West Central Public Health Partnership

2007 Regional Health Needs Assessment

Delta * Gunnison * Hinsdale * Montrose *
Ouray * San Miguel

WEST CENTRAL PUBLIC HEALTH PARTNERSHIP
2007 REGIONAL HEALTH NEEDS ASSESSMENT

Executive Summary

Rural areas of America have traditionally been challenged to adequately support the health care needs of their residents. With the goal of facilitating cooperation among adjacent rural communities, the West Central Public Health Partnership (WCPHP) was formed in 2006, through a grant from The Colorado Trust, for the purpose of providing more efficient and more effective health care coverage in Planning and Management Region 10. The WCPHP comprises public health and environment personnel from Delta, Gunnison, Hinsdale, Montrose, Ouray and San Miguel counties in west central Colorado.

Completing a regional health assessment is one of four initial goals for the WCPHP. The specific objectives of the needs assessment are to:

- Provide baseline measures on key indicators describing health trends in the region;
- Provide a tool for public officials to develop informed decision regarding policies that maintain or improve the health of people in the region; and to
- Provide the public with information about health care resources and information for informed decision making and advocacy.

The *Regional Health Needs Assessment:2007* is linked to indicators and goals contained in the *Healthy People 2010* report issued by the US Department of Health and Human Services. The regional needs assessment is based primarily on data available from various state agencies. It is also based on primary data provided by key informants within the Partnership and individuals who participated in the *2006 Health Care Needs Assessment* prepared by the Joffit Group for Ouray, San Miguel and the west end of Montrose County.

County level data was obtained whenever possible. When county level data was not available, regional data was used. Indicators were selected, in part, based on the consistency of available data across county lines.

KEY FINDINGS

A primary objective of the needs assessment is to identify priority areas deserving attention in the future development of health services and infrastructure. Priorities were identified through two sources: a survey of key informants and an analysis of indicators.

Priorities Identified by Key Informants

An important part of this needs assessment was a survey of key informants from all of the participating counties regarding their perceptions of health priorities. Informants were asked to select priority areas from an extensive list of health concerns. In addition, a health needs assessment for San Miguel, Ouray and the west end of Montrose counties conducted by the Joffit Group in 2006 also surveyed key informants. Responses from that study are included in the last row of Table A below.

Since informants were working off of a broad list of health concerns, their responses were collapsed into the eight areas identified in Table 1. For example, Delta County indicated: "medical workforce issues;" "fragile public health infrastructure," and "allocation of limited resources," suggesting that health providers are in short supply. Likewise, Gunnison County indicated a "lack of behavioral health services for substance abuse and alcohol," suggesting a similar shortage of providers.

Table A: Public Health Priorities Identified by Key Informants

	DELTA	GUNNISON	HINSDALE	MONTROSE	WEST MONTROSE/ OURAY/ SAN MIGUEL*
Substance abuse		✦	✦	✦	✦
Access to care/health insurance	✦		✦	✦	
Mental health		✦		✦	✦
Dental health			✦		✦
Senior services	✦				✦
Provider shortage	✦	✦			
Chronic disease prevention/treatment				✦	
Child well-being		✦			

* Information provided by the Joffit Group study (2006)

The highest priority areas (in the shaded columns) were: substance abuse services (4); access to care and health insurance coverage (3); and mental health services (3). These priority areas should be compared with those identified in the section that follows on "*Priorities Identified Through Indicators.*"

County staff working on issues of environmental health were also asked to prioritize their greatest areas of concern (see Table 2). All of the region's counties listed water quality and waste water as a high priority area. The next highest priority was food safety and consumer protection (3 counties).

Table 2: Environmental Health Priorities Identified by Key Informants

	DELTA	GUNNISON	HINSDALE	MONTROSE	OURAY	SAN MIGUEL
Water quality/waste water	✦	✦	✦	✦	✦	✦
Food safety/consumer protection	✦	✦		✦		
Air quality			✦			✦
Radon testing & education			✦	✦		
Environment/Sustainable development	✦	✦				
West Nile Virus	✦					
School chemical safety				✦		

Priorities Identified Through Indicators

In order to highlight key findings that deserve special attention by decision makers, conclusions from each section of this report are characterized in terms of positive and negative trends. Positive and negative trends are indicated below by arrows. An up arrow indicates an improving trend (e.g., better quality in some aspect of the environment), while a down arrow indicates a declining trend (e.g., more environmental pollution). A sideways arrow means that there hasn't been a change in trend; however, it does not indicate if the current condition is positive.

➢ **Access to Care**

↑ Positive Trends
⇧ Low income residents of five counties (excluding Ouray) have **access to a sliding fee scale or free primary care clinic or system**, though services may not be adequate for the needs of the population.
↓ Negative Trends
⇩ Region 10 has the lowest percentage of adults with **health insurance** in the state; it is also below the national average for coverage. ⇩ Young adults 18-24 years of age are least likely to have **health insurance**. ⇩ Access to adequate **dental sliding fee care and low cost dental care** is extremely limited or non-existent in most counties in the region. ⇩ Lack of **transportation** hinders access to services in all rural communities in the region.

➢ **Maternal and Child Health**

↑ Positive Trends
⇧ The percentage of women who **smoked during pregnancy** has shown a steady decrease. ⇧ The percentage of women who received adequate **prenatal care** has increased, but is still lower than the HP 2010 goal. ⇧ The rate of **unintended pregnancy** decreased slightly and was lower than the state rate in 2004-05. ⇧ A higher percentage of women in Region 10 than in the state initiated **breastfeeding** and breastfed nine or more weeks. ⇧ The **death rate among children aged 1-14** has decreased.

Maternal and Child Health (continued)

⇩ Negative Trends
⇩ The **infant mortality rate** has not decreased and, with the exception of Montrose, is higher than the state average.
⇩ The rate of **low birth weight** has increased and is higher than the HP 2010 goal.
⇩ The percentage of **unintended births** remains high despite the availability of emergency contraception and sliding fee scale family planning services in each of the counties. Note: Ouray residents must travel to Montrose for services and Hinsdale residents must travel to Gunnison to obtain some services.
⇩ **Inadequate weight gain during pregnancy** is increasing.

➢ **Chronic Diseases**

⇧ Positive Trends
⇧ From 1998-2005, there was a regional decline in **lung cancer** deaths.
⇧ The Region 10 death rate from **colorectal cancer** decreased from 1998-2005, although there was a decrease in the percent of early detection. Gunnison and San Miguel counties were most likely to detect this cancer early.
⇧ Early detection rates for **prostate cancer** are increasing.
⇧ There is a decrease in the age-adjusted mortality rates from **heart disease** in Colorado and Region 10 from 1998-2005.
⇧ Death rates are lower in Region 10 than for the state for those with any mention of **diabetes** on the death certificate, although the Region 10 prevalence of diabetes is slightly higher from 1998-2005.
⇧ **Influenza** deaths are down regionally and statewide.

Chronic Diseases (continued)

⇩ Negative Trends
⇩ **Lung cancer** is the leading cause of cancer deaths and the least likely to be detected at an early stage. The incidence rate among males with lung cancer in Montrose County is statistically elevated: 20% higher than for the state.
⇩ There is a trend for prevalence of **tobacco use** to be higher in Region 10 while decreasing statewide. Tobacco is the major cause of lung cancers.
⇩ Ouray County has a significantly higher rate of **colorectal cancer**.
⇩ The death rate from **prostate cancer** is significantly higher in Region 10 than for the state, and it is increasing. The rate of deaths from prostate cancer in Gunnison is significantly higher from 1992-2002.
⇩ Region 10 mortality rates for **breast cancer** were increasing from 1998-2002 and the early detection rate was lower.
⇩ Region 10 has a higher rate than Colorado for **melanoma** deaths and the rate is increasing. Mortality rates are higher for men.
⇩ From 2005-2006, **heart disease** was the leading cause of death and disability in Montrose/Delta. It was the second leading cause in Gunnison/Ouray. From 2005-2006, the age-adjusted rate of heart disease in Delta/Montrose was increasing.
⇩ A third of those who have been checked have **high cholesterol** and a fifth of area residents who have been checked have **high blood pressure**.
⇩ Prevalence of **diabetes** in Region 10 has increased slightly from 1998-2005. As the population ages and increases, the number of diabetes cases is expected to increase. Certain racial/ethnic groups, elderly, obese and economically disadvantaged individuals are at higher risk.
⇩ **Diabetes** diagnosis is 7% for Region 10, while the *Healthy People 2010* goal is 2.5%. Gestational diabetes — a precursor to adult diabetes for the mother and child — increased from 1998-2005 in Region 10.
⇩ The BRFSS survey (2004) reports that the percentage of individuals reporting ever having been diagnosed with **high cholesterol, diabetes or high blood pressure** is higher in Region 10 than for the state, and 40-50% of the region's population reports a body mass index exceeding normal weight range (a concern for Region 10 and the state). Only a third of Region 10 residents have **flu shots**.
⇩ Age adjusted **COPD** (chronic obstructive pulmonary disease) rates are increasing in Region 10, while decreasing in the state.
⇩ **Asthma** is a serious and growing health problem although reliable statistical data is needed; data on environmental triggers and their relationship to asthma and COPD is also needed.

➢ **Infectious Diseases**

↑ Positive Trends
⇧ No reported cases of **Active Pulmonary Tuberculosis** since 2001.
↓ Negative Trends
⇩ Two thirds of residents are not vaccinated against **influenza**. ⇩ **Sexually transmitted diseases**, including chlamydia, gonorrhea, HIV, and HPV are under reported and are thought to be increasing in prevalence. ⇩ **Hepatitis C** continues to be the most reported of the reportable diseases.

➢ **Mental Health and Substance Abuse**

↑ Positive Trends
⇧ In the past, **suicide** rates have been higher in Region 10 than those for the state. In the latest reporting period, the regional suicide rate has declined and is now similar to the state rate, though this may not represent a continuing trend.
↓ Negative Trends
⇩ More than half of Region 10 is considered a **health professional shortage area** (HPSA) for mental health. This condition has not changed over time. ⇩ Mental Health Association of Colorado reports that, in hospitals statewide, the number of behavioral health care patients served by **emergency** departments has skyrocketed. In addition, there are an alarming number of arrests and incarcerations of people who have serious mental health or substance abuse problems.

➢ Injuries and Violence

↑ Positive Trends
⇧ The homicide death rate in Region 10 is half the state rate.
⇧ Work-related injury deaths have decreased significantly in Region 10.
↓ Negative Trends
⇩ The rate of firearm-related injury deaths is higher in Region 10 than for the state.
⇩ The rate of unintentional child injury deaths is decreasing in Region 10, but is still significantly higher than the state.
⇩ The rate of motor vehicle accident deaths in Region 10 is higher than for the state.
⇩ With the exception of Montrose, injury hospitalizations for children ages 0-14 are significantly higher in Region 10 than state rate.

➢ Environmental health

↑ Positive Trends
⇧ A food handler safety program serving all of the counties in Region 10 was implemented in October 2006. This should result in fewer food borne illnesses throughout the region.
➔ Unchanged Trends
⇩ Radon levels are high throughout the region. More radon testing should be encouraged.
⇨ The biggest challenges to air quality in Delta and Montrose and the other Region 10 counties are open burning from backyard burn barrels, quasi-agricultural burning and piles of rubbish. Smoke from burning trash contributes to localized health issues and public nuisance problems. It is also a contributor to regional pollution.
⇨ Half of the region's population obtains drinking water either from small drinking water systems serving less than 3,300 people or private wells. Small systems are significantly more likely than large systems to have health violations; private wells may not be tested regularly, masking exposure to contaminants.
⇨ Selenium is a common cause of stream impairment in large areas of Montrose and Delta counties. Some geographic features, such as Mancos shale deposits, have the potential to adversely impact surface waters. Inappropriate land use patterns can lead to spikes in contaminant levels in streams, rivers and lakes, with adverse impacts on aquatic life, wildlife and human health.
⇨ Air quality is a priority health concern in the region. Methods of measuring outdoor air particulate levels, however, are rudimentary, and data may not adequately characterize air quality in ways that are meaningful from a public health standpoint.

Next Steps

The results of this health assessment will be presented to all Region 10 communities for comment. Additionally, based on the results of this assessment, members of the Partnership intend to establish action steps and create consensus regarding the recommendations that will be made to policy makers in Region 10.

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West Central Public Health Partnership
2007 Regional Health Needs Assessment

Introduction

The **West Central Public Health Partnership** (WCPHP) was formed in 2006 through a grant from The Colorado Trust. The WCPHP consists of public health and environment personnel from the counties of Delta, Gunnison, Hinsdale, Montrose, Ouray and San Miguel.

The geographic area covered by WCPHP consists of 9,569 square miles, much of which is public lands, located in west central Colorado. The area is otherwise known as *Region 10* for the purpose of economic development and planning, and is referred to as PMR 10 (Planning and Management Region) in many publications of the Colorado Department of Public Health and Environment.

Completing a regional public health assessment is one of four initial goals for the WCPHP. The specific objectives of the needs assessment are to:

- Provide baseline measures on key indicators describing health trends in the region;
- Provide a tool for public officials to develop informed decisions regarding policies that maintain or improve the health of people in the region; and to
- Provide the public with information about health care resources and information for informed decision making and advocacy.

Organization of this Report

This report is organized in eight sections. The first section describes demographic trends in the region. The six sections that follow review specific areas of health, beginning with access to care. The final section reviews issues associated with environmental health, an area which often is not incorporated into analyses of public health, but which clearly and often significantly affect public health.

The *Regional Health Needs Assessment:2007* is linked to indicators and goals contained in the *Healthy People 2010* report issued by the U.S. Health Resources Services Administration. *Healthy People 2010* employs national health indicators and establishes health goals to be achieved by 2010. Many of these goals have been incorporated into the present analysis. The *Regional Health Needs Assessment:2007* benefited from the work of the Joffit Group, which produced a health needs assessment in 2006 for Ouray, San Miguel and the west side of Montrose County.

In order to highlight key findings that deserve special attention by decision makers, conclusions at the end of each section of this report (except for demographics) are characterized in terms of positive and negative trends. Positive trends are areas of good and/or improving performance, while negative trends are areas requiring attention and where conditions may be worsening. Some trends which are important, but essentially unchanged, are also included in some section conclusions.

Project Planning and Development

Development of the *Regional Health Needs Assessment:2007* was guided by a steering committee consisting of public health and environment staff members from each of the partnering counties. (For a list of participants, please see *Acknowledgements*, at the end of this report. The steering committee first met in October 2006 to decide on the process and timeline for a regional health assessment, and to begin identifying the indicators that would be important to assess. A followup survey was conducted of steering committee members for the purpose of narrowing down the list of indicators they would recommend for incorporation in the report (see the executive summary for results). In December 2006, a subgroup of the committee met and decided on the final list of proposed indicators for the assessment.

In February 2007, a meeting was held in Denver with representatives from the Colorado Department of Public Health (CDPHE) Office of Local Liaison to further refine the list of indicators that would be reported on, based on data available for the region and for each of its counties. A graduate student from the University of Colorado was enlisted to assist with data collection as was a staff member of the CDPHE statistics section. Data collection began in March 2007. In August 2007 the steering committee reviewed the data collected and was given an opportunity to comment and make changes. A meeting with the technical advisor for the project culminated in a plan, process and timeline for completion of the assessment by December 2007.

A summary of the health assessment will be made available to the public when completed; public opinion will be obtained through an internet survey, focus groups or other means yet to be determined. Individual counties will have an opportunity to add additional assessment data, of specific interest in their county, to the regional assessment.

Data Sources and Limitations

The regional needs assessment is based primarily on data available from various state agencies. County level data was obtained whenever possible. When county level data was not available, regional data was used. Indicators were selected, in part, based on the consistency of available data across county lines.

Date Sources. Data sources employed in each section of this report are cited in footnotes and/or sources noted at the end of tables. Several important data sets are available online, including the following:

- Colorado County Indicators: www.coloradohealthinstitute.org/county/indicators.html
- Colorado Health Information Dataset (CoHID): www.cdphe.state.co.us/cohid/
- Maternal and Child Health Datasets: www.cdphe.state.co.us/ps/mch/mchdatasets.html
- Surveillance Reports for Communicable Diseases: www.cdphe.state.co.us/dc/surveillancereports.html
- Lead Poisoning Prevention Program — www.cdphe.state.co.us/dc/lead/survbullet2005.pdf

Other data sources used in this study include:

- Behavioral Risk Factor Surveillance System (BRFSS)
- Colorado Central Cancer Registry
- U.S. Census
- Office of the Colorado State Demographer
- Primary Health Care Professional Shortage Area (HPSA) dataset
- Regional Health Services Inventory
- Crime in Colorado Statistics website, maintained by the Colorado Bureau of Investigation

Data Limitations. Ideally, all selected indicators would be reported at the county level. Unfortunately, many indicators are available only at the regional level. Even where county level data were available, many tables in this report show an asterisk (*) where data were suppressed by the agency providing the information, because there were three or fewer events reported. This is done to preserve confidentiality.

Data from the Colorado Behavioral Risks Factors Surveillance System (BRFSS) appears in many tables in this report. BRFSS is a system of telephone surveys used to monitor lifestyles and behaviors related to the leading causes of mortality and morbidity. Because it is a rural area, Region 10 sample sizes are small. The Planning and Management Region (PMR) provides data for small population areas. The counties of Delta, Gunnison, Hinsdale, Montrose, Ouray and San Miguel are in Region 10.

The CDPHE Reported Disease database includes statistics on the annual numbers of diagnosed cases of infectious diseases. Diseases, such as tuberculosis, that pose a serious health threat and have mandatory reporting requirements, are more likely to be included in the database. The number of reported cases accurately indicates the actual number of cases diagnosed annually. However, the number of cases reported may not accurately reflect the disease incidence or prevalence, since there may be people with undiagnosed disease. This is true for all diseases reported here. For example, cases of chicken pox (varicella) may be unreported because many people do not go to the doctor when they contract it.

Photo:
East End of Telluride Valley

Section 1. DEMOGRAPHICS

Defining the Issue

One goal of *Healthy People 2010* "is to eliminate health disparities among segments of the population, including differences that occur by gender, race or ethnicity, education or income, disability, geographic location, or sexual orientation."[1] Having access to quality health care is considered a fundamental determinant of health status. Disparities in access due to demographic factors such as urban/rural residence, age and gender are compounded by factors such as population growth, increases in poverty rates, and other changes in the populations requiring health care.

Data on Region 10 and Colorado[2]

The West Central Public Health partnership consists of Montrose, Delta, Ouray, Gunnison, Hinsdale and San Miguel counties in the 9,569 square mile west central region of Colorado, much of which comprises public lands. This area is known as *Region 10* for the purpose of economic development and planning and is referred to as PMR 10 (Planning and Management region) in many of the Colorado Department of Public Health and Environment tables used in this report.

The total population for Region 10 is 93,440. The population increased 1.8% in 2004, slightly higher than the statewide average of 1.4%[3]. In 2004, Region 10's unemployment rate was 5.0%, lower than the Colorado average of 5.5%. According to the State of Colorado, Department of Labor and Employment, the labor force in the region increased 8.9% in 2004. One of the larger employment sectors in the Region, construction, increased 9.1%, adding 277 jobs. Wage and salary employment is increasing; however, average wages in Region 10 were only 67.3% of the state average wage.

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[1] *Healthy People 2010*, p.11
[2] Unless otherwise noted, all population information in this section is from the demographics Section of the Colorado Department of Local Affairs www.cdphe.state.co.us/sripts/htmsql.exe/cohid/popualtionPub.hsql
[3] According to the *Region 10 Review (*the *Review),* which is published yearly by the Region 10 League for Economic Assistance and Planning, Inc.

Region 10 raises 3.2% of the total crops and livestock sold in Colorado. Region 10 is a large producer of coal (45.8% of all the coal mined in Colorado in 2004) with Gunnison County being the top coal producer in the state. Currently, a small amount of oil and gas is extracted in Region 10 with most of the 2004 natural gas production taking place in San Miguel County.

Four region 10 counties (San Miguel, Hinsdale, Gunnison and Ouray) ranked in the top quarter of all Colorado counties in terms of per capita assessed valuation. The counties of Gunnison and San Miguel have major ski resorts, and year-round recreational and outdoor activities abound in this region. In addition to skiing, gold-medal fishing, hiking/biking, hunting and rafting are among the outdoor activities throughout the region. Tourism is extremely important to the region and, next to government jobs, accommodations and food service jobs account for the largest sector of wage and salary jobs in the region.

County Profiles[4]

- **Delta County.** Delta County is located in a large mountain valley at the confluence of the Uncompahgre and Gunnison rivers, just south of the Grand Mesa (the world's largest flat-top mountain). With a 2004 population of 30,080, Delta is the second most populous county in the region. The county's population increased 1.4% in 2004 over the previous year. The population includes 480 prisoners incarcerated at the Delta Correctional Facility.

  The Delta County labor force grew by 12.7% in 2004, significantly higher than the statewide increase of 1.8%; this increase is due, in part, to the arrival of a large retail store in the City of Delta and expansion of the mining industry. Government is the largest sector of wage and salary jobs, followed by retail trade, health care, accommodations and food service.

  In 2004, the average wage was 62.2% of the Colorado average wage; Delta County ranked 53rd out of 64 counties in per capita personal income; retirement payments constituted 21.7% of all personal income compared to 8.8% statewide; retail sales increased in all the municipalities in Delta County with a 35% increase countywide; Delta County ranked fifth in coal production among Colorado counties; and gas production increased significantly in 2004 due to the Coal Bed Methane expansion.

- **Gunnison County.** Thirty miles west of the Continental Divide, at the confluence of the Gunnison and Tomichi Rivers, Gunnison County is the third most populous county in the region with a 2004 population of 14,190. The largest sector of employment is government, followed by accommodations, food service, retail trade and mining. Gunnison is a resort area and is home to Western State College.

  In 2004, the average age in Gunnison County was 30 (with more males than females); the population density was 4.3 persons per square mile (of its 3,239 square mile area, 78% is Federal lands); per capita personal income was 76.9% of the Colorado average and Gunnison ranked 30th among 64 counties; the average wage was 65.4% of the Colorado average wage; a single family home sold for an average of $312,800; K-12 school enrollment is decreasing; Gunnison County had the highest county average in region 10 for per capita retail sales; the county continues is the top coal producer in the state; and natural gas production showed a slight decrease in 2004.

[4] The country profiles are summarized from information provided in the *Region 10 Review*, 2005. All data is from 2004, unless otherwise noted. Additional economic information can be obtained by accessing the Review online.

- **Hinsdale County.** One of the most remote counties in Colorado and the U.S., Hinsdale comprises 1,124 square miles of forested mountains. Public lands cover 95.3% of its area, and only 4.7% is private land. With a population of 838, Hinsdale County is the least populated county in the state, and has been characterized as the "most remote county" in the U.S. by the Census Bureau.

  The largest sector of wage and salary jobs is government, followed by accommodations and food services, retail trade and construction. In 2004, average wages in Hinsdale County were the lowest in the region and were only 47.7% of the average wages in the state. Per capita personal income ranked 34 out of 64 counties. Retail sales per capita were 67.9% of the Colorado average and the per capita assessed property valuation was the second highest in the region and 10th among 64 counties. Hinsdale County has shown a loss in jobs every year, beginning in 2000; in 2004, jobs decreased 2.8%. Despite this decrease in jobs, school enrollment is increasing.

- **Montrose County.** Montrose County's 2,200 square mile land area lies in the Uncompaghre River and Paradox Valleys. The majority of the county is made up of U.S. Forest Service, BLM and National Park lands. With a 2004 population of 37,435, Montrose County is the largest county by population in the region, making up 39.5% of the region's total population. Montrose County was the second fastest growing county in the region in 2004, with a growing labor force and growing number of employed. There also is a relatively large number of retired persons in the county.

  Montrose County is the agricultural hub of the Western Slope and home to the Black Canyon of the Gunnison National Park and the Gunnison Gorge National Recreation and Wilderness areas. Government makes up the largest sector of jobs followed by transportation and warehouse, manufacturing and health care. The average job in Montrose paid 68.4% of the Colorado average wage in 2004. Per capita personal income ranked 41st in the state. The City of Montrose serves as a regional trade center for a substantial area and retail sales grew 11.7% in 2004.

- **Ouray County.** Located in the heart of the San Juan Mountains, Ouray County's landscape is dominated by mountain peaks with 12 peaks at 13,000 feet or higher. Its 542 square miles supports a population of approximately 3,800. In 2004, the population of Ouray County grew 3.%. School enrollment is increasing. The primary wage and salary job is accommodations and food services, followed by government and construction.

  In 2004, the County's unemployment rate was 4.4%, lower than the statewide average but the highest reported over the last five years. The annual average wage in 2004 was only 72.5% of the statewide average. The total per capita personal income was the second highest in the region and ranked 16th among 64 counties. Overall retail sales increased 7.2% in 2004 and exceeded the state average by 21%. The per capita assessed valuation ranked 16th out of 64 counties. Only a small amount of agricultural activity still exists in Ouray County.

- **San Miguel County.** Stretching from the San Juan Mountains to the east, to the Utah border to the west, San Miguel County is home to the Telluride Ski Resort. Of the county's 1,287 square miles, 66% is public lands. The 2004 population was 7,222; there has been a slow population growth rate, with an increase of only 0.7% between 2004-2005. However, school enrollment increased 14 % during this period.

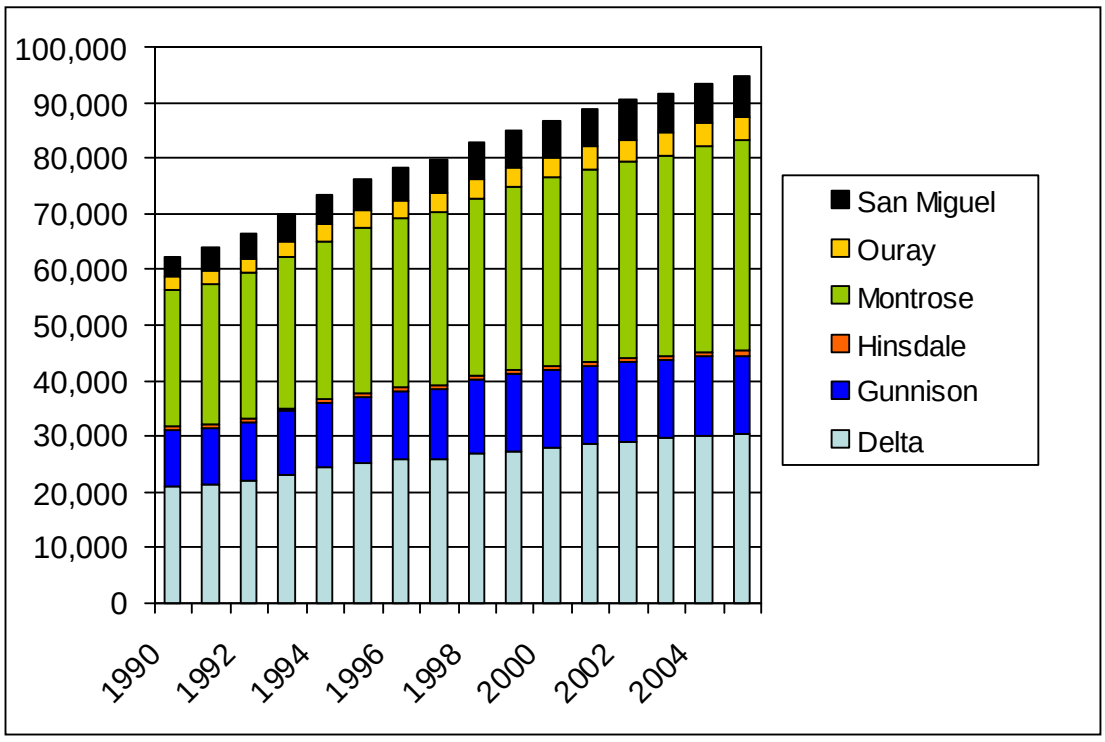
Construction, government and accommodations and food services continue to be the largest employment sectors in San Miguel County. In 2004, the number of employed increased by 3.5% with an unemployment rate of 5.2%.

The number of wage and salary jobs based in San Miguel County increased 1.5% in 2004. The average wage paid to San Miguel county workers was the highest in the region but only 74.1% of the Colorado average wage. Per capita retail sales were higher than the state average with an increase of 17.7% in 2004. Per capita personal income is the highest in the region and ranks 13th among all Colorado counties. The total taxable assessed valuation in San Miguel County was the highest in the region and the 4th highest of all Colorado counties. The average house sale prices are the highest in the region, averaging over $1 million in 2004.

Population Characteristics

Population varies by county, from a high of nearly 38,000 in Montrose to a low of approximately 800 in Hinsdale. Between 1990 and 2005, the region's population grew 52.2%, from 62,301 to 94,828, a rate of increase higher than the state (42.9%). The rate of increase varied widely by county, ranging from 38.8% in Gunnison to 96.5% in San Miguel. [See Figure 1.]

Figure 1. Region 10 Population by Year and by County, 1990-2005



Age

In 2005, children under five years of age comprised 6.2% of the population of Region 10 ranging from 4.6% in Ouray to 6.8% in Montrose. Over the period from 1990-2004, the percentage of children through 17 years of age has been declining slightly or remaining roughly the same. [See Figures 2 and 3.]

Figure 2. Age <5, As Percentage of Total Population, 1990-2005

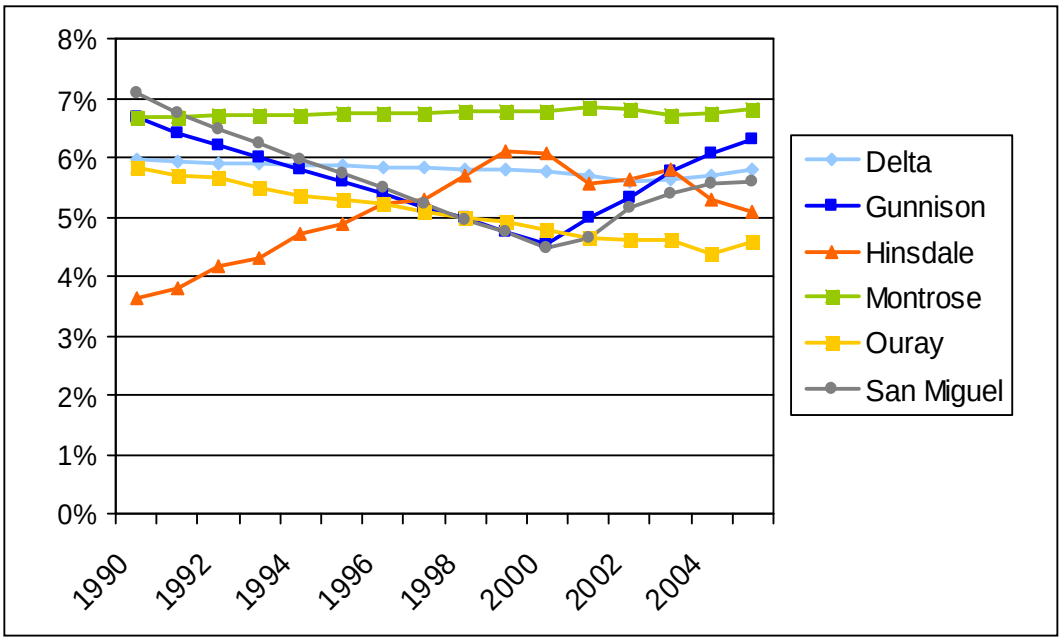
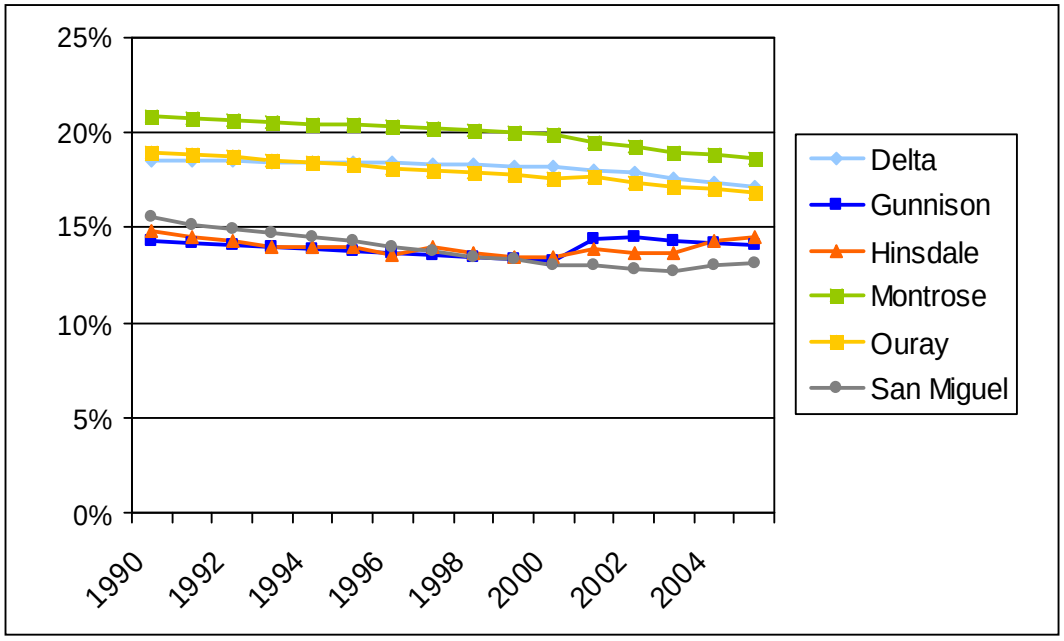


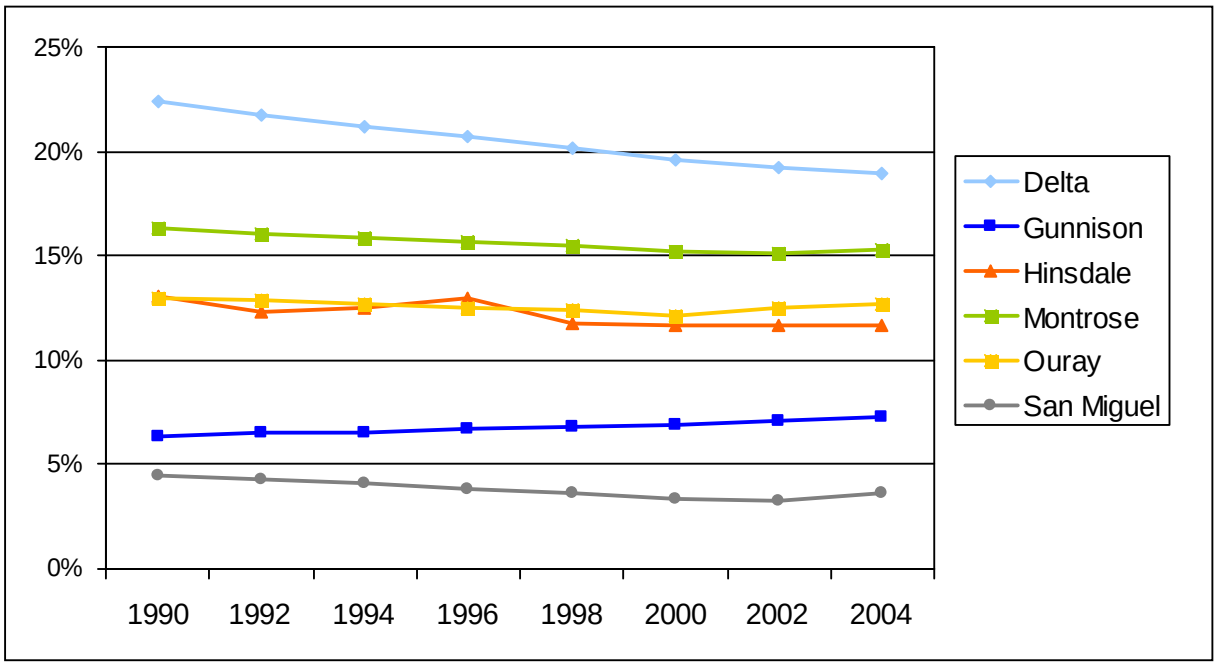
Figure 3. Age 5-17, As Percentage of Total Population, 1990-2005



People aged 65 or older comprised 14.1% of the population of Region 10, as compared with 9.7% for the state. Delta had the highest percentage (19%) followed by Montrose (15%), Ouray (13%), Gunnison (7%), and San Miguel (4%).

The regional rate of increase in the age 65+ growth rate from 1990-2005 was slightly lower than for the state (35.8% versus 38.9%) but there were wide variations by county. While Ouray experienced an increase of 85.5% in this population, while Delta had an increase of only 20.5%. [See Figure 4.]

Figure 4. Age 65 or Greater, As Percentage of Total Population, 1990-2005



Race/Ethnicity

Colorado has a rapidly growing Latino population. In 2005 Latinos made up almost 20% of the population. The percentage of Latinos in Region 10 is lower than for the state, with Montrose having the highest percentage in the region (16.8%) and Hinsdale the lowest (1.6%).

In 2000, 15.1% of Coloradans spoke a language other than English at home. Among Region 10 counties the percentage varied from 5.7% in Ouray to 11.6% in Montrose. [See Tables 1 and 2.]

Table 1. Language Other Than English Spoken at Home, % Age 5+, 2000

	Percentage of children age 5+
COUNTY	
DELTA	10.3%
GUNNISON	6.6%
HINSDALE	4.9%
MONTROSE	11.6%
OURAY	5.7%
SAN MIGUEL	10.8%
COLORADO	15.1%

Table 2. Race and Ethnicity, 2005

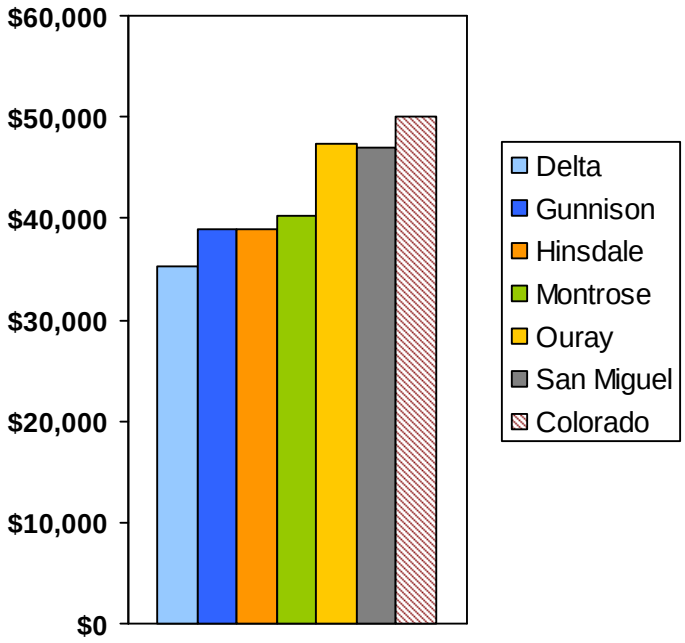
	Population (N)	% White, not Hispanic or Latino	% Hispanic or Latino	% Black
COUNTY				
DELTA	29,947	85.0	12.6	0.6
GUNNISON	14,226	91.3	5.8	0.6
HINSDALE	765	96.7	1.6	---
MONTROSE	37,482	80.7	16.8	0.6
OURAY	4,260	94.1	3.8	0.1
SAN MIGUEL	7,213	89.3	8.8	0.3
COLORADO	4,665,177	72.1	19.5	4.1

Income

Five out of six Region 10 counties had median household incomes lower than that of the state ($50,105).[5] Median household income in 2006 was lowest in Delta ($35,280) and highest in Ouray ($47,424). [See Figure 5.]

Figure 5. Median Household Income, 2006

	Median household income
COUNTY	
DELTA	35,280
GUNNISON	38,979
HINSDALE	38,891
MONTROSE	40,234
OURAY	47,424
SAN MIGUEL	46,891
COLORADO	50,105

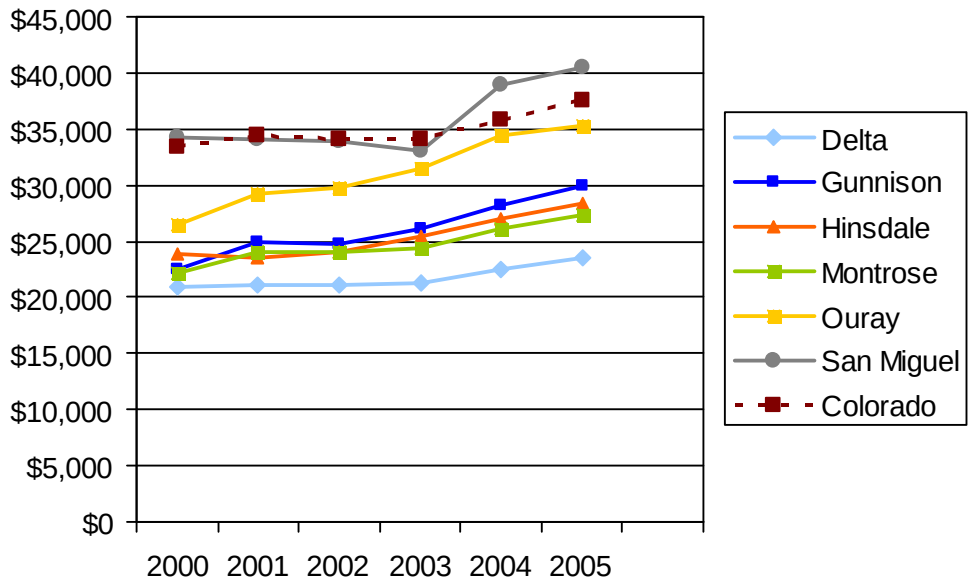


Data source: http://www.census.gov/hhes/www/saipe/downloads/estmod04/est04ALL.xls

[5] http://www.census.gov/cgi-bin/saipe/saipe.cgi

Another measure of economic well-being is per capita personal income. In Colorado the per capita personal income increased 12% from 2000 ($33,367) to 2005 ($37,510). Region 10 experienced a greater increase than the state during this period. [See Figure 6.]

Figure 6. Per Capita Personal Income and Percentage Change by County, 2000-2005

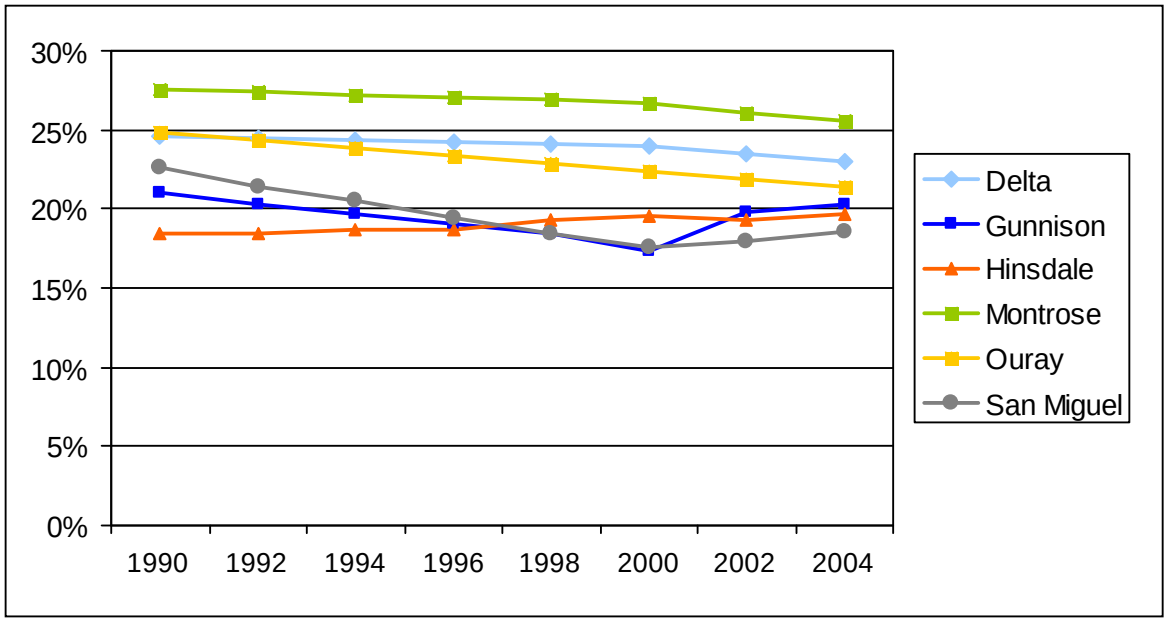


	% Change
COUNTY	
DELTA	13
GUNNISON	33
HINSDALE	19
MONTROSE	24
OURAY	34
SAN MIGUEL	19
COLORADO	12

Data source: http://www.bea.gov/bea/regional/reis/drill.cfm

The percentage of people living in poverty in Region 10 counties is generally higher than for the state. The percentage of children living in poverty is especially important because they can place greater demands on the public health system. In 2004, 11.4% of Coloradans under 18 were living in poverty. In Region 10, three counties had lower poverty rates than the state, while the rest had higher rates. Those with lower rates included Ouray (8.7%), San Miguel (10.1%) and Gunnison (10.8%). [See Figure 7.]

Figure 7. Age <18, As Percentage of Total Population, 1990-2005



Trends and Policy Implications

Increases in population without commensurate increases in funding can strain public health programs and limit choices. Public health departments are often expected to absorb increases in demand for services without adequate increases in staff or funding.

Photo:
Lake City Public Health

Section 2: ACCESS TO CARE

Defining the Issue

Access to care refers to the ability of individuals and families to get health care when they need it. Basic barriers to access are geographic (e.g., lack of providers in an area) and financial (e.g., inability to pay for health care services). When people are not able to access care, their medical conditions may worsen, often resulting in even greater health care costs (e.g., they end up in the emergency room). A target goal identified by the CDC's *Healthy People 2010* is to have 96% of persons of all ages provided with a specific source of ongoing primary care. For people over 65, the target is 100% coverage.

Data for Region 10 and Colorado

The most frequently cited health problem throughout the state, according to CDPHE, is access to care. The *Healthy Colorado 2010* report states that: "Having a specific source of ongoing primary care is important to disease prevention and control. It also represents an important way of reducing emergency room use and associated healthcare costs. People who are uninsured and those lacking access to an ongoing source of primary care often resort to emergency room use when conditions might have otherwise been prevented or managed before becoming acute."

Access to Healthcare Providers

All of the counties in the West Central Public Health Partnership (Region 10) are rural or frontier counties. All but Gunnison are designated health professional shortage areas according to CDPHE's Rural and Primary Care Office. [See Figure 8.] "Rural Colorado faces several key challenges related to health care access, including provider shortages, fewer group plans, higher health insurance costs compared to urban areas and emergency facility shortages." (*Healthy Colorado 2010*) [See Table 3.]

Figure 8: Facility Types in Rural Counties, May 2006

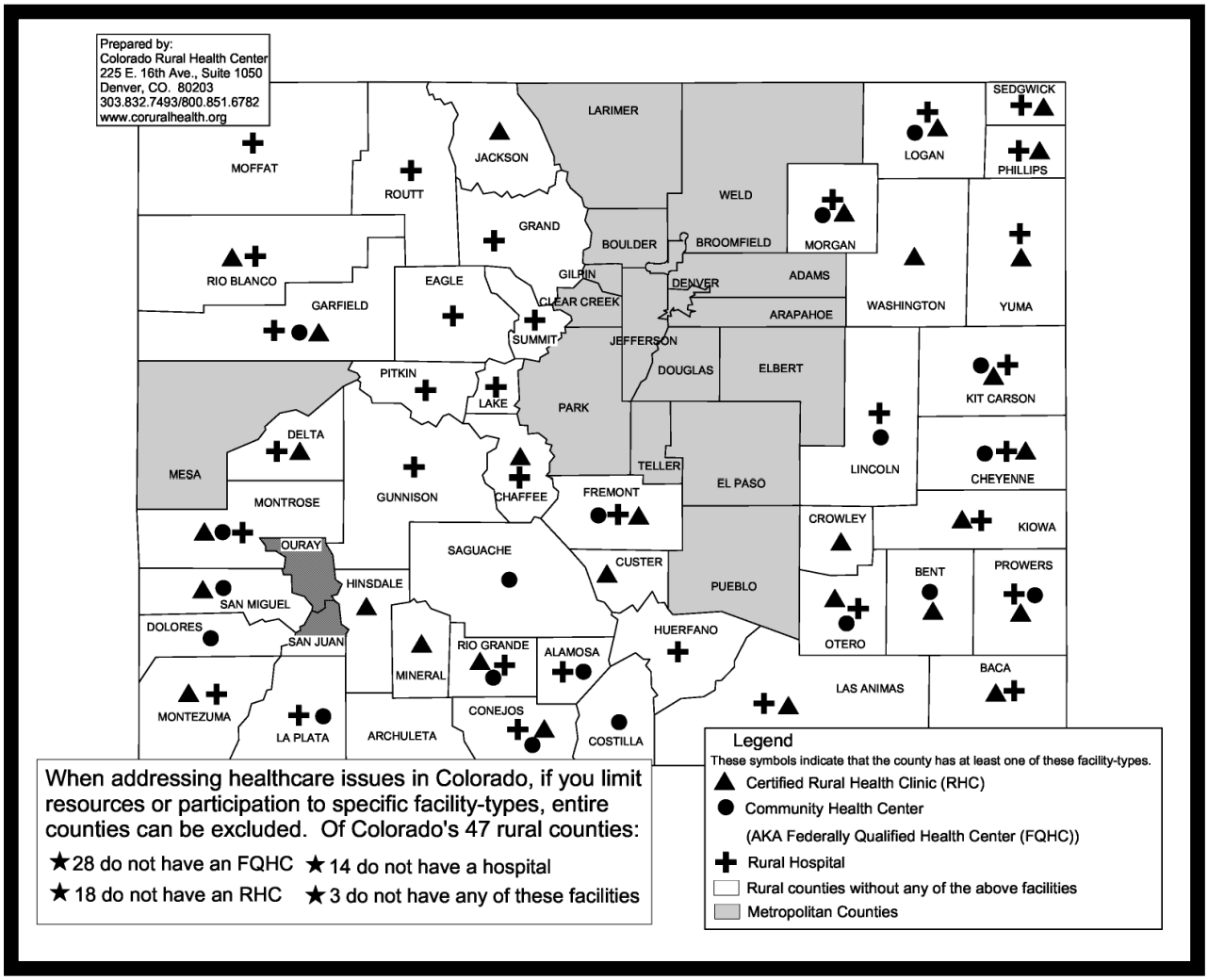


Table 3. Regional Health Services Inventory

	Hospital	Ambulance Service	Long-term Care	Assisted Living	Home Health	Hospice/ Palliative Care	Personal Care/ Homemaker Services	Sliding Fee (or Free) Primary Care Services	Dental Services (Low Income)	Mental Health Services (Low Income)
COUNTY										
DELTA	1	2	3	4	4	1	5	1	private	****
GUNNISON	1	1	1	1	1	1	2	very limited	private	
HINSDALE	0	1	0	0	1**	1	1	1	0	
MONTROSE	2*	2	3	3	3	2	1	2	clinic	
OURAY	0	1	0	0	1***	1	1	0	CHP only	
SAN MIGUEL	0	2	0	0	1***	1	—	1	CHP only	

Note: 24 hour emergency care(and transportation) is available throughout the region

* Montrose has an urgent care service in addition to the Montrose Memorial Hospital

** Hinsdale is served by Gunnison

*** Ouray and San Miguel counties are served by Montrose for Home Health

**** All counties are served by Midwestern Mental Health

Data source: Colorado Rural Health Center

The percentage of individuals reporting on the Behavioral Risk Factors Surveillance Survey (BRFSS) that they have access to a personal doctor or nurse is lower for Region 10 than for the rest of the state. In addition, the percent reporting that they could not see a doctor because of cost was higher for Region 10 than for the rest of the state. [See Table 4.]

Table 4: Access to Doctor or Nurse

	1998-99	2000-01	2002-03	2004-05
PERSONAL DOCTOR OR NURSE				
REGION 10	na	61.9	71.8	74.4
COLORADO	na	77.7	77.9	78.8
COULD NOT SEE DOCTOR BECAUSE OF COST				
REGION 10	na	na	19.0	21.9
COLORADO	9.3	10.0	12.1	12.9
Data source: CDPHE, Health Statistics Section, BRFSS				

Specific problems in terms of providers include the following:

- *Dental*: All counties, with the possible exception of Montrose, have an inadequate number of dental providers for low income adults and children. Montrose has the only Community Dental Clinic that serves the region on a sliding fee scale, accepts Medicaid and CHP+, and accepts adults and children. Gunnison and Delta have limited private providers that accept Medicaid/CHP+. In Hinsdale, Ouray, San Miguel counties, and the west end of Montrose County, there are no dental providers that accept Medicaid. San Miguel and Ouray have providers that accept CHP+ through Delta Dental. Even where Medicaid and the Colorado Child Health Plan provide dental care for children, not all eligible children are enrolling.
- *Mental health*: Midwestern Mental Health is the Medicaid contract provider serving all the counties in Region 10. Hinsdale, Ouray and San Miguel counties are mental health provider shortage areas (less than 6000:1) and the mental health/substance abuse services provided by Midwestern Mental Health are on a very limited, part-time basis as satellites.
- *Transportation*: Lack of adequate transportation services in rural Colorado, and in all Region 10 communities, is a barrier to access.
- *Cultural and linguistic competence*: There is an inadequate network of culturally and linguistically competent providers at every level and health care discipline, and especially in the area of mental health, according to key informants.
- *Sliding fee services*: Delta County is challenged with having the highest poverty level and the greatest number of uninsured. The only sliding fee scale rural health clinic is located in the town of Cedaredge. There are three Rural Health Clinics throughout the region that offer services on a sliding fee scale; Montrose also has a free clinic with limited services once a week and Gunnison has a very limited sliding fee public/private partnership "system."

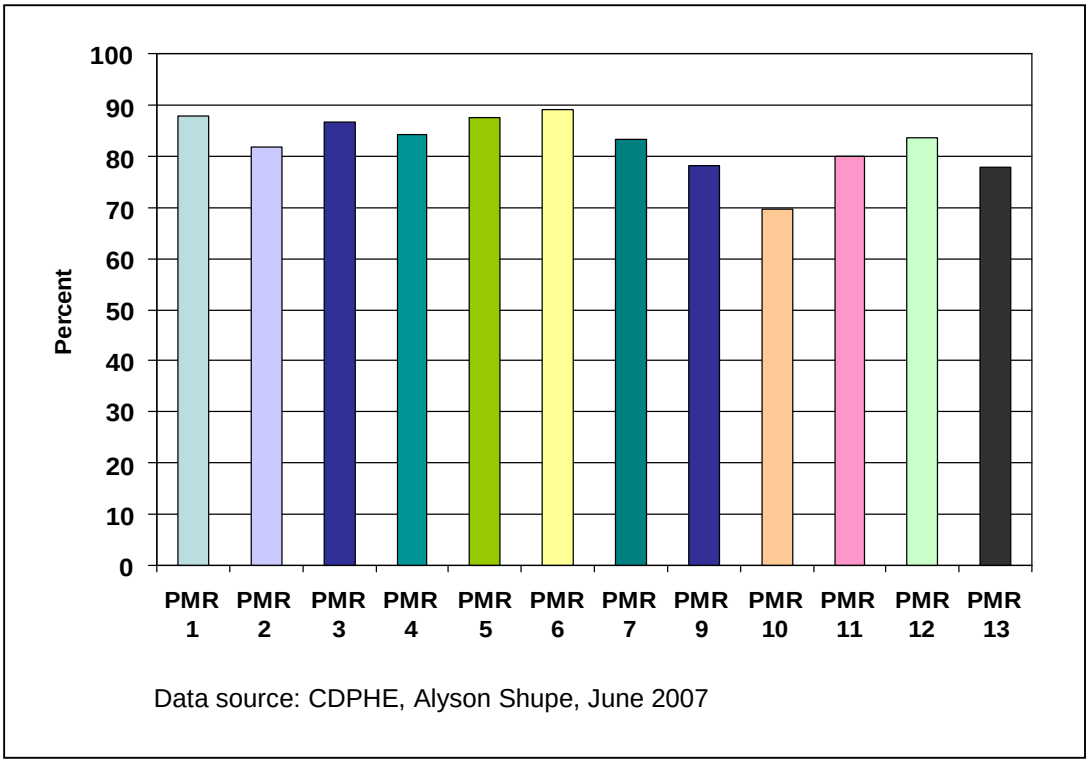
- *Other deficits*: The smaller counties in the region, including San Miguel, Ouray, Hinsdale and the west end of Montrose County, have deficits in the areas of acute mental health care, home health care services and assisted living/nursing home facilities. Pharmacy services are "vulnerable" in Hinsdale, Ouray and San Miguel counties.

Health Insurance Coverage

According to *Healthy Colorado 2010*: "Health insurance status is an important indicator of health care access. When people lack adequate access to health insurance coverage, they often seek care in understaffed, over-utilized and under-funded public clinics, community health centers, school-based health services and emergency rooms."

Figure 9 shows the percent of adults covered by health insurance for each of Colorado's 13 planning regions. Region 10 shows the lowest rates of any area of the state.

Figure 9. Adults with Health Insurance, 2004-2005 by Region



The percentage of uninsured people in the region has increased rapidly over the last full reporting period. [See Figure 10.]. For the state as a whole, the rate of increase for adults lacking insurance has been climbing most steeply for those in the age range of 45-54 and, since 2002, for those in the age range of 18-24. [See Figure 11.]

Figure 10: Percentage of Population without Health Insurance

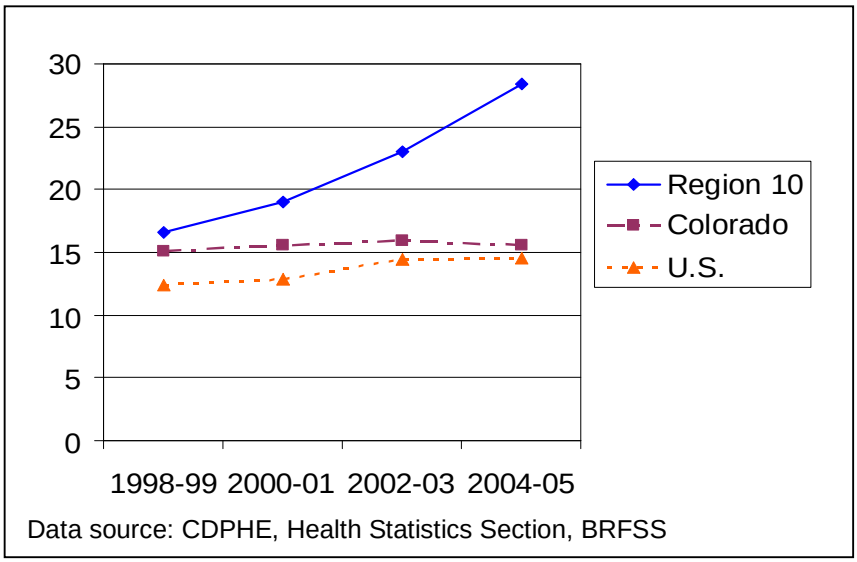
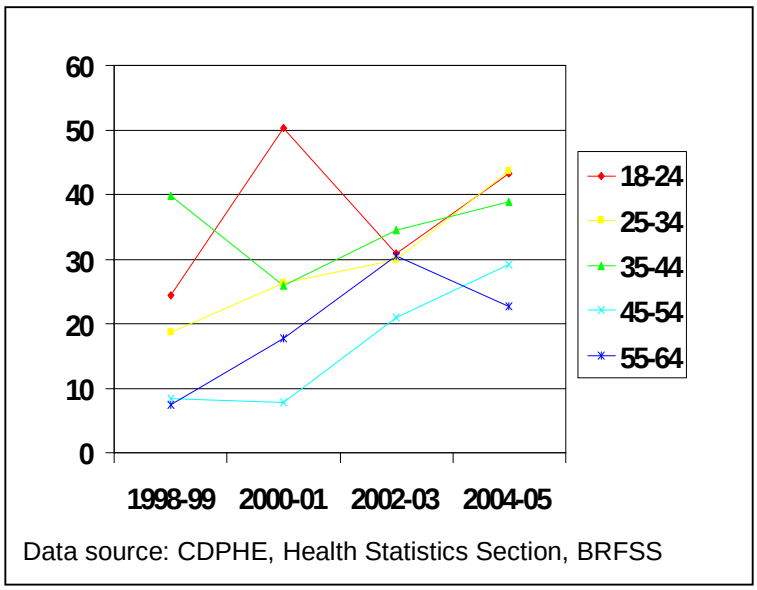


Figure 11: Percentage without Health Insurance by Age



Health coverage for children ages 1-14 is generally much higher than for the overall population. However, statewide coverage for this group declined between the 2004-2005 reporting periods.[See Table 5.]

Table 5: Medical and Dental Care, Colorado Children Ages 1-14

	2004	2005
HEALTH CARE COVERAGE	89.6	87.4
PERSONAL DOCTOR	86.6	70.4
RECEIVED ALL MEDICAL NEEDED IN LAST 12 MONTHS	98.0	98.6
Data source: CDPHE, Health Statistics Section, Child Health Survey Statewide		

Statewide data on access (from *Healthy Colorado 2010)* indicate:

- Of Colorado children living in families with incomes below 200% of poverty, 23% are uninsured.
- Young adults ages 18-24 are least likely to be insured.
- More females than males have health insurance coverage.
- Hispanic adults are less likely to have an ongoing source of primary care, as compared to all adults combined, and consistently have lower rates of health insurance.
- Low-income, uninsured and Hispanic children are less likely to have an ongoing source of primary care when compared to other Hispanic children and non-Hispanic white children.
- Non-citizens are nearly three times more likely to be uninsured.

Emergency Room Visits

Presumably, lack of health insurance will result in more uninsured and under-insured individuals utilizing emergency room services. Unfortunately, data on reasons for emergency room visits are difficult to obtain, as there are no statewide reporting requirements and the Colorado Hospital Association has not collected these data in the past. While it was hoped that data could be obtained on the percentage of emergency room visits for non-emergency causes, these data were not available from any of the region's three hospitals. The lack of data on emergency room visits ahs been identified by the state as an important gap in available assessment information.

Sliding Scale Fee Option

Though a sliding fee scale is available in Region 10 as a strategy for addressing financial barriers to accessing care, it is not uniformly provided, and it does not cover all individuals who could benefit from it.

- One sliding fee clinic exists in Delta County in the town of Cedaredge, about 20-30 minutes from the main population base of Delta.
- A free clinic in Montrose has the capacity to serve only 25 patients per week.
- The sliding fee clinic in Montrose County is in Olathe, a very rural town. Accessing transportation to Olathe is difficult for some residents.
- The sliding fee system cut off is 185% of poverty. Many uninsured individuals have incomes over this limit, but are considered "working poor" rather than “eligible poor.”
- Though there is no sliding fee clinic in Gunnison, Public Health assesses clients for eligibility. A limited number of vouchers is available for eligible clients to receive medical care in the private sector.
- Hinsdale and San Miguel counties appear to have the most accessible system for providing sliding fee medical care.
- Ouray residents have access to sliding fee clinics outside the county.

Oral Health

Despite the nationwide decline in cavities, due to prevention strategies such as community water fluoridation, fluoride toothpaste, fluoride mouth wash and dental sealants, dental decay remains a significant problem for minority populations and individuals with low-incomes. Oral health problems can significantly impact the health of many body systems and is the number one reason for school absenteeism. [See Table 6.]

Table 6: Children Receiving Care and Preventive Treatment — Percent by County

	Grade 3 children with untreated tooth decay (2004)	Medicaid children receiving dental services (2004)	County public water system providing fluoridated water
COUNTY			
DELTA	29.3	26.7	46.7
GUNNISON	18.4	28.7	1.2
HINSDALE	---	---	---
MONTROSE	30.2	26.7	97.1
OURAY	18.4	26.7	2.2
SAN MIGUEL	21.4	26.7	24.0
Data Source: Colorado Health Institute, http://www.coloradohealthinstitute.org/			

The Colorado Department of Public Health and Environment in cooperation with the CDC is developing a surveillance plan for tracking identified oral diseases, conditions and age groups. The purpose of this system is to monitor trends over time and document improvements, so that funding can be directed to programs that will reduce disparities and the burden of oral disease.

Trends and Policy Implications

Positive and negative trends are indicated below by arrows. An up arrow indicates improvement (e.g., less infectious disease), while a down arrow indicates a decline (e.g., poorer health due to a rising rate of infectious disease), and a side ways arrow means there has been no change. [See Table 7.]

Table 7: Positive and Negative Trends in Region 10

↑ Positive Trends
⇧ Low income residents of five counties (excluding Ouray) have **access to a sliding fee scale or free primary care clinic or system**, though services may not be adequate for the needs of the population.
↓ Negative Trends
⇩ Region 10 has the lowest percentage of adults with **health insurance** in the state; it is also below the national average for coverage.
⇩ Young adults 18-24 years of age are least likely to have **health insurance**.
⇩ Access to adequate **dental sliding fee care and low cost dental care** is extremely limited or non-existent in most counties in the region.
⇩ Lack of **transportation** hinders access to services in all rural communities in the region.

Policy Implications

Providing improved access to care is extremely challenging. *Healthy Colorado 2010* offers some ideas regarding **emerging or promising practices** that might be applied to addressing access challenges. These include:

- Eliminating the Medicaid assets test;
- Creating a "medical home" approach;
- Implementing open access patient scheduling systems;
- Convening patient advisory counsels; and
- Improving provider cultural competency.

Photo:
Mare with Colt

Section 3. MATERNAL AND CHILD HEALTH

Defining the Issue

It is often said that "our children are our future." Child and maternal health addresses issues related to making it a good future. A vision for that future is offered by the U.S. Health Resources and Services Administration: "A future America in which the right to grow to one's full potential is universally assured through attention to the comprehensive physical, psychological and social needs of the maternal and child health population. We strive for a society where children are wanted and born with optimal health, receive quality care, and are nurtured lovingly and sensitively as they mature into healthy, productive adults."[6]

Data for Region 10 and Colorado

One goal of *Healthy People 2010* is improved prenatal care. "Prenatal care includes three major components: risk assessment, treatment for medical conditions or risk reduction, and education. Each combination can contribute to reductions in perinatal illness, disability, and death by identifying and mitigating potential risks and helping women to address behavioral factors, such as smoking and alcohol use that contribute to poor outcomes. Prenatal care is more likely to be effective if women begin receiving care early in pregnancy."

Pregnancy and Breastfeeding

Smoking During Pregnancy. Smoking during pregnancy is associated with premature birth and low birth weight, and is among the adverse behaviors targeted in prenatal education. Smoking has decreased statewide since Colorado instituted the ban on smoking in public places and increased the cigarette tax. The percentage of women in Region 10 who reported smoking during pregnancy decreased from 15.7% in 2000-01 to 9% in 2004-05. [See Table 9.]

[6] From the HRSA vision statement, accessed December 20, 2007; see, http://mchb.hrsa.gov/about/default.htm.

Table 9. Expectant Mothers Smoking During Pregnancy (Percentage of Live Births)

	1998-99	2000-01	2002-03	2004-05
REGION 10	68.5	65.0	67.2	71.7
COLORADO	70.3	69.0	68.3	69.0
HP 2010 TARGET				90.0
Data source: CDPHE, Health Statistics Section				

Prenatal Care. Achieving an increase in the proportion of women who receive early and adequate prenatal care to 90% of live births is an important goal in *Healthy People 2010.* The percentage of women who received adequate prenatal care in Region 10 was higher in 2004-05 than in 1998-99 (71.7% versus 68.5%), while the percentage for the state remained relatively unchanged. Both the region and the state are below the *Healthy People 2010* target goal.

The percent of pregnant women with inadequate prenatal care in Region 10 is relatively low compared with other regions in the state (see Figure 11).

Figure 11. Percent of Colorado Women Giving Birth that had Inadequate Prenatal Care, 2004-2005

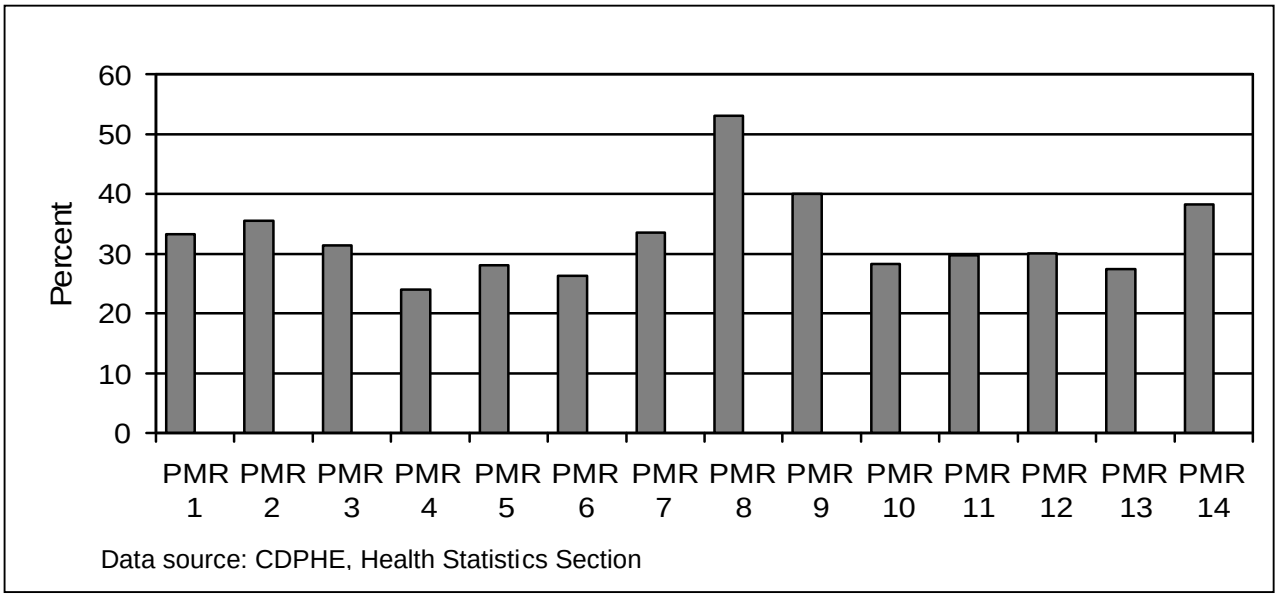


Table 10 employs the Kotelchuk Index, which is a measure of prenatal care usage during pregnancy; it is based on information collected on birth certificates, including number of prenatal care visits, month of the first prenatal care visit, birth weight, gestation and sex.

Table 10. Adequate Prenatal Care Using the Kotelchuck Index (Percentage of Live Births)

	1998-99	2000-01	2002-03	2004-05
REGION 10	15.1	15.7	11.8	9.0
COLORADO	10.8	9.5	8.5	8.3
Data source: CDPHE, Health Statistics Section				

CDPHE Maternity Care datasets indicate that 80% of women in Colorado with a live birth in 2005 reported having prenatal care during their first trimester. Data for the counties in Region 10 are based on very small numbers. The rate varied in Region 10, where less than 70% of women in four of the six counties reported that they obtained care in their first trimester.

Table 11 shows the trimester of an expectant mother's first prenatal visit for the period 2001-2005. About 80% of women in Colorado reported having their first prenatal visit during their first trimester, compared with about 74% of women in Region 10.

Table 11. Trimester of First Prenatal Care Visit, Annual Average, 2001-2005

	1st Trimester		2nd or 3rd Trimester		No Care	
	%	# cases	%	# cases	%	# cases
COUNTY						
DELTA	74.5	239	23.5	75	2	6
GUNNISON	*	*	*	*	*	*
HINSDALE	*	*	*	*	*	*
MONTROSE	65.5	315	33.2	160	1.3	6
OURAY	*	*	*	*	*	*
SAN MIGUEL	*	*	*	*	*	*
REGION 10	73.5	803	25.2	275	1.3	14
COLORADO	79.7	53,620	19.3	12,964	1.1	714
Note: Prenatal care percentages exclude births with unknown start of prenatal care * Indicates 1 or 2 events Data source: CDPHE, Health Statistics Section						

Weight Gain During Pregnancy and Breastfeeding Newborns. CDPHE data[7] indicate that 20% of women in Region 10 reported inadequate weight gain during pregnancy, which was close to state levels. A very high percentage of women in Region 10 reported that they initiated breastfeeding and breastfed for nine or more weeks. This may reflect strong support for breastfeeding in many Region 10 communities. [See Table 12.]

Table 12. Weight Gain During Pregnancy and Prevalence of Breastfeeding

	2002-2003		2004-2005	
	Region 10	Colorado	Region 10	Colorado
INADEQUATE WEIGHT GAIN	20.3	23.7	23.3	21.8
BREASTFEEDING INITIATION 9 OR MORE WEEKS	93.5	85.3	92.4	88.7
BREASTFEEDING 9 OR MORE WEEKS	79.0	62.3	72.3	65.6
Data source: CDPHE, Health Statistics Section				

Births

Unintended Births. About 40% of women in Colorado who had a live birth during the period 2000-2004 reported that the birth was unintended. The percentage of unintended births in Region 10 counties ranged from 25.9% in Gunnison to 48.3% in Delta. [See Table 13.]

Table 13. Unintended Births 2000-2004

	Percentage of unintended births
COUNTY	
DELTA	48.3
GUNNISON	25.9
HINSDALE	37.3
MONTROSE	38.0
OURAY	37.3
SAN MIGUEL	37.3
COLORADO	39.7
Data source: MCH Datasets	

[7] COHID Maternal and Child Health database and the Pregnancy Risk Assessment Monitoring System (PRAMS). The PRAMS uses estimates to populate the data for smaller counties, including all of the Region 10 counties. For more information on PRAMS, see: http://www.cdphe.state.co.us/hs/prams/

Home Births. In 2005, in Region 10, 3.1% of birth occurred at home. By comparison, 1.0% of births statewide occurred at home. Information on previous years is not available and it is not known whether there will continue to be a higher rate of home births in the future.[8]

Cesarean Section. The rate of cesarean section in Region 10 is similar to the state rate. About one-fourth of women having a live birth in 2004-05 delivered with a C-section. The increase in the rate of cesarean section in Region 10 and in Colorado reflects an increase nationwide. [See Table 14.]

Table 14. Cesarean Section (Percentage of Live Births)

	1998-99	2000-01	2002-03	2004-05
REGION 10	19.4	21.0	24.4	25.7
COLORADO	16.9	18.9	21.6	24.2
Data source: CDPHE, Health Statistics Section				

Teenage Births. The birth rate for Colorado teenagers aged 15-17 was 25 per 1,000 live births in 2002-04.[9] The teenage birth rates for the same period were 20.7 in Delta, 3.2 in Gunnison, and 26.2 in Montrose. [See Table 15.]

Table 15. Rate of Births per 1,000 Teens Ages 15-17, 2000-04

	Births/Estimated Population	Rate per 1,000 Live Births
COUNTY		
DELTA	55/1,851	20.7
GUNNISON	3/949	3.2
HINSDALE	0/52	0.0
MONTROSE	62/2,370	26.2
OURAY	*/271	*
SAN MIGUEL	0/336	0.0
REGION 10	7,100/283,490	25.0

* Three or fewer events
Data source: See http://www.cdphe.state.co.us/ps/mch/mchadmin/mchdatasets2006/profiles/.pdf

[8] CDPHE, Health Statistics Section, June 2007
[9] This rate is based on the number of births to teens aged 15-17 in 2002, 2003, and 2004 over the sum of the estimated population of females ages 15-17 in these same years, or 7,100/283,490.

Preterm Births. The rate of preterm births (less than 37 weeks gestation) as a percentage of live births was slightly higher in 2004-05 than in 1998-99. The rate in Region 10 was similar to the Colorado rate in all time periods. [See Table 16.]

Table 16. Preterm Births (Less than 37 Weeks Gestation) (Percentage of Live Births)

	1998-99	2000-01	2002-03	2004-05
REGION 10	8.0	9.1	8.0	10.0
COLORADO	8.9	9.0	9.5	10.0
Data source: CDPHE, Health Statistics Section				

Low Birth Weight. Low birth weight (LBW) is defined as births less than 2,500 grams (or 5 pounds, 8 ounces) or less. Very low birth weight (VBLW) includes births less than 1,500 grams (or 3 pounds, 4 ounces). According to *Healthy People 2010*: "In the past decade, critical measures of increased risk of infant death, such as new cases of low birth weight and very low birth weight, actually have increased in the United States." A goal set by *Healthy People 2010* is to achieve a decrease in the VBLW and LBW rates to 0.9 and 5.0 respectively. [See Table 17.]

Table 17. Low and Very Low Birth Weights, by County

	1999-2001		2003-2005	
	VBLW	LBW	VBLW	LBW
COUNTY				
DELTA	0.6	6.4	1.4	8.9
GUNNISON	1.7	10.1	2.0	9.2
HINSDALE	0.0	*	0.0	0.0
MONTROSE	1.1	8.3	1.3	8.1
OURAY	*	7.9	*	7.7
SAN MIGUEL	0.0	4.8	*	10.1
COLORADO	1.3	8.5	1.3	9.1

Note (1): Data are based on three-year time spans; for example, the 2007 measure is the VBLW or LBW rate for 2003-05; the numerator is the sum of the VBLW or LBW live births in 2003, 2004, and 2005; the denominator is the sum of all of live births in 2003, 2004, and 2005. The result is multiplied by 100 to yield the percentage.

Note (2): Births with unknown weights are excluded

* Data suppressed because there were fewer than 3 events

Data source: Colorado Health Information Dataset (COHID), Maternal and Child Health

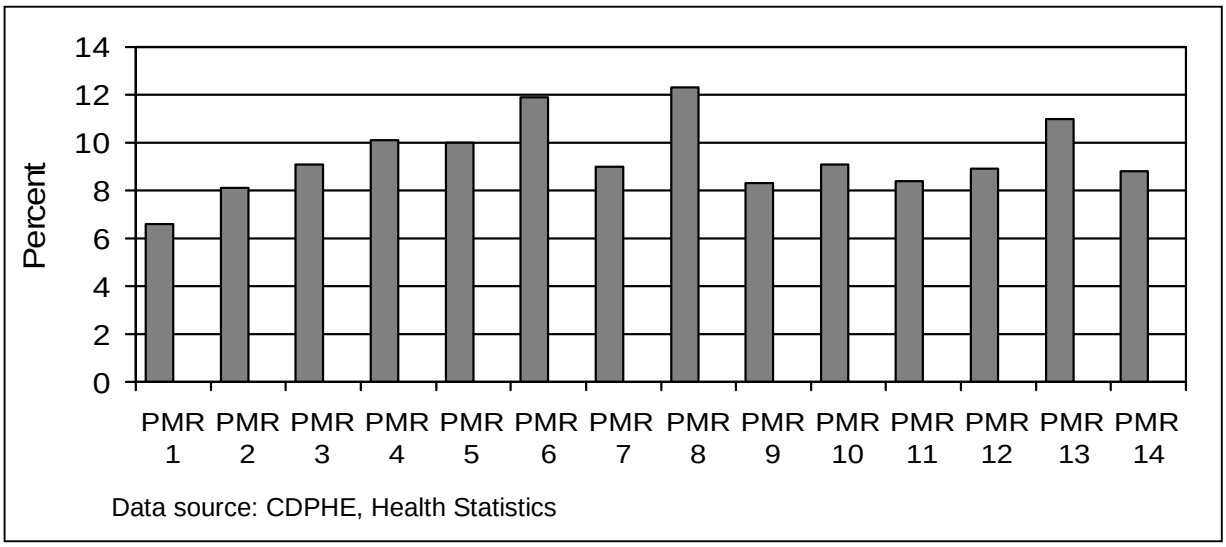
The rate of low birth weight as a percentage of live births was higher in 2004-05 than in 1998-99 in Region 10 (9.1 vs.7.6, respectively) and in the state (9.1 vs. 8.5, respectively). It is not known whether this represents a statistically significant increase, although the trend nationally is an increasing rate of LBW. [See Table 18.]

Table 18. Low Birth Weight (< 2,500 gm) and Very Low Birth Weight (<1,500 gm) (Percentage of Live Births)

	1998-99	2000-01	2002-03	2004-05
LOW BIRTH WEIGHT <2,500 GM				
REGION 10	7.6	7.6	7.6	9.1
COLORADO	8.5	8.5	9.0	9.1
VERY LOW BIRTH WEIGHT <1,500 GM				
REGION 10	1.2	1.1	1.0	1.5
COLORADO	1.3	1.3	1.3	1.3
Data source: CDPHE, Health Statistics Section				

Figure 12 shows the percent of low birth weight babies in Region 10 versus other planning regions in the state.

Figure 12. Percent of Colorado Births that were Low Birth Weight (< 5 lbs 9oz), 2004-2005



Infant and Child Mortality

Infant Deaths. According to *Healthy People 2010*: "Infant mortality is an important measure of a nation's health and a worldwide indicator of health status and social well-being. As of 1995, the U.S. infant morality rates ranked 25th among industrialized nations.... Four causes account for more than half of all infant deaths: birth defects, disorders related to short gestation and unspecified low birth weight (LBW), sudden infant death syndrome (SIDS), and respiratory distress. The leading causes of neonatal death in 1997 were birth defects, disorders related to short gestation and LBW, respiratory distress syndrome, and maternal complications of pregnancy. After the first month of life, SIDS is the leading cause of death.... Mortality rates are highest among infants born to mothers aged 16 years and less and 44 years and older."

For the period 1990-2006, there were 102 infant deaths in Region 10. The number of infant deaths ranged from fewer than 3 to 11 (in 1998 and 2003 respectively). Perinatal conditions were cited as the cause of 45% of deaths, and congenital malformations for 26% of deaths. These two causes combined were responsible for 73 deaths (72%). [See Tables 19 and 20.]

Table 19. Number of Deaths, Children Less than One Year of Age, by Year (Region 10)

	Total Deaths	Congenital Malformations	Perinatal Causes		Total Deaths	Congenital Malformations	Perinatal Causes
1990	8	3	4	1999	5	*	*
1991	8	*	3	2000	4	*	*
1992	3	*	*	2001	8	*	4
1993	5	*	*	2002	5	*	3
1994	3	*	*	2003	11	*	7
1995	4	*	*	2004	9	4	4
1996	6	*	*	2005	5	3	*
1997	10	*	6	2006	7	3	4
1998	*	*	*				
TOTAL Deaths: 102							
TOTAL Congenital Malformations: 27							
TOTAL Perinatal Causes: 46							

* Indicates that data was suppressed because there were fewer than 3 events
Data source: COHID Death Statistics database

Table 20. Causes of Death Children Less than One Year of Age, by County 1990-2006

	Total Deaths	Congenital Malformations	Perinatal Conditions
COUNTY			
DELTA	37	6	20
GUNNISON	22	5	12
HINSDALE	*	*	*
MONTROSE	36	13	11
OURAY	*	*	*
SAN MIGUEL	5	*	*
REGION 10	102	46	27
COLORADO	4,756	1,452	2,865

* Indicates 0-2 events
Data source: COHID Death Statistics database

Infant and Neonatal Mortality Rates. In 1997, the U.S. infant mortality rate was 7.2, compared with 15 per 1,000 live births; two-thirds of infants died during the first 28 days of life (the neonatal period) for a neonatal mortality rate of 4.8 per 1,000 live births. The HP 2010 goals for infant and neonatal mortality rates are 4.5 and 2.9, respectively.

Data on two indicators referred to as *infant and neonatal mortality measures* were obtained from the COHID Maternal and Child Health county datasets, which use data from the preceding five years to calculate mortality rates.[10]

The Colorado infant mortality rate fluctuated between 1998-2005, but it was constant at 6.1 for 2005, 2006 and 2007. [See Tables 21 and 22.] The neonatal mortality measure increased slightly from 4.2 in 2005 to 4.4 in 2007. [See Tables 23 and 24.]

For Region 10 counties, mortality rates are based on very small numbers of deaths as well as relatively small numbers of live births. Thus, rates are sensitive to small changes in the numerator. Rates cannot be calculated for Hinsdale, Ouray or San Miguel due to very small numbers.

Small numbers of deaths have a large effect on rates in counties with relatively few births. For example, the infant mortality rate in Delta County was 4.4 in 2004 compared with 6.6 in 2007. In 2004 there were 7 deaths (average over five previous years) and 1,576 live births, compared with 11 deaths and 1,663 live births in 2007. The infant death rate for Gunnison County was 7.6 in 2004 and 13.9 in 2007. There were 6 deaths (averaged over five previous years) in 2004 compared with 12 deaths in 2007.

[10] According to COHID: "The measure is the infant mortality rate per 1,000 live births. The numerator is the sum of all infant deaths in [a consecutive five-year period, i.e.,] 2001, 2002, 2003, 2004, and 2005. The denominator is the total number of live births in the same five years. The result is multiplied by 1,000 to yield the rate."

The rate remained relatively constant in Montrose in 2004 and 2007 (4.8 in each of those years). Montrose had a higher total number of live births than Delta or Gunnison, although the number of deaths was 33% higher in 2004 than in 2007 (9/2,244 in the 2004 measure and 12/2,429 in the 2007 measure).

Table 21. Infant Mortality (Percentage of Live Births)

	1998-99	2000-01	2002-03	2004-05
REGION 10	3.1	5.5	7.5	6.1
COLORADO	6.7	6.0	6.0	6.4
Data source: CDPHE, Health Statistics Section				

Table 22. Infant Mortality Rates for 2004 (1998-2002), 2005 (1999-2003), 2006 (2000-2004) and 2007 (2001-2005)

	1998-2002	1999-2003	2000-2004	2001-2005
COUNTY				
DELTA	4.4	7.7	7.5	6.6
GUNNISON	7.6	10.8	13.5	13.9
HINSDALE	*	*	*	*
MONTROSE	4.0	4.8	4.7	4.9
OURAY	0.0	0.0	*	*
SAN MIGUEL	0.0	0.0	0.0	*
REGION 10	6.2	6.1	6.1	6.1
HP 2010 GOAL	4.5	4.5	4.5	4.5
* indicates 1-2 events Data source: MCH Datasets				

Table 23. Neonatal Mortality Rates for 2005 (1999-2003), 2006 (2000-2004) and 2007 (2001-2005)

	2005	2006	2007
COUNTY			
DELTA	5.1	5.6	4.8
GUNNISON	8.4	10.2	11.6
HINSDALE	*	*	*
MONTROSE	2.6	3.0	2.5
OURAY	0	*	*
SAN MIGUEL	0	0	*
COLORADO	4.2	4.3	4.4
HP 2010 GOAL	2.9	2.9	2.9

* indicates 1-2 events
Data source: MCH Datasets

Table 24. Perinatal, Neonatal, Postneonatal, and Infant Mortality Rates per 1,000 Live Births 2001-05

	Perinatal	Neonatal	Postnatal	Infant
COUNTY				
DELTA	6.0	4.8	1.8	6.6
GUNNISON	13.8	11.6	*	13.9
HINSDALE	*	*	*	*
MONTROSE	4.9	2.5	2.5	4.9
OURAY	*	*	0	*
SAN MIGUEL	7.8	*	0	*
COLORADO	6.5	4.4	1.7	6.1

* indicates 1-2 events
Data source: MCH Datasets

Child Deaths Ages 1-14. A second data source shows the child death rate per 100,000 population for four time periods. The rate for 2004-05 is lower statewide and in Region 10 than the rate for 1998-99. [See Table 25.]

Table 25. Child Deaths Age 1-14 Years (Rates per 100,000 Population)

	1998-99	2000-01	2002-03	2004-05
REGION 10	29.4	22.3	24.8	21.1
COLORADO	22.2	21.7	20.6	18.6
Data source: CDPHE, Health Statistics Section				

Immunizations

The 2005 Colorado National Immunization Survey (NIS) estimated that 83.4% of children ages 19-35 months were fully immunized[11]. This placed Colorado at 16th in the nation and reflects an improvement from 2002 and 2003 when the state ranked 50th nationally. Higher vaccination rates are likely due to increased availability of vaccines, funding increases for immunization services and increased public awareness. Colorado is one of several states with a personal exemption that allows parents to opt out of immunization for their children. It is not known to what extent parents' decisions about whether and when to immunize their children affects rates.

According to the Vaccines for Children Program immunization rates in Region 10 varied in 2004, 2005 and 2006 from a low of 72% in Delta (2006) to a high of 100% in Montrose (2004).[12] [See Table 26.]

[11] 4:3:1:3:3 Series

[12] Region 10 data were obtained from site visit reports obtained from county health departments and nursing services. It is not possible to know exactly how many children are fully immunized. Per State auditors, there is no method at present to assess the full immunization rate in every county. Not all county providers of immunizations participate in the VFC program or participate in the Colorado Immunization Registry.

Table 26. Immunization Rates: Percentage Fully-Immunized Two-Year-Olds

	Percentage	Year
COUNTY		
DELTA	90	2005
	72	2006
GUNNISON	85	2005
HINSDALE	67	2005
MONTROSE	100	2004
	95	2005
	No site visit	2006
OURAY	No site visit	2006
SAN MIGUEL	85	2005
Data source: Site visit reports		

Nutrition and Oral Health

Nutrition. In 2004, CDPHE began administering a Child and Adolescent Health Survey.[13] The survey extends the questions asked on the Behavioral Risk Factors Surveillance Survey (BRFSS) to parents of children ages 1-14, and includes questions about nutrition, including items about food security — whether parents have sufficient income to provide their children with adequate food. Table 27 shows that food insecurity is a problem at least "sometimes" for about a quarter of the state's children. Between 2004-2005 that number increased, though this cannot be used to indicate a trend since the data covers only two points in time.

Table 27. Nutrition and Food Security, Children Ages 1-14 (Statewide)

	2004	2005
PARENTS RELIED ON A FEW KINDS OF LOW-COST FOOD TO FEED CHILD BECAUSE THEY WERE RUNNING OUT OF MONEY TO BUY FOOD		
OFTEN TRUE	4.5%	6.7%
SOMETIMES TRUE	23.8%	25.0%
NEVER TRUE	71.6%	68.3%
CHILD WAS HUNGRY, BUT PARENT COULDN'T AFFORD MORE FOOD	2.5%	2.5%
Data source: CDPHE, Health Statistics Section		

[13] http://www.cdphe.state.co.us/hs/pubs/childhealthsurveyRev.pdf

Body mass index. The Body Mass Index (BMI) is a standard measure of weight adopted by the Centers for Disease Control and Prevention (CDC). In the U.S. the BMI is being employed to track not only children who are underweight, but also those who are overweight and obese. In Colorado, in 2004, about 13% of all children ages 1-14 were found to be underweight, while almost 15% were found to be overweight, with another 14.7% "at risk of being overweight." The percentages for underweight and overweight children declined somewhat in 2005. [See Table 28.]

Table 28. Body Mass Index, Children Ages 1-14 (Statewide)

	2004	2005
UNDERWEIGHT (< 5TH PERCENTILE)	12.9%	9.6%
HEALTHY WEIGHT (5TH PERCENTILE TO < 85TH PERCENTILE)	58.6%	61.4%
AT RISK OF OVERWEIGHT (85TH PERCENTILE TO < 95TH PERCENTILE)	13.8%	15.1%
OVERWEIGHT (EQUAL TO OR > THAN 95TH PERCENTILE	14.7%	10.5%
Data source: CDPHE, Health Statistics Section, Child Health Survey		

Dental health. The teeth that we have for a lifetime are formed in childhood. Consequently, the dental health of children is essential to lifelong health. Table 29 shows the dental health of children statewide. The percentage of children with teeth in "fair" to "poor" condition increased between 2004-2005.

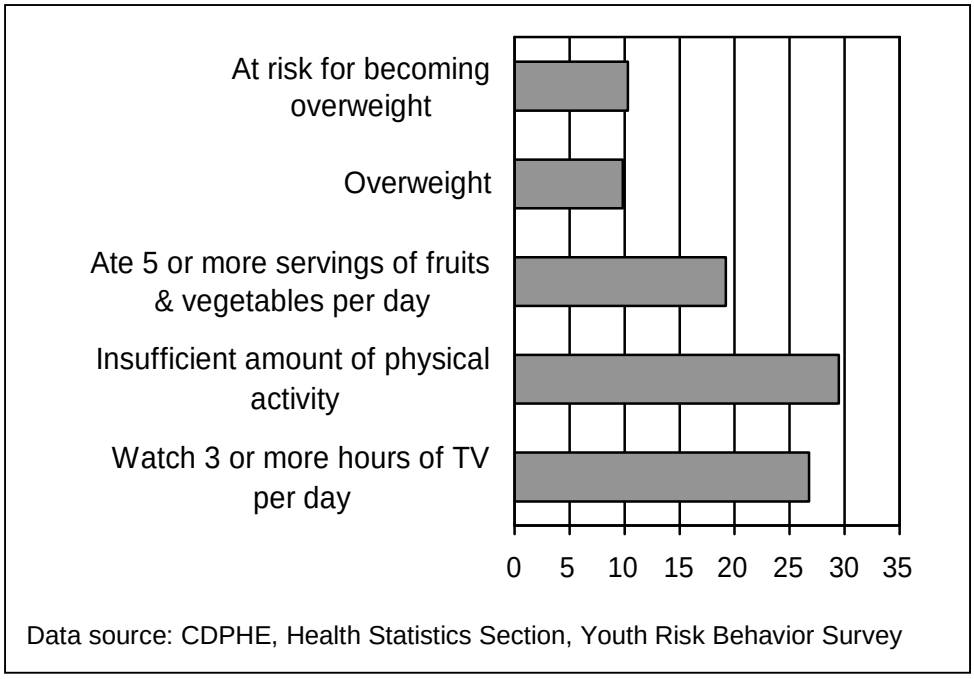
Table 29. Teeth Condition of the Child (Statewide)

	2004	2005
EXCELLENT	41.4%	41.0%
VERY GOOD	30.4%	29.8%
GOOD	18.8%	19.1%
FAIR	8.5%	7.9%
POOR	1.2%	2.2%
Data source: CDPHE, Health Statistics Section, Child Health Survey		

Teen Health Behaviors

Weight, Nutrition and Physical Activity. Certain behaviors are clearly associated with children being at risk for becoming overweight. These include an insufficient amount of physical activity and being sedentary because of the amount of television watched each day. [See Figure 13.]

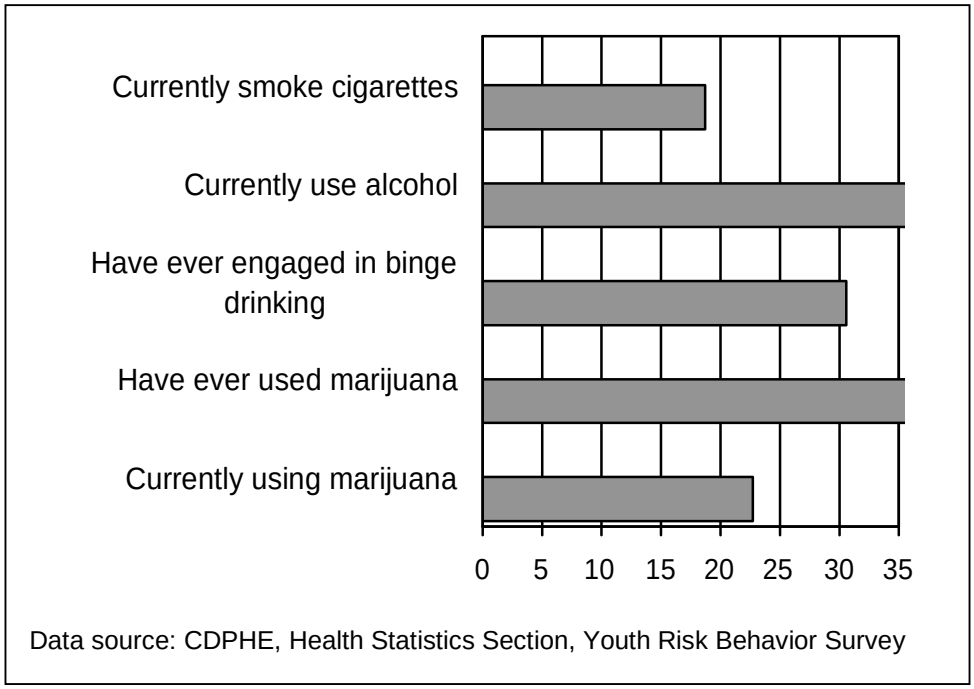
Figure 13. Overweight, Nutrition and Physical Activity: Colorado Students, Grades 9-12 (2005)



Data source: CDPHE, Health Statistics Section, Youth Risk Behavior Survey

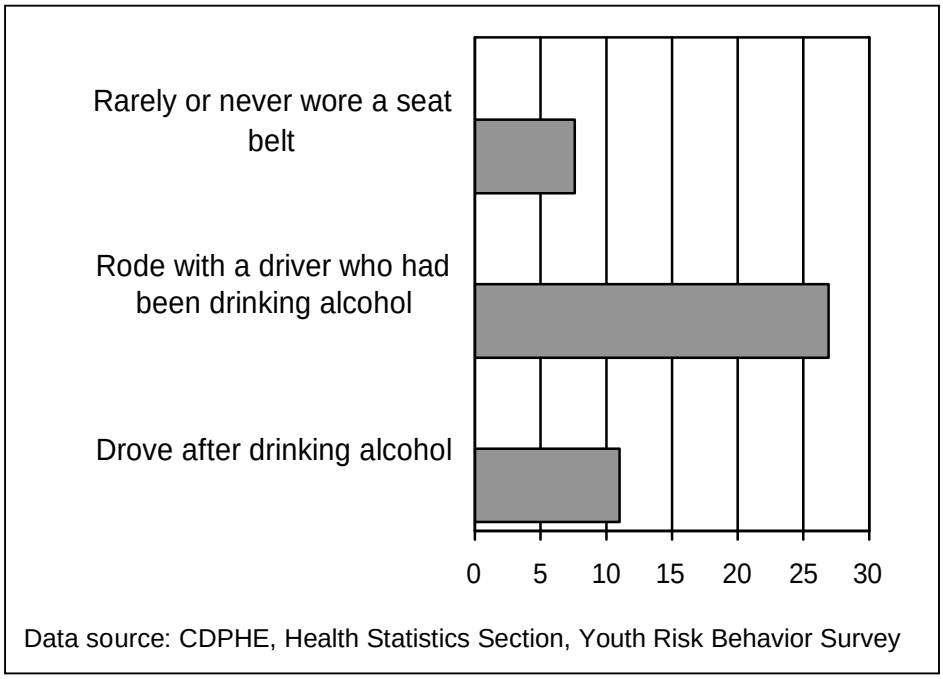
Tobacco, Alcohol and Marijuana Use. Lifelong health-related behaviors are generally established in childhood. It is important to promote positive choices before detrimental behaviors are initiated or become ingrained. The Youth Risk Behavior Survey (2005) noted that, "Substance use among youth is a major predictor of continued use or abuse as an adult, which can often lead to physical and/or mental health problems. The use of drugs and/or alcohol can lead to dangerous behaviors, including unprotected or unwanted sex, driving under the influence, and more serious criminal behaviors." [See Figure 14.]

Figure 14. Tobacco, Alcohol and Marijuana Use: Colorado Students, Grades 9-12 (2005)



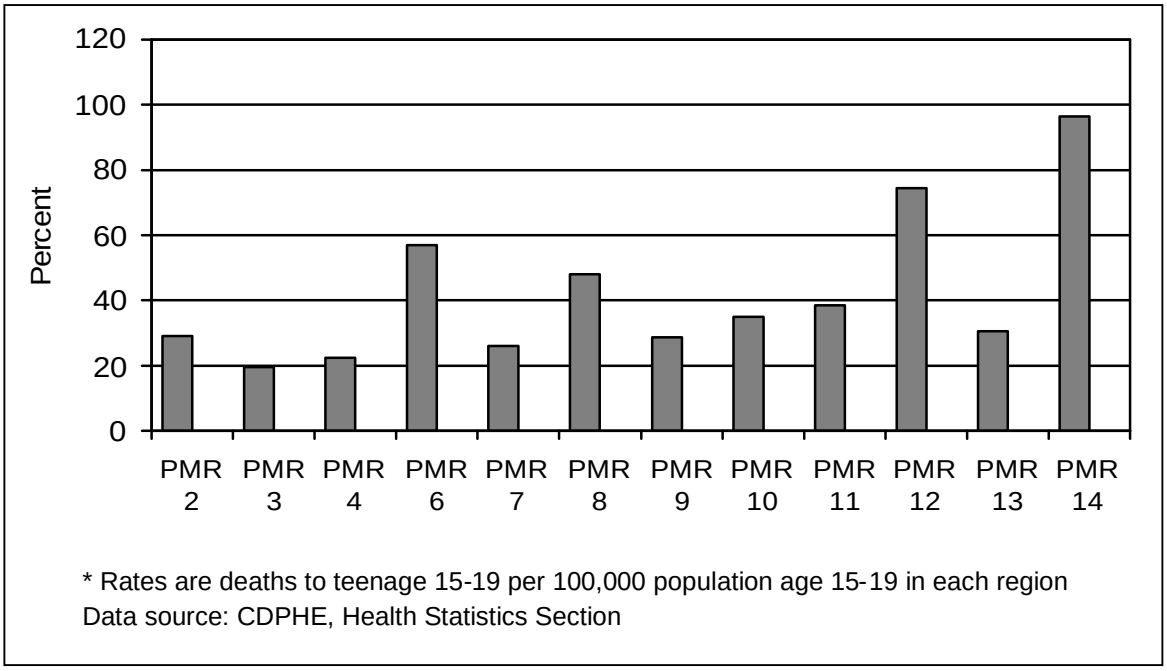
Driving Associated Unintentional Injuries. Injuries are classified as being either intentional or unintentional. Serious injuries are a public health concern because they can result in hospitalizations. Among children grades 9-12, being involved in an automobile accident is a major cause of injuries. [See Figure 15.] For children ages 15-19, being involved in an automobile accident is a major cause of death. [See Figure 16.]

Figure 15. Prevalence of Behaviors that Contribute to Unintentional Injuries: Colorado Students, Grades 9-12 (2005)



Data source: CDPHE, Health Statistics Section, Youth Risk Behavior Survey

Figure 16. Death Rates* for Teens from Motor Vehicle Crashes, Ages 15-19, Colorado Residents, by PMR (2004-2005)



* Rates are deaths to teenage 15-19 per 100,000 population age 15-19 in each region
Data source: CDPHE, Health Statistics Section

Trends and Policy Implications

Positive and negative trends are indicated below by arrows. An up arrow indicates an improving trend (e.g., better quality in some aspect of the environment), while a down arrow indicates a declining trend (e.g., more environmental pollution). [See Table 30.]

Table 30: Positive and Negative Trends in Region 10

↑ Positive Trends
⇧ The percentage of women who **smoked during pregnancy** has shown a steady decrease.
⇧ The percentage of women who received adequate **prenatal care** has increased, but is still lower than the HP 2010 goal.
⇧ The rate of **unintended pregnancy** decreased slightly and was lower than the state rate in 2004-05.
⇧ A higher percentage of women in Region 10 than in the state initiated **breastfeeding** and breastfed nine or more weeks.
⇧ The **death rate among children aged 1-14** has decreased.
↓ Negative Trends
⇩ The **infant mortality rate** has not decreased and, with the exception of Montrose, is higher than the state average.
⇩ The rate of **low birth weight** has increased and is higher than the HP 2010 goal.
⇩ The percentage of **unintended births** remains high despite the availability of emergency contraception and sliding fee scale family planning services in each of the counties. Note: Ouray residents must travel to Montrose for services and Hinsdale residents must travel to Gunnison to obtain some services.
⇩ **Inadequate weight gain during pregnancy** is increasing.

Policy Implications

- Sliding fee scale or reduced cost prenatal care is available to the residents of all counties in the region; however, lack of transportation in this rural region affects access to all types of health care.
- Although sliding fee scale family planning services and emergency contraception are available, there may be a lack of public awareness about how to access these services.
- In the three smallest counties (Hinsdale, Ouray, San Miguel), there are no hospitals; residents may travel to Montrose, Delta or Gunnison for prenatal care services, rather than obtaining care in their communities, where they know they will not deliver.
- While some women are choosing to give birth at home, information about these births is lacking. It is not known which factors—lifestyle choices, lack of access to medical services, or other factors—have the strongest impacts on the place of delivery.
- Inadequate weight gain during pregnancy, preterm births, low birth weight and neonatal mortality have not declined. This raises questions about whether and how prenatal care services are being utilized/delivered, and whether other factors influencing birth outcomes should be further scrutinized.
    - Seven in 10 women obtain adequate prenatal care, a rate that falls short of the HP 2010 target goal (9 of 10). More importantly, the percentage of women obtaining adequate prenatal care since 1998 appears to have remained relatively flat. Another indicator suggests that just one in four women obtains prenatal care after the first trimester.
    - Adequate prenatal care should contribute to better outcomes, such as adequate weight gain and full term deliveries, hence healthier mothers and babies.

Photo:
Hinsdale Silver Street Park

Section 4. CHRONIC DISEASES

Defining the Issue

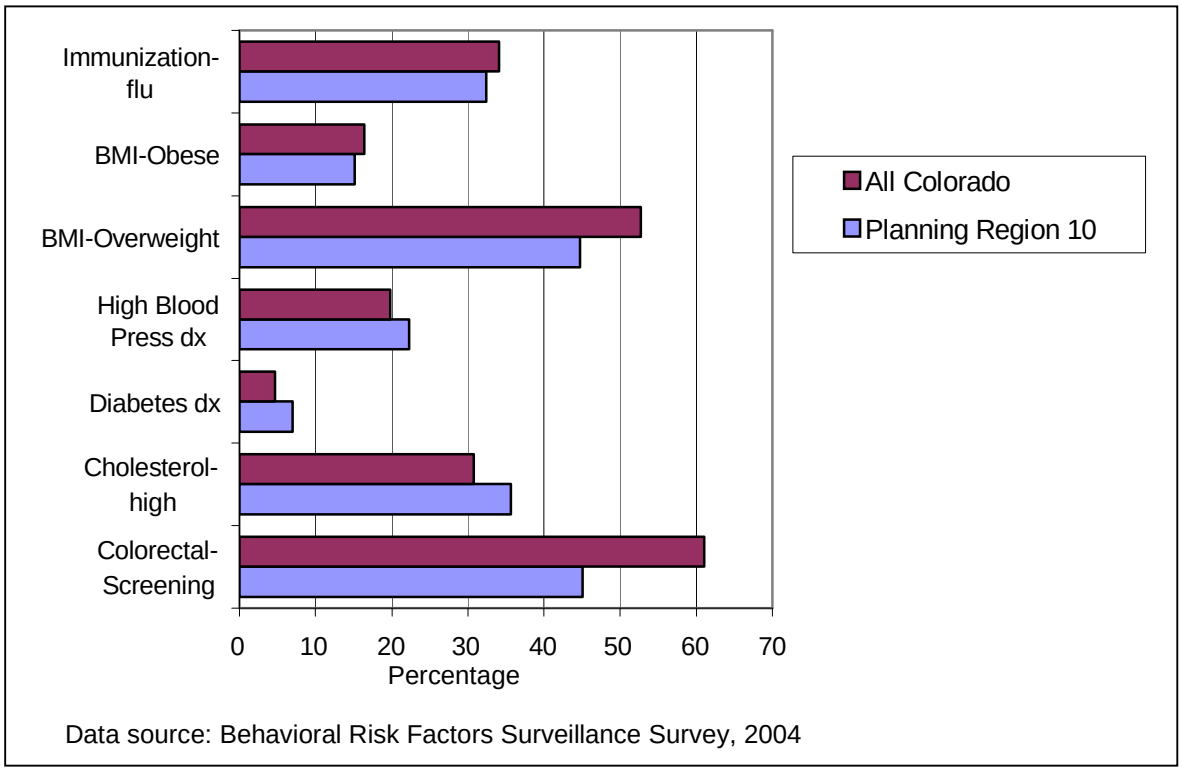
Chronic Diseases—such as heart disease, cancer and diabetes—are the leading causes of death and disability in the U.S. These diseases account for 7 of every 10 deaths and affect the quality of life of 90 million Americans. Although chronic diseases are among the most common and costly health problems, they are also among the most preventable. Adopting healthy behaviors such as eating nutritious foods, being physically active, and avoiding tobacco use can prevent or control the devastating effects of these diseases.[14]

Data from Region 10 and Colorado

Table 31 shows the prevalence of risk behaviors associated with selected chronic diseases for both Colorado and Region 10. Region 10 is below the rest of the state for most risk behaviors, but is above the state level for high cholesterol, high blood pressure and diabetes.

[14] See, http://www.health.gov/dietaryguidelines/dga2005/document/html/appendixC.htm

Table 31: Risk Factors Associated with Chronic Diseases



Data source: Behavioral Risk Factors Surveillance Survey, 2004

Table 32 shows leading causes of death by counties, for the entire region and for the state.

Table 32. Leading Causes of Death, Number of Deaths and Age-Adjusted Death Rates per 100,000 Population, 2004-05

	All Causes		Heart Disease		Malignant Neoplasms		Chronic Lower Respiratory Diseases	
	N	Rate	N	Rate	N	Rate	N	Rate
COUNTY								
DELTA	609	708.9	147	152.0	129	148.4	46	51.5
GUNNISON	127	733.6	24	153.0	29	157.6	3	18.2
HINSDALE	5	343.2	*	*	*	*	*	*
MONTROSE	669	742.4	154	165.6	138	154.2	60	65.7
OURAY	52	726.2	10	125.9	12	160.8	*	*
SAN MIGUEL	27	482.0	*	*	6	137.2	*	*
REGION 10	1,489	704.4	338	157.2	316	147.7	111	52.2
COLORADO	57,748	756.7	12,329	167.7	12,552	160.6	3,807	52.2

* indicates fewer than 3 events
Data source: CDPHE, Health Statistics Section

The sections that follow are organized by disease categories: cancers, cardiovascular disease, respiratory disease and diabetes. More detailed reporting is available on cancers, because the state maintains a Cancer Registry.

Cancer

In 2006, cancer was the second leading cause of death in Region 10 and in the U.S., and the primary cause of death in Colorado. The *Healthy People 2010* goal is, "to reduce the number of new cancer cases and the illness, disability and death caused by cancer." The document notes: ".... In addition to the human toll of cancer, the financial costs of cancer are substantial.... One-half of new cases of cancer occur in people aged 65 years and over." Early detection is critical to reducing deaths from many types of cancer including breast cancer, colorectal cancer, prostate cancer and melanomas of the skin. Data on cancer were obtained from the Colorado Central Cancer Registry and the Health Statistics Section of CDPHE.[15]

Data for all cancers combined show that, in Region 10, incidence rates and mortality rates were generally lower for women than for men. In general, rates were not significantly different between the region and the state. [See Tables 33 and 34.]

[15] The Cancer Registry provides incidence (or diagnosis) rates, mortality rates and percentage of cancers diagnosed by stage of the disease for three time spans during the period 1992-2002. Data are available by county and for Region 10 and Colorado. Incidence and mortality rates are expressed as average annual age-adjusted rates per 100,000 population. Significant differences in rates are included. Mortality data from the Health Statistics Section of CDPHE includes more recent data through 2005. Data are not reported by county, and statistical significance was not reported.

Table 33. Incidence of All Types of Cancer Combined

	1992-1998		1999-2000		2001-2002	
	M	F	M	F	M	F
COUNTY						
DELTA	487.1#	371.3	600.2	360.8	582.5	365.3
GUNNISON	601.4	342.0	373.3#	346.9	866.8*	212.1#
HINSDALE	387.6	357.7	211.7	352.1	786.5	**
MONTROSE	535.6	385.0	574.0	363.6	541.8	378.2
OURAY	608.2	341.6	644.3	506.7	497.0	485.2
SAN MIGUEL	370.0#	308.9	449.6	211.7#	267.3	454.1
REGION 10	544.1	592.7*	574.8	382.9	373.8	356.1#
COLORADO	544.6	397.6	522.6	400.1	530.7	404.6

* rate is significantly higher than Colorado rate
# rate is significantly lower than Colorado rate
** indicates less than 3 events

Data source: CDPHE, Colorado Central Cancer Registry, Cancer in Colorado, 1992-2002 Incidence and Mortality by County (2005), pg. 10

Table 34. Deaths from All Types of Cancer Combined

	1992-1998		1999-2000		2001-2002	
	M	F	M	F	M	F
COUNTY						
DELTA	197.0#	144.2	232.0	141.7	173.4	139.5
GUNNISON	236.2	109.6#	142.8	183.9	280.8	144.9
HINSDALE	**	233.2	**	307.1	**	**
MONTROSE	201.3	132.2	233.1	162.2	237.9	150.5
OURAY	292.4	136.2	506.9	98.2	166.5	110.5
SAN MIGUEL	80.2#	117.3	93.7	157.6	**	251.0
REGION 10	198.8#	133.6	242.2	152.2	201.1	146.2
COLORADO	223.9	151.8	208.5	146.2	202.2	146.9

* rate is significantly higher than Colorado rate
# rate is significantly lower than Colorado rate
** indicates less than 3 events

Data source: CDPHE, Colorado Central Cancer Registry, Cancer in Colorado, 1992-2002 Incidence and Mortality by County (2005), pg. 12

Detecting cancer at an early stage is essential to effective treatment and survival. In general, rates of early detection for Region 10 are comparable to those for the state as a whole. [See Table 35.]

Table 35. Percent of Cancer Detected at an "Early" Stage

		Region 10	Colorado
1992-1998	Colon and Rectum	42.0	40.3
	Lung and Bronchus	19.6	20.3
	Melanomas of the Skin	94.8	95.2
	Female Breast	75.4	71.2
	Prostate	77.6	78.8
1999-2000	Colon and Rectum	44.3	43.2
	Lung and Bronchus	15.4	20.4
	Melanomas of the Skin	96.7	94.5
	Female Breast	72.1	72.4
	Prostate	80.5	84.5
2001-2002	Colon and Rectum	37.2	44.6
	Lung and Bronchus	22.9	19.7
	Melanomas of the Skin	91.1	92.5
	Female Breast	65.6	72.9
	Prostate	89.3	87.1
Data source: Cancer in Colorado, 1992-2002			

Lung Cancer. Cancers of the lung and bronchus are the leading cancer-related causes of death in Region 10, Colorado and nationally. Overall incidence rates in Colorado were lower than national rates. Colorado mortality rates decreased from 1997-2001 about 2% per year for males, but increased 1-2% for females. [16]

Lung cancer mortality rates in Region 10 did not differ significantly from Colorado rates. Males in the U.S., Colorado and Region 10 had higher lung and bronchus cancer incidence and mortality rates than females. The mortality rate for males in Region 10 was slightly lower in 2001-02 than in preceding years (55.1 versus 57.1), while the rate was higher for females (36.9 versus 28.3). The incidence rate among males in Montrose was statistically elevated (at least 20% higher than the state) for 2000-01.[17] [See Table 36.]

[16] Cancer Registry, p 58
[17] Cancer Registry, p 58

Table 36. Lung and Bronchus Cancer Deaths (Age-Adjusted Rate per 100,000 Population)

	1998-99	2000-01	2002-03	2004-05
REGION 10	49.2	39.8	48.5	35.6
COLORADO	41.5	41.3	41.9	39.0
Data source: CDPHE, Health Statistics Section				

Colorectal Cancer. Colorectal cancer is the second leading cause of cancer-related deaths. CDPHE data on colorectal cancer deaths during four two-year periods from 1998 to 2005 shows that the Colorado death rate decreased from 18.4 to 17.1, while the Region 10 death rate decreased from 17.8 to 14.7. [See Table 37.]

Table 37. Colorectal Cancer Deaths (Age-Adjusted Rate per 100,000 Population)

	1998-99	2000-01	2002-03	2004-05
REGION 10	17.8	16.5	17.6	14.7
COLORADO	18.4	17.4	17.7	17.1
Data source: CDPHE, Health Statistics Section				

"Early" detection (in situ and localized stages) "is associated with a 5-year survival of close to 90%".[18] Colorado colorectal cancer incidence rates for 1997-2001 were 4-25% lower, and mortality rates were 3-19% lower than comparable U.S. rates. Women had lower colorectal cancer incidence and mortality rates than men both in Region 10 and the state.

While the percentage of cases diagnosed "early" increased for the state from 40.3 in 1992-98 to 44.6 in 2001-02, Region 10 showed a decrease in percent "early" detection from 42.0 to 37.2. Several counties in Region 10 had a lower percentage of cases diagnosed "early" in 2001-02, as compared with 1999-2000. In Montrose, the percentage detected "early" was 32.3 in 2001-02 compared with 40.0 in 1999-2000. In Delta, the percentages were 33.3 and 50.0, respectively. [See Tables 38, 39 and 40.]

[18] Cancer Registry, p 48

Table 38. Percentage of "Early" Detection of Colorectal Cancer

	1992-1998		1999-2000		2001-2002	
	%	# cases	%	# cases	%	# cases
COUNTY						
DELTA	45.5	119	50.0	46	33.3	49
GUNNISON	40.0	26	28.6	8	66.7	6
HINSDALE	66.7	3	**	—-	**	—-
MONTROSE	38.9	119	40.0	30	32.3	31
OURAY	33.3	3	33.3	3	42.9	7
SAN MIGUEL	33.3	7	**	—-	60.0	5
REGION 10	42.0	277	44.4	87	37.2	99
COLORADO	40.3	11,311	42.2	3,555	44.6	3,615

Note: "Early" detection is percent in situ + localized of staged cases (unknown stage excluded)
** indicates less than 3 events
Data source: CDPHE, Colorado Central Cancer Registry, Cancer in Colorado, 1992-2002 Incidence and Mortality by County (2005), pg. 54

Table 39. Incidence of Colorectal Cancer

	1992-1998		1999-2000		2001-2002	
	M	F	M	F	M	F
COUNTY						
DELTA	50.4	36.2	65.3	41.6	62.2	48.2
GUNNISON	58.7	42.3	**	67.8	50.0	**
HINSDALE	**	**	**	**	**	**
MONTROSE	55.3	39.1	45.8	27.8	45.5	26.1
OURAY	**	**	**	**	53.3	140.5
SAN MIGUEL	84.5	**	**	**	**	94.0
REGION 10	55.4	38.6	53.9	37.7	52.9	39.2
COLORADO	58.3	43.0	57.4	40.9	52.3	40.6

** indicates less than 3 events
Data source: CDPHE, Colorado Central Cancer Registry, Cancer in Colorado, 1992-2002 Incidence and Mortality by County (2005), pg. 50

Table 40. Colon and Rectum — Cancer Deaths, Average Annual Age-Adjusted MORTALITY Rates per 100,000 Population by Sex, Place, and Time period

	1992-1998		1999-2000		2001-2002	
	M	F	M	F	M	F
COUNTY						
DELTA	14.5#	12.1	15.5	15.8	20.2	15.4
GUNNISON	38.4	11.5	**	37.2	**	**
HINSDALE	**	**	**	**	**	**
MONTROSE	18.7	13.3	22.2	20.2	24.5	9.3
OURAY	**	**	**	**	**	**
SAN MIGUEL	**	**	**	**	**	**
REGION 10	17.9#	12.8	17.4	19.8	20.8	12.2
COLORADO	22.3	16.6	21.8	15.0	20.7	15.0

rate is significantly lower than the Colorado rate
** indicates less than 3 events
Data source: CDPHE, Colorado Central Cancer Registry, Cancer in Colorado, 1992-2002 Incidence and Mortality by County (2005), pg. 50

Prostate Cancer. In Colorado, the cumulative lifetime risk of prostate cancer is 1 in 5.[19] The 1997-2001 incidence rate in Colorado was similar to the national rate. Likewise, mortality rates in Region 10 and Colorado were not significantly different. [See Table 41.]

Table 41. Prostate Cancer Deaths (Age-Adjusted Rate per 100,000 Population)

	1998-99	2000-01	2002-03	2004-05
REGION 10	38.7	23.6	17.9	27.7
COLORADO	29.1	28.6	28.2	27.1

Data source: CDPHE, Health Statistics Section

In Region 10, however, the prostate cancer incidence rates were significantly higher than state rates for 1999-2000 and 2001-02. According to the state's Cancer Registry, these higher rates were generally transient over time and likely a result of early detection differences due to PSA testing. Early detection rates in both the region and the state were more than 10 percentage points higher in 2001-02 than in 1992-98. [See Tables 42, 43 and 44.]

[19] Cancer Registry, p 77

Table 42. Percentage of "Early" Detection of Prostate Cancer

	1992-1998		1999-2000		2001-2002	
	%	# cases	%	# cases	%	# cases
COUNTY						
DELTA	77.5	170	76.8	83	87.3	83
GUNNISON	67.6	53	71.4	16	93.8	36
HINSDALE	80.0	5	**	—-	75.0	4
MONTROSE	78.1	196	88.3	85	89.8	77
OURAY	86.7	28	75.0	6	100.0	5
SAN MIGUEL	90.9	17	66.7	9	83.3	8
REGION 10	77.6	469	80.5	201	89.3	213
COLORADO	78.8	16,813	84.5	5,346	87.1	5,517

Note: "Early" detection is percent in situ + localized of staged cases (unknown stage excluded)
** indicates less than 3 events
Data source: CDPHE, Colorado Central Cancer Registry, Cancer in Colorado, 1992-2002 Incidence and Mortality by County (2005), pg. 82

Table 43. Prostate—Diagnosed Cancers, Average Annual Age-Adjusted INCIDENCE Rates per 100,000 and Number by Sex, Place, and Time Period (Males)

	1992-1998		1999-2000		2001-2002	
	Rate	# cases	Rate	# cases	Rate	# cases
COUNTY						
DELTA	28.5	34	29.2	11	10.1	4
GUNNISON	36.9	6	**	—-	38.4	3
HINSDALE	**	—-	**	—-	**	—-
MONTROSE	33.8	33	37.6	12	24.6	9
OURAY	94.4	4	**	—-	**	—-
SAN MIGUEL	**	—-	**	—-	**	—-
REGION 10	31.8	78	30.9	25	20.0	18
COLORADO	34.2	2,522	30.6	733	27.1	711

** indicates less than 3 events
Data source: CDPHE, Colorado Central Cancer Registry, Cancer in Colorado, 1992-2002 Incidence and Mortality by County (2005), pg. 82

Table 44. Prostate—Cancer Deaths, Average Annual Age-Adjusted MORTALITY Rates per 100,000 Population and Number by Place, and Time Period

	1992-1998		1999-2000		2001-2002	
	Rate	# cases	Rate	# cases	Rate	# cases
COUNTY						
DELTA	134.7#	170	214.6	83	206.8	83
GUNNISON	260.2*	53	154.7	16	410.3*	36
HINSDALE	262.5	5	**	—-	321.0	4
MONTROSE	170.1	195	226.6	84	199.0	77
OURAY	282.0	28	122.2	6	137.8	5
SAN MIGUEL	138.3	17	306.0	9	118.7	8
REGION 10	173.7	468	230.2*	200	215.3*	213
COLORADO	179.2	16,792	170.7	5,340	164.6	5,510

* Rate is significantly higher than the Colorado rate
# Rate is significantly lower than the Colorado rate
** indicates less than 3 events
Data source: CDPHE, Colorado Central Cancer Registry, Cancer in Colorado, 1992-2002 Incidence and Mortality by County (2005), pg. 84

Breast Cancer. The Colorado female breast cancer incidence rate during 1997-2001 was 3% higher than the national rate, while the mortality rate was 13% lower.[20] Statewide, the breast cancer mortality rate was slightly lower in 2001-02 than in 1992-98 (22.3 versus 26.0). In Region 10, mortality rates were higher (28.7 versus 22.1).

Screening and early detection are critical to reducing deaths from female breast cancer. In Colorado, the rate of diagnosis of female breast cancer in the "early" stage held steady at about 72%. By comparison, the "early" diagnosis rate in Region 10 was lower in 2001-02 than in 1992-98 (65.6 versus 75.4). San Miguel had an early detection rate of less than 70% in 1999-2000 and 2001-02, and detection rates dropped from above 70% to 70% or less in Delta, Gunnison and Montrose. [See Tables 45, 46 and 47.]

[20] Cancer Registry, p 27.

Table 45. Female Breast — Diagnosed Cancers, Average Annual Age-Adjusted Incidence Rates per 100,000 by Sex, Place and Time Period

	1992-1998	1999-2000	2001-2002
COUNTY			
DELTA	130.6	117.0	97.9**
GUNNISON	120.8	89.0	35.1
HINSDALE	189.1	*	*
MONTROSE	140.7	120.6	105.3
OURAY	173.2	163.5	153.0
SAN MIGUEL	84.2	102.6	164.9
REGION 10	138.3	121.0	97.9**
COLORADO	131.3	138.9	130.3

* indicates less than three events in this category
** rate is significantly lower than Colorado rate
Data source: CDPHE, Colorado Central Cancer Registry, Cancer in Colorado, 1992-2002, Incidence and Mortality by County (2005); pg 30-31

Table 46. Female Breast —Cancer Deaths, Average Annual Age-Adjusted Incidence Rates per 100,000 by Sex, Place and Time Period

	1992-1998	1999-2000	2001-2002
COUNTY			
DELTA	25.0	22.6	30.4
GUNNISON	21.4	29.7	32.9
HINSDALE	**	**	**
MONTROSE	22.4	24.4	30.3
OURAY	31.2	**	**
SAN MIGUEL	**	**	**
REGION 10	22.1	22.9	28.7
COLORADO	26.0	24.0	22.3

* indicates less than three events in this category
Data source: CDPHE, Colorado Central Cancer Registry, Cancer in Colorado, 1992-2002, Incidence and Mortality by County (2005); pg 32-33

Table 47. Female Breast Cancer — Stage of Disease at Diagnosis: Percentage of "Early" Detection

	1992-1998		1999-2000		2001-2002	
	%	# cases	%	# cases	%	# cases
COUNTY						
DELTA	74.6	177	71.6	—-	66.0	47
GUNNISON	61.5	41	77.8	11	62.5	8
HINSDALE	80.0	5	**	**	**	**
MONTROSE	77.9	204	80.7	61	67.3	53
OURAY	87.5	24	75.0	8	75.0	8
SAN MIGUEL	63.6	11	60.0	6	42.9	8
REGION 10	75.4	462	72.1	138	65.6	124
COLORADO	71.2	19,018	72.4	6,835	72.9	6,916

Note: "Early" detection is percent in situ + localized of staged cases (unknown stage excluded)
** indicates less than 3 events
Data source: CDPHE, Colorado Central Cancer Registry, Cancer in Colorado, 1992-2002 Incidence and Mortality by County (2005), pg. 34-35

Melanoma. Melanomas of the skin are not among the main causes of cancer-related deaths. Many types of skin cancers could be prevented by limiting sun exposure, wearing protective clothing and using sunscreen. Education is an important key to prevention.

Table 48 shows the age-adjusted death rate from melanomas of the skin for the period 1998-2005. It is not known whether the differences in the rates are statistically significant. [See Table 17.]

Table 48. Melanoma Deaths (Age-Adjusted Rate per 100,000 Population)

	1998-99	2000-01	2002-03	2004-05
REGION 10	3.4	3.9	4.0	5.4
COLORADO	3.0	3.2	2.6	2.9

Data source: CDPHE, Health Statistics Section

Colorado incidence rates for melanoma in 1997-2001 were 30% higher for males and 32% higher for females than U.S. incidence rates.[21] Incidence and mortality rates for melanomas of the skin were similar for the region as for the state.

Incidence and mortality rates were higher for men than women. The mortality rate for males in Region 10 was higher in the last time period (2001-02) than in the previous two time periods. Early detection rates for melanomas of the skin were similar for the region and the state. It will be important to track this indicator to assess "early" detection rates. [See Tables 49, 50 and 51.]

Table 49. Percentage of "Early" Detection of Skin Cancer

	1992-1998		1999-2000		2001-2002	
	%	# cases	%	# cases	%	# cases
COUNTY						
DELTA	93.0	62	95.5	26	100.0	17
GUNNISON	95.5	24	100.0	7	88.9	9
HINSDALE	**	—-	**	—	**	—
MONTROSE	95.5	52	95.0	21	82.4	20
OURAY	100.0	5	100.0	6	**	—
SAN MIGUEL	100.0	5	100.0	7	**	—
REGION 10	94.5	150	96.7	67	91.1	49
COLORADO	95.2	6,060	94.5	2,455	92.5	2,483

Note: "Early" detection is percent in situ + localized of staged cases (unknown stage excluded)
** indicates less than 3 events
Data source: CDPHE, Colorado Central Cancer Registry, Cancer in Colorado, 1992-2002 Incidence and Mortality by County (2005), pg. 74

[21] Cancer Registry, pp 68

Table 50. Melanomas of the Skin—Diagnosed Cancers, Average Annual Age-Adjusted INCIDENCE rates per 100,000 by Sex, Place, and Time Period

	1992-1998		1999-2000		2001-2002	
	M	F	M	F	M	F
COUNTY						
DELTA	22.3	26.3	41.7	16.1	21.7	**
GUNNISON	33.5	23.4	25.4	23.5	35.4	**
HINSDALE	**	**	**	**	**	**
MONTROSE	22.9	15.2	26.0	16.7	23.5	15.7
OURAY	27.1	**	**	69.9	**	**
SAN MIGUEL	**	**	**	**	**	**
REGION 10	24.1	19.5	33.7	22.7	21.7	10.1#
COLORADO	22.8	15.6	25.9	17.1	25.0	16.8

rate is significantly lower than Colorado rate
** indicates less than 3 events
Data source: CDPHE, Colorado Central Cancer Registry, Cancer in Colorado, 1992-2002 Incidence and Mortality by County (2005), pg. 70

Table 51. Melanomas of the Skin—Cancer Deaths, Average Annual Age-Adjusted Population RATES per 100,000 by Sex, Place and Time Period

	1992-1998		1999-2000		2001-2002	
	M	F	M	F	M	F
COUNTY						
DELTA	3.7	5.7	**	**	10.5	**
GUNNISON	13.6	**	**	**	**	**
HINSDALE	**	**	**	**	**	**
MONTROSE	**	**	**	**	11.6	**
OURAY	**	**	**	**	**	**
SAN MIGUEL	**	**	**	**	**	**
REGION 10	4.1	3.3	5.4	**	9.1	2.5
COLORADO	4.3	2.2	4.3	1.9	3.9	2.0

** indicates less than 3 events
Data source: CDPHE, Colorado Central Cancer Registry, Cancer in Colorado, 1992-2002 Incidence and Mortality by County (2005), pg. 70

Cardiovascular Health

Heart disease is the leading cause of death for all people in the U.S. Coronary heart disease (CHD) accounts for the largest proportion of heart disease. Age-adjusted death rates for CHD have declined over the past 40 years, but declines in the unadjusted death rate have slowed because of an increase in the number of older people in the U.S., who have higher rates of CHD. High blood cholesterol is a major risk factor for CHD that can be modified. Screening for high blood pressure and high blood cholesterol is an important step in identification and referral of individuals with these risk factors. Primary prevention through life-style interventions that promote heart-healthy behaviors is a major strategy to reduce heart disease and stroke.

CDPHE data for Colorado for 2004-05 show that the absolute number of deaths, as well as the age-adjusted death rate from heart disease, was higher than for cancer. However, Colorado Health Information Dataset (COHID) death statistics for 2005 and 2006 show that heart disease was the second leading cause of death in the state following cancer. Although the absolute numbers of deaths in each of these years was higher for cancer than for heart disease, the age-adjusted death rate in 2005 was higher for heart disease than for cancer (169.4 and 160.9, respectively). Thus, ranking causes of death based on absolute numbers may present a different picture than age-adjusted rates.

CDPHE data for four two-year time periods shows decreases in the age-adjusted mortality rates from heart disease in both Colorado (203.0 to 167.7) and Region 10 (204.5 to 157.2) from 1998-99 to 2004-05. [See Tables 52 and 53.]

Table 52. Heart Disease Deaths (Age-Adjusted Rate per 100,000 Population)

	1998-99	2000-01	2002-03	2004-05
REGION 10	204.5	179.2	168.0	157.2
COLORADO	203.0	182.7	182.5	167.7
Data source: CDPHE, Health Statistics Section				

Table 53. Heart Disease Deaths (Age-Adjusted MORTALITY Rates per 100,000 Population)

	2004-2005	
	Rate	**# cases**
COUNTY		
DELTA	162.0	147
GUNNISON	153.0	24
HINSDALE	*	*
MONTROSE	165.6	154
OURAY	135.9	10
SAN MIGUEL	*	*
REGION 10	157.2	338
COLORADO	167.7	12,329

* indicates less than 3 events
Data source: CDPHE, Health Statistics Section

Annual county level data on cause of death for many Region 10 counties include small numbers. Although tables on leading causes of death can be generated for each county, it is important to note that rates based on small numbers are unstable and should be interpreted with caution. Thus, the number is reported along with the rate.

- Age-adjusted heart disease mortality rates for 2005 and 2006 varied by county.
- In 2005 and 2006, heart disease was the leading cause of death in Delta and Montrose and the second leading cause in Gunnison and Ouray.
- The age-adjusted death rate from heart disease in Delta was higher in 2006 than in 2005 (223.6 and 185, respectively) and Montrose (164.4 and 176.7, respectively).

High Blood Cholesterol Level and High Blood Pressure. The Behavioral Risk Factor Surveillance System (BFRSS) data on high blood cholesterol level and high blood pressure were provided by CDPHE for 1999, 2001, 2002-03, and 2005. Survey participants were asked whether they had been told by a doctor or other health professional that their blood cholesterol was high or their blood pressure was high. Number of respondents was not provided. Without additional information, the relevance of these data is difficult to interpret.

- Roughly one-third of those in Region 10 who reported that they had had their cholesterol level checked had been told that their level was high.
- Roughly one-fifth of those in Region 10 who reported that they had had their blood pressure checked had been told that their blood pressure was high.

[See Table 54.]

Table 54: High Blood Cholesterol Level and High Blood Pressure

	1999 (Only) %	**2001** (Only) %	**2002-03** %	**2005-05** %
BEEN TOLD BY A DOCTOR OR OTHER HEALTH PROFESSIONAL THAT BLOOD CHOLESTEROL IS HIGH (AMONG THOSE WHO HAVE HAD THEIR CHOLESTEROL LEVEL CHECKED)				
REGION 10	31.2	na	35.6	37.0
COLORADO	25.3	28.2	30.9	33.7
BEEN TOLD BY A DOCTOR, NURSE, OR OTHER HEALTH PROFESSIONAL THAT BLOOD PRESSURE IS HIGH (AMONG THOSE WHO HAVE HAD THEIR BLOOD PRESSURE CHECKED)				
REGION 10	18.3	20.1	22.3	23.7
COLORADO	21.0	19.8	19.8	20.8
Data source: Behavioral Risk Factor Surveillance System				

Chronic Lower Respiratory Diseases

Asthma, chronic obstructive pulmonary disease (COPD), and obstructive sleep apnea (OSA) are significant public health problems in the U.S.[22]. Asthma and COPD are among the 10 leading chronic conditions causing restricted activity.

COPD includes chronic bronchitis and emphysema, and occurs most often in older people. As much as 10% of the population aged 65 years and older is estimated to have COPD. Between 80-90% of COPD is attributed to cigarette smoking. Most patients with COPD have a history of cigarette smoking, although not all smokers develop COPD and not all patients with COPD are smokers or have smoked in the past. COPD worsens over time with continued exposure to a causative agent.

Asthma is a serious and growing health problem and is the most common cause of chronic illness in children after chronic sinusitis. The number of people with asthma increased in all age groups from 1979-80 to 1993-94. To control asthma effectively, patients need an asthma action plan developed under their physician's guidance. The plan spells out when and how to take medicines correctly and what to do when asthma worsens. From a community-based perspective, states need to track the occupational and environmental factors that cause or trigger asthma episodes.

COPD and Influenza and Pneumonia. COHID includes data on deaths from chronic lower respiratory diseases and for influenza and pneumonia. For 2005 and 2006, chronic lower respiratory diseases were the fourth and third leading cause of death in Colorado, respectively. Over 1,900 Coloradans died from this cause in each of these two years, and the age-adjusted death rates were 51.9 and 50.4, respectively. In each of these two years, over 600 Coloradans died from influenza and pneumonia. Age-adjusted death rates for influenza and pneumonia were 18.2 in 2005 and 16.2 in 2006. [See Tables 55 and 56.]

[22] HP 2010, pp 24-3

Table 55. Influenza and Pneumonia Deaths
(Age-Adjusted MORTALITY Rate per 100,000 Population)

	1998-99	2000-01	2002-03	2004-05
REGION 10	31.7	34.9	33.6	29.5
COLORADO	29.5	18.9	22.6	18.0

Data source: CDPHE, Health Statistics Section

Table 56. Influenza and Pneumonia Deaths, Age-Adjusted, Age 65 Years and Older
(95% Confidence Level)

	2005		2006	
	Rate	# cases	Rate	# cases
COUNTY				
DELTA	42.6	20	42.1	20
GUNNISON	*	—-	*	—-
HINSDALE	0.0	—-	0.0	—-
MONTROSE	33.2	16	18.1	9
OURAY	0.0	—-	*	—-
SAN MIGUEL	*	—-	*	—-
REGION 10				
COLORADO				

* Rate is significantly higher than the Colorado rate
\# Rate is significantly lower than the Colorado rate
** indicates less than 3 events

Data source:
http://www.cdphe.state.co.us/hs/vs/2006/Montrose_2006.pdf

Data on COPD, influenza and pneumonia death rates were provided by CDPHE for four time periods: 1998-99, 2000-01, 20002-03 and 2004-05. Age-adjusted COPD death rates for Region 10 were higher for 2004-05 than for 1998-99 (50.2 and 46.2, respectively). The opposite was true for Colorado, which had a lower death rate for 2004-05 than for 1998-99 (50.6 and 55.4, respectively). The statistical significance of these data was not reported.

Age-adjusted influenza and pneumonia death rates for Region 10 varied from 34.9 to 29.5, but did not show a distinct trend over time. The rates for Colorado varied from 29.5 to 18.0 and were consistently lower than for Region 10. [See Table 57.]

Table 57. COPD Deaths (Age-Adjusted MORTALITY Rate per 100,000 Population)

	1998-99	2000-01	2002-03	2004-05
REGION 10	46.2	39.9	51.3	50.2
COLORADO	55.4	51.6	52.0	50.6
Data source: CDPHE, Health Statistics Section				

Immunization—Flu and Pneumonia. Statewide and Region 10 BFRSS data on vaccination show that about one-third of respondents reported having had a flu shot during the past 12 months and about one-fifth reported that they had ever had a pneumonia vaccination. The percentage that had ever had a pneumonia vaccination increased slightly between 1998-99 and 2004-05 from 18-23% statewide and 19-23% in Region 10.

Asthma. Although asthma is known to be a serious public health problem, no data on asthma are available for Region 10 or for individual counties in Region 10. BFRSS data for Colorado were provided by CDPHE.

Statewide, the prevalence of school children with asthma was reported to be 12.5% in 2004 and 10.9% in 2005. The percentage of Colorado children with asthma who visited the emergency room one or more times was 26.7% in 2004 and 16.0% in 2005.

There is no reliable school-based mechanism to track the prevalence of asthma in school children. Schools in Region 10 have assigned school nurses, and Ouray, San Miguel and Hinsdale have a public health nurse. However, it is difficult to collect statistics on asthma because it is common practice for children with asthma to carry and self-administer their own medications.

Prevalence of Smoking. Data on the prevalence of smoking was obtained from the BFRSS. While smoking prevalence decreased statewide from 23.3% to 19.9% between 1999 and 2004-05, the prevalence in Region 10 did not show a specific trend, but varied from a high of 23.6% in 2001 to a low 15.4% in 2002-03. [See Table 58.]

Table 58. Adult Tobacco Use/Prevalence of Smoking (Percentages)

	1998-99	2000-01	2002-03	2004-05
REGION 10	20.7	23.6	15.4	21.7
COLORADO	23.3	22.2	19.5	19.9
Data source: CDPHE, Health Statistics Section, BRFSS				

Diabetes

Diabetes is a significant public health challenge for the U.S. in terms of quality of life, disability, and cost of treatment. High-risk populations include certain racial and ethnic groups, elderly persons, and economically disadvantaged persons. Changing demographic patterns are expected to increase the number of people who are at risk for diabetes and who eventually develop the disease. Diabetes is most common in individuals over 60 years of age. As the population ages and the percentage of the population aged 60 years and older grows, an increase in the number of people with diabetes is expected.

COHID data on the top ten causes of death in Colorado show that diabetes mellitus was the eighth leading cause in both 2005 and 2006 and accounted for 752 and 679 deaths, respectively. The statewide age-adjusted death rate was 19.6 in 2005 and 17.0 in 2006. The Behavioral Risk Factors Surveillance Survey (BRFSS) provides information on the percentage of respondents who indicated that they had diabetes. These data show an increase in the prevalence in Colorado from 3.9% in 1998-99 to 4.6% in 2004-05. It is not clear whether the variations in the regional prevalence rates are noteworthy.

Age-adjusted death rates with diabetes as the underlying cause increased slightly in Colorado, from 18.3 in 1998-99 to 19.0 in 2004-05. By contrast, death rates from diabetes, including those with any mention of diabetes on the death certificate, were much lower in Region 10 than in the state. County-level data for 2005 and 2006 show a small number of deaths from diabetes. [See Tables 59, 60and 61.]

Table 59. Prevalence of Diabetes (Percentages)

	1998-99	2000-01	2002-03	2004-05
REGION 10	3.1	5.4	7.0	3.4
COLORADO	3.9	4.4	4.6	4.6

Data source: CDPHE, Health Statistics Section, BRFSS

Table 60. Diabetes Deaths (Age-Adjusted MORTALITY Rate per 100,000 Population)

	2004-2005	
	Rate	**# cases**
COUNTY		
DELTA	7.4	7
GUNNISON	33.8	5
HINSDALE	*	—-
MONTROSE	21.9	20
OURAY	*	—-
SAN MIGUEL	*	—-
REGION 10	15.7	33
COLORADO	19.0	1,446

* indicates less than 3 events
Data source: CDPHE, Health Statistics Section

Table 61. Diabetes Deaths (Age-Adjusted MORTALITY Rate per 100,000 Population)

	1998-1999	2000-2001	2002-2003	2004-2005
DIABETES DEATHS, UNDERLYING CAUSE				
REGION 10	7.8	15.2	12.4	15.5
COLORADO	18.3	18.5	18.6	19.0
DIABETES DEATHS, ANY MENTION ON DEATH CERTIFICATE				
REGION 10	45.2	45.9	45.2	49.9
COLORADO	61.9	61.6	62.0	61.9

Data source: CDPHE, Health Statistics Section

Gestational Diabetes. The prevalence of gestational diabetes is expressed as a percentage of live births. Data indicate that the prevalence of gestational diabetes increased from 1998-99 to 2004-05 both in Colorado and in Region 10. The relatively lower prevalence of 1.2 in Region 10 compared with 1.9 in Colorado increased to 2.9 in Region 10 and 2.4 in Colorado. While the prevalence of diabetes in Colorado increased from 3.9% in 1998-99 to 4.6% in 2004-05, the prevalence in Region 10 fluctuated over this period. [See Table 62.]

Table 62. Gestational Diabetes, Percentage of Live Births

	1998-99	2000-01	2002-03	2004-05
REGION 10	1.2	1.9	2.6	2.9
COLORADO	1.9	2.1	2.1	2.4
Data source: CDPHE, Health Statistics Section				

Type 1/Juvenile Diabetes in Youth. Obesity, improper nutrition and lack of physical activity are associated with type 2 diabetes in youth. Colorado Child Health Survey data (children ages 1-14) on body mass index (BMI) found that 14.7% of youth were overweight (equal to or greater than the 95th percentile) in 2004 and 10.5% were overweight in 2005. No data were available for Region 10 or its counties. Childhood obesity is often a precursory to adult obesity. Adult obesity prevalence in Region 10 was 18% in 2000-05. [See section 3, *Maternal and Child Health*.]

Prevention[23]

The *Healthy People 2010* report, developed by the U.S. Department of Health and Human Services, provides standards for preventative care based on the best practices in public health planning. The report establishes goals and targets to be achieved by the year 2010, and monitors progress over time. Table 32 compares *Healthy People 2010* targets with levels reported for Planning Management Region 10. [See Table 63.]

Table 63: A Comparison of Health Indicator Outcomes

Healthy People 2010 Objective	Healthy People 2010 Target	Colorado BRFSS Survey 2004	PMR 10 2002-2003
HEALTH INSURANCE (AGE >18)	100%	84%	77%
PAP SMEAR, EVER	97%	96%	94%
PAP SMEAR, < 3 YRS	90%	84%	89%
MAMMOGRAM, < 2 YRS	70%	71%	73%
FECAL OCCULT BLOOD TEST	50%	32%	33%
SIGMOIDOSCOPY, EVER (AGE >50)	50%	50%	33%
DIABETES, EVER DIAGNOSED	2.5%	4.3%	7%
CHOLESTEROL SCREENING, <5 YRS	80%	72%	68%
INFLUENZA IMMUNIZATION, <1 YR	90%	34%	32%
PNEUMONIA VACCINATION, EVER	90%	22%	23%
OBESE, BMI >30	15%	17%	15%
OVERWEIGHT, BMI >25	40%	53%	45%
HIGH BLOOD PRESSURE, EVER	16%	20%	22%
NO LEISURE TIME PHYSICAL ACTIVITY	20%	19%	22%
BINGE DRINKING, PAST MONTH	6%	17%	14%
CIGARETTE SMOKING	12%	20%	15%
SEATBELTS, ALWAYS		79%	73%
FRUITS >2/DAY & VEGETABLES>3 /DAY	50%	24%	23%

Region 10 falls below the *Healthy People 2010* goals in the following areas:

- Health insurance for adults (77% in Region 10, as compared to the *Healthy People* goal of 100%);
- Screening for colorectal cancer (33% in Region 10, as compared to 50%);
- Influenza and pneumonia vaccination (32% and 23% in Region 10, as compared to 90%); and
- Binge drinkers (14% in Region 10, as compared to 6%)

[23] This section is drawn from, Local Health Care Initiative: Health Care Needs Assessment Report (December 18, 2006), prepared by the Joffit Group.

Trends and Policy Significance

In general, there is a lower death rate in Region 10 from cancer and heart disease, although it may not be a statistically significantly difference. The deaths from all cancers combined are approximately the same as for the state.

Positive and negative trends are indicated below by arrows. An up arrow indicates an improving trend (e.g., better quality in some aspect of the environment), while a down arrow indicates a declining trend (e.g., more environmental pollution). [See Table 64.]

Table 64: Positive and Negative Trends in Region 10

↑ Positive Trends
⇧ From 1998-2005, there was a regional decline in **lung cancer** deaths.
⇧ The Region 10 death rate from **colorectal cancer** decreased from 1998-2005, although there was a decrease in the percent of early detection. Gunnison and San Miguel counties were most likely to detect this cancer early.
⇧ Early detection rates for **prostate cancer** are increasing.
⇧ There is a decrease in the age-adjusted mortality rates from **heart disease** in Colorado and Region 10 from 1998-2005.
⇧ Death rates are lower in Region 10 than for the state for those with any mention of **diabetes** on the death certificate, although the Region 10 prevalence of diabetes is slightly higher from 1998-2005.
⇧ **Influenza** deaths are down regionally and statewide.

[continued next page]

⇩ Negative Trends

- ⇩ **Lung cancer** is the leading cause of cancer deaths and the least likely to be detected at an early stage. The incidence rate among males with lung cancer in Montrose County is statistically elevated: 20% higher than for the state.
- ⇩ There is a trend for prevalence of **tobacco use** to be higher in Region 10 while decreasing statewide. Tobacco is the major cause of lung cancers.
- ⇩ Ouray County has a significantly higher rate of **colorectal cancer**.
- ⇩ The death rate from **prostate cancer** is significantly higher in Region 10 than for the state, and it is increasing. The rate of deaths from prostate cancer in Gunnison is significantly higher from 1992-2002.
- ⇩ Region 10 mortality rates for **breast cancer** were increasing from 1998-2002 and the early detection rate was lower.
- ⇩ Region 10 has a higher rate than Colorado for **melanoma** deaths and the rate is increasing. Mortality rates are higher for men.
- ⇩ From 2005-2006, **heart disease** was the leading cause of death and disability in Montrose/Delta. It was the second leading cause in Gunnison/Ouray. From 2005-2006, the age-adjusted rate of heart disease in Delta/Montrose was increasing.
- ⇩ A third of those who have been checked have **high cholesterol** and a fifth of area residents who have been checked have **high blood pressure**.
- ⇩ Prevalence of **diabetes** in Region 10 has increased slightly from 1998-2005. As the population ages and increases, the number of diabetes cases is expected to increase. Certain racial/ethnic groups, elderly, obese and economically disadvantaged individuals are at higher risk.
- ⇩ **Diabetes** diagnosis is 7% for Region 10, while the *Healthy People 2010* goal is 2.5%. Gestational diabetes — a precursor to adult diabetes for the mother and child — increased from 1998-2005 in Region 10.
- ⇩ The BRFSS survey (2004) reports that the percentage of individuals reporting ever having been diagnosed with **high cholesterol, diabetes or high blood pressure** is higher in Region 10 than for the state, and 40-50% of the region's population reports a body mass index exceeding normal weight range (a concern for Region 10 and the state). Only a third of Region 10 residents have **flu shots**.
- ⇩ Age adjusted **COPD** (chronic obstructive pulmonary disease) rates are increasing in Region 10, while decreasing in the state.
- ⇩ **Asthma** is a serious and growing health problem although reliable statistical data is needed; data on environmental triggers and their relationship to asthma and COPD is also needed.

Policy Implications

Chronic diseases are the most common and costly health problems and yet the most preventable. They are the leading cause of death and disability in the U.S. Adopting healthy behaviors, such as eating nutritious foods, being physically active and avoiding tobacco use, as well as lowering stress, could prevent or significantly control these chronic diseases.

Early detection is critical to reducing deaths from many types of cancers. Primary prevention through life-style interventions is a major strategy for reducing heart disease and stroke. Tobacco is the leading preventable cause.

Potential strategies for prevention and control include:

- Community-level wellness programs;
- Government planning of active communities;
- School wellness policies;
- Smoking bans;
- Mass screening programs that outreach to the minority and multicultural communities;
- Low cost screenings;
- Smoking cessation programs;
- CPR or AED (Automated External Defibrillator) in key locations throughout the community;
- Public education on lung and skin cancers;
- Public education regarding available resources;
- Improved collaboration and coordination of resources;
- Development of a community resources navigation plan for health services coordination and education;
- Development of materials to support education;
- Improved tracking of asthma and chronic lower respiratory diseases;
- Improved tracking of occupational and environmental factors that cause or trigger asthma attacks;
- Promotion of flu and pneumonia vaccinations;
- Improvement of gestational diabetes education program;
- Development and implementation of evidence-based health education strategies targeting smoking prevention, healthy eating and active living;
- Continued consideration of physical activity in land use decisions and community planning; and
- Improved access to primary health care and assurance of a “medical home” for all people in Region 10.

Photo:
Montrose Court House

Section 5. INFECTIOUS DISEASES

Defining the Issue

Infectious diseases are a major cause of serious illness and death. They may be transmitted through food or water, or through contact with infected people, insects or animals.

New agents and diseases are routinely being detected, and some diseases considered to be under control in the past have reemerged in recent years. With current availability of vaccines, many infectious diseases are preventable, including polio, measles, rubella, hepatitis A, influenza, pneumonia, tetanus and hepatitis C. Vaccines are a cost effective means of protecting vaccinated individuals as well as their communities. However, there are many emerging diseases for which there are no vaccines, including mosquito borne West Nile Virus. Prevention of infectious diseases requires public education. Given available information, accurately assessing the relative risks to public health, and targeting scarce resources accordingly, remains a challenge.

Data for Region 10 and Colorado

The CDPHE Reported Disease database includes statistics on the annual numbers of diagnosed cases of infectious diseases. Diseases such as tuberculosis that pose a serious health threat and have mandatory reporting requirements are more likely to be included in the database. The number of reported cases accurately indicates the actual number of cases diagnosed annually. The number of cases reported, however, may not accurately reflect the disease incidence or prevalence. For example, cases of varicella (chicken pox) may be unreported because many people do not go to the doctor when they contract it. Reported disease statistics for pertussis are more likely to reflect the actual incidence, because patients usually do go to a doctor, who then reports the case to the state. [See Table 65.]

Table 65: Reportable Disease Statistics, Most Common Reported Diagnoses, Number of Cases by Year of Diagnosis

		Region 10	Colorado
2006	HEPATITIS C, CHRONIC	64	3,461
	VARICELLA (CHICKEN POX)	38	1,504
	ANIMAL BITES	2	964
	CAMPYLOBACTER	16	830
	INFLUENZA, HOSPITALIZED	25	775
	PERTUSSIS	44	710
	WEST NILE	47	345
2005	HEPATITIS C, CHRONIC	63	4,216
	VARICELLA (CHICKEN POX)	45	1,797
	PERTUSSIS	8	1,383
	INFLUENZA, HOSPITALIZED	11	1,032
	CAMPYLOBACTER	14	868
	SALMONELLOSIS	12	582
	GIARDIASIS	14	534
2004	HEPATITIS C, CHRONIC	92	4,800
	VARICELLA (CHICKEN POX)	58	2,040
	PERTUSSIS	32	1,185
	CAMPYLOBACTER	16	827
	SALMONELLOSIS	7	542
	GIARDIASIS	17	517
	WEST NILE	39	296

Data source:
http://www.cdphe.state.co.us/dc/CODiseaseStatistics/index.html

Tuberculosis

From 1993-2001 there were 16 reported cases of pulmonary TB and three cases of extrapulmonary TB. There have not been any reported cases of active TB since 2001.[24]

While active TB cases are reported to the CDPHE, local public health professionals work on an ongoing basis with patients who have latent TB to keep these cases from becoming infectious (active). Thus, the statistics obscure the fact that public health professionals are involved in the management of TB patients all year, which puts additional strain on the public health system.

Detection and diagnosis of TB requires extensive collaboration among public and private health care providers at local, state and federal levels. Confirmation of TB diagnosis requires laboratory testing that can take several weeks. To control TB and to prevent outbreaks and the development and spread of drug-resistant TB, individuals with the disease must complete curative therapy. Completion of therapy is an accepted indicator of the effectiveness of community control efforts.

Hepatitis C

Hepatitis C, chronic (HCV) is the most common chronic blood-borne viral infection in the U.S. An estimated 2.7 million people nationwide have HCV, which is transmitted via contaminated blood, including IV drug use and sexual transmission. Chronic hepatitis C (HCV) was the most commonly reported diagnosis for hepatitis in Colorado and in Region 10 for the period of 2004-2006.[25] Reporting data reflect the number of cases diagnosed in a given year and do not provide information on actual disease prevalence.

Some individuals diagnosed with HCV do not have a clear etiology (no known cause). Diagnosis of HCV requires laboratory analysis. Persons with chronic HCV infection may develop liver disease and are at risk of severe liver damage, which is exacerbated by exposure to hepatotoxins such as alcohol.

Public health strategies to reduce the personal and community consequences of HCV include increasing detection so individuals with this disease can be counseled to prevent further transmission; vaccination for Hepatitis A and Hepatitis B to promote better health; evaluation for chronic liver disease; possible use of anti-viral therapy; and counseling to prevent the use of potential hepatotoxins such as alcohol.

Varicella, Pertussis, and Influenza

Among the most commonly-reported diseases in 2004-06, varicella, pertussis and influenza are vaccine-preventable. Statewide, varicella was the second most commonly-reported disease during the reporting period, and pertussis was third in 2004 and 2005. Varicella and influenza are underreported because laboratory tests are not always performed to confirm the clinical diagnosis.

In Region 10, varicella was the second leading reported disease with 58 cases in 2004 and 45 in 2005. There were 38 reported cases in 2006. In the region there were 32 reported cases of pertussis in 2004 and 44 in 2006, but only 8 in 2005. There were 1,032 reported hospitalizations for influenza in Colorado in 2005 and 775 in 2006. Region 10 had 8 and 11 cases, respectively. [See Table 66.]

[24] Data for Region 10 counties for the years 1993-2006 were provided by the CDPHE Tuberculosis Program.
[25] The CDPHE database for 2004-2006 on reportable disease statistics

Table 66: Number of Cases of Pertussis and Varicella

	Pertussis			Varicella		
	2004	**2005**	**2006**	**2004**	**2005**	**2006**
COUNTY						
DELTA	26	5	17	1	7	15
GUNNISON	0	0	0	11	4	8
HINSDALE	---	---	---	---	---	---
MONTROSE	1	3	15	44	33	14
OURAY	4	0	10	0	0	0
SAN MIGUEL	1	0	2	2	1	1
REGION 10	32	8	44	58	45	38
COLORADO	1185	1383	710	2040	1797	1504

Data source: http://www.cdphe.state.co.us/dc/CODiseaseStatistics/index.html

Flu and Pneumonia Vaccination

Flu results in hundreds of lost days of work and school every year in Region 10. The incidence and severity of flu may be reduced by inoculation. However, between 1999-2004 only 30 percent of the population in Region 10 obtained a flu shot. Likewise, less than 25 percent reported that they had ever had a pneumonia immunization. People aged 65 and older are at highest risk of serious health problems and death resulting from complications of influenza and pneumonia; however, no data are available on immunization rates in this group. [See Table 67.] Data on deaths from these causes are included in *Section 4. Chronic Diseases*.

Table 67: Immunization — Flu and Pneumonia

	1999 (Only) %	**2001** (Only) %	**2002** -03 %	**2004** -05 %
FLU SHOT DURING THE PAST 12 MONTHS				
REGION 10	30.7	25.5	32.4	31.6
COLORADO	34.8	31.8	34.1	35.9
EVER HAD A PNEUMONIA VACCINATION				
REGION 10	18.9	na	22.9	22.6
COLORADO	17.7	23.1	22.2	22.7

Data source: Behavioral Risk Factor Surveillance System

West Nile Virus

West Nile virus is a recent addition to the list of reportable diseases. Individuals who develop symptoms of West Nile may experience debilitating long-term sequelae (i.e., symptoms that occur chronically after the acute phase of the disease is over) or, in extreme cases, may die. Treatment for West Nile is based on symptoms; there is no vaccine. Prevention efforts include public education about vector-borne transmission and protection against mosquito bites and spraying programs to reduce larvae.

West Nile was first reported in Colorado in 2004. After Hepatitis C, West Nile was the second most commonly-reported disease in Region 10 in 2004 (39 reported cases) and comprised 13.1% of the 296 cases reported statewide. In 2005, Region 10 reported two cases of West Nile, while 110 cases were reported in the state. Region 10 reported 47 cases in 2006, which accounted for 13.6% of the 345 cases reported statewide. [See Table 68.]

Table 68: Number of Reported Cases of West Nile

	2004	2005	2006
COUNTY			
DELTA	27	1	34
GUNNISON	1	0	0
HINSDALE	---	---	---
MONTROSE	11	0	13
OURAY	0	0	0
SAN MIGUEL	0	1	0
REGION 10	10	39	47
COLORADO	296	110	345

Data source:
http://www.cdphe.state.co.us/dc/CODiseaseStatistics/index.html

Sexually Transmitted Diseases

The most common sexually transmitted diseases (STDs) are gonorrhea and chlamydia. During the five-year period 2001-05 there were a total of 41 reported cases of gonorrhea and 704 reported cases of chlamydia in Region 10.

The prevalence of sexually transmitted diseases such as gonorrhea and chlamydia are reported when treating physicians order lab work and the labs then report results to the state. Physicians who treat patients without ordering lab work may save the patient money but cheat the system of valuable information. Gonorrhea is especially difficult to track statistically because it is relatively easy to diagnose in a clinical setting, without laboratory confirmation. [See Table 69.]

Data were not obtained on Human Papilloma Virus (HPV), which is thought to be prevalent and is considered to be a predominant cause of cervical cancer. However, a vaccine against HPV and a laboratory test to diagnose HPV are now available.

Table 69: Number of Reported Cases of Chlamydia and Gonorrhea Cases by Year, 2001-2005

	2001	2002	2003	2004	2005	Total
CHLAMYDIA						
COUNTY						
DELTA	25	30	40	33	49	177
GUNNISON	17	18	24	29	17	105
HINSDALE	---	---	---	---	---	---
MONTROSE	47	83	66	81	88	365
OURAY	---	1	---	1	3	5
SAN MIGUEL	8	10	15	8	11	52
REGION 10	97	142	145	152	168	704
GONORRHEA						
REGION 10	5	3	10	5	18	41
Data source: CDPHE, HIV/STD Surveillance Section						

HIV and AIDS

In 2001 there were 14 reported cases of HIV in Region 10.[26] By 2005, 5 additional cases had been added for a total of 19 reported cases. In 2001 there were 22 reported cases of AIDS in Region 10. By 2005, 5 additional cases had been added for a total of 27 reported cases.

Data are reported by each county but are not included in this assessment due to small numbers and privacy considerations. Data are cumulative by year of diagnosis and do not reflect the number of cases diagnosed annually. Rather, they reflect the total number of cases ever diagnosed by year of diagnosis.

[26] Annual data on HIV and AIDS were provided by the HIV/STD Surveillance Section of CDPHE.

Trends and Policy Implications

Positive and negative trends are indicated below by arrows. An up arrow indicates an improving trend (e.g., less infectious disease), while a down arrow indicates a declining trend (e.g., poorer health due to a rising rate of infectious disease). [See Table 70.]

Table 70: Positive and Negative Trends in Region 10

↑ Positive Trends
⇧ No reported cases of **Active Pulmonary Tuberculosis** since 2001.
↓ Negative Trends
⇩ Two thirds of residents are not vaccinated against **influenza**.
⇩ **Sexually transmitted diseases**, including chlamydia, gonorrhea, HIV, and HPV are under reported and are thought to be increasing in prevalence.
⇩ **Hepatitis C** continues to be the most reported of the reportable diseases.

Policy Implications

- Surveillance and control of communicable diseases in the community is the number one priority for Public Health officials and a statutory responsibility for local Boards of Health. When diseases are under-reported and there is a lack of coordination between physicians' offices, public health officials and hospital emergency rooms, there is a delay in timely investigation and control of communicable diseases. This is becoming increasingly important as communities prepare for emergencies and possible pandemics.
- The overuse of antibiotics, which contributes to the emergence of antibiotic-resistant strains of bacteria, is not assessed or addressed in this section of this report.
- The question of whether or not the public has adequate awareness of family planning and other sliding-fee services was raised earlier in this report. The same question might be asked regarding the increase in cases of STD, as STD education and testing are available free or at low cost in all counties in Region 10.

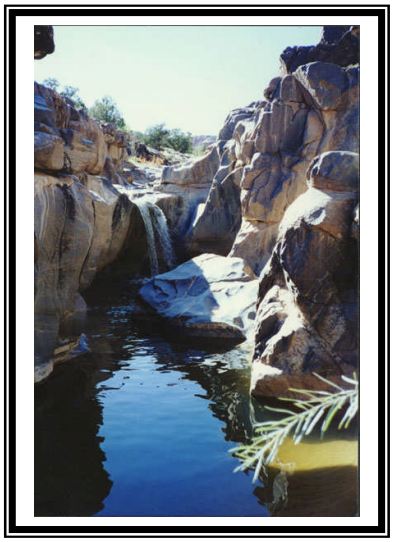


Photo: Canyon Waterfall

Section 6. MENTAL HEALTH AND SUBSTANCE ABUSE

Defining the Issue

Mental health is a state of successful mental functioning, resulting in productive activities, fulfilling relationships, and the ability to adapt to change and cope with adversity. Mental health is indispensable to personal well-being, family and interpersonal relationships, and one's contribution to society.

Suicide, as well as attempted suicide, are among the clearest signs of a failure of mental health. Consequently, suicide rates are commonly reported among indicators of mental health.

Alcohol and other addictive disorders can co-occur with mental disorders. According to *Healthy People 2010,* "about three percent of the population aged 18 years and older has been identified as having co-occurring mental and addictive disorders in one year. Of those with serious mental illness, 15% have both types of disorder in one year, and of those with a severe and persistent mental illness, 27% have both mental and addictive disorders…. Comorbid mental and addictive disorders also are evident in children and adolescents."[27]

[27] *Healthy People 2010,* p.37.

Data for Region 10 and Colorado

Suicide

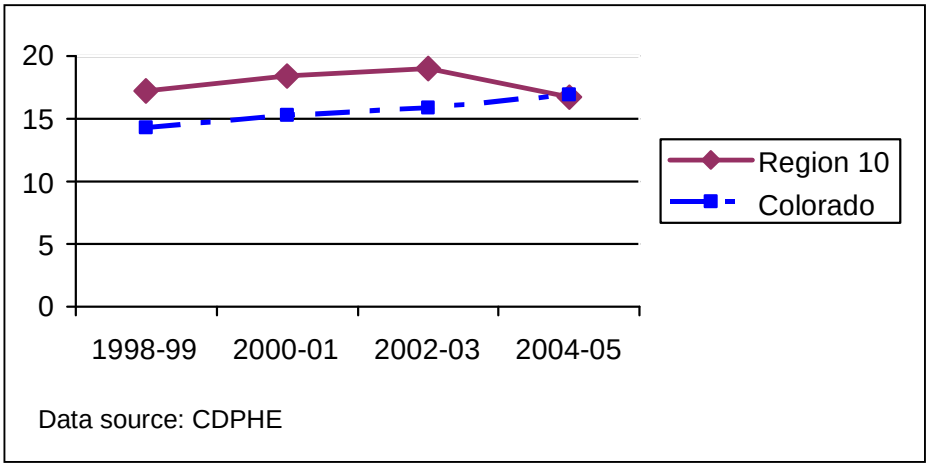
Data on suicide attempts and deaths are known to be underreported and inaccurate due to difficulty in attributing intent of an individual's actions to the resulting cause of death. Law enforcement, coroners, and emergency rooms collect and report data using different criteria. Suicide attempts and deaths may be masked as accidents or motor vehicle accidents.

Colorado has one of the highest suicide rates in the nation. Between 1991 and 2000, the mean age-adjusted suicide rate in Colorado was 16.74 per 100,000 population.

The age-adjusted suicide death rate in Region 10 was similar to that of Colorado (18.7 versus 16.2). However, the firearm-related suicide death rate was higher in Region 10 than in Colorado at 12.7 versus 8.9, respectively. Firearm-related suicide deaths accounted for 69% of suicide deaths in Region 10 versus 54% in Colorado.

Viewed in terms of trends, the suicide rate for the state and the region have remained relatively constant, with rates for the region general running somewhat higher than those for the state. [See Figure 17.]

Figure 17. Suicide Injury Deaths (Age-Adjusted Rate per 100,000 Population)



County-level data on suicide during this ten-year period show that rates for Delta, Gunnison, Montrose and San Miguel were all higher than for the state. Calculated risk scores for suicide attempts for each county are shown in Table 71. Although Delta did not have the highest mean age-adjusted death rate among the four counties, the county's risk score was in the highest quartile. Risk scores were calculated based on estimated risk for suicide using five variables from the National Comorbidity Survey, including female gender, living alone, employment, past-year major depression diagnosis, and past-year other psychiatric diagnosis.

Table 71. Age-Adjusted Suicide Rates per 100,000 Population: 1991-2000*

	Age-Adjusted Rate	# Deaths	Risk Score Quartile for Suicide Attempts *
COUNTY			
DELTA	25.94	61	1
GUNNISON	17.71	19	3
HINSDALE	—-	—-	4
MONTROSE	24.63	63	3
OURAY	—-	4	2
SAN MIGUEL	38.18	9	3
COLORADO	16.74	6,231	

Risk Score Quartile: 1=Highest risk score quartile; 4=Lowest risk score quartile
Data Source: http://www.cdphe.state.co.us/pp/Suicide/SuicideReport.pdf

Trend Data on Suicide Deaths. More recent data on regional and statewide deaths due to suicide were obtained for four two-year periods 1998-2005 from CDPHE. While the age-adjusted death rates per 100,000 population increased statewide from 14.3 in 1998-99 to 16.9 in 2004-05, the regional rates were variable and did not indicate a clear trend. However, with the exception of the last two-year period, the regional rate was higher than the state rate in each of the preceding three time periods. [See Table 72.]

Table 72. Age-Adjusted Death Rates per 100,000 Population: 1998-2005*

	1998-1999	2000-2001	2003-2003	2004-2005
REGION 10	17.2	18.4	19.0	16.7
COLORADO	14.3	15.3	15.9	16.9

Data Source: CDPHE, Health Statistics Section

Adolescents and Thoughts of Suicide. According to the *Suicide in Colorado* report: "By some estimates, four out of five people who commit suicide have tried to warn others of their intent through verbal statements, written notes, demonstrating a preoccupation with death or other behavior indicating they are planning to end their life."[28]

Table 73 shows findings from the "Youth Risk Behavior Component" of the *Healthy Kids Colorado* survey, which provides data on the percentage of students who seriously considered attempting suicide, made a plan about how they would attempt suicide or actually attempted suicide during the past 12 months. Information is not available for Region 10.

Table 73. Adolescent Suicide Attempts in Colorado

	2001	2003	2005
PERCENTAGE OF STUDENTS WHO:			
SERIOUSLY CONSIDERED ATTEMPTING SUICIDE DURING PAST 12 MONTHS	19.3	18.6	13.6
MADE A PLAN ABOUT HOW THEY WOULD ATTEMPT SUICIDE PAST 12 MONTHS	13.8	14.6	10.6
ACTUALLY ATTEMPTED SUICIDE 1 + TIMES DURING THE PAST 12 MONTHS	10.7	13.2	6.7
Data source: CDPHE, Health Statistics Section – Youth Risk Behavior Component of the Healthy Kids Colorado Survey			

Mental Illness

Major depression and other mental health illnesses are considered important predictors of suicide and attempted suicide. Data on major depression and other psychiatric illnesses is shown below. According to the report, *Suicide in Colorado*: "To be diagnosed with major depression or another psychiatric illness, respondents had to meet diagnostic criteria for the disorder as defined in the *American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, 3rd Edition (DSM-III)* and measured by the *NIMH Diagnostic Interview Schedule (DIS), version III.*"[29] Approximately 3 to 5% of the population of each county was diagnosed with major depression and 19to 23% were diagnosed with other psychiatric illnesses. [See Table 74.]

[28] See page 20, http://www.cdphe.state.co.us/pp/suicide/SuicideReport.pdf
[29] See page 71, http://www.cdphe.state.co.us/pp/suicide/SuicideReport.pdf

Table 74. Depression and Psychiatric Illnesses, Rates per 100,000 Population (1991-2000)

	Major Depression		Other Psychiatric Illnesses	
	%	# cases	%	# cases
COUNTY				
DELTA	2.87	455	19.02	3,012
GUNNISON	4.28	348	22.83	1,859
HINSDALE	3.25	12	19.45	74
MONTROSE	3.12	553	19.93	3,533
OURAY	3.16	54	19.04	329
SAN MIGUEL	4.22	119	23.11	654
Data Source: http://www.cdphe.state.co.us/pp/Suicide/SuicideReport.pdf				

One-Year Snapshot of Visits to County Mental Health Services. Services statistics on utilization of emergency mental health services, mental health outpatient services, and substance abuse treatment program services was obtained from the *Midwestern Colorado Mental Health Center, Service by Community* report for the period June 1, 2006 to May 31, 2007. Data are compiled for each county and reported to the MCMHC in the form of consumer counts. These utilization statistics provide a snapshot of the numbers of patient visits with implications for service providers in terms of caseloads, program costs, etc. State data and county-level trend data were not obtained for this report. [See Tables 75 and 76.]

Table 75. Service Statistics: Number of Mental Health Center Patient Visits for Emergency Services, Outpatient Services and Substance Abuse Treatment Program Services*

	Emergency Mental Health Services	Mental Health Outpatient Services	Substance Abuse Treatment
COUNTY RESIDENTS			
DELTA	288	452	94
GUNNISON	4	294	144
HINSDALE	106	23	5
MONTROSE	410	972	261
OURAY	21	54	9
SAN MIGUEL	43	96	133
OTHER COLORADO RESIDENTS	35	29	16
OUT OF STATE RESIDENTS	16	20	4
TOTAL	979	2,153	692

Total visits including visits by adults, children, elderly and unknown
Data source: Midwestern Colorado Mental Health Center

Table 76. Emergency Services Mental Health: Consumer Count

	Child	Adult	Elder	Unknown
COUNTY RESIDENTS				
DELTA	34	218	21	15
GUNNISON	8	90	3	5
HINSDALE	0	4	0	0
MONTROSE	70	286	32	22
OURAY	0	17	1	3
SAN MIGUEL	1	38	1	3
OTHER COLORADO RESIDENTS	2	28	3	2
OUT OF STATE RESIDENTS	1	14	1	0
TOTAL	122	739	67	51
Data source: Midwestern Colorado Mental Health Center				

Substance Abuse

Table 77 shows 2006 data on the number of individuals in treatment for a diagnosable mental, behavioral or emotional disorder, and the treatment rate for substance abuse. The term *serious emotional disorder* (SED) is used when referring to children less than 18 years of age in treatment, while the terms *serious mental illness* and *serious and persistent mental illness* (SMI/SPMI) refer to persons in treatment who are 18 years of age and older.

Table 77. Number of Individuals in Treatment for Diagnosable Mental, Behavioral or Emotional Disorder, and Treatment Rate for Substance Abuse

	Pop. Est. 2006[1]	SED[2]	SMI/SPMI[3]	Treatment Rate for Substance Abuse[4]
County				
Delta	30,401	186	330	232
Gunnison	14,331	43	150	506
Hinsdale	819	4	13	0
Montrose	38,559	327	537	337
Ouray	4,307	5	7	159
San Miguel	7,143	11	44	146
Colorado	4,753,377	19,502	35,519	500

[1] Represents population estimates for 2006. Source: http://www.census.gov/

[2] SED = Persons aged less than 18 years with a diagnosable mental, behavioral, or emotional disorder in treatment FY06. Source: http://mentalhealth.samhsa.gov/resources/dicgtionary.aspx and FY2006 Colorado Client Records Assessment (CCAR) Data. The CCAR is used to determine the severity of symptoms in mental health.

[3] SMI/SPMI = Persons aged 18 or older with a diagnosable mental, behavioral, or emotional disorder in treatment during FY06. Source: http://mentalhealth.samhsa.gov/resources/dictionary.aspx and FY2006 CCAR Data.

[4] Substance abuse expressed as the rate/100,000 population (alcohol or illicit drugs in treatment, calendar year 2006).

Data source: Alcohol and Drug Abuse Division, Colorado Department of Human Services

Substance Abuse Among Adolescents. Data on statewide substance abuse among adolescents was obtained from the 2005 Youth Behavior Component of the Healthy Kids Colorado Survey. Data on Region 10 is not available. Statewide, about 3 out of 10 respondents indicated that they had 5 or more drinks of alcohol in a row within a couple of hours on one or more of the past 30 days. Survey results indicated that 42% of respondents had used marijuana one or more times in their life, and 23% said they had used it one or more times in the past 30 days. About 10% reported that they had sniffed glue or used inhalants to get high one or more times during their life.

Trends and Policy Implications

At this time, the information available is inadequate for fully assessing the mental health and substance abuse issues, problems and solutions either for individual counties or for Region 10 as a whole. While substance abuse and the need for mental health services typically "rise to the top" as issues/priorities, public health professionals in Region 10 do not have the expertise or resources for comprehensive assessment in the area of mental health and substance abuse.

Positive and negative trends are indicated below by arrows. An up arrow indicates an improving trend (e.g., less infectious disease), while a down arrow indicates a declining trend (e.g., poorer health due to a rising rate of infectious disease). [See Table 78.]

Table 78: Positive and Negative Trends in Region 10

↑ Positive Trends
⇧ In the past, **suicide** rates have been higher in Region 10 than those for the state. In the latest reporting period, the regional suicide rate has declined and is now similar to the state rate, though this may not represent a continuing trend.
↓ Negative Trends
⇩ More than half of Region 10 is considered a **health professional shortage area** (HPSA) for mental health. This condition has not changed over time.
⇩ Mental Health Association of Colorado reports that, in hospitals statewide, the number of behavioral health care patients served by **emergency** departments has skyrocketed. In addition, there are an alarming number of arrests and incarcerations of people who have serious mental health or substance abuse problems.

Policy Implications

- In 2005, the National Institute of Mental Health identified the need for **mental health and substance abuse services in rural areas** as second only to primary care. Key informants in Region 10 list accessible, affordable **mental health and substance abuse** services as a top priority. Mental health and substance abuse treatment services are inadequate for meeting the needs of the residents of the region. Colorado ranks 5th in the nation for per capita alcohol consumption, and is ranked in the top 10 nationwide for alcohol, cocaine and marijuana consumption. There is a tremendous need for increased local investment in public mental health and substance abuse prevention and treatment programs in this region. This includes investment in community education and youth prevention programs. Additionally, it is important that screening and referral services be increased at the primary care level, and that comprehensive assessment services in the area of mental health and substance abuse are provided on a community-wide basis.
- Region 10 has insufficient **bilingual/bicultural** expertise in the area of mental health, and too few local mental health providers specialize in **adolescents and senior citizens**.

Photo:
Crested Butte Bear

Section 7. INJURIES AND VIOLENCE

Defining the Issue[30]

"The risk of injury is so great that most persons sustain a significant injury at some time during their lives.... Many injuries are not 'accidents', or random, uncontrollable acts of fate; rather, most injuries are predictable and preventable."

More people ages 1-34 die as a result of unintentional injuries than any other cause of death. Injuries cause more than two out of five deaths in children ages 1-4. For people ages 15-24 years, injuries are the cause of nearly four out of five deaths.

Data for Region 10 and Colorado

Injuries can be unintentional (i.e., accidental) or intentional. The most commonly reported serious injuries are those resulting in hospitalization or death. Hospitalization data are shown below, followed by data for unintentional and intentional injuries.

[30] *Healthy People 2010*

Injury Requiring Hospitalizations

Information from the Colorado Health Information Data source (COHID) offers injury hospitalization statistics for the ten-year period from 1995-2004. During this period, there were 6,651 injury hospitalizations in Region 10. The cause for hospitalization was unintentional in almost 90% of cases, about 7% of hospitalizations were the result of intentional injuries, while the remainder were undetermined.

Injury Hospitalizations Ages 0-14. Injury-related hospitalization rates are generally higher for children in the region than for the state as a whole. [See Table 79.]

Table 79. Rate of Injury Hospitalizations by County, Ages 0-14 (2000-05)

	Rate per 100,000 Population
COUNTY	
DELTA	279.6
GUNNISON	405.1
HINSDALE	383.1 (3/783)
MONTROSE	160.4
OURAY	238.7
SAN MIGUEL	282.8
COLORADO	198.3

Data source: CDPHE
http://www.cdphe.state.co.us/ps/mch/mchadmin/mchdatasets2007/index.html

Unintentional Injury Deaths

Injuries are a leading cause of death in Colorado. Colorado Health Information data (COHID) indicate that unintentional injury deaths were the fourth leading cause of death, and suicides were the seventh leading cause in 2006 in the state.[31] Following are data for unintentional injuries, followed by data for intentional injuries, which includes injuries due to violent crimes.

From 1990-2006, there were 736 unintentional injury deaths in Region 10. The age-adjusted unintentional injury death rate in Region 10 was 51.6 compared with 39.7 in Colorado. [See Table 80.]

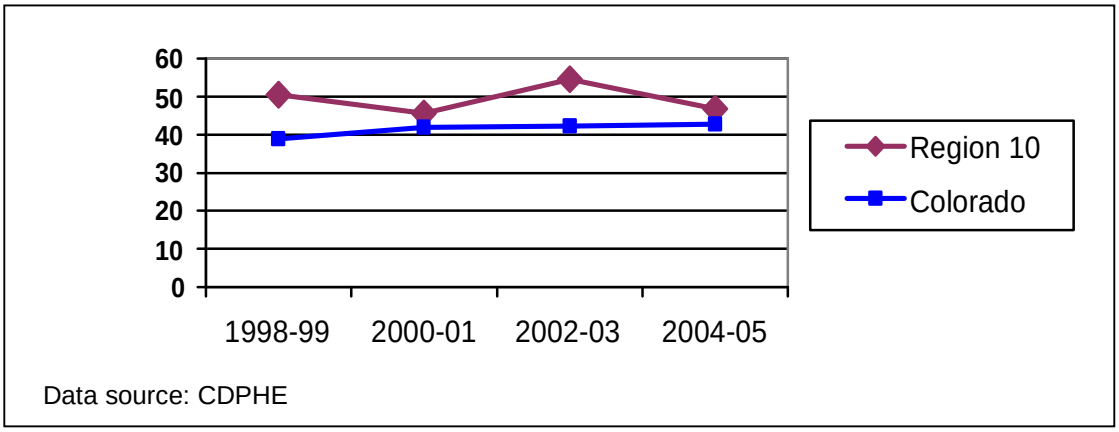
[31] Data on deaths from unintentional injuries was obtained from COHID death statistics.

Table 80. Unintentional Injury Deaths, Age-Adjusted Rate per 100,000 Population (1990-2006)

	# cases	Rate
COUNTY		
DELTA	259	52.9
GUNNISON	108	60.6
HINSDALE	4	---
MONTROSE	284	50.9
OURAY	31	56.3
SAN MIGUEL	50	61.3
REGION 10	736	51.6
COLORADO	25,566	39.7
Data source: COHID		

The data in Table 2 covers the period from 1990-2006. However, CDPHE provides data for shorter time periods and reports it in rates per 100,000 population.[32] [See Figure 18.] Both Table 80 and Figure 18 show a consistently higher rate of unintentional injury for Region 10 than for the state as a whole.

Figure 18. Unintentional Injury Death Rates (Age-Adjusted Rates per 100,000 Population)



[32] The CPHE injury data reported here include only residence data, not occurrence data. The residence data (e.g., for the Western Slope), while the occurrence data is a useful tool for measuring the total burden of injury deaths for overall prevention purposes. Source: Kirk A Bol, October 5, 2007, Health Statistics Section, CHEIS

Unintentional Injury Deaths — Children Ages 1-14. From 1990-2006 there were 41 unintentional injury deaths among children ages 1-14 in Region 10. Twenty-four deaths (59%) were due to motor vehicle accidents and 17 were due to non-transportation related causes. In some years the number of deaths spiked. For example, five unintentional injury deaths were reported for 2005; all of these were due to motor vehicle accidents. Of the non-transport deaths during this period, seven (41%) were due to drowning and submersion, and eight (47%) were due to other unspecified injuries. The causes of two deaths could not be determined due to small numbers of cases.

Between 1998-2005, unintentional injury death rates for children ages 1-14 years were higher for the region than for the state. While the rate for the state decreased from 9.2 to 5.4, the rate for Region 10 decreased from 19.6 to 15.1. The 2004-05 rate (15.1) for the region was three times higher than the state rate. It is not known whether the difference in the rates is statistically significant. [See Table 81.]

Table 81. Injuries and Accidents, Ages 1-14 (Rate per 100,000 Deaths)

	1998-99	2000-01	2002-03	2004-05
REGION 10	19.6	---	9.3	15.1
COLORADO	9.2	7.5	7.7	5.4
Data source: CDPHE				

Unintentional Injury Deaths — Children Ages 15-19. From 1990-2006 there were 48 unintentional injury deaths among children ages 15-19 in Region 10. Four out of five deaths (81%) were due to transportation-related causes (39 deaths); 36 of these were due to motor vehicle accidents. The causes of death for nine children with non-transportation injuries were not available due to the small numbers of cases.

Transportation-related Injury Deaths

From 1990-2006 there were 372 transportation-related deaths, which accounted for 51% of unintentional injury deaths in Region 10 compared with 47% for the state as a whole. The transportation-related death category includes deaths from motor vehicle accidents, other land transportation accidents, and water or air transportation accidents.

Nine out of ten transportation-related deaths were due to motor vehicle accidents (87% in Region 10 and 91% in Colorado). The age-adjusted death rate from injuries due to water or air transportation accidents was twice as high in Region 10 as for the state (2.6 versus 1.0, respectively). [See Table 82.]

Table 82. Transportation-Related Injury Deaths, Age-Adjusted Rate per 100,000 Population (1990-2006)

	Number	Rate
COUNTY		
DELTA	127	29.0
GUNNISON	56	26.2
HINSDALE	---	---
MONTROSE	135	25.6
OURAY	16	28.5
SAN MIGUEL	37	38.9
REGION 10	372	26.8
COLORADO	12,039	17.4
Data source: CDPHE		

In terms of trends, death rates from motor vehicle accidents in Region 10 tend to be higher for the region than for the state (see table below). The differences in motor vehicle accident rates between the state and Region 10 are consistent with information reported in *Injury in Colorado*[33] for 2001-03. During this three-year period the death rate from motor vehicle traffic accidents in Colorado was 15.9, while for several counties in Region 10 the rate was over 21.0.[34]
[See Table 83.]

Table 83. Motor Vehicle Accident Deaths (Age-Adjusted Rates per 100,000 Population)

	1998-99	2000-01	2002-03	2004-05
REGION 10	16.9	20.6	24.4	20.7
COLORADO	14.7	16.7	16.1	14.1
Data source: CDPHE				

[33] CDPHE
[34] Each of the four Region 10 counties with three or more reported deaths had rates above 21.0.

Youth Behavior and Unintentional Transportation Injuries. The Youth Risk Behavior Survey provides information on the prevalence of behaviors that contribute to unintentional injuries among Colorado students in grades 9-12. About 7.5% reported that they never wore a seat belt. More than 25% of those surveyed in 2005 reported that they rode with a driver who had been drinking, and more than 10% reported that they drove after drinking.

Non-transportation Injury Deaths

The non-transportation injury category includes falls, poisoning, drowning/submersion, fire-related, firearms and other causes. From 1990-2006 the age-adjusted death rate was 24.8 in Region 10 and 22.3 in Colorado. The 364 unintentional injury deaths shown in Table 6 includes falls (111), poisoning (47); drowning/submersion (27), fire-related (12), firearms (6), and other causes (161). [See Table 84.]

Table 84. Non-Transportation Injury Deaths 1990-2006

	Number	Age-Adjusted Rate
COUNTY		
DELTA	132	23.9
GUNNISON	52	34.4
HINSDALE	3	25.7
MONTROSE	149	25.2
OURAY	15	27.8
SAN MIGUEL	13	22.3
REGION 10	364	24.8
COLORADO	13,527	22.3
Data source: CDPHE		

Firearm and Work-Related Injury Deaths

Firearms-related injuries have been a significant source of deaths. The rates for such injuries in Region 10 have generally been somewhat higher than rates for the state as a whole. [See Table 85.]

Table 85. Firearm-Related Deaths (Age-Adjusted Rate per 100,000 Population)

	1998-99	2000-01	2002-03	2004-05
REGION 10	10.3	13.5	14.5	12.2
COLORADO	9.6	11.0	11.2	11.6
Data source: CDPHE				

Work-related deaths are those that occur on the job. Rates for these types of injury deaths have generally been higher for Region 10 than for the state as a whole. [See Table 86.]

Table 86. Work-Related Injury Deaths (Age-Adjusted Rate per 100,000 Population)

	1998-99	2000-01	2002-03	2004-05
REGION 10	4.1	3.9	3.1	1.4
COLORADO	1.9	2.2	1.9	1.8

Data source: CDPHE

Intentional Injury Deaths, 1990-2006

From 1990-2006 there were 295 intentional injury deaths in Region 10 for an age-adjusted rate of 20.9. These deaths were associated with either suicides or homicides. Nine out of 10 intentional deaths (264) in Region 10 were due to suicide; 181 (69%) resulted from the use of firearms; and 83 were from unspecified causes. The age-adjusted rate from all suicide causes was 18.7. [Data on suicide is reported in *Section 6. Mental Health and Drug Abuse.]*

Homicide. In Region 10, 31 deaths resulted from homicide for an age-adjusted rate of 2.3. This compares with a rate of 4.4 for the state. The number of homicides in Region 10 has held constant in three of the four previous years: 2003, 2005, and 2006. [See Table 87.]

Table 87. Homicides (Age-Adjusted Rate per 100,000 Population)

	1998-99	2000-01	2002-03	2004-05
REGION 10	#	#	2.7	2.3
COLORADO	4.4	3.5	4.0	4.2

data suppressed if there are less than three cases per year
Data source: CDPHE

Intentional Injury Deaths — Children Ages 15-19. For Region 10, there were 17 intentional injury deaths to children ages 15-19 in 1990-2006. Sixteen were due to suicide; 14 of these (82% overall) were firearm-related suicide deaths.

Violent Crime — Injuries and Deaths. Data on violent crimes, including murder, rape and assault, were obtained from the *Crime in Colorado Statistics* website. Table 10 indicates the number of offenses, reported by county and for the state. In 2006, there were 3 murders, 28 reported rapes and 604 reported assaults in Region 10. [See Table 88.]

Table 88. Number of Offenses Reported by County and Statewide, 2006

	Murder	Reported Rapes	Reported Assaults
COUNTY			
CEDAREDGE MARSHALL	0	0	0
DELTA SHERIFF	0	4	57
DELTA PD	2	6	79
CRESTED BUTTE MARSHALL	0	1	22
GUNNISON SHERIFF	0	0	15
GUNNISON PD	0	5	79
HINSDALE SHERIFF	0	0	4
MONTROSE SHERIFF	1	4	140
MONTROSE PD	1	6	137
OLATHE PD	0	2	6
OURAY SHERIFF	0	0	7
SAN MIGUEL SHERIFF	0	0	14
TELLURIDE MARSHALL	0	0	44
REGION 10	4	28	604
COLORADO	157	2,030	39,307

Data Source: Crime in Colorado Statistics for 2006, Colorado Bureau of Investigation. [35]

[35] Notes on crime statistics: The Ouray PD did not report to the Colorado Bureau of Investigation in 2006. Numbers represent reports to the CBI by local law enforcement agencies. If an agency is not listed, it is reported by the local sheriff. Multiple offenses may occur during an arrest. However, only the highest ranking offense is reported. There is no direct correlation between the number of individuals arrested and the number of offenses reported.

The number of adult and juvenile arrests by county and for the state is shown in Table 89. In 2006 there were 2 arrests for murder and 2 arrests for rape. All 4 of these were adults. There were 352 adults and 13 juveniles arrested for assault.

Table 89. Number of Adult and Juvenile Arrests Reported by County and Statewide, 2006

	Murder	Reported Rapes	Reported Assaults
COUNTY			
CEDAREDGE MARSHALL	0	0	4/0
DELTA SHERIFF	0	1/0	35/3
DELTA PD	0	0	35/1
CRESTED BUTTE MARSHALL	0	0	11/0
GUNNISON SHERIFF	0	0	12/0
GUNNISON PD	0	0	43/0
HINSDALE SHERIFF	0	0	3/0
MONTROSE SHERIFF	1/0	0	82/4
MONTROSE PD	1/0	1/0	79/3
OLATHE PD	0	0	3/0
OURAY SHERIFF	0	0	3/0
SAN MIGUEL SHERIFF	0	0	19/1
TELLURIDE MARSHALL	0	0	23/1
COLORADO	114/12	481/73	21,575/3,283

Note: Where two numbers are separated by a slash, the first number is adult arrests and the second is juvenile arrests.

Data Source: Crime in Colorado Statistics for 2006, Colorado Bureau of Investigation. [36]

[36] Notes on crime statistics: The Ouray PD did not report to the Colorado Bureau of Investigation in 2006. Numbers represent reports to the CBI by local law enforcement agencies. If an agency is not listed, it is reported by the local sheriff. Multiple offenses may occur during an arrest. However, only the highest ranking offense is reported. There is no direct correlation between the number of individuals arrested and the number of offenses reported.

Domestic Violence

Data on domestic violence are incomplete and difficult to obtain. Domestic violence incidents are underreported for a variety of reasons and data do not present an accurate picture. Even if data could be easily obtained, there are no good ways to make comparisons with the rest of the state, because comparable data are not available. An incident may not be called in to the police and, if a call is made, the responding officer may not file a report or make an arrest. At the individual level, action is dependent on a decision process that is subject to circumstances, perceptions and decisions. Agency protocols may differ among jurisdictions and may change with time.

Data on domestic violence filings during a one-year period were obtained from the Seventh Judicial District Office in Montrose, which covers the six-county area. [See Table 90.]

Table 90. Domestic Violence Filings, Seventh Judicial District Office[37], Montrose July 1, 2005 - June 30, 2006

	Reports of Domestic Violence
COUNTY	
DELTA	123
GUNNISON	64
HINSDALE	1
MONTROSE	161
NUCLA (MONTROSE COUNTY)	8
OURAY	10
SAN MIGUEL	33
Data source: The Seventh Judicial District	

[37] The Seventh Judicial District covers all six counties.

Child Abuse and Neglect

According to the Colorado Children's Trust Fund "Child maltreatment, as generally defined, includes both abuse and neglect of children. Of these two general types, neglect represents approximately 60 percent of all child maltreatment and physical abuse represents approximately 20 percent. Additionally, sexual abuse represents approximately 10 percent of child maltreatment and approximately 7 percent is emotional maltreatment."[38]

The *Healthy People 2010* goal is to reduce the incidence of maltreatment of children younger than 18 (including physical abuse, sexual abuse, emotional abuse, and/or neglect) to 10.3 (or below) per 1,000 children. Region 10 counties categorized as "meeting the goal" include Delta, Montrose, Ouray and San Miguel. Region 10 counties categorized as being "at some distance from the goal" are at least 20 percent away but less than double the goal, and include Gunnison and Hinsdale.

Table 91 reflects substantiated cases of child abuse and neglect in Region 10 for calendar year 2005, 2006 and the first six months of 2007.

Table 91. Substantiated Abuse and Neglect Victims, Ages 0-18, per 1,000 Population

	CY 2005		CY 2006		Jan-Jun CY 2007	
	Number	Rate	Number	Rate	Number	Rate*
COUNTY						
DELTA	46	6.54	52	7.27	23	
GUNNISON	39	13.22	36	11.87	18	
HINSDALE	3	19.48	1	5.85	0	
MONTROSE	76	7.90	59	6.14	43	
OURAY	2	2.24	5	5.55	1	
SAN MIGUEL	3	2.07	2	1.34	0	
COLORADO	10,878	9.19	9,800	8.15	4,424	

* Rate not yet available for CY 2007
Data source: **National Child Abuse and Neglect Data System** (**NCANDS**)

[38] Colorado Children's Trust Fund, *Child Abuse and Neglect Manual*, www.cdphe.state.co.us/ps/cctf

Trends and Policy Implications

Positive and negative trends are indicated below by arrows. An up arrow indicates an improving trend (e.g., less infectious disease), while a down arrow indicates a declining trend (e.g., poorer health due to a rising rate of infectious disease). [See Table 92.]

Table 92: Positive and Negative Trends in Region 10

↑ Positive Trends
⇧ The homicide death rate in Region 10 is half the state rate.
⇧ Work-related injury deaths have decreased significantly in Region 10.
↓ Negative Trends
⇩ The rate of firearm-related injury deaths is higher in Region 10 than for the state.
⇩ The rate of unintentional child injury deaths is decreasing in Region 10, but is still significantly higher than the state.
⇩ The rate of motor vehicle accident deaths in Region 10 is higher than for the state.
⇩ With the exception of Montrose, injury hospitalizations for children ages 0-14 are significantly higher in Region 10 than state rate.

Policy Implications

- Firearm use is common in rural Colorado, due to the abundance of recreational hunting.
- Rural roads — and the off-road use of all terrain vehicles (ATVs) — contribute significantly to the number of motor vehicle accidents in this region. Use of alcohol and other substances also increase the risk of motor vehicle accidents.
- Neither the number of motor vehicle accidents in which a safety belt has not been worn, nor the cause of the unintentional child injury deaths, have been assessed; data is needed to adequately implement prevention efforts.
- Risky behaviors of youth contribute to accidents being the number one cause of death in teens and young adults. Data is limited by the absence of emergency room trauma statistics in Region 10's three hospitals.

Photo:
Gunnison Girl with Fish

Section 8. ENVIRONMENTAL HEALTH

Defining the Issue

Environmental health comprises those aspects of human health influenced by factors in the environment. It includes concern for preventing foodborne and waterborne diseases, providing safe drinking water, and maintaining outdoor and indoor air quality. In the broadest sense, "environmental health" also includes how communities are built and how industries are operated.[39]

Data for Region 10 and Colorado

This section reviews available data for several areas of environmental health, including food and waterborne diseases, drinking water supplies, and indoor contaminants (radon and lead).

Acute Gastroenteritis Infections from Food and Water

Known causes of acute gastroenteritis (AGI) include viral, bacterial and parasitic foodborne pathogens. It is estimated that more than 38 million cases of AGI occur annually in the U.S. The majority (80.5%) are caused by viral pathogens. Bacterial diseases, including campylobacter, E. coli, salmonella, and shigella, cause 13.5% of AGI cases, and 6% are caused by parasitic diseases, including giardia lamblia and cryptosporidium.[40]

[39] Healthy People 2010 pp.8-30
[40] Craun, G.F., et. al., "Assessing waterborne risks: an introduction." *Journal of Water and Health* 04, Suppl 2 (2006). http://www.epa.gov/nheerl/articles/2006/waterborne_disease/introduction.pdf

In Colorado, illnesses in persons diagnosed with certain bacterial and parasitic diseases are reported to the state; data are available on the CDPHE statistics website. Individual infections due to viral pathogens are generally not reported, unless there is an outbreak due to these viruses. Obtaining an accurate diagnosis of many bacterial and parasitic diseases requires laboratory analysis. Because persons with AGI do not always obtain medical attention or undergo testing, these diseases are under-diagnosed and, therefore, are underreported. However, the level of underreporting is assumed to be consistent from year to year. Rates are calculated based on small numbers of cases.

In Colorado and Region 10, campylobacter, salmonella and giardiasis are the most commonly-reported bacterial and parasitic diseases. [See Table 93.]

Table 93. Rates for Selected Incidents of AGI (2004-2006)*

	Region 10			Colorado		
	2004	2005	2006	2004	2005	2006
BACTERIAL						
CAMPYLOBACTER	16	14	16	824	868	830
E. COLI/STEC	1	2	2	52	83	109
SALMONELLA	7	12	11	542	582	625
SHIGELLOSIS	3	0	2	161	170	238
PARASITIC						
CRYPTOSPORIDIOSIS	4	1	0	59	50	77
GIARDIASIS	17	14	11	517	534	554

Rates based on population estimates for each year.
Data source:
http://www.cdphe.state.co.us/dc/CODiseaseStatistics/Statistics_06/Diag_County_2006.HTML

In order to improve food safety at restaurants, food handlers safety classes were implemented in Region 10 in October 2006, under a contract with Colorado State Extension Service, Tri River Area. While these classes are not mandatory, as of June 30, 2007, 28 classes were held throughout the region with a total number of 327 participants. Upon completion of the class, 69% of participants said they would make some changes in their food handling practices, while 31% said they would make multiple changes in their practices. Overall, the classes have been well-received by participants.

Nevertheless, food handlers training is not mandatory. There are inconsistencies between counties regarding food inspections and consumer protection, in general. There are no local consumer protection agents in Gunnison County or Ouray County. State Health conducts food inspections in Gunnison County, and Montrose County provides this service for Ouray County. Staffing for consumer protection is strained in all counties, with the possible exception of Delta County (which has the only health department in Region 10). Growth of population in Region 10, including the Western Slope, further strains the public health/environmental health system.

Public Drinking Water Systems

Most people in the U.S. obtain their drinking water from public water supply systems. The U.S. Environmental Protection Agency (EPA) has established regulations intended to ensure that community water systems supply safe drinking water. Compliance with established regulations is one measure of the public's receipt of a safe water supply, free from disease-causing agents.[41] A goal of *Healthy People 2010* is to increase the proportion of people served by community water systems who receive a supply of drinking water that meets the regulations of the Safe Drinking Water Act. [See Table 94.]

Table 94. Number of Water Systems by County

	Total # of systems	# serving residential communities	# of non-community systems
COUNTY			
DELTA	31	21	10
GUNNISON	67	18	49
HINSDALE	17	1	16
MONTROSE	21	16	5
OURAY	8	5	3
SAN MIGUEL	17	9	8

Data source: Safe Drinking Water Information System; Water Quality Control Division, Colorado Dept. of Public Health & Environment

A public water system (PWS) serves at least 25 persons on average per day for 60 or more days per year. There are three types of public water systems:

- Community water systems serve the same people year-round, including residential homes.
- Non-transient non-community water systems serve the same people every day, but not year-round, and the systems are not residential. Schools, factories and mines that have their own water systems are examples of this type of public water system.
- Transient non-community water systems do not consistently serve the same people. Examples include rest stops, visitor centers, campgrounds, ranches, lodges, resorts, airports and gas stations.

[41] See http://www.healthypeople.gov/Document/HTML/Volume1/08Environmental.htm

Many people in rural areas get their drinking water from surface water sources diverted from rivers or reservoirs, or from ground water extracted from aquifers via wells. The state's Safe Drinking Water Information System (SDWIS/State) database includes information on type of supply as well as population served and types of violations. Data are collected and maintained by the state, and reported to the EPA's database (SDWIS/Fed).

Drinking Water Violations as Public Health Indicators

The SDWIS databases contain information about public water systems and their violations of the Colorado Primary Drinking Water Regulations. These regulations establish maximum allowable contaminant levels, treatment techniques, and monitoring and reporting requirements, so as to ensure that water systems provide safe water to their customers.[42]

The EPA SDWIS online query system enables the public to access information about drinking water suppliers and view violations and enforcement history since 1993. Data on violations in Region 10 were provided by the CDPHE Compliance Assurance and Data Management Section. During the period 2001-2007, 31 public water systems in Region 10 had health violation data related to either exceeding a safety standard for a "maximum contaminant level" (MCL) or a treatment technique.

Although individual counties currently track violation information, Table 95 provides data that serve as a baseline indicator for the region as a whole. The table shows the public water system (PWS) name, county, primary source, population served and violation type. The dates of the violations are not included; however, this information and additional details are available from the Water Quality Control Division (CDPHE) on the EPA SDWIS/Fed website via queries using either the county name or the water system ID.

Surface water violations include:

- Failure to monitor/sample or report, which can be significant; if data are not available, the status of the water system and its potential risks to public health are unknown.
- MCL and Treatment Technique violations, which are the primary indicators of potential public health risk.

Public notifications include:

- A boil order, which is a type of public notification that can be related to an enforcement action. Boil orders must be issued when a system experiences treatment failure of a nature that poses an acute risk to public health.
- A bottled water order occurs if the contaminant is a chemical that concentrates with boiling.
- PWSs must certify, in writing, that the boil order/bottled water order was delivered (e.g., by hand, reverse 911).

Table 95. Public Water Systems with Reporting Health-based Violations of the Colorado Primary Drinking Water Regulations

[42] See. www.epa.gov/enviro/html/sdwis/sdwis_query.html

PWS Name	County	Primary Source	Total Population	Violation Type
ANTELOPE HILLS HOA	Gunnison	Groundwater	350	Radium combined (226, 228)
BOWIE MINE NO. 2	Delta	Surface water	225	Surface water treatment rule (SWTR)
BOWIE MINE NO. 2	Delta	Surface Water	225	Turbidity
CAMP RED CLOUD	Hinsdale	Groundwater	170	Coliform, total (TCR)
TOWN OF CEDAREDGE	Delta	Surface water	2054	Surface water treatment rule (SWTR)
CEMENT CREEK CAMPGROUND	Gunnison	Groundwater	38	Coliform, total (TCR)
CHAIR MT. RANCH HOA	Gunnison	Groundwater	45	Coliform, total (TCR)
COALBY DOMESTIC WC	Delta	Groundwater under the influence of surface water	212	Surface water treatment rule (SWTR)
COALBY DOMESTIC WC	Delta	Groundwater under the influence of surface water	212	Interim Enhanced SWTR
COALBY DOMESTIC WC	Delta	Groundwater under the influence of surface water	212	Turbidity
COBBETT CB	Delta	Groundwater	43	Coliform, total (TCR)
TOWN OF CRESTED BUTTE	Gunnison	Surface water	2000	Surface water treatment rule (SWTR)
DALLAS CREEK WC	Ouray	Groundwater under the influence of surface water	650	Total trihalomethanes (TTHM)
ELK MEADOWS ESTATES	Ouray	Groundwater under the influence of surface water	175	Surface water treatment rule (SWTR)
FRUITLAND DOMESTIC WC	Delta	Surface water	400	Coliform, total (TCR)
FRUITLAND DOMESTIC WC	Delta	Surface water	400	Turbidity
FRUITLAND DOMESTIC WC	Delta	Surface water	400	Total haloacetic acids (HAA5)
FRUITLAND DOMESTIC WC	Delta	Surface water	400	Interim enhanced SWTR

PWS Name	County	Primary Source	Total Population	Violation Type
FRUITLAND DOMESTIC WC	Delta	Surface water	400	Surface water treatment rule (SWTR)
HARMELS RANCH RESORT	Gunnison	Groundwater	198	Coliform, total (TCR)
TOWN OF HOTCHKISS	Delta	Surface water	1120	Total haloacetic acids (HAA5)
ISLAND LAKE CG	Delta	Groundwater	73	Coliform, total (TCR)
LAKE VIEW CG	Gunnison	Groundwater	193	Coliform, total (TCR)
LAZY CRUTCH PARK	Hinsdale	Groundwater under the influence of surface water	26	Interim enhanced SWTR
MAD DOG WC	Delta	Groundwater under the influence of surface water	50	Surface water treatment rule (SWTR)
MURDIE HOA	Gunnison	Surface water	83	Coliform, total (TCR)
TOWN OF NATURITA	Montrose	Purchased surface water	485	Coliform, total (TCR)
NORWOOD WATER COMMISSION	San Miguel	Surface water	1700	Coliform, total (TCR)
NORWOOD WATER COMMISSION	San Miguel	Surface water	1700	CARBON, TOTAL ORGANIC (TOC)
NORWOOD WATER COMMISSION	San Miguel	Surface water	1700	Surface water treatment rule (SWTR)
NORWOOD WATER COMMISSION	San Miguel	Surface water	1700	Total haloacetic acids (HAA5)
NORWOOD WATER COMMISSION	San Miguel	Surface water	1700	Total trihalomethanes (TTHM)
TOWN OF OPHIR	San Miguel	Groundwater	145	Coliform, total (TCR)
OXBOW MINING WATERWORKS	Gunnison	Groundwater under the influence of surface water	200	Turbidity
TOWN OF PAONIA	Delta	Groundwater under the influence of surface water	2499	Interim enhanced SWTR
PARADOX PIPELINE CO.	Montrose	Groundwater	68	Coliform, total (TCR)
TOWN OF RIDGWAY	Ouray	Surface water	1200	Surface water treatment rule (SWTR)

PWS Name	County	Primary Source	Total Population	Violation Type
SONRISE MT. RANCH	Gunnison	Groundwater	110	Coliform, total (TCR)
SPRUCE LODGE	Delta	Groundwater	25	Coliform, total (TCR)
TELLURIDE PINES HOA	San Miguel	Groundwater under the influence of surface water	25	Surface water treatment rule (SWTR)
TELLURIDE PINES HOA	San Miguel	Groundwater under the influence of surface water	25	Coliform, total (TCR)
TELLURIDE PINES HOA	San Miguel	Groundwater under the influence of surface water	25	Interim enhanced SWTR
TRI STATE G AND T NUCLA STA	Montrose	Surface water	66	Surface water treatment rule (SWTR)
Wilson Mesa	San Miguel	Surface water	200	Total trihalomethanes (TTHM)

Data source: Data source: Safe Drinking Water Information System; Water Quality Control Division, Colorado Dept. of Public Health & Environment

Small Community Drinking Water Systems

In 1997, small systems (serving 25 to 3,300 people) accounted for more than 85%of the community water systems in the U.S., but served only about 10% of the population. These systems accounted for 91% of the violations of EPA drinking water regulations. According to USGS, 17% of the nation's total population was served by their own water supply systems in 1990, compared with 18% in 1985.[43]

In Region 10, just six of the 163 public water systems serve populations of more than 3,300 each. Three of the six large systems are located in Montrose, and these three systems serve about 60% of the county's population. One large system in Delta serves just 26% of the county's population. Gunnison and San Miguel have large systems which serve 53% and 52% of their respective populations. Nearly 48,000 people are served by these six systems, none of which had health violations from 2001-2007. Thus, the balance of the residents of Region 10 — around half or 47,700 people — are served either by small water systems, which have a higher rate of violations, or by private wells.

Private Drinking Water Systems

Approximately 15% of Americans rely on their own private drinking water supplies; these supplies are not subject to EPA standards, although some state and local governments set rules to

[43] http://www.healthypeople.gov/Document/HTML/Volume1/08Environmental.htm

protect users of these wells. Unlike public drinking water systems serving many people, they do not have experts regularly checking the water's source and its quality before it is sent to the tap. These households must take special precautions to ensure the protection and maintenance of their drinking water supplies. [44]

As population increases, the demand for water will continue to increase. Private residential wells supply water to an unknown number of residents in the six counties, and the growing population will place increasing demands on wells to supply water for residential use. Local health departments, CDPHE and the EPA regulate public water systems; however, they do not have the authority to regulate private drinking well water quality.

While newly completed private residential wells are recorded by the Colorado State Engineer's Office, responsibility for monitoring the wells is often left up to the homeowner, and results are likely to go unreported to the county or state. Therefore, the quality of water from private wells within a county is usually unknown. Homeowners may not be diligent about testing their well water, which could pose health risks for the individual household. [See Table 96.]

Table 96. Total Number of Completed Wells by County and Use, 2006

	Total	Residential	Household
COUNTY			
DELTA	1788	961	333
GUNNISON	3787	1922	1180
HINSDALE	656	258	277
MONTROSE	1625	952	102
OURAY	529	334	91
SAN MIGUEL	1233	731	269

Data source: Office of the State Engineer, Colorado Division of Water Resources, Cumulative Report 2006; http://water.state.co.us/pubs/cumulative/CYS_rpt_2006.pdf

[44] See http://www.epa.gov/safewater/privatewells/index2.html

Water Quality in Streams, Rivers and Lakes

Water quality in systems such as rivers and streams, lakes, and aquifers may vary over time and within systems. Pollutants harmful to human health may seep into these systems from naturally-occurring and man-made sources. Events such as run-off during rainstorms may trigger surges in pollutants that pose potential health risks to humans. Human land use patterns may increase health risks by contributing to increased rates of erosion, releasing naturally-occurring chemicals from soils, or introducing new sources of pollution from commercial activities, such as mining, industry and residential development. Identifying how impacts to water systems occur and creating strategies for monitoring and curtailing activities with adverse health consequences is among the significant challenges facing the public and environmental health field.

One indicator of water quality is stream impairment data. Monitoring systems provide data on water temperature, as well as chemicals, such as iron, magnesium, zinc, selenium, chromium, arsenic and nitrates. A designation of impairment indicates that designated thresholds — for aquatic life, wildlife or humans — have been exceeded in water samples. Certain natural formations and geographic features such as Mancos shale or thin top soil may predispose an area to water quality problems; human activity can further exacerbate or mitigate the impacts. Data on stream impairment can be used to inform land use planning in areas known to be at increased risk.

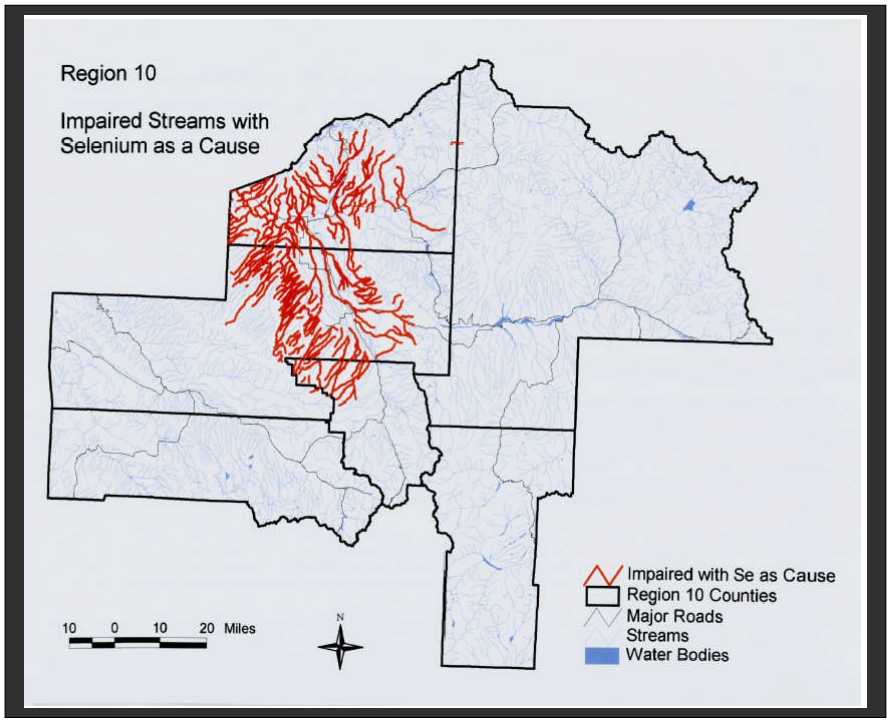
Impaired Streams with Selenium as a Cause. Selenium is a non-metallic chemical element that occurs naturally in the environment and is released through both natural processes and human activities. Selenium from hazardous waste sites and from farmland often ends up in groundwater or surface waters through irrigation, causing selenium to end up in local drinking water.[45]

Selenium bio-accumulates in aquatic food chains and has been known to cause reproductive failure, deformities, and other adverse impacts in birds and fish. As a result of elevated selenium concentrations, many western Colorado rivers and streams are on the Colorado 303(d) list, including the main stem of the Colorado River, from the Gunnison River confluence to the Utah border. Studies in the Grand and Gunnison Valley region suggest that selenium mobilization occurs primarily in shallow aquifers, which are present as a result of irrigation and water delivery through unlined canal networks.[46] [See Figure 19.]

The current EPA standard for selenium is 50 PPB; standards for acceptable levels of selenium are subject to change. Streams in Montrose and Delta County are affected by selenium as shown in Figure 19 . Certain types of development may further threaten public health through increased exposure to selenium in drinking water. As the number of residences with private wells increases in these areas, increasing numbers of people will be at risk of exposure, especially if they do not test their well water and implement mitigation strategies. Other forms of inappropriate land use, such as detrimental irrigation practices, also increase the risks to human health.

[45] See http://www.lenntech.com/Periodic-chart-elements/Se-en.htm.
[46] See, http://co.water.usgs.gov/projects/BSD00/index.html

Figure 19. Impaired Streams with Selenium as a Cause



Water Contamination from Mancos Shale Soil. Black shale can be a source of mineral wealth as well as a cause for environmental concern. Oil and gas are the most obvious of the resources that originate in black shale, and some of the world's largest mineral deposits are hosted by black shale. Some black shale sequences such as those found in the Mancos Shale landscape of the Upper Colorado River Basin are non-point sources for potentially toxic elements, such as arsenic, selenium, chromium and mercury. Additionally, some black shale-hosted ore deposits and associated water rock can be point sources for a variety of toxicants. Slope stability and a variety of other engineering issues further contribute to the list of problems encountered in black shale landscapes.[47]

[47] See, http://geology.usgs.gov/connections/fws/resources/mancos_shale.htm

Fish Contaminant Advisories. Another important indicator of water quality is the proportion of rivers and streams, and lake acreage, under advisories against fish consumption. An example of this is Sweitzer Lake near Delta, which is listed as a public health hazard for fishing.[48]

Indoor Contaminants

Radon. Radon is a cancer-causing, radioactive gas that cannot be seen, smelled or tasted. According to the EPA, radon is estimated to cause about 21,000 lung cancer deaths per year.[49] The U.S. Surgeon General has warned that radon is the second leading cause of lung cancer (after smoking) in the U.S. today. [See Figure 20.]

Radon comes from the natural (radioactive) breakdown of uranium in soil, rock and water. Radon can be found all over the U.S. and can permeate the air in any type of building, including homes, offices and schools, resulting in a high indoor radon level. The greatest risk of exposure is in the home, where people spend most of their time. [See Figure 21.]

The EPA and the Surgeon General recommend testing all homes below the third floor for radon. The EPA also recommends testing in schools. Radon reduction systems work and are not too costly. Some radon reduction systems can reduce radon levels in the home by up to 99%. Even very high levels can be reduced to acceptable levels.

[48] See http://geology.usgs.gov/connections/fws/resources/mancos_shale.htm
[49] EPA's 2003 Assessment of Risks from Radon in Homes (EPA 402-R-03-003).

Figure 20. Deaths from Radon and Other Causes[50], 1999-2002

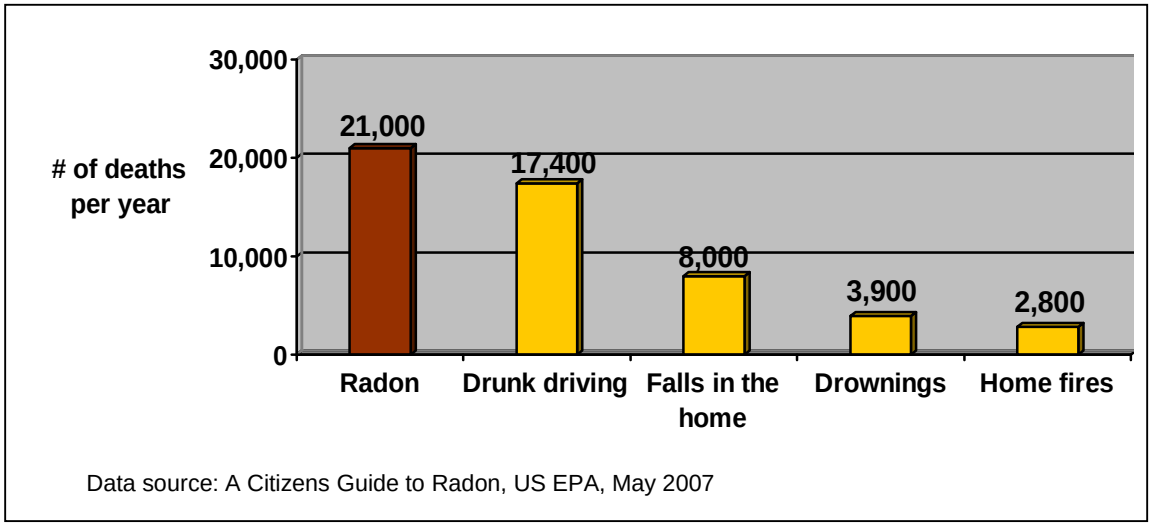
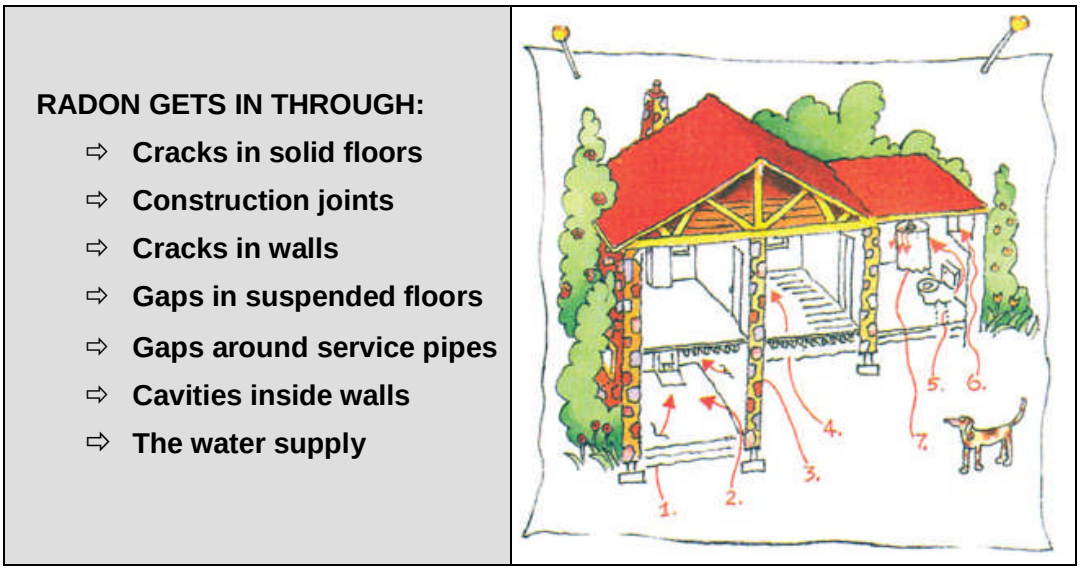


Figure 21. How Radon Gets Into a Home

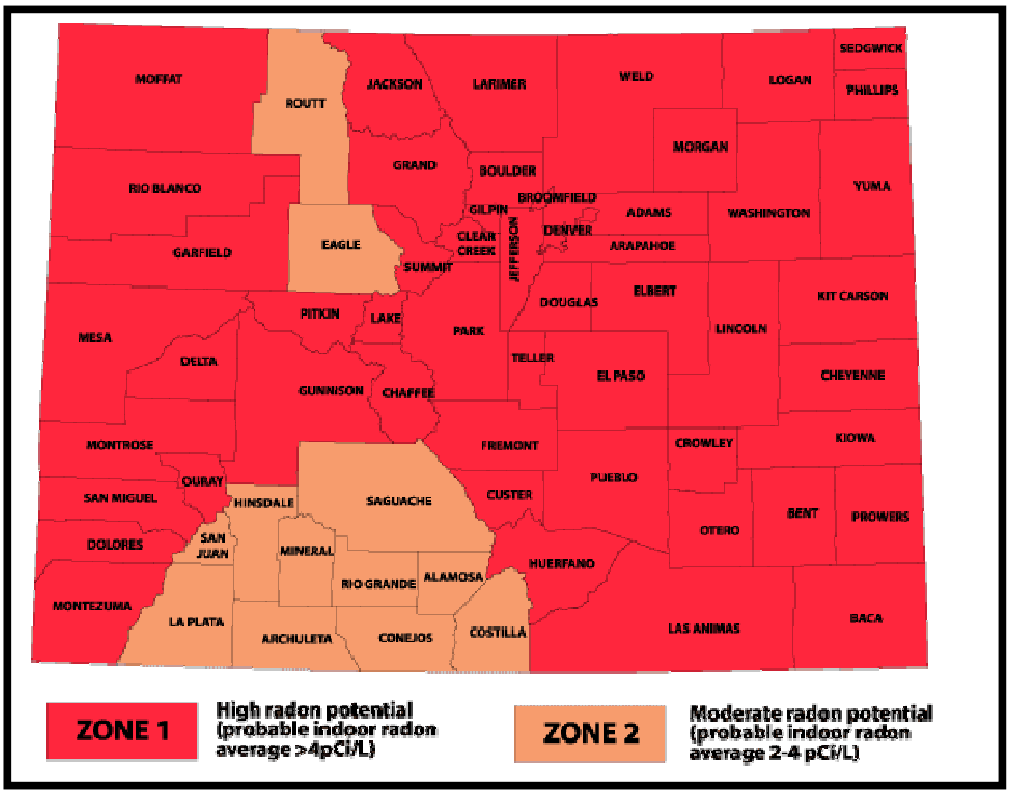


[50] The numbers of deaths from other causes are taken from the Centers for Disease Control and Prevention's 1999-2001 National Center for Injury Prevention and Control Report and 2002 National Safety Council Reports.

The EPA and the U.S. Geological Survey (USGS) have evaluated the radon potential in the U.S. and have developed a map to assist national, state, and local organizations in targeting their resources and to assist building code officials in determining whether radon-resistant features are applicable in new construction. [See Figure 22.] This map is not intended to be used to determine whether or not a home in a given zone should be tested for radon. Homes with elevated levels of radon have been found in all three zones. All homes should be tested regardless of geographic location. The map assigns each of the 3,141 counties in the U.S. to one of three zones based on radon potential. Each zone designation reflects the average short-term radon measurement that can be expected to be measured in a building without the implementation of radon control methods.

The radon zone designation of the highest priority is Zone 1. In Region 10, all counties are in zone 1, except for Hinsdale, which is in zone 2. The presence of radon at any specific location is not predictable without testing. It is important for residents in Region 10 to be informed about the potential presence and risks associated with radon; testing should be encouraged.

Figure 22: EPA Designated Radon Zones in Colorado[51]



[51] Consult the EPA Map of Radon Zones document (EPA-402-R-93-071) before using this map. This document contains information on radon potential variations within counties. EPA also recommends that this map be supplemented with any available local data in order to further understand and predict the radon potential of a specific area. This and other indoor air quality publications can be ordered through the IAQ INFO Clearinghouse.

Lead. According to the Centers for Disease Control and Prevention (CDC), childhood lead poisoning is "the most common environmental disease of young children." Lead is highly toxic and affects virtually every system of the body. At low levels, lead's neurotoxic effects have the greatest impact on children's developing brains and nervous systems, causing reductions in IQ, decreased attention span, reading and learning disabilities, hyperactivity and behavioral problems.[52]

The foremost cause of childhood lead poisoning in the U.S. today is ingestion of lead-based paint, and the accompanying contaminated dust and soil found in or around older houses. HUD estimates that 75% of pre-1980 housing units contain some lead-based paint. Fully 90% of privately owned units built before 1940, 80% of units built between 1940 and 1959, and 62% of units built between 1960 and 1979 contain some lead-based paint.

The belief that, in order to be poisoned, children must eat lead-based paint chips is unfounded. The most common cause of poisoning is the ingestion, through hand-to-mouth transmission, of lead-contaminated surface dust. Leaded dust is generated as lead-based paint deteriorates over time, is damaged by moisture, abraded on friction surfaces and impact surfaces, or distributed in the course of renovations, repair or abatement projects. Lead contaminated dust may be so fine that it cannot be seen by the naked eye and can be difficult to clean up.

There is no data for Region 10 that corresponds with the *Healthy People 2010* objective pertaining to the testing of pre-1950 housing for lead. Table 97 shows that there are 8,549 homes in Region 10 that were constructed prior to 1950[53]. The greatest proportion of pre-1980 homes across Region 10 is in Delta and Montrose counties.

Table 97. Number of Pre-1980 Homes

	Year Built					
	1970-79	**1960-69**	**1950-59**	**1940-49**	**1939 or earlier**	**Total Pre-1980 Stock**
COUNTY						
DELTA	2,982	883	792	1,013	2,564	8,234
GUNNISON	2,404	832	502	221	1,010	4,969
HINSDALE	290	91	19	19	72	491
MONTROSE	3,234	1,469	924	657	1,909	8,193
OURAY	334	119	35	42	428	958
SAN MIGUEL	896	101	118	77	537	1,729
TOTAL	10,140	3,495	2,390	2,029	6,520	24,574

Data source: 2000 Census

[52] See, Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing
[53] 2000 Census

Air Quality

Historically, the EPA's air quality monitoring and National Ambient Air Quality Standards data collection have taken place in large urban centers and other areas generally considered to have the nation's poorest air quality. As non-attainment areas become attainment areas, the EPA will continue its monitoring efforts.

The counties that are monitored for criteria pollutants (particulates) in the air are Delta, Gunnison and San Miguel. In 2005 the levels of particulates were exceeded in Gunnison County (Crested Butte).

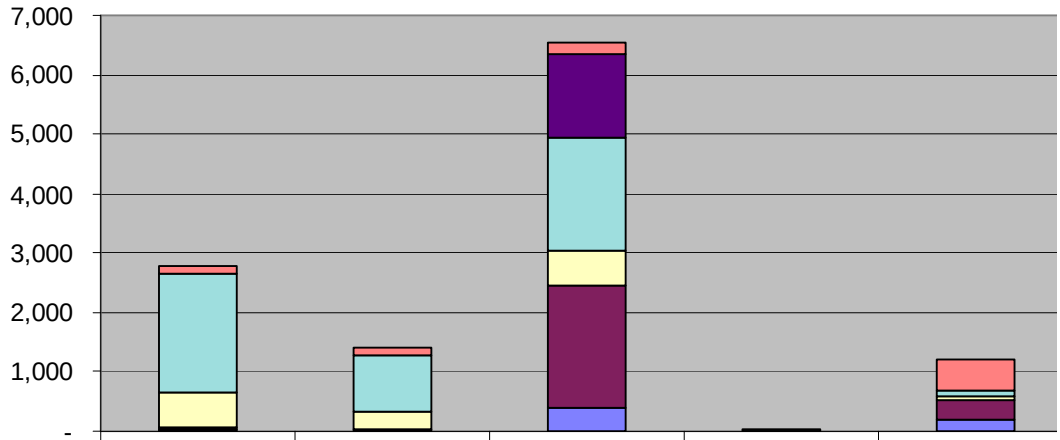
Regulated sources of criteria pollutants are facilities that have emissions at such a level that they require a permit from CDPHE. [See Table 98 and Figure 23.]

Table 98. Tons of Emissions from Permitted Sources, 2006

	# of facilities	CO	NOX	PM10	Total particulates	SOX	VOC
COUNTY							
DELTA	51	44.26	34.99	585.89	1977.97	0.22	139.46
GUNNISON	21	12.25	24.09	306.04	922.95	0.91	127.84
HINSDALE	---	---	---	---	---	---	---
MONTROSE	63	396.61	2057.24	602.56	1871.41	1407.08	212.34
OURAY	3	---	---	10.57	23.69	---	---
SAN MIGUEL	42	196.24	337.51	51.49	104.27	0.42	508.86
TOTAL	180	649.36	2453.83	1556.55	4900.30	1408.64	988.50

Data source: 2000 Census

Figure 23. 2006 Emissions of Criteria Pollutants by County (Tons)



	DELTA	GUNNISON	MONTROSE	OURAY	SAN MIGUEL
VOC	139.46	127.84	212.34	-	508.86
SOX	0.22	0.91	1,407.08	-	0.42
Particulates	1,977.97	922.95	1,871.41	23.69	104.27
PM10	585.89	306.04	602.56	10.57	51.49
NOX	34.99	24.09	2,057.24	-	337.51
CO	44.26	12.25	396.61	-	196.24

VOC = Volatile Organic Compounds
PM10 = Particulate Matter of 10 microns or smaller
NOX = Nitrous Oxides
SOX = Sulphur Oxides
CO = Cobalt

Data source: Colorado Air Inventory System (CAIS), CDPHE

Trends and Policy Implications

Positive and negative trends are indicated below by arrows. An up arrow indicates an improving trend (e.g., better quality in some aspect of the environment). A sideways arrow means that there hasn't been a change in trend; however, it does not indicate if the current condition is positive. [See Table 99.]

Table 99: Positive and Negative Trends in Region 10

↑ Positive Trends
⇧ A food handler safety program serving all of the counties in Region 10 was implemented in October 2006. This should result in fewer food borne illnesses throughout the region.
➔ Unchanged Trends
⇩ Radon levels are high throughout the region. More radon testing should be encouraged.
⇨ The biggest challenges to air quality in Delta and Montrose and the other Region 10 counties are open burning from backyard burn barrels, quasi-agricultural burning and piles of rubbish. Smoke from burning trash contributes to localized health issues and public nuisance problems. It is also a contributor to regional pollution.
⇨ Half of the region's population obtains drinking water either from small drinking water systems serving less than 3,300 people or private wells. Small systems are significantly more likely than large systems to have health violations; private wells may not be tested regularly, masking exposure to contaminants.
⇨ Selenium is a common cause of stream impairment in large areas of Montrose and Delta counties. Some geographic features, such as Mancos shale deposits, have the potential to adversely impact surface waters. Inappropriate land use patterns can lead to spikes in contaminant levels in streams, rivers and lakes, with adverse impacts on aquatic life, wildlife and human health.
⇨ Air quality is a priority health concern in the region. Methods of measuring outdoor air particulate levels, however, are rudimentary, and data may not adequately characterize air quality in ways that are meaningful from a public health standpoint.

Policy Implications

- Some types of monitoring can be conducted by individuals (e.g., testing for radon). Public education should be used to encourage increased home testing for radon.
- Knowledgeable individuals can take steps to reduce their exposure to lead in older homes. Communities can support programs to identify populations at risk and implement preventive measures. Public education programs can help reduce indoor lead exposure.
- Many complex environmental challenges exist, requiring concerted community effort in order to effect sustainable change. One such challenge is that the health effects of the degradation of surface and ground water systems can be difficult to recognize and quantify. However, monitoring and other programs will increase the availability of information that can help inform decisions for land use that will protect water quality.
- Food handlers training is not mandatory, and there are inconsistencies between counties as to food inspections and consumer protection in general. There are no local consumer protection agents in Gunnison County or Ouray County. State Health does food inspections in Gunnison County, and Montrose County provides this service in Ouray County.
- Tracking is being done to determine whether food handler training programs are having an effect on reducing food borne illnesses. Four pathogens were chosen for tracking, in order to be consistent with *Healthy People 2010*: Campylobacter, E. Coli, Salmonella, and Listeria. While it is too soon to establish a trend, 2005 and 2006 data on pathogens which may be responsible for food borne illnesses indicate a low number of cases in Region 10; this is consistent with population size.
- Staffing for consumer protection is strained in all counties, with possibly the exception of Delta County (which has the only health department in Region 10). Growth on the Western Slope and in Region 10 further strains the public health/environmental health system.

Acknowledgments

We gratefully acknowledge the time, effort, talent, expertise and direction provided by all of the people involved in producing this first regional health assessment for the counties of Delta, Gunnison, Hinsdale, Montrose, Ouray and San Miguel. This project was funded by *The Colorado Trust Partnerships in Health Initiative,* with *g*rant fiscal management provided by *Gunnison County.*

We wish to thank the following participating partners of the West Central Public Health Partnership who helped in the design of the project and provided their local expertise for its completion:

Delta County
Bonnie Koehler, Deputy Director, Delta County Health and Human Services
Ken Nordstrom, Delta County Environmental Health

Gunnison County
Renee Brown, Director, Gunnison County Health and Human Services
Carol Worrall, Nursing Supervisor, Gunnison County Public Health Nursing Service
Richard Stenson, Gunnison County Environmental Health

Hinsdale County
Candy Beebe, Director, Hinsdale County Public Health and Community Services
Charlie Curtis, Hinsdale County Environmental Health

Montrose County
Peg Mewes, Director, Montrose County Health and Human Services
Karen Connor, Health Educator,
Montrose County Public Health Nursing Service
Richard Thompson, Montrose County and Regional Environmental Health
Vera Stauffer, Food Service Inspector

Ouray County
Cheryl Roberts, Director, Ouray County Public Health Nursing Service

San Miguel County
June Nepsky, Director, San Miguel County Public Health Nursing Service
Dave Schneck, San Miguel County Environmental Health

The principal authors of this report were *Carol Hermann, MPH*, graduate student at the School of Public Affairs, University of Colorado Denver; and *Carol Dawson,* coordinator for the West Central Public Health Partnership. Editorial and publication assistance was provided by: *Allan Wallis,* Associate Professor of Public Policy, University of Colorado Denver; *Harryl Hollingsworth;* and *David Lampe.* Technical advice was provided by staff of the Colorado Department of Public Health and Environment: *Jeff Stoll,* Office of Local Liaison*; Alyson Shupe, PhD,* Health Statistics Section*;* and *Zulema Smith,* Office of Local Liaison. The report by the Joffit Group on Health Needs in Ouray, San Miguel and the west side of Montrose County was of great benefit as a model in organizing the current report. Project facilitation was provided by: *Noelle Hagan,* and *Allan Wallis* with the Center for Public Private Cooperation, University of Colorado Denver.