3</sup> initiative of eliminating racial and ethnic health disparities by 2010. Each of the four communities of color has deep historical roots in Colorado, and the state has become increasingly diverse in recent years.

Today, Hispanics/Latinos account for nearly 20 percent of the state's population. African-Americans/Blacks make up 4 percent, Asians/Pacific Islanders 3 percent and American Indians 1 percent. Today roughly 15 percent of Coloradans speak a language other than English at home, and members of the four communities of color reside throughout rural and urban Colorado.

As mentioned above, this report consists of an average of 40 health indicators based on recent Colorado data for each of the four communities of color. Each section begins with a brief demographic overview of the group. Health indicators then are presented in a sequence based on life cycle stage (maternal and infant health, child and adolescent health, and adult health), risk factors (smoking, nutrition, etc.) and leading causes of death (heart disease, cancer, etc.). Each section includes a discussion of data limitations, one or more summaries of initiatives in Colorado to address disparities and recommendations for reducing disparities for each group.

\* Some sections of this report, especially the section on mental health, include material published in the 2005 report



The introduction is followed by five more general sections that precede the sections presenting indicators for each community of color. The general sections are as follows:

- **Determinants of health.** This section explores how the social conditions in which people live and work contribute to the health disparities documented later in the report. Data are presented on socioeconomic status for each group, variations in access to health care due to differing levels of insurance coverage, differences in quality of health care and environmental justice.
- **Immigration.** Each community of color includes native-born Americans whose roots in Colorado go back generations as well as recent immigrants. While many recent immigrants are healthy young adults, immigrants who are undocumented have limited ability to speak English or lack health insurance and are at risk for poor health. This section calls attention to ways that immigration status can contribute to health disparities, especially for Colorado's Asian/Pacific Islander and Hispanic/Latino communities.
- **Cultural Competence.** Providing culturally competent health services to a culturally diverse population is a challenge for Colorado's public health and health-care systems. This section points to steps that can be taken to address this problem.
- **Mental Health.** This section reminds us that health is more than the absence of physical diseases and that mental health issues may present themselves differently in communities of color.
- **Cost of Health Disparities.** Health disparities are costly in several senses of the term. They generate costs to the health-care system that could be reduced by the elimination of disparities. More importantly, poor health extracts a cost to individuals, families and communities by limiting the ability of people to realize their full potential.

## Summary of Findings

The indicators presented in each group section provide a fairly comprehensive picture of disparities: areas where the burden of disease is greater or lesser for a particular community than for the Colorado population as a whole. The term “health disparities” carries the connotation of greater disease burden, health risk, access to quality health care, etc. for communities of color. However, as demonstrated in this report, there are indicators for each group where its “performance”



is disparate but “better” than that of the state population overall. To distinguish between the two types of disparities we have labeled the former “disparities of concern” and the latter “positive indicators.” Except for the Asian/Pacific Islander population, where we found many more positive indicators than disparities of concern, and American Indians, where the available indicators provide very limited information on either type of disparity, we have found in Colorado what has been reported elsewhere for the nation as a whole: disparities of concern substantially outnumber (and outweigh in terms of seriousness of health concern) positive indicators.

Below we present selected disparities of concern and positive health indicators for each community of color. Each is given a brief title with the relevant figure number within that group section in parentheses. There are fewer indicators presented for American Indians and Asian/Pacific Islanders due to data limitations. Readers are encouraged to consult the individual sections to get a clearer picture of the extent to which a group's performance differs from that of the total population. Additional information on data sources and accuracy may be found in the Appendix.

## Hispanic/Latino

The rapidly growing Hispanic/Latino community is burdened by disparities of concern affecting children, youth and adults, yet there are areas where Hispanics/Latinos exhibit better health behaviors, lower disease prevalence and lower mortality rates.

Disparities of concern (Figure No.)	Positive indicators (Figure No.)
Child obesity (13)	Smoking and drinking in last three months of pregnancy (11,12)
Child oral health (14–16)	Hypertension (27)
Teen fertility (18)	Lung cancer incidence and mortality (38,39)
Adult obesity (26)	Heart disease mortality (40)
Diabetes mortality (43)	
Chronic liver disease and cirrhosis mortality (50)	
Motor vehicle injury mortality (52)	
Homicide and legal intervention mortality (53)	

## African-American/Black

The African-American/Black population experiences the greatest magnitude of health disparities by race and ethnicity, both nationally and in Colorado. However, there are areas where African-Americans/Blacks exhibit better health behaviors, lower disease prevalence and lower mortality rates.

Disparities of concern (Figure No.)	Positive indicators (Figure No.)
Infant and perinatal mortality (5, 6)	Drinking during last three months of pregnancy (11)
Low-weight births (7)	Teen fertility (16)
Three+ stressors during pregnancy (9)	Binge drinking (23)
Childhood obesity (12)	Chronic lower respiratory disease mortality (44)
Adult obesity (24)	Suicide (49)
Hypertension (25)	Motor vehicle injury mortality (50)
Heart disease mortality (26)	
Cancer mortality (all cancers) (28)	
Prostate cancer mortality (36)	
Diabetes mortality (47)	
Homicide and legal intervention mortality (48)	
HIV mortality (52)	

## American Indian

As described in the American Indian section, there are fewer health indicators for Colorado's American Indian population, and those indicators that do exist are less reliable for American Indians than for other groups. Data limitations represent a major challenge for identifying health disparities for Colorado's American Indian population. These limitations are primarily a function of the inadequacies of the current data systems and misclassification of American Indians as some other race/ethnicity group in standard health data systems such as vital records. There also are limitations on data sharing from the Indian reservations. National data suggest that the burden of disease for Colorado's American Indian population is greater than suggested by the indicators included in this report.

Disparities of concern (Figure No.)	Positive indicators (Figure No.)
Smoking (6)	Heart disease mortality (11)
Binge drinking (10)	Cancer mortality (12)
Diabetes Mortality (16)	

## Asian/Pacific Islander

In contrast to the other three communities of color covered in this report, Colorado Asians/Pacific Islanders, like Asians/Pacific Islanders nationally, exhibit far more positive indicators than disparities of concern. By the indicators covered in this report, the Asian/Pacific Islander community appears healthier than other groups. Small population numbers and the diversity of Colorado's Asian/Pacific Islander population create special challenges to compiling data appropriate for assessing the health of this diverse community and for accurately estimating the extent of health disparities between the Asian population and the total population, as well as within the Asian population.

Disparities of concern (Figure No.)	Positive indicators (Figure No.)
Cervical cancer mortality (31)	Three+ stressors during pregnancy (9)
Tuberculosis incidence (36)	Smoking and drinking in last three months of pregnancy (10, 11)
Chronic Hepatitis B (43)	Children's oral health (13–15)
	Life expectancy (16)
	Smoking and drinking (20, 21)
	Adult obesity (22)
	All cancer mortality (25)
	Lung cancer mortality (33)
	Heart disease mortality (34)
	Chronic lower respiratory disease mortality (38)

## Addressing Disparities

At the national, state and community level, various groups, both public and private, have done much to heighten public awareness of the extent and persistence of health disparities. Researchers have extended our knowledge of the pervasiveness of this problem, and public health officials have devised a number of strategies for reducing health disparities. In Colorado, the Office of Health Disparities was established in the Colorado Department of Public Health and Environment in 2004. Local foundations have generously funded numerous initiatives to reduce disparities, often for specific health conditions afflicting specific communities of color in Colorado. No magic bullet has emerged from these efforts, but small victories are being won across the state. Each group section opens with a discussion of community strengths that can be drawn upon to address disparities. Each section concludes with summaries of specific initiatives in Colorado communities and recommendations to redouble efforts to reduce and, ultimately eliminate, disparities.

## Recommendations

This report illustrates the facts that racial and ethnic health disparities are complex, and suggests that solutions to close the gap must be equally complex and will need to operate on many levels.

### Recommendation for Improving the Social Determinants of Health

Plan and develop socioeconomic interventions that improve community's access to better housing conditions, improved nutritional choices, health care, goods and services.

### Recommendation for Improving the Practice of Epidemiology

Researchers and public officials need to work together to evaluate the effectiveness of disparities interventions and to document and publicize those programs and policies that yield positive results.<sup>4</sup>

### Recommendations for Improving Cultural and Linguistic Competence

With numerous cultural competence resources available (e.g., books, videos, training), all people can pursue professional development to improve their cultural competence skills to work more collaboratively with the communities they serve. Recommendations to

expand cultural competence capacity include the following:

- Develop standards tailored to community needs, collect data to identify service needs, finance interpreter services and increase the supply of minority health providers.<sup>5</sup>
- Incorporate funding for professional interpretation and translation services into grant applications.
- Develop minimum standards for culturally and linguistically competent health services; undertake data collection and research on successful practices; support education, training and development of a more competent workforce; and monitor and enforce the effectiveness of implemented programs.<sup>6</sup>
- Provide equitable and effective treatment in an appropriate manner to all people who enter the health-care system.<sup>7</sup>
- Allocate time and resources for cultural competence training.

### Recommendations for Improving Work Force Diversity and Leadership Development in the Health Professions

A means to achieving the aforementioned cultural and linguistic competence in an organization is the strategic recruiting, hiring and retaining of a diverse work force. The supply, composition and competence of the health work force are important ingredients in maintaining and improving the health status of individual patients and broader populations.<sup>8</sup> Recommendations include the following:

- Provide financial incentives for minority students and institutions committed to increasing the graduation rates of those students to increase public health work force diversity. Provide substantial support for scholarships and loan repayment grants to minority and low-income health professions students willing to practice in underserved areas.
- Support people of color in the health professions through strategic partnerships, leadership development, continuing education and networking activities, as well as organizations that educate policymakers about public and institutional policies that promote health work force diversity.<sup>9</sup>
- Create leadership development programs that intentionally recruit people of color and that incorporate individual leadership training, organizational capacity building and constituency development.<sup>10</sup>



- Diversify health professions through such efforts as mentoring, developing a critical mass of under-represented minority health professions students and faculty, providing focused and consistent support from leadership, and providing social and psychological support.<sup>11</sup>

## Recommendations for Health Promotion and Preventive Care

- Expand the number and capacity of community health centers, reduce financial barriers to obtaining primary care, and increase research efforts to address disparities in primary care for minority populations.
- Encourage provider-community prevention partnerships, target resources to populations disproportionately affected by disease, and implement screening and prevention programs targeted toward minority communities.<sup>12</sup>
- Implement and evaluate culturally appropriate patient education programs to increase patients' knowledge of how to best access care and participate in treatment decisions.<sup>13</sup>
- Implement patient navigator and/or outreach worker models to effectively address the needs of disparate populations with chronic diseases.



## Recommendations for Improving Mental Health Disparities

The presence of mental illness predicts adverse physical health outcomes. Addressing disparities in mental health care also can address general health outcomes for those suffering mental illness. The tables below outline corrective measures to address these needs:

**Table 1.1: Corrective Measures for Mental Health Disparities<sup>14</sup>**

- Reduce stigmatization of mental illness through education.
- Enhance communication-based social skills training for those with mental illness.
- Improve access to and availability of mental health services in underserved communities.
- Enhance numbers of providers to the underserved through targeted recruitment.
- Increase education to improve treatment compliance.

**Table 1.2: Corrective Measures for Physical Health Disparities in Patients with Mental Illness<sup>15</sup>**

- Correct educational deficits on the part of health-care deliverers.
- Improve cultural competence of health-care providers.
- Provide "health-care extenders" to address shortages of providers in underserved communities.
- Provide "one-stop shopping" for medical and psychiatric interventions.
- Emphasize evidence-based prevention and effective interventions.

## Recommendations for Strengthening the Safety Net System

- Support safety net hospitals and providers in the community (e.g., provide funding for community-recommended services, volunteer to help transport patients to and from clinics).
- Health services programs should ensure that underserved clients (including racial and ethnic minorities) receive all services for which they are eligible.
- Health services programs should collect and analyze patient data to improve services for the racial and ethnic minorities.

## Research and Promising Practices

- Improve research, surveillance, monitoring and evaluation to provide better data and tools to address health disparities. Major inadequacies in data collection hamper efforts within individual states and hinder efforts to understand differences among states.<sup>16</sup>

- Enhance surveillance systems and supply necessary resources to enable the generation of reliable estimates for minority populations.
- Seize the opportunities and fulfill the critical role that public and private agencies have in fostering collection, analysis and use of minority health data for the identification and amelioration of disparities.<sup>17</sup> The accepted national standard for data collection is the race and ethnicity categories in the Office of Management and Budget's Directive 15.
- Researchers must talk with people in the community to get their personal stories and opinions to fully understand how stress, racism and health are related. Such descriptions (qualitative studies) provide a context to help researchers understand how social interactions create health outcomes.<sup>18</sup>
- Infuse practice with evidence-based interventions and share results of community-based research and promising program strategies with others in the field and in the community.



## Overarching Recommendations

Social and behavioral factors have a broad and profound impact on health across a wide range of conditions and disabilities. A better balance is needed between the clinical approach to disease (presently the dominant public health model for most risk factors) and research and intervention efforts that address generic social and behavioral determinants of disease, injury and disability.<sup>19</sup>

Rather than focusing interventions on a single or limited number of health determinants, interventions on social and behavioral factors should link multiple levels of influence, (i.e., individual, interpersonal, institutional, community and policy levels).<sup>20</sup>

- Organizations should adopt the goals and strategies from the Colorado Interagency Health Disparities Leadership Council's strategic plan *Working Together to Address Racial and Ethnic Health Disparities in Colorado*. (<http://www.cdphe.state.co.us/ohd/08HealthDisparitiesStrategicPlan.pdf>)
- The Office of Health Disparities invites organizations to report on their successfully implemented best practices, challenges and ideas for private and public partnerships.
- The Office of Health Disparities reminds organizations to keep the overarching issues of health disparities in mind when developing and implementing programs and providing equitable services to the community.

## Suggested Uses of this Report

- Cite report data in grant applications.
- Cite report data in presentations to educate people about health disparities and their root causes.
- Use the data for planning and setting priorities.
- Use the data to set measurable objectives to develop a program.
- Use the recommendations in the report to advance your organizations' programs, policies and/or priorities.
- Use data and recommendations to advocate for the needs of communities of color.

# Introduction and Overview of Colorado's Racial and Ethnic Diversity and Health Disparities

OVER THE PAST 50 YEARS, the United States has benefited greatly from advances in medicine, environmental protection, disease control, and health promotion strategies. Improved technologies within the medical, public health and environmental fields have resulted in increased life expectancy and a better quality of life. However, racial and ethnic groups have not benefited equally from these advances. Communities of color are disproportionately affected by disease, disability and death. These differences in health status among groups are known as health disparities and are present at the national, state and local levels.

This is the third report prepared by the Colorado Department of Public Health and Environment intended to describe and examine racial and ethnic health disparities in Colorado.

This report updates and expands on the findings of the 2005 report<sup>21</sup> while retaining a focus on Colorado's four major communities of color: Hispanics/Latinos, African-Americans/Blacks, Asians/Pacific Islanders and American Indians. New features include

- more information on the characteristics of each group, including demographic and social differences within each broader community of color;
- an updated discussion of the relationship of social and environmental determinants of health to health disparities;
- new material on immigrants and health disparities and the importance of culturally competent services to maximizing the health of Colorado's diverse population;
- a summary of promising initiatives undertaken by public and private organizations in Colorado to reduce documented health disparities; and
- a detailed discussion of the strengths and weaknesses of the data sources used in this report.\*

National data show a discouraging pattern that is evident in this report as well. Despite increased attention to health disparities at the national, state and community levels, relatively little progress has been made in achieving the vision of the Healthy People 2010<sup>22</sup> initiative of eliminating racial and ethnic health disparities by that date.

## Organization of the Report

The focus of this report is current data (sometimes referred to as “indicators” or “health indicators”) on health disparities. There is a separate section for each community of color. Each of these sections begins with a brief discussion of the size, growth, composition and geographic distribution of the group. Health indicators are organized in terms of the life cycle: pregnancy and birth outcomes, childhood, adolescence and adulthood.\*\* Within the life cycle stages are indicators of risk factors (e.g., smoking), disease incidence (e.g., people diagnosed with cancer from the Cancer Registry) and mortality. Each section ends with recommendations for addressing disparities and examples of current efforts to do so. Preceding the sections on Colorado's four communities of color are sections on determinants of health, immigration, cultural competence, mental health and the cost of health disparities. This introductory section includes a historical overview of Colorado's racial and ethnic diversity and a summary of health disparities. The section on recommendations for improving health disparities provides overarching recommendations and suggested uses of this report. The appendix provides a description of the sources of the data used in this report. Data limitations are discussed both in the appendix and at appropriate points throughout the report.

## Overview of Colorado's Racial and Ethnic Diversity

What is Colorado today has been home to American Indians for thousands of years. In the early 18<sup>th</sup> century, Spanish explorers moving north from New Mexico entered what is now Colorado. By the early 19<sup>th</sup> century, French and American trappers routinely passed through Colorado in search of furs. Near what is now Las Animas, a permanent trading post, Bent's Old Fort, was established on the Arkansas River in 1835. After victory in the Mexican–American War in 1848, the United States acquired southern Colorado. In 1851, Colorado's first permanent settlement, San Luis, was established in the San Luis Valley.

\* Some sections of this report, especially the section on mental health, include material published in the 2005 report.

\*\* Relatively few indicators are available for childhood and adolescence, and there are no indicators specific to the elderly.



White people were a distinct minority in Colorado until the discovery of gold near the confluence of Cherry Creek and the South Platte River in the summer of 1858. The Gold Rush brought thousands from the eastern United States, including a few African-American/Blacks. With the arrival of the railroad in 1870, built in part by Chinese workers, each of the four broad communities of color that are the focus of this report were all established in Colorado. From the achievement of statehood in 1876 to the present day, Colorado has been home to a racially and ethnically diverse population.\*

Each of the communities of color featured in this report has been present in Colorado since the first (1860) census results for the Colorado Territory. The results show 34,227 residents, including 46 classified as “Negro.”

Four years after Colorado achieved statehood, the population had grown to 194,327, including 2,435 Negroes (as classified by the census) and 766 of “other races.” By the onset of World War II (1940), Colorado had a population of 1,123,296, including an estimated 12,176 African-American/Blacks, 2,734 Japanese, 1,360 American Indians and 216 Chinese. The total includes 92,540 with “Spanish mother tongue.”\*\*

\* A standard history of Colorado, Abbott, C., Leonard, S.J. and McComb, D., 1982 Colorado: A History of the Centennial State (revised edition) Colorado Associated University Press provides more detail on the settlement of Colorado and the growth of each community of color. See also Limerick, P.N., 1987, The Legacy of Conquest: The Unbroken Past of the American West, Norton.

\*\* U.S. Bureau of the Census, 1940 Census of Population.



## The Office of Health Disparities

The Office of Health Disparities was officially introduced in September of 2004. The executive director of the Colorado Department of Public Health and Environment created two structures to assist public health systems in addressing health disparities among minority communities. The Office of Health Disparities serves in a coordinating, educating and capacity-building role for state and local public health programs and community-based organizations. The Minority Health Advisory Commission provides a formal mechanism for community members to give input on health programming at the level of the executive director of the Colorado Department of Public Health and Environment. These two structures evolved out of a six-year Turning Point grant provided by the Robert Wood Johnson Foundation and a start-up grant from Kaiser Permanente to officially launch the Office of Health Disparities. The office and the commission were codified in statute through Senate Bill 242 in May 2007.

The Office of Health Disparities is dedicated to eliminating racial and ethnic health disparities in Colorado by fostering systems change and capacity building through multisectoral collaboration.

### Office Functions

- Publish data reports documenting health disparities
- Provide education on racial and ethnic health disparities and cultural competence
- Improve interpretation and translation services within public health systems
- Build capacity within communities to extend public health programs

- Conduct state-level strategic planning on minority health improvement
- Provide technical assistance to the department as well as local health departments, community-based organizations and communities statewide
- Promote work force diversity within public health systems
- Serve as point of contact and resource for the public
- Coordinate the Minority Health Advisory Commission
- Coordinate and support the Interagency Health Disparities Leadership Council
- Coordinate the Health Disparities Grant Program

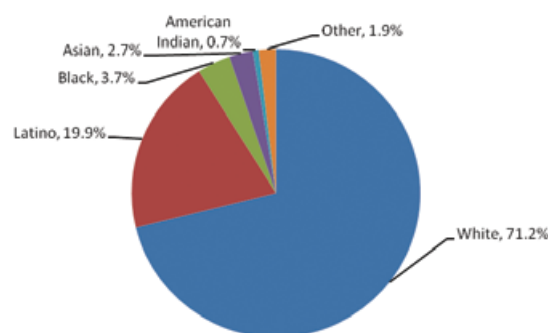
### The Minority Health Advisory Commission's Purposes

- Provides a formal mechanism for community members to give input on health programming at the level of the department executive director
- Helps the department determine culturally innovative data-collection strategies
- Strengthens collaborations between the department and communities of color
- Makes recommendations for the Health Disparities Grant Program regarding financial support for local and statewide initiatives that address prevention, early detection, needs assessment and treatment of cancer, cardiovascular disease (including diabetes) and pulmonary disease in minority populations

For updated information on the Office of Health Disparities, please visit <http://www.cdph.state.co.us/ohd/>

The post-war period was characterized by periods of rapid economic expansion, which brought migrants of all major race and ethnic groups from elsewhere in the United States. By the end of the 20<sup>th</sup> century, Colorado had a population of 4,301,261 with immigration from Mexico, Central America and Asia playing an increasing role in the state's population growth. The most recent estimates from the Census Bureau show Colorado with a population approaching 5 million of which 71 percent are White, non-Hispanic; 20 percent Latino; 4 percent Black; 3 percent Asian; and 1 percent American Indian. With continued immigration, including that from regions previously unrepresented in Colorado, and the higher fertility of some communities of color, we can expect racial and ethnic diversity to become an ever-more-prominent feature of Colorado's population.

**Figure 1. Population of Colorado's major racial and ethnic groups, 2007**



Source: U.S. Bureau of the Census, *Annual Estimates of the Population by Sex, Race and Hispanic Origin for States: April 1, 2000, to July 1, 2007*

## Classifying and Naming Colorado's Communities of Color

The four communities of color that are the focus of this report, Hispanics/Latinos, African-Americans/Blacks, Asian and Pacific Islanders and American Indians, reflect the state's ever-changing demographic composition. Each community of color (and the majority White population) is, itself, composed of distinct subgroups that may or may not identify with the five broad groups discussed in this report. The beginning of each group section includes a brief discussion of major subgroups.

The health indicators that are the empirical foundation of this report generally are available only for the five major groups at the state level. This precludes, for example, reporting separately on Asian and Pacific Islanders with different cultural traditions and national origins (e.g., Asian Indians, Japanese-Americans, Hmong, Filipinos) or distinguishing the health status of Latinos recently arrived from Central America from those whose families have resided in Colorado for more than a hundred years.

The broad groups included in this report are similar to those recognized in national demographic and health data systems. However, several conventions have been adopted to make this report more accessible to the general reader. Federal data-gathering standards require that race and ethnicity (e.g., Hispanic origin) be treated as distinct concepts and that individuals be given the opportunity to identify with more than one race. This results in a more complex classification scheme that more accurately reflects the racial and ethnic diversity of our population while simultaneously making the summarization of data on our diverse population more

challenging. Many Coloradans identify with the White race and Hispanic origin and some identify with the Black race and Hispanic origin. To simplify data presentation, people identifying as Hispanic or Latino, regardless of the racial identity, are generally classified as "Hispanic/Latino" in this report. This has the effect of removing these individuals from the other group(s) with which they identify and assigning individuals who identify equally with two or more groups to either a single group or an unreported "other" category.

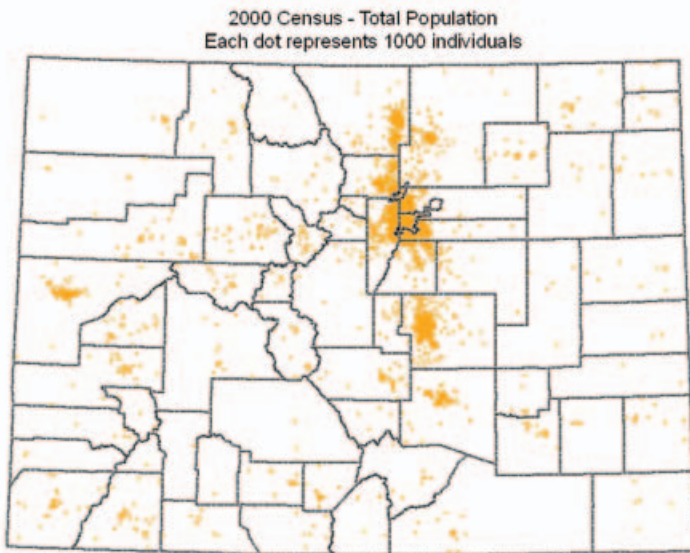
This report also employs a convention for naming each group to make the report accessible to the general reader and to shorten labels for figures. Thus, "Hispanic/Latino" in the text is short for "Hispanic or Latino origin" and is shortened further to "Latino" in the figure labels. "African-American/Black" is shortened to "Black" in the figure labels. The label for individuals referred to as "Asian" in this report appears in some data sources "Asian and Pacific Islander" (or "AAPI"). Finally, the group referred to as "American Indian" appears as "American Indian or Alaska native" in some data sources. (White is generally treated as a residual category—all individuals not associated with one of the four named groups—for this report while the label "Caucasian" is used in some data sources.) For further discussion of group classification and naming conventions see Appendix.\*

\* Direct quotations and material incorporated from other sources (such as community contributions) retain the group labels used in these sources.

## Geographic Distribution

Colorado often is considered a rural state because it includes a large amount of sparsely settled territory. However, roughly 70 percent of the population lives in the densely settled urban areas east of the Continental Divide, known as the Front Range.\* The state's population distribution is illustrated in Map 1.

**Map 1. Distribution of Total Population, 2000**



## Language

According to the 2000 Census, 15 percent of Colorado residents speak a language other than English in the home. This is 3 percent less than the national average of 18 percent. Coloradans speak more than 40 languages. The most common non-English language spoken is Spanish, at 10.5 percent of residents, followed at a distance by German, French and Vietnamese (See Table 1). Of the people who speak a non-English language, 81 percent are adults over 18 years of age and 19 percent are children between the ages of 5 and 17.\*\*

\* In the 2000 Census, 69.4 percent of the state's population lived in the following "urbanized areas": Denver–Aurora, Colorado Springs, Fort Collins, Pueblo, Boulder and Greeley. An urbanized area is "an area consisting of a central place(s) and adjacent territory with a general population density of at least 1,000 people per square mile of land area that together have a minimum residential population of at least 50,000 people." [http://factfinder.census.gov/home/en/epss/glossary\\_u.html](http://factfinder.census.gov/home/en/epss/glossary_u.html)

\*\* Not shown.

**Table 1. Language Spoken at Home, 2000**

Language	Total Number of People Speaking the Language (5 years and older)	% of Total Population Speaking the Language
<b>All languages spoken</b>	<b>4,006,285</b>	<b>100%</b>
English (only)	3,402,266	84.92
Spanish (including Spanish Creole)	421,670	10.53
German	30,824	0.77
French (including Patios, Cajun)	18,045	0.45
Vietnamese	12,499	0.31
Korean	12,045	0.30
Chinese	11,333	0.28
Russian	10,737	0.27
Japanese	6,605	0.16
Italian	5,703	0.14
Polish	5,064	0.13
Tagalog	5,013	0.13
Arabic	4,998	0.12
Other Asian languages	4,644	0.12
African languages	4,273	0.11
Other Slavic languages	3,774	0.09
Hmong, Miao	3,533	0.09
Scandinavian languages	3,377	0.08
Persian	3,300	0.08
Other Native North American languages	2,753	0.07
Serbo-Croatian	2,600	0.06
Navajo	2,510	0.06
Greek	2,494	0.06
Other West Germanic languages	2,491	0.06
Other Pacific Island languages	2,440	0.06
Other Indo-European languages	2,312	0.06
Hindi	2,292	0.06
Thai	2,214	0.06
Portuguese (including Portuguese Creole)	2,141	0.05
Other Indic languages	2,053	0.05
Laotian	1,852	0.05
Cambodian, Mon Khmer	1,567	0.04
Hebrew	1,492	0.04
Hungarian	1,284	0.03
Other and unspecified languages	1,146	0.03
Urdu	1,083	0.03
Gujarathi	716	0.02
Yiddish	470	0.01
Armenian	400	0.01
French Creole	272	0.01
<b>Non-English Total</b>	<b>604,019</b>	<b>15.08%</b>

Source: U.S. Bureau of the Census, 2000 Census of Population



## Overview of Health Disparities in Colorado

Colorado is fortunate to have many natural and human assets, including a relatively healthy environment and a healthy population. Our self-image as a healthy state is generally well-founded. We consistently have the lowest rate of adult obesity in the country, our cancer death rate is the third lowest in the nation and our cardiovascular death rate is fourth lowest.<sup>23</sup>

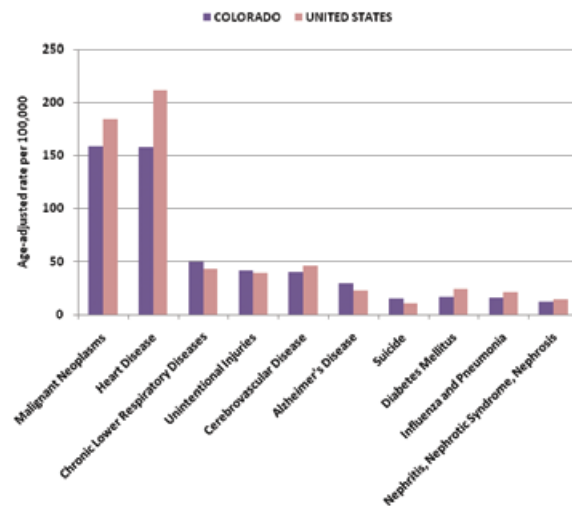
However, as several recent reports document, Colorado lags behind other states in important health indicators. For example, the United Health Foundation's America's Health Rankings ranked Colorado 19<sup>th</sup> in 2008, down from 16<sup>th</sup> in 2007. Despite Colorado's high rank for a low cardiovascular death rate, the report specifically notes that the cardiovascular death rate for Colorado's African-Americans/Blacks is much greater than for the total population (316 deaths per 100,000 vs. 247 per 100,000). Additionally, "access to health care varies significantly by race and ethnicity in Colorado; 42.5 percent of Hispanics/Latinos lack health insurance compared to 12.8 percent of non-Hispanic Whites."<sup>24</sup> Using a different set of indicators, a 2007 Commonwealth Fund study gave Colorado a rank of 22<sup>nd</sup> on "health system performance."<sup>25</sup> Closer to home, the Colorado Health Foundation's 2008 Colorado Health Report Card, which provided grades on the population's health for various life stages ranging from C- for infants and children to B+ for aging, found "that overall, the state fared the same or slightly worse compared to last year."<sup>26</sup>

Two commonly used approaches for summarizing population health for comparative purposes are life expectancy and leading causes of death. The expectation of life at birth—the average number of years a newborn would live if it experiences current age-specific mortality rates throughout its life—is a commonly used summary measure for the impact of mortality from all causes on a population. By this measure, Coloradans are healthier than other Americans. The expectation of life at birth for Coloradans in 2006 was 79.4 years compared to the 2005 U.S. value of 77.8 years. When considering leading causes of death, we see that Coloradans have substantially lower death rates for malignant neoplasms (cancer) and heart disease. Colorado also has lower-than-national death rates for less common diseases including cerebrovascular disease, diabetes, influenza, pneumonia and nephritis. For other diseases (chronic lower respiratory disease and Alzheimer's) we have a somewhat higher rate than the U.S. rate, as we do for unintentional injuries and suicide (Figure 2).



As we will show in detail in the sections on specific groups, both life expectancy and death from leading causes vary substantially among Colorado's communities of color. These and related disparities in risk factors and disease incidence also constitute part of empirical evidence of health disparities in Colorado.

**Figure 2. Leading causes of death, Colorado and U.S., 2005**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

Death often is the end of a disease process that can be traced back to genetic predisposition; social and environmental determinants of health; health behaviors; and access to and use of health-care services, including preventive, acute and chronic care. This report includes indicators for some of these contributing factors including determinants of health such as education and income, health behaviors such as physical activity and nutrition, access to health care as indicated by health (and dental) insurance coverage, and use of medical screenings such as mammograms for early detection of breast cancer in women. For these contributing factors, a relatively clear picture emerges of disparities in contributing factors as well as death from specific disease categories (and other causes of death such as suicide and motor vehicle injuries). Each

of Colorado's communities of color, with the exception of Asians/Pacific Islanders, has higher-than-average mortality for several of the leading causes of death. Consistent with this are related disparities on contributing determinants and other risk factors.

The complex ways in which disparities in contributing factors produce the health disparities identified in this report are often poorly understood. Similarly, much

needs to be learned about effective means to reduce the overall burden of disease across the entire population and reducing disparities experienced by specific communities of color. It is beyond the scope of this report to summarize what is known in these areas for the health conditions covered for each of the four communities of color. The report instead focuses on the presentation of current Colorado-specific indicators.

### How accurate are indicators of health disparities in Colorado?

The foundation for this report is current health indicators for Colorado's population. The data come primarily from data systems maintained by the Colorado Department of Public Health and Environment, including the vital records system (which gathers data on all births and deaths of state residents), registries of "reportable diseases" (such as for cancer and tuberculosis) and surveys of health conditions and health behaviors. Like all statistical systems, these are subject to a variety of types of errors: the actual cause of death may be different from that reported by a physician or coroner on a death certificate, some reportable diseases may be undetected, and survey respondents may not accurately recall or report behaviors such as smoking and drinking or whether a physician has told them that they have diabetes or hypertension. For some indicators (for example, low-weight births), the amount of error is so small as to be insignificant for the purposes of this report. Data on hard-to-detect conditions and risky behaviors are much more prone to error.

In the context of health disparities, the concern over data accuracy is not so much about the sources of error mentioned above but whether these errors occur disproportionately among various groups and, more important, how accurately the health conditions of each group are measured.

Misclassification is a major source of error, especially for some indicators for American Indians, Asians/Pacific Islanders and Hispanics/Latinos. Misclassification occurs when data for an individual is attributed to the wrong group. Reported death rates for American Indians and, to a lesser extent, Asians are generally thought to be too low because the decedent is identified as White rather than American Indian or Asian.

Data accuracy also is compromised for groups with relatively small numbers. Some events such as death from influenza or pneumonia may occur infrequently in groups with relatively small numbers, making it

difficult to compute a death rate that is comparable to that for a larger population where there are many more cases of death for the same condition. Most health indicators in this report pool data from multiple years to reduce the impact of small numbers. For example, death rates are based on deaths for the five-year period 2002–2006. Nevertheless, readers are cautioned that some indicators, though based on the best Colorado data available, may not accurately convey the full extent of health disparities for a particular group.

Finally, some indicators are based on sample surveys that gather data from a relatively small portion of a population. Estimates for groups that make up a relatively large portion of the total population (e.g., Hispanics/Latinos in Colorado) are nearly as accurate as estimates for the total population. Estimates for groups that make up a relatively small portion of the total population (e.g., Asians/Pacific Islanders and American Indians in Colorado) are more prone to sampling error and, therefore, may not yield accurate estimates for these groups.

Overall, the accuracy of the data in this report depends on the indicators; it depends on the group; and, most importantly, it depends on the level of accuracy needed to reach conclusions. If one wants to get a general sense of the nature and extent of health disparities for Colorado's four communities of color, the errors inherent in the indicators included in this report should generally be a secondary concern. If one wants a detailed and accurate picture of the interplay of contributing factors for a particular health condition for a particular community (or sub-community) more accurate data would be highly desirable and a specific data-gathering strategy should be developed.

*Data accuracy issues are discussed in greater detail for specific indicators and groups in the group sections and in the appendix.*

# Determinants of Health

THE MOST POWERFUL OF THE ROOT CAUSES of health disparities are the social conditions in which people live and work, referred to as the determinants of health.<sup>27</sup> Epidemiologic research has found that there are factors associated with race and ethnicity that affect health status and risk, independent of biological differences between groups.<sup>28</sup> For example; stress can mobilize lipids and glucose and produce elevations in blood pressure.<sup>29</sup> Chronic triggering of these physiological responses over many years is known to impact determinants of cardiovascular disease.<sup>30</sup> Racial discrimination can be an added stressor linked with high blood pressure, increased rates of infant death and coronary artery disease.<sup>31</sup>

## Determinants of Health

Research has identified many social determinants of health that can contribute to the group of health disparities that are the focus of this report. The roles of several of these factors are described briefly below. Colorado data for those factors reported in state data systems are presented later in this section.

*Income* is the indicator of socioeconomic position that includes wage earnings, dividends, interest, child support, alimony, transfer payments and pensions. Income has a cumulative effect over the life course that enforces social hierarchies, causing chronic stress that leads to poorer health outcomes for those with the poorest incomes.<sup>37</sup>

*Social support networks* provide exposure to different degrees of life experiences that sometimes can be perceived as threatening, frightening and difficult to deal with.<sup>38</sup> Positive networks give a sense of emotional security and value that can help individuals cope with daily stresses.

*Education* affects health disparities directly by increasing awareness and knowledge of healthy behaviors and the appropriate use of the health-care system and indirectly by providing access to employment and income that provides access to health insurance. It can be measured as a continuous variable or as a categorical variable by assessing educational milestones such as completion of primary or high school, higher education diplomas or degrees.<sup>39</sup>

*Employment*—Whether one has a job and the type of work one does are related to the availability of supportive social networks and the presence of work-

## Racial Discrimination

Racial discrimination is a social factor that influences personal health on many levels and appears to be a leading cause in the development of health conditions that can lead to illness.<sup>32</sup> Stress experienced by minorities related to a lifetime of discrimination can adversely affect physical and mental health.<sup>33</sup> Also, historical injustices such as U.S. Public Health Service's (1932–1972) Tuskegee Syphilis Experiment, where Black men unknowingly had treatment for syphilis withheld and eventually died of the disease, have created distrust of government systems and may discourage some minority populations from seeking health care or taking part in government health programs.<sup>34</sup>

based stress, which, in turn affects health outcomes.<sup>40</sup> The type of work one does also is related to the risk of injury through industrial accidents and exposure to toxic substances.

*Physical environment* such as living in substandard housing and unsafe neighborhoods or in areas with more environmental toxins can contribute to health disparities. People living in remote locations can experience difficulty accessing health care in a timely fashion.

*Social environment* speaks to supportive communities and having the support of families, friends and neighbors that can reduce stress and improve health outcomes.<sup>41</sup>

*Personal health practices and coping skills* ranging from physical activity to nutrition, tobacco use and the practice of safer sex play a key role in determining health. Coping skills are psychological characteristics such as personal competence and sense of control and mastery over one's life that play an important role in supporting mental and physical health.<sup>42</sup>

Disparities in access and use of *health services* contribute significantly to disparities in health status and health outcomes. Disparities in access to social services also contribute to health disparities.<sup>43</sup>

*Culture* is defined as shared thoughts, communications, actions, customs, beliefs, values and institutions of racial, ethnic, religious or social groups. Culture influences how health-care information is received, how rights are exercised, what is considered to be a health problem, how symptoms and concerns about the problem are expressed, who should provide treatment for the problem, and what type of treatment should be given.<sup>44</sup>



According to the Grant Makers in Health report *Strategies for Reducing Racial and Ethnic Disparities in Health*, the history of slavery and segregation are at the very root of the substandard neighborhoods, housing, lack of employment and educational opportunities, and lack of access to health-care services that many minorities face that influence health.<sup>35</sup>

Institutionalized racism is defined as differential access to the goods, services and opportunities of society by race. This can be seen in differential access to quality education, sound housing, gainful employment, clean environment, wealth and power.<sup>36</sup>

## Determinant Domains of Health

Determinants of health are factors that together contribute to individual and population-level health status. Data are presented in this section for four determinant domains: socioeconomic status, access, quality of care and environment. By focusing on these determinants, a greater understanding of the context and conditions in which behaviors (another determinant of health) occur will be possible.

### Socioeconomic Status

Together education, employment/occupation, and income are indicators of social position often conceptualized as socioeconomic status. The three domains are closely related. Education is a gateway for economic opportunity by way of occupation and income.

Research has repeatedly found that morbidity and mortality rates are inversely related to many correlates of socioeconomic status.<sup>45</sup> In other words, as education, job status and income increase, disease and death decrease. Because socioeconomic status is a leading determinant of health, it is a substantial contributor to health disparities. Health disparities, however, transcend socioeconomic status disparities. Studies that control the effects of socioeconomic status on health behaviors and outcomes find that disparities by race and ethnicity are reduced but not always eliminated. The data presented in this section show that most communities of color in Colorado have lower socioeconomic status values than the majority population in all domains, which is consistent with national findings.

### Education

Education affects health disparities directly by increasing awareness and knowledge of healthy behaviors and the appropriate use of the health-care system and indirectly by providing access to employment and

income that provides access to health insurance, reduces health risks and increases access to health care. Quality and quantity of education directly affect literacy, or “the ability to read, write, and speak in English, and compute and solve problems at the levels of proficiency necessary to function, to achieve one’s goals, and to develop one’s knowledge and potential.”<sup>46</sup>

Health literacy is dependent on but not guaranteed by general literacy. A recent report from the Institute of Medicine defines health literacy as “the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.”<sup>47</sup> It goes on to note that “health literacy goes beyond the individual obtaining information. Health literacy emerges when expectations, preferences, and skills of individuals seeking health information meet the expectations, preferences, and skills of those providing information and services. Health literacy arises from a convergence of education, health services, and social and cultural factors. Although causal relationships between limited health literacy and health outcomes are not yet established, cumulative and consistent findings suggest such a causal connection.”<sup>48</sup>

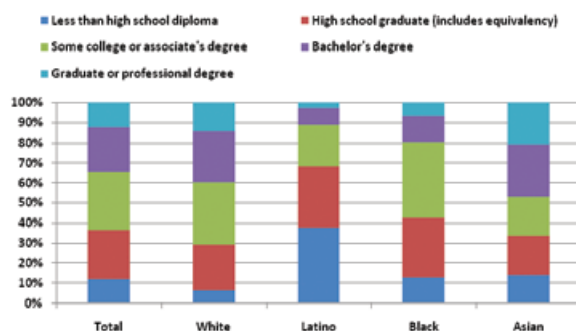
Health literacy is necessary for many activities such as following prescription medication instructions and filling out applications for health-related services. For example, studies involving participants with diabetes, asthma and hypertension have found that those with low health literacy had less knowledge of their condition and how to manage it.<sup>49</sup> The National Adult Literacy Survey reported that in the United States, African-American, American Indian/Alaskan native, Hispanic/Latino and Asian/Pacific Islander adults were more likely than Caucasian adults to perform in the lowest two literacy levels (at or below eighth-grade proficiency).<sup>50</sup> Moreover, lower levels of literacy are associated with a higher level of poverty and greater health disparities. Literacy can be improved and poverty reduced, through early childhood development programs and good schools. Early education and good schools are associated with higher literacy, educational attainment, and higher earnings, all factors that help break the cycle of intergenerational transmission of poverty.<sup>51</sup> Improvement along each of these factors would contribute to the reduction of health disparities.

Shortcomings in “cultural competence” (see the Cultural and Linguistic Competence section) within the health-care sector are well-documented and generally agreed to be a contributing factor to health disparities. One way to improve the cultural competence of the health-care work force is to increase participation

by members of minority groups. However, access to many health-care positions requires extensive and rigorous educational preparation. According to the Sullivan Commission on Diversity in the Health Care Workforce's report titled *Missing Persons: Minorities in the Health Professions*,<sup>52</sup> racial and ethnic minorities are underrepresented in scientific sectors, which influence population health. If educational achievement disparities persist, current shortages of health and environmental professionals of color—physicians, nurses, health educators, toxicologists, epidemiologists and researchers—will be exacerbated.

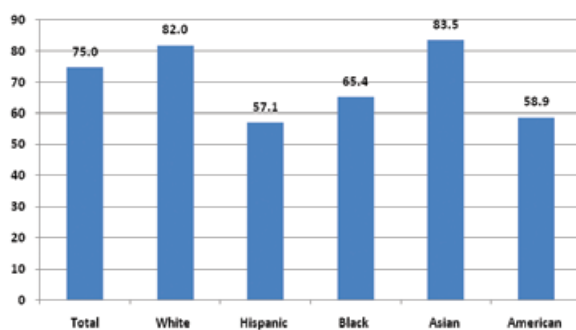
Significant disparities exist for educational attainment among Colorado's communities of color. Figure 1 shows educational attainment for people 25 years of age and older. While more young Coloradans for all groups are graduating from high school and completing undergraduate and graduate degrees, disparities persist. Figure 2 shows that Hispanic/Latinos, African-Americans/Blacks and American Indians all had lower high school graduation rates than the state as a whole.

**Figure 1. Educational attainment, people 25 years of age and older, Colorado, 2006**



Source: U.S. Bureau of the Census, American Community Survey

**Figure 2. Colorado high school graduation rates, 2007**



Source: Colorado Dept. of Education



## Employment/Occupation

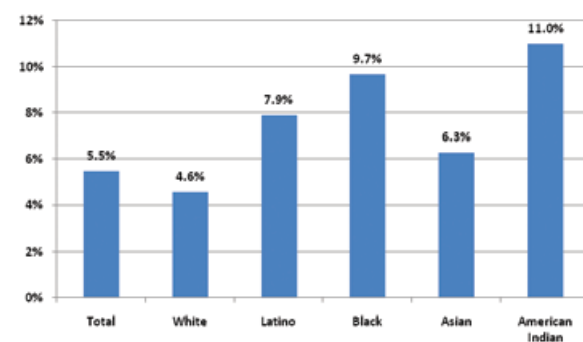
Because of educational disparities and opportunity limitations, workers of color are underrepresented in professional positions and overrepresented in blue-collar and service jobs that are lower-paying and less likely to provide health coverage.<sup>53</sup> Nationally, Hispanics/Latinos and African-Americans/Blacks are more than twice as likely as Whites to be classified as “working poor.”<sup>54</sup>

Immigrants in Colorado often work in the service sector (e.g., fast food and janitorial work), in rural areas as agricultural laborers and migrant farm workers, and in feedlots and meat processing plants.<sup>55</sup> Immigrant workers reported holding menial labor jobs, earning low wages, experiencing job discrimination, working in unsafe environments and facing unfair labor practices. Most lacked health coverage.

Occupational health research indicates that workers of color may disproportionately work in unsafe and unhealthful conditions without proper training, protection or notification of risks.<sup>56</sup> Moreover, workers of color display elevated rates of work-related illness, injury, death and disability.<sup>57</sup>

Figure 3 shows that all communities of color had higher unemployment rates in 2006. During the current economic recession, these disparities may have grown.

**Figure 3. Colorado unemployment rate, 2006**



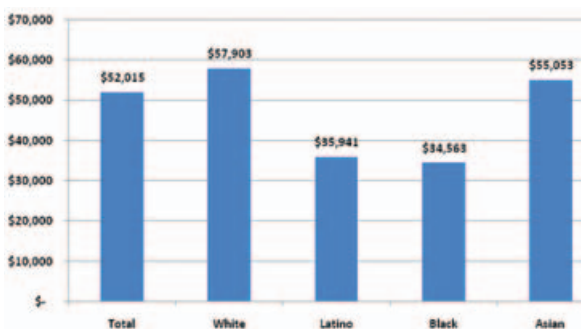
Source: U.S. Bureau of the Census, American Community Survey

## Income

Income is a strong predictor of health for all people. Income is causally related to health because it affects conditions necessary for biological survival and ability to control life circumstances.<sup>58</sup>

Differences in educational attainment and participation in high-paying jobs contribute to disparities in income. Results for two common income measures, median household income and poverty rates, are shown in Figures 4, 5 and 6 below.\* Median household income for Hispanics/Latinos and African-Americans/Blacks (but not Asians/Pacific Islanders) was substantially below that of the total population in 2006. Similarly, poverty rates for Hispanics/Latinos and African-Americans/Blacks (both all individuals and related children) were substantially above those for the total population in 2006. A recent study by the Colorado Children's Campaign found that the number of children living in poverty in Colorado increased by 73 percent between 2000 and 2006, more than any other state.<sup>59</sup> Nevertheless, the child poverty rate in Colorado (15.2 percent in 2005–07) remains below that for the nation as a whole (17.9 percent).<sup>60</sup>

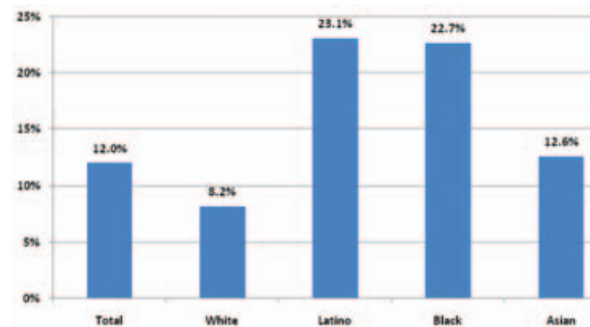
**Figure 4. Colorado median household income, 2006**



Source: U.S. Bureau of the Census, American Community Survey

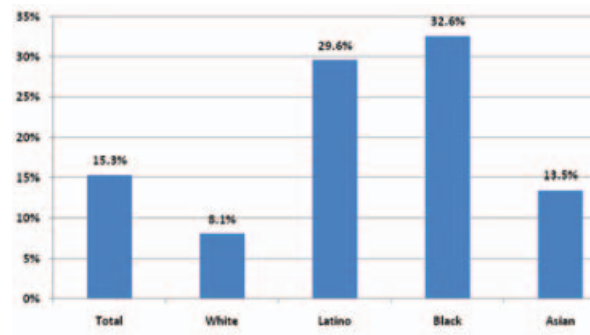
\* Median household income is the amount the “middle” household in each group earned, i.e., 50 percent earned more and 50 percent earned less. Household income is the total money income of a household earned by all members from all sources. The “poverty rate” is the percent of the population below the federal poverty level. The federal poverty level is an amount set by the federal government annually and represents the monetary income a family needs to purchase a marginally adequate diet and other necessities of living. The federal poverty level for a family of four in 2006 was approximately \$21,000.

**Figure 5. Colorado poverty rate (all people), 2006**



Source: U.S. Bureau of the Census, American Community Survey

**Figure 6. Colorado childhood poverty rate (related children under 18), 2006**



Source: U.S. Bureau of the Census, American Community Survey

Wealth disparities, the cumulative effect of past income disparities, often are more striking, since people of color have had less opportunity to accumulate wealth over time.<sup>61</sup> Wealth provides families with the ability to do such things as financially cope with an emergency or send their children to college. Studies have demonstrated that physical and mental health are associated with greater household wealth.<sup>62</sup>

## Access to Health Care

In common usage, “access” often is shorthand for access to health insurance. Access, however, encompasses all systems that are necessary for accessing health care, including but not limited to health insurance. While health insurance increases the likelihood of appropriate health care when needed, it does not ensure it. Recent studies have drawn attention to the phenomenon of “underinsurance,” the fact that some people are unable to pay for needed health care even though they are “insured.” Similarly, the existence of free and sliding-fee health clinics and the federal requirement that hospitals provide emergency care to

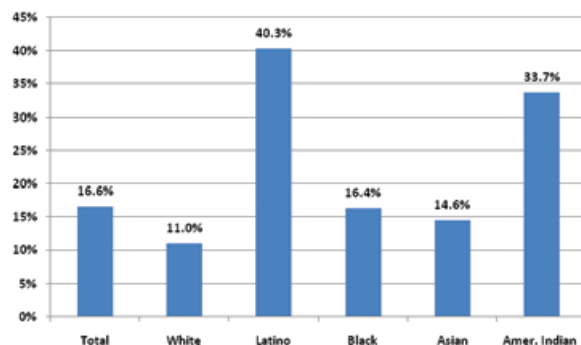
all regardless of legal status or ability to pay mean that uninsured individuals do have limited access to health care. Many of these clinics are located in communities with large minority and immigrant populations and are experienced in providing culturally competent care.

The adequacy of health-care coverage is another facet of the access dilemma. To be underinsured is to have insurance that does not adequately cover health-care costs or that has limited benefits. Underinsurance affects access when policies do not cover pre-existing medical conditions, when co-payments and deductibles cause delays in care or when certain categories of benefits (e.g., mental health services) are not covered.<sup>63</sup>

Even when people have health coverage, it can be inefficient, ineffective or unevenly distributed. Federal programs, such as Medicaid and Medicare, are in place to help the uninsured, yet many low-income individuals aren't eligible due to a higher annual earning than required. The Indian Health Service is the federal agency responsible for providing health care to native populations. According to the Surgeon General's Report, only 20 percent of American Indians report access to Indian Health Service clinics, which are located mainly on reservations.

Figure 7 shows that Hispanic/Latino and American Indian adults in Colorado have especially high rates of uninsurance.

**Figure 7. Adults lacking any kind of health insurance, 2004-07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

Colorado inhabitants who were born in another country are more likely to lack health insurance regardless of citizenship status. The immigrant and refugee populations, both documented and undocumented, are less likely to receive employer- or publicly provided health care.<sup>64</sup>

In 2005, Colorado ranked 50<sup>th</sup>, last in the nation, in children in poverty who were uninsured. With 37 percent of poor children uninsured in Colorado, we are nearly double the national average of 19 percent.<sup>65</sup>

Although health care is an important factor for good health, the impact of access to health care on health and well-being often is overestimated. Health care is more often used for purposes of treatment than prevention.

### Quality of care

Lack of quality care can be due to bias and negative racial stereotyping by physicians, most often because of a lack of cultural competence and without conscious awareness.<sup>66</sup> Historically, poor quality of care delivered to minority patients leads to mistrust of the health-care system, often because of perceived past discrimination, cultural beliefs about illness and health, and language barriers.<sup>67</sup>

The Institute of Medicine's report *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care* cites several studies about racial and ethnic disparities in care.<sup>68</sup> For example, evidence suggests that physicians' perceptions of patients, as well as diagnostic and treatment decisions, can vary with race.<sup>69</sup> The report notes that cross-cultural training to prepare providers to meet the needs of an increasingly multicultural society, to improve doctor-patient communications, and to expand understandings of patients' cultural contexts have been integrated to a limited extent into undergraduate, graduate and continued health professions education.<sup>70</sup>

For people whose first language is not English, language barriers can contribute to health disparities. English proficiency is a gateway necessary for accessing numerous health-related systems. "Limited English Proficient" individuals are those people "who have a limited ability to read, speak, write, or understand English" ([www.lep.gov](http://www.lep.gov)). The following examples illustrate the host of health challenges facing people with limited English proficiency.

People with limited English proficiency may experience difficulty

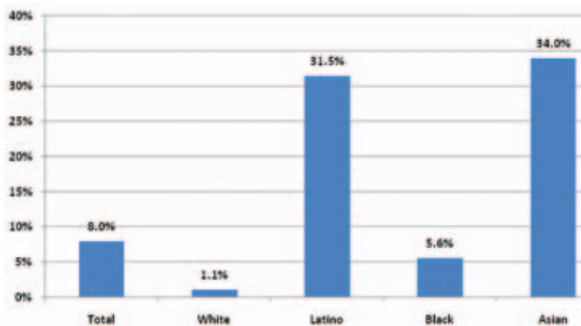
- accessing health-related services due to lack of information about available services or fear of jeopardizing immigration status by using such services;
- communicating in health settings, including speaking for themselves, using sophisticated vocabulary and formulating questions;



- comprehending U.S. health-care culture, including what is expected of the patient (e.g., provision of medical history, payment procedures) and what the patient can expect of providers (e.g., right to an interpreter); and
- understanding and identifying with printed health information that is not culturally or idiomatically relevant.<sup>71</sup>

Federal laws addressing language access such as Title VI of the Civil Rights Act of 1964 and Title VI regulations prohibit discrimination on the basis of race, color or national origin. In addition, Executive Order 13166 was issued by the president in 2000. This executive order states that individuals with limited English proficiency should have “meaningful access to federally conducted and federally funded programs and services” ([www.lep.gov](http://www.lep.gov)). Some of the institutions or programs that receive federal funds and must comply with Title VI and its language-access requirements are hospitals, Medicaid and Medicare, mental health centers, family health center clinics, local and state public health departments, etc. Several documents have been developed by federal departments to assist individuals and agencies in the implementation of Title VI language access requirements (visit [www.lep.gov](http://www.lep.gov)). However, implementation of the limited English proficiency requirements has been a challenge to many agencies, due to the lack of specific funding earmarked for language access from the federal government. The *Culturally and Linguistically Appropriate Services* was developed to provide 14 national standards that address interventions that have the most direct impact on clinical care as well as organizational structures, policies and processes that support the implementation of the interventions.

**Figure 8. Coloradans (5 years of age and over) who speak English less than “very well,” 2006**



Source: U.S. Bureau of the Census, American Community Survey

## Environment

### External Environment

In Colorado and nationally, communities of color can be disproportionately exposed to environmental risk factors that can affect health and well-being. However, data documenting the magnitude of environmental health disparities in Colorado currently are limited because of methodological challenges to linking environmental data with health and demographic data.

### Environmental Justice

The legacy of racial inequality and residential segregation has left members of disadvantaged racial or ethnic groups more heavily concentrated in resource-poor neighborhoods.<sup>72</sup> In the recent documentary *Unnatural Causes...is inequality making us sick?* James Krieger suggests place determines what someone is exposed to in terms of a whole host of factors that can affect health. Those factors include exposure to chemical agents, violence or crime in neighborhoods, interaction with neighbors,<sup>73</sup> physical environment, availability of affordable healthy food, target advertising, social norms, exposure to chronic stress and availability of services.<sup>74</sup> There is increasing recognition that the environment may affect what people eat.<sup>75</sup> In poor neighborhoods where members of minority groups disproportionately live, “junk” food, soda and cigarettes are readily available in small markets.<sup>76</sup> Grocery stores that sell fresh foods are scarce and/or expensive, restaurants are less likely to serve fresh fruits and vegetables, and liquor stores are common.<sup>77</sup> Neighborhood has been found to be an independent risk factor for health outcomes after controlling for income, education and occupation.<sup>78</sup>

Neighborhoods of color are seeing increasing numbers of adverse health outcomes including infant and adult mortality, crime, teenage childbearing, tuberculosis, sexually transmitted disease, cardiovascular disease and environmental exposures.<sup>79</sup> Researchers hypothesize that patterns that lead to separation and isolation of neighborhoods of color affect health indirectly through the quality of the local environment, concentration of poverty and the shaping of socioeconomic attainment.<sup>80</sup> For example, such patterns can facilitate and confine the spread of infectious diseases such as tuberculosis and gonorrhea within a neighborhood.

## One Community's Experience: Weld County

The Colorado Department of Public Health and Environment's state Lead-Based Paint Program continues to receive federal funding, but the Lead Poisoning Prevention Program lost federal funding in 2007. This state program loss left a financial and technical gap in services available to local communities. The Weld County Department of Public Health and Environment, a local health provider in northern Colorado, saw an opportunity to bridge that gap by using funding from the settlement of an enforcement case. The violator in the case agreed to allow a portion of the administrative penalty assessed for environmental violations to be used for a supplemental environmental project. Weld County proposed and was the recipient of supplemental environmental project funds to purchase an XRF/Niton XLp303a lead paint analyzer. The purchase of this tool allowed Weld County to respond to families of children with reported elevated blood lead levels and provide investigative services to identify the sources of the lead poisoning. In 1978, lead was banned from residential paint. The United States Census Bureau 2000 Decennial Census data show that 63 percent of the homes in Weld County are high-risk and were built prior to 1980. Homes of lower-income residents in Weld County, many of whom are Latino, often have lead-based paint.

Weld County has used the analyzer in at least three investigations to locate the source of lead causing the elevated blood lead levels. In each case, the County was able to use the analyzer to pinpoint the source of the lead poisoning quickly so the resolution could be promptly determined and the abatement of the lead hazard completed. The XRF lead-based paint analyzer has served as an invaluable tool during elevated blood level investigations due to the instrument's speed, cost-efficiency and nondestructiveness to painted surfaces. The instrument's ability to download specific test data quickly, by use of Bluetooth software, greatly improved the organization of the investigation reports generated for the physician, homeowner, patient and/or the patient's parents.

In the best interest of public health, and especially the health of children under 6 years old, this tool has been invaluable in field investigations for identifying sources of lead poisoning. Weld County also has made this instrument available to neighboring counties. Due to the concerns associated with lead contamination in children's toys, the instrument has been made available to screen many toys and dinnerware. Since the instrument can be used only as a screening tool for many of the items listed above, once a positive lead test is noted, the county then can offer the customer further testing via an acid extraction process and analysis by graphite furnace atomic absorption. This screening helps save the lab and customer valuable time and money, as well as ensuring the health risk of a known agent is reduced in a susceptible population.

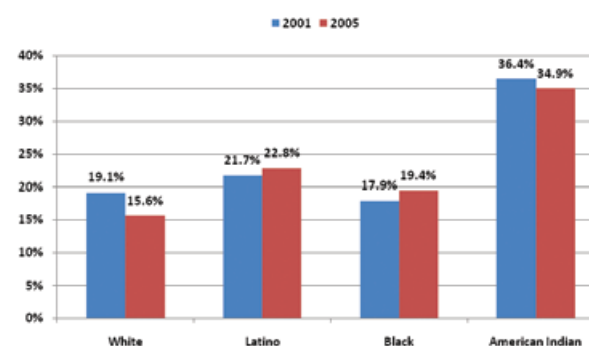
### *Environmental Tobacco Smoke*

On July 1, 2006, the state of Colorado implemented the Colorado Clean Indoor Air Act, also known as the Smoke-Free Colorado law. The law requires most indoor public areas and entryways leading into businesses to be smoke-free, creating a healthier environment in which all Colorado residents can live and work. As of January 1, 2008, all state-licensed casinos in Colorado also were required to be smoke-free. Colorado's statewide smoke-free laws help Colorado residents and workers preserve and improve their health by limiting their indoor exposure to secondhand tobacco smoke, a known health hazard.<sup>81</sup>

Colorado has begun to see a lowering of the burdens from tobacco, but not everyone has benefited.<sup>82</sup> Cigarette addiction remains significantly more common among young adults, Hispanics/Latinos, American Indians and people with social or economic disadvantages.<sup>83</sup> Figure 9 illustrates a decrease in smoking among Whites and American Indians from 2001 to

2005 while the rates for Latinos and Blacks increased slightly. Smoke-free homes became significantly more common during 2001–2006 among all but African-American students.<sup>84</sup> In 2006, smoke-free home rules were most commonly reported by White students.<sup>85</sup>

**Figure 9. Colorado adults who smoked, 2001 & 2005**



Source: Adult tobacco use and exposure, Colorado, 2001 and 2005, State Tobacco Education and Prevention Partnership, Colorado Department of Public Health and Environment

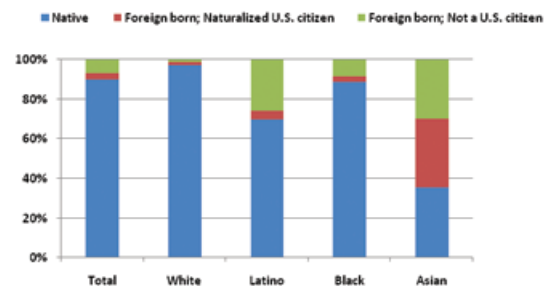
# Immigration and Health Disparities

THERE ARE VERY LIMITED DATA ON HEALTH DISPARITIES for undocumented immigrants in Colorado. Standard data sources used to identify health disparities do not ask about immigration status. In addition, immigrants, especially undocumented immigrants, are less likely to be included in some public statistics systems due to language barriers and fear of deportation. Most immigrants come to the United States to pursue job opportunities and better living conditions, to further their education, or to unite with family members and loved ones already living in the United States. In addition, some come to escape persecution, war, famine and even genocide in their home countries. Recent estimates indicate that roughly one-third of foreign-born residents have become naturalized citizens, one-third are lawful permanent residents and one-third are undocumented residents. According to [www.connectingimmigrants.org](http://www.connectingimmigrants.org), “immigrants want to work, and most are working within a few weeks of arrival. Many work as unskilled laborers” engaging in hard, unclean and hazardous occupations that most U.S. citizens may not want to perform. Many lawful permanent residents and undocumented residents return permanently or periodically to their home countries.

While the majority of immigrants are relatively healthy younger adults, they face a number of barriers to accessing health-care services. Higher rates of uninsurance and underinsurance, as well as language barriers and discrimination, can compromise access to preventive, primary and acute care. Over time, lack of access to health care can contribute to health disparities even among relatively healthy populations.

As shown in Figure 1, immigrants constitute a larger portion of Colorado’s Hispanic/Latino and Asian populations than other groups. Thus, the influence of immigrant status on health disparities is likely to be greater for these two groups.

**Figure 1. Coloradan’s place of birth and citizenship, 2006**



Source: U.S. Bureau of the Census, American Community Survey





# Cultural and Linguistic Competence

CULTURAL AND LINGUISTIC COMPETENCE SKILLS ARE VERY IMPORTANT in the delivery of effective public health and health care. Just as it's important that health professionals know their individual health profession discipline, they need to be able to clearly communicate with individuals from diverse communities to prevent, improve and/or treat health conditions. The Office of Minority Health at the U.S. Department of Health and Human Services issued the National Standards for Culturally and Linguistically Appropriate Services in Health Care as an important strategy to correct inequities and as a guide to providers and institutions.\* According to the Office of Minority Health, culturally and linguistically appropriate services are those “that are respectful of and responsive to cultural and linguistic needs” of the individuals and/or communities served by health professionals and institutions. In these standards, the office defines cultural and linguistic competence as “a set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals that enables effective work in crosscultural situations.” Culture is defined in the standards as “integrated patterns of human behavior that include the language, thoughts, communications, actions, customs, beliefs, values, and institutions of racial, ethnic, religious, or social groups.” In addition, competence is explained as “having the capacity to function effectively as an individual and an organization within the context of the cultural beliefs, behaviors, and needs presented by consumers and their communities.”<sup>86</sup>

Satcher and Rubens recommend that health professionals should be able to develop cultural and linguistic competence skills including their ability to “respect and validate other cultures; discover the cultural context of the health-care problem as well as patient needs, expectations, and culturally appropriate resources; adapting communication skills to situations in which English is not the common language; demonstrating proficiency in the use of interpreters; and considering the influence of culture on all aspects of care delivery including negotiation, problem solving, diagnosis, management, and treatment to achieve optimal health-care outcomes.”<sup>87</sup>



The National Standards for Culturally and Linguistically Appropriate Services in Health Care includes a discussion on the role of organizations and cultural competence. According to the report, “organizations must become familiar with the communities they serve and understand the characteristics and specific perspectives of the cultural groups represented (see standard 11).” This understanding of communities in a service area will assist organizations in developing programs and services to address the needs of the communities in the area.

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\* The standards report is available at [www.omhrc.gov/CLAS](http://www.omhrc.gov/CLAS).



# Mental Health

## Introduction

MENTAL WELL-BEING IS FUNDAMENTAL TO HEALTH, according to the 1999 U.S. Department of Health and Human Services' *Mental Health: A Report of the Surgeon General*, the first Surgeon General's report ever to focus exclusively on mental health. Mental health is a state of successful performance of mental functions, resulting in productive activities, fulfilling relationships with other people and the ability to adapt to change and cope with adversity. The Surgeon General's report asserts that mental illness is a critical public health problem that must be addressed by the nation.<sup>88</sup>

Mental disorders are health conditions involving an alteration in thinking, mood or behavior that cause people to feel distressed or that impair their functioning.<sup>89</sup> Examples of these disorders include anxiety, attention deficit, hyperactivity, autism, bipolar, depression, post-traumatic stress and schizophrenia. In the United States, an estimated 22.1 percent of Americans ages 18 and older—about 1 in 5 adults—suffer from a diagnosable mental disorder in a given year.<sup>90</sup> One in five (more than 900,000) Coloradans need mental health services each year.<sup>91</sup> In addition, four of the 10 leading causes of disability in the United States and other developed countries are mental disorders: major depression, bipolar disorder, schizophrenia and obsessive-compulsive disorder. Many people suffer from more than one mental disorder at a given time.<sup>92</sup> In the United States, mental disorders are diagnosed based on the Diagnostic and Statistical Manual of Mental Disorders, fourth edition.

Most mental and physical illnesses now are recognized to be influenced by a combination of biological, psychological and social factors. Advances also have occurred in the scientific understanding of how behavior and mental functioning affect physical health. Modern science is discovering that while it is operationally convenient for purposes of discussion to separate mental health from physical health, this is more a matter of semantics. Furthermore, behavior now is acknowledged to have a major impact on physical and psychosocial health.<sup>93</sup> Unhealthy behavior (e.g., alcohol and tobacco use, sedentary lifestyle and poor dietary choices) is strongly linked to noncommunicable diseases such as cardiovascular disease and cancer, which are the leading causes of death for all racial and ethnic groups in Colorado. Health behavior also is a prime determinant in the spread of communicable diseases

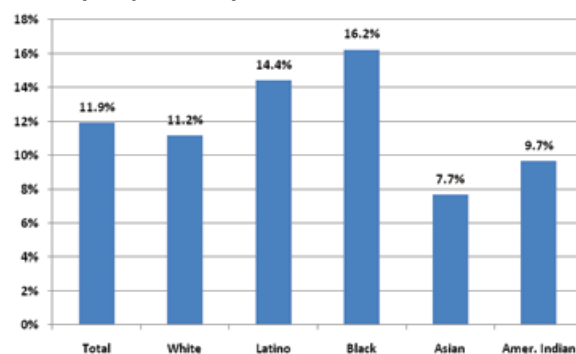
such as HIV and psychosocial conditions such as homelessness, crime and substance abuse.

Mental disorders and psychological stress due to exposure to violence and poverty are known to affect individual health behavior.<sup>94</sup> Communities and populations with higher rates of poverty and violence are at risk of having higher incidence of mental disorders. This is of particular concern to public health because of the role it plays in shaping overall health status of populations.

## Mental Health within Communities of Color

Limited data are available on the prevalence of mental health issues within communities of color in Colorado. However, the Behavior Risk Factor Surveillance System employs a telephone survey to ask adults about their physical and mental health. Figure 1 shows that Hispanics/Latinos and African-Americans/Blacks were more likely, and Asians/Pacific Islanders and American Indians less likely, to indicate that their mental health was “not good” eight or more days in the last month.

**Figure 1. Adults whose mental health was not good eight or more days in past 30 days, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

In the mental health field, researchers consistently have demonstrated differences in rates and patterns of mental health treatment for African-Americans/Blacks, Hispanics/Latinos, Asian Americans/Pacific Islanders and American Indians. Several factors contribute to the disparities, including lack of insurance coverage, a tendency to attribute mental health problems to religious and other culturally sanctioned belief

systems, and lack of access to receptive and culturally compatible providers.<sup>95</sup>

In the 2001 follow-up report by the Surgeon General, *Mental Health: Culture, race, and ethnicity—A Supplement to Mental Health*, the best available research cited in the report states that racial and ethnic groups have less access to and availability of care, and tend to receive poorer-quality mental health services when they do access care. The report acknowledged that once burdened by mental illness, all Americans do not share equally in the hope for recovery.<sup>96</sup>

Additionally, mental health professionals now are beginning to recognize culturally specific mental health disorders and poor mental health status due to perceptions of racial and ethnic discrimination compared to particular health indicators. Some relationships are subtle, such as with stress and heart disease, while others, such as with depression and substance abuse, are more obvious.<sup>97</sup>

Individuals with mental illness have significantly higher comorbidity and mortality rates when matched diagnostically with people without mental illness sharing similar demographics and risk factors for common disease (e.g., cardiovascular disease, renal disease, hypertension and diabetes).<sup>98</sup> When an individual with a mental illness identifies as being a person of color, the morbidity associated with a comorbid medical illness is confounded significantly because dual disparities exist and overlap.<sup>99</sup> Being nonwhite with comorbid mental illness and physical health issues places the individual at greater risk for increased disability, poverty, lower educational achievement and greater mortality from both natural and unnatural causes.<sup>100</sup>

Individuals from a nonwhite racial or ethnic group with mental illness not only have to deal with their mental illness, but often also are challenged with the notion of stigma. Stigmatization is associated with prejudice, avoidance, fear, rejection and ultimately discrimination.<sup>101</sup> It can be such a formidable force that individuals with the stigmatized characteristic frequently identify with and internalize the public's perceptions and attitudes. In those with mental illness, the burden of stigmatization can lead to an individual being so ashamed and embarrassed that he or she denies the illness, fails to seek treatment or fails to comply with prescribed treatments.<sup>102</sup>

The presence of mental illness predicts adverse physical health outcomes. Addressing disparities in mental health care also can address general health outcomes for those suffering from mental illness. The tables

below outline corrective measures to address these needs:

**Table 1.1: Corrective Measures for Mental Health Disparities<sup>103</sup>**

- Reduce stigmatization of mental illness through education.
- Enhance communication-based social skills training for those with mental illness.
- Improve access to and availability of mental health services in underserved communities.
- Enhance numbers of providers to the underserved through targeted recruitment.
- Increase education to improve treatment compliance.

**Table 1.2: Corrective Measures for Physical Health Disparities in Patients with Mental Illness<sup>104</sup>**

- Correct educational deficits on the part of health-care deliverers.
- Improve cultural competence of health-care providers.
- Provide "health-care extenders" to address shortages of providers in underserved communities.
- Provide "one-stop shopping" for medical and psychiatric interventions.
- Emphasize evidence-based preventions and effective interventions.

## Mental Health within Specific Minority Populations

### Hispanic/Latino Mental Health

The rate of use of Colorado's public mental health system by Hispanics/Latinos is a little more than their proportion of the state's population (18.2 percent of the population<sup>105</sup> and 21.8 percent of clients in 2003).<sup>106</sup> Access to culturally and linguistically appropriate mental health services is an important issue for this population. In the 2000 Census, 10.5 percent of Colorado residents reportedly spoke Spanish as the primary language in the home. A Colorado provider survey conducted for the Mental Health Funders Collaborative found that 12.5 percent of all therapists surveyed claimed to be able to conduct treatment in Spanish<sup>107</sup> and only 7.9 percent of Colorado providers identify themselves as Hispanic/Latino.<sup>108</sup>

More than a quarter of Colorado's Hispanic/Latino population (26 percent) is uninsured.<sup>109</sup> Due partly to this lack of insurance, Hispanics/Latinos are twice as likely to seek mental health services in publicly funded primary care settings. Being uninsured is driven by the lack of job-based insurance and a function of a combination of ethnicity, immigration status and citizenship status.<sup>110</sup>

One finding from a set of national adult epidemiological studies is that Mexican immigrants who lived fewer than 13 years in the United States or Puerto Ricans who resided on the island of Puerto Rico had lower prevalence rates of depression and other disorders than did Mexican-Americans who were born in the United States, Mexican immigrants who lived in the United States 13 years or more, or Puerto Ricans who lived on the mainland. This consistent pattern of findings across independent investigators, different sites and two Hispanic/Latino subgroups suggests that factors associated with living in the United States are related to an increased risk of mental disorders. This finding has led some authors to interpret the findings as suggesting that acculturation may lead to an increased risk of depression and other mental disorders.<sup>111</sup>

## African-American/Black Mental Health

The rate of Colorado's public mental health system usage by African-Americans/Blacks is more than double their proportion in the state's population (3.7 percent of the population and 8.3 percent of clients served in 2003).<sup>112</sup> Nationally, the overall percentage of African-Americans who receive mental health services appears to be half that of Whites, even after controlling for differences in need and sociodemographic factors.<sup>113</sup>

According to the literature<sup>114</sup>

- African-Americans/Blacks drop out of services at a significantly higher rate than Whites and use fewer treatment sessions for mental health services;
- African-Americans/Blacks enter treatment at a later, more advanced stage than Whites, and underconsume community mental health services of all kinds;
- African-Americans/Blacks are misdiagnosed more often than Whites and are more often diagnosed with a severe mental illness.

A survey by the National Mental Health Association revealed that only one-third of all people with major depression ever seek treatment. However, according to the study, African-Americans/Blacks are among the least likely to seek professional help for depression.<sup>115</sup>

The *Psychiatric Disorders in America Epidemiologic Catchment Area Study* reported similar rates of schizophrenia and bipolar disorder in Black and White populations.<sup>116</sup> However, according to another study, schizophrenia misdiagnosis patterns are stronger and more persistent in African-Americans/Blacks.<sup>117</sup>

Factors that may contribute to fewer African-Americans/Blacks being diagnosed and/or seeking treatment for clinical depression and other serious mental illness include the following:<sup>118</sup>

- A mistrust of medical health professionals exists based in part on historically biased health studies. (Only one-third of African-Americans/Blacks said they would take medication for depression.)
- Cultural barriers influenced by language and values, exist in the relationships between the doctor and the patient. (Approximately 63 percent of African-Americans/Blacks believe that depression is a "personal weakness.") Cultural background plays a large role in how the symptoms of depression are reported and interpreted, and consequently, if and how clinical depression is recognized and treated.<sup>119</sup>
- African-Americans/Blacks rely on the support of family and the religious community, rather than mental health professionals, during periods of emotional distress. However, only one in four African-Americans/Blacks recognize that a change in eating habits and sleeping patterns are a sign of depression; only 16 percent recognize irritability as a sign.

Seeking one's own means to improve health is commendable, and reliance on family, friends and the religious community for support can be helpful. As with many illnesses, accurate professional diagnosis and early treatment of mental disorders is more effective and helps prevent the likelihood of serious recurrences. A physician or qualified mental health professional must diagnose and treat depression and other mental illness.<sup>120</sup>

## American Indian Mental Health

Overall, American Indians represent less than 1.5 percent of the U.S. population; therefore, large-scale representative studies have not had enough samples to generalize prevalence rates of mental illness for this population.<sup>121</sup> American Indians make up 0.7 percent of the state's population, and accounted for 2.7 percent of public mental health clients in 2003.

According to national literature, delivery of mental health services to American Indians on the reservations has been hampered by problems at several levels. At the system level, there often is lack of clarity regarding the roles and responsibilities that the Indian Health Service, state mental health departments, tribes and the Bureau of Indian Affairs should assume in working with American Indians who have serious mental



illnesses. There are few, if any, specific, written working agreements between states, the Indian Health Service and tribal groups regarding mental health service delivery. Additionally, the Indian Health Service and tribal and state governments have grossly inadequate funds to address the needs of seriously mentally ill people in American Indian communities.<sup>122</sup>

*There also are concerns about the cultural competence of non-Indian service providers and about the levels of support for traditional healing approaches in mental health service systems.*

At the level of direct service provision, there are issues of geographic isolation, concerns about the cultural competence of non-Indian service providers and issues with the levels of support for traditional healing approaches in mental health service systems. Family and consumer support services are virtually unavailable in Native American communities.<sup>123</sup> There also are specific service needs related to living in an urban setting, off the reservation and away from the Indian Health Service.<sup>124</sup> In Colorado, members of 35 federally recognized tribes live throughout the state, and a large proportion of American Indians live in the Denver area.

In terms of mental health disorders, American Indians have a suicide rate of more than twice the national average, and approximately 70 percent of mentally ill American Indians also display substance abuse issues.<sup>125</sup> American Indians also can experience culture-bound syndromes such as ghost sickness (a preoccupation with death or the deceased that includes symptoms of nightmares, anxiety, feelings of danger and a sense of suffocation).<sup>126</sup>

## Asian/Pacific Islander Mental Health

Nationally, our knowledge of the mental health needs of Asians/Pacific Islanders is limited. Epidemiological studies have included few people classified within this group. In Colorado, Asians/Pacific Islanders' rates of use of the state's public mental health system are less than their proportion of the population (2.5 percent of the population<sup>127</sup> and 1.7 percent of clients in 2003<sup>128</sup>). National studies of service use among Asians have found the lowest rate of service use of all racial and ethnic groups.<sup>129</sup> Studies have found a tendency of Asians to use services only when more ill than Whites using the same services.<sup>130</sup> Reasons cited for this include greater reluctance to use mental health care in general and discouragement by families to use such services. It has been suggested that these reasons may be related to shame and stigma, different cultural conceptions of treatment, and cultural and linguistic mismatch.<sup>131</sup>

While overall prevalence rates of diagnosable mental illnesses among Asians appear to be inconclusive, when symptom scales are used, Asians show higher levels of depressive symptoms than do Whites. Furthermore, Chinese-Americans are more likely to exhibit somatic (physical) complaints of depression than are African-Americans/Blacks or Whites.<sup>132</sup> Asians also may experience culture-bound syndromes such as neurasthenia, a form of nervous exhaustion related to depression, known as “*shenjian shuairuo*” and “*hwa-byung*” or suppressed anger syndrome, which is characterized by symptoms such as constriction in the chest, palpitations, flushing, headache, dysphoria, anxiety and poor concentration.





# Assessing the Costs of Health Disparities

THE TERM “HEALTH DISPARITIES” often is used to describe two distinct but related concepts: **health-status** disparities and **health-care** disparities. Health status is a combination of behavioral, biological, social, environmental and economic factors reflecting how we live. Measures of health status include rates of disease or morbidity, lifestyle/behavior, and death or mortality. Health-care disparities refers to differences in the preventive, diagnostic and treatment services offered to people, including health-care quality and outcomes. Throughout this report, the focus has been on health-status disparities.

Monetary costs often are associated with disparities in health care. The real economic costs associated with health disparities are very difficult to calculate. The Center to Reduce Cancer Health Disparities published a report entitled *Economic Costs of Cancer Health Disparities: Summary of Meeting Proceedings* that summarized the methods and difficulties in determining the economic costs associated with cancer health disparities.

Within the health-care cost structure alone, costs can be divided into direct, indirect and intangible costs.

- **Direct costs** are related to expenditures for goods, services and other resources used in the direct provision of a service. Both direct medical (e.g., cost of medications) and direct nonmedical (e.g., paid child care) costs are categorized as direct costs.
- **Indirect costs** generally are resources related to days lost from work (i.e., loss of productivity). Medical or health-related indirect costs generally are broken down into morbidity (i.e., lost productivity due to work absence or disability) and mortality (i.e., lost productivity due to premature death).
- **Intangible costs** are those related to adverse health effects for which there are no market prices (e.g., reduction in quality of life due to physical pain, emotional problems and lifestyle changes).

## Core Direct Costs

- Screening
- Hospitalization
- Outpatient clinical care
- Physician visits
- Rehabilitation/home health care
- Prescription and nonprescription drugs
- Medical devices (walkers, wheel chairs, etc.)
- Nursing home/long-term care
- Hospice care

## Other Direct Costs

- Transportation to health-care providers
- Child care related to obtaining health-care services
- Special diets
- Lodging for remote treatment facilities

## Core Indirect Costs (impact on patient)

- Reduced productivity
- Job loss/shift to lower-wage employment
- Loss of promotion opportunities
- Lost wages due to premature death

## Other Related Indirect Costs (impact on family/friends)

- Time lost from work and housekeeping by family members or friends
- Loss to the community of volunteers/caregivers

## Intangible Costs

- Pain and suffering
- Bereavement
- Psychosocial impairment
- Familial health

Sources: M.R. Gold, J.E. Siegel, L.B. Russell and M.C. Weinstein, M.C., “Cost-Effectiveness in Health and Medicine,” New York: Oxford University Press, 1996. D.G. Fryback and B. M. Craig, “Measuring Economic Outcomes of Cancer,” J Natl Cancer Inst Monographs, no. 33 (2004): 134–41.

Economic studies often focus only on direct and indirect costs due to the difficulty in assessing intangible costs. In presenting direct and indirect costs, an additional distinction often is made in economic studies between costs primarily within the health-care system (core costs) and costs outside of the health system (noncore costs). Larger societal costs are difficult to determine since there is no monetary value placed on impacts on family and friends or intangibles such as family health, stress and quality of life.

The true economic consequences are hard to determine, but affect all Americans at the societal, governmental and, oftentimes, family and individual level. The delivery of health-care services plays a surprisingly small role in overall health, so we must focus on health status and the determinants of health to truly make a difference in health disparities.\*

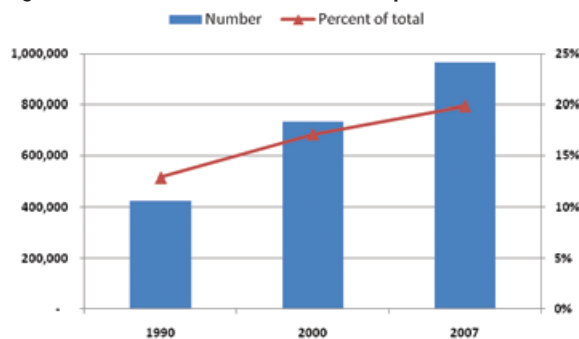
\* Center to Reduce Cancer Health Disparities, Economic Costs of Cancer Health Disparities: Summary of Meeting Proceedings, Dec. 2004.

# The Hispanic/Latino Population

## Introduction

LATINOS HAVE BEEN A SIGNIFICANT PART of Colorado's population even before Mexican and Spanish settlers established Colorado's first permanent town, San Luis, in 1851. Colorado's Latino population has grown due to relatively high fertility levels and a continued migration from the southwestern United States, Mexico and, more recently, Central America. More than doubling since 1990, the Latino population now numbers nearly 1 million residents (Figure 4). At nearly 20 percent of the state's population (Figure 1), Hispanics/Latinos are the largest ethnic minority in Colorado.

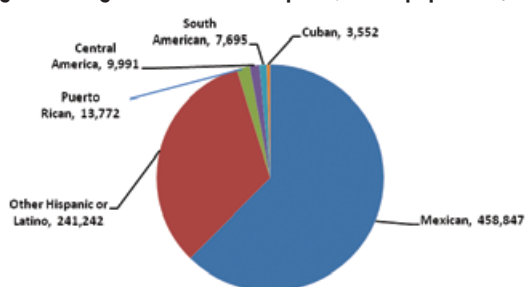
**Figure 1. Growth of the Colorado Latino Population, 1990–2007**



Source: U.S. Bureau of the Census, *Census of Population (1990 and 2000), Annual Estimates of the Population by Sex, Race, and Hispanic Origin for States: April 1, 2000 to July 1, 2007*

Colorado's Hispanic/Latino population is itself diverse. Descendants of Hispanics/Latinos who have resided in what is now the United States are likely to identify themselves as "other Hispanic or Latino" on the census, while more recent immigrants and their children are more likely to identify with their country of origin. The 2000 census found a substantial majority of Colorado Hispanics/Latinos identified as "Mexican" and relatively small minorities identifying as Puerto Rican, Cuban or from a Central American or South American country. The remainder of Colorado's Hispanics/Latinos were classified as "other Hispanic or Latino" (Figure 2).

**Figure 2. Origin of Colorado's Hispanic/Latino population, 2000**

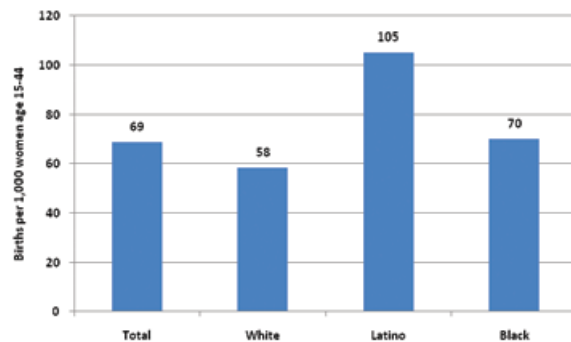


Source: U.S. Bureau of the Census, 2000 Census of Population

## Sources of Population Growth and Geographic Distribution

Hispanics/Latinos have substantially higher fertility than the total population (Figure 3).

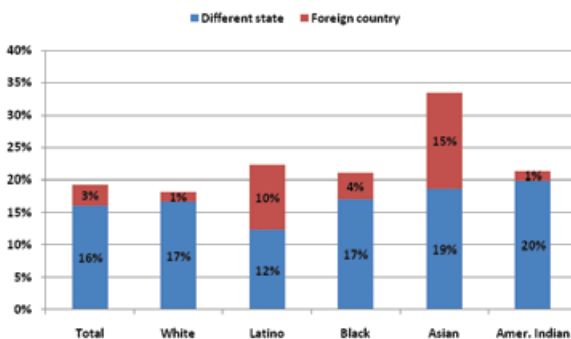
**Figure 3. Colorado General Fertility Rate, 2005**



Source: National Center for Health Statistics, Centers for Disease Control and Prevention.

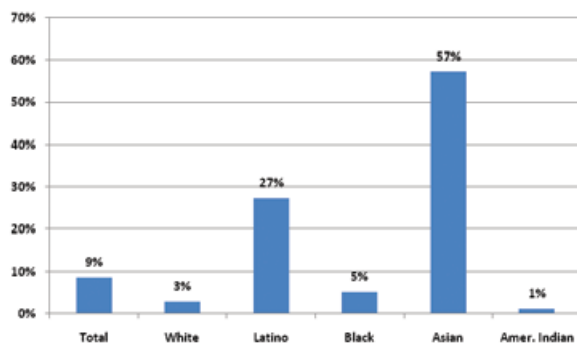
One way to measure the contribution of domestic and international migration to population growth is to look at the proportion of the population that recently moved to Colorado from another state or a foreign country. Figure 4 shows that 12 percent of the Hispanic/Latino population 5 years of age and over in 2000 lived in another state in 1995 and an additional 10 percent lived abroad. Figure 5 shows that slightly more than one quarter of Colorado's Latino population were foreign born in 2000.

**Figure 4. Colorado population (5 years of age and over) living in another state or foreign country in 1995, 2000**



Source: U.S. Bureau of the Census, 2000 Census of Population

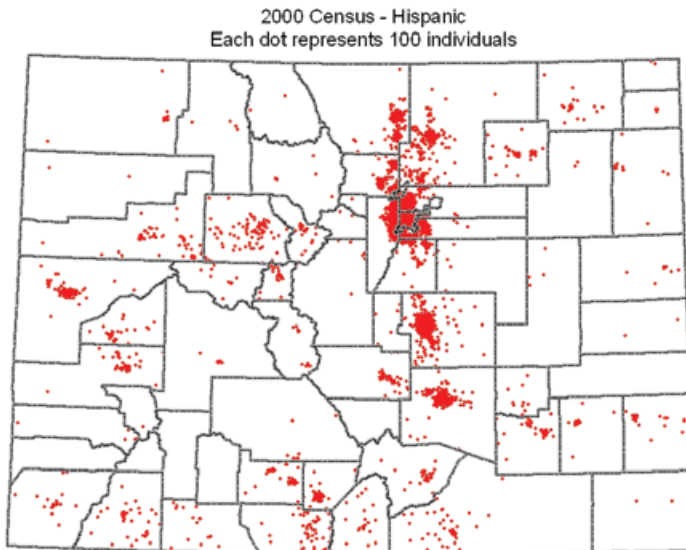
**Figure 5. Foreign-born population, Colorado, 2000**



Source: U.S. Bureau of the Census, 2000 Census of Population

Hispanics/Latinos are widely distributed across the state with major concentrations in the Denver, Pueblo and Greeley metropolitan areas, the San Luis Valley and mountain resort communities. (See Map 1.)

**Map 1. Distribution of the Hispanic/Latino population, 2000**



## Strengths within the Hispanic/Latino Community

Hispanic/Latino communities exhibit variations in cultural values and practices influenced by differences in socioeconomic status, educational attainment, immigration status, English proficiency and length of stay in the United States. However, Hispanics/Latinos share a number of strengths and protective factors that influence their health behaviors. Some of these factors include familism, personalism and community networking.<sup>133</sup> Many Hispanics/Latinos include their families in making important decisions (familism versus individualism), since family members provide a strong support system. Personalism (personalismo) involves



valuing and building relationships at the individual (personal) rather than the institutional (impersonal) level, through warm and friendly interactions aimed at taking an active role in the client's/patient's life. Community networking involves collective community actions through community-based organizations and networks that provide trustworthy essential linkages and access to resources and services.

## Data Issues

"Latino" (or "Hispanic") is not a distinct race, but an ethnicity classification. Hispanics/Latinos in Colorado also may identify themselves with one or more of the most currently used racial categories including American Indian, Asian, Black, Pacific Islander and White.<sup>134</sup> The racial diversity within this group compounded with many inconsistencies in methods used to assign race and ethnicity for data collection and reporting may result in data biases.<sup>135</sup> Some important data bases and data collection instruments narrow the racial choices for Latinos to "Black Hispanic," "White Hispanic" and "Hispanic of some other race." A significant number of Latinos would fall under this "some other race" category, limiting the usefulness of the data, as there are differences in characteristics, attitudes and opinions within the different Latino/Hispanic racial groups.<sup>136</sup> In 1993, the Office of Management and Budget defined the Hispanic or Latino category as a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race.<sup>137</sup>

Quick changes in the demographics of the Hispanic/Latino population and its subgroups have challenged data collection and surveillance systems to keep pace with its rapid growth. Many of these data systems do not have adequate subgroup sample sizes and data, resulting in lack of specific information about subgroups and inaccurate generalizations to all subgroups based on the most prominent group.<sup>138</sup> Nevertheless, a general sense of how Colorado's Hispanics/Latinos self-identify is conveyed by the results of the 2000 census shown in Figure 2.

### Definition of Health Disparities

Communities of color are disproportionately affected by disease, disability and death. These differences in health status among groups are known as health disparities and are present at the national, state and local levels. There also are disparities in access to health care and quality of care.

## Health Disparities— A Life Cycle View

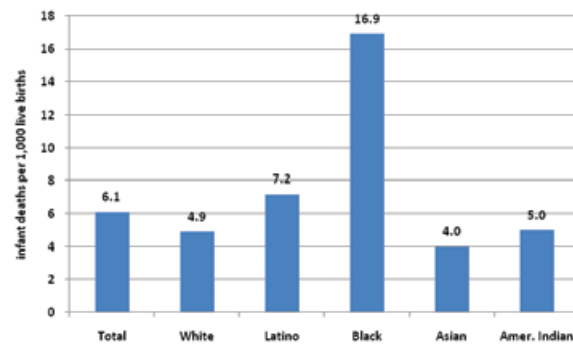
Because health disparities appear early in life and persist through the life cycle, the indicators of health disparities presented in this report are organized in terms of the life cycle: pregnancy and birth outcomes, child and youth health indicators and adult indicators. Due to data limitations, relatively few child and adolescent indicators are available for minority groups, and there are no indicators specific to elders. However, the report includes extensive information on mortality disparities. Though deaths are concentrated in the older ages, mortality disparities reflect the cumulative effect of disparities throughout the life cycle. All data presented are specific to Colorado.

### Pregnancy and Birth Outcomes

#### Infant Mortality, Perinatal Mortality and Low-Weight Births

Infant mortality (deaths among children in the first year of life) is a widely used indicator of population health. There have been modest improvements in both the total and Latino infant mortality rate in Colorado in recent years.<sup>139</sup> Nevertheless, the Hispanic/Latino infant mortality rate remains above the rate for the total population as shown in Figure 6.

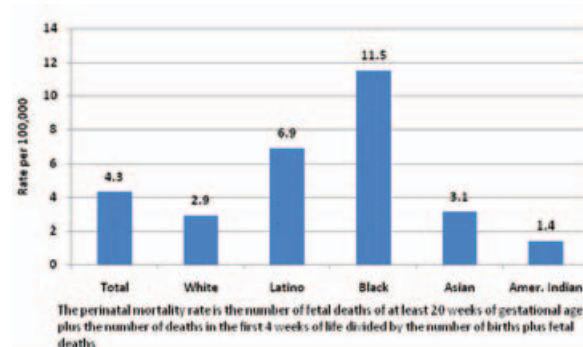
Figure 6. Infant mortality rate, 2002–06



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

Perinatal mortality, the number of fetal deaths of at least 20 weeks of gestational age plus the number of deaths in the first four weeks of life divided by the number of births plus fetal deaths, is another measure of pregnancy outcomes. As with infant mortality, the Hispanic/Latino perinatal mortality rate is higher than for the total population (Figure 7).

Figure 7. Perinatal mortality rate, 2002–06

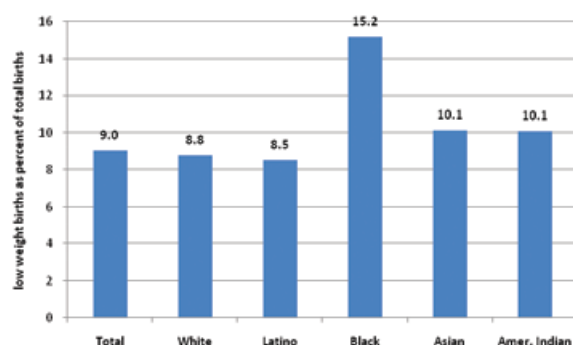


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

A third birth outcome measure often associated with infant and perinatal mortality is low-weight births. On this indicator, Hispanic/Latinos perform somewhat better than the total population (Figure 8). This discrepancy is sometimes referred to as the “Hispanic Paradox.” Analysts are not certain what accounts for the coincidence of fewer low-weight births and higher infant and perinatal mortality. One theory holds that dietary and other behaviors of foreign-born Latinas reduce their risk for low-weight births. Data from the Pregnancy Risk Assessment Monitoring System presented below show that Latino women are less likely to smoke or drink during the last three months of pregnancy than other women (Figures 11 and 12), which may contribute to the relative infrequency of low-weight births to Latina mothers.



**Figure 8. Low-weight births, 2002–06**

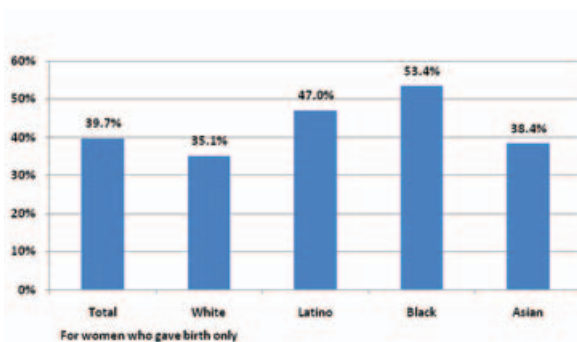


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Pregnancy Risk Factors

Poor birth outcomes such as infant mortality, perinatal mortality and low-weight births are associated with a variety of pregnancy risk factors. In this section, we examine differences in unintended pregnancies, the presence of stressors during pregnancy,\* and whether pregnant women smoked or drank alcohol during the last three months of their pregnancy. Hispanic/Latino mothers report somewhat higher rates of unintended pregnancies (Figure 9). However, they are no more likely to experience three or more stressors during pregnancy than other mothers (Figure 10).

**Figure 9. Women with unintended pregnancies 2004–06**

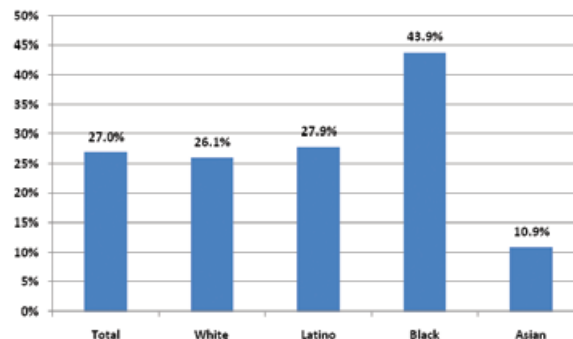


Source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, Colorado Department of Public Health and Environment

\* Stressors include moving, unpaid bills, arguments with partner or husband, hospitalization of a family member, job loss, death of a family member or friend, family problems with alcohol or drugs, separation or divorce from spouse, homelessness, jail, physical fighting and partner not wanting the pregnancy.

\*\* For the purposes of this report, a “positive health indicator” is any indicator in which a minority group scores better than the total population.

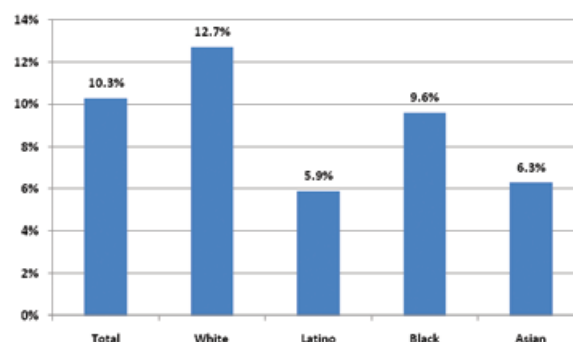
**Figure 10. Women reporting three or more stressors during pregnancy, 2004–06**



Source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, Colorado Department of Public Health and Environment

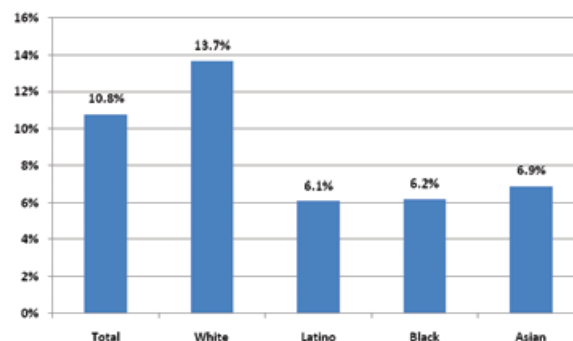
With regard to smoking and drinking during the last three months of pregnancy, Hispanic/Latino mothers show the lowest prevalence of these risky behaviors of any group in the state (Figures 11 and 12). The low prevalence of these risk factors are among the positive health indicators for Latinos.\*\*

**Figure 11. Women who smoked during last three months of pregnancy, 2004–06**



Source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 12. Women who drank during last three months of pregnancy, 2004–06**



Source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, Colorado Department of Public Health and Environment



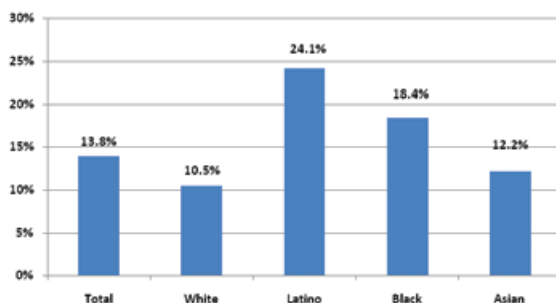
## Children's Health

The health of a population is profoundly affected by the health of its children because it reflects current and future health burdens. This section presents information on childhood obesity and oral health.

### Childhood Obesity

The growing incidence of obesity, especially among children, is gaining broad attention as a major health concern.\* Data from a recent Colorado Child Health Survey show that Hispanic/Latino children are much more likely to be obese (Figure 13) than other children.

**Figure 13. Children who are obese, ages 2–14, 2005–07**

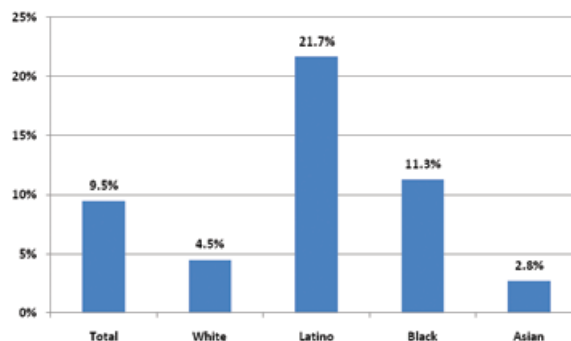


Source: Child Health Survey, Health Statistics Section, Colorado Department of Public Health and Environment

### Children's Oral Health

Oral health is an important component of overall health. Establishing good oral health habits in childhood and getting needed dental care are important for maintaining oral health in adulthood. The Colorado Child Health Survey included a question on parents' assessment of their children's oral health and access to dental care. Figure 14 shows that roughly one in five Hispanic/Latino parents report that their children's teeth are in fair or poor condition, a much higher rate than for other groups.

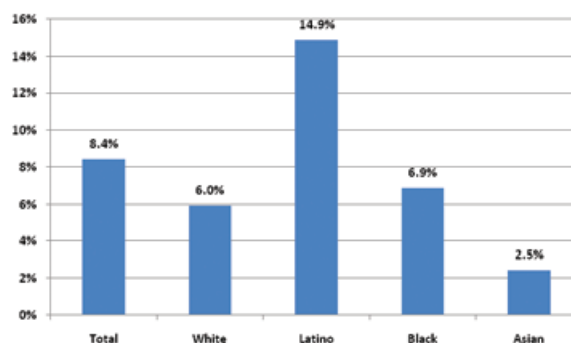
**Figure 14. Condition of teeth is fair to poor, 2004–06**



Source: Child Health Survey, Health Statistics Section, Colorado Department of Public Health and Environment

Consistent with this is the finding that more Hispanic/Latino children who needed dental care did not get it compared with other groups (Figure 15), and Latino children were less likely to have a regular source of dental care (Figure 16).

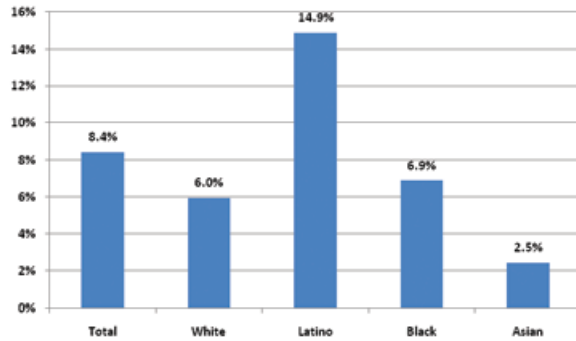
**Figure 15. Children who needed dental care but did not get it, 2004–06**



Source: Child Health Survey, Health Statistics Section, Colorado Department of Public Health and Environment

\* Data from the most recent Colorado Child Health Survey show a childhood obesity rate for all children of 13 percent for 2007, which is a slight, but statistically insignificant, decrease from the rate of 14.8 percent for 2004: <http://www.cdphe.state.co.us/hs/yrbs/childhealth.html>

**Figure 16. Children with no regular source of dental care, 2004–06**



Source: Child Health Survey, Health Statistics Section, Colorado Department of Public Health and Environment

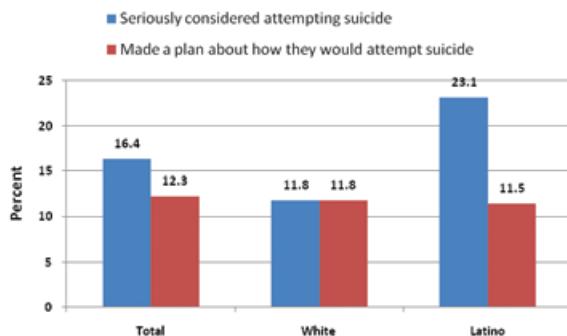
## Youth

Adolescence is a stage in the life cycle when young people become more independent from their parents. Too often this independence results in engaging in risky behaviors.\* For this report, we have selected three areas of special concern for Hispanic/Latino youth: suicide, teen fertility and gonorrhea.

### Suicide

According to the Surgeon General, “an estimated 90 percent of suicides are associated with a history of mental illness—usually depression—or substance abuse.”<sup>140</sup> Thus, suicide ideation (thinking about and planning suicide) among teens is an indicator of potentially serious behavioral health issues. While Latino high school students are more likely than all students to have considered suicide in the past 12 months, they are no more likely to have made a plan about how to commit suicide.

**Figure 17. High school students who considered and planned suicide in past 12 months, 2007**



Source: Youth Risk Behavior Survey, Health Statistics Section, Colorado Department of Public Health and Environment

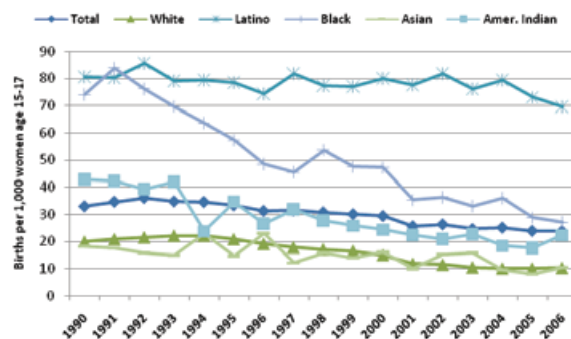
\* Findings from the Youth Risk Behavior Survey for Colorado, which present data on a range of risk behaviors, can be found at <http://www.cdphe.state.co.us/hs/yrbs/yrbs.html>.



### Teen Fertility

Teen fertility (births to teenage mothers) is a concern for teen mothers (and fathers), their parents and society at large. There is strong evidence that teen mothers (especially those under age 18) are less likely to finish high school, establish strong families and contribute to society than their counterparts who postpone childbearing until they reach adulthood. Furthermore, children of teenage mothers “are at increased risk of low birth weight, prematurity, mental retardation, poverty, welfare dependency, poor school performance, insufficient health care, and inadequate parenting.”<sup>141</sup> While teen fertility rates have fallen nationally, in Colorado they still remain high for Latina teens.

**Figure 18. Teen fertility rate, 1990–2006**

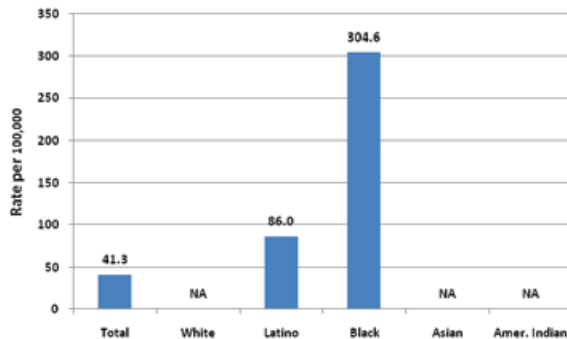


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

## Gonorrhea

Gonorrhea is a sexually transmitted disease that infects both men and women. Safer sex practices, such as using a condom, reduce the risk of contracting gonorrhea. The gonorrhea rate for Hispanic/Latino teens is roughly twice that for all Colorado teens. Colorado has adopted a Sexually Transmitted Diseases Prevention Plan that identifies a number of strategies for reducing the incidence of sexually transmitted diseases.<sup>142</sup>

**Figure 19. Gonorrhea rate age 10–17, 2005–006**



Source: STD Management Information System, STI/HIV Surveillance Program, STI/HIV Section, Colorado Department of Public Health and Environment

## Adults

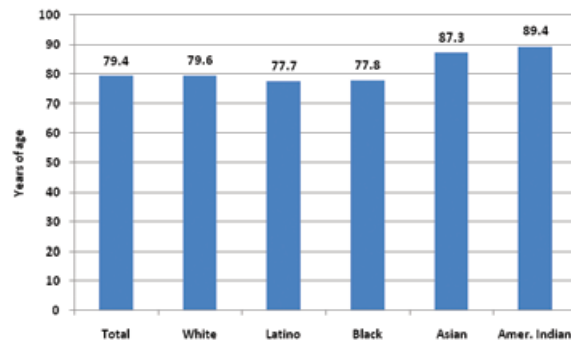
We have more information on health disparities in Colorado relating to adults than any other segment of the life cycle. This is because the three leading data sources used for this report either report risk behaviors for adults (the Behavior Risk Factor Surveillance System), report on the incidence of diseases that are more prevalent among adults (e.g., cancer incidence from the cancer registry) or pertain to mortality (cause-specific death rates from the vital records system).

This section begins with data on life expectancy, which summarizes the impact of mortality across the life span, and leading causes of death. It is followed by information on risk factors affecting a range of conditions and then proceeds with sections on each of the leading causes of death beginning with the most prevalent.

### Life expectancy and leading causes of death

Life expectancy at birth is a commonly used summary measure for the impact of mortality from all causes on a population. Technically, it is the average number of years a newborn would live if it experienced current age-specific mortality rates. Comparing life expectancy at birth among different populations provides a ready method of summarizing the differential impact of mortality at various ages. Figure 20 shows that Hispanics/Latinos have a slightly lower expectation of life at birth than that for all Coloradans.

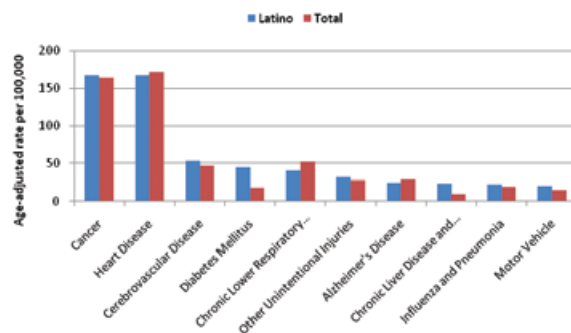
**Figure 20. Life expectancy at birth, 2006**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

Cancer and heart disease are the leading causes of death for Latinos as they are for the total population. Hispanic/Latinos have slightly higher cancer death rates and slightly lower heart disease death rates than for the total population. Figure 21 shows disparities for each of the 10 leading causes of death for Hispanics/Latinos. Except for chronic lower respiratory diseases and Alzheimer's disease, death rates for Hispanics/Latinos are higher than for the total population. The following sections examine risk factors and disease incidence rates associated with some of these leading causes of death.

**Figure 21. Ten leading causes of death for Hispanics/Latinos, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Risk factors associated with one or more leading causes of death

#### Physical activity, nutrition, smoking and binge drinking

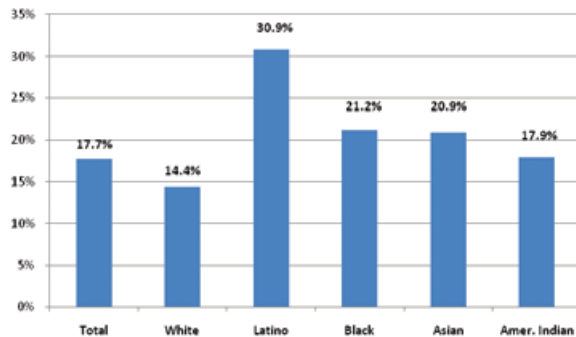
Behaviors such as exercise, eating habits and substance abuse are important determinants of lifetime health. On each of these dimensions, Hispanics/Latinos are more likely to exhibit great risk behaviors than Whites.

Hispanic/Latino adults are twice as likely as Whites to report that they engaged in no leisure exercise in the



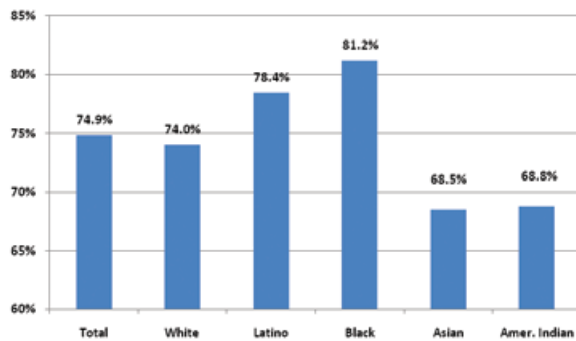
past month (Figure 22). Contributing factors may include low income, which limits access to some leisure activities popular with more affluent Coloradans; more family responsibilities; and living in neighborhoods with fewer opportunities for exercise. The rate of Hispanics/Latinos consuming fewer than five fruits and vegetables a day is similar to that of the total population (Figure 23).

**Figure 22. Adults who are physically inactive, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 23. Adults who consume fewer than five fruits and vegetables per day, 2004–07**

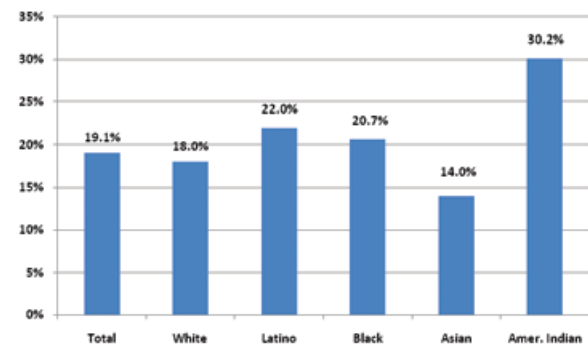


Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment



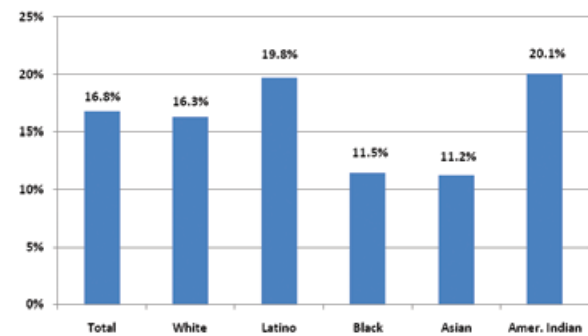
Hispanic/Latino adults are somewhat more likely to smoke and binge drink than other Coloradans.

**Figure 24. Adults who smoke, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

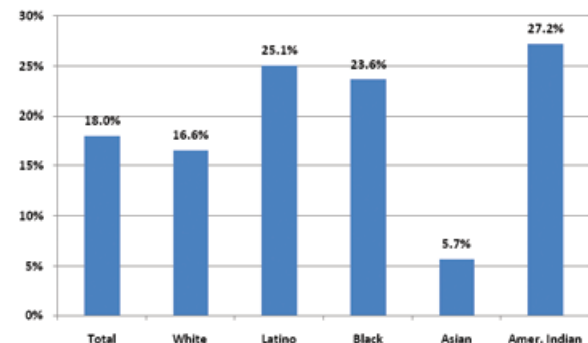
**Figure 25. Adults who binge drink, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

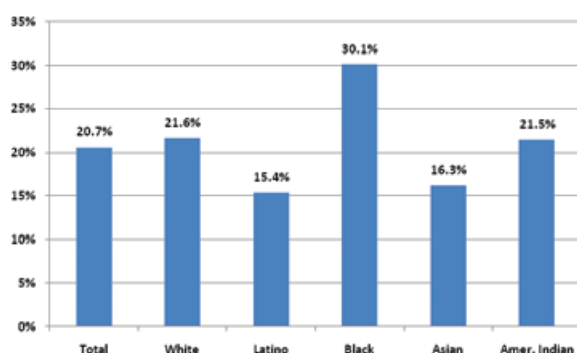
Lack of physical activity and poor nutrition contribute to increased rates of obesity, hypertension and diabetes. Smoking is related to hypertension, heart and cerebrovascular diseases, lung cancer and chronic lower respiratory diseases. Hispanics/Latinos have a higher prevalence of obesity (Figure 26), but lower prevalence of reported high blood pressure (Figure 27).

**Figure 26. Adults who are obese, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 27. Adults with high blood pressure, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

## Screenings, Incidence and Mortality for Leading Causes of Death

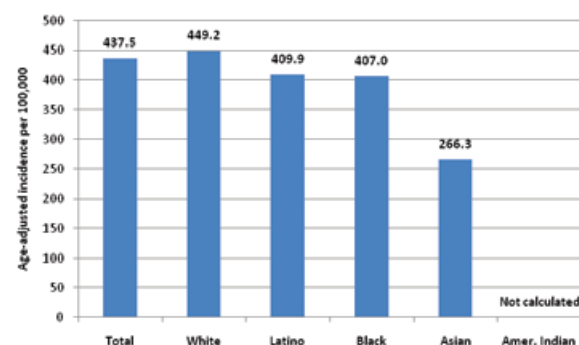
### Cancer

Cancer is the leading cause of death for Colorado Latinos, accounting for 18 percent of all Latino deaths in 2007. In addition to data for all cancers combined, this section includes information on specific cancers of interest to the Latino population: cancers of the breast, cervix, prostate and lung.

### All Cancers

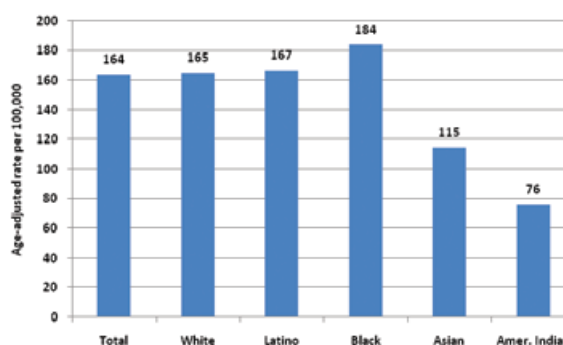
As shown in Figure 28, Latinos actually have a lower all-cancer incidence rate than the total population, yet have a slightly higher mortality rate (Figure 29). This apparent paradox is explained by the fact that cancer tends to be detected at a later stage for Latinos when treatments are less likely to be successful.

**Figure 28. Cancer incidence (all cancers), 2002–06**



Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment.

**Figure 29. Cancer mortality (all cancers), 2002–06**



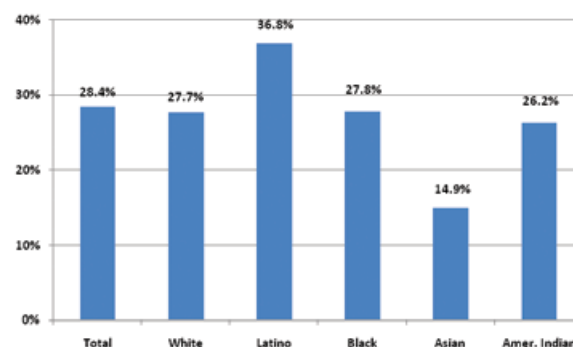
Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Specific cancers

#### BREAST CANCER

In recent decades, significant progress has been made in the diagnosis and treatment of breast cancer. Nevertheless, breast cancer accounted for 13 percent of all cancer deaths among Hispanic/Latino women in 2007. Early detection increases a woman's chance of surviving breast cancer, yet Latino women 40 and over are substantially less likely to have had a mammogram in the past two years than other women, as shown in Figure 30.

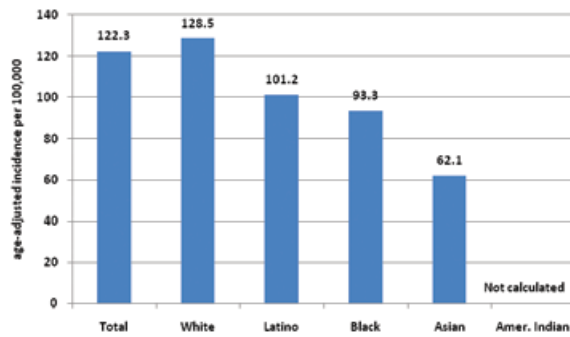
**Figure 30. Women 40+ who did not have a mammogram, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

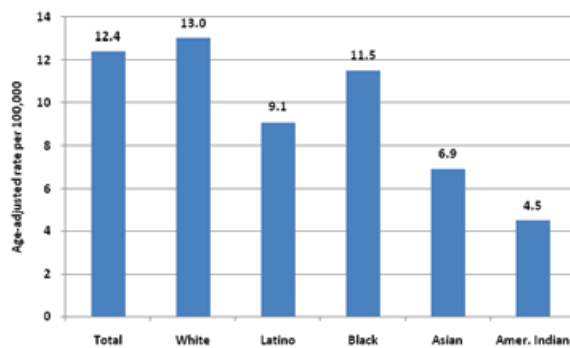
Despite the fact that fewer Hispanic/Latino women 40 and over have had a recent mammogram, they have a substantially lower incidence and mortality rates for breast cancer.

**Figure 31. Female breast cancer incidence, 2002–06**



Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment.

**Figure 32. Breast cancer mortality, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

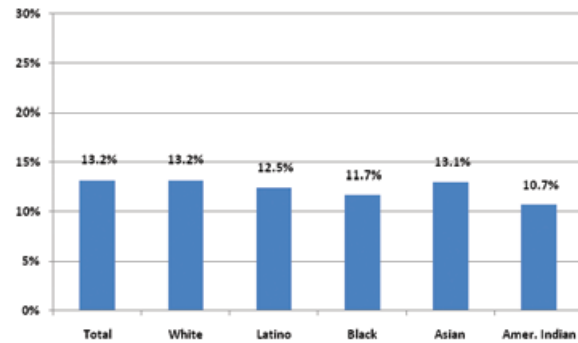


#### CERVICAL CANCER

While cervical cancer accounts for a relatively small number of cancer deaths among Hispanic/Latino women (4 percent in 2007), it is of interest because early detection from a Pap test can significantly reduce cervical cancer mortality. Even though Hispanics/Latinas have a lower adherence to guidelines for mammograms, they have the same level of adherence to the guidelines for the Pap test. This might be explained by the fact

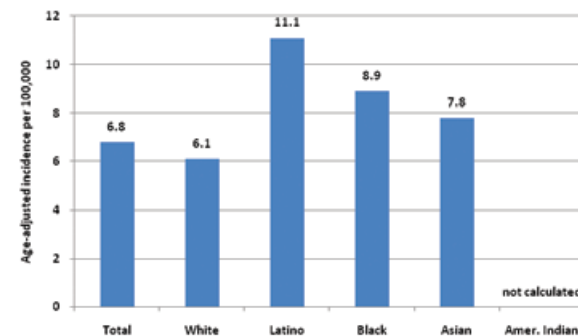
that the screenings are recommended for different age groups of women. Mammograms are recommended for women over 40, while Pap smears are recommended for all sexually active women, many of whom are under 40. Nevertheless, Hispanic/Latino women have higher incidence and mortality rates for cervical cancer when compared with all Colorado women.

**Figure 33. Women who have not had a Pap smear in the past three years, 2004–07**



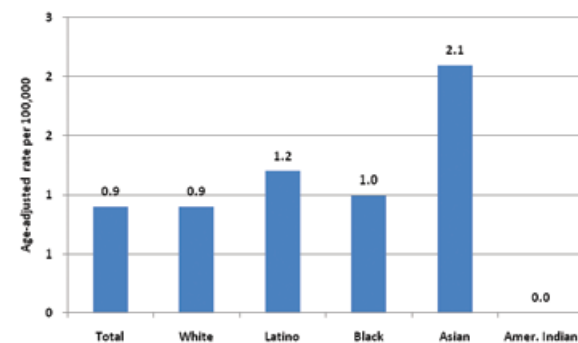
Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 34. Cervical cancer incidence, 2002–06**



Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment.

**Figure 35. Cervical cancer mortality, 2002–06**



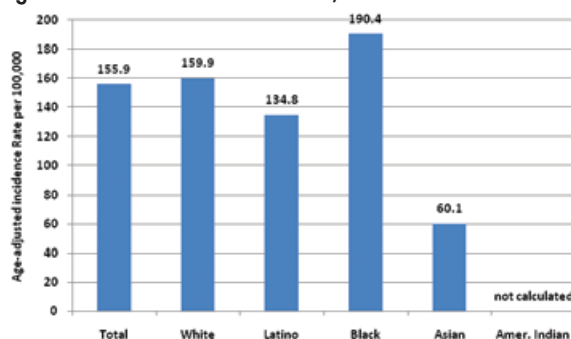
Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment



## PROSTATE CANCER

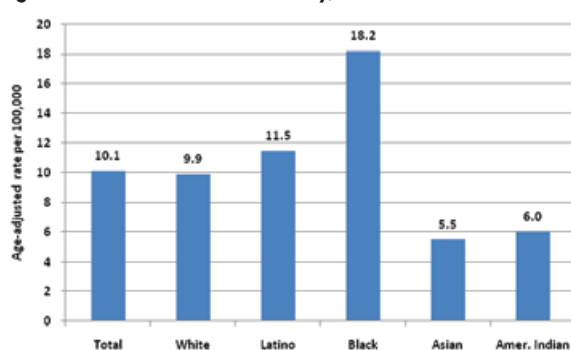
Prostate cancer is another example of a cancer for which Hispanics/Latinos have lower incidence rates than the total population but higher mortality rates. This may be due to different access to care for prostate cancer among Latino men.

**Figure 36. Prostate cancer incidence, 2002–06**



Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment.

**Figure 37. Prostate cancer mortality, 2002–06**

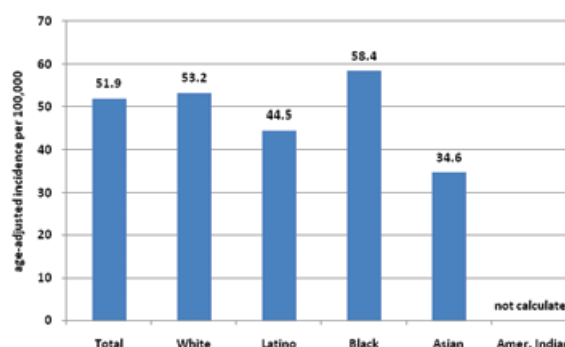


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

## LUNG CANCER

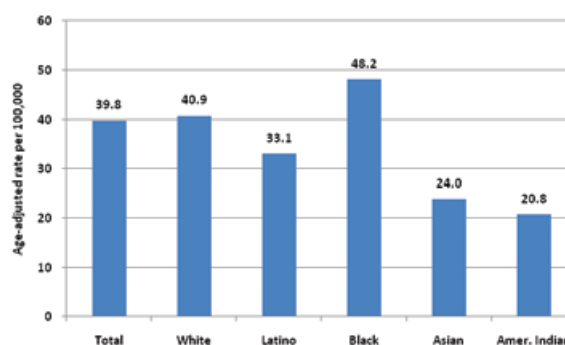
Despite the fact that Hispanics/Latinos are more likely to smoke than other Coloradans, they have lower lung cancer incidence and mortality.

**Figure 38. Lung cancer incidence, 2002–06**



Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment.

**Figure 39. Lung cancer mortality, 2002–06**



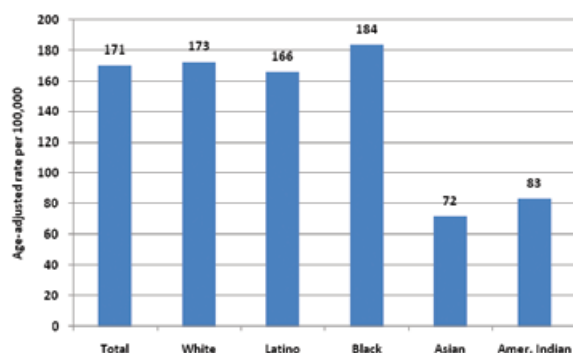
Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

## Heart disease

While heart disease is the leading cause of death for all Coloradans, it is second to cancer for Hispanics/Latinos, accounting for 17 percent of all Latino deaths in 2007. Physical inactivity, poor nutrition, smoking and binge drinking all are associated with increased risk for heart disease and cerebrovascular disease. As shown in Figures 22–25 (above), Hispanics/Latinos have a higher prevalence of each of these risk factors than most Coloradans. Nevertheless, their heart disease mortality rate is slightly below that of the total population.



**Figure 40. Heart disease mortality, 2002–06**

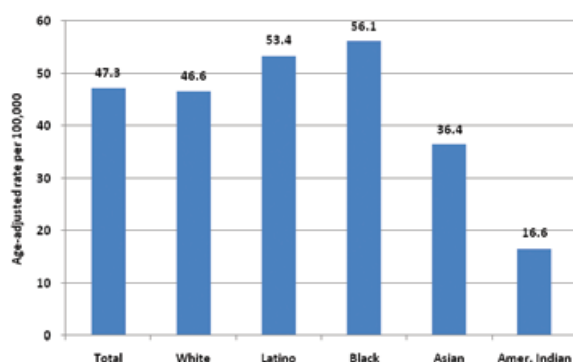


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### *Cerebrovascular disease*

Cerebrovascular disease, which shares many of the risk factors associated with heart disease, is the third leading cause of death for Latinos. Unlike heart disease, Hispanics/Latinos have a higher cerebrovascular disease mortality rate (Figure 41).

**Figure 41. Cerebrovascular disease mortality, 2002–06**



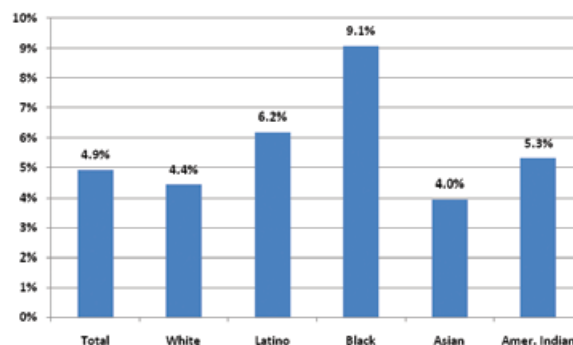
Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### *Diabetes*

Diabetes is the fourth leading cause of death for Hispanics/Latinos. Physical inactivity, poor nutrition and obesity are associated with diabetes. The higher-than-average prevalence of diabetes among Hispanics/Latinos is consistent with the fact that they are more likely to have each of these risk factors. There also may be a genetic predisposition.



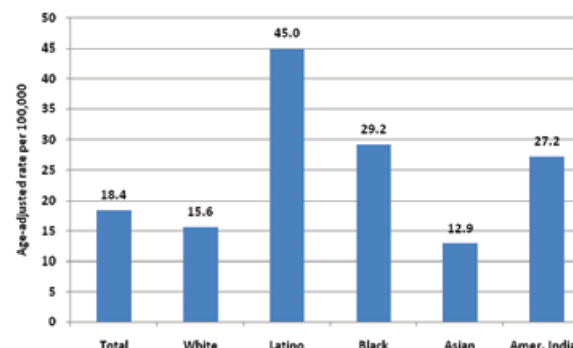
**Figure 42. Adults with diabetes, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

While the disparity between Hispanic/Latino and total diabetes rates is relatively small, the disparity in diabetes mortality is very large, with Hispanics/Latinos having an age-adjusted death rate for diabetes more than twice that of the total population and nearly three times that of Whites (Figure 43). A possible explanation for this apparent paradox is that Latinos may have higher rates of undiagnosed diabetes than other groups.

**Figure 43. Diabetes mortality, 2002–06**

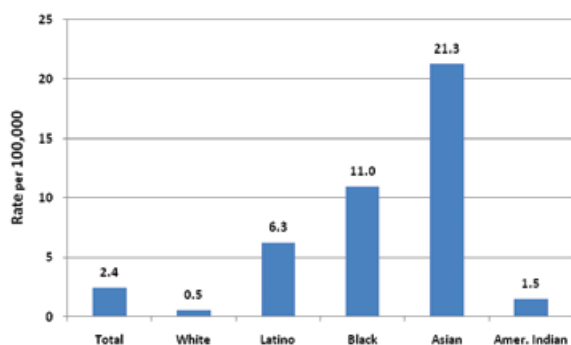


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### *Tuberculosis, asthma and chronic lower respiratory diseases mortality*

Tuberculosis and asthma are two respiratory conditions of concern to the Hispanic/Latino population. While tuberculosis is relatively rare these days, the Hispanic/Latino incidence rate is more than twice that of the total population (Figure 44).

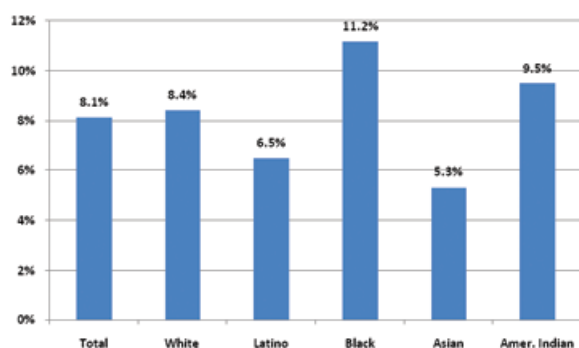
**Figure 44. Tuberculosis incidence, 2002–06**



Source: Tuberculosis Program, Disease Control and Environmental Epidemiology Division, Colorado Department of Public Health and Environment

Asthma, which is a much more common respiratory condition, is somewhat less prevalent among Colorado Hispanics/Latinos than the total population.

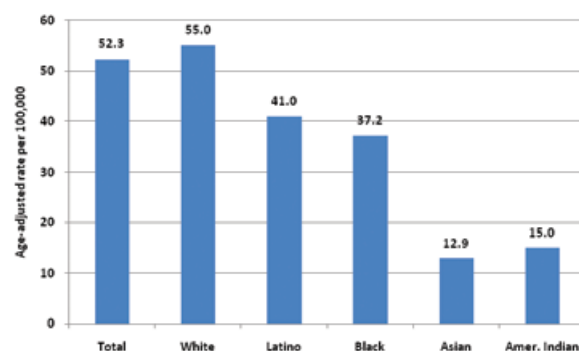
**Figure 45. Adults with asthma, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

Although chronic lower respiratory disease is the fifth leading cause of death for Hispanics/Latinos, its rate in Hispanics/Latinos is lower than that for the total population.

**Figure 46. Chronic lower respiratory disease mortality, 2002–06**

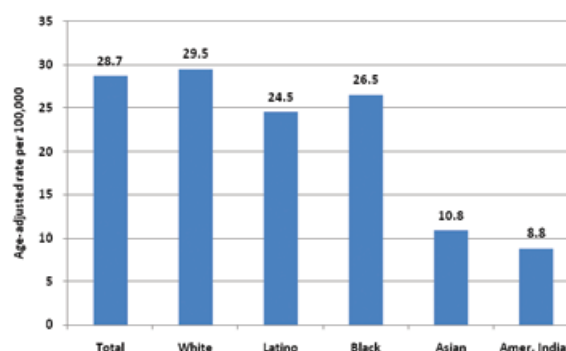


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

## Alzheimer's Disease

“Alzheimer’s disease is a slowly progressive disease of the brain that is characterized by impairment of memory and eventually by disturbances in reasoning, planning, language, and perception.”<sup>143</sup> Alzheimer’s disease is the leading cause of dementia among the elderly. While nearly half of all Americans 85 and older are affected by Alzheimer’s, it is not a normal part of aging. Aside from age, hypertension and diabetes are risk factors for Alzheimer’s. Alzheimer’s is the seventh leading cause of death for Hispanics/Latinos, yet the death rate from Alzheimer’s is lower for Latinos than the total population.

**Figure 47. Alzheimer’s disease mortality, 2002–06**



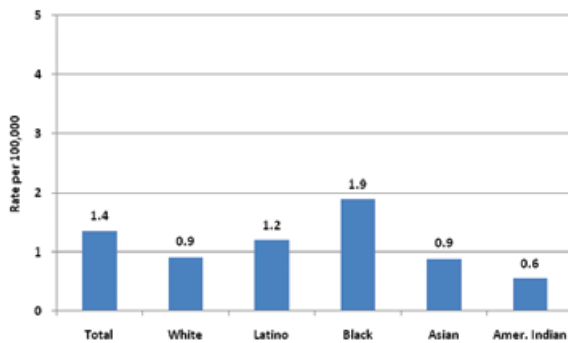
Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment



### Hepatitis B and chronic liver disease

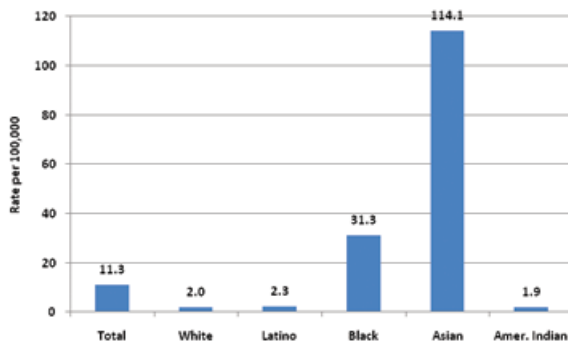
Hepatitis is a viral disease primarily affecting the liver. Hepatitis B is a strain of hepatitis that is spread in much the same way as HIV. Most adults with acute hepatitis B recover completely. However, most infants and children infected with hepatitis B remain chronically infected. Chronic hepatitis B is endemic in Southeast Asia and Sub-Saharan Africa where as many as 15–20 percent of adults are infected.<sup>144</sup> The race/ethnicity of more than a third of all hepatitis B cases (acute and chronic) is unknown. Among cases of acute and chronic hepatitis B where race/ethnicity is known, Hispanics/Latinos have lower incidence rates than the total population. However, Latino mortality from chronic liver disease and cirrhosis is more than double the rate for the total population (Figure 50).

**Figure 48. Acute Hepatitis B, 2002–06**



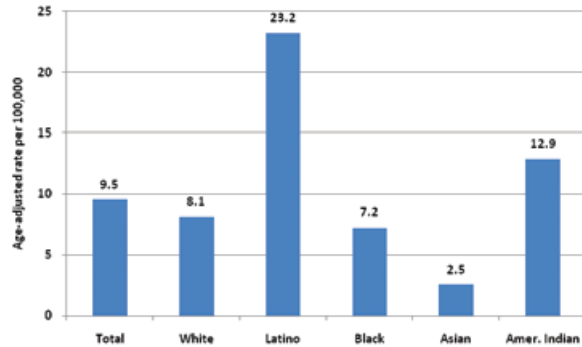
Source: Viral Hepatitis Program, Disease Control and Environmental Epidemiology Division, Colorado Department of Public Health and Environment

**Figure 49. Chronic Hepatitis B, 2002–06**



Source: Viral Hepatitis Program, Disease Control and Environmental Epidemiology Division, Colorado Department of Public Health and Environment

**Figure 50. Chronic liver disease and cirrhosis mortality, 2002–06**

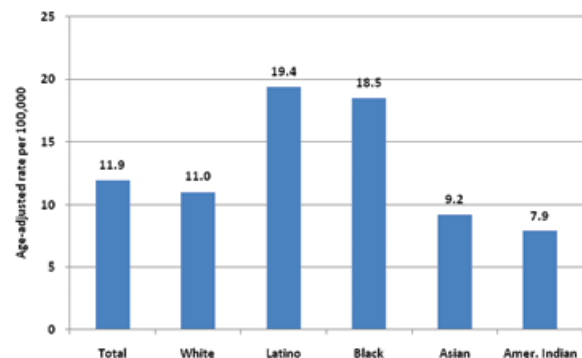


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Nephritis

Nephritis is inflammation of the kidney that may result from a urinary tract infection or some other condition. Hispanics/Latinos are more likely to die from nephritis or nephrotic syndrome than other Coloradans.

**Figure 51. Nephritis, nephrotic syndrome and nephrosis mortality, 2002–06**



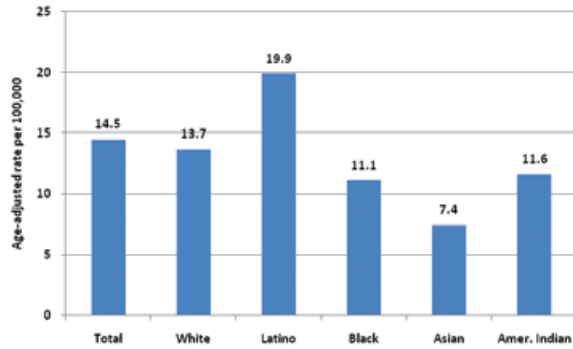
Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment



### Other causes of death of concern

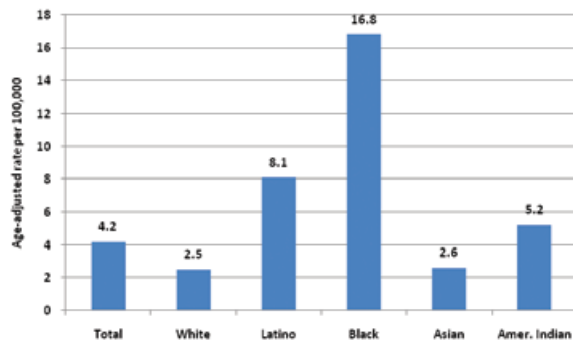
Other causes of death that are of concern to the Hispanic/Latino community include motor vehicle injuries, homicide and legal intervention, and HIV/AIDS. The mortality rates for all of these are higher than those for the total population (Figures 52–55).

**Figure 52. Motor vehicle injury mortality, 2002–06**



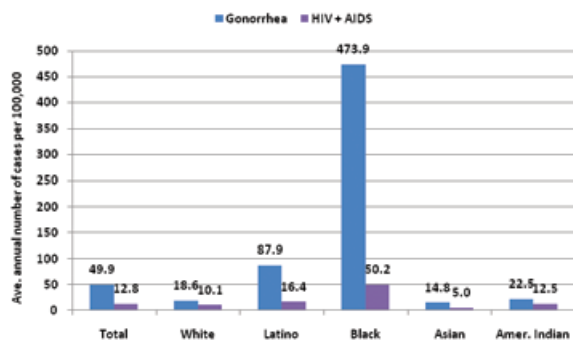
Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 53. Homicide and legal intervention mortality, 2002–06**



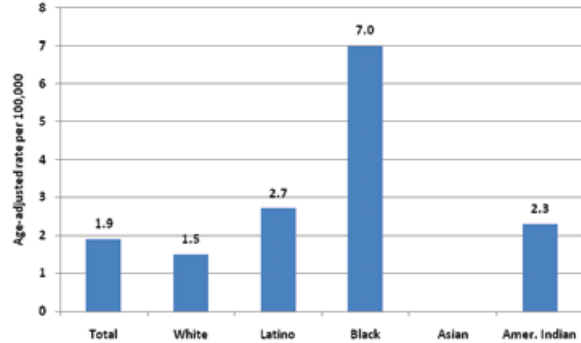
Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 54. Sexually transmitted diseases, 2002–06**



Source: Colorado eHARS, HIV/AIDS Reporting System, STD Management Information System, STI/HIV Surveillance Program, STI/HIV Section, Colorado Department of Public Health and Environment

**Figure 55. Human Immunodeficiency Virus disease mortality, 2002–06**

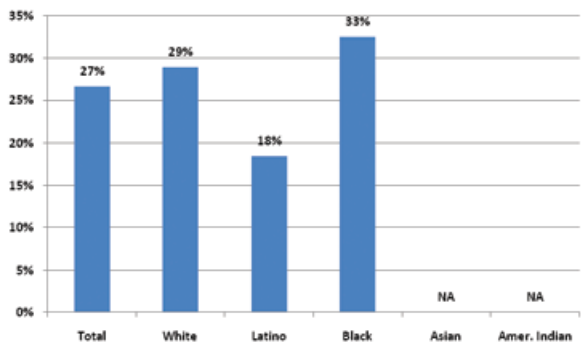


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Oral Health

Oral health is an important but often neglected component of overall health. The Behavior Risk Factor Surveillance System includes self-reported data on oral health for adults that demonstrate that disparities exist on this dimension of health as they do for physical and mental health. Figure 56 indicates that Hispanics/Latinos are somewhat less likely to have had six or more permanent teeth removed. This could be more a reflection of the younger age of Hispanic/Latino respondents than better oral health. Figure 57 shows that Hispanics/Latinos are less likely to have had a dental visit or dental cleaning in the last year. Dental insurance typically covers most of the cost of dental cleanings, and Figure 58 shows that Hispanics/Latinos are less likely to have dental insurance than other Coloradans.

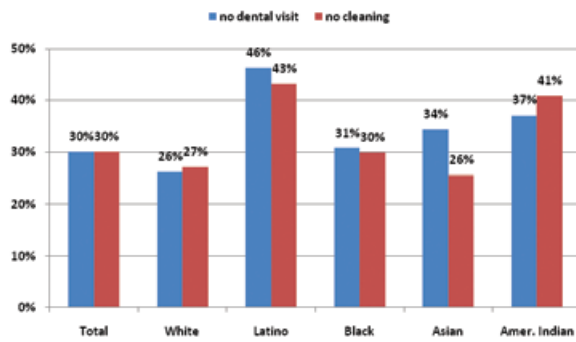
**Figure 56. Adults who have had six or more permanent teeth removed, 2006**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

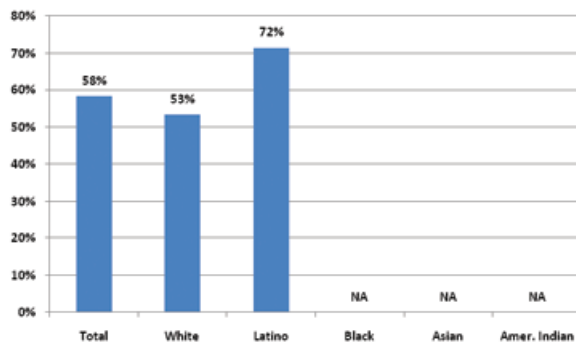


**Figure 57. Adults reporting no dental visit and no dental cleaning in the past year, 2006**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 58. Adults without dental insurance, 2006**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

## Recommendations

Eliminating health disparities in the Hispanic/Latino community requires an understanding of the diversity of individuals and cultures within the community. Differences in socioeconomic status, educational attainment, immigration status, English proficiency and length of stay in the United States have direct impacts on decision-making and health behaviors.

Meaningful community involvement is critical in the planning, development and implementation of effective programs. In addition, involving families and considering their integrity, assets and collectivism also is important to effective programs.<sup>145</sup>

Specific interventions include the following:

- Improve access to preventive and other health-care services for the large number of uninsured and underinsured.<sup>146</sup>
- Develop culturally and linguistically appropriate communication and intervention strategies and care.
- Provide meaningful access to services for Hispanics/Latinos with limited English proficiency.
- Promote and support efforts to recruit and retain Hispanic/Latino youth into the health professions.
- Participate in mentoring Hispanic/Latino youth, students and professionals.<sup>147</sup>
- Educate community members about health disparities and provide them with the resources and opportunities to address them on their own.<sup>148</sup>



## Community Highlight: Tri-County Health Department's Tobacco Prevention Program—Supporting Traditional Media with Faith-Based Outreach in Metro Denver

### Purpose

In spring 2008, Tri-County Health Department's Tobacco Prevention Program convened local partners to implement a Spanish-language Latino media campaign using research-based media developed by the State Tobacco Education & Prevention Partnership. The campaign's goals, based on key informant interviews, a statewide survey of 1,000 Hispanic/Latino smokers and community input, were to increase awareness and use of the Colorado QuitLine, dispel myths about nicotine replacement therapy and use familial influence to encourage cessation among Spanish-speaking Latinos in the seven-county Denver-metro area. This project was made possible through funding from the State Tobacco Education & Prevention Partnership.

### Methods

To accomplish these goals, Tri-County Health Department sought the input of community members and Hispanic/Latino-serving organizations. Through its partnership with the media consulting firm Evolve Communications, Tri-County Health Department secured a 100 percent match for its purchase of 165 television and 140 radio spots on the metro-area's most popular Spanish-language stations. The spots ran from April 7, 2008, to June 1, 2008. Concurrently, Tri-County Health Department partnered with the Latino-serving community-based organization, CREA Results, to conduct *promotora*\* outreach at three of the largest Hispanic/Latino churches in Adams, Arapahoe and Denver counties.

### Findings

The media campaign resulted in more than 2.5 million gross impressions via television,\*\* and each radio commercial was heard an average of 12.1 times by more than 150,000 people. *Promotora* outreach at Our Lady Mother of the Church in Commerce City, The Queen of Peace in Aurora and Our Lady of Guadalupe in Denver resulted in nearly



5,000 one-on-one conversations with those contemplating tobacco cessation, and 100 fax referrals to the Colorado QuitLine.

### Results

When county-level data were compared over the same six-month period, counties receiving both traditional media and faith-based outreach experienced a 64 percent increase in calls to the QuitLine from self-identified Latinos, while counties receiving only traditional media experienced a 59 percent increase in calls to the QuitLine from self-identified Hispanics/Latinos.\*\*\*

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\* A *promotora* is an outreach worker in a Hispanic community who is responsible for raising awareness of health and educational issues.

\*\* "Gross impressions" is the number of people or households reached times the average frequency of seeing a message. For example, if 500,000 people could see a message four times, this would result in 2 million gross impressions.

\*\*\* The difference between the two groups of counties is not statistically significant.

## Community Highlight: Avon Comadre Breast Health Project

### Description/Purpose

The Comadre Project is an education and intervention program to promote early detection of breast cancer through mammography and provide navigation assistance for completion of screening. The project began in 2002. It operates in Denver County and is sponsored by the Avon Products Foundation.

### Methods

In Hispanic/Latino culture, one definition of a comadre is a woman who can be relied upon for advice, guidance or assistance. A trained comadre conducts both outreach and “inreach” to provide education and awareness of breast cancer early detection and control. Inreach is conducted in Denver Health community clinics, where the comadre interacts with patients in waiting rooms to schedule them for mammograms in coordination with clinic visits to the Denver Health Women’s Health Van and free mammograms offered by the Colorado Women’s Wellness Connection.



The program routinely conducts community outreach and education at churches and community centers and on Spanish-language radio and television. More than 16,000 Colorado Hispanics/Latinos have been reached through these activities since the start of the Comadre Project in 2002.

### Results

Results for the inreach component of the program are shown in the table below.

Inreach Participant Demographics (June 2002–January 2008)	
Number enrolled & received breast health information	2,876
Mean age in years (range)	53 (40–81)
Monolingual Spanish speakers	71%
Income < \$17,000/yr.	91%
Education eighth grade or less	60%
Number of mammography appointments	2,339
Number of completed mammograms	2,198 (94%)
Number self-reported breast cancers diagnosed by biopsy	9
Number of cancer patients referred to survivor programs	10

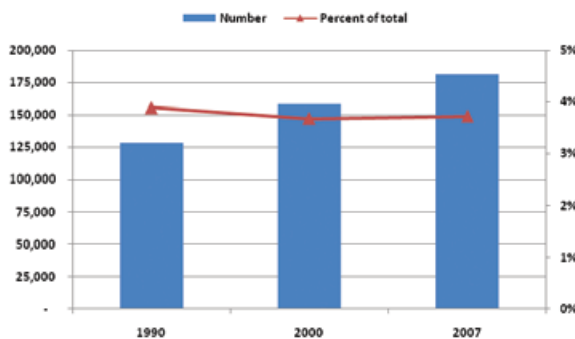
# The African-American/Black Population

## Introduction

THE AFRICAN-AMERICAN/BLACK COMMUNITY IN COLORADO is a diverse group of people with African origins. The majority of African-American/Black Coloradans descended from America's original Africans who were slaves and have traveled the long road from subjugation to integration in most dimensions of American life. Others have arrived more recently from the Caribbean and Africa. African-Americans/Blacks first arrived in Colorado during the 19<sup>th</sup> century Gold Rush. Colorado's Black population continued to grow following the Civil War. It was not until World War II and its aftermath that substantial numbers of African-Americans or Blacks arrived in Colorado. The African-American/Black population describes itself as resilient, possessing many assets, including faith-based networks, a cultural identity and community cohesiveness.

Today, Colorado is home to approximately 185,000 African-Americans/Blacks. The African-American/Black share of the state's population, roughly 4 percent, has remained stable since 1990.

**Figure 1. Growth of Colorado's African-American/Black population, 1990–2007**



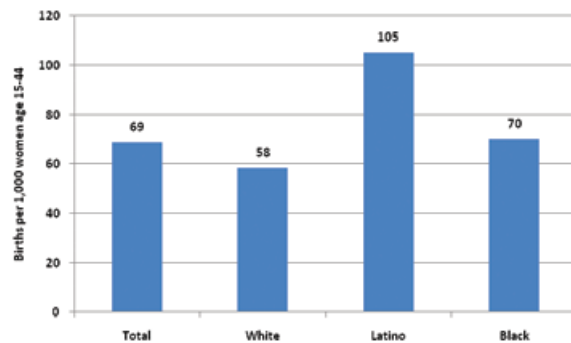
Source: U.S. Bureau of the Census, *Census of Population (1990 and 2000), Annual Estimates of the Population by Sex, Race, and Hispanic Origin for States: April 1, 2000 to July 1, 2007*

## Sources of population growth and geographic distribution

Historically the African-American/Black population of the United States and Colorado has grown more rapidly than the total population because of higher fertility rates. This is no longer true for Colorado, where the African-American/Black fertility rate is similar to that for the total population (Figure 2).

Contributing to the fall in African-American/Black fertility is the dramatic decline in teen fertility illustrated in Figure 16.

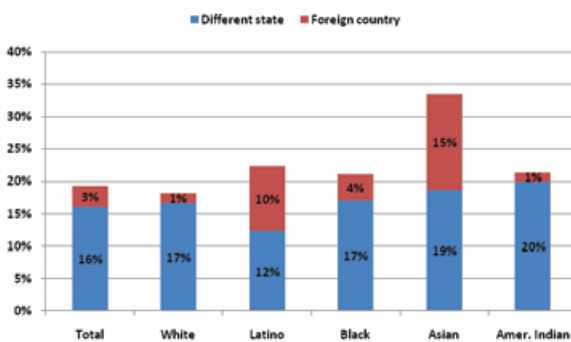
**Figure 2. Colorado General Fertility Rate, 2005**



Source: National Center for Health Statistics, Centers for Disease Control and Prevention.

Migration has been an important source of growth for Colorado's Black population. Data from the 2000 census show that roughly one in five Colorado African-Americans/Blacks lived outside the state in 1995 (Figure 3). While in-migration from other states and immigration from abroad is an important source of growth for the state's African-American/Black population, these sources of growth are not much different than for the total population.

**Figure 3. Colorado population (5 years of age and over) living in another state or foreign country in 1995, 2000**

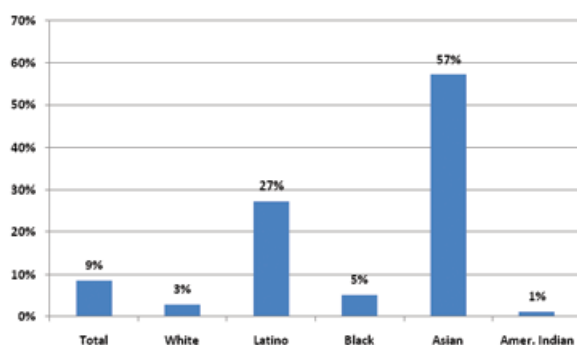


Source: U.S. Bureau of the Census, 2000 Census of Population

Compared with other groups, international migration (immigration) has played a minor role in the growth of Colorado's African-American/Black population. This has begun to change with the arrival of immigrants from Africa, especially East Africa. As of 2000, however, only 5 percent of Colorado's African-American/Black population was foreign-born (Figure 4).



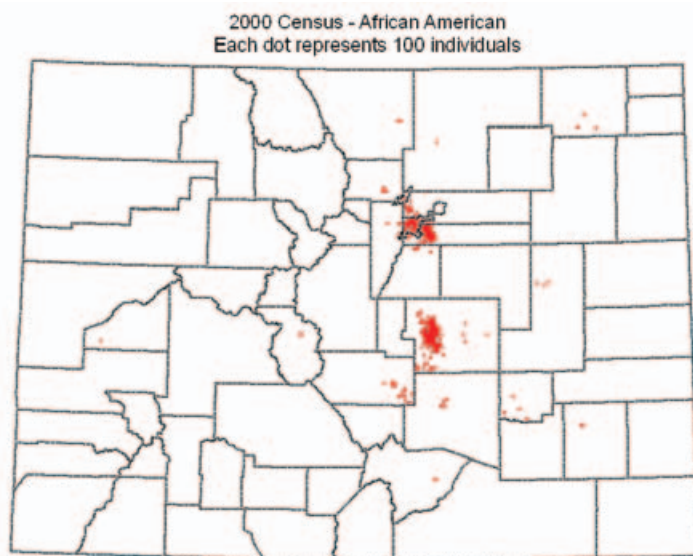
**Figure 4. Foreign-born population, Colorado, 2000**



Source: U.S. Bureau of the Census, 2000 Census of Population

As illustrated in Map 1, Colorado's African-American/Black population is concentrated in the Denver and Colorado Springs metropolitan areas. In Denver, there has been a substantial dispersion of African-Americans/Blacks to the suburbs, especially to Aurora, in the last 20 years. The presence of multiple military bases in the Colorado Springs area is a contributing factor to the large number of African-Americans/Blacks there.

**Map 1. Distribution of the African-American/Black population, 2000**



### Definition of Health Disparities

Communities of color are disproportionately affected by disease, disability and death. These differences in health status among groups are known as health disparities and are present at the national, state and local levels. There also are disparities in access to health care and quality of care.



## Strengths within the African-American/Black Community

A clear strength within the African-American/Black community is its strong value of connectedness in defining family not simply at a level of blood relatives but very broadly. There is the strong value to help, a desire to lend a helping hand.<sup>149</sup> The African-American/Black population describes itself as resilient, possessing many assets, including faith-based networks, a cultural identity and community cohesiveness. In Colorado, this has translated into multiple community-driven health initiatives.

## Health Disparities—A Life Cycle View

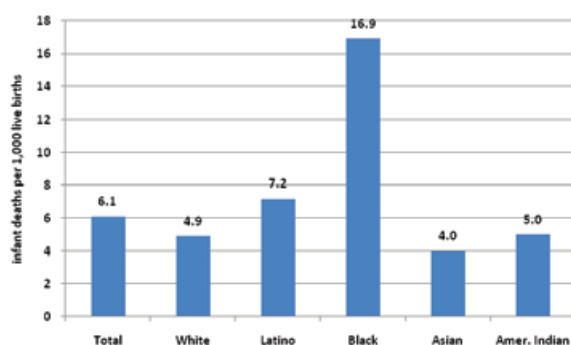
Because health disparities appear early in life and persist through the life cycle, the indicators of health disparities presented in this report are organized in terms of the life cycle: pregnancy and birth outcomes, child and youth health indicators, and adult indicators. Due to data limitations, relatively few child and adolescent indicators are available for all minority groups, and there are no indicators specific to elders. However, the report includes extensive information on mortality disparities. Though deaths are concentrated in the older ages, mortality disparities reflect the cumulative effect of disparities throughout the life cycle. All data presented are specific to Colorado.

## Pregnancy and birth outcomes

### Infant mortality, perinatal mortality and low-weight births

Infant mortality (deaths among children in the first year of life) is a widely used indicator of population health. There have been modest improvements in both the African-American/Black infant mortality and perinatal mortality rates in Colorado in recent years. Nevertheless, the African-American/Black infant mortality rate is more than double the rate for the total population and other groups as shown in Figure 5.

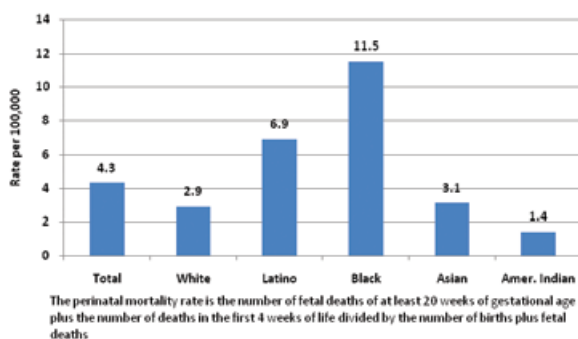
**Figure 5. Infant mortality rate, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

Perinatal mortality, the number of fetal deaths of at least 20 weeks of gestational age plus the number of deaths in the first 4 weeks of life divided by the number of births plus fetal deaths, is another measure of pregnancy outcomes. As with infant mortality, the total African-American/Black perinatal mortality rate is substantially higher than for the total population (Figure 6).

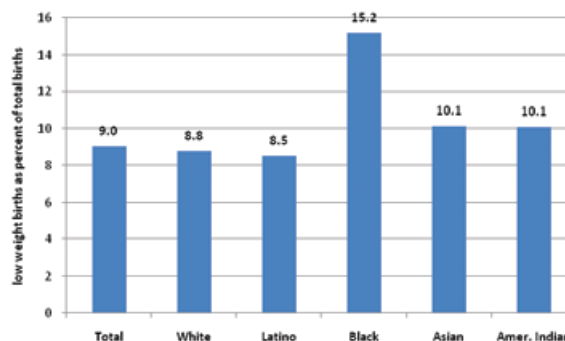
**Figure 6. Perinatal mortality rate, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

A third birth outcome measure often associated with infant and perinatal mortality is low-weight births. As with infant and perinatal mortality, African-Americans/Blacks have a substantially higher incidence of low-weight births (Figure 7).

**Figure 7. Low-weight births, 2002–06**

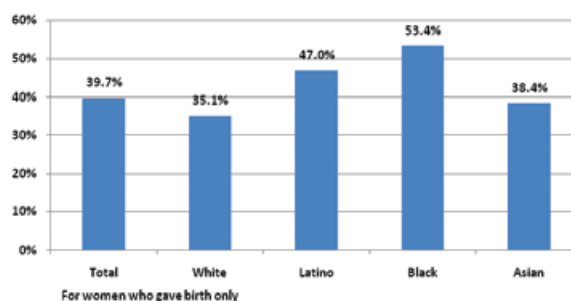


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Pregnancy risk factors

Poor birth outcomes such as infant mortality, perinatal mortality and low-weight births are associated with a variety of pregnancy risk factors. In this section, we examine differences in unintended pregnancies, the presence of stressors\* and whether pregnant women smoked or drank alcohol during the last three months of the pregnancy. African-American/Black mothers report the highest rate of unintended pregnancies (Figure 8) and are much more likely to have experienced three or more stressors during pregnancies than other mothers (Figure 9).

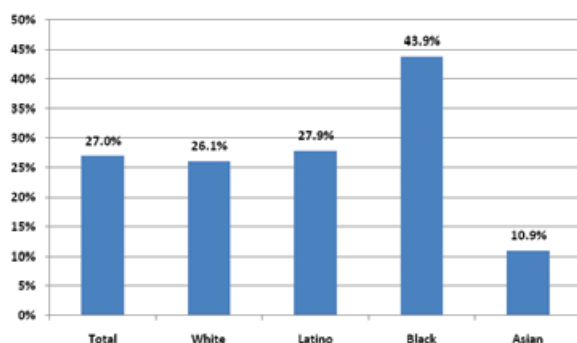
**Figure 8. Women with unintended pregnancies 2004–06**



Source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, Colorado Department of Public Health and Environment

\* Stressors include moving, unpaid bills, arguments with partner or husband, hospitalization of a family member, job loss, death of a family member or friend, family problems with alcohol or drugs, separation or divorce from spouse, homelessness, jail, physical fighting and partner not wanting the pregnancy.

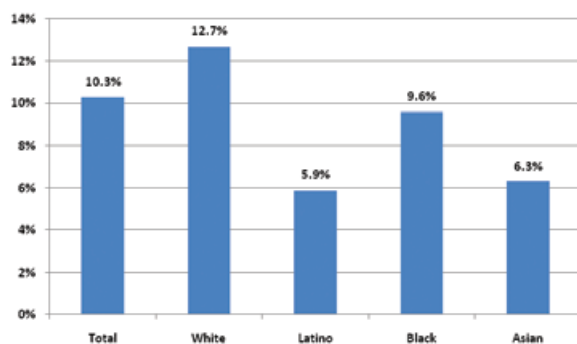
**Figure 9. Women reporting three or more stressors during pregnancy, 2004–06**



Source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, Colorado Department of Public Health and Environment

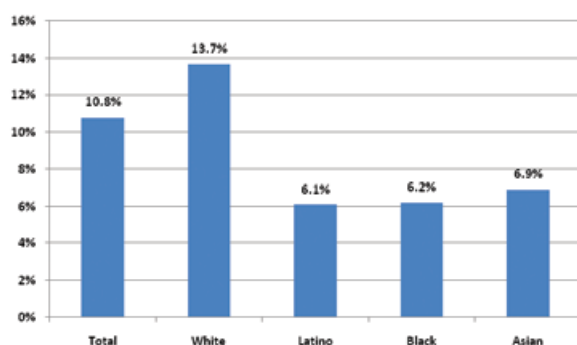
Despite the greater prevalence of multiple stressors, African-American/Black mothers report somewhat lower rates of smoking and lower rates of drinking during the last three months of pregnancy (Figures 10 and 11).

**Figure 10. Women who smoked during last three months of pregnancy, 2004–06**



Source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 11. Women who drank during last three months of pregnancy, 2004–06**



Source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, Colorado Department of Public Health and Environment

## New studies on risk factors and pregnancy outcomes

The large and persistent disparity in African-American/Black infant mortality led the Colorado Department of Public Health and Environment to undertake two in-depth studies on maternal behaviors and birth outcomes. The infant mortality study,<sup>150</sup> which was based on linked birth and death records for 2002–06, includes the following conclusions:

Studies have found racial/ethnic differences in diet, including folic acid intake, and in the living environment, such as infant sleep position, may lead to the racial/ethnic disparities in infant mortality. Other factors that have been suggested as contributing to the disparities in both low birth weight and infant mortality include racial/ethnic differences in maternal medical conditions and socioeconomic factors that may prevent adequate prenatal care. In addition to promoting early prenatal care, promoting the health of women in general over their lifetimes, not just during pregnancy, should be addressed to improve perinatal outcomes.

Other researchers have demonstrated that improvements in maternal socioeconomic status and education do not result in the same improvements in infant mortality and low birth weight in African-American/Black infants compared to White infants. Put another way, income and education do not appear to offer the same protection for African-American/Black women as they do for White women. These researchers conclude that traditional risk factors commonly associated with low birth weight do not explain the entire Black-White disparity and that other risk factors or stressors may explain the disparity, including racism and lifetime stress.

A second study, which surveyed all African-American/Black women giving birth between July and December 2002, found evidence similar to that reported in Figures 8–11. It also found that more African-American/Black women than White women reported not beginning prenatal care as early as they would have liked (26 percent vs. 16 percent) and that “Health care workers address many of the issues facing African-American/Black mothers: they are more likely to discuss smoking, alcohol use, breastfeeding and abuse with African-American/Black women compared to White women.”<sup>151</sup>

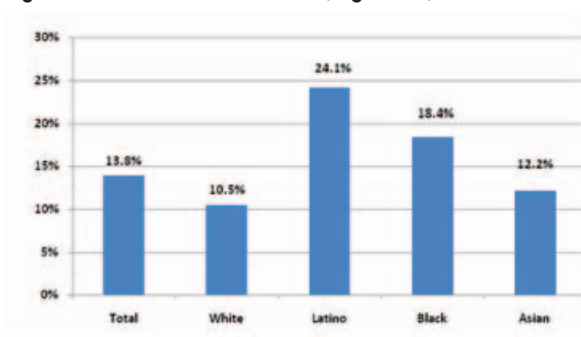
## Children's health

The health of a population is profoundly affected by the health of its children because it reflects current and future health burdens. This section presents information on childhood obesity and oral health.

### Childhood obesity

The growing incidence of obesity, especially among children, is gaining broad attention as a major health concern.\* Data from the Colorado Child Health Survey show that African-American/Black children are more likely to be obese than the total for all Colorado children (Figure 12).<sup>152</sup>

**Figure 12. Children who are obese, age 2–14, 2005–07**

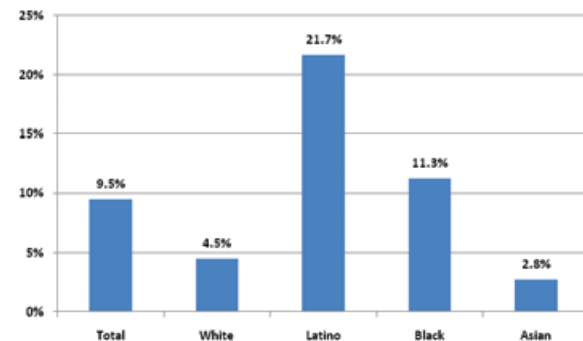


Source: Child Health Survey, Health Statistics Section, Colorado Department of Public Health and Environment

### Children's oral health

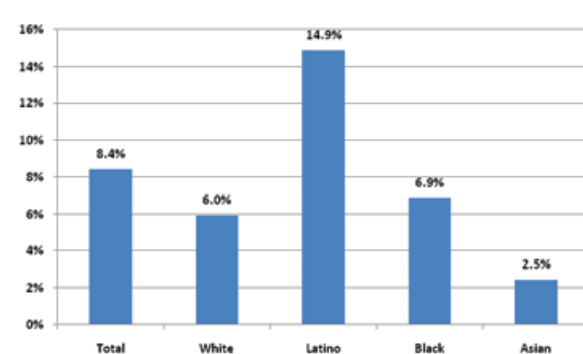
Oral health is an important component of overall health. Establishing good oral health habits in childhood and addressing dental care needs are important for maintaining oral health in adulthood. The Colorado Child Health Survey included a question on parents' assessment of their children's oral health and access to dental care. Figure 13 shows that 11 percent of African-American/Black parents report their children's teeth are in fair or poor condition, a rate similar to that for the total population. African-American/Black parents also report a relatively low rate of children not receiving dental care when they need it (Figure 14) or lacking a regular source of dental care (Figure 15). There is not a generally accepted explanation of why Black children do well compared with other children of color on these oral health indicators. One possibility is that poor African-American/Black children have access to dental care either through public insurance (Medicaid and the Child Health Plan Plus) or from community health centers and other sources of dental care for children in poverty in the Denver area.

**Figure 13. Condition of teeth is fair to poor 2004–06**



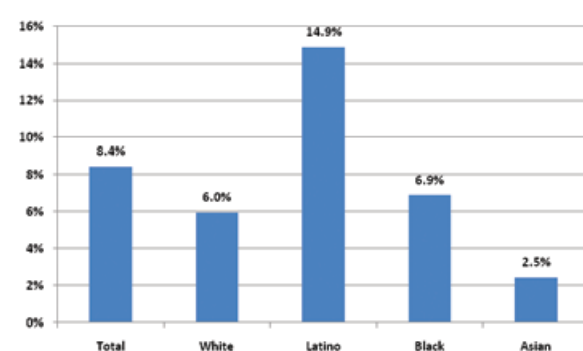
Source: Child Health Survey, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 14. Children who needed dental care but did not get it, 2004–06**



Source: Child Health Survey, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 15. Children with no regular source of dental care, 2004–06**



Source: Child Health Survey, Health Statistics Section, Colorado Department of Public Health and Environment

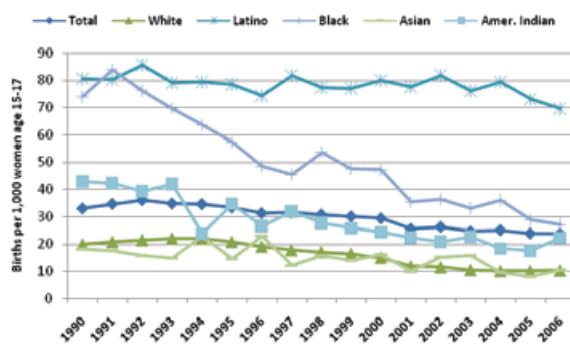
\* Data from the most recent Colorado Child Health Survey show a childhood obesity rate for all children of 13 percent for 2007, a slight, but statistically insignificant, decrease from the rate of 14.8 percent for 2004: <http://www.cdph.state.co.us/hs/yrbs/childhealth.html>



## Youth

The Youth Risk Behavior Survey is an annual survey of Colorado high school students that provides information on various health risk behaviors. Unfortunately, the sample is too small to provide reliable estimates for African-American/Black youth. There are, however, reliable and impressive data on one indicator that has long been a concern: teen fertility. As shown in Figure 16, from a high of more than 80 per 1,000 in 1991 to slightly below 30 in 2006, there has been a steady downward trend. While still higher than White and Asian teen fertility, African-American/Black teen fertility now is no different from the total level.

**Figure 16. Teen fertility rate, 1990–2006**

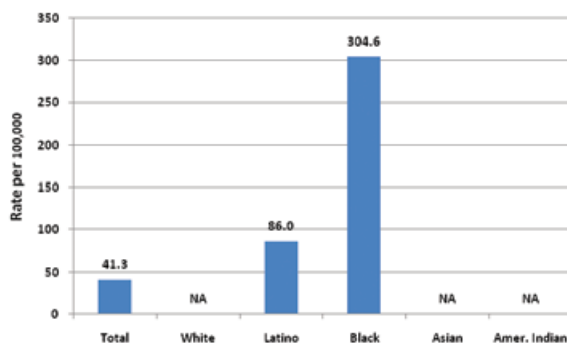


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

## Gonorrhea

The gonorrhea rate for African-American/Black teens is much higher than for other groups (Figure 17). Gonorrhea is a sexually transmitted disease that infects both men and women. Safer sex practices, such as using a condom, reduce the risk of contracting gonorrhea. Colorado has adopted a Sexually Transmitted Diseases Prevention Plan that identifies a number of strategies for reducing the incidence of sexually transmitted diseases.<sup>153</sup>

**Figure 17. Gonorrhea rate age 10–17, 2005–2006**



Source: STD Management Information System, STI/HIV Surveillance Program, STI/HIV Section, Colorado Department of Public Health and Environment



## Adults

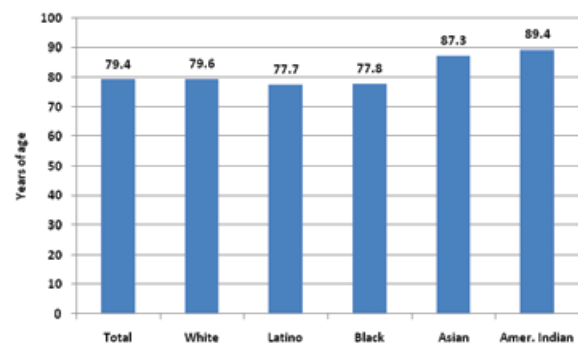
We have more information on health disparities in Colorado relating to adults than any other segment of the life cycle. This is because the three leading data sources used for this report either report risk behaviors for adults (the Behavior Risk Factor Surveillance System), report on the incidence of diseases that are more prevalent among adults (e.g., cancer incidence from the cancer registry) or pertain to mortality (cause-specific death rates from the vital records system).

This section begins with data on life expectancy, which summarizes the impact of mortality across the life span, and leading causes of death. It is followed by information on risk factors affecting a range of conditions and then proceeds with sections on each of the leading causes of death beginning with the most prevalent.

## Life expectancy and leading causes of death

Life expectancy at birth is a commonly used summary measure for the impact of mortality from all causes on a population. Technically, it is the average number of years a newborn would live if it experienced current age-specific mortality rates. Comparing life expectancy at birth among different populations provides a ready method of summarizing the differential impact of mortality at various ages. Figure 18 shows that African-Americans/Blacks have a slightly lower expectation of life at birth than that of all Coloradans.

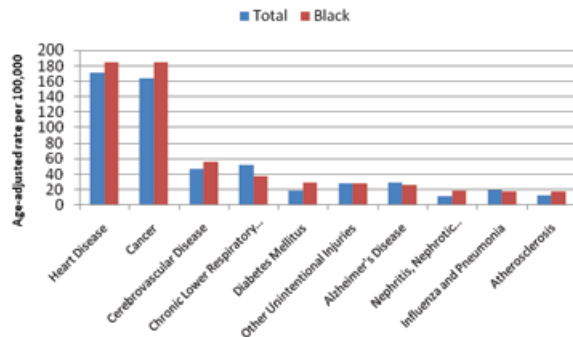
**Figure 18. Life expectancy at birth, 2006**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

Heart disease and cancer are the leading causes of death for African-Americans/Blacks as they are for the total population. Figure 19 shows disparities for each of the 10 leading causes of death for African-Americans/Blacks. Except for chronic lower respiratory diseases, Alzheimer's disease, and influenza and pneumonia, death rates for African-Americans/Blacks are higher than the total population. The following sections examine risk factors and disease incidence rates associated with some of these leading causes of death.

**Figure 19. Ten leading causes of death for African-Americans/Blacks, 2002–06**



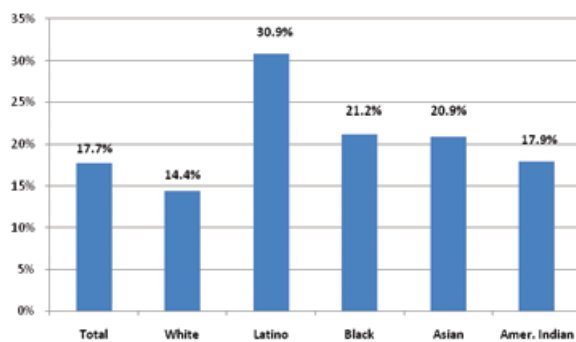
Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Risk factors associated with one or more leading causes of death

#### Physical activity, nutrition, smoking and binge drinking

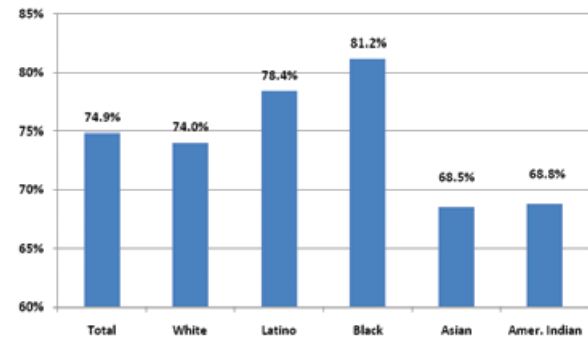
Behaviors such as exercise, eating habits and substance abuse are important determinants of lifetime health. African-Americans/Blacks are slightly more likely to be physically inactive and to consume fewer than five fruits and vegetables daily than the total population (Figures 20 and 21). Their smoking rate is similar to that for the total population and the prevalence of binge drinking is substantially less (Figures 22 and 23).

**Figure 20. Adults who are physically inactive, 2004–07**



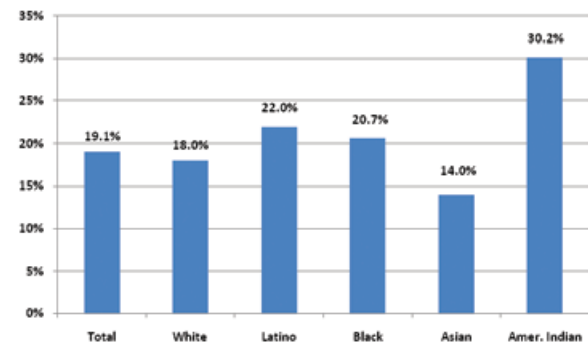
Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 21. Adults who consume fewer than five fruits and vegetables per day, 2004–07**



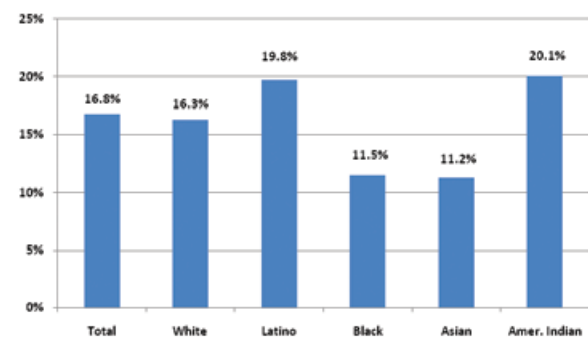
Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 22. Adults who smoke, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

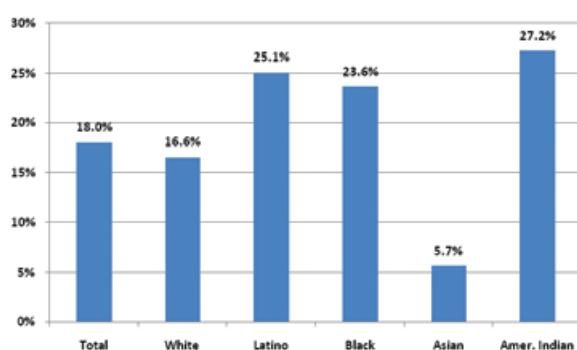
**Figure 23. Adults who binge drink, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

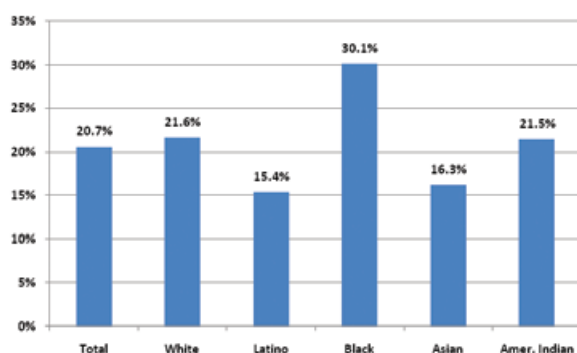
Lack of physical activity, poor nutrition and smoking all are linked to increased rates of obesity, hypertension and diabetes. African-Americans/Blacks have a higher prevalence of obesity and hypertension than the total population (Figures 24 and 25).

**Figure 24. Adults who are obese, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 25. Adults with high blood pressure, 2004–07**



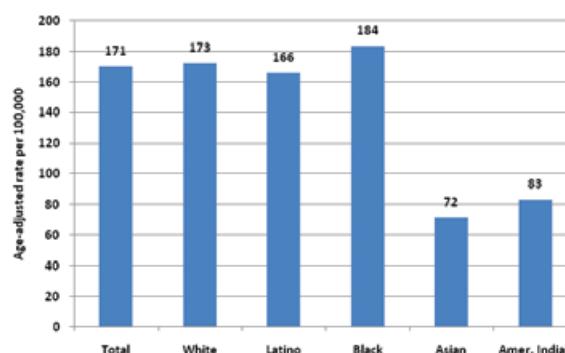
Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment



## Heart disease

For the years 2002–2006 combined, heart disease was the leading cause of death for all Coloradans. For African-Americans/Blacks, heart disease and cancer are tied for the leading cause of death (184 per 100,000 population). See Figure 19. While African-Americans/Blacks are not markedly different than other Coloradans with regard to some risk factors for heart disease (e.g., physical inactivity, poor nutrition, smoking and binge drinking), they do have higher rates of obesity and hypertension that contribute to their higher-than-average heart disease mortality rate (Figure 26).

**Figure 26. Heart disease mortality, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

## Screenings, Incidence and Mortality for Leading Causes of Death

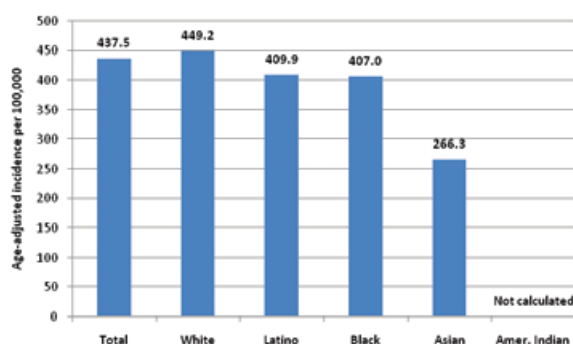
### Cancer

Cancer is tied with heart disease for the leading cause of death for Colorado African-Americans/Blacks, accounting for 21 percent of all deaths. In addition to data for all cancers combined, this section includes information on specific cancers of interest to the African-American/Black population: cancers of the breast, cervix, prostate and lung.

### All Cancers

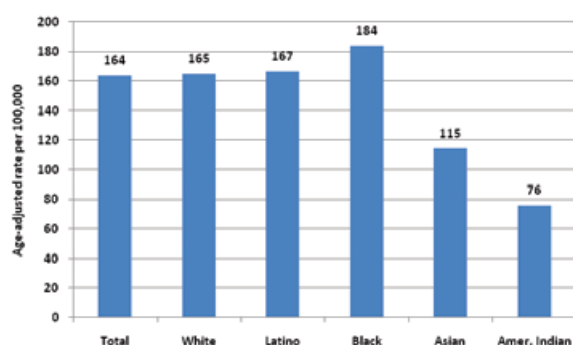
As shown in Figure 27, African-Americans/Blacks actually have a lower all-cancer incidence rate than the total population, yet have a slightly higher mortality rate (Figure 28). This apparent paradox is explained by the fact that cancer tends to be detected at a later stage for African-Americans/Blacks, when treatments are less likely to be successful.

**Figure 27. Cancer incidence (all cancers), 2002–06**



Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment.

**Figure 28. Cancer mortality (all cancers), 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

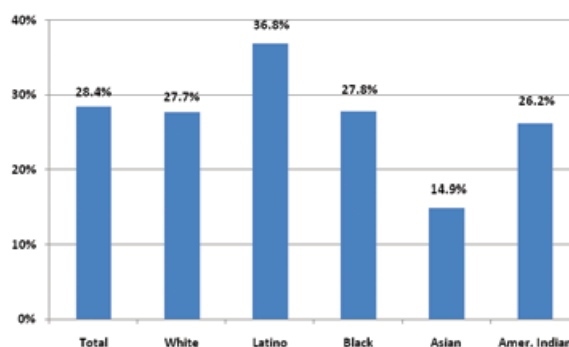
## Specific cancers

### BREAST CANCER

In recent decades, significant progress has been made in the diagnosis and treatment of breast cancer. Nevertheless, breast cancer accounts for 15 percent of all cancer deaths among African-American/Black women. Early detection increases a woman's chance of surviving breast cancer. African-American/Black women (and their doctors) are doing as well on this indicator as all Colorado women (Figure 29), yet there still is substantial room for improvement.

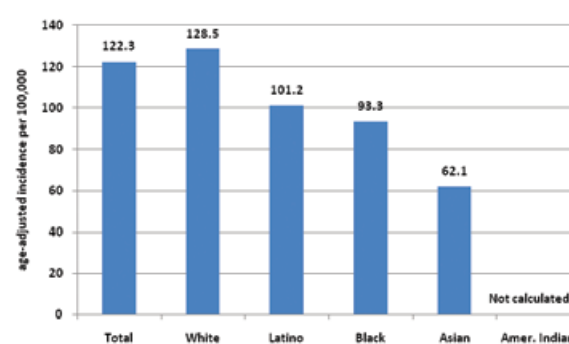
The reported incidence of breast cancer among African-American/Black women is lower than for the total population (Figure 30), yet the mortality rate is about the same (Figure 31). As with the total cancer incidence and mortality data, this discrepancy may be due to later detection and treatment of breast cancer among African-American/Black women.

**Figure 29. Women 40+ who did not have a mammogram, 2004–07**



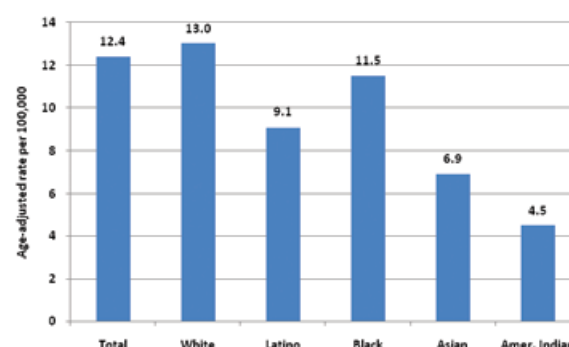
Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 30. Female breast cancer incidence, 2002–06**



Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment.

**Figure 31. Breast cancer mortality, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

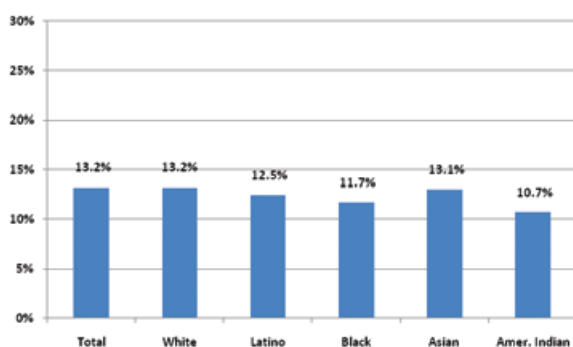




## CERVICAL CANCER

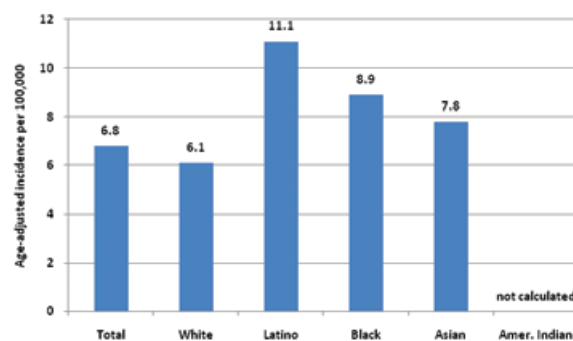
While cervical cancer accounts for a relatively small number of cancer deaths, it is of interest because early detection from a Pap smear test can reduce cervical cancer mortality. African-American/Black women are slightly more likely than all Colorado women to have had a Pap smear test in the past three years (Figure 32). Although the reported incidence rate for cervical cancer among African-American/Black women is slightly higher than for the total population (Figure 33), the mortality rate is no different (Figure 34).

**Figure 32. Women who have not had a Pap smear in the past three years, 2004–07**



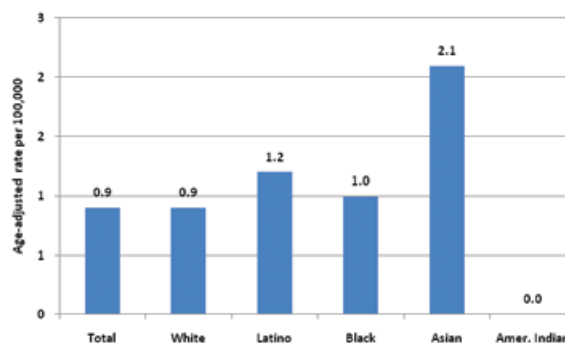
Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 33. Cervical cancer incidence, 2002–06**



Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment.

**Figure 34. Cervical cancer mortality, 2002–06**

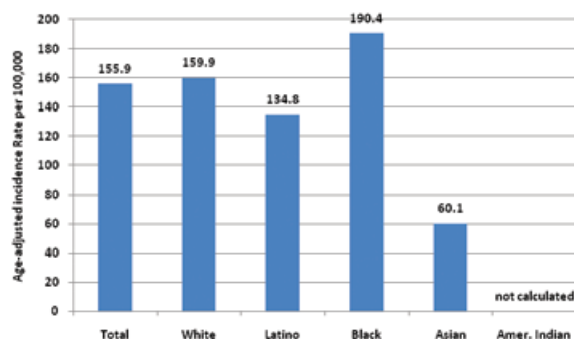


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

## PROSTATE CANCER

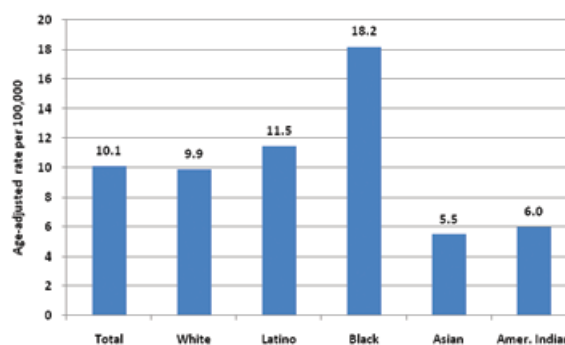
Prostate cancer is both more prevalent in the African-American/Black population (Figure 35) and more lethal, with the highest mortality rate of all groups (Figure 36). This higher mortality may be due to poorer access to prostate cancer care.

**Figure 35. Prostate cancer incidence, 2002–06**



Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment.

**Figure 36. Prostate cancer mortality, 2002–06**

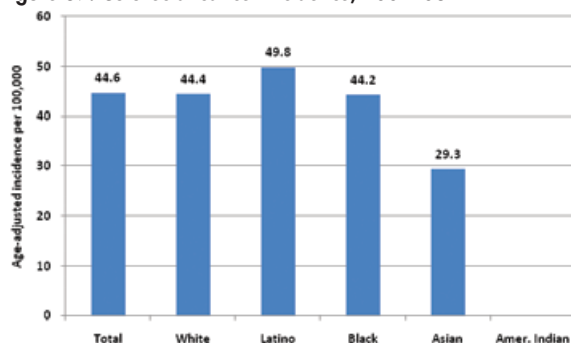


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

## COLORECTAL CANCER

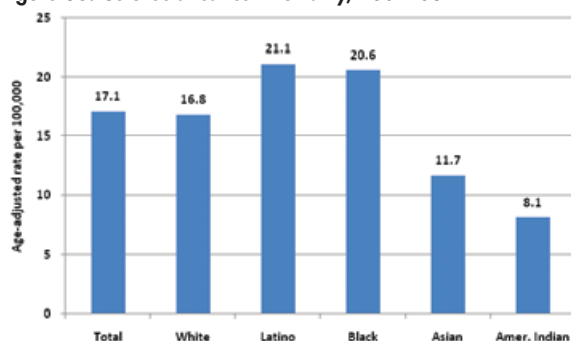
The incidence of colorectal cancer is no greater for African-Americans/Blacks than all Coloradans (Figure 37), yet the mortality rate is somewhat higher (Figure 38).

**Figure 37. Colorectal cancer incidence, 2002–06**



Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment.

**Figure 38. Colorectal cancer mortality, 2002–06**

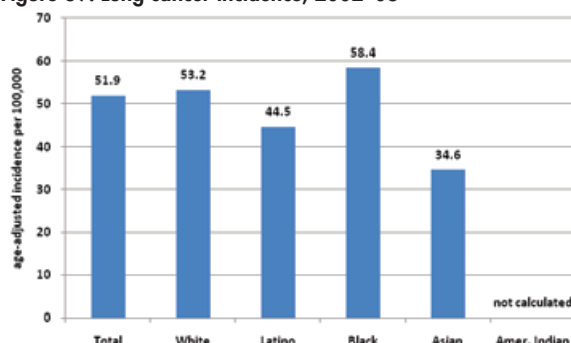


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

## LUNG CANCER

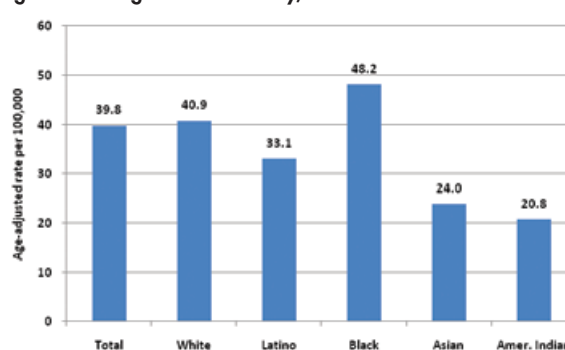
Although African-Americans/Blacks are no more likely to smoke than other Coloradans (Figure 22), they have both a higher incidence (Figure 39) and mortality rate (Figure 40) from lung cancer.

**Figure 39. Lung cancer incidence, 2002–06**



Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment.

**Figure 40. Lung cancer mortality, 2002–06**



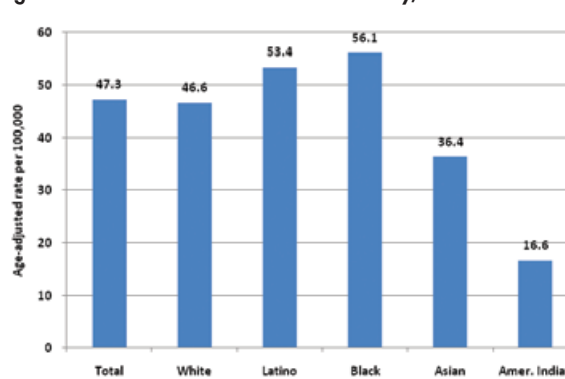
Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment



## Cerebrovascular disease

Cerebrovascular disease is the third leading cause of death for African-Americans/Blacks. The most common type of cerebrovascular disease event is a stroke. As shown in the discussion of heart disease mortality, African-Americans/Blacks have higher rates of obesity and hypertension, two risk factors for cerebrovascular disease.

**Figure 41. Cerebrovascular disease mortality, 2002–06**

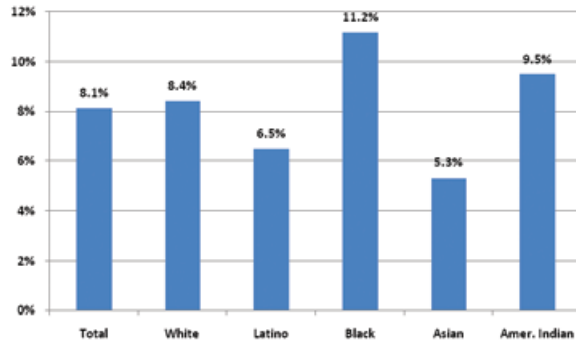


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Respiratory conditions and mortality

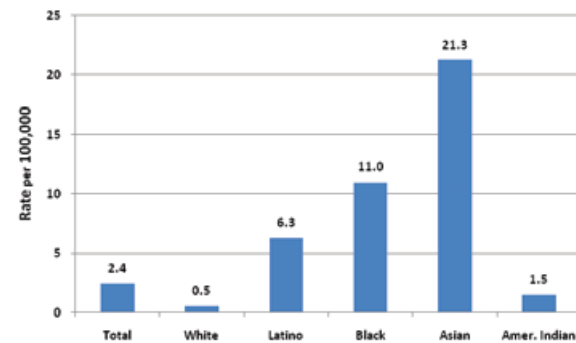
Asthma and tuberculosis are two respiratory conditions for which African-Americans/Blacks show higher rates than the total population (Figures 42 and 43).

**Figure 42. Adults with asthma, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

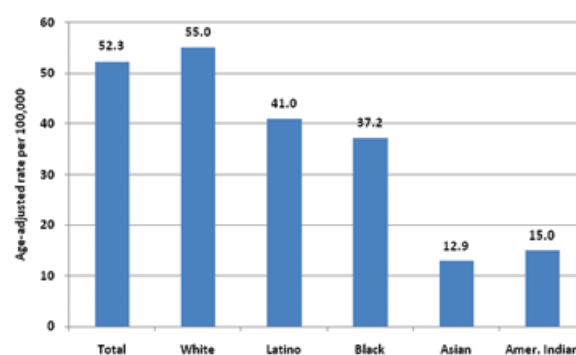
**Figure 43. Tuberculosis incidence, 2002–06**



Source: Tuberculosis Program, Disease Control and Environmental Epidemiology Division, Colorado Department of Public Health and Environment

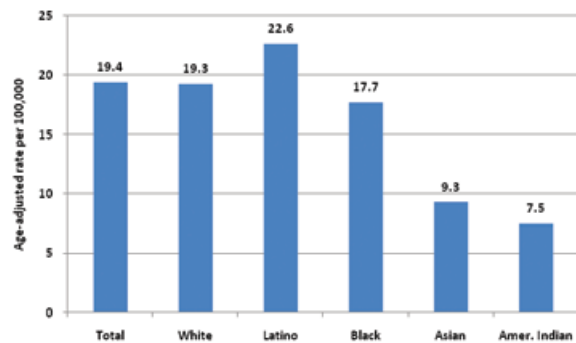
Yet the age-adjusted mortality rate for chronic lower respiratory disease, the fourth leading cause of death for African-Americans/Blacks, is substantially below that for the total population (Figure 44). African-Americans/Blacks also are somewhat less likely to die from influenza and pneumonia than other Coloradans (Figure 45).

**Figure 44. Chronic lower respiratory disease mortality, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 45. Influenza and Pneumonia mortality, 2002–06**

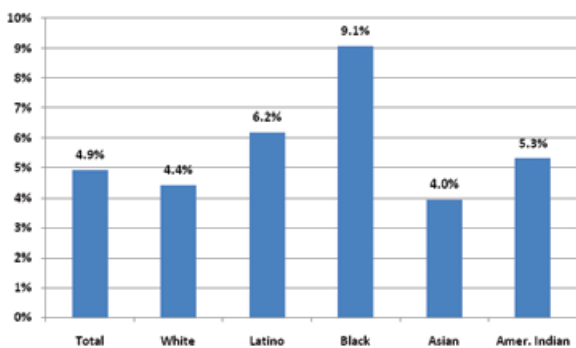


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Diabetes

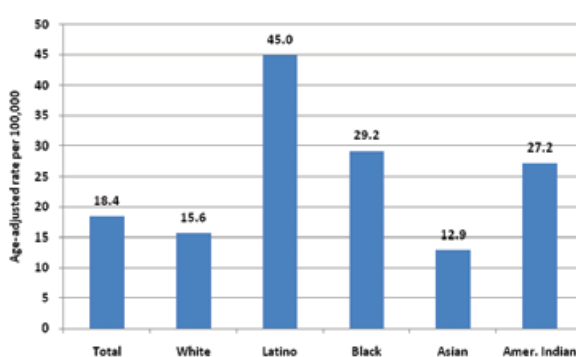
Diabetes is the fifth leading cause of death for African-Americans/Blacks. Survey data (Behavior Risk Factor Surveillance System) show that African-Americans/Blacks have the highest prevalence of diagnosed diabetes of any group (Figure 46). They also have the second highest rate of diabetes mortality (Figure 47).

**Figure 46. Adults with diabetes, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 47. Diabetes mortality, 2002–06**

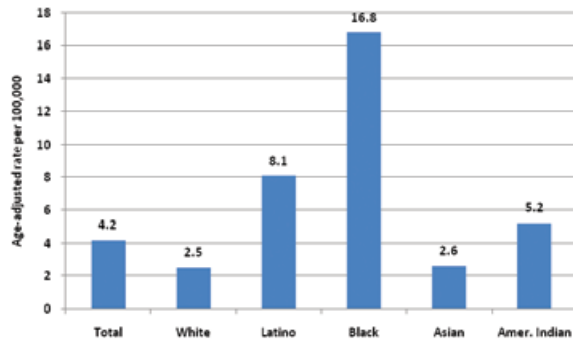


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Other causes of death of concern

Homicide and legal intervention, suicide, motor vehicle deaths and deaths from human immunodeficiency virus (HIV) disease all are of special concern to the African-American/Black community. In Colorado, the African-American/Black homicide and legal intervention death rate is four times that of the total population and twice that of the second highest group, Latinos (Figure 48).

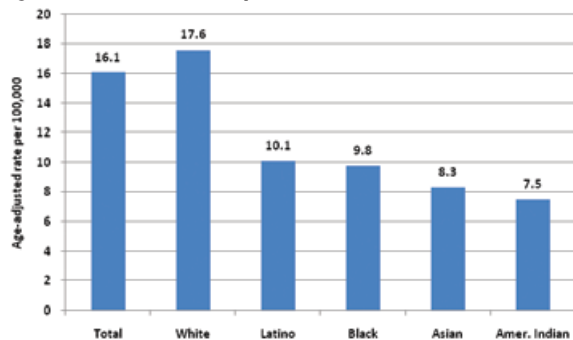
**Figure 48. Homicide and legal intervention mortality, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

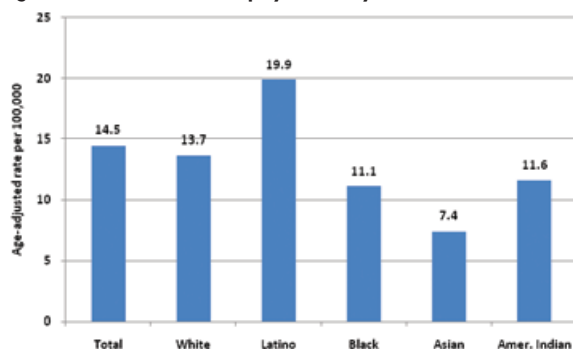
In contrast to homicide, African-Americans/Blacks have lower rates of suicide (Figure 49) and motor vehicle deaths (Figure 50) than the total population.

**Figure 49. Suicide mortality, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

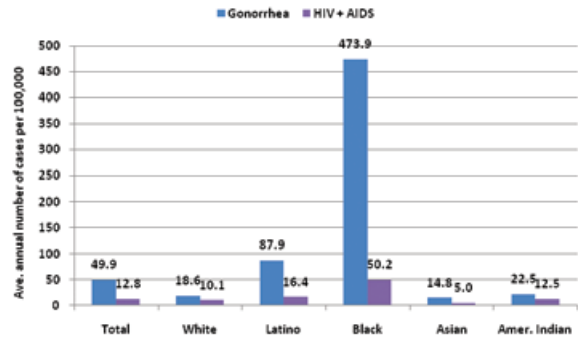
**Figure 50. Motor vehicle injury mortality, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

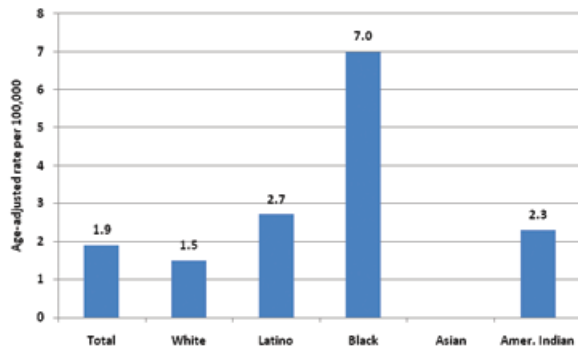
African-Americans/Blacks have much higher rates of sexually transmitted disease than other groups, especially gonorrhea (Figure 51). They also are much more likely to die from HIV than any other group (Figure 52).

**Figure 51. Sexually transmitted diseases, 2002–06**



Source: Colorado eHARS, HIV/AIDS Reporting System, STD Management Information System, STI/HIV Surveillance Program, STI/HIV Section, Colorado Department of Public Health and Environment

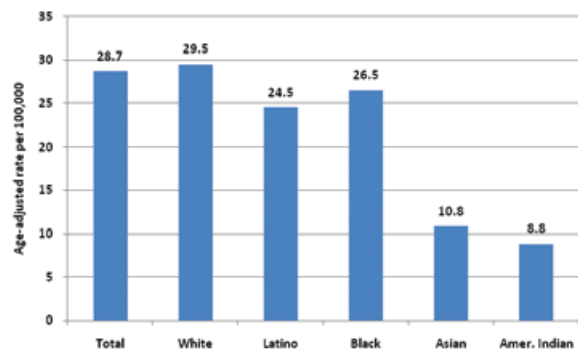
**Figure 52. Human Immunodeficiency Virus disease mortality, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

Alzheimer's disease is the seventh leading cause of death for African-Americans/Blacks, yet their rate is slightly below that for the total population (Figure 53).

**Figure 53. Alzheimer's disease mortality, 2002–06**



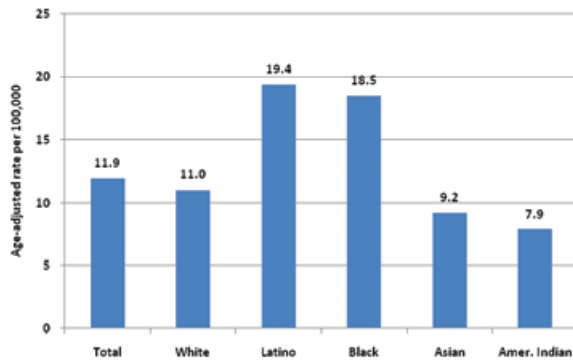
Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment



## Nephritis

Nephritis, the eighth leading cause of death for African-Americans/Blacks, is inflammation of the kidney, which may result from a urinary tract infection or some other condition. African-Americans/Blacks are more likely to die from nephritis or nephrotic syndrome than most Coloradans (Figure 54).

**Figure 54. Nephritis, nephrotic syndrome and nephrosis mortality, 2002–06**

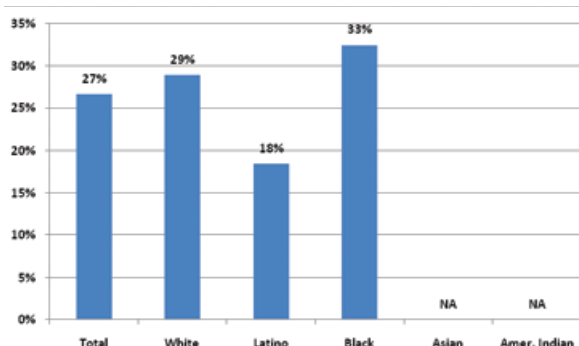


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

## Oral Health

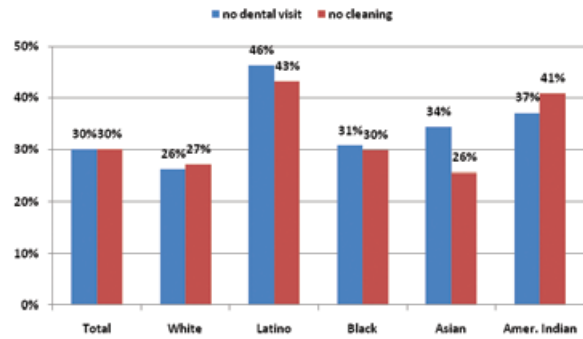
Oral health is an important but often neglected component of overall health. The Behavior Risk Factor Surveillance System includes self-reported data on oral health for adults. These indicators demonstrate that disparities exist on this dimension of health as they do for physical and mental health. Figure 55 indicates that African-Americans/Blacks are somewhat more likely to have had six or more permanent teeth removed even though reported rates of dental visits and dental cleanings are similar to those for all Coloradans (Figure 56).

**Figure 55. Adults who have had 6 or more permanent teeth removed, 2006**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 56. Adults reporting no dental visit and no dental cleaning in the past year, 2006**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

## Recommendations:

The following important considerations were developed in consultation with *Eliminating Health Disparities: Conversations with Blacks in America*<sup>154</sup> regarding the elimination of health disparities in the African-American/Black population. “To effectively reach populations affected by disparities, providers need to have a personal understanding of the communities and people within those populations—who they are, what matters to them and how they can be supported in building a stronger foundation for health.” To make meaningful changes to our health-care system to serve the needs of African-Americans/Blacks and reduce disparities, data about disparities must be linked to experience and wisdom about people, and power must be shared.<sup>155</sup> Another important concept in the elimination of health disparities includes recognizing and addressing “the larger social and contextual issues—racism, poverty, lack of education, unemployment, lack of health insurance and access to care—that directly affect the health of Black people.”

*Eliminating Health Disparities: Conversations with Blacks in America* identified and recommended the following specific interventions:

- Improve providers’ cultural competence by enhancing their understanding of how respect is demonstrated in the cultures of their patients and by putting that understanding into practice.
- Recognize the connection between faith and healing<sup>156</sup> and the effectiveness of working with faith communities to address direct health-care needs, such as health promotion and screenings, as well as social needs, such as literacy and meal programs.
- Develop strategies to address the underrepresentation of African-Americans/Blacks in health-care professions, and work with all providers to help them become more culturally competent.<sup>157</sup>



## Community Highlight: Center for African American Health survey gauges health attitudes and perceptions

### Purpose

The Center for African American Health was established to improve the health and well-being of African-Americans through culturally appropriate disease prevention and chronic disease self-management programs. Its efforts include an annual survey of African-Americans in metro Denver, designed to gauge how cultural factors and lack of knowledge may contribute to the negative health outcomes that disproportionately affect the population.<sup>158</sup>

### Survey Methodology

The 2007 survey was distributed to 2,298 members of 33 Black churches in metro Denver. A total of 1,642 individuals responded, a 71 percent response rate. Of all respondents, 1,188 were African-American. The results analyzed and reported are for the African-American respondents. About two-thirds of the African-American respondents were women and one-third men. The respondents were almost evenly divided between people under age 50 (52 percent) and people age 50 and over (47 percent). The major categories of inquiry were cardiovascular disease, health literacy and communication, diabetes, depression, physical activity/nutrition, and general health-seeking behaviors. The demographic and cardiovascular disease questions used are subsets of the 2003 Behavioral Risk Factor Surveillance Survey (Behavior Risk Factor Surveillance System).

### Key Findings from the 2007 Survey of African-Americans in Colorado

- More than one in three African-Americans (37 percent) described themselves as being in poor health.
- More than one in four African-Americans (28 percent) had no one they think of as “their own” doctor.
- Only one in five African-Americans (20 percent) questioned knew the four warning signs of heart attack and stroke.
- Almost a third of African-Americans (30 percent) incorrectly believed that diabetes can be cured.

### Cardiovascular Disease

Only 20 percent of African-Americans surveyed recognized the four warning signs of a heart attack and stroke, while 28 percent recognized none of the warning signs. A gender comparison showed statistical significance for African-American females having more cardiovascular disease knowledge than African-American males.

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### **Diabetes**

While there is no cure for diabetes, research proves it can be controlled with proper diet, exercise and medication. The survey showed that myths about diabetes are alive and thriving in the African-American community. For example, 30 percent of respondents (incorrectly) stated that diabetes can be cured, and another 25 percent weren't sure, for a total of 55 percent. In addition, 20 percent were not aware that a person is "pre-diabetic" when his or her blood sugar level is high but not high enough to be diagnosed with diabetes, and another 40 percent were unsure.

### **Health Insurance**

While the vast majority of African-Americans surveyed reported having health-care coverage through private insurance or public programs, 15 percent did not have coverage and an additional four percent weren't sure. This finding is consistent with data from the Colorado Health Institute and other sources, which show the uninsured rate for African-Americans at about 15–17 percent. However, the center's survey analysis uncovered a significantly higher percentage of African-American men than women who reported having no health coverage.

### **Relationship with a Health-Care Provider**

The survey also asked African-Americans if they have someone they think of as their health-care provider. Seventy percent said they have one (or more) people they think of as their health-care provider, but 28 percent of African-Americans surveyed did not. This is an important health indicator, because preventive screenings such as mammograms and colonoscopies are twice as likely to occur if a person has a regular source of medical care, and adults with access to a regular source of care also are better able to manage chronic illness.<sup>159</sup> However, it is important to note that there are other obstacles to receiving preventive screenings, even for people who are insured and have a regular source of medical care, including the screenings not being covered by the insurance plan and high deductibles.

### **Physical Activity and Nutrition**

It is widely known that disease prevention and chronic disease management are linked to adequate physical activity and proper nutrition. Nationally, the Centers for Disease Control and Prevention report that only 25 percent of African-American adults participate in regular moderate physical activity. However, more than half (58 percent) of participants in the Center for African-American Health's survey indicated that they would exercise and eat more nutritious food if their family members participated.

### **Conclusions**

The 2007 African American Health Survey is the largest survey of African-Americans of its kind in Colorado. Its purpose was to discover if the attitudes of African-Americans about their health and their knowledge about health and healthy lifestyle behaviors play a role in the health disparities that affect them. The center's analysis of responses to the survey questions strongly confirms the need for additional education related to African-Americans' understanding of the major health issues facing them, including cardiovascular disease and diabetes. It also reinforces the importance of efforts to help people have a more informed interaction with the health-care system in general and with their primary care physician in particular. The survey responses strongly suggest that additional social supports could help improve the lifestyle behaviors, such as diet and exercise, of African-Americans.

### **Limitations**

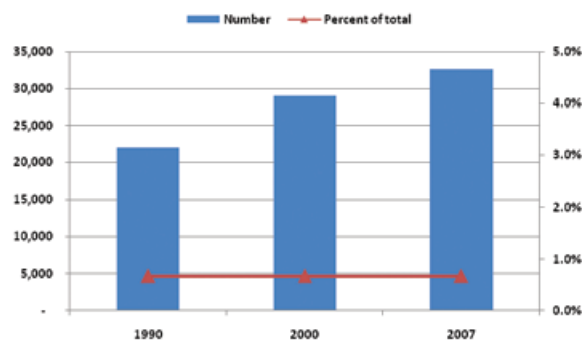
- The center is consistently looking to enhance the brevity and clarity of the survey questions to further increase participation and response.
- A minor age adjustment variable was included to exclude individuals under the age of 18 from taking the survey; however, 87 youths managed to participate.
- The ideal random sample method was not possible for the survey. The fact that convenience sampling had to be used may compromise the generalizability of the results. It is possible that some may consider data from members of Black churches less than fully representative of Denver area African-Americans.

# The American Indian Population

## Introduction

AMERICAN INDIANS ARE THE FIRST RESIDENTS of Colorado and may have arrived around 10,000 years ago. Today, the American Indian population is the smallest of the four race/ethnic groups covered in this report, accounting for less than one percent of the state's population, a share that has changed little in recent years (Figure 1). The smaller size of this population means that data from many standard sources often is not available or not reliable (see *Data Issues*).

**Figure 1. Growth of the Colorado American Indian population, 1990–2007**



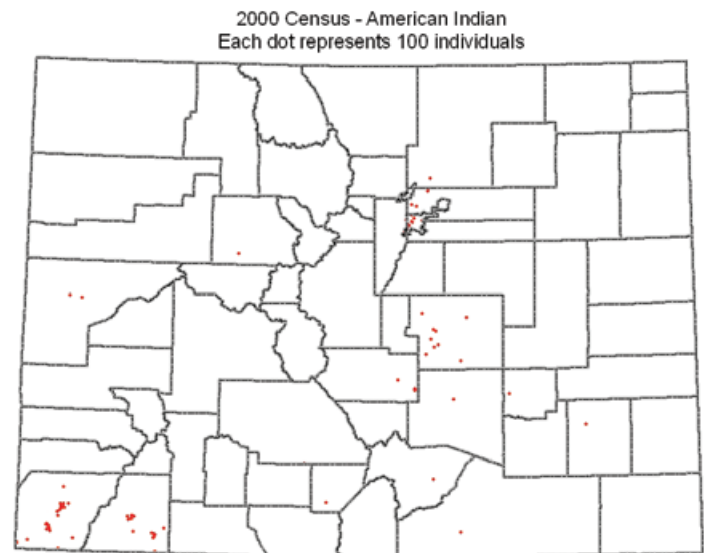
Source: U.S. Bureau of the Census, *Census of Population (1990 and 2000), Annual Estimates of the Population by Sex, Race, and Hispanic Origin for States: April 1, 2000 to July 1, 2007*

Most of Colorado's American Indians (71.3 percent) reside in a metropolitan area, with more than half residing in metro Denver, roughly the same proportion as for the total population. Colorado's two Indian reservations, the Southern Ute Reservation and the Ute Mountain Ute Reservation, both located in southwest Colorado, were home to only 3,042 (6.9 percent) of the state's 44,241 American Indians in 2000. While the vast majority of those residing on the Ute Mountain Ute reservation were American Indians (1,609 of 1,687), only a small minority (12.8 percent) of those living on the more populous Southern Ute Reservation identified as American Indian (1,433 of a total reservation population of 11,159).

A recent community needs assessment conducted for the Denver Indian Family Resource Center reports that "urban Indians tend to be descendants of the Indian children who 'participated' in the Indian boarding school experience; returning veterans who relocated to urban areas following World War II; and those who participated in the Bureau of Indian Affairs (BIA) relocation and job placement programs. During the 1950s and early

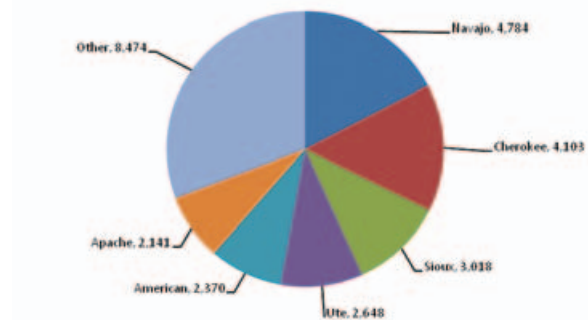
1960s, the BIA launched a concerted effort to assimilate Indian people into the majority society through the relocation of American Indians from multiple states to cities, including Denver, for jobs or job training."<sup>160</sup>

**Map 1. Distribution of the American Indian population, 2000**



The 2000 census reported that 27,538 American Indians identified with a single tribe. The most-often-named tribes (of more than 30 cited) are shown in Figure 2. These tribal affiliations reflect the fact that Utes constitute a relatively small proportion of Colorado's American Indian population and that most of the state's American Indians are likely to have migrated to Colorado from surrounding states. More than a quarter of the American Indians enumerated in the 2000 census did not give a tribal affiliation.

**Figure 2. American Indians in Colorado that identify with a single tribe, 2000**



Source: U.S. Bureau of the Census, 2000 Census of Population



## Strengths within the American Indian Communities

“The perseverance of American Indian societies is rooted in their strong belief in retaining their cultural identity, traditions and spiritual/ceremonial ways as their foundation. American Indians place high regard on cultural identity, traditions and spirituality, and teaching strong values through family unity and supporting family members.”

*American Indian Families Project. 2005. A look at American Indian Families in Hennepin County: Final Summary*

## Data issues

Data limitations represent a major challenge for identifying health disparities for Colorado’s American Indian population. These limitations primarily are a function of the inadequacies of the current data systems and misclassification of American Indians as some other race/ethnicity group in standard health data systems such as vital records. There also are limitations on data sharing from the Indian reservations.

**Small population size.** Sample surveys such as the Behavior Risk Factor Surveillance System, the Pregnancy Risk Assessment Monitoring System and the Child Health Survey include American Indians in approximate proportion to their share of the total population. With less than one percent of the total population, the number of American Indians included in these surveys tends to be too small to yield reliable estimates, even when multiple years of data are combined as with Behavior Risk Factor Surveillance System-based estimates. This report includes estimates for Colorado’s American Indian population from the Behavior Risk Factor Surveillance System (Figures 6–10). However, with the exception of the smoking indicator (Figure 6), the estimates for American Indians are not statistically different from those for the total population.

**Misclassification.** Misclassification occurs when a person whose race/ethnic self-identification is different from how they are identified in some other setting or information system. This can affect data for any group but is especially problematic for health statistics for American Indians, who tend to be underidentified in disease registries and vital statistics. Misclassification of race and ethnicity occurs in health-related databases

most often because the recorded information is based on observation by physicians, coroners or medical examiners, or other health-care workers rather than on patient self-reports or reports by close relatives.<sup>161</sup> A recent report from the National Center for Health Statistics states

Rates for the AIAN [American Indian/Alaska native] and API [Asian and Pacific Islander] populations should be interpreted with caution because of reporting problems with respect to correct identification of race on both the death certificate and in population censuses and surveys. The net effect of the reporting problems for the AIAN rate is approximately 30 percent understated and for the API rate is approximately 7 percent understated.<sup>162</sup>

Misclassification of American Indians has been specifically noted as a problem affecting cancer incidence estimates for American Indians.<sup>163</sup>

These data limitations have posed a challenge in the choice of indicators to include in this section. No Colorado estimates for American Indians are available for many of the indicators included in other sections. Where estimates exist, we have made somewhat arbitrary decisions on which indicators to include and exclude, but we included indicators that were requested by the health disparities report work group. We have chosen to exclude some indicators for which estimates are available because the estimates are inconsistent with what is known about the health status of the American Indian population from other sources. We also have included some indicators that may seriously underestimate the burden of particular diseases on the American Indian population due to misclassification. In the absence of more accurate Colorado indicators, it seems reasonable to assume that the health issues faced by Colorado’s American Indians are similar to those experienced by all American Indians. The national statistics on American Indians are compromised, but to a lesser extent than Colorado estimates, by the issues of small numbers and misclassification.

## Definition of Health Disparities

Communities of color are disproportionately affected by disease, disability and death. These differences in health status among groups are known as health disparities and are present at the national, state and local levels. There also are disparities in access to health care and quality of care.



## Health Disparities— A Life Cycle View

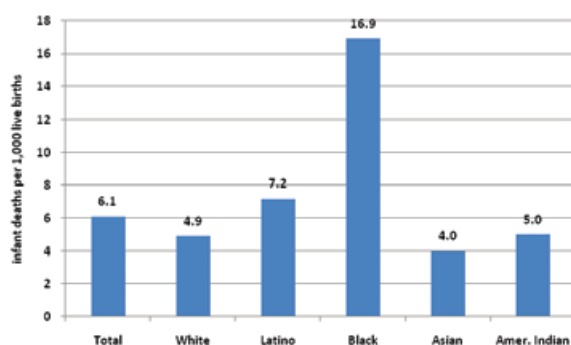
Health disparities begin with disparities during pregnancy and in birth outcomes. Health disparities also are evident among children and youth, and the best-documented disparities are evidenced in differential disease incidence and mortality among adults. For other groups, we have presented indicators for each of these life stages. Due to data limitations (see Data issues) this section presents fewer standard indicators of disparities for Colorado's American Indians. Instead we have collected evidence from regional and national sources. All data presented are specific to Colorado.

### Pregnancy and birth outcomes

#### Infant mortality, perinatal mortality and low-weight births

Infant mortality (deaths among children in the first year of life) is a widely used indicator of population health. Colorado vital records information indicates that American Indians have slightly lower infant mortality than the total population (Figure 3). Whether this is an artifact of misclassification or an accurate estimate is unknown.

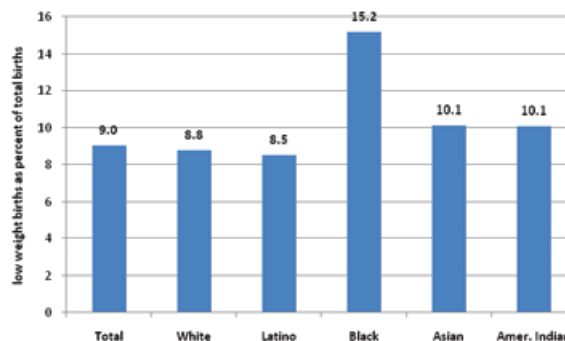
Figure 3. Infant mortality rate, 2002–06



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

Low-weight births increase the risk of infant death and poor child health. American Indians appear to have a slightly higher incidence of low-weight births than the total population (Figure 4).

Figure 4. Low-weight births, 2002–06



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Children's Health

No reliable indicators of the health of Colorado American Indian children were available for this report.

### Youth

The Denver Indian Family Resource Center "Community Highlight" at the end of this section summarizes a recent needs assessment focusing on the needs of American Indian youth who suffer from "severe emotional and behavioral disorders." A majority of both adults and youth included in the study identified alcohol and drug abuse as a "common problem" facing American Indian youth in the metro Denver area.<sup>164</sup> The needs assessment includes

- *Risk and resiliency factors* in the metro Denver American Indian community;
- *Current service delivery systems* offered within the community to youth and families, their accessibility, cultural competence, effectiveness and referral systems, as well as gaps in what is offered;
- *Community attitudes and recommendations* regarding mental health, barriers to accessing effective services and treatment, and ideas for a system that would support American Indian youth and their families.

## Adults

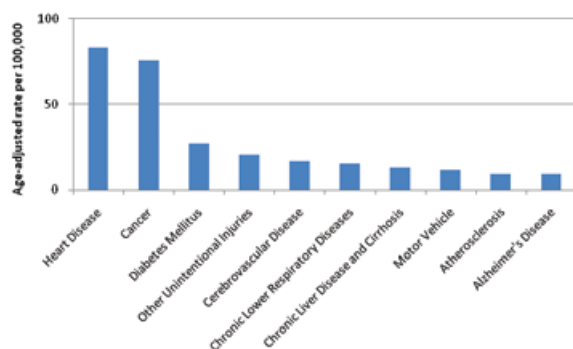
### Expectation of life and leading causes of death

As indicated in the discussion of data limitations, misclassification of American Indian deaths results in underestimation of overall mortality rates and rates for specific diseases. Given what is known about the burden of disease on Colorado's American Indian population, the calculated expectation of life at birth, 89.4 years—a full ten years greater than the value for the total population—is not credible, and the figure comparing American Indian expectation of life to other groups is not shown in this section.

Misclassification also compromises reported incidence and disease-specific mortality data for American Indians, rendering comparisons of American Indian rates to other populations highly problematic. Nevertheless, we have chosen to present limited disease-specific mortality data to provide some empirical grounding to the discussion of health disparities experienced by Colorado's American Indian population.

Despite these limitations, mortality data do provide a reasonable general view of the relative burden of various diseases on Colorado's American Indian population. The 10 leading causes of death for American Indians, shown in Figure 5, indicate that the leading causes for American Indians are similar to those for the total population. Heart disease and cancer exact the heaviest toll on Colorado's American Indian population as they do nationwide.<sup>165</sup> Diabetes, injuries, cerebrovascular disease, chronic lower respiratory diseases and chronic liver disease and cirrhosis all are prominent causes of death for Colorado's American Indians.

**Figure 5. Leading causes of death for American Indians, 2002–06**

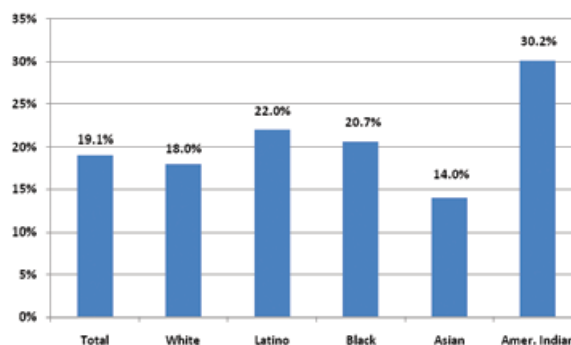


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Risk factors associated with one or more leading causes of death

With the exception of smoking, the estimated prevalence of risk factors reported in other sections (physical activity, nutrition and binge drinking) does not differ between American Indians and all Coloradans. Figure 6 shows that adult American Indians are more likely to smoke than other Coloradans.

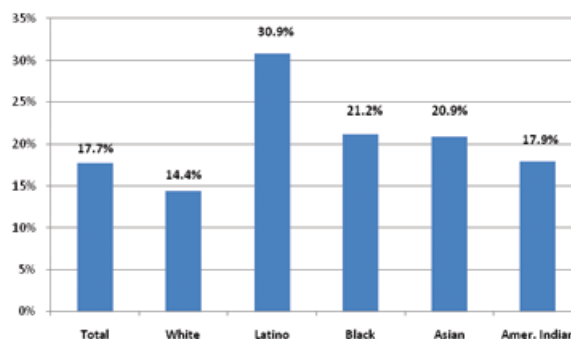
**Figure 6. Adults who smoke, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

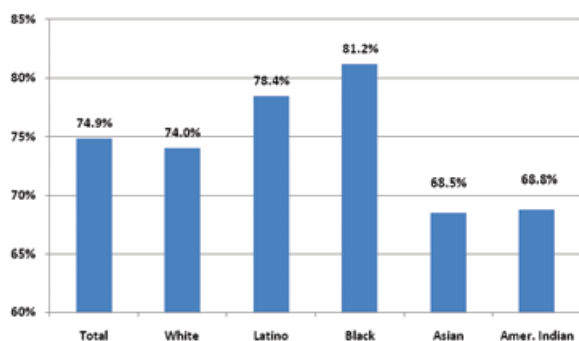
Lack of physical activity, poor nutrition, and smoking all are linked to increased rates of obesity, hypertension and diabetes. Figure 7 suggests that American Indians are no more likely to be physically inactive than other Coloradans, while Figure 8 suggests that they may be somewhat less likely to consume fewer than five fruits and vegetables daily. Figure 9 suggests that Colorado American Indians have a higher prevalence of obesity than all Coloradans. None of the differences in Figures 7–9 are statistically significant when compared to the total population.

**Figure 7. Adults who are physically inactive, 2004–07**



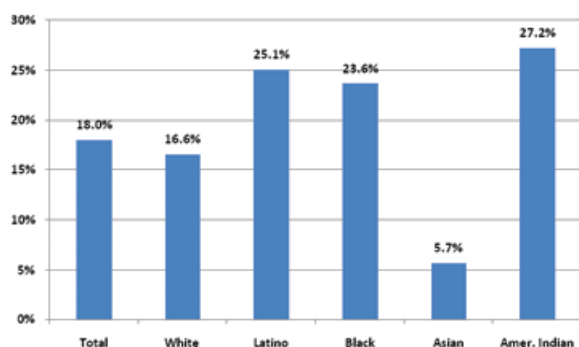
Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 8. Adults who consume fewer than five fruits and vegetables per day, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

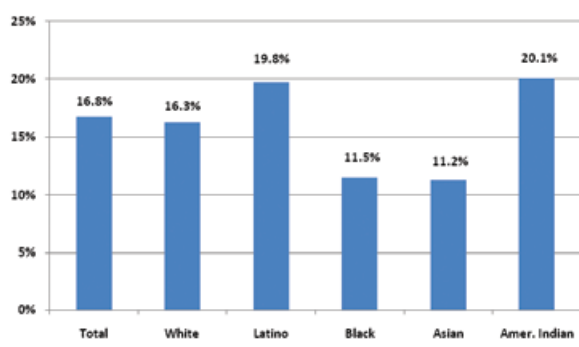
**Figure 9. Adults who are obese, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

National data show American Indians are more likely to have had any illicit drug use in the past year and to have had five or more drinks on a single occasion at least once in the past year (binge drinking).<sup>166</sup> An estimated 20 percent of the Colorado American Indians responding to the Behavior Risk Factor Surveillance System admit to engaging in binge drinking in the past month (Figure 10).

**Figure 10. Adults who binge drink, 2004–07**

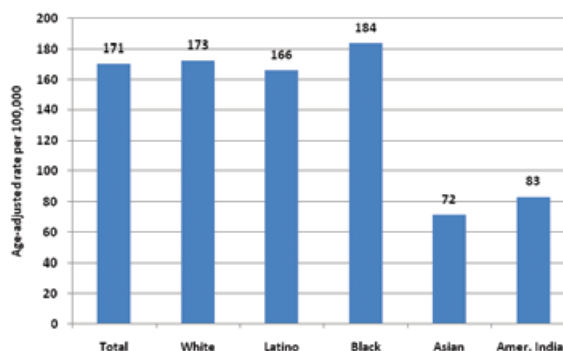


Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

## Heart disease

For the years 2002–2006 combined, heart disease was the leading cause of death for all Coloradans, and was likely the leading cause of death for American Indians also. Improved behaviors regarding physical activity, nutrition, smoking and binge drinking could reduce heart disease mortality for American Indians. The estimate of heart disease mortality shown in Figure 11 is likely to be low due to misclassification.

**Figure 11. Heart disease mortality, 2002–06**

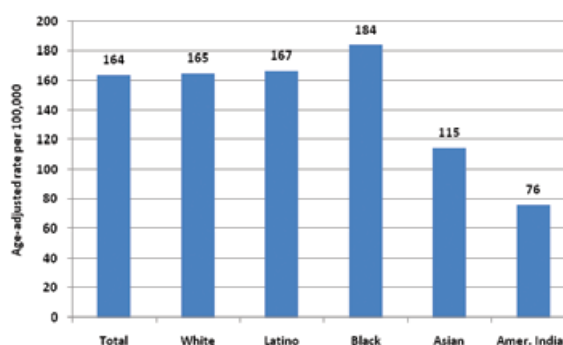


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

## Cancer incidence, mortality and barriers to care

For the years 2002–2006 combined, cancer was the second leading cause of death for all Coloradans and is likely the second leading cause of death for American Indians. All cancer, breast cancer and lung cancer mortality rates, shown in Figures 12–14, are likely to be underestimates due to misclassification. The low lung cancer death rate especially is suspect, given that American Indians are more likely to smoke than other Coloradans (Figure 6). American Indian women report adhering to recommended mammogram screenings as frequently as other women, as shown in Figure 15.

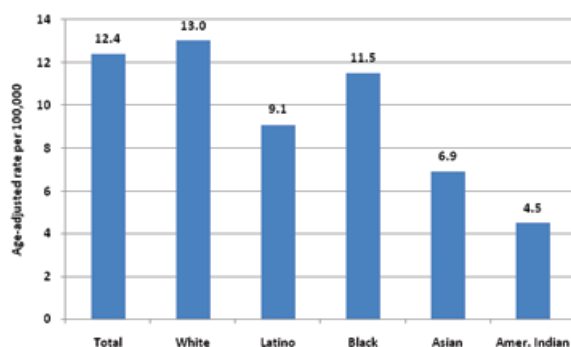
**Figure 12. Cancer mortality (all cancers), 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

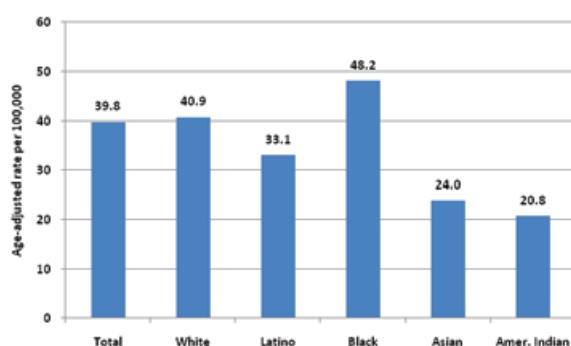


**Figure 13. Breast cancer mortality, 2002–06**



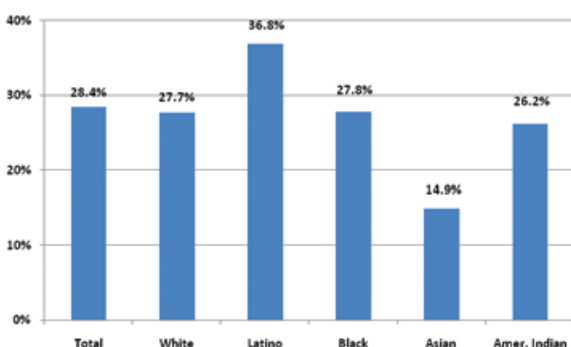
Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 14. Lung cancer mortality, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 15. Women 40+ who did not have a mammogram, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

In the absence of credible cancer incidence and mortality for Colorado, a recent national report provides useful information on cancer incidence and mortality for American Indians.

The American Cancer Society, the Centers for Disease Control and Prevention, the National Cancer Institute, and the North American Association of Central Cancer Registries collaborate annually to provide updated information on cancer occurrence and trends in the U.S. The 2007 report features

a comprehensive compilation of cancer information for American Indians and Alaska natives (AI/AN). Overall, rates for AI/AN were lower than for NHW [non-Hispanic Whites] from 1999 through 2004 for most cancers, but they were higher for cancers of the stomach, liver, cervix, kidney, and gallbladder. Regional analyses, however, revealed high rates for AI/AN in the Northern and Southern Plains and Alaska.\* For cancers of the breast, colon and rectum, prostate, and cervix, AI/AN were less likely than NHW to be diagnosed at localized stages. For the AI/AN population, lower overall cancer incidence and death rates obscured important variations by geographic regions and less favorable healthcare access and socioeconomic status. Enhanced tobacco control and cancer screening, especially in the Northern and Southern Plains and Alaska, emerged as clear priorities.<sup>167</sup>

Native cancer patients continue to have the poorest survivorship from cancer five years after diagnosis when compared with other minority, poor and medically underserved populations.<sup>168</sup> In many geographic regions, there are no accurate survival data available, and quality of life information specific to Native American cancer survivorship has not been collected. Thus, the true extent is unknown.<sup>169</sup>

#### Barriers to Care

The Department of Health and Human Services March 2004 report, *Making Cancer Health Disparities History*, summarized identified barriers to equivalent cancer-related health care and outcomes. These included such barriers as

- cancer services not being delivered as a continuum of care (lack of prevention, screening, follow-up, adequate training, timely initiation of treatment and end-of-life care);
- cancer service providers allowing racism and other biases to affect their job performance;
- individuals' distrust of cancer prevention and early detection services when received from those not within their own community;
- cultural, religious and traditional tribal beliefs that are not always compatible with evidence-based or best-available medical practices;
- inability to access services because of cost barriers (including lack of or underinsurance, lack of ability to take time off work) or physical barriers (geographic isolation, lack of transportation, inconvenient hours of service, frailty or physical disability, or competing life demands); and
- lack of awareness, access or ability to derive benefit from available services (due to language differences, low literacy or impairments).<sup>170</sup>

\* Colorado is in the Southwest region, but there is a significant migration stream between Colorado and the Northern and Southern Plains regions.

Other studies on health behavior barriers, choices and access to timely and effective health care by minority groups have identified these and additional problems, including

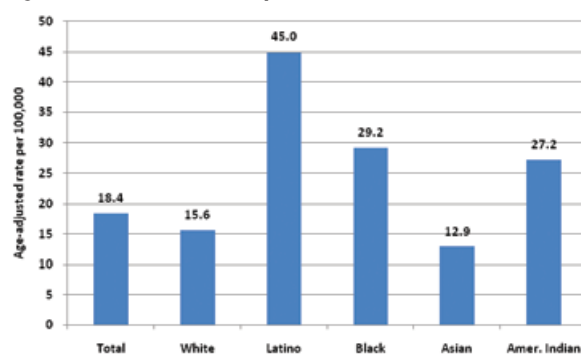
- the need for social support, defined as emotional, informational, appraisal and instrumental support;
- the lack of clear communication about differing understandings of health and disease between patient and provider;<sup>171</sup>
- fear and lack of language, education and acculturation;<sup>172</sup>
- perceived racial, economic and gender bias;
- lack of having a regular doctor;<sup>173</sup>
- lack of cultural competence on the part of nurses; and
- low levels of health literacy.<sup>174</sup>

Likewise, numerous articles have accurately described barriers related to clinical trials.

### Diabetes

Diabetes appears to be the third leading cause of death for American Indians compared with eighth for all Coloradans. Unlike the other disease-specific mortality indicators, Figure 16 shows a higher incidence of diabetes mortality for American Indians than all Coloradans. Assuming the true level is higher than indicated in Figure 16, diabetes and its associated risk factors, which include physical inactivity, poor nutrition and smoking, are serious health concerns for Colorado's American Indian population.

**Figure 16. Diabetes mortality, 2002–06**



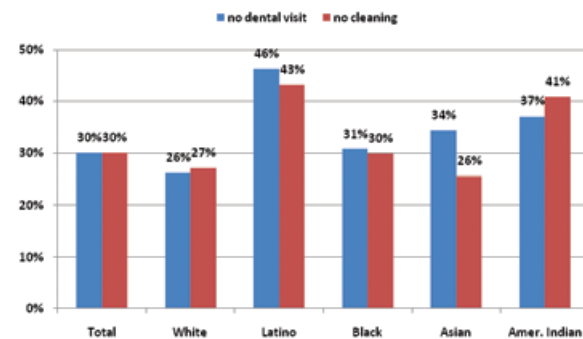
Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Oral Health

Oral health is an important but often neglected component of overall health. The Behavior Risk Factor Surveillance System includes self-reported data on oral health

for adults that demonstrate that disparities exist on this dimension of health as they do for physical and mental health. Figure 17 indicates that American Indians are somewhat less likely to have had a dental visit or dental cleaning in the past year compared to all Coloradans.

**Figure 17. Adults reporting no dental visit and no dental cleaning in the past year, 2006**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

## Recommendations

To address health disparities for American Indians, the following actions are recommended:

- Encourage tribal governments to engage their citizens who don't reside on reservations to enhance native political influence, revitalize and protect culture, and access valuable human capital.<sup>175</sup>
- Conduct multi-year comprehensive community-based participatory research projects aimed at providing both urban and traditional Indians preventive programs and improved health outcomes and health status.
- Address the high priorities of prevention and mental health.
- Support capacity-building in the areas of health and economic opportunity within native communities. These two factors are inextricably linked. Improvements in one cannot succeed without strength in the other.<sup>176</sup>
- Support American Indian students in the field of public health and health care through scholarship programs and active mentoring relationships.<sup>177</sup>
- Support and facilitate the use of traditional native healers as a complement to western medicine. Recognize the importance of spiritual traditions when setting up prevention programs, screenings and health-care services.<sup>178</sup>
- Increase resources to collect better and more complete data for this population.

## Community Highlight: Native American Cancer Research's American Indian Community Members Needs Assessment Data

### Description/Purpose

This section summarizes findings from two waves of data collected by Native American Cancer Research, a community based, American Indian nonprofit organization dedicated to reducing cancer incidence and mortality in Native Americans. Unlike the standard data sources cited elsewhere in this report, these studies have been specifically designed to gather data from American Indians residing in Colorado.

### The 1994–96 Native American Cancer Research study

#### Methods

This study asked 145 American Indians about multiple health conditions. More than half responded that they had been told by a provider that they were obese and one-quarter were told that they had diabetes. One-third of elders were told that they had arthritis. Thirty-eight percent were current users of tobacco (two-thirds of these individuals were from the Northern or Southern Plains). Less than one-third had private health insurance.

Beginning in 2005, Native American Cancer Research collected needs assessment data from the Colorado American Indian community primarily through the use of an automated response system during community meetings. Because the American Indian community is less likely to complete telephone or paper surveys, data were collected

using convenience samples for focus groups, pilot tests and education sessions in multiple locations and venues throughout Colorado. From April 2005 through April 2007, Native American Cancer Research conducted 33 American Indian community activities that included collecting automated response system data.

### Findings/Results

The findings on health conditions and insurance status are similar to those from the 1994–1996 study. Of the 410 participants, more than one-third are from the Northern Plains. Most (n=324; 79 percent) were female, with ages ranging from early teens to 93. The highest level of education completed varied greatly (4 percent completing elementary school to 6 percent completing a doctorate), but the mean was some college, but no degree. When asked how old people were when they first tried chewing or smoking tobacco, 41.2 percent started between ages 14–16 and 29.4 percent started between ages 11 and 13. Of the current habitual smokers, more than half (60 percent) had heard of the Colorado QuitLine or QuitNet. However, almost none (91.1 percent) had ever called the number or used the Web site.

Likewise, for the Native American Cancer Research's Native American Prevention of Obesity study, fewer than 10 percent ate more than one serving of fruits or vegetables daily and fewer than 10 percent took part in physical activity daily, including school-age American Indians.

## Community Highlight: Denver Indian Family Resource Center Community Needs Assessment

### Description/Purpose

The *Keeping the Circle Whole* Community Needs Assessment, conducted over the course of nine months in 2006 and 2007, involved more than 700 youth and adults living in the seven-county metro Denver area (Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas and Jefferson counties). The assessment was designed to identify the protective structures and gaps serving the mental health of American Indian youths.

### Methods

The work included:

- **Nine** stakeholder-facilitated work sessions: community, administrators and service provider groups;
- **Four** steering committee work sessions: key health and community advisors;

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- 20 key informant interviews;
- 11 focus groups;
- 700+ surveys from youth and adult community members;
- 53 administrator and provider surveys;
- 13 crisis intervention education specialist surveys.

Dr. Jeff King conducted the last assessment of Denver's American Indian/Alaska native population in 1993. The first of its kind, Dr. King's study surveyed approximately 350 people.

The new *Keeping the Circle Whole* assessment now provides an unprecedented amount of statistical and anecdotal evidence on the current state of Colorado's urban Indian youth and their families. "This type of research has never been done before," said Denver Indian Family Resource Center Executive Director Phyllis Bigpond. "I don't think a lot of people realize how many American Indian people live here in the Denver metro area. It's a good opportunity to shed light on our community."

### Findings/Results

A few snapshots of the study:

#### Adults say:

- 78% are proud to be AI/AN
- 46% experience racial prejudice
- 44% feel disconnected from their culture
- 34% suffer from depression

#### Youth say:

- 62% are proud to be AI/AN
- 42% experience racial prejudice
- 45% feel disconnected from their culture
- 29% want help with their problems

Respondents also cited significant difficulties accessing services for mental health issues (e.g., transportation and fees). Nearly 70 percent of respondents said they would prefer an American Indian provider for some services, and almost a third could not afford services because they were either uninsured or found Medicaid too cumbersome and inadequate to pay for what they needed. A striking number of survey participants identified stigma, lack of understanding and fear of indiscretion that prevented families from seeking help they need for mental health support.

### Conclusion

The needs assessment offers more than just a snapshot of Denver's American Indian population—more than 27,000 people with nearly 60 different tribal affiliations. It also reveals a group of people who find strength in their heritage, yet, many fear, are drifting from traditional values and becoming disconnected from their historic culture. The candid contributions that make up the assessment reveal a people that experience racism, suicide, a disproportionately high degree of alcohol and drug abuse, depression and other troubling symptoms.

"Through our work, we've identified the needs for mental health services, and we've realized the resources that exist are not actually accessible to the people we serve," says Bigpond. "People need more information, and they need to know where to seek help. It's hard for people to talk honestly about mental health."

With this new assessment, organizations in the Indian community hope to significantly increase public education about mental health, streamline interagency collaboration and provide wraparound support structures to better serve this population. The revelations of this report come at an opportune time for the Denver Indian Family Resource Center, which just received a five-year, Equality in Health Initiative grant from The Colorado Trust to provide culturally responsive child and family therapy. Nationally, American Indian health issues are at the forefront. Some U.S. Congress members are pushing to renew the Indian Health Care Improvement Act, which has been grossly underfunded for several years.

"Really, there aren't enough services for anybody, but it becomes even more difficult for populations that deal with other factors, particularly cultural sensitivity," said Bigpond. Despite the tremendous challenges that Denver's urban Indian population faces, including poverty, historic abuse, racism and disparate tribal affiliations, community members express a deep confidence in their ability to forge creative and effective services.





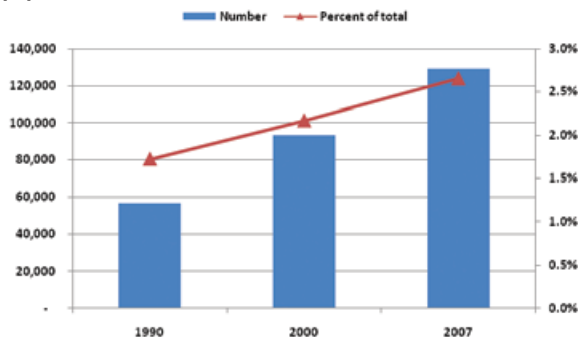
# The Asian/Pacific Islander Population

## Introduction

PEOPLE OF VARIOUS ASIAN HERITAGES have resided in Colorado for more than a century. The first Asians were Chinese immigrants who worked in mining and railroad construction in the 19<sup>th</sup> century. The relocation of Japanese-Americans to internment camps, including Camp Amache in Southeastern Colorado, early in World War II brought a large influx of Japanese-Americans, mostly from California.\* After the war, many remained in Colorado. Another war-related influx of Asians followed the war in Vietnam, when refugees from Vietnam and Laos settled in Colorado. The majority of Colorado's Asians/Pacific Islanders, however, have come either directly from Asia or from elsewhere in the United States seeking economic opportunity in Colorado's growing economy.

Asians/Pacific Islanders make up the most rapidly growing group in Colorado, more than doubling since 1990 (Figure 1).

**Figure 1. Growth of the Colorado Asian/Pacific Islander population, 1990–2007**



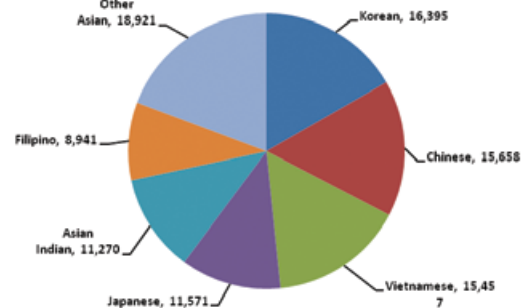
Source: U.S. Bureau of the Census, *Census of Population (1990 and 2000), Annual Estimates of the Population by Sex, Race, and Hispanic Origin for States: April 1, 2000 to July 1, 2007*

Colorado's Asian/Pacific Islander population consists of people with many different Asian national origins. Figure 2 shows the largest groups for people identifying with a single group in the 2000 census. (Thus, individuals identifying as Chinese *and* Vietnamese, for example, are excluded from this tabulation.) Of the nearly 100,000 Coloradans who identified with a single Asian/Pacific Islander group, no group accounts for as many as 20 percent of the state's Asian/Pacific Islander population. The largest single group, Koreans, accounts for 17 percent of the state's Asian/Pacific Islander population. Chinese,

\* At its peak, 7,318 people were interned at Camp Amache. <http://www.colorado.gov/dpa/doit/archives/vvwcod/granada3.htm>

Vietnamese, Japanese and Asian Indians make up somewhat smaller shares of the 16 groups identified in the 2000 census (Figure 2).

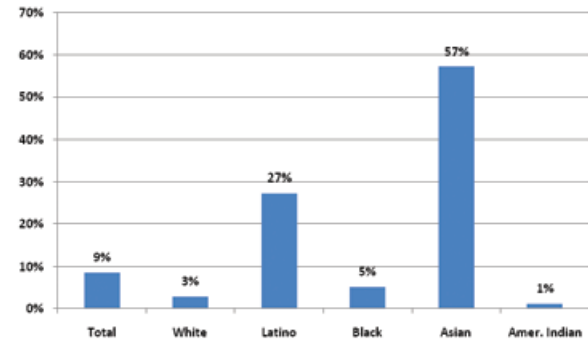
**Figure 2. Largest Asian/Pacific Islander Groups in Colorado, 2000**



Source: U.S. Bureau of the Census, *2000 Census of Population*

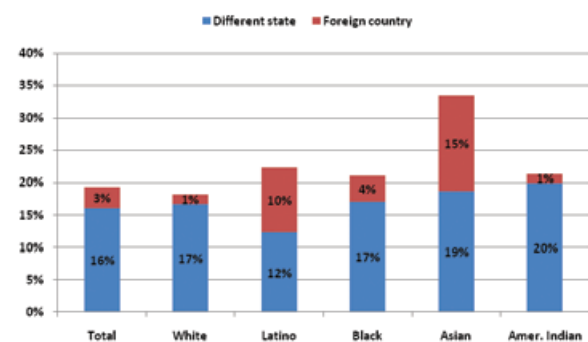
More than half of Colorado's Asians/Pacific Islanders are foreign-born (Figure 3). And more than a third residing in the state in 2000 lived in either another state (19 percent) or in a foreign country (15 percent) just five years earlier (Figure 4).

**Figure 3. Foreign-born population, Colorado, 2000**



Source: U.S. Bureau of the Census, *2000 Census of Population*

**Figure 4. Colorado population (5 years of age and over) living in another state or foreign country in 1995, 2000**

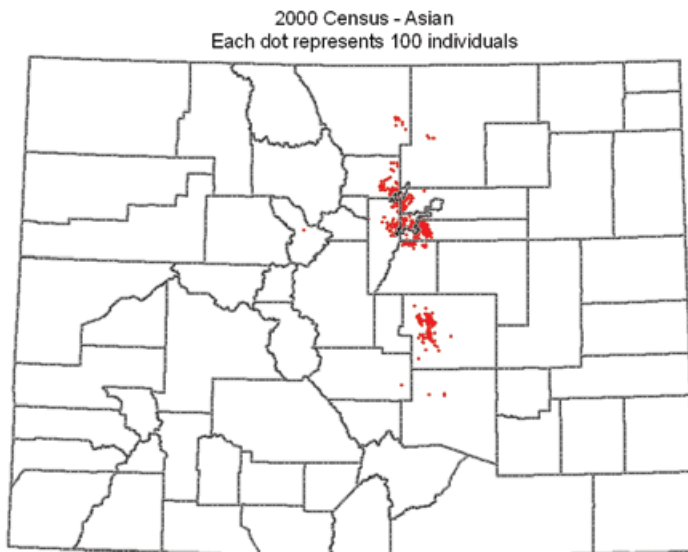


Source: U.S. Bureau of the Census, *2000 Census of Population*

Because many of Colorado's Asians/Pacific Islanders are recent arrivals from distinct national and cultural backgrounds, grouping them together as "Asians/Pacific Islanders" is statistically convenient, but can obscure differences within this broad group that are important for understanding and addressing health disparities.

Colorado's Asian/Pacific Islander population is overwhelmingly concentrated in the Denver, Boulder and Colorado Springs metropolitan areas as shown in Map 1.

**Map 1. Distribution of the Asian/Pacific Islander population, 2000**



## Strengths & Uniqueness

Nationally, the Asian and Pacific Islander population includes people from 30 Asian nations and 25 Pacific Island nations, which could be subdivided into even more languages, cultures and immigration patterns. Some Asian/Pacific Islander groups have higher rates of poverty and linguistic isolation than others. For example, 63 percent of the Hmong population, 51 percent of Laotians and 47 percent of Cambodians live in poverty and are more likely to have no health insurance.<sup>179</sup>

Family is a principal value in Asian culture, and Asians/Pacific Islanders derive much of their identity from being members of their family. A family can include immediate and extended family, community, clanship, place of worship, etc. Extended families can be found under one roof, including parents, grandparents, cousins, in-laws, siblings, aunts and uncles. Family is the basic unit of society and the central focus of an individual's life.

Although traditional values have been transformed, the extent to which they have historically influenced child-rearing beliefs and practices among Asian/Pacific Islander cultures is readily apparent. The family is characterized by well-defined, highly interdependent roles within a cohesive patriarchal vertical structure. Parental roles and/or responsibilities typically entail significant personal sacrifice and accountability in return for the right to assume strict authority over and unquestioning obedience and loyalty from the child. Children, in turn, are viewed as extensions of their parents. They are treasured, protected and readily indulged within a very nurturing, secure and predictable social environment (involving both immediate and extended family members) throughout infancy and the toddler period.

Among Southeast Asian cultures, Vietnamese parents traditionally avoid praising the infant and may become anxious if complimentary comments regarding the infant's health or appearance are made by others for fear that a lurking evil spirit may overhear and attempt to steal the baby away. If an infant becomes ill, Cambodian parents may temporarily change the infant's name to confuse the spirits. In general, more traditional child-rearing beliefs and practices promote family interdependence and deference to the needs of the group.<sup>180</sup>

Many Asians/Pacific Islanders practice traditional healing which can consist of yin yang, herbal medication, therapeutic massage, acupressure, acupuncture, moxibustion,\* coining, balm, steaming, spiritual healing and natural remedies. Coining, the most popular form of dermabrasion, is used to treat fever, chills, muscle aches, headaches, flu or even the common cold. The practice involves first covering the affected area with a medicated ointment such as Tiger Balm, then gently rubbing the area with the edge of a coin (or spoon), downward and away from the head, until dark marks that look like bruises can be seen. This procedure allows the "toxic wind" to be brought to the body surface and released; supposedly, the more ill the affected person, the darker the marks will be.<sup>181</sup>

\* Moxibustion is the therapeutic use of moxa, "a soft woolly mass prepared from the ground young leaves of a Eurasian artemisia (especially *Artemisia vulgaris*) that is used in traditional Chinese and Japanese medicine typically in the form of sticks or cones which are ignited and placed on or close to the skin or used to heat acupuncture needles." Merriam-Webster Online: <http://www.merriam-webster.com/dictionary/moxibustion>



Historically, there was a lot of segregation among different Asian/Pacific Islander groups, but with the younger generation adopting the American culture and uniting as a group, the Asian/Pacific Islander community is learning to put aside differences. Inter-marriage has helped Asians/Pacific Islanders learn more about one another, even though many immigrants have not fully committed themselves to American ways. Asians/Pacific Islanders hold true to their culture and their ancestors' beliefs of community and respect for elders.

## Data Limitations

Small population numbers and the diversity of Colorado's Asian/Pacific Islander population create special challenges to compiling data appropriate for assessing the health of this diverse community and for accurately estimating the extent of health disparities between the Asian/Pacific Islander population and the total population, as well as within the Asian/Pacific Islander population. In some data sources (though not those used in this report), Asians/Pacific Islanders are included in an "other" category, a practice that Asian/Pacific Islander community advocates strongly discourage.<sup>182</sup> While data collection on health of Asians/Pacific Islanders is slowly improving, published information on health and health barriers among specific Asian/Pacific Islander ethnic groups still is limited. In some cases, health and population data simply are not available.<sup>183</sup> Because more than half of the nation's Asians/Pacific Islanders (51 percent) live in just three states, California, New York and Hawaii, most national data on Asians/Pacific Islanders is collected along the coasts.

## Definition of Health Disparities

Communities of color are disproportionately affected by disease, disability and death. These differences in health status among groups are known as health disparities and are present at the national, state and local levels. There also are disparities in access to health care and quality of care.

## Health Disparities— A Life Cycle View

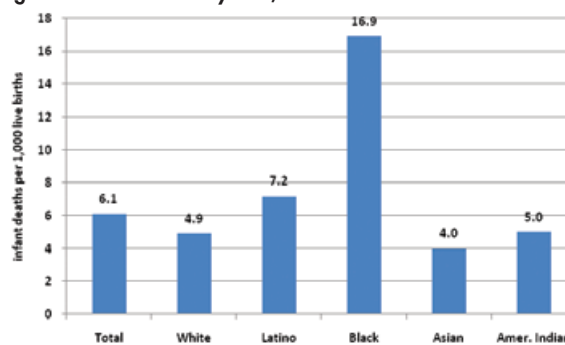
Because health disparities appear early in life and persist through the life cycle, the indicators of health disparities presented in this report are organized in terms of the life cycle: pregnancy and birth outcomes, child and youth health indicators, and adult indicators. Due to data limitations, relatively few child and adolescent indicators are available for minority groups, and there are no indicators specific to elders. However, the report includes extensive information on mortality disparities. Though deaths are concentrated in the older ages, mortality disparities reflect the cumulative effect of disparities throughout the life cycle. All data presented are specific to Colorado.

## Pregnancy and birth outcomes

### Infant mortality, perinatal mortality and low-weight births

Infant mortality (deaths among children in the first year of life) is a widely used indicator of population health. Asians/Pacific Islanders have a lower infant mortality rate than the total population in Colorado (Figure 5) and nationally.<sup>184</sup>

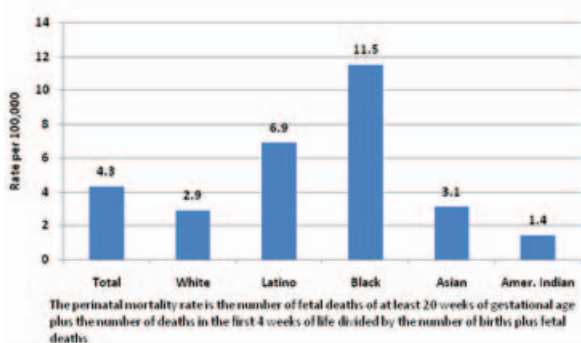
**Figure 5. Infant mortality rate, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

Perinatal mortality, the number of fetal deaths of at least 20 weeks of gestational age plus the number of deaths in the first four weeks of life divided by the number of births plus fetal deaths, is another measure of pregnancy outcomes. As with infant mortality, the Asian/Pacific Islander perinatal mortality rate is lower than for the total population (Figure 6).

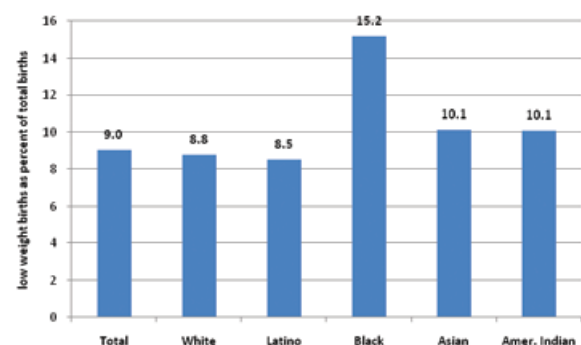
**Figure 6. Perinatal mortality rate, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

A third birth outcome measure often associated with infant and perinatal mortality is low-weight births. Asians/Pacific Islanders have a slightly higher incidence of low-weight births than the total population (Figure 7).

**Figure 7. Low-weight births, 2002–06**



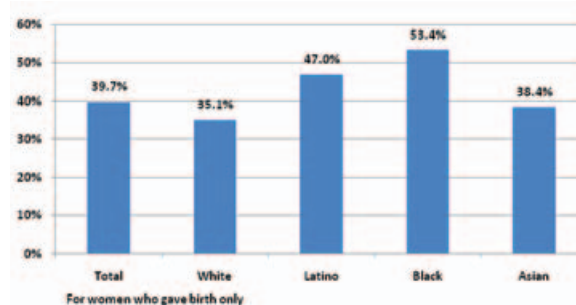
Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Pregnancy risk factors

Poor birth outcomes such as infant mortality, perinatal mortality and low-weight births are associated with a variety of pregnancy risk factors. In this section, we examine differences in unintended pregnancies, the presence of stressors\* and whether pregnant women smoked or drank alcohol during the last three months of the pregnancy. Unintended pregnancies occur at roughly the same rate for Asian/Pacific Islander mothers as for all Colorado mothers (Figure 8).

\* Stressors include moving, unpaid bills, arguments with partner or husband, hospitalization of a family member, job loss, death of a family member or friend, family problems with alcohol or drugs, separation or divorce from spouse, homelessness, jail, physical fighting and partner not wanting the pregnancy.

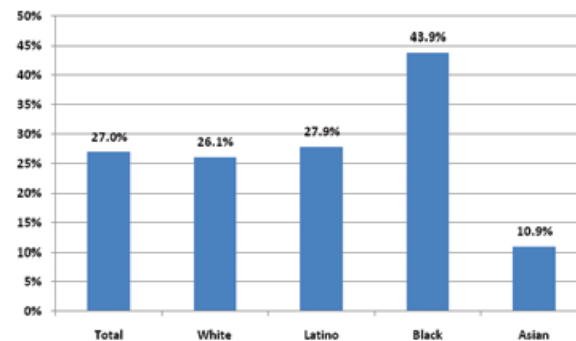
**Figure 8. Women with unintended pregnancies 2004–06**



Source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, Colorado Department of Public Health and Environment

Asian/Pacific Islander mothers are much less likely than other mothers to report three or more stressors during pregnancy (Figure 9).

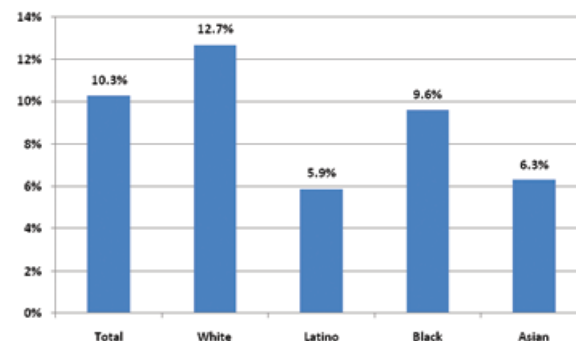
**Figure 9. Women reporting three or more stressors during pregnancy, 2004–06**



Source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, Colorado Department of Public Health and Environment

With regard to smoking and drinking during the last three months of pregnancy, Asian/Pacific Islander mothers report a lower prevalence of these risky behaviors than reports from all mothers (Figures 10 and 11).

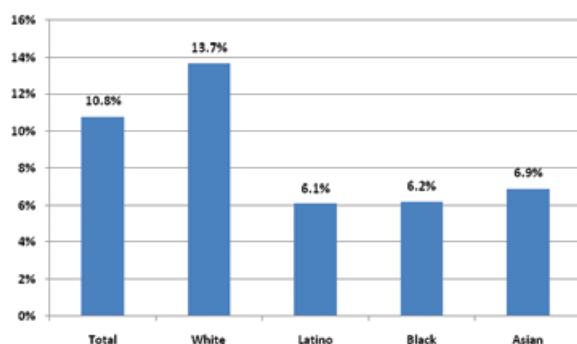
**Figure 10. Women who smoked during last three months of pregnancy, 2004–06**



Source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, Colorado Department of Public Health and Environment



**Figure 11. Women who drank during last three months of pregnancy, 2004–06**



Source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, Colorado Department of Public Health and Environment

## Children's health

The health of a population is profoundly affected by the health of its children because it reflects current and future health burdens. This section presents information on childhood obesity and oral health.

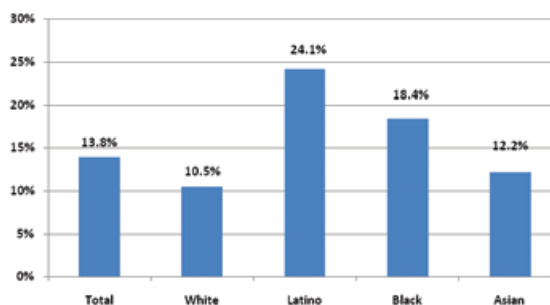
### Childhood obesity

The growing incidence of obesity, especially among children, is gaining broad attention as a major health concern.\* Data from a recent Colorado Child Health Survey show that Asian/Pacific Islander children are somewhat less likely to be obese than all Colorado children (Figure 12), but the results are not statistically significant.<sup>185\*\*</sup>

\* Data from the most recent Colorado Child Health Survey show a childhood obesity rate for all children of 13.0 percent for 2007, a slight, but statistically insignificant, decrease from the rate of 14.8 percent for 2004: <http://www.cdphe.state.co.us/hs/yrbs/childhealth.html>

\*\* This report notes, "The Centers for Disease Control and Prevention do not use the term 'obese' in relation to children; therefore the highest weight category for children is 'overweight.' Body mass index (BMI), which is a measure of weight adjusted for height, is used to determine weight categories. Because children's body composition changes over the years and because girls and boys grow at different rates, BMI for children is age- and gender-specific. BMI for age is determined using gender-specific growth charts that place a child in a percentile relative to weight and height. Weight categories, based on these percentiles, are as follows: underweight < 5<sup>th</sup> percentile; normal weight 5<sup>th</sup> to < 85<sup>th</sup> percentile; at risk of overweight 85<sup>th</sup> to < 95<sup>th</sup> percentile; overweight 95<sup>th</sup> percentile and above." Percent obese in Figure 12 is the percent of children whose BMI is at the 95<sup>th</sup> percentile or above.

**Figure 12. Children who are obese, ages 2–14, 2005–07**

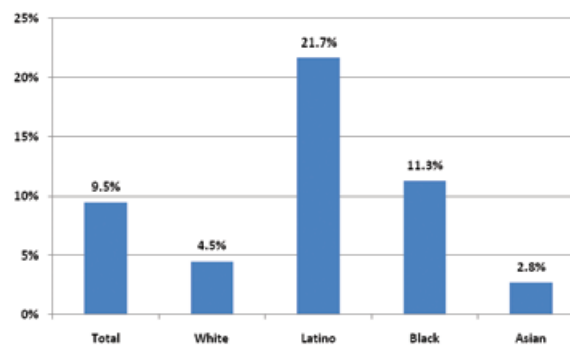


Source: Child Health Survey, Health Statistics Section, Colorado Department of Public Health and Environment

### Children's oral health

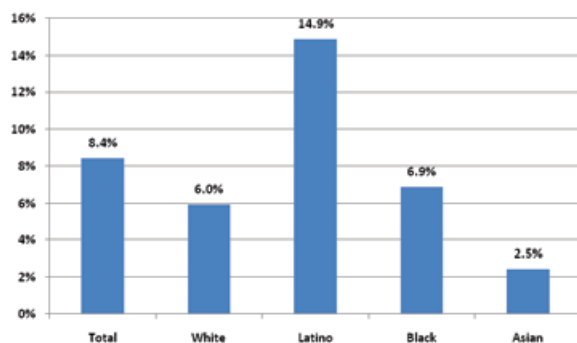
Oral health is an important component of overall health. Establishing good oral health habits in childhood and getting needed dental care are important for maintaining oral health in adulthood. The Colorado Child Health Survey included a question on parents' assessment of their children's oral health and access to dental care. Figure 13 shows that very few Asian/Pacific Islander parents report that their children's teeth are in fair or poor condition. Similarly, very few Asian/Pacific Islander parents report that their children were unable to get needed dental care (Figure 14), and very few do not have a regular source of dental care (Figure 15). In sum, the oral health of Colorado's Asian/Pacific Islander children appears to be better than that of any other group.

**Figure 13. Condition of teeth is fair to poor 2004–06**



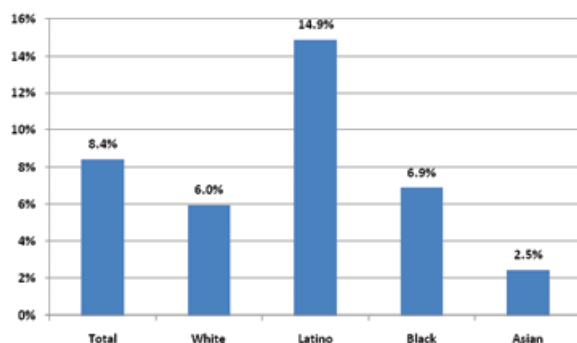
Source: Child Health Survey, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 14. Children who needed dental care but did not get it, 2004–06**



Source: Child Health Survey, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 15. Children with no regular source of dental care, 2004–06**



Source: Child Health Survey, Health Statistics Section, Colorado Department of Public Health and Environment

## Youth

Due to the absence of reliable data, there are no indicators of health disparities for Asian/Pacific Islander youth.

## Adults

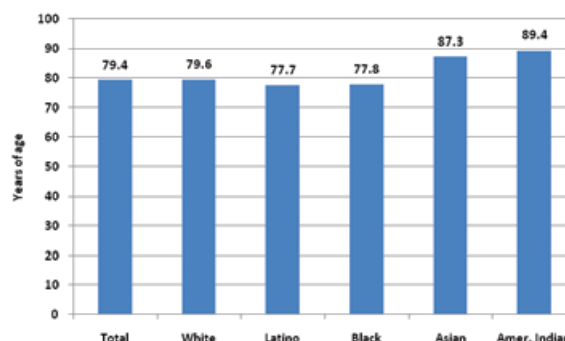
We have more information on health disparities in Colorado relating to adults than any other segment of the life cycle. This is because the three leading data sources used for this report either report risk behaviors for adults (the Behavior Risk Factor Surveillance System), report on the incidence of diseases that are more prevalent among adults (e.g., cancer incidence from the cancer registry) or pertain to mortality (cause-specific death rates from the vital records system), which takes its toll primarily on adults.

This section begins with data on life expectancy, which summarizes the impact of mortality across the life span, and leading causes of death. It is followed by information on risk factors affecting a range of conditions and then proceeds with sections on several of the leading causes of death beginning with the most prevalent.

## Life expectancy and leading causes of death

Life expectancy at birth is a commonly used summary measure for the impact of mortality from all causes on a population. Technically, it is the average number of years a newborn would live if it experiences current age-specific mortality rates throughout its life. Comparing life expectancy at birth among different populations provides a ready method for summarizing the differential impact of mortality at various ages. Figure 16 shows that Asians/Pacific Islanders have a substantially higher expectation of life at birth than most Coloradans.

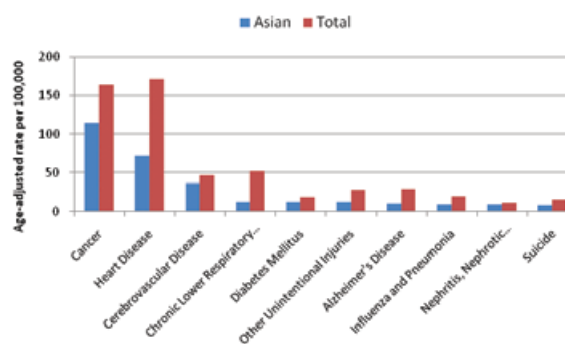
**Figure 16. Life expectancy at birth, 2006**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

Cancer and heart disease are the leading causes of death for Asians/Pacific Islanders, as they are for the total population. In keeping with their greater life expectancy, Asians/Pacific Islanders have lower age-adjusted death rates for all of the leading causes of death (Figure 17). In fact, Asian/Pacific Islander mortality is lower than the total for 12 of the 13 disease-specific mortality measures examined in this section. Consistent with this, we find a relatively lower prevalence of risk factors and lower incidence rates for the diseases associated with the leading causes of death.

**Figure 17. Ten leading causes of death for Asians, 2002–06**



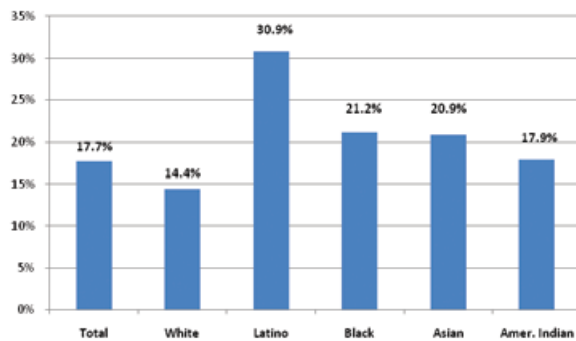
Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

## Risk factors associated with one or more leading causes of death

### Physical activity, nutrition, smoking and binge drinking

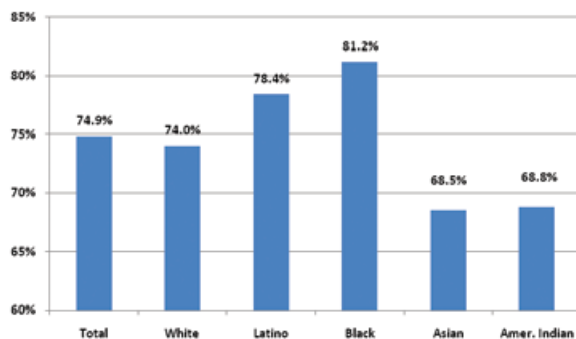
Behaviors such as physical activity, eating habits and substance abuse are important determinants of lifetime health. On each of these dimensions, except physical activity, Asians/Pacific Islanders are more likely to engage in healthy behaviors (or avoid unhealthy ones) than the total population (Figures 18–21).

**Figure 18. Adults who are physically inactive, 2004–07**



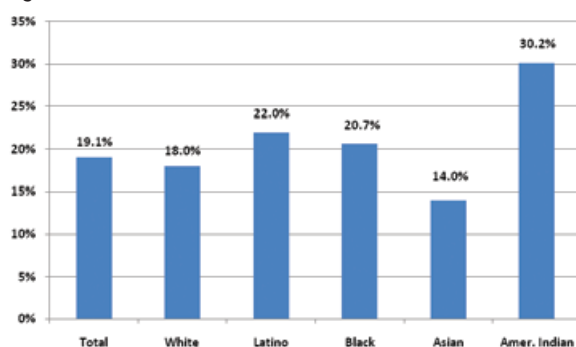
Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 19. Adults who consume fewer than five fruits and vegetables per day, 2004–07**



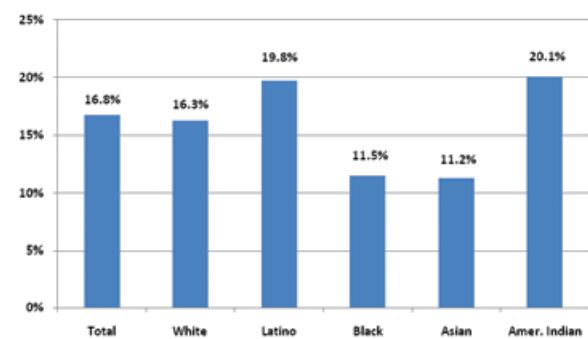
Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 20. Adults who smoke, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

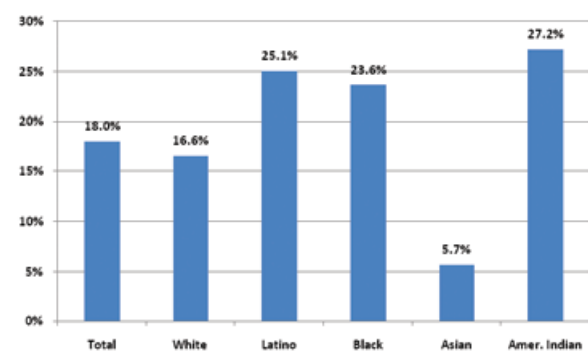
**Figure 21. Adults who binge drink, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

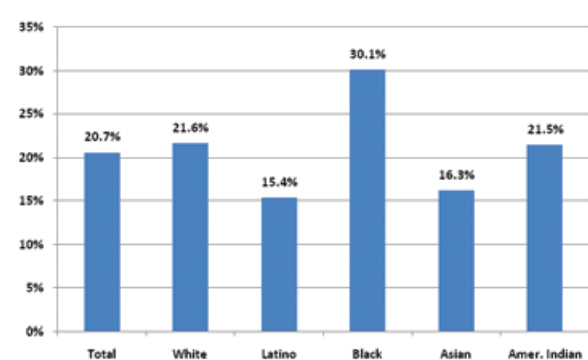
Lack of physical activity, poor nutrition and smoking all are linked to increased rates of obesity, hypertension and diabetes. It is not surprising, given their relatively healthy risk behavior profile, that Asians/Pacific Islanders have the lowest rates of adult obesity of any group (Figure 22) and nearly the lowest rate of hypertension (Figure 23).

**Figure 22. Adults who are obese, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 23. Adults with high blood pressure, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

## Screenings, Incidence and Mortality for Leading Causes of Death

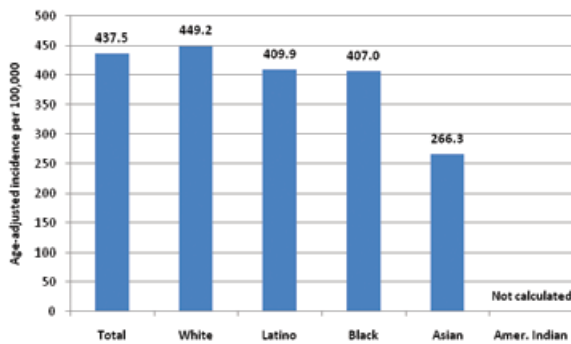
### Cancer

Cancer is the leading cause of death for Colorado Asians/Pacific Islanders, accounting for 29 percent of all deaths. In addition to data for all cancers combined, this section includes information on several specific cancers of interest to the Asian/Pacific Islander population: cancers of the breast, cervix and lung.

### All Cancers

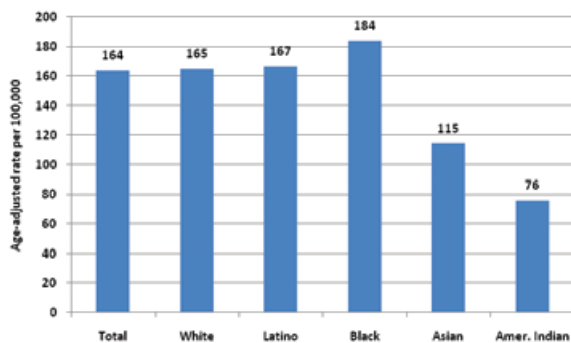
Despite it being the leading cause of death, the all-cancer incidence and mortality rate for Colorado Asians/Pacific Islanders is far below that of other groups, with the exception of American Indians.

**Figure 24. Cancer incidence (all cancers), 2002–06**



Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment.

**Figure 25. Cancer mortality (all cancers), 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

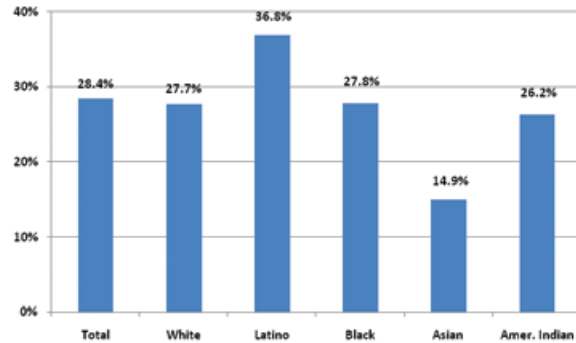
### Specific cancers

#### BREAST CANCER

In recent decades, significant progress has been made in the diagnosis and treatment of breast cancer. Nevertheless, breast cancer accounts for 12 percent of all cancer deaths among Asian/Pacific Islander women.

Early detection increases a woman's chance of surviving breast cancer. Asian/Pacific Islander women age 40 and over are substantially more likely to have had a recent mammogram than other women (Figure 26).

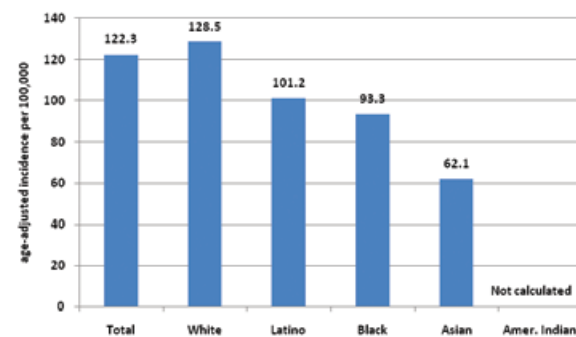
**Figure 26. Women 40+ who did not have a mammogram, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

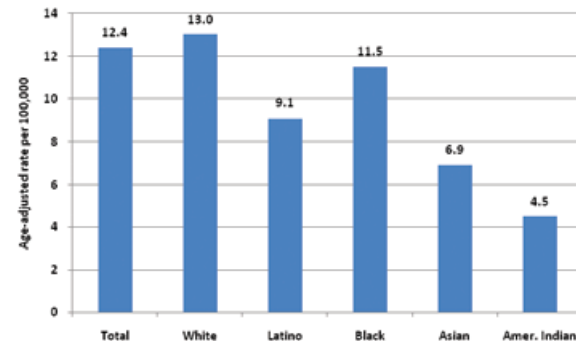
The breast cancer incidence rate for Asian/Pacific Islander women is roughly half that of the total population (Figure 27) and the breast cancer mortality rate also is low (Figure 28).

**Figure 27. Female breast cancer incidence, 2002–06**



Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment.

**Figure 28. Breast cancer mortality, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

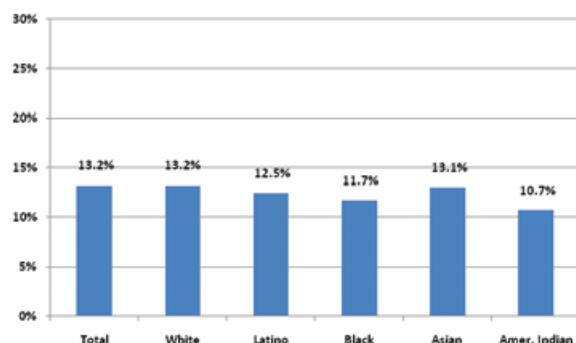




## CERVICAL CANCER

While cervical cancer accounts for a relatively small number of cancer deaths, it is of interest because early detection from a Pap smear test can significantly reduce cervical cancer mortality. In contrast to better adherence to guidelines for mammograms, Asian/Pacific Islander women show no better adherence to the guidelines for the Pap smear test, which can indicate the presence of cervical cancer.

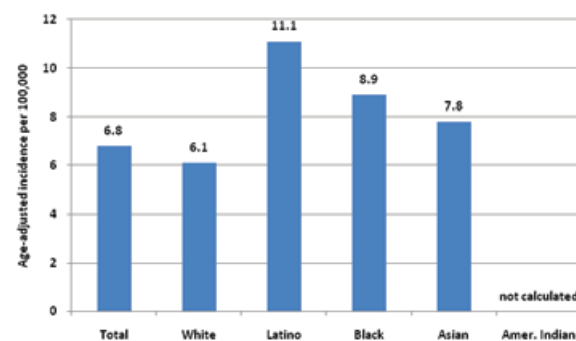
**Figure 29. Women who have not had a pap smear in the past three years, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

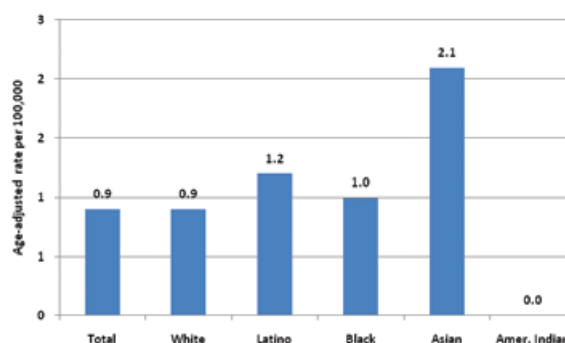
The incidence of cervical cancer is slightly higher for Asian/Pacific Islander women (Figure 30), and the cervical cancer mortality rate is slightly higher (than the total) for Asian/Pacific Islander women than for any other group (Figure 31).

**Figure 30. Cervical cancer incidence, 2002–06**



Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment.

**Figure 31. Cervical cancer mortality, 2002–06**

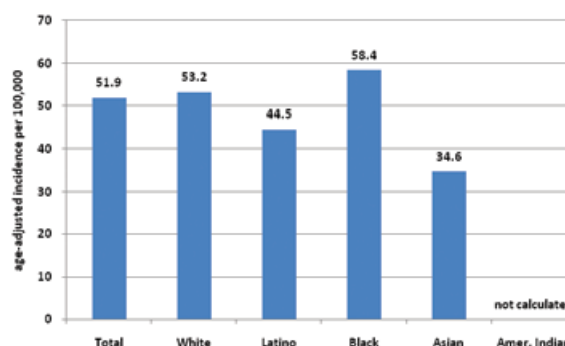


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

## LUNG CANCER

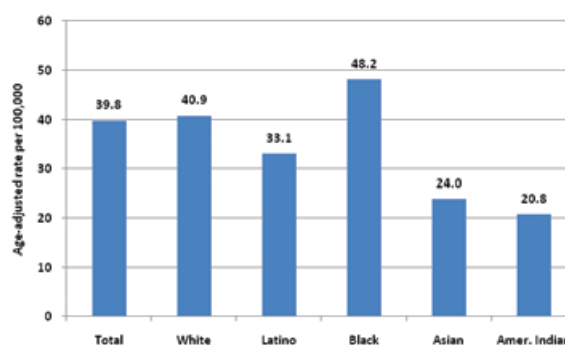
Lung cancer incidence (Figure 32) and lung cancer mortality (Figure 33) are substantially lower for Asians/Pacific Islanders than for the total population and the other groups. This is consistent with the somewhat lower proportion of Asian/Pacific Islander adults who smoke (Figure 20).

**Figure 32. Lung cancer incidence, 2002–06**



Source: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment.

**Figure 33. Lung cancer mortality, 2002–06**

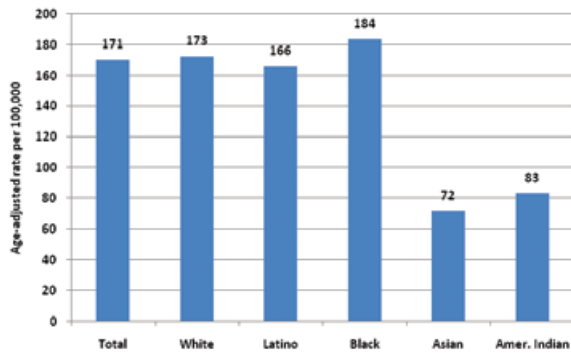


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Heart disease

One of the more striking group differences in the health disparities covered in this report is the much lower rate of heart disease mortality experienced by Asians/Pacific Islanders. The age-adjusted heart disease mortality rate for Asians/Pacific Islanders is less than half that for the total population (Figure 34).

**Figure 34. Heart disease mortality, 2002–06**

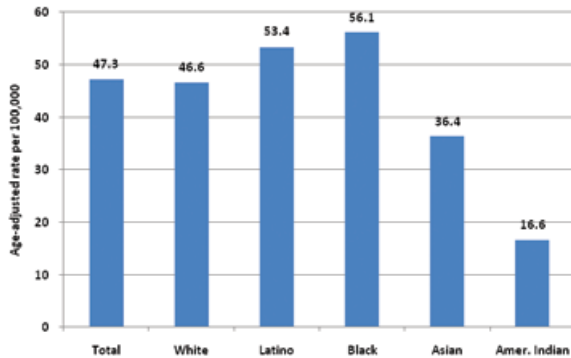


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Cerebrovascular disease

Less dramatic than the low incidence of heart disease mortality, but still impressive, is the low rate of cerebrovascular disease mortality among Asians/Pacific Islanders (Figure 35). These two causes of death share many risk factors.

**Figure 35. Cerebrovascular disease mortality, 2002–06**

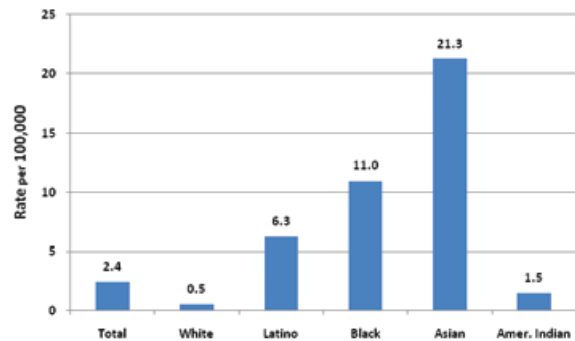


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Respiratory diseases and respiratory disease mortality

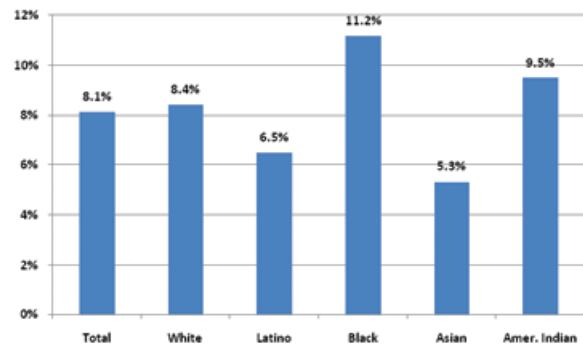
Respiratory diseases and respiratory disease mortality are of special concern for the Asian/Pacific Islander population because of the relatively high incidence of tuberculosis among Asians/Pacific Islanders (Figure 36). For another respiratory disease, asthma, Asians/Pacific Islanders have a lower prevalence than the total population (Figure 37).

**Figure 36. Tuberculosis incidence, 2002–06**



Source: Tuberculosis Program, Disease Control and Environmental Epidemiology Division, Colorado Department of Public Health and Environment

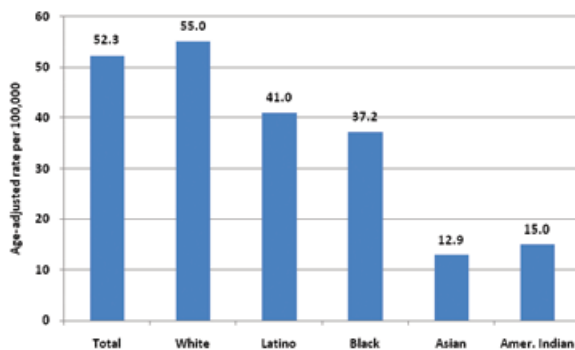
**Figure 37. Adults with asthma, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

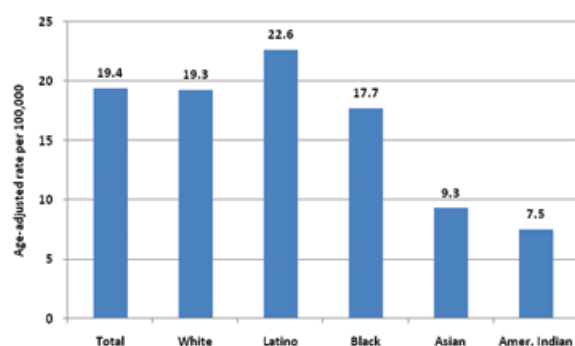
Chronic lower respiratory disease is the fourth leading cause of death for Asians/Pacific Islanders, yet they have a much lower incidence of mortality from this disease than the total population (Figure 38). They also have a much lower death rate from influenza and pneumonia, the eighth leading cause of death for Asians/Pacific Islanders (Figure 39).

**Figure 38. Chronic lower respiratory disease mortality, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 39. Influenza and pneumonia mortality, 2002–06**

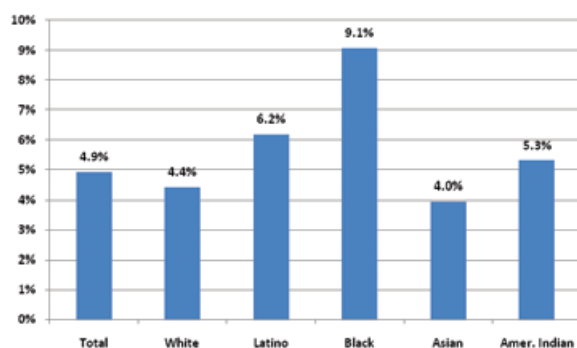


Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Diabetes

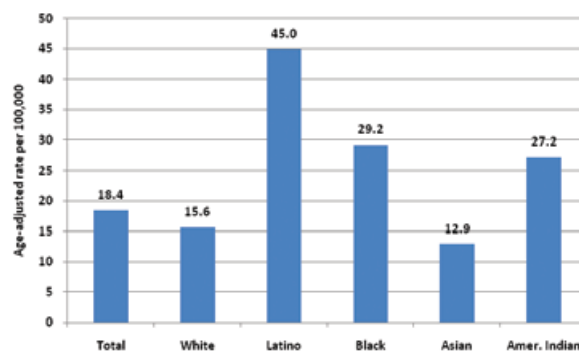
Diabetes, the fifth leading cause of death for Asians/Pacific Islanders, shares many of the risk factors for heart disease, where Asians/Pacific Islanders have relatively low mortality rates. Consistent with these findings, Asians/Pacific Islanders have both the lowest diabetes prevalence (Figure 40) and mortality (Figure 41) rates of all the groups included in this report.

**Figure 40. Adults with diabetes, 2004–07**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

**Figure 41. Diabetes mortality, 2002–06**



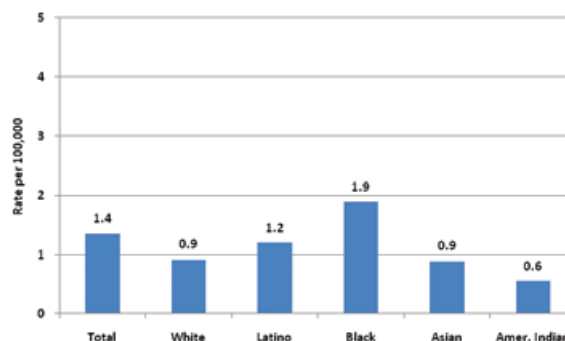
Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

### Hepatitis B and chronic liver disease and cirrhosis mortality

Hepatitis is a viral disease primarily affecting the liver. Hepatitis B is a strain of hepatitis that is spread in much the same way as HIV. Most adults with acute hepatitis B recover completely. However, most infants and children infected with hepatitis B remain chronically infected. Chronic hepatitis B is endemic in Southeast Asia and Sub-Saharan Africa where as many as 15–20 percent of adults are infected.<sup>186</sup> People chronically infected with hepatitis B virus not only have the potential for developing cirrhosis and primary hepatocellular carcinoma, but also are potential sources for infecting others.<sup>187</sup>

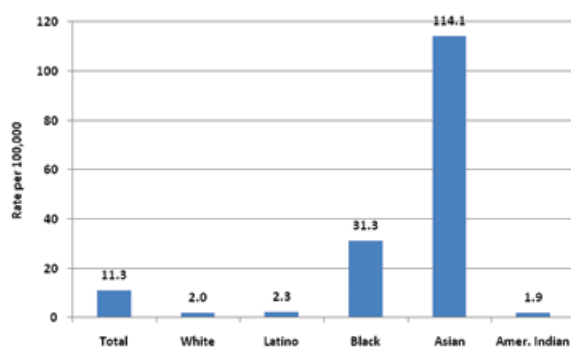
The race/ethnicity of more than a third of all hepatitis B cases (acute and chronic) is unknown. Among cases of acute and chronic hepatitis B where race/ethnicity is known, Asians/Pacific Islanders have a slightly lower incidence of acute hepatitis B (Figure 42) but a much higher rate of chronic hepatitis B (Figure 43). The relatively low acute rate for the Asian/Pacific Islander population indicates that they are no more likely to have been recently exposed than other populations. The relatively high prevalence of chronic hepatitis B may be a holdover from pre-immigration contraction of the disease among recent immigrants. In a recent study, a total of 609 Korean-Americans completed hepatitis B (HBV) blood screening tests in seven Korean churches in Colorado between 2004 and 2007. The study found “Korean Americans had an almost ten times higher incidence of current (4%) and past HBV infection (41%) than the general U.S population. Older individuals had a higher incidence of past HBV infection and lower immunization rate.”<sup>188</sup>

**Figure 42. Acute Hepatitis B, 2002–06**



Source: Viral Hepatitis Program, Disease Control and Environmental Epidemiology Division, Colorado Department of Public Health and Environment

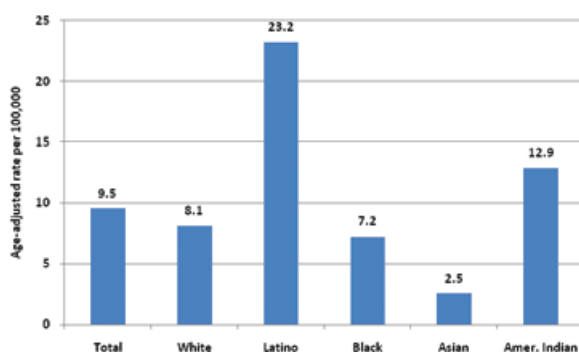
**Figure 43. Chronic Hepatitis B, 2002–06**



Source: Viral Hepatitis Program, Disease Control and Environmental Epidemiology Division, Colorado Department of Public Health and Environment

Despite the high incidence of chronic hepatitis B among Colorado's Asian/Pacific Islander population, they have a very low mortality rate for chronic liver disease and cirrhosis (Figure 44).

**Figure 44. Chronic liver disease and cirrhosis mortality, 2002–06**



Source: Vital Statistics, Health Statistics Section, Colorado Department of Public Health and Environment

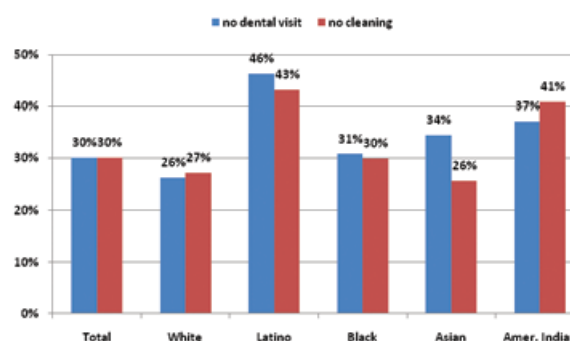
## Oral Health

Oral health is an important but often neglected component of overall health. The Behavior Risk Factor Surveillance System includes self-reported data on oral health for adults. These indicators demonstrate that



disparities exist on this dimension of health as they do for physical and mental health. However, the percent of Asians/Pacific Islanders who report neither visiting a dentist in the past year nor having a dental cleaning is roughly similar to that for the total population (Figure 45).

**Figure 45. Adults reporting no dental visit and no dental cleaning in the past year, 2006**



Source: Behavior Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

## Recommendations

To achieve meaningful change in the health of Asians/Pacific Islanders, data alone will not be enough to accomplish the task. The data about disparities must be linked to experience and wisdom about people, and power must be shared. The elimination of health disparities will require concerted effort by individuals and institutions in the public health community.<sup>189</sup>

The challenge for effectively eliminating health disparities and achieving parity in diverse AAPI [Asian American/Pacific Islander] communities requires a comprehensive, multi-level approach. This approach must incorporate a better understanding of disparities and move toward reducing and eliminating social, political, cultural and institutional barriers to health-care services and health promotion. And this approach ultimately must build community capacity and empower communities to respond in health and social policy arenas. Only with a combined approach of program and policy implementation on the local, regional and national levels can we realize the vision of health parity for Asians, Pacific Islanders and all communities.<sup>190</sup>

To begin to provide culturally competent services for the Asian/Pacific Islander community, the following recommendations are provided:

- “Improve data collection, analysis and dissemination for Asian-Americans and Pacific Islanders.”<sup>191</sup> Effective data must be collected in multiple languages from sufficiently large sample sizes.



- “Attempt to maintain and, if appropriate, re-establish traditional family structures according to cultural norms. Respect the family hierarchy.”<sup>192</sup>
- “Data needs to be gathered in a way that allows examination of distinct groups within the Asian-American population. Aggregated data tends to render invisible those groups that are most likely to face severe disparities (e.g., new immigrants).”<sup>193</sup>
- “It is important to gather information regarding specific ethnic background, language, immigration/refugee experience, acculturation level and problems, intergenerational conflicts, cultural strengths,”<sup>194</sup> barriers, lack of health insurance and community support.
- “Work collaboratively with various organizations and individuals within a particular community, as well as across different ethnic groups. This enhances and expands a group’s political power and increases the chance of achieving” ... “collective and individual missions.”<sup>195</sup>



## Community Highlight: Colorado Asian Health Education and Promotion

Many people from Asian and Pacific Island cultures emigrate from countries where preventive medicine is not the norm. They often view relationships as hierarchical and will defer to the leaders of their community and the senior members of their family before they will interact with Western health-care providers. In addition, Asian immigrants experience substantial language and cultural barriers that may impact their ability to benefit from traditional health-promotion programs. This provides a unique challenge for health-care providers in the screening and treatment of various diseases.

### Purpose

Early detection and prevention of chronic diseases such as cardiovascular disease, cancer, respiratory diseases and women’s health issues in the Asian-American Pacific Islander population (with an emphasis on the un/underinsured, low-income and limited English proficient individuals) can be best implemented by reaching these diverse communities in their own environment.

Colorado Asian Health Education and Promotion is a nonprofit organization committed to reducing health disparities in the Asian-American/Pacific

Islander population. Between February 2006 and July 2008, Colorado Asian Health Education and Promotion organized more than 95 health education and screening events, with direct screening of more than 8,000 people, and provided more than 5,000 free influenza vaccines, throughout the Front Range, but primarily in the metro Denver area.

The Colorado Asian Health Education and Promotion program employed the following procedures:

- development and application of disease-screening protocols and procedures while working with “community-in-place”
- development and implementation of follow-up coaching/education and caseworker intervention approaches for people at risk
- training community-trainers and navigators to use accepted evidence-based methods
- performing patient education for effective disease self-management and “coaching” for positive health behavior change

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### Findings

The following findings were obtained by working with a large number of the Asian-American/Pacific Islander population. While a large set of qualitative data exists, Colorado Asian Health Education and Promotion has obtained substantial quantitative data. As an example, data gathered on 2,148 participants in the program's intervention in 2008 provided the following information on community members:

- Average age: 50
- Gender: 59 percent female; 41 percent male
- Insurance status: 34 percent had no health insurance
- Language: 43.6 percent did not speak English
- Average family size: 3.4
- Average years in United States: 13.6
- Education: 29 percent had not graduated from high school
- Household income: 45 percent less than \$25,000 per year

Screening data showed the following:

- 44 percent had total cholesterol greater than 200.
- 25 percent had low HDL (less than or equal to 40).
- 24 percent had pre-diabetes.
- 16.5 percent had diabetes.
- 9.1 percent needed additional bronchodilation evaluation due to an abnormality.
- At least 7.4 percent needed and received a well-defined COPD evaluation.
- 31 percent had high blood pressure.
- 48 percent of adults more than 40 years of age exercised fewer than four hours a week.

Individuals who needed follow-up care were able to sign up with a case manager or navigator from Colorado Asian Health Education and Promotion to ensure appropriate provider referral, self-management training and treatment at the organization's Community Clinic.

### Conclusions

By partnering with the community and performing screenings and education by qualified people "of the community," the Colorado Asian Health Education and Promotion approach proved to be effective in reaching large numbers of the Asian-American/Pacific Islander population.

Many of the individuals reached had experienced barriers to accessing health services. Many did not have health insurance at the time of screening and also were in need of follow-up care. It is likely that such people would not normally be reached through traditional health screenings and risk-assessment procedures. There has been an increase in disease self-management, preventive care and communitywide awareness of early detection and prevention of chronic diseases, and improved access for treatment of uninsured Asian-Americans/Pacific Islanders due to the organization's community clinic.

### Limitations

The main barriers to providing screenings to the Asian-American/Pacific Islander community continue to be language, cultural differences, lack of understanding of the U.S. medical system, lack of trust and lack of health insurance. There was a great deal of participation by uninsured people and those with no access to mainstream medical services. Colorado Asian Health Education and Promotion found the dramatic increase in demand for screenings and cases identified for subsequent referral to be quite challenging.

Though Colorado Asian Health Education and Promotion provides a holistic and integrated set of services, the effectiveness of its program is limited by level of education and awareness of diseases within the Asian-American/Pacific Islander community. Colorado Asian Health Education and Promotion believes there must be better partnerships between community-based organizations (such as Colorado Asian Health Education and Promotion), public health groups and provider networks. Moreover, there continues to be an urgent need for data collection and early detection of diseases in these populations.

## Community Highlight: Asian Pacific Development Center

### Community-based participatory evaluation research project

The Asian Women's Health Program of the Asian Pacific Development Center was established to address cervical cancer disparities and access to cervical cancer screening services among Asian-American women living in the metro Denver Area. Through a partnership with the Spring Institute, 9Health and a multi-Asian ethnic community advisory board, the Asian Women's Health Program provides:

- health literacy classes to English as a Second Language (ESL) students, with a component focusing on women's health and the importance of breast and cervical cancer screening;
- educational workshops focusing on cervical cancer and health screening offered in community-based settings such as a mutual aid societies, churches or other ethnic community-serving agencies;
- medical interpreter training and training to health-care providers on how to work effectively with medical interpreters;
- cervical cancer screening through the Women's Wellness Connection Screening Sites and 9Health fair;
- navigation services to increase Asian women's access to cervical cancer screening through bilingual/bicultural navigators who support women through all stages of the medical care system.

### Results

Last fiscal year, as a result of the Asian Women's Health Program,

- health literacy classes reached more than 778 adults in ESL classes;
- 708 women were reached through educational workshops;
- 28 medical interpreters were trained;
- 19 health-care providers were trained;
- 527 women received more than 639 units of screening (Pap smears, mammograms, pelvic examinations) and 59 follow-up services.

### Community educational workshops

- More than 25 percent of the women who took part in the workshops and the evaluation survey (506) had not been screened for cervical cancer in the past three years or longer.
- Survey results suggest that women leaving the workshops understood the importance of participating in regular Pap tests.

### ESL classes

Asian and other students showed significant improvements in:

- knowing how to fill out medical history forms;
- making healthy lifestyle choices;
- knowing the names for different parts of the body and medical tests.

### Navigation

- Of the women reached through screening and navigation services, nearly 83 percent were uninsured and nearly 25 percent had never had a Pap smear. An additional 16 percent had not had a Pap smear in the last three years.

### Conclusion

The community advisory board provides input to the Asian Pacific Development Center, the Spring Institute and 9Health on culturally responsive programming and community-based implementation. The community advisory board also works with the Asian Pacific Development Center's research partner, OMNI Institute, to provide feedback on evaluation tools, input on how to implement these tools effectively and feedback on data analyses and reporting to ensure that the evaluation is responsive to project and community needs. Through this approach and offering multiple opportunities in the community for health promotion, the Asian Pacific Development Center was able to have a positive impact on many in the Asian-American/Pacific Islander population in a culturally acceptable way.

# Recommendations for Improving Health Disparities

THIS REPORT ILLUSTRATES THE FACTS that racial and ethnic health disparities are complex, and suggests that solutions to close the gap must be equally complex and will need to operate on many levels.

The following recommendations are not intended for one specific audience or agency, but rather they can be used to create programs and objectives within various sectors to promote collaborations to improve the public's health.

## Suggested Uses of this Report

- *Cite report data in grant applications.*
- *Cite report data in presentations to educate people about health disparities and their root causes.*
- *Use the data for planning and setting priorities.*
- *Use the data to set measurable objectives to develop a program.*
- *Use the recommendations in the report to advance your organizations' programs, policies and/or priorities.*
- *Use data and recommendations to advocate for the needs of communities of color.*

People of color, children, the working poor and those unable to work appear to be bearing the brunt of the health crisis in America.<sup>196</sup> The burdens, costs and consequences of their poor health outcomes affect not only those in their inner circle, i.e., family, friends, cities and states, but the fabric of society as a whole. This is a public health problem with significant implications for the health and vitality of our nation's work force and economy.<sup>197</sup> From a public health standpoint, racial and ethnic disparities threaten to hamper efforts to improve the nation's health. All members of a community are affected by the poor health status of its least healthy members. For example, infectious diseases, including those that are vaccine-preventable, know no racial/ethnic or socioeconomic boundaries.<sup>198</sup> The Center for Health and Public Policy Studies states that the public health system requires financial investments at every stage, research, prevention and treatment, to adequately address the most serious issues facing

the health of the public, including the elimination of health disparities and strengthening the nation's public health infrastructure to deal with existing and emerging health threats.<sup>199</sup>

Health policy (e.g., resources, commitment and social priorities) shapes individual and population health outcomes. Policy determines the way society organizes its resources, conducts its business and expresses its values. Yet, people in low-income communities of color historically have had limited access to the policy-making process despite the range of federal, state and local policies that directly shape their existence.<sup>200</sup>

The Interagency Health Disparities Leadership Council brings together representatives from community-based agencies, federal agencies, associations and state agencies outside of traditional public health whose engagement and partnership are essential to an effective health disparities elimination strategy. The council published its first monograph, *Eliminating Health Disparities: A Cornerstone for Solving Colorado's Health Care Crisis*. The council finalized the Colorado Strategic Plan to Eliminate Health Disparities. The completed plan was created with the goal of developing specific and tangible strategies that government agencies, community organizations and other organizations can implement in working toward the elimination of health disparities across Colorado. The plan focuses on six specific areas important in eliminating health disparities:

- Community Involvement/Community Partnerships
- Addressing the Determinants of Health
- Health Disparities Research/Evidence-Based Practices
- Policy and Legislation
- Work Force Diversity in Health Professions/Cultural Competence
- Sustainability

The monograph and strategic plan are available at [www.cdphe.state.co.us/ohd/](http://www.cdphe.state.co.us/ohd/)



## Improving the Social Determinants of Health

Recommendation:

- Plan and develop socioeconomic interventions that improve community's access to better housing conditions, improved nutritional choices, health care, goods and services.

Increasingly, evidence suggests that disparities in socioeconomic status have profound social consequences.<sup>201</sup> Socioeconomic status is central to eliminating health disparities because it is closely tied to health and longevity. At all income levels, people with higher socioeconomic status have better health than those at the level below them. Socioeconomic status also is a strong force behind differences in health among racial and ethnic groups.<sup>202</sup> In the United States, socioeconomic status is a strong predictor of health status by race and ethnicity, because of the association between income level and race.<sup>203</sup> An individual's socioeconomic status is closely tied to influential health factors such as behaviors, mental health, living environment, education level, access to resources and medical care.<sup>204</sup> However, disparities go beyond socioeconomic status. Indeed, interventions based solely on socioeconomic status indicators will be limited in their effectiveness. Addressing factors that either influence socioeconomic status or are a barrier is key to eliminating racial and ethnic health disparities. Policies and interventions to address these disparities must be considered in terms of the social and economic structure of the community. This type of holistic approach to health improvement supports people where they live.<sup>205</sup>

Examples of policies and programs that address barriers created by low socioeconomic status are increasing in Colorado's rural resort areas. These counties have service industry needs that are attracting a significant number of Spanish-speaking immigrants. The relatively lower-wage service jobs exist in areas with a relatively high cost of living. As a result, many county governments and private partners are working to ensure that housing and transportation needs are met for the service industry work force.

## Improving the Practice of Epidemiology

The Centers for Disease Control and Prevention, for example, has developed a "Reactions to Race" module for the Behavioral Risk Factors Surveillance System to better understand the relationships between race and health. The Colorado Behavioral Risk Factors Surveillance System used this module during the 2004 data collection year.

Researchers and public officials must work together to evaluate the effectiveness of disparities interventions and to document and publicize those programs and policies that yield positive results.<sup>206</sup> Currently, the University of Colorado Denver is evaluating the overall impact of the health disparities grants program.

### Recommendations for Epidemiology

- "Vigorously investigate the basis of observed race-associated differences in health outcomes.
- Interpret race-related findings instead of controlling for race or trying to explain it as a confounding variable.
- Conduct follow-up research if findings from initial research are unclear.
- Develop measurements of racism, especially institutionalized\* or personally mediated\*\* racism, and link them to the differences in health outcomes.
- Acknowledge the association between race and social class, which is perpetuated by institutionalized racism.
- Partner with communities to raise questions, generate hypotheses and share findings."<sup>207</sup>

Source: Camara P. Jones, "Race," Racism, and the Practice of Epidemiology," *American Journal of Epidemiology* 154, no. 4 (April 12, 2001): 303–304.

\* Institutionalized racism as defined by Dr. Camara Jones means "differential access to the goods, services, and opportunities of society by race."

\*\* Personally mediated racism according to Dr. Jones is defined as "prejudice and discrimination, where prejudice means differential assumptions about the abilities, motives, and intentions of others according to their race, and discrimination means differential actions toward others according to their race."

## Improving Cultural and Linguistic Competence

With numerous cultural competence resources available (e.g., books, videos, training), all people can pursue professional development to improve their cultural competence skills to work more collaboratively with communities they serve. Recommendations to expand cultural competence capacity include

- develop standards tailored to community needs, collect data to identify service needs, finance interpreter services and increase the supply of minority health providers;<sup>208</sup>
- incorporate funding for professional interpretation and translation services into grant applications;

*Example: As of 2008, the Minority Health Advisory Commission has integrated a capacity assessment into the Health Disparities Grant Program application. The capacity assessment section describes the applicant agency's understanding of the community's strengths, assets, barriers, cultural health beliefs, health literacy levels and linguistic barriers. Organizations should demonstrate meaningful involvement with the target population and inclusion of the target population with the development, planning, implementation, monitoring and evaluation of the proposed project.*

- develop minimum standards for culturally and linguistically competent health services; undertake data collection and research on successful practices; support education, training and development of a more competent work force; and monitor and enforce the effectiveness of implemented programs.<sup>209</sup>

*Example: The Colorado Department of Public Health and Environment's Limited English Proficiency Steering Committee recently worked in coordination with the Office of Health Disparities to streamline language services for the department. The Office of Health Disparities contracted with the Spring Institute's Interpreter Network of Colorado to provide four 16-hour interpreter orientations for department interpreters, local health agencies, public nursing and grantees. The goals of these orientations were to provide a theoretical framework to understand the work and role of an interpreter and to provide knowledge of professional criteria as well as concrete skills of interpretation, culture and advocacy that will allow interpreters to respond effectively in all interpreting*

*situations. Rural Solutions, a community-based organization on the Northeast Plains of Colorado, also contracted with the Spring Institute for a 40-hour interpreter training that was funded by the Health Disparities Grant Program.*

- Provide equitable and effective treatment in an appropriate manner to all people who enter the health-care system.<sup>210</sup> Culturally and Linguistically Appropriate Standards were issued by the Department of Health and Human Services Office of Minority Health to address this need. The Department of Health and Human Services also has published guidance for compliance with Title VI of the Civil Rights Act, which requires agencies that receive financial assistance from the federal government to take the necessary steps to ensure that individuals with limited English proficiency can meaningfully access programs and services. Four key elements for compliance with the guidelines include
  - an assessment of the needs of the population;
  - comprehensive written policies on language access (including hiring of bilingual staff and interpreters and arranging for telephone interpreters);
  - training of staff; and
  - monitoring of programs to ensure people with limited English proficiency are adequately served.<sup>211</sup>
- Allocate time and resources for cultural competence training.

The Office of Health Disparities has made cultural and linguistic competence a priority and developed a cultural competence training including Derald Wing Sue and David Sue's three competencies: awareness, knowledge and skill. The training is designed for professionals from any discipline who desire to expand their knowledge and incorporate strategies within their organization to address the needs of diverse populations. The purpose of the training is to encourage individuals to move from being culturally unaware to being culturally responsive. As Colorado's demographics continue to change, professionals should seek opportunities to increase their understanding of the individuals they serve and develop skills and establish policies to work effectively in multicultural settings.

## Improving Work Force Diversity and Leadership Development in the Health Professions

A means to achieving the aforementioned cultural and linguistic competence in an organization is the strategic recruiting, hiring and retaining of a diverse work force. While racial and ethnic minorities make up one-quarter of the nation's population, with this share growing to nearly a third by 2010, minorities account for fewer than 10 percent of the health work force. Minority populations are more likely to live in areas with chronic shortages of health professionals. The supply, composition and competence of the health work force are important ingredients in maintaining and improving the health status of individual patients and broader populations.<sup>212</sup>

■ In an effort to strengthen and expand pipeline programs, the Office of Health Disparities organized a Recruiting and Retaining Youth of Color Task Force. The purpose of the task force is to bring together community-based organizations, academic institutions, public health, students and health-care providers to streamline efforts for recruiting and retaining youth of color in the health field. The task force's mission is to lead a statewide collaboration for recruiting and retaining youth of color in the health professions. The task force identified the following goal areas:

- **Resource Inventory**—Conduct a Colorado Analysis for Improving the Diversity of the Health Professions.
- **Parent and Family Involvement**—Engage and educate parents and adult supporters of color about the academic process and the available resources for their children interested in the health and environmental professions.
- **Youth**—Engage youth of color through the K–20 system, local government entities, and nonprofits throughout Colorado in programs that inform, educate and prepare youth for a career in health and environmental sciences.
- **Systems/Policy Change**—Inform and engage decision-makers to address and support policy and systems change that will promote the recruitment and retention of a diverse health and environment science work force in Colorado.
- **Health Professional Support/Development**—Provide continuous support and career development opportunities to cultivate leadership and advancement of health professionals of color at all levels.
- Provide financial incentives for minority students and to institutions committed to increasing the graduation rates of those students to increase health service work force diversity. Provide substantial support for scholarships and loan repayment grants to minority and low-income health professions students willing to practice in underserved areas.



“An adequate supply of competent public health professionals is a vital component of the governmental public health infrastructure. A number of factors are having an adverse effect on the ability of state public health to ensure that there are sufficient numbers of these individuals to fill current and rapidly growing vacancies. Chief among these are that the current work force is rapidly aging and nearing retirement while there are few students and young professionals who are interested in careers at public health agencies. The combination has resulted in a critical narrowing of the public health work force pipeline in a majority of states. If left unchecked, time will exacerbate the crisis.”

—The Council of State Governments and  
the Association of State and Territorial  
Health Officials

- Support people of color in the health professions through strategic partnerships, leadership development, continuing education and networking activities, as well as organizations that educate policy-makers about public and institutional policies that promote health work force diversity.<sup>213</sup> For example, the Office of Health Disparities continues to support leadership development in communities of color by awarding scholarships for the Regional Institute for Health and Environmental Leadership program for health professionals of color to participate in the year-long advanced leadership training institute. This scholarship positions health professionals of color in the Rocky Mountain region's health and environmental leadership network. The office has awarded 29 scholarships since its inception.
- Maintain data and report about recruitment of medical students from underserved areas and encourage the development of undergraduate medical and other health professional clerkships in primary care combining health education, human services and community involvement.<sup>214</sup>

It is well-educated public health professionals who will effectively shape the programs and policies needed to improve population health during the next century. Only a small portion of the total public health work force receives any formal public health education.

- Schools of public health may play crucial roles via curriculum setting, distance learning, cross-training and continuing education for the larger public health work force.

- Integrate enhanced participation in the educational process by those in senior practice positions, namely, program managers; division chiefs; those with comparable experiences; and those with unique skills in areas such as communication, cultural competence, leadership development, policy and planning.<sup>215</sup>
- Create leadership development programs that intentionally recruit people of color and that incorporate individual leadership training, organizational capacity-building and constituency development.<sup>216</sup>
- Diversify health professions through such efforts as mentoring, developing a critical mass of under-represented minority (URM) health professions students and faculty, focal and consistent support from leadership, and providing social and psychological support.<sup>217</sup>

*Example: The Office of Health Disparities has provided internships for students interested in working in health disparities. Student interns have come from a variety of degree programs and higher education institutions around Colorado.*

## Improving Health Promotion and Preventive Care

### Community-Based Health Care/ Health Conditions

Recommendations for improving community-based health care include the following:

- Expand the number and capacity of community health centers, reduce financial barriers to obtaining primary care, and increase research efforts to address disparities in primary care for minority populations.
- Encourage provider-community prevention partnerships, target resources to populations disproportionately affected by disease, and implement screening and prevention programs targeted toward minority communities.<sup>218</sup> For example, the Health Disparities Grant Program has funded such programs as Salud Family Health Centers and Clinica Tepeyac. Both programs incorporated screenings with education centered around heart health including diabetes.
- Implement and evaluate culturally appropriate patient education programs to increase patients' knowledge of how to best access care and participate in treatment decisions.<sup>219</sup>



- Implement patient navigator and/or outreach worker models to effectively address the needs of disparate populations with chronic diseases.

## Disparities in Mental Health

The presence of mental illness predicts adverse physical health outcomes. Addressing disparities in mental health care also can address general health outcomes for those suffering mental illness. The tables below outline corrective measures to address these needs:

**Table 1.1: Corrective Measures for Mental Health Disparities<sup>220</sup>**

- Reduce stigmatization of mental illness through education.
- Enhance communication-based social skills training for those with mental illness.
- Improve access to and availability of mental health services in underserved communities.
- Enhance numbers for providers to the underserved through targeted recruitment.
- Increase education to improve treatment compliance.

**Table 1.2: Corrective Measures for Physical Health Disparities in Patients with Mental Illness<sup>221</sup>**

- Correct educational deficits on the part of health-care deliverers.
- Improve cultural competence of health-care providers.
- Provide “health-care extenders” to address shortages of providers in underserved communities.
- Provide “one-stop shopping” for medical and psychiatric interventions.
- Emphasize evidence-based prevention and effective interventions.

*Example: The Colorado Trust’s Report on Mental Health Disparities in Colorado was developed in 2006 to inform its ongoing grant-making activities related to advancing quality mental health care for the people of Colorado. The unique report integrates short vignettes, based on true stories or composites of stories shared. The stories highlight some of the serious issues that communities of color face in accessing and then in receiving mental health care that is understanding of, appropriate for and responsive to their specific cultural and individual needs. To view the full report visit [www.thecoloradotrust.org](http://www.thecoloradotrust.org).*

## Health Insurance, Medicaid and Medicare

### America’s Safety Net: Intact but Endangered<sup>222</sup>

To a great extent, the costs and consequences of uninsured and unstably insured populations are hidden and difficult to measure. Financial costs incurred by those without coverage may be covered by payments for the health care of those with insurance or paid by charities and taxpayers, and the health effects may be absorbed by families in the form of diminished physical and psychological well-being, productivity and income. Thus, health insurance continues to serve the function of spreading risk even as it increasingly finances routine care. The lack of access to insurance increases population risks to morbidity from treatable diseases.

There are a few examples of communities in which core safety net providers have integrated into a seamless system (e.g., Denver Health).<sup>223</sup>

Recommendations for strengthening the safety net system include the following:

- Support safety net hospitals and providers in the community (e.g., provide funding for community-recommended services, volunteer to help transport patients to and from clinics).
- Health services programs should ensure that underserved clients receive all services for which they are eligible.
- Health services programs should collect and analyze patient data to improve services for the underserved.

There have been few studies on what interventions might serve to correct the disparity of access to quality health care for communities of color. However, for one such subpopulation, an article in the *Journal of the National Medical Association* identified the three modifiable factors of poverty, uninsurance and having a primary care medical home that have a dramatic effect on patterns of care for African-American patients and could be independently targeted for intervention. Multivariate analysis suggests that each of the three “disadvantaged” criteria contributes independently to the variation in use of health-care services within the African-American population. While poverty is a fundamental root cause, data suggest that significant reductions in disparities might be realized with focused interventions to achieve universal health insurance coverage and universal access to a primary care medical home.<sup>224</sup>

## Denver Health and Hospital Authority: Integration of Safety Net Systems

There are two major safety net systems in the United States: community health centers and safety net hospitals. In most cities, these two components remain separate from each other. Fortunately for Denver, leaders integrated the community health centers with the hospital system from the beginning. Denver Health's integrated system provides care for all populations through an acute care hospital, trauma center, 911 emergency medical response system, public health department, poison and drug center, nurse line, and center for medical response to terrorism.

Denver Health is Colorado's largest Medicaid provider. In 2008, Denver Health provided \$318 million in charity care for the uninsured. Care is provided for special populations primarily through nine neighborhood family health centers, 12 public school clinics, a nonmedical detoxification center for public inebriates, and a correctional care facility for prison and jail inmates.

For Denver Health's racial and ethnic client populations, there are no disparities in several health outcome areas. For example,

- Survival rates are among the highest in the country among academic hospitals;
- 88 percent of Hispanic and 81 percent of African-American female clients have had Pap smears at the appropriate time;
- 82 percent of childhood immunizations are up to date;
- 51 percent of Hispanic and African-American patients have their blood pressure under control, compared to the national average of 30 percent for all populations.

*Sources: Bobbi Barrow, Chief Communications Officer, Denver Health and Hospitals*

## Research and Promising Practices

Improve research, surveillance, monitoring and evaluation to provide better data and tools to address health disparities. Major inadequacies in data collection hamper efforts within individual states and hinder efforts to understand differences among states.<sup>225</sup>

Enhance surveillance systems and supply necessary resources to enable the generation of reliable estimates for minority populations.

Seize the opportunities and fulfill the critical role that public and private agencies have in fostering collection, analysis and use of minority health data for the identification and amelioration of disparities.<sup>226</sup> The accepted national standard for data collection is the race and ethnicity categories in the Office of Management and Budget's Directive 15.

Focus on conceptualizing and measuring institutionalized racism to learn how this relates to minority populations' health behaviors, per Camara P. Jones, MD, MPH, PhD, CDC research director on social determinants of health.<sup>227</sup> The Centers for Disease Control and Prevention's (CDC) Measures of Racism Working Group is researching whether people report differential treatment based on their race and whether this affects their use of health services and their chronic disease health outcomes.

Researchers must talk with people in the community to get their personal stories and opinions to fully understand how stress, racism and health are related. Such descriptions (qualitative studies) provide a context to help researchers understand how social interactions create health outcomes.<sup>228</sup> Simply counting deaths, cases of disease and other events will not give a complete picture of health disparities.

An example of a project that has used research to improve programmatic capacity is the School Environment Project to increase physical activity and healthy eating for elementary children in the San Luis Valley. This project built on previous and existing studies of diabetes and obesity in the San Luis Valley. The project partners were the Rocky Mountain Prevention Research Center, the School Environment Project Steering Committee and the San Luis Valley community. A community-based approach was taken because it was recognized that community members had an understanding of issues facing their schools and what would work in their setting, and they wanted to make decisions about improvements to their schools. This project sought to foster community ownership and empowerment among team members including power-sharing, capacity-building through mentoring and learning exchanges, and group participation in all phases of the project.

**Recommendation to move toward evidence-based practice:**

- Infuse practice with evidence-based interventions and share results of community-based research and promising program strategies with others in the field and in the community.

The Office of Minority Health's Framework for Improving Racial/Ethnic Minority Health and Eliminating Racial/Ethnic Health Disparities was created to guide and organize the systematic planning, implementation and evaluation of the office's efforts and other efforts aimed at improving racial/ethnic minority health and reducing and, ultimately, eliminating racial/ethnic health disparities. Efforts include those aimed directly at racial/ethnic minority health problems and also those that support a "systems approach" to addressing such problems across the country. This systems approach previously has not been available in efforts targeted toward racial/ethnic minority health and health disparities issues. The strategic framework provides a rationale for efforts conducted and supported, support for increased quantity and enhanced quality of evaluations of the effectiveness of efforts, and a basis for enhancing effectiveness and efficiency. To view the framework, please visit <http://www.omhrc.gov/npa/templates/content.aspx?ID=78>.

## Overarching Recommendations

Social and behavioral factors have a broad and profound impact on health across a wide range of conditions and disabilities. A better balance is needed between the clinical approach to disease (presently the dominant public health model for most risk factors) and research and intervention efforts that address generic social and behavioral determinants of disease, injury and disability.<sup>229</sup>

Rather than focusing interventions on a single or limited number of health determinants, interventions on social and behavioral factors should link multiple levels of influence, (i.e., individual, interpersonal, institutional, community and policy levels).<sup>230</sup>

- Organizations should adopt the goals and strategies from the Colorado Interagency Health Disparities Leadership Council's strategic plan *Working Together to Address Racial and Ethnic Health Disparities in Colorado*. (<http://www.cdph.state.co.us/ohd/08HealthDisparitiesStrategicPlan.pdf>)
- The Office of Health Disparities invites organizations to report on their successfully implemented best practices, challenges and ideas for private and public partnerships.

The Office of Health Disparities reminds organizations to keep the overarching issues of health disparities in mind when developing and implementing programs and providing equitable services to the community.





# Appendix

## Data sources and accuracy

### Introduction

THE DATA FOR THIS REPORT are drawn primarily from data gathered by the Colorado Department of Public Health and Environment, working in collaboration with the federal Centers for Disease Control and Prevention and from the U.S. Census Bureau. These information sources have evolved over the years to meet the changing needs of data analysts and the general public for accurate information on the characteristics of residents, their health status and related subjects. This appendix provides a brief discussion of the nature of these data sources. Special emphasis is placed on the how these data sources classify people by race and ethnicity and on the limitations of these data sources related to providing accurate health and demographic information on the health and demographic characteristics of the four communities of color that are the focus of this report.

### U.S. Census Bureau

The U.S. Census Bureau conducts the decennial census of population and periodic surveys including the American Community Survey. The decennial census is a constitutionally required effort to enumerate the entire population of the United States. All residents are asked to identify their race and ethnicity.\* Five broad racial groups are identified: American Indian or Alaska native, Asian, Black or African-American, native Hawaiian or other Pacific Islander, and White.\*\* Beginning with the 2000 census, respondents were provided an opportunity to identify with more than one racial group. A separate question asks respondents whether they are “Hispanic or Latino.”\*\*\* These same standards now apply to surveys conducted by the Census Bureau and other federal agencies, including the American Community Survey.

The decennial census provides the most accurate information available on the state’s population and its characteristics. Nevertheless, like all statistical enterprises involving human beings, it is subject to errors of several types. One that has drawn increased attention in recent years is the undercount. The Census Bureau uses a variety of techniques to estimate the magnitude of the net undercount. Table A1 provides estimates of the net undercount for the population as a whole and certain “race/origin” groups. The net undercount for communities of color ranges from 1 percent to nearly 5 percent.\*\*\*\*

**Table A1. Net undercount, 2000 Census, U.S.**

	Net undercount (percent)
Total	1.18
Race/Origin	
Non-Hispanic White	0.67
Non-Hispanic Black	2.17
Non-Hispanic Asian	0.96
Hispanic	2.85
American Indian, Off Reservation	3.28
American Indian, On Reservation	4.74

Source: U.S. Bureau of the Census, 2004, COVERAGE MEASUREMENT FROM THE PERSPECTIVE OF MARCH 2001 ACCURACY AND COVERAGE EVALUATION, Census 2000 Topic Report No. 4

The American Community Survey is a sample survey of approximately 3 million U.S. households conducted annually since 1996. (Roughly 30,000 households in Colorado are surveyed each year.) It provides “rolling estimates” of detailed social and demographic characteristics that used to be available only once every 10 years. As a sample survey, it is subject to sampling

\* Standards for gathering and reporting information on race and ethnicity are promulgated by the U.S. Office of Management and Budget. See “Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity,” October 30, 1997. <http://www.whitehouse.gov/omb/fedreg/1997standards.html>

\*\* The definitions of these five groups are as follows:

- **American Indian or Alaska native:** A person having origins in any of the original peoples of North and South America (including Central America), and who maintains tribal affiliation or community attachment.
- **Asian:** A person having origins in any of the original peoples of the Far East, Southeast Asia or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand and Vietnam.
- **Black or African-American:** A person having origins in any of the Black racial groups of Africa. Terms such as “Haitian” or “Negro” can be used in addition to “Black” or “African-American.”
- **Native Hawaiian or Other Pacific Islander:** A person having origins in any of the original peoples of Hawaii, Guam, Samoa or other Pacific Islands.
- **White:** A person having origins in any of the original peoples of Europe, the Middle East or North Africa.

\*\*\* A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race. The term “Spanish origin” can be used in addition to “Hispanic or Latino.”

\*\*\*\* Standards for gathering and reporting information on race and ethnicity are promulgated by the U.S. Office of Management and Budget. See “Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity,” October 30, 1997, <http://www.whitehouse.gov/omb/fedreg/1997standards.html>.



error, which tends to be large for small populations. As a result of the limited number of observations gathered through 2006, the Census Bureau does not publish estimates from the American Community Survey for areas or groups below 65,000. Thus, estimates from the 2006 American Community Survey are not available for 25 of Colorado's 64 counties or for American Indians residing in Colorado.

The decennial censuses and the more recent American Community Survey are the source of most of the demographic information about Colorado's communities of color included in this report.

## Colorado Demography Office

The Colorado Demography Office, working in cooperation with the U.S. Bureau of the Census and local governments in Colorado, prepares annual estimates of the population by age and sex. These estimates are used as denominators in calculating vital statistics rates.\*

## Vital Statistics

The bulk of the health indicators in this report come from the vital statistics system, which includes detailed information on births and deaths of Colorado residents compiled from information provided on birth and death certificates. The way individuals are classified by race and ethnicity in the vital statistics system has been explained by the Colorado Department of Public Health and Environment as follows:

Information on race is determined by responses to race checkboxes on the various certificates and reporting forms. Ethnic backgrounds are determined by responses to Hispanic origin checkboxes. The following race/ethnicity categories are used in this report to approximate the groups found among the Colorado population: White non-Hispanic, White Hispanic, Black, American Indian, and Asian/Pacific Islander. The Black, American Indian, and Asian/Pacific Islander categories are not divided by origin and thus may or may not be of Hispanic origin. Race/ethnicity statistics for live birth and spontaneous fetal death are based on race of mother unless otherwise noted. Race/ethnicity of mother has been adopted throughout the United States as the category for natality and pregnancy issues since 1989. Infant mortality rates (number of infant deaths per 1,000 live births) by race/ethnicity are calculated using

the race/ethnicity of the infant in the numerator (number of infant deaths) and the race/ethnicity of mother in the denominator (number of live births). This method was adopted by the National Center for Health Statistics in 1989, and in order to be comparable to national statistics, Colorado has also adopted this method of calculating infant mortality rates. On death certificates, race/ethnicity is at times determined by funeral directors and/or coroners by observation rather than by interviewing the next of kin. This may result in misreporting or underreporting of deaths to members of racial or ethnic minority groups.<sup>231</sup>

An excerpt from a recent article by Melonie Heron of the National Center for Health Statistics provides further insight into the challenges of obtaining accurate vital event data for race and ethnic groups:

*Quality of race and Hispanic origin data*—Death rates for Hispanic, AIAN, and API people should be interpreted with caution because of misreporting of race on the death certificate (41,42,43). A number of studies have been conducted on the reliability of race reported on the death certificate by comparing race on the death certificate with that reported on another data collection instrument, such as the census or a survey. Differences may arise because of differences in who provides race information on the compared records. Race information on the death certificate is reported by the funeral director as provided by an informant or in the absence of an informant, on the basis of observation. In contrast, race on the census or on the Current Population Survey is obtained while the individual is alive and is self-reported or reported by another member of the household familiar with the individual and, therefore, may be considered more valid. A high level of agreement between the death certificate and the census or survey report is essential to assure unbiased death rates by race.

Studies (42,44) show that a person self-reported as AIAN, API, or Hispanic origin on census or survey records was sometimes reported as White on the death certificate. The net effect of misclassification is an underestimation of deaths and death rates for races other than White and Black and for Hispanic origin. In addition, undercoverage of some minority groups in the census and resultant population estimates, introduces biases into death rates by race and Hispanic origin (41,45,46). For a more detailed discussion, see "Deaths: Final Data for 2004" (3).<sup>232</sup>

Indicators in this report derived from birth and death certificates include the following:

- Teen fertility
- Low birth weight
- Infant mortality
- Perinatal mortality
- Life expectancy
- Leading causes of death
- Age-adjusted death rates

\* These estimates, including a discussion of estimation methodology, are available at <http://dola.colorado.gov/dlg/demog/index.html>. See also Bol K., 2008. "Colorado's Population and Vital Statistics—Recent Innovations and Recommendations," Colorado Department of Public Health and Environment, Health Watch #68.

## Behavioral Risk Factor Surveillance System (BRFSS)

The Colorado Behavioral Risk Factor Surveillance System is a system of telephone surveys sponsored by the Centers for Disease Control to monitor lifestyles and behaviors related to the leading causes of mortality and morbidity. The Colorado survey has been conducted monthly since January 1990. Interviews with 5,979 adults aged 18 and over were completed in 2005. The sample size has grown over the years and in 2008, approximately 12,000 surveys were completed. All households with land line telephones have a chance of being selected to participate in the survey, with individual survey respondents being randomly selected from each successfully contacted household.

In conformance with federal guidelines, respondents self-identify regarding their race and ethnicity. One question asks whether they are “Hispanic or Latino.” A subsequent question asks whether they are “White, Black or African-American, Asian, native Hawaiian or other Pacific Islander, American Indian or Alaska native, or other.” In this report, people identifying as “Hispanic or Latino” are identified as “Latino” regardless of their response to the race question. For the sake of brevity and to facilitate labeling of graphs, responses from individuals who would properly be labeled “White, non-Hispanic,” “Black or African-American, non-Hispanic,” are simply labeled “White,” “Black,” “Asian” and “American Indian.” The numbers of “native Hawaiians,” “other Pacific Islanders” and “Alaskan natives” residing in Colorado are too small to yield reliable information except for the decennial census, which contains detailed information on the numbers of each of these groups at the national, state and local levels.

The Colorado Behavioral Risk Factor Surveillance System also relies on self-reports of health risks, behaviors and status, which may differ from assessments made by a trained clinician.

For this report, the results from the 2004, 2005, 2006 and 2007 surveys were pooled to increase sample size to reduce errors in estimates for communities of color. The resulting estimates will differ from other published Behavioral Risk Factor Surveillance System estimates which typically pool only two years of data.

Behavioral Risk Factor Surveillance System indicators used in this report include the following:

- Physical activity
- Consumption of five fruits and vegetables per day
- Smoking
- Binge drinking

- Asthma prevalence
- Diabetes prevalence
- High blood pressure prevalence
- Obesity prevalence
- Adult oral health

## Child Health Survey

The Colorado Child Health Survey is a follow-back survey to the Behavioral Risk Factor Surveillance System. Behavioral Risk Factor Surveillance System respondents who have a child between the ages of 1 and 14 are identified and are asked to complete a survey about one of their children at a later date. Questions similar to the Behavioral Risk Factor Surveillance System are asked of the parent about the child’s behavior.

Child health survey indicators used in this report include the following:

- Childhood obesity
- Oral health (children)

## Pregnancy Risk Assessment Monitoring System

The Pregnancy Risk Assessment Monitoring System is a population-based risk factor surveillance system sponsored by the Centers for Disease Control designed to identify and monitor behaviors and experiences of women before, during and after pregnancy. Information is collected by surveying a sample of women who recently have given birth. Findings from the Pregnancy Risk Assessment Monitoring System survey are used to develop and assess perinatal health programs in public and private health-care settings.<sup>233</sup>

Indicators in this report derived from the Pregnancy Risk Assessment Monitoring System include the following:

- Unintended pregnancy
- Stress during pregnancy
- Drinking during the last three months of pregnancy
- Smoking during the last three months of pregnancy

## Disease Incidence

### Cancer

The Colorado Central Cancer Registry is the statewide cancer surveillance program of the Colorado Department of Public Health and Environment. 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) under Cooperative Agreement U58000848. Information is collected from all Colorado hospitals, pathology labs, outpatient clinics, physicians solely responsible for diagnosis and treatment, and state Vital Statistics. Pertinent 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.<sup>234</sup>

### Sexually Transmitted Diseases

The HIV/STD Surveillance Program conducts surveillance and research to characterize and track sexually transmitted disease/HIV infections in Colorado. There are three units within this program: 1) HIV/STD Surveillance, 2) HIV Incidence, 3) STD/HIV Registry. The program ensures compliance with and completeness of sexually transmitted disease/HIV reporting; investigates HIV cases with no identified risk; provides blood-borne pathogen information to first responders, health-care workers, law enforcement and corrections personnel; and conducts HIV incidence and prevalence studies. The Registry Unit collects, compiles and disseminates information on gonorrhea, syphilis, chlamydia and HIV infection, and contacts health-care providers to ensure that clients receive adequate treatment. Staff identifies disease outbreaks and coordinates the response by the Colorado Department of Public Health and Environment, collaborating agencies, and health-care providers. The program synthesizes data from multiple sources to develop annual Colorado sexually transmitted disease/HIV epidemiological profiles. These reports are used to inform and guide the state STD/HIV programs and are disseminated to care providers, local health departments, community planning groups, researchers and the public.<sup>235</sup>

### Tuberculosis and Hepatitis

Tuberculosis and hepatitis data are both considered reportable diseases. Physicians, hospitals or other health-care staff must report cases of tuberculosis and hepatitis A, B and C. The hepatitis program's current activities include surveillance for acute and chronic hepatitis B and hepatitis C, perinatal hepatitis B case management, hepatitis immunization for high-risk populations, hepatitis C testing, professional and public education, and referral services for people currently infected.

## Small Frequencies and Estimate Accuracy

Some of the events underlying several of the estimates in this report are relatively rare, such as interviews with members of communities of color or deaths from specific diseases. This small number or small frequency problem compromises the accuracy of estimates based on infrequent events. The Colorado Department of Public Health and Environment has prepared the following statement about the challenge of small frequencies. While it is addressed to small frequencies that occur for geographic areas with small populations, it also pertains to small groups such as communities of color for the state as a whole.

Many Colorado counties have small populations and few vital events. Interpretation of vital statistics in such areas may be difficult. Analysis of year-to-year changes or comparison with other places are hampered by a tendency for rates and percentages to fluctuate widely. Combining multiple years of data and/or using average annual data provide a more reliable indicator of what is true for an area. Combining data for places with small numbers of events and small populations into regions is another way of improving the general usefulness of data. Both average annual statistics and multi-county data are included in this report for selected events.

Testing for statistical significance is another way to address the problem of small frequencies. Although statistical significance is not used in this report, a brief explanation is presented. Numbers of vital events reported for an area represent complete counts and are not subject to sampling error, yet they may be affected by the random variation in the number of events involved. When the numbers are used for analytical purposes, such as the comparison of rates for different areas, the number of events that actually occurred may be considered as one of a large series of possible results that could have arisen under the same circumstances. The probable range of values may be estimated from the actual figures according to certain statistical assumptions. In general, distribution of vital events may be assumed to follow the binomial distribution. Estimates of standard errors and tests of significance under this assumption are described in most standard statistic text books. When the number of events is large, the standard error, expressed as a percent of the number or rate, usually is small. However, when the number of events is small (i.e., fewer than 100) and the probability of such an event is small, considerable caution must be used in interpreting the data.<sup>236</sup>

# Endnotes

<sup>1</sup> Colorado Department of Public Health and Environment, *Profile of Health Disparities Among Communities of Color*, 2001.

<sup>2</sup> Colorado Department of Public Health and Environment, Office of Health Disparities. *Racial and Ethnic Health Disparities in Colorado 2005*.

<sup>3</sup> U.S. Department of Health and Human Services, *Healthy People 2010*. 2<sup>nd</sup> ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. (Washington, D.C.: U.S. Government Printing Office, November 2000).

<sup>4</sup> J. E. McDonough et al., *A State Policy Agenda to Eliminate Racial and Ethnic Health Disparities*, Report of the Commonwealth Fund (June 2004).

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

<sup>7</sup> "National Standards on Culturally and Linguistically Appropriate Services in Health Care," Federal Register: December 22, 2000, vol. 65, no. 247, 80865–80879.

<sup>8</sup> Grantmakers in Health (GIH), "Promoting Diversity in the Health Workforce," *GIH Bulletin*, November 19, 2001.

<sup>9</sup> Ibid.

<sup>10</sup> Michael McCally, The Society and Population Health Reader: Income inequality and health. *New England Journal of Medicine* 342, January 20, 2000, 221, <http://content.nejm.org>.

<sup>11</sup> Brian D. Smedley and Adrienne Y. Stith, *The Right Thing to Do, The Smart Thing to Do: Enhancing Diversity in the Health Professions* (Washington, D.C.: Institute of Medicine, National Academies Press, 2001), 6.

<sup>12</sup> McDonough et al., *A State Policy Agenda to Eliminate Racial and Ethnic Health Disparities*.

<sup>13</sup> Brian D. Smedley and Adrienne Y. Stith, *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care* (Washington, D.C.: Institute of Medicine, Board on Health Sciences Policy, National Academies Press, 2003).

<sup>14</sup> Ibid.

<sup>15</sup> Ibid.

<sup>16</sup> McDonough et al., *A State Policy Agenda to Eliminate Racial and Ethnic Health Disparities*.

<sup>17</sup> Ibid.

<sup>18</sup> Ibid.

<sup>19</sup> Brian D. Smedley and S. Leonard Syme, Eds., *Promoting Health Intervention Strategies from Social and Behavioral Research* (Washington, D.C.: Institute Of Medicine, National Academies Press, 2000), 7.

<sup>20</sup> Ibid.

<sup>21</sup> Colorado Department of Public Health and Environment, *Racial and Ethnic Health Disparities in Colorado 2005*.

<sup>22</sup> U.S. Department of Health and Human Services, *Healthy People 2010*.

<sup>23</sup> United Health Foundation, 2008. America's Health Rankings 2008, Colorado State Snapshot, <http://www.americashealthrankings.org/2008/index.html>.

<sup>24</sup> Ibid.

<sup>25</sup> Joel C. Cantor, Sc.D. et al., *Aiming Higher: Results from a State Scorecard on Health System Performance*, The Commonwealth Fund, 2007, [http://www.commonwealthfund.org/publications/publications\\_show.htm?doc\\_id=494551](http://www.commonwealthfund.org/publications/publications_show.htm?doc_id=494551).

<sup>26</sup> The Colorado Health Foundation, *The Colorado Health Report Card*, 2008, <http://www.coloradohealth.org/reportcard2008.aspx?terms=report+card>.

<sup>27</sup> Alec Irwin and Elena Scali, *Action on the Social Determinants of Health: Learning From Previous Experiences* (World Health Organization, 2005), [http://www.who.int/social\\_determinants/resources/action\\_sd.pdf](http://www.who.int/social_determinants/resources/action_sd.pdf).

<sup>28</sup> R. Klitzman, "HIV and the Law: Integrating Law, Policy, and Social Epidemiology," *Journal of Law, Medicine, and Ethics* (December 2002).

<sup>29</sup> D.R. Jones et al., "Affective and Physiological Responses to Racism: The Roles of Afrocentrism and Mode of Presentation," *Ethnicity & Disease* 6 (Winter/Spring 1996): 109–122.

<sup>30</sup> D.R. Williams et al., "Racial Differences in Physical and Mental Health: Socioeconomic Status, Stress, and Discrimination," *Journal of Health Psychology* 2 (1997): 335–351.

<sup>31</sup> "Episode 1: In Sickness and In Wealth," *Unnatural Causes...is inequality making us sick?* DVD, directed by Larry Adelman (2008; San Francisco, CA: California Newsreel, 2008).

<sup>32</sup> Jill A. Hunsaker, MPH et al., *Profile of Health Disparities Among Communities of Color Colorado, 2001*. Colorado Department of Public Health and Environment.

<sup>33</sup> Ibid.

<sup>34</sup> Ibid.

<sup>35</sup> Ibid.

<sup>36</sup> C. Jones, "Levels of Racism: A theoretic framework and a gardener's tale," *American Journal of Public Health* (August 2000); 90 (8):1212–1215.

<sup>37</sup> O. Solar and A. Irwin, *Commission on Social Determinants of Health: A Conceptual Framework for Action on the Social Determinants of Health*, World Health Organization, 2007, [http://www.who.int/social\\_determinants/resources/csdh\\_framework\\_action\\_05\\_07.pdf](http://www.who.int/social_determinants/resources/csdh_framework_action_05_07.pdf).

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<sup>39</sup> Ibid.

<sup>40</sup> Ibid.

<sup>41</sup> Canada. 1999 Healthy Development of Children and Youth: The Role of the Determinants of Health.

<sup>42</sup> Ibid.



<sup>43</sup> Ibid.

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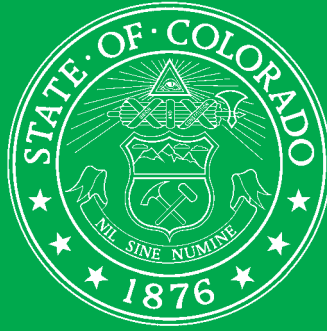
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## Colorado Department of Public Health and Environment

“To protect and improve  
the health and environment  
of the people of Colorado.”

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