Healthy Mesa County 2012-2017

Strategies to address community health needs

Created by:
Mesa County Health Department

MESA COUNTY
HEALTH DEPARTMENT
Working Together for a Healthy Community

Acknowledgments

The Healthy Mesa County 2012-2017 report is a collaborative effort of the many organizations and providers in the community with a commitment to improve the health of our residents. We would like to thank our partners for their input, expertise and support. Without their dedication, this plan would not have been possible.

- City of Grand Junction
- Colorado Mesa University
- Colorado West Psychiatric Hospital, Inc.
- Community Hospital
- Family Health West Hospital
- Hilltop Community Resources
- Marillac Clinic
- Mesa County 211
- Mesa County Department of Human Services
- Mesa County Public School District 51
- Strive
- Primary Care Partners, P.C.
- Rocky Mountain Health Plans
- St. Mary's Hospital & Regional Medical Center
- United Way of Mesa County
- Ute water Conservancy District

Executive Summary

Colorado's Public Health Act, adopted in 2008, requires state and local health departments to complete a Community Health Needs Assessment (CHNA) every 5 years (CRS 25-1-506, 3b), and develop a Community Health Improvement Plan (CHIP) (CRS 25-1-505) outlining specific objectives and strategies to address the identified needs.

Mesa County Health Department started the CHNA process in 2011 by creating a Community Health Steering Committee to lead a strategic process and suggest health priority areas for Mesa County.

Following principles from the Colorado Health Assessment and Planning System (CHAPS) and the PRECEDE/ROCEED Model (Green and Kreuter, 2005), the committee decided on four crucial steps to assess needs, determine causes, and reach consensus on possible interventions to achieve desired outcomes. Those steps are: compile existing data, engage stakeholders and prioritize health problems, gather primary data from community input, and determine health priorities.

Implementation of PRECEDE/PROCEED and CHAPS phases resulted in well-structured qualitative and quantitative health data for Mesa County. Thorough analysis of Mesa County indicators allowed for comparison to Colorado, and when available to the Nation. The purpose was to understand trends contributing to quality of life, death, disease, illness, injury, and life changing events. Health data was presented to the stakeholder group in ten different categories; participants scored each category based on importance and actionability. The results identified six health priorities that clustered together as most important and actionable: maternal and child health, mental health, tobacco use, obesity, family abuse and violence, and screening/detection.

To further explore factors contributing to the community's health and to gather additional information concerning personal health needs, the committee facilitated six subject-matter-expert focus groups, one community focus group, and three summits. General questions asked included: "How much of an issue is… in our community?" And, "What barriers, services, or data do you feel influence this issue?" Community input resulted in a comprehensive list of barriers and possible solutions related to the following three critical issues, identified as Mesa County's Winnable Battles: obesity, suicide and unintended pregnancy.

The underlying approach of the PRECEDE/PROCEED model is to first identify final consequences, in this case, obesity; suicide; and unintended pregnancy, and work backwards to the causes, known as: predisposing, enabling and reinforcing factors. A closer look at the community input under this scope, revealed significant similarities and determined built environment, parenting, access to health care, mental health, and building a sense of community as contributing factors to poor health outcomes in Mesa County. Recognizing them as priorities is a crucial step in identifying potential solutions.

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PURPOSE OF A COMMUNITY HEALTH NEEDS ASSESSMENT

Community health needs assessments (CHNA) are fundamental tools of public health practice in Mesa County. Their aim is to describe the health of the community by presenting information on health status, community health needs, resources, and analysis of local health problems. The CHNA is the foundation for improvement planning in the local public health system.

The local public health system is defined in the National Public Health Performance Standards Program as the collection of public, private, and voluntary entities, as well as individuals and informal associations, which contribute to the public's health within a jurisdiction.

In Mesa County, the local public health system is comprised of large and small organizations; some have specialized missions while others have broad missions. The entities that comprise the local public health system have CHNA requirements for funding and strategic planning. For example, statutory changes in Internal Revenue Service reporting requirements of nonprofit hospitals, which went into effect in 2012, require a CHNA to be conducted.

The goal of this CHNA is to fulfill the assessment needs for all the entities of the local public health system in Mesa County.

The importance of the CHNA to Mesa County Health Department is codified in Colorado Revised Statutes (CRS). The Mesa County Health Department must:

- Complete a community health needs assessment every 5 years to include the following (CRS 25-1-506, 3b):
  - ◊ Analysis of data to determine the health status and risk factors in the local community (CRS 25-1-505, 2a).
  - ◊ Description of the public health system capacity (CRS 25-1-505, 2b).
  - ◊ Description of the financial resources available to address the public health need.
  - ◊ Description of how the 10 Essential Public Health Services (6CCR 1014-7, 2E) and the Core Services (6CCR 1014-7, 4) are addressed by the local public health system.
- Develop a community health improvement plan (CHIP) (CRS 25-1-505).

POPULATION DEMOGRAPHICS

Mesa County is located on the western border of Colorado, 250 miles west of Denver. The County, one of sixty-four counties in Colorado, encompasses 3,313 square miles. The County seat, Grand Junction, is the largest city in Western Colorado. Grand Junction is in a river valley and gets its name from the confluence of the Gunnison and Colorado rivers. The Grand Valley covers 38.22 square miles and has an elevation of 4,586 feet. Mesa County also includes the towns of Collbran, DeBeque and Palisade, the city of Fruita, and smaller unincorporated areas.

Population Size

According to the 2010 U.S. Census, Mesa County's population is 146,723. In 2010, Mesa County saw a net migration of 712 people (Colorado State Demographer's Office, 2012). Mesa County is over 50% rural and "frontier." The city of Grand Junction comprises close to 40% of the county population with an estimated 58,566 residents (U.S. Census Bureau, 2010).

Population Trends

Mesa County has a boom and bust population based on the changing employment markets for naturally-occurring energy resources, such as oil shale and natural gas. Despite the fluctuating population, the county has historically experienced a steady 2% growth. With the recent economic downturn, growth has slowed some, but is expected to return to its 2% growth rate within the next few years (Colorado State Demographer's Office, 2012).

The median age in Mesa County is 38 years. Table 1 identifies age distribution throughout the cities, towns, and unincorporated areas of the county. Figure 1 depicts Mesa County's population by age.

Jurisdictional Area	Total population	17 years and under		18 years and over		21 years and over		65 years and over		Median age
	Number	Number	%	Number	%	Number	%	Number	%	Years
Collbran town	708	193	27.3	515	72.7	376	53.1	62	8.8	22.4
De Beque town	504	126	25	378	75	348	69	56	11.1	34.6
Fruita city	12,646	3,594	28.4	9,052	71.6	8,668	68.5	1,741	13.8	34.8
Grand Junction city	58,566	12,427	21.2	46,139	78.8	42,797	73.1	9,143	15.6	36.7
Palisade town	2,692	601	22.3	2,091	77.7	2,014	74.8	493	18.3	42.5
Total city and Town	75,116	16,941	22.6	58,175	77.4	54,203	72.2	11,495	15.3	*
Unincorporated Area	71,607	17,576	24.5	54,031	75.5	51,387	71.8	10,377	14.5	*
Mesa County 2010	146,723	34,517	23.5	112,206	76.5	105,590	72	21,872	14.9	38.1
Change 2000-2010	30,468	6,254	-1.4	25,018	1.5	23,781	1.6	4,230	-0.03	no change
Colorado	5,029,196	1,225,609	24.4	3,802,587	75.6	3,595,067	71.5	549,625	10.9	36.1

Table 1: Mesa County Demographics by Age and Jurisdiction (Mesa County Planning Division, 2012).

ETHNICITY AND RACE

Mesa County's population is 89.4% white. However, the Hispanic population of 13.3% (19,552 persons) has increased over 68% since the 2000 census. Figures 2 and 3 show race for Mesa County and Colorado, while Figures 4 and 5 show ethnicity for Mesa County and Colorado.

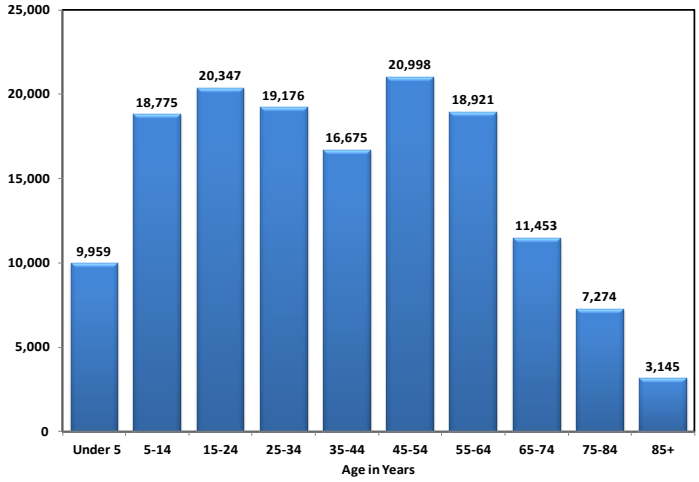


Figure 1: Mesa County population by age group (U.S. Census Bureau, 2012).

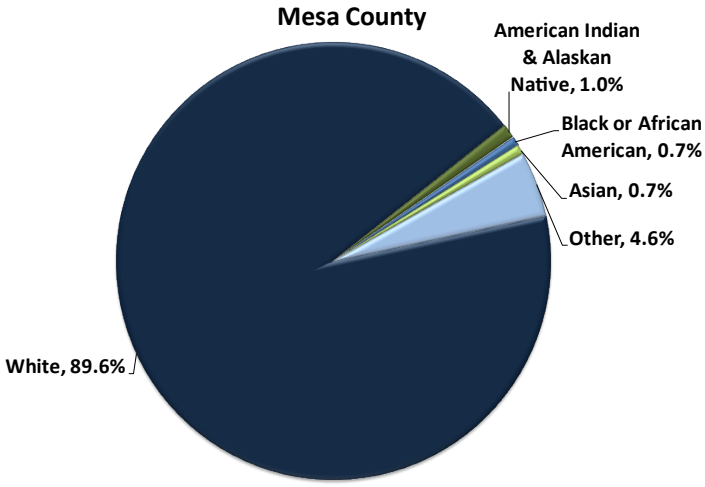
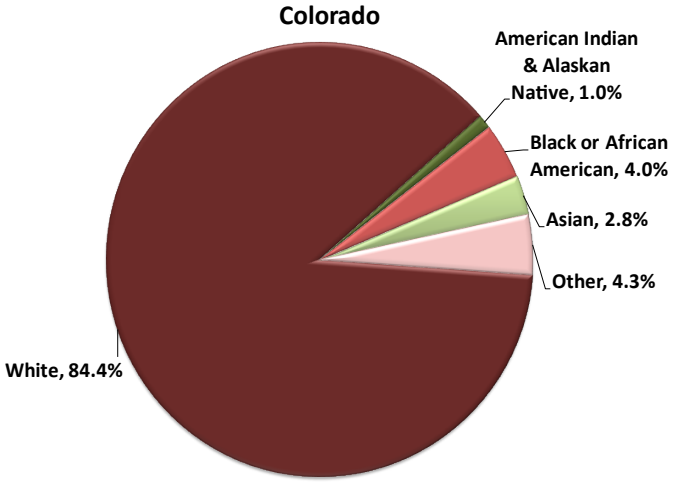


Figure 2



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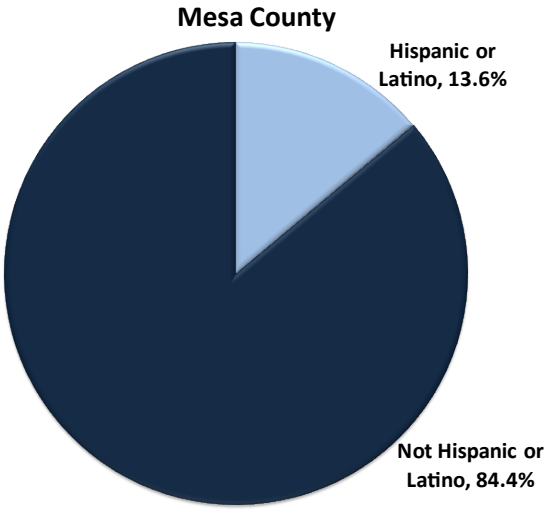

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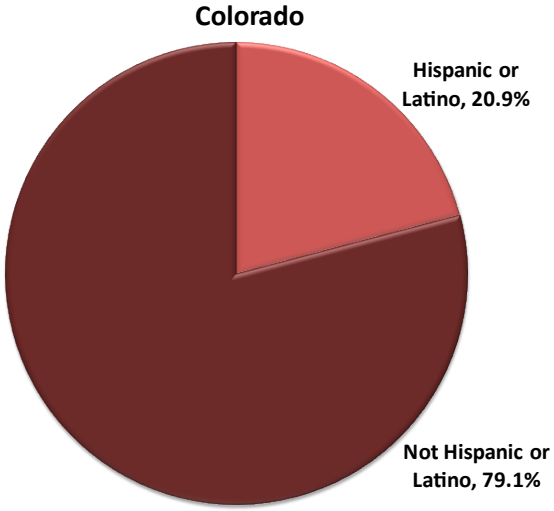

Figure 5

Figures 2-5: Mesa County and Colorado Race and Ethnicity Demographics (U.S. Census Bureau, 2012).

ECONOMIC OPPORTUNITY

Income

In 2010, Mesa County had a per capita personal income (PCPI) of $34,379. This PCPI ranked 35th in Colorado where the state average income was $42,295 and was 86% of the national average income of $39,937 (Figure 6). The U.S. Census defines per capita income as "the mean money income received in the past 12 months for every man, woman, and child in a geographic area. It is calculated by dividing the total income of all people 15 years of age and over in a geographic area by the total population in that area." Although income data is not collected for people under 15 years of age, that population is included in the denominator of per capita income.

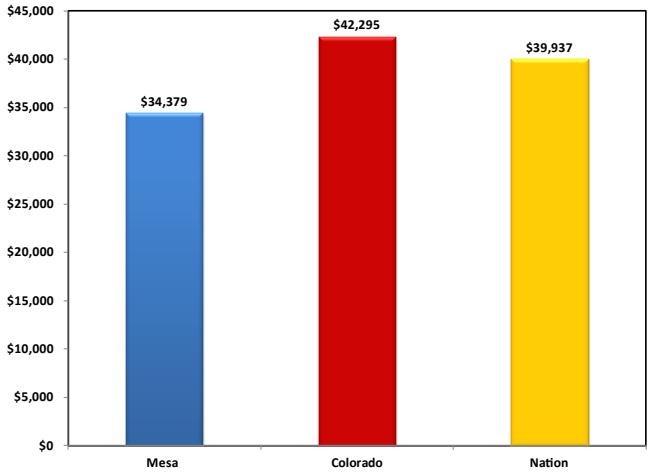

Figure 6: 2010 Per capita income (U.S. Department of Commerce, Bureau of Economic Analysis, 2012).

The annual per capita income average for 2006-2010 was $27,500, with a median household income in the same period averaging $48,417 (U.S. Census, 2010). From 2005-2010, the median household income in Mesa County was consistently lower than Colorado's median household income (Figure 7).

The average number of persons below the poverty level during this period was 21,568, representing roughly 14.7% of the Mesa County population.

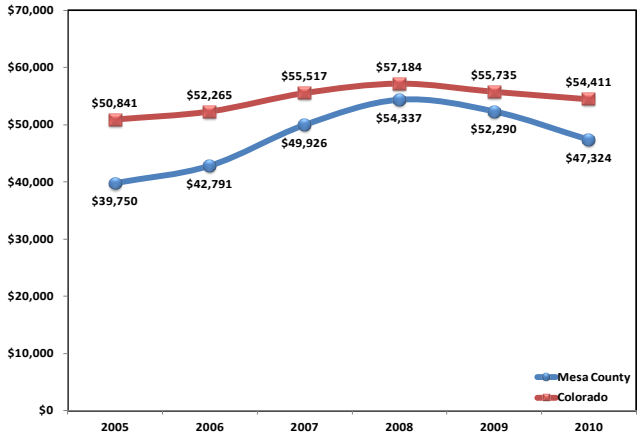

Figure 7: Median household income in Mesa County (Annie E. Casey Foundation's Data Center, 2012).

The 2000-2010 average annual growth rate of per capita personal income was 3.0%. The average annual growth rate for Colorado was 2.2% and for the nation was 2.8% (U.S. Department of Commerce, Bureau of Economic Analysis, 2012). However, compared to the U.S., both the Mesa County and Colorado average annual growth rates are in decline. In Mesa County this was a sharp decline from a peak set in 2008 (Figure 8).

Mesa County's Top 20 Employers, 2012	Number of Full-Time Employees
Mesa County School District 51	2,392
St. Mary's Hospital	1,500
Mesa County	980
State of Colorado	901
City Market	630
City of Grand Junction	628
VA Medical Center	600
Hilltop	558
Colorado Mesa University	496
Community Hospital	416
Rocky Mountain Health Plans	330
West Star Aviation	325
Family Health West	315
McDonald's	300
Mesa Developmental Services	250
United Companies	245
Primary Care Partners	238
Star Tek	237
Colorado West Mental Health	230
Hospice & Palliative Care of Western Colorado	229

Table 2: Mesa County's top 20 employers, by number of full-time employees (Grand Junction Economic Partnership survey of large businesses in Mesa County, Fall of 2012).

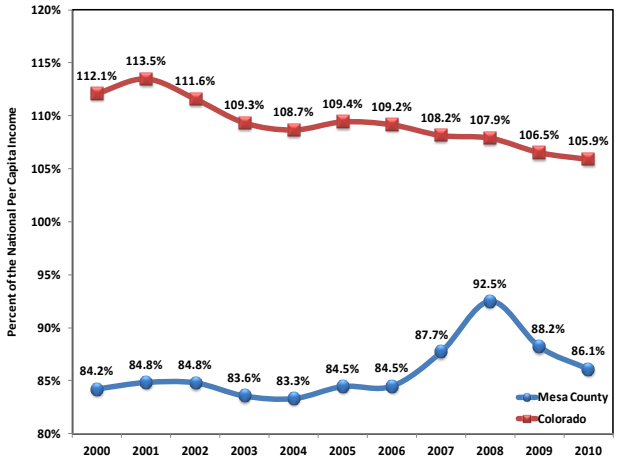

Figure 8: Average personal income as a percentage of national per capita income (U.S. Department of Commerce, Bureau of Economic Analysis, 2012).

Employment

In the fall of 2012, the Grand Junction Economic Partnership completed a survey to identify the top employers in Mesa County; table 2 identifies the top 20 employers and the number of full-time employees for each. This survey is completed twice a year. Survey results vary greatly based on seasonality and participation from employers. In the most recent survey, large employers in both the energy and retail industries did not participate. Listed in the top 20 employers are several health-related employers including all four of the county's hospitals, a large physician practice, hospice, and mental health services.

Mesa County's Top 10 Industries, 2010	Number of Paid Employees
All Industry	**49,484**
Health	9,175
Retail	8,329
Accommodation	6,035
Construction	3,573
Professional, Scientific, and Technical Services	3,000
Transportation and Warehousing	2,454
Waste Management and Remediation Services	2,339
Wholesale Trade	2,234
Manufacturing	2,154
Finance and Insurance	2,075

Table 3: Mesa County's top 10 Industries in 2010, by number of paid employees (2010 County Business Patterns, 2012; and U.S. Census Bureau, 2012).

The U.S. Census Bureau confirmed that in 2010, the largest industry for employment in Mesa County was the health industry with a total of 9,175 residents working in this field. The health industry was followed by retail, accommodation, construction, and professional/scientific/technical services. Table 3 outlines industry information for Mesa County.

Like all other counties in the United States, Mesa County was greatly impacted by the recession in 2009. From 2005-2008, Mesa County's unemployment rate was slightly lower than Colorado's rate. However, from 2009-2011, Mesa County's rate was higher than Colorado's rate. In 2005, Mesa County's unemployment rate was 5.0%, or one in twenty people. In 2011 the rate almost doubled, to 9.6% or one in ten people (Figure 9).

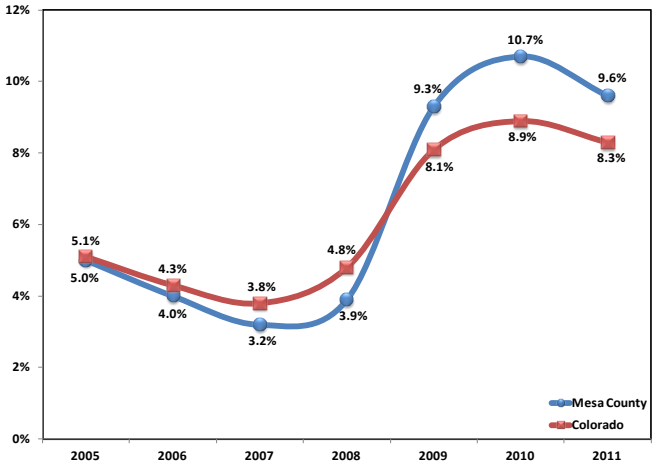

Figure 9: Unemployment rates (U.S. Department of Labor, 2012).

Poverty

The National Center for Health Statistics (CDC) (2012) indicates that "…adults living in poverty are more likely to be in poor health, to be uninsured, and to die at a younger age than adults not living in poverty" (Health, United States, 2011, pg. 36). Furthermore, "Growing up in poverty raises a child's risk for school failure, poor health, and teen pregnancy and childbearing" (Health, United States, 2011, pg. 27).

The percent of Mesa County residents and children living in poverty has been trending in an unhealthy direction since 2008; the most current poverty rates place Mesa County at the highest levels of poverty since 2005 (Figures 10 and 11). The United States Food and Drug Administration reports that, in 2009, 36% of students in Mesa County schools were eligible to participate in the free lunch program. That translates to 8,796 students whose families fall below 130% of the federal poverty level (FPL) guideline for free lunch eligibility.

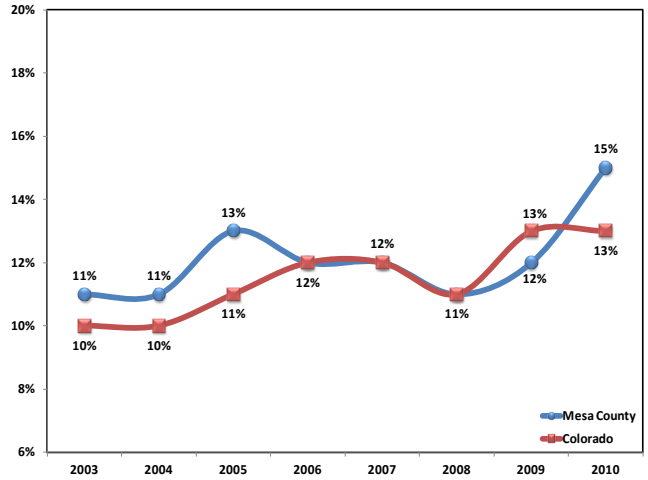

Figure10: Percent of population below federal poverty level (Annie E. Casey Foundation, Data Center, 2012).

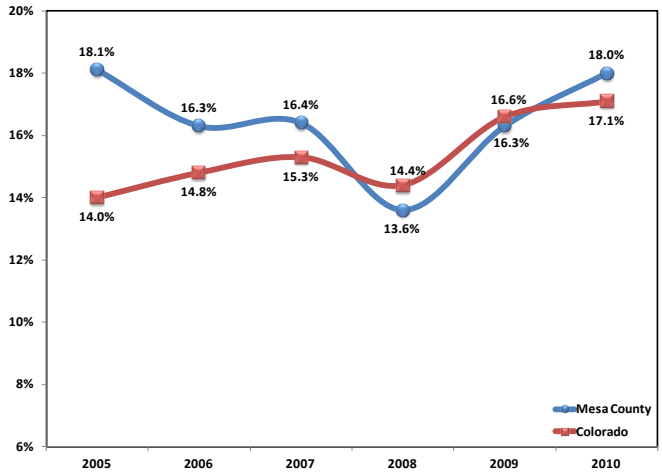

Figure11: Percent of children under 18 years below federal poverty level (Annie E. Casey Foundation, Data Center, 2012).

Insurance

Insurance is an important factor in access to healthcare services. The total number of uninsured individuals in Mesa County is approximately 31,287 persons, or about 22% of the population. In addition, 34% of the Hispanic population is uninsured. Of Mesa County residents aged 18-64, an estimated one-in-five are without health insurance. In fact, Mesa County has seen the highest increase in uninsured persons in the state (Annie E. Casey Foundation, Kids Count, 2012). Due to changes in healthcare financing at the federal and state levels, it is anticipated that by 2014 this number will increase to approximately 43,033 members (Rocky Mountain Health Plans, 2012). Table 4 depicts Mesa County's uninsured population by age and ethnicity.

Uninsured	Number	%
Total	31,287	21.8
Under 18 Years	6,560	19.1
18 to 64 Years	24,471	27.8
65 Years and Older	256	1.2
Uninsured by Ethnicity		
Not Hispanic or Latino	23,097	19.4
Hispanic or Latino	6,617	34.1
Eligible But Not Enrolled (EBNE)		
Children 0-18 Years (Medicaid or CHP+)	3,708	23.8
Adult Parents of Dependent Children	893	26.5

Table 4: Mesa County uninsured by age, ethnicity, and EBNE status (U.S. Census Bureau, 2010; and Colorado Health Institute, 2009).

EDUCATION

Mesa County is served by three school districts: Mesa County Valley School District 51, Plateau Valley School District 50, and DeBeque School District 49-JT. Mesa County Valley School District 51 is the largest of the three districts. Table 5 identifies the County's high schools, their enrollment numbers, and the corresponding graduation rates. From 2006-2011, Mesa County's high school dropout rate slightly trended down (Figure 12).

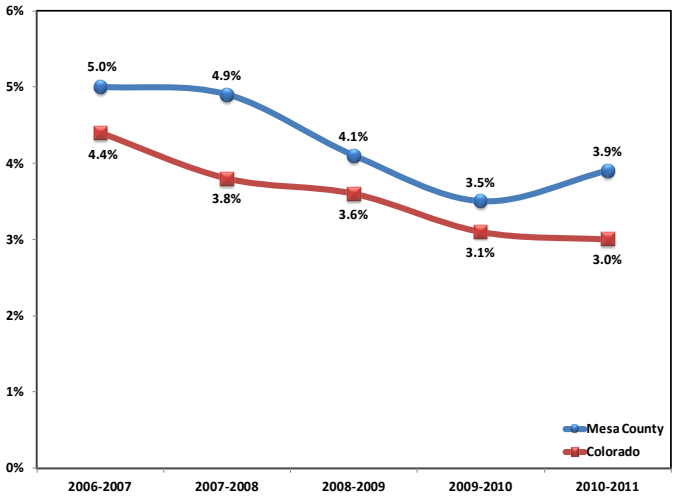

Figure 12: Mesa County high school dropout rate compared to Colorado (Colorado Department of Education, 2012).

However, for those same years, Mesa County consistently had a higher high school dropout rate compared to Colorado.

In 2010, 25% of Mesa County residents reported having attended some college, which is higher than Colorado's 23%. However, only 25% of Mesa County's population obtained a bachelor's degree or higher, compared to 37% for Colorado (Table 6).

Mesa County Districts	Student Enrollment	Graduation Rate
Mesa County Valley 51	**21,917**	**75.5%**
Grand Junction High School	1,760	81.0%
Central High School	1,572	78.6%
Fruita Monument High School	1,284	88.9%
Palisade High School	1,010	77.6%
R-5 High School	244	27.3%
Grand River Virtual Academy	156	N/A
Mesa Valley Vision Home and Community	79	77.8%
Gateway School	7	100.0%
De Beque 49JT	**125**	**66.7%**
De Beque Undivided High School	37	66.7%
Plateau Valley 50	**489**	**30.6%**
Grand Mesa High School	136	17.9%
Plateau Valley High School	77	85.2%

Table 5: Mesa County high school enrollment and graduation rates for 2011-2012, by district (Colorado Department of Education, 2012).

Educational Attainment	Mesa County		Colorado	
	Number	%	Number	%
Population 25 years and over	94,568	64.5	3,387,310	67.4
Less than 9th grade	3,285	3.5	135,447	4
9th to 12th grade, no diploma	6,977	7.4	195,838	5.8
High school graduate (includes equivalency)	29,294	31	757,700	22.4
Some college, no degree	23,150	24.5	773,805	22.8
Associate's degree	7,822	8.3	281,428	8.3
Bachelor's degree	15,979	16.9	789,859	23.3
Graduate or professional degree	8,061	8.5	453,233	13.4
Percent high school graduate or higher		89.1		90.2
Percent bachelor's degree or higher		25.4		36.7

Table 6: Selected measures of educational attainment in Mesa County and Colorado in 2010 (U.S. Census Bureau, 2012).

HEALTH CARE ACCESS AND UTILIZATION

In January of 2010, the U.S. Health and Human Services' Health Resources and Administration (HRSA) Division designated Mesa County as a Low-Income Health Professional Shortage Area (HPSA) for primary care services. Health leaders in Mesa County submitted an application in order to receive this designation, which was renewed in December 2012. This federal designation recognizes that Mesa County has too few primary care physicians relative to the low-income population. Health care organizations can use this designation as a recruitment tool for new primary care health professionals; providers practicing in these areas can receive payment assistance with their student loans.

In addition to the HPSA designation, Mesa County also received a geographic location designation as a Medically Underserved Area (MUA), and the low-income population in Mesa County was identified as a Medically Underserved Population (MUP). MUA/MUP designation is an eligibility factor in receiving Federally Qualified Health Center status. Medically Underserved Areas/Populations are designated officially by HRSA as having:

- Too few primary care providers.
- High infant mortality.
- High poverty and/or high elderly population.

Hospitals

Mesa County has four hospitals, all of which aim to meet the needs of residents in Western Colorado and Eastern Utah. Together they feature state-of-the-art facilities and emergency transport services.

- **St. Mary's Hospital and Regional Medical Center** in Grand Junction is a nonprofit, fully-accredited facility with over 350 beds, a level II trauma center, air emergency transport services, and a level II neonatology center. They also offer a full range of psychiatric services, a rehabilitation center, dialysis, open-heart surgery, brain and spine center, and a comprehensive oncology clinic. They are currently the only hospital in the county that provides labor and delivery services.
- **Community Hospital** in Grand Junction is a full-service, nonprofit, acute-care hospital licensed for 78 beds. They provide complete surgical services, an emergency department, a critical-care unit, an imaging center, full rehabilitative therapy services, home health, and a comprehensive occupational medicine program.
- **The Department of Veterans Affairs (VA) Medical Center** in Grand Junction is a federal health facility with 53 acute and long-term beds and provides inpatient and ambulatory medicine, surgery, and psychiatric services to all veterans.
- **Family Health West** in Fruita is a 16-bed, nonprofit, critical-access hospital. Services provided include an emergency department, general and orthopedic surgery, imaging and radiology, a coagulation clinic, and a full-service laboratory.

Mental Health

In December 2010, Mesa County received a Health Provider Shortage Area (HPSA) designation for Mental Health from the U.S. Department of Health and Human Services. Similar to the Primary Care HPSA designation, the Mental Health designation recognizes that Mesa County meets the following criteria qualifying for a geographic area designation: there are too few mental health care providers; there are unusually high needs for mental health services; and mental health professionals are over utilized or are distant/inaccessible to residents of the geographic area designated. The designation will be renewed in December of 2013.

- **Colorado West Psychiatric Hospital, Inc.** in Grand Junction is a 32-bed psychiatric hospital. Additional services include outpatient care for mental health and substance abuse, a weekday recovery program, a women's 90-day residential treatment program, and a non-medical alcohol or drug detoxification center.

POLITICAL INFLUENCE

Local health care policy is often driven by the political makeup of the community. The number of active voters in Mesa County has been trending downward since 2007. All three major political affiliations, Republican, Democrat, and unaffiliated have seen a drop in their numbers of active voters. The number of active Republican voters (30,556) in Mesa County at the end of 2011 was double that of Democrats (13,279) (Figure 13).

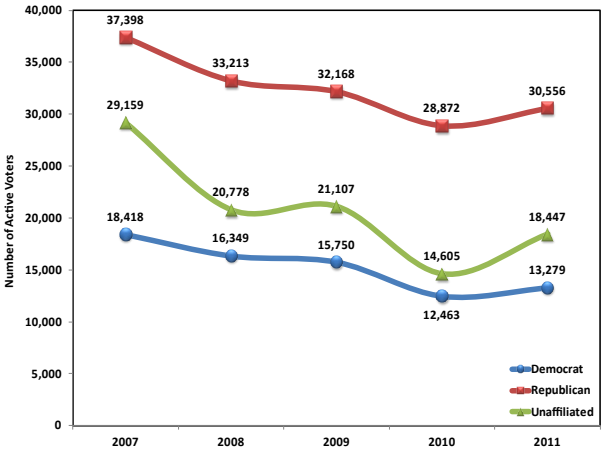

Figure 13: Active Voters by party affiliation in Mesa County (Colorado State Secretary's Office, 2012).

MODELS AND FRAMEWORKS

Mesa County has conducted community health assessments using a variety of methods over the past 20 years. This experience allows for flexibility and creativity in incorporating various models and frameworks to guide the assessment process. Although there are many ways to conduct an assessment, most models and frameworks contain consistent elements.

The following assessment frameworks guided Mesa County's Community Health Needs Assessment process:

1. Colorado Health Assessment and Planning System (CHAPS) (Table 7)

2. PRECEDE/PROCEED Model (Table 8)

Colorado Health Assessment and Planning System (CHAPS)

In the spring of 2010, Mesa County Health Department in partnership with the Colorado Department of Public Health and Environment's (CDPHE) Office of Planning and Partnership, began laying the foundation for completing this community health needs assessment. The State formed a Public Health Indicators Task Force to review data, identify data gaps, and develop a framework for data compilation. This multi-disciplinary, cross-sectional task force was comprised of representatives from federal, state, and local agencies; Mesa County Health Department designated a staff person to participate on this task force. By the end of 2010, the task force adopted the Health Equity Framework (Attachment A) and published a list of 250 recommended indicators for Colorado. The Public Health Indicators Work Group Report (Attachment B) provides complete details on this process as well as a list of task force members. Attachment C contains a complete list of the indicators.

CDPHE also convened the Assessment and Planning Task Force, comprised of state and local agency representatives, to develop the overall structure to guide local public health agencies through the assessment process. This task force included experts, contractors, and users of community assessment tools (Attachment D). Work from the task force culminated into Colorado's Health Assessment and Planning System (CHAPS). "CHAPS provides guidance for a standard process to help local public health agencies meet assessment and planning requirements of the Public Health Act of 2008. CHAPS also assists agencies that want to prepare for voluntary accreditation by the National Public Health Accreditation Board, since CHAPS processes meet national standards" (CDPHE, n.d. para 1).

Stage 1	Plan the Process
Stage 2	Identify and Engage Stakeholders
Stage 3	Conduct a Community Health Assessment
Stage 4	Conduct a Capacity Assessment
Stage 5	Prioritize Issues
Stage 6	Develop a Public Health Improvement Plan
Stage 7	Implement, Promote and Monitor the Plan
Stage 8	Inform and Participate in Statewide Public Health Improvement Plan

Table 7: The 8 stages of the CHAPS process (Colorado Department of Public Health and Environment (CDPHE), n.d.).

Beginning in 2011, CDPHE asked local public health agencies to volunteer as pilot sites to test and further develop the assessment and planning tools. Mesa County Health Department was one of seven pilot sites selected, and was awarded Preventive Block Grant funding from CDPHE. As a pilot site, Mesa County Health Department provided feedback on early drafts of the CHAPS guidance documents.

In addition to providing input on CHAPS, Mesa County Health Department found value in utilizing other assessment models to provide different perspectives and approaches.
The eight stages of CHAPS provided general guidance for Mesa County's process (Table 7). Attachment E provides additional details on the CHAPS process.

PRECEDE/PROCEED

The PRECEDE/PROCEED model is an assessment and planning tool. PRECEDE is Predisposing, Reinforcing, and Enabling Constructs in Educational Diagnosis and Evaluation. PROCEED is Policy, Regulatory, and Organization Constructs in Educational and Environmental Development.

The model has nine phases; 1-5 are related to assessment (PRECEDE) and 6-9 are related to planning and implementation (PROCEED). The PRECEDE portion of the model will be utilized during the community health assessment process for Mesa County. PROCEED will provide guidance toward planning, implementation, and evaluation of health promotion interventions that will be utilized to address needs identified in the PRECEDE portion of the model.

Phase 1: Social Diagnosis	Collect data related to a particular community through interviews, surveys, focus groups, etc.
Phase 2: Epidemiological Diagnosis	Identify health problems that contribute to quality of life concerns discovered in the social diagnosis. Generally uses secondary data analysis.
Phase 3: Behavioral and Environmental Diagnosis	Identify the behaviors or lifestyles (behavioral factors) and the social or physical factors (environmental factors) related to the health problem identified in the epidemiological diagnosis.
Phase 4: Educational and Organizational Diagnosis	Predisposing, reinforcing and enabling factors related to the health problem are identified. They are then rated on importance and changeability and prioritized.
Phase 5: Administrative and Policy Diagnosis	Based on results from the prior phases, potential interventions are identified. Policies and resources are also identified relative to program implementation.

Table 8: Phases 1-5 of the PRECEDE/PROCEED model (Glanz, Lewis, Rimer, 1997).

MESA COUNTY'S COMMUNITY HEALTH NEEDS ASSESSMENT STEPS

Mesa County Health Department adapted and combined portions of the above mentioned assessment frameworks to complete a needs assessment process (Attachment F).

Although the CHAPS process and the PRECEDE/PROCEED model suggest engaging stakeholders as the first step, the process used for this assessment started with collecting data (PRECEDE/PROCEED Epidemiological Diagnosis). This is because stakeholder engagement is more meaningful when it involves reviewing data-based community needs. In past assessments, the experience has been that stakeholder engagement before data analysis resulted in identifying needs that are more subjective and based on the agendas of special interest, rather than the true needs of the community.

Chronic disease, maternal and child health, oral health, communicable disease, and injury and violence are five broad categories that encompass morbidity and mortality issues normally addressed through community health efforts. When examining these issues, several associated behavioral determinants and environmental risk factors were identified and used to guide the Mesa County Community Health Needs Assessment through the following steps:

Step 1: Compile Existing Data

Step 2: Engage Stakeholders and Prioritize Health Problems

Step 3: Gathering Primary Data

Step 1: Compile Existing Data

In February 2011, Mesa County Health Department reviewed a list of 250 indicators developed by the Public Health Indicator Task Force as a starting point for gathering local data. Mesa County Health Department staff researched all available data for Mesa County related to each of the 250 indicators and identified whether a state standard or a Healthy People 2020 objective was available for comparison. Attachment G contains a complete list of data sources used.

Step 2: Engage Stakeholders and Prioritize Health Problems

Mesa County Health Department established the Mesa County Community Health Steering Committee, comprised of selected community representatives, to provide guidance for the health assessment process. Members of the steering committee were chosen based on their abilities to provide subject matter expertise, provide input, see the big picture of community health, and review the health-indicator data. Committee members were asked to commit to a kickoff meeting, potentially participate in priority area focus groups, and provide a review of the final CHNA report.

Mesa County Community Health Steering Committee participants received a letter from the Public Health Director (Attachment H) inviting them to attend a kickoff meeting in the fall of 2011. The following key community organizations participated, representing diversity within the public health system:

- City of Grand Junction
- Colorado West Psychiatric Hospital, Inc.
- Community Hospital
- Family Health West
- Mesa County Local Emergency Planning Committee (LEPC)
- Marillac Clinic
- Mesa County School District #51
- Mesa County Department of Human Services
- Mesa County Health Department
- Hilltop
- Mesa County 211
- St. Mary's Hospital
- Strive

The Mesa County Community Health Steering Committee convened for the first time during the Community Health Needs Assessment Kickoff breakfast meeting on October 18th, 2011.
During the kickoff, the Mesa County Health Department Director provided the group with an overview of the CHNA process and initial data analysis. The agenda and presentation are available in Attachments I and J.

Based on the length of this initial kickoff meeting, the Mesa County Community Health Steering Committee decided to postpone the prioritization process and reconvene later to select priority areas. This meeting was held on November 2nd, 2011. Lunch was provided. The Mesa County Health Department Director provided a brief overview of the process and committee members began the prioritization exercise.

Participants were provided with fact sheets on a variety of health categories. Each member of the Steering Committee was provided a prioritization worksheet (Attachment K) and asked to score each of the health categories based on two factors: Importance and Actionablility. A scale from 0-10 (less important or actionable to most important or actionable) was used. As the worksheets were completed, staff entered the data into a scatter plot to visually depict where each of the Steering Committee members scored the priority categories.

A chart of all categories based on the average combined score was created to easily compare how the categories related to one another.

The Committee then discussed each health category in order to reach consensus on which areas would move forward as priorities. After selecting the priority groups, the Steering Committee and other stakeholders were asked through an online survey instrument, SurveyMonkey, to identify and recommend additional community members to attend focus groups as subject matter experts. An additional focus group containing community members was convened to get input on all priority areas.

Throughout the focus group process, Steering Committee members received updates on the Community Health Needs Assessment Process through MailChimp, an online newsletter tool that allows for tracking results.

Step 3: Gathering Primary Data

The Steering Committee gathered primary data to further explore information for Mesa County. This was completed by holding focus groups and by identifying and reviewing data available in a variety of community programs.

Subject-Matter-Expert Focus Groups

The first step in gathering additional data was to hold focus groups on each of the priority areas. These focus groups were held from mid-December 2011 through mid-January 2012. These meetings were scheduled in two-hour blocks. Committee members provided recommendations for subject matter experts; Mesa County Health Department staff reviewed these recommendations and ensured the list was comprehensive and inclusive of all agencies, individuals, and organizations that are involved in each of the health priority areas. An invitation was created for each of the focus groups and an example is available in Attachment L. The invitation was sent through email to all suggested contacts.

The subject matter expert focus group participants were given a background sheet on the health assessment process as well as the scatter plot of the prioritization (Attachment M). They also received fact sheets for each priority area (Attachment N).

The focus groups were structured to follow a short discussion format. General questions were asked including: "How much of an issue is… in our community?" And, "What barriers, services, or data do you feel influence this issue?" Focus group participants were asked these questions to gather information regarding how demographic and social determinants impact the health areas. A complete list of subject matter experts who were invited and who attended the focus groups is located in Attachment O.

Community Focus Group

The community focus group was conducted on January 23, 2012. Mesa County Health Department worked with the Self Sufficiency Division at Mesa County Department of Human Services (DHS) to recruit community members. The DHS intake team gave clients, as they met with them, an overview of the process to gauge interest. Those who were interested filled out the registration form available in Attachment P. Information collected included name, age, ethnicity, zip code, household income, etc. Each participant received a reminder card with the date, time, and location of the focus group.

Childcare, provided by volunteers, was available to participants if needed. To utilize this service, participants were required to sign the liability waiver available in Attachment Q. The childcare was located in a conference room directly across from where the focus group was held. A variety of options were available for the kids including watching a movie, drawing, or coloring. Focus groups participants received a $25 gift card to City Market for their participation. Snacks were available for both the focus group participants as well as the children.

Each community focus group participant received a background sheet on the health assessment process and the scatter plot of the prioritization (Attachment M). They also received the same one-page fact sheets for each priority area that the steering committee and subject matter experts received (Attachment N).

Community Health Summits

Once the subject-matter-expert and community focus groups were complete, Mesa County Health Department and community partners identified key public health priorities that would have a large-scale impact on health and quality of life. These areas became Mesa County's Winnable Battles to be addressed over the next several years. As a means to triangulate information gathered in the focus groups, large community summits were held to discuss issues related to Mesa County's Winnable Battles. The summits encouraged community partners, stakeholders, and members of the public to offer ideas and potential solutions to barriers.

HEALTH MORTALITIES, MORBIDITIES, BEHAVIORS, AND ENVIRONMENT

This section provides tables, charts, and trend data resulting from the Community Health Needs Assessment process and associated steps:

1. Compiling existing data,

2. Engage stakeholder and prioritize health problems, and

3. Gathering primary data.

The tables found in the following sections are comprised of various indicators comparing Mesa County to Colorado. Colored bars are used to represent indicators in which Mesa County is doing significantly different than Colorado, using a 95% confidence interval ($p < .05$).

Step 1: Compile Existing Data

To maintain the ability to quickly reference indicator data throughout the PRECEDE process, the five broad public health classifications were used:

- Chronic Disease
- Communicable Disease
- Oral Health
- Maternal and Child Health
- Injury and Violence

And, in an effort to accomplish a comprehensive epidemiological diagnosis of Mesa County, the complete list of 250 indicators developed by the Public Health Indicator Task Force guided initial data collection. The list of indicators was divided into categories, Table 9, representing different levels of indicator comparisons.

Chronic diseases, such as cardiovascular disease, cancer, and diabetes are the leading causes of death and disability in Mesa County. These diseases also cause major limitations in daily living for many Mesa County residents. Mesa County estimates for 2008-2010 show that cancer, cardiovascular disease, chronic liver disease and cirrhosis, and cerebrovascular disease rank 2nd, 4th, 9th, and 10th respectively in the Colorado Department of Public Health and Environment's top ten list of 'years of potential life lost' (Colorado health indicators, 2011).

Mortality/Morbidity	Mesa County	Colorado	Significant Difference (p < .05)
Heart Disease as Cause of Death (rate per 100,000) (2011)	159.9	131.2	Worse
Cancer as Cause of Death (rate per 100,000) (2011)	146	143.6	No difference
Chronic Lower Respiratory Diseases as Cause of Death (rate per 100,000) (2011)	58.2	46.8	No difference
Cerebrovascular Diseases as Cause of Death (rate per 100,000) (2011)	42.1	34.8	No difference
Other Respiratory Diseases as Cause of Death (rate per 100,000) (2011)	9.0	8.4	No difference
Diabetes Mellitus as Cause of Death (rate per 100,000) (2011)	15.1	16.4	No difference
Adults 18+ Years with Diabetes (2008-2010)	6.7%	5.9%	No difference
Adults 18+ Years Who Have Ever Been Told They Have High Blood Pressure (2007, 2009)	24.9%	21.8%	No difference
Adults 18+ Years Who Have Been Told They Have High Cholesterol (2007, 2009)	32.4%	34.4%	No difference
Adults 18+ with Arthritis (2007, 2009)	30.0%	23.9%	Worse
Adults 18+ with Asthma (2008-2010)	9.4%	8.5%	No difference
Children Ages 1-14 Years with Asthma (2009)	7.5%	8.2%	No difference
Adults 18+ who reported that their general health was "Fair" or "Poor" (2008-2010)	15.6%	12.5%	No difference
Average Number of Days Out of the Last 30 Days Physical Health Was Not Good (2009-2010)	3.9	3.1	No difference
Behavioral and Environmental Factors			
Adults 18+ Years Who Have Had a Cholesterol Screening in the Past 5 Years (2007, 2009)	71.3%	76.5%	No difference
Females 18+ Years Who Report Having Had a Papanicolaou Smear Within the Past 3 Years (2008, 2010)	84.1%	84.0%	No difference
Obese Adults 18+ Years (2009-2010)	22.5%	19.9%	No difference
Overweight or Obese Children Ages 2-14 Years (2008-2009)	23.7%	25.8%	No difference
Uninsured Adults Ages 18-24 Years (2011)	21.4%	19.8%	No difference
Children Who Are Eligible but Not Enrolled in Medicaid or CHP+ (2010)	23.8%	18.7%	Worse
Number of Fast Food Restaurants (rate per 100,000) (2009)	67	70	Unknown
Number of Homes Tested for Radon (rate per 100,000) (2009)	909	2,027	Worse
Limited Access to Healthy Foods (low-income people who do not live close to a grocery store) (2012)	14.0%	6.0%	Unknown
Number of Grocery Stores (rate per 100,000) (2009)	11	14	Unknown
Number of Farmers' Markets (rate per 100,000) (2009)	1.36	0.24	Unknown

Table 10: Indicators showing the mortality, morbidity, and behavioral and environmental factors for chronic disease in Mesa County, Colorado, and the Nation (Colorado Department of Public Health and Environment [CDPHE], 2012; US Census Bureau, 2012; County Health Rankings, 2011).

Cardiovascular Disease

The World Health Organization (WHO) (2012a) defines cardiovascular diseases as a group of disorders of the heart and blood vessels, most notably, coronary heart disease, cerebrovascular disease, and peripheral arterial disease (What are Cardiovascular Diseases, para. 1). Cardiovascular diseases remain the biggest cause of deaths worldwide, in Colorado, and in Mesa County. Heart disease is currently the greatest cause of death in Mesa County (Table 11).

Blood cholesterol is a measure of the amount of lipids, or fats, in the blood. When a person has too much cholesterol in their blood, it can build up on the walls of arteries. Elevated blood cholesterol levels lead to cardiovascular disease. Screening for blood cholesterol levels is key to the prevention of heart disease. Cholesterol screening is trending in a healthy direction; however, at 74% Mesa County still falls below the Healthy People 2020 goal of 82% (Figure 14).

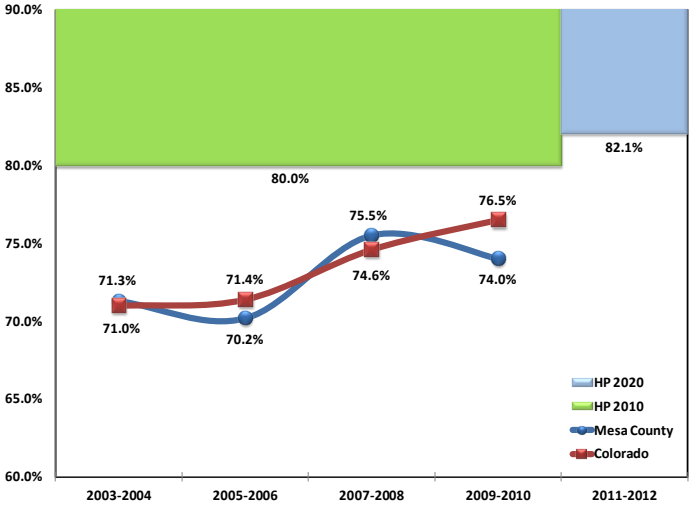

Figure 14: Adults aged 18+ who have had cholesterol screening in the past 5 years (Colorado Health Information Dataset [CoHID], 2012; Department of Health and Human Services [HHS], 2012; Healthy People 2020, 2011).

Cancer

Cancer is defined as, "A generic term for a large group of diseases that can affect any part of the body. Other terms used are malignant tumors and neoplasms.

One defining feature of cancer is the rapid creation of abnormal cells that grow beyond their usual boundaries, and which can then invade adjoining parts of the body and spread to other organs" (WHO, n.d., What is cancer, para. 1). Cancer is the second leading cause of death in Mesa County; however, Mesa County has rates similar to Colorado, and both fall well below the national cancer death rate.

Mesa County 2011 Top 10 Causes of Death	Mesa County Rate (per 100,000)	Colorado Rate (per 100,000)	National Rate	Significant Difference from Colorado (p < .05)
Heart disease	159.9	131.2	178.5*	Worse
Cancer	146.0	143.6	172.5*	No difference
Chronic lower respiratory diseases	58.2	46.8	42.1*	No difference
Cerebrovascular	42.1	34.8	39.0*	No difference
Unintentional Injuries	48.6	46.3	37.1*	No difference
Alzheimer's disease	27.8	29.3	25.0*	No difference
Suicide	34.4	17.4	11.9*	Worse
Diabetes mellitus	15.1	16.4	20.8*	No difference
Chronic liver disease/cirrhosis	12.4	12.2	9.4*	No difference
Other diseases of respiratory system	9.0	8.4	-	No difference

* 2010 preliminary data, CDC.

Table 11: The top 10 causes of death in Mesa County compared to the rates for Colorado and the Nation (CoHID, 2012).

Aggregated data from the Colorado Central Cancer Registry (2000-2011) describes, that of the major cancer sites, the incidence rate for cancer of the lung, female breast, and prostate are all significantly worse in Mesa County than for Colorado ($p < .05$) (Figure 15):

- **Lung Cancer**
  Mesa County (67.0)
  Colorado (52.1)
  Rate per 100,000

- **Female Breast Cancer**
  Mesa County (136.6)
  Colorado (125.9)
  Rate per 100,000

- **Prostate Cancer**
  Mesa County (201.9)
  Colorado (160.6)
  Rate per 100,000

Diabetes

The Centers for Disease Control (CDC) (2012a) explains diabetes as, "A disease in which blood glucose levels are above normal;" diabetes can express itself in two ways, "…either your body doesn't make enough insulin or can't use its own

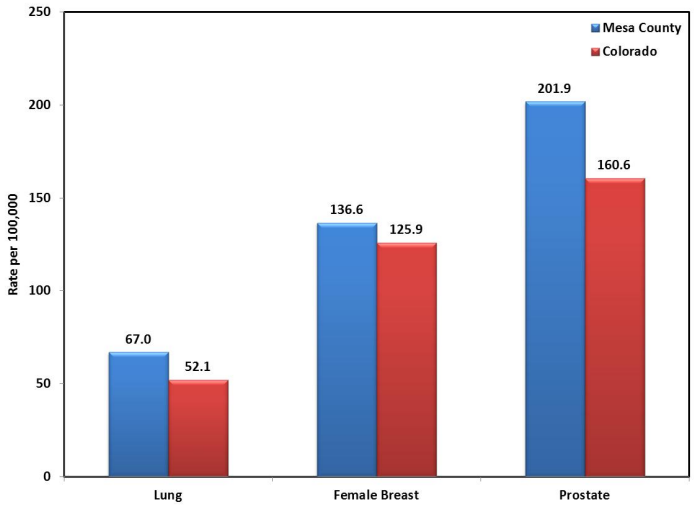

Figure 15: Cancer of the Lung, Female Breast, and Prostate (Colorado Central cancer Registry, 2000-2011).

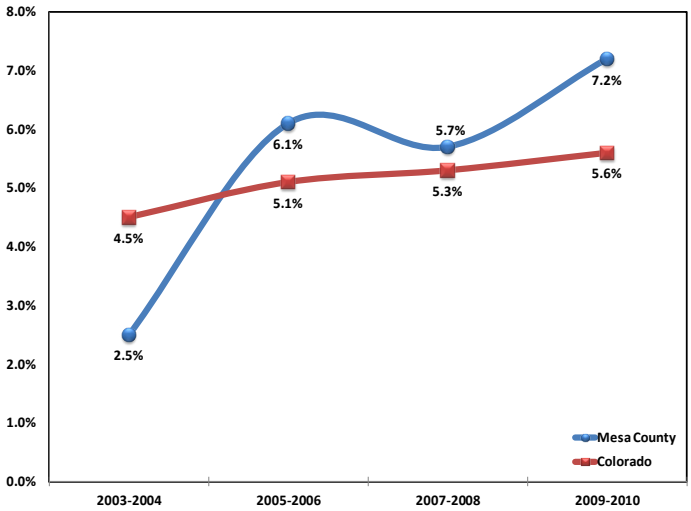

Figure 16: Adults aged 18+ with diabetes (CoHID, 2012).

insulin as well as it should" (What is diabetes, para 1). The result is a buildup of sugar in the blood. Diabetes can cause serious health complications including heart disease, blindness, kidney failure, and lower extremity amputations. The overall risk of dying among people with diabetes is at least double the risk of their peers without diabetes" (WHO 2012b, What are common consequences of diabetes, para. 6). Diabetes is the seventh leading cause of death in the United States and the ninth leading cause of death in Mesa County.

Type I diabetes, which is the insulin-dependent form of diabetes, is most often diagnosed in children, teenagers, and young adults. Mesa County School District #51 reports a rate of 1 in 250 students having Type I diabetes, compared to Colorado's rate of 1 in 300. Type II diabetes, the noninsulin-dependent form of diabetes, is the most common type of diabetes. Though it is often referred to as adult-onset diabetes, it can develop at any age. The number of adults with diabetes in Mesa County has been trending in an unhealthy direction since 2003, and has more than doubled over the past decade (Figure 16).

Asthma

"Asthma is a disease characterized by recurrent attacks of breathlessness and wheezing, which vary in severity and frequency from person to person. During an asthma attack, the lining of the bronchial tubes swells, causing the airways to narrow, reducing the flow of air into and out of the lungs" (WHO, n.d., Asthma, para. 1).

There is no cure for asthma, but with the proper education and resources disease management can control the disorder enabling people to enjoy a good quality of life.

There is not a significant difference between Mesa County (7.5%) and Colorado (8.2%) ($p < .05$) for children between the ages of 1-14 years with asthma. Correspondingly, Mesa County (9.4%) and Colorado (8.5%) are not significantly different ($p < .05$) for adults with asthma, but trending on this indicator is in an unhealthy direction (Figure 17).

Arthritis

Arthritis is joint inflammation, but according to the CDC (2012b), the word represents "more than 100 rheumatic diseases and conditions that affect joints, tissues surrounding joints, and connective tissue" (Arthritis basics, para. 1). It is the most common cause of disability in the United States, limiting the activities of nearly 21 million adults (CDC, 2012b, Quick stats on arthritis, para. 2). The percentage of adults with arthritis in Mesa County (30.0%) is significantly worse than Colorado (23.9%) ($p < .05$).

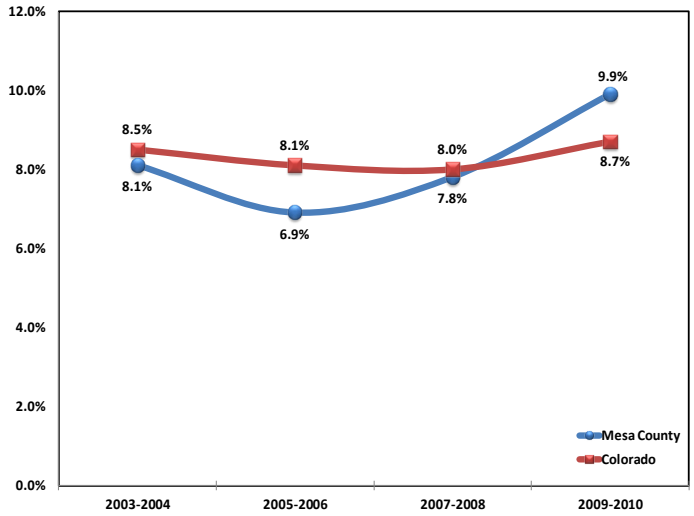

Figure 17: Adults aged 18+ with asthma (CoHID, 2012).

Chronic Disease Indicators in which Mesa County is Significantly Different ($p < .05$)	
Mesa County is better for:	**Mesa County is worse for:**
Hospitalizations due to stroke Mesa County (227) Colorado (271) rate per 100,000	**Adults receiving a blood cholesterol screening within the past 5 years** Mesa County (74%) Colorado (82%)
Hospitalizations due to heart disease Mesa County (2,109) Colorado (2,593) rate per 100,000	**Adults with high blood cholesterol levels** Mesa County (30%) Colorado (14%)
Hospitalizations due to acute myocardial infraction Mesa County (170) Colorado (188) rate per 100,000	**Adults with arthritis** Mesa County (30%) Colorado (24%)
Hospitalizations due to heart failure Mesa County (639) Colorado (776) rate per 100,000	

Table 12: Chronic disease indicators in which Mesa County is better and worse than Colorado (CDPHE, 2012).

Obesity

The CDC (2012c) defines overweight and obesity as, "…labels for ranges of weight that are greater than what is generally considered healthy for a given height. The terms also identify ranges of weight that have been shown to increase the likelihood of certain diseases and other health problems" (Defining overweight and obesity, para. 1). Obesity is a national epidemic and is a serious public health problem because it is associated with some of the leading causes of death in the U.S. and worldwide, including diabetes, heart disease, stroke, and some types of cancer. There is no significant difference between Mesa County and Colorado ($p < .05$) for any of the obesity or overweight indicators. However, Mesa County is showing a trend in an unhealthy direction for both adult obesity and overweight and obese children (Figures 18 and 19).

Nutrition is also an important factor in good health, disease prevention, and maintaining a healthy weight. In 2011, the third Mesa County Citizen Attitude Survey indicated a decline in county citizens' satisfaction with nutrition and health education efforts in the community (Figure 20).

Physical activity is another important factor of good health. Regular physical activity will help control weight, reduce the risk of many chronic diseases, increase strength and mobility, and improve mental

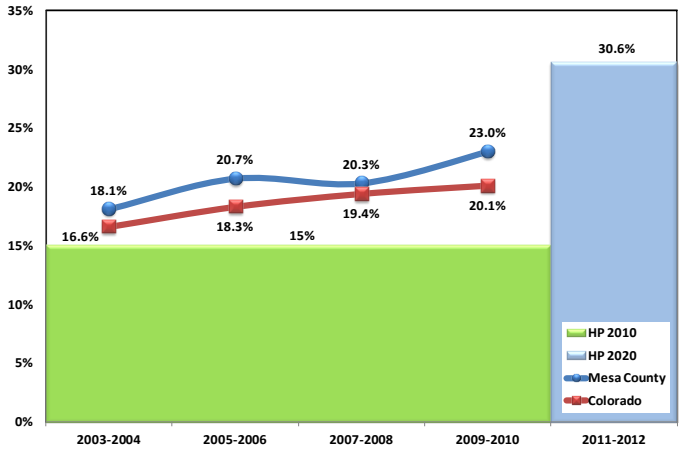

Figure 18: Adults 18+ years that are obese
Adapted from the Colorado Health Information Dataset, 2012

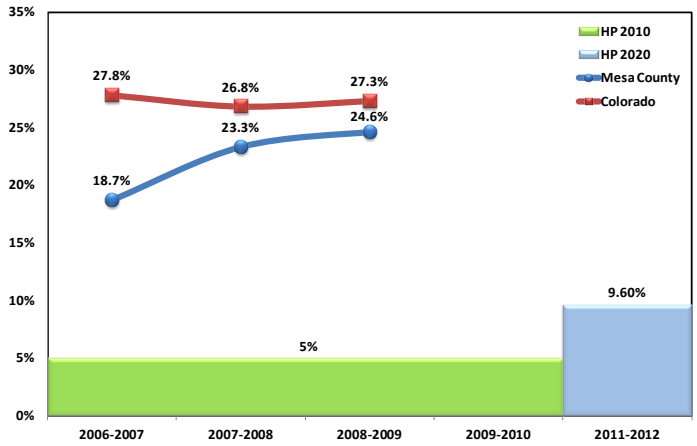

Figure 19: Children ages 2-14 years that are overweight or obese Adapted from the Colorado Health Information Dataset, 2012

health and mood (CDC, 2011b, Physical activity and health, para. 1). There is not a significant difference between Mesa County (81.4%) and Colorado (82.9%) ($p < .05$) for leisure time activity.
Within Mesa County there is a correlation between an individual's income and their leisure time activity (Figure 21). This indicates that those who earn a higher income are more likely to be physically active.

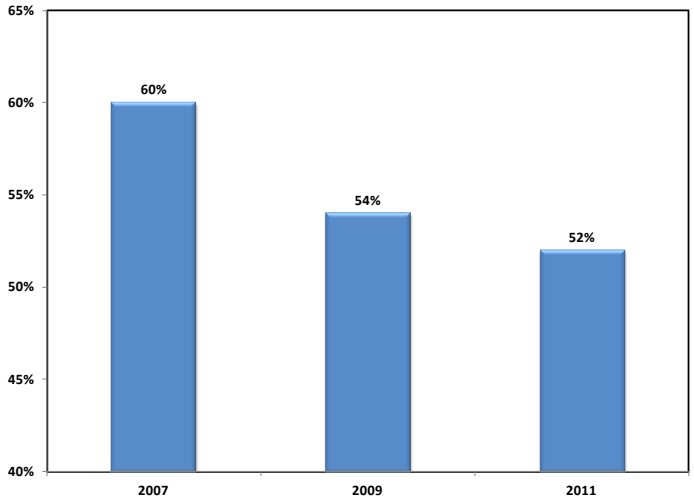

Figure 20: Efforts to Educate the Public on Nutrition and Health Issues. Percent of respondents who rated the item as "very good" or "good" on a 5-point scale (2011 Citizen Attitude Survey, 2011).

Tobacco

Tobacco use, specifically smoking, harms nearly every organ of the body. The CDC (2012d) notes, in the United States, "more deaths are caused each year by tobacco use than by all deaths from human immunodeficiency virus (HIV), illegal drug use, alcohol use, motor vehicle injuries, suicide, and murders combined" (Smoking and Tobacco Use, para. 3).

There is no significant difference between Mesa County and Colorado ($p < .05$) for any of the tobacco use indicators including percentage of adults who smoke and percentage of children who rode in cars or lived in homes where someone had smoked recently. However, the percentage of Mesa County adults who smoke is trending in an unhealthy direction (Figure 22), and early estimates of 2011 Behavioral Risk Factor Surveillance System (BRFSS) data show Mesa County (25.5%) at more than double the Healthy People 2020 target (12.0%).

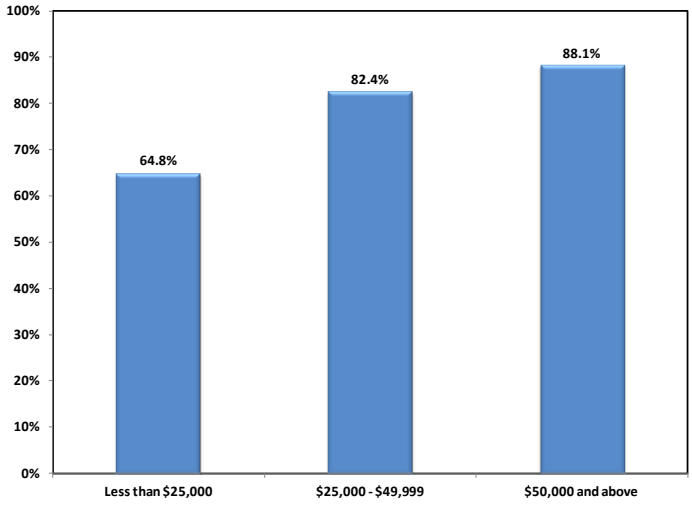

Figure 21: Percent of people in Mesa County answering yes to the question, "During the past 30 days, other than your regular job, did you participate in any physical activities?", data years 2009-2010 (CoHID, 2012).

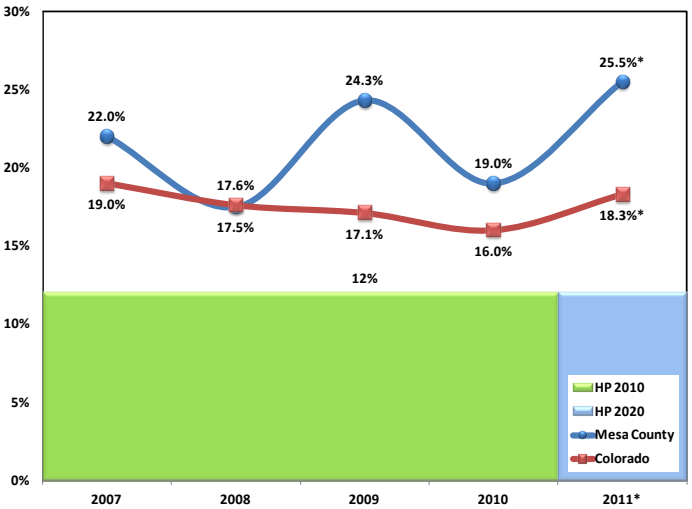

Figure 22: Percent of adults who currently smoke cigarettes (CoHID, 2012). *Collection methods for BRFSS changed in 2011 and aren't consistent with previous years.

Years of Potential Life Lost (YPLL)

As defined by CDC (1986), "… the number of years of potential life lost by each death occurring before a predetermined end point, set at age 65 years" (Premature mortality in, para. 7). It is a measure of premature death and a useful tool in ranking the leading causes of death in the younger age groups. Mesa County is significantly worse than Colorado ($p < .05$) in six of the top ten causes of YPLL in Mesa County (Table 13).

Health Access

The Colorado Health Institute's Colorado Health Access Survey, completed in November 2011, found that because of cost, more Mesa County residents were forgoing health services. Following are specific examples and how Mesa County compares to Colorado:

- 14% are not filling prescriptions (12% Colorado)
- 18% did not see a doctor (13% Colorado)
- 22% did not see a specialist (13% Colorado)
- 24% did not see dentist (23% Colorado)
- 7% did not see a mental health provider (7% Colorado)

This survey also found that Mesa County residents are less likely to have a usual source of care; 18% have no usual source of care compared to 15% in Colorado. Of all emergency department and urgent care visits, greater than 80% could be addressed in a primary care setting. (Mesa County Health Department, 2013).

2011 Mesa County Top 10 Causes of YPLL	Mesa County (YPLL per 100,000 population)	Colorado (YPLL per 100,000 population)	Significant Difference ($p < .05$)
All Causes	4298.8	3759.3	Worse
Unintentional Injuries	1062.6	794.8	Worse
Cancer	603.1	503.0	Worse
Suicide	506.2	419.3	Worse
Heart Disease	409.6	325.7	Worse
Injuries of Undetermined Intent	216.3	313.5	Better
Congenital Malformations	156.2	187.8	Better
Prenatal Conditions	137.6	139.4	No difference
Homicide/ Legal Intervention	116.8	126.6	No Difference
Chronic Liver Disease and Cirrhosis	107.8	59.2	Worse
Cerebrovascular Diseases	68.4	56.0	Worse

Table 13: The top 10 causes of years of potential life lost in Mesa County compared to the rates for Colorado (CDPHE, 2012).

Communicable diseases are passed in various ways from human-to-human or from animal-to-human. Public health agencies monitor communicable disease activity in an effort to prevent or control their transmission.

Morbidity	Mesa County	Colorado	Significant Difference (p < .05)
HIV (rate per 100,000) (2008-2010)	4.2	5.5	No difference
Chlamydia, Ages 15-29 Years (rate per 100,000) (2008-2010)	1633.8	1597.2	No difference
Gonorrhea, Ages 15-29 Years (rate per 100,000) (2008-2010)	62.9	229.0	Better
Campylobacter (rate per 100,000) (2008-2010)	15.7	15.5	No difference
STEC (Shiga Toxin Producing E. Coli) (rate per 100,000) (2008-2010)	3.0	3.9	No difference
Salmonella (rate per 100,000) (2008-2010)	10.4	12.8	No difference
West Nile Virus (rate per 100,000) (2008-2010)	3.2	1.7	No difference
Influenza Hospitalizations in People Aged 65+ Years (rate per 100,000) (2008-2010)	37.4	62.7	Better

Table 15: Indicators showing the morbidity for communicable disease in Mesa County, Colorado (CDPHE, 2012).

Immunizations and Vaccinations

Public health maintains preventive tools such as vaccinations for vaccine-preventable disease as well as antibiotics and antiviral medications for treatment to counteract the morbidity and mortality associated with outbreaks and epidemics. Mesa County (37.4 per 100,000) is significantly better than Colorado (62.7 per 100,000) ($p < .05$) for rates of influenza hospitalizations in people ages 65 and over; this is directly related to immunization rates in the community.

A 2012 Mesa County child-care provider survey issued by the MCHD revealed that less than half (48%) of child-care providers who responded (n=154) received an influenza immunization in the past year. Additionally, more than half (57%) of the child-care providers that answered the survey believe that it's possible for the flu shot to make a person become sick with the flu (Figure 23)

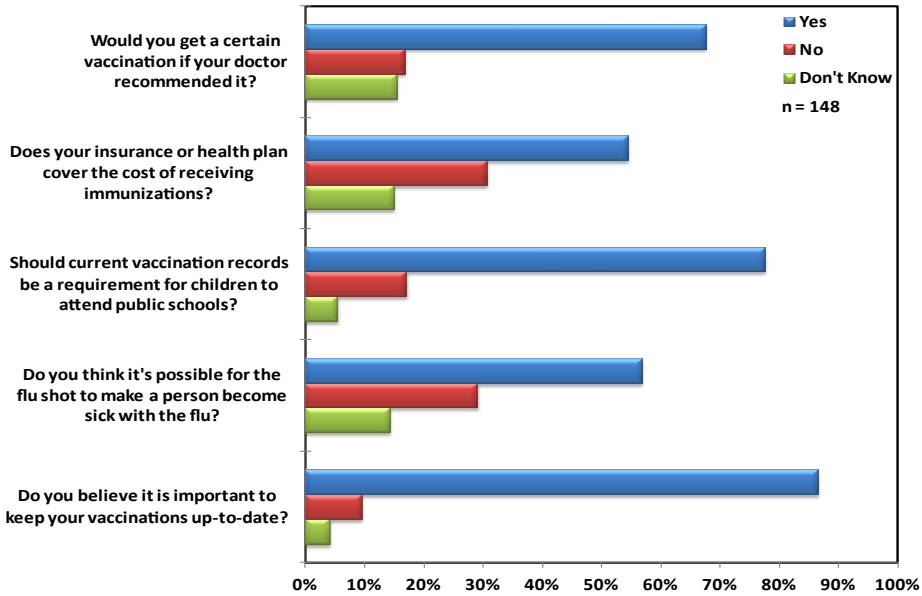

Figure 23: Child-care providers' attitudes on vaccinations (2012 Child-Care Provider Survey, Mesa County, 2012).

Sexually Transmitted Disease (STD)

The World Health Organization (n.d.) describes STD's as, "… infections that are spread primarily through person-to-person sexual contact. There are more than 30 different transmissible bacteria, viruses, and parasites" (Sexually transmitted infections, para. 1). Sexually transmitted diseases are very common. "Every year there are more than 19 million new cases of STD's in the U.S. By age 25, roughly 1 in 2 sexually active people will get one" (It's Your Life, n.d., Why Should I Get Tested, para. 1). Mesa County is not significantly different than Colorado ($p < .05$) for incidence rates of most STD's. Mesa County (62.9 per 100,000) is significantly better than Colorado (229.0 per 100,000) ($p < .05$) for rates of Gonorrhea.

A Mesa County Health Department survey given to 402 Mesa County high school teens, revealed that only 64% of teens used a condom every time they had sex (Figure 24).

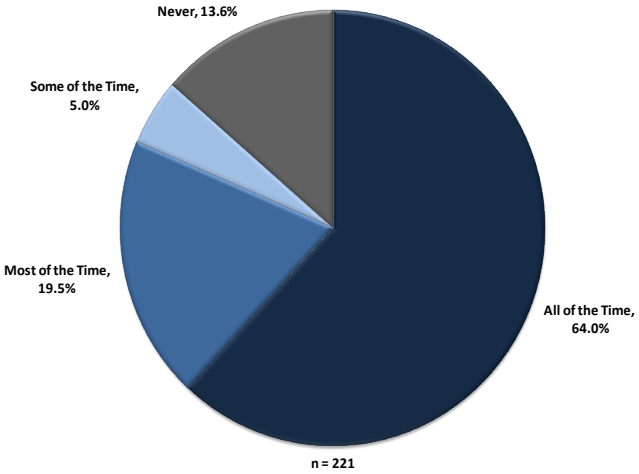

Figure 24: Response to the question, "How often do you use condoms to prevent sexually transmitted diseases (STD's)" (2012 Teen Sexual Health Survey, Mesa County, 2012).

Maintaining good oral health is an essential part of overall health and quality of life. There are serious consequences related to poor oral health including cavities, gum disease, tooth loss, and oral cancers. The World Health Organization also points to oral health as a contributing factor to many chronic diseases, such as, cardiovascular disease, cancer, chronic respiratory disease, and diabetes.

Mortality	Mesa County	Colorado	Significant Difference (p < .05)
Cancer of the Lip, Oral Cavity, and Pharynx Deaths (rate per 100,000) (2009-2011)	1.6	2.0	No difference
Behavioral and Environmental Factors			
Adults 18+ Years Who Visited a Dentist or Dental Clinic Within the Past Year (2010)	57.6%	68.6%	Worse
Adults 18+ Years Who Ever Lost Any Teeth Due to Decay or Periodontal Disease (2008, 2010)	44.9%	35.6%	Worse
Children Ages 1-14 Years With Fair or Poor Condition of Teeth (2008-2010)	12.9%	8.4%	No difference
Third Grade Children With Untreated Tooth Decay (2006-2007)	25.0%	24.5%	No difference
Third Grade Children With Caries Experience (2006-2007)	57.7%	57.2%	No difference
Third Grade Children With Dental Sealants on at Least One Tooth (2006-2007)	34.8%	35.0%	No difference
Children on Medicaid Who Received Dental Service Between July 2009 and June 2010	39.1%	45.8%	Unknown
People Who Have Dental Insurance (2008-2009)	51.6%	48.4%	Unknown
Adults 18+ Years Who Currently Smoke Cigarettes (2011)	25.5%	18.3%	No difference

Table 14: Indicators showing the mortality and the behaviors and environmental factors for oral health in Mesa County and Colorado (CDPHE, 2012; CoHID, 2012; US Census Bureau, 2012; and Colorado Department of Health Care Policy and Financing (CDHCPF), 2012).

Fluoridation

The CDC (2012e) describes community water fluoridation as an evidence-based, effective, safe, and cost-beneficial public health intervention for the prevention of tooth decay which benefits every member of a community (Fluoridation basics, para 5). As of August 2012, 138,339 people in Mesa County are served by a public water system. Of those, 96% have optimally fluoridated water (National Oral Health Surveillance System, 2012).

A 2005 Colorado-specific study found that fluoridated communities saved approximately $61 per person per year in averted dental treatment costs (O'Connell, Brunson, Anselmo & Sullivan, 2005). This equates to an annual savings of $8.1 million in averted dental costs in Mesa County.

Dental Visits and Outcomes

Mesa County has seen steady growth, proportional to the growth of the community, in the number of licensed registered dentists from 2005-2011 (Colorado Health Institute, 2012). As a result, Mesa County (0.6 per 1,000) has a higher rate of licensed registered dentists than Colorado (0.4 per 1,000). While Mesa County is not significantly different than Colorado (p < .05) for any of the tracked oral health indicators, Mesa County is showing a negative trend for the percent of adults who visited a dentist, dental hygienist, or dental clinic for any reason in the past year (Figure 25).

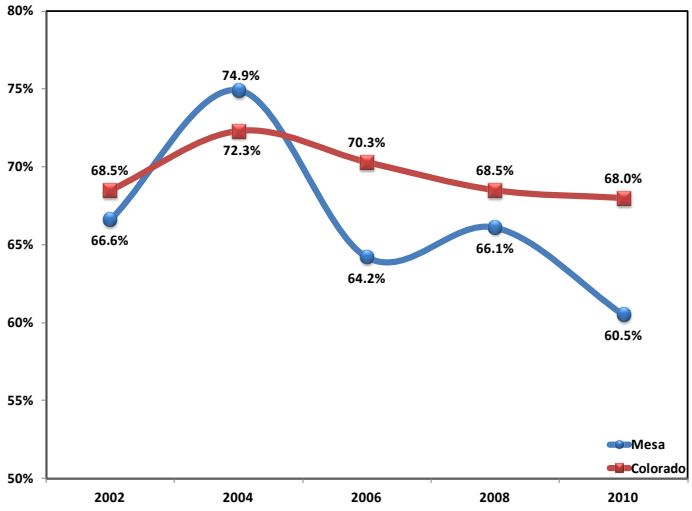

Figure 25: Percent of adults who visited a dentist, dental hygienist, or dental clinic for any reason in the past year (CoHID, 2012).

The health and wellness of mothers, infants, and children has a two-fold impact. Mothers must maintain good personal health, not only for themselves, but for the sake of their children. Prenatal care and other positive maternal behaviors pave the way for a strong and healthy next generation. In turn, poor birth outcomes lead to costly medical conditions for these children throughout their entire lives.

Mortality	Mesa County	Colorado	Significant Difference (p < .05)
Infant Mortality (rate per 1,000) (2011)	4.8	5.6	No difference
Neonatal Mortality (rate per 1,000) (2011)	2.7	4.0	No difference
Child Deaths Ages 1-14 Years (rate per 1,000) (2011)	0.2	0.1	No difference
Behavioral and Environmental Factors			
Teen Fertility Ages 15-19 Years (rate per 1,000) (2011)	36.6	27.8	Worse
Latina Teen Fertility Ages 15-19 Years (rate per 1,000) (2011)	73.4	55.2	Worse
Women Receiving Prenatal Care Beginning in the First Trimester of Their Pregnancy (2011)	80.7%	79.4%	No difference
Live Births Where Mothers Gained an Appropriate Amount of Weight During Pregnancy (2009-2010)	21.0%	30.9%	Worse
Newborns Who were Screened for Hearing Impairment Before Hospital Discharge (2009)	97.4%	97.3%	No difference
Low Birth Weight (2011)	7.7%	8.7%	No difference
Very Low Birth Weight (2011)	1.5%	1.3%	No difference
Women Who Smoked Cigarettes During the 3 Months Before Pregnancy (2009-2010)	35.5%	22.1%	Worse
Women Who Smoked Cigarettes During the Last 3 Months of Pregnancy (2009-2010)	11.0%	8.6%	No difference
Women Who Drank Alcohol During the Last 3 Months of Pregnancy (2009-2010)	7.1%	11.0%	No difference
Mothers Who Initiated Breastfeeding With Their Newborns (2008-2010)	90.5%	91.7%	No difference
Child Abuse (rate per 1,000) (2011)	11.3	8.3	Unknown
Overweight or Obese Children Ages 2-14 Years (2008-2009)	23.7%	25.8%	No difference
Children Who Are Eligible but Not Enrolled in Medicaid or CHP+ (2010)	23.8%	18.7%	Worse
Percent of Children Under 18 Years Below Federal Poverty Level (2010)	18.0%	17.1%	Unknown
Percent of Students Eligible for Free and Reduced School Lunch (2011)	44.1%	40.9%	Unknown

Table 15: Indicators showing the mortality and the behaviors and environmental factors for maternal and child health in Mesa County and Colorado (CDPHE, 2012; CoHID, 2012; US Census Bureau, 2012; and CDHCPF, 2012).

Teen Fertility

In the Colorado Health Institution's 2011 Colorado Health Report Card (2012), "Estimates reveal that a child is born to a teenage mother every 84 minutes and that teen pregnancy expenses cost Colorado taxpayers at least $184 million in 2008" (Teen Fertility, para. 4). Mesa County (36.6 per 1,000) is significantly worse than Colorado (27.8 per 1,000) ($p < .05$) for teen fertility rates of girls aged 15-19 years (Figure 26). Mesa County (73.4 per 1,000) is significantly worse than Colorado (55.2 per 1,000) ($p < .05$) for Latina fertility rates of girls aged 15-19 years.

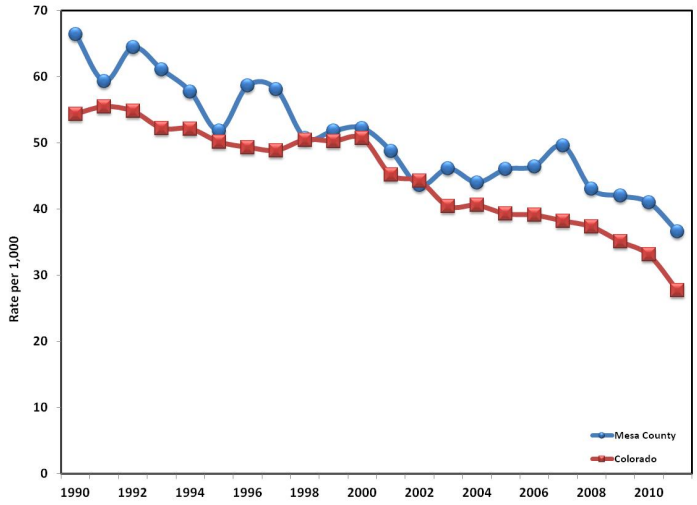

Figure 26: Teen birth rates, girls aged 15-19 years (Colorado Vital Statistics, 2012).

Within Mesa County, there is a significant difference between non-Hispanics (37.5 per 1,000) and Hispanics (73.4 per 1,000) ($p < .05$) in the fertility rate of girls aged 15-19 years. In fact, for this indicator, the fertility rate for Hispanics is double the rate for non-Hispanics. This trend has remained unchanged since 2005 (Figure 27).

In 2012 Mesa County Health Department issued a Teen Sexual Health Survey to Mesa County high school students to examine teenage behaviors surrounding sex. Only 47% of high school student who have had sex said they use birth control all of the time to prevent pregnancy; 35% of teens said they never use birth control (Figure 28). This survey also asked the teenagers at what age they first had sex, and the most common answers were 14 and 15 (30%) (Figure 29). Additionally, of those who reported having sex, over 80% did so before the age of 16.

Prenatal Care

Receiving early and regular prenatal care is one of the best ways to promote a healthy pregnancy. In a change from 2010, Mesa County (80.7%) is no longer significantly better than Colorado (79.4%) ($p < .05$) for the percent of pregnant women who began prenatal care in the first trimester of their pregnancy (Figure 30). The Adequacy of Prenatal Care Utilization (APNCU) Index uses two elements from birth certificate data: when prenatal care began and the number of prenatal visits from when prenatal care began until delivery. Based on this index, Mesa County (50.7%) is significantly worse than Colorado (60.1%) ($p < .05$) for adequacy of prenatal care.

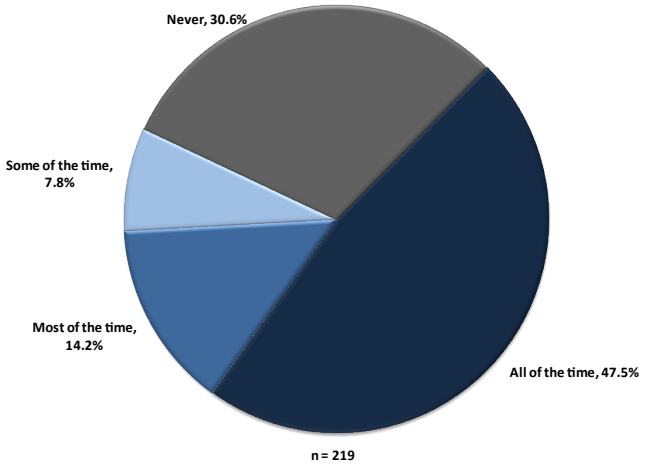

Figure 28: High school teens' use of birth control in Mesa County (Mesa County teen sexual health survey, 2012).

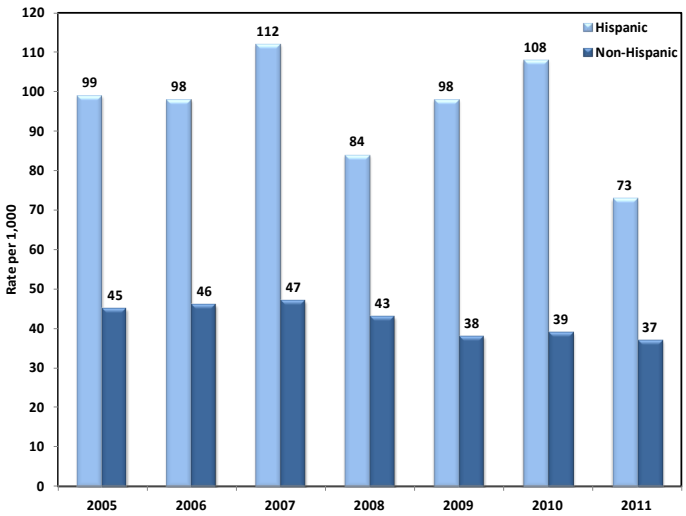

Figure 27: Teen birth rates in Mesa County by ethnicity, girls aged 15-19 years (CoHID, 2012, and US Census Bureau, 2012).

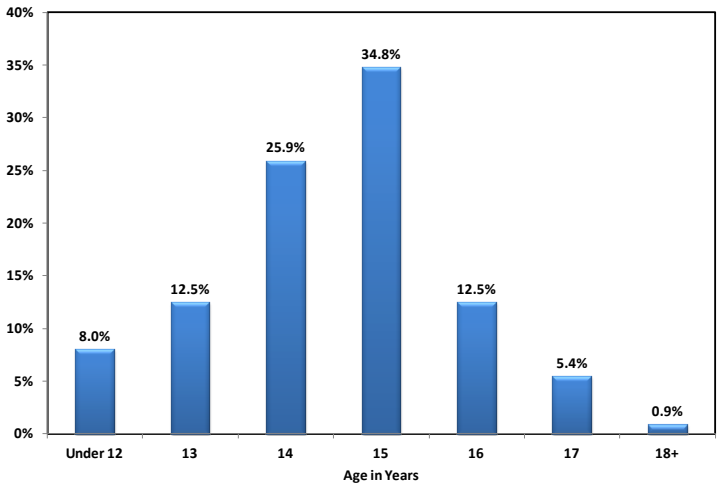

Figure 29: Age at first sexual encounter (Mesa County teen sexual health survey, 2012)

Maternal Behaviors

Maternal behaviors such as inappropriate weight gain, tobacco use, and alcohol abuse can impact the baby's health outcomes, such as low birth weight, fetal alcohol syndrome, cognitive disabilities, and death. The percent of mothers in Mesa County (21.0%) who gain the appropriate amount of weight during pregnancy is not significantly different than Colorado (30.9%) ($p < .05$); however, there is a downward trend for this maternal indicator (Figure 31).

Smoking during pregnancy leads to many risks for the baby, including miscarriage and stillbirth, low birth weight, oxygen depletion, and respiratory problems (CDC, n.d., Tobacco use and pregnancy, para. 1). Mesa County (35.5%) is significantly worse than Colorado (22.1%) ($p < .05$) for mothers who smoked in the three months before pregnancy (Figure 32). Neither the percentage for Mesa County mothers who smoked during the last three months of pregnancy (11%) or mothers who drank during the last three months of pregnancy (7.1%) are significantly different than the percentages for Colorado ($p < .05$).

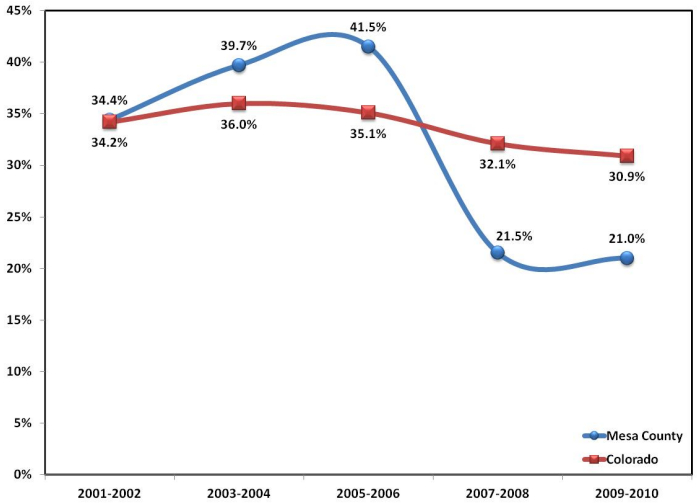

Figure 31: Women who gained an adequate amount of weight during pregnancy (CoHID, 2012).

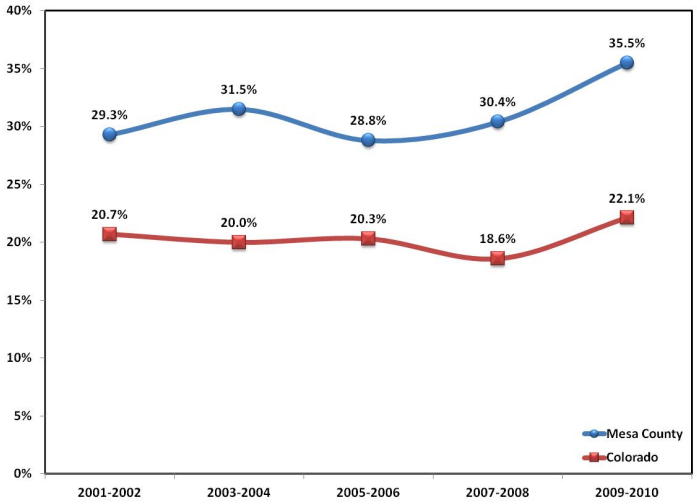

Figure 32: Women who smoked during the three months before pregnancy (CoHID, 2012).

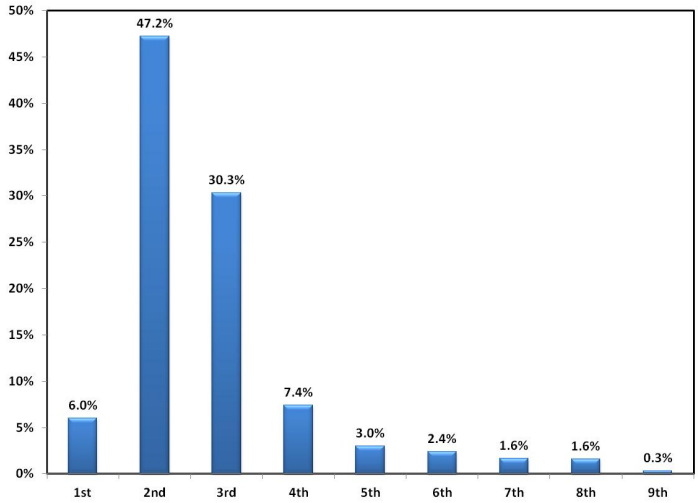

Figure 30: Month in which pregnant mothers began prenatal care, 2010 (CoHID, 2012).

Injury and violence encompasses a large spectrum of public health indicators, including accidents, crime, suicide, and public safety. A notable aspect of injury and violence is that nearly all of the unfavorable outcomes are preventable.

Mortality/Morbidity	Mesa County	Colorado	Significant Difference (p < .05)
Unintentional Injuries Deaths (rate per 100,000) (2011)	48.6	46.3	No difference
Suicide (rate per 100,000) (2011)	34.4	17.4	Worse
Motor Vehicle Injury Deaths (rate per 100,000) (2011)	14.7	9.3	No difference
Homicide and Legal Intervention Deaths (rate per 100,000) (2011)	5.1	3.9	No difference
Firearm Deaths (rate per 100,000) (2011)	18.1	10.9	No difference
Drug-Induced Deaths (rate per 100,000) (2011)	23.3	16.2	No difference
Alcohol-Induced Deaths (rate per 100,000) (2011)	18.4	12.7	No difference
Behavioral and Environmental Factors			
Injury Hospitalizations for All Ages	563.1	660.9	Worse
Injury Hospitalization Ages 0-19 Years (rate per 100,000) (2011)	220.5	212.0	No difference
Teen Injury Hospitalizations Ages 15-19 Years (rate per 100,000) (2011)	460.8	408.3	No difference
Motor Vehicle Accident Hospitalizations (rate per 100,000) (2011)	58.9	56.2	No difference
Child Abuse (rate per 1,000) (2011)	11.3	8.3	Unknown
Elder Maltreatment Ages 65+ Years (rate per 100,000) (2010)	1147.6	709.8	Unknown
Adults 18+ Years Who Report Always Using a Seatbelt When Driving or Riding in a Car (2008, 2010)	82.5%	83.5%	No difference
Juvenile Arrests (rate per 1,000) (2010)	37.3	30.8	Unknown
Adult Arrests (rate per 1,000) (2010)	52.3	47.7	Unknown
Adult Binge Drinking (Males 5+/Females 4+ Drinks on an Occasion) in Past Month (2008-2010)	18.1%	15.9%	No difference
Prevalence of Liquor Stores (rate per 10,000 population) (2009)	3.0	2.3	Unknown

Table 17: Indicators showing the mortality, morbidity, and behaviors and environmental factors for injury and violence in Mesa County and Colorado (CDPHE, 2012; CoHID, 2012; US Census Bureau, 2012; Colorado Bureau of Investigations, 2012; and Colorado Department of Human Services, 2012).

Injury Leading to Death

Mesa County is not significantly different than Colorado (p < .05) for any of the major mechanisms of injury leading to death except suicide. Alcohol-induced deaths in Mesa County are showing an overall unhealthy trend over the past 5 years (Figure 33).

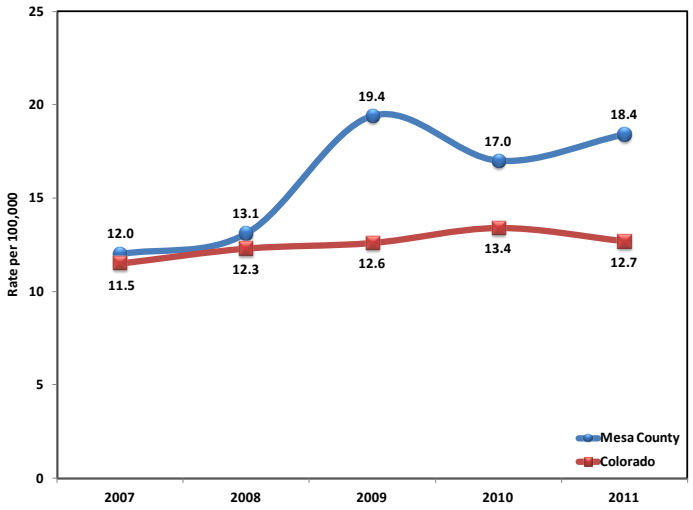

Figure 33: Alcohol-Induced Deaths (CoHID, 2012).

Suicide

Suicide has been and continues to be a significant public health issue for Colorado and Mesa County. The years between 2007 and 2011 represent a trough in the rates of suicide, beginning with a steady decline and ending with worst suicide rate in the past five years (Figure 34). Mesa County (34.4 per 100,000) is significantly worse than Colorado (17.4 per 100,000) ($p < .05$) for the rate of suicide, and is nearly three times the rate for the Nation.

Within Mesa County, there is a significant difference ($p < .05$) in the number of suicides based on gender. Men accounted for 37 of the 49 completed suicides in 2011 (Figure 35).

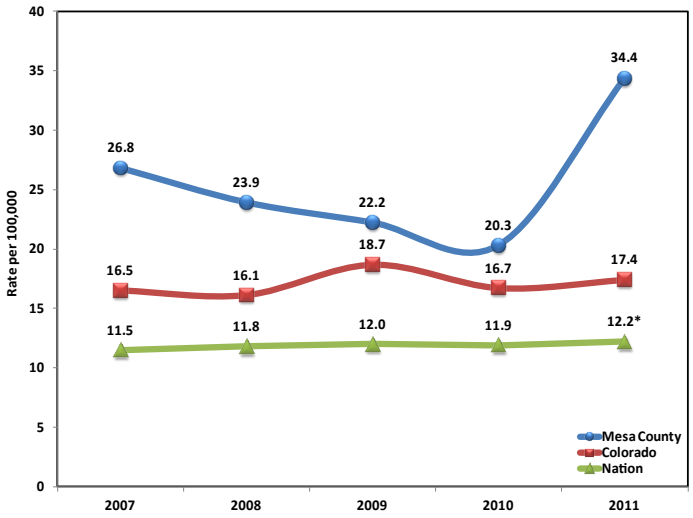

Figure 34: Suicide Rates, comparing Mesa County, Colorado, and the Nation (Colorado Health Information Dataset, 2012; and CDC, 2012). *Predicted 2011 rate based on data since 2007.

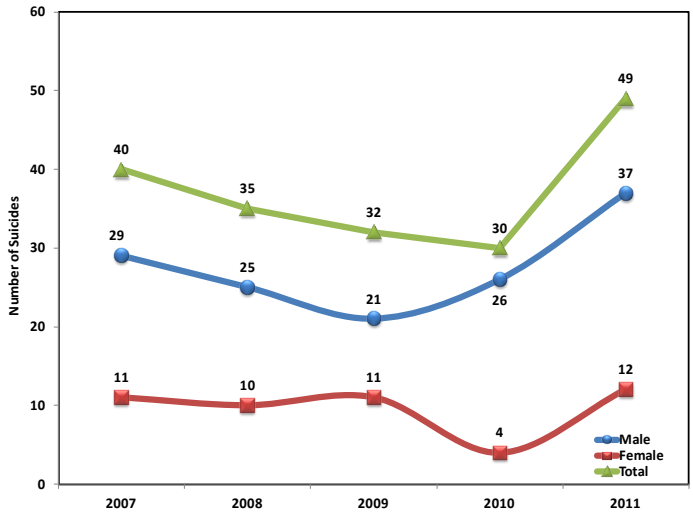

Figure 35: Total number of suicides in Mesa County, by gender (Colorado health Information dataset, 2012).

Injury Leading to Hospitalization

Mesa County is not significantly different than Colorado ($p < .05$) for any of the major mechanisms of injury leading to hospitalizations for 2011. Mesa County is performing significantly better than Colorado ($p < .05$) for the following indicators of injuries leading to hospitalization (per 100,000 population):

- **Total injury hospitalizations**
  Mesa County (563.1)
  Colorado (660.9)

- **Total unintentional injury hospitalizations**
  Mesa County (386.8)
  Colorado (472.7)

- **Poisoning hospitalizations**
  Mesa County (24.9)
  Colorado (34.3)

- **Falls resulting in hospitalization**
  Mesa County (219.9)
  Colorado (286.3)

Public Safety

In 2011, as part of a biennial study, Mesa County citizens were asked their attitudes on how safe they felt in their community. Mesa County residents feel the least satisfied with community efforts on management of criminals, crime prevention, animal control, and enforcement of traffic laws (Figure 36).

Vehicle Safety

"Adult seat belt use is the most effective way to save lives and reduce injuries in crashes" (CDC, 2011c, Seat belt fact sheet, para. 1). In 2012, a four-month survey by the Grand Junction Police Department showed that approximately one in three drivers (32%) who were pulled over for a traffic violation were not wearing a seat belt (n=225). Of those not wearing a seat belt, 16% were pulled over for speeding or careless driving.

Car seats and booster seats are another way to prevent serious injury or death to children between the ages of 0-12 years. A car-seat-installation survey given to 56 parents at the Mesa County Health Department car-seat fit stations in 2011 and 2012, provided the following results:

- 44% of parents do not know the safest location within the vehicle to place their child;
- 67% of parents do not know, according to best practice, that children should remain in a rear-facing seat until age two;
- 67% of parents do not know that when a child is rear facing, the harness straps should be at or below the shoulders;
- 56% of parents do not know the recommended angle for a rear-facing seat is 45 degrees.

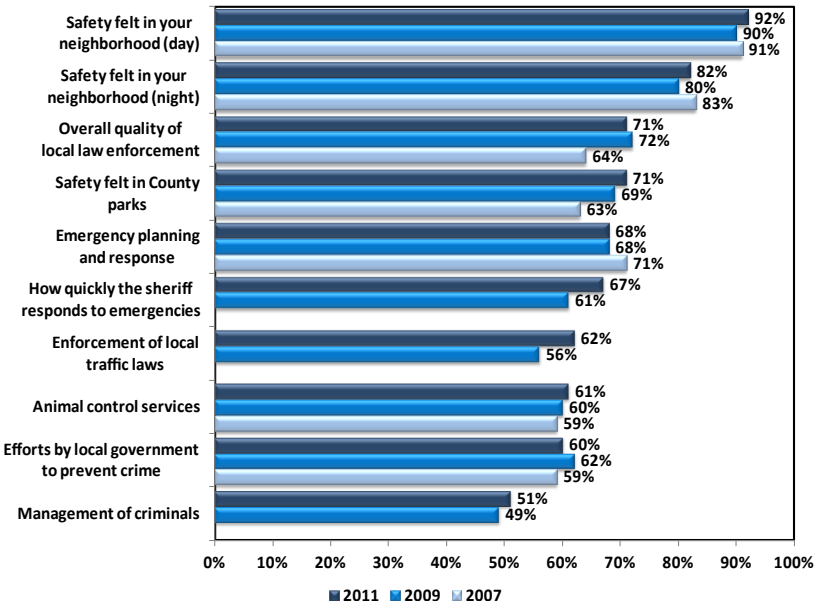

Figure 36: Level of satisfaction with various items related to the perception of public safety in Mesa County, by year. The chart shows respondents who rated the item as "satisfied" or "very satisfied" (2011 Citizen Attitude Survey, 2011).

Step 2: Engage Stakeholders and Prioritize Problems

Mesa County health officials identified indicators where Mesa County was deficient in comparison to Colorado and the Healthy People 2020 goals, from both a snapshot and trend perspective. These indicators were then organized into the following ten priority categories to be presented to the stakeholders at the kick-off meeting:

- Smoking
- Pregnancy
- Infant Mortality
- Oral Health
- Screening and Detection
- Obesity
- Unintentional Injury
- Sexually Transmitted Diseases
- Mental Health
- Family Abuse and Violence

Fact Sheet Topic	Attachment
Smoking	Attachment T
Pregnancy	Attachment U
Infant Mortality	Attachment V
Oral Health	Attachment W
Obesity	Attachment X
Screening and Early Detection	Attachment Y
Sexually Transmitted Diseases	Attachment Z
Unintentional Injury	Attachment AA
Mental Health	Attachment AB
Family Abuse and Violence	Attachment AC

Table 18: Fact sheets for the 10 health priority categories.

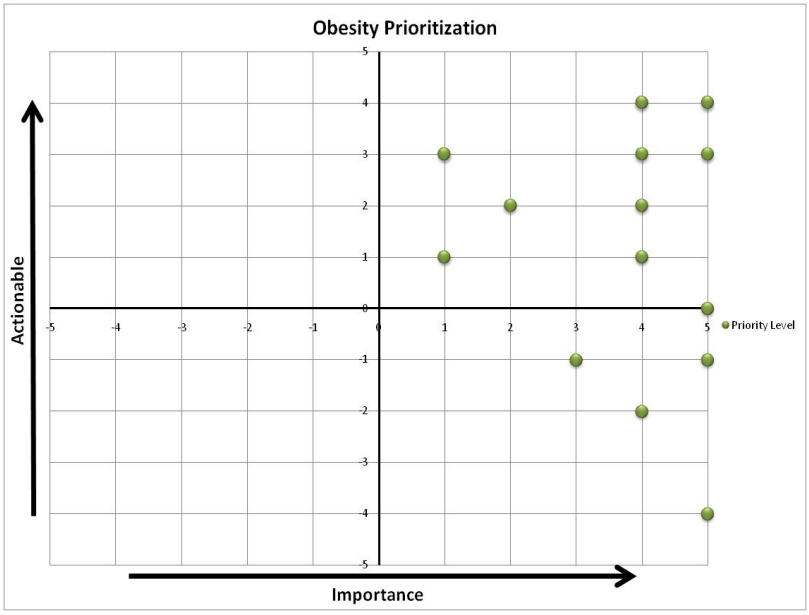

Figure 37: Priority chart for obesity, as prioritized by the steering committee.

Fact sheets were created for each of the 10 priority categories, Table 18, which were used by the steering committee as a reference during the prioritization process.

Figure 37 is an example of the scatter plot for obesity. Each dot represents a Steering Committee member's scoring for that priority health area. All individual scatter plots are available in (Attachments M-V).

During the prioritizing exercise, the Steering Committee felt it was important to focus on fewer, more prevalent priority areas to ensure

Subject Matter Expert Focus Groups	Date	Time
Screening and Early Detection	Tuesday, December 20th, 2011	9:00 am - 11:00 am
Maternal and Child Health	Tuesday, December 20th, 2011	2:00 pm - 4:00 pm
Tobacco	Wednesday, December 21st, 2011	1:00 pm - 3:00 pm
Family Abuse and Violence	Wednesday, January 4th, 2011	9:00 am - 11:00 am
Obesity	Tuesday, January 10th, 2012	9:00 am - 11:00 am
Mental Health	Thursday, January 12th, 2012	2:00 pm - 4:00 pm

Table 19: Schedule for the subject-matter-expert focus groups.

success in making an impact in Mesa County. After further discussion, unintended pregnancy and infant mortality were combined into a Maternal and Child Health category. A data point was created for this new category by averaging the two points together. This decreased the number of health categories from ten to nine. Additionally, the smoking category became tobacco to be inclusive of all forms of tobacco use.

The process identified six health priorities that clustered together as more important and more actionable: mental health, maternal child health, tobacco use, obesity, family abuse and violence, and screening/detection. Three areas were outliers: sexually transmitted diseases, oral health, and unintended injury. Through discussion, the Steering Committee determined these areas were already being addressed by community partners. The final priority groups are indicated in Figure 38.

Step 3: Gathering Primary Data

The Steering Committee held a subject-matter-expert focus group on each of the six selected health priority areas; additionally, there was a community focus group addressing all six of the health priorities (Table 19). The key findings from each of the focus groups are found in table 20.

As a result of the subject-matter-expert focus groups, Mesa County health officials had enough information to choose the three most actionable areas of concern within the community as Mesa County's winnable battles:

- Suicide
- Unintended Pregnancy
- Obesity

As a follow-up, Mesa County Health Department held three summits to achieve greater insight on barriers and possible solutions to address the Mesa County winnable battles. Agendas for the summits are located in attachement S, and results from those summits are listed in tables 21-23.

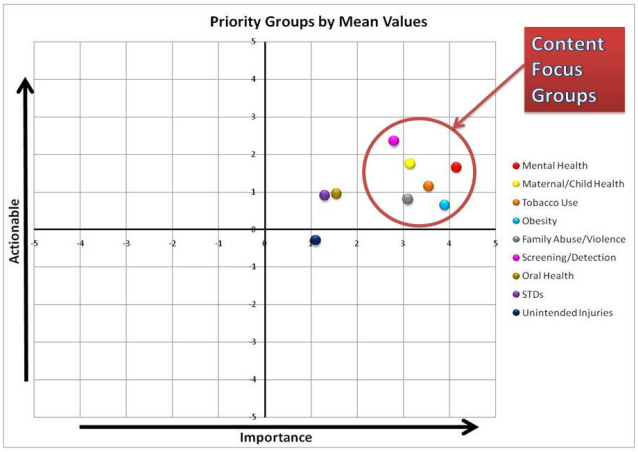

Figure 38: Priority chart showing the final focus areas, as prioritized by the steering committee.

Screening and Early Detection Subject Matter Expert Focus Group Key Findings	
• Screening in worksite situations (with incentives) could increase screening numbers. • Early detection has little effect on outcomes if access to care is an issue.	• Community wide screenings raise citizen awareness. • Depression screening requires that there is an intervention in place.
Maternal and Child Health Subject Matter Expert Focus Group Key Findings	
• There are enough resources being thrown at maternal and child health, but there isn't systematic tracking of the outcomes from these programs.	• Physicians should remain diligent about their recommendations concerning maternal behaviors such as alcohol consumption and tobacco use.
Tobacco Subject Matter Expert Focus Group Key Findings	
• Tobacco is an important issue in our community, but not a priority. • Laws are already in place to curb tobacco use.	• It's difficult to pinpoint the target population and specific issues linked to the target population.
Family Abuse and Violence Subject Matter Expert Focus Group Key Findings	
• The Grand Junction Police Department reports that domestic violence is trending down, while child abuse is on the rise. • Resources won't be effective until the heart of the issue is addressed, drugs and alcohol.	• Most agencies involved with domestic violence see themselves as response agencies, not a part of prevention. • Funding in this arena is based on population rather than poverty level.
Obesity Subject Matter Expert Focus Group Key Findings	
• For adults, worksite wellness programs need to become more widespread, and there should be incentives for healthy living. • There aren't enough safe routes for walking or biking in town.	• Recess is being eliminated from schools. • Developing healthy nutrition habits starts early and in the home. • For parents, it's hard to battle with "yummy" foods.
Mental Health Subject Matter Expert Focus Group Key Findings	
• There is a stigma around mental health that prevents many from using resources. • Substance abuse and mental health issues are co-occuring problems. • Resources are limited; the ratio of providers to residents is 1 to 3500.	• Limited mental health care providers are most often tied to national contracts. • Information needs to be available to the public about mental health first aid.
Community Focus Group Key Findings	
• It's nearly impossible to find health care if one isn't insured, clinics are full or long wait times. • Health priorities can be tied back to parenting.	• Not enough communication on where to find services, or hearing mixed messages.

Table 20: Key findings from each of the subject matter expert focus groups and the community focus group.

Suicide Prevention Summit Outcomes	
Barriers	
• Stigma. • Funding/Cost. • Lack of awareness of education and resources. • Lack of peer services. • Lack of therapeutic services for youth offenders at the school level. • Outside stresses (school, work, finances, etc.).	• Access for a variety of problems. One agency can't do everything. • Cracks in the system. • Lack of resources during crisis time. • Getting through to men. • Leadership and coordination in the areas of education and training.
Solutions	
• Resource alignment. • Victim involvement. • Agency collaboration. • Comprehensive communication plan. • Increase primary care screening for mental health issues. • Recruit faith community groups.	• Leadership. • Mandate mental health training for large employers. • Increased support for returning vets: reintegration and follow-up. • Bridge support services after release from care. • More treatment options, not just Colorado West Regional Mental Health Clinic.

Table 21: Barriers and solutions resulting from the suicide prevention summit, 2012.

Unintended Pregnancy Summit Outcomes	
Barriers	
• Clinic location/hours/transportation. • Parents are afraid to talk about certain issues: SES, culture, young parents, and diversity of values in the community. • Parents are not addressing issues with teens. • Myths vs. reality of how contraception works. • Information/education not available to teens in settings where they would best respond or listen.	• Lack of sexual health education. • Open communications: consistent between teens and parents as well as community resources. • Common, coordinated efforts to reach target population under a defined set of measurable outcomes.
Solutions	

• Education:
  ○ Teen boys.
  ○ Parents (bilingual).
  ○ Community campaigns.
  ○ Facebook (social media).
  ○ Texting.
	• Create opportunities to educate where kids "hang out".
	• Increase opportunities to access resources before pregnancy happens.
	• Targeted information and education for teens. Are we speaking their language?

Table 22: Barriers and solutions resulting from the unintended pregnancy summit, 2012.

Obesity Prevention Summit Outcomes	
Barriers	
• Lack of parent involvement in school wellness policy. • Find and address causes for hesitation on canal utilization: crime, liability, etc. Can this be addressed by the community?	• Changing behavior in children is important but parents need to be targeted as well. • Educate obese people regarding self-responsibility.
Solutions	
• Home economic courses in schools: shopping, cooking, life skills. • Worksite wellness. • Improve enrollment in federal nutrition programs. • Utilize 211 as community resource for information and education.	• Develop programs outside of school to allow students to earn credit for healthy activities. • Schools and churches can become more of a community centers to encourage kid and parent participation. • Sugar tax could help reduce cost of fruits and vegetables or to build a recreation center.

Table 23: Barriers and solutions resulting from the obesity prevention summit, 2012.

KEY FINDINGS

Completing the Community Health Needs Assessment process led to the identification of several health outcomes and health behaviors where Mesa County is doing better than Colorado and the nation. However, there are several areas where Mesa County can improve. Table 24 identifies how these areas relate to Mesa County's Winnable Battles of obesity, unintended pregnancy, and suicide.

"Many factors combine together to affect the health of individuals and communities. Whether people are healthy or not is determined by their circumstances and environment. Factors such as where we live, the state of our environment, genetics, our income and education level, and our relationships with friends and family all have considerable impacts on health…" (World Health Organization, n.d., The determinants of health, para. 1).

Identified Areas for Improvement	Mesa County Winnable Battle
Heart Disease Chronic lower-respiratory disease Cerebrovascular Disease Adults with arthritis Limited access to healthy foods for low-income	Obesity
Teen birth rates Latina teen birth rates Women who smoke during pregnancy	Unintended Pregnancy
Firearm deaths Drug induced deaths Alcohol induced deaths Suicide	Suicide

Table 24: Areas of concern associated with Mesa County's Winnable Battles.

Health Improvement Model

Morbidity and mortality data are used to assess quality of life and the overall health of a community. It is important to examine what diseases and injuries are causing death (mortality) and identify the frequency and type of diseases occurring in the population (morbidity). Additionally, health-related events, such as injuries and unintended pregnancies, can occur and can be life changing. The ultimate goal of the needs assessment process was to identify the behaviors and determinants that lead to the most common causes of death, disease, injury, and life-changing events in Mesa County. Once these behaviors and determinants are identified, successful policies and interventions for improving health outcomes can be implemented.

Death, Disease, Injury, and Life-Changing Events

Data gathered throughout the Community Health Needs Assessment identified that Mesa County is significantly worse than Colorado ($p < .05$) for All causes of years of potential life lost (YPLL). Specifically, Mesa County is significantly worse than Colorado ($p < .05$) for six of the top ten causes of YPLL. Premature deaths have a direct impact on the health of a community. Mesa County residents are losing years of their lives to preventable conditions such as unintentional injury, suicide, cancer, and heart disease. As an example, suicide numbers are on the rise to a level double that of Colorado, and nearly triple that of the United States.
Morbidities such as adult and childhood obesity, asthma, arthritis, and diabetes are trending in an unhealthy direction.

Behavioral and Environmental Factors

The health of a community is also determined by behavioral and environmental factors. According to Green and Kreuter (2005), "Behavioral factors refer to the patterns of behavior (and together with social circumstances, lifestyle) of individuals and groups that protect or put them at risk for a given health or social problem." Additionally, "Environmental factors are those determinants outside the person that can be modified to support behavior, health, or quality of life" (p. 14). Individual behaviors play a vital role in health outcomes and can include, but are not limited to, lack of physical activity, poor nutrition, tobacco use, and unprotected sex.

As an example, sexually active Mesa County teens reported: engaging in sexual activity prior to the age of 16, and low contraceptive use. These behaviors contribute to Mesa County's teen birth rate, which has been decreasing over the past decades, but is still higher than Colorado's rate.

Environmental factors also impact health outcomes and can include, but are not limited to: access to health facilities, walking paths, and healthy food options; transportation; and green space.

Mesa County's low-income residents are less likely to live near facilities that offer healthy food choices. This example illustrates how an environmental determinant can result in poor nutrition leading to obesity and other chronic diseases.

Predisposing, Reinforcing and Enabling Factors

After identifying behavioral and environmental factors, it is important to identify the predisposing, reinforcing and enabling factors associated with the health outcomes.

Green and Kreuter's PRECEDE/PROCEED model (2005) explains factors that have the potential to influence individual behaviors as predisposing, reinforcing and enabling.

> *Predisposing factors* include a person's or population's knowledge, attitudes, beliefs, values, and perceptions that facilitate or hinder motivation for change.
>
> *Reinforcing factors* are the rewards received and the feedback the learner receives from others following adoption of a behavior; this may encourage or discourage continuation of the behavior.
>
> *Enabling Factors* are those skills, resources, or barriers that can help or hinder the desired behavioral changes as well as the environmental changes. One can view them as vehicles or barriers, created mainly by societal forces or systems (p. 14-15).

These factors impact one's ability to change behavior. It is important to identify these factors to ensure the development and implementation of appropriate interventions. Positive behavior change should ultimately improve the occurrence of death, disease, injury and other life-changing events in Mesa County.

Identified Areas for Improvement	Mesa County Winnable Battle	Predisposing, Reinforcing, and Enabling Factors
Heart Disease Chronic lower-respiratory disease Cerebrovascular Disease Adults with arthritis Limited access to healthy foods for low-income	Obesity	Parenting Social and Emotional Wellbeing Access to Health Care Built Environment Building a Sense of Community
Teen birth rates Latina teen birth rates Women who smoke during pregnancy	Unintended Pregnancy	Parenting Access to Health Care Building a Sense of Community
Firearm deaths Drug induced deaths Alcohol induced deaths Suicide	Suicide	Parenting Social and Emotional Wellbeing Access to Health Care Building a Sense of Community

Table 25: Areas of concern associated with Mesa County's Winnable Battles and priorities.

AREAS FOR IMPROVEMENT

Recognizing common behaviors that may be contributing to poor health outcomes in Mesa County is a crucial step in the process of identifying potential solutions. "Many public health and health care interventions focus on changing individual behaviors... Positive changes in individual behavior can reduce the rates of chronic disease in this country" (Healthy People, 2012, para. 12).

Throughout the Community Health Needs Assessment process, seven focus groups and three community summits were held. In addition to discussing data relevant to the focus group topics, participants also discussed determinants that contributed to the health outcomes. Several factors related to individual behaviors and determinants of health were discussed and recognized as common among the various focus groups. The following five predisposing, reinforcing and enabling factors were identified as having a potential impact on health outcomes in Mesa County and will become the emphasis of future public health improvement efforts:

- Parenting
- Mental Health
- Access to Healthcare
- Built Environment
- Building a Sense of Community

COMMUNITY HEALTH IMPROVEMENT PLAN

The Community Health Improvement Plan (CHIP) is a comprehensive set of recommendations geared toward improving the health of Mesa County residents, particularly those at greater risk of poor health outcomes. The plan addresses the five priority areas identified in the Community Health Needs Assessment (CHNA): building a sense of community, access to health care services, built environment, mental health, and parenting. Each priority area relates to at least one Mesa County Winnable Battle, and includes goals and objectives designed to guide improvement efforts, and strategies for implementation. Additionally, a list of modifiable and non-modifiable factors that contribute to negative health status and risk behavior, and area-specific assets dedicated to addressing the problem are included.

Priority areas were selected by analyzing the root causes of morbidities and mortalities in Mesa County. The Mesa County Health Department understands that in order to impact health outcomes, health officials must look beyond programs, policies, and even individual behaviors and focus on addressing the contributing factors and determinants of poor health. The priority areas, recommendations, and strategies for implementation recognize the interconnectedness of individual behaviors and the systems and environments in which people grow and learn.

The Community Health Improvement Plan is a community effort, and therefore reflects the contributions of Mesa County residents, organizations, and businesses.

Implementation of the strategies suggested in this document will not succeed without the continued involvement of community partners in further identification and discussion of strategies and interventions to address each priority area as well as setting measurable objectives.

This plan has been developed under the assumption that sustainable change and positive health outcomes are only possible if programs and agencies with similar missions join forces and dedicate their resources to achieving a common goal. It is important to maximize partnerships and identify leaders who have the expertise and the ability to move the process forward.

Identification of health priorities is a dynamic and cyclical process which requires of periodic re-evaluation. The implementation of priority area strategies and their outcomes will be tracked and reported annually. Emerging health needs may necessitate the realignment of resources. Adaptability will be among the chief virtues of any plan or strategy dedicated to improving health and quality of life in Mesa County.

PARENTING

Our Goal: Improve the health of children by empowering parents

Parents contribute to the contextual environments in which their children live, learn, and grow. They influence health outcomes by demonstrating behaviors and attitudes that set the tone for family and individual action.

EMOTIONAL AND SOCIAL WELLBEING

Our Goal: Improve the health of Mesa County by recognizing and addressing social, emotional, and physical risk factors

Mental health disorders can negatively affect behaviors such as physical activity, tobacco and alcohol use, and sleeping habits leading to increase in chronic diseases such as cancer, diabetes, asthma, and obesity.

ACCESS TO HEALTH CARE

Our Goal: Increase access to health care services

Barriers to getting health services, including routine check-ups, treatment, and medications result in fewer opportunities for preventive care and over-utilization of emergency departments for non-emergency issues. Conversely, those with reliable access to services are more likely to receive timely and consistent care and, in turn, experience positive health outcomes.

BUILT ENVIRONMENT

Our Goal: Promote health through advocacy for a well-constructed and inclusive built environment

Built environment is a key determinant of health and plays a decisive role in influencing the behaviors of individuals and communities. A community's development priorities shape the number and type of opportunities people have to be active, eat healthy food, and socialize.

BUILDING A SENSE OF COMMUNITY

Our Goal: Engage community in commons-approach collaboration

True collaboration among community partners and agencies offering similar services and programs is essential to ensure that those at greatest risk receive the information, resources, services, and programs need in order to change behaviors leading to unhealthy outcomes.

Priority Area 1: Parenting

Parenting is a crucial and complex determinant of health. While parents control some factors that contribute to their children's health status, like the presence of secondhand smoke or nutritious foods in the home, there are many factors over which they have little or no control, such as air quality or the prevalence of communicable disease in the community. Some factors are difficult to define. Access to prenatal care is a good example: parents with adequate insurance coverage and information may be able to get prenatal care, while parents without either will likely struggle to get the same care; a shortage of providers, however, may prevent even the insured and informed parents from receiving prenatal care. While parenting is inseparable from child and adolescent health, the precise effects of parenting are diffuse, and often connected to numerous other determinants.

According to the CDC (2012), a parent is "the adult primary caregiver of a child's basic needs" (Ways to Engage, p. 1). A parent may be a biological parent or relative, or they may be a non-biological parent, such as an adoptive or foster parent. Parents contribute to the contextual environments in which their children live, learn, and grow. They act as role models, demonstrating behaviors and attitudes that set the tone for family and individual action. Lastly, by interacting with their children, parents develop connections that profoundly affect the transmission of norms and behaviors (Bernat & Resnick, 2009). By these three means, parenting impacts the physical and mental health status, ongoing development, and prevalence of risk behaviors among children.

Beginning at conception, parents directly impact their children's physical and mental health. Because a child's first physical environment is the womb, his or her health is initially and significantly affected by maternal risk behaviors, health status, and the extent to which the mother receives prenatal care (US Department of Health and Human Services Office on Women's Health, 2009). Maternal health continues to be important during breastfeeding. According to the Academy for Educational Development (n.d.), breastfeeding creates vital emotional bonds between mother and child and helps to maximize a child's physical and intellectual potential; it also provides invaluable nutrition, aids in the development of the immune system, and saves an estimated 6 million young lives from infectious disease each year (Benefits of Breastfeeding). As newborns become more active, aware, and inquisitive, they need environments free from dangerous objects and substances in which to play and explore. The mental health of young children also depends on the child's environment; risk factors for behavioral health problems among children include maternal depression, exposure to domestic violence, substance abuse in the home, and lack of parenting knowledge (Hagan, Shaw, & Duncan, 2008).

As children grow older, parents continue to influence their health outcomes, though in different ways. Some parental risk behaviors not only produce direct harms for their children, but increase the likelihood that children will participate in the behavior. Parents are primary role models for their children. Moreover, studies show that the very presence of cigarettes and alcohol in the home are positively associated with adolescent smoking and drinking (Aufseeser, Jekielek, & Brown, 2006). On the other hand, by participating in shared activities with their children, parents can encourage specific (healthy) behaviors and foster close connections with their children that make it more likely that such behavior will become their children's norm. For example, eating meals together is associated with

numerous positive health outcomes related to diet, nutrition, and psychological well-being, and reduces the likelihood that adolescents will partake of risk behaviors like substance use and suicide (Aufseeser, Jekielek, & Brown, 2006).

Parents also play an important role in the emotional, cognitive, and social development of their children. During early childhood, the behavioral health of a child's family is strongly correlated to the child's successful development. Parental depression, isolation, and substance abuse, in addition to major family stresses, such as the loss of a job or divorce, often inhibit the social and emotional growth of young children (Hagan, Shaw, & Duncan, 2008).

On the other hand, playing, talking, and reading with young children spurs the development of their cognitive and motor skills. Careful monitoring of a child's progression through stages of development can identify developmental delays and provide a basis for early interventions. Research also indicates that normal, healthy child development is affected by the extent to which parents provide early and ongoing behavioral guidance; whether or not parents are responsive to the cues and needs of their children; and the degree to which such responsiveness is timely and developmentally-appropriate (Hagan, Shaw, & Duncan, 2008).

Lastly, research has found that adolescents' home environments and the strength of parent-child relationships have important effects on the prevalence of certain risk behaviors.

Protective factors related to adolescent risk behaviors include: parents know who their children's friends are, and where their children are after school; parents are physically present in the home at key times, such as before and after school or during meal times; and parents communicate clear expectations regarding academic performance (Aufseeser, Jekielek, & Brown, 2006; Resnick et al., 1997). Evidence also indicates that discussing specific risk behaviors and their health implications is associated with lower rates of those behaviors (Resnick et al., 1997). More broadly, when parents create open lines of communication, provide encouragement, and foster close emotional bonds with their children, they establish a structure of family support promotes self-esteem and self-regulation and is strongly protective against risk behaviors (Bernat & Resnick, 2009).

GOAL

Improve the health of children by empowering parents.

Modifiable Contributing Factors

- Funding
- Support systems
- Collaboration among parent-related agencies
- Parents' perceived role in child's health
- Parental/school interaction and involvement
- Parental-child communication
- Parental knowledge and skills impacting children's health and development
- Awareness of and access to resources
- Transportation collaborative (vans, taxi)
- Provider understanding of barriers (SES)
- Family basic needs
- Utilization of resources
- Violence free environment
- Multi-system requirements and demands (system coordination)
- Parent's health status

Non-Modifiable Contributing Factors

- Socio-Economic Status
- Single parent families
- Education
- Type of employment
- Geographic location
- Family size
- Cost of services (child care, health care)

Assets

- Adoption agencies
- ARIEL
- City of Grand Junction Parks & Recreation
- Counseling Education Center (CEC)
- Colorado West Regional Mental Health Center
- Early childhood council
- Faith based organizations
- Family adolescent partnership
- Foundational Advice Concerning Teens
- Hilltop Community Resources
- Mesa County Department of Human Services
- Mesa County Health Department
- Partnership for children and families
- Primary Care Partners
- Rocky Mountain SER
- School District
- STRIVE
- Workforce Center

Objectives and Strategies

1. By 2017, Mesa County will establish a coordinated system to build capacity related to parents' role in children's health and wellbeing.
    a. Engage agency leaders and appropriate partners to ensure buy-in
    b. Develop a strategy to provide coordinated in-home visits
    c. Identify efficient referral process across agencies
    d. Work toward a commons approach whereby reducing competition for participants and resources while encouraging innovation and collaboration
    e. Target parents of at-risk children and recruit those who are least likely to participate in programs
    f. Offer culturally-competent, evidence-based training to providers

2. By 2017, 60% of Mesa County parents will be able to identify at least one resource for enhancing their health base knowledge and skills.
    a. Establish work group
    b. Identify potential funding opportunities and individuals
    c. Develop and implement a media campaign to promote parenting resources and programs
    d. Coordinate with 211 and Kiwanis Directory to ensure comprehensive list of services is available
    e. Coordinate with school districts, charter programs, pre-schools, family resource centers and child care providers to distribute information

3. By 2017, Mesa County will have an established navigator program to improve system coordination and ensure follow-through.
    a. Identify potential funding opportunities
    b. Research successful consumer-centered models and interventions used locally and nationwide
    c. Engage community leaders to gain support for expansion, collaboration and enhancement of existing navigator programs
    d. Develop community neighborhood resource centers or family resource centers

4. By 2017, Mesa County will have a comprehensive local data set as means to guide programming and advocacy.
    a. Implement standardized survey to identify current family structure and demographics to cross-reference with services provided
    b. Maintain updated database of programs offered, population served, and their outcomes to identify potential duplication of services and gaps
    c. Integrate Ages and Stages Questionnaire (ASQ) reporting into current datasets (i.e. QHN) to streamline communication among providers

Priority Area 2:
Emotional and Social Wellbeing

The World Health Organization (WHO) describes mental health as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (WHO 2004, p. 10). The CDC (2011) breaks down mental health into three indicators or types of well-being: emotional, which encompasses feelings such as peacefulness, satisfaction, and happiness; psychological, which includes self-acceptance and control, life purpose and spirituality, and self-direction; and social, which represents the recognition of oneself and of positive relationships within the broader community (Mental Health Basics, para. 5). These definitions constitute a picture of mental health where separate but interrelated domains of thinking and feeling are controlled, balanced, and directed toward individual flourishing. Mental health is thus not simply the absence of disease or distress, but is a positive condition of individual and community fulfillment. Increasingly, new evidence is beginning to show a correlation between positive mental health and improved health outcomes.

Mental health exists in contrast with mental illness, which his defined as "collectively all diagnosable mental disorders" or "health conditions that are characterized by alterations in thinking, mood, or behavior (or some combination thereof) associated with distress and/or impaired functioning" (Mental Health Basics, para. 3). Common mental illnesses include anxiety, depression, and bipolar disorders; more severe, less common mental illnesses include Autism Spectrum Disorders and Schizophrenia. These illnesses can lead to a variety of negative outcomes for the individual and his or her community. They may co-occur with other medical conditions or lead to risk behaviors, and they may impair a person's ability to function socially. In addition, seeking treatment for mental illness is often much more difficult and controversial than seeking treatment for medical illness.

A growing body of evidence demonstrates the link between mental disorders and chronic conditions. According to the US Department of Health and Human Services (2012), mental disorders are "strongly associated with the risk, occurrence, management, progression, and outcome of serious chronic diseases and health conditions" (Mental Health, para. 5). In 2011, a group of Colorado foundations published a report that contained several startling conclusions about the physical health of adults with Serious Mental Illness (SMI):

- On average, adults in the United States with SMI are dying at age 53 – 25 years lower than the average life expectancy for Americans. This is a life expectancy comparable to that of sub-Saharan Africa.
- Years of life lost are largely due to preventable causes
- Rates of respiratory disease are five times higher
- Rates of diabetes, cardiovascular disease, and infectious diseases are 3.4 times higher
- Rates of lung cancer are three times higher
- Rates of stroke among people under age 50 is two times higher (TriWest, p. 135)

Similarly, adults with non-SMI mental disorders are at an increased risk of chronic disease, due in part to their engagement in risk behaviors (discussed below). They also tend to have more adverse experiences of chronic conditions than those without any mental disorder at all. For instance, people who have depression often experience more severe symptoms of medical conditions, greater difficulty in adapting to their condition, and more medical costs than those without co-occurring depression (Cassano, 2002). The progression of

chronic conditions exacerbates the mental disorder and vice versa, creating a vicious cycle of poor physical and mental health. "This cycle decreases a person's ability to participate in the treatment of and recovery from mental health disorders and chronic disease" (Mental Health, para. 5).

Mental health disorders are also strongly related to the occurrence and course of many risk behaviors for chronic disease. To begin with, people with mental disorders are more likely to experience difficulty performing basic tasks related to self-care. They may neglect or be unable to eat a healthy diet, perform an adequate amount of physical activity, regularly and accurately take medications, quit smoking, and/or engage in healthy sleeping habits (Mental Health Basics, para. 4). These behaviors increase a person's risk for medical illness as well as chronic conditions, and have further negative consequences for a person's emotional and psychological well-being. According to the CDC (2011), such consequences are particularly acute among the elderly and persons with low socioeconomic status (Health Related Quality of Life, para. 2).

More dangerous behaviors are associated with the occurrence of mental disorders, including substance use and abuse, violence, and suicide. For a variety of reasons, persons experiencing mental disorders sometimes choose to self-medicate by using drugs and alcohol. While self-medication may relieve mental distress in the short term, this behavior often develops into co-occurring mental and substance use disorders. Results may include a worsening of the original mental disorder; an increase in other risk behaviors, like insufficient sleep or driving while impaired; increased likelihood of impaired social functioning, leading to the loss of friends, a job, or even a home; further personal and family distress; and violent and injurious behavior, all the way up to suicide. There are many personal and societal consequences associated with such behaviors, from lost productivity, low educational attainment, and unemployment to the incurrence of emergency medical costs and the loss of loved ones (TriWest, 2011).

Nevertheless, services for mental health-related issues can be difficult to access. While 10.7% of Mesa County children have behavioral or emotional problems, and 43.7% of Mesa County residents report having a lot of anxiety in the household (Bridges Out of Poverty, 2009), there is only one provider for every 3,461 residents (County Health Rankings, 2011). The mental health care system simply lacks the capacity to provide services to many of the people who need them. Even when and where services are available, the cost of care is often prohibitive; many mental health services cannot be paid for with state insurance. The fragmentation and complexity of the mental health care system has also prevented many from seeking services, and the lack of publicly available information on how to access and navigate the system ensures that community awareness of and motivation to seek treatment remains inadequate. Perhaps most disconcerting are the stigmas surrounding mental health services that prevent people from seeking much-needed treatment. Social and cultural attitudes that view mental disorders and their treatment negatively keep mental health issues underground, furthering the sense of social isolation and even shame among persons experiencing mental disorders, and discouraging them from openly and confidently treating their condition. In 2011, 7% of Mesa County residents reported not seeing a mental health provider even though they needed one (The Colorado Trust, 2011).

GOAL

Improve the health of Mesa County by recognizing and addressing social, emotional and physical risk factors through coordinated and consistent monitoring, messaging and effective partnerships.

Modifiable Contributing Factors

- Substance abuse
- Stigma
- Stress (work, finances, school, etc.)
- Self-image
- Lack of culturally appropriate messaging
- Ease of access to qualified providers
- Number and type of providers
- Health status
- Support systems

Non-Modifiable Contributing Factors

- Family history
- Genetics
- Cost
- Seasonality/Weather

Assets

- Colorado West Regional Mental Health
- Strive
- Ariel Clinical Services
- Western Colorado Suicide Prevention Foundation
- Mesa County Suicide Prevention Coalition
- Mesa County Department of Human Services
- School District 51
- Hilltop
- Coalition for Hope
- NAMI
- Private physicians/local hospitals
- Media
- Faith communities

Objectives and Strategies

1. By 2017, Mesa County will establish a coordinated system to build capacity related to mental health as a determinant of poor physical health.
    a. Establish work group
    b. List existing programs, populations served, outcomes; identify gaps, duplications, partnerships
    c. Engage agency leaders to ensure buy-in
    d. Work toward a commons approach to reduce competition for clients and resources while encouraging innovation and collaboration
    e. Target at-risk populations and recruit those who are least likely to participate in programs
    f. Ensure long-term impact through identification and coordination for funding opportunities
    g. Develop community-wide volunteer support and recognition program to reduce burnout

2. By 2017, 60% of Mesa County residents will be able to identify at least one mental health resource.
    a. Develop and implement a coordinated media campaign to promote resources and programs including appropriate media education about mental health issues
    b. Produce consistent and unified messages regarding community resources and challenges to decrease public confusion and misunderstanding
    c. Create a well-publicized resource clearinghouse and promote service utilization
    d. Coordinate with 211 to ensure comprehensive list of services is available
    e. Work to reduce stigma of mental health treatment through outreach, media awareness and proactive marketing of local resources

3. By 2017, develop a system to support optimal mental health in Mesa County addressing behavioral health risk and protective factors.
    a. Develop a peer-based support system to enhance positive mental well-being, particularly for men
    b. Expand mental health resources and support for veterans
    c. Enhance bridge after-care support programs

4. By 2017, promote early identification of mental health needs and access to services.
    a. Promote integration of mental health services into primary care settings
    b. Provide appropriate tools to employers so they can support employee wellness
    c. Engage faith communities with awareness training and community resource information
    d. Develop and provide community with easy-to-use mental health information

5. By 2017, enhance data collection of key behavioral determinants influencing optimal mental health in Mesa County.
    a. Develop a standardized survey to identify specific community needs and modifiable contributing factors contributing to wellbeing and mental health
    b. Monitor and publish key indicators over time

Priority Area 3:
Access to Health Care

In a recent report, the Mesa County Health Department (MCHD) (2013) demonstrated that barriers to accessing health care resources were a significant issue affecting all Mesa County residents. Due to uninsurance and underinsurance, for example, nearly one in three residents experienced cost-related barriers to getting health services, including routine check-ups, treatment, and medications. Unsurprisingly, those with reliable access to services are more likely to receive timely and consistent care and, in turn, experience positive health outcomes.

The U.S. Department of Health & Human Services (2012) recognizes access to care as the "…timely use of personal health services to achieve the best health outcomes. Access to care impacts overall physical, mental, and social health status; prevention of disease and disability; quality of life; preventable death; and life expectancy" (Access to Health Services, para. 3). HHS has also identified the following four components of access to health care:

- Coverage
- Services
- Timeliness
- Workforce

Having adequate health insurance coverage allows people to access and utilize the health care services they need, which generates better overall health outcomes. The 2011 Colorado Health Access Survey demonstrated how the cost of health care impacts both those without insurance as well as those with insurance. Because of cost, about one-in-five Mesa County residents report that they did not see a doctor (18.4%) or a specialist (22%) when they needed one, and nearly one in four (24.2%) reported that they did not see a dentist when they needed one (MCHD, 2013). Meanwhile, one-in-four uninsured and underinsured Coloradoans rates their health as Fair/Poor, while only one in ten adequately insured Coloradoans rate their health as Fair/Poor (The Colorado Trust, 2011). The Institute of Medicine (IOM) (2009) found that the occurrence and severity of many acute conditions and chronic diseases, such as cancer, congestive heart failure, diabetes, heart attack, hypertension, serious injury/trauma, and stroke were positively associated with uninsurance. Roughly 18,000 unnecessary deaths are attributable to lack of health insurance each year (IOM, 2004). Simply put, those who have adequate insurance coverage are healthier and more likely to avoid preventable deaths than those who do not have adequate insurance coverage.

Another important facet of access to health care is the availability of a usual and ongoing source of care. Having a usual source of care, in particular a usual primary care provider, is associated with more communicative and trusting patient-provider relationships, which in turn means that patients are more likely to receive appropriate and coordinated care. A usual source of care also provides continuity in the delivery of clinical preventive services, which prevent disease or detect and treat it at an early stage (Access to Health Services, 2012, para. 6). In Mesa County, 18% of residents report having no usual source of care; of uninsured residents who do report having a usual source of care, 40.9% identified sources other than doctor's offices, private and public clinics, and community health centers (MCHD, 2013). This indicates that a significant portion of Mesa County – as many as 30,000 residents – may be without access to continuous care, much less a primary medical home where they can receive integrated primary, dental, and behavioral health services.

It is also important that services can be delivered quickly after a need is recognized. Delays in care – whether actual or perceived – "likely reflect significant barriers to care" (Access to Health Services, 2012, para. 7). For instance, time spent waiting for an appointment at a doctor's office may become a barrier to access. 2012 data for Mesa County showed that new patients waited an average of 20 days for a routine appointment and established patients waited an average of 17 days for a routine appointment (MCHD, 2013). Those without a ready access point and/or adequate insurance coverage are thus at a higher risk for avoidable hospitalizations and are increasingly forced to rely on Emergency Departments (EDs) as "safety nets." Subsequently, the overutilization of EDs causes delays in care for all patients, regardless of insurance status. Increasing evidence suggests that ED overutilization is associated with higher rates of in-hospital morbidity and mortality (Moskop, Sklar, Geiderman, Schears, & Bookman, 2008).

The final component of health care access is the size and composition of the workforce. Health care will inevitably be harder to access – much less in a timely manner – if there are not enough care providers relative to the population. While Mesa County is not currently experiencing a shortage in the total number of primary care providers, the number of providers serving the low-income population (<200% FPL) is small: there is just 1 provider to every 3,184 low-income residents (MCHD, 2013). This suggests that too few providers relative to the population accept Medicaid, Medicare, and uninsured patients. Fewer providers mean fewer access points, which leads to underutilization and overcrowding, delays in care, and ED overutilization. Workforce shortages may therefore compound the negative health effects of inadequate insurance coverage. This is especially true for the most vulnerable populations, such as children and the elderly.

Barriers to health care access among some can affect access for all. The IOM (2009) reports that "when community-level rates of uninsurance are relatively high, insured adults in those communities are more likely to have difficulties obtaining needed health care and to be less satisfied with the care they receive" (America's Uninsured Crisis, p. 4). Ensuring widespread, reliable access to primary, oral, and mental health care can improve community health outcomes on the whole.

GOAL

Increase access and capacity of health care services.

Modifiable Contributing Factors

- Knowledge of available resources
- Health literacy
- Capacity of providers accepting Medicaid and Medicare
- Few safety-net providers
- Transportation
- Identification of underserved populations

Non-Modifiable Contributing Factors

- Geography
- Low-income
- High deductible insurance
- Cost

Assets

- St. Mary's Hospital and Regional Medical Center
- Community Hospital
- Marillac Clinic
- Family Health West
- Mesa County Health Department
- Mesa County Department of Human Services
- Colorado Health Care Policy and Finance
- Mesa County Health Leadership Consortium
- COHBE
- Quality Health Network
- Women's Health Care of Western Colorado
- Hilltop
- Rocky Mountain Health Plans, Inc.
- Colorado West Psychiatric Hospital, Inc.
- Primary and urgent care clinics

Objectives and Strategies

1. Through 2017, continue to recruit and improve capacity of existing health care providers.
    a. Collaborate with existing workgroups to align goals and activities
    b. Maintain federal designation as a health provider shortage area (HPSA)
    c. Promote unique collaborative efforts in Mesa County (Independent Physicians Association, Quality Health Network, Health Leadership Consortium)
    d. Encourage efforts to address shortage of health providers for low income populations.

2. By 2017, improve utilization of health care services by encouraging a medical home.
    a. Promote enrollment in CHP+, Medicaid and other low-cost health plans
    b. Increase community health literacy
    c. Increase awareness of proper use of preventive care and wellness programs
    d. Promote and develop referral mechanisms to existing clinics that serve low-income

3. By 2017, provide additional access points for those with Medicaid, Medicare, and the uninsured and underinsured.
    a. Identify reasons for high emergency room utilization
    b. Examine feasibility of establishing federally funded health clinics
    c. Identify barriers to care

4. Through 2017, improve and maintain health informatics support regular assessment of the local health care system.
    a. Perform regular assessment of access, capacity and utilization trends in Mesa County
    b. Sustain targeted analysis of customer services provided by public and private systems that affect access and quality of care
    c. Improve data sharing and public health assessment through increased integration with health information systems like Quality Health Network, Crimson Care, and others

Priority Area 4: Built Environment

The Transportation Research Board (TRB) defines the built environment as "the land-use patterns, the transportation system(s) and design features that together provide opportunities for travel and physical activity" (TRB, 2005). The built environment refers to the man-made resources and infrastructure – buildings, roads, parks, mass transit, and so on – that support our regular activities, such as going to work, buying food, and engaging in recreational activities. The built environment also encompasses those processes that determine land-use patterns, namely community planning and zoning. A community's development priorities shape the number and type of opportunities people have to be active, eat healthy food, and socialize. By this definition, the built environment is a key social determinant of health and plays a decisive role in influencing the behaviors of individuals and communities.

Recent research has demonstrated a clear link between individual health behaviors and outcomes and the built environment. Aspects of the built environment such as the presence of sidewalks and well-connected streets have been shown to increase levels of physical activity. According to the Colorado Health Foundation (2012), people who live in neighborhoods that are "walkable" – that include safe, sturdy, well-designated walking paths for residents – are twice as likely to get enough physical activity as those who don't (Healthy Places, para. 4). A well-planned built environment provides the opportunity for people to perform moderate to vigorous physical activity on a regular basis, which has been shown to decrease a person's risk for obesity, cardiovascular disease, diabetes, and hypertension (TRB, 2005). Now, a growing body of evidence is calling attention to the built environment's positive effects on mental health. Parks, open-space planning, and exposure to nature may have important effects on levels of stress, job satisfaction, and recovery from fatigue (Design for Health, 2007). More broadly, the built environment encompasses several of the social determinants of mental health identified by the Surgeon General, notably "adequate housing" and "safe neighborhoods" (CDC, n.d., Mental health basics, para. 6).

The built environment plays an important role in determining how and to what resources people have safe and reliable access. As alluded to above, people who have access to recreational facilities such as parks, schools, and community centers are much more likely to perform the recommended amount of exercise. "The odds of a child being obese or overweight are 20 to 60 percent higher in neighborhoods with no access to sidewalks, parks, and recreation centers than among children not living under such conditions" (Healthy Places, para. 4). The presence and location of fast food restaurants, grocery stores, farmer's markets, and community gardens helps to shape a community's dietary choices. When healthy, nutritious foods are few and far between, or when transit networks do not provide thorough or consistent access across required distances, people are likely to choose the most convenient option – which is most often fast food. Similarly, if built environments make walking or biking to work unsafe, inconvenient, and/or onerous, driving becomes the easy, consistent choice, to the detriment of safety, air quality, and physical activity levels.

The built environment also has a profound effect on a community's environmental health. Sprawling land-use patterns have contributed to an increased reliance on the automobile as a preferred means of transportation, which has drastically increased the emission of pollutants that can lead to a myriad of health problems, most notably asthma and other respiratory illnesses (Design for Health, 2007). It has also discouraged physical activity as a regular means

of transportation; the very fact that walking and biking have become largely "recreational" activities is an indication that the built environment has transformed our basic mode of living. Lastly, urban sprawl decreases a community's engagement with its natural surroundings, as they become less visible and less accessible. As mentioned above, contact with nature, or at least with green, open spaces, can have powerful calming effects for our minds and bodies.

Lastly, the built environment impacts how safe and connected people feel in their communities. "A national survey found that twice as many low-income respondents as moderate-income respondents worried about safety in their neighborhoods. A safe environment increases the likelihood of people bicycling and walking, making use of public transit, accessing parks, and patronizing healthier eating venues" (Prevention Institute, 2008).

Not only can a well-constructed built environment make people feel safer, it can help significantly reduce unintended injuries that results from automobile and pedestrian crashes (Walk Friendly Communities, 2012). When the built environment is truly built for all modes of transportation, people feel more comfortable and thus are more willing to make different –healthier – choices.

GOAL

Promote health through advocacy for a well-constructed and inclusive built environment.

Modifiable Contributing Factors

- Existing trails not connected
- Difficult or impossible routes between residential, school, recreation and job sites
- Under-developed areas
- Limited transportation
- Perceived dangers and safety concern
- Zoning and compliance
- Benefits of trail use
- Coordination or communication between advocacy groups and/or policy makers
- Maintenance of existing active transportation pathways

Non-Modifiable Contributing Factors

- Multiple jurisdictions
- Development Standards
- Residential location
- Private land

Assets

- Grand Junction Parks & Recreation
- City of Fruita Parks & Recreation
- Town of Palisade Parks & Recreation
- Traffic & Engineer staff
- Activity and Recreational Centers
- School District 51
- Colorado Riverfront Commission
- City and County Planning Departments
- Mesa Land Trust
- Grand Valley Transit
- Mesa County Parks, Landscapes, and Open Spaces
- Grand Valley Trails Alliance

Objectives and Strategies

1. By or before 2017, mobilize the community to support efforts aimed to enhance active transportation opportunities in Mesa County.
    a. Encourage participation in annual trails summits
    b. Encourage participation in various organizations that support trail development
    c. Coordinate with regional trail and recreation advocacy groups and assist in elimination of barriers to regional cooperation
    d. Promote utilization of existing trails, and paths
    e. Engage public safety officials in addressing safety concerns
    f. Support the Urban Trails Master Plan and other comprehensive regional area plans
    g. Work closely with efforts to improve air quality and increase awareness of impacts of poor air quality on active transportation

2. By or before 2017, Mesa County planning officials will have identified solutions to ensure there are safe routes to all schools with a high pedestrian population as well as highly-used recreation facilities.
    a. Organize community to support development efforts and safe crossings
    b. Work group participants and leader identified
    c. Potential funding sources identified
    d. Create maps to identify priority schools and routes
    e. Reduce potential barriers and identify solutions
    f. Support education efforts (i.e., Share the Road)
    g. Prioritize ongoing maintenance and repair of existing trails and paths

3. By or before 2017, Mesa County and municipal planning officials will have identified solutions to ensure contiguous active transportation pathways on community streets.
    a. Identify and support work group participants and leaders
    b. Collaborate with municipal planning efforts and master plans
    c. Identify potential funding sources for capital projects including GOCO
    d. Create maps to identify priority projects
    e. Advocate for maintenance, repair, safety and functional improvement of existing sidewalks, bike lanes, and other infrastructure
    f. Support planning for connectivity between residential areas, employment centers, schools and recreational opportunities
    g. Ensure compliance with development standards regarding barriers to active transportation (i.e., weeds, etc)

Priority Area 5:
Building a Sense of Community

Many Mesa County organizations provide services and programs aimed at improving residents' health. Although many of these efforts have similar goals, most work within silos, resulting in competition for funding, participants, and community partners. In order for residents to be engaged and feel a sense of belonging to the community, these organizations need to work together.

Mesa County (specifically Grand Junction) has been successful in building a collaborative health care system. Much of this success can be attributed to the Mesa County Health Leadership Consortium (MCHLC), which has been in existence since 2009. Notable members are the executives of St. Mary's Hospital, Community Hospital, Family Health West Hospital, Rocky Mountain Health Plans, Marillac Clinic, Colorado West Mental Health, Mesa Developmental Services, Hilltop, Hospice & Palliative Care of Western Colorado, Mesa County Health and Human Services, Home Care of the Grand Valley, Quality Health Network, the Mesa County Independent Physicians Association, and the Grand Junction Area Chamber of Commerce. The mission of the MCHLC is to collaborate to improve the quality of our lives and become one of the healthiest communities in North America.

Over the past decade, and before the MCHLC was formalized, many of the above-mentioned agencies worked together to address health care issues in Grand Junction. Their work has resulted in improved quality and access to care while lowering the associated costs. These successful efforts have gained national attention. The Dartmouth Atlas of Health Care identified Grand Junction as an area with lower costs on average for medical patients. As a result, many researchers have studied the health care system in Grand Junction to determine how these results were obtained and how to use the system as a model for other communities. (Nichols, Weinberg & Barnes, 2009)

Additionally, Grand Junction's collaborative health care system has been successful because of a partnership formed between Rocky Mountain Health Plans (RMHP) and the Mesa County Physicians Independent Practice Association (MCPIPA). These entities worked together to negotiate a higher (150 percent) reimbursement for Medicaid patients who utilize RMHP as their plan administrator. This change allowed each physician in MCPIPA to be paid a set amount regardless of payer source. In other communities, physicians limit the number of Medicaid and Medicare patients they see because of the lower reimbursement rates. RMHP agreed to pay higher reimbursement rates to ensure that patients weren't discriminated against or denied care based on their insurance coverage.

Grand Junction's successful collaboration was recently highlighted in a PBS documentary titled U.S. Health Care: The Good News. In this documentary, journalist T.R. Reid highlights communities, including Grand Junction, that have good health outcomes while spending less. (Reid, 2012)

To build upon this success, the Mesa County Health Leadership Consortium wanted to extend collaboration efforts from beyond those directly involved in the health care system to include community partners involved in improving health outcomes. To provide a framework to these collaborative efforts, the Mesa County Health Leadership Consortium explored Professor Elinor Ostrom's Commons principles (Ostrom, 1990). In 2011, Professor Ostrom and her team from Indiana University determined that the unique collaborative characteristics of Grand Junction's health care system contain the following Commons design principles: boundaries, autonomy, collectively crafted rules, monitoring, graduated sanctions, dispute resolution process, formation of sub-groups,

and fair and appropriate rules (Ostrom, 1990).

Professor Ostrom was awarded the Nobel Prize in Economics for her work in identifying design principles that explain how communities collaborate to share resources through a Commons approach. The design principles are illustrated by examining the current Health Commons in Grand Junction, which is comprised of the local hospitals, Rocky Mountain Health Plans, Mesa County Physicians IPA, and Quality Health Network. Theoretically, in addition to the current health system Commons, Micro-Commons also exist and include agencies that influence wellness such as community clinics, health and wellness initiatives, behavioral health, recreation resources, etc. Although the Micro-Commons are not likely to become part of the health care system's central reimbursement pool, they can be instrumental in influencing the demand toward the pool's resources. Current local efforts toward payment and delivery reform will result in an expanded Health Commons to recognize existing Micro-Commons such as behavioral health, developmental services, community health clinics, hospice, home health, public health and human services.

The Sandoval County Health Commons (Kaufman et al., 2006), which is a public/private interagency partnership, is another example of a successful health Commons. In this partnership, formerly-competing organizations have discovered through their collaboration that "Health Commons are appealing to funding agencies and investors and can redirect existing resources to address individual and community health needs even in the poorest, most remote locations" (p. 26). The Health Commons has resulted in sustained funding, as its programs are "highly attractive to public and private funders" (p. 26). This approach will ultimately result in opportunities for sustainable funding.

Considering the Health Commons from the perspective of the Diffusion of Innovation Theory (Rogers, 1995), programs with similar missions that work independently are competing for the same resources, and for the same clients within the innovator, early adopter and early majority groups (see Figure 40). By working together and using the Commons approach of sharing resources, programs will be able to reach higher-risk families within the late majority and laggard groups, which theoretically comprise 50 percent of the target population.
In order for health improvement strategies and efforts to be successful in Mesa County, there must be true collaboration among community partners. Agencies that offer similar services and programs should embrace the Commons approach ensuring that those who are at greatest risk receive the information, resources, services and programs they need in order to change behaviors that lead to unhealthy outcomes.

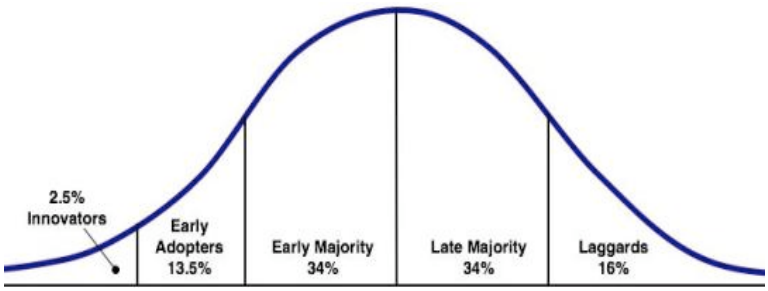

Figure 40: Diffusion of Innovation Curve

GOAL

Engage community in commons-approach collaboration.

Modifiable Contributing Factors

- CEO level buy-in
- Turf issue
- Capacity
- Barriers related to governing boards
- Technology

Non-Modifiable Contributing Factors

- Restrictions of funding
- Community size
- Geography
- Agency history

Assets

- Mesa County Health Leadership Consortium
- Current private and public partnerships
- Research on Commons approach
- Validation from Indiana University study
- School District 51
- Colorado Mesa University
- Elected officials from municipalities and county
- Community leaders

Objectives and Strategies

1. By 2017, Mesa County agencies will have complete understanding of the design principles of the Commons.
    a. Establish a work group
    b. Provide training
    c. Further explore the definitions, existence of, and roles of micro-commons

2. By 2017, identify programs that provide similar services and propose ways to collaborate.
    a. List programs
    b. Identify populations served
    c. Develop a plan to reach those within the high-risk populations that are least likely to participate in programs

3. By 2017, develop a comprehensive resource and recruitment plan.
    a. Pool resources to implement combined media messages
    b. Identify mutual community assets such as buildings, funding sources, facilitators, volunteers

NEXT STEPS

Mesa County Health Department will lead and support the next steps of this process by providing technical assistance in the following areas:

- Data analysis- Assist in gathering and interpreting data to support projects, grant proposals, etc.

- Evaluation- Develop and administer data collection tools and surveys, and provide analysis of results to identify needs and outcomes

- Community organizing- Convene partners, stakeholders and community members to identify needs and implement strategies to improve health

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