CANCER
IN
EL PASO AND PUEBLO COUNTIES
1998-2000

Prepared by the
Colorado Comprehensive Cancer Control Program
Colorado Department of Public Health and Environment
HPDP-CCP-A5
4300 Cherry Creek Drive South
Denver, CO 80246-1530

(303) 692-2520

September 2002

ACKNOWLEDGMENTS

The publication of *Cancer in El Paso and Pueblo Counties: 1998-2000* is a continuation of a series of Colorado regional reports on cancer. This report may be useful to policy makers, health care professionals, and community groups to assist in developing and evaluating prevention and intervention strategies, identifying high risk populations, and prioritizing resource allocations for cancer-related services.

This report was completed under the direction of the following Colorado Department of Public Health and Environment (CDPHE), Health Promotion and Disease Prevention staff:

Jillian Jacobellis, Ph.D., M.S., Director
Normie Morin-Voillequé, Ph.D., M.P.H., Chief, Chronic Disease Prevention Section
Sara Miller, M.P.A., Program Manager, Colorado Comprehensive Cancer Prevention and Control Program

Special thanks to the following CDPHE individuals for their technical assistance, data analysis, and report writing and editing:

Randi Rycroft, Data Coordinator, Colorado Comprehensive Cancer Prevention and Control Program
David Brand, M.S.P.H., Statistical Analyst, Chronic Disease Programs
Jack Finch, M.S., Statistical Analyst, Colorado Central Cancer Registry
Kirk Bol, Statistical Analyst, Colorado Central Cancer Registry

In addition to those individuals named above, thanks to other members of the Colorado Cancer Prevention Coalition Surveillance Subcommittee for their guidance and feedback on the report:

Robin Bott, CTR, Director, Colorado Central Cancer Registry, CDPHE
Tim Byers, M.D., M.P.H., University of Colorado Health Sciences Center
Karen Deleeuw, State Tobacco Education Partnership Program, CDPHE
Alacey Berumen MNM, Ph.D. Candidate, Regional Cancer Planner, American Cancer Society
Judy Mouchawar, M.D., Kaiser Permanente
Nancy Olson, Susan G. Komen Foundation
Alyson Shupe, Ph.D., M.S.W., Chief, Health Statistics Section, CDPHE
Heather Tolby, Colorado Comprehensive Cancer Prevention and Control Program
Huiyun Xiang, Ph.D., Health Statistics Section, CDPHE

Appreciation is extended to the following agencies for providing data for this report: Colorado Central Cancer Registry, Health Statistics Section, and Survey Research Unit, all of the Colorado Department of Public Health and Environment.

The Centers for Disease Control and Prevention (CDC) funded this project under cooperative agreement U55/CCU816013-01. The CDC project officer is Debra Younginer.

TABLE OF CONTENTS

ACKNOWLEDGMENTS iii
TABLE OF CONTENTS v
LIST OF FIGURES vi
LIST OF TABLES viii
CENTRAL COLORADO COUNTIES ix
EXECUTIVE SUMMARY xi
Introduction 3
Data and Definitions 7
  Data Sources 7
  Data Limitations 7
  Definitions 7
Cancer-Related Behaviors 13
  Population by Age Group 13
  Current Smoker 14
  Overweight 14
  Current User of Smokeless Tobacco 15
  Mammogram Screening and Pap Test 16
  Colorectal Cancer Screening 18
  Sun Protection 19
Selected Findings by Cancer Site 27
  All Cancers Combined 27
  Colon and Rectal Cancer 30
  Lung Cancer 33
  Melanoma 35
  Female Breast Cancer 37
  Invasive Cervical Cancer 40
  Prostate Cancer 41
Appendix 77
References 85

LIST OF FIGURES

Figure 3. 1 Population Proportions by Age Group and Region....13
Figure 3. 2 Percent Current Smoker....14
Figure 3. 3 Percent Overweight or Obese (BMI >=25.0) 15
Figure 3. 4 Percent Smokeless Tobacco User....16
Figure 3. 5 Percent of Women Having Both Mammograms and CBE's 17
Figure 3. 6 Percent of Women Having Pap Smears....17
Figure 3. 7 Percent Having Blood Stool Test Age 50 and Older....18
Figure 3. 8 Percent Having Sigmoidoscopy/Colonoscopy Age 50 and Older....19
Figure 3. 9 Percent Using Sunscreen SPF 15 or Higher....20
Figure 3. 10 Percent Wearing Wide-Brimmed Hat....20
Figure 3. 11 Percent Wearing Protective Clothing 21
Figure 3. 12 Percent Wearing Wide-Brimmed Hat and Protective Clothing....21

Figure 4. 1 All Cancers Combined – Average Annual Age-Adjusted Incidence Rate 28
Figure 4. 2 All Cancers Combined – Percent "Early" Detection....29
Figure 4. 3 All Cancers Combined – Average Annual Age-Adjusted Mortality Rate 30
Figure 4. 4 Colon and Rectal Cancer Average Annual Age-Adjusted Incidence Rate....32
Figure 4. 5 Colon and Rectal Cancer – Average Annual Age-Adjusted Mortality Rate 32
Figure 4. 6 Lung Cancer – Average Annual Age-Adjusted Incidence Rate....34
Figure 4. 7 Lung Cancer – Average Annual Age-Adjusted Mortality Rate 35
Figure 4. 8 Melanoma – Average Annual Age-Adjusted Incidence Rate....37
Figure 4. 9 Female Breast Cancer – Average Annual Age-Adjusted Incidence Rate 39
Figure 4. 10 Female Breast Cancer – Average Annual Age-Adjusted Mortality Rate....39
Figure 4. 11 Invasive Cervical Cancer – Average Annual Age-Adjusted Incidence Rate 41
Figure 4. 12 Prostate Cancer – Average Annual Age-Adjusted Incidence Rate 43
Figure 4. 13 Prostate Cancer – Average Annual Age-Adjusted Mortality Rate....43

Figure 5. 1 Population Proportions by Age Groupa and Region....47
Figure 5. 2 Percent Current Smoker....48
Figure 5. 3 Percent Overweight or Obese (BMI >=25.0) 49
Figure 5. 4 Percent of Women Having Both Mammograms and CBE's 50
Figure 5. 5 Percent Using Sunscreen SPF 15 or Higher....52
Figure 5. 6 Percent Wearing Wide-Brimmed Hat....52
Figure 5. 7 Percent Wearing Protective Clothing 53
Figure 5. 8 Percent Wearing Wide-Brimmed Hat and Protective Clothing....53

Figure 6. 1 All Cancers Combined – Average Annual Age-Adjusted Incidence Rate 60
Figure 6. 2 All Cancers Combined – Percent "Early" Detection By Region, 1999-2000 61
Figure 6. 3 All Cancers Combined – Average Annual Age-Adjusted Mortality Rate 62
Figure 6. 4 Colon and Rectal Cancer Average Annual Age-Adjusted Incidence Rate....63
Figure 6. 5 Colon and Rectal Cancer – Average Annual Age-Adjusted Mortality Rate 64
Figure 6. 6 Lung Cancer – Average Annual Age-Adjusted Incidence Rate....66
Figure 6. 7 Lung Cancer – Average Annual Age-Adjusted Mortality Rate 66

Figure 6. 8 Melanoma – Average Annual Age-Adjusted Incidence Rate.....68
Figure 6. 9 Female Breast Cancer – Average Annual Age-Adjusted Incidence Rate 70
Figure 6. 10 Female Breast Cancer – Average Annual Age-Adjusted Mortality Rate.....70
Figure 6. 11 Invasive Cervical Cancer – Average Annual Age-Adjusted Incidence Rate 72
Figure 6. 12 Prostate Cancer – Average Annual Age-Adjusted Incidence Rate 73
Figure 6. 13 Prostate Cancer – Average Annual Age-Adjusted Mortality Rate.....74

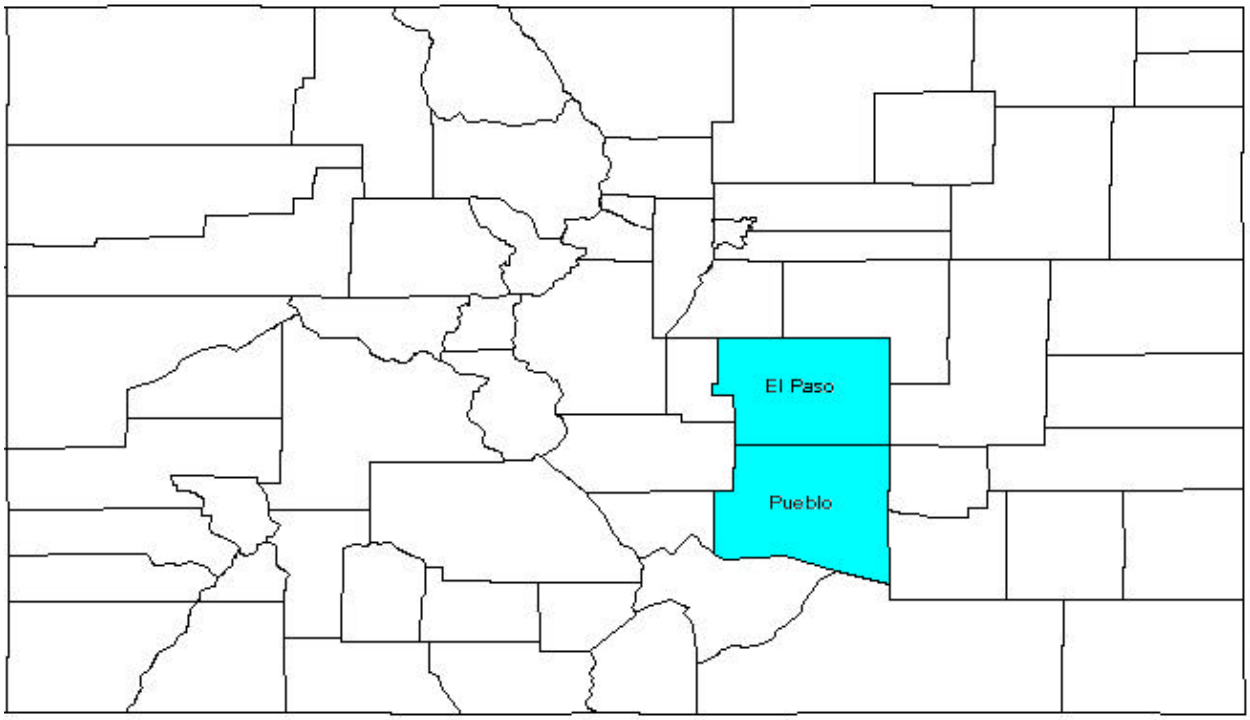
LIST OF TABLES

Table 3. 1 Age Groups by Region: Colorado, 2000 22
Table 3. 2 Cancer-Related Behaviors by Region, Gender, and Age Group: 22

Table 5. 1 Age Groups by Region: Colorado, 2000 54
Table 5. 2 Cancer-Related Behaviors by Region, Gender, and Age Group: 54

Table 7. 1 All Cancers Combined – Incidence Rates 77
Table 7. 2 All Cancers Combined – Stage at Diagnosis 77
Table 7. 3 All Cancers Combined – Mortality Rates 77
Table 7. 4 Colon and Rectal Cancer – Incidence Rates 78
Table 7. 5 Colon and Rectal Cancer – Stage at Diagnosis 78
Table 7. 6 Colon and Rectal Cancer – Mortality Rates 78
Table 7. 7 Lung Cancer – Incidence Rates 79
Table 7. 8 Lung Cancer – Stage at Diagnosis 79
Table 7. 9 Lung Cancer – Mortality Rates 79
Table 7. 10 Melanoma – Incidence Rates 80
Table 7. 11 Melanoma – Stage at Diagnosis 80
Table 7. 12 Melanoma – Mortality Rates 80
Table 7. 13 Female Breast Cancer – Incidence Rates 81
Table 7. 14 Female Breast Cancer – Stage at Diagnosis 81
Table 7. 15 Female Breast Cancer – Mortality Rates 81
Table 7. 16 Invasive Cervical Cancer – Incidence Rates 82
Table 7. 17 Invasive Cervical Cancer – Stage at Diagnosis 82
Table 7. 18 Invasive Cervical Cancer – Mortality Rates 82
Table 7. 19 Prostate Cancer – Incidence Rates 83
Table 7. 20 Prostate Cancer – Stage at Diagnosis 83
Table 7. 21 Prostate Cancer – Mortality Rates 83

EL PASO AND PUEBLO COUNTIES



EXECUTIVE SUMMARY

This report, *Cancer in El Paso and Pueblo Counties Colorado: 1998-2000*, was written by the Colorado Comprehensive Cancer Prevention and Control Program to assist with the development and evaluation of cancer prevention and intervention strategies in El Paso and Pueblo counties. It is the fifth in a series of reports covering different regions of Colorado that utilizes county-specific data. The five regional reports are:

- *Cancer in Eastern Colorado: 1995-1997*, published in 1999;
- *Cancer in Western Colorado: 1996-1998*, published in 2000;
- *Cancer in Central Colorado: 1997-1999*, published in 2001;
- *Cancer in North Denver: 1998-2000*, published in 2002, and;
- *Cancer in El Paso and Pueblo Counties: 1998-2000*, published in 2002.

All five reports are available on the internet: www.cdphe.state.co.us/pp/ccpc/ccpchom.asp. *Cancer in El Paso and Pueblo Counties: 1998-2000* incorporates data from three sources within the Colorado Department of Public Health and Environment: cancer-related behavior data from the 1998, 1999, and 2000 Colorado Behavioral Risk Factor Surveillance System (BFRSS) survey, cancer incidence and stage data from the Colorado Central Cancer Registry, and cancer mortality data from the Health Statistics Section.

It is widely held that most kinds of cancer can be prevented and/or detected at an early stage. Studies suggest that 75 to 80 percent of cancer deaths are attributable to health behaviors, including smoking, diet, obesity, physical inactivity, excessive alcohol intake, and reproductive and sexual history. A change to healthy behaviors and/or a cancer-related check-up is recommended to reduce the chance of getting cancer. Detailed risk factors and prevention information for each cancer are described in the report. The following is a summary of the major findings of the report.

Behavioral Risk Factor Surveillance System survey findings:

- El Paso County had slightly higher smoking prevalence for all age groups and for males and females compared to the remainder of the state. In Pueblo County, the smoking prevalence was higher than the state for people aged 35-54, people aged 55 and older, and for females.
- About half of the people in El Paso County reported being overweight or obese. A similar proportion in Pueblo County reported being overweight or obese.
- Residents of El Paso County were significantly less likely to be chronic drinkers.

- Women aged 50 and over in Pueblo County were slightly less likely to have had a mammogram and clinical breast exam in the last 2 years than women in the rest of the state. Women aged 50 and over in El Paso County were as likely as women in the state to have had a mammogram and clinical breast exam in the past two years.
- Women in Pueblo County were as likely as women in the rest of the state to have received a Pap test in the last three years. Women in El Paso County were slightly more likely to have had a Pap test in the last three years compared to the rest of the state.
- People in Pueblo County were significantly less likely to have had a blood stool screening test for colorectal cancer than people in the remainder of the state. In addition, they were less likely to have had a sigmoidoscopy or colonoscopy. People in El Paso County were as likely to have had colorectal screenings as people in the remainder of the state.
- Residents of Pueblo County were significantly less likely to use SPF 15 or higher sunscreen than were people in the remainder of the state. People in El Paso County reported similar protection behaviors as people in the remainder of the state.

Cancer data comparisons between El Paso and Pueblo counties and the state by selected cancer sites:

- **All cancers combined:** The incidence rate for all cancers combined for males was higher in El Paso County than in Colorado. Female cancer incidence rates in El Paso County were higher than the state rate. The male cancer incidence rate in Pueblo County was similar to the state rate while the rate for females in Pueblo County was lower than the state rate. Early detection percentages were similar between both El Paso and Pueblo counties and the state. Cancer mortality rates for males and females in El Paso County were similar to the state rates. The mortality rate for females in Pueblo County was lower compared to the state. The mortality rate for males in Pueblo County was similar to the state rate.
- **Colon and rectal cancer:** The El Paso County male colorectal cancer incidence rate was 10 percent higher than the state rate while the female colorectal cancer incidence rate was the same as the state rate. The male and female colorectal cancer incidence rates in Pueblo County were similar to the state rate. Early detection percentages in El Paso County were better than the Colorado percentage. The Pueblo County early detection percentage was slightly lower than the state percentage. The male colorectal cancer mortality rate in El Paso County was higher than the state rate. The mortality rate for females in El Paso County was similar to the Colorado rate. In

Pueblo County, the male colorectal mortality rate was higher than the state rate, while the rate for females was significantly lower.

- **Lung cancer:** The lung cancer incidence rate for El Paso County males was higher than the state rate while the female lung cancer incidence rate was similar. The lung cancer incidence rate for males in Pueblo County was higher than the state rate and the rate for females was similar to the state rate. The lung cancer mortality rate for El Paso County females was higher than the state rate. The mortality rates in Pueblo County were higher than the state rate in males and lower in females.
- **Melanoma:** Melanoma incidence rates in El Paso County were higher than the state rate for females but similar to the state rate for males. In Pueblo County, the incidence rates were lower than the state rates for both males and females. Early detection percentages were similar between Colorado and each of the counties. The melanoma mortality rate in El Paso county males was higher than the state rate.
- **Female breast cancer:** The breast cancer incidence rates in El Paso and Pueblo counties were similar to the state rate. Early detection percentages were lower in El Paso county women than in the state. Breast cancer mortality rates were similar between each of the counties and the state.
- **Invasive cervical cancer:** The invasive cervical cancer incidence rate in El Paso County was higher than the state rate. The mortality rate was also higher in El Paso County.
- **Prostate cancer:** The prostate cancer incidence rate was higher in El Paso County than in the state. The early detection percentage in Pueblo County was higher than in the state. The prostate cancer mortality rate in Pueblo County was lower than the state rate.

Though the analysis did not find large differences in cancer rates or cancer-related behaviors between Colorado and El Paso and Pueblo counties, improvements can still be made. Efforts should also be made to improve screening practices, such as the use of mammograms, Pap smears, blood stool tests, and sigmoidoscopy. A healthy lifestyle is the primary key to a healthy life.

Section I

Introduction

Introduction

Cancer is the second leading cause of death in Colorado, according to the *1999 Annual Report of Vital Statistics Colorado* summary data published by the Health Statistics Section of the Colorado Department of Public Health and Environment. During the period from 1940 to 1990, Colorado saw a substantial increase in cancer mortality rates. However, since 1990, some progress has been made in reducing cancer mortality rates, and Colorado mortality rates rank among the lowest in the United States.

Although cancer cells can be lethal, most types of cancer can be prevented or detected at an early stage by:

- Adopting healthy behaviors, such as stopping smoking, improving dietary habits, and increasing physical activity;
- Using early detection methods, such as mammography, Pap tests, prostate-specific-antigen (PSA) tests, and sigmoidoscopy;
- Implementing comprehensive health education programs.

A number of public agencies and private organizations have made great efforts to reduce cancer incidence and mortality throughout Colorado. The Colorado Comprehensive Cancer Prevention and Control Program is a project funded by the Centers for Disease Control and Prevention (CDC) to coordinate this effort. The goal of this program is to improve preventive behaviors by collaborating with public and private agencies to set priorities for interventions, conducting public awareness campaigns, establishing cancer prevention and control policies, and supporting community-based projects.

One of the program's activities is to produce a series of reports on specific regional cancer data. This report, *Cancer in El Paso and Pueblo Counties: 1998-2000*, is the fifth and latest of this series. In the report series, *Cancer in Eastern Colorado: 1995-1997*, was published in September 1999; *Cancer in Western Colorado: 1996-1998* was published in September 2000; *Cancer in Central Colorado: 1997-1999* was published in September 2001; and *Cancer in North Denver: 1998-2000* was published in September 2002. All five reports are available on the internet at: www.cdphe.state.co.us/pp/ccpc/ccpchom.asp. The counties included in this report are El Paso and Pueblo (see map on page ix).

This report is organized into seven sections. Section I is this introduction. Section II describes data and data sources and defines terminology used in this report. Section III

summarizes the findings of the 1998 - 2000 Behavioral Risk Factor Surveillance System (BRFSS) surveys in El Paso County. Section IV discusses and compares cancer incidence and mortality rates in El Paso County and the state. Sections V and VI discuss BRFSS findings and cancer incidence and mortality rates for Pueblo County. Section VII, the Appendix, displays detailed county-specific incidence, staging, and mortality data.

Section II

Data and Definitions

Data and Definitions

Data Sources

Data used for this report came from several sources in the Colorado Department of Public Health and Environment (CDPHE). The cancer incidence and staging data were provided by the Colorado Central Cancer Registry (CCCR), which collects data on all cancers diagnosed in Colorado. The cancer mortality data were provided by the CDPHE Health Statistics Section, which compiles and analyzes data from birth and death records. The BRFSS data were provided by the CDPHE Survey Research Unit, which conducts health-related surveys.

Data Limitations

It is important to note that rates for a limited time period are not always reflective of true incidence or mortality rates. This effect can be even more pronounced when county rates are calculated based on small numbers of cases, as one number can change the rate considerably.

Since the *all cancers combined* incidence and mortality rates were much higher than individual cancer incidence and mortality rates, the *all cancers combined* rates were displayed graphically on a larger scale in the bar chart than the scale used for individual cancer rates. Individual cancer incidence and mortality rates were displayed on different scales. It is important to note the differences in scales when comparing rates of different cancer sites.

To assure the confidentiality of individuals, this report does not present data with fewer than three events in each category.

Definitions

The Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing statewide telephone survey designed to monitor the prevalence of health behaviors and preventive health practices associated with the leading causes of death in Colorado. Each year, at least 1,800 Colorado residents aged 18 and older are surveyed. While the Colorado BRFSS provides reliable estimates of cancer-related risk factors and behaviors for the state as a whole, estimates at the county level can be less reliable if the number of respondents is small. In El Paso and Pueblo counties there typically are enough respondents to provide reliable county level data in a

single year, however, data were combined for the three year period from 1998 to 2000 for this report.

Cancer Incidence Rates are a measure of the number of new cancer cases diagnosed over a defined time period divided by a specified population. Age-adjusted incidence rates were used in this report in order to compare rates of different populations. Any observed differences in age-adjusted rates are not due to different ages of the populations being compared. The incidence rates in this report were adjusted to the 2000 U.S. standard population.

Cancer Mortality Rates are a measure of the number of deaths due to cancer over a defined period divided by a specified population. The mortality rates in this report were age-adjusted to the 2000 U.S. standard population.

Cumulative Risk is an estimate of the chances of an individual being diagnosed with cancer by a certain age based on age-specific rates within a certain time period. This risk can be expressed as a percentage or probability, i.e., for men the cumulative risk to age 85 for all cancers combined is about 51 percent, or 1 in 2.

Stage of Cancer is typically defined by size and containment, or spread, of the tumor. Initially, the cancerous cells do not invade surrounding tissues. This very early condition is called the in-situ stage. Next, the cancer cells infiltrate the organ where they originated. This is the localized stage. The regional stage is when cancer cells have spread to adjacent tissues or to nearby lymph nodes. Eventually, cancer cells may become disseminated throughout the body, usually by invasion of the circulatory system. This level of cancer spread is called the distant stage.

The stage of cancer at the time of diagnosis is a very important factor in determining the potential effectiveness of treatment and its potential for cure. At the in-situ stage, cancer is usually highly curable. Some cancer cells, such as lung and melanoma, spread more rapidly than others do, and the potential to be life-threatening is greater. For these cancers, the best prevention is to avoid risk factors that may cause the disease.

Early Detection of Cancer is defined in this report as the percent of cases diagnosed at in-situ and localized stages, excluding unknown staged cases. Mathematically, the early detection percentage is the number of in-situ cases plus the number of localized cases divided by the total number of staged cancer cases, multiplied by 100.

Statistical Significance in this report was evaluated using a Z-test (alpha = 0.05) for testing differences between the state incidence and mortality rates and county incidence and mortality rates. Only rates based on six or more cases were tested. A statistically significant result means that there is likely a real difference in rates between the two populations, a

difference that cannot be explained by chance alone. All statistically significant results are discussed in this report. Some higher or lower county rates, though not statistically significant, may be discussed if they are more than 20 percent different from the state rate.

BRFSS data for the individual counties were compared to the remainder of the state, i.e., statewide data excluding the individual county. In the narrative discussion, the terms "remainder of the state" and "the state" will be used interchangeably. Confidence intervals were used to determine statistical significance for the risk factor prevalence differences.

Section III

Cancer-Related Behaviors
El Paso County

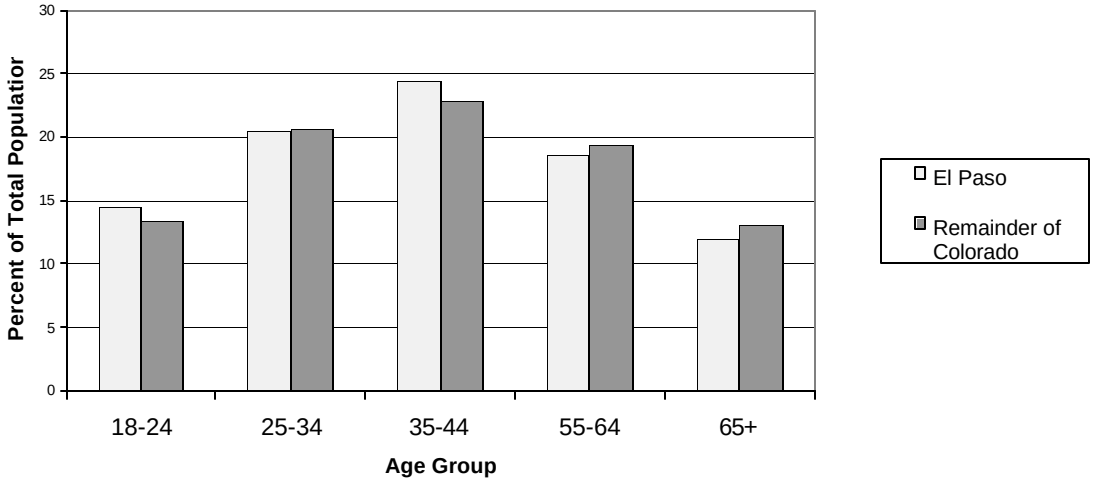
Cancer-Related Behaviors – El Paso County

Two counties in Colorado comprise the areas described in this report. Although not true of all counties, El Paso and Pueblo counties typically have sufficient numbers of respondents to provide reliable estimates of health-related behaviors. Data from the 1998, 1999, and 2000 BRFSS surveys were combined to provide the information for this report. This section summarizes the selected findings of these surveys for El Paso County. Detailed BRFSS data are listed in tables at the end of the section.

Population by Age Group

As seen in Figure 3.1, the population distributions of El Paso County and the remainder of the state were similar. The highest percentage of people are in the 35-44 age group. The 55-64 age group represents the smallest percentage of population in each region (see Table 3.1).

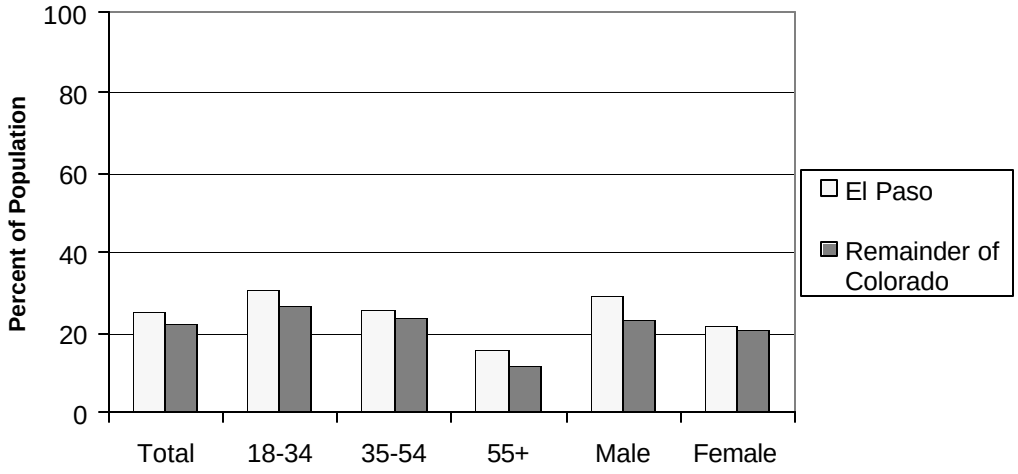
Figure 3. 1 Population Proportions by Age Group and Region, 1998-2000 BRFSS



Current Smoker

Cigarette smoking increases risk for both heart disease and lung cancer, and has been linked as well to oral, esophageal, pancreatic, cervical, kidney, colon, and bladder cancer. Current smokers were identified as those respondents who had smoked at least 100 cigarettes in their lives and were currently smoking at the time of the survey. As seen in Figure 3.2, the 1998-2000 BRFSS surveys found that the prevalence of current smoking among people in El Paso County was slightly higher than the overall state prevalence. This difference was true for all age groups, and for males and females, although all were within expected statistical variation. In each of the two areas, smoking prevalence decreases with age.

Figure 3. 2 Percent Current Smoker
By Region, Age Group, and Gender, 1998-2000 BRFSS



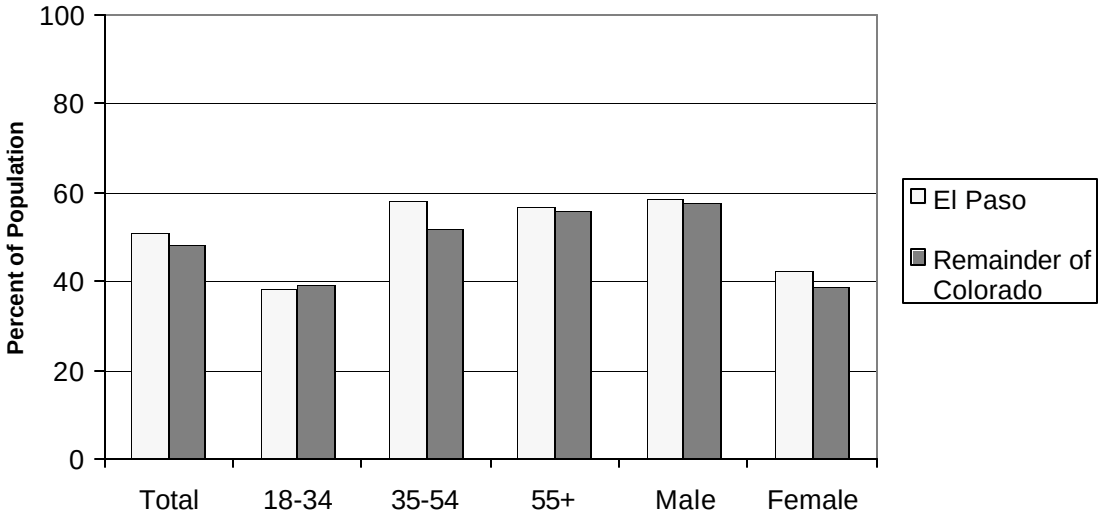
Chronic Drinking

Frequent alcohol use is a major cause of both social and medical problems. The American Cancer Society estimates that in the U.S. in 2002, 19,000 cancer deaths may be due to excessive alcohol use. Excessive alcohol use is a cause of many types of cancers: oral cavity, pharynx, larynx, esophageal, and liver. Excessive alcohol consumption also increases the risk of breast and colorectal cancers. The BRFSS defines chronic drinking as consuming 60 or more drinks per month. In El Paso County, the prevalence of chronic drinking is significantly lower than in the remainder of the state and is significantly lower in El Paso County for males, and for people aged 18-34 (see Table 3.2).

Overweight

Being overweight is considered a risk factor for heart disease, diabetes, and some cancers, such as breast, endometrium, colon, and kidney. Overweight is defined as a body mass index (BMI) of greater than or equal to 25.0. The formula for calculating BMI is $\frac{(weight\ in\ kilograms)}{(height\ in\ meters)^2}$. Figure 3.3 depicts the percentages of overweight or obese people in El Paso County and the remainder of the state. In both areas, males were significantly more likely than females to be overweight or obese. In El Paso County, people aged 18-34 were significantly less likely to be overweight or obese than people aged 35-54 (see Table 3.2).

Figure 3. 3 Percent Overweight or Obese (BMI >=25.0)
By Region, Age Group, and Gender, 1998-2000 BRFSS

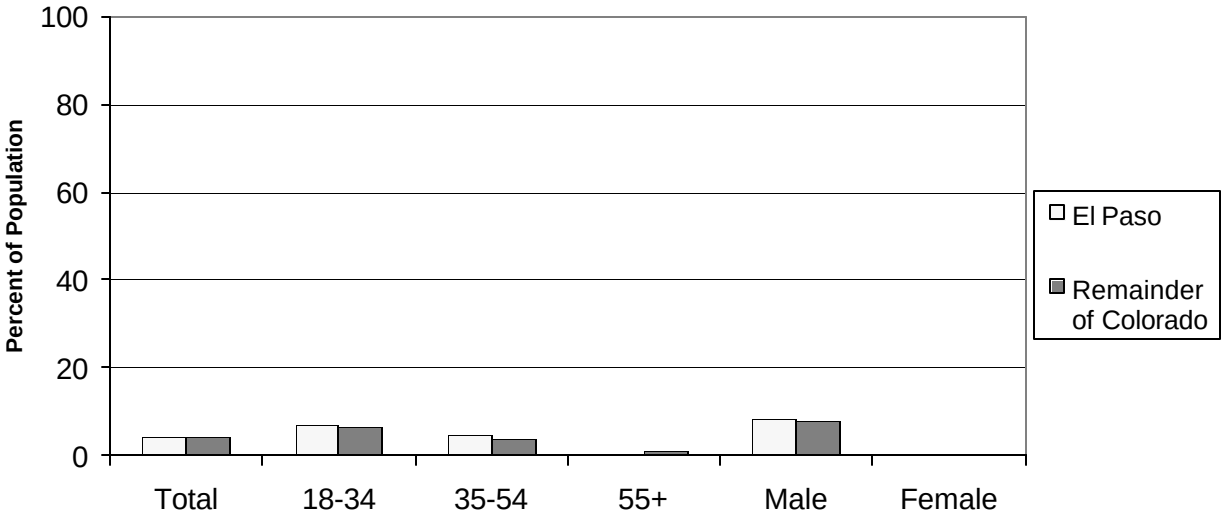


Current User of Smokeless Tobacco

In 1986, the U.S. Surgeon General concluded that the use of smokeless tobacco can cause cancer as well as a number of non-cancerous oral conditions, and can lead to nicotine addiction and dependence (Cancer Facts & Figures 2002, ACS). A current user of smokeless tobacco is one who currently uses any smokeless tobacco products such as chewing tobacco or snuff. Figure 3.4 shows that while the prevalence of smokeless tobacco use was generally low, the

highest rates were found in the 18-34 age group, and in men. Generally, the prevalence of using smokeless tobacco decreased with increasing age (see Table 3.2).

Figure 3. 4 Percent Smokeless Tobacco User By Region, Age Group, and Gender



Mammogram Screening and Pap Test

Regular cancer screening is recommended as the major prevention method for breast and cervical cancers. As shown in Figure 3.5, the BRFSS reported that women aged 40 and over in El Paso County were as likely as women aged 40 and over statewide to have ever had a mammogram and a clinical breast exam. Women aged 50 and older in El Paso County were as likely as women in the remainder of the state to have had both a mammogram and clinical breast exam in the past two years between the two regions.

Women in El Paso County were slightly more likely than women in the remainder of the state to have ever had a Pap test. The 2010 goal for Pap screening is that 90 percent of women will have had a Pap test in the past three years. The percentages in El Paso County and the remainder of the state were 87.3 and 82.7, respectively. In both areas, women aged 35-54 are significantly more likely to have had a Pap test in the past three years than women aged 55 and older (see Figure 3.6 and Table 3.2).

Figure 3. 5 Percent of Women Having Both Mammograms and CBE's
By Age Group, 1998-2000 BRFSS

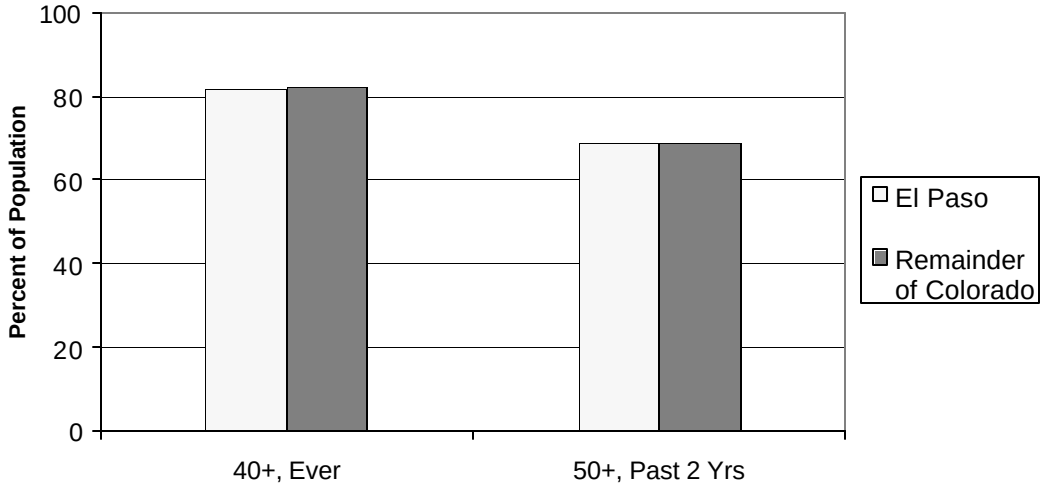
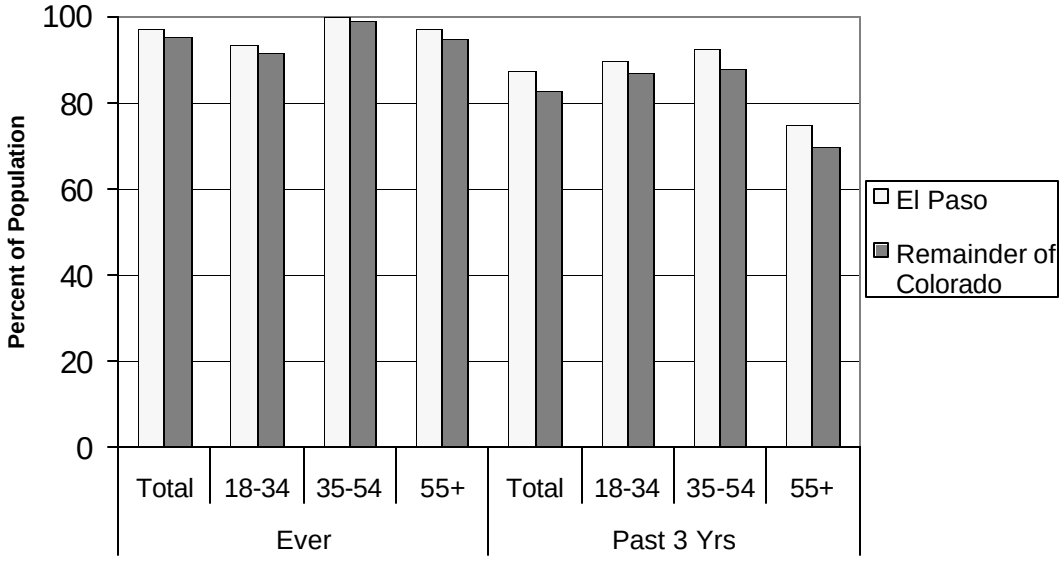


Figure 3. 6 Percent of Women Having Pap Smears
By Age Group, 1998-2000 BRFSS



Colorectal Cancer Screening

The American Cancer Society recommends that individuals aged 50 and over have a yearly fecal occult blood test (FOBT) and a sigmoidoscopy every 5 years. Figure 3.7 shows that overall, El Paso County residents aged 50 and over did as well as people in the remainder of the state in ever having had a blood stool test, and were slightly more likely to have had the test in the past year. Women in El Paso County were more likely than women in the remainder of the state to have had a blood stool test in the past year, but the difference was within expected statistical variation.

Individuals in El Paso County reported ever having a sigmoidoscopy at a percentage slightly higher than individuals in the remainder of the state (see Figure 3.8). Men were more likely to report ever having had a sigmoidoscopy than women were in both areas (see Table 3.2).

Figure 3. 7 Percent Having Blood Stool Test Age 50 and Older By Gender, 1998-2000 BRFSS

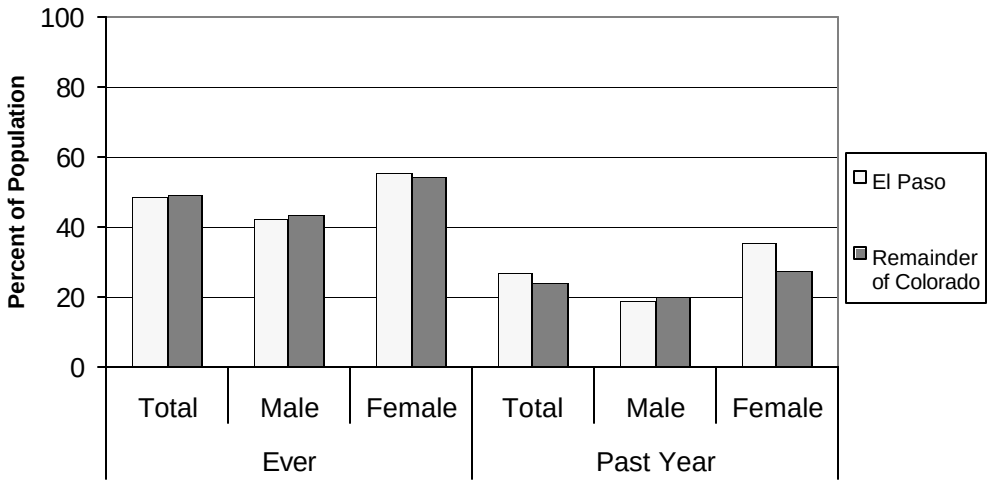
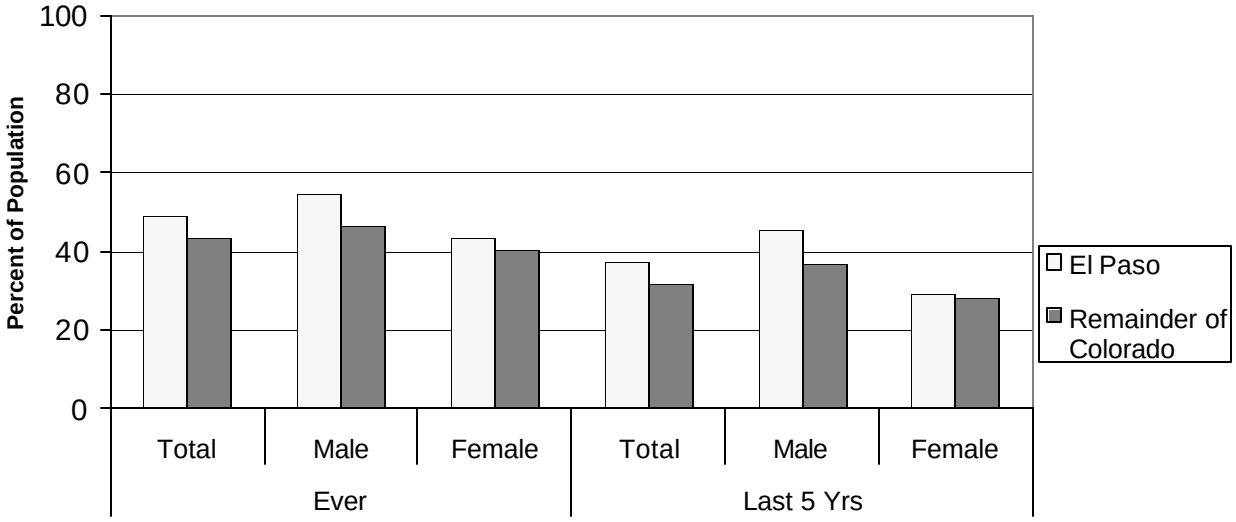


Figure 3. 8 Percent Having Sigmoidoscopy/Colonoscopy Age 50 and Older By Gender, 1998-2000 BRFSS



Sun Protection

The principal cause of skin cancer is overexposure to sunlight, especially overexposure that results in sunburn and blistering. Melanoma is the most serious type of skin cancer, and in Colorado, the melanoma incidence rate is increasing more rapidly than for any other major cancer. The American Cancer Society and the Centers for Disease Control and Prevention both recommend that when outdoors, individuals use a sunscreen SPF 15 or higher and wear protective clothing such as a wide-brimmed hat, a long-sleeved shirt, and long pants.

Figures 3.9-3.12 depict the sun protection behavior data. The 1998-2000 BRFSS data showed that 58.1 percent of people in the remainder of the state reported that they always or nearly always used SPF 15 or higher sunscreen when being out for more than an hour on a sunny summer day. Individuals in El Paso County reported similar sunscreen use. Females were more likely to use sunscreen than males in each of the areas.

The overall percentage of people reporting always or nearly always wearing both hats and protective clothing when being out on a sunny summer day for more than an hour were similar between El Paso County and the remainder of the state. The prevalence did increase with age in both regions. People aged 18-34 were significantly less likely than the older age groups to

wear both a hat and protective clothing and males were significantly more likely than females to wear both a hat and protective clothing (see Table 3.2).

Figure 3. 9 Percent Using Sunscreen SPF 15 or Higher
By Region, Age Group, and Gender, 1998-2000 BRFSS

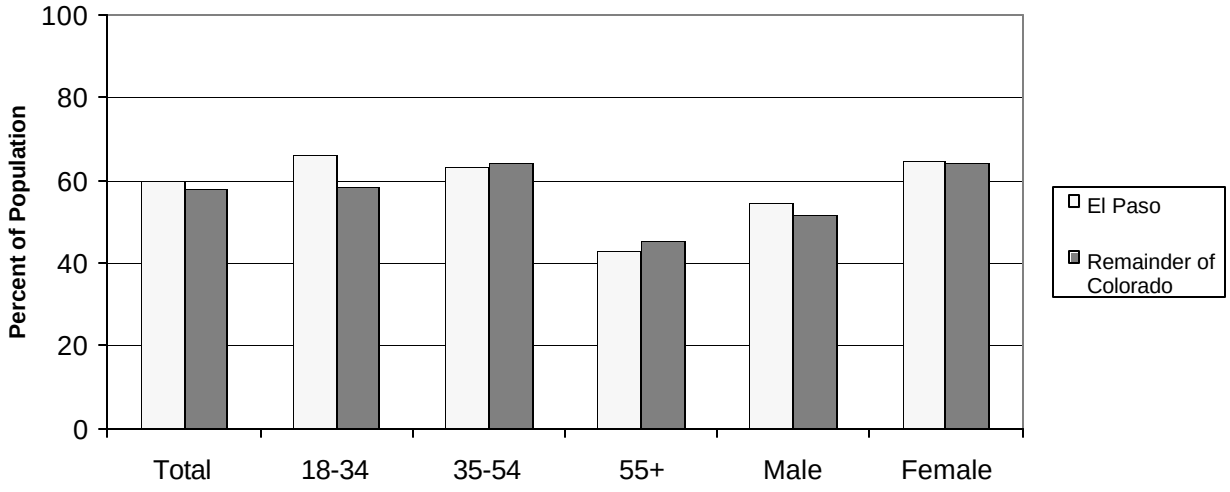


Figure 3. 10 Percent Wearing Wide -Brimmed Hat
By Region, Age Group, and Gender, 1998-2000 BRFSS

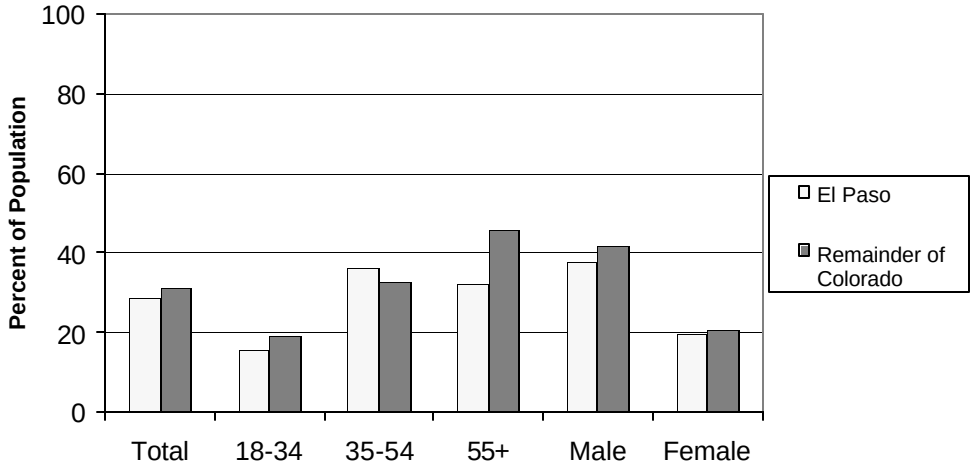


Figure 3. 11 Percent Wearing Protective Clothing
By Region, Age Group, and Gender, 1998-2000 BRFSS

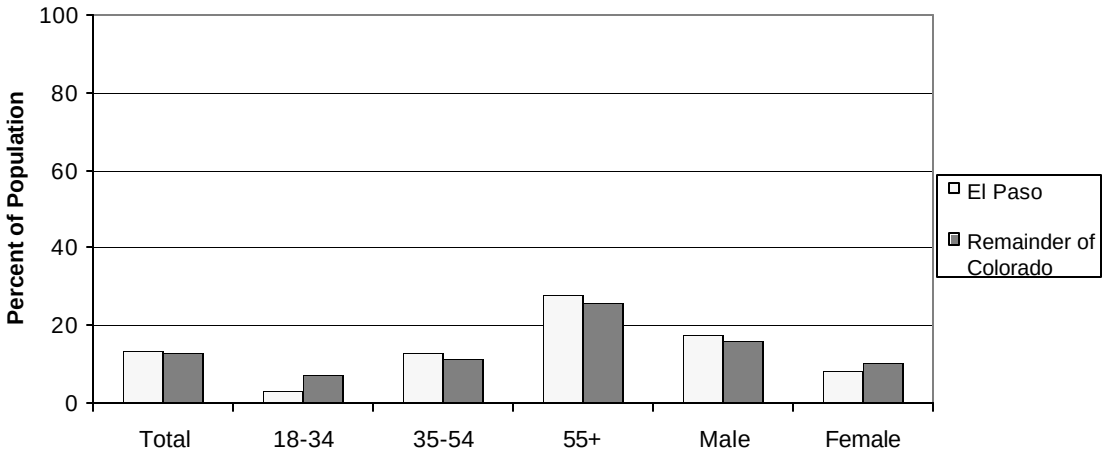


Figure 3. 12 Percent Wearing Wide-Brimmed Hat and Protective Clothing
By Region, Age Group, and Gender, 1998-2000 BRFSS

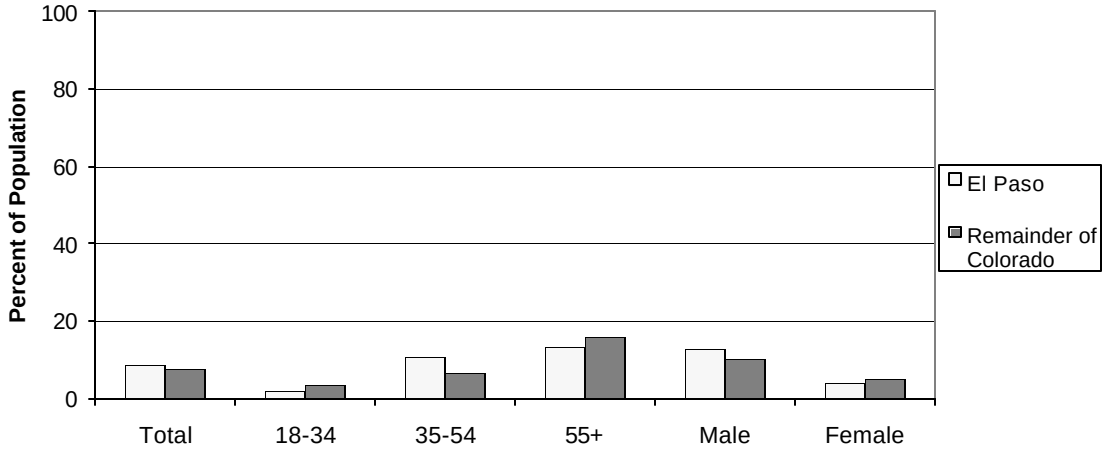


Table 3. 1 Age Groups by Region: Colorado BRFSS, 1998-2000

	18-24	25-34	35-44	45-54	55-64	65+
El Paso County	14.5	20.4	24.4	18.6	10.1	12.0
Remainder of State	13.3	20.7	22.8	19.4	10.7	13.1

Table 3. 2 Cancer-Related Behaviors by Region, Gender, and Age Group: Colorado BRFSS 1998-2000

	Total	18-34	35-54	55+	Male	Female
Percent overweight or obese (BMI >= 25.0)						
El Paso County [a, d]	50.8	38.2	58.1	56.6	58.5	42.4
Remainder of Colorado	48.2	39.0	51.6	55.8	57.4	38.8
Percent current smoker						
El Paso County	25.3	30.8	25.8	15.6	29.1	21.6
Remainder of Colorado	22.0	26.7	24.0	12.0	23.1	20.9
Percent current use of smokeless tobacco						
El Paso County	4.3	6.9	4.5	0.0	8.2	0.0
Remainder of Colorado	4.1	6.3	4.0	1.2	8.0	0.3
Percent reporting chronic drinking (consumed 60+ drinks in the past month)						
El Paso County	**1.4**	**0.7**	2.1	1.1	**1.8**	1.0
Remainder of Colorado	5.0	8.0	4.1	2.4	7.8	2.1
Percent of women ever having mammogram and clinical breast exam, 40 and older						
El Paso County	81.8	–	–	–	–	–
Remainder of Colorado	82.1	–	–	–	–	–
Percent of women having mammogram and clinical breast exam in past 2 years, 50 and older						
El Paso County	68.7	–	–	–	–	–
Remainder of Colorado	68.7	–	–	–	–	–
Percent of women ever having had a Pap test						
El Paso County	97.1	93.3	100.0	96.9	–	–
Remainder of Colorado	95.0	89.9	99.5	96.5	–	–
Percent of women having had a Pap test in past 3 years						
El Paso County [b]	87.3	89.6	92.2	74.9	–	–
Remainder of Colorado	82.7	86.9	87.8	69.5	–	–

Bold= difference between El Paso County and the remainder of the state is statistically significant using 95% confidence intervals

– = Number of respondents insufficient to provide reliable estimates

a = difference between age groups 18-34 and 35-54 is statistically significant using 95% confidence intervals

b = difference between age groups 35-54 and 55+ is statistically significant using 95% confidence intervals

c = difference between age groups 18-34 and 55+ is statistically significant using 95% confidence intervals

d = difference between males and females is statistically significant using 95% confidence intervals

Table 3.2 continued

	Total	18-34	35-54	55+	Male	Female
Percent ever having blood stool test, 50 and older						
El Paso County	48.7	–	–	–	42.3	55.1
Remainder of Colorado	49.3	–	–	–	43.7	54.1
Percent having blood stool test in the past year, 50 and older						
El Paso County	27.1	–	–	–	18.8	35.4
Remainder of Colorado	24.0	–	–	–	20.1	27.3
Percent ever having sigmoidoscopy/colonoscopy, 50 and older						
El Paso County	48.8	–	–	–	54.6	43.2
Remainder of Colorado	43.2	–	–	–	46.3	40.6
Percent having sigmoidoscopy/colonoscopy in past 5 years, 50 and older						
El Paso County	37.3	–	–	–	45.5	29.3
Remainder of Colorado	31.9	–	–	–	36.6	27.9
Percent always/nearly always using sun block SPF 15 or higher when out for more than an hour on a sunny summer day						
El Paso County	59.7	66.3	63.4	42.7	54.7	64.8
Remainder of Colorado	58.1	58.7	64.4	45.6	51.6	64.3
Percent always/nearly always wearing a wide-brimmed hat when out for more than an hour on a sunny summer day						
El Paso County [a, d]	28.7	15.4	36.1	32.4	37.5	19.6
Remainder of Colorado	31.2	19.2	32.8	45.8	41.8	20.8
Percent always/nearly always wearing protective clothing when out for more than an hour on a sunny summer day						
El Paso County [a, d]	13.2	3.0	13.0	27.7	17.7	8.4
Remainder of Colorado	13.1	7.0	11.2	25.8	16.0	10.3
Percent always/nearly always wearing a wide-brimmed hat and protective clothing when out for more than an hour on a sunny summer day						
El Paso County [a, c, d]	8.6	1.9	10.6	13.4	13.0	4.0
Remainder of Colorado	7.8	3.5	6.9	16.0	10.4	5.3

Bold= difference between El Paso County and the remainder of the state is statistically significant using 95% confidence intervals

– = Number of respondents insufficient to provide reliable estimates

a = difference between age groups 18-34 and 35-54 is statistically significant using 95% confidence intervals

b = difference between age groups 35-54 and 55+ is statistically significant using 95% confidence intervals

c = difference between age groups 18-34 and 55+ is statistically significant using 95% confidence intervals

d = difference between males and females is statistically significant using 95% confidence intervals

Section IV

Selected Findings by Cancer Site
El Paso County

Selected Findings by Cancer Site – El Paso County

All Cancers Combined

According to the Cancer Registry annual report, the cumulative risk of being diagnosed with cancer before age 85 in Colorado is 1 in 2 for men, and 1 in 3 for women.

Risk Factors

Factors contributing to cancer can be classified into three major groups: genetic, environmental, and behavioral (Colorado Cancer Prevention and Control Plan Advisory Committee, 1996). This report focuses mainly on behavioral factors. Studies suggest that 75-80 percent of cancer deaths are attributable to health behaviors, including diet, smoking, excessive alcohol intake, and reproductive and sexual history (National Cancer Advisory Board, 1994). Behaviors that contribute to late diagnosis of cancer, and thus a poorer prognosis, include delay in seeking medical care when cancer signs are present, and not participating in recommended screening protocols.

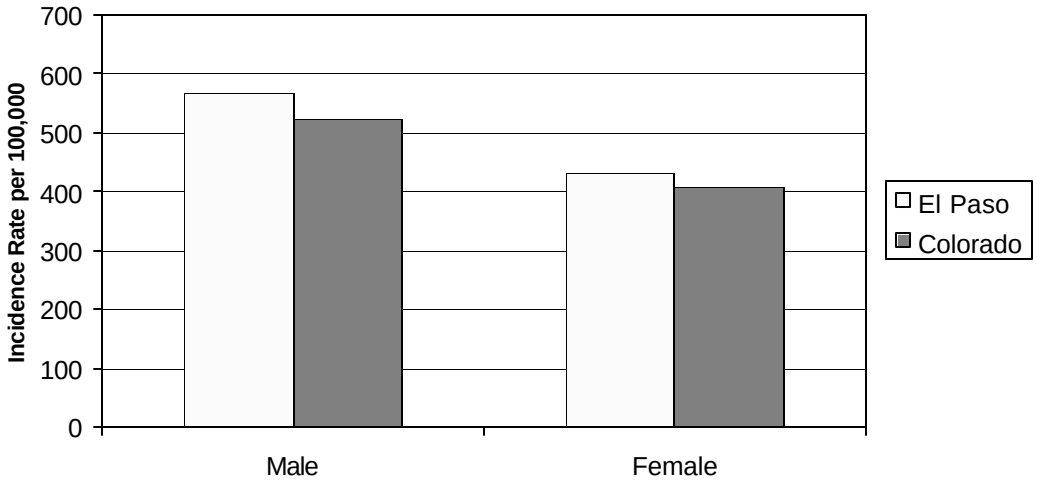
Prevention

The American Cancer Society (ACS) recommends a cancer-related checkup every three years for people aged 20-40 and every year for people aged 40 and over. Regular screening examinations can detect many cancers at earlier stages, improving the chances of treatment success. Adopting healthy behaviors, such as quitting smoking, eating healthier foods, and increasing physical activity may reduce one's chance of getting cancer. The ACS estimates that in 2002 approximately 170,000 cancer deaths will be due to tobacco use, and about one-third of all cancer deaths in 2002 will be related to nutrition, physical activity, and other lifestyle factors.

Incidence

During 1999 and 2000, 15,859 male and 15,632 female cancer cases were diagnosed in Colorado. Comparable statistics for El Paso County were 1858 male cases and 1867 female cases. The all cancers combined cancer incidence rate for El Paso County males was 8 percent higher than the state rate, which was statistically significant (see Figure 4.1). For females in El Paso County, the cancer incidence rate was about 6 percent higher, which was also statistically significant (see Table 7.1).

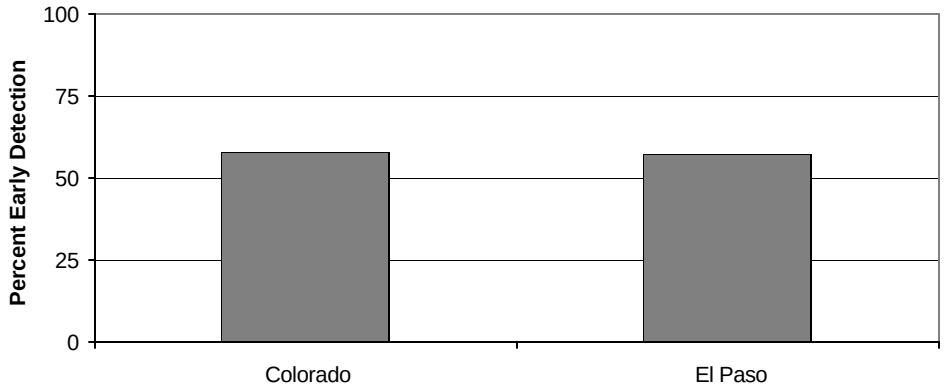
Figure 4. 1 All Cancers Combined – Average Annual Age-Adjusted Incidence Rate per 100,000 by Region and Sex, 1999-2000



Early Detection

Early cancer detection leads to better survival. In Colorado, during the 1999-2000 time period, 57.9 percent of cancer cases were detected early. As shown in Figure 4.2, the early detection percentage for El Paso County was similar to the state percentage (see Table 7.2).

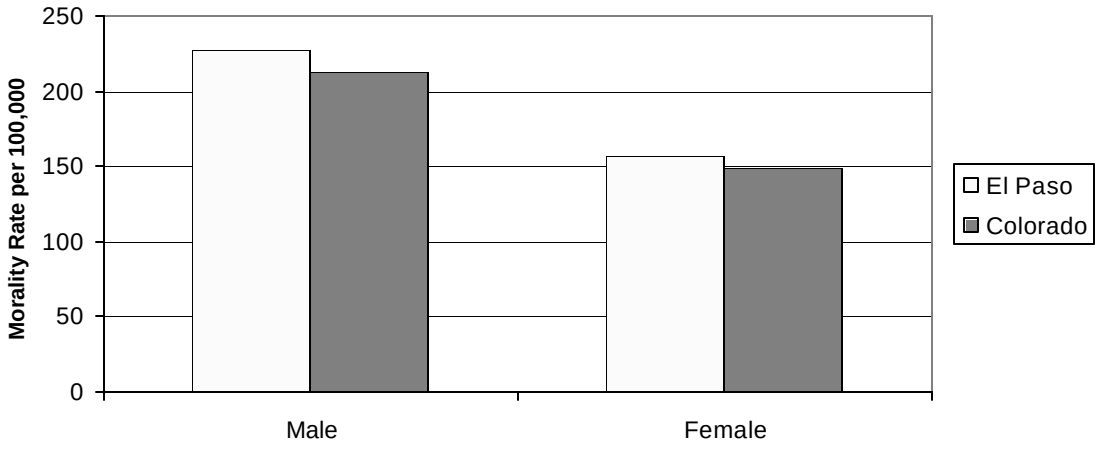
Figure 4. 2 All Cancers Combined – Percent "Early" Detection By County, 1999-2000



Mortality

During the 1998-1999 period there were 5,952 male cancer deaths and 5,676 female cancer deaths in Colorado, and 672 male cancer deaths and 658 female cancer deaths in El Paso County. The cancer mortality rates for males and females in El Paso County were similar to the state rates (see Figure 4.3 and Table 7.3).

Figure 4. 3 All Cancers Combined – Average Annual Age-Adjusted Mortality Rate per 100,000 by Region and Sex, 1998-1999



Colon and Rectal Cancer

The cumulative risk for Colorado men to be diagnosed with colon and rectal cancer before age 85 is 1 in 13, and the risk for Colorado women is 1 in 17. Colon and rectal cancer ranked third among the most commonly diagnosed cancers in Colorado men during the 1996-2000 time period, and second among Colorado women.

Risk Factors

Risk factors for colorectal cancer include a personal or family history of cancer or adenomas (a type of polyp) of the colon or rectum, a personal history of endometrial, ovarian, or breast cancer, and a personal history of longstanding ulcerative colitis. Additionally, smoking, excessive alcohol consumption, and characteristics of the average American diet (high fat and/or low fruit and vegetable consumption) are also associated with increased risk (Guide to Clinical Preventive Services).

Prevention

The American Cancer Society recommends that individuals over 50 years old have a yearly fecal occult blood test (FOBT), plus flexible sigmoidoscopy and digital rectal examination every five years, or colonoscopy and digital rectal examination every 10 years, or double-contrast barium enema and digital rectal examination every five to 10 years. The U.S. Preventive Services Task Force recommends screening for all persons aged 50 and older with annual FOBT and/or flexible sigmoidoscopy (time interval between exams unspecified). The Colorado Clinical Guidelines Collaborative suggests that persons with a higher than average risk for colorectal cancer, based on a family history, should have more intensive screening. Consumption of a diet low in meat, combined with a high fruit and vegetable diet, may decrease the risk of developing colorectal cancer. Some studies suggest that regular exercise can also decrease one's risk for developing colorectal cancer (Pate RR, et al.).

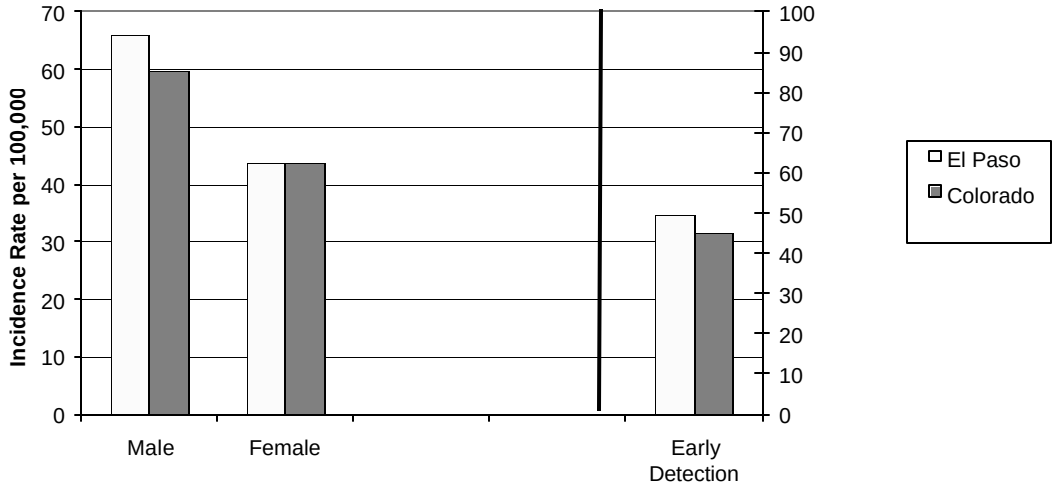
Incidence

During the period of 1999-2000, 1,717 males and 1,642 females in Colorado were diagnosed with colon and rectal cancer. Comparable statistics for El Paso County were 190 males and 179 females in the same time period. Although the male colorectal cancer incidence rate for El Paso County was 10 percent higher than the state rate, it was within expected statistical variation (see Figure 4.4). The female colorectal cancer incidence rate for El Paso County was the same as the state rate (see Table 7.4).

Early Detection

During the 1999-2000 period, 44.8 percent of colorectal cancers statewide and 49.3 percent in El Paso County were detected early (see Table 7.5).

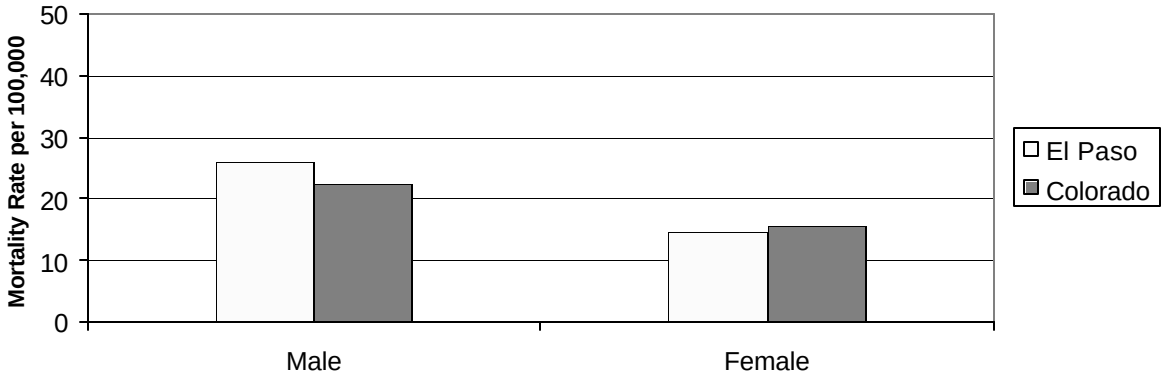
Figure 4. 4 Colon and Rectal Cancer Average Annual Age-Adjusted Incidence Rate and Percent "Early" Detection by Region, 1998-2000



Mortality

During the 1998-1999 period, Colorado had 624 male and 596 female deaths from colorectal cancer. El Paso County had 76 male and 59 female colorectal cancer deaths in the same period. The Colorado colorectal cancer mortality rate was 22.5 for males and 15.6 for females. The rate for males in El Paso County was 15 percent higher than the state rate, but this difference was within expected statistical variation. The rate for females in El Paso County was similar to the state rate (see Table 7.6).

Figure 4. 5 Colon and Rectal Cancer – Average Annual Age-Adjusted Mortality Rate per 100,000 by Region and Sex, 1998-1999



Lung Cancer

The cumulative risk of Colorado men being diagnosed with lung cancer before age 85 is 1 in 10, and the risk for Colorado women is 1 in 17. Lung cancer ranked second among the most commonly diagnosed cancers in Colorado men during the 1996-2000 time period, and third among Colorado women.

Risk Factors

The Colorado Cancer Prevention and Control Plan states that cigarette smoking is the predominant risk factor for lung cancer. Approximately 90 percent of lung cancer cases in men and 80 percent of cases in women are attributable to cigarette smoking. Individuals who smoke more than two packs a day have lung cancer mortality rates 15 to 25 times greater than do those individuals who have never smoked. Passive exposure to cigarette smoke increases the risk for nonsmokers. Other risk factors thought to be important in the development of lung cancer include exposure to industrial substances such as arsenic, certain organic chemicals, asbestos (especially for persons who smoke), and radiation exposure from occupational, medical, and environmental sources. Residential radon exposure may increase risk, especially in cigarette smokers.

Prevention

Lung cancer is largely preventable. An estimated 85 percent of all lung cancers in Colorado could be prevented if cigarette smoking were eliminated (Colorado Cancer Prevention and Control Plan Advisory Committee). Because symptoms often do not appear until the disease is in advanced stages, early detection of lung cancer is difficult. Precancerous cellular changes in bronchial tissues often return to normal in smokers who stop smoking. Chest x-rays, analysis of cell types in sputum, and fiber-optic examination of the bronchial passages assist diagnosis, but have not been shown to be useful as widespread screening procedures to detect early stage disease.

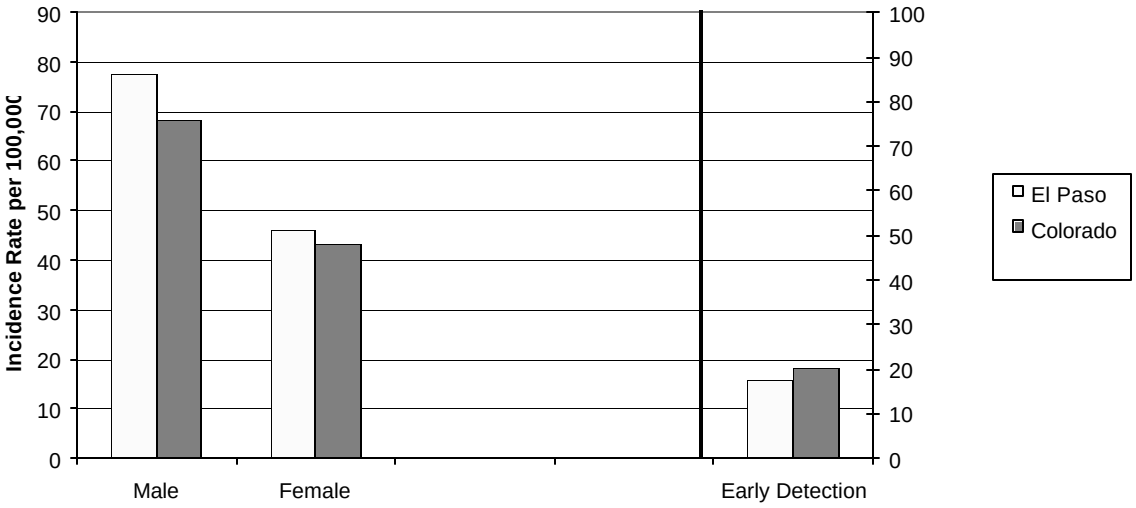
Incidence

During 1999-2000 in Colorado, 1,954 men and 1,595 women were diagnosed with lung cancer; in El Paso County 237 men and 189 women were diagnosed with lung cancer. The male lung cancer incidence rate for El Paso County was 13 percent higher than the state rate, and the female lung cancer incidence rate was similar to the state rate (see Table 7.7).

Early Detection

Because symptoms often do not appear until the disease is in an advanced stage, early detection of lung cancer is very difficult. In 1999-2000, only 20.2 percent of cases were detected early in Colorado, 17.5 percent in El Paso County (see Table 7.8).

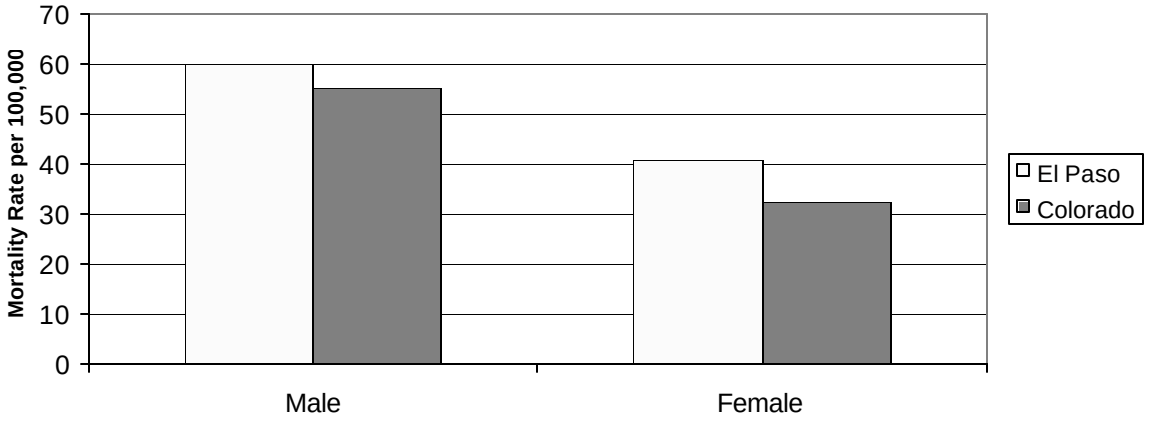
Figure 4. 6 Lung Cancer – Average Annual Age-Adjusted Incidence Rate and Percent "Early" Detection by Region, 1999-2000



Mortality

Lung cancer is the leading cause of cancer death in Colorado for both men and women. During the 1998-1999 time period, 1,552 men and 1,221 women died of lung cancer in Colorado, and 177 men and 169 women died of lung cancer in El Paso County. Figure 4.7 shows that the lung cancer mortality rates in El Paso County females was 25 percent higher than the state rate, which was statistically significant. Rates for males were similar between the two regions (see Table 7.9).

Figure 4. 7 Lung Cancer – Average Annual Age-Adjusted Mortality Rate per 100,000 by Region and Sex, 1998-1999



Melanoma

Melanoma is the most deadly type of skin cancer. Other types of skin cancer, basal or squamous cell cancers, are highly curable. Although representing only less than 5 percent of all skin cancers, melanoma accounts for the majority of deaths caused by skin cancer. The melanoma incidence rate in Colorado is increasing faster than most other major cancers. The cumulative risk of being diagnosed with melanoma before age 85 is 1 in 35 for men and 1 in 61 for women. Melanoma ranked fifth among the most commonly diagnosed cancers in Colorado men and women combined during the 1996-2000 time period.

Risk Factors

Excessive exposure to ultraviolet radiation (including natural sunlight and tanning booths) is the major risk factor for all skin cancers (U.S. Preventive Services Task Force, American Academy of Dermatology, Colorado Cancer Prevention and Control Plan Advisory Committee). Severe sunburn in childhood, fair complexion, and occupational exposure to coal tar, pitch, creosote, arsenic compounds, or radium are also considered risk factors for skin cancer.

Prevention

The U.S. Preventive Services Task Force recommends that the primary prevention of skin cancer involve limiting sun exposure especially during midday, avoiding tanning facilities, wearing protective clothing, and applying sunscreen preparations. The American Cancer Society recommends a monthly skin self-examination for all adults and a skin examination by a physician every three years in persons 20-39 years old, and annually in persons 40 years and older.

Early detection of melanoma is critical. Over 90 percent of melanomas that arise in the skin can be recognized with the naked eye. Melanomas often start as small, mole-like growths that increase in size, change color, become ulcerated, and bleed easily. Skin changes described in the "ABCD" rule require further diagnostic evaluation:

- A is for Asymmetry - one-half of the mole does not match the other.
- B is for Border - the edges are ragged, notched, or blurred.
- C is for Color - the pigmentation is not uniform.
- D is for Diameter - greater than 6 millimeters, about the size of a pencil eraser.

Any sudden or progressive increase in the size of a mole is also a cause for concern.

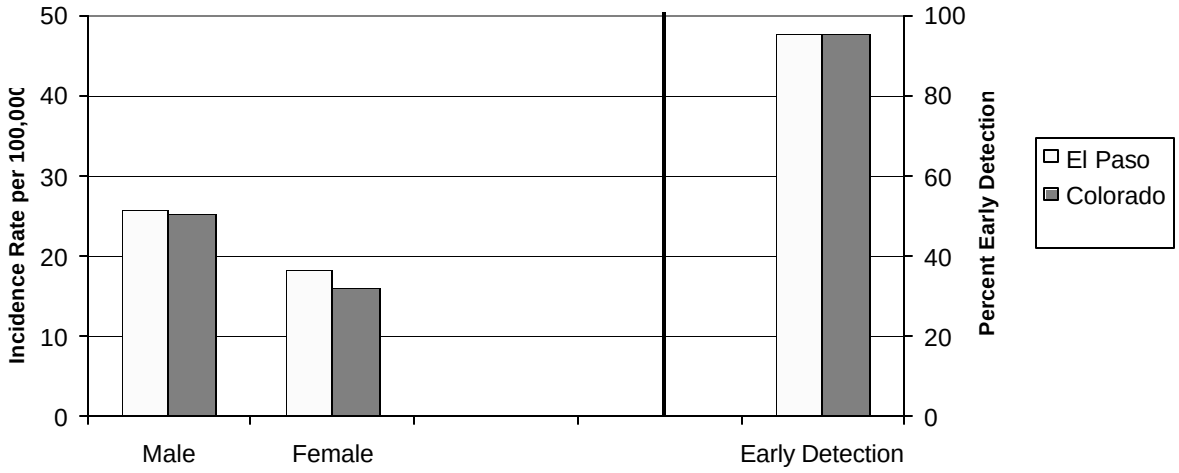
Incidence

During the 1999-2000 time period, 843 Colorado men and 641 Colorado women were diagnosed with melanoma. The comparable statistics for El Paso County were 97 men and 85 women. The male melanoma incidence rate in El Paso County was similar to the state rate, and the female incidence rate was 14 percent higher. This difference was within expected statistical variation (see Table 7.10).

Early Detection

During the 1999-2000 time period, 95.1 percent of melanoma cases were detected early in Colorado; El Paso County showed a similar percentage (see Table 7.11).

Figure 4. 8 Melanoma – Average Annual Age-Adjusted Incidence Rate and Percent "Early" Detection By Region, 1999-2000



Mortality

The 1998-1999 melanoma mortality rate for males in El Paso County was 32 percent higher than the state rate. This rate was calculated on a small number of deaths and was within expected statistical variation. The number of deaths in El Paso County females was too small to perform reliable statistical tests (see Table 7.12).

Female Breast Cancer

The cumulative risk for Colorado women being diagnosed with breast cancer before age 85 is 1 in 7. Breast cancer ranked first among the most commonly diagnosed cancers in Colorado women during the 1996-2000 time period.

Risk Factors

Breast cancer risk increases with age. A personal or family history of breast cancer is the most established risk factor. Increased risk for breast cancer has been associated with first full-term pregnancy after age 30, and also with early menarche and late menopause (the Colorado Cancer Prevention and Control Plan Advisory Committee, U.S. Preventive Service Task Force, the American Cancer Society). Obesity, heavy alcohol use, high-fat diets, and estrogen replacement therapy have been suggested as possible risk factors for breast cancer (Clinical

Oncology). Despite the large number of known and potential risk factors, few are strongly associated with the development of breast cancer, and no single factor or combination of factors can predict the occurrence of breast cancer in any one individual. The key to reducing breast cancer mortality is early detection through screening (American Cancer Society).

Prevention

The American College of Radiology, the American Medical Association, and the American College of Obstetricians and Gynecologists recommend that women aged 40 and over have a screening mammogram every one to two years, and an annual clinical breast exam. The American Cancer Society recommends that women aged 20-39 do a breast self-exam each month and have a clinical breast exam by a health care professional every three years; and that women aged 40 and over do a breast self-exam each month and have a mammogram and a clinical breast exam every year.

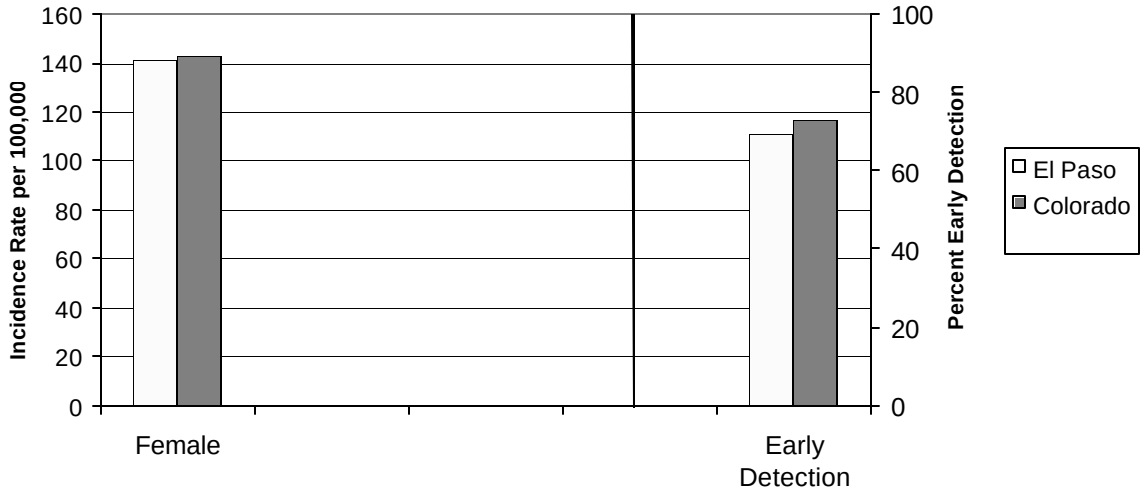
Incidence

In Colorado during the 1999-2000 time period, 5,501 new female breast cancers were diagnosed; 621 were diagnosed in El Paso County women. The female breast cancer incidence rate for El Paso County was similar to the state rate (see Figure 4.9 and Table 7.13).

Early Detection

Figure 4.9 shows that in Colorado during the 1999-2000 time period, 72.7 percent of female breast cancers were detected early. In El Paso County, a similar proportion of female breast cancer cases, 69.4 percent, were detected early (see Table 7.14).

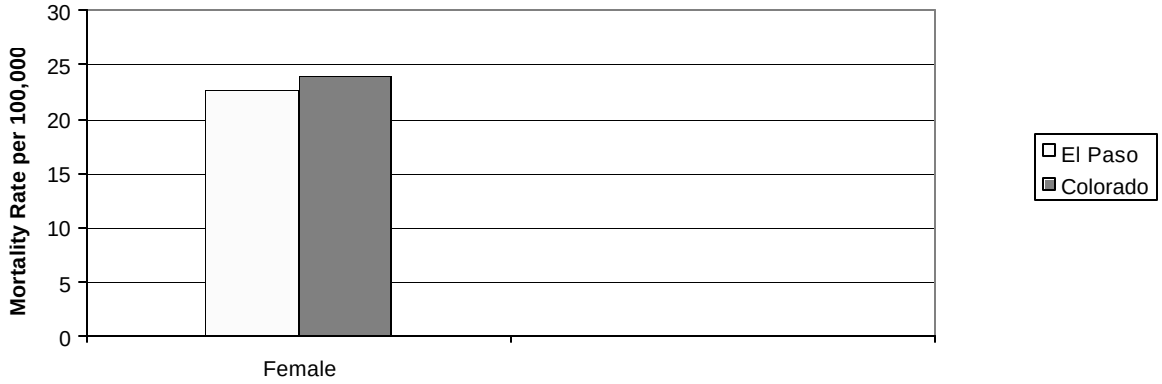
Figure 4. 9 Female Breast Cancer – Average Annual Age-Adjusted Incidence Rate and Percent "Early" Detection By Region, 1999-2000



Mortality

During the 1998-1999 time period, 932 Colorado women died of breast cancer while 98 El Paso County women died of breast cancer in the same time period. The female breast cancer mortality rate in El Paso County was similar to the state rate (see Figure 4.10 and Table 7.15).

Figure 4. 10 Female Breast Cancer – Average Annual Age-Adjusted Mortality Rate per 100,000 by Region, 1998-1999



Invasive Cervical Cancer

The cumulative risk of Colorado women being diagnosed with invasive cervical cancer before age 85 is 1 in 140. Invasive cervical cancer ranked eleventh among the most commonly diagnosed cancers in Colorado women during the 1996-2000 time period.

Risk Factors

Multiple sex partners, younger age at first intercourse, a higher number of pregnancies, sexually transmitted infections with certain types of human papilloma virus, and maternal use of diethylstilbestrol (DES) during pregnancy raise the risk for cervical cancer. Smoking and long-term use of oral contraceptives may also increase risk (Colorado Cancer Prevention and Control Plan Advisory Committee).

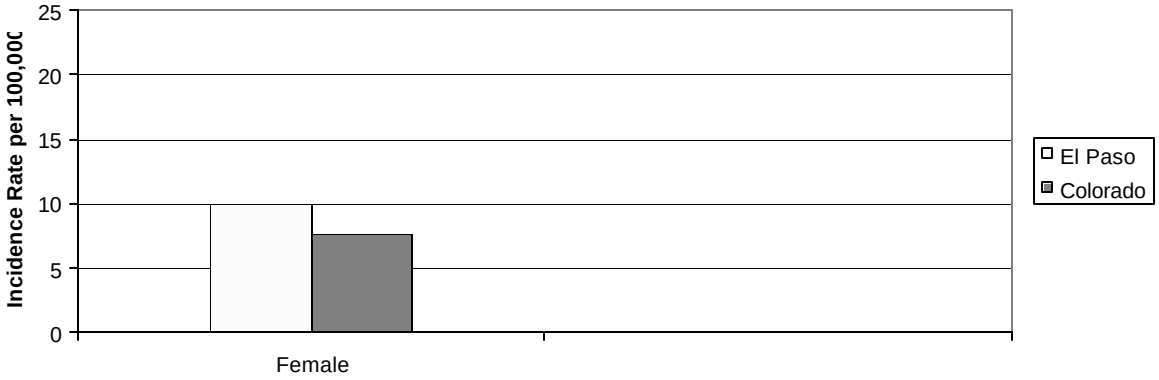
Prevention

The American Cancer Society and the National Cancer Institute recommend pelvic exams every one to three years for women aged 18 to 40 and for sexually active women younger than age 18. Annual exams are recommended for women after age 40. Women should have Papanicolaou tests (Pap) at least every one to three years after three negative annual tests. The U.S. Preventive Services Task Force recommends that Pap tests should begin with the onset of sexual activity and should be repeated every one to two years at the physician's discretion. Because cervical cancer has been linked to sexually transmitted infections, use of barrier methods of contraception and involvement with fewer sex partners may decrease the risk of developing cervical cancer.

Incidence

In Colorado there were 314 invasive cervical cases diagnosed during the 1999-2000 time period; 50 cases were diagnosed in El Paso County. The El Paso County cervical cancer incidence rate was 30 percent higher than the state rate, but this difference was within expected statistical variation (see Figure 4.11 and Table 7.16).

Figure 4. 11 Invasive Cervical Cancer – Average Annual Age-Adjusted Incidence Rate per 100,000 by Region, 1999-2000



Early Detection

Early detection percentages were not calculated for cervical cancer because in-situ cervical cancer is not reportable to the Colorado Central Cancer Registry.

Mortality

The cervical cancer mortality rate for El Paso County was 20 percent higher than the state rate, but this was based on small case counts and was within expected statistical variation (see Table 7.18).

Prostate Cancer

The cumulative risk of Colorado men being diagnosed with prostate cancer before age 85 is 1 in 5. Prostate cancer ranked first among the most commonly diagnosed cancers in Colorado men during the 1996-2000 time period.

Risk Factors

Incidence increases with age (especially after age 60). Both familial and environmental factors may contribute to increased risk for prostate cancer. Studies suggest that a family history of prostate cancer in a first-degree relative doubles one's risk. Suspected environmental risk factors include occupational exposure to cadmium, work in rubber manufacturing, and farming. Epidemiologic evidence also suggests that a diet high in fat, particularly animal or saturated fat, increases the risk of prostate cancer (American Cancer Society).

Prevention

The American Cancer Society recommends that men age 50 and older that have at least a 10-year life expectancy should talk with their health care professional about having a digital rectal exam of the prostate gland and a prostate-specific antigen (PSA) blood test every year. Men who are at high risk for prostate cancer (black men or men who have a history of prostate cancer in close family members) should consider beginning these tests at an earlier age. The PSA test measures the blood levels of prostate specific antigen, a protein secreted by prostate cells. In conjunction with a digital rectal exam, the PSA test is a valuable tool for detecting prostate cancer at a very early stage.

Incidence

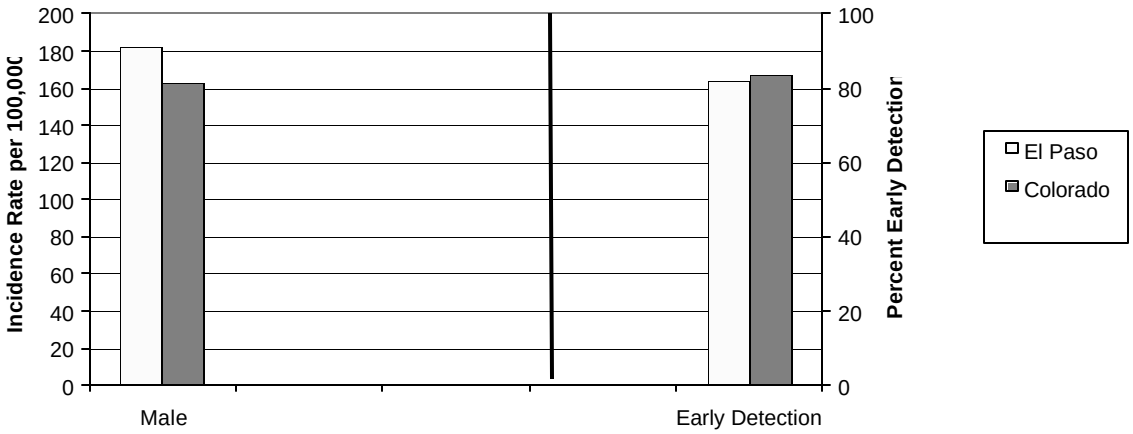
According to the Cancer Registry annual report, prostate cancer incidence rose sharply in Colorado from the late 1980's to 1992, with a similarly sharp drop in rates from 1992 to 1998. This phenomenon has been attributed to changes in PSA screening rates. As the PSA test was widely adopted in the late 1980's, more prostate cancer cases were diagnosed at an earlier stage than they otherwise would have been. Once this pool of cases was detected, the incidence rate decreased to its earlier level and the average annual incidence rate has been fairly consistent since 1998.

During the 1999-2000 time period, 4,847 new cases were detected in Colorado with 589 cases diagnosed in El Paso County. The prostate cancer incidence rate in El Paso County was 182.2 per 100,000, which was statistically significantly higher than the state rate of 162.5 (see Figure 4.12 and Table 7.19).

Early Detection

In Colorado during the 1999-2000 time period, 83.4 percent of prostate cancers were detected at early stages, and 81.9 percent of the cancers were detected early in El Paso County (see Table 7.20).

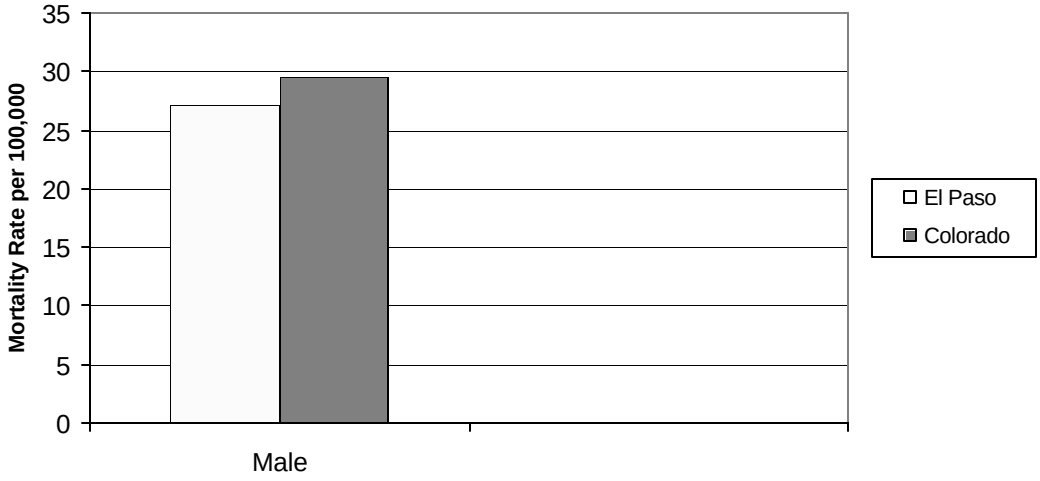
Figure 4. 12 Prostate Cancer – Average Annual Age-Adjusted Incidence Rate and Percent Early Detection by Region, 1999-2000



Mortality

Figure 4.12 shows that the El Paso County prostate cancer mortality rate was similar to the state rate for 1998-1999 (see Table 7.21).

Figure 4. 13 Prostate Cancer – Average Annual Age-Adjusted Mortality Rate per 100,000 by Region, 1998-1999



Section V

Cancer-Related Behaviors Pueblo County

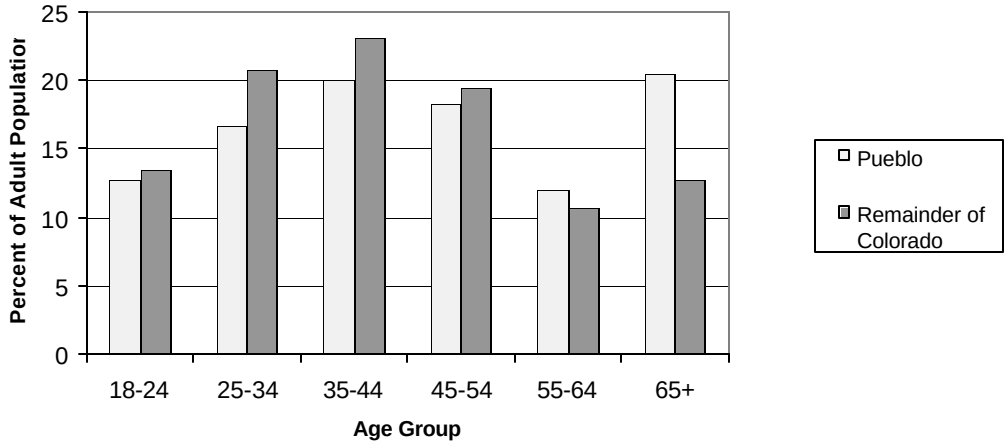
Cancer-Related Behaviors – Pueblo County

Two counties in Colorado comprise the areas described in this report. Although not true of all counties, El Paso and Pueblo counties typically have sufficient numbers of respondents to provide reliable estimates of health related behaviors. Data from the 1998, 1999, and 2000 BRFSS surveys were combined to provide the information for this report. This section summarizes the selected findings of these surveys for Pueblo County only. Although reliable estimates are available at the county level, several group-specific data points did not produce reliable estimates for Pueblo County and are not displayed in Table 5.2. Detailed BRFSS data are listed in tables at the end of the section.

Population by Age Group

As seen in Figure 5.1, the population distributions of Pueblo County and the state were mostly similar. Pueblo County does have a higher proportion of people aged 65 and older than the remainder of the state (see Table 5.1).

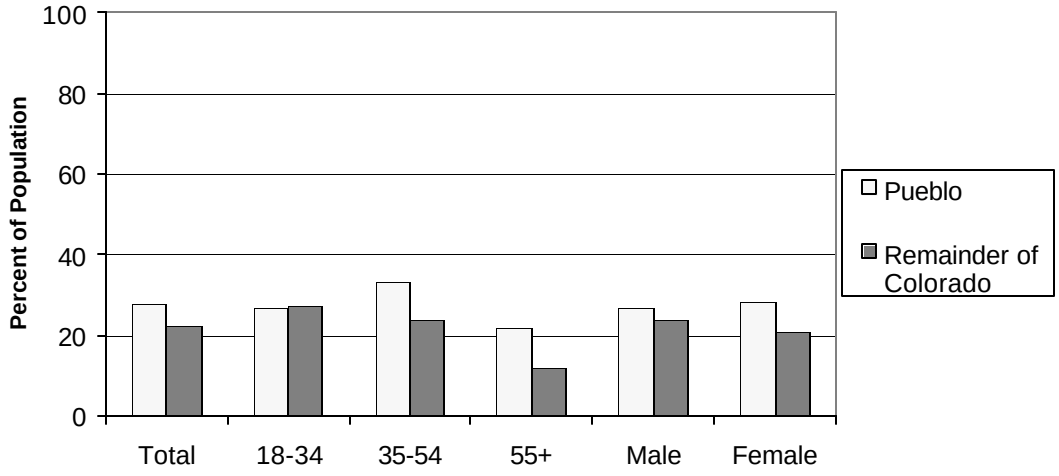
Figure 5. 1 Population Proportions by Age Group and Region, 1998-2000 BRFSS



Current Smoker

Cigarette smoking increases risk for both heart disease and lung cancer, and has been linked as well to oral, esophageal, pancreatic, cervical, kidney, colon, and bladder cancer. Current smokers were identified as those respondents who had smoked at least 100 cigarettes in their lives and were currently smoking at the time of the survey. As seen in Figure 5.2, the 1998-2000 BRFSS surveys found that the prevalence of current smoking among people in Pueblo County was slightly higher than in rest of the state, but the difference was within expected statistical variation. The groups that had the greatest differences were people aged 35-54, people aged 55 and older, and females.

Figure 5. 2 Percent Current Smoker
By Region, Age Group, and Gender, 1998-2000 BRFSS



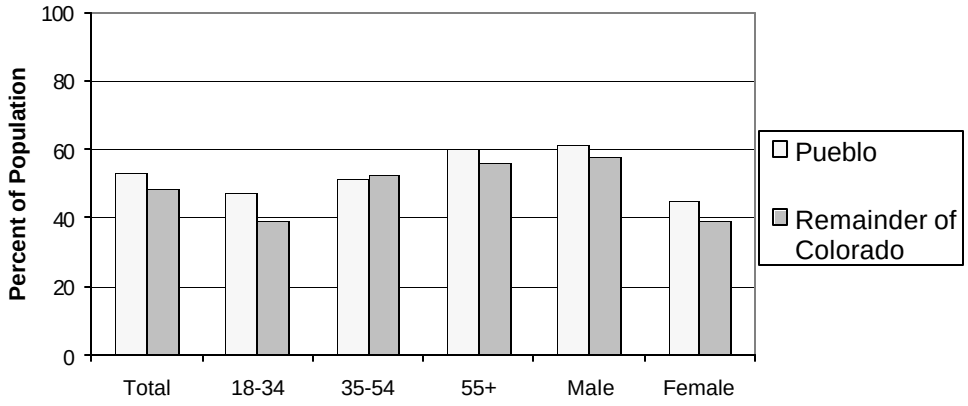
Chronic Drinking

Frequent alcohol use is a major cause of both social and medical problems. The American Cancer Society estimates that in the U.S. in 2002, 19,000 cancer deaths may be due to excessive alcohol use. Excessive alcohol use is a cause of many types of cancers: oral cavity, pharynx, larynx, esophageal, and liver. Excessive alcohol consumption increases the risk of breast and colorectal cancers. The BRFSS defines chronic drinking as consuming 60 or more drinks per month. In Pueblo County, the prevalence of chronic drinking was 2.1 percent compared to 4.5 percent in the remainder of the state. While the prevalence was lower in Pueblo County, the difference was within expected statistical variation (see Table 5.2).

Overweight

Being overweight is considered a risk factor for heart disease, diabetes, and some cancers, such as breast, endometrium, colon, and kidney. Overweight is defined as a body mass index (BMI) of greater than or equal to 25.0. The formula for calculating BMI is $\frac{(weight\ in\ kilograms)}{(height\ in\ meters)^2}$. Figure 5.3 depicts the percentages of overweight or obese people in Pueblo County and the remainder of the state. A comparison between Pueblo County and the state showed that Pueblo County had overweight percentages slightly higher than the state overall. Although people aged 18-34 and females showed the greatest differences, none of the differences between the two areas was statistically significant (see Table 5.2).

Figure 5. 3 Percent Overweight or Obese (BMI >=25.0)
By Region, Age Group, and Gender, 1998-2000 BRFSS



Current User of Smokeless Tobacco

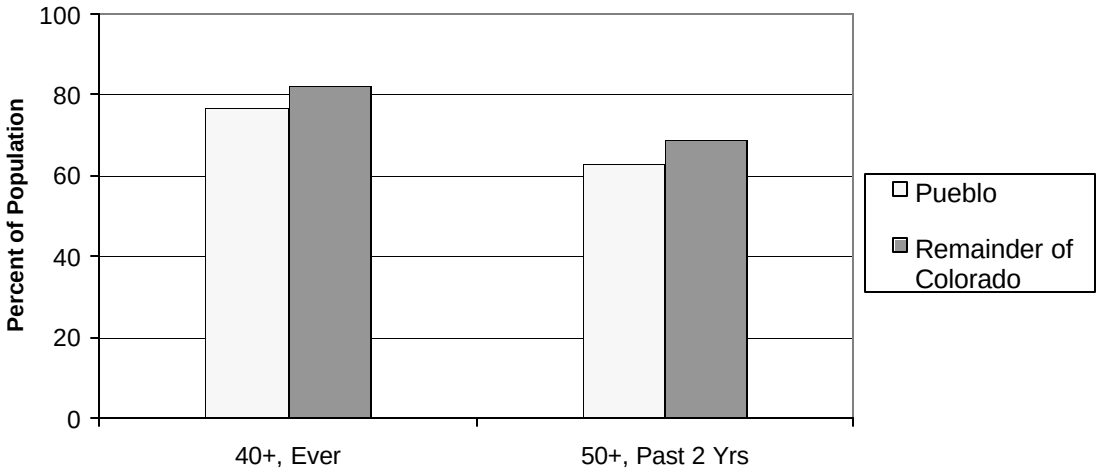
In 1986, the U.S. Surgeon General concluded that the use of smokeless tobacco can cause cancer as well as a number of non-cancerous oral conditions, and can lead to nicotine addiction and dependence (American Cancer Society). A current user of smokeless tobacco is one who currently uses any smokeless tobacco products such as chewing tobacco or snuff. The overall prevalence of smokeless tobacco use was generally low, however, approximately 14 percent of males in Pueblo County reported smokeless tobacco use compared to 8 percent of males in the remainder of the state (see Table 5.2).

Mammogram Screening and Pap Test

Regular cancer screening is recommended as the major prevention method for breast and cervical cancers. As shown in Figure 5.4, the BRFSS survey data found that women aged 40 and over in Pueblo County were less likely than women statewide to have ever had a mammogram and a clinical breast exam. There was a similar difference in women aged 50 and over in reporting having had mammograms and clinical breast exams in the past two years.

Women in Pueblo County were as likely as women statewide to have ever had a Pap test, and were as likely to have had a Pap test in the past three years. In both areas, the percentages of women having a Pap test in the past three years fall short of the Year 2010 goal of 90 percent (see Table 5.2).

Figure 5. 4 Percent of Women Having Both Mammograms and CBE's By Age Group, 1998-2000 BRFSS



Colorectal Cancer Screening

The American Cancer Society recommends that individuals aged 50 and over have a yearly fecal occult blood test (FOBT) and a sigmoidoscopy every 5 years. Overall, Pueblo County residents aged 50 and over did significantly worse than people in the remainder of the state in getting blood stool tests. Twenty-nine percent of Pueblo residents had ever had a blood stool test compared to almost 50 percent in the state. Substantially fewer people had a blood stool test in the past year – 11.8 percent in Pueblo County and 24.6 percent in the state.

In people aged 50 and older, Pueblo County residents were less likely to have ever had a sigmoidoscopy or colonoscopy and were less likely to have had the tests in the past five years. These differences were not statistically significant, but the percentages in both regions were only about half the way to the Year 2010 goal of 60 percent (see Table 5.2).

Sun Protection

The principal cause of skin cancer is overexposure to sunlight, especially overexposure that results in sunburn and blistering. Melanoma is the most serious type of skin cancer, and in Colorado, the melanoma incidence rate is increasing more rapidly than for any other major cancer. The American Cancer Society and the Centers for Disease Control and Prevention both recommend that when outdoors, individuals use a sunscreen SPF 15 or higher and wear protective clothing such as a wide-brimmed hat, a long-sleeved shirt, and long pants.

Figures 5.5-5.8 depict the sun protection behavior data. The 1998-2000 BRFSS data showed that 58.8 percent of people in the remainder of the state reported that they always or nearly always used SPF 15 or higher sunscreen when being out for more than an hour on a sunny summer day. Individuals in Pueblo County reported significantly less sunscreen use and this was particularly evident in males. Females were more likely to use sunscreen than males in each of the areas.

Pueblo County residents reported higher percentages of wearing hats and protective clothing, either singly or in combination. In Pueblo County, people were significantly more likely to always or nearly always wear both hats and protective clothing when being out on a sunny summer day for more than an hour than people in the remainder of the state (see Table 5.2).

Figure 5. 5 Percent Using Sunscreen SPF 15 or Higher
By Region, Age Group, and Gender, 1998-2000 BRFSS

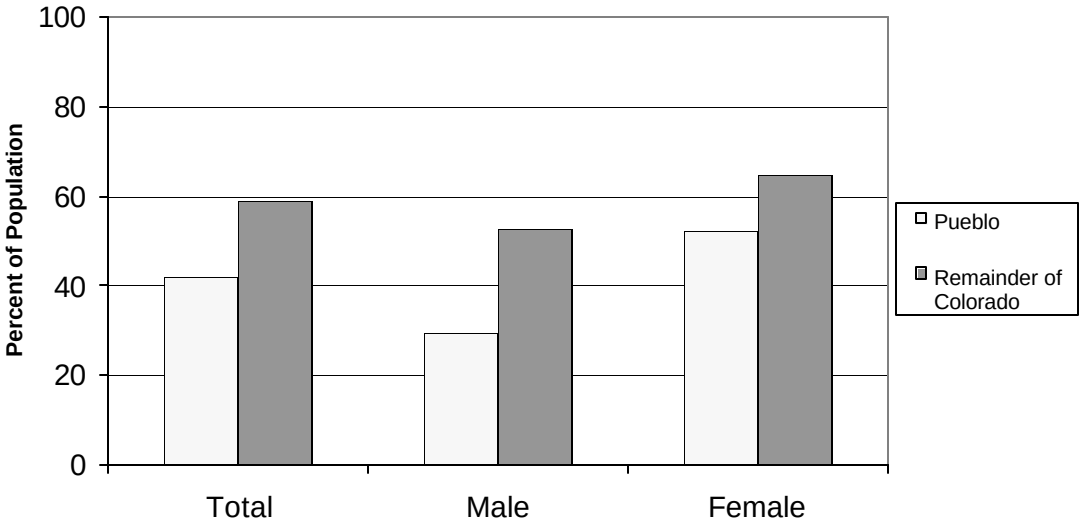


Figure 5. 6 Percent Wearing Wide -Brimmed Hat
By Region, Age Group, and Gender, 1998-2000 BRFSS

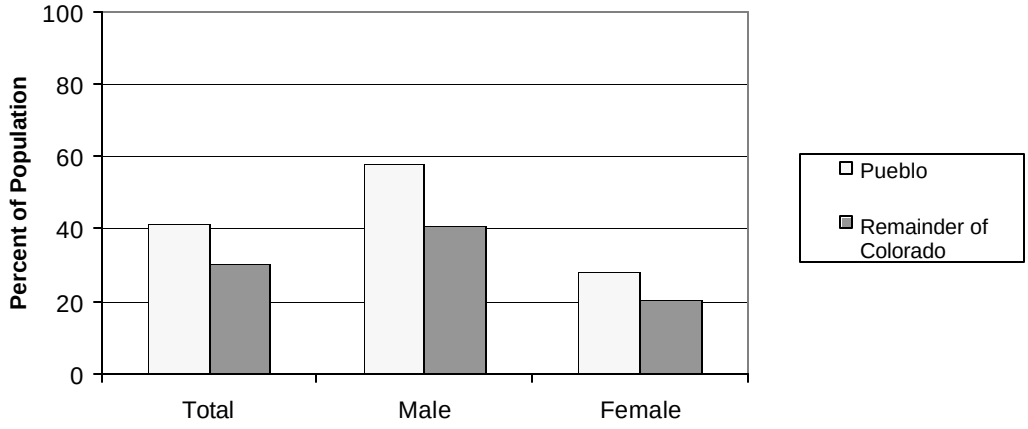


Figure 5. 7 Percent Wearing Protective Clothing
By Region, Age Group, and Gender, 1998-2000 BRFSS

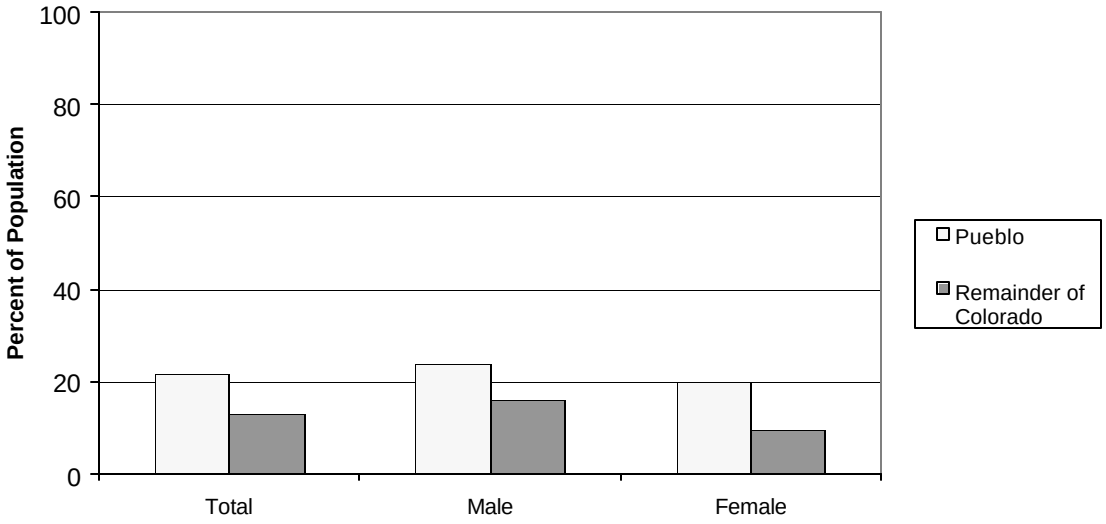


Figure 5. 8 Percent Wearing Wide-Brimmed Hat and Protective Clothing
By Region, Age Group, and Gender, 1998-2000 BRFSS

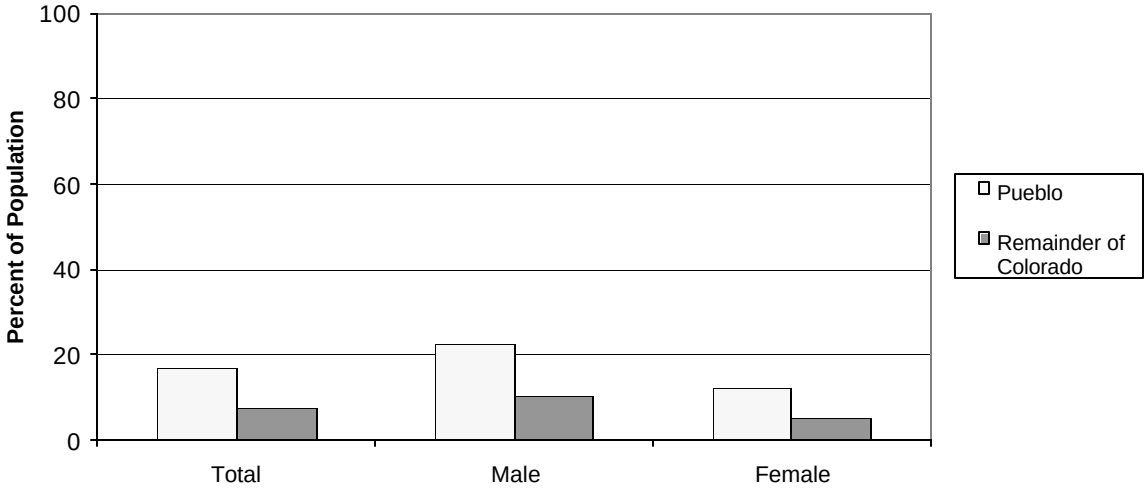


Table 5. 1 Age Groups by Region: Colorado BRFSS 1998-2000

	18-24	25-34	35-44	45-54	55-64	65+
Pueblo County	12.7	16.6	20.0	18.3	12.0	20.5
Remainder of Colorado	13.5	20.8	23.1	19.4	10.6	12.7

Table 5. 2 Cancer-Related Behaviors by Region, Gender, and Age Group: Colorado BRFSS 1998-2000

	Total	18-34	35-54	55+	Male	Female
Percent overweight or obese (BMI >= 25.0)						
Pueblo County	52.9	47.3	51.3	60.2	61.3	44.7
Remainder of Colorado	48.4	38.9	52.3	55.8	57.6	39.0
Percent current smoker						
Pueblo County	27.4	26.8	33.1	21.5	26.6	28.2
Remainder of Colorado	22.2	27.2	23.9	12.0	23.7	20.8
Percent chronic drinking (consuming 60+ drinks past month)						
Pueblo County	2.1					
Remainder of Colorado	4.5					
Percent current use of smokeless tobacco						
Pueblo County	6.1	–	–	–	13.7	0.0
Remainder of Colorado	4.1	–	–	–	8.0	0.3
Percent of women ever having mammogram and clinical breast exam, 40 and older						
Pueblo County	76.9	–	–	–	–	–
Remainder of Colorado	82.3	–	–	–	–	–
Percent of women having mammogram and clinical breast exam in past 2 years, 50 and older						
Pueblo County	63.1	–	–	–	–	–
Remainder of Colorado	68.8	–	–	–	–	–
Percent of women ever having had a Pap test						
Pueblo County	96.7	–	–	–	–	–
Remainder of Colorado	95.5	–	–	–	–	–
Percent of women having had a Pap test in past 3 years						
Pueblo County	81.1	–	–	–	–	–
Remainder of Colorado	83.3	–	–	–	–	–

Bold= difference between Pueblo County and the remainder of the state is statistically significant using 95% confidence intervals

– = Number of respondents insufficient to provide reliable estimates

Table 5.2 continued

	Total	18-34	35-54	55+	Male	Female
Percent ever having blood stool test, 50 and older						
Pueblo County	**29.0**	–	–	–	–	–
Remainder of state	49.9	–	–	–	–	–
Percent having blood stool test in the past year, 50 and older						
Pueblo County	**11.8**	–	–	–	–	–
Remainder of state	24.6	–	–	–	–	–
Percent ever having sigmoidoscopy/colonoscopy, 50 and older						
Pueblo County	34.7	–	–	–	–	–
Remainder of state	44.2	–	–	–	–	–
Percent having sigmoidoscopy/colonoscopy in past 5 years, 50 and older						
Pueblo County	25.8	–	–	–	–	–
Remainder of state	32.8	–	–	–	–	–
Percent always/nearly always using sun block SPF 15 or higher when out for more than an hour on a sunny summer day						
Pueblo County	**41.9**	–	–	–	**29.3**	52.3
Remainder of state	58.8	–	–	–	52.8	64.7
Percent always/nearly always wearing a wide-brimmed hat when out for more than an hour on a sunny summer day						
Pueblo County [d]	41.6	–	–	–	**58.0**	28.0
Remainder of state	30.5	–	–	–	40.8	20.4
Percent always/nearly always wearing protective clothing when out for more than an hour on a sunny summer day						
Pueblo County	21.6	–	–	–	23.7	19.8
Remainder of state	12.8	–	–	–	15.9	9.7
Percent always/nearly always wearing a wide-brimmed hat and protective clothing when out for more than an hour on a sunny summer day						
Pueblo County	**16.6**	–	–	–	22.4	11.9
Remainder of state	7.6	–	–	–	10.3	4.9

Bold= difference between Pueblo County and the remainder of the state is statistically significant using 95% confidence intervals

– = Number of respondents insufficient to provide reliable estimates

a = difference between age groups 18-34 and 35-54 is statistically significant using 95% confidence intervals

b = difference between age groups 35-54 and 55+ is statistically significant using 95% confidence intervals

c = difference between age groups 18-34 and 55+ is statistically significant using 95% confidence intervals

d = difference between males and females is statistically significant using 95% confidence intervals

Section VI

Selected Findings by Cancer Site Pueblo County

Selected Findings by Cancer Site – Pueblo County

All Cancers Combined

According to the Cancer Registry annual report, the cumulative risk of being diagnosed with cancer before age 85 in Colorado is 1 in 2 for men, and 1 in 3 for women.

Risk Factors

Factors contributing to cancer can be classified into three major groups: genetic, environmental, and behavioral (Colorado Cancer Prevention and Control Plan Advisory Committee, 1996). This report focuses mainly on behavioral factors. Studies suggest that 75-80 percent of cancer deaths are attributable to health behaviors, including diet, smoking, excessive alcohol intake, and reproductive and sexual history (National Cancer Advisory Board, 1994). Behaviors that contribute to late diagnosis of cancer, and thus a poorer prognosis, include delay in seeking medical care when cancer signs are present, and not participating in recommended screening protocols.

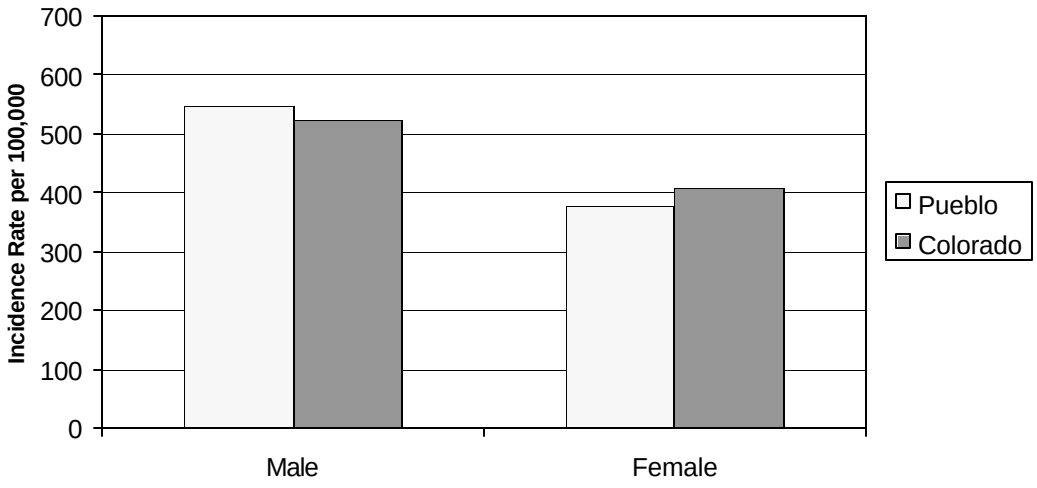
Prevention

The American Cancer Society (ACS) recommends a cancer-related checkup every three years for people aged 20-40 and every year for people aged 40 and over. Regular screening examinations can detect many cancers at earlier stages, improving the chances of treatment success. Adopting healthy behaviors, such as quitting smoking, eating healthier foods, and increasing physical activity may reduce one's chance of getting cancer. The ACS estimates that in 2002, approximately 170,000 cancer deaths will be due to tobacco use, and about one-third of all cancer deaths in 2002 will be related to nutrition, physical activity, and other lifestyle factors.

Incidence

During 1999 and 2000, 15,859 male and 15,632 female cancer cases were diagnosed in Colorado. Comparable statistics for Pueblo County were 754 male cases and 626 female cases. The incidence rate for males was similar to the state rate while the female rate was 8 percent lower than the state rate. This difference was statistically significant (see Figure 6.1 and Table 7.1).

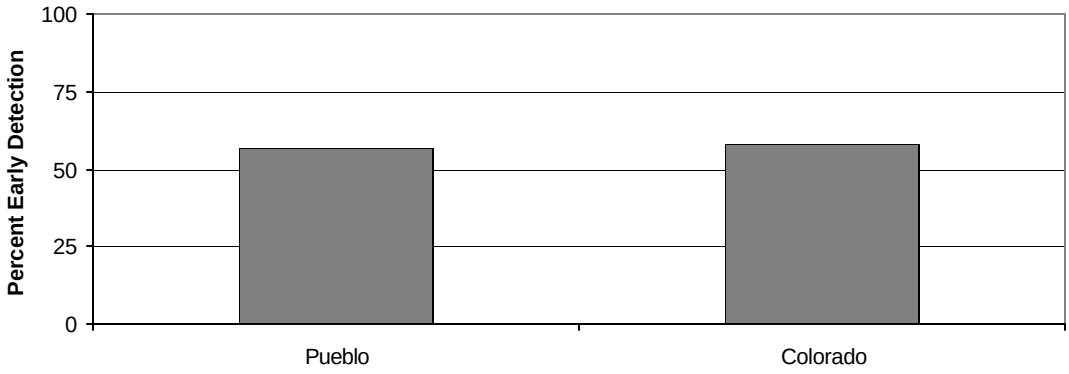
Figure 6. 1 All Cancers Combined – Average Annual Age-Adjusted Incidence Rate per 100,000 by Region and Sex, 1999-2000



Early Detection

Early cancer detection leads to better survival. In Colorado, during the 1999-2000 time period, 57.9 percent of cancer cases were detected early. As shown in Figure 6.2, the early detection percentage for Pueblo County was similar to the state percentage (see Table 7.2).

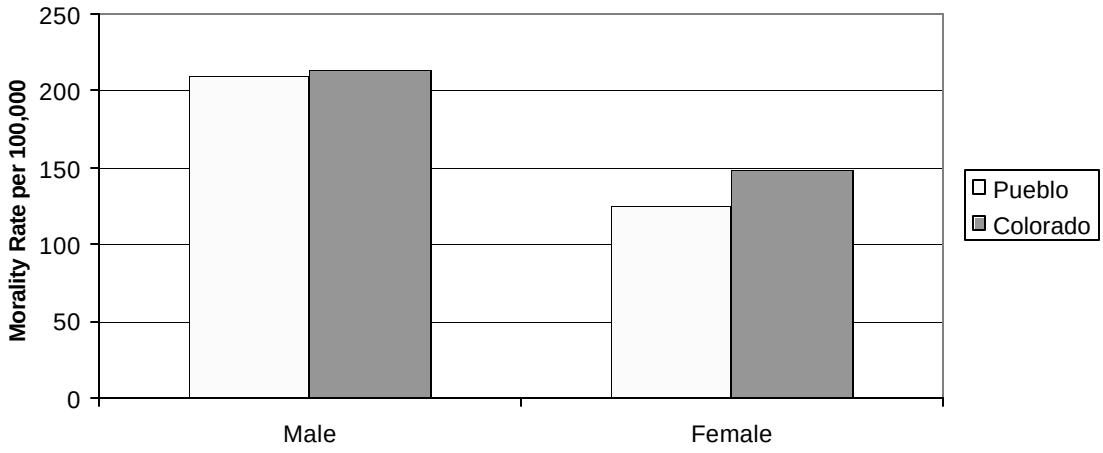
Figure 6. 2 All Cancers Combined – Percent "Early" Detection By Region, 1999-2000



Mortality

During the 1998-1999 period there were 5,952 male cancer deaths and 5,676 female cancer deaths in Colorado, and 281 male cancer deaths and 222 female cancer deaths in Pueblo County. The mortality rate for males in Pueblo County was similar to the state rate while the female mortality rate was 16 percent lower than the state rate. This difference was statistically significant (see Figure 6.3 and Table 7.3).

Figure 6. 3 All Cancers Combined – Average Annual Age-Adjusted Mortality Rate per 100,000 by Region and Sex, 1998-1999



Colon and Rectal Cancer

The cumulative risk for Colorado men to be diagnosed with colon and rectal cancer before age 85 is 1 in 13, and the risk for Colorado women is 1 in 17. Colon and rectal cancer ranked third among the most commonly diagnosed cancers in Colorado men during the 1996-2000 time period, and second among Colorado women.

Risk Factors

Risk factors for colorectal cancer include a personal or family history of cancer or adenomas (a type of polyp) of the colon or rectum, a personal history of endometrial, ovarian, or breast cancer, and a personal history of longstanding ulcerative colitis. Additionally, smoking, excessive alcohol consumption, and characteristics of the average American diet (high fat and/or low fruit and vegetable consumption) are also associated with increased risk (Guide to Clinical Preventive Services, Cancer Facts and Figures 2002).

Prevention

The American Cancer Society recommends that individuals over 50 years old have a yearly fecal occult blood test (FOBT), plus flexible sigmoidoscopy and digital rectal examination every five years, or colonoscopy and digital rectal examination every 10 years, or double-

contrast barium enema and digital rectal examination every five to 10 years. The U.S. Preventive Services Task Force recommends screening for all persons aged 50 and older with annual FOBT and/or flexible sigmoidoscopy (time interval between exams unspecified). The Colorado Clinical Guidelines Collaborative suggests that persons with a higher than average risk for colorectal cancer, based on a family history, should have more intensive screening. Consumption of a diet low in meat, combined with a high fruit and vegetable diet, may decrease the risk of developing colorectal cancer. Some studies suggest that regular exercise can also decrease one's risk for developing colorectal cancer (Pate RR, et al.).

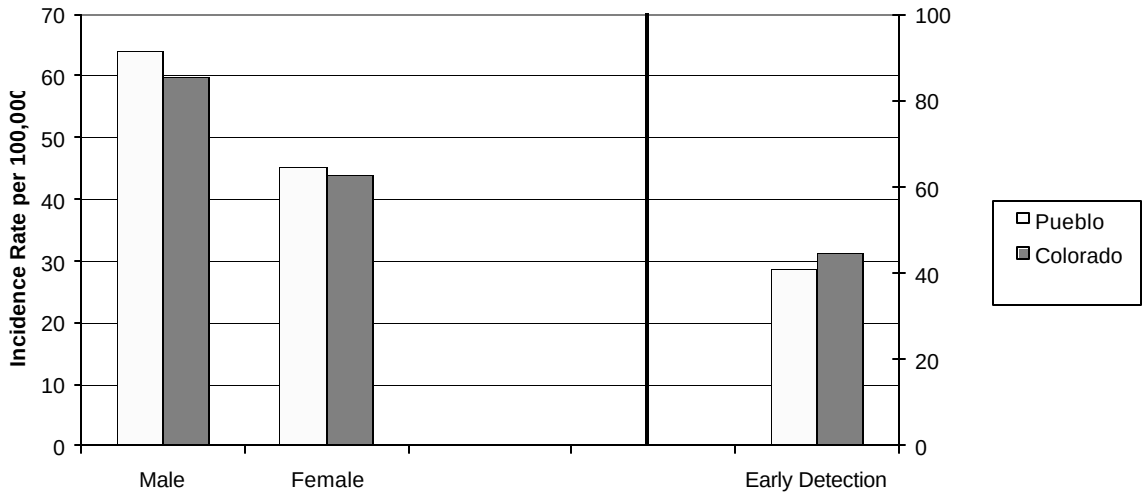
Incidence

During the period of 1999-2000, 1,717 males and 1,642 females in Colorado were diagnosed with colon and rectal cancer. Comparable statistics for Pueblo County were 87 males and 80 females in the same time period. The colorectal incidence rates in Pueblo county were similar to state rates for both males and females (see Figure 6.4 and Table 7.4).

Early Detection

During the 1999-2000 period, 44.8 percent of colorectal cancers statewide and 41.1 percent in Pueblo County were detected early (see Table 7.5).

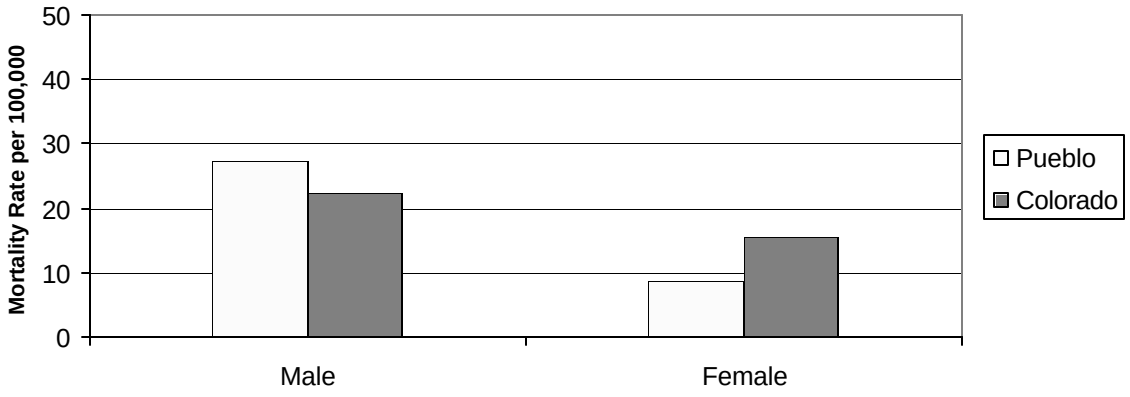
Figure 6. 4 Colon and Rectal Cancer Average Annual Age-Adjusted Incidence Rate and Percent "Early" Detection by Region, 1999-2000



Mortality

During the 1998-1999 period, Colorado had 624 male and 596 female deaths from colorectal cancer. Pueblo County had 37 male and 17 female colorectal cancer deaths in the same period. The Colorado colorectal cancer mortality rate was 22.5 for males and 15.6 for females. The Pueblo County mortality rate for males was 27.3, which was 21 percent higher than the state rate but still within expected statistical variation. The mortality rate for females in Pueblo County was 8.7. This was statistically significantly lower, but was based on a small case count (see Table 7.6).

Figure 6. 5 Colon and Rectal Cancer – Average Annual Age-Adjusted Mortality Rate per 100,000 by Region and Sex, 1998-1999



Lung Cancer

The cumulative risk of Colorado men being diagnosed with lung cancer before age 85 is 1 in 10, and the risk for Colorado women is 1 in 17. Lung cancer ranked second among the most commonly diagnosed cancers in Colorado men during the 1996-2000 time period, and third among Colorado women.

Risk Factors

The Colorado Cancer Prevention and Control Plan states that cigarette smoking is the predominant risk factor for lung cancer. Approximately 90 percent of lung cancer cases in men and 80 percent of cases in women are attributable to cigarette smoking. Individuals who smoke more than two packs a day have lung cancer mortality rates 15 to 25 times greater than do those individuals who have never smoked. Passive exposure to cigarette smoke increases the risk for

nonsmokers. Other risk factors thought to be important in the development of lung cancer include exposure to industrial substances such as arsenic, certain organic chemicals, asbestos (especially for persons who smoke), and radiation exposure from occupational, medical, and environmental sources. Residential radon exposure may increase risk, especially in cigarette smokers.

Prevention

Lung cancer is largely preventable. An estimated 85 percent of all lung cancers in Colorado could be prevented if cigarette smoking were eliminated (Colorado Cancer Prevention and Control Plan Advisory Committee). Because symptoms often do not appear until the disease is in advanced stages, early detection of lung cancer is difficult. Precancerous cellular changes in bronchial tissues often return to normal in smokers who stop smoking. Chest x-rays, analysis of cell types in sputum, and fiber-optic examination of the bronchial passages assist diagnosis, but have not been shown to be useful as widespread screening procedures to detect early stage disease.

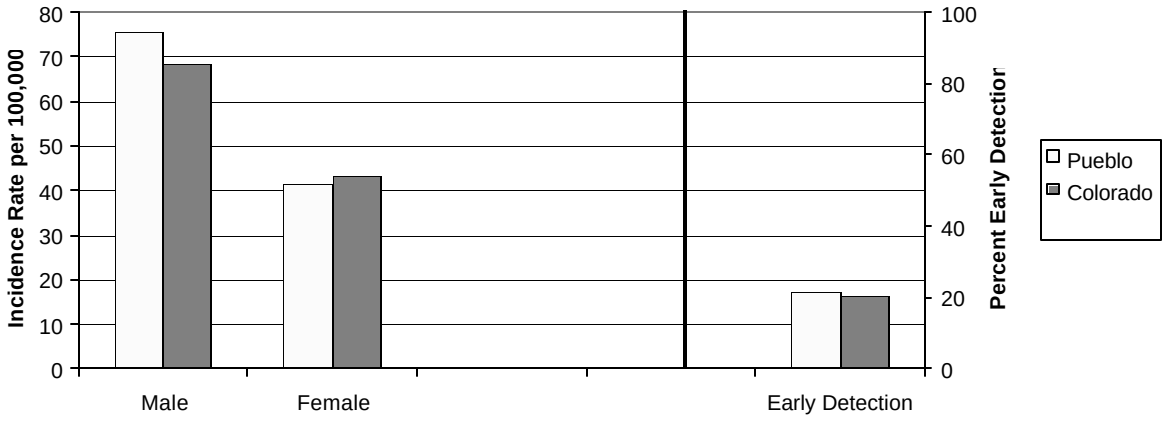
Incidence

During 1999-2000 in Colorado, 1,954 men and 1,595 women were diagnosed with lung cancer; in Pueblo County 103 men and 74 women were diagnosed with lung cancer. The male lung cancer incidence rate for Pueblo County was 11 percent higher than the state rate, but was within expected statistical variation. The female lung cancer incidence rate was similar to the state rate (see Table 7.7).

Early Detection

Because symptoms often do not appear until the disease is in an advanced stage, early detection of lung cancer is very difficult. According to the American Cancer Society, approximately 15 percent of lung cancers are detected while the cancer is still localized. In 1999-2000, 20.2 percent of cases were detected early in Colorado, 21.8 percent in Pueblo County (see Table 7.8).

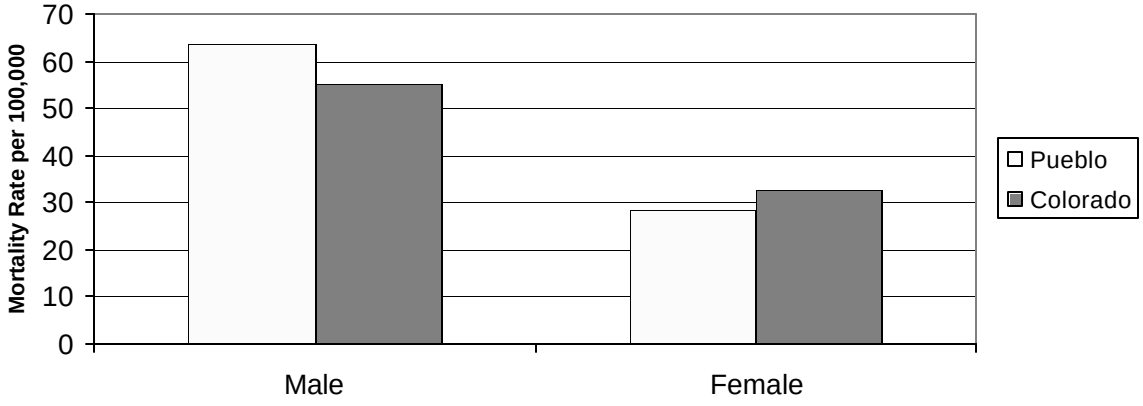
Figure 6. 6 Lung Cancer – Average Annual Age-Adjusted Incidence Rate and Percent "Early" Detection by Region and Gender, 1999-2000



Mortality

Lung cancer is the leading cause of cancer death in Colorado for both men and women. During the 1998-1999 time period, 1,552 men and 1,221 women died of lung cancer in Colorado, and 87 men and 52 women died of lung cancer in Pueblo County. Figure 6.7 shows that the lung cancer mortality rates in Pueblo County males was 16 percent higher than the state rate. The female rate was 13 percent lower than the state rate. Both of these rates were within expected statistical variation (see Table 7.9).

Figure 6. 7 Lung Cancer – Average Annual Age-Adjusted Mortality Rate per 100,000 by Region and Sex, 1998-1999



Melanoma

Melanoma is the most deadly type of skin cancer. Other types of skin cancer, basal or squamous cell cancers, are highly curable. Although representing only less than 5 percent of all skin cancers, melanoma accounts for the majority of deaths caused by skin cancer. The melanoma incidence rate in Colorado is increasing faster than most other major cancers. The cumulative risk of being diagnosed with melanoma before age 85 is 1 in 35 for men and 1 in 61 for women. Melanoma ranked fifth among the most commonly diagnosed cancers in Colorado men and women combined during the 1996-2000 time period.

Risk Factors

Excessive exposure to ultraviolet radiation (including natural sunlight and tanning booths) is the major risk factor for all skin cancers (U.S. Preventive Services Task Force, American Academy of Dermatology, Colorado Cancer Prevention and Control Plan Advisory Committee). Severe sunburn in childhood, fair complexion, and occupational exposure to coal tar, pitch, creosote, arsenic compounds, or radium are also considered risk factors for skin cancer.

Prevention

The U.S. Preventive Services Task Force recommends that the primary prevention of skin cancer involve limiting sun exposure especially during midday, avoiding tanning facilities, wearing protective clothing, and applying sunscreen preparations. The American Cancer Society recommends a monthly skin self-examination for all adults and a skin examination by a physician every three years in persons 20-39 years old, and annually in persons 40 years and older.

Early detection of melanoma is critical. Over 90 percent of melanomas that arise in the skin can be recognized with the naked eye. Melanomas often start as small, mole-like growths that increase in size, change color, become ulcerated, and bleed easily. Skin changes described in the "ABCD" rule require further diagnostic evaluation:

- A is for Asymmetry - one-half of the mole does not match the other.
- B is for Border - the edges are ragged, notched, or blurred.
- C is for Color - the pigmentation is not uniform.
- D is for Diameter - greater than 6 millimeters, about the size of a pencil eraser.

Any sudden or progressive increase in the size of a mole is also a cause for concern.

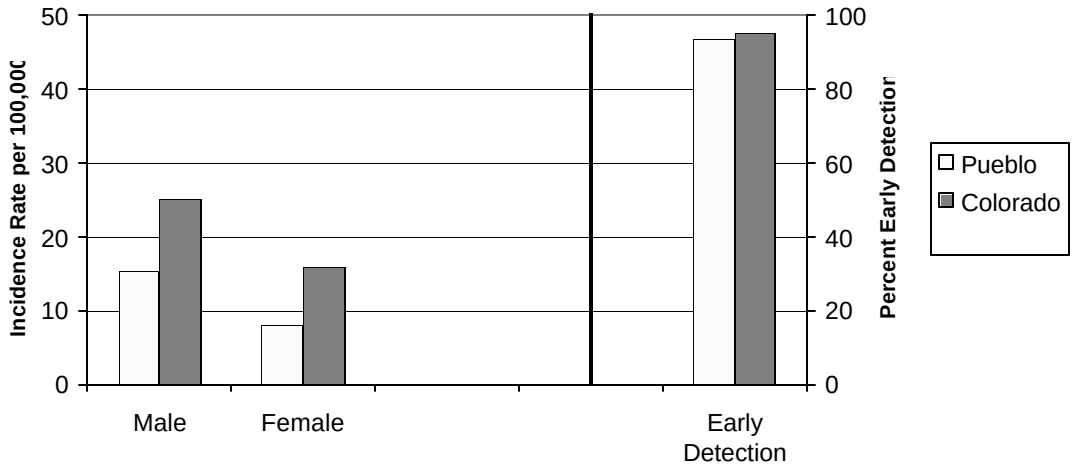
Incidence

During the 1999-2000 time period, 843 Colorado men and 641 Colorado women were diagnosed with melanoma. The comparable statistics for Pueblo County were 20 men and 13 women. The male melanoma incidence rate in Pueblo County was 38 percent lower than the state rate, and the female incidence rate was 50 percent lower. Although both of these rates were based on small case counts, they were statistically significantly lower than the state rate (see Table 7.10).

Early Detection

During the 1999-2000 time period, 95.1 percent of melanoma cases were detected early in Colorado; Pueblo County showed a similar percentage (see Figure 6.8 and Table 7.11).

Figure 6. 8 Melanoma – Average Annual Age-Adjusted Incidence Rate and Percent "Early" Detection By Region, 1999-2000



Mortality

There were very small case counts in Pueblo County for melanoma deaths during the 1998-1999 time period. Although the female mortality rate in Pueblo County was twice the state rate, this was within expected statistical variation. A statistical comparison could not be made for male deaths due to small numbers (see Table 7.12).

Female Breast Cancer

The cumulative risk for Colorado women being diagnosed with breast cancer before age 85 is 1 in 7. Breast cancer ranked first among the most commonly diagnosed cancers in Colorado women during the 1996-2000 time period.

Risk Factors

Breast cancer risk increases with age. A personal or family history of breast cancer is the most established risk factor. Increased risk for breast cancer has been associated with first full-term pregnancy after age 30, and also with early menarche and late menopause (the Colorado Cancer Prevention and Control Plan Advisory Committee, U.S. Preventive Service Task Force, American Cancer Society). Obesity, heavy alcohol use, high-fat diets, and estrogen replacement therapy have been suggested as possible risk factors for breast cancer (Clinical Oncology). Despite the large number of known and potential risk factors, few are strongly associated with the development of breast cancer, and no single factor or combination of factors can predict the occurrence of breast cancer in any one individual. The key to reducing breast cancer mortality is early detection through screening (American Cancer Society).

Prevention

The American College of Radiology, the American Medical Association, and the American College of Obstetricians and Gynecologists recommend that women aged 40 and over have a screening mammogram every one to two years, and an annual clinical breast exam. The American Cancer Society recommends that women aged 20-39 do a breast self-exam each month and have a clinical breast exam by a health care professional every three years; and that women aged 40 and over do a breast self-exam each month and have a mammogram and a clinical breast exam every year.

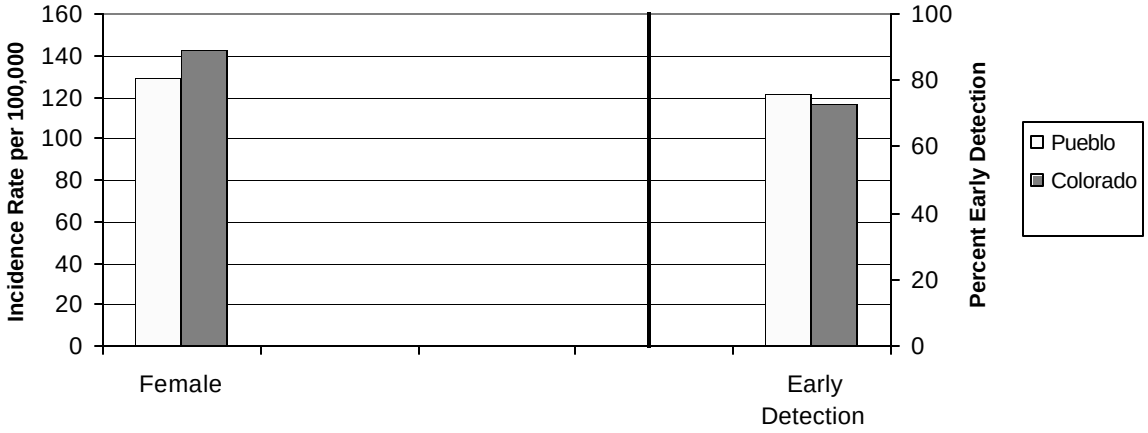
Incidence

In Colorado during the 1999-2000 time period, 5,501 new female breast cancers were diagnosed; 207 were diagnosed in Pueblo County women. The female breast cancer incidence rate for Pueblo County was similar to the state rate (see Figure 6.9 and Table 7.13).

Early Detection

Figure 6.9 shows that in Colorado during the 1999-2000 time period, a similar proportion of female breast cancers were detected early in the two regions (see Table 7.14).

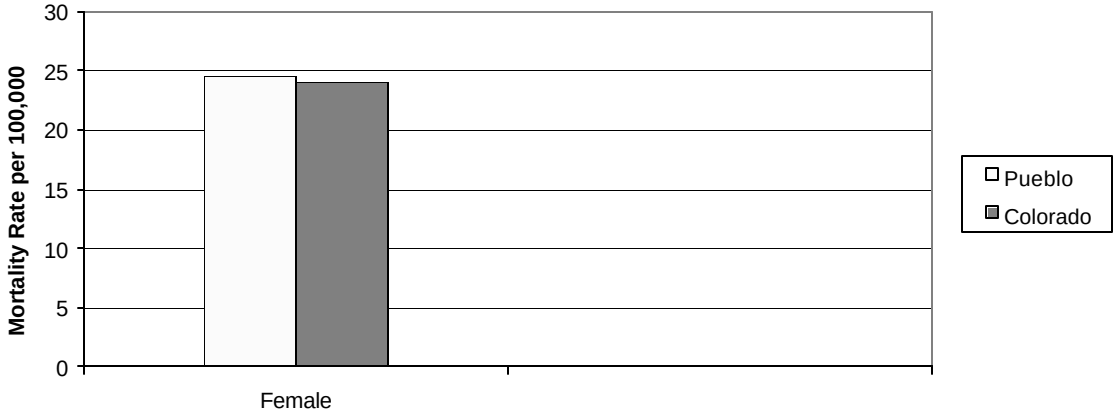
Figure 6. 9 Female Breast Cancer – Average Annual Age-Adjusted Incidence Rate and Percent "Early" Detection By Region, 1999-2000



Mortality

During the 1998-1999 time period, 932 Colorado women died of breast cancer while 42 Pueblo County women died of breast cancer in the same time period. The female breast cancer mortality rate in Pueblo County was similar to the state rate (see Figure 6.10 and Table 7.15).

Figure 6. 10 Female Breast Cancer – Average Annual Age-Adjusted Mortality Rate per 100,000 by Region, 1998-1999



Invasive Cervical Cancer

The cumulative risk of Colorado women being diagnosed with invasive cervical cancer before age 85 is 1 in 140. Invasive cervical cancer ranked eleventh among the most commonly diagnosed cancers in Colorado women during the 1996-2000 time period.

Risk Factors

Multiple sex partners, younger age at first intercourse, a higher number of pregnancies, sexually transmitted infections with certain types of human papilloma virus, and maternal use of diethylstilbestrol (DES) during pregnancy raise the risk for cervical cancer. Smoking and long-term use of oral contraceptives may also increase risk (Colorado Cancer Prevention and Control Plan Advisory Committee).

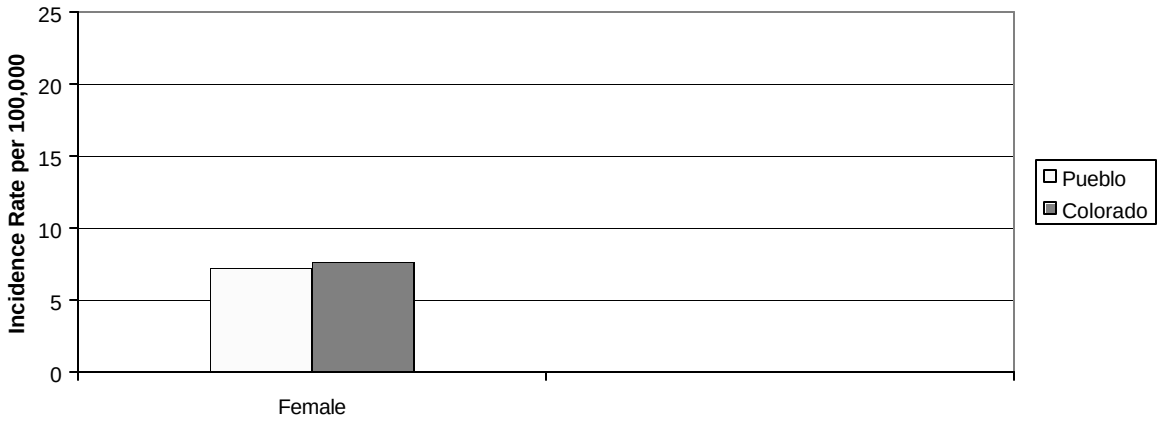
Prevention

The American Cancer Society and the National Cancer Institute recommend pelvic exams every one to three years for women aged 18 to 40 and for sexually active women younger than age 18. Annual exams are recommended for women after age 40. Women should have Papanicolaou tests (Pap) at least every one to three years after three negative annual tests. The U.S. Preventive Services Task Force recommends that Pap tests should begin with the onset of sexual activity and should be repeated every one to two years at the physician's discretion. Because cervical cancer has been linked to sexually transmitted infections, use of barrier methods of contraception and involvement with fewer sex partners may decrease the risk of developing cervical cancer.

Incidence

In Colorado there were 314 invasive cervical cases diagnosed during the 1999-2000 time period; 10 cases were diagnosed in Pueblo County. The Pueblo County incidence rate was 7.2 per 100,000, which was similar to the state rate of 7.6 (see Figure 6.11 and Table 7.16).

Figure 6. 11 Invasive Cervical Cancer – Average Annual Age-Adjusted Incidence Rate per 100,000 by Region, 1999-2000



Early Detection

Early detection percentages were not calculated for cervical cancer because in-situ cervical cancer is not reportable to the Colorado Central Cancer Registry.

Mortality

The cervical cancer mortality rates for Pueblo County and the state were similar, 2.1 and 2.0, respectively.

Prostate Cancer

The cumulative risk of Colorado men being diagnosed with prostate cancer before age 85 is 1 in 5. Prostate cancer ranked first among the most commonly diagnosed cancers in Colorado men during the 1996-2000 time period.

Risk Factors

Incidence increases with age (especially after age 60). Both familial and environmental factors may contribute to increased risk for prostate cancer. Studies suggest that a family history of prostate cancer in a first-degree relative doubles one's risk. Suspected environmental risk factors include occupational exposure to cadmium, work in rubber manufacturing, and farming. Epidemiologic evidence also suggests that a diet high in fat, particularly animal or saturated fat, increases the risk of prostate cancer (American Cancer Society).

Prevention

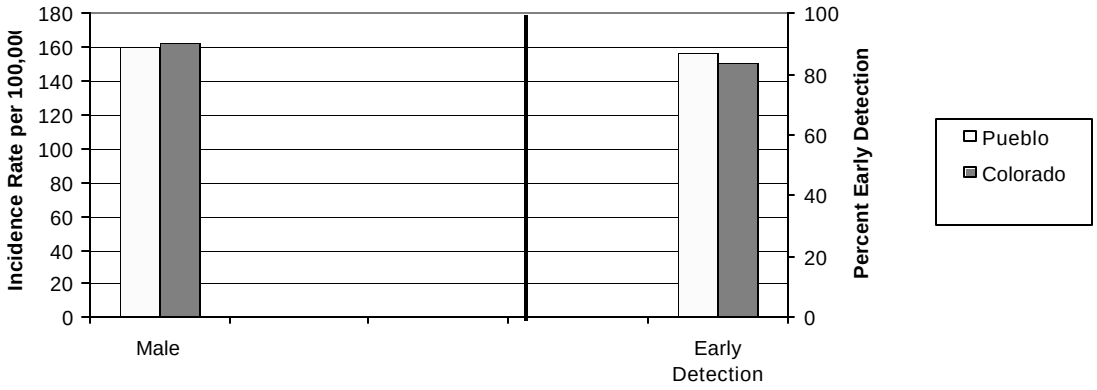
The American Cancer Society recommends that men age 50 and older that have at least a 10-year life expectancy should talk with their health care professional about having a digital rectal exam of the prostate gland and a prostate-specific antigen (PSA) blood test every year. Men who are at high risk for prostate cancer (black men or men who have a history of prostate cancer in close family members) should consider beginning these tests at an earlier age. The PSA test measures the blood levels of prostate specific antigen, a protein secreted by prostate cells. In conjunction with a digital rectal exam, the PSA test is a valuable tool for detecting prostate cancer at a very early stage.

Incidence

According to the Cancer Registry annual report, prostate cancer incidence rose sharply in Colorado from the late 1980's to 1992, with a similarly sharp drop in rates from 1992 to 1998. This phenomenon has been attributed to changes in PSA screening rates. As the PSA test was widely adopted in the late 1980's, more prostate cancer cases were diagnosed at an earlier stage than they otherwise would have been. Once this pool of cases was detected, the incidence rate decreased to its earlier level, and the average annual incidence rate has remained fairly consistent since 1998.

During the 1999-2000 time period, 4,847 new cases were detected in Colorado with 228 cases diagnosed in Pueblo County. The prostate cancer incidence rate in Pueblo County was similar to the state rate (see Figure 6.12 and Table 7.19).

Figure 6. 12 Prostate Cancer – Average Annual Age-Adjusted Incidence Rate and Percent Early Detection by Region, 1999-2000



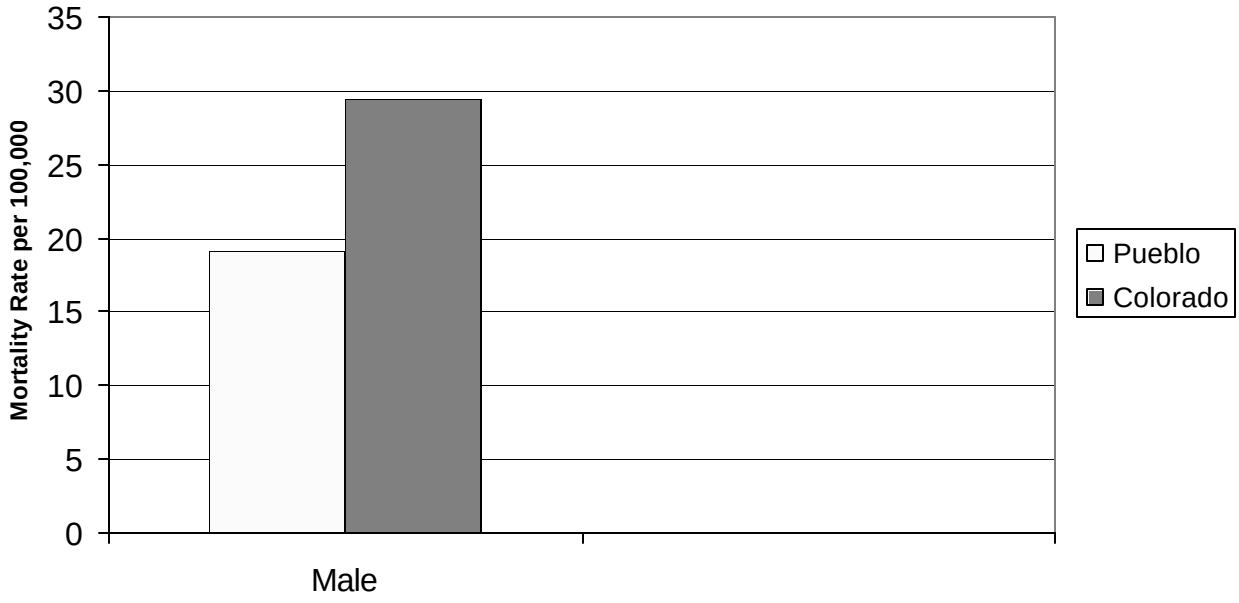
Early Detection

In Colorado during the 1999-2000 time period, 83.4 percent of prostate cancers were detected at early stages, and 87.0 percent of the cancers were detected early in Pueblo County (see Table 7.20).

Mortality

Figure 6.13 shows that the Pueblo County prostate cancer mortality rate was 35 percent lower than the state rate for 1998-1999. This difference was statistically significant (see Table 7.21).

Figure 6. 13 Prostate Cancer – Average Annual Age-Adjusted Mortality Rate per 100,000 by Region, 1998-1999



Section VII

Appendix

Incidence, Staging, and Mortality Data by County

Appendix

Table 7. 1 All Cancers Combined – Incidence Rates

Number of Diagnosed Cancers and Average Annual Age-Adjusted Incidence Rates per 100,000 by Sex and Place, 1999-2000

Place	Male		Female	
	N	Rate	N	Rate
Colorado	15859	524.3	15632	408.0
El Paso	1858	**567.9**	1867	**430.7**
Pueblo	754	547.7	626	**376.8**

Table 7. 2 All Cancers Combined – Stage at Diagnosis

Stage of Disease at Diagnosis and Early Detection by Place, 1999-2000

	In-Situ %	Local %	Regional %	Distant %	Unknown %	Cases N	% "Early" Detection
Colorado	8.0	41.4	17.5	18.4	14.8	34752	57.9
El Paso	7.8	43.6	18.6	19.4	10.7	4087	57.5
Pueblo	6.5	41.7	16.4	20.7	14.8	1498	56.5

Table 7. 3 All Cancers Combined – Mortality Rates

Number of Deaths and Average Annual Age-Adjusted Mortality Rates per 100,000 by Sex and Place, 1998-1999

Place	Male		Female	
	N	Rate	N	Rate
Colorado	5952	213.0	5676	148.7
El Paso	672	227.2	658	157.4
Pueblo	281	209.2	222	**124.7**

Bold = difference between region or county and the state is significant at $p < 0.05$

* = data could not be displayed due to small case counts

Table 7. 4 Colon and Rectal Cancer – Incidence Rates

Number of Diagnosed Cancers and Average Annual Age-Adjusted Incidence Rates per 100,000 by Sex and Place, 1999-2000

Place	Male		Female	
	N	Rate	N	Rate
Colorado	1717	59.8	1642	43.8
El Paso	190	65.8	179	43.8
Pueblo	87	64.1	80	45.2

Table 7. 5 Colon and Rectal Cancer – Stage at Diagnosis

Stage of Disease at Diagnosis and Early Detection by Place, 1999-2000

	In-Situ %	Local %	Regional %	Distant %	Unknown %	Cases N	% "Early" Detection
Colorado	6.5	35.3	34.5	17.0	6.6	3597	44.8
El Paso	7.5	39.9	33.8	14.8	4.0	399	49.3
Pueblo	8.2	29.7	39.0	15.4	7.7	182	41.1

Table 7. 6 Colon and Rectal Cancer – Mortality Rates

Number of Deaths and Average Annual Age-Adjusted Mortality Rates per 100,000 by Sex and Place, 1998-1999

Place	Male		Female	
	N	Rate	N	Rate
Colorado	624	22.5	596	15.6
El Paso	76	25.9	59	14.5
Pueblo	37	27.3	17	**8.7**

Bold = difference between region or county and the state is significant at $p < 0.05$

* = data could not be displayed due to small case counts

Table 7. 7 Lung Cancer – Incidence Rates

Number of Diagnosed Cancers and Average Annual Age-Adjusted Incidence Rates per 100,000 by Sex and Place, 1999-2000

Place	Male		Female	
	N	Rate	N	Rate
Colorado	1954	68.3	1595	43.1
El Paso	237	77.7	189	46.2
Pueblo	103	75.7	74	41.3

Table 7. 8 Lung Cancer – Stage at Diagnosis

Stage of Disease at Diagnosis and Early Detection by Place, 1999-2000

	In-Situ %	Local %	Regional %	Distant %	Unknown %	Cases N	% "Early" Detection
Colorado	0.1	17.4	19.5	49.6	13.4	3553	20.2
El Paso	0.2	15.9	21.6	54.6	7.7	427	17.5
Pueblo	0	19.2	17.0	52.0	11.9	177	21.8

Table 7. 9 Lung Cancer – Mortality Rates

Number of Deaths and Average Annual Age-Adjusted Mortality Rates per 100,000 by Sex and Place, 1998-1999

Place	Male		Female	
	N	Rate	N	Rate
Colorado	1552	55.1	1221	32.6
El Paso	177	59.9	169	**40.8**
Pueblo	87	63.8	52	28.4

Bold = difference between region or county and the state is significant at $p < 0.05$

* = data could not be displayed due to small case counts

Table 7. 10 Melanoma – Incidence Rates

Number of Diagnosed Cancers and Average Annual Age-Adjusted Incidence Rates per 100,000 by Sex and Place, 1999-2000

Place	Male		Female	
	N	Rate	N	Rate
Colorado	843	25.2	641	16.0
El Paso	97	25.7	85	18.2
Pueblo	20	**15.5**	13	**8.0**

Table 7. 11 Melanoma – Stage at Diagnosis

Stage of Disease at Diagnosis and Early Detection by Place, 1999-2000

	In-Situ %	Local %	Regional %	Distant %	Unknown %	Cases N	% "Early" Detection
Colorado	29.1	61.5	2.6	2.0	4.8	2113	95.1
El Paso	28.5	64.1	2.7	2.0	2.7	256	95.2
Pueblo	34.0	56.0	2.0	4.0	4.0	50	93.8

Table 7. 12 Melanoma – Mortality Rates

Number of Deaths and Average Annual Age-Adjusted Mortality Rates per 100,000 by Sex and Place, 1998-1999

Place	Male		Female	
	N	Rate	N	Rate
Colorado	144	4.7	66	1.7
El Paso	21	6.2	5	1.1
Pueblo	5	4.1	7	3.8

Bold = difference between region or county and the state is significant at $p < 0.05$

* = data could not be displayed due to small case counts

Table 7. 13 Female Breast Cancer – Incidence Rates

Number of Diagnosed Cancers and Average Annual Age-Adjusted Incidence Rates per 100,000 by Sex and Place, 1999-2000

Place	Female	
	N	Rate
Colorado	5501	142.7
El Paso	621	141.5
Pueblo	207	129.3

Table 7. 14 Female Breast Cancer – Stage at Diagnosis

Stage of Disease at Diagnosis and Early Detection by Place, 1999-2000

	In-Situ %	Local %	Regional %	Distant %	Unknown %	Cases N	% "Early" Detection
Colorado	17.0	52.3	23.3	2.7	4.8	6630	72.7
El Paso	16.6	51.5	26.3	3.8	1.7	745	69.4
Pueblo	14.1	58.5	20.3	2.9	4.2	241	75.8

Table 7. 15 Female Breast Cancer – Mortality Rates

Number of Deaths and Average Annual Age-Adjusted Mortality Rates per 100,000 by Sex and Place, 1998-1999

Place	Female	
	N	Rate
Colorado	932	24.0
El Paso	98	22.7
Pueblo	42	24.5

Bold = difference between region or county and the state is significant at $p < 0.05$

* = data could not be displayed due to small case counts

Table 7. 16 Invasive Cervical Cancer – Incidence Rates

Number of Diagnosed Cancers and Average Annual Age-Adjusted Incidence Rates per 100,000 by Sex and Place, 1999-2000

Place	Female	
	N	Rate
Colorado	314	7.6
El Paso	50	9.9
Pueblo	10	7.2

Table 7. 17 Invasive Cervical Cancer – Stage at Diagnosis

Stage of Disease at Diagnosis and Early Detection by Place, 1999-2000

	Local %	Regional %	Distant %	Unknown %	Cases N
Colorado	58.9	27.1	8.6	5.4	314
El Paso	70.0	20.0	8.0	2.0	50
Pueblo	90.0	0	10.0	0	10

Table 7. 18 Invasive Cervical Cancer – Mortality Rates

Number of Deaths and Average Annual Age-Adjusted Mortality Rates per 100,000 by Sex and Place, 1998-1999

Place	Female	
	N	Rate
Colorado	82	2.0
El Paso	11	2.4
Pueblo	3	2.1

Bold = difference between region or county and the state is significant at $p < 0.05$

* = data could not be displayed due to small case counts

Table 7. 19 Prostate Cancer – Incidence Rates

Number of Diagnosed Cancers and Average Annual Age-Adjusted Incidence Rates per 100,000 by Sex and Place, 1999-2000

Place	Male	
	N	Rate
Colorado	4847	162.5
El Paso	589	**182.2**
Pueblo	228	159.6

Table 7. 20 Prostate Cancer – Stage at Diagnosis

Stage of Disease at Diagnosis and Early Detection by Place, 1999-2000

	In-Situ %	Local %	Regional %	Distant %	Unknown %	Cases N	% "Early" Detection
Colorado	0	65.6	9.0	4.1	21.3	4852	83.4
El Paso	0	68.9	11.4	3.9	15.8	589	81.9
Pueblo	0	67.5	7.5	2.6	22.4	228	87.0

Table 7. 21 Prostate Cancer – Mortality Rates

Number of Deaths and Average Annual Age-Adjusted Mortality Rates per 100,000 by Sex and Place, 1998-1999

Place	Male	
	N	Rate
Colorado	701	29.5
El Paso	66	27.1
Pueblo	24	**19.1**

Bold = difference between region or county and the state is significant at $p < 0.05$

* = data could not be displayed due to small case counts

References

American Academy of Dermatology. *Skin Cancer: An Undeclared Epidemic*. Schaumburg, IL, 1994.

American Cancer Society. *Prevention and Detection Guidelines*. Online at www.cancer.org/guide/guidchec.html.

American Cancer Society. *Cancer Facts & Figures 2002*. New York, 2002.

Brownson, R.C., Remington, P.L. and Davis, J.R. (Eds). *Chronic Disease Epidemiology and Control*, 2nd ed. Washington, D.C.: American Public Health Association, 1998.

Colorado Cancer Prevention Coalition. *Cancer Goals for the Year 2010.* Denver, Colorado: Colorado Department of Public Health and Environment, April, 2002.

Colorado Central Cancer Registry. *Cancer in Colorado 1990-1999: Incidence and Mortality by County*. Denver, Colorado: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment, 2002 (pending publication).

Colorado Clinical Guidelines Collaborative. *Colorectal Cancer Screening*. Denver, CO, 1998.

Health Statistics Section. *1999 Annual Report of Vital Statistics Colorado.* Denver, Colorado: Health Statistics Section, Colorado Department of Public Health and Environment. Online at http://www.cdphe.state.co.us/hs/Websummary99.pdf.

Lenhard, R.E. Jr., Osteen, R.T., Gansler, T., et al. *American Cancer Society's Textbook of Clinical Oncology*, 1st ed. Atlanta, GA: American Cancer Society, 2001.

National Cancer Advisory Board. *Cancer at the Crossroads*. NIH Publication No. 93-2789. Bethesda, MD: National Cancer Institute, 1994.

Pate R.R., Pratt M., Blair S.N., et al. *Physical Activity and Public Health: A Recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine.* JAMA. 1995; 273:402-407.

U.S. Preventive Services Task Force. *Guide to Clinical Preventive Services*, 2nded. Alexandria, Virginia: International Medical Publishing, 1996.