

The West Central Public Health Partnership  
2011 REGIONAL  
HEALTH ASSESSMENT



## **West Central Public Health Partnership 2011 Regional Health Assessment**

### **Executive Summary**

#### **Background**

Rural Areas of America have traditionally been challenged to adequately support the health care needs of their residents. Assessment, Assurance and Policy Development are the core functions of Public Health and, with that in mind, access to care and provision of direct services to underinsured and uninsured, when otherwise not available, rest with Public Health. With the goal of making the best use of limited existing and future resources (both human and fiscal) and 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 public health services 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.

A regional health assessment was completed by the WCPHP in 2007 as one of the four initial goals of the WCPHP. It was the intention to update the regional health assessment in 2010-2011. With the passage of the Colorado Public Health Reorganization Act (the Act), effective July 1, 2008, state and local public health agencies are charged with establishing state and local public health plans that set priorities for the public health system in Colorado. A health assessment must be done and stakeholders engaged in order to then create a public health plan. As a result of the Act and a prevention grant obtained by the Director of the Colorado Department of Public Health and Environment (CDPHE) Office of Planning and Partnership (OPP), the WCPHP was chosen as a regional pilot site for the development of the proposed Colorado Health Assessment and Planning System (CHAPS). The WCPHP became the core planning team with additional stakeholders identified in each county, a regional planner hired, and a regional health assessment process started.

The specific objectives of the regional health 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;
- Provide the public with information about health care resources and information for informed decision making and advocacy; and to
- Inform the CHAPS process for CDPHE.

The *Regional Health Assessment 2011* is linked to indicators and goals contained in the *Healthy People 2010 and 2020 reports* issued by the US Department of Health and Human Services. The *Regional Health Assessment 2011* is based primarily on data available from various state agencies. It is also based on primary data provided by key informants within the WCPHP and by stakeholders in the counties of the WCPHP.

County level data were 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.

## **Community Context**

The counties of Delta, Gunnison, Hinsdale, Montrose, Ouray and San Miguel are contiguous and located in the center of Colorado's Western Slope of the Rocky Mountains and are designated as rural/frontier counties. The city of Montrose is the most populous and the trade center for the region. Montrose/Delta are more agricultural and have most of the region's population and elderly. Gunnison, Hinsdale, Ouray and San Miguel are more rural tourist/mountain communities and the home to the world-renowned ski areas of Crested Butte and Telluride and world class fishing. Western State College is located in Gunnison and the Black Canyon of the Gunnison National Park in Montrose County. Ouray is known as "Little Switzerland" and Hinsdale County is the least populated county in the state. According to the *2009 Region 10 Health Profile*, the 2008 regional population is 101,485, half of which is 20-64 years. Our region is more white/non-Hispanic than the state as a whole (84.6 region vs. 71.9 state) and we have a lower percentage of Hispanic population than the state (12.8 vs. 18.9). The resort areas are a haven for second homeowners, resulting in a high cost of living and significantly inflated home values. Less than three-quarters of our adults have health insurance and fewer adults are getting preventive testing and vaccines than the state as a whole.

## **Key Findings**

A primary objective of the health assessment is to identify priority areas deserving attention in the future development of health services and infrastructure. Priorities were identified through two sources: stakeholders or key informants in each of the counties and an analysis of local data (key indicators).

### **Priorities Identified by Indicators, Stakeholders and Key Informants**

As part of the assessment and planning process, a health status data report was prepared in the fall of 2010 and stakeholder groups were identified in each of the six counties. A summary of key findings from the indicators was presented to stakeholders in meetings held in each of the six counties in May 2011. Table A (below) shows the key findings from the indicators in the Health Data Report 2010 and as prioritized by the

core planning team (WCPHP). The priority Healthy Lifestyles promotion and education included: (tobacco, obesity, healthy eating, exercise)

In the first stakeholder meetings in each of the counties, the stakeholders selected their top focus areas based on the key indicators presented. The focus areas were then compiled into a table format for further prioritization of regional priorities by the core planning team (WCPHP). Table B (below) shows the focus areas as prioritized by the stakeholders.

The core planning team then picked regional priorities based in part by the prioritization of the data and the stakeholders. Additionally, criteria used by the core planning team for regional priorities were:

- “Winnable Battles” as per the Colorado list
- Four priorities at the most
- At least one priority in the Environmental Health area
- Keep it simple
- A “quick win” on at least one priority area
- Priorities that lend themselves to regional strategies

The following regional priorities were chosen based on the above criteria by the core planning team. These priorities will be the basis for strategies and an action plan as part of the regional public health improvement plan (PHIP).

- Obesity prevention
- Improve well water quality
- Mental Health/Substance abuse
- Food Safety

At the second stakeholder meetings held in each of the counties, stakeholders were presented the regional priorities chosen, county specific priorities were discussed as well as best practices. Stakeholders were given the opportunity to give further input on best practices for the priority areas chosen and in at least half of the counties, the stakeholders self organized for addressing some county priorities that were not chosen as regional priorities. For example: Gunnison County stakeholders considered low birth weight and infant mortality as well as home births a priority that deserved special attention in their county. Montrose County formed a subcommittee to work on a county wide falls prevention program, Delta County formed a subcommittee to address injury prevention coordination, and Ouray County chose to address the capacity issue of providing essential public health services long term. San Miguel County stakeholders expressed a desire to have the PHIP indicate that while water quality and air quality did not make it into a regional plan; they were supportive of more assessment and resources in those areas by CDPHE.

**Table A Key Focus Areas Prioritized by the Core Planning Team from the Data**

<b>Delta</b>	<b>Gunnison</b>	<b>Hinsdale</b>	<b>Montrose</b>	<b>Ouray</b>	<b>San Miguel</b>
Air Quality: Indoor air monitoring and education, radon/mold	Air Quality: Indoor air monitoring and education, radon/mold	Indoor Air Quality: radon and lung cancer	Air Quality: Indoor air monitoring and education, radon/mold		Air Quality: Indoor air monitoring and education, radon, mold, carbon monoxide
Water Quality: private well testing	Water Quality: Improve residential and household well water	Water Quality: Improve residential and household well water testing, private wells		Water Quality: Improve residential and household well water	Water Quality: Improve residential and household well water testing, private wells
Food Safety: Education, food handler cards/scores	Food Safety: adequate inspections and food handler education	Food Safety: adequate inspections and food handler education	Food Safety: adequate inspections and food handler education	Food Safety: adequate inspections and food handler education	Food Safety - festivals and restaurants
Immunization Rate and Tracking	Improve Disease surveillance (testing), reporting, and immunization tracking	Immunization Tracking	Immunization Rate and Tracking	Immunization Tracking	Prevent Infections: test for Hep C, yearly influenza vaccine, reporting and immunization tracking
	Communicable Disease Prevention: improve public health/ environmental health integration				Communicable Disease Prevention: improve public health/ environmental health integration
Falls and MVA prevention (especially among teens)	Falls and MVA prevention (especially among teens)	Falls and MVA prevention (especially among teens)	Falls and MVA prevention (especially among teens)	Falls and MVA prevention (especially among teens)	Falls and MVA prevention (especially among teens)
Healthy Lifestyles & Chronic Disease Prevention	Healthy Lifestyles promotion and education	Healthy Lifestyles promotion and education	Healthy Lifestyles & Chronic Disease Prevention	Healthy Lifestyles promotion and education	Healthy Lifestyles promotion and education
Unintended Pregnancy prevention			Teen and Unintended Pregnancy prevention	Prenatal Care - first trimester	
Tobacco -(including during pregnancy)		Mental Health/ Substance Abuse (alcohol and medical marijuana)	Tobacco - Smoking during pregnancy	Mental Health/ Substance Abuse	
		Capacity		Capacity	Capacity

**Table B Focus Areas as Prioritized by the Stakeholders in Each of the Counties**

<b>Delta</b>	<b>Gunnison</b>	<b>Hinsdale</b>	<b>Montrose</b>	<b>Ouray</b>	<b>San Miguel</b>
Healthy Lifestyles Promotion	Healthy Lifestyles Promotion (covers a variety of sub-issues)	Healthy Lifestyles promotion and education: (tobacco, obesity, healthy eating, exercise)	Healthy Lifestyles, including tobacco	Healthy Lifestyles promotion and education: (tobacco, obesity, healthy eating, exercise)	Healthy Lifestyles
Mental Health/ Substance Abuse	Mental Health/ Substance Abuse	Mental Health	Suicide	Mental Health/ Substance Abuse	Mental Health/ Substance Abuse
Food Safety		Food Safety: adequate inspections and food handler education		Food Safety: adequate inspections and food handler education	Food Safety (feeling that SMC is doing well, but that it should move forward as a regional issue)
Stewardship of the Environment (although there was lack of agreement on how this might affect economic development)	Water Quality: Improve residential and household well water				Air and Water Quality (includes watershed protections and contaminants in addition to other issues)
Injury Prevention			Falls Prevention		
	Children's Health (includes prenatal care and a variety of topics)	Substance Abuse	Teen Pregnancy Prevention		Prevent Communicable Disease (a hybrid of issues)
		Capacity		Capacity	

**Section trends and policy implications**

In order to highlight key findings that deserve special attention by decision makers, conclusions from each section of the assessment are characterized in terms of positive and negative trends and policy implications. Policy implications and recommendation are included in the sections however we have confined the executive summary to trends only.

**Access to Care**

<b>↑ Positive Trends</b>
<ul style="list-style-type: none"> <li>↑ <b>Sliding Scale Clinic:</b> 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.</li> <li>↑ <b>Spanish language services</b> within health care have improved since 5 years ago.</li> <li>↑ <b>Child Health Insurance:</b> The eligibility requirements in the state of Colorado have changed, allowing more children to be eligible for state supported health insurance such as CHP+ and Medicaid.</li> <li>↑ <b>Child Health Insurance</b> New programs, such as health navigator programs, have been addressing enrollment of children in health insurance programs.</li> <li>↑ <b>Child Dental Health:</b> Across Region 10 new dental health programs for children have been increasing the availability of services.</li> </ul>
<b>↓ Negative Trends</b>
<ul style="list-style-type: none"> <li>↓ <b>Access:</b> Region 10 counties have the following health care access issues: health provider shortages, fewer group health insurance options, high health insurance costs, transportation issues and emergency facility shortages.</li> <li>↓ <b>HPSA:</b> All of the counties in Region 10 (except Gunnison and Hinsdale) have been designated Health Professional Shortage Areas (HPSA).</li> <li>↓ <b>Dental Services</b> for low income or uninsured people are scarce in Region 10 (especially for adults); all of Region 10 is considered a dental health HPSA.</li> <li>↓ <b>Mental Health HPSA:</b> There is only 1 mental health service provider for all of Region 10, and Region 10 is considered a mental health HPSA.</li> <li>↓ <b>Adult Health Insurance:</b> fewer adults in Region 10 report having any kind of health care coverage, and a higher percentage of adults report having no usual source of care than the state of Colorado.</li> <li>↓ <b>Child Dental Health:</b> Available data on children’s oral health shows this to be a need in Region 10, e.g. the percentage of 3<sup>rd</sup> graders with dental caries is above the state rate in all of the Region 10 counties except for Gunnison and Ouray counties.</li> </ul>

Maternal and Child Health

↑ Positive Trends
↑ <b>Teen Fertility:</b> All Region 10 Counties are below the national average and Healthy People 2020 goal for Teen Fertility from 2002-2009.
↑ <b>Adolescent Health Profile:</b> All Region 10 Counties met the Healthy People 2010 goals in the following categories; Teen Fertility, Teen homicide, Teen Motor Vehicle Deaths and Teen Suicide (2010)
↑ <b>Breastfeeding:</b> All Counties met the Healthy People 2010 goal for breastfeeding initiation in 2010.
↓ Negative Trends
↓ <b>Breastfeeding:</b> All region 10 Counties have major decreases in the number of women still breastfeeding at 6 and 12 months.
↓ <b>Low Birth Weight:</b> All Counties (excluding Hinsdale) have a Low Birth Weight rate higher than the Healthy People 2020 goal.
↓ <b>Oral Health:</b> All Counties did not meet the Healthy People 2010 goals for each category of Oral Child Health (with the exception of Ouray’s rate of dental decays in grade 3).

Chronic Diseases

↑ Positive Trends
↑ <b>Cancer and Heart Disease:</b> the death rate due to cancer and heart disease has been declining in Region 10 from 1995 – 2009.
↑ <b>Lung, breast, prostate cancer:</b> the Region 10 death rates for lung, breast and prostate cancer are all below the desired Healthy People 2020 goal.
↑ <b>Cancer:</b> all of the counties (excluding Montrose) have a lower death rate due to cancer than the state.
↑ <b>Heart Disease:</b> all of the counties (excluding Delta) have a lower death rate due to heart disease than the state.
↑ <b>Stroke:</b> all of the counties (excluding Hinsdale) have a lower death rate due to stroke than the state.
↑ <b>Breast Cancer:</b> the incidence rate of breast cancer is lower than the state rate in all of the more populous counties in Region 10 except for Montrose County.
↑ <b>Prostate and Colon Cancer:</b> the incidence rate of prostate and colon cancer is lower than the state rate in all of the more populous counties in Region 10 except for Gunnison County.
↑ <b>Lung Cancer:</b> the incidence rate of Lung cancer is lower than the state rate in all of the more populous counties in Region 10 except for Montrose and Gunnison Counties.

- ↑ **Influenza and Pneumonia:** the death rate due to influenza and pneumonia in Region 10 is declining and getting closer to the state rate.
- ↑ **Pneumonia Immunization:** there is a higher percentage of adults who have ever had a pneumonia shot for Region 10.
- ↑ **Diabetes:** less adults have diabetes in Region 10 than the state
- ↑ **Overweight and Obesity:** fewer adults are overweight and obese in Region 10 than in the state.
- ↑ **Cholesterol Screening:** more adults in Region 10 have been screened for high cholesterol than in Colorado.

**↓ Negative Trends**

- ↓ **Heart Disease and Cancer** are the top killers in Region 10 and the state.
- ↓ **Skin Cancer:** Region 10 has a higher death rate due to melanoma than the state and is above the Healthy People 2020 goal.
- ↓ **Chronic Lower Respiratory Disease:** There is a higher death rate due to Chronic Lower Respiratory Disease in Montrose County than the state.
- ↓ **Diabetes:** The percentage of adults with diabetes is increasing statewide, although it is not clear in Region 10 what the trend is.
- ↓ **Prevention:** A lower percentage of adults in Region 10 have had a flu shot or a colon cancer screening than the state.
- ↓ **Fruits and Vegetable Intake:** Region 10 has a lower percentage of adults eating enough fruits and vegetables than the state. Over 75 percent of adults in Region 10 eat less than the recommended amount.
- ↓ **Cholesterol Levels:** Nearly 35 percent of those in Region 10 have been told by a doctor that they have elevated cholesterol levels
- ↓ **Tobacco Smoking:** Region 10 has a higher smoking rate than the state rate.
- ↓ **Physical Activity:** A higher percentage of adults are inactive in Region 10 than in the state.
- ↓ **Overweight and Obesity:** A quarter of the population in three of the six counties is overweight or obese; and half of the population of the remaining three counties is overweight or obese. As a whole, nearly 50 percent of Region 10 is overweight or obese.

**Infectious Diseases**

**↑ Positive Trends**

- ↑ **Surveillance:** Communicable Disease surveillance and control is the number one priority and a statutory responsibility for Boards of Health.
- ↑ **Surveillance:** Communicable Disease surveillance is strong with good support from CDPHE.

<ul style="list-style-type: none"> <li>↑ <b>West Nile Virus</b> cases are trending downward.</li> <li>↑ <b>Active Tuberculosis</b> and AIDS/HIV cases are down</li> </ul>
<p>↓ <b>Negative Trends</b></p>
<ul style="list-style-type: none"> <li>↓ <b>Infrastructure:</b> The lack of integration of Public Health and Environmental Health departments in some of the counties is considered a barrier by professionals to a good communicable disease prevention and surveillance program.</li> <li>↓ <b>Underreporting</b> of communicable disease by providers is a continuing trend.</li> <li>↓ <b>Vaccines:</b> There remains no cohesive response to anti-vaccine sentiment in the communities.</li> <li>↓ <b>Tracking:</b> Immunization tracking is not cohesive or complete enough to produce an accurate immunization rate by county or region.</li> <li>↓ <b>CIIS:</b> Not all providers in a county are necessarily on the Colorado Immunization Information System.</li> <li>↓ <b>Influenza:</b> Percentage of adults immunized for influenza is still well below the state percentage as a whole.</li> <li>↓ <b>Pneumococcal Infection:</b> The rate of pneumococcal infection in children under age 5 in our region is higher than the state.</li> <li>↓ <b>Chlamydia</b> and <b>Chronic Hepatitis C</b> remain the leading reported communicable diseases. Chronic Hep C may be underreported.</li> </ul>

**Mental Health and Substance Abuse**

<p>↑ <b>Positive Trends</b></p>
<ul style="list-style-type: none"> <li>↑ <b>Suicide:</b> 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 (except for Montrose) and is now similar to the state rate, though this may not represent a continuing trend.</li> <li>↑ <b>Drug courts</b> in our region are shown to be an effective strategy</li> <li>↑ <b>Suicide:</b> there are suicide prevention task forces throughout the region and there is a 24 hour crisis hotline and suicide hotline available to the residents of the region.</li> </ul>
<p>↓ <b>Negative Trends</b></p>
<ul style="list-style-type: none"> <li>↓ <b>HPSA:</b> Region 10 is considered a <b>health professional shortage area</b> (HPSA) for mental health. This condition has not changed over time.</li> <li>↓ <b>Mental Health/substance abuse:</b> Mental Health Association of Colorado reports that, in hospitals statewide, the number of behavioral health care patients served by <b>emergency departments</b> has skyrocketed. In addition, there are an alarming number of arrests and incarcerations of people who have serious mental health or substance abuse problems. According to anecdotal information from healthcare providers and law enforcement personnel, Region 10 is no exception to this trend.</li> </ul>

- ↓ **Mental Health/substance abuse** is not a traditional public health function however it is a public health problem that affects every aspect of our lives and the community continues to rate it as a top priority in the community health assessment.
- ↓ **Mental Health/substance abuse** is generally inadequately assessed in the community.
- ↓ **Treatment Programs:** there continues to be a need for increased local investment in public mental health and substance abuse prevention and treatment programs in the region
- ↓ **Liquor store density** is high per capita in our resort communities.
- ↓ **Arrests/incarcerations** and people who use the emergency room with behavioral health problems continues to be high.
- ↓ **Mental Health/substance abuse:** The number of people needing mental health/substance abuse services continues to be high.
- ↓ **Suicide:** The Region is on track to exceed the number of suicide deaths in our region from 2010 to 2011. The economic burden of suicide, not to mention the social/emotional trauma to family and community, remains high.
- ↓ **The stigma** attached to accessing mental health services continues to be prevalent
- ↓ **Hinsdale County** does not have public mental health services serving them on a regular basis in the county as is the case in the other counties in the region.

**Injuries and Violence**

↑ Positive Trends
<ul style="list-style-type: none"> <li>↑ <b>Homicides:</b> Homicides are low in Region 10 and significantly lower than the state as a whole.</li> </ul>
↓ Negative Trends
<ul style="list-style-type: none"> <li>↓ <b>Hospitalizations:</b> Region 10 rate for injuries requiring hospitalizations is higher than the Healthy People goal.</li> <li>↓ <b>Falls:</b> Falls are the leading cause of ER trauma admissions at Montrose Memorial Hospital and Delta County Memorial Hospital and second at Gunnison Valley Hospital.</li> <li>↓ <b>Hospitalizations:</b> Delta is the only county with a significantly higher rate than the State for injury hospitalizations</li> <li>↓ <b>Hospitalizations:</b> Falls and motor vehicle accidents are the first and second leading cause of injury hospitalizations in all counties in our region</li> <li>↓ <b>Injury:</b> Colorado and Region 10 counties do not meet the HP 2020 goal of reducing unintentional injuries resulting in death</li> <li>↓ <b>Deaths:</b> Region 10 exceeds the Colorado rate for non-transportation injury deaths. Delta and Montrose counties have a higher percent of firearm-related injuries and deaths than the State 1999-2009.</li> <li>↓ <b>Assaults:</b> Assaults are the leading reported violent offense in Region 10.</li> </ul>

## **Environmental Health**

<b>↑ Positive Trends</b>	
↑	<b>Food handler classes</b> are consistent throughout the region however they are not mandatory.
<b>↓ Negative Trends</b>	
↓	<b>Air and Water</b> quality are priority concerns in the region.
↓	<b>Air:</b> Smoke from burning and emissions from motor vehicles are the biggest challenge to air quality.
↓	<b>Water:</b> Small water systems and wells serve half the region's population. Household wells are not regulated and testing is left to the consumer.
↓	<b>Radon</b> remains high in our region, however testing and public information has improved. Radon is the leading cause of non-smoking lung cancer and lung cancer rates remain high in our region.
↓	<b>Consumer Protection:</b> there are capacity concerns in relation to consumer protection.

## **Capacity**

A capacity assessment is currently being conducted in our region and the state. While that assessment will be linked to the Regional Health Assessment, there is not enough information to include at this time. Anecdotally it is clear that the small counties find it difficult to recruit new experienced directors and nurses and there are very few public health employees with a Masters in Public Health (MPH) in the region. The smaller counties especially are concerned about their ability to provide essential services long term. While the region has an experienced workforce, it is an aging workforce in public and environmental health that will need replacing in the coming years. Although the public's number one public health priority is healthy lifestyle promotion/ obesity prevention, only a couple of the counties have health educators and little to no funding for health education. Four of the counties are understaffed for consumer protection.

## **Next Steps**

The West Central Public Health Partnership will create a public health improvement plan by early 2012 based on the regional priorities chosen.



---

## TABLE OF CONTENTS

<b>1. DEMOGRAPHICS.....</b>	<b>1</b>
<b>Data on Region 10 .....</b>	<b>1</b>
County Profiles .....	2
Social Determinants of Health .....	4
Economic/Employment Demographics .....	7
Age Demographics.....	7
Population Growth .....	10
Population Income .....	11
<b>Policy Implications.....</b>	<b>13</b>
<b>2. ACCESS TO CARE .....</b>	<b>15</b>
<b>Defining the Issue .....</b>	<b>15</b>
<b>Data for Region 10 and Colorado.....</b>	<b>15</b>
Access to Healthcare Providers.....	16
Health Insurance Coverage.....	19
Emergency Room Visits .....	23
Sliding Scale Fee Option.....	23
Oral Health.....	23
<b>Trends and Policy Implications.....</b>	<b>24</b>
<b>3. MATERIAL AND CHILD HEALTH.....</b>	<b>27</b>
<b>Defining the Issue .....</b>	<b>27</b>
<b>Data for Region 10 and Colorado.....</b>	<b>27</b>
Pregnancy Behaviors .....	27
Pregnancy and Breastfeeding .....	27
Perinatal Health Profile.....	29
Prenatal Care .....	30
Births.....	32
Unintended Pregnancy/Births.....	34
Teen Fertility .....	35
Low Birth Weight.....	36
Infant Mortality.....	39
Child Health.....	41
Adolescent Health .....	43
<b>Trends and Policy Implications.....</b>	<b>46</b>
<b>4. CHRONIC DISEASES .....</b>	<b>49</b>
<b>Defining the Issue .....</b>	<b>49</b>
<b>Data from Region 10 and Colorado.....</b>	<b>49</b>
Leading Cause of Death.....	49
Cardiovascular Health .....	54
Cancer .....	57
Chronic Lower Respiratory Disease .....	66
Diabetes.....	67
Prevention of Chronic Diseases .....	69

Screenings and Vaccines .....	69
Healthy Behaviors .....	70
<b>Trends and Policy Implications.....</b>	<b>72</b>
Policy Implications.....	74
<b>5. INFECTIOUS DISEASES .....</b>	<b>77</b>
<b>Defining the Issue .....</b>	<b>77</b>
<b>Key Informant Analysis .....</b>	<b>77</b>
<b>Data for Region 10 and Colorado.....</b>	<b>78</b>
Leading Types of Reported Communicable Diseases .....	78
Tuberculosis.....	82
Hepatitis C.....	83
Varicella, Pertussis, and Influenza.....	83
Influenza and Pneumonia Vaccination.....	85
West Nile Virus.....	85
Sexually Transmitted Diseases .....	86
HIV and AIDS.....	86
<b>Trends and Policy Implications.....</b>	<b>87</b>
<b>6. MENTAL HEALTH AND SUBSTANCE ABUSE .....</b>	<b>89</b>
<b>Defining the Issue .....</b>	<b>89</b>
<b>Data for Region 10 and Colorado.....</b>	<b>90</b>
Suicide .....	90
Mental Illness .....	91
Substance Abuse .....	94
<b>Trends and Policy Implications.....</b>	<b>100</b>
<b>7. INJURIES AND VIOLENCE.....</b>	<b>103</b>
<b>Defining the Issue .....</b>	<b>103</b>
<b>Data for Region 10 and Colorado.....</b>	<b>103</b>
Injury Requiring Hospitalizations .....	103
Unintentional Injury Resulting in Death.....	108
Motor Vehicle Related Injuries.....	109
Fire Arm Related Injuries and Death .....	111
Violence and Crime .....	111
Child/Adolescent Injury and Violence .....	114
Child Abuse.....	115
Domestic Abuse .....	115
<b>Trends and Policy Implications.....</b>	<b>116</b>
<b>8. ENVIRONMENTAL HEALTH .....</b>	<b>119</b>
<b>Defining the Issue .....</b>	<b>119</b>
<b>Data for Region 10 and Colorado.....</b>	<b>119</b>
<b>Key Informant Strengths and Weaknesses Analysis.....</b>	<b>119</b>
Food Safety.....	120
Public Drinking Water Systems .....	123
Drinking Water Violations as Public Health Indicators .....	126
Small Community Drinking Water Systems .....	127
Private Drinking Water Systems.....	127
Water Quality in Streams, Rivers and Lakes .....	129
Indoor Contaminants .....	132
Air Quality .....	134

---

Figure 8.4 Western Slope Air Pollution Sources 2008 .....	135
Behavioral Risk Factor Surveillance System Data on Environmental Health .....	137
This is the first year environmental health questions were added to the BRFSS survey. This gives an idea of what people in Region 10 think about environmental health issues and also some of their behaviors, such as radon testing and recycling.....	139
Zoonotic Disease.....	139
<b>Trends and Policy Implications.....</b>	<b>140</b>
<b>Acknowledgments.....</b>	<b>143</b>



## **West Central Public Health Partnership 2011 Regional Health Assessment**

### **Introduction**

#### ***About the West Central Public Health Partnership***

The **West Central Public Health Partnership** (WCPHP) was formed in 2006 through a grant from The Colorado Trust (Partnerships in Health Initiative). The WCPHP consists of public health and environment personnel from the counties of Delta, Gunnison, Hinsdale, Montrose, Ouray and San Miguel. The WCPHP was formed to make the best use of limited existing and future resources (both human and fiscal). The challenge was to bring policy makers and staff in all the counties together to initiate discussions about how we can work together to improve public and environmental health as a region. The mission is to “build and strengthen public and environment infrastructure by identifying and implementing collaborative projects that benefit” our member counties.

The geographic area covered by the 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.

A regional health assessment was completed by the WCPHP in 2007 as one of the four initial goals of the WCPHP. It was the intention to update the regional health assessment in 2010-2011.

#### ***This report and process***

With the passage of Senate Bill 08-194, the Colorado Public Health Re-organization Act (the Act), effective July 1, 2008, state and local public health agencies are charged with establishing state and local public health plans that set priorities for the public health system in Colorado. A health assessment must be done in order to create a public health plan. As a result of The Act and a prevention grant obtained by the Director of the Colorado Department of Public Health and Environment (CDPHE) Office of Planning and Partnership (OPP), the WCPHP was chosen as a regional pilot site for the development of the proposed Colorado Health Assessment and Planning System (CHAPS). The WCPHP became the core planning team with additional stakeholders identified in each county. A portion of the OPP prevention grant was given to the WCPHP for the purpose of hiring a regional planner, which was accomplished in July 2010. One of the initial steps to the assessment and planning process was the development of a *Health Status Data Report*. This 2011 Regional Health Assessment is the result of the *2010 Health Status Report* and the region wide county stakeholder meetings held May-July 2011.

The purpose of the report is to:

- *Inform the core planning team, key informants and stakeholders as well as the community at large of the health status of the counties within the region based on key indicators describing health trends*
- *Aid in the determination of health priorities and subsequent public health improvement plan for the member counties of the WCPHP and 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.*
- *Assist the Colorado Department of Public Health and Environment as they develop a statewide system for health assessment and planning.*
- *Provide the public with information about health care resources and information for informed decision making and advocacy.*

### **Organization of this assessment**

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

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 the Demographics Section) are characterized in terms of positive and negative trends. Positive trends are areas of good 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.

In addition, an attempt has been made to give some sense of capacity to provide services in this assessment. A **capacity assessment** is currently being conducted in the counties in our region. When it is available, it will be linked to this regional health assessment.

### **Data Sources and Limitations**

The regional community health 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. 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. Indicators were selected, in part, based on the consistency of available data across county lines. The core planning team and our consultant from OPP and the CDPHE Health Statistics Division provided guidance as to the indicators.

The CDPHE Reported Disease database includes statistics on the annual numbers of diagnosed cases of infectious diseases. The number of cases reported may not accurately reflect the disease incidence or prevalence, since there may be people with undiagnosed disease. For example, cases of chicken pox (varicella) may be unreported because many people do not go to the doctor when they contract it.

Immunization rates for the counties in the region are conspicuously absent. While immunization rates are considered to be an indicator of child health, in Colorado, there is no consistent, universal reporting system that allows us to accurately measure rates, for all providers, the same across counties.

Data from the Colorado Behavioral Risk Factors Surveillance System (BRFSS) appears in many tables in this assessment. BRFSS is a system of telephone surveys used to monitor lifestyles and behaviors related to the leading causes of mortality and morbidity. Because the region is rural, sample sizes may be small.



## 1. DEMOGRAPHICS



### Defining the Issue:

The health of a population is largely influenced by social and demographic factors. Population disparities including race or ethnicity, gender, education, income, disability, geographic location and sexual orientation must be considered due to the impact these have on access to health care and health resources. Healthy People 2020 strives to “improve the conditions in which people live, learn, work, and play” and to “address the interrelationship between these conditions” to “create a healthier population and a healthier workforce. Integrating health policy efforts with those related to education, housing, business, transportation, agriculture, media, and other areas outside of the health sector will ultimately improve the health, safety, and prosperity of the Nation.”<sup>1</sup>

### Data on Region 10<sup>2</sup>

The West Central Public Health Partnership of Region 10 Colorado consists of Delta, Gunnison, Hinsdale, Montrose Ouray and San Miguel Counties. Region 10 is 9,569 square miles within the west central region of the state. The 2009 total population was

<sup>1</sup> Healthy People 2020, Determinants of Health, See; <http://www.healthypeople.gov/2020/about/DOHAbout.aspx>

<sup>2</sup> Regional Socio-economic Profile, See; <http://www.colorado.gov/cs/Satellite/DOLA-Main/CBON/1251590805419>

102,675 and is expected to reach 152,247 by 2025. For the most up to date population data see Table 1.4 below based on 2010 Census data. Montrose County was the fastest growing county within the region with 2.2% from 2008 to 2009. Overall job growth in Region 10 was only 1.1 percent from 2000-2009 with declines in both 2007-2008 and 2008-2009. In 2010 4,419 people were unemployed, with an unemployment rate of 8.8 percent for the region. Local government jobs account for the largest sector of employment, closely followed by retail and trade, construction and accommodations and food services. Construction, which was the largest employment division for the region in 2008 lost 1,261 jobs from 2008-2009. Agriculture is a substantial industry within Region 10, specifically within Delta and Montrose as over 10 percent of jobs are within agribusiness. Per capita personal income did increase an average 4.0 percent per year from 2001-2008, surpassing the nations rate of 3.2 percent per year. The Region 10 area is predicted to see significant growth over the next 25 years as a result of increasing tourism and migration of retirees.

### **County Profiles**<sup>3</sup>

#### **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 2009 population of 31,322, Delta is the second most populous county in the region. The 2008 population included 480 prisoners incarcerated at the Delta Correctional Facility. The youth population (less than 18 years of age) was 21.4% and Hispanic ethnicity was 13.4%. The population 65 years and older was 20%. Families made up 71% of the households in Delta County and in 2006-2008, 84 % of people 25 years and older had at least graduated from high school and 18% had a bachelor's degree or higher. Seventeen percent did not complete high school. The median income in 2008 was \$43,621 with a 2009 unemployment rate of 7.5%. 12.1% of individuals were below the Federal Poverty Level (FPL). 21% of children under 18 were below the FPL. 36% of households received social security. Home ownership was at 77.5%.

In 2009, Government was the largest sector of jobs at 2,537 followed by retail trade at 1,585, agriculture 1,159 and construction at 979. Mining sector jobs were at 554, lower than accommodation and food jobs at 725.

#### **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 2009 population of 15,350. Gunnison County is home to Crested Butte Mountain Resort and Western State College. The youth population (18 years or younger) in 2008 was 18% and 6.3% of this population is of Hispanic origin. The population 65 years and

---

<sup>3</sup> Data Source for county profiles: Colorado State Demography Office, US Census Bureau, Colorado Department of Labor and Employment, 2007 West Central Partnership Health Assessment, American Community Survey 2006-2007 and Co. Dept. of Education, Colorado Department of Local Affairs, 2010

older was 1,133. The median income in 2008 was \$46,972 with a 2009 unemployment rate of 5.8%. 12.0% of individuals were below the FPL. Home ownership is at 58.3%. Second homes are a significant factor in Gunnison County.

In 2009, the government sector accounted for the largest number of jobs at 1,984 followed by accommodation and food service at 1,415, construction at 1,146 and retail trade at 1,022. Mining accounted for 767 down from being the 4<sup>th</sup> largest sector in 2004. Gunnison County continues to be the top coal producer in the state.

### **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 comprise 95.3% of the county. With a 2009 population of 821, Hinsdale County is the least populated county in the state. Nearly 17% of the 2008 population was under 18 years and 128 were over the age of 65. Only 1.4% of the total population is Hispanic ethnicity. The median household income is \$50,692 with a 2009 unemployment rate of 3.5%, the lowest in the region. Slightly over 7% of individuals are below the FPL. Home ownership rate is 64.9% and second homes are a significant factor in Hinsdale County.

In 2009, the largest sector of jobs was construction (94) followed by Government (90), retail trade (57) and accommodations and food service at 53. Changes in the job sector have occurred as in the 2007 assessment, government led as the largest sector of jobs.

### **Montrose County**

Montrose County's 2,200 square mile land area lies in the Uncompahgre River and Paradox Valleys. The majority of the county is made up of US Forest Service, BLM and National Park lands. 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 Recreation and Wilderness areas. Specifically, new economic improvements in Montrose County have been due to wine production and farms producing sweet corn.

The City of Montrose serves as a regional trade center for a substantial area. With a 2009 population of 41,412, Montrose County has the largest population in the region. 23.8% of the population in 2008 was under 18 and 17% was over 65. Families made up 69 % of the households in Montrose County. Hispanic ethnicity comprises 17.6% of the population. In 2006-2008, 86 percent of people 25 and older had at least graduated from high school and 21 percent had a bachelor's degree or higher. The median income in 2008 was \$45,817 and 30% of the households were receiving Social Security. The county had an 8.5% unemployment rate, the highest in the region. Individuals below the FPL account for 11.9% of the population, with 19% of related children under 18 years old below the FPL. The home ownership rate is at 74.9%.

In 2009, the largest sector of employment was government (3,229), followed by retail trade (2,552), construction (2,179), manufacturing (1,272) and accommodations and food service (1,244).

### **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 4,602 (2009). In 2009, 19.2% of the population was under 18 years and 5.6% of the population was of Hispanic ethnicity. The median household income in 2008 was \$59,725, the second highest in the region. The unemployment rate was 5.9% and home ownership rate was at 73.4%. 7.6% of individuals were under the Federal Poverty Level.

In 2009, the largest sector of jobs was in accommodations and food service (413), followed by construction (404), government (388), and retail trade (253).

### **San Miguel County**

Stretching from the San Juan Mountains to the Utah border, San Miguel County is home to the Telluride Ski Resort. Of the county's 1,287 square miles, 66% is public lands. The 2009 population was 7,558. In 2008 17.6% of the population was less than 18 years of age and 9% of Hispanic ethnicity. The median household income in 2008 was the highest in the region at \$61,074. The unemployment rate was 6.3% and % of individuals below FPL was 8.2%. Home ownership rate was at 51.5% in 2008. Second homes may be a reason for lower home ownership rate.

In 2009, the largest sector of jobs was accommodations and food service (1,040), followed by construction (927), government (836), real estate (569), and retail trade (46).

### ***Social Determinants of Health***

Social Determinants of health are based on social and physical factors that surround people on a daily basis. Healthy People 2020 outlines the following as some of the most influential social health determinants: social norms and attitudes, such as discrimination; exposure to crime, violence, and social disorder; social support and social interactions; socioeconomic conditions, such as concentrated poverty; the quality of schools; transportation options; public safety; and residential segregation. According to the Center for Disease Control discrimination against groups based on race or ethnicity, gender, income, sexual orientation and age negatively affects the quality of health within a population. Understanding and implementing health equity is central to eliminating the health disparities related to social standings.

**Table 1.0 Region 10 Ethnicity Demographics 2009**

<b><i>Population Characteristics</i></b>	<b>Region 10</b>	<b>Colorado</b>
<b>White/non-Hispanic:</b>	<b>84.1 %</b>	<b>71.6 %</b>
<b>White/Hispanic:</b>	<b>13.1%</b>	<b>18.9 %</b>
<b>Black:</b>	<b>0.8 %</b>	<b>4.9 %</b>
<b>Asian American/Pacific Islander:</b>	<b>0.6%</b>	<b>3.2%</b>
<b>American Indian/Native Alaskan:</b>	<b>1.4 %</b>	<b>1.4 %</b>
<b>Poverty - Total Population:</b>	<b>N/A</b>	<b>12.6 %</b>
<b>Poverty - Children:</b>	<b>N/A</b>	<b>16.6 %</b>

Data Source: CDPHE, See:

<http://www.chd.dphe.state.co.us/CHDReporting.aspx?region=Region10&pop=1&pn=0&ch=0&ah=0&adh=0&ci=0&cd=0&mor=0>

Table 1.0 shows that Region 10 is not as diverse as the rest of Colorado, with about 84% of the population being White/Non-Hispanic compared to Colorado at 71.6% White/Non-Hispanic.

Table 1.1 Population Profile by County, 2010

	Population 2009	% of Pop. <18 Years 2008	% Hispanic Ethnicity 2008	Median Household Income	% Unemployment Rate 2009	% Below FPL	Home Owner rate	Graduation Rate 2010
<b>Delta</b>	31,322	21.4	13.4	\$43,621	7.5%	12.1	77.5%	84.2%
<b>Gunnison</b>	15,350	18.0	6.3	\$46,972	5.8%	12.0	58.3%	85.6%
<b>Hinsdale</b>	821	16.9	1.4	\$50,692	3.5%	7.3	64.9%	100.0%
<b>Montrose</b>	41,412	23.8	17.6	\$45,817	8.5%	11.9	74.9%	73.9%
<b>Ouray</b>	4,602	19.2	5.6	\$59,725	5.9%	7.6	73.4%	93.1%
<b>San Miguel</b>	7,558	17.6	9.0	\$61,074	6.3%	8.2	51.6%	91.8%
<b>Colorado</b>	5,011,326	24.4	20.02	\$57,184	7.7%	11.2	67.3%	74.6%

Data Source: CDPHE, Health Statistics Division

Notes: FPL means Federal Poverty Level

Colorado High School Graduation Rate in 2010: 72.4%

### ***Economic/Employment Demographics***<sup>4</sup>

The diversity in the socioeconomic profile of Region 10 is seen in Table 1.2. Retirees make up 28.2% of those living in Region 10, investors and those living off personal wealth, 27.1 percent work in the tourism industry, 25.7 percent hold traditional jobs and 18.9 percent are employed by national or regional services (see note below table 1.2. for detailed job listings within each employment sector). According to the Colorado Department of Local Affairs, the region's economy is projected to rise at an average of 3.0 percent increase in job rate per year from 2010-2015, creating 8,316 total new employment opportunities. Healthy People 2020 states that both the availability of employment and the conditions of employment have an impact on population health and have therefore developed objectives in an effort to enhance these health determinants.

**Table 1.2 Employment Demographics by County**

	<b>Delta</b>	<b>Gunnison</b>	<b>Hinsdale</b>	<b>Montrose</b>	<b>Ouray</b>	<b>San Miguel</b>
<b>Traditional</b>	2,682	2,323	35	2,881	269	338
<b>National/ Regional Services</b>	1,692	987	23	<b>3,141</b>	159	279
<b>Tourism</b>	375	<b>2,931</b>	145	1,284	831	<b>3,428</b>
<b>Household Basic</b>	<b>3,934</b>	779	<b>197</b>	2,966	<b>969</b>	517
<b>Total All Jobs</b>	12,684	10,816	465	19,807	2,581	6,528

Data Source: Colorado Department of Local Affairs, 2010

Notes: \*Traditional jobs include agribusiness, mining, manufacturing, and government. National and Regional Service Jobs include mining, construction, trade, transportation, information, communications, financial activities, professional and business services and health and education. Tourism jobs include recreation, lodging, food, real estate, construction, retail, trade, transportation. Household Basic includes retirees, commuters, those living off of investment, wealth or public assistance.

Note: Bold Italics indicate largest economic sector

### ***Age Demographics***

In 2010 the total population of Region 10 was 100,190. Table 1.3 and Figures 1.0-1.2 give detailed information with regard to the age breakdown of the population in each county.

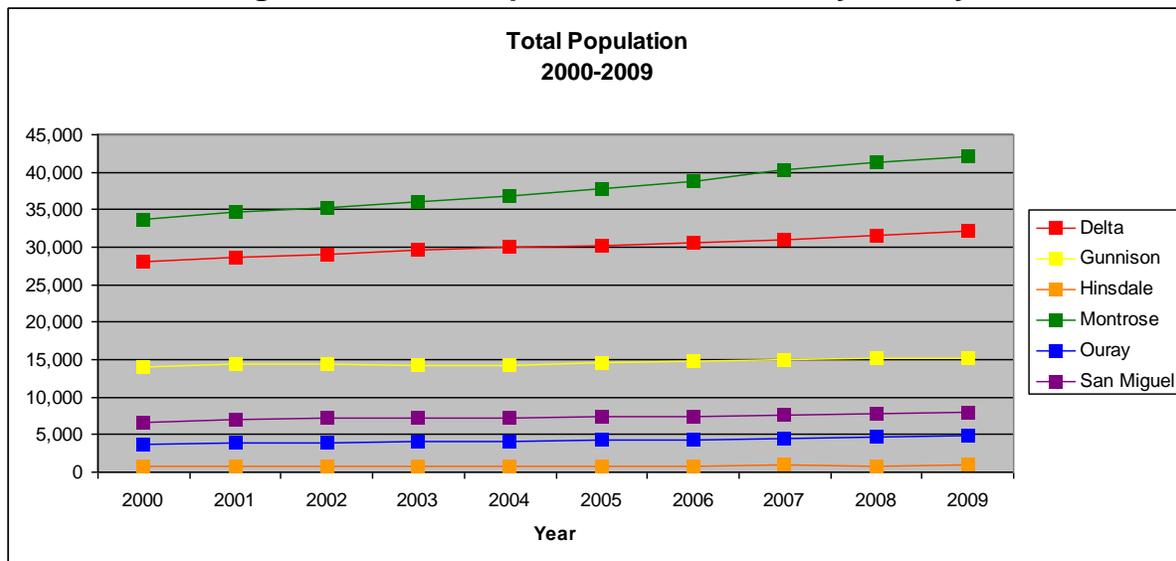
<sup>4</sup> Colorado Department of Local Affairs, State Demography Office, 2010 See; <http://dola.colorado.gov/dlg/demog/profiles/region10.pdf>

**Table 1.3 County Population Age Profiles 2010**

	<b>Delta</b>	<b>Gunnison</b>	<b>Hinsdale</b>	<b>Montrose</b>	<b>Ouray</b>	<b>San Miguel</b>
<b>Total Population</b>	30,952	15,324	843	41,276	4,436	7,359
<b>Percent 16 Years and Over</b>	80.6	83.7	80.9	78.1	84.4	81.9
<b>Percent 18 Years and Over</b>	77.9	81.9	80.1	75.3	82.0	80.3
<b>Percent 21 Years and Over</b>	74.9	74.2	78.2	72.5	80.0	78.7
<b>Percent 65 Years and Over</b>	20.2	8.8	17.4	17.8	17.5	7.0

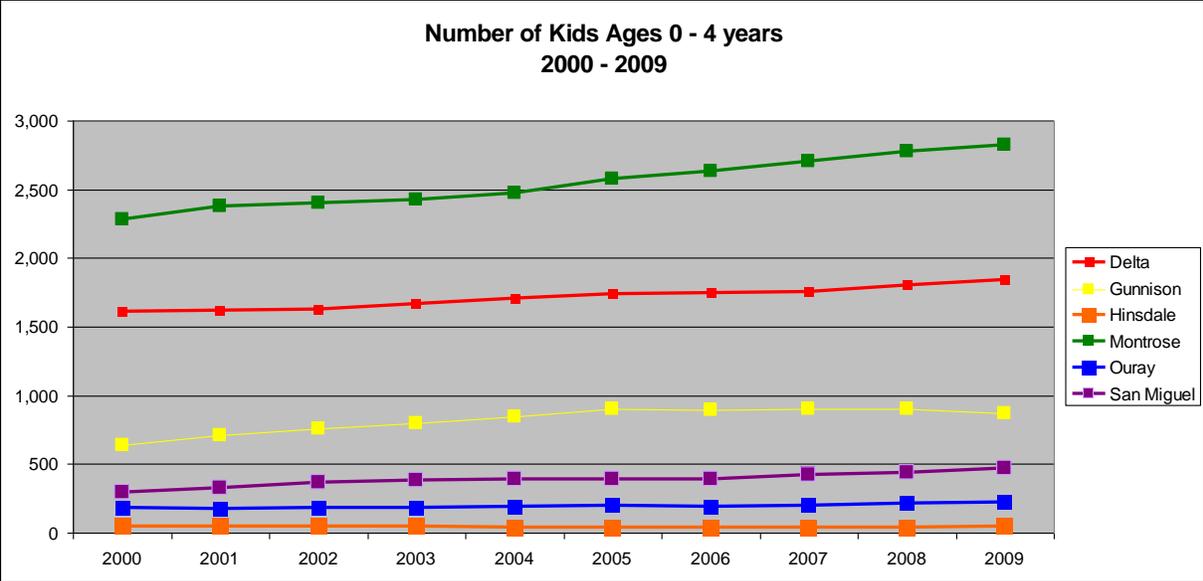
Data Source:

**Figure 1.0 Total Population Trend Data by County**



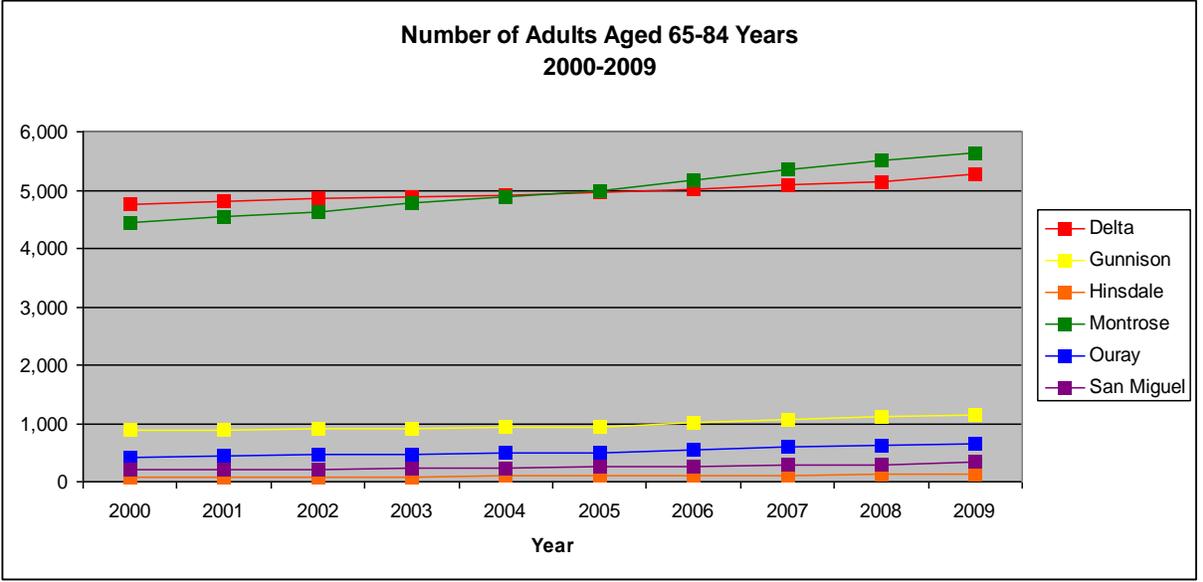
Data Source: Colorado Health Institute; Colorado State Demography Office, Division of Local Government, Department of Local Affairs 2010, [http://www.dola.state.co.us/demog\\_webapps/population](http://www.dola.state.co.us/demog_webapps/population)

Figure 1.1 Population of 0-4 year Olds Over Time



Data Source: Colorado Health Institute; Colorado State Demography Office, Division of Local Government, Department of Local Affairs 2010, [http://www.dola.state.co.us/demog\\_webapps/population](http://www.dola.state.co.us/demog_webapps/population)

Figure 1.2 Population of 65 – 84 Year Olds Over Time



Data Source: Colorado Health Institute; Colorado State Demography Office, Division of Local Government, Department of Local Affairs 2010, [http://www.dola.state.co.us/demog\\_webapps/population](http://www.dola.state.co.us/demog_webapps/population)

**Population Growth <sup>4</sup>**

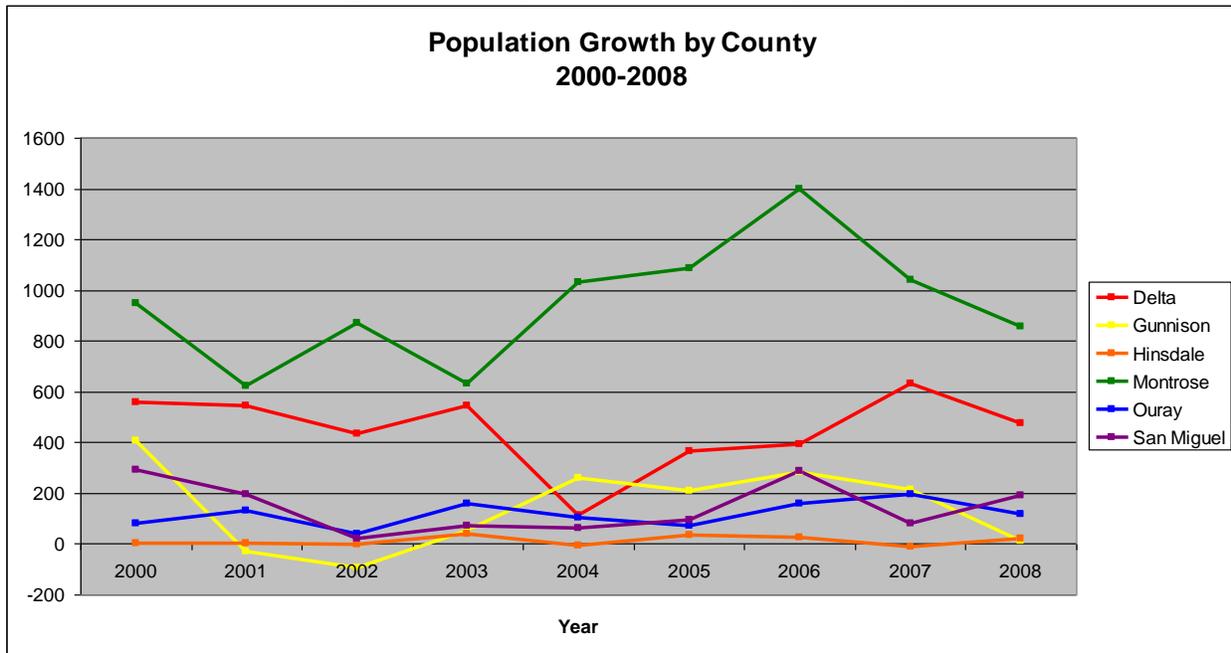
The population of Region 10 increased between 2000- and 2010 by 13,842 people or a growth rate of 1.9% annually. More than half region’s population increase occurred in Montrose County, as noted by the Colorado Department of Local Affairs.

**Table 1.4: County Population 2000-2010**

	Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel	Region 10 Total
<b>Total Population 2000</b>	27,834	13,956	790	33,432	3,742	6,594	86,348
<b>Total Population 2010</b>	30,952	15,324	843	41,276	4,436	7,359	100,190
<b>Total Change in Population 2000-2010</b>	3,118	1,368	53	7,844	694	765	13,842

Data Source: Colorado Department of Local Affairs, 2011

**Figure 1.3 Population Growth by County**



Data Source: Colorado Health Institute; Colorado State Demography Office, Division of Local Government, Department of Local Affairs 2010, [http://www.dola.state.co.us/demog\\_webapps/population](http://www.dola.state.co.us/demog_webapps/population)

Note: Population growth is calculated using the total population estimates by county.

### Population Income <sup>4</sup>

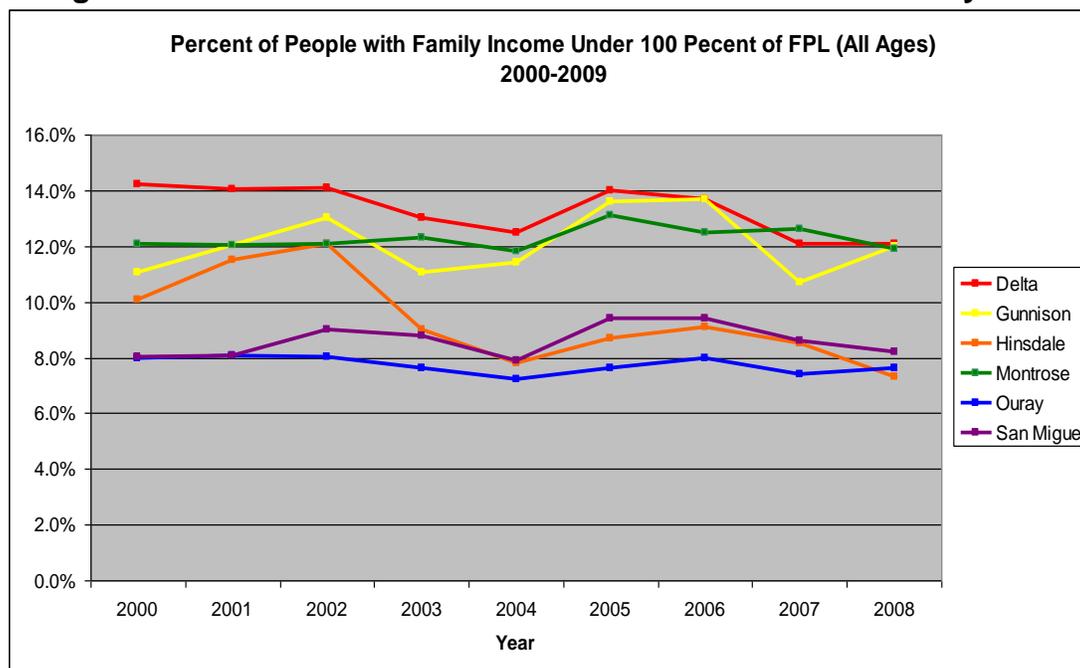
From 2001-2008, per capita personal income increased an average of 4.0 percent per year, which was greater than the nation's annual increase of 3.2 percent. Nearly 65% of the region's income came from earnings and 24.8 percent from dividends, interest and rent. Other income avenues included retirement and disability (6.8 percent) and Medicare, Medicaid and Veteran's Benefits (6.1 percent).

**Table 1.5: Per Capita Personal Income by County, 2008**

Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel	Region 10
\$29,909	\$35,002	\$36,131	\$30,318	\$44,650	\$52,945	\$33,329

Data Source: Colorado Department of Local Affairs, 2011

**Figure 1.4 Percent of Families Under 100 % of Federal Poverty Level**



Note: FPL refers to Federal Poverty Line

Data Source: Colorado Health Institute; Colorado State Demography Office, Division of Local Government, Department of Local Affairs 2010,

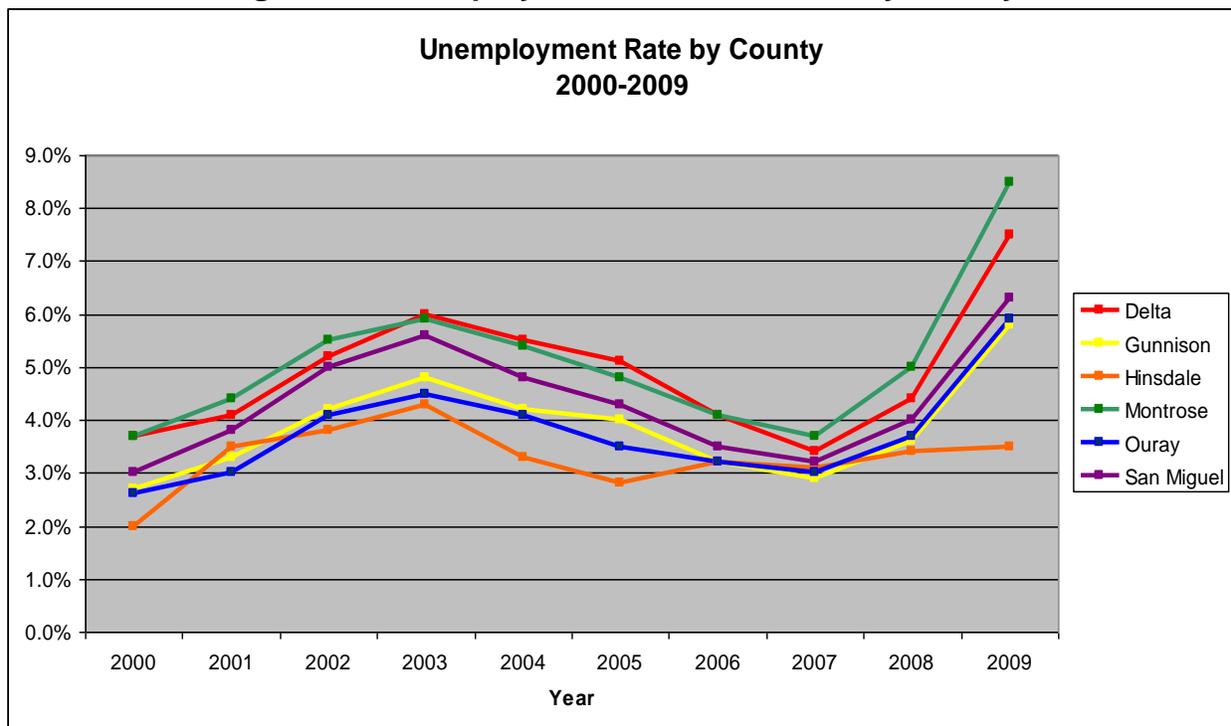
[http://www.dola.state.co.us/demog\\_webapps/population](http://www.dola.state.co.us/demog_webapps/population)

**Table 1.6 Median Household Income 2008**

County	Income	Rank
Delta	\$43,621	39
Gunnison	\$46,972	31
Hinsdale	\$50,692	28
Montrose	\$45,817	36
Ouray	\$59,725	14
San Miguel	\$61,074	13
Colorado	\$57,184	
United States	\$52,029	

Data Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) program. Available at <http://www.census.gov.hhes/www/saipe>

**Figure 1.5 Unemployment Rate Over Time by County**



Data Source: Colorado Health Institute; Colorado State Demography Office, Division of Local Government, Department of Local Affairs 2010, [http://www.dola.state.co.us/demog\\_webapps/population](http://www.dola.state.co.us/demog_webapps/population)

**Table 1.7 Medicare Beneficiaries 2007**

<b>Medicare Beneficiaries: 2007</b>			
<b>County</b>	<b>Aged</b>	<b>Disabled</b>	<b>Total Aged and Disabled</b>
Delta	5,742	745	6,487
Gunnison	1,117	140	1,257
Hinsdale	122	13	135
Montrose	6,209	841	7,050
Ouray	615	63	678
San Miguel	339	31	370

Definition: The Medicare program provides health insurance for individuals 65 years of age and older, certain disabled individuals and individuals with kidney failure. Coverage is divided into two parts: Part A or Hospital Insurance, and Part B or Supplementary Medical Insurance.

Notes: Some beneficiaries for each year and Medicare beneficiary category (aged, disabled and total aged and disabled) cannot be traced to a particular county. Therefore, the sum of all county numbers is not equal to the state total. \* indicates 10 or fewer Medicare beneficiaries.

Data Source: Colorado Health Institute and Medicare Beneficiary Database, Center for Medicare & Medicaid Services (CMS); <http://www.cms.hhs.gov/MedicareEnrpts/>

## **Policy Implications**

### ***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.
- ⇒ As the population of Region 10 Counties continues to grow and change it is vital that the social determinants of health, as stated by Healthy People 2020, are involved in public health policies and procedures.
- ⇒ Understand health equity and its effects on the overall health of the population.
- ⇒ All counties are experiencing a rise in the number of older adults aged 65-84. With the population of older adults increasing public health policies and procedures should adapt to fit the current needs of the community.





## 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, lack of providers who accept public insurances). When people are not able to access care, their medical conditions may worsen, often resulting in even greater health care costs. A target goal identified by the Center for Disease Control's *Healthy People 2020* is to have at least 95% of all people provided with a specific source of ongoing primary care. For children and 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 Colorado Department of Health and the Environment, 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."<sup>5</sup>

---

<sup>5</sup> Healthy Colorado 2010

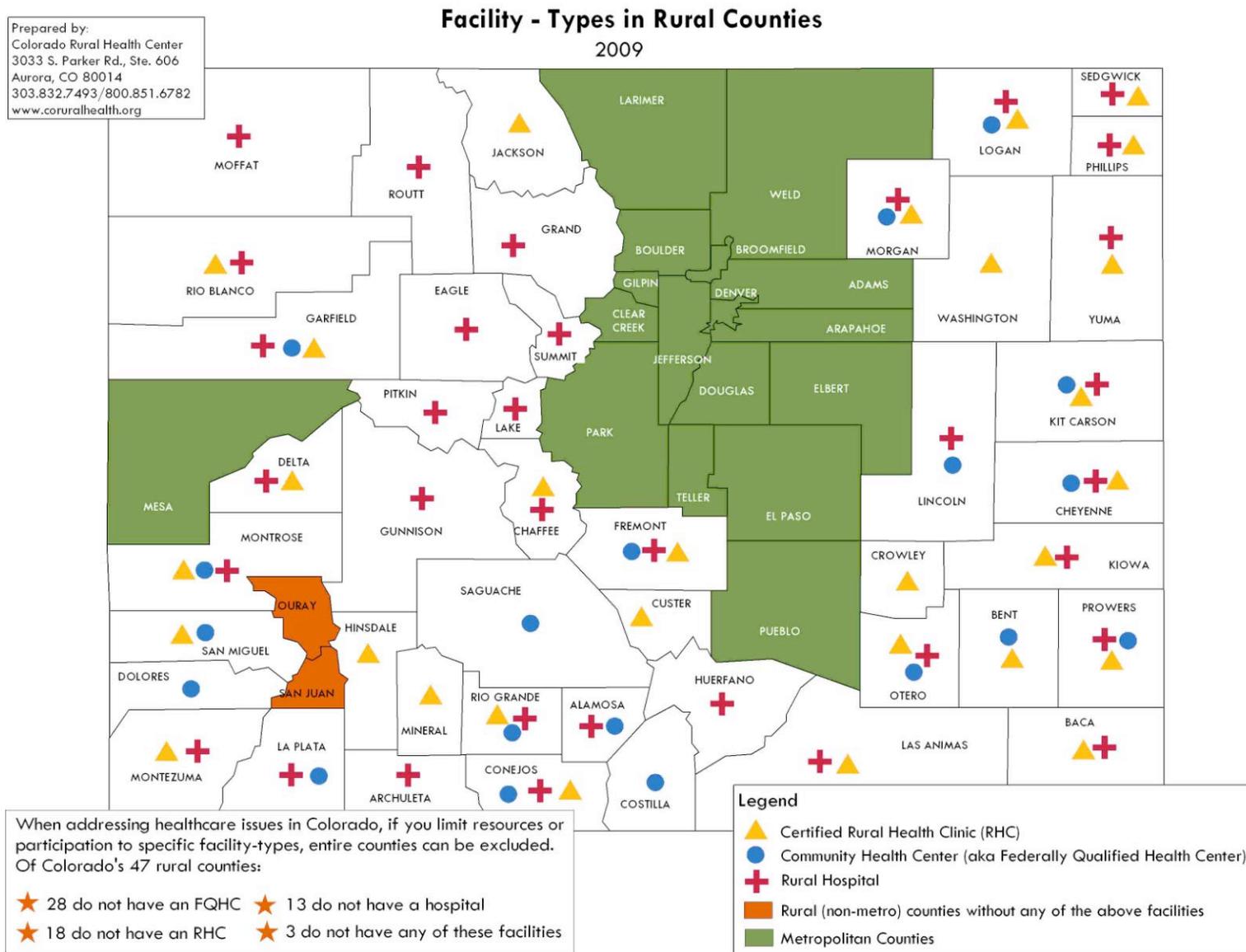
**Access to Healthcare Providers**

All of the counties in the West Central Public Health Partnership (Region 10) are rural or frontier counties. All but Gunnison and Hinsdale are designated health professional shortage areas (HPSA) according to CDPHE's Rural and Primary Care Office. "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"<sup>1</sup> (See Table 2.0).

Figure 2.0 from the Colorado Rural Health Center shows 3 types of facilities, Rural Health Clinics, Rural Hospitals, and Community Health Centers. This shows that for instance Ouray County has none of these types of facilities, Gunnison County has only a Rural Hospital, and Hinsdale County has only a Rural Health Clinic. County profiles of Hinsdale, Ouray and San Miguel counties are also available online from the Colorado Rural health Center, see <http://www.coruralhealth.org/resources/library.htm> .

Table 2.0 below shows an inventory of types of health care services based on key informant interviews with Public Health directors.

Figure 2.0 Facility types in Rural Counties



**Table 2.0 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	1*	2	3	3	3	2	3	1	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 2 school-based health clinics. Montrose has a cancer clinic and dialysis center.

\*\* Hinsdale is served by Gunnison

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

\*\*\*\* All counties are served by The Center for Mental Health

Data source: Colorado Rural Health Center and key informants

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. According to the CDPHE Primary Care Office most of Region 10 is considered either a geographic or low income HPSA in terms of Dental Health. Only Ouray and part of San Miguel County are not designated a Dental Health HPSA.

- **Mental health:** The Center for Mental Health is the Medicaid contract provider serving all the counties in Region 10. All of the counties in Region 10 are mental health provider shortage areas (less than 6000:1) and the mental health/substance abuse services provided by the Center Mental Health are on a very limited, and in some cases, part-time basis as satellites. A critical shortage area is the lack of child psychiatrists, as well as providers who bill Medicaid for psychological evaluations. There are no detoxification facilities or inpatient substance abuse treatment services in Region 10. After hours Emergency mental health services are provided by practitioners based in Montrose and telepsychiatry is often used, however, if a face-to-face evaluation is needed there are often lengthy waits.
- **Transportation:** Lack of adequate transportation services in rural Colorado, and in all Region 10 communities, is a barrier to access.
- **Cultural and linguistic competence:** Historically there has been an inadequate network of culturally and linguistically competent providers at every level and health care discipline. Currently this is still the case in terms of mental health and substance abuse providers, according to key informants. Since the last assessment in 2007 the situation has improved somewhat, as there has been an increase of in-house staff who are Spanish language speakers at health care facilities.
- **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.

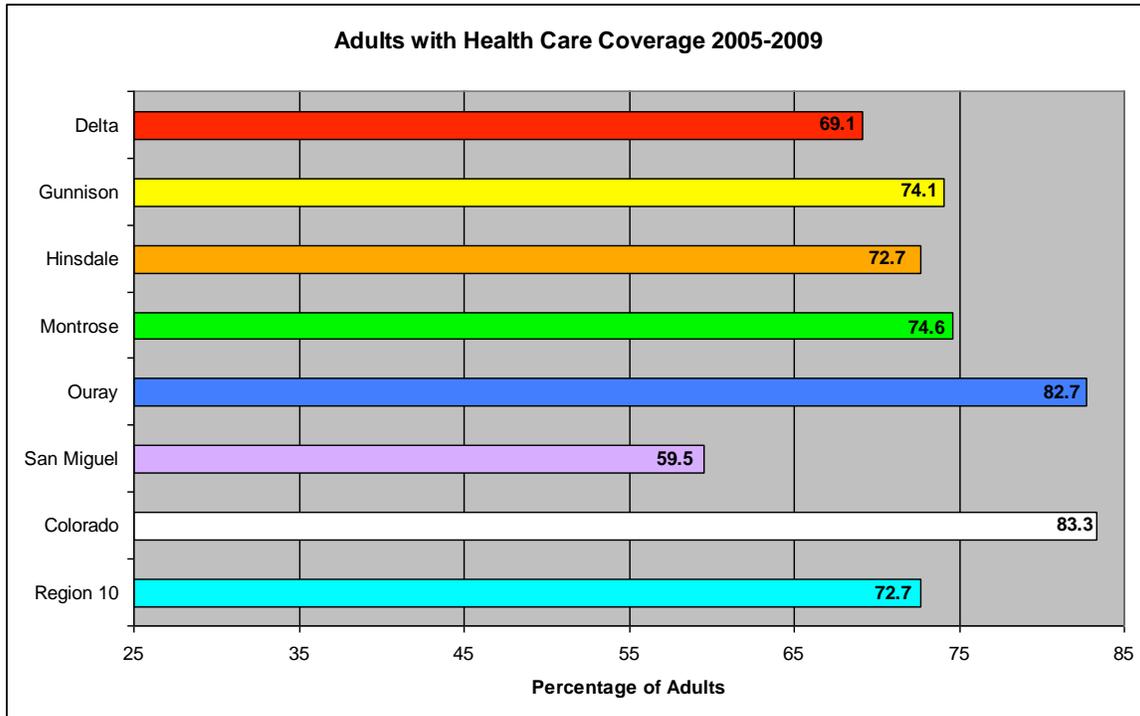
### ***Health Insurance Coverage***

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.”

**Adults:**

Fewer adults in Region 10 report having any kind of Health Care Coverage compared to Colorado (Figure 2.1). This varies by individual county, ranging from only 59.5% in San Miguel County, to 82.7% in Ouray County.

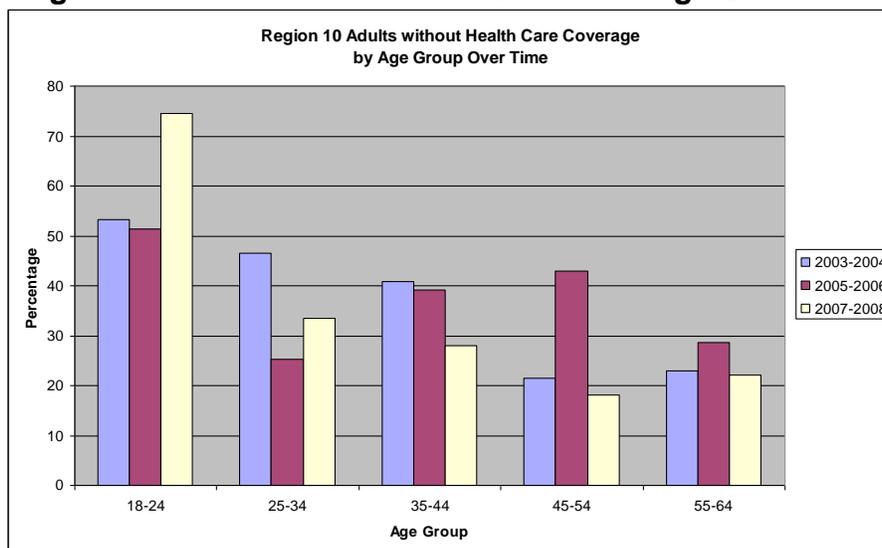
**Figure 2.1 Adults with Any Kind of Health Care Coverage**



Data Source: BRFSS, CDPHE Health Statistics

2005-2009 Combined Average Note: Includes a small number of people over 65 (1.2 % of the total adults for Colorado)

**Figure 2.2 Region 10 Adult Lack of Health Care Coverage Over Time and by Age**



Data Source: BRFSS, CDPHE Health Statistics

Figure 2.2 shows similar data as Figure 2.1 except broken down by age and over time. This shows that in general the 18 – 24 year olds are the least likely to report having any type of health care coverage. Over time the situation for 18 – 24 year olds has worsened with more reporting lack of any type of health care coverage in 2007-2008 compared to 2003-2004.

Another indicator of the lack of access to health care services is found in Table 2.1 which shows that more adults in Region 10 report that they have no usual source of care.

**Table 2.1 Adults with No Usual Source of Care**

<b>Adults with No Usual Source of Care: 2008-2009</b>	
Region 10	12.20%
Colorado	10.30%

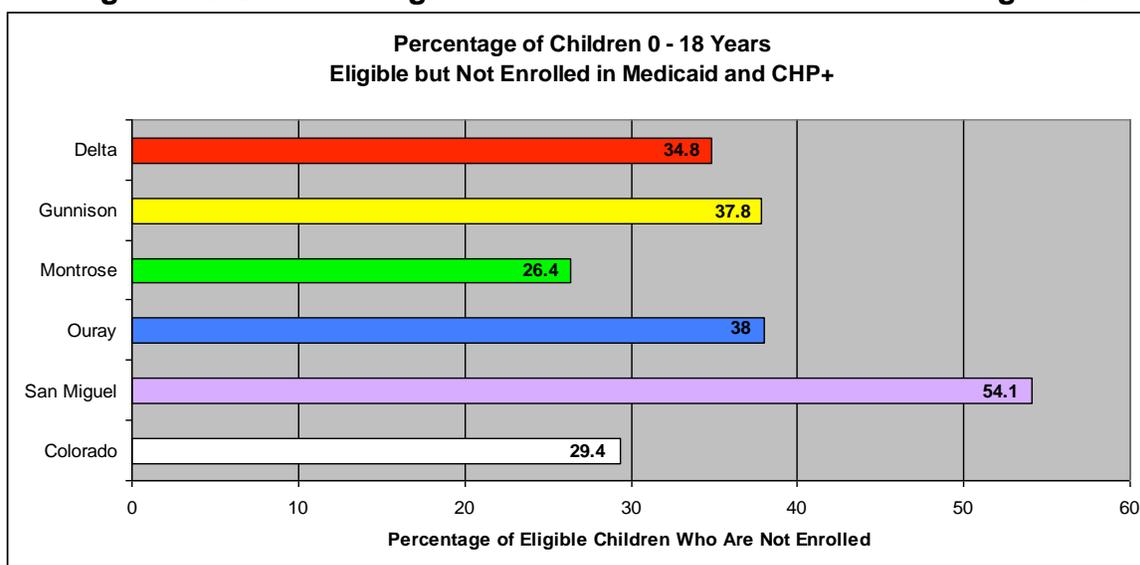
Note: Surveyed individuals were asked if "there was a place where (they) usually go when sick or when (they) need advice about health." This is often referred to as a usual source of care. Data Source: 2008-2009 Colorado Household Survey, Colorado Health Institute website

In recent years the state of Colorado has increased Medicaid coverage to whole families, essentially expanding adult health insurance coverage. In the past Medicaid for families was only for pregnant women and the baby for the first year after birth. Now Medicaid will cover families as long as they meet the income qualifications.

**Children:**

Health coverage for children ages 1-14 is generally much higher than for the overall population. Since 2007 when the last assessment was done, the state of Colorado has made improvements to the health care insurance system for families and children in need. The income ceiling for eligibility for CHP+ has been raised, increasing the number of children eligible for the program. However children who are undocumented are not eligible for Medicaid or CHP+. Also the children of people who are undocumented are less likely to enroll in programs, even if they are eligible.

Table 2.4 shows the percentage of children in 2008 that were eligible but not enrolled in the state insurance programs for children, Medicaid and CHP+. This indicator demonstrates a need that is not being met.

**Figure 2.3 Children Eligible but Not Enrolled in Insurance Programs**

Data Source: Colorado Health Institute Colorado Children's Health Insurance Status: 2010 Update (2008 data) Hinsdale County data was not available from the Colorado Health Institute due to small numbers (fewer than 30 cases).

It is important to note that information from key informants indicates that the percentage of kids eligible but not insured has decreased in recent years due to new emphasis placed on enrollment of children in these insurance programs. Also in July of 2011 CHI changed the way they measured undocumented children (who are therefore ineligible for these insurance programs). Updated data from the Colorado Health Institute (CHI) shows the following updated 2009 rates for each county: Delta 22.5%, Gunnison 15.8%, Montrose 16.4%, Ouray 15.5%, and San Miguel 38.6%. Hinsdale County data was not available for that rate; however CHI did report that there were 7 children in 2009 that were eligible but not enrolled in Hinsdale County. The Colorado rate in 2009 was 19.6%.<sup>6</sup>

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.

<sup>6</sup> See: [http://datacenter.coloradohealthinstitute.org/data\\_results.jsp?i=262&rt=3&p=2&c=2](http://datacenter.coloradohealthinstitute.org/data_results.jsp?i=262&rt=3&p=2&c=2)

### ***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 has 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.

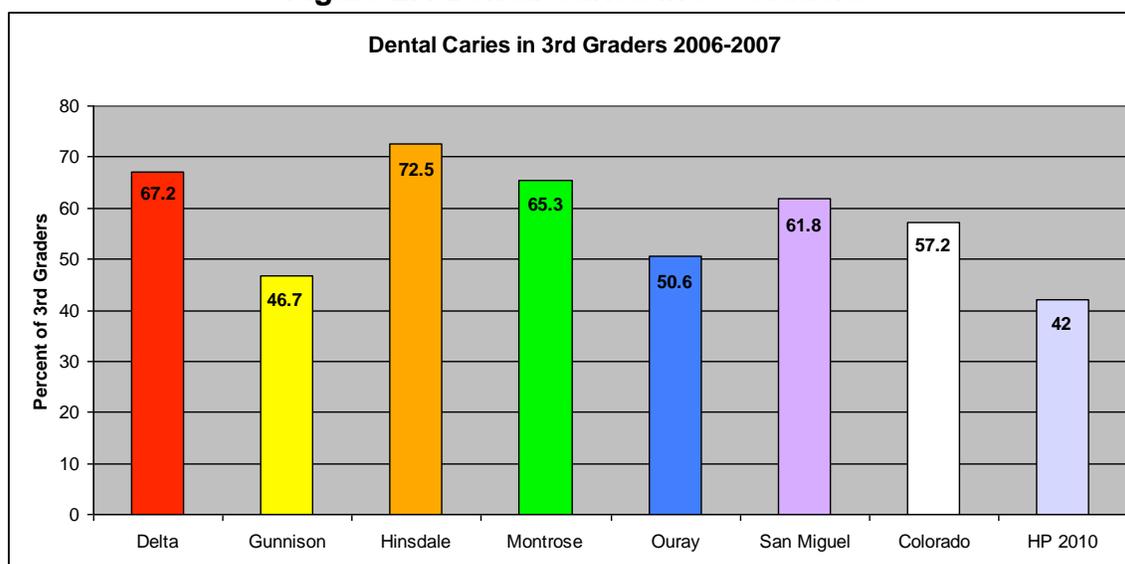
- One sliding fee clinic exists in Delta County in the town of Cedaredge, about 20-30 minutes from the main population base of Delta.
- A free clinic in Montrose has the capacity to serve only 25 patients per week.
- The sliding fee clinic in Montrose County is in Olathe, a very rural town. Accessing 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."
- Although there is no sliding fee clinic in Gunnison, Public Health assesses clients for eligibility for a local primary care voucher program for adults and a voucher program for children that includes vision, oral, primary, and behavioral health care. A limited number of vouchers are 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 County 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.

Children’s dental health is more widely covered in the Maternal Child Health Section on page 42. Figure 2.4 below shows the most recently available data on a basic child dental health indicator, dental caries. This shows that there is variability between counties on the percentage of youth who are accessing dental care appropriately. The percentage of children with dental caries in the 3<sup>rd</sup> grade varies from 46.7 % in Gunnison County to 72.5 % in San Miguel County. Key informant information indicates that in the past several years several dental health initiatives aimed at youth have been started across Region 10. This indicator should improve as more recent data becomes available.

**Figure 2.4 Dental Caries in 3<sup>rd</sup> Graders**



Data Source: MCH Data Sets, CDPHE  
 Healthy People 2010 goal is 42%

**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 sideways arrow means there has been no change (see Table 2.2).

**Table 2.2 Positive and Negative Trends in Region 10**

↑ Positive Trends	
↑	<b>Sliding Scale Clinic:</b> 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.
↑	<b>Spanish language services</b> within health care have improved since 5 years ago.
↑	<b>Child Health Insurance:</b> The eligibility requirements in the state of Colorado have changed, allowing more children to be eligible for state supported health insurance such as CHP+ and Medicaid.
↑	<b>Child Health Insurance</b> New programs, such as health navigator programs, have been

addressing enrollment of children in health insurance programs.
↑ <b>Child Dental Health:</b> Across Region 10 new dental health programs for children have been increasing the availability of services.
<b>↓ Negative Trends</b>
↓ <b>Access:</b> Region 10 counties have the following health care access issues: health provider shortages, fewer group health insurance options, high health insurance costs, transportation issues and emergency facility shortages.
↓ <b>HPSA:</b> All of the counties in Region 10 (except Gunnison and Hinsdale) have been designated Health Professional Shortage Areas (HPSA).
↓ <b>Dental Services</b> for low income or uninsured people are scarce in Region 10 (especially for adults); all of Region 10 is considered a dental health HPSA.
↓ <b>Mental Health HPSA:</b> There is only 1 mental health service provider for all of Region 10, and Region 10 is considered a mental health HPSA.
↓ <b>Adult Health Insurance:</b> fewer adults in Region 10 report having any kind of health care coverage, and a higher percentage of adults report having no usual source of care than the state of Colorado.
↓ <b>Child Dental Health:</b> Available data on children’s oral health shows this to be a need in Region 10, e.g. the percentage of 3 <sup>rd</sup> graders with dental caries is above the state rate in all of the Region 10 counties except for Gunnison and Ouray counties.

### ***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 councils; and
- ⇒ Improving provider cultural competency.





### 3. MATERNAL AND CHILD HEALTH

#### **Defining the Issue**

The quality of our future is dependent on addressing maternal and child health issues within our nation. The U.S. Health Resources and Services Administration aspires to create “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.”<sup>7</sup> In order to create this level of maternal and child health, we must understand the current state of operations, services and outcomes that exist within Region 10 of Colorado.

#### **Data for Region 10 and Colorado**

Healthy People 2020 stresses the improvement of maternal and child health in the United States as one of its many desired goals. Making positive alterations in health behaviors, health systems, wellness, and quality of life of women, children, and families are all important Healthy People 2020 objectives.<sup>8</sup>

#### ***Pregnancy Behaviors***

#### ***Pregnancy and Breastfeeding***

---

<sup>7</sup> From the HRSA vision statement, accessed December 20, 2007; see, <http://mchb.hrsa.gov/about/default.htm>.

<sup>8</sup> From Healthy People 2020 Topics & Objectives, accessed July, 2011; see, <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=26>

Breastfeeding is one of the most influential ways to enhance the health of both mother and the child. Research has found breast milk to be essential in supplying the nutrients that promote proper growth and development for the baby as well as reducing obesity. Benefits of breastfeeding for the mother include no financial cost, appropriate postpartum weight loss and reducing the risk of ovarian and breast cancer, type II diabetes and postpartum depression. In the United States, 75% of mothers initiate breastfeeding but only 13% are breastfeeding their babies exclusively 6 months later.<sup>9</sup> The Healthy People 2020 goal for breastfeeding initiation is 81.9 percent. In 2007, only 2.9 percent of live births occurred in facilities that provide recommended care for lactating mothers and their babies. Healthy People 2020 aspires to increase this percentage to 8.1.<sup>10</sup>

Table 3.0 identifies the percentage of mothers who have ever breastfed. Neither Montrose County nor the state of Colorado meet the 81.9% Healthy People 2020 goal; and Delta and Gunnison counties barely surpass it. In each county and in the state there is a noteworthy drop from the percentage of women who have ever breastfed to the percentage of women who breastfed for at least 6 months and then again at 12 months. The decline over time of women still breastfeeding implies a need for a greater support system that promotes the extended practice among mothers.

**Table 3.0 WIC Breastfeeding Statistics by County, 2007-2009**

Data Source: 2007-2009 Pediatric Nutrition Surveillance, WIC; <http://www.cdphe.state.co.us/ps/wic/>

County	# Breastfed Ever	% Breastfed Ever (Rank)	# Breastfed At least 6 Months	% Breastfed At Least 6 Months (Rank)	# Breastfed At Least 12 Months	% Breastfed At Least 12 Months (Rank)
Delta	509	82.3 (12)	438	27.6 (21)	375	16.5 (15)
Gunnison	220	86.4 (6)	185	44.3 (2)	158	23.4 (6)
Hinsdale	*	**	*	**	*	**
Montrose	1,226	75.3 (24)	1,095	27.1 (23)	947	12.9 (31)
Ouray	41	**	38	**	35	**
San Miguel	92	**	80	**	67	**
Colorado	100,340	74.0	88,878	26.7	71,665	15.0

Note: \* Indicates that percentages and ranks were not calculated because < 100 records were available for analysis after exclusions. Rank compares this county's rate to other counties. Rank 1 = best rate.

<sup>9</sup> From the Center for Disease Control: Breastfeeding, accessed July 2011, see; <http://www.cdc.gov/breastfeeding/promotion/index.htm>

<sup>10</sup> From Healthy People 2020, Maternal Child Health, accessed July 2011, see; From Healthy People 2020, Accessed July 2011, See; <http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=26>

**Perinatal Health Profile**

Unintended births are higher than the Healthy People 2010 desired goal throughout the region, with the exception of Gunnison. No Region 10 Counties, again excluding Gunnison, meet the Healthy People 2010 goal of 90% of pregnant women receiving prenatal care within the first trimester. In all counties less than 35% of the population is reported as having appropriate weight gain during pregnancy and over 35% are reported as having excessive weight gain during pregnancy. Gunnison County has the highest rates for breast feeding initiation and first trimester prenatal care and the lowest rates in smoking three months prior to pregnancy, smoking during the last trimester and unintended births, all of which are positive pregnancy health behaviors. Delta has the highest percentages for both smoking three months prior to pregnancy (31.5%) and smoking during the last trimester of pregnancy (17.7%). Delta displays the second highest rate for unintended births (see Table 3.1).

**Table 3.1 2010 Maternal Child Health Data Set Summary: Perinatal Health Profile**

	Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel	CO	HP 10
<b>Breast-feeding Initiation</b>	91.6	99.5	92.1	88.6	92.1	92.1	89.5	75.0
<b>1<sup>st</sup> tri. Prenatal Care</b>	69.3	90.6	71.4	69.5	80.6	79.1	76.9	90.0
<b>Approp. Wt gain during pregnancy</b>	33.5	26.5	34.1	34.0	34.1	34.1	34.4	NA
<b>Excessive Wt. gain</b>	36.4	48.3	40.2	43.1	40.2	40.2	41.4	NA
<b>Inadequate Wt gain</b>	30.1	25.2	25.7	22.9	25.7	25.7	24.2	NA
<b>Perinatal mortality</b>	2.9	13.0	0.0	7.6	DS	12.7	6.3	4.5
<b>Smoking 3mo before pregnancy</b>	31.5	11.2	24.2	25.1	24.2	24.2	19.6	NA
<b>Smoking last trim.</b>	17.7	3.1	11.9	11.8	11.9	11.9	9.9	NA
<b>Unintended births</b>	40.3	21.7	39.2	43.5	39.2	39.2	38.6	30.0

*Data Source: CDPHE Maternal/Child Health Datasets 2010* Notes: Regional rates/percentages are used for Hinsdale, Ouray and San Miguel counties for the following indicators: Appropriate wt. gain during pregnancy, Excessive wt. gain during pregnancy, Inadequate wt. gain during pregnancy, smoking 3 months before pregnancy, smoking last trimester of pregnancy, and unintended births. 1<sup>st</sup> Trimester prenatal care: percent of women receiving prenatal care during 2008. Appropriate wt. gain: percent of women 2004-08. Excessive wt. gain: percent of women 2004-08. Inadequate wt. gain: percent of women 2004-08. Perinatal Mortality (fetal deaths at 28 wks gestation or later and infant deaths at 7 days or less): rate per 1,000 live births for 2004-08. Smoking during first 3 months before pregnancy: percent of women 2004-08. CO goal is 19.0%. Smoking during last 3 months of pregnancy: % of women who were still

smoking their last trimester 2004-08. CO goal 10.0% Unintended births: percent of births (not pregnancy's) 2004-2008 that were unintended.

The following are all areas which the Colorado rates do not meet the Healthy People 2010 goals; first trimester prenatal care, perinatal mortality and unintended births.

Healthy People 2020 released an updated set of Perinatal goals and objectives as seen below in Table 3.2. The 2020 goal for receiving prenatal care within the first trimester is much lower than the 2010 goal, making it easier to attain. Therefore the previous rates in Gunnison, Ouray and San Miguel meet the 2020 goal. Note that the 2020 goals in reference to smoking and intended pregnancy are different from the 2010 goals. The updated goal in reference to smoking now focuses on abstaining from smoking during the entire pregnancy instead of three months prior and during the last trimester. Also, Healthy People 2020 made modifications to their goal of decreasing unintended births to now increasing intended pregnancy.

**Table 3.2 Perinatal Health Profile: Healthy People 2020 Goals**

Breastfeeding Initiation	1 <sup>st</sup> Trimester Prenatal Care	Perinatal Mortality	Abstaining From Smoking During Entire Pregnancy	Intended Pregnancy
81.9%	77.9%	11.4 (per 100,000)	98.6%	56.0%

Data Source: Healthy People 2020, <http://www.healthypeople.gov/2020/default.aspx>

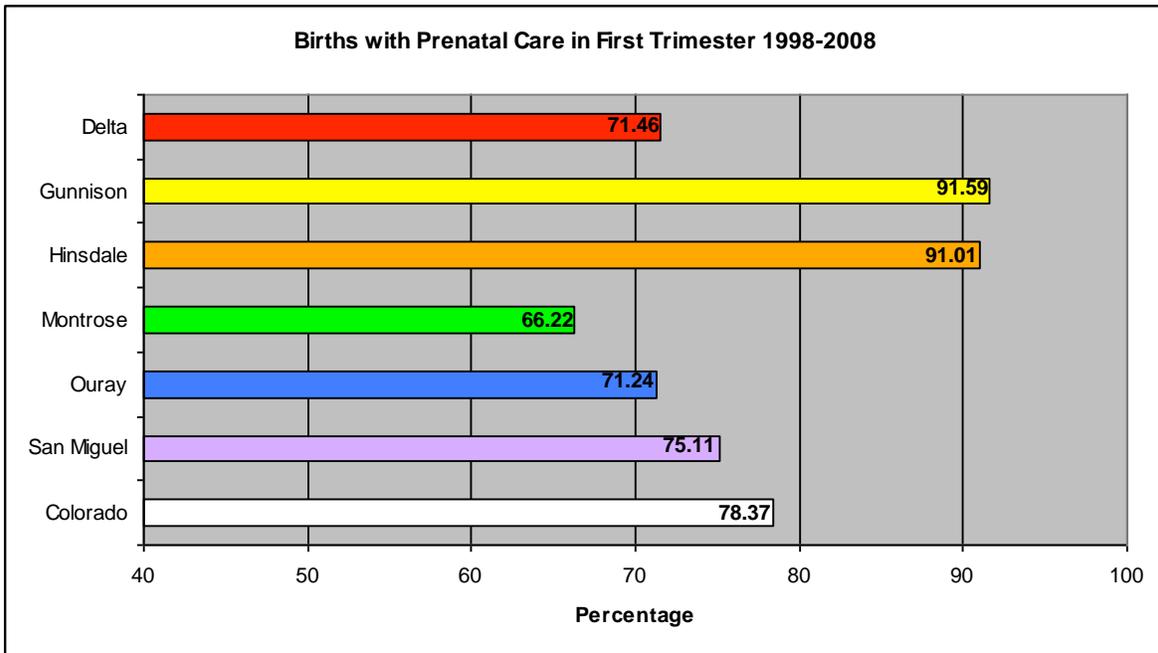
***Prenatal Care***

The Healthy People 2020 goal for receiving prenatal care within the first trimester is 77.9 percent of pregnant women. As seen in Figure 3.0 only two Region 10 Counties (Gunnison and Hinsdale) have met the Healthy People 2020 standard from 1998-2008. In 2009 77.7 percent of pregnant women in Colorado received prenatal care within the first trimester.<sup>11</sup> Prenatal care within the first trimester of pregnancy is vital in assuring the health of the mother and child as it allows for early detection of possible complications. Certain barriers women in Colorado account to the inability of receiving prenatal care within the first trimester include an inability to get an earlier appointment and a lack of funds, resources and insurance<sup>12</sup>.

<sup>11</sup> From the Colorado Maternal Health Data Set 2011, accessed in July 2011, see; <http://www.cdphe.state.co.us/ps/mch/mchadmin/mchdatasets2011/profiles/colorado.pdf>

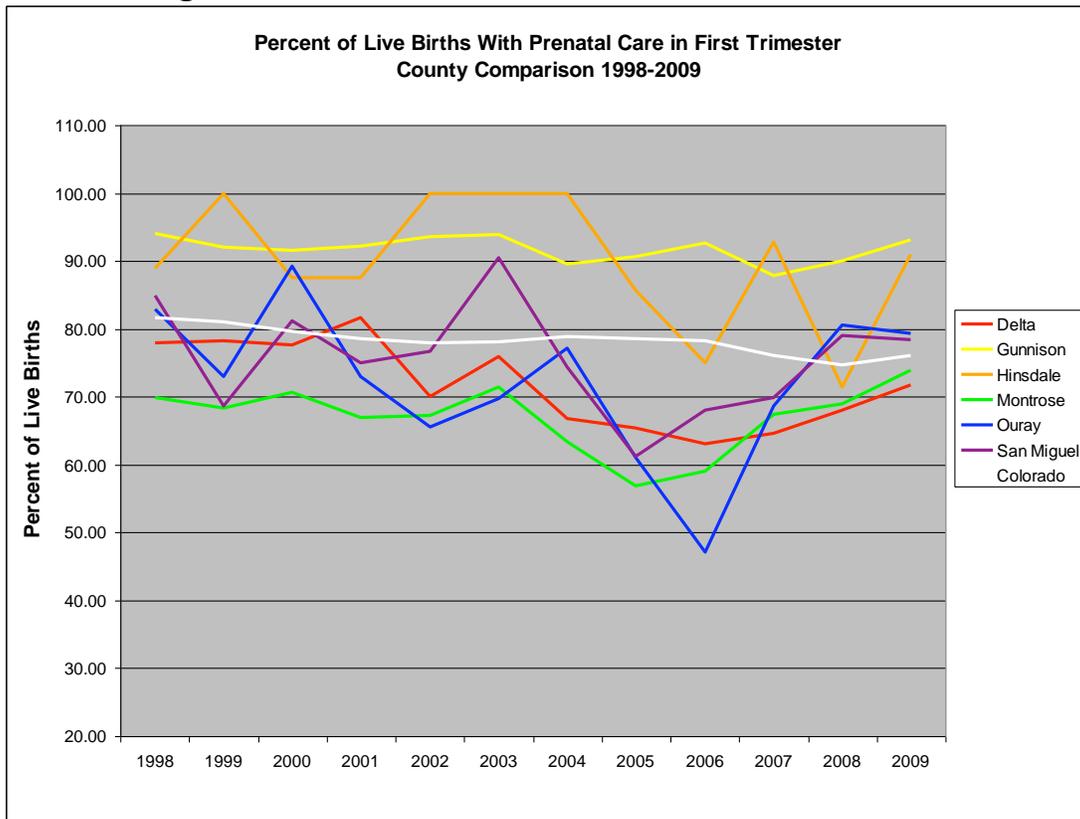
<sup>12</sup> Data Source: Colorado PRAMS Prevalence Estimates, 2009 <http://www.cdphe.state.co.us/hs/mchdata/all2009CO.pdf>

**Figure 3.0 Prenatal Care In First Trimester 1998-2008 Average**



Data Source: CDPHE, COHID Colorado Birth Statistics

**Figure 3.1 Prenatal Care in First Trimester Over Time**



Data Source: CDPHE, COHID Colorado Birth Statistics

Figure 3.1 displays the variation in rates of live births with prenatal care for the first trimester from 1998-2009. Considerable spikes and drops in percentages occur in each county over the years.

***Births***

There is an overall decrease in the total number of births each year for the state of Colorado and Region 10 from 2007 to 2009. The percentage of hospital versus home births is consistent each year with the number of hospital births far outweighing home births (see Table 3.3).

**Table 3.3 Live Births by Facility Type 2007, 2008, 2009**

<b>Live births by facility type and region: Colorado residents, 2007</b>														
	All Births		Hospital		Freestanding Birth Center		Clinic / Doctor Office		Home Birth		Other		Not Classifiable	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<b>Colorado</b>	70,804	100	69,936	98.77	77	0.11	3	0	767	1.08	15	0.02	6	0.01
<b>Delta</b>	364	100	349	95.88	*	*	*	*	14	3.85	*	*	*	*
<b>Gunnison</b>	172	100	166	96.51	*	*	*	*	5	2.91	*	*	*	*
<b>Hinsdale</b>	14	100	13	92.86	*	*	*	*	*	*	*	*	*	*
<b>Montrose</b>	556	100	548	98.56	*	*	*	*	8	1.44	*	*	*	*
<b>Ouray</b>	51	100	46	90.20	*	*	*	*	5	9.80	*	*	*	*
<b>San Miguel</b>	103	100	94	91.26	*	*	*	*	8	7.77	*	*	*	*
<b>Region 10</b>	1,260	100	1,216	96.51	*	*	*	*	41	3.25	*	*	*	*
<b>Live births by facility type and region: Colorado residents, 2008</b>														
	All Births		Hospital		Freestanding Birth Center		Clinic / Doctor Office		Home Birth		Other		Not Classifiable	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<b>Colorado</b>	70,028	100	69,018	98.56	141	0.2	*	*	823	1.18	24	0.03	20	0.03
<b>Delta</b>	351	100	341	97.15	*	*	*	*	10	2.85	*	*	*	*
<b>Gunnison</b>	181	100	177	97.79	*	*	*	*	4	2.21	*	*	*	*
<b>Hinsdale</b>	7	100	6	85.71	*	*	*	*	*	*	*	*	*	*
<b>Montrose</b>	568	100	555	97.71	*	*	*	*	13	2.29	*	*	*	*
<b>Ouray</b>	31	100	26	83.87	*	*	*	*	5	16.13	*	*	*	*
<b>San Miguel</b>	110	100	104	94.55	*	*	*	*	5	4.55	*	*	*	*
<b>Region 10</b>	1,248	100	1,209	96.88	*	*	*	*	38	3.04	*	*	*	*
<b>Live births by facility type and region: Colorado residents, 2009</b>														
	All Births		Hospital		Freestanding Birth Center		Clinic / Doctor Office		Home Birth		Other		Not Classifiable	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<b>Colorado</b>	68,605	100	67,526	98.43	214	0.31	*	*	834	1.22	26	0.04	5	0.01
<b>Delta</b>	347	100	335	96.54	*	*	*	*	12	3.46	*	*	*	*
<b>Gunnison</b>	161	100	157	97.52	*	*	*	*	4	2.48	*	*	*	*
<b>Hinsdale</b>	11	100	8	72.73	*	*	*	*	3	27.27	*	*	*	*
<b>Montrose</b>	521	100	510	97.89	*	*	*	*	11	2.11	*	*	*	*
<b>Ouray</b>	29	100	22	75.86	*	*	*	*	7	24.14	*	*	*	*
<b>San Miguel</b>	65	100	63	96.92	*	*	*	*	*	*	*	*	*	*
<b>Region 10</b>	1,134	100	1,095	96.56	*	*	*	*	38	3.35	*	*	*	*

\* Indicates fewer than three events in category.  
 Data Source: Health Statistics Section, Colorado Department of Public Health and Environment

### ***Unintended Pregnancy/Births***

Unintended pregnancy is one that is unwanted or mistimed at conception. According to the Center for Disease Control, unintended pregnancy is associated with an increased risk of maternal morbidity and an increased likelihood of risky prenatal behaviors that negatively affect the health of both the mother and child. In 2000 less than half of the pregnancies in the United States were planned.<sup>13</sup> Developing more effective contraceptive resources that promote accessibility and adherence for men and women can help to decrease the number of unintended pregnancies. Healthy People 2020 is promoting an increase in the number of women who use contraception to plan their pregnancies as way to decrease unintended pregnancy and improve preconception care and health behaviors for expectant mothers.

**Table 3.4 Unintended Pregnancy by Region 10 and State, 2009**

	<b>Region 10</b>	<b>Colorado</b>
<b>Number of Unintended Pregnancies</b>	35	760
<b>Percent of Unintended Pregnancies</b>	34.3	39.5

Data Source: Colorado Health Information Dataset, Pregnancy Risk Assessment Monitoring System Statistics  
Note: County data not available due to a too small a number of respondents.

**Table 3.5 Percent Unintended Births by County and State, 2010**

	<b>Delta</b>	<b>Gunnison</b>	<b>Hinsdale</b>	<b>Montrose</b>	<b>Ouray</b>	<b>San Miguel</b>	<b>Colorado</b>
<b>Unintended Births</b>	40.3	21.7	39.2	43.5	39.2	39.2	30.0

Data Source: CDPHE Maternal/Child Health Datasets 2010

<sup>13</sup> From Healthy People 2020, accessed in July 2011, see; <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=26>

**Teen Fertility**

The goal of Healthy People 2020 is to reduce the rate of pregnancy for females aged 15-17 to 36.2 pregnancies per 1,000, as approximately two-thirds of births to women younger than the age of 18 are unintended.<sup>7</sup> From 2002-2009 all Region 10 counties are consistently below the Healthy People 2020 goal for teen pregnancy.

**Table 3.6 Teen Fertility Rate Trend Ages 15-17**

	<b>2002-2004 Births / Teen Population</b>	<b>2002-2004 Rate per 1,000 Live Births</b>	<b>2005-2009 Rate per 1,000 Live Births</b>
County			
Delta	55 / 1,851	20.7	20.9
Gunnison	3 / 949	3.2	11.5
Hinsdale	0 / 52	0.0	*
Montrose	62 / 2,370	26.2	21.7
Ouray	* / 271	*	*
San Miguel	0 / 336	0.0	7.9**
Region 10	***	***	18.6
Colorado	7,100 / 283,490	25.0	22.3

\* Three or fewer events      \*\*\* Data uncompiled at time of printing

\*\* The reported rate for San Miguel County for 2006-2008: 2010 MCH data set

Data sources: County Data 2005-2009: Colorado Birth Statistics 2005-2009  
Region 10 Data and Colorado Rate for 2005-2009: Colorado Regional Health Profiles, Health Statistics Section,  
Colorado Department of Public Health and Environment.

Vital Statistics 2006-2008, 2002 – 2004

Data: 2007 Regional Health Needs Assessment p. 29 Table 15

Teen fertility is calculated by dividing the number of births to teens by the total teen population.

**Table 3.7 Birth rates for teenagers 15-19 years: United States and Colorado, 2008 and by race and Hispanic origin of mother**

	All Races	Non-Hispanic, White	Non-Hispanic, Black	Hispanic
<b>United States</b>	41.5	27.2	64.2	81.8
<b>Colorado</b>	42.5	22.9	57.6	101.0

Data Source: CDC, <http://www.cdc.gov/nchs/data/databriefs/db46.pdf>

The state of Colorado set a target teen fertility rate of 12 births per 1,000 teens aged 15-17. Data collected by the Colorado Department of Health and Environment shows that Delta, Gunnison, Hinsdale and San Miguel met that target. Montrose County was identified as being close to the target. Ouray County had numbers that were too small to report.<sup>14</sup>

### **Low Birth Weight**

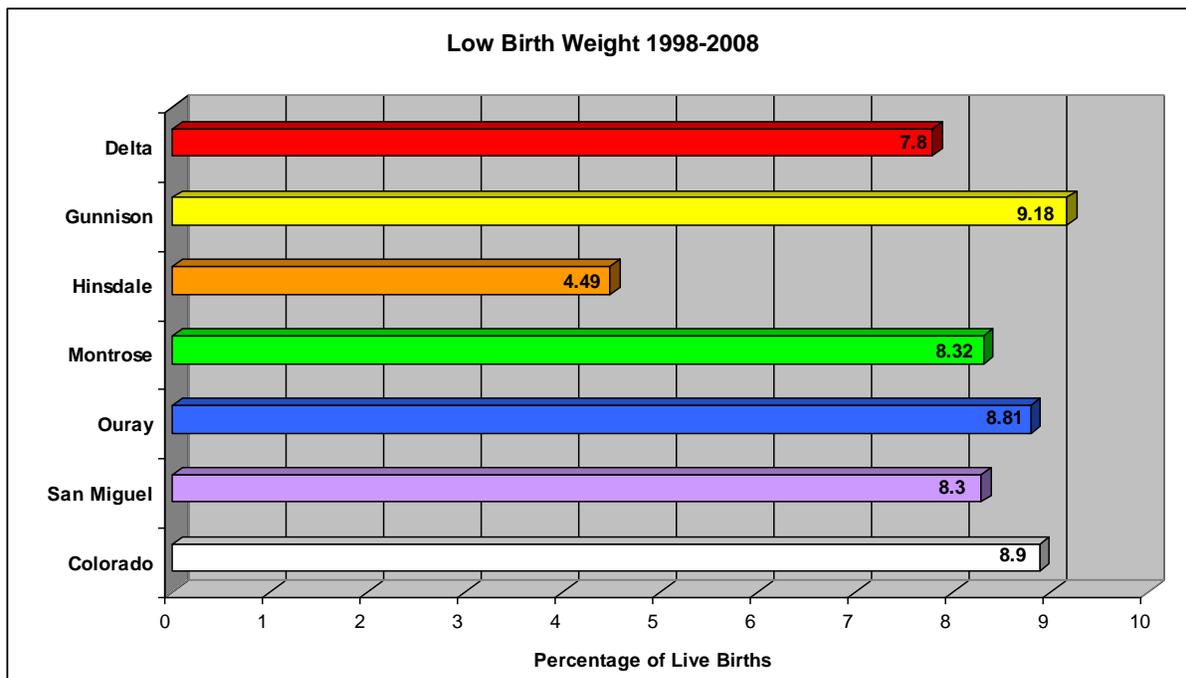
Low Birth Weight is the measure of live births with a birth weight of less than 2,500 grams (5 lbs, 8oz). Low birth weight in the United States is rising to a degree greater than that of 15 years ago and Colorado has one of the highest state rates in the nation.<sup>15</sup> Some behavioral factors associated with low birth weight include smoking and drug and alcohol abuse during pregnancy and insufficient prenatal care. The Healthy People 2020 national goal rate for Low Birth Weight is 7.8, which is a 5 percent improvement from the 8.2 percent of LBW live births in 2007.<sup>4</sup>

As seen in Figures 3.2 and 3.3 and Tables 3.8 and 3.9 all Region 10 Counties, excluding Hinsdale, have a consistently higher rate of low birth weight than the Healthy People 2020 goal of 7.8.

<sup>14</sup> Vital Statistics, Health Statistics Section, CDPHE; State Demography Office, Colorado Department of Legal Affairs

<sup>15</sup> From CDPHE, accessed July 2011, see; <http://www.cdphe.state.co.us/hs/mchdata/mchdata.html>

**Figure 3.2 Low Birth Weight Births 1998-2008**



Data Source: CDPHE, COHID Birth Statistics

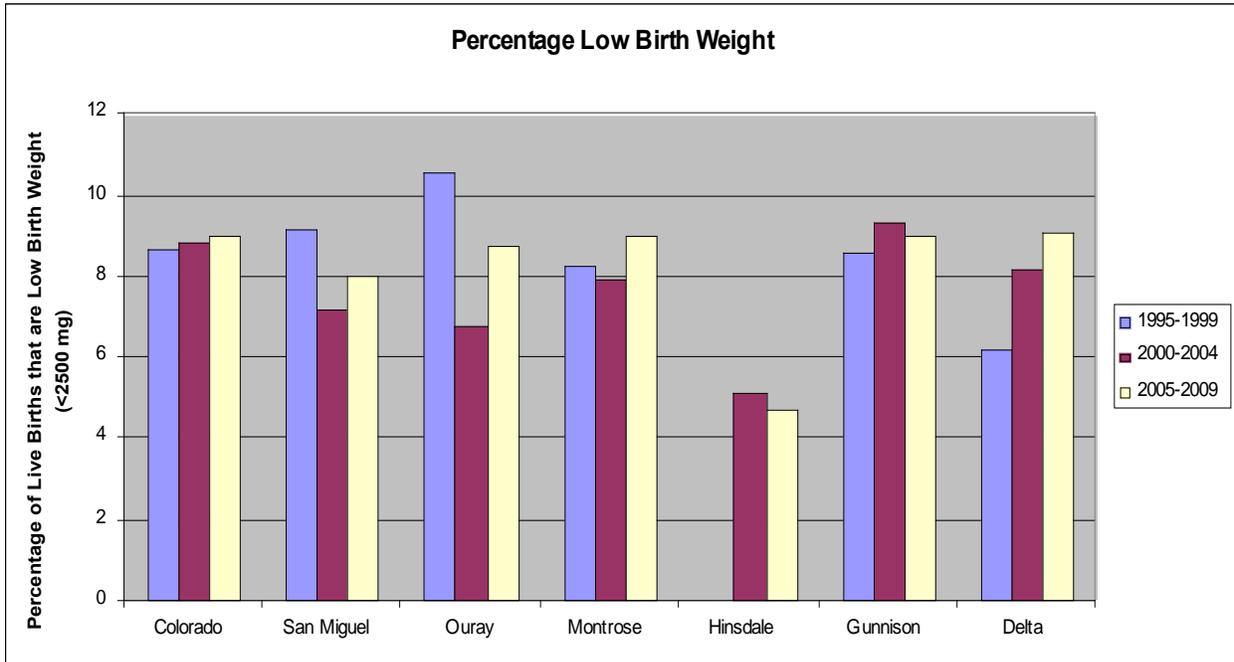
**Table 3.8 Percentage Low Birth Weight Births Over Time, 2007-2009**

County	2007	2008	2009
Delta	8.5	12.3	11.0
Gunnison	8.7	9.9	9.9
Hinsdale	14.3	*	0.0
Montrose	9.4	10.7	9.8
Ouray	11.8	9.7	*
San Miguel	6.8	8.2	*
Colorado	9.0	8.9	8.8
United States	8.2	UNK	UNK

Data Source: CDPHE COHID, <http://www.cdphe.state.co.us/scripts/broker.exe>

Notes: \* indicates 1 or 2 events

**Figure 3.3 Percentage of Low Birth Weight Births Over Time 1995-2009**



Data Source: CDPHE, COHID Birth Statistics

Notes: Data for Hinsdale County 1995-1999 is missing due small numbers.

**Table 3.9 Number and Percentage of Low Birth Weight Births Over Time**

County	1995-1999		2000-2004		2005-2009	
	#	%	#	%	#	%
Delta	93	6.2	132	8.2	159	9.1
Gunnison	52	8.6	82	9.3	75	9
Hinsdale	*	*	2	5.1	2	4.7
Montrose	182	8.3	186	7.9	238	9
Ouray	17	10.6	11	6.8	16	8.8
San Miguel	29	9.2	27	7.2	37	8

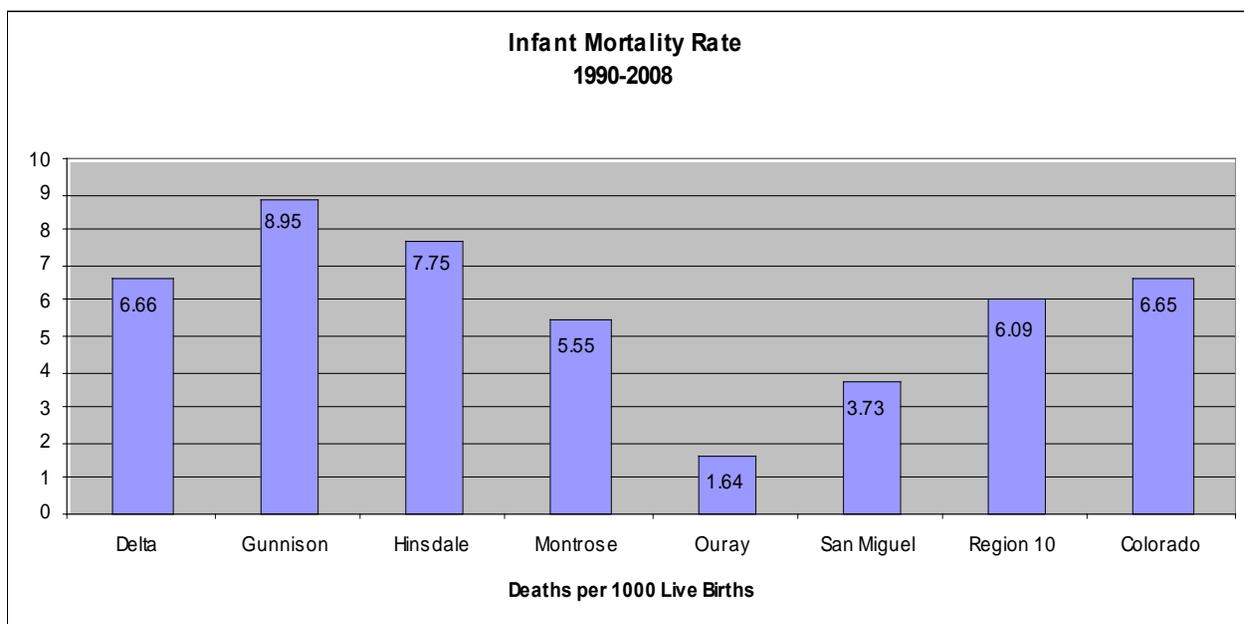
Data Source: CDPHE, COHID Birth Statistics

Source: Colorado Birth Statistics Section of CDPHE

**Infant Mortality**

Infant mortality is death that occurs within the first year of life. Mortality within the first year of life is considered a standard indicator of child and maternal health care status. The national rates for infant mortality have been declining, but are still considerably high when compared to other developed countries. <sup>8</sup> According to the Center for Disease Control the United States ranked 29<sup>th</sup> in the world for infant mortality in 2004. Healthy People 2020 aims for a 10 percent improvement from the 2006 national rate of 6.7, resulting in a target rate of 6.0 infant deaths per 1,000 births. <sup>4</sup>

**Figure 3.4 Infant Mortality Rate 1990-2008 Average**



Data Source: CDPHE COHID Death Statistics

Notes: Infant Mortality Rate (IMR) is deaths under age 1 per 1,000 live births

It is important to note that collected data on infant mortality within Region 10 counties is subject to drastic change in rates from year to year as a result of the small number of events. A slight increase or decrease in the number of infant deaths within a county in a particular year will have a significant effect on the county’s rate. This is why so many years of data are averaged in this chart, to attempt to control for this effect of small numbers. Of note, all of the counties except Gunnison and Hinsdale have an Infant Mortality Rate that is lower than the state rate.

**Table 3.10 Infant Mortality Trend**

	1990-1994	1995-1999	2000-2004	2005-2009
County				
Delta	8.9	7.9	7.5	3.4
Gunnison	7.9	5.0	13.6	8.4
Hinsdale	*	*	*	*
Montrose	5.0	5.0	5.1	7.1
Ouray	0.0	0.0	6.2	0
San Miguel	3.9	0.0	0.0	8.7
Region 10	6.2	4.5	6.8	6.1
Colorado	7.9	6.7	6.	6.1
HP 2010 Goal	4.5	4.5	4.5	4.5

Data Source: CDPHE COHID Death Statistics

Table 3.11 shows the Infant Mortality Rate average of smaller segments of time (5 year segments). It also shows the degree to which Region 10 Counties met the Healthy People 2010 goals related to infant health. Delta is the sole county to have met the Infant Mortality Rate and Neonatal Mortality Rate Healthy People 2010 goals. All other county rates, including the state rate, exceed the Healthy People 2010 goal. Delta is also the only county to have met the Very Low Birth Weight Healthy People 2010 goal, while all county rates (including Delta) did not meet the Healthy People 2010 goal for Low Birth Weight.

**Table 3.1 2010 Maternal Child Health Data Set Summary: Infant Health Profile**

	Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel	CO	HP 2010
<b>Infant Mortality</b>	3.4	9.6	0.0	6.5	DS	8.5	6.2	4.5
<b>Neonatal Mortality</b>	2.3	6.0	0.0	4.2	DS	6.4	4.4	2.9
<b>Newborn Hearing Screening</b>	96.0%	96.1%	85.7%	97.9%	87.1%	93.5%	97.8%	NA
<b>% Low Birth wt.</b>	9.0	8.5	DS	9.0	9.5	9.2	9.0	5.0
<b>% Very low Birth wt.</b>	0.9	1.2	0.0	1.5	0.0	DS	1.3	0.9
<b>% VLBW born in Level 3 hospital</b>	60.0	63.6	NA	70.7	DS	DS	87.8	90.0
<b>Post neonatal Mortality</b>	DS	3.6	0.0	2.3	0.0	DS	1.7	1.2

Notes: DS = 1 or 2 children. Infant Mortality: rate per 1,000 live births 2004-2008. Average rate over 5 years.  
 Neonatal Mortality (death during first 28 days of life): rate per 1,000 live births 2004-2008  
 Newborn Hearing Screening: % of infants screened before hosp. discharge. CO goal 98%  
 % Low birth weight (5lbs 8ounces or less): rate for 2006-08. Calculated by county of residence of mother. Average for 3 years. % Very low birth weight (3lbs 4ounces or less): average for 3 years 2006-08 VLBW born at Level 3 hospitals: VLBW infants 2004-2008. Postneonatal mortality (death after 28 days and before 1 year): rate is per 1,000 live births 2004-2008 (average for 5 years).  
 Data Source: CDPHE Maternal/Child Health Datasets 2010

**Child Health**

The Child Health Data Set displayed [See Table 3.12] compares the Region 10 County’s rates in various child health matters, to the Healthy People 2010 goals. Region 10 did not meet the Healthy People 2010 goals for health insurance coverage rates or overweight/obesity rates. HP 2020 goal is for 14.6% or less of kids aged 2-19 are obese.

The child health goals put forth by Healthy People 2020 vary from the Healthy People 2010 goals. A new area of concern for Healthy People 2020 is reducing children's exposure to violence to 54.5%. To view more child health goals visit [healthypeople.gov](http://healthypeople.gov).

**Table 3.12 Maternal Child Health Data Set Summary: Child Health**

	Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel	CO	HP 10
<b>Child Abuse</b>	7.5	7.2	0.0	7.8	4.4	2.1	8.3	10.3
<b>Child Care Centers using consultants</b>	100%	100%	100%	100%	0.0	75% 6/8	95.8%	NA
<b>Deaths 1-14</b>	41.7	DS	0.0	28.8	0.0	0.0	17.7	NA
<b>Motor Vehicle Deaths 1-14</b>	DS	0.0	0.0	DS	0.0	0.0	2.8	9.2
<b>CHP+ enrollees</b>	13.1	8.8	DS	18.6	11.4	6.5	8.1	NA
<b>Health Ins. Coverage</b>	87.8	87.8	87.8	87.8	87.8	87.8	91.1	100
<b>No gap in Health ins coverage</b>	86.5	86.5	86.5	86.5	86.5	86.5	92.3	NA
<b>Medicaid enrollees</b>	31.1%	16.0%	DS	33.7	13.7%	15.2%	25.8%	NA
<b>Schools with school based HC</b>	0	0	0	1	0	0	42	NA
<b>I.Z. Providers linked to CIIS</b>	66.7% 8/12	60.0% 3/5	100% 1/1	44.4% 8/18	100% 2/2	100% 4/4	56.7%	NA
<b>Injury hospitalization 0-14</b>	234.8	136.6	DS	186.4	84.2	138.5	163.1	NA
<b>Overweight/obese</b>	22.6%	22.6%	22.6%	22.6%	22.6%	22.6%	26.8%	15.0

Note: DS indicates 1-2 children. Health ins. coverage and gap in health ins. coverage as well as overweight/obese data is regional and taken from child health survey. Child Deaths 1-14, rate is per 100,000. Co. goal is 15.0. Data are 2004-2008 5 yr. average. Injury Hosp. 0-14, rate is per 100,000. Co. goal is 150.0. Data are 2004-08 5 year average. Child care centers using consultants: refers to centers that utilize the services of a registered nurse consultant.

Source: CDPHE Maternal/Child Health Datasets 2010

### **Child Oral Health**

All Region 10 Counties did not meet the Healthy People 2010 goals for each category of the Child Oral Health Profile with the exception of Ouray in regards to untreated dental decay in grade three. While oral diseases are preventable they affect children in the United States more than any other chronic disease. Tooth decay in children is often

very painful and leads to difficulties in eating and speaking.<sup>16</sup> Adequate prenatal care and children’s access to dental exams, fluoride and dental sealants all aid in reducing oral ailment in children (see Table 3.13).

**Table 3.13 Maternal Child Health Data Set Summary: Child Oral Health**

Notes: Caries Experience: est. percent of children in grade 3 during 2006-07 school year.

	Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel	CO	HP 10
<b>Caries experience Grade 3</b>	67.2	46.7	72.5	65.3	50.6	61.8	57.2	42.0
<b>Dental Sealants Grade 3</b>	31.8	47.2	30.7	32.6	34.3	33.0	35.0	50.0
<b>% Medicaid Rcvd Dental Services</b>	35.9	24.4	DS	48.2	45.0	29.8	43.7	NA
<b>Untreated Dental Decay gr3</b>	32.3	16.6	36.1	30.2	20.1	27.6	24.5	21.0

Dental sealants: est. percent of children grade 3 during 2006-07 school year.

Untreated decay: est. percent of children grade 3 during 2006-07 school year.

Source for the 3 indicators above is Oral Health Program, Prevention Services Division, CDPHE

Medicaid Dental Services: percent of children on Medicaid who received dental services July 2007-June 2008. CO goal is 44.0%. Source is Co. Dept. of Health Care Policy and Financing.

Data Source: CDPHE Maternal/Child Health Datasets 2010

Healthy People 2020 set a goal to increase school based health centers that provide dental sealants to 26.5%. Schools within Region 10 have begun implementing these types of programs, improving the oral health of the child population.

**Adolescent Health**

Table 3.14 provides County information on different categories of adolescent health, along with the coinciding Healthy People 2010 and Colorado 2010 goals. Montrose County reports having the highest teen fertility rate as well as highest rate of births to Latina teens, both of which are greater than the Colorado 2010 goal. Teen

<sup>16</sup> From The Center For disease Control, Oral Health, accessed in July 2011, see; <http://www.cdc.gov/OralHealth/topics/child.htm>

hospitalization due to injury may be an area of concern for Delta, Montrose and San Miguel as their numbers exceed the Colorado desired goal; San Miguel has the highest teen hospitalization rate that is much higher than the Colorado 2010 goal. All counties met the Healthy People 2010 goal in areas where sufficient information is available (see Table 3.14). See Tables 3.15 and 3.16 for adolescent health goals from Healthy People 2020.

**Table 3.14 Maternal Child Health Data Set Summary: Adolescent Health**

	Teen 15-17 Fertility	Births to Latina Teens	Teen Homicide 15-19	Teen Injury Hospitalization	Teen 15-19 Motor Vehicle Deaths	Teen 15-19 Suicide
<b>Delta</b>	20	43.6	0	598.3	DS	0
<b>Gunnison</b>	10.7	40.0	0	191.0	0.0	DS
<b>Hinsdale</b>	0.0	0.0	0.0	DS	0.0	0.0
<b>Montrose</b>	24.1	52.4	0.0	452.5	0.0	DS
<b>Ouray</b>	DS	0.0	0.0	311.7	DS	0.0
<b>San Miguel</b>	7.9	DS	0.0	762.1	DS	0.0
<b>Colorado Co. Goal</b>	22.3 21.0	58.0	5.1	485.1 450.0	16.6	12.1
<b>Healthy People 2010</b>	43*	NA	3.0	NA	9.2	5.0

Notes: The measure of teen injury hospitalizations is the rate of hospitalizations for injuries per 100,000 teens aged 15-19 from 2004-2008. The rate is the average for each of the 5 years. Numerator is 65 hospitalizations per 10,864 teens in that period for Delta. In San Miguel, the numerator is 14 for 1,837 teens. Montrose also exceeds the Colorado goal slightly.

Montrose exceeds the Colorado rate of teen fertility. Teen fertility is the measure of the rate of births per 1,000 teens ages 15-17 for 2006-2008. Montrose's numerator is 63 births per 2,618 female teens during this time period. Rate is the average for each of the 3 years.

\*HP 2010 goal is for pregnancies not live births

Data Source: CDPHE, Maternal/Child Health Datasets 2010

**Table 3.15 Adolescent Health: Healthy People 2020**

Reduce Pregnancy Rate in Females Aged 15-17	Reduce Maltreatment Deaths for Adolescents and Children Under the Age of 18
36.2	2.2/100,000

Data Source: Healthy People 2020, <http://www.healthypeople.gov/2020/default.aspx>

Healthy People 2020 established a new set of goals and objectives focusing on the improvement of adolescent health. The majority of health concerns within the adolescent population are behavioral, and therefore considered preventable with the

utilization of environmental and social influences. The areas that Healthy People 2020 identifies as most important include; homicide, suicide, motor vehicle crashes, drinking and driving, substance use and abuse, sexually transmitted infections, pregnancy and homelessness. Adolescent health not only impacts the health status at the current time of life, but further influences future health status and risk of disease. Some of the goals developed by Healthy People 2020 that will improve adolescent health through environmental and social networks are as follows;

**Table 3.16 Healthy People 2020 Adolescent Health Goals**

- Increase the proportion of adolescents who are connected to a parent or other positive adult caregiver
- Increase educational achievement of adolescents and young adults
- Reduce adolescent and young adult perpetration of, as well as victimization by, crimes
- Decrease the proportion of public schools with a serious violent incident
- Increase the proportion of schools with a school breakfast program
- Reduce the proportion of adolescents who have been offered, sold, or given an illegal drug on school property

Please note that all data set health summary profiles (Tables 3.11-3.14) include information that was published in 2010. A 2011 set of data was released during the finalizing of this health assessment. To view the newest health profiles see the Colorado Department of Public Health and Environment website at <http://www.cdphe.state.co.us/hs/mchdata/mchdata.html>

### ***Immunizations***<sup>17, 12, 13</sup>

The development of immunizations and their ability to control infectious diseases is strongly associated with life expectancy in the United States. Immunizations are a core aspect of preventative health care and are cost effective for our health care system. The immunization goals of Healthy People 2020 focus on decreasing the occurrence and spread of infectious disease by applying methods that adhere to our social living norms. Healthy People 2020 also stress the use of technological advances when developing immunization strategies to meet a growing and diverse population.<sup>18</sup> See table 3.17 for Healthy People 2020 immunization goals.

---

<sup>17</sup> From Healthy People 2020, Immunizations and Infectious Disease, accessed July 2011, see; <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=23>

<sup>18</sup> From Healthy People 2020, Maternal Child Health, accessed July 2011, see; <http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=26>

The Colorado Immunization Information System is a computer based method operated by the Colorado Department of Public Health and Environment that collects and disseminates immunization information for Coloradans. The CIIS allows for immunization providers to electronically track the immunization records of patients with the objective of assuring all appropriate immunizations are received. The data that is available online only shows the number of providers that utilize CIIS. The state of Colorado set a target rate of 100% of immunization providers being linked to the CIIS. Ouray, Hinsdale and San Miguel all meet the Colorado 2010 Target at 100%, while Delta and Gunnison are between 50.1%-79.9% and Montrose is  $\leq 50\%$ <sup>19</sup>.

Unfortunately as of the printing of this Assessment county level immunization data was not available from the CIIS.

See below for a list of updated immunization objectives from Healthy People 2020.

**Table 3.17 Healthy People 2020 Immunization Goals**

- |   |
|---|
| <ul style="list-style-type: none"> <li>• Increase the percentage of children under 6 years of age who have two or more immunizations recorded in the immunization information system to 95%.</li> <li>• Increase the percentage of providers who have had vaccination coverage levels among children in their practice population measured within the past year.</li> <li>• Increase routine vaccination coverage levels for adolescents.</li> <li>• Achieve and maintain effective vaccination coverage levels for universally recommended vaccines among young children.</li> <li>• Reduce, eliminate, or maintain elimination of cases of vaccine preventable diseases.</li> </ul> |
|---|

**Trends and Policy Implications**

Positive and Negative trends are shown below in table 3.18. Positive trends are indicated with an up arrow and negative trends are indicated with a down arrow.

<sup>19</sup> Colorado Information System December 2009; State Demography Office, Colorado Department of Local Affairs

**Table 3.18 Positive and Negative Trends in Region 10**

↑ Positive Trends	
↑	<b>Teen Fertility:</b> All Region 10 Counties are below the national average and Healthy People 2020 goal for Teen Fertility from 2002-2009.
↑	<b>Adolescent Health Profile:</b> All Region 10 Counties met the Healthy People 2010 goals in the following categories; Teen Fertility, Teen homicide, Teen Motor Vehicle Deaths and Teen Suicide (2010)
↑	<b>Breastfeeding:</b> All Counties met the Healthy People 2010 goal for breastfeeding initiation in 2010.
↓ Negative Trends	
↓	<b>Breastfeeding:</b> All region 10 Counties have major decreases in the number of women still breastfeeding at 6 and 12 months.
↓	<b>Low Birth Weight:</b> All Counties (excluding Hinsdale) have a Low Birth Weight rate higher than the Healthy People 2020 goal.
↓	<b>Oral Health:</b> All Counties did not meet the Healthy People 2010 goals for each category of Oral Child Health (with the exception of Ouray’s rate of untreated dental decays in grade 3)

***Policy Implications***

- ⇒ The number of women still breastfeeding at 6 and 12 months decreases drastically in each county. The data suggests that there is poor support from health care systems and providers for encouraging the continued practice. Healthy People 2020 identifies specific goals for increasing the number of facilities that promote continued breastfeeding.
- ⇒ Rates of prenatal care within the first trimester of pregnancy fluctuate significantly from 1998-2009, representing inconsistencies within the health care systems of Region 10 Counties. Region 10 Counties may need to address the current barriers for pregnant women in obtaining adequate prenatal care.
  - Low birth weight is seen at high rates in Region 10 which is one of many results of insufficient prenatal care.
- ⇒ Unintended births are higher than the Colorado percentage in all Region 10 Counties excluding Gunnison. A possible area of interest is increasing access to health care facilities that promote personalized contraceptive resources.
- ⇒ Information on the current status of child oral health implies a prospective priority amongst Region 10 Counties. Dental caries, dental sealants, dental decay and Medicaid received dental services are all areas needing improvement.
- ⇒ Immunization data need to be improved so that each county can measure their success of immunizing young children.





## 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. In 2005, nearly 1 out of every 2 adults in America had at least one chronic illness. This high prevalence of chronic diseases results in a substantial financial burden to our nation. Although chronic diseases are among the most common and costly health problems, they are also among the most preventable. There are 4 common causes of chronic disease: lack of physical activity, poor nutrition, tobacco use, and excessive alcohol consumption.<sup>20</sup> 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.<sup>21</sup>

### **Data from Region 10 and Colorado**

#### ***Leading Cause of Death***

Chronic diseases such as heart disease and cancer are the top causes of death in all 6 of the Region 10 counties. Figures 6.0 – 6.5 below show the leading cause of death in each county in pure numbers of deaths. In counties with small populations death rates (usually given in deaths per 100,000 people) may not be an accurate representation of the situation. The following Figures show the top causes of death for each county looking at pure numbers rather than rates. The benefit of this information is that each county can clearly see what the top causes of death are and how one cause of death

---

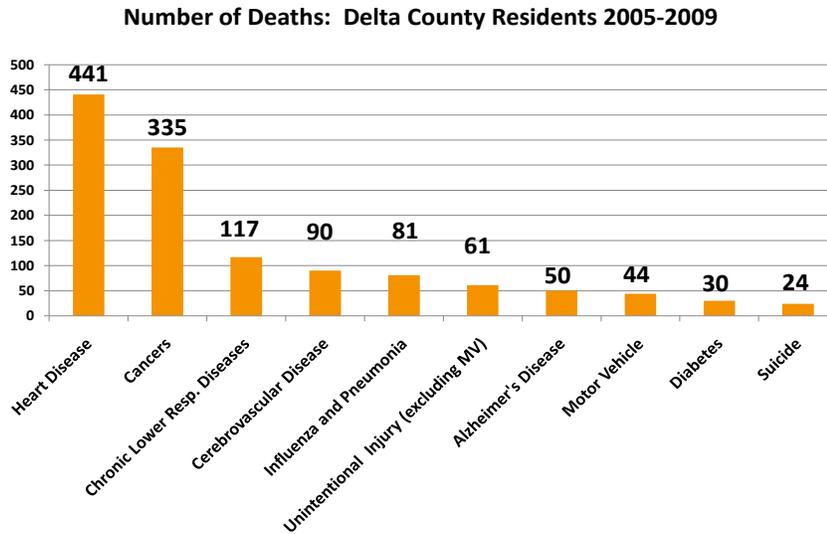
<sup>20</sup> See, <http://www.cdc.gov/chronicdisease/overview/index.htm>

<sup>21</sup> See, <http://www.health.gov/dietaryguidelines/dga2005/document/html/appendixC.htm>

compares to another (Figures 6.0 – 6.5). This may help to describe the magnitude of the problem in each county in order to prioritize which health issues are most important. For most of the counties chronic diseases and injuries (unintentional injury or motor vehicle injuries) are the top killers and therefore deserve attention (see Injury Section for more information on injury data).

**Figure 6.0 Leading Causes of Death Delta County**

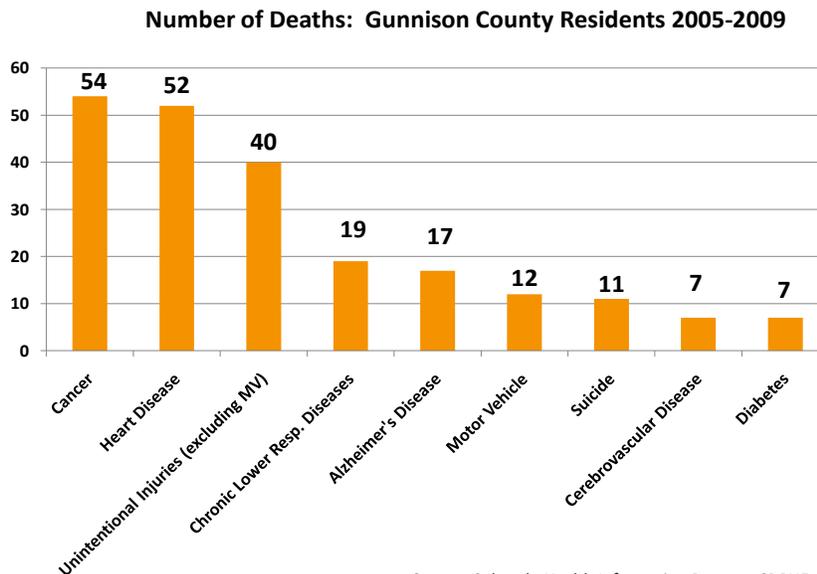
**DELTA: Leading Causes of Death**



Source: Colorado Health Information Dataset, CDPHE

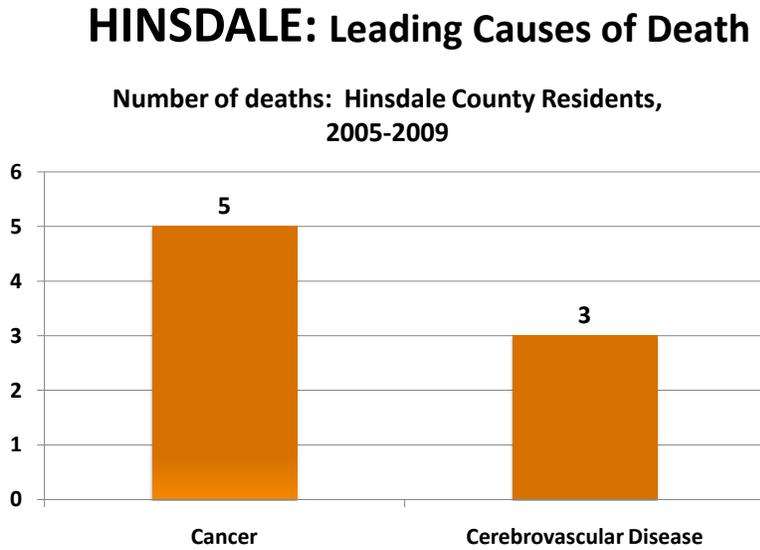
**Figure 6.1 Leading Causes of Death Gunnison County**

**GUNNISON: Leading Causes of Death**



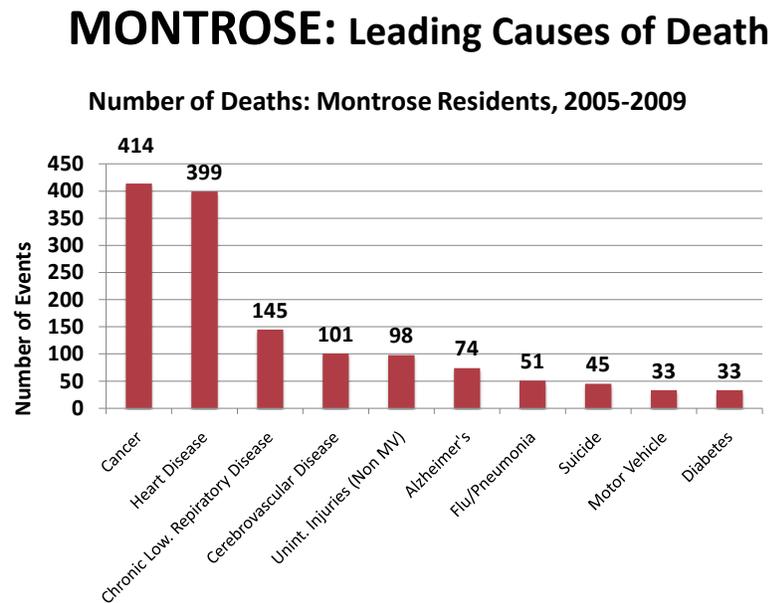
Source: Colorado Health Information Dataset, CDPHE

Figure 6.2 Leading Causes of Death Hinsdale County



Source: Colorado Health Information Dataset, CDPHE

Figure 6.3 Leading Causes of Death Montrose County



Data Source: Colorado Health Information Dataset, CDPHE

Figure 6.4 Leading Causes of Death Ouray County

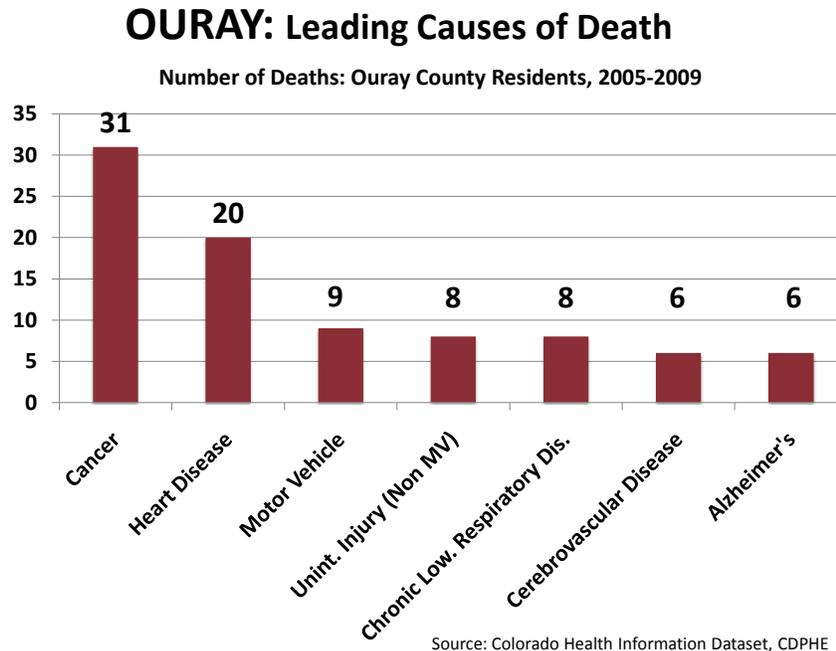
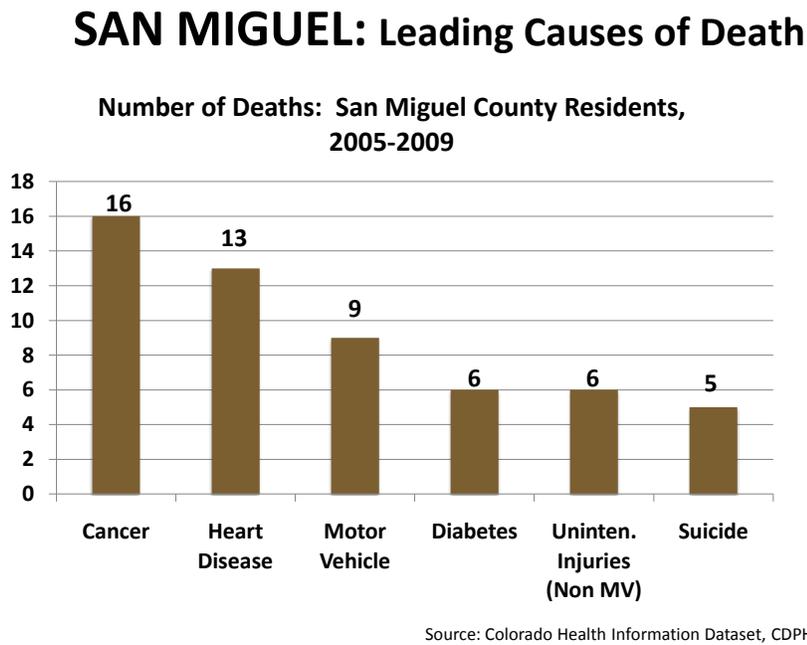


Figure 6.5 Leading Causes of Death San Miguel County



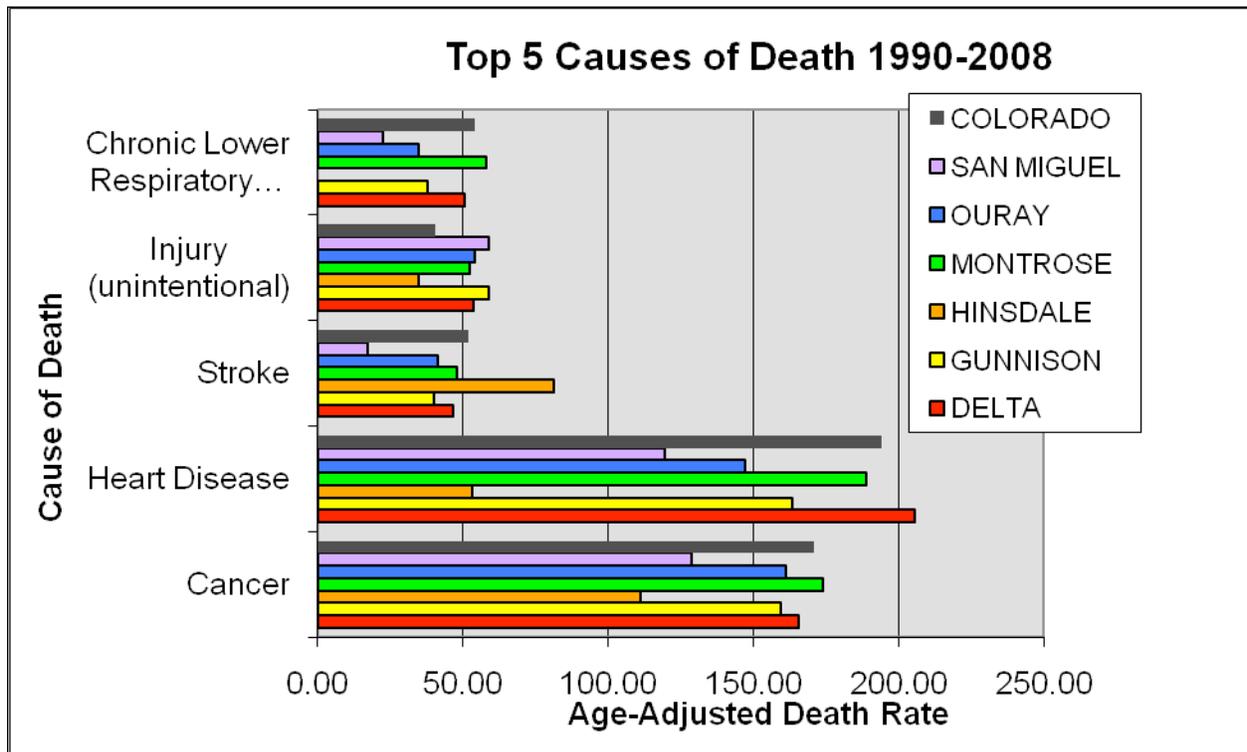
Figures 1 – 6 show that for most of the counties the top 2 causes of death are from chronic diseases, typically heart disease and cancer. Table 6.0 below shows the same data as in Figures 6.0 – 6.5, ranking the top causes of death. This allows one to compare between counties, Colorado and the US to see differences in the top causes of death, providing a preliminary clue as to what health issues are occurring in each location. For Table 6.0 the Colorado data is from 2009 and the U.S. data is from 2007.

**Table 6.0: Leading Causes of Death in Each of the 6 Counties in Region 10**

Rank	Montrose	Delta	Gunnison	San Miguel	Ouray	Hinsdale	Colorado	U.S.
1	Cancer	Heart Disease	Cancers	Cancers	Cancers	Cancers	Cancers	Heart Disease
2	Heart Disease	Cancers	Heart Disease	Heart Disease	Heart Disease	Cerebro-vascular Disease	Heart Disease	Cancer
3	Chronic Lower Respiratory Disease	Chronic Lower Respiratory Disease	Unintentional Injury (Non Motor Vehicle)	Motor Vehicle	Motor Vehicle	Other	Chronic Lower Respiratory Disease	Cerebrovascular Disease
4	Cerebro-vascular Disease	Cerebro-vascular Disease	Chronic Lower Resp. Disease	Diabetes & Unintentional Injuries (Non Motor Vehicle)	Unintentional Injury (Non Motor Vehicle) & Chronic lower respiratory disease		Cerebrovascular disease	Lower Respiratory Disease
5	Unintentional Injuries (Non Motor Vehicle)	Influenza& Pneumonia	Alzheimer's Disease	Diabetes & Unintentional Injuries (Non Motor Vehicle)	Chronic lower respiratory disease		Unintentional Injuries (Non Motor Vehicle)	Unintentional Injuries (Includes MV Crashes)
6	Alzheimer's Disease	Unintentional Injury (Excluding Motor Vehicle)	Motor Vehicle	Suicide	Cerebro-vascular Disease & Alzheimer's		Alzheimer's Disease	Diabetes
7	Influenza/ Pneumonia	Alzheimer's Disease	Suicide	Other			Suicide	Alzheimer's
8	Suicide	Motor Vehicle	Other		Other		Diabetes	Flu and Pneumonia
9	Motor Vehicle & Diabetes	Diabetes					Influenza/Pneumonia	Nephrosis
10		Suicide					Motor Vehicle	Septicemia

Figure 6.6 also shows death data except it shows death rates rather than pure number of events, as in Figures 6.0-6.5. The death rate is the number of deaths per 100,000 adjusted by age, allowing a comparison that is not affected by different age demographics between populations. In 2007 deaths caused by heart disease in the United States were at a rate of 126 per 100,000 populations. Healthy People 2020 set the goal to reduce that rate to 100.8.<sup>22</sup> All but Hinsdale County will need to reduce the heart disease death rate to meet this goal of 100.8.

<sup>22</sup> From Healthy People 2020, Heart Disease and Stroke, accessed July 2011, see; <http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=21>

**Figure 6.6 Region 10 Top Causes of Death by County and in Colorado**

Data Source: CDPHE COHID Death Statistics

Death rates are used so that comparisons can be made between different populations, or groups of people. For instance, a rate is used so that comparisons between a county and the state of Colorado can be made. In an attempt to show a more accurate death rate for the smaller counties 19 years of data on deaths lumped together to create one average death rate for each location in Figure 6.6. This shows that Montrose County has a slightly higher death rate due to cancer than the state of Colorado and Delta County has higher rate of heart disease than the state. Hinsdale County has a higher death rate due to strokes than the state rate. Montrose has a higher rate of deaths due to Chronic Lower Respiratory Disease (CLRD). All but Hinsdale County have a higher death rate due to unintentional injury than the state (see Injury Section for more information). The number of deaths and the death rates are calculated based on the residence of the person, rather than where the death occurred.

### **Cardiovascular Health**

Although the death rate due to cardiovascular disease has been declining in the United States and in Colorado, heart disease is still the leading cause of death in the United States and in our region.<sup>23</sup> Cardiovascular disease includes among other conditions, heart disease and cerebrovascular disease (stroke).

<sup>23</sup> See, <http://www.cdc.gov/heartdisease/facts.htm>

This downward trend in the death rate seen nationally is also seen in each of the 6 counties (Table 6.1). As mentioned above, most of the 6 counties have a lower death rate than the state. However the death rate due to cardiovascular disease in Delta County does not appear to be falling as quickly as the state rate.

**Table 6.1 Cardiovascular Disease Death Rates**

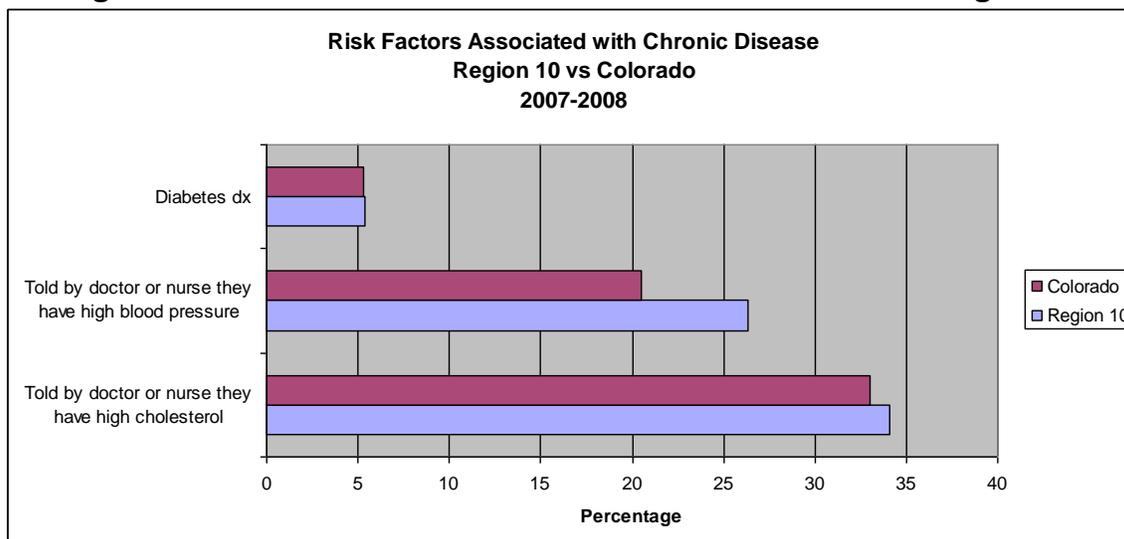
<b>Cardiovascular Disease Age-Adjusted Death Rate per 100,000 people 5 year average</b>			
	<b>1995-1999</b>	<b>2000-2004</b>	<b>2005-2009</b>
<b>Delta</b>	294.5	241.5	<b>239.8</b>
<b>Gunnison</b>	241.2	242.8	<b>138.4</b>
<b>Hinsdale</b>	230.3	119.6	<b>116.0</b>
<b>Montrose</b>	268.4	237.9	<b>211.3</b>
<b>Ouray</b>	206.2	186.7	<b>140.7</b>
<b>San Miguel</b>	168.8	176.6	<b>104.9</b>
<b>Colorado</b>	<b>298.3</b>	<b>260.6</b>	<b>212.5</b>

Data Source: Colorado Death Statistics: CDPHE

Cardiovascular disease has modifiable and non-modifiable risk factors associated with it. For instance the modifiable risk factors are smoking, poor nutrition, lack of exercise, and not keeping cholesterol and blood pressure levels under control. Diabetes is considered a chronic disease, but it is also a risk factor for developing cardiovascular disease. Figure 6.7 shows that Region 10 and Colorado have similar percentages of adults with diabetes. Figure 6.7 also shows that a higher percentage of people in Region 10 have been told they have high blood pressure and high cholesterol. Other modifiable risk factors for cardiovascular disease are also risk factors for cancer, and other chronic diseases. These risk factors are discussed further down in this section.

Blood pressure and cholesterol levels are two key indicators of one's risk of heart disease and the monitoring of both is a preventative chronic disease behavior. Healthy People 2020 has set a goal to increase to 92.9% the number of adults (18 years and older) who had their blood pressure measured within the past two years and could also state whether it was normal or high. Healthy People 2020 would also like to increase the percentage of adults who have had their blood cholesterol levels checked within 5 years to 74.6%.<sup>2</sup>

As seen in Figure 6.7 below over 25% of people in Region 10 have been told by a doctor that they have high blood pressure. The Healthy People 2020 goal for adults living with hypertension is 26.9%, meaning that Region 10 is meeting the 2020 goal. However it appears that at least 5% more adults in Region 10 report having high blood pressure than Colorado. Nearly 35% of those living in Region 10 have been told by a doctor that they have elevated cholesterol, a number that is much higher than the Healthy People 2020 goal of 13.5%.<sup>2</sup>

**Figure 6.7 Risk Factors Associated with Chronic Disease Region 10**

Data Source: BRFSS, CDPHE COHID

Table 6.2 below shows that there are differences in the percentage of adults told they have high cholesterol in each county, ranging from 27.6% in Gunnison County to 32.7% in Delta County. It also appears that Region 10 has a lower percentage of people with high cholesterol compared to Colorado, although Figure 6.7 shows a different scenario (this difference can be accounted for because of the additional years of data included in Table 6.2 below).

**Table 6.2 Percent of Adults Told They Have High Cholesterol by County**

	Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel	Region 10	Colorado
2005-2009	33.7	27.6	N/A	32.7	30.9	N/A	32.9	34

Colorado Health Statistics Section, BRFSS Data Query

Table 6.3 below shows that not quite as many people in Region 10 have had a cholesterol test in the past 5 years compared to Colorado. Except for Ouray County, the rest of the counties in Region 10 have a smaller percentage of people who have been recently tested compared to Colorado. Colorado and all of the counties except Ouray also need to improve this percentage in order to meet the 2020 goal of 74.6%.

**Table 6.3 Percent of People Who Have Had Cholesterol Checked  
in the past 5 years by County**

	Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel	Region 10	Colorado
2005-2009	69.3	72.3	N/A	71.5	88.6	N/A	71.6	73.6

Colorado Health Statistics Section, BRFSS Data Query

### **Cancer**

Like cardiovascular disease, cancer death rates for all cancers have been declining in the United States<sup>24</sup>. All of the counties, but Montrose County, appear to have lower death rates due to cancer than the state of Colorado (see Table 6.4). However cancer is still the 2nd leading cause of death in the 6 county region. Table 6.4 below shows the death rate per 100,000 people in each county. This rate for most of the counties appears to be going down over time. For Gunnison, Montrose, and San Miguel counties the trend is not as clear, as the rate appeared to go up in 2000-2004 before going down in 2005-2009.

**Table 6.4 Cancer Death Rates by County**

<b>Cancer Age-Adjusted Death Rate per 100,000 people 5 year average</b>			
	1995-1999	2000-2004	2005-2009
Delta	159.3	164.8	149.8
Gunnison	153.3	186.2	101.0
Hinsdale	153.2	93.7	74.4
Montrose	173.1	177.7	171.2
Ouray	219.1	161.4	113.5
San Miguel	70.5	175.6	129.0
Colorado	175.7	167.9	156.7

Data Source: Colorado Death Statistics: CDPHE

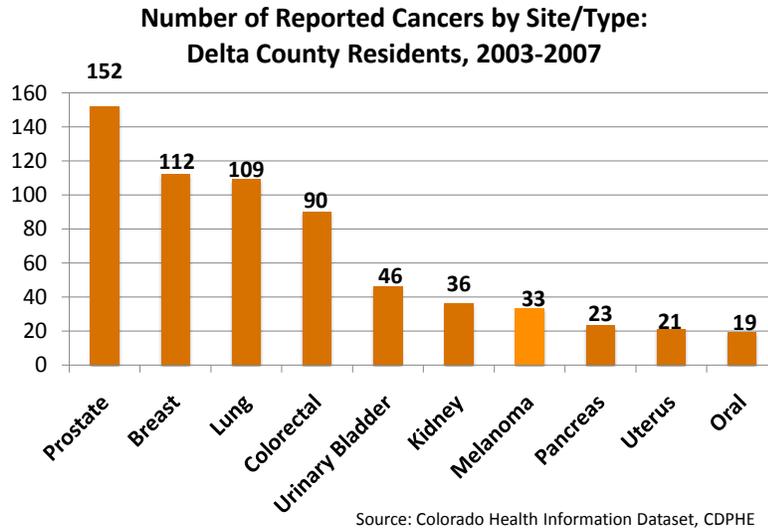
Figures 6.8 – 6.13 show the leading reported cancer sites (or types) in raw numbers between 2003 and 2007. It is important to note that this data is not showing the number of deaths due to each type of cancer, but rather the number of people diagnosed with certain common types of cancer. For instance Figure 6.8 shows that 152 people were diagnosed with prostate cancer between 2003 and the end of 2007 in Delta County. However lung cancer actually kills more people in Delta County than prostate cancer

<sup>24</sup> See, <http://www.cancer.gov/newscenter/pressreleases/2011/ReportNation2011Release>

(see Tables 6.6 and 6.8 below). Data in figures 6.8 – 6.13 give us an idea of the magnitude of the issue in each county, ranging from 166 diagnoses of prostate cancer in Montrose County to diagnosed cases 3 in Hinsdale County. Each county can see which cancer seems to be occurring more regularly within that county.

**Figure 6.8 Leading Reported Cancer Sites Delta County**

**DELTA: Leading Reported Cancer Sites/Types**



**Figure 6.9 Leading Reported Cancer Sites Gunnison County**

**GUNNISON: Leading Reported Cancer Sites/Types**

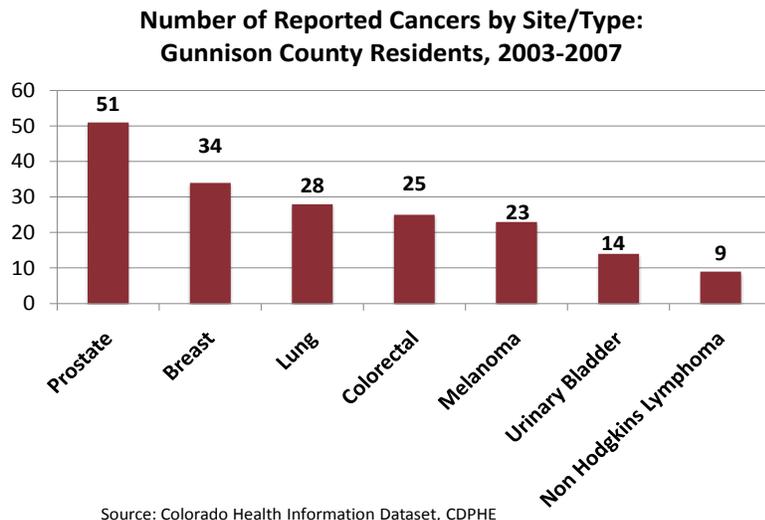
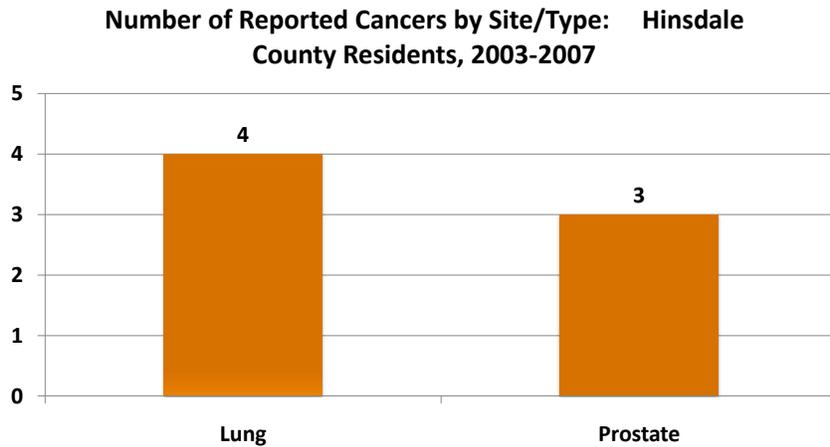


Figure 6.10 Leading Reported Cancer Sites Hinsdale County

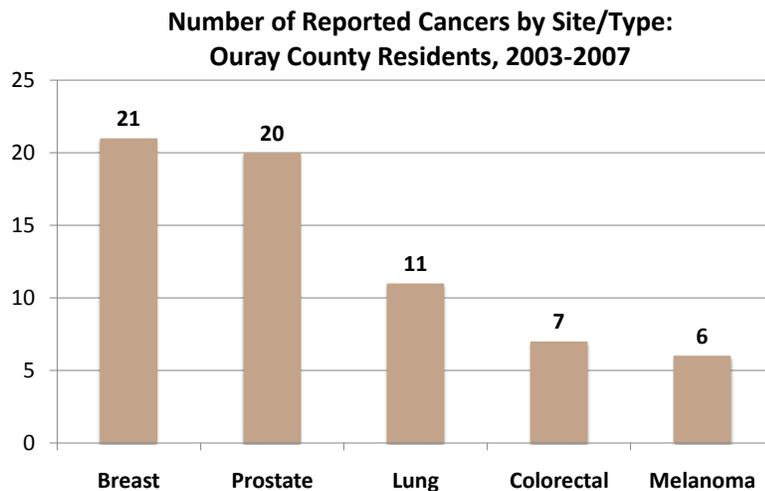
### HINSDALE: Leading Reported Cancer Sites/Types



Source: Colorado Health Information Dataset, CDPHE

Figure 6.11 Leading Reported Cancer Sites Ouray County

### OURAY: Leading Reported Cancer Sites/Types



Source: Colorado Health Information Dataset, CDPHE

Figure 6.12 Leading Reported Cancer Sites Montrose County

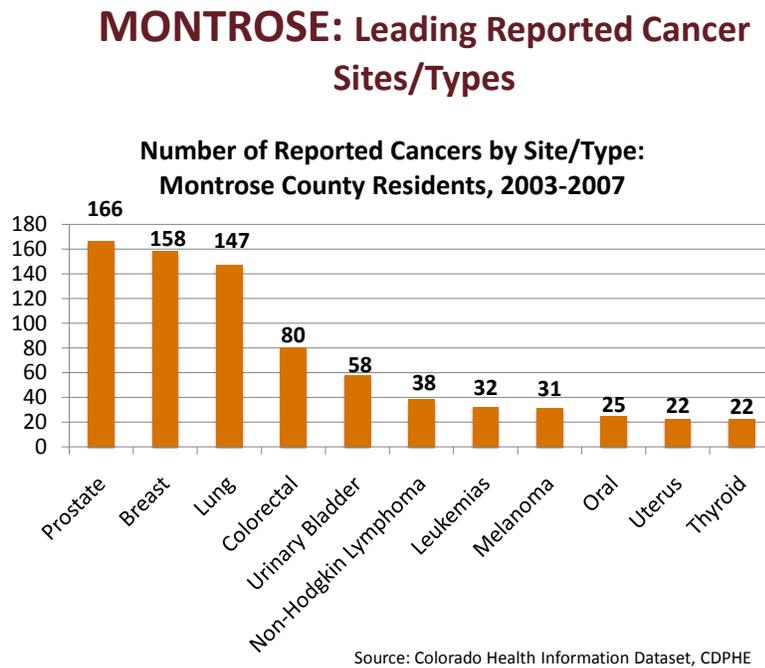
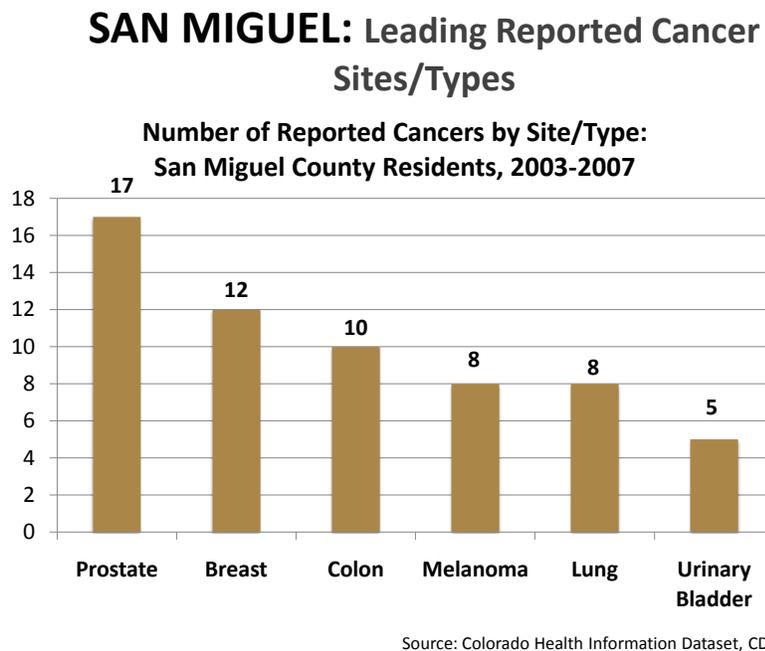


Figure 6.13 Leading Reported Cancer Sites San Miguel County



Figures 6.8 – 6.13 show that prostate, breast, and lung cancer are the top three types of cancers that people are being diagnosed with in most of the counties in the region.

Table 6.5 allows comparison between counties, Colorado and the US in terms of cancer sites. This shows that Colorado and the US both have Prostate, Breast, Lung and Colorectal Cancer in their top 4, and most of the counties in the region have a similar pattern.

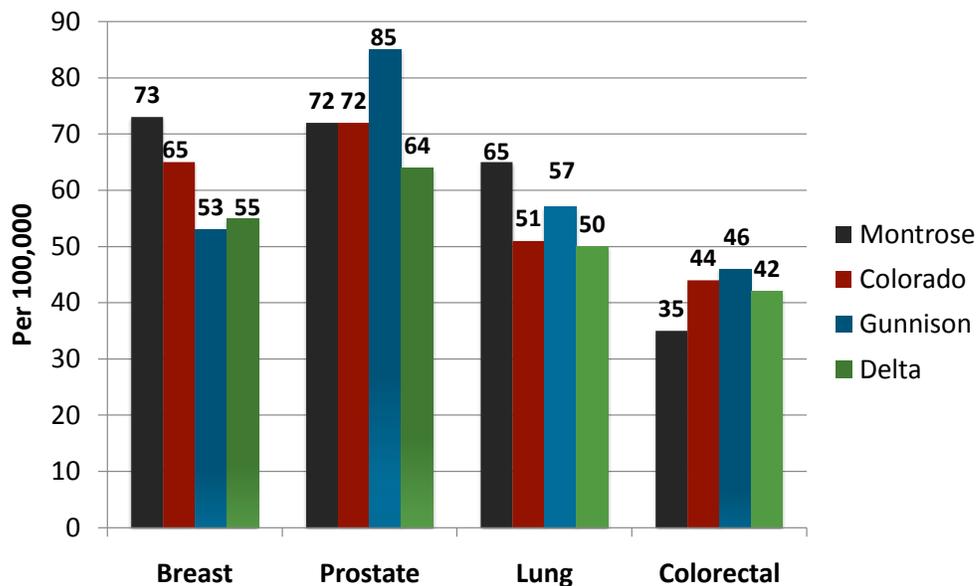
**Table 6.5 Leading Reported Cancer Sites – 6 County Comparison**

Six County Comparison LEADING REPORTED CANCER SITES, 2003 – 2007								
Rank	Montrose 42,063	Delta 31,970	Gunnison 15,392	San Miguel 7,688	Ouray 4,712	Hinsdale 850	Colorado (Year-2007)	U.S. (Year-2007)
1	Prostate	Prostate	Prostate	Prostate	Breast	Lung	Breast	Prostate
2	Breast	Breast	Breast	Breast	Prostate	Prostate	Prostate	Breast
3	Lung	Lung	Lung	Colon	Lung	Other	Lung	Lung
4	Colorectal	Colorectal	Colorectal	Melanoma	Colorectal		Colorectal	Colorectal
5	Urinary Bladder	Urinary Bladder	Melanoma	Lung	Melanoma		Melanoma	Uterus
6	Non-Hodgkin's Lymphoma	Kidney	Urinary Bladder	Urinary Bladder	Other		Non-Hodgkin Lymphoma	Urinary Bladder
7	Leukemias	Melanoma	Non-Hodgkin's Lymphoma	Other			Urinary Bladder	Non-Hodgkin's Lymphoma
8	Melanomas	Pancreas	Other				Kidney	Melanomas
9	Oral	Uterus					Thyroid	Kidney
10	Uterus & Thyroid	Oral					Leukemias	Ovary

Figure 6.14 below yields even more information on Prostate, Breast, Lung and Colorectal Cancer. Figure 6.14 shows the incidence rates of these types of cancers for the state of Colorado and the three larger of the counties in the region.

**Figure 6.14 Incidence Rates of Leading Cancer Types:  
Montrose, Gunnison and Delta Counties**

Incidence Rates of Leading Cancer Types: Montrose, Gunnison  
and Delta Counties and Colorado  
2003-2007 Average; Rate per 100,000 Population



Source: Colorado Health Information Dataset, CDPHE

Note: Number of events too small to illustrate a rate for Hinsdale, Ouray and San Miguel counties

Montrose County has a higher incidence of breast and lung cancer than the state. Gunnison County has a higher incidence of prostate, lung and colorectal. Delta County has lower rates than the state in all 4 types of cancers. Although the incidence rates showed in Figure 16 give more information on the differences in the rate at which people are being diagnosed with these 4 types of cancers, more information is needed to understand why these differences are being seen. For instance Gunnison County has an incidence rate of 85 for prostate cancer, while Colorado has a rate of 72. Is this because more people actually have prostate cancer in Gunnison County, or is it because more people are being tested for prostate cancer in Gunnison County? More research would be needed to answer these types of questions.

### Cancer Death Rates and Numbers

**Lung Cancer:** Like the nation, lung cancer is by far the most common cancer death in the region, causing 489 deaths between 1999 and the end of 2009 (Table 6.6). Montrose has a higher rate of deaths due to lung cancer than the state (Table 6.6).

Delta County has a similar death rate due to lung cancer as the state. Hinsdale County appears to have a higher death rate due to lung cancer than the state, although since Hinsdale has such small numbers of deaths this may not be an accurate representation of the situation.

**Table 6.6 Lung Cancer Death Rates**

Lung Cancer: trachea bronchus and lung	1995-1999		2000-2004		2005-2009		1999-2009	
	Number	Age-Adj Rate						
Delta	77	39.2	84	39.7	89	39.0	195	40.3
Gunnison	12	27.1	15	35.8	7	13.1	25	23.9
Hinsdale	*	*	*	*	*	*	6	59.5
Montrose	84	44.6	111	52.8	110	45.0	242	48.9
Ouray	8	40.3	5	15.7	8	33.7	15	28.0
San Miguel	*	*	3	27.3	*	*	6	28.2
Region 10	185	40.1	220	43.2	218	38.0	489	41.3
Colorado	6,724	41.7	7,494	41.0	7,890	37.7	16,746	39.2

Data Source: Colorado Death Statistics, CDPHE

*Healthy People 2020 Goal for Lung Cancer Death Rate: 45.5 per 100,000*

Lung Cancer is considered to be highly preventable, because the main cause of lung cancer is tobacco use. See the Prevention section below for more information on the smoking rates in each county. Smoking tobacco is estimated to be associated with over 80% of lung cancer cases. Radon exposure is also a contributor to lung cancer, although it is not known to what extent exactly, it is thought to be the second leading cause. Radon is discussed more fully in the Environmental Health section on page132.

**Colon Cancer:**

Colon Cancer is the next most common type of cancer death in the region. Colon cancer is preventable both by colon cancer screening tests and lifestyle changes. Overall the region had a slightly lower death rate due to colon cancer than the state between 1999 and 2009 (Table 6.7).

**Table 6.7 Colon Cancer Death Rates**

Cancer: colon and rectum	1995-1999		2000-2004		2005-2009		1999-2009	
	Number	Age-Adj Rate						
Delta	24	11.8	41	18.9	31	13.4	76	15.5
Gunnison	8	19.5	8	22.4	6	12.8	14	15.9
Hinsdale	*	*	*	*	*	*	*	*
Montrose	34	18.2	31	14.6	28	11.6	71	14.3
Ouray	3	12.6	3	13.7	*	*	15	9.9
San Miguel	*	*	3	27.3	3	32.9	6	28.2
Region 10	71	15.7	86	16.9	68	12.0	173	14.6
Colorado	2,951	18.6	3,161	17.4	3,176	15.2	6,945	16.4

Data Source: Colorado Death Statistics, CDPHE

*Healthy People 2020 Goal for Colon Cancer Death Rate: 14.5 per 100,000*

**Prostate Cancer:**

Prostate Cancer is the 3<sup>rd</sup> top cause of death due to cancer in the region. The regional death rate has been above and below the rate of Colorado during 1995 – 2009 (Table 6.8). Prostate cancer screening tests are available, however there is controversy about whether the PSA blood test causes more harm than good due to the possibility of increasing unnecessary surgeries.

**Table 6.8 Prostate Cancer Death Rates**

Prostate Cancer	1995-1999		2000-2004		2005-2009		1999-2009	
	Number	Age-Adj Rate						
Delta	23	11.1	14	6.2	29	12.1	51	10.1
Gunnison	5	15.8	6	15.1	3	6.4	11	11.9
Hinsdale	*	*	*	*	*	*	*	*
Montrose	27	14.3	23	10.7	35	14.0	64	12.6
Ouray	4	32.4	*	*	*	*	*	*
San Miguel	*	*	3	33.2	*	*	3	13.4
Region 10	59	13.0	48	9.5	68	11.8	132	11.2
Colorado	1,746	11.6	1,791	10.5	1,876	9.7	4,027	10.2

Data Source: Colorado Death Statistics, CDPHE

*Healthy People 2020 Goal for Prostate Cancer Death Rate: 21.2 per 100,000*

**Breast Cancer:**

The death rate due to breast cancer has declined for the State of Colorado. It is less clear for the region, although in general the region appears to have a lower death rate due to breast cancer compared to Colorado (Table 6.9).

**Table 6.9 Breast Cancer Death Rates**

Breast Cancer	1995-1999		2000-2004		2005-2009		1999-2009	
	Number	Age-Adj Rate						
Delta	21	12.0	25	13.4	16	8.1	44	10.3
Gunnison	5	14.9	6	12.2	3	5.7	11	9.7
Hinsdale	*	*	*	*	*	*	*	*
Montrose	23	12.7	29	13.7	23	9.8	59	12.1
Ouray	3	15.3	3	19.2	*	*	5	12.3
San Miguel	*	*	*	*	*	*	4	11.2
Region 10	54	12.1	66	12.8	45	8.0	124	10.5
Colorado	2,326	14.0	2,463	12.7	2,477	11.2	5,426	12

Data Source: Colorado Death Statistics, CDPHE

*Healthy People 2020 Goal for Breast Cancer Death Rate 20.6 per 100,000*

**Melanoma Cancer:**

Although cancer deaths due to melanomas are much less compared to other types, melanoma deaths are higher in Colorado as compared to the rest of the country. Also melanoma cancer, a type of skin cancer, is preventable with proper protection from the sun. Region 10 appears to have a slightly higher death rate due to melanoma than the state of Colorado.

**Table 6.10 Melanoma Cancer Death Rates**

Melanoma Cancer	1995-1999		2000-2004		2005-2009		1999-2009	
	Number	Age-Adj Rate						
Delta	8	4.9	8	4.1	7	3.0	16	3.4
Gunnison	4	7.1	*	*	*	*	4	2.4
Hinsdale	*	*	*	*	*	*	*	*
Montrose	3	1.8	11	5.6	11	4.6	23	4.9
Ouray	*	*	*	*	*	*	*	*
San Miguel	*	*	*	*	*	*	*	*
Region 10	16	3.7	23	4.5	19	3.2	45	3.8
Colorado	507	2.9	572	2.9	748	3.4	1,413	3.1

Data Source: Colorado Death Statistics, CDPHE

*Healthy People 2020 Goal for Melanoma Cancer Death Rate: 2.4 per 100,000*

### **Chronic Lower Respiratory Disease**

Asthma, chronic obstructive pulmonary disease (COPD), and obstructive sleep apnea (OSA) are significant public health problems in the U.S.<sup>25</sup> Asthma and COPD are among the 10 leading chronic conditions causing restricted activity.<sup>26</sup>

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.

The death rate due to chronic lower respiratory disease is higher in Montrose County than Colorado, but lower in Delta County (Table 6.11). For the smaller counties the death rate also seems to be below the state rate, although small numbers make it difficult to draw conclusions.

**Table 6.11 Chronic Lower Respiratory Disease Death Rates**

<b>Chronic Lower Respiratory Disease Age-Adjusted Death Rate per 100,000 people 5 year average</b>			
	<b>1995-1999</b>	<b>2000-2004</b>	<b>2005-2009</b>
<b>Delta</b>	49.8	45.4	49.8
<b>Gunnison</b>	28.8	44.6	38.6
<b>Hinsdale</b>	*	*	*
<b>Montrose</b>	60.9	55.6	58.0
<b>Ouray</b>	*	29.3	42.2
<b>San Miguel</b>	*	40.8	*
<b>Colorado</b>	56.1	53.3	51.3

Deaths due to Influenza and Pneumonia appear to be going down for both Colorado and Region 10. The 2008 -2009 death rate for Region 10 was 17.6 compared to 16.2 for Colorado, which is a significant improvement for Region 10 over time (Table 6.12). The gap between the Colorado rate and the Region 10 rate appears to be closing.

<sup>25</sup> HP 2010, pp 24-3

<sup>26</sup> West Central Public Health Partnership: Regional Needs Assessment, p. 65

**Table 6.12 Influenza and Pneumonia Deaths  
(Age-Adjusted Mortality Rate per 100,000 Population)**

Table 6.13 shows that the influenza and pneumonia deaths occur primarily in Delta and Montrose counties, where there has been a reduction in the number of deaths from 2005 compared to 2009 (Table 6.13).

	1998-99	2000-01	2002-03	2004-05	2006-07	2008-09
Region 10	31.7	34.9	33.6	29.5	26.5	17.6
Colorado	29.5	18.9	22.6	18.0	15.8	16.2

Data source: CDPHE, Health Statistics Section

**Table 6.13 Influenza and Pneumonia Deaths  
(Age-adjusted Mortality Rate per 100,000 Population)**

	2005		2006		2007		2008		2009	
	Rate	# cases								
County										
Delta	42.6	20	42.1	20	30.7	15	27.6	14	25.8	13
Gunnison	*	—	*	—	0	0	0	0	0	0
Hinsdale	0.0	0	0.0	0	0	0	0	0	0	0
Montrose	33.2	16	18.1	9	24.9	13	14.4	7	15.1	8
Ouray	0.0	0	*	—	0	0	0	0	0	0
San Miguel	*	—	*	—	0	0	0	0	0	0
Region 10	34.8	38	28.6	32	24.5	28	17.9	21	17.3	21
Colorado	18.0	664	16.3	609	15.4	589	17.1	683	15.4	655

\*indicates less than 3 events

Data source: [http://www.cdphe.state.co.us/hs/vs/2006/Montrose\\_2006.pdf](http://www.cdphe.state.co.us/hs/vs/2006/Montrose_2006.pdf)

COHID Colorado Death Dataset Query

## Diabetes

Public Health officials are becoming increasingly concerned about the rise of diabetes in the United States. 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.<sup>27</sup>

Diabetes affects 28.5 million people in the United States. It is associated with an increased likelihood of developing heart disease or having a stroke, kidney failure, non-traumatic lower limb amputation, and new cases of blindness. It also decreases life expectancy up to 10-15 years and is the 7<sup>th</sup> leading cause of death in the U.S.<sup>28</sup> Healthy People 2020 is concerned with the increasing rate of diabetes and has set specific goals and objectives targeting diabetes in the United States. The Healthy People 2020 goal for death caused by diabetes is 65.8 deaths per 100,000.<sup>29</sup> As seen in Table 6.16 the death rate for diabetes in Colorado and all Region 10 Counties is much lower than the Healthy People 2020 goal.

According to BRFSS data it appears that Region 10 has a lower rate of diabetes among adults than the state of Colorado, with 4.9 % in Region 10 and 5.4% in Colorado (see Table 6.14). The percentage of adults with diabetes in each county appears to vary widely, with Delta, Ouray, and San Miguel having higher rates than the state, and Gunnison and Montrose having lower rates. The rate for Hinsdale County was unavailable due to small numbers.

**Table 6.14 Percent of People Told They Have Diabetes by County**

	Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel	Region 10	Colorado
<b>2005 - 2009</b>	6.0	1.0	*	5.3	8.2	5.9	4.9	5.4

Colorado Health Statistics Section, BRFSS Data Query. \* Too few respondents

Over time the percentage of people with diabetes is increasing in Colorado, and most likely is also increasing in Region 10, although the rate appears to be going up and down somewhat (Table 6.15).

Due to the small number of deaths due to diabetes in Region 10 the death rates are not informative for most of the counties on Table 6.16. The larger counties, Montrose and Delta counties have death rates that are most likely accurate and both appear lower than the state rate.

<sup>27</sup> West Central Public Health Partnership 2007 Regional Needs Assessment

<sup>28</sup> From The Center for Disease Control, National Diabetes Fact Sheet 2011, accessed July 2011, see; [http://www.cdc.gov/diabetes/pubs/pdf/ndfs\\_2011.pdf](http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf)

<sup>29</sup> From Healthy People 2020, Diabetes, accessed July 2011, see; <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=8>

**Table 6.15 Prevalence of Diabetes (Percentages)**

	1998-99	2000-01	2002-03	2004-05	2005-09
Region 10	3.1	5.4	7.0	3.4	4.9
Colorado	3.9	4.4	4.6	4.6	5.4

Data source: CDPHE, Health Statistics Section, BRFSS

**Table 6.16 Death Rate Due to Diabetes in Region 10 by County**

<b>Diabetes Age-Adjusted Death Rate per 100,000 people 5 year average</b>			
	1995-1999	2000-2004	2005-2009
<b>Delta</b>	11.0	13.1	12.9
<b>Gunnison</b>	*	21.4	13.3
<b>Hinsdale</b>	*	*	*
<b>Montrose</b>	11.8	15.9	13.6
<b>Ouray</b>	*	*	*
<b>San Miguel</b>	*	*	36.9
<b>Colorado</b>	17.7	18.5	17.8

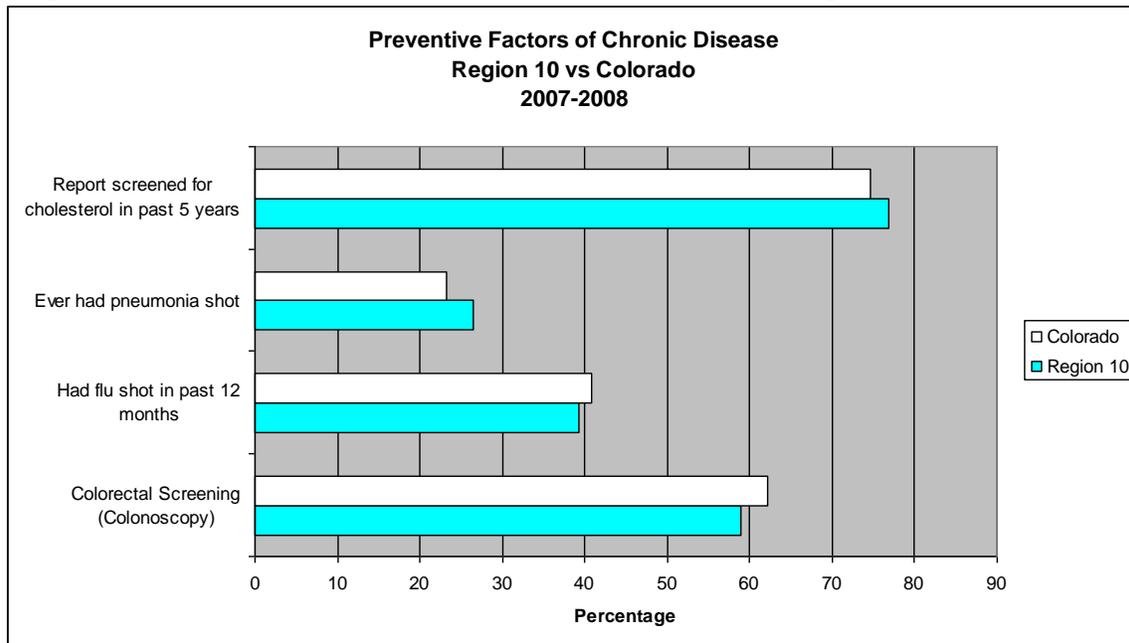
Data Source: Colorado Death Statistics: CDPHE

### ***Prevention of Chronic Diseases***

Healthy lifestyles, screenings, and vaccines are all recommended strategies for preventing chronic diseases.

### ***Screenings and Vaccines***

Early screenings include cancer screenings, such as pap smears, mammograms and colonoscopies, as well as screenings such as blood pressure, cholesterol and glucose. Vaccines are also available to help prevent chronic diseases. Figure 6.15 below shows some data that are available for Region 10 on screenings and vaccines. A lower percentage of adults in Region 10 have had a colorectal screening to prevent colon cancer than Colorado. Also slightly less people in Region 10 have had a vaccine against influenza in the past year.

**Figure 6.15 Preventive Factors of Chronic Disease Region 10 vs. Colorado**

Data Source: BRFSS, CDPHE COHID

### ***Healthy Behaviors***

Healthy lifestyle or health behaviors are also recognized as playing a large part in the development of chronic disease. Smoking tobacco is considered the number one preventable cause of chronic disease, as it is associated with 2 of the biggest killers in the United States, heart disease and lung cancer.

Table 6.17 below shows that Region 10 as a whole has a higher adult smoking rate than the state of Colorado, however within Region 10 the percentage varies widely between counties. This data shows that Ouray County has the lowest percentage of adult smokers at 8.2% while Delta County has the highest at 23.2%.

**Table 6.17 Percent of Adults who Smoke Tobacco by County**

	Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel	Region 10	Colorado
<b>2005 - 2009</b>	23.2	17.4	N/A	17.6	8.2	13.7	19.1	18.2

Data Source: Colorado Health Statistics Section, BRFSS Data Query

Consumption of fruits and vegetables is another lifestyle choice that is important for the prevention of chronic disease. Table 6.18 shows the percentage of adults who are getting the recommended amount of fruits and vegetables each day. Only about 25% of the adults in Region 10 report eating enough fruits and vegetables.

**Table 6.18 Percent of people who consume 5 or more servings of fruits/veggies per day, by County**

	Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel	Region 10	Colorado
<b>2005, 2007, &amp; 2009</b>	19.8	32.2	N/A	26.8	25.3	N/A	24.7	25

Data Source: Colorado Health Statistics Section, BRFSS Data Query

Question asked every other year

Exercise has been shown to be an important lifestyle choice for maintaining a healthy weight as well as preventing chronic diseases. Table 6.19 below shows the percentage of adults who reported having no physical/activity in the past 30 days. Region 10 had 20% of adults who reported having no physical activity in the past 30 days, although this percentage varied widely between counties. This indicates that Region 10 is not as active as the state of Colorado with a percentage of only 17.7% of adults saying they had no exercise in the past 30 days.

**Table 6.19 Percent of people who had no physical activity/exercise in last 30 days, selected counties**

	Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel	Region 10	Colorado
<b>2005 - 2009</b>	21.6	18.3	N/A	23.8	7.2	5.6	20.1	17.7

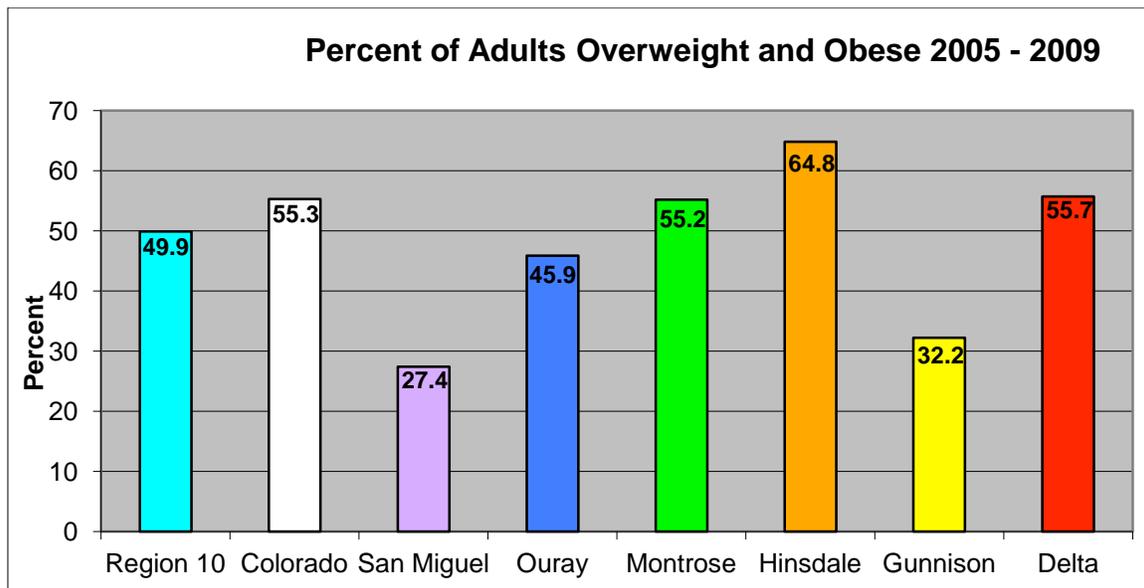
Data Source: Colorado Health Statistics Section, BRFSS Data Query

Obesity has become an increasingly concerning issue in the United States and in Colorado. Although Colorado is one of the leanest states, the percentage of people

who are overweight and obese is increasing over time. The rate of increase among Colorado youth is especially concerning.

Figure 6.16 below shows the percentage of adults who are overweight and obese in each county. On the BRFSS telephone survey adults were asked to report their height and weight. These numbers were used to calculate the person's Body Mass Index (BMI). A BMI from 25 to 29.9 is considered overweight, while a BMI 30 and above is considered obese. Figure 6.16 shows the percentage of adults who were either overweight or obese. About half of Region 10 adults are overweight or obese, which is less than the state of Colorado. This data shows that Montrose, Hinsdale and Delta counties appear to similar or higher percentages of overweight and obese than the state.

**Figure 6.16 Percentage of Adults Who are Overweight and Obese Overweight and Obesity**



Data Source: Colorado Health Statistics Section, BRFSS Data Query Note: Key Informants in Hinsdale County doubted the accuracy of this data for their county.

Healthy People 2020 Goal: Reduce the population of those who are **obese** to 30.6 percent

### **Trends and Policy Implications**

In general, there is a lower death rate in Region 10 from cancer and heart disease compared to Colorado, although it may not be a statistically significant difference. Death rates due to cancer and cardiovascular disease (including heart disease) have been decreasing in Region 10, following the trend nation-wide.

Positive and negative trends are indicated below by arrows. An up arrow indicates an improving trend, while a down arrow indicates a declining trend.

**Table 6.20 Positive and Negative Trends in Region 10**

<b>↑ Positive Trends</b>
<p>↑ <b>Cancer and Heart Disease:</b> the death rate due to cancer and heart disease has been declining in Region 10 from 1995 – 2009.</p> <p>↑ <b>Lung, breast, prostate cancer:</b> the Region 10 death rates for lung, breast and prostate cancer are all below the desired Healthy People 2020 goal.</p> <p>↑ <b>Cancer:</b> all of the counties (excluding Montrose) have a lower death rate due to cancer than the state.</p> <p>↑ <b>Heart Disease:</b> all of the counties (excluding Delta) have a lower death rate due to heart disease than the state.</p> <p>↑ <b>Stroke:</b> all of the counties (excluding Hinsdale) have a lower death rate due to stroke than the state.</p> <p>↑ <b>Breast Cancer:</b> the incidence rate of breast cancer is lower than the state rate in all of the more populous counties in Region 10 except for Montrose County.</p> <p>↑ <b>Prostate and Colon Cancer:</b> the incidence rate of prostate and colon cancer is lower than the state rate in all of the more populous counties in Region 10 except for Gunnison County.</p> <p>↑ <b>Lung Cancer:</b> the incidence rate of Lung cancer is lower than the state rate in all of the more populous counties in Region 10 except for Montrose and Gunnison Counties.</p> <p>↑ <b>Influenza and Pneumonia:</b> the death rate due to influenza and pneumonia in Region 10 is declining and getting closer to the state rate.</p> <p>↑ <b>Pneumonia Immunization:</b> there is a higher percentage of adults who have ever had a pneumonia shot for Region 10.</p> <p>↑ <b>Diabetes:</b> less adults have diabetes in Region 10 than the state</p> <p>↑ <b>Overweight and Obesity:</b> fewer adults are overweight and obese in Region 10 than in the state.</p> <p>↑ <b>Cholesterol Screening:</b> more adults in Region 10 have been screened for high cholesterol than in Colorado.</p>
<b>↓ Negative Trends</b>
<p>↓ <b>Heart Disease and Cancer</b> are the top killers in Region 10 and the state.</p> <p>↓ <b>Skin Cancer:</b> Region 10 has a higher death rate due to melanoma than the state and is above the Healthy People 2020 goal.</p> <p>↓ <b>Chronic Lower Respiratory Disease:</b> There is a higher death rate due to Chronic Lower Respiratory Disease in Montrose County than the state.</p> <p>↓ <b>Diabetes:</b> The percentage of adults with diabetes is increasing statewide, although it is not clear in Region 10 what the trend is.</p>

- ↓ **Prevention:** A lower percentage of adults in Region 10 have had a flu shot or a colon cancer screening than the state.
- ↓ **Fruits and Vegetable Intake:** Region 10 has a lower percentage of adults eating enough fruits and vegetables than the state. Over 75 percent of adults in Region 10 eat less than the recommended amount.
- ↓ **Cholesterol Levels:** Nearly 35 percent of those in Region 10 have been told by a doctor that they have elevated cholesterol levels
- ↓ **Tobacco Smoking:** Region 10 has a higher smoking rate than the state rate.
- ↓ **Physical Activity:** A higher percentage of adults are inactive in Region 10 than in the state.
- ↓ **Overweight and Obesity:** A quarter of the population in three of the six counties is overweight or obese; and half of the population of the remaining three counties is overweight or obese. As a whole, nearly 50 percent of Region 10 is overweight or obese.

### ***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, avoiding tobacco use, reducing alcohol intake, as well as lowering stress, could prevent or significantly control these chronic diseases.

There are many recommended strategies and policies to support behavior change (see list below). Some evidenced based strategies include: changing the built environment to encourage exercise and healthy eating, encouraging healthy foods in schools and other public institutions, promoting policies aimed at reducing smoking such as increasing the cost of cigarettes. Another strategy to prevent and reduce chronic disease is programs that screen for and detect disease. Early detection is critical to reducing deaths from many types of cancers. Also screening for high blood pressure and cholesterol helps to prevent chronic disease.

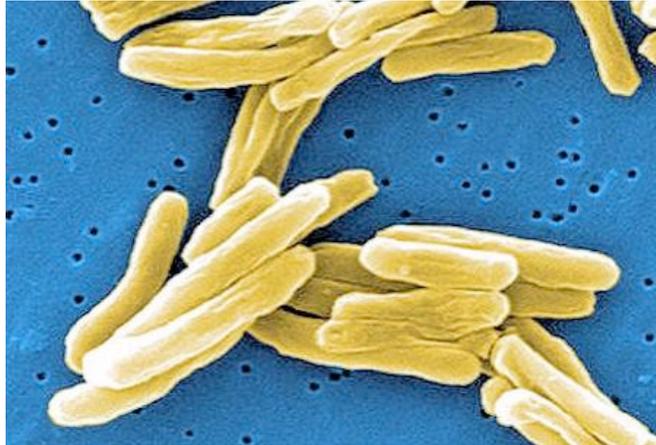
The funding of chronic disease prevention programs in Colorado and Region 10 has been dramatically reduced in recent years due to the restructuring of Amendment 35 dollars by the State of Colorado. Many counties that had tobacco prevention programs or cancer, cardiovascular and pulmonary disease prevention programs have had to discontinue those programs due to loss of state funding. Communities will have to look for other sources of funding for tobacco and chronic disease prevention programs until the state funding situation changes.

#### **Potential strategies for prevention and control include:**

- ⇒ Community-level wellness programs;
- ⇒ Government planning of active communities;
- ⇒ School wellness policies;
- ⇒ Tobacco prevention policies

- ⇒ 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;
- ⇒ 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.





## 5. INFECTIOUS DISEASES

### **Defining the Issue**

Infectious diseases are a major cause of serious illness and death. They may be transmitted through food, 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 the limitations of available information, accurately assessing the relative risks to public health and targeting scarce resources accordingly remains a challenge.

### **Key Informant Analysis**

At a meeting of the West Central Partnership on March 28, 2011, public health staff were asked to give an analysis of the strengths and weaknesses of the Communicable Disease program in our region. Providing communicable disease surveillance is a critical duty of Public Health. Communicable Disease prevention and Environmental Health are the two responsibilities most critical to Public Health. By importance, the following were considered weaknesses:

- Lack of Environmental Health/Public Health integration in all counties
- Immunization tracking: No uniform method for determining immunization rates in a county.

- Underreporting of communicable diseases by health care providers
- Anti-vaccine sentiment with no cohesive response

Generally, all considered the communicable disease surveillance system strong in our region and the state as evidenced by staff expertise, the Colorado Electronic Disease Reporting System (CEDRS), Health Alert Network (HAN) alerts, good support for counties from the state level Colorado Department of Public Health and Environment (CDPHE), reporting requirements from CDPHE, continuing education, and the CDPHE website.

### **Data for Region 10 and Colorado**

#### ***Leading Types of Reported Communicable Diseases***

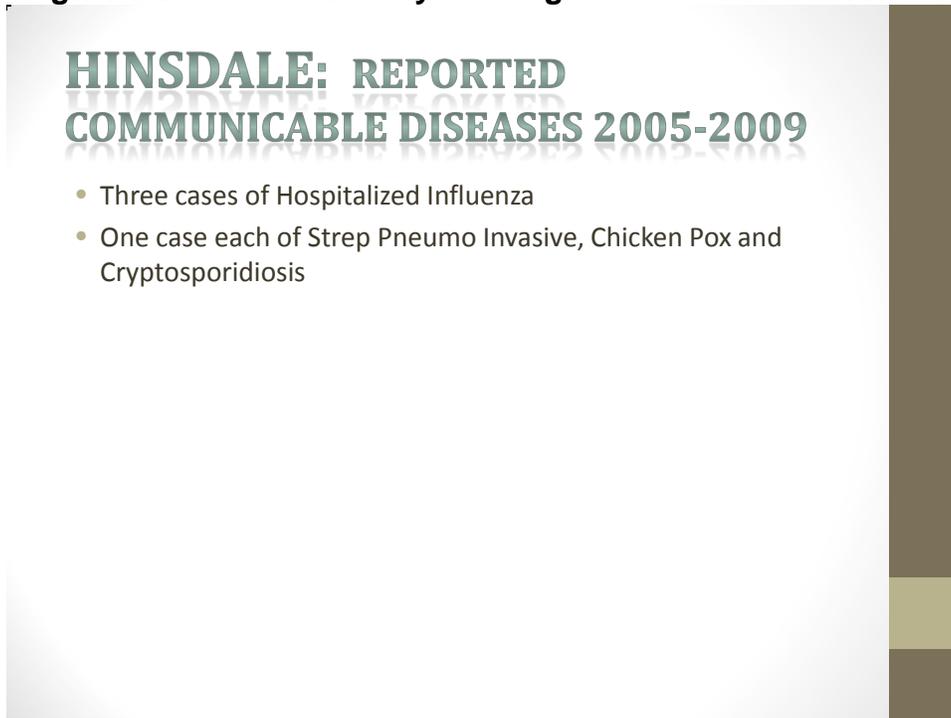
The CDPHE Reported Disease database includes statistics on the annual numbers of diagnosed cases of infectious diseases. Diseases such as tuberculosis that pose a serious health threat and have mandatory reporting requirements are more likely to be included in the database. The number of reported cases accurately indicates the actual number of cases diagnosed annually. However, the number of cases reported, may not accurately reflect the disease incidence or prevalence. For example, cases of varicella (chicken pox) may be unreported because many people do not go to the doctor when they contract it (see Table 5.0).

**Table 5.0 Most Common Reportable Disease Cases,  
CDPHE Reportable Conditions;  
West Central Public Health Region**

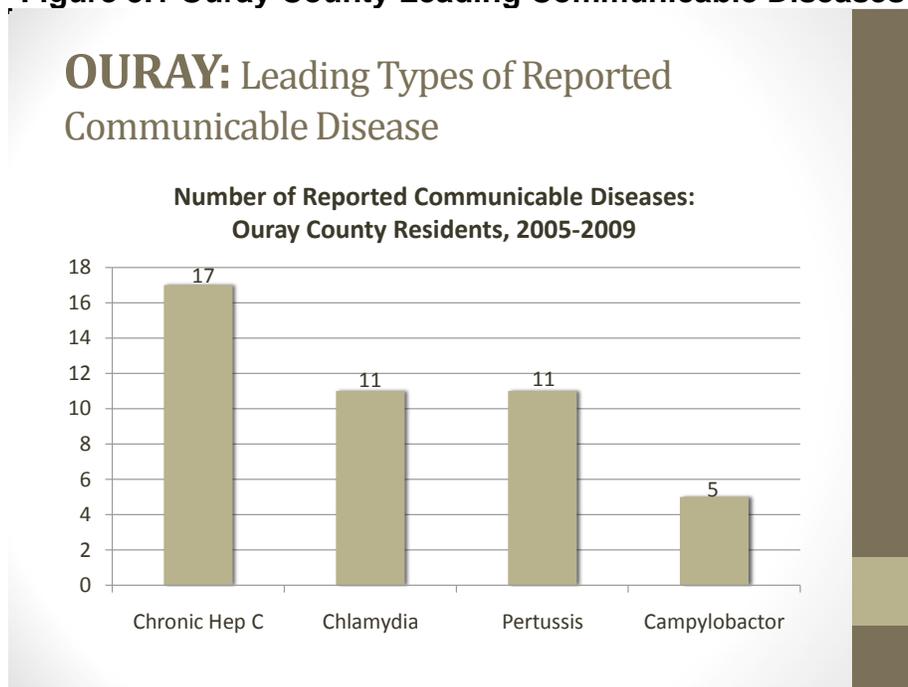
2007	2008	2009
Hep. C chronic <b>80</b>	Hep. C chronic <b>55</b>	Hep C chronic <b>54</b>
Chicken Pox <b>43</b>	Chicken Pox <b>41</b>	Influenza (hosp) <b>28</b>
Campylobacter <b>25</b>	Campylobacter <b>19</b>	Campylobacter <b>26</b>
Salmonella <b>13</b>	Influenza (hosp) <b>19</b>	Salmonella <b>18</b>
Giardia <b>10</b>	Giardia <b>12</b>	Giardia <b>16</b>
West Nile Virus <b>9</b>	Strep. Pneumo Invasive <b>12</b>	Strep Pneumo Invasive <b>11</b>
Pertussis <b>6</b>	Salmonella <b>10</b>	Chicken Pox <b>8</b>

In 2007 there were 6 cases of West Nile Virus reported in Delta County and 3 cases reported in Montrose County. None were reported in subsequent years. Chronic Hepatitis C is the number one reportable condition each year.

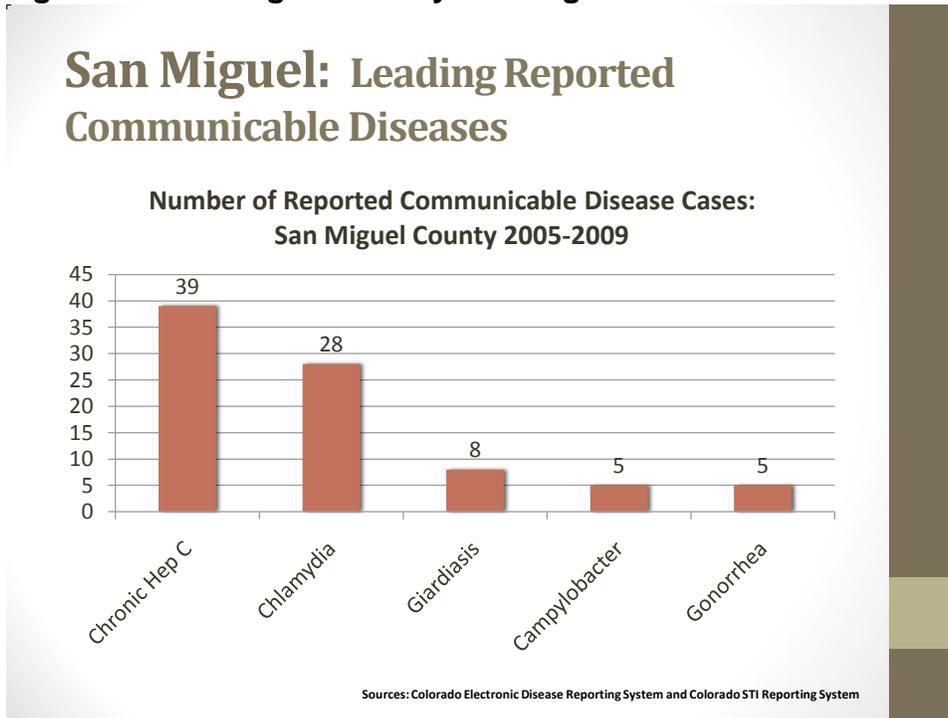
**Figure 5.0 Hinsdale County Leading Communicable Diseases**



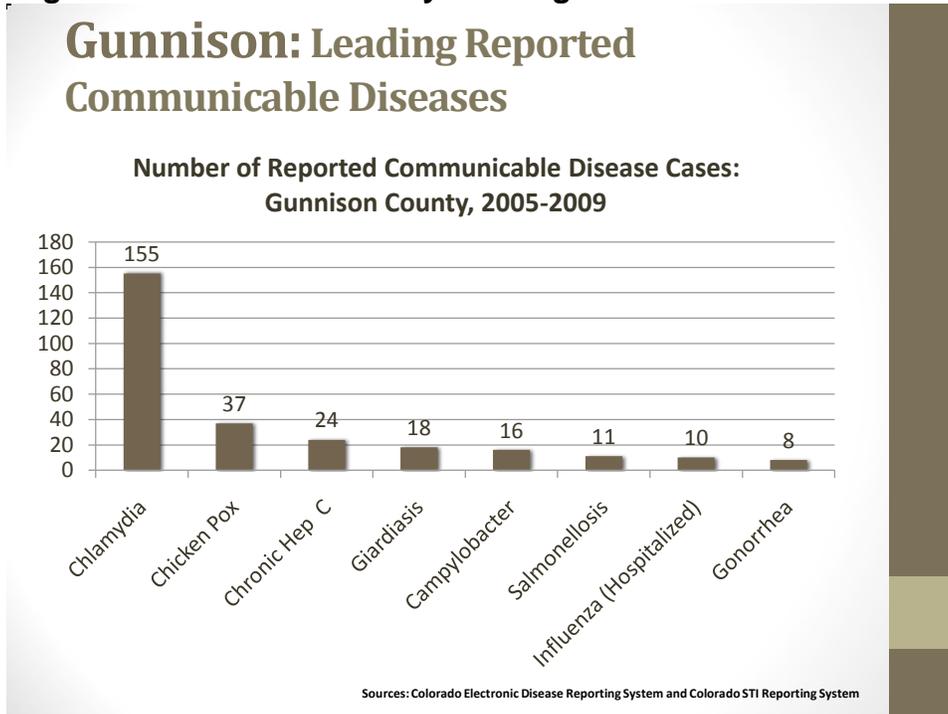
**Figure 5.1 Ouray County Leading Communicable Diseases**



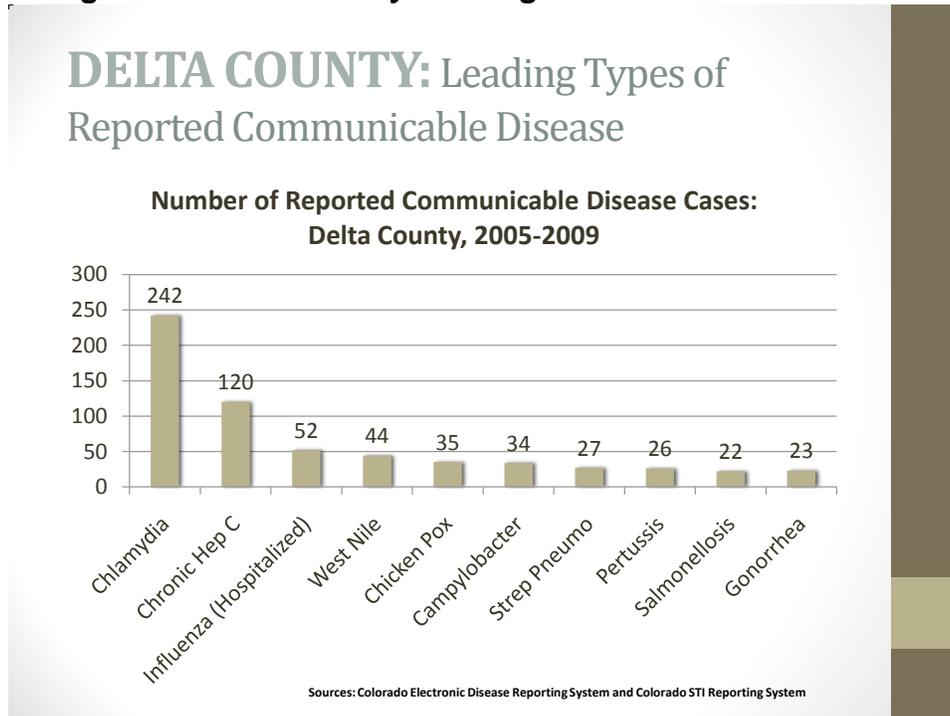
**Figure 5.2 San Miguel County Leading Communicable Diseases**



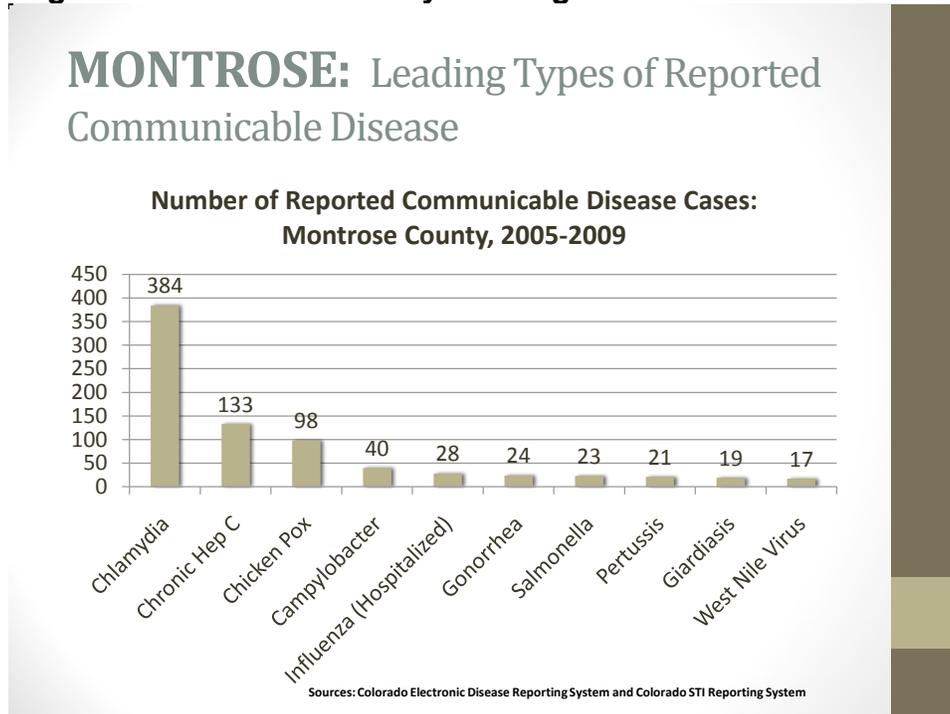
**Figure 5.3 Gunnison County Leading Communicable Diseases**



**Figure 5.4 Delta County Leading Communicable Diseases**



**Figure 5.5 Montrose County Leading Communicable Diseases**



**Table 5.1 Six County Comparison Leading Communicable Diseases**

Six County Comparison LEADING REPORTED Communicable Diseases, 2005-2009							
Rank	Montrose 42,063	Delta 31,970	Gunnison 15,392	San Miguel 7,688	Ouray 4,712	Hinsdale 850	Colorado (Year-2007)
1	Chlamydia	Chlamydia	Chlamydia	Chlamydia	Chronic Hep C	Influenza (Hospitalized)	Chlamydia
2	Chronic Hep C	Chronic Hep C	Chicken Pox	Chronic Hep C	Chlamydia	Other	Chronic Hep C
3	Chicken Pox	Influenza (Hospitalized)	Chronic Hep C	Giardiasis	Pertussis		Gonorrhea
4	Campylobacter	West Nile Virus	Giardiasis	Campylobacter	Campylobacter		Influenza (Hospitalized)
5	Influenza (Hospitalized)	Chicken Pox	Campylobacter	Gonorrhea	Other		Campylobacter
6	Gonorrhea	Campylobacter	Salmonellosis	Other			Salmonellosis
7	Salmonellosis	Strep Pneumo Invasive	Influenza (Hospitalized)				Strep Pneumo Invasive
8	Giardiasis	Pertussis	Gonorrhea				Hepatitis B
9	West Nile Virus	Salmonellosis	Other				Chicken Pox
10	Other	Gonorrhea					Giardiasis

### ***Tuberculosis***

From 1993-2001 there were 16 reported cases of pulmonary tuberculosis (TB) and three cases of extrapulmonary TB. From 2002-2010 there were 4 reported cases of TB in Region 10 counties, there have not been any reported cases of active TB since 2009.<sup>30</sup>

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, putting 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

<sup>30</sup> Data for Region 10 counties was provided by the CDPHE Tuberculosis Program. See; <http://www.cdphe.state.co.us/dc/tb/statistics.html>

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 was the most commonly reported reportable condition in Region 10 for the period of 2004-2009.<sup>31</sup> 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 2007-2009, varicella, pertussis and influenza are vaccine-preventable. 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 in 2007 and 2008. There were 8 reported cases in 2009. In the region the number of pertussis cases since the 2007 health assessment have decreased considerably

---

<sup>31</sup> The CDPHE database for reportable disease statistics

**Table 5.2 Influenza-Associated Hospitalizations by County by Diagnosis**

	Total Number of Cases
Delta	11
Gunnison	1
Hinsdale	0
Montrose	11
Ouray	0
San Miguel	0

**04/25/10 through 05/01/10**

Data Source: Colorado Department of Public Health and Environment, 2010

Notes: More confirmatory testing is being done in the Denver Metro area due to a specially funded enhanced surveillance project. This is expected to result in more complete ascertainment of influenza hospitalizations in the Denver Metro area compared to other parts of the state.

Total Number of Cases includes; Type A, Type B, 2009 H1N1, H3, and H1 from 08/30/09-05/01/10

**Table 5.3 Influenza and Pneumonia Deaths  
(Age-adjusted Mortality Rate per 100,000 Population)**

	2005		2006		2007		2008		2009	
	Rate	# cases								
<b>County</b>										
Delta	42.6	20	42.1	20	30.7	15	27.6	14	25.8	13
Gunnison	*	—	*	—	0	0	0	0	0	0
Hinsdale	0.0	—	0.0	—	0	0	0	0	0	0
Montrose	33.2	16	18.1	9	24.9	13	14.4	7	15.1	8
Ouray	0.0	—	*	—	0	0	0	0	0	0
San Miguel	*	—	*	—	0	0	0	0	0	0
Region 10	34.8	38	28.6	32	24.5	28	17.9	21	17.3	21
Colorado	18.0	664	16.3	609	15.4	589	17.1	683	15.4	655

\*indicates less than 3 events

Data source: [http://www.cdphe.state.co.us/hs/vs/2006/Montrose\\_2006.pdf](http://www.cdphe.state.co.us/hs/vs/2006/Montrose_2006.pdf)

COHID Colorado Death Dataset Query

***Influenza and Pneumonia Vaccination***

Influenza (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. Between 2005-2009 almost 70 percent of the adult over 65 population in Region 10 obtained a flu shot. In 2007 30% of adults got a flu shot. Pneumonia vaccine is less common. People aged 65 and older are at highest risk of serious health problems and death resulting from complications of influenza and pneumonia. Data on deaths from these causes are included in *Section 4 Chronic Diseases*.

**Table 5.4: Percentage of Adults over 65 who reported getting a Flu Shot 2005-2009**

<b>County</b>	<b>Percent</b>
<b>Delta</b>	69.1
<b>Gunnison</b>	69.8
<b>Hinsdale</b>	N/A
<b>Montrose</b>	69.9
<b>Ouray</b>	N/A
<b>San Miguel</b>	N/A
<b>Region 10</b>	69.3
<b>Colorado</b>	75.9

Data Source: Colorado Health Statistics, BRFSS Query

***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). These Region 10 cases 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. In 2007 there were six cases of West Nile virus reported in Delta County and three cases reported in Montrose County. No cases were reported in the region in subsequent years.

## Sexually Transmitted Diseases

The most common communicable disease and the most common sexually transmitted disease (STD) is Chlamydia (Table 5.1 above). However the rates of Chlamydia are not necessarily high compared to other counties (see:

[http://www.cdphe.state.co.us/dc/hivandstd/HIV\\_STDSurv/0405SurvReport.pdf](http://www.cdphe.state.co.us/dc/hivandstd/HIV_STDSurv/0405SurvReport.pdf).

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.

**Table 5.5 Chlamydia: Number of Cases by County**

	2003	2004	2005	2006	2007
<b>Delta</b>	40	34	48	48	50
<b>Gunnison</b>	24	29	17	19	29
<b>Hinsdale</b>	0	0	0	0	0
<b>Montrose</b>	66	76	93	66	74
<b>Ouray</b>	0	1	3	3	2
<b>San Miguel</b>	15	8	11	13	12

Data Source: CDPHE Sexually Transmitted Infection Surveillance Report, February 2009

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.

## HIV and AIDS

In 2001 there were 14 reported cases of HIV in Region 10.<sup>32</sup> 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. The number of HIV and AIDS cases in our region continues to decrease each year.

Data are reported by each county but are not included in this assessment due too small numbers and privacy considerations. Each year the diagnoses are added to a cumulative number and not reported as an annual number. The numbers reflect the total number of cases ever diagnosed, to date.

<sup>32</sup> 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, positive trend while a down arrow indicates a declining, negative trend (See Table 5.7).

**Table 5.7 Positive and Negative Trends in Region 10**

↑ Positive Trends
<ul style="list-style-type: none"> <li>↑ <b>Surveillance:</b> Communicable Disease surveillance and control is the number one priority and a statutory responsibility for Boards of Health.</li> <li>↑ <b>Surveillance:</b> Communicable Disease surveillance is strong with good support from CDPHE.</li> <li>↑ <b>West Nile Virus</b> cases are trending downward.</li> <li>↑ <b>Active Tuberculosis</b> and AIDS/HIV cases are down</li> </ul>
↓ Negative Trends
<ul style="list-style-type: none"> <li>↓ <b>Infrastructure:</b> The lack of integration of Public Health and Environmental Health departments in some of the counties is considered a barrier by professionals to a good communicable disease prevention and surveillance program.</li> <li>↓ <b>Underreporting</b> of communicable disease by providers is a continuing trend.</li> <li>↓ <b>Vaccines:</b> There remains no cohesive response to anti-vaccine sentiment in the communities.</li> <li>↓ <b>Tracking:</b> Immunization tracking is not cohesive or complete enough to produce an accurate immunization rate by county or region.</li> <li>↓ <b>CIIS:</b> Not all providers in a county are necessarily on the Colorado Immunization Information System.</li> <li>↓ <b>Influenza:</b> Percentage of adults immunized for influenza is still well below the state percentage as a whole.</li> <li>↓ <b>Pneumococcal Infection:</b> The rate of pneumococcal infection in children under age 5 in our region is higher than the state.</li> <li>↓ <b>Chlamydia</b> and <b>Chronic Hepatitis C</b> remain the leading reported communicable diseases. Chronic Hep C may be underreported.</li> </ul>

### 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.
- ⇒ As reported by the Colorado Health Institute, Colorado ranks 30<sup>th</sup> in the nation for vaccinations of young children.<sup>33</sup> Neglecting to vaccinate young children often stems from parental fears regarding possible negative effects. Educational outreach addressing vaccine misconceptions should be a public health priority.

---

<sup>33</sup> From, The Colorado Health Institute's 2010 Health Report Card, See; [www.Coloradohealthinstitute.org](http://www.Coloradohealthinstitute.org)



## 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.

Healthy People 2020 lists mental health and mental disorders as one of the topics to continue work on, stating that “mental disorders are among the most common causes of disability. Mental health disorders are the leading cause of disability in the United States, accounting for 25 percent of all years of life lost to disability and premature mortality.” Adding to the importance of mental health as a health concern is the connection between mental health and physical health. Mental health plays a major role in people's ability to maintain good physical health. Mental illnesses, such as depression and anxiety, affect people's ability to participate in health-promoting behaviors. In turn, problems with physical health, such as chronic diseases, can have a serious impact on mental health and decrease a person's ability to participate in treatment and recovery.<sup>34</sup>

---

<sup>34</sup> See: <http://healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=28>

The problems of 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. Depression is one of the leading causes of suicide.<sup>35</sup>

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.”<sup>36</sup>

According to the Center for Mental Health website, [www.centermh.org](http://www.centermh.org), “Mental Illness is second only to heart disease as the leading cause of disease in our country. Nearly 2/3 of all people with diagnosable mental disorders do not seek treatment. At the same time, Mental Illnesses have never been more treatable.” The Center for Mental Health serves all the counties included in this assessment (Delta, Gunnison, Hinsdale, Montrose, Ouray and San Miguel). According to information provided on their website, the Center provides services to roughly 5,200 people each year and in the last year responded to over 2,500 mental health emergencies in the region. In addition to other services, they have a free and confidential online screening on their website for individuals 17 and older and 24-Hour Emergency Services free of charge to everyone. The Center Mental Health is also a participant in Project Safety Net, a suicide prevention initiative of the Colorado Department of Public Health and Environment that targets parents, caregivers, and other adults who work with high risk youth aged 10 – 17.<sup>37</sup>

## **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 motor vehicle or other accidents.

Colorado has one of the highest suicide rates in the nation. According to the Office of Suicide Prevention Annual Report 2009-2010, in 2009, Colorado suicide rate of 18.4/100,000 was the highest rate on record since 1988. The number of Coloradans who died by suicide in 2009 (940) accounted for the highest single year total in the State’s history. Also, according to the same report, in 2009, suicide was the 7<sup>th</sup> leading

---

<sup>35</sup> [www.centermh.org](http://www.centermh.org)

<sup>36</sup> *Healthy People 2010*, p.37.

<sup>37</sup> See: [http://www.sprc.org/grantees/statetribe/desc/showStateTribe.asp?st\\_trID=25](http://www.sprc.org/grantees/statetribe/desc/showStateTribe.asp?st_trID=25)

cause of death for all Coloradans with 85 and older demonstrating the highest suicide rate. Suicide is the 2<sup>nd</sup> leading cause of death in 10-34 year olds.

County-level death rate data (Table 6.0 below) on suicide between 2005-2009 shows that Montrose County (21.8 deaths per 100,000 people) and Ouray (19.0 deaths per 100,000 people) both had higher rates than the state. From 1999-2007 there were 52 suicide deaths in Delta, 20 in Gunnison, under 3 in Hinsdale, 67 in Montrose, 4 in Ouray and 6 in San Miguel County. According to the coroner’s reports for this six-county service area, during January 1- May 4, 2011, eight people in Montrose County and four people in Delta County have taken their own lives with one suicide each in Gunnison and San Miguel counties. According to the *Delta County Independent* (May 4, 2011), in the first six months of 2011 there were 14 suicides in the region--only one less than for all of 2010 (15).

**Table 6.0: Age-Adjusted Suicide Rates per 100,000 Population: 1999-2009**

Suicide Age-Adjusted Death Rate per 100,000 People				
	5 Year Averages			10 Year Average
	1995-1999	2000-2004	2005-2009	1999-2009
<b>Delta</b>	25.7	23.8	14.9	20.0
<b>Gunnison</b>	21.7	14.5	13.5	16.1
<b>Hinsdale</b>	114.6	*	*	40.0
<b>Montrose</b>	22.8	20.9	21.8	20.5
<b>Ouray</b>	19.7	*	19.0	13.4
<b>San Miguel</b>	28.0	6.3	13.5	8.9

Data Source: Colorado Death Statistics: CDPHE

Note: Due to infrequency of deaths due to suicide the rates shown are the average of either 5 or 10 years of data. \* Data unreported due to small numbers

Data on the leading cause of death in each county is shown in the Chronic Disease Section on page 49 of the report. Leading cause of death for the years 2005-2009, show suicide as the 10<sup>th</sup> leading cause of death in Delta County, the 7<sup>th</sup> in Gunnison County, the 8<sup>th</sup> in Montrose and Ouray counties, and the 6<sup>th</sup> in San Miguel County. Suicide ranked 7<sup>th</sup> as a cause of death in Colorado in 2009.

*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.”<sup>38</sup>

**Mental Illness**

Major depression and other mental health illnesses are considered important predictors of suicide and attempted suicide. According to the report, *Suicide in Colorado*: “To be

<sup>38</sup> See page 20, <http://www.cdphe.state.co.us/pp/suicide/SuicideReport.pdf>

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, 3<sup>rd</sup> Edition (DSM-III)* and measured by the *NIMH Diagnostic Interview Schedule (DIS), version III.*<sup>39</sup>

*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* (now the Center for Mental Health) for the period June 1, 2006 to Feb. 28, 2010. Data are compiled for each county and reported to the Center for Mental Health 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 Table 6.1).

**Table 6.1 The Center for Mental Health Services Statistics**

	Emergency Mental Health Services		Mental Health Outpatient Services		Substance Abuse Treatment	
	6/1/06 - 5/31/07	3/1/09- 2/28/10	6/1/06 - 5/31/07	3/1/09- 2/28/10	6/1/06 - 5/31/07	3/1/09- 2/28/10
County Residents						
Delta	288	341	452	822	94	198
Gunnison	106	141	294	446	144	141
Hinsdale	4	3	23	16	5	1
Montrose	410	510	972	1248	261	352
Ouray	21	20	54	39	9	5
San Miguel	43	35	96	112	133	135
Other Colorado Residents	35	12	29	23	16	14
Out of State Residents	16	5	20	13	4	4
<b>TOTAL</b>	<b>979</b>	<b>1,067</b>	<b>2,153</b>	<b>2719</b>	<b>692</b>	<b>850</b>
Total visits including visits by adults, children, elderly and unknown Data source: Midwestern Colorado Mental Health Center Query						

<sup>39</sup> See page 71, <http://www.cdphe.state.co.us/pp/suicide/SuicideReport.pdf>

A regional health profile, called *Connecting Attitudes and Altitudes*, was put together for the Western Slope Rural Philanthropy Days in the summer of 2010. A summary of that profile follows including the data in Table 6.2:

**Table 6.2 Mental Health/Substance Abuse  
2010 County Health Rankings Report**

	Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel	Colorado
# of Poor Mental Health Days	2.9	2.3	*	3.1	1.9	2.9	3.0
Inadequate Social support	17%	13%	*	19%	9%	*	17%
Liquor Store Density	4.0	8.8	0.0	2.6	7.1	8.3	2.4

Source of Data: 2010 Colorado Health Rankings Report

<http://www.countyhealthrankings.org/colorado>

- \* Indicates data too small to report.
- Poor mental health days is a self report and occurs within the past 30 days.
- Inadequate social support indicates the percent of adults without social/emotional support...self report
- Liquor store density is the number of stores per 10,000 population

### Mental Health

Delta (6.5%), Gunnison (6.4%) and Montrose (6.3%) have slightly higher percentage of individuals needing emotional disturbance or mental health services than the state average (6.1%) The other counties are slightly below the state average.<sup>40</sup>

### Alcohol Treatment Admissions

Montrose (296.63) is the only county in the region with a rate on par with state averages (297.23 per 100,000 people). All other counties have numbers significantly lower than the state average of alcohol treatment admissions.<sup>41</sup>

### Illicit Drug Use Among Adults

More adults over age 26 across the seven counties (7.43%) than the state average (6.62%) self-report having used any illicit drug in the last month, measured by ADAD region (includes Mesa County).<sup>42</sup>

<sup>40</sup> The Mental Health Funders Collaborative, 2002, Accessed through the OMNI ASPIRE database, June 2009

<sup>41</sup> Alcohol and drug Abuse Division, 2008. Accessed through the OMNI ASPIRE database, June 2009

<sup>42</sup> SAMHSA, National Survey on Drug Use and Health 2006. Accessed through the OMNI ASPIRE database, June 2009.

## Substance Abuse

### Substance Abuse Among Adolescents

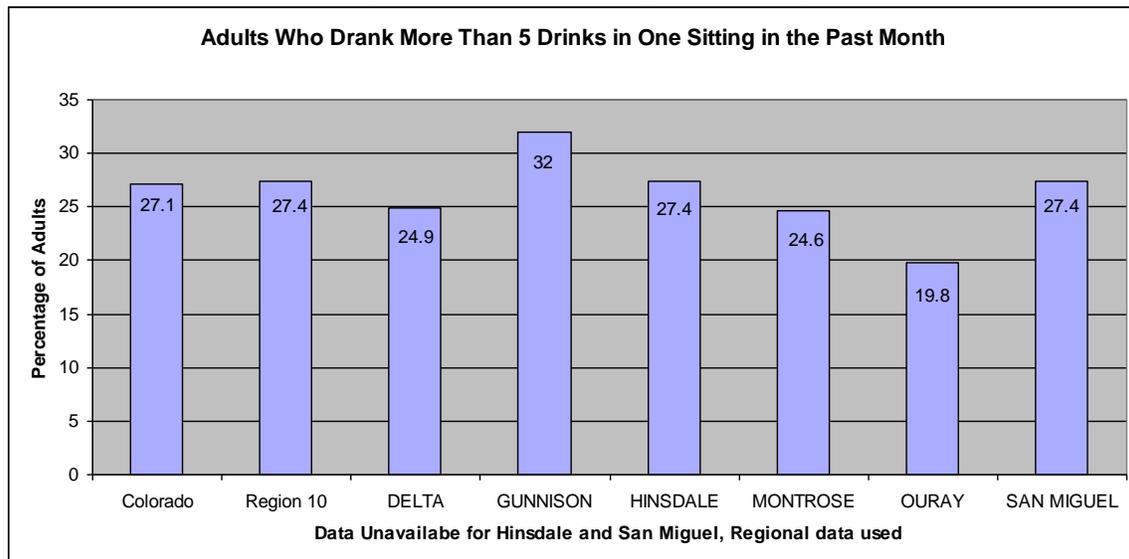
Although data on statewide substance abuse among adolescents is available from the *2005 Youth Behavior Component of the Healthy Kids Colorado Survey*, data for Region 10 is not available. Individual counties may have data available, but since it was not available for all of the counties it is not reported in this assessment. 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.

Substance abuse prevention professionals in Colorado have increasingly become concerned with new synthetic products such as synthetic THC and “bath salts”. Prevention professionals are looking towards legal regulation of these products as a goal.

### Substance Abuse Among Adults

Binge drinking is associated with health problems and is considered one indicator of substance abuse. Below in Figure 6.0 BRFSS data shows that Region 10 has a similar percentage of adults admitting to drinking more than 5 drinks in one sitting in the past month. However Gunnison County has a higher rate than the state and the rest of the counties in Region 10.

**Figure 6.0 Adult Binge Drinking**



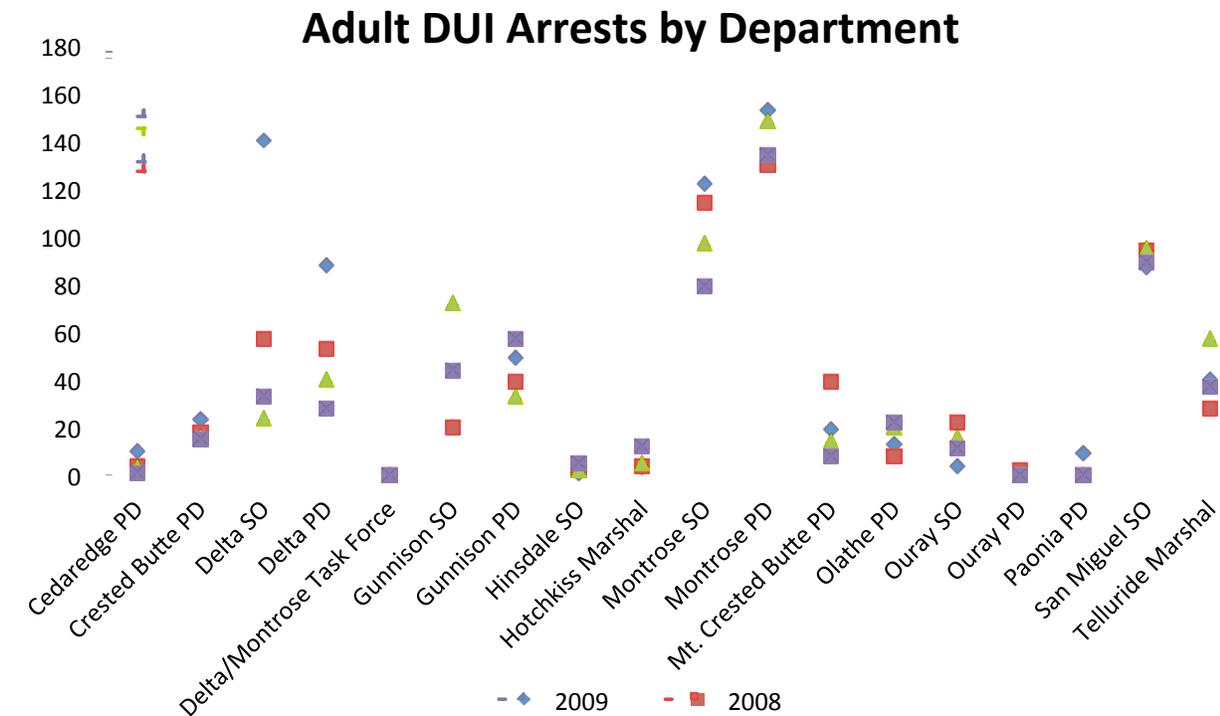
Data Source: BRFSS 2005-2009

Note: There were not enough responses for Hinsdale and San Miguel Counties

Below Figures 6.1, 6.2, and 6.3 show data on adult and juvenile driving under the influence (DUI) arrests and drug arrests by individual police department (PD), sheriff

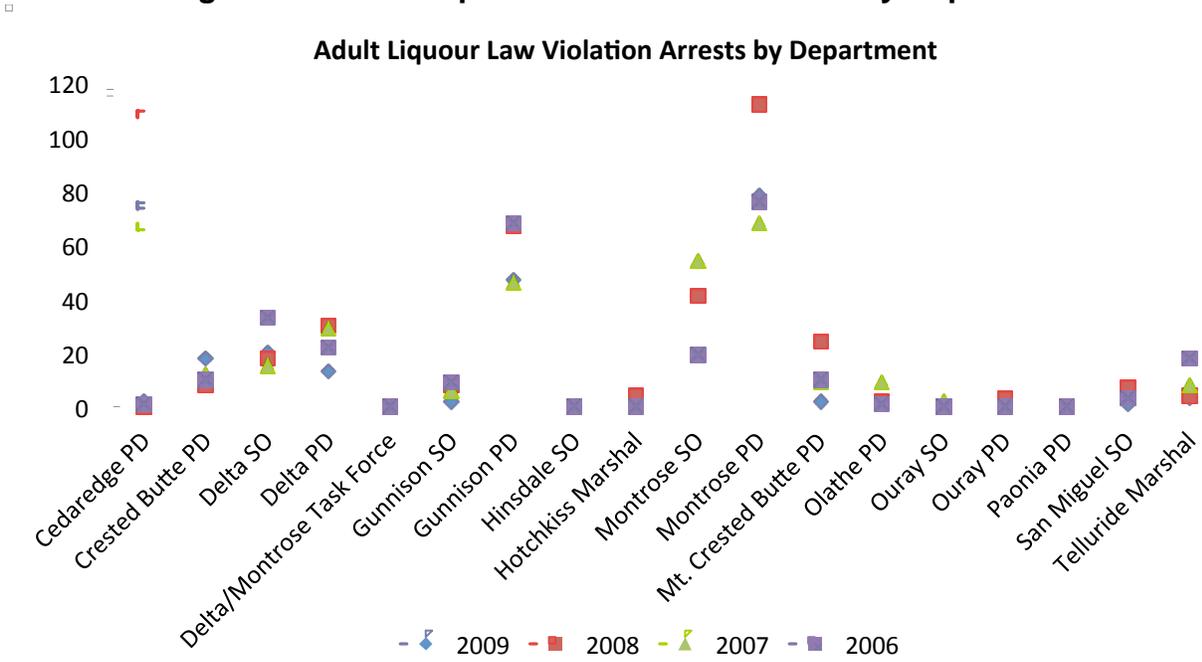
offices (SO), Marshall Offices, and Task Forces. These figures allow one to compare between locations on the number of arrests being made. However these data are difficult to interpret because there are many factors that influence the number of arrests. For instance one expects more arrests in places with larger populations. Enforcement may differ between location and over time. Factors like population and degree of enforcement may affect the number of arrests made in a given location/office.

**Figure 6.1 Adult Driving Under the Influence Arrests by Department**



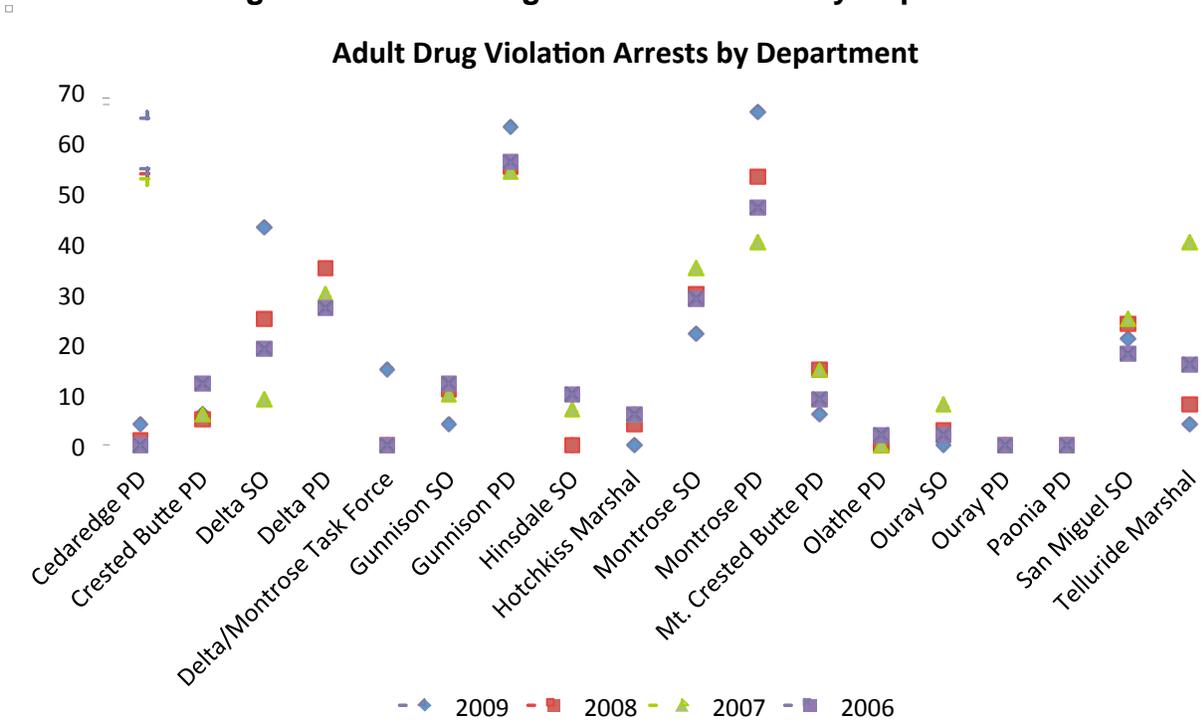
Data Source: Colorado Bureau of Investigation, Crime in Colorado Report 2009

**Figure 6.2 Adult Liquor Law Violation Arrests by Department**



Data Source: Colorado Bureau of Investigation, Crime in Colorado Report 2009

**Figure 6.3 Adult Drug Violation Arrests by Department**



Data Source: Colorado Bureau of Investigation, Crime in Colorado Report 2009

**Table 6.3 Driving Under the Influence of Alcohol (DUI)**

	<b>2006 Adult/Juven.</b>	<b>2007 Adult/Juven.</b>	<b>2008 Adult/Juven.</b>	<b>2009 Adult/Juven.</b>
<b>Cedaredge PD</b>	<b>1/0</b>	<b>3/0</b>	<b>4/0</b>	<b>10/0</b>
<b>Crested Butte PD</b>	<b>15/0</b>	<b>16/0</b>	<b>18/0</b>	<b>23/0</b>
<b>Delta SO</b>	<b>33/0</b>	<b>24/2</b>	<b>57/0</b>	<b>140/1</b>
<b>Delta PD</b>	<b>28/5</b>	<b>40/1</b>	<b>53/2</b>	<b>88/0</b>
<b>Delta/Montrose Task Force</b>	<b>NSR</b>	<b>NSR</b>	<b>NSR</b>	<b>NSR</b>
<b>Gunnison SO</b>	<b>44/1</b>	<b>73/1</b>	<b>20/0</b>	<b>20/1</b>
<b>Gunnison PD</b>	<b>57/0</b>	<b>33/1</b>	<b>39/0</b>	<b>49/0</b>
<b>Hinsdale SO</b>	<b>5/0</b>	<b>2/0</b>	<b>2/0</b>	<b>1/0</b>
<b>Hotchkiss Marshal</b>	<b>12/0</b>	<b>5/0</b>	<b>4/0</b>	<b>3/0</b>
<b>Montrose SO</b>	<b>79/3</b>	<b>97/3</b>	<b>114/6</b>	<b>122/2</b>
<b>Montrose PD</b>	<b>134/2</b>	<b>148/3</b>	<b>130/1</b>	<b>153/1</b>
<b>Mt. Crested Butte PD</b>	<b>8/0</b>	<b>14/0</b>	<b>39/0</b>	<b>19/0</b>
<b>Olathe PD</b>	<b>22/0</b>	<b>20/0</b>	<b>8/0</b>	<b>13/0</b>
<b>Ouray SO</b>	<b>11/0</b>	<b>16/0</b>	<b>22/0</b>	<b>4/0</b>
<b>Ouray PD</b>	<b>NSR</b>	<b>NSR</b>	<b>2/0</b>	<b>0/0</b>
<b>Paonia PD</b>	<b>NSR</b>	<b>NSR</b>	<b>NSR</b>	<b>9/0</b>
<b>San Miguel SO</b>	<b>89/0</b>	<b>95/0</b>	<b>94/7</b>	<b>87/0</b>
<b>Telluride Marshal</b>	<b>37/0</b>	<b>57/0</b>	<b>28/0</b>	<b>40/1</b>

Data Source: Colorado Bureau of Investigation, Crime in Colorado Reports 2006-2009

**Table 6.4 Drug Violations (DV)**

	<b>2006 Adult/Juven.</b>	<b>2007 Adult/Juven.</b>	<b>2008 Adult/Juven.</b>	<b>2009 Adult/Juven.</b>
<b>Cedaredge PD</b>	<b>0/0</b>	<b>0/0</b>	<b>1/1</b>	<b>4/0</b>
<b>Crested Butte PD</b>	<b>12/0</b>	<b>6/6</b>	<b>5/1</b>	<b>6/3</b>
<b>Delta SO</b>	<b>19/0</b>	<b>9/0</b>	<b>25/4</b>	<b>43/3</b>
<b>Delta PD</b>	<b>27/11</b>	<b>30/5</b>	<b>35/5</b>	<b>28/14</b>
<b>Delta/Montrose Task Force</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15/0</b>
<b>Gunnison SO</b>	<b>12/2</b>	<b>10/1</b>	<b>11/0</b>	<b>4/1</b>
<b>Gunnison PD</b>	<b>56/3</b>	<b>54/0</b>	<b>55/4</b>	<b>63/7</b>
<b>Hinsdale SO</b>	<b>10/0</b>	<b>7/0</b>	<b>0/0</b>	<b>0/0</b>
<b>Hotchkiss Marshal</b>	<b>6/3</b>	<b>6/3</b>	<b>4/4</b>	<b>0/0</b>
<b>Montrose SO</b>	<b>29/1</b>	<b>35/5</b>	<b>30/10</b>	<b>22/3</b>
<b>Montrose PD</b>	<b>47/11</b>	<b>40/12</b>	<b>53/28</b>	<b>66/12</b>
<b>Mt. Crested Butte PD</b>	<b>9/0</b>	<b>15/1</b>	<b>15/0</b>	<b>6/1</b>
<b>Olathe PD</b>	<b>2/0</b>	<b>0/0</b>	<b>0/0</b>	<b>0/0</b>
<b>Ouray SO</b>	<b>2/0</b>	<b>8/0</b>	<b>3/0</b>	<b>0/0</b>
<b>Ouray PD</b>	<b>NSR</b>	<b>NSR</b>	<b>0/0</b>	<b>0/0</b>
<b>Paonia PD</b>	<b>NSR</b>	<b>NSR</b>	<b>NSR</b>	<b>0/1</b>
<b>San Miguel SO</b>	<b>18/0</b>	<b>25/0</b>	<b>24/9</b>	<b>21/2</b>
<b>Telluride Marshal</b>	<b>16/1</b>	<b>40/1</b>	<b>8/1</b>	<b>4/0</b>

Data Source: Colorado Bureau of Investigation, Crime in Colorado Reports 2006-2009

**Table 6.5 Liquor Law Violations (LLV)**

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
<b>Cedaredge PD</b>	<b>1/0</b>	<b>1/3</b>	<b>0/0</b>	<b>2/0</b>
<b>Crested Butte PD</b>	<b>10/0</b>	<b>12/0</b>	<b>8/1</b>	<b>18/0</b>
<b>Delta SO</b>	<b>33/31</b>	<b>15/20</b>	<b>18/9</b>	<b>20/14</b>
<b>Delta PD</b>	<b>22/13</b>	<b>29/14</b>	<b>30/16</b>	<b>13/1</b>
<b>Delta/Montrose Task Force</b>	<b>NSR</b>	<b>NSR</b>	<b>NSR</b>	<b>NSR</b>
<b>Gunnison SO</b>	<b>9/2</b>	<b>6/0</b>	<b>8/1</b>	<b>2/0</b>
<b>Gunnison PD</b>	<b>68/15</b>	<b>46/4</b>	<b>67/0</b>	<b>47/11</b>
<b>Hinsdale SO</b>	<b>0/0</b>	<b>0/0</b>	<b>0/0</b>	<b>0/0</b>
<b>Hotchkiss Marshal</b>	<b>0/0</b>	<b>0/0</b>	<b>4/2</b>	<b>0/0</b>
<b>Montrose SO</b>	<b>19/25</b>	<b>54/22</b>	<b>41/42</b>	<b>41/25</b>
<b>Montrose PD</b>	<b>76/32</b>	<b>68/51</b>	<b>112/81</b>	<b>78/50</b>
<b>Mt. Crested Butte PD</b>	<b>10/0</b>	<b>9/1</b>	<b>24/8</b>	<b>2/0</b>
<b>Olathe PD</b>	<b>1/2</b>	<b>9/7</b>	<b>2/1</b>	<b>2/0</b>
<b>Ouray SO</b>	<b>0/0</b>	<b>2/0</b>	<b>0/0</b>	<b>0/0</b>
<b>Ouray PD</b>	<b>NSR</b>	<b>NSR</b>	<b>3/1</b>	<b>1/0</b>
<b>Paonia PD</b>	<b>NSR</b>	<b>NSR</b>	<b>NSR</b>	<b>0/2</b>
<b>San Miguel SO</b>	<b>3/0</b>	<b>3/0</b>	<b>7/40</b>	<b>1/0</b>
<b>Telluride Marshal</b>	<b>18/2</b>	<b>8/2</b>	<b>4/0</b>	<b>3/2</b>

Data Source: Colorado Bureau of Investigation, Crime in Colorado Reports 2006-200

**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.

Region 10 is on track to dramatically increase in deaths by suicide from 2010 in 2011. Montrose and Ouray have higher suicide rates than the State. The economic burden of suicide is \$3,738 in direct costs and \$1,414,842 in indirect costs: Office of Suicide Prevention, Suicide Prevention in Colorado Annual Report 2009-2010.

“Drug courts are this nation’s most effective strategy at reducing recidivism among seriously drug addicted, non-violent offenders with long criminal histories. Nationally 75% of individuals who complete drug court are not re-arrested. Drug courts save up to \$13,000 for every individual they serve and return as much as \$27 for every \$1 invested” (Delta County Independent 6-1-11).

Positive and negative trends are indicated below by arrows. An up arrow indicates an improving trend, while a down arrow indicates a declining trend. See Table 6.6.

**Table 6.6: Positive and Negative Trends in Region 10**

↑ Positive Trends
<ul style="list-style-type: none"> <li>↑ <b>Suicide:</b> 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 (except for Montrose) and is now similar to the state rate, though this may not represent a continuing trend.</li> <li>↑ <b>Drug courts</b> in our region are shown to be an effective strategy</li> <li>↑ <b>Suicide:</b> there are suicide prevention task forces throughout the region and there is a 24 hour crisis hotline and suicide hotline available to the residents of the region.</li> </ul>
↓ Negative Trends
<ul style="list-style-type: none"> <li>↓ <b>HPSA:</b> Region 10 is considered a <b>health professional shortage area</b> (HPSA) for mental health. This condition has not changed over time.</li> <li>↓ <b>Mental Health/substance abuse:</b> Mental Health Association of Colorado reports that, in hospitals statewide, the number of behavioral health care patients served by <b>emergency departments</b> has skyrocketed. In addition, there are an alarming number of arrests and incarcerations of people who have serious mental health or substance abuse problems. According to anecdotal information from healthcare providers and law enforcement personnel, Region 10 is no exception to this trend.</li> <li>↓ <b>Mental Health/substance abuse</b> is not a traditional public health function however it is a public health problem that affects every aspect of our lives and the community continues to rate it as a top priority in the community health assessment.</li> <li>↓ <b>Mental Health/substance abuse</b> is generally inadequately assessed in the community.</li> <li>↓ <b>Treatment Programs:</b> there continues to be a need for increased local investment in</li> </ul>

public mental health and substance abuse prevention and treatment programs in the region

- ⇓ **Liquor store density** is high per capita in our resort communities.
- ⇓ **Arrests/incarcerations** and people who use the emergency room with behavioral health problems continues to be high.
- ⇓ **Mental Health/substance abuse:** The number of people needing mental health/substance abuse services continues to be high.
- ⇓ **Suicide:** The Region is on track to exceed the number of suicide deaths in our region from 2010 to 2011. The economic burden of suicide, not to mention the social/emotional trauma to family and community, remains high.
- ⇓ **The stigma** attached to accessing mental health services continues to be prevalent
- ⇓ **Hinsdale County** does not have public mental health services serving them on a regular basis in the county as is the case in the other counties in the region.

### ***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 5<sup>th</sup> 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.
- ⇒ Policies limiting liquor store density are recommended to reduce alcohol abuse, however given the nature of a tourism based economy, this strategy would most likely be unacceptable in Region 10.
- ⇒ 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**.





## 7. INJURIES AND VIOLENCE

### **Defining the Issue**

Injuries can be unintentional (i.e., accidental) or intentional. The most commonly reported serious injuries are those resulting in hospitalization or death. Beyond death and any initial physical impairment, injuries have a negative impact on productivity, mental health, medical costs and long term disability<sup>43</sup>.

### **Data for Region 10 and Colorado**

Unintentional Injuries and those related to violence are a health concern that is seen across a broad-spectrum that affects all populations. Both unintentional and violence-related injuries are within the top 15 causes of death for American's of all ages<sup>1</sup> and many can be avoided. Healthy People 2020 has identified a set of goals and objectives that work towards injury and violence prevention in the United States. The following section assesses the rate of violence and injuries in Region 10 and explores new relative goals and objectives from Healthy People 2020.

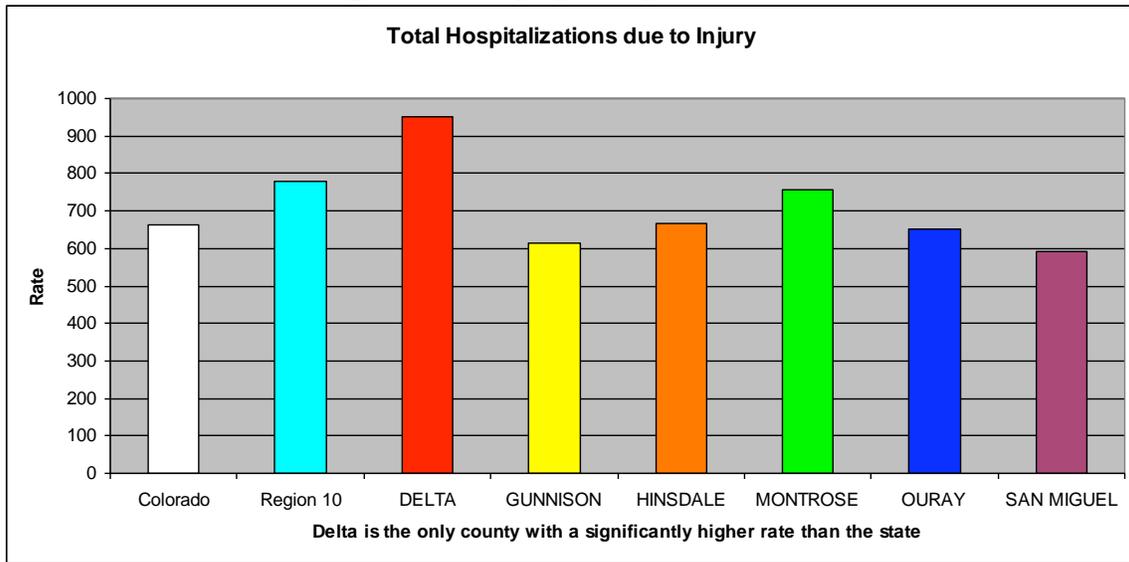
### ***Injury Requiring Hospitalizations***

In 2007, there were 617.6 hospitalizations in the region for nonfatal injuries per 100,000 populations (age adjusted to the year 2000 standard population). The Healthy People 2020 goal is to reduce hospitalizations for nonfatal injuries to 555.8 per 100,000. As seen in Figure 7.0 all of the six counties are above 555.8. Figures 7.1 – 7.7 look at the top causes of injury hospitalizations in each county in raw numbers.

---

<sup>43</sup> From, Healthy People 2020

**Figure 7.0 Injury Hospitalizations**



Data Source: Colorado Injury Hospitalization Statistics CDPHE COHID

Note: **Delta is the only county with a significantly higher rate than the state.**

Rate is calculated per 100,000 people

**Figure 7.1 Hinsdale County Leading Cause of Injury Hospitalization**

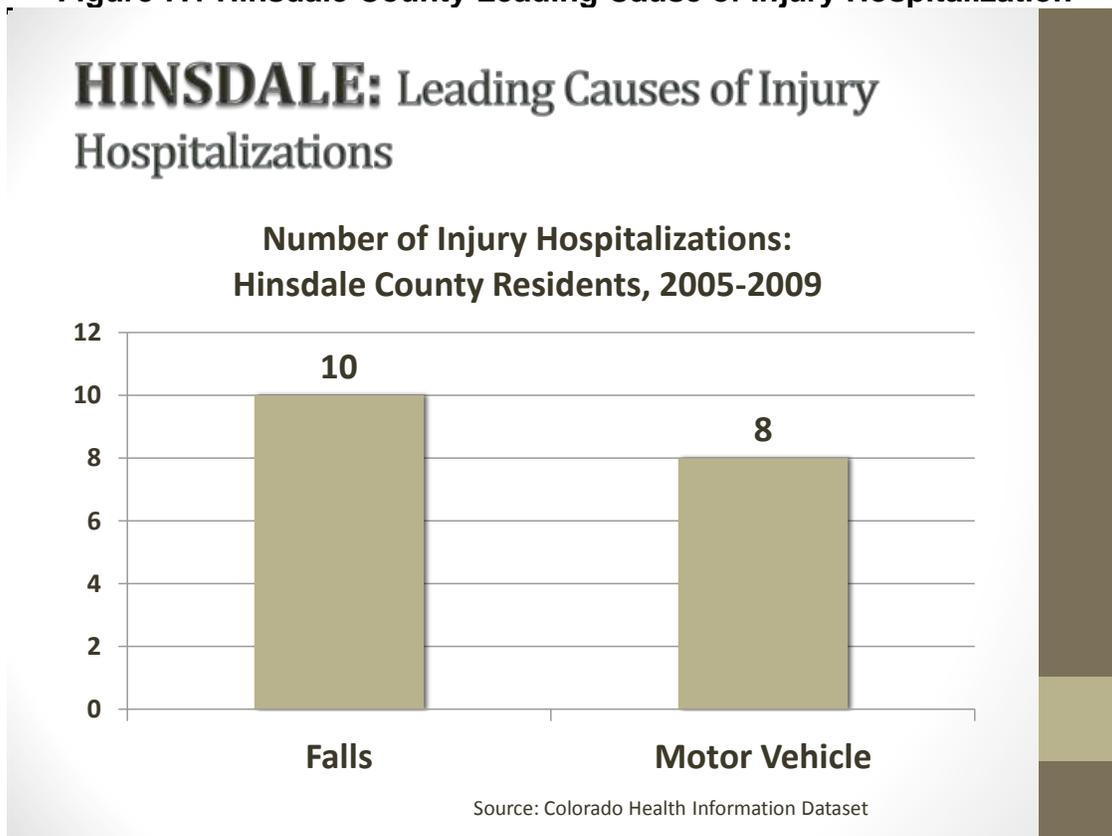


Figure 7.2 Ouray County Leading Cause of Injury Hospitalization

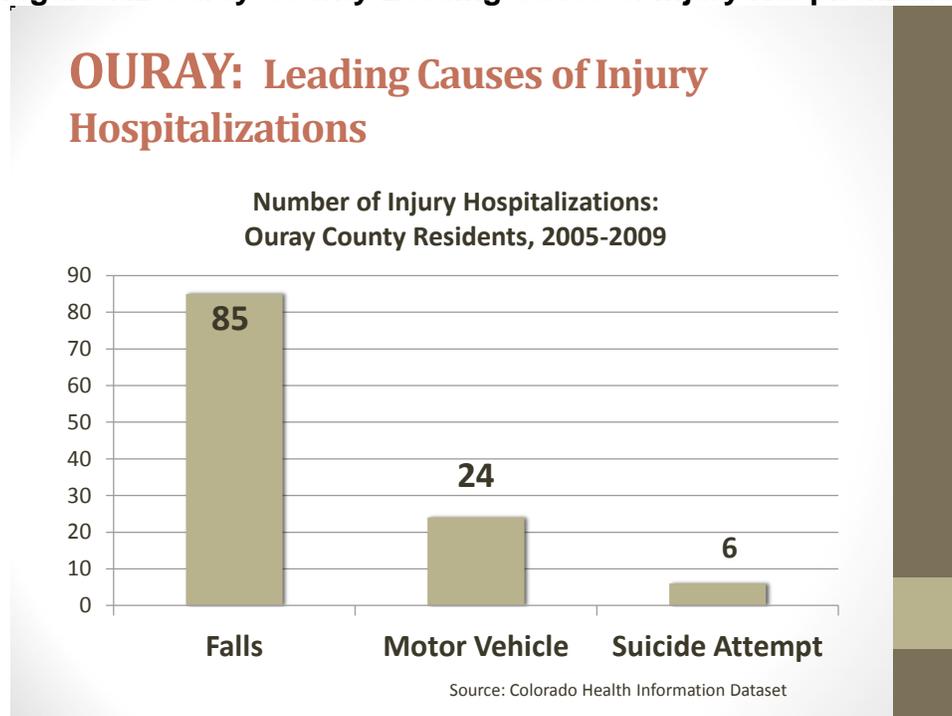


Figure 7.3 San Miguel County Leading Cause of Injury Hospitalization

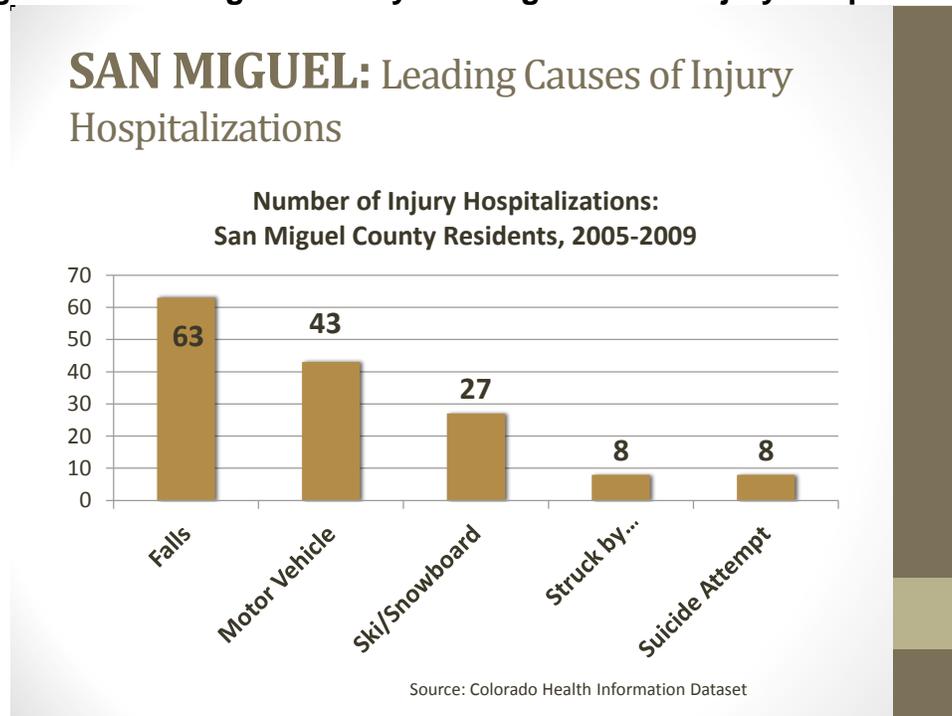


Figure 7.4 Gunnison County Leading Cause of Injury Hospitalization



Figure 7.5 Delta County Leading Cause of Injury Hospitalization

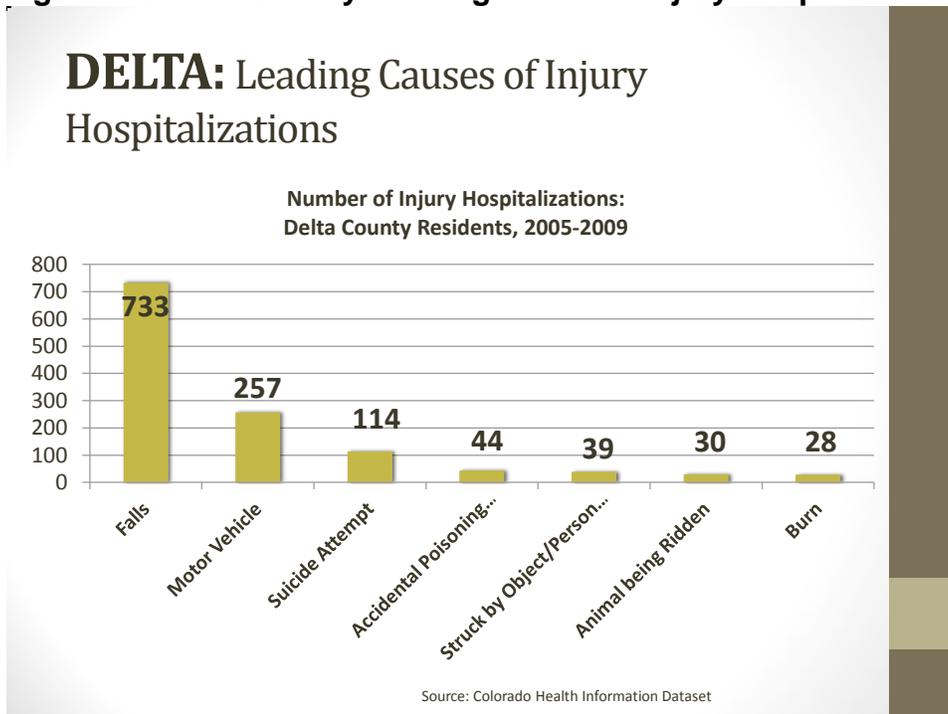
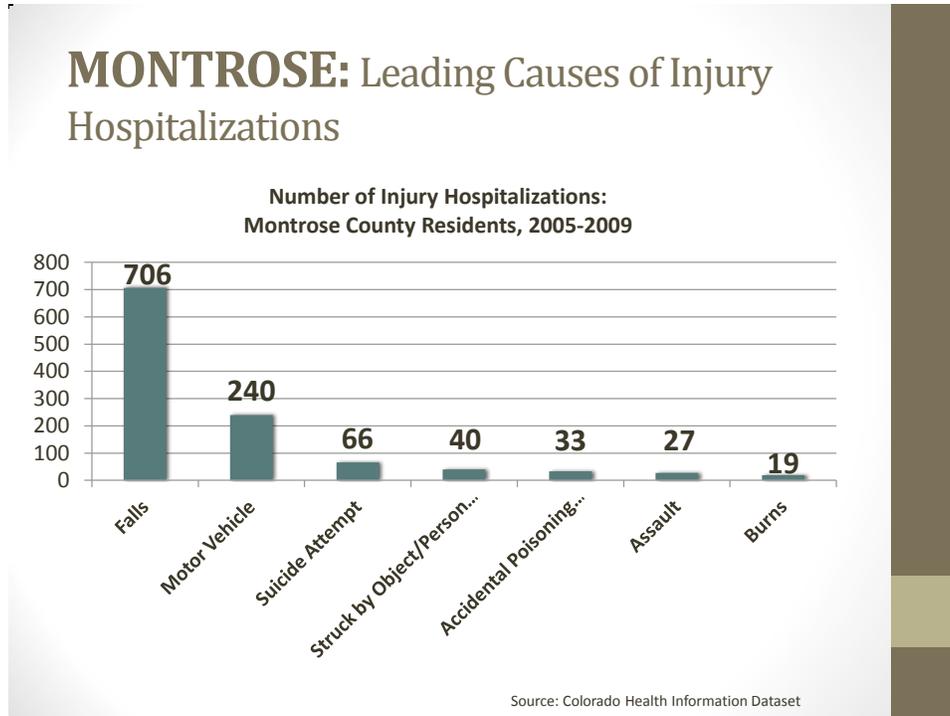


Figure 7.6



**Figure 7.7 Leading Cause of Injury Hospitalizations 6 Counties**

Six County Comparison: LEADING REPORTED TYPES of INJURY HOSPITALIZATION 2003 – 2007							
Rank	Montrose 42,063	Delta 31,970	Gunnison 15,392	San Miguel 7,688	Ouray 4,712	Hinsdale 850	Colorado (Year-2007)
1	Falls	Falls	Falls	Falls	Falls	Falls	Falls
2	Motor Vehicle	Motor Vehicle	Motor Vehicle	Motor Vehicle	Motor Vehicle	Motor Vehicle	Motor Vehicle
3	Suicide Attempt	Suicide Attempt	Ski/Snowboard	Ski/Snowboard	Suicide Attempt	Other	Suicide Attempt
4	Struck by Object/Person (Accidental)	Accidental Poisoning (Drug/Alcohol)	Bicycling	Struck by Object/Person (Accidental)	Other		Accidental Poisoning (Drug/Alcohol)
5	Accidental Poisoning (Drug/Alcohol)	Struck by Object/Person (Accidental)	Suicide Attempt	Suicide Attempt			Assault
6	Assault	Burn	Other	Other			Struck by Object/Person
7	Burns	Other					Overexertion
8	Other						Other

Data Source: Colorado Health Information Dataset

Table 7.0 displays the most common types of injuries that result in an Emergency Room visit at Gunnison Valley Hospital, Montrose Memorial Hospital and Delta County Memorial Hospital.

Falls are the leading cause of ER trauma patients at Montrose Memorial Hospital and Delta County Memorial Hospital and the second leading cause at Gunnison Valley Hospital. Fall related injuries more commonly occur within the elderly population and significantly increase their risk of death. Preventative measure against elderly falls include regular exercise, close monitoring of prescription side effects, updating and transforming the safety and functionality of living spaces and having regular eye and vision exams<sup>44</sup>. Healthy People 2020 aims for a rate of 7.0 per 100,000 population for people of all ages, and 45.3 for those 65 and older for falls leading to fatality.

**Table 7.0: Hospital Emergency Room Trauma Patients**

	<b>Gunnison Valley Hospital</b> Aug 2009-Aug 2010	<b>Montrose Memorial Hospital</b> Jan 2009-Jan 2010	<b>Delta County Memorial Hospital</b> July 2010-Sept 2010
<b>Falls</b>	19	159	124
<b>MVA</b>	29	31	32
<b>MCA</b>	10	26	4
<b>Ski/Snowboard</b>	22	27	N/A
<b>ATV/OV</b>	12	12	20
<b>MBA/Bike</b>	3	5	4
<b>Burns</b>	0	4	12
<b>Sports</b>	12	2	8
<b>Assault</b>	2	N/A	4
<b>Horse</b>	4	N/A	N/A
<b>Other/Miscellaneous</b>	5	12	36
<b>UNK</b>			8

Data Source: Gunnison Valley Hospital, Montrose Memorial Hospital, Delta County Memorial Hospital

Notes: Time periods were not consistent across data. Delta Hospital's numbers were multiplied by 4 to estimate an annual number. Note: Each hospital categorized traumas a little differently. All Terrain Vehicle (ATV) was combined with (Other Vehicle) OV for the purpose of this chart together, as was Mountain Bike Accident (MBA) with Bike. Motor Vehicle Accident (MVA), Motor Cycle Accident (MCA).

### ***Unintentional Injury Resulting in Death***

40.0 deaths per 100,000 populations were caused by unintentional injuries in the United States in 2007 (age adjusted to the year 2000 standard population), and the Healthy People 2020 goal is to reduce that number to 36.0. As seen below in Table 7.1, neither Colorado nor any of the Region 10 counties met the desired goal during any of the five year reporting periods. The Healthy People 2020 Goal is to reduce fatal injuries to 53.3 deaths per 100,000 populations.

<sup>44</sup> From, the Center for Disease Control, Accessed in 2011, See; <http://www.cdc.gov/HomeandRecreationalSafety/Falls/adultfalls.html>

**Table 7.1 Unintentional Injury Deaths**

<b>Unintentional Injury Age-Adjusted Death Rate per 100,000 people 5 year average</b>			
	<b>1995-1999</b>	<b>2000-2004</b>	<b>2005-2009</b>
<b>Delta</b>	54.4	46.0	62.3
<b>Gunnison</b>	60.0	53.8	56.0
<b>Hinsdale</b>	*	*	*
<b>Montrose</b>	47.2	54.0	59.5
<b>Ouray</b>	58.7	15.8	69.3
<b>San Miguel</b>	54.4	66.4	46.8
<b>Colorado</b>	38.7	42.0	44.4

Data Source: Colorado Death Statistics: CDPHE

Note: \* Less than 3 deaths

Table 7.2 below shows the total deaths and death rates for non-transportation injuries, including: falls, poisoning, drowning/submersions, fire-related, firearms and other causes. It is useful to look at these data because transportation causes are taken out, showing that the higher rates of injury in Region 10 are not all due to motor vehicle injuries, but rather other causes as well.

**Table 7.2 Non-Transportation Injury Deaths  
Number and Age-Adjusted Rate per 100,000 people 1990-2006 vs. 1993-2009**

	<b>Total Deaths 1990-2006</b>	<b>Age-Adj Rate 1990-2006</b>	<b>Total Deaths 1993-2009</b>	<b>Age-Adj Rate 1993-2009</b>
Delta	132	23.9	159	27.5
Gunnison	52	34.4	59	33.4
Hinsdale	3	25.7	2	*
Montrose	149	25.2	195	29.6
Ouray	15	27.8	14	22.0
San Miguel	13	22.3	12	16.3
Region 10	364	24.8	441	27.6
Colorado	13,527	22.3	16,498	25.1

Data Source: CDPHE COHID Death Statistics

Note: \* Less than 3 deaths.

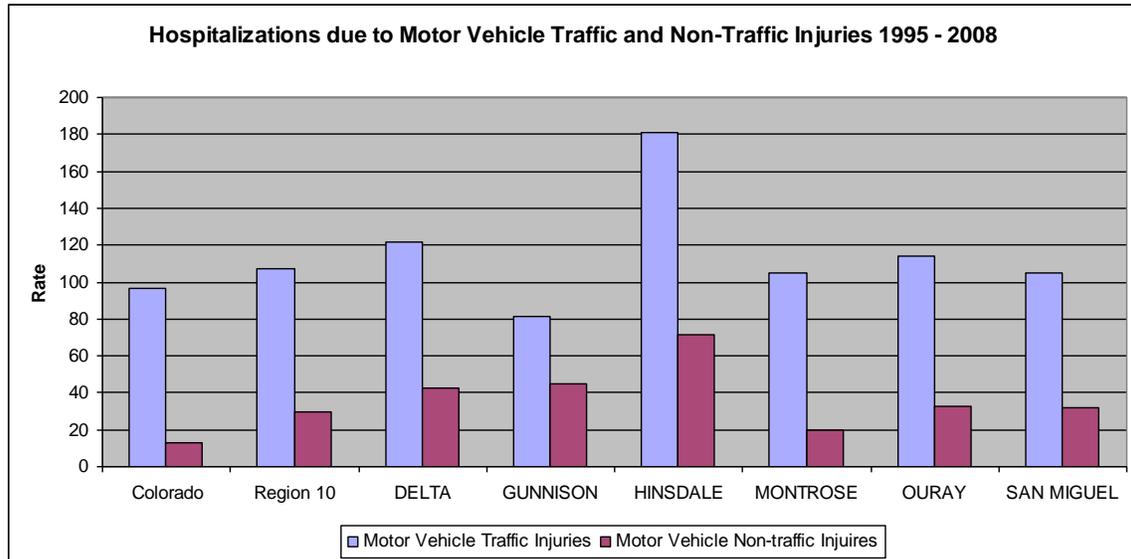
**Motor Vehicle Related Injuries**

Motor vehicle crashes are the leading cause of death in the United States for those aged 5-34, and in 2009 over 2 million adult drivers and passengers were treated in the Emergency Room due to a motor vehicle injury<sup>45</sup>. See Figure 7.7 for motor vehicle injury hospitalizations in the state of Colorado and Region 10 Counties. Figure 7.7 below

<sup>45</sup> From the Center for Disease Control, Accessed in 2011, See; <http://www.cdc.gov/motorvehiclesafety/index.html>

shows that the rate of Motor Vehicle Traffic Injuries in Delta, Hinsdale and Montrose were significantly higher than the state. The rate of Motor Vehicle Non-Traffic Injuries in Delta and Gunnison were significantly higher than the state.

**Figure 7.7 Injury Hospitalizations Motor Vehicle**



Data Source: Colorado Injury Hospitalization Statistics CDPHE COHID

Healthy People 2020 has identified goals to reduce the number of fatal and non fatal motor vehicle injuries, as well as increase the use of seat belts. (See Table 7.3 below). The Center for Disease Control states that wearing a seat belt is the number one way to prevent injury and death during a motor vehicle accident.

**Table 7.3 Healthy People 2020 Injury Goals**

	Previous U.S Rate	Healthy People 2020 Goal
<b>Deaths Caused by Motor Vehicle Accident</b>	13.8 per 100,000 (2007)	12.4 per 100,000
<b>Injuries Caused by Motor Vehicle Accident</b>	771.5 per 100,000 (2007)	694.4 per 100,000
<b>Seat Belt Use Amongst Drivers &amp; Front Seat Passengers</b>	84% (2009)	92.4%

Source: Healthy People 2020

### ***Fire Arm Related Injuries and Death***

Healthy People 2020 has set the goal to reduce nonfatal fire arm related injuries to 18.6 per 100,000 and reduce those causing death to 9.2 per 100,000. In 2007 the national rate for fire arm related injuries was 20.7 and those resulting in death were 10.2. From 1999-2009 Hinsdale, Gunnison and Ouray Counties had so few instances of fire arm related injuries and/or deaths that the Colorado Health Information Data Set did not report the occurrence. The state of Colorado is abundant in wildlife and outdoor recreation, making fire arm ownership a commonality. Understanding safe and proper owning and handling procedures of fire arms can help in reducing related accidents.

**Table 7.4: Fire Arm Related Injuries and Deaths, Manner of Incident 1999-2009**

<b>County</b>	<b>Number of Injuries</b>	<b>Number of Deaths</b>	<b>Death Rate</b>	<b>Unintentional Injury</b>	<b>Assault Injury</b>
<b>Delta</b>	21	4	19	10	*
<b>Hinsdale</b>	*	*	*	*	*
<b>Gunnison</b>	*	*	*	*	*
<b>Montrose</b>	20	5	25	8	4
<b>Ouray</b>	*	*	*	*	*
<b>San Miguel</b>	3	0	0	*	*
<b>Colorado</b>	3,358	392	11.7	803	1,717

Note: \* Indicates fewer than 1-2 events

Source: COHID, Injury Statistics

<http://www.cdphe.state.co.us/scripts/htmsql.exe/cohid/injurycustom.hsql#main>

### ***Violence and Crime***

Violence against oneself or others is a serious public health issue that causes harm to all, regardless of age, gender, race or socioeconomic status. Making alterations in our social norms and the societal acceptance of violence, and changing the policies around violence are ways to reduce its prevalence. Assault is the leading reported violent offense within Region 10 Counties in 2009 (See Table 7.5). Healthy People 2020 set the goal of reducing the national occurrence of physical assault to 14.7 per 100,000 populations.

**Table 7.5 2009 Offense Statistics for Region 10 Counties**

<b>Offenses</b>	<b>Delta</b>	<b>Gunnison</b>	<b>Hinsdale</b>	<b>Montrose</b>	<b>Ouray</b>	<b>San Miguel</b>
<b>Murder/Manslaughter:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>Negligent Manslaughter:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Forcible Rape:</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>0</b>
<b>By Force</b>	4	3	1	7	0	0
<b>Attempted</b>	0	0	0	0	0	0
<b>Robbery:</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>1</b>
<b>By Firearm</b>	1	1	0	0	0	0
<b>Knife/Cutting Instrument</b>	0	0	0	1	0	0
<b>Other Dangerous Weapon</b>	4	0	0	1	0	1
<b>StrongArm</b>	0	1	0	6	0	0
<b>Assaults:</b>	<b>209</b>	<b>135</b>	<b>3</b>	<b>319</b>	<b>9</b>	<b>23</b>
<b>Firearm</b>	4	1	0	22	0	0
<b>Knife/Cutting Instrument</b>	2	3	0	17	0	2
<b>Other Dangerous Weapon</b>	40	9	0	18	1	2
<b>Hands/Fist/Feet</b>	5	27	0	30	4	4
<b>Other Assaults</b>	158	95	3	232	4	15
<b>Total Number of Offenses</b>	<b>250</b>	<b>140</b>	<b>4</b>	<b>335</b>	<b>9</b>	<b>24</b>

Data Source: 2009 Colorado regional Crime Statistics Source; Colorado bureau of Investigation, 2009 Crime in Colorado Report

**Table 7.6 2009 Arrest Statistics for Region 10 Counties**

Arrests	Gunnison		Montrose		San Miguel		Ouray		Hinsdale		Delta	
	Adult	Juven	Adult	Juven	Adult	Juven	Adult	Juven	Adult	Juven	Adult	Juven
<b>Murder Non Negligent Manslaughter</b>	0	0	2	0	0	0	0	0	0	0	0	0
<b>Forcible Rape</b>	0	0	2	0	4	0	0	0	1	0	9	0
<b>Robbery</b>	0	0	3	2	0	0	0	0	0	0	7	0
<b>Aggravated Assault</b>	28	0	53	6	9	0	2	0	0	0	33	3
<b>Other Assaults</b>	44	2	164	6	24	1	2	1	3	0	110	11
<b>Weapons</b>	2	2	9	12	3	1	0	0	0	0	16	6
<b>Other Sex Offenses</b>	0	1	3	0	3	0	0	0	0	0	5	0
<b>Other Family Offenses</b>	5	0	14	0	1	0	1	0	0	0	57	0
<b>Total Number of Arrests</b>	79	5	250	26	44	2	5	1	4	0	237	20

Data Source: 2009 Colorado regional Crime Statistics Source; Colorado bureau of Investigation, 2009 Crime in Colorado Report

**Tables 7.6 Assault Resulting in Hospitalization by County and State 1999-2009**

	Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel	Colorado
<b>Number</b>	47	6	*	51	4	6	14,145

Note: \* Indicates fewer than 1 or 2 events

Source: COHID Injury Statistics, <http://www.cdphe.state.co.us/scripts/broker.ex>

**Child/Adolescent Injury and Violence****Table 7.8 Hospitalization due to Injury, Ages 5-9, 1999-2009**

	<b>Delta</b>	<b>Gunnison</b>	<b>Hinsdale</b>	<b>Montrose</b>	<b>Ouray</b>	<b>San Miguel</b>
<b>Total Injury Hospitalizations</b> N (Crude Rate)	40 (198.4)	10 (126.5)	*	46 (159.3)	3 (116.2)	7 (177.8)
<b>Total Unintentional Injuries</b> N (Crude Rate)	40 (198.4)	10 (126.5)	*	45 (155.8)	3 (116.2)	7 (177.8)

Notes: \* Indicated fewer than 1 or 2 events  
Rates are per 100,000 population  
Source: COHID

**Table 7.9: Hospitalization due to Injury, Intentional and Unintentional, Ages 10-14, 1999-2009**

	<b>Delta</b>	<b>Gunnison</b>	<b>Hinsdale</b>	<b>Montrose</b>	<b>Ouray</b>	<b>San Miguel</b>
<b>Total Injury Hospitalizations</b> N (Crude Rate)	70 (314.2)	13 (163.2)	3 (607.3)	52 (174.5)	6 (192.9)	18 (457.9)
<b>Total Unintentional Injury</b> N (Crude Rate)	64 (287.3)	13 (163.2)	3 (607.3)	46 (154.3)	5 (160.7)	17 (432.5)
<b>Total Intentional Injury</b> N (Crude Rate)	5 (22.4)	*	*	5 (16.8)	*	*

Note: \* Indicates 0-2 events  
Source: COHID

**Table 7.10 Hospitalization due to Injury, Intentional and Unintentional, Ages 15-19, 1999-2009**

	Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel
<b>Total Injury Hospitalizations</b> N (Crude Rate)	162 (701.4)	47	3 (660.8)	143 (474.7)	12 (381.1)	27 (685.1)
<b>Total Unintentional Injury</b> N (Crude Rate)	128 (554.2)	44 (272.9)	*	113 (375.1)	10 (317.6)	26 (659.7)
<b>Total Intentional Injury</b> N (Crude Rate)	36 (155.9)	3 (18.6)	*	28 (92.9)	*	*

Note: \* Indicates fewer than 1 or 2 events  
Source: COHID

### **Child Abuse**

Child abuse includes all harmful physical, sexual and emotional acts taken against a minor, including neglect. The Healthy People 2020 goal is to reduce that rate to 8.5. As shown in the Maternal Child Health Section on page 42 all of the Region 10 counties were under that goal rate ranging from a rate of 0 – 7.8.

### **Domestic Abuse<sup>46 47 48</sup>**

The Colorado Coalition Against Domestic Violence defines domestic violence as “a pattern of abusive behavior used by the abuser to gain or maintain control over the victim.” Domestic abuse (also referred to as intimate partner violence) includes sexual,

<sup>46</sup> The Colorado Coalition Against Domestic Abuse “What is Domestic Abuse”  
<http://www.ccadv.org/index.php/getting-help/what-is-dv>

<sup>47</sup> Center for Disease Control, “Intimate Partner Violence”  
<http://www.cdc.gov/ViolencePrevention/intimatepartnerviolence/definitions.html>

<sup>48</sup> The Domestic Violence Program Annual Report 2010  
<http://www.colorado.gov/cs/Satellite?blobcol=urldata&blobheader=application%2Fpdf&blobkey=id&blobtable=MungoBlobs&blobwhere=1251702435106&ssbinary=true>

emotional, economic and physical acts of abuse taken against a victim. Severity and incidence of violence are varying, therefore the Center for Disease Control places the definition on a continuum that includes one single act to numerous repetitive acts. There are three domestic violence crisis resources within Region 10 Colorado including; The Jubilee House located in Gunnison, the San Miguel Resource Center located in Telluride and Tri-County Resources located in Montrose. In 2010 the Jubilee House had 14 total hotline calls and served 60 victims, the San Miguel Resource Center had 103 hotline calls and served 168 victims and Tri-County Resources has 76 hotline calls and served 423 victims<sup>6</sup>. Information on reported violent crimes can be obtained from individual county law enforcement victim services. Data regarding domestic violence is often misleading as many incidences go unreported. The prevalence of actual acts versus reported acts should be considered.

**Trends and Policy Implications**

Table 7.11 displays positive and negative trends regarding injuries and violence in Region 10. Positive trends are indicated with an upward pointing arrow and negative trends with a downward pointing arrow.

**Table 7.11**

<b>↑ Positive Trends</b>
<p>↑ <b>Homicides:</b> Homicides are low in Region 10 and significantly lower than the state as a whole.</p>
<b>↓ Negative Trends</b>
<p>↓ <b>Hospitalizations:</b> Region 10 rate for injuries requiring hospitalizations is higher than the Healthy People goal.</p> <p>↓ <b>Falls:</b> Falls are the leading cause of ER trauma admissions at Montrose Memorial Hospital and Delta County Memorial Hospital and second at Gunnison Valley Hospital.</p> <p>↓ <b>Hospitalizations:</b> Delta is the only county with a significantly higher rate than the State for injury hospitalizations</p> <p>↓ <b>Hospitalizations:</b> Falls and motor vehicle accidents are the first and second leading cause of injury hospitalizations in all counties in our region</p> <p>↓ Colorado and Region 10 counties do not meet the HP 2020 goal of reducing unintentional injuries resulting in death</p> <p>↓ <b>Deaths:</b> Region 10 exceeds the Colorado rate for non-transportation injury deaths. Delta and Montrose counties have a higher percent of firearm-related injuries and deaths than the State 1999-2009.</p> <p>↓ <b>Assaults:</b> Assaults are the leading reported violent offense in Region 10.</p>

***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 (ATV) contribute to the number of motor vehicle accidents in this region. Use of alcohol and other substances also increase the risk of motor vehicle accidents.
- ⇒ Risky behaviors of youth contribute to accidents being the number one cause of death in teens and young adults.





## **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 food borne 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.<sup>49</sup>

### **Data for Region 10 and Colorado**

This section reviews available data for several areas of environmental health, including food, zoonotic and waterborne diseases, drinking water supplies, air quality and indoor contaminants (radon and lead). It also includes strengths and weaknesses of the Environmental Health programs in our region by key informants.

### **Key Informant Strengths and Weaknesses Analysis**

At a facilitated discussion, including the environmental and public health staff of the region, on March 28, 2011, an abbreviated Strengths Weaknesses Opportunities and Threats (SWOT) analysis was conducted to determine the state of Environmental Health in our region from a staff perspective. Thirteen to fourteen items of concern were identified in both the strength and weaknesses categories. The weaknesses in order of expressed importance were as follows:

---

<sup>49</sup> Healthy People 2010 pp.8-30

- The lack of monitoring of indoor air quality except by complaint
- The fragmentation of Environmental Health between the building and planning department and the Public Health department.
- Inadequate Environmental Health/Consumer Protection staffing for the needs
- Increasing Public Water System violations
- The potential relationship of mold/radon to lung cancer rates in the region
- The lack of monitoring of individual wells and small systems
- Uranium mills (radiation threat and air quality)
- Recycling of hazardous household waste
- Access to Environmental Health information for residents
- Consumer disposal of medications and septage issues

It was generally felt that since our 2007 regional health assessment, consumer protection had improved and there was more of an immediate response to problems since all the counties in the region are conducting inspections locally or regionally. It was also noted that we have experienced staff in the region, there is better State and local collaboration on water quality, there is more outreach and education to the public for radon, food safety classes are being conducted in all counties, a food safety DVD has been produced for the region and food handlers have access to Hepatitis A vaccine through the classes. Air quality is being monitored in San Miguel, Delta and Gunnison counties; there are air quality advisories when needed, no wood burning in the City of Telluride and more air pollution enforcement with State and counties. Delta County is a model for recreational water monitoring and the upper and lower Gunnison water quality monitoring has Colorado support.

### ***Food Safety***

#### ***Acute Gastroenteritis Infections from Food and Water***

Known causes of acute gastroenteritis (AGI) include viral, bacterial and parasitic food borne 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.<sup>50</sup>

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

---

<sup>50</sup> 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](http://www.epa.gov/nheerl/articles/2006/waterborne_disease/introduction.pdf)

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 8.0). Reportable conditions show that Campylobacter has been number 3 in all three years (Table 8.1), Salmonella has been in the top 7 reportable conditions all three years and Giardia has been listed as the 5th most reportable condition all in the three years 2007-2009.

**Table 8.0 Cases of Selected Incidents of AGI (2007-2009)\***

	Region 10					
	2004	2005	2006	2007	2008	2009
BACTERIAL						
CAMPYLOBACTER	16	14	16	25	19	26
E. COLI/STEC	1	2	2	2	3	5
SALMONELLA	7	12	11	10	10	18
SHIGELLOSIS	3	0	2	2	1	1
PARASITIC						
CRYPTOSPORIDIOSIS	4	1	0	0	1	0
GIARDIASIS	17	14	11	7	12	16
Data source: <a href="http://www.cdphe.state.co.us/dc/CODiseasestatics/index.html">http://www.cdphe.state.co.us/dc/CODiseasestatics/index.html</a>						

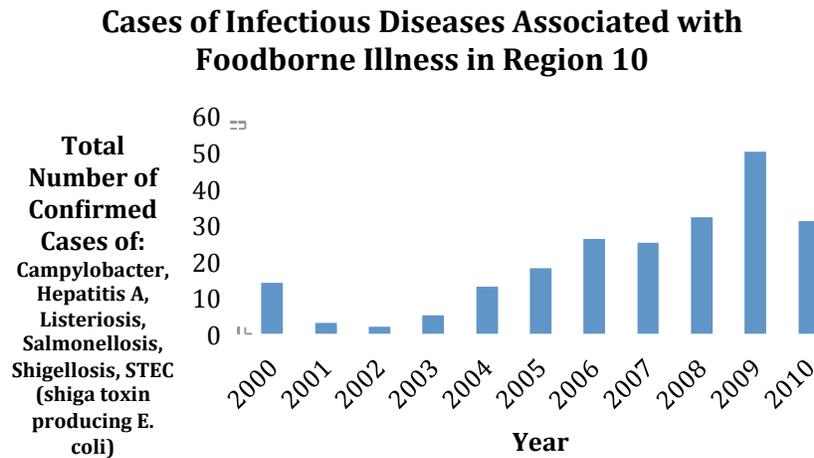
**Table 8.1 Region 10 Most Common CDPHE Reportable Conditions**

2007		2008		2009	
Hep. C chronic	80	Hep. C chronic	55	Hep C chronic	54
Chicken Pox	43	Chicken Pox	41	Influenza (hosp)	28
Campylobacter	25	Campylobacter	19	Campylobacter	26
Salmonella	13	Influenza (hosp)	19	Salmonella	18
Giardia	10	Giardia	12	Giardia	16
West Nile Virus	9	Strep. Pneumo Invasive	12	Strep Pneumo Invasive	11
Pertussis	6	Salmonella	10	Chicken Pox	8

Data source: <http://www.cdphe.state.co.us/dc/CODiseasestatics/index.html>

In 2007 there were 6 cases of West Nile Virus reported in Delta County and 3 cases reported in Montrose County. None were reported in subsequent years. Chronic Hepatitis C is the number one reportable condition each year.

**Figure 8.0 Cases of Infectious Diseases Associated with Foodborne Illness  
Region 10**



Data Source: CEDRS CrossTab Report

Note: CEDRS Query was for "Report by Onset Year" of combined confirmed cases of Campylobacter, Hepatitis A, Listeria, Salmonella, Shigella, and E. coli.

As a matter of additional note, from an economic standpoint, tourism is an important economic driver in our region. Food Service/Accommodations jobs are the #1 means of employment in Ouray and San Miguel counties. These jobs rate #2 in Gunnison County, #4 in Hinsdale County and 5<sup>th</sup> in Delta and Montrose counties (see Demographic Section County Profiles).

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, however, only approximately 1200 food handlers completed the class between 2006-2010. 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. Montrose County provides consumer protection for itself and for Gunnison County and Ouray County. In 2010, the first year Montrose provided consumer protection for Gunnison County, 67% of inspections were completed for the three counties and as of this report we are on track to complete only 48% of inspections in 2011. Hinsdale County has had difficulty maintaining a consumer protection program. Staffing for consumer protection is strained in all counties, with the possible exception of Delta County and San Miguel County both of which have devoted adequate resources to this program for many years.

**Table 8.2 Food Borne Illness Violations per Inspection 2009**

	Delta	Gunnison South	Gunnison North	Hinsdale	Montrose	Ouray	San Miguel
<b># of inspections with any FBI violation</b>	304	35	55	7	97	40	162
<b># of inspections completed</b>	995	67	98	33	181	58	278
<b>% w/any FBI violations</b>	30.55%	52.24%	56.12%	21.21%	53.59%	68.97%	58.27%
<b>Complaints</b>	1	0	0	0	3	1	2

*Note: Additional information available is whether the inspection is follow-up, pre-operational, or regular. Listed are the totals.*

*Source: Montrose County Environmental Health and the CDPHE Consumer Protection Division*

### **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.<sup>51</sup>

<sup>51</sup> See <http://www.healthypeople.gov/Document/HTML/Volume1/08Environmental.htm>

**Table 8.3 Public Water Systems and Type by County**

<b>West Central Public Health Partnership Public Water Systems</b>		
<b>County</b>	<b>Public Water System Type</b>	<b>Number of Active Public Water Systems</b>
Delta	Community	24
	Transient, Non-Community	12
	Non-Transient, Non-Community	1
	Total	37
Gunnison	Community	19
	Transient, Non-Community	42
	Non-Transient, Non-Community	2
	Total	63
Hinsdale	Community	2
	Transient, Non-Community	15
	Non-Transient, Non-Community	0
	Total	17
Montrose	Community	17
	Transient, Non-Community	3
	Non-Transient, Non-Community	2
	Total	22
Ouray	Community	5
	Transient, Non-Community	4
	Non-Transient, Non-Community	0
	Total	9
San Miguel	Community	10
	Transient, Non-Community	9
	Non-Transient, Non-Community	0
	Total	19
<p>Community Water System = A public water system that serves at least 15 service connections used by year-round residents or that regularly serves at least 25 year-round residents</p> <p>Transient, Non-Community Water System = A public water system that is not a community water system and that does not regularly serve at least 25 of the same persons over six months per year</p> <p>Non-Transient, Non-Community Water System = A public water system that is not a community water system and that regularly serves at least 25 of the same persons over six months per year</p> <p><i>Data Source: CDPHE Water Quality Division Query</i></p>		

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.

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).

**Table 8.4 Completed Wells by County and Primary Uses**

	Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel
Total	1929	4071	712	1746	574	1343
Residential	1030	2019	269	978	355	783
Household	375	1265	289	110	91	282
Livestock	27	63	2	80	20	31
Irrigation	96	38	2	54	17	12
Commercial	23	157	61	24	6	24
Municipal	4	32	4	17	1	28
Geothermal	15	3	0	40	3	3
Industrial	5	26	2	5	0	16
Monitoring	93	203	13	288	26	112
All Uses	1	0	0	0	0	2
Other	260	265	70	150	55	50

*Note: A change in data retrieval criteria regarding Monitoring and "Other" uses caused a reduction in the numbers reported in previous years.*

*Well uses such as fire protection, exchange, recreation and wildlife are now reported in the "other" category.*

*Source: Colorado Division of Water Resources. Total Number of Completed Wells by County and Primary Uses through 11/17/2010*

### ***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.<sup>52</sup>

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.

The Colorado Department of Public Health and Environment *Water Quality Control Division 2009 Report* provides data that serve as a baseline indicator for the region as a whole. The report 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).

---

<sup>52</sup> See. [www.epa.gov/enviro/html/sdwis/sdwis\\_query.html](http://www.epa.gov/enviro/html/sdwis/sdwis_query.html)

**Table 8.5 Fluoridated Water**

	County Population Served by public water systems (PWS)	County Population Receiving fluoridated water	Percent of county population receiving fluoridated water	Percent of county PWS population receiving fluoridated water
<b>Delta</b>	19,744	10,038	33.09%	50.84%
<b>Gunnison</b>	12,788	390	2.60%	3.05%
<b>Hinsdale</b>	400	0	0%	0%
<b>Montrose</b>	75,950	74,556	>100%	98.16%
<b>Ouray</b>	2,865	90	2.06%	3.14%
<b>San Miguel</b>	4,849	1,200	15.93%	24.50%
<b>Colorado</b>	4,931,190	3,479,600	71.60%	70.60%

Data Source: CDC, <http://apps.nccd.cdc.gov/gisdoh/waterfluor.aspx>

### ***Small Community Drinking Water Systems***

In 1997, small water 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.<sup>53</sup>

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 protect users of these wells. Unlike public drinking water systems serving many people, they do not have experts regularly checking the water's

<sup>53</sup> <http://www.healthypeople.gov/Document/HTML/Volume1/08Environmental.htm>

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.<sup>54</sup>

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.

**Table 8.6 Completed Wells by County and Primary Uses**

	<b>Delta</b>	<b>Gunnison</b>	<b>Hinsdale</b>	<b>Montrose</b>	<b>Ouray</b>	<b>San Miguel</b>
Total	1929	4071	712	1746	574	1343
Residential	1030	2019	269	978	355	783
Household	375	1265	289	110	91	282
Livestock	27	63	2	80	20	31
Irrigation	96	38	2	54	17	12
Commercial	23	157	61	24	6	24
Municipal	4	32	4	17	1	28
Geothermal	15	3	0	40	3	3
Industrial	5	26	2	5	0	16
Monitoring	93	203	13	288	26	112
All Uses	1	0	0	0	0	2
Other	260	265	70	150	55	50

*Note: A change in data retrieval criteria regarding Monitoring and "Other" uses caused a reduction in the numbers reported in previous years.*

*Well uses such as fire protection, exchange, recreation and wildlife are now reported in the "other" category.*

*Source: Colorado Division of Water Resources. Total Number of Completed Wells by County and Primary Uses through 11/17/2010*

<sup>54</sup> See <http://www.epa.gov/safewater/privatewells/index2.html>

### ***Water Quality in Streams, Rivers and Lakes***

Water quality in systems such as rivers, 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.<sup>55</sup>

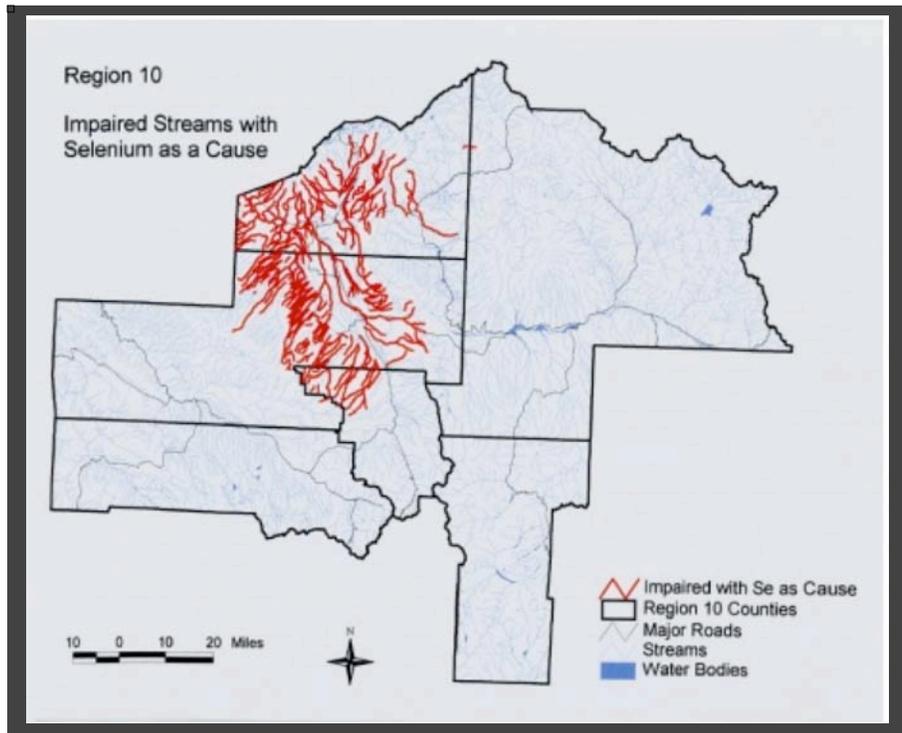
Selenium bio-accumulates in aquatic food chains and has been known to cause reproductive failure, deformities, and other adverse impacts in birds and fish. As a result of elevated selenium concentrations, many western Colorado rivers and streams are on the Colorado 303(d) list, including the main stem 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.<sup>56</sup> 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 8.1. 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.

---

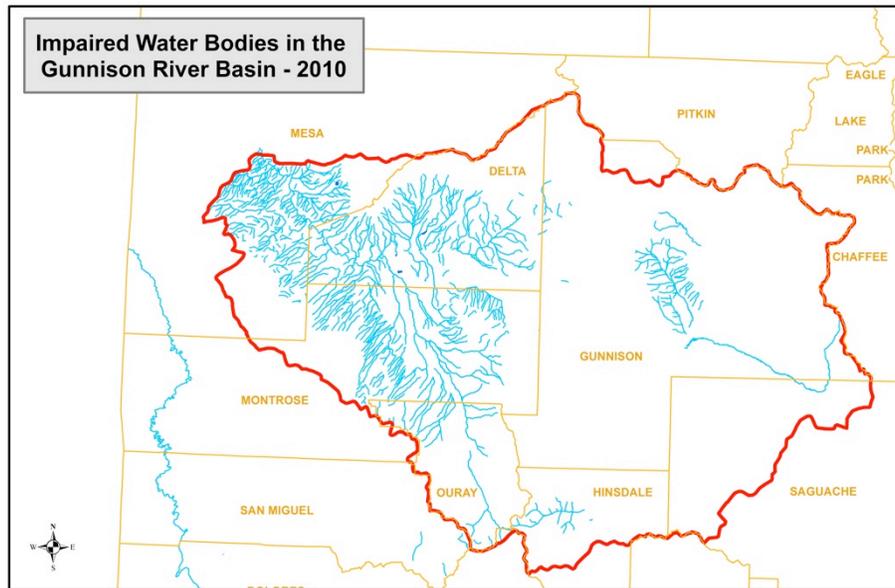
<sup>55</sup> See <http://www.lenntech.com/Periodic-chart-elements/Se-en.htm>.

<sup>56</sup> See, <http://co.water.usgs.gov/projects/BSD00/index.html>

**Figure 8.1 Impaired Streams with Selenium as a Cause 2007**



**Figure 8.2 Impaired Streams All Causes 2010**



*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.<sup>57</sup>



*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.<sup>58</sup>



---

<sup>57</sup> See, [http://geology.usgs.gov/connections/fws/resources/mancos\\_shale.htm](http://geology.usgs.gov/connections/fws/resources/mancos_shale.htm)

<sup>58</sup> See [http://geology.usgs.gov/connections/fws/resources/mancos\\_shale.htm](http://geology.usgs.gov/connections/fws/resources/mancos_shale.htm)

## ***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.<sup>59</sup> The U.S. Surgeon General has warned that radon is the second leading cause of lung cancer (after smoking) in the U.S. today.

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.

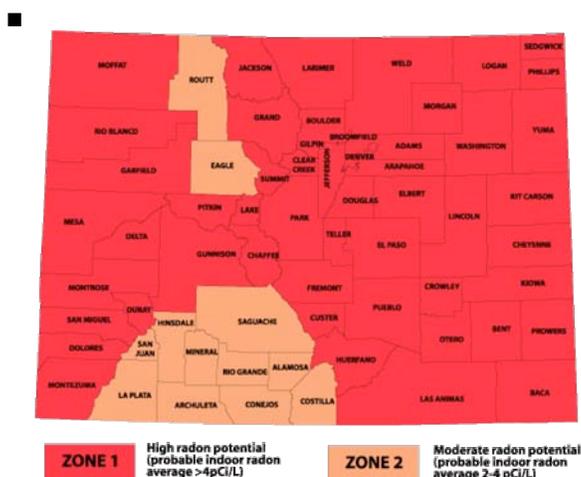
The EPA and the Surgeon General recommend testing all homes below the third floor for radon. The EPA also recommends testing in schools. Radon reduction systems work and are not too costly. Some radon reduction systems can reduce radon levels in the home by up to 99%. Even very high levels can be reduced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

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.

---

<sup>59</sup> [EPA's 2003 Assessment of Risks from Radon in Homes \(EPA 402-R-03-003\)](#).

Figure 8.3 EPA Designated Radon Zones in Colorado<sup>60</sup>

**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.<sup>61</sup>

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

<sup>60</sup> 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.

<sup>61</sup> See, [Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing](#)

8,549 homes in Region 10 that were constructed prior to 1950<sup>62</sup>. The greatest proportion of pre-1980 homes across Region 10 is in Delta and Montrose counties.

**Table 8.7 Number of Pre-1980 Homes**

Year Built	1970-79	1960-69	1950-59	1940-49	1939 or earlier	Total Pre-1980 Stock
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						

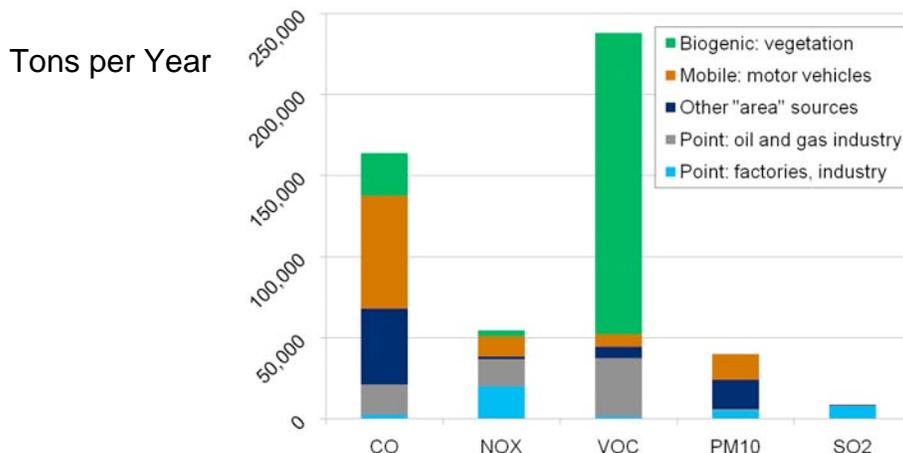
### ***Air Quality***

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. Regulated sources of criteria pollutants are facilities that have emissions at such a level that they require a permit from CDPHE.

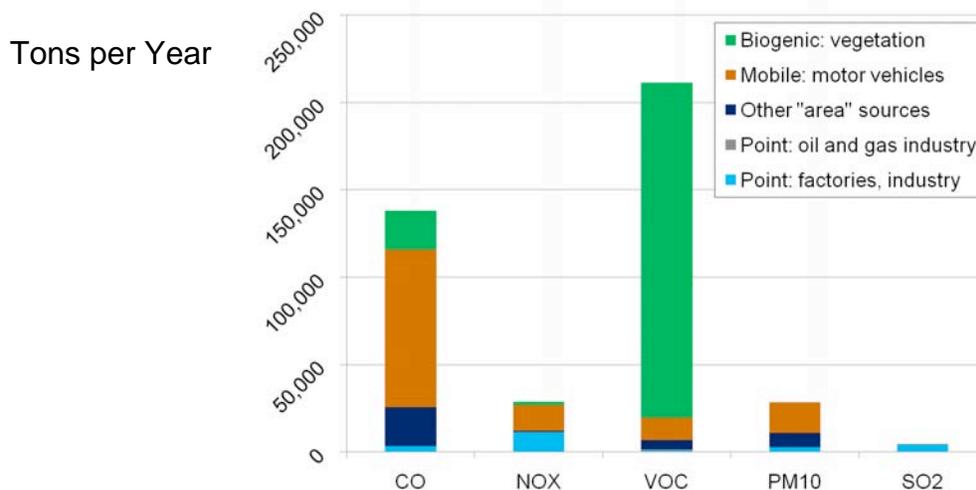
<sup>62</sup> 2000 Census

**Figure 8.4 Western Slope Air Pollution Sources 2008**



Data Source: Colorado Air Pollution Control Division, Air Quality Control Commission Report to the Public 2009-2010 p. 37

**Figure 8.5 Central Mountain Air Pollution Sources 2008**



Data Source: Colorado Air Pollution Control Division, Air Quality Control Commission Report to the Public 2009-2010 p. 37

All of the Western Slope counties comply with federal air quality control standards.

Air Pollutant Sources: Delta, Montrose, Ouray, San Miguel

Motor vehicles \* oil and gas development \* Cameo and Nucla coal fired power plants,  
 \* Coal mines in Delta and Montrose counties \* sand and gravel operations \* windblown dust \* wildfires \*  
 prescribed fire

Air Pollutant Sources: Gunnison, Hinsdale

Motor vehicles \* sand and gravel operations \* Oxbow and Mountain coal mining facilities in Gunnison  
 County \* wildfires \* controlled burning

**Table 8.8 Emissions of Criteria Pollutants by County  
2008 Inventory (tons per year)**

	<b>CO</b>	<b>NOx</b>	<b>PM 10</b>	<b>SOx</b>	<b>VOC</b>	<b>Benzene</b>
Delta	12,132.3	1,571.8	2,503.9	47.6	18,106.4	46.0
Gunnison	13,468.9	1,421.2	2,543.6	44.3	22,306.4	58.0
Hinsdale	3,546.6	110.1	547.6	1.0	10,262.4	17.0
Montrose	19,532.8	3,664.8	5,823.1	1,357.6	21,220.3	70.5
Ouray	4,267.9	465.8	1,104.0	6.1	9,259.0	14.9
San Miguel	5,547.9	1,093.4	1,504.1	8.9	13,065.0	37.0
Colorado	1,369,472	357,486	378,106	68,249	1,162,062	4,167

Note: **CO**: Carbon Monoxide

**NOx**: Nitrous Oxides (primary precursor pollutant to the formation of ozone and secondary particulate matter, haze)

**PM 10**: Particulate matter of 10 microns or smaller

**SOx**: Sulfur oxides

**VOC**: Volatile organic compounds

Note: The above graph indicates the totals in tons per year. In the 2008 Inventory from the Colorado Air Inventory System, the numbers under each pollutant is further broken down into the following categories: Agriculture, Aircraft, Biogenic, Commercial Cooking, Construction, forest and prescribed fire, Fuel combustion, Highway vehicles, non-road, O & G area, O & G points, other points sources, pesticide application, portable fuel containers, railroads, refueling, road dust, solvent utilization, structure fires, surface coating, tank trucks in transit, wood burning.

Source: CDPHE, Colorado Air Quality Control Division, Colorado Air Inventory System 2008.

**Behavioral Risk Factor Surveillance System Data on Environmental Health****Table 8.9 Behavioral Risk Factor Surveillance System Environmental Health**

	Region 10 % Yes	Colorado % Yes
<b>Drinking Water</b>		
Is a private well the main source of your home water supply?	15.7	9.1
Is the city, county or town water system the main source of your home water supply?	79	84.2
Is a small water system (operated by property owner, condo, or home owner's assoc) the main source of your home water supply?	2.8	1.2
Is the main source of your home water supply something other than above?	2.4	0.1
Unknown	*	4.4
<b>Waste Water</b>		
Does your home use a municipal sewer as a sewage disposal system?	*	73.7
Does your home use a septic system as a sewage disposal system?	*	15.8
Does your home use a different kind of sewage disposal system than above?	*	0.7
<b>Medication Disposal</b>		
Do you flush your expired/unused medications down the toilet?	11.9	12.1
Do you throw your expired/unused medications in the trash?	41.5	36.5
Do you take your expired/unused medications to a special medical collection site?	4.5	10.1
Don't take any medications	23.8	23
Don't know/Unsure	7.5	6.5
Other	11.8	10.7

Data Source: 2009 BRFSS, Health Statistics Section, Colorado Department of Public Health and Environment

Notes: \* insufficient data

Table 8.9 Continued

	Region 10 % Yes	Colorado % Yes
<b>Radon</b>		
Do You Know What Radon Gas Is?	77.8	73.1
Has Your Household Been Tested For Radon Gas?	20.8	34.5
Were the radon levels in your household above 4 Pci/L (picocuries per liter)?	*	11.7
<b>Sustainability</b>		
During the past 3 months have you recycled often?	48.9	29.9
Sometimes?	25.3	32.9
Rarely?	2.5	10.9
Never?	18.5	14.2
During the past 3 months have you made an effort to reduce water consumption, for example by installing low-flow fixtures or toilets, or efficient landscape irrigation, etc often?	42.9	41.4
Sometimes?	28.7	25,25
Rarely?	3.6	9.3
Never?	24.9	22.9
Storm drain pollution can be prevented by not putting things like detergents--for example, from washing your car in the driveway or street- paint, fertilizer, grass clippings, leaves, or waste into gutters or storm drains. During the last 3 months have you taken steps to prevent storm drain pollution often?	40.1	53.7
Sometimes?	9.7	12.5
Rarely?	1.2	5.9
Never?	11.5	12.7
During the past 3 months have you taken steps to reduce fuel consumption and vehicle air pollution, for example by driving a smaller or alternative-fuel vehicle, carpooling, using public transportation, or by biking or walking, often?	49.8	39.7
Sometimes?	29.1	28.0
Rarely?	5.8	13.0
Never?	14.9	18.7
<b>Raw Milk</b>		
In the past 12 months did you drink any unpasteurized milk, also known as "raw milk"?	*	3.1

Data Source: 2009 BRFSS, Health Statistics Section, Colorado Department of Public Health and Environment

Notes: \* insufficient data

This is the first year environmental health questions were added to the BRFSS survey. This gives an idea of what people in Region 10 think about environmental health issues and also some of their behaviors, such as radon testing and recycling.

**Zoonotic Disease**

**Table 8.10 Reportable Zoonotic Disease Cases by County  
CDPHE Reportable Conditions  
West Central Public Health Region  
Zoonotic Conditions 2007-2009 Combined**

	Delta	Gunnison	Hinsdale	Montrose	Ouray	San Miguel
Animal Bites	2	2	0	1	1	3
Hantavirus	1	0	0	0	0	0
Plague	0	0	0	0	0	0
Rabies	0	0	0	0	0	0
Rocky Mountain Spotted Fever	0	0	0	0	0	0
West Nile Virus	6	0	0	3	0	0

In 2007 there were 6 cases of West Nile Virus reported in Delta County and 3 cases reported in Montrose County. None were reported in subsequent years.

## **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

### **Positive and Negative Trends in Region 10**

<b>↑ Positive Trends</b>
<p>↑ <b>Food handler classes</b> are consistent throughout the region however they are not mandatory.</p>
<b>↓ Negative Trends</b>
<p>↓ <b>Air and Water</b> quality are priority concerns in the region.</p> <p>↓ <b>Air:</b> Smoke from burning and emissions from motor vehicles are the biggest challenge to air quality.</p> <p>↓ <b>Water:</b> Small water systems and wells serve half the region's population. Household wells are not regulated and testing is left to the consumer.</p> <p>↓ <b>Radon</b> remains high in our region, however testing and public information has improved. Radon is the leading cause of non-smoking lung cancer and lung cancer rates remain high in our region.</p> <p>↓ <b>Consumer Protection:</b> there are capacity concerns in relation to consumer protection.</p>

## ***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. More than  $\frac{3}{4}$  of our residents know what radon is however only 20% have had their homes tested for radon. Radon is the leading cause of non-smoking lung cancer and lung cancer ranks first, second and third in all counties in our region except San Miguel County.
- ⇒ 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.
- ⇒ Staffing for consumer protection is strained in all counties, with possibly the exception of Delta and San Miguel Counties. Montrose County is inadequately staffed to provide 100% of required inspections in all three counties. 2010=67% 2011=48%
- ⇒ In 2009, the percent of inspection with any Food borne Illness violations was greater than 52% in all counties except Hinsdale. Cases of infectious disease associated with food borne illness spiked in 2009 in Region 10. Food Service and Accommodations jobs are in the top five job sectors in our region.
- ⇒ Public Water Systems are the main source of home water supply for the majority of residents. Primarily groundwater. 52 PWS in our region had health-based violations of the Colorado Primary Drinking Water Regulations. An increase over the 2007 assessment. There is insufficient data on the quality of streams and well water
- ⇒ Air pollutant sources in our region are: motor vehicles, oil and gas development, coal mining, coal fired power plants, sand and gravel operations, windblown dust, wildfires and controlled burning. “Biogenic sources” are the primary VOC (volatile organic compounds).
- ⇒ More than half of our residents report that they throw medications in the trash



---

## Acknowledgments

We gratefully acknowledge the time, effort, talent, expertise and direction provided by all of the people involved in producing the 2011 Regional Health Assessment for the counties of Delta, Gunnison, Hinsdale, Montrose, Ouray and San Miguel. This report was funded by *The Colorado Trust Partnerships in Health Initiative grant* and by a prevention grant from *CDPHE Office of Planning and Partnership*.

Consultation for this project was provided by Kathleen Matthews MPH and Jill Hunsaker-Ryan MPH of the CDPHE Office of Planning and Partnership and by Alyson Shupe, PhD of the CDPHE Health Statistics Division and Sharon Adams, Environmental Health consultant, CDPHE.

We wish to thank the following members of the WCPHP and the core planning team:

### **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, Director, Gunnison County Public Health  
Richard Stenson, Gunnison County Environmental Health

### **Hinsdale County**

Tara Hardy, Director, Hinsdale County Public Health and Community Services

### **Montrose County**

Peg Mewes, Director, Montrose County Health and Human Services  
Lynda Stack and Diana Williams, Director, Montrose County Public Health  
Richard Thompson, Montrose County Environmental Health and  
Gunnison/Montrose/Ouray consumer protection

### **Ouray County**

Cheryl Roberts, Director, Ouray County Public Health

### **San Miguel County**

June Nepsky, Director, San Miguel County Public Health and Environment  
Dave Schneck, San Miguel Count Environmental Health

The principle authors of this report were Margaret Wacker MPH, regional planner and Carol Dawson RN coordinator/planner West Central Public Health Partnership. Project facilitation was provided by Noelle Hagan with the Center for Public Private Cooperation, University of Colorado Denver. Special thanks to Chelsea Williams, intern, Gunnison County Public Health.