

# El Paso County Health Indicators 2012 Report



Prevent • Promote • Protect

# Table of Contents

|   |           |
|---|-----------|
| <b>Introduction.....</b>  | <b>3</b>  |
| <b>Acknowledgements .....</b>   | <b>4</b>  |
| <b>Methodology.....</b>   | <b>5</b>  |
| <b>Health Disparities.....</b>  | <b>6</b>  |
| <b>Who We Are: El Paso County Demographic and Socioeconomic Data.....</b> | <b>8</b>  |
| <b>Morbidity and Mortality Data.....</b>                                  | <b>13</b> |
| <b>Health Indicators:</b>   |           |
| <b>Access to Care.....</b>  | <b>17</b> |
| <b>Environmental Health.....</b>  | <b>20</b> |
| <b>Food Safety.....</b>   | <b>23</b> |
| <b>Healthy Eating and Active Living.....</b>                              | <b>26</b> |
| <b>Mental Health and Substance Abuse.....</b>                             | <b>32</b> |
| <b>Motor Vehicle Injuries .....</b>                                       | <b>36</b> |
| <b>Oral Health.....</b>   | <b>39</b> |
| <b>Tobacco Use.....</b>   | <b>41</b> |
| <b>Unsafe Sexual Practices and Teen Pregnancy.....</b>                    | <b>44</b> |
| <b>Vaccine-Preventable Infectious Diseases.....</b>                       | <b>48</b> |
| <b>Glossary of Terms.....</b>   | <b>51</b> |

# Introduction

Welcome to the *El Paso County Health Indicators 2012 Report*.

This report provides objective information regarding the health of our residents and identifies health trends and/or issues that may be of concern in our county. This report was compiled by the El Paso County Public Health epidemiology staff, who collected, verified, and analyzed population-based health data. In order to assure that the health data presented in this report was relevant and understandable to the community, Public Health convened a community group to review and provide feedback. This group, called the Healthy Community Collaborative (HCC), is comprised of health leaders, elected officials, and interested citizens from our community. We are grateful to have had the guidance and support of the HCC for this process.

The HCC will continue to provide leadership as we work together to create a Community Health Improvement Plan (CHIP) that will help guide efforts towards improving health in the community. The HCC will identify health focus areas for intervention; target resources to address health issues; guide outreach to disparate populations; and determine what strategies can be implemented to positively influence health outcomes. The

CHIP will be released in 2012 and will provide a road map for improving the health of El Paso County residents.

Throughout this health assessment process, Public Health has been aligning its work with Colorado's 10 Winnable Battles, which represent key public health and environmental issues in the state where progress can be made in the next five years. In our county, Public Health and the HCC will be seeking opportunities to team up with the Colorado Department of Public Health and Environment and other regional partners in order to share ideas and resources as they relate to achieving common goals in these areas.

Colorado's 10 Winnable Battles<sup>1</sup> are:

- Clean Air
- Clean Water
- Infectious Disease Prevention
- Injury Prevention
- Mental Health and Substance Abuse
- Obesity
- Oral Health
- Safe Food
- Tobacco
- Unintended Pregnancy

This is an exciting time for El Paso County to demonstrate our success as a health leader in the state and in the nation.

If you have any questions about this report or would like to join the HCC and help improve the health and wellbeing of our county, please contact us at [healthinfo@elpasoco.com](mailto:healthinfo@elpasoco.com). Thank you.

Jill Law, R.N., B.S.N.  
Interim Public Health Director

Bernadette Albanese, M.D., M.P.H.  
Medical Director

El Paso County Public Health

**“The mission of El Paso County Public Health is to protect and promote public health and environmental quality in the community through people, prevention, and partnerships.”**

# Acknowledgements

El Paso County Public Health gratefully acknowledges Amy Anderson, M.P.H., Kelley Vivian, Danielle Oller, M.F.A., Susan Wheelan, M.B.A., Kandi Buckland, R.N., M.P.A., and Kathy Rice, M.S. for their invaluable work and input into this report. We also extend a special thank you to Dr. Alyson Shupe and her staff at the Colorado Department of Public Health and Environment (CDPHE) Health Statistics Section; CDPHE's Office of Planning and Partnerships; as well as many other programs at CDPHE for their data contributions, expertise, and technical assistance during this process.

El Paso County Public Health is also appreciative of members of the Healthy Community Collaborative (HCC), who provided vital insight and feedback about the content of this report. The HCC is a stakeholder group of community partners who came together in 2011 to create an action plan to improve the health of the people of El Paso County. HCC membership includes representatives from schools, hospitals and health systems, non-profit organizations, city and county government agencies, public health, medical providers, and interested citizens.

# Methodology

## Data Sources

Population-based health data is routinely and systematically collected by a number of national and state agencies. Information on birth, death, disease, injury, hospitalization, health-risk behaviors, and sociodemographic characteristics are accessible either at the county level for El Paso County or at the state level for Colorado. Data for the El Paso County Health Indicators 2011 Report was obtained primarily from standardized data sources, which included:

### Population counts and other administrative data

- Colorado State Demography Office
- Colorado Department of Labor and Employment
- Colorado Department of Education

### Birth and death data

- Colorado Department of Public Health and Environment

### Socioeconomic data

- United States Census Bureau
- Colorado Department of Labor and Employment

### Disease or injury surveillance data

- Colorado Department of Public Health and Environment
- National Highway Traffic Safety Administration
- Colorado Hospital Association

### Health survey data

- American Community Survey (ACS)
- Behavioral Risk Factor Surveillance System (BRFSS)
- Colorado Child Health Survey
- Colorado Health Access Survey (formerly, Colorado Household Survey)
- National Immunization Survey (NIS)
- National Survey on Drug Use and Health
- Pregnancy Risk Factor Monitoring System (PRAMS)
- Youth Risk Behavior Surveillance System (YRBS)

*Note: This is not an exhaustive list of all data sources used in this report. Citations are provided at the end of each chapter with references to the original data source.*

### Technical Notes

- County versus state level data—Some of the data was only available at the state level due to sampling limitations, and those values are used as surrogate measures where county level data was not available.
- Combining years of data—In some instances when analyzing county level data, multiple years of data were combined to provide more stable estimates, particularly when using health survey data. These estimates

represent an annual average during the specified time frame, usually no more than five years.

- Margin of error (see Glossary of Terms)—When measurements are calculated from a sample of people within a population, these values are subject to a level of uncertainty or error. This uncertainty can be represented through the use of a margin of error, which indicates a range of values for which there is a 95 percent probability of containing the true value for the entire population.

In this report, many of the data values presented have a margin of error. However, for ease of reading and presentation, margins of error were only included when making notable comparisons (particularly when describing health disparities). Error bars are included on some figures in the report and these represent the (95 percent) upper and lower limits of the margin of error. When comparing values between groups of a population or across time periods, if margin of errors overlap then there is no statistically significant difference between the measured values. Alternatively, if margin of errors do not overlap, then there is a statistically significant difference between the measured values. ■

# Health Disparities

Health disparities, also referred to as health inequities, are differences in the occurrence of disease or health conditions, health outcomes, risk factors, or access to health care based on demographic or socioeconomic characteristics of subgroups of a population.<sup>1</sup> In order to interpret health disparities within a population, it is critical to understand root causes and contributing factors that influence health behaviors and health outcomes. These factors have been characterized as the ‘social determinants of health.’

The World Health Organization defines the social determinants of health as “the circumstances into which people are born, live, work, and age; and the systems put in place to deal with illness. These circumstances are in turn shaped by a wider set of forces: economics, social policies, and politics.”<sup>2</sup>

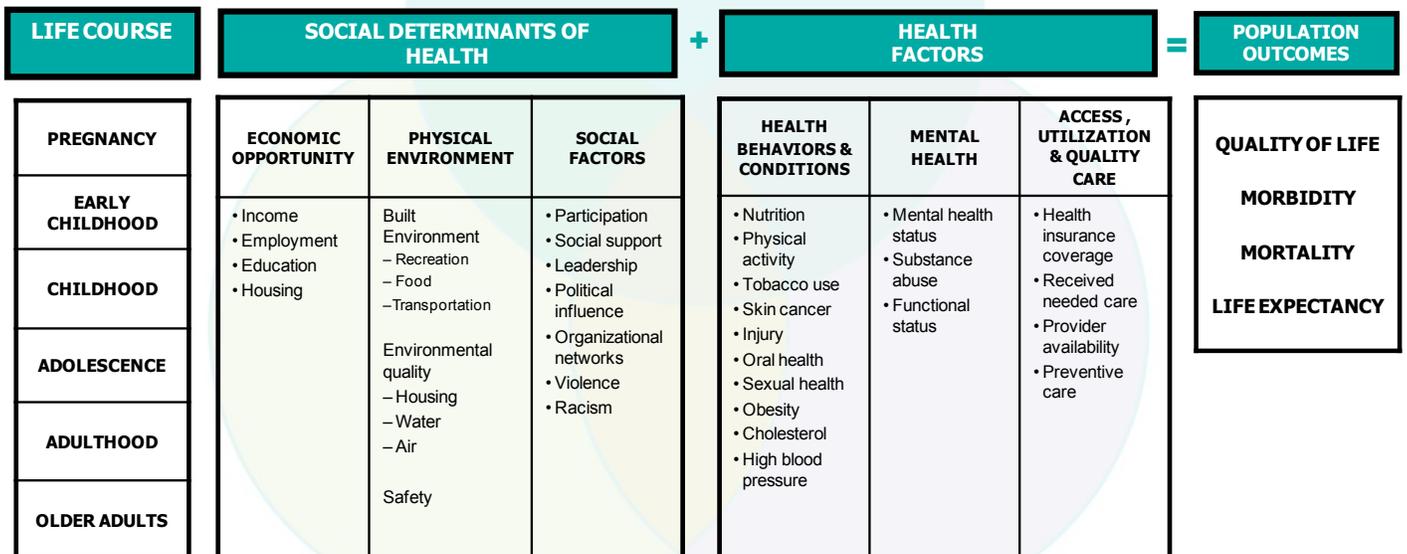
The Colorado Department of Public Health and Environment (CDPHE) created a health equity model that defines many social determinants of health and how they impact

health behaviors across the life course (Figure 1).<sup>3</sup> Life course spans from pregnancy through childhood, adolescence, and adulthood. The right side of the model represents the summary health outcome measures commonly used to describe population health (for example, death rates from cardiovascular disease, rates of obesity, or life expectancy). The remainder of the model depicts the various social, economic, and environmental factors impacting decisions people make about their health

## Health Equity

AN EXPLANATORY MODEL FOR CONCEPTUALIZING THE SOCIAL DETERMINANTS OF HEALTH

**NATIONAL INFLUENCES  
GOVERNMENT POLICIES  
U.S. CULTURE & CULTURAL NORMS**



behaviors, which ultimately have an affect on better or worse health outcomes. The model also illustrates the complex role that health and mental health conditions and access to care have on health outcomes. In total, the model is intended to highlight the multiplicity of factors that have been shown to play a role in health at both the population and individual level.

Health disparities are rooted in differences based on social determinants of health, which help explain why certain populations have a disproportionate share of disease burden. Identifying health disparities defines those people in a population that are at higher risk for worse health outcomes. For example, circumstances in early life can have a profound effect on health at all ages. Inadequate education can limit employment options during early adulthood, which could lead to substantially lower family income, causing a family to live in a poorer neighborhood that does not have easy access to healthy food outlets, which in turn impacts eating behaviors that result in higher obesity rates among people with lower educational attainment. Additionally, these socioeconomic conditions may contribute to having poor access to care or undertaking other high risk health behaviors, such as cigarette smoking.

### **Why Health Disparity Matters**

Achieving good health in a community is dependent upon identifying which people are affected by health disparities and engage in high risk behaviors. Understanding what has an effect on unhealthy behavior is instrumental to designing and implementing successful programs to improve health outcomes. Positive change may require intervention directed not only at certain people within a population, but at policies that support change in social, economic, or environmental circumstances within a community.

Health disparities or inequities are present in El Paso County. In this report, differences in health behaviors, outcomes, or risk are presented by age, sex, race/ethnicity, income status, and/or educational attainment in order to highlight where disparities exist. In the section containing socioeconomic data for El Paso County, maps are included to illustrate where people who may have health disparities live in the county. Presenting data in this manner is intended to help identify where and with whom focused efforts are needed to have significant and sustained progress in improving health. ■

**The World Health Organization defines the social determinants of health as “the circumstances into which people are born, live, work, and age; and the systems put in place to deal with illness. These circumstances are in turn shaped by a wider set of forces: economics, social policies, and politics.”**

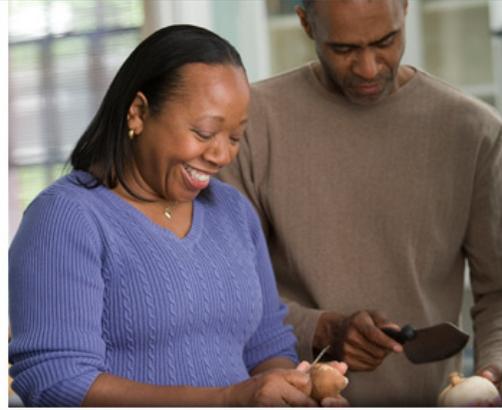
.....  
<sup>1</sup>National Cancer Institute [Internet]. Available from: <http://crchd.cancer.gov/disparities/defined.html>.

<sup>2</sup>World Health Organization [Internet]. Available from [www.who.int/social\\_determinants/thecommission/finalreport/key\\_concepts/en/index.html](http://www.who.int/social_determinants/thecommission/finalreport/key_concepts/en/index.html).

<sup>3</sup>Colorado Department of Health and Environment [Internet]. Social Determinants of Health. Available from: [www.coprevent.org/search/label/sdoh](http://www.coprevent.org/search/label/sdoh).

# Who We Are:

## El Paso County Demographic and Socioeconomic Data



El Paso County is located in the south central region of Colorado. As of July 2010, the county had an estimated 627,096 residents and the population is projected to reach nearly 1 million over the next three decades (Figure 1).<sup>1</sup> El Paso County is a mix of urban, suburban, and rural communities with about two-thirds (419,353) of the population residing within the city of Colorado Springs. The variation in population density throughout the county is demonstrated in Figure 2, which indicates the number of people per square mile.<sup>2</sup>

El Paso County's population is comprised of 50.2 percent females. The median age is 34.1 years, with 26.1 percent of the population under the age of 18 years and 10.0 percent over the age of 65 years (Table 1).<sup>1,3</sup> The racial and ethnic breakdown in the county shows the population to be predominantly non-Hispanic white (73.9 percent), followed by 15.0 percent Hispanic of any race (Figure 3); non-Hispanic black

and other non-Hispanic races comprise 6.3 percent and 4.8 percent of the total population, respectively.<sup>1</sup> Vital statistics data showed that during 2010, there were 9,187 live births and 3,530 deaths in El Paso County.<sup>4</sup>

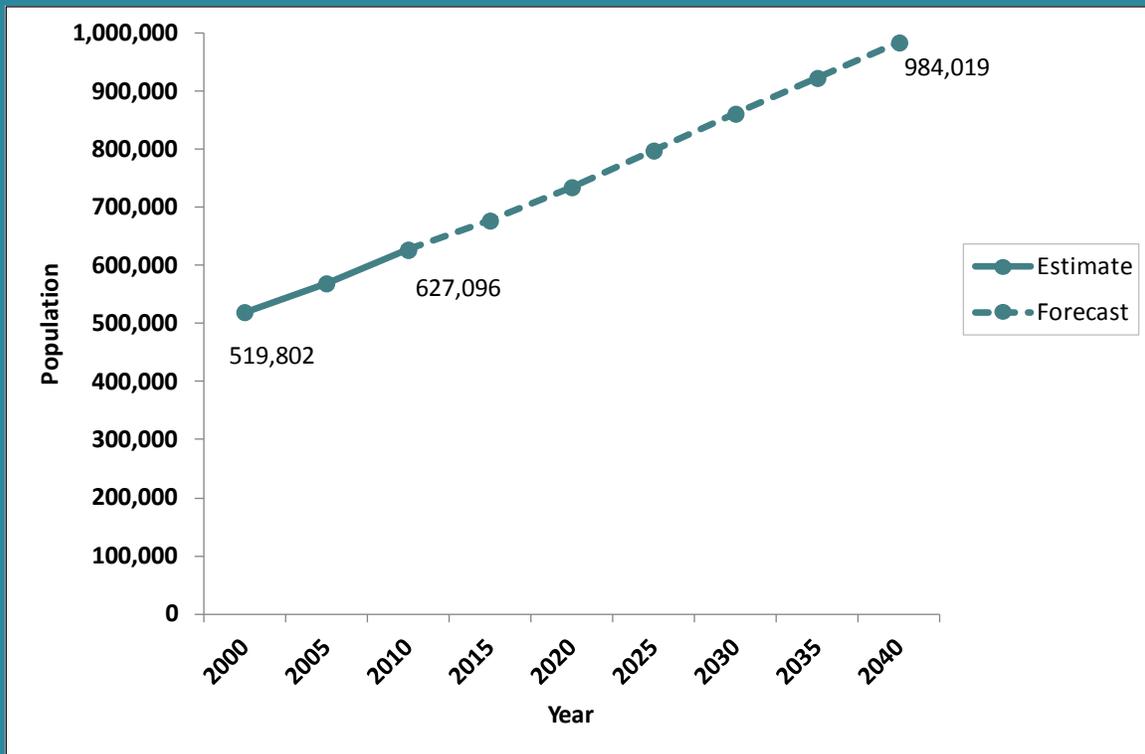
El Paso County has a large military presence, including four military installations – Fort Carson Army Base, Peterson Air Force Base, Schriever Air Force Base, and the United States Air Force Academy. A 2011 report from the Greater Colorado Springs Chamber of Commerce estimates that these four installations employ nearly 40,500 military personnel and approximately 21,000 civilian/contract personnel.<sup>5</sup> Three-quarters of military personnel are estimated to live in communities outside the military bases. El Paso County is home to 58 percent of Colorado's military retiree population, according to this report.

The median household income in El Paso County was \$51,548 in 2010 (Figure 4), with 19.1

percent of children younger than 18 years and 10.4 percent of families living below the Census Bureau's 2010 poverty threshold.<sup>6</sup> Families living in poverty are more concentrated in south Colorado Springs, and south-central and eastern El Paso County (Figure 5). An estimated 8.9 percent of households in El Paso County received Supplemental Nutrition Assistance Program benefits (SNAP, formerly known as food stamps) in 2010; among households receiving SNAP, 56.2 percent were below the poverty threshold and 60.3 percent included children younger than 18 years of age.<sup>7</sup> According to the Colorado Department of Labor and Employment, the average unemployment rate in El Paso County during 2011 was 9.5 percent.<sup>8</sup>

In 2010, 22.0 percent of El Paso County residents ages 25 years and older held a high school diploma or equivalent as their highest degree, and just over one-third held a bachelor's degree or higher (Figure 6).<sup>9</sup>

**Figure 1. Population estimates and projected forecast, El Paso County 2000 to 2040**



**Table 1. Age distribution of El Paso County population, 2010**

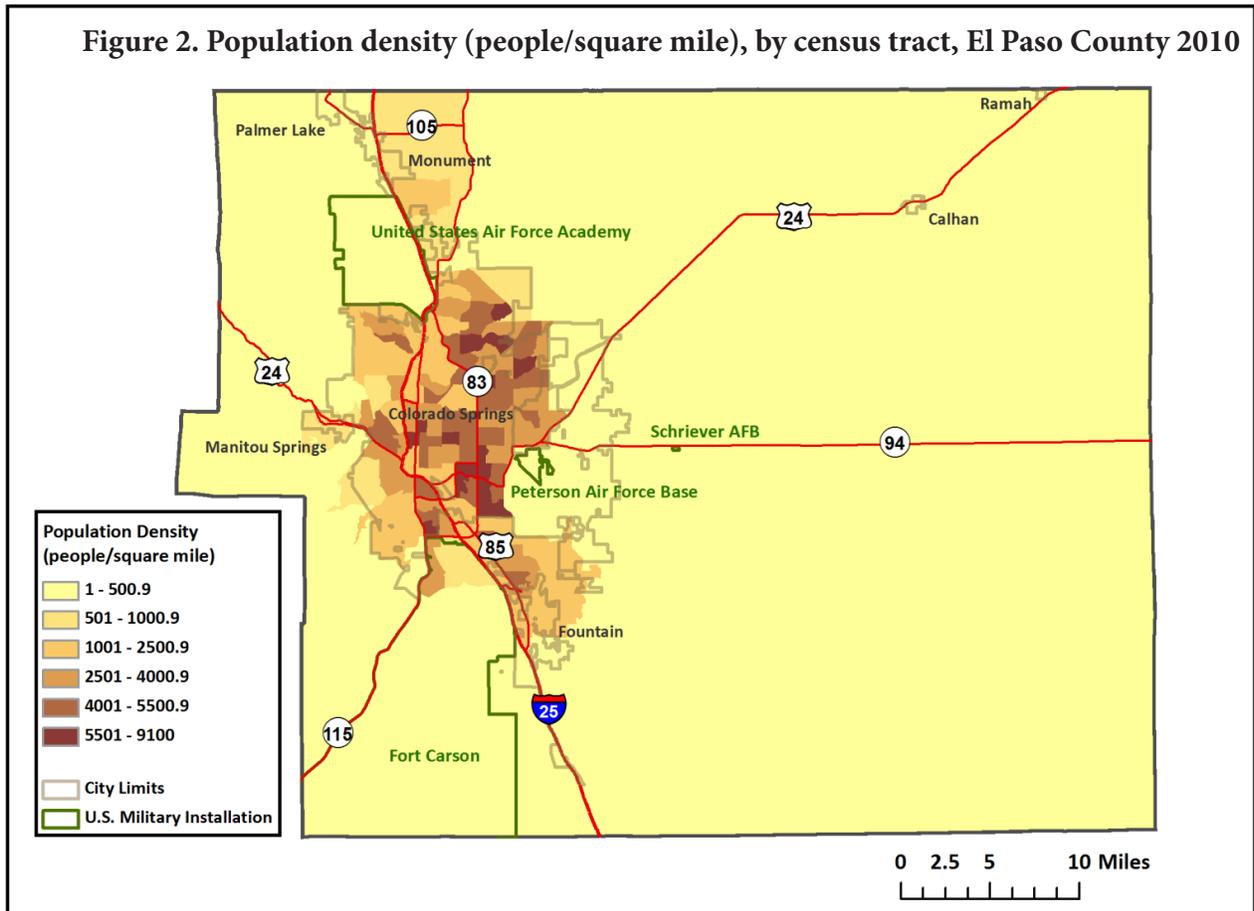
| Age                | Number  | Percent of population |
|--------------------|---------|-----------------------|
| Under 18 years     | 163,425 | 26.1%                 |
| 18 to 24 years     | 68,648  | 10.9%                 |
| 25 to 44 years     | 170,547 | 27.2%                 |
| 45 to 64 years     | 161,656 | 25.8%                 |
| 65 years and older | 62,820  | 10.0%                 |

The on-time graduation rate, defined as the number of students who completed high school within four years, for the class of 2010 was 78.4 percent.<sup>10</sup> During the same academic year, 2.1 percent of seventh to twelfth grade students dropped out of school in El Paso County.

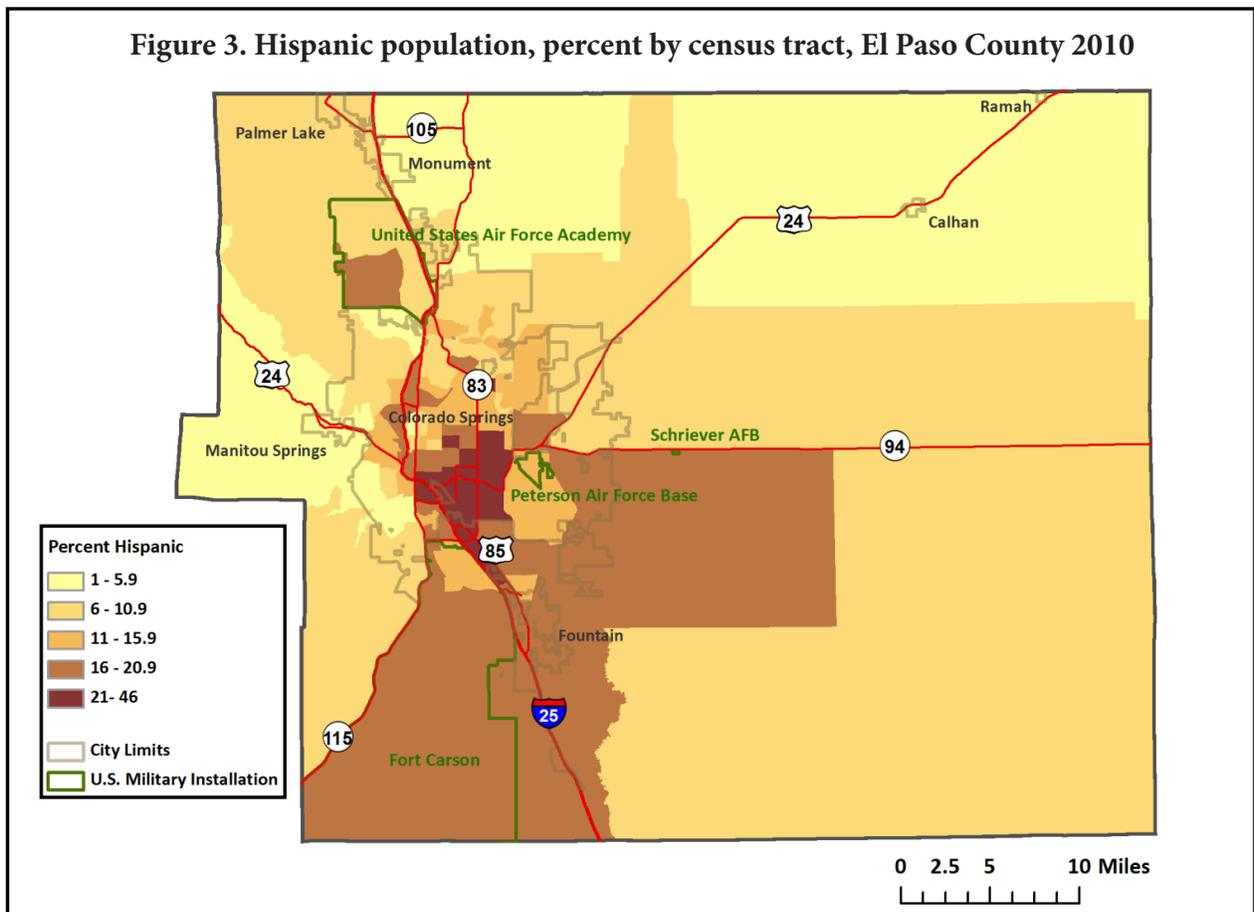
An estimated 11.0 percent of people ages 5 years and older in El Paso County spoke a language other than English at home in 2010, with more than half (58.3 percent) being

Spanish-speaking.<sup>9</sup> Of those speaking a language other than English at home, 36.2 percent were considered linguistically isolated (defined as speaking English “less than very well”). ■

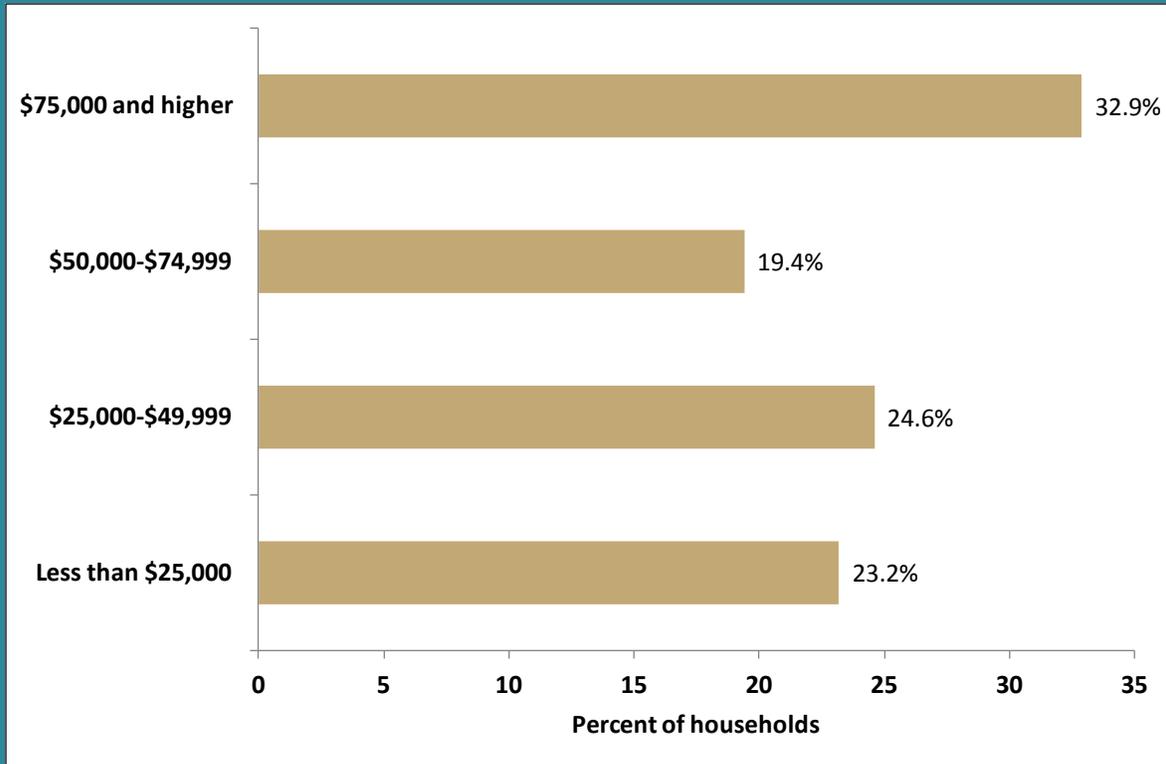
**Figure 2. Population density (people/square mile), by census tract, El Paso County 2010**



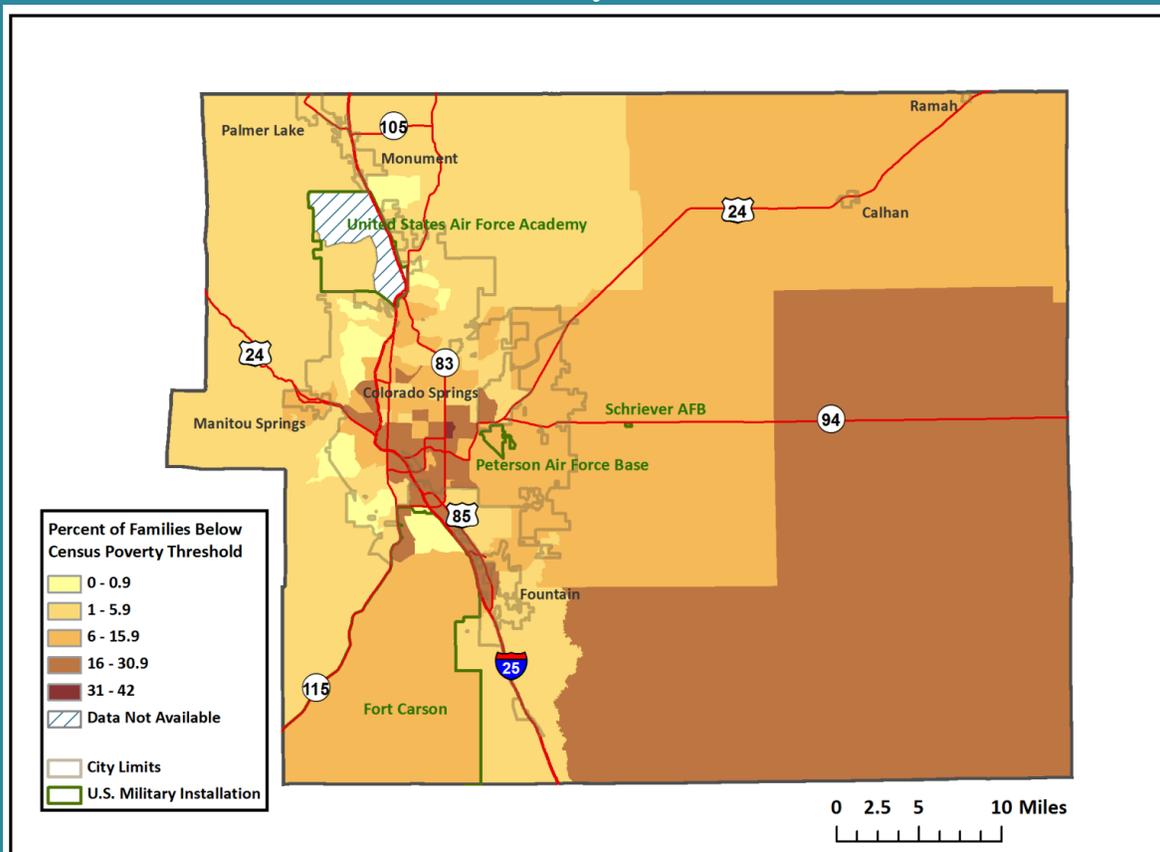
**Figure 3. Hispanic population, percent by census tract, El Paso County 2010**



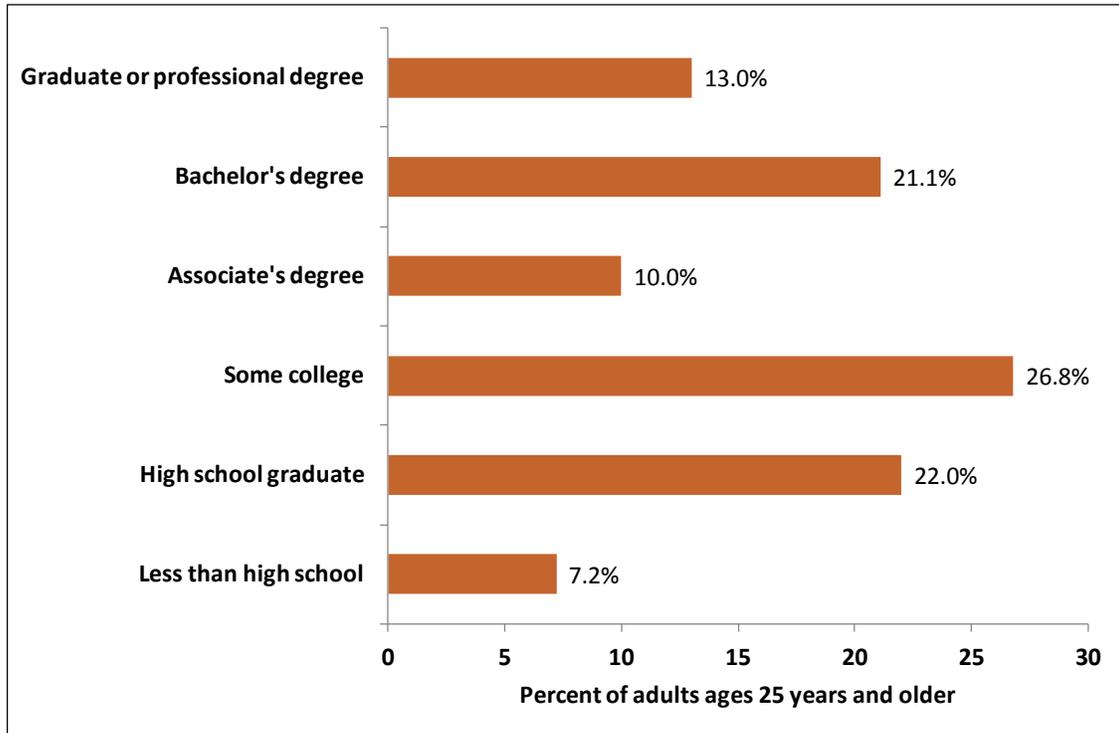
**Figure 4. Annual household income, El Paso County 2010**



**Figure 5. Percent of families below poverty threshold, by census tract, El Paso County 2006 to 2010**



**Figure 6. Educational attainment among adults ages 25 years and older, El Paso County 2010**



<sup>1</sup>Colorado State Demography Office [Internet]. Population Data. Available from: [www.colorado.gov/cs/Satellite/DOLA-Main/CBON/1251593300013](http://www.colorado.gov/cs/Satellite/DOLA-Main/CBON/1251593300013).

<sup>2</sup>U.S. Census Bureau [Internet]. 2010 Census. Population, Housing Units, Area, and Density: 2010 – County – Census Tract (Table GCT-PH1). Available from: <http://factfinder2.census.gov/main.html>.

<sup>3</sup>U.S. Census Bureau [Internet]. 2010 Census. Profile of General Population and Housing Characteristics (Table DP-1). Available from: <http://factfinder2.census.gov/main.html>.

<sup>4</sup>Colorado Department of Public Health and Environment [Internet]. 2010 State and County Birth and Death Summary Tables. Available from: [www.chd.dphe.state.co.us/topics.aspx?q=Maternal\\_Child\\_Health\\_Data](http://www.chd.dphe.state.co.us/topics.aspx?q=Maternal_Child_Health_Data).

<sup>5</sup>Greater Colorado Springs Chamber of Commerce [Internet]. Colorado's Valuable National Assets: A brief look at Colorado's military [April 2011]. Available from: [www.coloradospringschamber.org/military/](http://www.coloradospringschamber.org/military/).

<sup>6</sup>U.S. Census Bureau [Internet]. 2006-2010 American Community Surveys. Selected Economic Characteristics in the United States (Table DP03). Available from: <http://factfinder2.census.gov/main.html>.

<sup>7</sup>U.S. Census Bureau [Internet]. 2010 American Community Survey. Food Stamps/SNAP (Table S2201). Available from: <http://factfinder2.census.gov/main.html>.

<sup>8</sup>Colorado Department of Labor and Employment [Internet]. 2010 Local Area Unemployment Statistics. Available from: <http://lmgateway.coworkforce.com/lmgateway/default.asp>.

<sup>9</sup>U.S. Census Bureau [Internet]. 2010 American Community Survey. Selected Social Characteristics in the United States (Table DP02). Available from: <http://factfinder2.census.gov/main.html>.

<sup>10</sup>Colorado Department of Education [Internet]. 2009-2010 Colorado Education Statistics. Available from: [www.cde.state.co.us/index\\_stats.htm](http://www.cde.state.co.us/index_stats.htm).

# Morbidity and Mortality Data

One of the overarching goals of Healthy People 2020, the decennial national public health improvement plan, is to improve the quality and length of healthy lives among Americans.<sup>1</sup> Reducing disability, injury, disease, and premature death are key priorities in achieving this goal. This section provides data on general health status, life expectancy, and causes of death.

## How is it measured?

Morbidity data quantifies the occurrence of illness or disease and mortality measures death. In this section, self-reported health status represents a morbidity indicator and is obtained from health surveys of adults. Mortality indicators are derived from death certificates, and demonstrate disease severity as well as differences in the risk of dying between subgroups of a population or geographic area. Life expectancy represents the average number of years of life expected after birth; while healthy life expectancy is the average number of years that a person can expect to live in “good or excellent health” – that is, in the absence of significant disease, injury, or disability. Years of potential life lost is a measure of premature mortality, which is calculated as the estimated number of years of life lost among people in a population who die before reaching a given age. Deaths occurring

in younger persons contribute more to this measure than deaths among older persons.

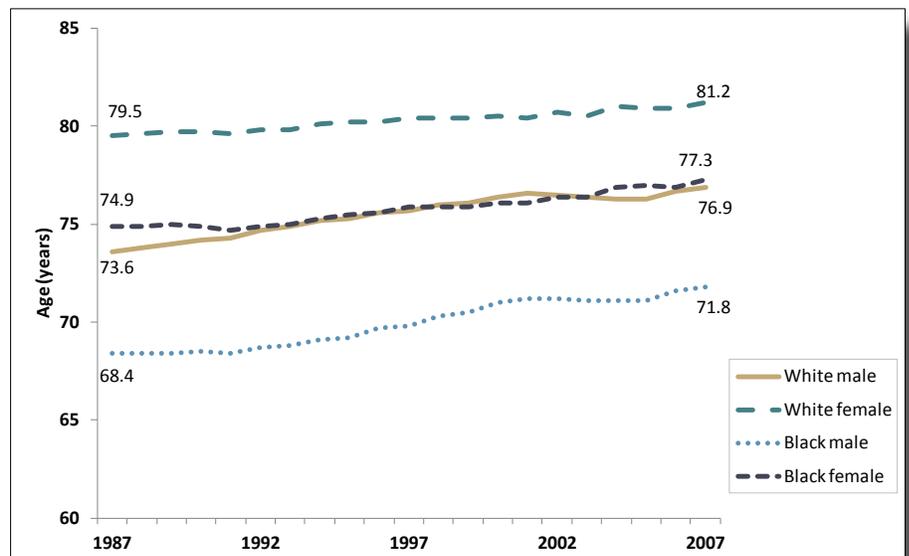
## How are we doing in El Paso County?

In El Paso County, 10.6 percent of adults ages 18 and older reported being in fair or poor health in 2009-2010, and 89.4 percent reported being in good or better health.<sup>2</sup> This self-reported measure has high correlation with actual health status and mortality.<sup>3</sup>

Figure 1 shows the trend in life expectancy for El Paso County between 1987 and 2007.<sup>4</sup> While life expectancy has increased overall in the past two decades, gender and racial disparities remain evident, particularly among black males. This gap becomes

more apparent when examining healthy life expectancy in Colorado, where there are substantial differences between white, non-Hispanic persons as compared to the white, Hispanic or black populations (Table 1).<sup>5</sup> Among white, non-Hispanic persons in Colorado, approximately 9 percent of one’s life is expected to be spent in fair or poor health. In comparison, for black persons this proportion increases to 17 percent; and among white, Hispanic persons, 23 percent of one’s life is expected to be in fair or poor health.<sup>6</sup> For El Paso County’s population as a whole, there is approximately an eight year difference between life expectancy (79.6 years) and healthy life expectancy (71.7 years).

**Figure 1. Life expectancy, by sex and race, El Paso County 1987 to 2007**



From 2007 to 2009, the three leading causes of death for all ages in El Paso County were cancer, heart disease, and unintentional injuries (Table 2).<sup>7</sup> However, the impact of certain diseases on mortality may be better understood when illustrated by age group (Table 3).<sup>8</sup> Infant mortality is commonly attributed to abnormal fetal development and Sudden Infant Death Syndrome (SIDS). For children and young adults, preventable injuries including accidents, homicide,

and suicide play a dominant role. Cancer and chronic heart or respiratory diseases emerge as major causes of death in the middle and older age adult groups.

Preventable deaths substantially contribute to premature mortality, or deaths occurring before an expected age. During 2007 to 2009, residents of El Paso County experienced significantly more premature death than the Colorado average (4,090.7 versus

3,713.9 age-adjusted years of potential life lost per 100,000 population younger than age 65, respectively).<sup>9</sup> In El Paso County, an estimated 727.7 years of potential life were lost annually per 100,000 population younger than age 65 due to accidents and 476.7 years of potential life were lost due to suicide. Other leading causes of years of potential life lost include cancer (572.0), heart disease (404.8) and chronic liver disease and cirrhosis (112.4). ■

**Table 1. Life expectancy and healthy life expectancy, by race/ethnicity, Colorado 2008 to 2010**

|                            | Life expectancy (years) | Healthy life expectancy (years) |
|----------------------------|-------------------------|---------------------------------|
| <b>Total</b>               | 80.0                    | 71.0                            |
| <b>White, non-Hispanic</b> | 80.2                    | 73.0                            |
| <b>White, Hispanic</b>     | 79.2                    | 61.1                            |
| <b>Black</b>               | 76.8                    | 64.0                            |

**Table 2. Top 10 causes of death, El Paso County 2007 to 2009**

| Rank      | Cause of death                      | Deaths per 100,000 population per year |
|-----------|-------------------------------------|--|
| <b>1</b>  | Cancer                              | 128.5                                  |
| <b>2</b>  | Heart disease                       | 113.6                                  |
| <b>3</b>  | Unintentional injuries              | 38.7                                   |
| <b>4</b>  | Chronic lower respiratory diseases  | 38.0                                   |
| <b>5</b>  | Cerebrovascular diseases            | 33.1                                   |
| <b>6</b>  | Suicide                             | 18.6                                   |
| <b>7</b>  | Alzheimer's disease                 | 15.6                                   |
| <b>8</b>  | Diabetes mellitus                   | 12.8                                   |
| <b>9</b>  | Chronic liver disease and cirrhosis | 9.7                                    |
| <b>10</b> | Influenza and pneumonia             | 9.4                                    |

**Table 3. Age-specific leading causes of death, El Paso County 2007 to 2009**

| Age group                      | Top 5 leading causes of death                           |
|--------------------------------|---|
| <b>Infants &lt;1 year</b>      | 1. Congenital malformations & chromosomal abnormalities |
|                                | 2. Length of gestation & fetal malnutrition             |
|                                | 3. SIDS   |
|                                | 4. Complications of pregnancy, labor & delivery         |
|                                | 5. Blood-related disorders                              |
| <b>Ages 1 to 14 years</b>      | 1. Accidents  |
|                                | 2. Homicide   |
|                                | 3. Cancer   |
|                                | 4. Heart disease  |
|                                | 5. Congenital malformations & chromosomal abnormalities |
| <b>Ages 15 to 24 years</b>     | 1. Accidents  |
|                                | 2. Suicide  |
|                                | 3. Homicide   |
|                                | 4. Cancer   |
|                                | 5. Heart disease  |
| <b>Ages 25 to 44 years</b>     | 1. Accidents  |
|                                | 2. Suicide  |
|                                | 3. Cancer   |
|                                | 4. Heart Disease  |
|                                | 5. Homicide   |
| <b>Ages 45 to 64 years</b>     | 1. Cancer   |
|                                | 2. Heart disease  |
|                                | 3. Accidents  |
|                                | 4. Suicide  |
|                                | 5. Chronic liver disease & cirrhosis                    |
| <b>Ages 65 years and older</b> | 1. Cancer   |
|                                | 2. Heart disease  |
|                                | 3. Chronic lower respiratory diseases                   |
|                                | 4. Cerebrovascular disease                              |
|                                | 5. Alzheimer's disease                                  |

“From 2007 to 2009, the three leading causes of death for all ages in El Paso County were cancer, heart disease, and unintentional injuries. However, the impact of certain diseases on mortality may be better understood when illustrated by age group.”

<sup>1</sup> U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion [Internet]. Healthy People 2020. Available at [www.healthypeople.gov/2020/about/default.aspx](http://www.healthypeople.gov/2020/about/default.aspx).

<sup>2</sup> Colorado Department of Public Health and Environment [Internet]. Colorado Health Information Dataset: 2009-2010 Behavioral Risk Factor Surveillance System. Available from: [www.chd.dphe.state.co.us/cohid/topics.aspx?q=Behavioral\\_Risk\\_Factors](http://www.chd.dphe.state.co.us/cohid/topics.aspx?q=Behavioral_Risk_Factors).

<sup>3</sup> Jylhä M. What is self-rated health and why does it predict mortality? Towards a unified conceptual model. Soc Sci Med 2009;69:307-316.

<sup>4</sup> Kulkami S, Levin-Rector A, Ezzati M, and Murray C. Falling behind: life expectancy in U.S. counties from 2000-2007 in an international context. Population Health Metrics 2011; 9:16.

<sup>5</sup> Colorado Department of Public Health and Environment (CDPHE). 2008-2010 Life Expectancy Estimates. Provided by CDPHE Health Statistics on Sept 28, 2011.

<sup>6</sup> Bol K. Living Longer? Living Better? Estimates of Life Expectancy and Healthy Life Expectancy in Colorado. Colorado Department of Public Health and Environment Health Watch 2012; 82:1-12.

<sup>7</sup> Colorado Department of Public Health and Environment [Internet]. Colorado Health Information Dataset: 2007-2009 Death Data. Available at [www.chd.dphe.state.co.us/cohid/topics.aspx?q=Death\\_Data](http://www.chd.dphe.state.co.us/cohid/topics.aspx?q=Death_Data).

<sup>8</sup> Colorado Department of Public Health and Environment (CDPHE). 2007-2009 Age-Specific Leading Causes of Death. Provided by CDPHE Health Statistics on Aug 17, 2011.

<sup>9</sup> Colorado Department of Public Health and Environment (CDPHE). 2007-2009 Years of Potential Life Lost Estimates. Provided by CDPHE Health Statistics on Oct 26, 2011.

# Health Indicators

- **Access to Care**
- **Environmental Health**
- **Food Safety**
- **Healthy Eating and Active Living**
- **Mental Health and Substance Abuse**
- **Motor Vehicle Injuries**
- **Oral Health**
- **Tobacco Use**
- **Unsafe Sexual Practices and Teen Pregnancy**
- **Vaccine-Preventable Infectious Diseases**

# Health Indicators

## Access to Care

Access to health care encompasses a broad concept related to the availability, affordability, and accessibility of health services.<sup>1</sup> Those services may include preventive or specialty care, and emergency treatment. While having health insurance provides a gateway towards accessing the health care system, insurance alone may not ensure the necessary levels of access. Insurance coverage must be comprehensive and affordable in terms of out-of-pocket expenses, and is dependent on having adequate numbers and types of providers who accept an individual's health insurance. Health care providers should be geographically accessible and offer services adequate to meet the needs of clients.

Evidence shows that uninsured individuals experience more adverse outcomes, including death, as compared to insured individuals.<sup>2</sup> Those without insurance are more likely to be younger, of minority race or ethnicity, unemployed, have lower levels of education or income, and to smoke. These factors are co-contributors to being uninsured that, in turn, impact an individual's ability to seek care when needed, have a regular source of care other than in an acute care setting, and maintain continuity of care.<sup>3</sup>

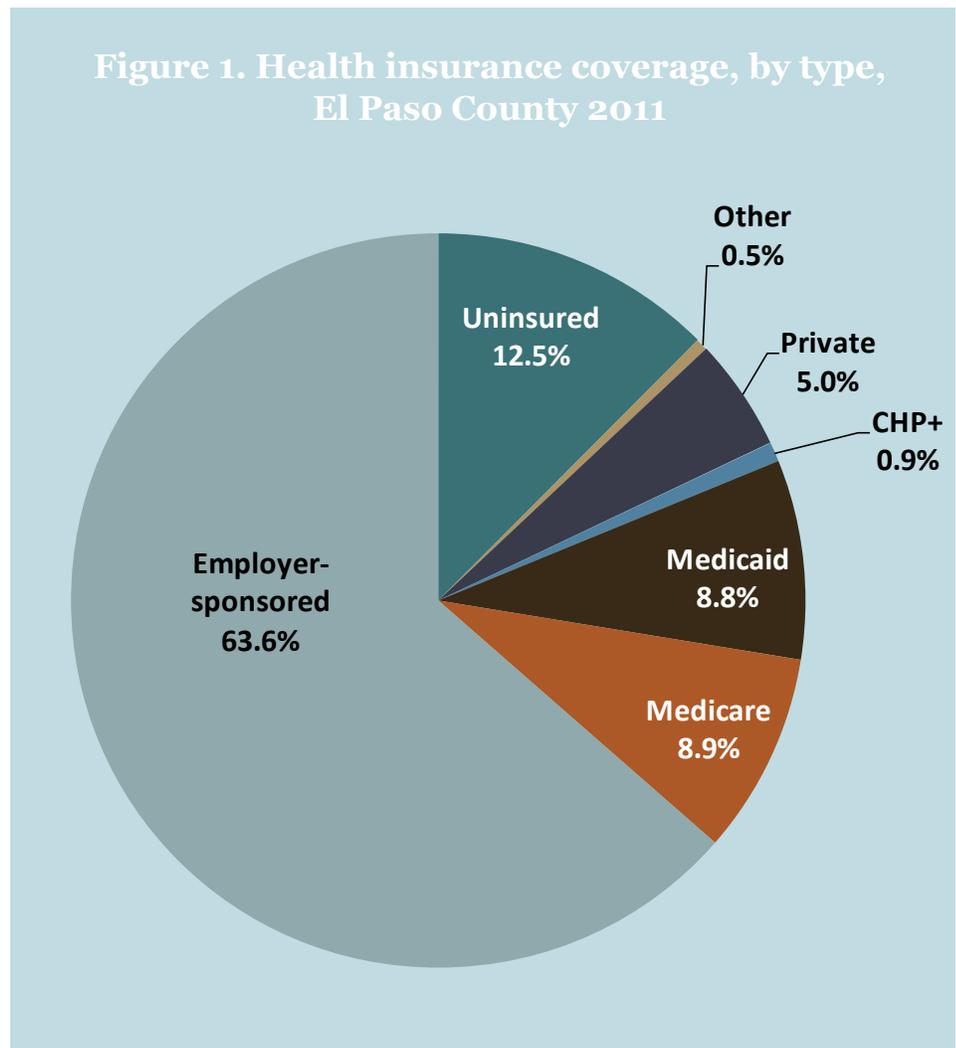
Other factors that impact an individual's ability to access the health care system include lack of transportation, long wait times to get an appointment, and difficulties with language or literacy.

### How is it measured?

While health insurance does not ensure access to care, having some form of coverage is a widely accepted proxy for measuring health care access. Health insurance is

commonly classified into private or public. In this report, private insurance represents employer-sponsored, direct-purchase, and military-based plans; while public insurance represents federal and state government-based public plans, including Medicaid, Medicare, and Child Health Plan Plus (CHP+). Individuals with health insurance may still be underinsured, which is defined as having out-of-pocket medical expenses that exceed an insured

Figure 1. Health insurance coverage, by type, El Paso County 2011



individual's ability to pay from usual sources of family income.

### How are we doing in El Paso County?

Data from the 2011 Colorado Health Access Survey showed that about 13 percent of El Paso County residents did not have any form of public or private health insurance (Figure 1).<sup>4</sup> Most residents (63.6 percent) were insured through an employer-sponsored health plan and nearly 19 percent reported insurance coverage through a public plan such as Medicaid or Medicare. Of those with private or public insurance for the past 12 months, 12.3 percent were

considered to be underinsured.

Medicaid and CHP+ are public insurance programs for certain groups of individuals and families. Eligibility is based upon requirements such as age, income and assets, and whether the individual is pregnant, blind, or disabled. Although El Paso County has a higher proportion of qualified individuals enrolled in these programs overall when compared to Colorado (86.3 percent vs. 78.8 percent, respectively), there are still persons who qualify but remain unenrolled. In El Paso County in 2009, 10.3 percent (4,212)

of children ages 18 years and younger who were eligible for either Medicaid or CHP+ were not enrolled.<sup>5</sup> Furthermore, 24.5 percent (3,104) of eligible adults ages 19-64 years were not enrolled in Medicaid.

Figure 2 shows the usual source of care for those with and without current health insurance during 2011. Those with insurance coverage primarily visit doctor's offices or other private clinics (70.2 percent), whereas only 23.5 percent of uninsured individuals identified such places as their usual source of care.<sup>4</sup> In contrast, 44 percent of

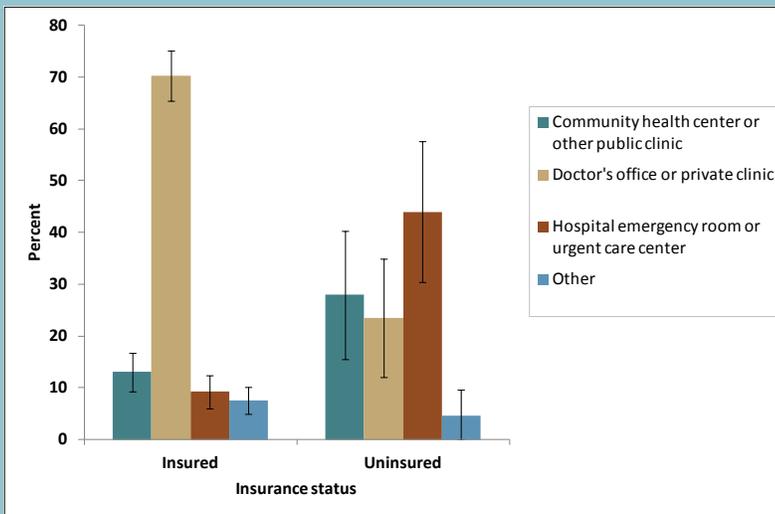


Figure 2. Usual source of health care, by insurance status, El Paso County 2011

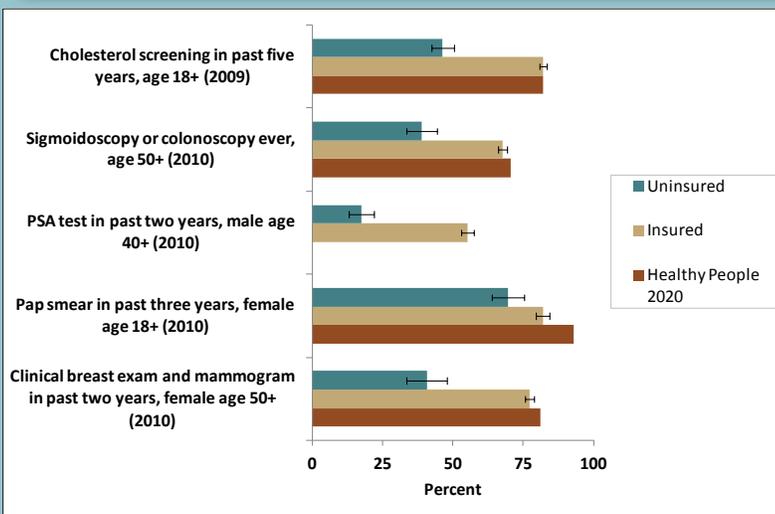


Figure 3. Health screening of adults ages 18 years and older, by insurance status, Colorado 2009 and 2010

Note: Error bars represent the 95% margin of error for each value.

those without coverage typically sought care at emergency rooms or urgent care centers, and 27.9 percent utilized community health centers or other public clinics.

The disparity of access between insured and uninsured individuals is further demonstrated when examining the utilization of preventive health services. Colorado data from 2009 and 2010 showed that insured adults ages 18 years and older are near or at the

Healthy People 2020 targets for various health screenings (Figure 3).<sup>6</sup> However, the proportion of uninsured adults receiving the same services is significantly lower than insured persons.

Seeking care from a primary care provider for routine and preventive care often is not an option for the un- or underinsured. Beyond insurance status, access to primary care is dependent on the proximity to and number of

providers in a community.<sup>1</sup> The rate of primary care physicians per population in El Paso County has been consistently lower than the state average. In 2010, there were 65 primary care physicians per 100,000 population in Colorado, but only 44 per 100,000 in El Paso County.<sup>7</sup> ■

**“44 percent of those without insurance coverage typically sought care at emergency rooms or urgent care centers, and 27.9 percent utilized community health centers or other public clinics.”**

<sup>1</sup>Robert Wood Johnson Foundation [Internet]. 2011 County Health Rankings: Access to Care. Available from: [www.countyhealthrankings.org/health-factors/access-care](http://www.countyhealthrankings.org/health-factors/access-care).

<sup>2</sup>Wilper AP, Woolhandler S, Lasser KE, et al. Health insurance and mortality in US adults. *Am J Public Health* 2009;99:2289-2295.

<sup>3</sup>Institute of Medicine. *America's uninsured crisis: consequences for health and health care*. Washington, D.C.: National Academies Press, 2009.

<sup>4</sup>Colorado Health Access Survey, 2011. Denver, CO: The Colorado Trust.

<sup>5</sup>Colorado Health Institute [Internet]. Uninsured, Health Coverage, and Access Data Tables. Available from: [http://datacenter.coloradohealthinstitute.org/data\\_topic.jsp?c=2](http://datacenter.coloradohealthinstitute.org/data_topic.jsp?c=2).

<sup>6</sup>Colorado Department of Public Health and Environment (CDPHE). 2009-2010 Behavioral Risk Factor Surveillance System. Provided by CDPHE Health Statistics on Sept 16, 2011.

<sup>7</sup>Colorado Health Institute [Internet]. Workforce Data Tables. Available from: [http://datacenter.coloradohealthinstitute.org/data\\_topic.jsp?c=5](http://datacenter.coloradohealthinstitute.org/data_topic.jsp?c=5).

# Health Indicators

## Environmental Health

People have a reciprocal relationship with the surrounding environment – each influencing the health of the other. The World Health Organization estimates that globally nearly one-quarter of premature deaths and overall disease burden (years of healthy life lost) can be attributed to modifiable environmental factors.<sup>1</sup> These environmental factors include physical, chemical and biological hazards that directly affect health and also increase unhealthy behaviors.

Children, elderly persons, and those with chronic lung or heart conditions are particularly sensitive to poor environmental quality.<sup>2</sup> Air pollution (indoor and outdoor) has been linked to decreased lung function and worsening of conditions such as asthma, and radon is linked to lung cancer. For drinking water, certain contaminants such as bacteria and viruses can cause acute gastrointestinal illness, while others (like metals or solvents) may become a health concern after years of exposure to levels above standards set by the Environmental Protection Agency (EPA). The built environment refers to man-made resources and infrastructure intended to support human activity.<sup>3</sup> However, the built environment can also pose health risks, and create barriers to healthy behaviors such as physical activity.

### How is it measured?

Environmental health indicators have been compiled by the Colorado Department of Public Health and Environment (CDPHE). CDPHE uses air monitoring stations around the state to collect data on ozone levels and PM<sub>2.5</sub> (particles 2.5 micrometers and smaller), which includes very small particles of dust, dirt, smoke, and soot that can get deep into the lungs. The National Ambient Air Quality Standards are federal limits for allowable levels of these air pollutants. Because the values are measured from fixed geographic points, the data can only reflect air quality at those specific locations, not the actual air quality of the entire county.

For drinking water, CDPHE collects data from certified laboratories that perform required testing of public drinking water systems; data is readily available from a subset of public water systems called ‘community water systems,’ which is a system that provides drinking water to at least 25 people or more year-round in their residences. Arsenic and nitrates are two elements that are routinely tested in Colorado drinking water systems. Information regarding household sources of water is collected through the Behavioral Risk Factor Surveillance System (BRFSS), a state-based survey of adults. BRFSS also collects data

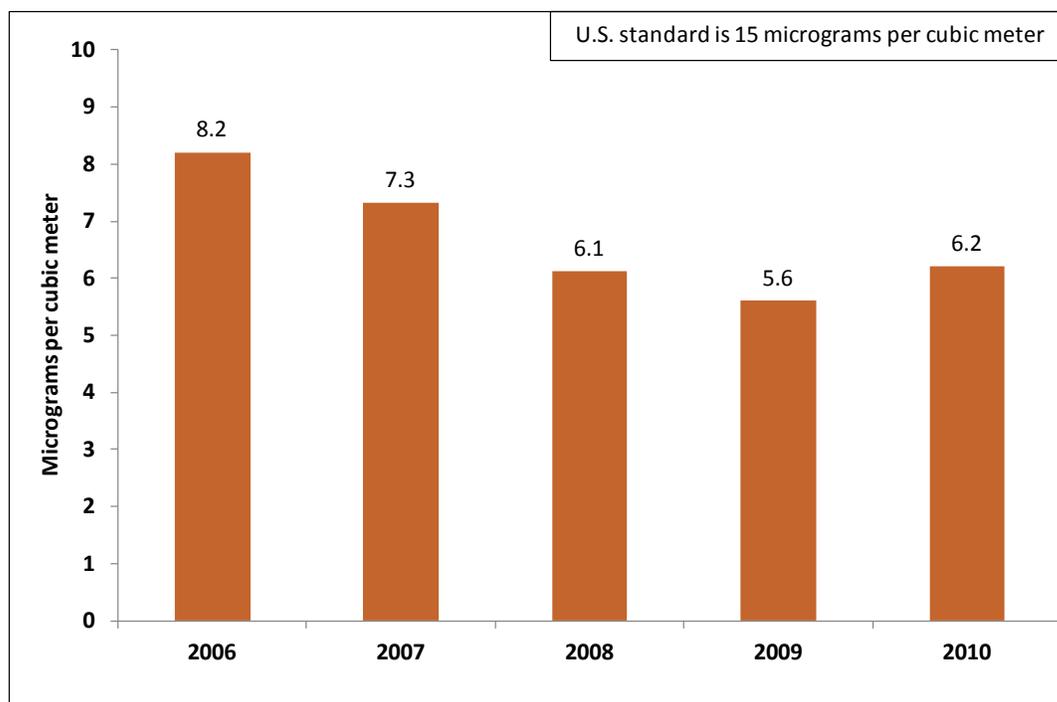
about radon awareness; other data on measuring radon levels comes from results of indoor radon tests that are done by homeowners. Statistics related to transportation are obtained from the United States Census Bureau.

### How are we doing in El Paso County?

For the period 2006 to 2010, the average annual level of PM<sub>2.5</sub> measured within El Paso County remained below the federal standard of 15 micrograms per cubic meter (Figure 1).<sup>4</sup> Ground level ozone is the major component of what is referred to as smog. For ozone levels, Figure 2 illustrates favorable trends in El Paso County between 2006 and 2010, showing a decreasing number of days per year that the county’s average daily ozone levels exceeded the national standard levels.<sup>4</sup> Automotive traffic is an important contributor to air pollutants, particularly in urban areas. In El Paso County in 2010, people 16 years of age and older either drove (77.6 percent) or carpooled to work (9.1 percent); less than 1 percent used public transportation and about 5 percent walked to get to work (Table 1).<sup>5</sup>

Radon is a colorless, odorless, radioactive gas that forms naturally in soil. Radon is known to cause lung cancer and can seep into homes through cracks and openings in floors

**Figure 1. Annual average level of PM2.5 in El Paso County, 2006 to 2010**



and crawl spaces.<sup>6</sup> While indoor radon testing of homes is not mandated in Colorado, 36.0 percent of adults in El Paso County stated they had their home tested for radon as of 2009.<sup>7</sup> For many counties in Colorado (including El Paso), 40 to 60 percent of homes tested for radon showed results above the EPA action level of four picocuries per liter (Figure 3).<sup>6</sup>

The Safe Drinking Water Act regulates acceptable levels of contaminants in drinking water obtained through public water systems.<sup>8</sup> However, this federal law does not apply to private wells serving less than 25 people. In 2009, one out of ten adults in El Paso County reported having a private well as the main source of their household water.<sup>9</sup> The remainder were primarily served by public water systems. People drinking water from a private well are responsible for having the well tested for

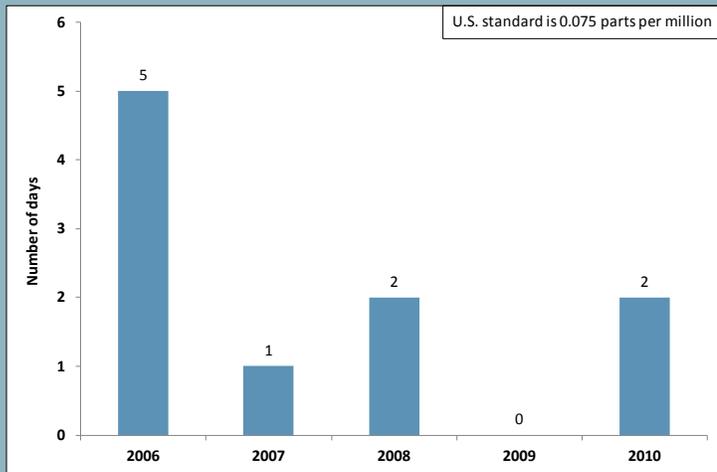
common contaminants such as arsenic, nitrates, and bacteria.

Arsenic is an element that occurs naturally in rocks and soil and can be present in drinking water in Colorado.<sup>8</sup> The most concerning health effects of arsenic are those that can occur after long-term exposure over many years. Chronic arsenic exposure may increase the risk of certain cancers, skin changes, nerve problems, or problems with the circulatory system. The EPA has set the standard for the maximum contaminant level for arsenic in drinking water at 10 micrograms per liter. In 2010, 92 percent of community water systems (44 of 48 total systems) had arsenic testing results available and all showed an average level below five micrograms per liter.<sup>8</sup>

Nitrate is a naturally occurring chemical found in soil and water; excessive nitrate levels in drinking water can result

from runoff due to industrial use of fertilizer, leakage from sewage and septic tanks, or decaying natural material (such as animal waste).<sup>8</sup> Young infants suffer the most severe consequence of excessive nitrate exposure by affecting the body's ability to carry oxygen in the blood. As with arsenic, the EPA sets the standard for the maximum nitrate concentration in drinking water, which is currently 10 milligrams per liter. In 2009, 85 percent of community water systems (41 of 48 total systems) in El Paso County had available data and all results showed an average nitrate level below five milligrams per liter.<sup>8</sup> ■

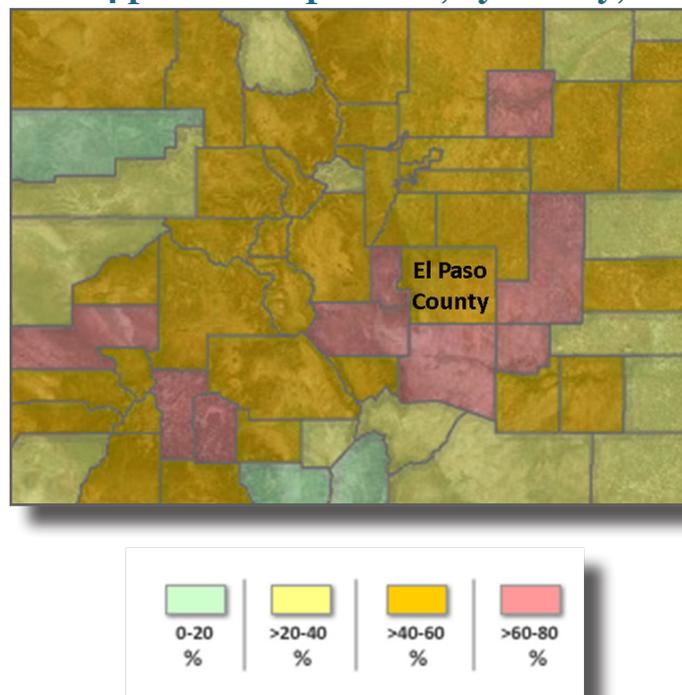
**Figure 2. Number of days per year the average daily ozone levels exceeded United States standard ozone concentrations, El Paso County 2006 to 2010**



**Table 1. Primary means of transportation to work among people 16 years of age and older, El Paso County 2010**

| Means of transportation                   | Percent of workers |
|---|--------------------|
| Drove alone – car, truck, or van          | 77.6%              |
| Carpooled – car, truck, or van            | 9.1%               |
| Public transportation (excluding taxicab) | 0.9%               |
| Walked                                    | 4.9%               |
| Other means                               | 1.7%               |
| Worked at home                            | 5.8%               |

**Figure 3. Percent of indoor air radon tests above the Environmental Protection Agency action level of 4 picocuries per liter, by county, 2005 to 2009**



<sup>1</sup>World Health Organization (WHO). Preventing disease through healthy environments. Geneva, Switzerland: WHO; 2006.  
<sup>2</sup>Colorado Department of Public Health and Environment [Internet]. Colorado Environmental Public Health Tracking, Environment Topics. Available from: [www.coepht.dphe.state.co.us/environmentTopics.aspx](http://www.coepht.dphe.state.co.us/environmentTopics.aspx).  
<sup>3</sup>Robert Wood Johnson Foundation [Internet]. 2011 County Health Rankings. Available from: [www.countyhealthrankings.org/health-factors/built-environment](http://www.countyhealthrankings.org/health-factors/built-environment).  
<sup>4</sup>Colorado Department of Public Health and Environment [Internet]. Colorado Environmental Public Health Tracking, Air Quality. Available from: [www.coepht.dphe.state.co.us/Environment/airQuality.aspx](http://www.coepht.dphe.state.co.us/Environment/airQuality.aspx).  
<sup>5</sup>U.S. Census Bureau [Internet]. 2010 American Community Survey. Selected Economic Characteristics in the United States (Table DP03). Available from: <http://factfinder2.census.gov/main.html>.  
<sup>6</sup>Colorado Department of Public Health and Environment [Internet]. Colorado Environmental Public Health Tracking, Radon. Available from: [www.coepht.dphe.state.co.us/Environment/radon.aspx](http://www.coepht.dphe.state.co.us/Environment/radon.aspx).  
<sup>7</sup>Colorado Department of Public Health and Environment [Internet]. 2009 Colorado Behavioral Risk Factor Surveillance System, Radon Charts. Available from: [www.chd.dphe.state.co.us/BRFSS%202009%20results\\_Radon3.pdf](http://www.chd.dphe.state.co.us/BRFSS%202009%20results_Radon3.pdf).  
<sup>8</sup>Colorado Department of Public Health and Environment [Internet]. Colorado Environmental Public Health Tracking, Drinking Water. Available from: [www.coepht.dphe.state.co.us/Environment/drinkingWater.aspx](http://www.coepht.dphe.state.co.us/Environment/drinkingWater.aspx).  
<sup>9</sup>Colorado Department of Public Health and Environment [Internet]. 2009 Colorado Behavioral Risk Factor Surveillance System, Drinking Water Charts. Available from: [www.chd.dphe.state.co.us/BRFSS%202009%20results\\_drinking%20water.pdf](http://www.chd.dphe.state.co.us/BRFSS%202009%20results_drinking%20water.pdf).

# Health Indicators

## Food Safety

Foodborne illness, also commonly referred to as ‘food poisoning’, is estimated to cause illness in one out of six (48 million) people in the United States every year, as well as 128,000 hospitalizations and 3,000 deaths.<sup>1</sup> Infants, young children, older adults, pregnant women, and those with weakened immune systems are at the greatest risk for foodborne illness.<sup>2</sup>

Improvements in tracking foodborne disease by public health and advances in laboratory testing have allowed faster and more accurate detection of foodborne illness outbreaks. Nationally in 2011, there were 16 large, multistate outbreaks related to contaminated food that were investigated by the Centers for Disease Control and Prevention (CDC).<sup>3</sup> Cases from Colorado were reported in seven of those outbreaks. Overall, 31 foodborne illness outbreaks were reported in Colorado in 2011.<sup>4</sup>

Any foodborne illness or outbreak represents faulty links in the food safety system. Contamination of food can occur at any step from the point of production (such as on a farm) to where food is processed, distributed, sold, or prepared in the home or at food establishments. National regulatory agencies (including the Food and

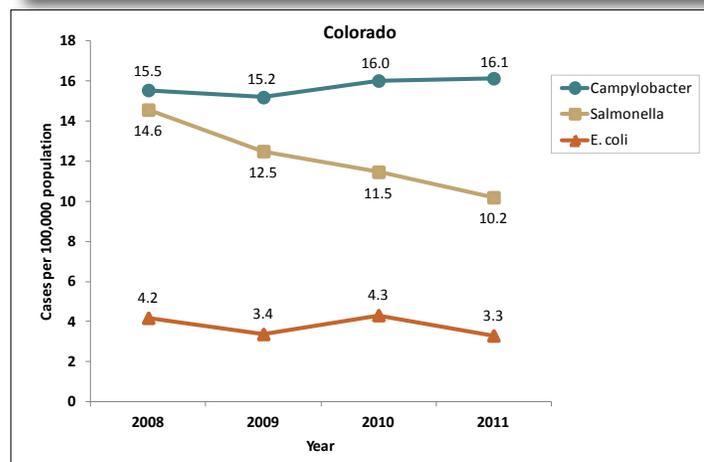
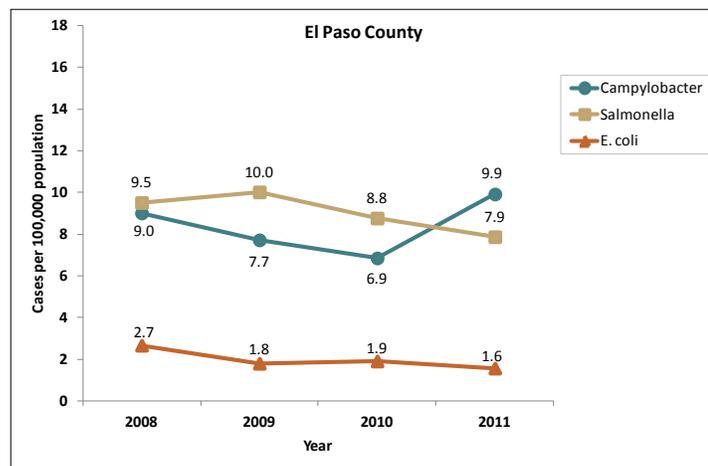
Drug Administration, the United States Department of Agriculture Food Safety and Inspection Service, and the Environmental Protection Agency) are charged with reducing the risk of food contamination by establishing and enforcing food safety standards; inspecting domestic and imported food products; and working with the food industry to conduct risk assessments and mitigate violations in safety standards.<sup>5</sup>

However, even in the home, people need to take precaution in proper food handling, storage, and preparation in order to prevent foodborne illness.<sup>6</sup>

### How is it measured?

The CDC and state and local health departments have surveillance systems in place to track foodborne illness and outbreaks in the United States, which are notifiable conditions in all states. Data on the

**Figure 1. Incidence of common foodborne illness pathogens, El Paso County and Colorado 2008 to 2011\***



\*2011 data is preliminary

incidence of foodborne illness or outbreaks are tracked over time to help measure the overall effectiveness of food safety measures.

According to the Colorado Department of Public Health and Environment, a retail food establishment is defined as “a retail operation that stores, prepares, or packages food for human consumption or serves or otherwise provides food for human consumption to consumers directly or indirectly through a delivery service, whether such food is consumed on or off the premises or whether there is a charge for such food.”<sup>7</sup> Retail food establishments are required to be licensed in Colorado and are inspected regularly to ensure compliance with state regulations. Food inspectors review many factors, but focus on ‘critical’ violations that are directly related to risk of illness (for instance, improper temperature for food storage or cooking). Data from retail food inspections serves as an indicator of risk for foodborne illness.

### How are we doing in El Paso County?

In the United States and Colorado, the pathogens which account for the majority of reported cases of foodborne illnesses are norovirus, Salmonella, Campylobacter, and shiga-toxin producing E. coli (also referred to as ‘STEC’). Preliminary data from 2011 shows 123 reported cases of Salmonella, Campylobacter, and E. coli identified in El Paso County and 1,518 in Colorado.<sup>4</sup> Overall disease rates are higher in Colorado as compared to

**Table 1. Percent of regular inspections with one or more critical violations, by category, El Paso County 2011**

| Violation category                | Percent of inspections with one or more violation in the category |
|-----------------------------------|---|
| Personnel                         | 28%   |
| Food temperature control          | 20%   |
| Handwashing and toilet facilities | 19%   |
| Poisonous or toxic items          | 19%   |
| Sanitization                      | 10%   |
| Food source                       | 10%   |
| Water, sewage, plumbing systems   | 6%  |
| Pest control                      | 3%  |

El Paso County (Figure 1) and only Salmonella has shown a sustained decrease in incidence since 2008.

Although individual cases of norovirus are not tracked, norovirus remains an important cause of foodborne illness outbreaks. For 2011, there were 31 reported outbreaks in Colorado related to contaminated food, of which 11 (35 percent) were confirmed or suspected to be due to norovirus.<sup>4</sup> In El Paso County, norovirus accounted for one of three foodborne illness outbreaks reported in 2011.<sup>8</sup>

Retail food establishments are the most common setting for foodborne illness outbreaks, so monitoring violations identified during inspections is important to improve food safety. In December 2011, there were 2,339 licensed retail food establishments in El Paso County. Throughout 2011, these facilities received 4,552 regular inspections to assure compliance with food safety regulations.<sup>9</sup> Overall, there was an average of 1.41 critical violations per regular inspection in 2011. This rate ranges from

0.33 to 2.88 depending on facility type, with 100-200 seat restaurants and grocery stores with delis having the highest rates of critical violations at 2.17 and 2.88 per regular inspection, respectively. Violations are also grouped into broader categories that represent the source of risk (Table 1).<sup>9</sup> Personnel-related violations (including problems with sick food handlers, improper hand washing, bare hand contact with food, and other hygienic practices) were seen in 28 percent of regular inspections in 2011. In one in five inspections, food temperature control issues (not keeping food cold or hot enough) were cited, and problems with toilet or hand washing facilities were noted 19 percent of the time. One in five regular inspections resulted in three or more critical violations.

<sup>1</sup>Centers for Disease Control and Prevention [Internet]. 2011 Estimates for Foodborne Illness. Available from: [www.cdc.gov/foodborneburden/index.html](http://www.cdc.gov/foodborneburden/index.html).

<sup>2</sup>U.S. Department of Agriculture, Food Safety and Inspection Service [Internet]. Fact Sheets: At-Risk Populations. Available from: [www.fsis.usda.gov/Fact\\_Sheets/index.asp](http://www.fsis.usda.gov/Fact_Sheets/index.asp).

<sup>3</sup>Centers for Disease Control and Prevention [Internet]. Multistate Foodborne Outbreaks. Available from: [www.cdc.gov/outbreaknet/outbreaks.html](http://www.cdc.gov/outbreaknet/outbreaks.html).

<sup>4</sup>Colorado Department of Public Health and Environment, Disease Control and Environmental Epidemiology Division. Colorado Electronic Disease Reporting System. Accessed on Mar 30, 2012.

<sup>5</sup>U.S. Department of Health and Human Services [Internet]. How Government Responds to Food Illness Outbreaks. Available from: <http://foodsafety.gov/poisoning/responds/index.html>.

<sup>6</sup>U.S. Department of Health and Human Services [Internet]. Keep Food Safe. Available from: <http://foodsafety.gov/index.html>.

<sup>7</sup>Colorado Department of Public Health and Environment [Internet]. State Board of Health, Colorado Food Establishment Rules and Regulations. Available from: [www.cdphe.state.co.us/regulations/consumer/101002Retailfood.pdf](http://www.cdphe.state.co.us/regulations/consumer/101002Retailfood.pdf).

<sup>8</sup>El Paso County Public Health (EPCPH). 2011 Communicable Disease Summary Data. Provided by EPCPH Communicable Disease Program on Apr 2, 2012.

<sup>9</sup>El Paso County Public Health (EPCPH). 2011 Retail Food Establishment Inspection Data. Provided by EPCPH Environmental Health on Feb 16, 2012.

# Health Indicators

## Healthy Eating and Active Living

Good nutrition and physical activity are essential to good health. Benefits associated with a healthy diet and regular exercise include:

- decreased risk of chronic diseases such as type 2 diabetes, hypertension, and certain cancers.
- decreased risk of overweight and obesity.
- decreased risk of vitamin and mineral deficiencies.<sup>1</sup>

A healthful diet includes a variety of nutrient-dense foods within and across the food groups, especially whole grains, fruits, vegetables, low-fat or fat-free dairy products, and lean protein sources. A healthful diet also limits the intake of saturated and trans

fats, cholesterol, added sugars, sodium, and alcohol.

Physical activity reduces risks of cardiovascular disease and diabetes beyond that produced by weight reduction alone. In addition, physical activity helps to:

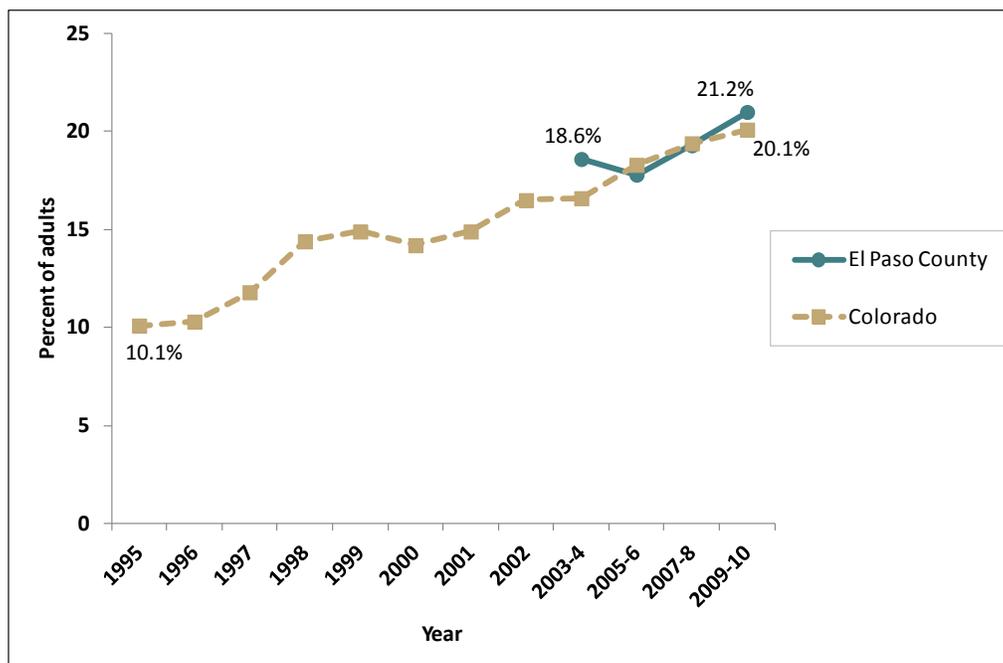
- reduce high blood pressure.
- reduce risk for type 2 diabetes, heart attack, stroke, and several forms of cancer.
- reduce arthritis pain and associated disability.
- reduce risk for osteoporosis and falls.
- reduce symptoms of depression and anxiety.<sup>2</sup>

Expending calories through physical activity, combined

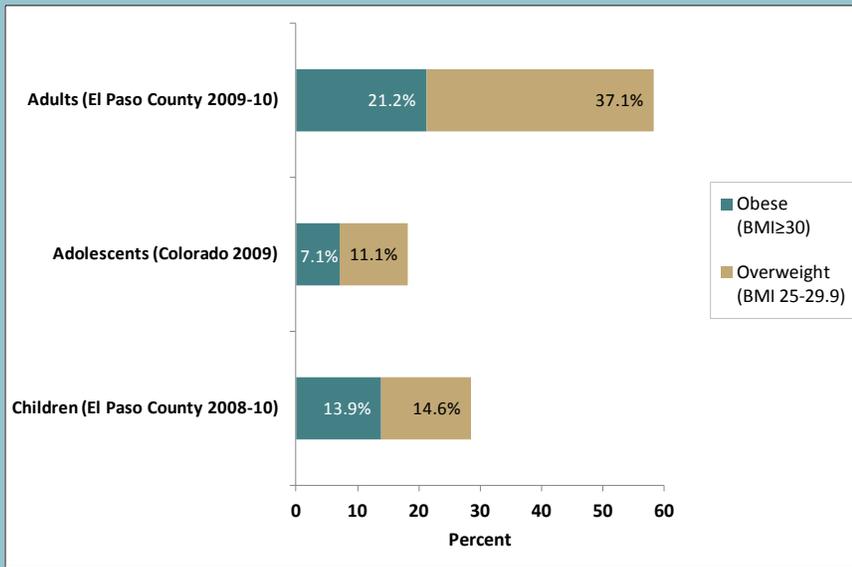
with reducing the number of calories consumed, creates a “calorie deficit” that results in weight loss. Most weight loss occurs because of decreased caloric intake. However, evidence shows weight loss is best maintained by engaging in regular physical activity.<sup>2</sup>

In 2008, the United States Department of Health and Human Services released guidelines for physical activity.<sup>3</sup> Adults ages 18 to 64 years should engage in two hours and 30 minutes of moderate-intensity, or one hour and 15 minutes of vigorous-intensity, aerobic physical activity each week. Children and adolescents (ages 6 to 17 years) should engage in one hour of

**Figure 1. Percent of adults 18 years and older who are obese (BMI ≥30), 1995 to 2010**



**Figure 2. Percent of population with unhealthy weight, El Paso County and Colorado 2008 to 2010**



**“An estimated 37.1 percent of the adult population in El Paso County were overweight and 21.2 percent were obese in 2009 to 2010.”**

physical activity every day. Both age groups are advised to participate in muscle-strengthening activities at least twice weekly.

**How is it measured?**

Diet is measured in a variety of ways, and one indicator of a healthy diet is reported fruit and vegetable consumption. Barriers that restrict access to healthier food exist for some populations related to geography, income, and education levels. Measuring the locations of neighborhood grocery stores and farmers’ markets compared to the density of fast food restaurants may explain patterns of food consumption and the availability of more or less nutritional foods in a particular setting.

Perhaps the most telling indicators of diet and physical activity are the outcome measures for overweight and obesity, high cholesterol,

hypertension, and diabetes. Overweight and obesity are labels for ranges of weight that are greater than what is generally considered healthy for a given height, and have been linked to increased risk of certain health problems.

For estimating prevalence of unhealthy weight at the population level, measures of weight and height are used to calculate “body mass index” (BMI). BMI is used because, for most people, it correlates with their amount of body fat.

- An adult who has a BMI between 25 and 29.9 is considered overweight.
- An adult who has a BMI of 30 or higher is considered obese.

A common source of adult BMI data is the Behavioral Risk Factor Surveillance System which is a state-based health survey of adults 18 years and older. For adolescents and

children, BMI calculations are compared to percentiles of BMI-for-age ranges. The percentile indicates the relative position of the child’s BMI among children of the same sex and age in the United States. Adolescent BMI data is extracted from the state-based Youth Risk Behavior Survey of high school students. For younger children, BMI data is derived from the Colorado Child Health survey. Data for overweight and obese children and adolescents are available at the state level.

Physical activity is measured by quantifying the duration and relative intensity levels of various activities in which people engage. At the population level, these measures are commonly obtained from the aforementioned health surveys.

## How are we doing in El Paso County?

Although Colorado continues to rank as one of the leanest states in terms of weight indicators, it has not escaped the national obesity epidemic. The proportion of Colorado adults who are obese has more than doubled in the past 15 years—from 10.1 percent in 1995 to 21.4 percent in 2010—meaning more than one of every five Colorado adults are obese (Figure 1).<sup>4,5</sup> An estimated 37.1 percent of the adult population in El Paso County were overweight and 21.2 percent were obese in 2009 to 2010 (Figure 2).<sup>6</sup>

Disparities exist for people who are overweight and obese based on income, education, gender, and race (Figure 3). There is a trend, although not statistically significant, for black adults to have higher prevalence of obesity as compared to white or Hispanic adults. Also, obesity is more common among people in households earning less than \$25,000 per year and, interestingly, is higher in people who graduated high school or have a more advanced degree.<sup>6</sup>

People who are overweight or obese are at risk for poor health outcomes including hypertension, high cholesterol, and non-gestational diabetes. In El Paso County, the number of adults with these conditions has increased substantially in the past decade, paralleling trends in obesity. Between 2003 and 2009, hypertension among adults has risen from 14.7 percent to 19.2 percent, and high cholesterol rose from 25.5 percent to 34.5 percent among those who had their

cholesterol levels checked.<sup>5</sup> The prevalence of non-gestational diabetes increased from 3.8 percent among adults in 2003-2004 to 5.4 percent in 2009-2010, representing a 42 percent increase overall. Figure 4 illustrates that people with unhealthy BMI are substantially more likely to suffer from hypertension, high cholesterol, and non-gestational diabetes.<sup>7</sup>

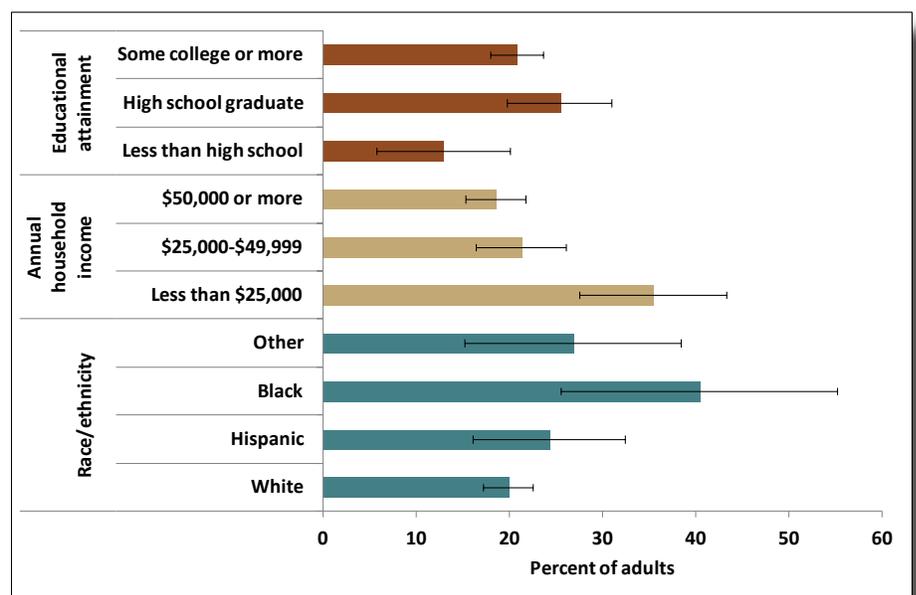
As shown in Figure 2, 28.5 percent of El Paso County children ages 2 to 14 years were of excessive weight, which is not significantly different than the state average of 25.8 percent (2008 to 2010).<sup>8</sup> Additionally, almost one in five Colorado high school students were at an unhealthy weight in 2009.<sup>9</sup>

Eating, physical activity, and sedentary behaviors of children and youth impact the risk of being overweight and obese.

Statewide, nearly two-thirds of children under 14 years of age regularly eat fast food and a substantial proportion engage in sedentary activities for two or more hours per average school day (Table 1).<sup>10</sup>

The United States Preventive Services Task Force presented evidence that breastfeeding provides substantial health benefits for children, with improved health outcomes related to the duration and exclusivity of breastfeeding.<sup>11</sup> For example, children who were not breastfed were more likely to have asthma, type 2 diabetes, and obesity. Interestingly, data shows that in El Paso County nearly 90 percent of new mothers initiate breastfeeding after birth, although nearly one-third of those mothers do not continue breastfeeding beyond 2 months (Figure 5).<sup>12</sup>

**Figure 3. Percent of adults 18 years and older who are obese (BMI ≥30), by selected characteristics, El Paso County 2009 to 2010**



Note: Error bars represent the 95% margin of error for each value.

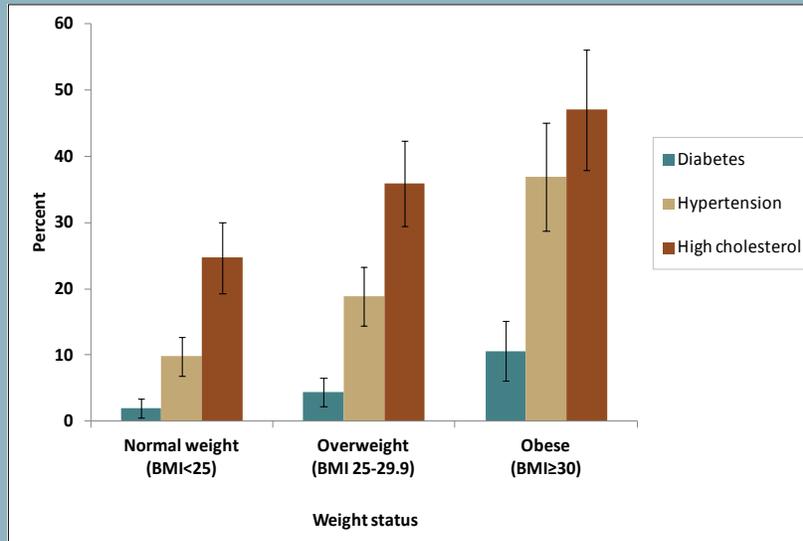
Physical activity measures indicate that many adults are meeting recommended guidelines. In El Paso County in 2009, 57.0 percent of adults reported engaging in two hours and 30 minutes of moderate physical activity (e.g., brisk walking) or one hour of vigorous physical activity (e.g., running) per week.<sup>13</sup> In contrast, fewer children and youth are meeting the recommendation for daily physical activity. Only 38.0 percent of Colorado

children ages 5 to 14 met the recommended weekly amount of moderate physical activity in 2010.<sup>10</sup> Just over one-quarter of Colorado high school students met the recommended weekly amounts of exercise in 2009 (Table 1).<sup>9</sup>

Geographic characteristics of a community may have barriers for healthy eating. For example, where people live impacts the availability of nearby full-service

grocery stores with fresh fruits and vegetables, which can then influence food choices. In 2008, only 44 percent of zip codes in El Paso County had some form of healthy food outlet (defined as a grocery store, produce stand, or farmer's market). This value was below the range found in neighboring Colorado counties and the state average of 59 percent, and well below the national benchmark of 92 percent (Table 2).<sup>14</sup> ■

**Figure 4. Percent of adults 18 years and older with co-existing conditions based on weight status, El Paso County 2009**



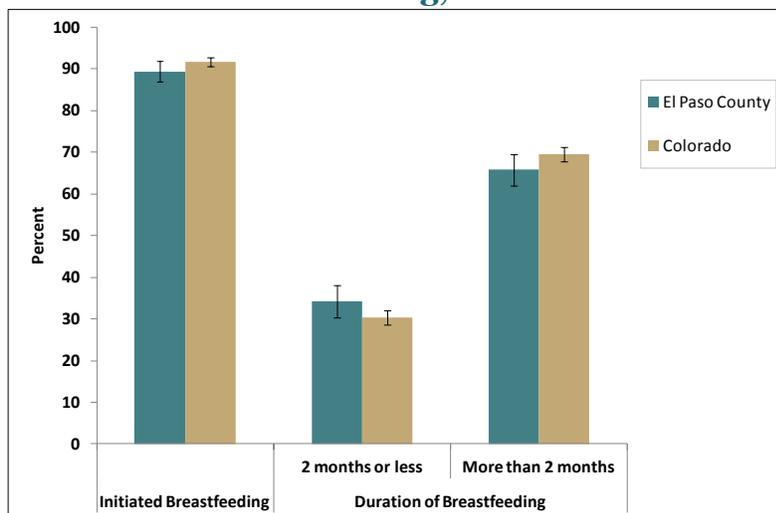
Note: Error bars represent the 95% margin of error for each value.

**Table 1. Percent of children and adolescents engaging in selected eating and recreational behaviors, Colorado 2009 and 2010**

|  | Ages 1-14 years (2010) | Ages 15-19 years (2009) |
|--|------------------------|-------------------------|
| Consuming less than recommended daily amount of fruit and vegetables <sup>a</sup>          | 81.3%                  | 75.6%                   |
| Eating fast food one or more times per week <sup>b</sup>                                   | 63.3%                  | n/a                     |
| Engaging in recommended daily physical activity <sup>c</sup>                               | 38.0%<br>(ages 5-14)   | 26.9%                   |
| Watching TV or videos two or more hours on average school day <sup>d</sup>                 | 34.1%<br>(ages 5-14)   | 45.6%                   |
| Playing video games or using computer two or more hours on average school day <sup>d</sup> | 11.0%<br>(ages 5-14)   | 35.2%                   |

<sup>a</sup> Five or more servings per day.  
<sup>b</sup> Food is paid for at a counter or drive thru, before being eaten.  
<sup>c</sup> 60 minutes of physical activity per day.  
<sup>d</sup> Unrelated to school  
n/a: Measure unavailable for age group

**Figure 5. Percent of new mothers who breastfed their infant and duration of breastfeeding, 2008 to 2010**



Note: Error bars represent the 95% margin of error for each value.

**Table 2. Accessibility of healthy food outlets based on zip code in selected Colorado counties, 2008**

| Place              | Percent of zip codes with access to at least one healthy food outlet* |
|--------------------|---|
| Colorado           | 59%   |
| Adams County       | 83%   |
| Arapahoe County    | 83%   |
| Denver County      | 70%   |
| Douglas County     | 69%   |
| El Paso County     | 44%   |
| Jefferson County   | 83%   |
| Larimer County     | 73%   |
| Pueblo County      | 82%   |
| Weld County        | 52%   |
| National Benchmark | 92%   |

\* Healthy food outlet is defined as a grocery store or produce stand/farmers' market

<sup>1</sup>Centers for Disease Control and Prevention [Internet]. Nutrition Resources for Health Professionals. Available from: [www.cdc.gov/nccdphp/dnpao/index.html](http://www.cdc.gov/nccdphp/dnpao/index.html).

<sup>2</sup>Centers for Disease Control and Prevention [Internet]. Physical Activity for a Healthy Weight. Available from: [www.cdc.gov/healthyweight/physical\\_activity/index.html](http://www.cdc.gov/healthyweight/physical_activity/index.html).

<sup>3</sup>U.S. Department of Health and Human Services [Internet]. 2008 Physical Activity Guidelines [Oct 2008]. Available from: [www.health.gov/paguidelines/guidelines/default.aspx#toc](http://www.health.gov/paguidelines/guidelines/default.aspx#toc).

<sup>4</sup>Centers for Disease Control and Prevention [Internet]. 1995-2002 Behavioral Risk Factor Surveillance System: Prevalence and Trends Data. Available from: <http://apps.nccd.cdc.gov/brfss/>.

<sup>5</sup>Colorado Department of Public Health and Environment [Internet]. Colorado Health Information Dataset: 2003-2010 Behavioral Risk Factor Surveillance System. Available from: [www.chd.dphe.state.co.us/cohid/topics.aspx?q=Behavioral\\_Risk\\_Factors](http://www.chd.dphe.state.co.us/cohid/topics.aspx?q=Behavioral_Risk_Factors).

<sup>6</sup>Colorado Department of Public Health and Environment (CDPHE). 2009-2010 Behavioral Risk Factor Surveillance System. Provided by CDPHE Health Statistics on Aug 30, 2011.

<sup>7</sup>Colorado Department of Public Health and Environment (CDPHE). 2009 Behavioral Risk Factor Surveillance System. Provided by CDPHE Health Statistics on July 14, 2011.

<sup>8</sup>Colorado Department of Public Health and Environment (CDPHE). 2008-2010 Colorado Child Health Survey Data. Provided by CDPHE Health Statistics on March 29, 2012.

<sup>9</sup>Colorado Department of Public Health and Environment [Internet]. Adolescent Health Data: 2009 Youth Risk Behavior Survey. Available from: [www.chd.dphe.state.co.us/topics.aspx?q=Adolescent\\_Health\\_Data](http://www.chd.dphe.state.co.us/topics.aspx?q=Adolescent_Health_Data).

<sup>10</sup>Colorado Department of Public Health and Environment [Internet]. Maternal and Child Health Data: 2010 Colorado Child Health Survey. Available from: [www.chd.dphe.state.co.us/topics.aspx?q=Maternal\\_Child\\_Health\\_Data](http://www.chd.dphe.state.co.us/topics.aspx?q=Maternal_Child_Health_Data).

<sup>11</sup>U.S. Preventive Services Task Force. *Primary Care Interventions to Promote Breastfeeding: U.S. Preventive Services Task Force Recommendation Statement*. Originally published in *Ann Intern Med* 2008;149:560-4. AHRQ Publication No. 09-05126-EF-2, October 2008. Available from: [www.uspreventiveservicestaskforce.org/uspstf08/breastfeeding/brfeedrs.htm](http://www.uspreventiveservicestaskforce.org/uspstf08/breastfeeding/brfeedrs.htm).

<sup>12</sup>Colorado Department of Public Health and Environment [Internet]. Colorado Health Information Dataset: 2008-2010 Pregnancy Risk Assessment Monitoring System. Available from: [www.chd.dphe.state.co.us/cohid/topics.aspx?q=Pregnancy\\_Risk\\_Assessment\\_Data](http://www.chd.dphe.state.co.us/cohid/topics.aspx?q=Pregnancy_Risk_Assessment_Data).

<sup>13</sup>Centers for Disease Control and Prevention [Internet]. 2009 Selected Metropolitan/Micropolitan Area Risk Trends: Behavioral Risk Factor Surveillance System City and County Data. Available from: <http://apps.nccd.cdc.gov/BRFSS-SMART/SelMMSAPrevData.asp>.

<sup>14</sup>Robert Wood Johnson Foundation [Internet]. 2011 County Health Rankings. Available from: [www.countyhealthrankings.org/colorado/el-paso](http://www.countyhealthrankings.org/colorado/el-paso).

# Health Indicators

## Mental Health and Substance Abuse

Mental health is “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.”<sup>1</sup> There is emerging evidence that positive mental health is associated with improved health outcomes.

Mental illness is 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.”<sup>2</sup> Depression is the most common type of mental illness, affecting more than 26 percent of the

United States adult population.<sup>3</sup>

Evidence has shown that mental disorders, especially depression, are strongly related to the occurrence, successful treatment, and course of many chronic diseases including diabetes, cancer, cardiovascular disease, asthma, and obesity.<sup>4,5</sup> Poor mental health also impacts risk behaviors for chronic disease, such as physical inactivity, smoking, excessive drinking, and insufficient sleep.

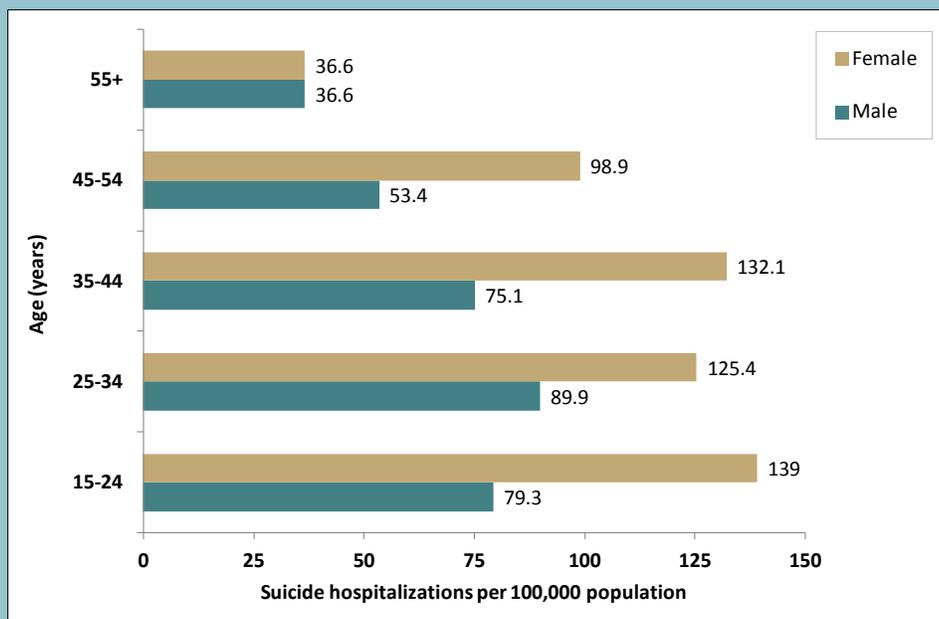
Substance abuse or misuse is the consumption of mind—and behavior—altering substances that have negative behavioral and health outcomes.<sup>6</sup> Substance abuse may involve alcohol, tobacco, or illicit drugs such as marijuana, cocaine,

heroin, and methamphetamine. Substance abuse includes the over-consumption of alcohol (e.g., binge drinking) as well as the misuse of prescription drugs for purposes other than prescribed. Mental disorders and substance abuse have substantial co-morbidity, meaning people can suffer from both conditions at the same time.

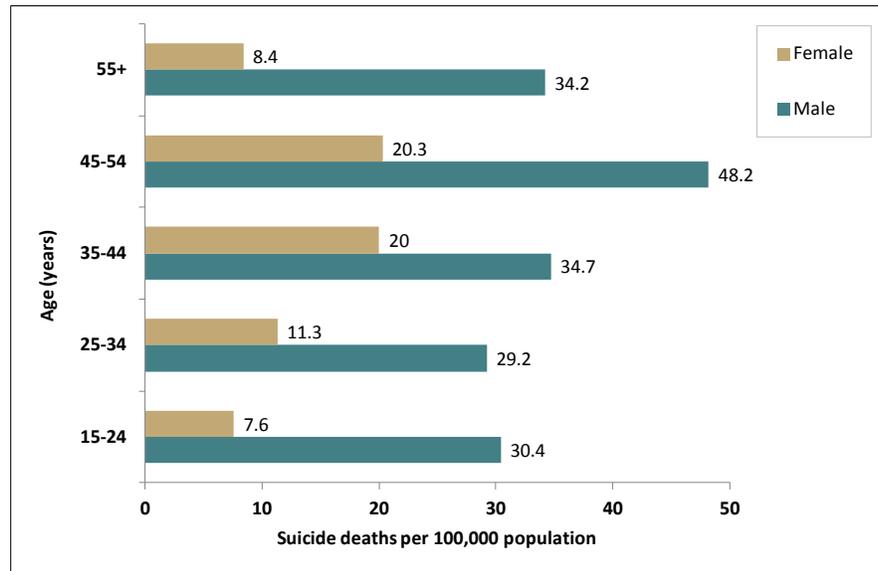
### How is it measured?

Mental health and substance use are commonly measured through the Behavioral Risk Factor Surveillance System, a state-based survey of adults. Adolescent data is obtained from the Youth Risk Behavior Survey, a state-based survey among high school students that measures behaviors related to

Figure 1. Rate of suicide attempts resulting in hospitalization, by age and sex, El Paso County 2008 to 2010



**Figure 2. Suicide death rate, by age and sex, El Paso County 2008 to 2010**



sexual activity, injury, tobacco and substance abuse, diet, and physical activity; data are available at the state level only. Hospitalization and death data are used to describe the severity of mental health and substance abuse. Additionally, national surveys conducted by the Substance Abuse and Mental Health Services Administration (SAMHSA) provide supplemental information on substance abuse at the state level.

### How are we doing in El Paso County?

In El Paso County between 2009 and 2010, 14.1 percent of adults 18 years and older reported having poor mental health for more than a week within the past month, a finding similar to the Colorado average (12.7 percent).<sup>7</sup> For depression specifically, 8.2 percent of El Paso County adults reported symptoms meeting criteria for being currently depressed (2008 data).<sup>8</sup> Mental health data for Colorado adolescents shows that 25.4 percent of high school students describe

having depression symptoms in the previous year (2009 data); these findings were significantly more common among females (31.7 percent) than males (19.3 percent).<sup>9</sup>

Severe, untreated depression may lead people to contemplate suicide, attempt suicide, or die from suicide. In El Paso County, higher rates of hospitalization due to suicide attempts are found for females and among people between 15 to 44 years of age (Figure 1).<sup>10</sup> The number of suicide deaths in El Paso County has ranged from 69 to 131 per year between 2006 and 2010. Adjusted for population size, the suicide rate in 2009 to 2010 was 19.7 per 100,000 population in El Paso County, as compared to the Colorado average of 18.1 per 100,000 population.<sup>11</sup> Males have higher suicide death rates across all age groups (Figure 2).

SAMHSA surveys from 2008 and 2009 indicate that illicit drug use is significantly higher among adults ages 18 to 25 years than any other age group (Table 1). Marijuana use is two to three times more

common than other illicit drug use in every age category and is used significantly more often in Colorado than for the United States as a whole.<sup>12</sup> Among Colorado high school students, in 2009, about one in four students reported binge drinking (consuming five or more alcoholic drinks within a few hours), and 24.8 percent stated having used marijuana in the previous month.<sup>9</sup> Between 3 and 4 percent of students reported usage of either heroin or methamphetamine in their lifetime.

Depressed mood among adolescents impacts other risk behaviors in this age group. As shown in Figure 3, substance abuse, tobacco use, and sexual activity are significantly more common among high school students who also report having symptoms of depression; these students are also ten times more likely to contemplate suicide.<sup>13</sup> In contrast, students without significant depression symptoms are more likely to engage in some form of physical activity. ■

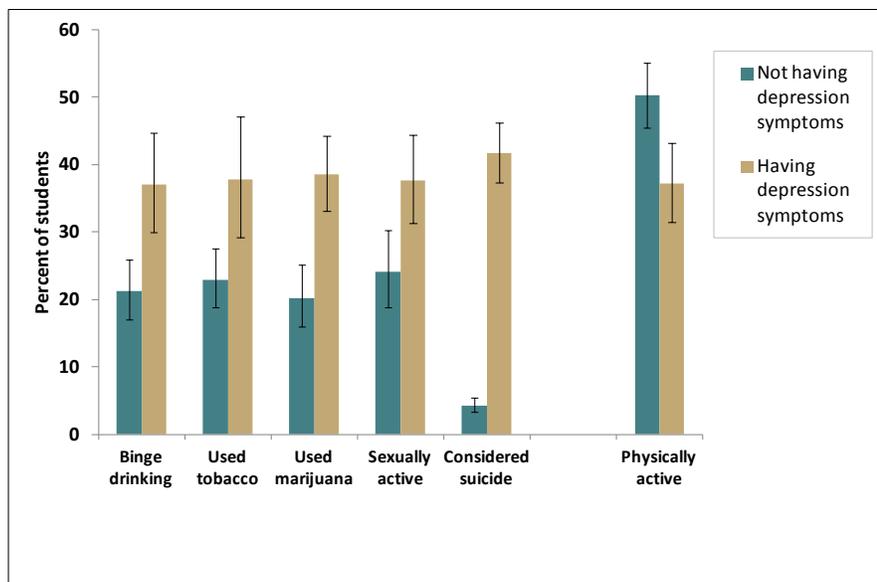
**Table 1. Percent of population who report using illicit drugs in past 30 days, by age, Colorado 2008 to 2009**

|   |               | Age                 |                      |                    |
|---|---------------|---------------------|----------------------|--------------------|
|   |               | 12-17 years         | 18-25 years          | 26 years and older |
| <b>Illicit drugs *</b><br><b>(other than marijuana)</b> | Colorado      | 4.3%<br>(3.3-5.5)   | 9.9%<br>(7.7-12.5)   | 2.5%<br>(1.7-3.7)  |
|   | United States | 4.5%<br>(4.2-4.7)   | 8.1%<br>(7.7-8.5)    | 2.6%<br>(2.5-2.8)  |
| <b>Marijuana</b>  | Colorado      | 10.2%<br>(8.2-12.6) | 24.3%<br>(20.9-28.1) | 7.4%<br>(5.6-9.6)  |
|   | United States | 7.0%<br>(6.7-7.3)   | 17.3%<br>(16.8-17.9) | 4.4%<br>(4.2-4.7)  |

\*Includes cocaine, heroin, hallucinogens, inhalants, and nonmedical use of prescription-type pain relievers, tranquilizers, stimulants, and sedatives.

Note: Numbers in parentheses represent the 95% margin of error for each value.

**Figure 3. Correlation between symptoms of depression and other behaviors among Colorado students in ninth through twelfth grades, 2009**



Note: Error bars represent the 95% margin of error for each value.

<sup>1</sup>World Health Organization. Strengthening Mental Health Promotion. Geneva, World Health Organization (Fact sheet no. 220), 2001.

<sup>2</sup>U.S. Department of Health and Human Services. Mental Health: A Report of the Surgeon General. Rockville, MD: U.S. Department of Health and Human Services; Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health, 1999.

<sup>3</sup>Kessler RC, Chiu WT, Demler O, Walters EE. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. Arch Gen Psychiatry 2005;62:617–627.

<sup>4</sup>Chapman DP, Perry GS, Strine TW. The vital link between chronic disease and depressive disorders. Prev Chronic Dis 2005;2(1):A14.

<sup>5</sup>Centers for Disease Control and Prevention [Internet]. Mental Health Basics. Available from: [www.cdc.gov/mentalhealth/basics.htm](http://www.cdc.gov/mentalhealth/basics.htm).

<sup>6</sup>U.S. Department of Health and Human Services [Internet]. Healthy People 2020: Substance Abuse. Available from: [www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=40](http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=40).

<sup>7</sup>Colorado Department of Public Health and Environment [Internet]. Colorado Health Information Dataset: 2009-2010 Behavioral Risk Factor Surveillance System. Available from: [www.chd.dphe.state.co.us/cohid/topics.aspx?q=Behavioral\\_Risk\\_Factors](http://www.chd.dphe.state.co.us/cohid/topics.aspx?q=Behavioral_Risk_Factors).

<sup>8</sup>Colorado Department of Public Health and Environment (CDPHE). 2008 Behavioral Risk Factor Surveillance System. Provided by CDPHE Health Statistics on Aug 30, 2011.

<sup>9</sup>Colorado Department of Public Health and Environment [Internet]. Adolescent Health Data: 2009 Youth Risk Behavior Survey. Available from: [www.chd.dphe.state.co.us/topics.aspx?q=Adolescent\\_Health\\_Data](http://www.chd.dphe.state.co.us/topics.aspx?q=Adolescent_Health_Data).

<sup>10</sup>Colorado Department of Public Health and Environment [Internet]. Colorado Health Information Dataset: 2008-2010 Injury Hospitalizations. Available from: [www.chd.dphe.state.co.us/cohid/topics.aspx?q=Injury\\_Hospitalizations](http://www.chd.dphe.state.co.us/cohid/topics.aspx?q=Injury_Hospitalizations).

<sup>11</sup>Colorado Department of Public Health and Environment [Internet]. Colorado Health Information Dataset: 1999-2010 Death Data. Available from: [www.chd.dphe.state.co.us/cohid/topics.aspx?q=Death\\_Data](http://www.chd.dphe.state.co.us/cohid/topics.aspx?q=Death_Data).

<sup>12</sup>Substance Abuse and Mental Health Services Administration [Internet]. State Estimates of Substance Use and Mental Disorders from the 2008-2009 National Surveys on Drug Use and Health [June 2011]. Available from: <http://store.samhsa.gov/shin/content//SMA11-4641/SMA11-4641.pdf>.

<sup>13</sup>Colorado Department of Education [Internet]. Healthy Kids Colorado Survey, 2009 State Report [Dec 2010]. Available from: [www.cde.state.co.us/HealthAndWellness/download/CSHReport2009.pdf](http://www.cde.state.co.us/HealthAndWellness/download/CSHReport2009.pdf).

# Health Indicators

## Motor Vehicle Injuries

Motor vehicle-related injuries are the leading cause of death for people ages 5 to 34 years old in the United States, and the top cause of death for teens nationally.<sup>1</sup> Nearly one in three deaths from vehicle crashes involve an impaired driver. Motor vehicle-related injuries send more than 4 million people to hospital emergency departments every year.

Motor vehicle injuries and fatalities are preventable, however. The use of age-appropriate seat restraints in cars, and helmets and safety gear for motorcyclists reduce the risk of injury or death. It is estimated that child safety seats reduce deaths nationally by 71 percent for infants and 54 percent for toddlers.<sup>2</sup> Focus areas for further reducing the risk of injury from motor vehicles include teen driver education and alcohol-impaired driving prevention.

### How is it measured?

Motor vehicle traffic injuries and fatalities are those which occur on a public trafficway (roadways, shoulders, roadsides, medians) and involve at least one motor vehicle. These injury measures include pedestrians, bicyclists, and other non-motorists involved in the accident. Data regarding motor vehicle traffic crashes, injuries, and deaths are obtained from the Colorado Department of Transportation (CDOT), the Electronic Accident Reporting System, the

National Highway Traffic Safety Administration, and Colorado hospital discharge data. CDOT publishes information on all motor vehicle crashes, including those causing property damage, injury, and fatalities. Crashes are examined for contributing factors such as impaired drivers, occupant protection, inexperienced drivers, and speeding.

Risk factors for injuries, such as seat belt usage, driving while impaired, and riding with someone who is impaired are collected through state-based surveys, including the Behavioral Risk Factor Surveillance System survey of adults and the Youth Risk Behavior Survey of high school students.

### How are we doing in El Paso County?

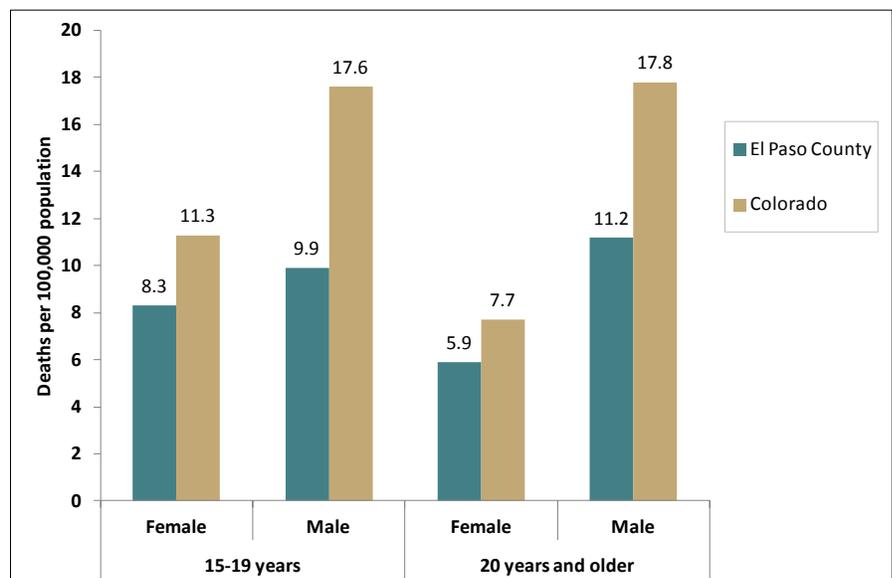
The rate of motor vehicle

traffic injuries resulting in hospitalization in El Paso County declined from 95.6 injuries per 100,000 population in 2000 to 53.7 injuries per 100,000 population in 2010, which was lower than the 2010 state average rate of 58.8 per 100,000.<sup>3</sup>

The rate of motor vehicle traffic fatalities in El Paso County has declined 53 percent between 2000 and 2010, from 13.7 to 6.5 fatalities per 100,000 population, respectively.<sup>4</sup> In 2010, there were 8,335 reported traffic crashes in El Paso County of which 37 (less than 1 percent) resulted in at least one fatality.<sup>5</sup> Among 448 motor vehicle-related deaths in Colorado in 2010, 41 (9 percent) occurred within El Paso County.

Table 1 highlights several characteristics of motor vehicle traffic fatalities in El Paso

**Figure 1. Rate of motor vehicle traffic fatalities, by age and sex, 2006 to 2010**



County and demonstrates the impact on fatalities of passenger restraint systems, helmet usage, impaired driving, and speeding. For example, nearly two out of five fatalities involved alcohol-impaired drivers, and in three-quarters of motorcycle fatalities either a driver or rider were not wearing a helmet.<sup>4</sup> Additionally, residents of El Paso County who ride motorcycles are 60 percent more likely than drivers to be involved in an injury crash.<sup>5</sup> Although overall, 85 percent of vehicle occupants use age-appropriate seat restraints, more than half of passenger vehicle fatalities in El Paso County involved an

unrestrained passenger.<sup>4,5</sup>

Disparities exist in terms of age and sex when examining motor vehicle traffic fatalities (Figure 1). The fatality rate is higher among teens ages 15 to 19 years old compared to adults 20 years and older (9.1 versus 8.5 per 100,000 population in El Paso County, respectively).<sup>4</sup> Motor vehicle traffic fatality rates in males remain higher than females, regardless of age.

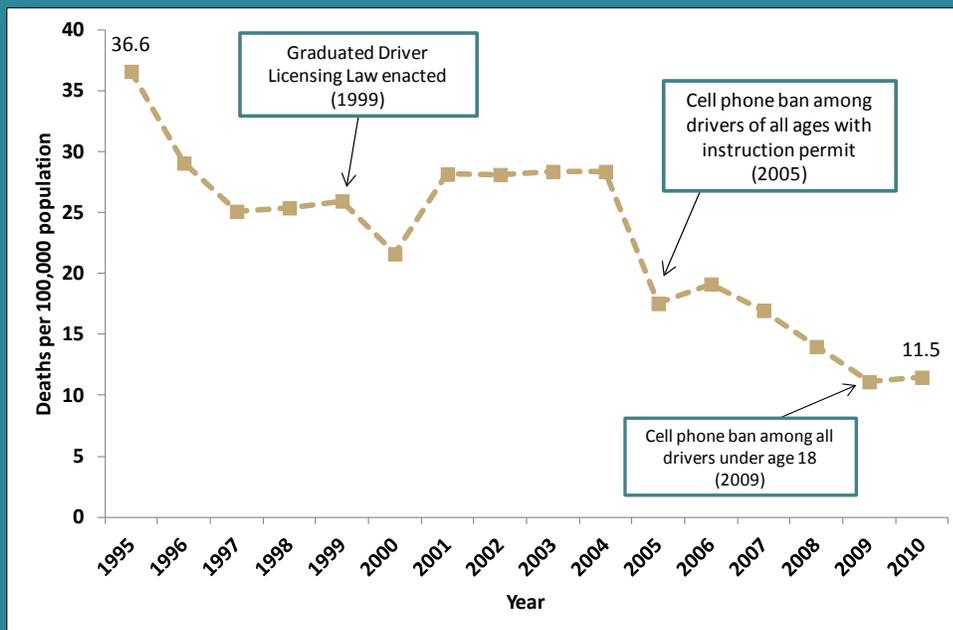
Adolescent driving behaviors may contribute to poor outcomes for this age group. Teens ages 15 to 19 years accounted for 12.2 percent

of motor vehicle fatalities in 2010 (Table 1). Survey data from 2009 shows that nearly 8 percent of Colorado high school students reported driving after consuming alcohol and approximately one in four students admitted to getting in a car with someone they knew to have consumed alcohol.<sup>6</sup> Since 1999, several state laws have been enacted to promote safety among young drivers including graduated driver licensing and bans on cell phone use (Figure 2).<sup>7</sup> Concurrently, there has been a 56 percent decrease in motor vehicle fatalities among teens ages 15 to 19 years between 1999 and 2010.<sup>4</sup> ■

**Table 1. Characteristics of motor vehicle traffic fatalities in El Paso County, 2010**

| Vehicle and driver-related factors                          | Percent of total fatalities                    |
|---|--|
| <b>Occupant in a passenger vehicle (all seat positions)</b> | 73.1%  |
| Unrestrained driver or passenger                            | 46.7% of passenger vehicle occupant fatalities |
| <b>Motorcycle</b>   | 19.5%  |
| Driver or rider not wearing helmet                          | 75.0% of motorcycle fatalities                 |
| <b>Alcohol-impaired driver (BAC = 0.08+)</b>                | 39.0%  |
| <b>Speeding-related crash</b>                               | 43.9%  |
| <b>Teen fatalities (ages 15-19)</b>                         | 12.2%  |

**Figure 2. Rate of motor vehicle traffic fatalities among adolescents ages 15 to 19 years and enactment of state laws, Colorado 1995 to 2010**



<sup>1</sup>Centers for Disease Control and Prevention [Internet]. Winnable Battles: Motor Vehicle Injuries. Available from: [www.cdc.gov/WinnableBattles/MotorVehicleInjury/index.html](http://www.cdc.gov/WinnableBattles/MotorVehicleInjury/index.html).

<sup>2</sup>U.S. Department of Transportation, National Highway Traffic Safety Administration (NHTSA) [Internet]. Traffic Safety Facts 2009: Children. Washington (DC): NHTSA; 2009. Available from: [www-nrd.nhtsa.dot.gov/pubs/811387.pdf](http://www-nrd.nhtsa.dot.gov/pubs/811387.pdf).

<sup>3</sup>Colorado Department of Public Health and Environment [Internet]. Colorado Health Information Dataset: 2000-2010 Injury Hospitalizations. Available from: [www.chd.dphe.state.co.us/cohid/topics.aspx?q=Injury\\_Hospitalizations](http://www.chd.dphe.state.co.us/cohid/topics.aspx?q=Injury_Hospitalizations).

<sup>4</sup>U.S. Department of Transportation, National Highway Traffic Safety Administration [Internet]. Fatality Analysis Reporting System Encyclopedia: 2000-2010 Fatality Query. Available from: [www-fars.nhtsa.dot.gov//QueryTool/QuerySection/SelectYear.aspx](http://www-fars.nhtsa.dot.gov//QueryTool/QuerySection/SelectYear.aspx).

<sup>5</sup>Colorado Department of Transportation [Internet]. FY 2011 Problem Identification Report. Available from: [www.coloradodot.info/programs/safety-data-sources-information/2011%20Problem%20Identification\\_DRAFT1.pdf/view](http://www.coloradodot.info/programs/safety-data-sources-information/2011%20Problem%20Identification_DRAFT1.pdf/view).

<sup>6</sup>Colorado Department of Public Health and Environment [Internet]. Adolescent Health Data: 2009 Youth Risk Behavior Survey. Available from: [www.chd.dphe.state.co.us/topics.aspx?q=Adolescent\\_Health\\_Data](http://www.chd.dphe.state.co.us/topics.aspx?q=Adolescent_Health_Data).

<sup>7</sup>Colorado Revised Statutes [Internet]. Title 42, Article 4. Available from: [www.state.co.us/gov\\_dir/leg\\_dir/olls/analyses/title42.pdf](http://www.state.co.us/gov_dir/leg_dir/olls/analyses/title42.pdf).

# Health Indicators

## Oral Health

The World Health Organization defines good oral health as being free of chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the mouth and oral cavity.<sup>1</sup> Behavioral factors that negatively impact oral health include unhealthy diet, tobacco use, excessive alcohol use, and poor oral hygiene. These are the same risk factors for other chronic diseases like diabetes, cardiovascular disease, chronic respiratory disease, and certain cancers.

### How is it measured?

Oral health is challenging to measure, particularly at the

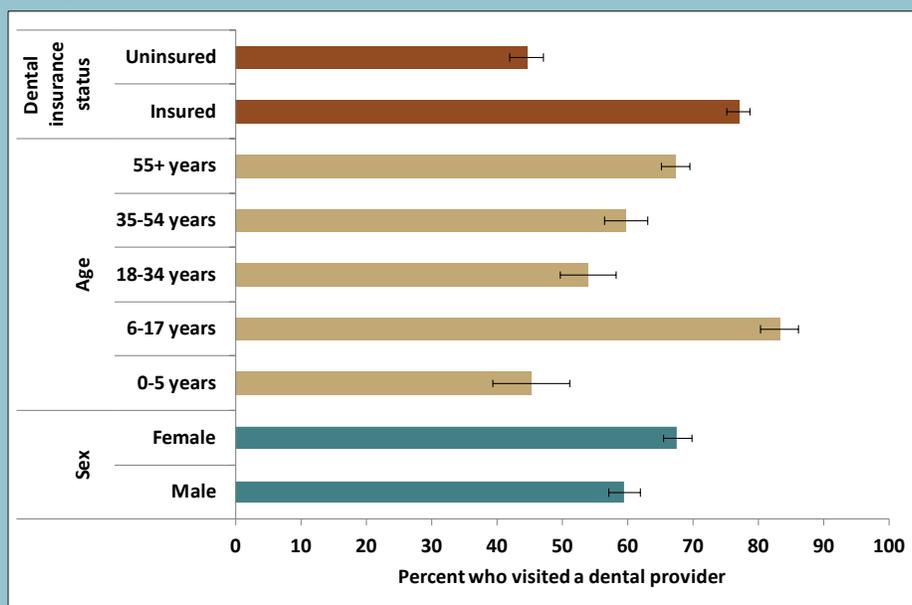
population level. One approach quantifies the prevalence of certain oral conditions within a population, such as the number of children with dental caries (cavities) or the number of adults with oral and throat cancers. Another approach is to evaluate behaviors or conditions that contribute to better or worse oral health. Such measures include rates of dental insurance coverage, the number of people who recently visited a dentist, and the number of people exposed to optimally fluoridated water.

### How are we doing in El Paso County?

Because oral cancer rates for El Paso County are quite low, data was analyzed for other oral health measures. According

to the 2011 Colorado Health Access Survey, approximately 35 percent of El Paso County residents did not have dental insurance in 2011.<sup>2</sup> Availability of insurance coverage impacted access to dental services; only 44.5 percent of people without current dental insurance coverage reported visiting a dentist or dental hygienist in the previous year, compared to 76.9 percent of those with dental insurance (Figure 1). There are disparities in utilization of dental services based on age. As shown in Figure 1, 50 to 70 percent of adults 18 years of age and older visited a dental provider in the previous year.<sup>2</sup> Children ages 6 to 17 years were most likely to have had a dental visit, with 83.1 percent receiving

Figure 1. Percent of El Paso County residents who visited a dentist or dental hygienist in the previous 12 months, by selected characteristics, 2011



Note: Error bars represent the 95% margin of error for each value.

dental care in 2011. However, dental visits tended to be lower among children 5 years of age and younger, with only 45.2 percent of these children seeing a dentist or dental hygienist within the previous year.

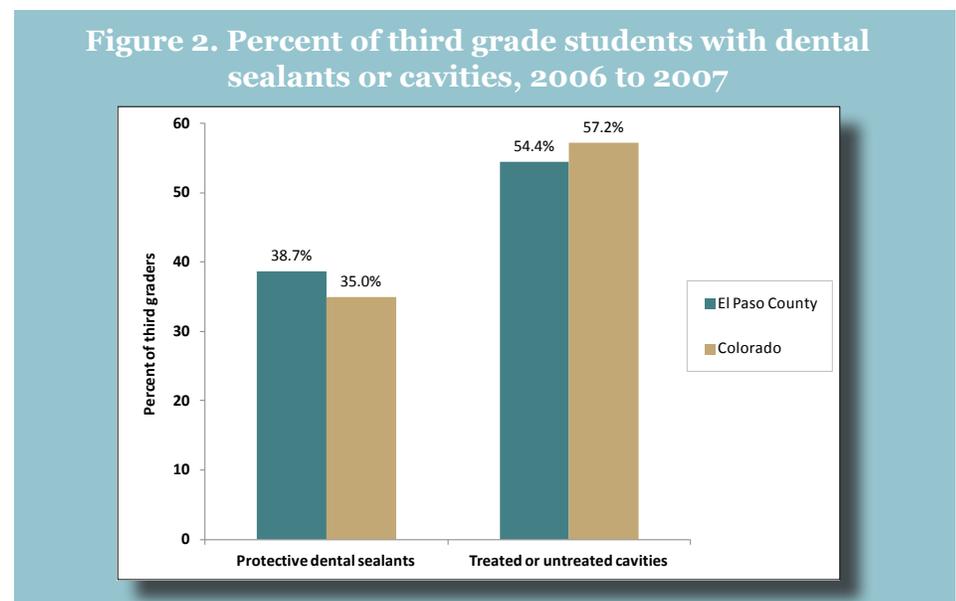
The American Academy of Pediatric Dentistry recommends all children see a dentist between 6 months and 1 year of age, or when the first tooth arrives.<sup>3</sup> This early visit plays an important role in establishing a child’s dental care routine, which helps prevent future tooth decay. Even with these recommendations, data from the 2010 Child Health Survey of Colorado children 1 to 5 years old showed that only 7.9 percent of young children had seen a dentist prior to age 2, and only 33.5 percent had ever visited a dentist.<sup>4</sup>

Lack of pediatric dental care can have long term outcomes. In 2010, 18.2 percent of Colorado parents with children ages 14 years and younger reported that the primary problem with their child’s teeth was crooked teeth or teeth that needed braces.<sup>5</sup> Parents also reported issues with cavities (14.3 percent), broken teeth or missing fillings

(2.0 percent), or tooth pain (0.4 percent) for their child. Data from the Colorado Oral Health Survey, for which third grade children in the 2006-2007 school year had an oral examination by a dental hygienist, indicated that 54.4 percent of El Paso County third graders had treated or untreated cavities and 38.7 percent had protective dental sealants on one or more of their permanent molars (Figure 2).<sup>6</sup>

According to the U.S. Public Health Service, optimal fluoride level in drinking water is between 0.7 - 1.2 parts per million, depending on mean daily air temperature for a

geographic area.<sup>7</sup> Scientific studies have concluded that fluoridated public water supplies can prevent and even reverse tooth decay by enhancing remineralization, the process by which fluoride “rebuilds” tooth enamel that is beginning to decay.<sup>8</sup> The Healthy People 2020 objective is for roughly 80 percent of people served by public water systems to have optimally fluoridated water.<sup>9</sup> For Colorado in 2010, nearly 70 percent of the population served by public water systems received fluoridated water at or above 0.7 parts per million; in marked contrast, for El Paso County that figure was only 8.7 percent.<sup>10</sup> ■



<sup>1</sup>World Health Organization [Internet]. Available from: [www.who.int/mediacentre/factsheets/fs318/en/index.html](http://www.who.int/mediacentre/factsheets/fs318/en/index.html)

<sup>2</sup>Colorado Health Access Survey. 2011. Denver, CO: The Colorado Trust.

<sup>3</sup>American Academy of Pediatric Dentistry [Internet]. Available from: [www.aapd.org/publications/brochures/babycare.asp](http://www.aapd.org/publications/brochures/babycare.asp)

<sup>4</sup>Colorado Department of Public Health and Environment (CDPHE). 2010 Colorado Child Health Survey Data. Provided by CDPHE Health Statistics on Aug. 26, 2011.

<sup>5</sup>Colorado Department of Public Health and Environment [Internet]. 2010 Colorado Child Health Survey. Available from: [www.cdphe.state.co.us/hs/mchdata/Copy%20of%20chs2010PUB2.pdf](http://www.cdphe.state.co.us/hs/mchdata/Copy%20of%20chs2010PUB2.pdf).

<sup>6</sup>Colorado Department of Public Health and Environment. Colorado Oral Health Survey, 2006-2007 School Year [Oct 2007, revised July 2011]. Available from: [www.cdphe.state.co.us/hs/oral/BSS%2006-07%20Report.pdf](http://www.cdphe.state.co.us/hs/oral/BSS%2006-07%20Report.pdf) and [www.cdphe.state.co.us/hs/mchdata/Oral%20Health%20County%20Estimates%202006-2007.pdf](http://www.cdphe.state.co.us/hs/mchdata/Oral%20Health%20County%20Estimates%202006-2007.pdf).

<sup>7</sup>U.S. Department of Health and Human Services, Public Health Service. “Review of Fluoride: Benefits and Risks”, 1991. Available from: <http://health.gov/environment/ReviewofFluoride/>.

<sup>8</sup>National Cancer Institute [Internet]. Available from: [www.cancer.gov/cancertopics/factsheet/Risk/fluoridated-water](http://www.cancer.gov/cancertopics/factsheet/Risk/fluoridated-water).

<sup>9</sup>U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion [Internet]. Healthy People 2020. Oral Health Objectives. Available from: [www.healthypeople.gov/2020/topicobjectives2020/overview.aspx?topicid=32](http://www.healthypeople.gov/2020/topicobjectives2020/overview.aspx?topicid=32).

<sup>10</sup>Centers for Disease Control and Prevention [Internet]. Oral Health Maps for Water Fluoridation. Available from: <http://apps.nccd.cdc.gov/gisdoh/waterfluor.aspx>.

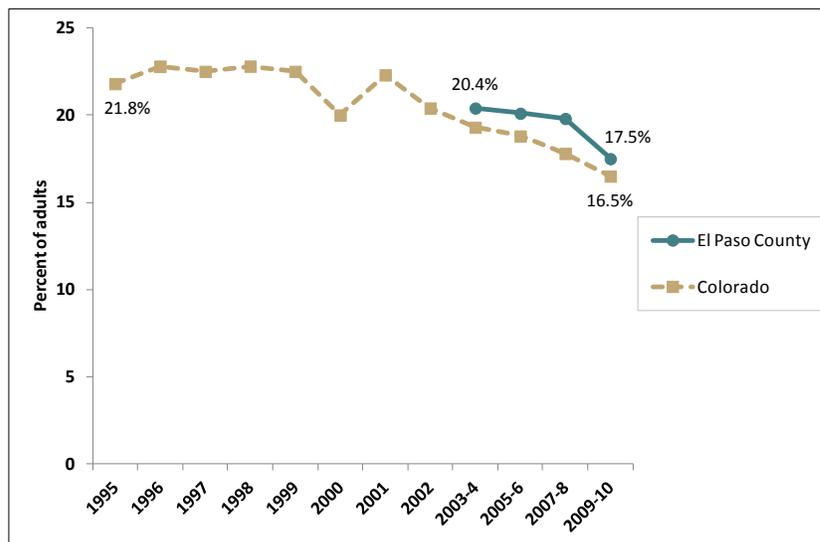
# Health Indicators

## Tobacco Use

The association between tobacco use and adverse health outcomes is well established, and cigarette smoking is considered a leading cause of preventable death. Smoking harms nearly every organ in the body and has a causative relationship with many diseases including lung cancer, coronary heart disease, and chronic obstructive pulmonary disease.<sup>1</sup> In addition, smoking impacts early childhood development and reproductive health. Females who smoke are at increased risk for infertility, preterm delivery, or having a baby with low birth weight, and their infants are also at higher risk for Sudden Infant Death Syndrome (SIDS).

Exposure to secondhand smoke can result from being in proximity to smoke from the burning tip of a cigarette or smoke exhaled from a smoker's lungs. Secondhand smoke exposes nonsmokers to the same carcinogens and toxins as smokers.<sup>2</sup> Infants and children with chronic exposure may develop any number of health problems including exacerbation of asthma, respiratory infections, and ear infections. Adult nonsmokers who are exposed to secondhand smoke at home or at work increase their risk of developing heart disease by 25 to 30 percent, and increase risk for lung cancer by 20 to 30 percent.

**Figure 1. Percent of adults 18 years and older who report being a current cigarette smoker, 1995 to 2010**



### How is it measured?

Data on tobacco use (namely cigarette smoking behavior) is commonly ascertained through the Behavioral Risk Factor Surveillance System, a state-based survey of adults. Cigarette smoking among youth is measured using the Youth Risk Behavior Survey (YRBS), also a state-based survey among high school students that assesses behaviors related to sexual activity, injury, tobacco and substance abuse, diet, and physical activity.

Secondhand smoke exposure among children and adolescents is measured using data from the Colorado Child Health Survey or YRBS. Statistics on state and local tobacco taxes and smoke-free indoor air policies can provide indirect data on the potential exposure to secondhand smoke.

### How are we doing in El Paso County?

Although cigarette smoking rates among adults in El Paso County have declined in recent years, as of 2010 nearly 18 percent of adults 18 years and older are current smokers (Figure 1).<sup>3,4</sup> This smoking rate is slightly higher than the Colorado average for adult smokers (16.5 percent) and substantially higher than the Healthy People 2020 goal of reducing smoking prevalence to 12 percent of adults.<sup>5</sup>

There are disparities among persons who smoke cigarettes in El Paso County, based on age, sex, race/ethnicity, and other socioeconomic factors (Figure 2).<sup>6</sup> As indicated, 38.0 percent of people with less than a high school education are smokers compared to only 12.6 percent of people with some

college education. Adults whose annual household income is less than \$25,000 smoke at almost three times the rate of adults in households who earn \$50,000 or more. Adults ages 18 to 34 show the highest rates of smoking, and more males smoke than females.

Another group showing disparities is pregnant females, for which data illustrates a higher smoking prevalence among younger mothers (Figure 3).<sup>7</sup> Between 2008 and 2010, 40 to 50 percent of females ages 15 to 24 years who recently gave birth reported smoking prior to pregnancy. Younger mothers tend to smoke more, and all mothers regardless of age tend to stop smoking while pregnant and start smoking soon after their baby is born.

Youth smoking data for Colorado demonstrate that 17.7 percent of high school students reported recent use of cigarettes, which is trending higher than the Healthy People 2020 goal of 16 percent.<sup>5,8</sup> About one in three high school students who ever try smoking a cigarette become regular, daily smokers before leaving high school.<sup>9</sup> Cigarette sales to minors are prohibited by federal and state laws, which are intended to curb youth from starting smoking. As of 2009, only 13.2 percent of Colorado's underage high school student smokers were purchasing cigarettes from a store or vending machine (Figure 4).<sup>8</sup> However, the majority of these young smokers are obtaining cigarettes from an adult by asking them to purchase cigarettes or by bumming them from another youth or adult.

The Colorado Clean Indoor Air Act was implemented on July 1, 2006 to provide strong protection against exposure to secondhand smoke. This law banned smoking from all non-exempt indoor public places such as restaurants, bars, and workplaces.<sup>10</sup> The smoke-free law was amended in 2008 to include casinos.

As a result of such policies, private settings such as homes

and personal vehicles have become a primary source for secondhand smoke exposure.<sup>11</sup> Children are exposed to more secondhand smoke than non-smoking adults, and children who live with smokers are particularly vulnerable. Between 2007 and 2009, 5.5 percent of El Paso County children ages 1 to 14 years lived in homes where someone had smoked one or more times in the past week.<sup>12</sup> In addition, 8.1 percent

Figure 2. Percent of adults 18 years and older who currently smoke, by selected characteristics, El Paso County 2009 to 2010

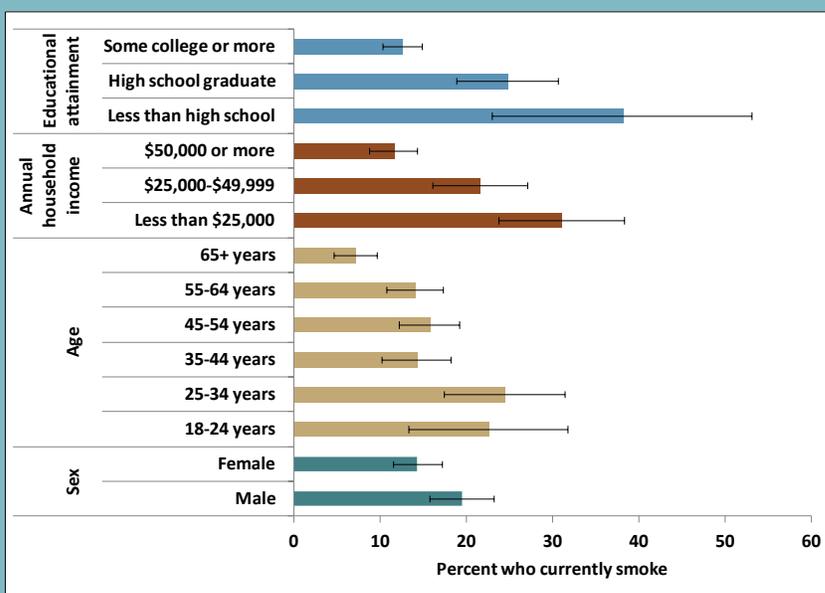
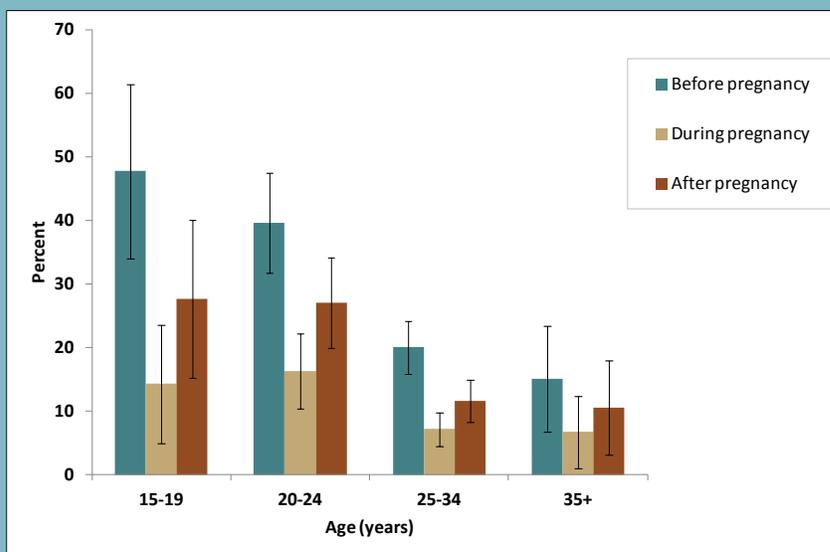


Figure 3. Percent of new mothers who smoked before, during, or after pregnancy, by age, El Paso County 2008 to 2010



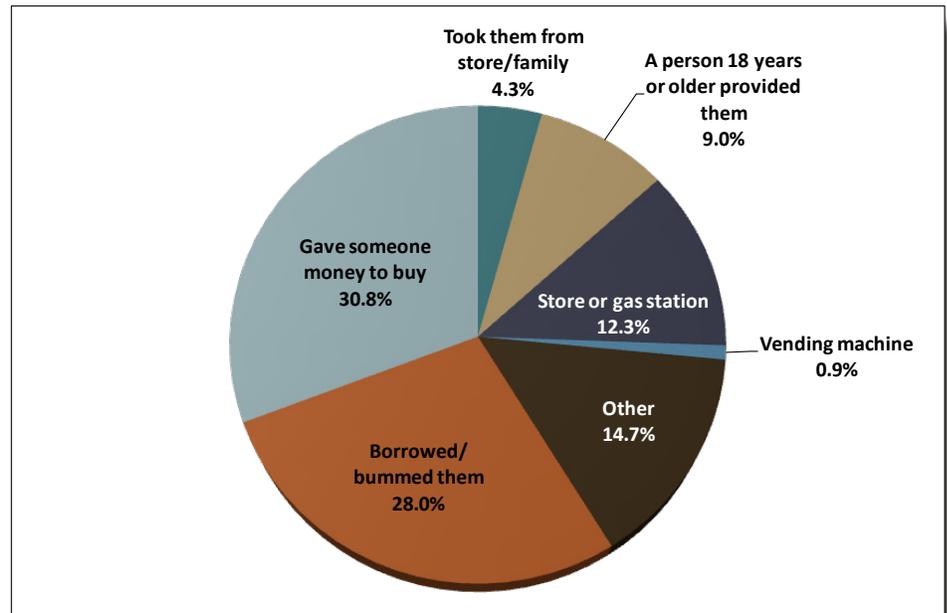
Note: Error bars represent the 95% margin of error for each value.

of children frequently rode in a car with someone who was smoking.

Federal and state cigarette tax increases have helped reduce smoking rates, especially among youth.<sup>13</sup> By the end of 2011, the national average for state excise cigarette taxes was \$1.46 per pack, with a range of \$0.17 to \$4.35; Colorado had the 18th lowest state cigarette excise tax at \$0.84.<sup>14</sup> Many counties and cities nationwide have imposed additional, local cigarette taxes—the highest being New York City, where a pack of cigarettes includes \$6.86 in federal, state, and local cigarette taxes.<sup>15</sup> Colorado does not have any local cigarette taxes, but federal and state taxes equate to \$1.85 per pack. ■

**“Between 2007 and 2009, 5.5 percent of El Paso County children ages 1 to 14 years old lived in homes where someone had smoked one or more times in the past week.”**

**Figure 4. Usual method of acquiring cigarettes (in past 30 days) among underage high school students who currently smoke, Colorado 2009**



<sup>1</sup>Centers for Disease Control and Prevention [Internet]. Available from: [www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/health\\_effects/effects\\_cig\\_smoking/index.htm](http://www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/effects_cig_smoking/index.htm).

<sup>2</sup>Centers for Disease Control and Prevention [Internet]. Available from: [www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/secondhand\\_smoke/health\\_effects/index.htm](http://www.cdc.gov/tobacco/data_statistics/fact_sheets/secondhand_smoke/health_effects/index.htm).

<sup>3</sup>Colorado Department of Public Health and Environment [Internet]. Colorado Health Information Dataset: 2003-2010 Behavioral Risk Factor Surveillance System. Available from: [www.chd.dphe.state.co.us/cohid/topics.aspx?q=Behavioral\\_Risk\\_Factors](http://www.chd.dphe.state.co.us/cohid/topics.aspx?q=Behavioral_Risk_Factors).

<sup>4</sup>Centers for Disease Control and Prevention [Internet]. Behavioral Risk Factor Surveillance System: 1995-2002 Prevalence and Trends Data. Available from: <http://apps.nccd.cdc.gov/brfss/>.

<sup>5</sup>U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion [Internet]. Healthy People 2020. Tobacco Use Objectives. Available from: [www.healthypeople.gov/2020/topicobjectives2020/objectiveslist.aspx?topicid=41](http://www.healthypeople.gov/2020/topicobjectives2020/objectiveslist.aspx?topicid=41).

<sup>6</sup>Colorado Department of Public Health and Environment (CDPHE). 2009-2010 Behavioral Risk Factor Surveillance System. Provided by CDPHE Health Statistics on Aug 30 2011.

<sup>7</sup>Colorado Department of Public Health and Environment [Internet]. Colorado Health Information Dataset: 2008-2010 Pregnancy Risk Assessment Monitoring System. Available from: [www.chd.dphe.state.co.us/cohid/topics.aspx?q=Pregnancy\\_Risk\\_Assessment\\_Data](http://www.chd.dphe.state.co.us/cohid/topics.aspx?q=Pregnancy_Risk_Assessment_Data).

<sup>8</sup>Colorado Department of Public Health and Environment [Internet]. Adolescent Health Data: 2009 Youth Risk Behavior Survey. Available from: [www.chd.dphe.state.co.us/topics.aspx?q=Adolescent\\_Health\\_Data](http://www.chd.dphe.state.co.us/topics.aspx?q=Adolescent_Health_Data).

<sup>9</sup>Centers for Disease Control and Prevention. “Selected Cigarette Smoking Initiation and Quitting Behaviors Among High School Students – United States, 1997,” MMWR 47(10):386-389, May 22, 1998. Available from: [www.cdc.gov/mmwr/preview/mmwrhtml/00052816.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/00052816.htm).

<sup>10</sup>Colorado Department of Public Health and Environment [Internet]. Smoke Free Colorado Resources: The Law. Available from: [www.smokefreecolorado.org/the-law.html](http://www.smokefreecolorado.org/the-law.html).

<sup>11</sup>Centers for Disease Control and Prevention. “Nonsmokers’ Exposure to Secondhand Smoke in the United States, 1999-2008,” MMWR 59(35):1141-1146, September 10, 2010. Available from: [www.cdc.gov/mmwr/pdf/wk/mm5935.pdf](http://www.cdc.gov/mmwr/pdf/wk/mm5935.pdf).

<sup>12</sup>Colorado Department of Public Health and Environment [Internet]. Colorado Health Indicators: Tobacco Use Exposure. Available from: [www.chd.dphe.state.co.us/HealthIndicators/Default.aspx](http://www.chd.dphe.state.co.us/HealthIndicators/Default.aspx).

<sup>13</sup>The Task Force on Community Preventive Services. The guide to community preventive services: what works to promote health? New York, NY: Oxford University Press; 2005. Available from: [www.thecommunityguide.org/tobacco/tobacco.pdf](http://www.thecommunityguide.org/tobacco/tobacco.pdf).

<sup>14</sup>Centers for Disease Control and Prevention [Internet]. State Tobacco Activities Tracking and Evaluation System: State Excise Tax Fact Sheet. Available from: [www.cdc.gov/tobacco/statesystem](http://www.cdc.gov/tobacco/statesystem).

<sup>15</sup>Campaign for Tobacco-Free Kids [Internet]. Top Combined State-Local Cigarette Tax Rates Fact Sheet. Available from: [www.tobaccofreekids.org/research/factsheets/pdf/0267.pdf](http://www.tobaccofreekids.org/research/factsheets/pdf/0267.pdf).

# Health Indicators

## Unsafe Sexual Practices and Teen Pregnancy

Unsafe sexual practices lead to adverse outcomes including unintentional pregnancy (especially for adolescents) and sexually transmitted infections (STIs). Unintended (unwanted or mistimed) pregnancies are related to individual behaviors and methods used to prevent pregnancy. Teen pregnancy and teen mothering have been associated with repeat pregnancies and poor fetal or infant outcomes related to lack of prenatal care, gestational complications, low maternal weight gain, preterm delivery, and low birth weight.<sup>1</sup> Adverse

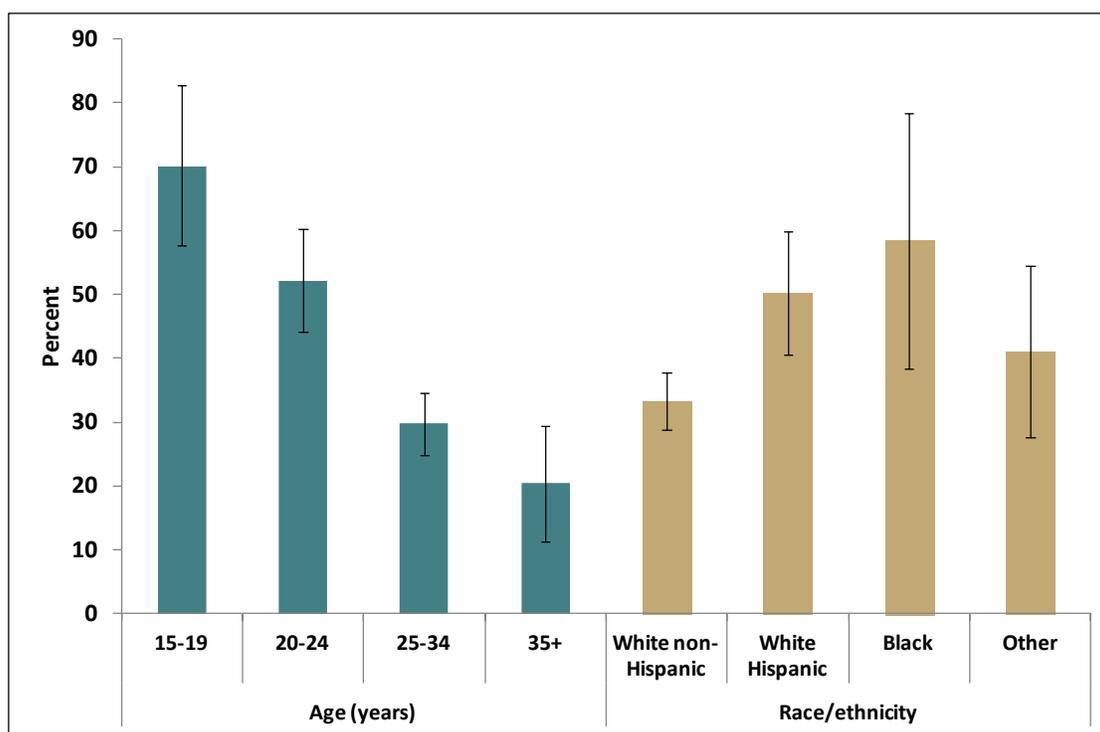
socioeconomic effects related to teen pregnancy have included single parenthood, marital instability, school dropout and lower educational attainment, unemployment, and welfare dependency. STIs can cause serious health problems, particularly in females (pelvic inflammatory disease, infertility, cervical cancer) and in newborns (low birth weight, severe infection, brain injury).

### How is it measured?

Data on unintended pregnancy is collected from a state-based survey of mothers

who recently gave birth and is administered through the Pregnancy Risk Assessment Monitoring System. Teen birth rates, also referred to as teen fertility rates, are presented as the number of live births per 1,000 females ages 15 to 17 years. For pregnancy outcomes, infants born weighing less than 5 pounds, 8 ounces (2,500 grams) are considered low birth weight. Adolescent data is obtained from the Youth Risk Behavior Survey (YRBS), a state-based survey among high school students that measures behaviors related to

**Figure 1: Proportion of pregnancies\* that were unintended, by maternal age and race/ethnicity, El Paso County 2008 to 2010**



\*Resulting in a live birth.

Note: Error bars represent the 95% margin of error for each value.

sexual activity, injury, tobacco and substance abuse, diet, and physical activity; data are available at the state level only. STI rates are obtained through the Colorado Department of Public Health and Environment reportable conditions.

### How are we doing in El Paso County?

Figure 1 illustrates the proportion of pregnancies resulting in a live birth that were unintended in El Paso County. From 2008 to 2010, an estimated 70.1 percent of pregnancies among teens 15 to 19 years old were unintended.<sup>2</sup>

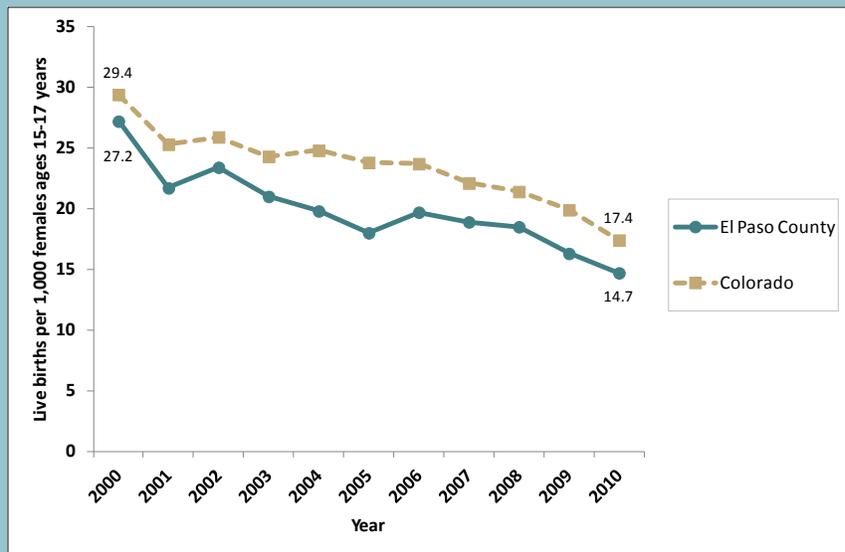
Among all pregnancies resulting in live births in El Paso County in 2010, 36.2 percent were unintended.

Teen birth rates in El Paso County and Colorado have been trending downward in the past decade (Figure 2). The rates in El Paso County remained lower than Colorado as a whole; in 2010 the teen birth rate was 14.7 live births per 1,000 females ages 15 to 17 years in El Paso County compared to 17.4 for Colorado.<sup>3</sup> In 2010, 12 percent of live births to teens 15 to 19 years old in El Paso County resulted in low birth weight

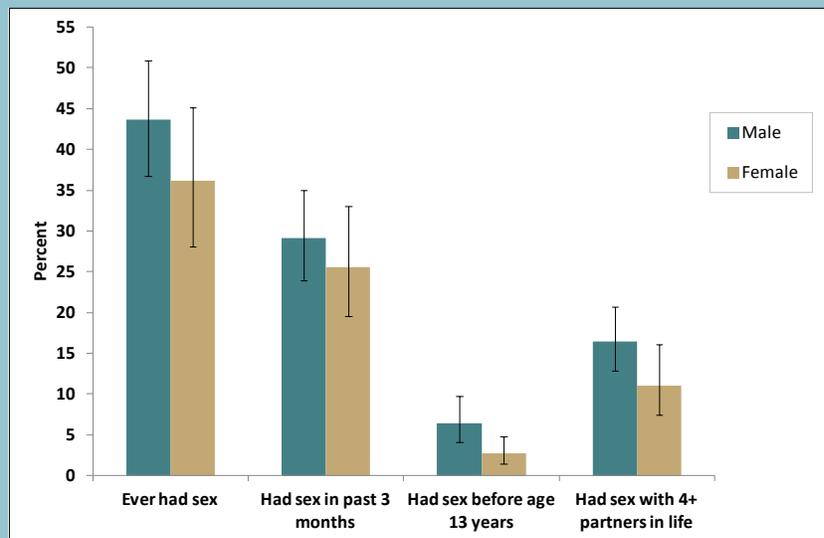
infants, which is higher than the proportion for females 20 to 44 years old (9.1 percent).

Data from the 2009 YRBS indicated that, overall, 60 percent of Colorado high school students reported abstaining from sexual activity. For those students who had sex at least once in their life, prevalence was higher among male high school students (43.7 percent) than for females (36.2 percent) (Figure 3).<sup>4</sup> Nearly 14 percent of high school students reported having four or more sexual partners in their lifetime.

**Figure 2: Birth rate for teens ages 15 to 17 years, 2000 to 2010**



**Figure 3: Sexual behavior among students in ninth through twelfth grade, Colorado 2009**



Note: Error bars represent the 95% margin of error for each value.

Among high school students who were currently sexually active (defined as having sex within the three months prior to the survey), 26.4 percent stated using hormonal contraception as a method of preventing pregnancy. Only six out of 10 sexually active high school students reported using condoms, which also protect against STIs such as gonorrhea, chlamydia, and human immunodeficiency virus (HIV).<sup>4</sup> In addition, just 11.2 percent of sexually active students used both condoms and hormonal contraception. In El Paso County, these sexual behaviors play a role in the high rate of STIs in the teen population. In 2010, the rate of chlamydia among teens 15 to 19 years old was 1,277.9 per 100,000 population, and for gonorrhea the rate was 122.8 per 100,000 population.<sup>5</sup>

The rate of STIs for all ages in El Paso County has been consistently higher than the state average (Figure 4). While trends for gonorrhea have been improving in the past decade, chlamydia infections have remained relatively unchanged. Furthermore, the greatest number of STIs has continually been among people between the ages of 15 and 29 years (84.5 percent of the county's chlamydia and gonorrhea cases in 2010.)<sup>5</sup>

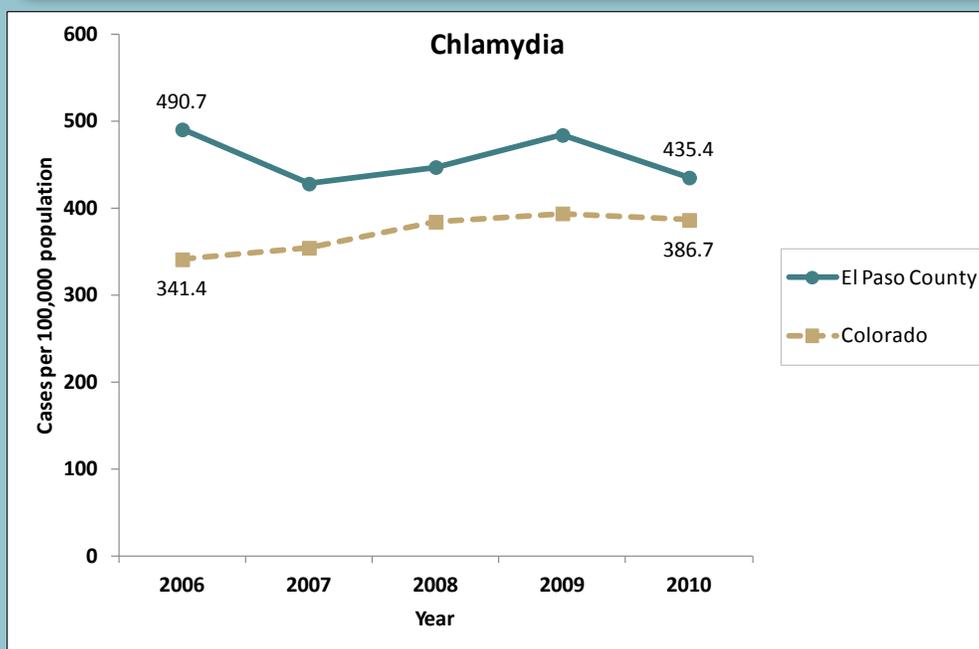
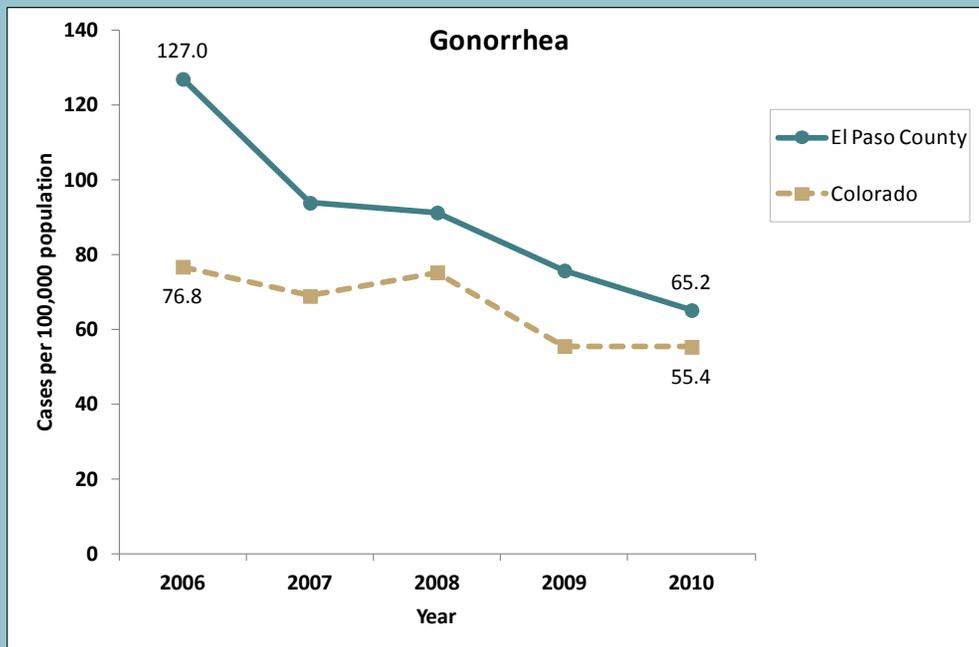
Unsafe sexual practices contribute to the incidence of HIV and acquired immune deficiency syndrome (AIDS). In El Paso County, there were 35 new diagnoses of HIV in 2010 and it is estimated that 428 people are living with HIV and an additional 308 are living with AIDS.<sup>6</sup> The rate of HIV infection in El Paso County is lower than Denver, Adams, and Arapahoe Counties (Table 1). ■

**“The rates of sexually transmitted infection for all ages in El Paso County are higher than the state average.”**

**Table 1: HIV incidence in selected Colorado Counties, 2006 to 2010**

| County         | New HIV infections per 100,000 population |
|----------------|---|
| Denver         | 30.3                                      |
| Adams          | 12.7                                      |
| Arapahoe       | 11.2                                      |
| <b>El Paso</b> | <b>4.7</b>                                |
| Pueblo         | 4.2                                       |
| Jefferson      | 3.7                                       |
| Larimer        | 3.2                                       |
| Weld           | 2.7                                       |
| Douglas        | 2.3                                       |

Figure 4: Rates of sexually transmitted infections, 2006 to 2010



<sup>1</sup>Robert Wood Johnson Foundation [Internet]. 2011 County Health Rankings. Available from: [www.countyhealthrankings.org/health-factors/unsafe-sex](http://www.countyhealthrankings.org/health-factors/unsafe-sex).

<sup>2</sup>Colorado Department of Public Health and Environment [Internet]. Colorado Health Information Dataset: 2008-2010 Pregnancy Risk Assessment Monitoring System. Available from: [www.chd.dphe.state.co.us/cohid/topics.aspx?q=Pregnancy\\_Risk\\_Assessment\\_Data](http://www.chd.dphe.state.co.us/cohid/topics.aspx?q=Pregnancy_Risk_Assessment_Data).

<sup>3</sup>Colorado Department of Public Health and Environment [Internet]. Colorado Health Information Dataset: 2000-2010 Birth Data. Available from: [www.chd.dphe.state.co.us/cohid/topics.aspx?q=Birth\\_Data](http://www.chd.dphe.state.co.us/cohid/topics.aspx?q=Birth_Data).

<sup>4</sup>Centers for Disease Control and Prevention [Internet]. 2009 Youth Risk Behavior Surveillance System. Available from: [www.cdc.gov/yrbs/](http://www.cdc.gov/yrbs/).

<sup>5</sup>Colorado Department of Public Health and Environment (CDPHE). 2006-2010 Rates of Chlamydia and Gonorrhea. Provided by CDPHE STI/HIV Surveillance Program on July 28, 2011.

<sup>6</sup>Colorado Department of Public Health and Environment [Internet]. Colorado HIV Surveillance Report [4<sup>th</sup> Quarter 2010]. Available from: [www.cdphe.state.co.us/dc/HIVandSTD/HIV\\_STDSurv/HIV.AIDS.Surv.rpt.4thQuarter.2010.pdf](http://www.cdphe.state.co.us/dc/HIVandSTD/HIV_STDSurv/HIV.AIDS.Surv.rpt.4thQuarter.2010.pdf).

# Health Indicators

## Vaccine-Preventable Infectious Diseases

Death and illness from infectious diseases have declined markedly in the United States over the past century and these successes are considered one of the 10 great public health achievements, according to the Centers for Disease Control and Prevention.<sup>1</sup> Over this time, disease control resulted from improvements in sanitation and hygiene, the discovery of antibiotics, and the implementation of universal childhood vaccination programs. Immunizations also are largely responsible for the increase in life expectancy in the United States during the 20th century because of their ability to increase childhood survival of certain diseases.<sup>2</sup> Immunizations are widely available for once common childhood infectious diseases such as polio, tetanus, measles, mumps, varicella (chickenpox), and pertussis (whooping cough).

Vaccines protect individuals by inducing the production of protective antibodies against the germ, which either prevent infection from occurring or reduce the severity of illness. However, immunized people also help protect those in their home and community who are vulnerable to infectious diseases, including people with weakened immune systems that cannot receive vaccines or babies who are too young to receive vaccines. For many vaccines, when more than 90 percent of a population is immunized against a particular infectious disease, this level of immunity makes spread of infection from one person to another unlikely. Even individuals not vaccinated are offered some protection because the disease has little opportunity to spread within the community. This concept is referred to as 'herd immunity'.<sup>3</sup>

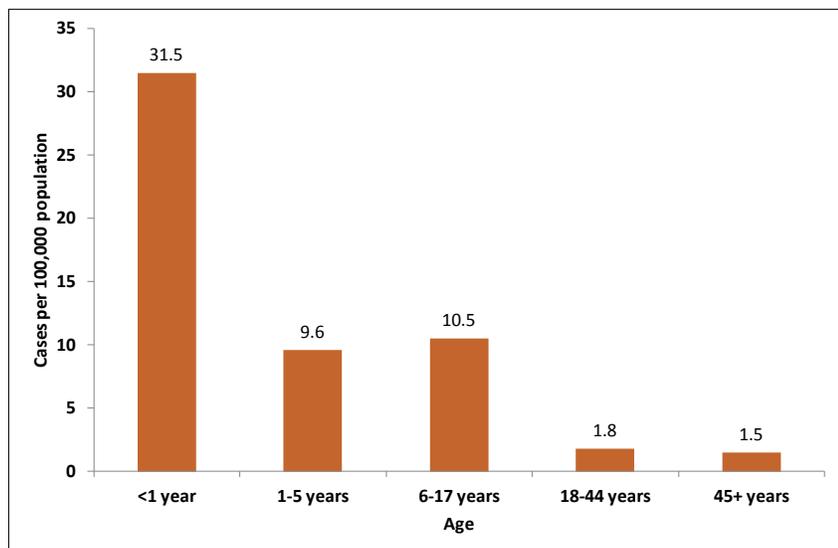
### How is it measured?

The incidence of vaccine-preventable infectious diseases is measured through public health surveillance systems at the local, state, and national level. In Colorado, the State Board of Health determines which conditions and diseases are required to be reported to state and local health departments. Immunization rates in Colorado are most commonly assessed through school-based audits conducted by the Colorado Department of Public Health and Environment. Additional data also is available through parent and health care provider surveys that are performed at the national level by the Centers for Disease Control and Prevention.

### How are we doing in El Paso County?

The diphtheria-tetanus-pertussis (DTaP) vaccine is recommended for all children between the ages of 2 months and 18 months who do not have a medical contraindication to vaccination. In Colorado in 2010, 86.0 percent of children ages 19 to 35 months had received four DTaP doses, with no significant change in uptake since 2008 (86.5 percent).<sup>4</sup> With immunization levels being lower than desired, pertussis remains prevalent in our community. Figure 1 shows the rate of pertussis by age group in El Paso County from 2008 to 2010.<sup>5</sup> Infants have

**Figure 1. Rate of pertussis, by age group, El Paso County 2009 to 2011**



the highest rate of pertussis infection at 31.5 cases per 100,000 population, and suffer the most severe consequences including prolonged illness, hospitalization, and death. However, a substantial number of pertussis cases occur in adults ages 18 years and older (29 percent of all cases between 2009 and 2011). Adolescents and adults with pertussis may have delayed diagnosis or not seek medical care at all, but are infectious and can spread disease within their homes, workplaces, or schools.

The pneumococcal conjugate vaccine (PCV) protects children against several types of infections caused by *Streptococcus pneumoniae*, such as bloodstream infection and meningitis. PCV is recommended to be administered in four doses to children between the ages of 2 months and 15 months. In Colorado in 2010, 81.6 percent of children ages 19 to 35 months had received four PCV doses, showing no difference since 2008 (82.5 percent).<sup>4</sup> Serious pneumococcal infections

disproportionately impact the health of infants and young children as well as elderly adults (Figure 2).<sup>5</sup> For children, the highest rates of infection are for those under 1 year of age; and among adults the rate of disease rises markedly for people 65 years and older (who are at higher risk for pneumonia).

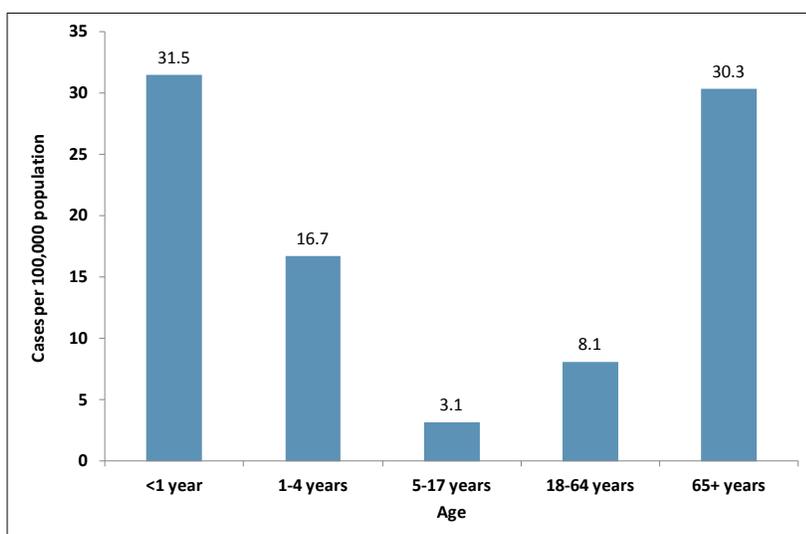
Adult pneumococcal vaccine (also referred to as the ‘pneumonia’ vaccine) is recommended for people 65 years and older, and national data shows that in 2010, coverage was 59.7 percent overall.<sup>6</sup> Among people ages 65 years and older, non-Hispanic whites had higher vaccination coverage (63.5 percent) compared with Hispanics (39.0 percent), non-Hispanic blacks (46.2 percent), and non-Hispanic Asians (48.2 percent). In El Paso County, nearly three-quarters of senior adults had reported ever receiving a pneumococcal vaccine (2009 to 2010).<sup>7</sup>

The Colorado Board of Health requires children entering kindergarten to have received

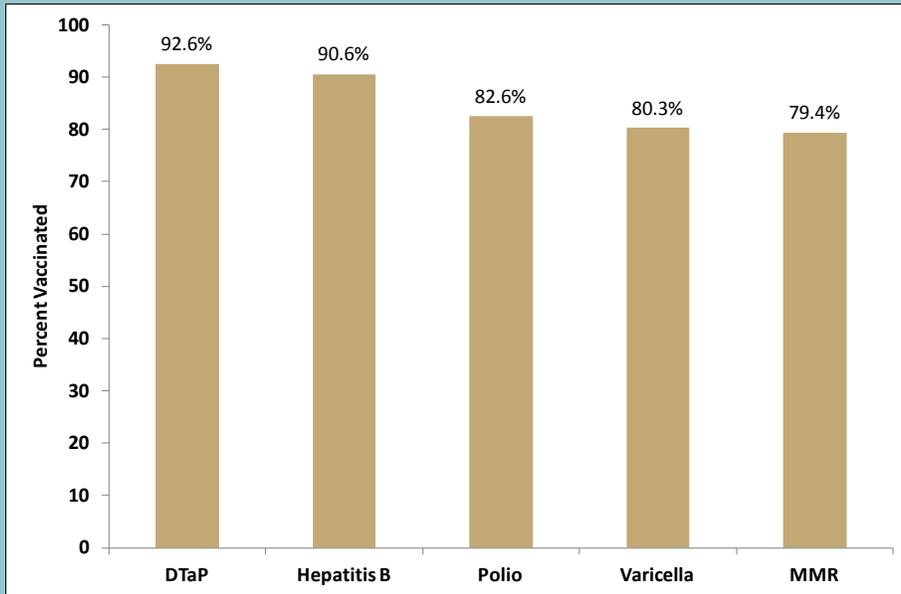
vaccinations for DTaP; measles, mumps, rubella (MMR); polio; hepatitis B; and varicella, unless an exemption has been made for religious or medical reasons.<sup>8</sup> Statewide for the 2010 to 2011 school year, between 79 and 93 percent of kindergartners entered school being up-to-date on these required vaccines, with MMR having the lowest compliance. Overall, 6.3 percent of kindergartners exempted from one or more required vaccines. The percent of kindergartners who claimed an exemption was highest for varicella and MMR and lowest for DTaP.

Data on immunization rates for adolescents shows more variability, in part because newer vaccines have just recently been recommended and more time is needed before a vaccine is commonly used in the population. Certain adolescent vaccines serve to boost immunity that has been lost over time from childhood immunizations (e.g., MMR). Other immunizations are recommended for adolescents because this age group is more susceptible to certain diseases (e.g., meningitis, human papillomavirus). Table 1 shows the percent of Colorado youth ages 13 to 17 years who are up to date on recommended vaccinations. More than 85 percent of adolescents have received the MMR and pertussis (Tdap) booster doses; however, less than 60 percent are receiving the vaccine to prevent meningitis and only 40.9 percent of females have received the human papillomavirus vaccine. ■

**Figure 2. Rate of serious pneumococcal infection, by age group, El Paso County 2009 to 2011**



**Figure 3. Percent of Colorado kindergarteners up-to-date on required immunizations at school entry, 2010-11 school year**



**Table 1. Percent of Colorado adolescents ages 13 to 17 years who received recommended vaccines, 2010**

| Vaccine            | Percent of adolescents |
|--------------------|------------------------|
| Tdap               | 85.7%                  |
| Meningitis         | 59.6%                  |
| MMR                | 92.6%                  |
| HPV (females only) | 40.9%                  |

**“The Colorado Board of Health requires children entering kindergarten to have received vaccinations for DTaP; measles, mumps, rubella (MMR); polio; hepatitis B; and varicella, unless an exemption has been made for religious or medical reasons. Statewide for the 2010 to 2011 school year, between 79 and 93 percent of kindergartners entered school being up-to-date on these required vaccines, with MMR having the lowest compliance.”**

<sup>1</sup>Centers for Disease Control and Prevention. “Achievements in Public Health, 1900-1999: Control of Infectious Diseases,” MMWR 48(29): 621-629, July 30, 1999. Available from: [www.cdc.gov/mmwr/preview/mmwrhtml/mm4829a1.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4829a1.htm).

<sup>2</sup>U.S. Department of Health and Human Services [Internet]. Healthy People 2020: Immunization and Infectious Diseases. Available from: [www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=23](http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=23).

<sup>3</sup>U.S. Department of Health and Human Services, National Institutes of Health [Internet]. Community Immunity. Available from: [www.niaid.nih.gov/topics/Pages/communityImmunity.aspx](http://www.niaid.nih.gov/topics/Pages/communityImmunity.aspx).

<sup>4</sup>Centers for Disease Control and Prevention [Internet]. 2007-2010 National Immunization Survey Data [Internet]. Available from: [www.cdc.gov/vaccines/stats-surv/nis/default.htm#nis](http://www.cdc.gov/vaccines/stats-surv/nis/default.htm#nis).

<sup>5</sup>Colorado Department of Public Health and Environment, Disease Control and Environmental Epidemiology Division. Colorado Electronic Disease Reporting System. Accessed on Apr 2, 2012.

<sup>6</sup>Centers for Disease Control and Prevention. “Adult Vaccination Coverage – United States, 2010,” MMWR 61(04): 66-72, February 3, 2010. Available from: [www.cdc.gov/mmwr/preview/mmwrhtml/mm6104a2.htm?s\\_cid=mm6104a2\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6104a2.htm?s_cid=mm6104a2_w).

<sup>7</sup>Colorado Department of Public Health and Environment [Internet]. Colorado Health Information Dataset: 2009-2010 Behavioral Risk Factor Surveillance System. Available from: [www.chd.dphe.state.co.us/cohid/topics.aspx?q=Behavioral\\_Risk\\_Factors](http://www.chd.dphe.state.co.us/cohid/topics.aspx?q=Behavioral_Risk_Factors).

<sup>8</sup>Colorado Department of Public Health and Environment, Immunization Section [Internet]. 2010-2011 Immunization School Survey Assessment. Available from: [www.cdphe.state.co.us/dc/immunization/11-12schoolYear/School%20Imm%20Survey%2009-16-11%20B.pdf](http://www.cdphe.state.co.us/dc/immunization/11-12schoolYear/School%20Imm%20Survey%2009-16-11%20B.pdf).

# Glossary of Terms

## **Age-adjusted Rate**

Rate of a disease or health condition for a given population that has been standardized to control for the influence different age groups might have on health-related events when comparing populations. Age-adjusted rates are commonly used when comparing death data between two populations.

## **Age-specific Rate**

Rate of a disease or health condition for a particular age group within a given population. Teen fertility rates are one example.

## **Birth Rate**

The number of live births to females of a specific age group per 1,000 females in the specified age group. Also referred to as a fertility rate.

## **Census Tract**

A small, relatively permanent statistical subdivision of a county created for the purpose of presenting data. Census tracts are designated by the United States Census Bureau and intended to be homogeneous with respect to population characteristics, economic status, and living conditions. Census tracts usually have between 2,500 and 8,000 persons and do not cross county boundaries. The spatial size of census tracts varies widely depending on the density of a particular settlement.

## **Healthy People 2020**

Health goals defined at the national level by the Department of Health and Human Services, which communicate a vision for improving health and achieving health equity with a set of specific measurable objectives; these objectives are defined as targets to be achieved by the year 2020.

## **Incidence**

Measures the occurrence of new cases of a disease, health condition, or health-related event that occurs within a specified population over a period of time (commonly based on an annual basis). For example, the number of Colorado children newly diagnosed with asthma during 2011. Incidence is commonly reported as a rate of disease or condition per 100,000 population.

## **Margin of Error/Error Bars (See Methodology)**

When measurements are calculated from a sample of people within a population, these values are subject to a level of uncertainty or error. This uncertainty can be represented through the use of a margin of error, which indicates a range of values for which there is a 95 percent probability of containing the true value for the entire population. Error Bars are included on some Figures in the report and these represent the (95%) upper and lower limits of the margin of error.

## **Morbidity**

A general term used to describe the occurrence of disease or health conditions. Morbidity does not include death.

## **Mortality**

A term used to describe the occurrence of death.

**Poverty Threshold**

Income thresholds developed by the United States Census Bureau that incorporate the size and composition of a family to determine who is in poverty. If a family's income is less than the family's poverty threshold, then that family and each individual member is considered to be in poverty. These thresholds are updated annually to account for inflation. The Census Bureau's poverty thresholds are calculated differently than the poverty guidelines issued by the Department of Health and Human Services to determine eligibility for public assistance.

**Prevalence**

Measures the presence of existing cases of a disease, health condition, or other attribute within a population at a specific point in time. For example, the proportion of Colorado adults who were current smokers in 2011.

**Proportion**

The ratio of a part to the whole, commonly expressed as a percent.

**Rate**

A measure of frequency often used to describe how often a disease, health condition, or health-related event is occurring in a population. Fertility rates, incidence rates, and mortality rates are common examples.

**Years of Potential Life Lost (YPLL)**

A measure of premature death which describes the number of years that an individual was expected to live beyond his or her death. A cause of death that is more common among children and young adults (e.g., accidents) will result in more YPLL than would a chronic disease more common among elderly persons.



El Paso County Public Health  
1675 W. Garden of the Gods Road, Suite 2044  
Colorado Springs, Colorado 80907  
[www.elpasocountyhealth.org](http://www.elpasocountyhealth.org)  
(719) 578-3199