CANCER
IN
EASTERN COLORADO

1995-1997

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

Planning and Management Regions - 1, 5, 6, and 14
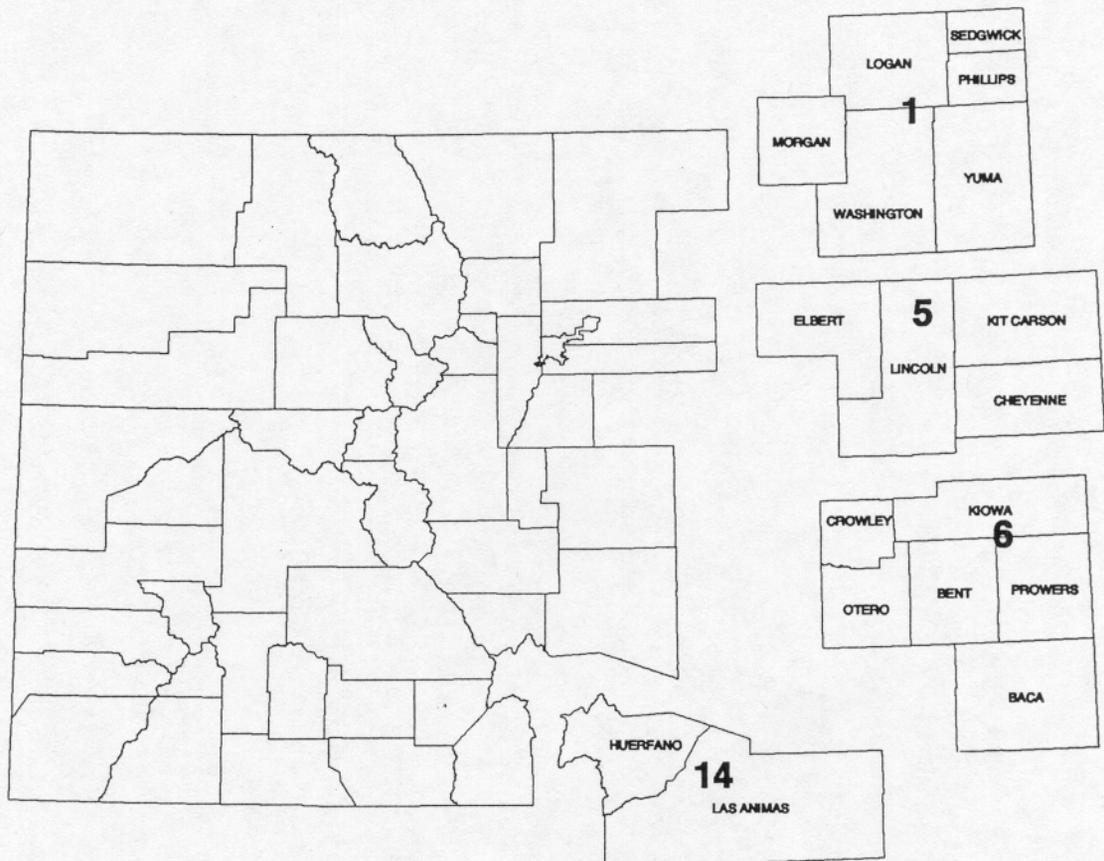
Cancer in Eastern Colorado: 1995-1997

EXECUTIVE SUMMARY

This report, *Cancer in Eastern Colorado: 1995-1997*, was written by the Colorado Comprehensive Cancer Prevention and Control Program to help plan, develop, and evaluate cancer prevention and intervention strategies in Eastern Colorado. The report covers four Planning and Management Regions (PMR)[1] comprising 18 counties in Eastern Colorado. It is the first of a series of reports covering different regions of Colorado utilizing county-specific cancer data. The report focuses on six major cancers that are either preventable or detectable at an early stage: colon and rectum, lung, melanoma, breast, invasive cervix, and prostate. The report incorporates data from three sources within the Colorado Department of Public Health and Environment: cancer-related behavior data from the 1995 Colorado Behavior Risk Factor Surveillance System (BRFSS), cancer incidence and stage data from the Colorado Central Cancer Registry, and cancer mortality data from the Health Statistics Section. Detailed risk factors and prevention information for each cancer are also described in the report. The following is a summary of the major findings of the report:

< **Behavioral Risk Factor Surveillance System 1995 survey findings:**

    $ About 30% of Eastern Colorado residents were overweight compared to only 20% of the residents in the rest of state.

    $ A similar percent of residents from Eastern Colorado (19.8%) and the rest of the state (21.9%) reported being current smokers.

    $ Eastern Colorado residents reported chronic drinking less than the residents of the rest of the state did (2.1% vs. 4.9%). Females reported drinking less than males in both areas.

    $ Women in Eastern Colorado were as likely to receive a mammogram and clinical breast exam as women in the rest of the state (58.3% vs. 61.0%). Women in Eastern Colorado were less likely to receive Pap tests in the past three years than

women in the rest of the state. Women between age 18 and 24 and women over 65 in Eastern Colorado showed a bigger gap in having Pap tests in comparison to their counterparts in the rest of the state in the past three years (74.4% vs. 93.1% for the18-24 age group, and 55.1% vs. 67.3% for the 65 and over age group).

< **Cancer data comparisons between Eastern Colorado and the state by selected cancer sites:**

$ In Eastern Colorado the <u>all cancers combined</u> age-adjusted incidence rates for both males and females were lower than the state rate, except for the PMR6 male rate. The age-adjusted cancer mortality rates for both males and females in Eastern Colorado were slightly lower than the state rate, except PMR6 and PMR14 male rates. The early detection percentages for Eastern Colorado and the Planning and Management Regions were generally worse than the state percentage, with the exception of PMR5.

$ Eastern Colorado <u>colon and rectum cancer</u> age-adjusted incidence rates for both males and females were similar to the state rate. PMR1 had a statistically higher male incidence rate than the state male rate. Both male and female colorectal mortality rates in Eastern Colorado were similar to the state rate. Early detection was better in PMR5 than the state but worse in the rest of the regions, except for PMR1 which was similar to the state.

$ The male age-adjusted <u>lung cancer</u> incidence rate for Eastern Colorado was similar to the state rate, and the female lung cancer incidence rate was statistically lower than the state rate.   The male lung cancer incidence rate in PMR6 was 45% higher than the state rate. The age-adjusted lung cancer mortality rates for Eastern Colorado for men and women were generally similar to the state rate, but the PMR6 male rate was 64% higher than the state rate.

$ The male <u>melanoma</u> incidence rate for Eastern Colorado was similar to the state rate, and the female rate was lower. The male and female melanoma mortality rates in Eastern Colorado were lower than the state rate.

$ The <u>female breast cancer</u> age-adjusted incidence rate for Eastern Colorado was statistically lower than the state rate. The same was true for rates in PMR5, PMR6 and PMR14. The female breast cancer mortality rate for Eastern Colorado was similar to the state rate. The PMR1 mortality rate was 55% higher. Similar percentages of female breast cancer were detected early in Eastern Colorado and the state. The early detection percentages for the individual Planning and Management Regions were worse than the state percentage, except for PMR5.

$ The <u>invasive cervix cancer</u> age-adjusted incidence rate for Eastern Colorado was similar to the state rate. The invasive cervix cancer mortality rate in Eastern

Colorado was lower than the state rate, though the Eastern Colorado rate was based on a small number of cases.

$ The prostate cancer age-adjusted incidence rate for Eastern Colorado was similar to the state rate. The prostate cancer mortality rates were generally lower than the state rate. The early detection percentages for Eastern Colorado and individual PMRs were as good or better than the state percentage.

Cancer remains the second leading cause of death in Colorado and efforts continue to be made to fight this devastating disease. Cancer rates in Eastern Colorado were generally similar to state rates. However, a few areas had higher rates, such as the PMR6 male lung cancer incidence and mortality rates, and the PMR1 female breast cancer mortality rate. These areas can serve as the basis for targeted community intervention efforts.

Most types of cancer can be prevented and/or detected at an early and more survivable stage. Studies suggest that 75-80 percent of cancer deaths are attributable to health behaviors, including diet, smoking, and reproductive and sexual history. A change of life style may reduce the chance of getting cancer, and early detection can reduce the chance of dying from cancer. Routine age specific cancer-related checkups are recommended to detect cancer early at the most treatable stage. Eastern Colorado residents had a higher percentage of being overweight than the rest of the state, and Eastern Colorado women had a lower percentage receiving cancer screening tests. Reducing risk factors, such as being overweight and using tobacco, and early detection through routine exams can reduce future cancer rates and mortality.

For more information, please contact:
Colorado Comprehensive Cancer Control and Prevention Program
Colorado Department of Public Health and Environment
EMSPD-CPCP-A5
4300 Cherry Creek Drive South, Denver, Co 80246-1530
Telephone: (303) 692-2520

---

[1] Planning and Management Region 1: Logan, Morgan, Phillips, Sedgwick, Washington, and Yuma counties.
Planning and Management Region 5: Cheyenne, Elbert, Kit Carson, and Lincoln counties.
Planning and Management Region 6: Baca, Bent, Crowley, Kiowa, Otero, and Prowers counties.
Planning and Management Region 14: Huerfano and Las Animas counties.

Chapter One

Introduction

Cancer is the second leading cause of death in Colorado, according to *Colorado Vital Statistics (1997)* published by the Health Statistics Section of the Colorado Department of Public Health and Environment. Colorado has seen a substantial increase in the cancer mortality rate and a large decrease in the mortality rate for heart disease over the past 50 years. Cancer will surpass heart disease as the leading cause of death in Colorado if current trends persist.

Although cancer cells are lethal, most types of cancers can be prevented or detected at an early stage. Survival time may be increased through a broad range of actions:

·   Changing personal lifestyles, such as stopping smoking, improving dietary habits, and increasing physical activity;

·   Expanding the use of early detection practices, such as mammography, Pap 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 in Colorado. The Colorado Comprehensive Cancer Prevention and Control and Prevention Program is a new project funded by the Centers for Disease Control and Prevention (CDC) to join this effort. The goal of this program is to reduce cancer risk factors and improve preventive behaviors by collaborating with public and private agencies to set priorities for intervention strategies, conduct public awareness campaigns, establish cancer prevention and control policies, and to support 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 Eastern Colorado: 1995-1997* is the first of this series. Included in this report are the following four Planning and Management Regions (PMR)

comprising 18 Colorado counties. PMR1: Logan, Morgan, Phillips, Sedgwick, Washington, and Yuma; PMR5: Cheyenne, Elbert, Kit Carson, and Lincoln; PMR6: Baca, Bent, Crowley, Kiowa, Otero, and Prowers; and PMR14: Huerfano, and Las Animas (See map).

      This report is organized as follows: Chapter Two describes data and data sources, and defines terminology used in this report; Chapter Three summarizes the findings of the 1995 Behavioral Risk Factor Surveillance System (BRFSS) survey in Eastern Colorado; Chapter Four discusses and compares cancer incidence and mortality rates in Eastern Colorado, and the state; and the Appendix displays county specific incidence, staging, and mortality data.

Chapter Two

Data and Definitions

Data Sources

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

Data Limitations

Cancer staging data for this report were extracted at a later time than the staging data used for *Cancer in Colorado 1991-1996: Incidence and Mortality by County*, an annual report prepared by the CDPHE Colorado Central Cancer Registry (hereinafter referred to as the Cancer Registry Annual Report). Therefore, there are small differences in counts of cases and early detection percentages between these two reports.

It is also important to note that rates for a limited time period are not always reflective of true incidence or mortality when county rates based on a small number of cases are compared with state rates, because in this case one number can change the rate significantly. In this report, when county rates were found to be much higher than the state rates, the county rates were also compared with the rates of previous years, 1991-1993 for incidence, or 1994-1995 for mortality. If the differences were not consistent over more than one time period, then the differences may be due to normal fluctuations over time.

Since the *all cancers combined* incidence and mortality rates were much higher than

3

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.

County, PMR, and Eastern Colorado incidence and mortality rates were compared to the state rates, while Eastern Colorado BRFSS percentages were compared to the remainder of the state percentages.

To assure the confidentiality of individuals this report does not present data with less than three events in each category.   However, in some PMR tables with multi-county displays when a small number could be inferred by subtraction, additional suppression was required.

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, 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 are not routinely available for less populated areas. In order to achieve reliable estimates for less populated areas, those areas need to be over-sampled. In 1995, the BRFSS survey over-sampled 600 individuals for a total of 747 people being interviewed in 18 counties comprising Eastern Colorado. Chapter Three of this report is based on the 1995 survey.

Cancer Incidence Rates are a measure of the number of new cancer cases over a defined time period divided by a specified population. Age-adjusted incidence rates are used in this report in order to compare rates of different populations. Any observed differences in age-adjusted rates will not be due to different age structures of the populations under comparison. The incidence rates in this report were adjusted to the 1970 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. Age-adjusted mortality rates are used in this report in order to compare rates of different populations. Any observed differences in age-

adjusted rates will not be due to different age structures of the populations under comparison. The mortality rates in this report are age-adjusted to the 1970 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. It can be expressed as a percentage or a probability, e.g. for men the cumulative risk to age 85 for all cancers combined is about 54% or 1 in 2.

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, Early Detection percentage = (number of in-situ cases + number of localized cases / total number of cancer cases - unknown staged cases) x 100.

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 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 spread to adjacent tissues or to nearby lymph nodes. Eventually, cancer cells may become dispersed throughout the body usually by invasion of the circulatory system. This level of cancer spread is called distant stage.

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

Statistical Significance In this report , a Z-test (alpha=0.05) was used for testing differences between the state data and the regional data (county-specific data, Planning and Management Region specific data, and Eastern Colorado specific data). A statistically significant result means that there is likely a real difference 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% different from the state rate.

There were 286 separate tests of statistical significance in this report. Using a significance level of 0.05 to evaluate the 286 tests, 5% of these tests (about 14) would be expected to exceed statistical limits (about 7 lower and 7 higher than the state rate) simply due to random variation. In fact, 32 of these tests exceeded statistical limits, of which 5 were higher and 27 were lower than the state rate.

Chapter Three

Cancer-Related Behaviors

Eastern Colorado comprises 18 counties on the east side of the state. The number of respondents from the statewide Colorado BRFSS is too small to produce reliable estimates of health related behaviors in less populated areas. So, in 1995, an additional 600 respondents were added for a total of 747 respondents from Eastern Colorado. This chapter summarizes the selected findings of the 1995 survey report: *Health Related Behaviors in Eastern Colorado* (Brief, No. 25, July 1998. Health Statistics Section, CDPHE).

**Figure 3.1　Population Age Distribution of Eastern Colorado and
the Remainder of the State; Colorado BRFSS, 1995**

(Eastern Colorado N=747, Remainder of State N=1737)
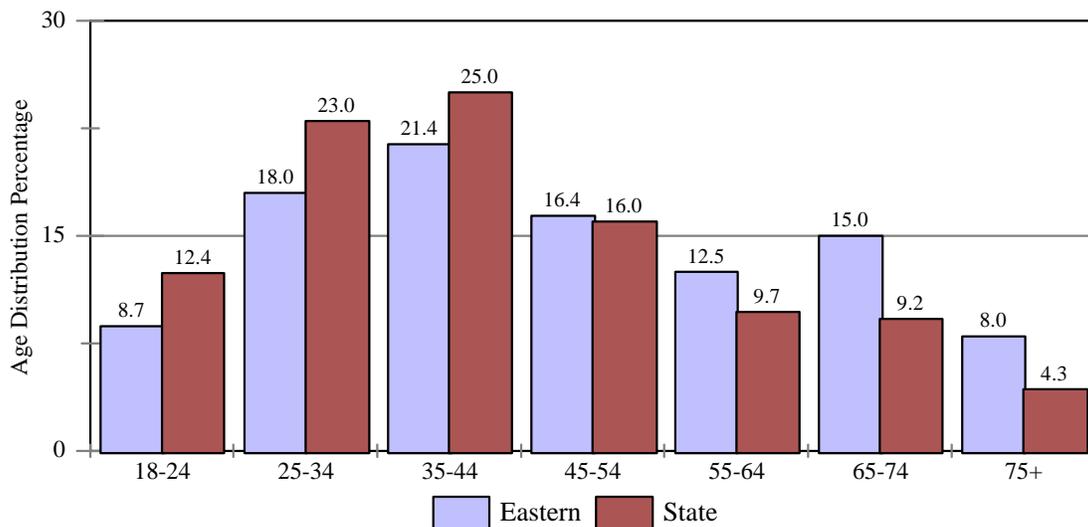
Population by Age: The peak age group in both regions was 35-44. Eastern Colorado had a higher proportion of the adult population aged 55 and older than the rest of the state (see Figure 3.1).

Figure 3.2   **Percent Reporting Being Overweight in Eastern Colorado**

and the Remainder of the State; Colorado BRFSS, 1995

(Sample Size: Eastern Colorado N=747, Remainder of the State N=1737)
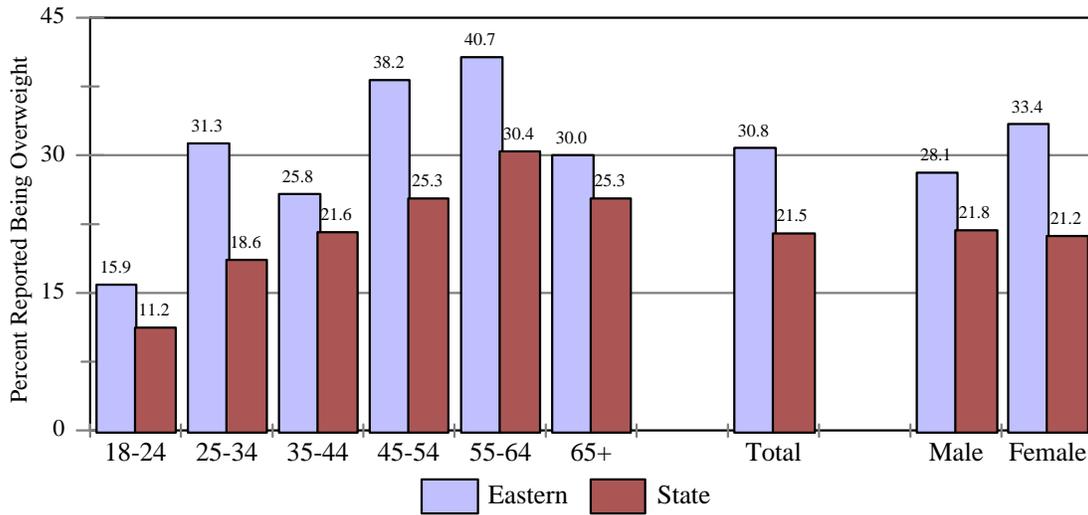
Overweight: Being overweight is considered a risk factor for heart disease, diabetes, and some cancers, such as breast, kidney, and endometrial cancer. Overweight is defined as a Body Mass Index (BMI=weight in kilograms/height in meters^2) of 27.3 or higher for females and 27.8 or higher for males. A comparison of Eastern Colorado with the rest of the state shows that about 30 percent of the residents sampled in Eastern Colorado were overweight, while only 20 percent were overweight in the rest of the state. This difference is statistically significant, and remained so after adjusting for the differences in the age distribution between Eastern Colorado and all the other counties. The adults in Eastern Colorado were more likely to report being overweight across all age groups than the residents of the rest of the state, and Eastern Colorado females and males both were more overweight than the rest of the state (see Figure 3.2).

Figure 3.3   Percent Reporting Being Current Smokers in Eastern Colorado

and the Remainder of the State; Colorado BRFSS, 1995

(Sample Size: Eastern Colorado N=747, Remainder of the State N=1737)
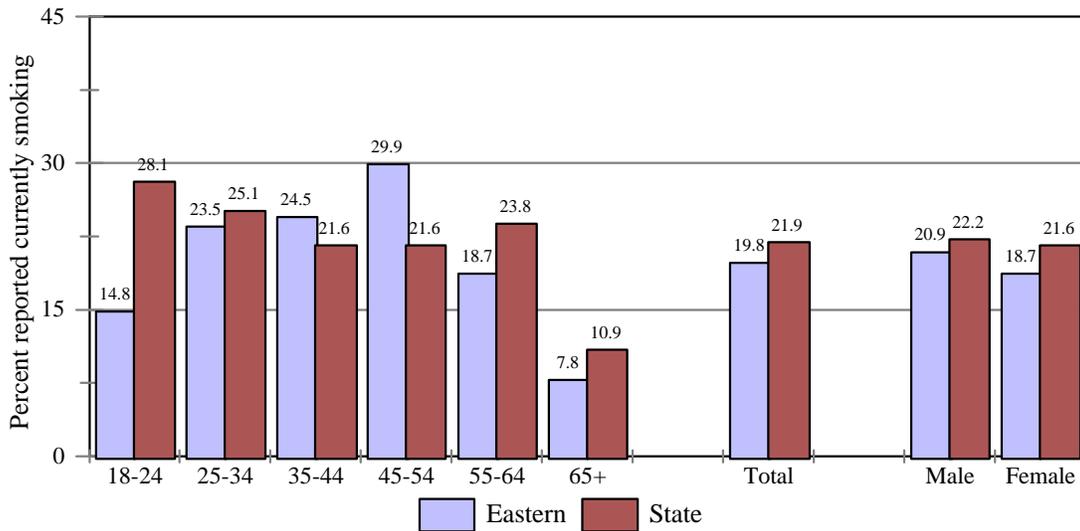
Smoking: Cigarette smoking is directly associated with heart disease and lung cancer, and has been linked to pancreas, cervix, kidney, and bladder cancer. Current smokers were identified as those respondents who had smoked at least 100 cigarettes in their lives and were currently smoking. The survey found that the prevalence of people who currently smoked was similar for Eastern Colorado (19.8%) and the rest of the state (21.9%). In Eastern Colorado, smoking prevalence was highest in the age group 45-54 years; for the rest of state, the peak age group was 18-24. There was not much difference between the rates of male smoking and female smoking in the region and the state (see Figure 3.3).

**Figure 3.4   Percent Reporting Chronic Alcohol Use in Eastern Plains
and the Remainder of the State; Colorado BRFSS, 1995**
(Sample Size: Eastern Colorado N=747, Remainder of the State N=1737)
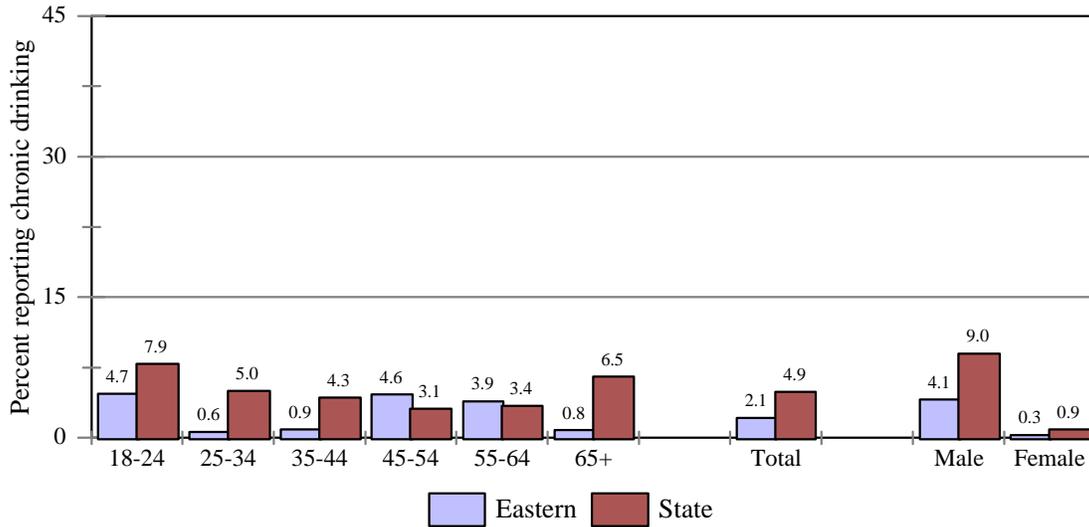
Alcohol Use: Frequent alcohol use is a major cause of both social and medical problems.

Heavy alcohol use is a cause of oral, liver, and rectum cancer.   The survey showed that adults in

Eastern Colorado were less likely to report binge drinking (5 or more alcoholic drinks on at least one

occasion in the last month) and chronic drinking (60 or more alcoholic drinks in the last month) than

adults in the rest of the state (2.1% vs 4.9%). This difference remained significant when controlling for

the differences in the age distribution between the two populations.   Males in the region and the state

drank more than females , and younger people were more likely to report chronic drinking than other

age groups (see Figure 3.4).

**Figure 3.5   Percent of Women Aged 50 and Over Who Had Received Mammogram
and Clinical Breast Exam in the past two years; Colorado BRFSS, 1995**
(Sample Size: Eastern Colorado N=747, Remainder of State N=1737)
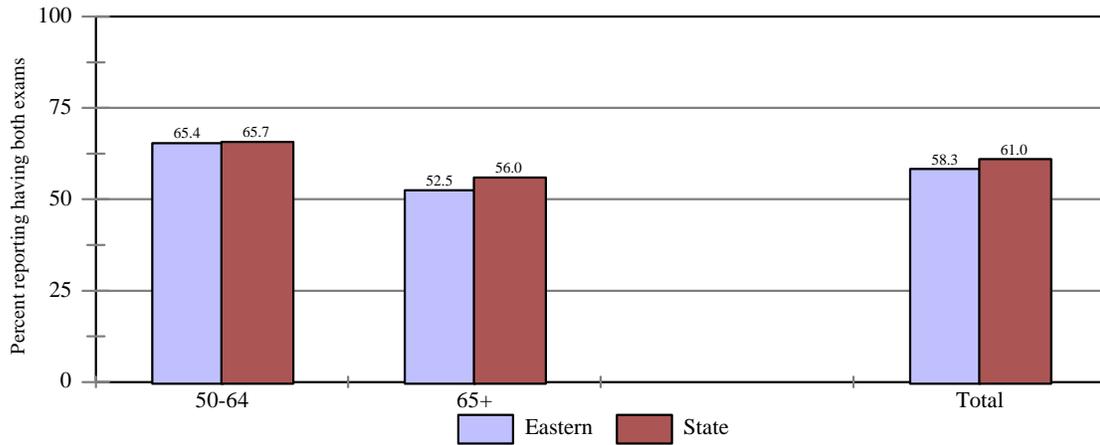
**Figure 3.6   Percent of Women Aged 18 and Older Who Had A Pap Test
in the Past Three Years ; Colorado BRFSS, 1995**
(Sample Size: Eastern Colorado N=747, Remainder of State N=1737)
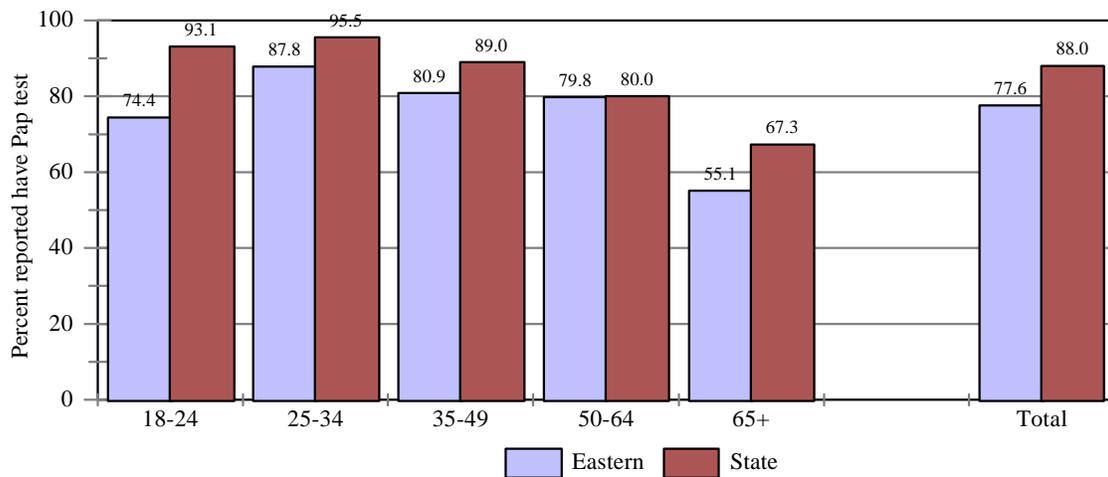
Screening: Regular cancer screening is recommended as the major prevention method for

certain cancers. The BRFSS survey on women's cancer screening showed that on average about 60

percent of women over 50 years of age and older in Eastern Colorado and the state had received both a mammogram and a clinical breast exam in the last 2 years. In both areas, the proportion of women who received regular screening (mammogram and pap tests) dropped considerably for women aged 65 and older. Women in Eastern Colorado were less likely than women in the rest of the state to have had a Pap test in the past 3 years. This difference was statistically significant, and remained so after adjusting for the age differences between Eastern Colorado and the rest of the state. The difference observed in screening prevalence between the two regions was particularly large in the 18-24 and 65 and older age groups (see Figure 3.5 for the mammogram and clinical breast exam display, and Figure 3.6 for the Pap test display).

Chapter Four

Selected Findings by Cancer Site

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 procedures.

Prevention: The American Cancer Society recommends a cancer-related checkup every 3 years for people aged 20-40 and every year for people aged 40 and over. A change of life style, such as quitting smoking, increasing fiber food intake, and participating in more physical activity, may reduce the chance of getting cancer.

Cancer incidence: During the period of 1995 and 1996, 14,612 male and 14,146 female cancer cases were diagnosed in Colorado. Comparable statistics for Eastern Colorado were 856 male and 680 female cases. The male incidence rate was 4% lower than the Colorado rate, while the female incidence rate was 14% lower than the Colorado rate, which was statistically significant.

13

**Figure 4.1   All Cancers Combined – Average Annual Age-Adjusted Incidence Rate
per 100,000 by Region and Sex, 1995-1996**
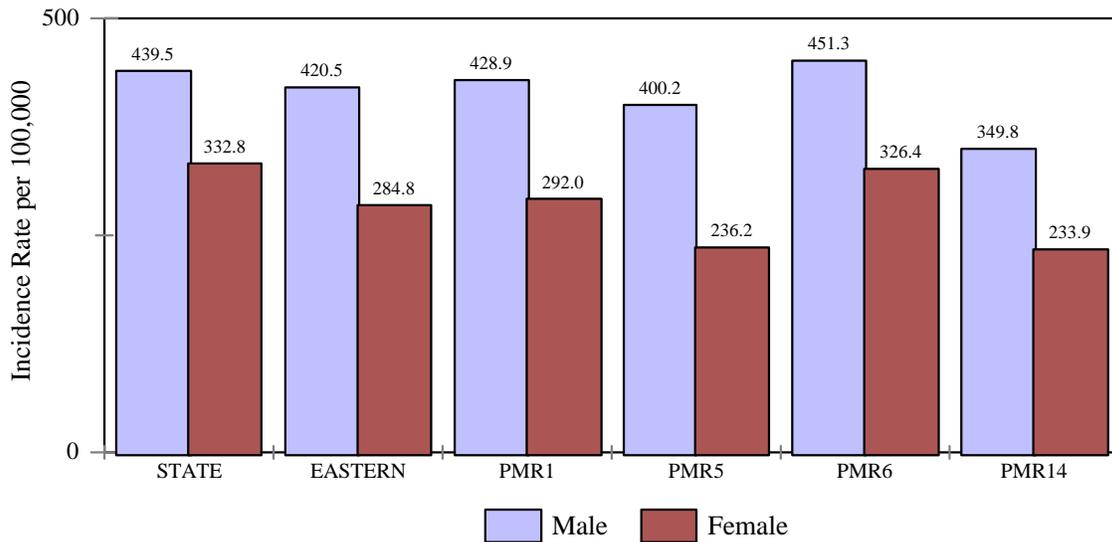
In PMR1 the male cancer incidence rate was 2% lower than the state rate, and the female rate in this region was statistically 12% lower. Within the region, the Sedgwick county female cancer incidence rate was 48% lower than the state rate. The Phillips county male cancer incidence rate was 40% higher than the state rate, and the Yuma county male rate was 21% higher. However, the incidence rates for Phillips and Yuma counties in the previous 1991-93 time period were both lower than the state rate, according to the Cancer Registry Annual Report. Thus, the more recent elevation in these two counties may be a reflection of year-to-year fluctuation or due to a higher percentage of early detection as the staging data suggest.

The male incidence rate in PMR5 was 9% lower than the state rate, and the female cancer incidence rate was 29% lower, which was statistically significant. Elbert county exhibited statistically lower male and female rates than the state rates. Kit Carson and Lincoln counties both had statistically lower female cancer rates.

The PMR6 male cancer incidence rate was slightly higher than the state rate, while the female cancer incidence rate was slightly lower. Neither rate was statistically different from the state rate.

PMR14 male and female cancer incidence rates were statistically lower than the state rate (see Figure 4.1 for regional rates and Table 5.1 in Appendix for county-specific data).

Figure 4.2   All Cancers Combined -- Percent of "Early" Detection by Region, 1995-1996
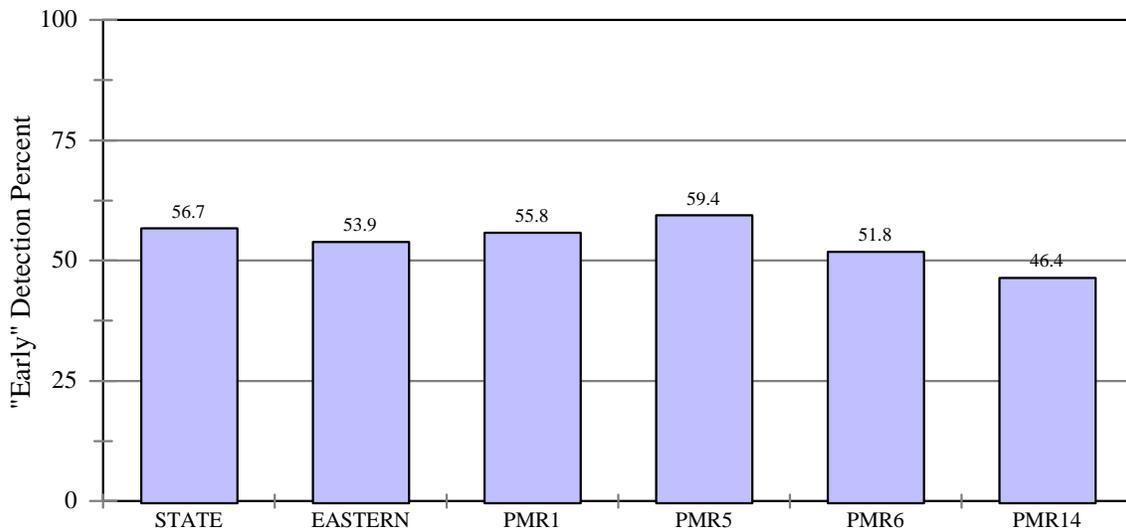
Early Detection: Early detection leads to better survival. In Colorado during the 1995-96 time period, 56.7% of cancer cases were detected early. Early detection percentages for Eastern Colorado and the Planning and Management Regions were generally lower than that of the state, with the exception of PMR5 (59.4%) and Phillips (66.1%), Yuma (63.5%), Elbert (60.8%), Cheyenne (82.4%), Morgan (56.8%), and Lincoln (56.9%) counties (see Figure 4.2 for regional rates and Table 5.2 in Appendix for county-specific data).

**Figure 4.3   All Cancers Combined – Average Annual Age-Adjusted Mortality
Rate per 100,000 by Region and Sex, 1996-1997**
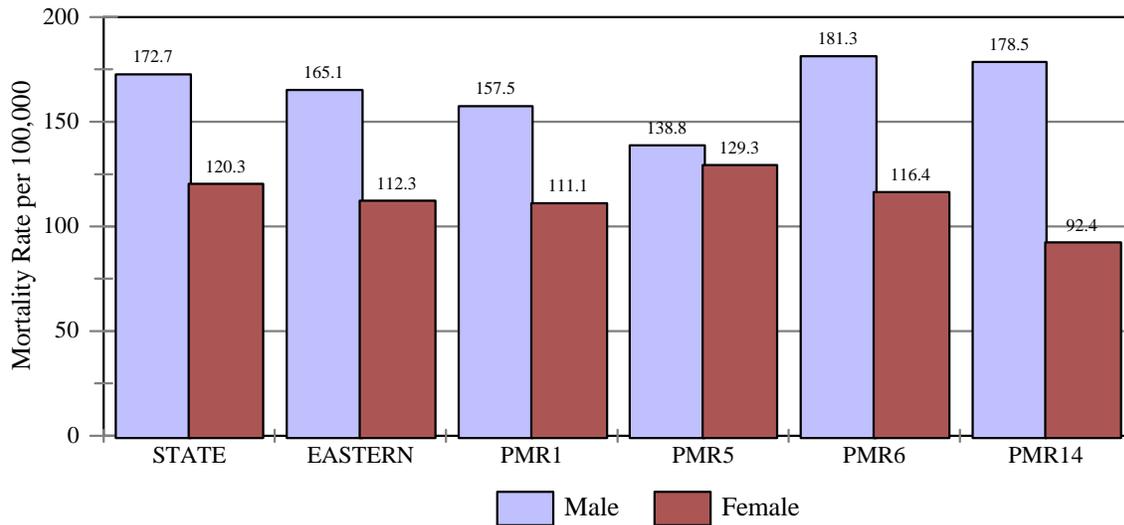
Cancer Mortality: Male and female cancer mortality rates in Eastern Colorado were slightly lower than the state rates. The same was true for the PMR1 male and female rates, the PMR5 male rate and PMR6 and PMR14 female rates. The PMR1 male rate was 9% lower than the state rate, while its female rate was 8% lower. The PMR6 and PMR14 male rates were 5% and 3% higher, respectively, than the state rate. The Prowers county male and female cancer mortality rates were both higher than the state rates. A comparison of the previous time period, 1994-95, finds similar higher mortality rates in this county. This elevation may be due in part to higher lung cancer mortality. The Kiowa county female rate for 1996-97 showed a 67% increase over the state rate. However, when the previous 1994-95 time period was compared, the female rate was much lower than the state rate (see Figure 4.3 for regional rates and Table 5.3 for county-specific data).

Colon and Rectum Cancer

The cumulative risk for Colorado men to be diagnosed with colon and rectum cancer before age 85 is 1 in 13, and the risk for Colorado women is 1 in 17. Colon and rectum cancer ranks third among the most commonly diagnosed cancers in Colorado men during the 1992-1996 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, characteristics of the average American diet (high fat and/or low fruit and vegetable consumption) is 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 5 years, or colonoscopy and digital rectal examination every 10 years, or double-contrast barium enema and digital rectal examination every 5-10 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 low 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 Rate: The male colorectal cancer incidence rate during 1995-96 in Eastern Colorado was 6% higher than the state rate, and the female cancer incidence rate was 6% lower than the state rate.

**Figure 4.4   Colon and Rectum Cancer – Average Annual Age-Adjusted Incidence
Rate per 100,000 by Region and Sex, 1995-1996**
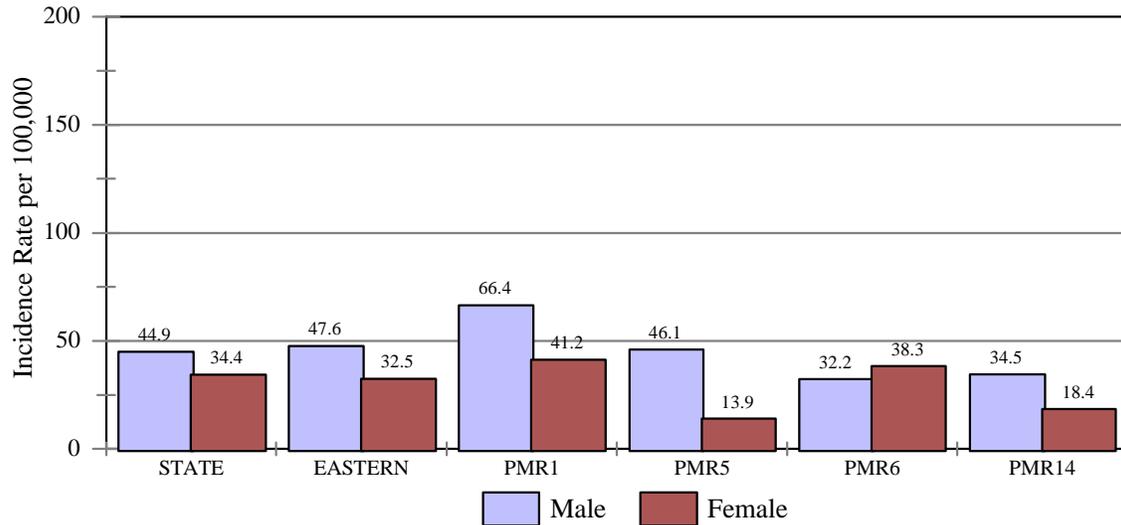
The male colorectal cancer incidence rate in PMR1 was 48% higher than the state rate. This difference was statistically significant. Within this region, Phillips County had a rate 194% higher than the state rate. Logan, Morgan, Sedgwick, and Yuma counties all had a rate 28% or more above the state rate. However, during the previous 1991-93 time period, these counties did not exhibit higher rates. The PMR1 female colorectal cancer incidence rate was 20% higher than the state rate. Three counties in PMR1 had rates 24% or more above the state rate. These counties were: Logan, Washington, and Yuma.

The PMR5 male colorectal cancer incidence rate was similar to the state rate, while the female rate was significantly lower. The Kit Carson County male incidence rate was 31% higher, and in the previous 1991-93 time period, it also had a rate 41% higher; however, both rates were based on a small number of cases.

PMR6 had a male and a female colorectal cancer incidence rate similar to the state rate. PMR14 had a lower male rate, and a statistically significant lower female rate (see Figure 4.4 for regional rates and Table 5.4 in Appendix for county-specific data).

**Figure 4.5   Colon and Rectum Cancer -- Percent of "Early" Detection
by Region, 1995-1996**
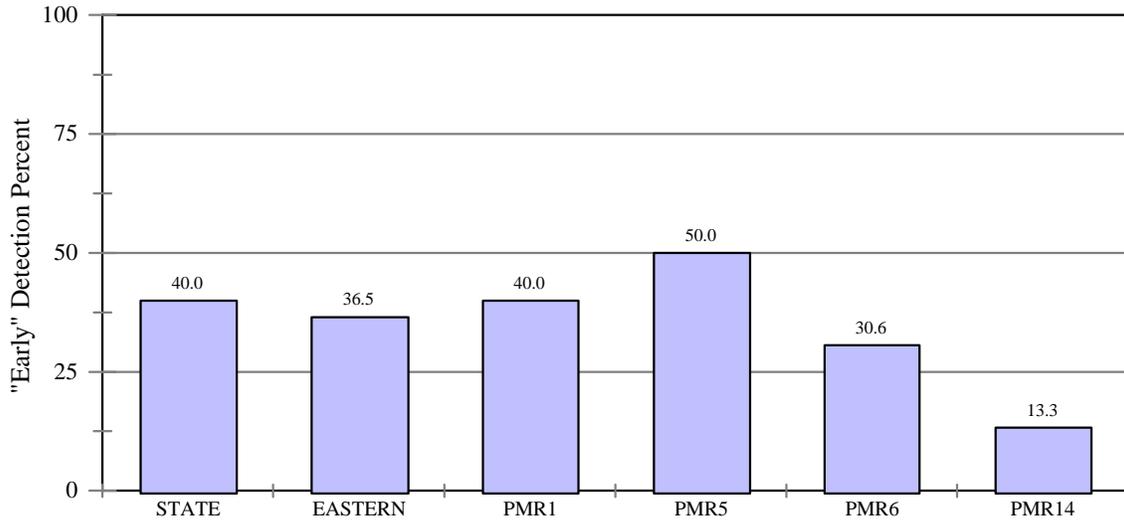
Early Detection: During 1995-96, 40% of colorectal cancers were detected early in
Colorado, and 36.5 % in Eastern Colorado. PMR5 had a better early detection percentage (50.0%)
than the state and early detection for PMR1 was the same as the state. PMR6 and PMR14 had lower
early detection percentages (30.6% and 13.3%, respectively) than the state (see Figure 4.5). Counties
that had 30% or lower early detection were: Sedgwick, Yuma, Baca, Otero, Prowers, Huerfano, and
Las Animas (see Table 5.5 in Appendix).

**Figure 4.6   Colon and Rectum Cancer – Average Annual Age-Adjusted Mortality
Rate per 100,000 by Region and Sex, 1996-1997**
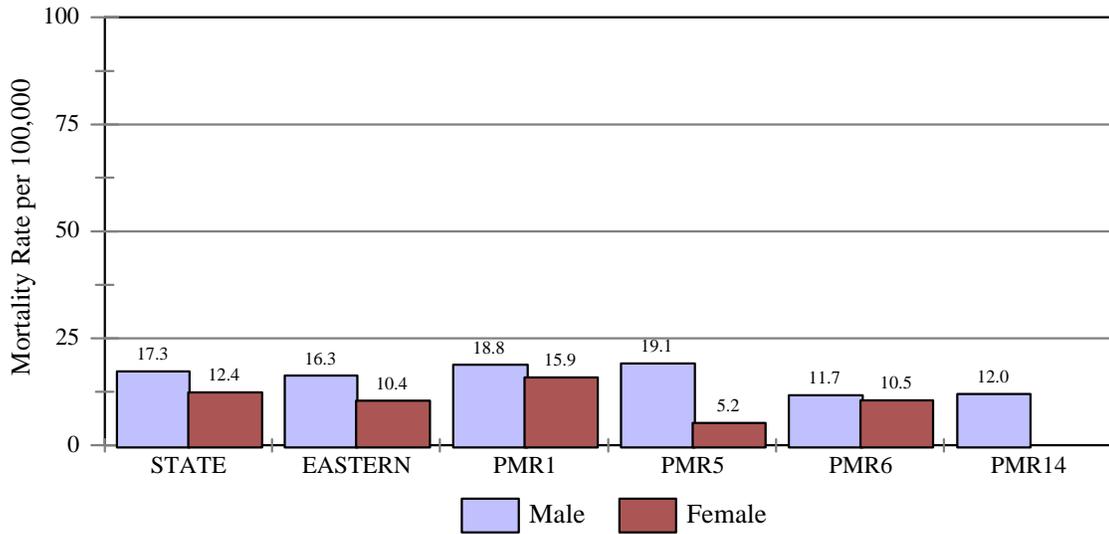
Note: PMR14 female rate was suppressed due to a small number of cases in the category.

Mortality Rate: Both male and female colon and rectum cancer mortality rates in Eastern
Colorado were similar to the state rate. PMR1 had slightly higher male and female mortality rates than
the state rates, while PMR6 had lower male and female rates. The PMR5 female colon and rectum
cancer mortality rate was 58% lower than the state rate, which might be due to a higher percentage of
early detection. None of these differences were greater than expected statistical variation. The county-
specific rates were similar to the state rate (see Figure 4.6 for regional rates and Table 5.6 in Appendix
for county-specific data).

Lung Cancer

The cumulative risk of Colorado men being diagnosed with lung cancer before age 85 is 1 in 9,
and the risk for Colorado women is 1 in 17. Lung cancer ranks second among the most commonly

diagnosed cancers in Colorado men during the 1992-1996 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 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 and 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. Pre-cancerous cellular changes in bronchial tissues often return to normal in smokers who stop smoking. Chest x-rays, analysis of cell types in sputum, and fiberoptic examination of the bronchial passages assist diagnosis, but have not been shown to be useful as widespread screening procedures to detect early stage disease.

Cancer Incidence: Lung cancer incidence during 1995-96 in Colorado was 2,039 for men and 1,433 for women, and in Eastern Colorado the incidence was 136 for men, and 65 for women. The male age-adjusted lung cancer incidence rate for Eastern Colorado was 5% higher than the state rate, and the female lung cancer incidence rate was 26% lower, which was statistically significant.

PMR1, PMR5 and PMR14 all had lower rates than the state rates for both men and women. Among them the lower female rate in PMR14 was statistically significant. Though

**Figure 4.7   Lung Cancer – Average Annual Age-Adjusted Incidence Rate
per 100,000 by Region and Sex, 1995-1996**
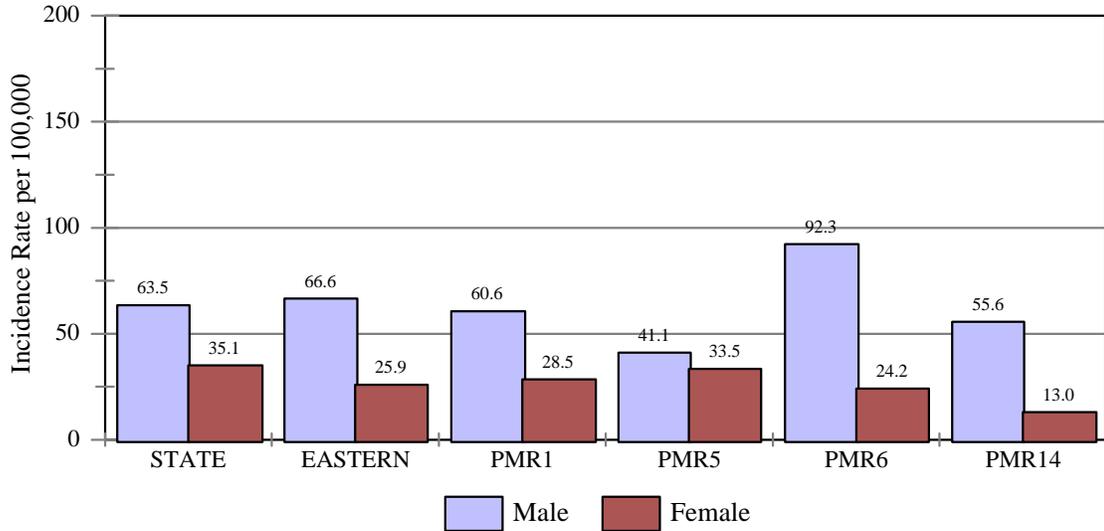
PMR6 had a lower female rate than the state, its male rate was statistically 45% higher than the

state rate. In this region, Otero County exhibited a substantially lower female rate, while Bent and

Prowers counties had substantially higher male rates. These last three comparisons were statistically

significant (see Figure 4.7 for regional rates and Table 5.7 in Appendix for county-specific data).

**Figure 4.8   Lung Cancer -- Percent of "Early" Detection
by Region, 1995-1996**
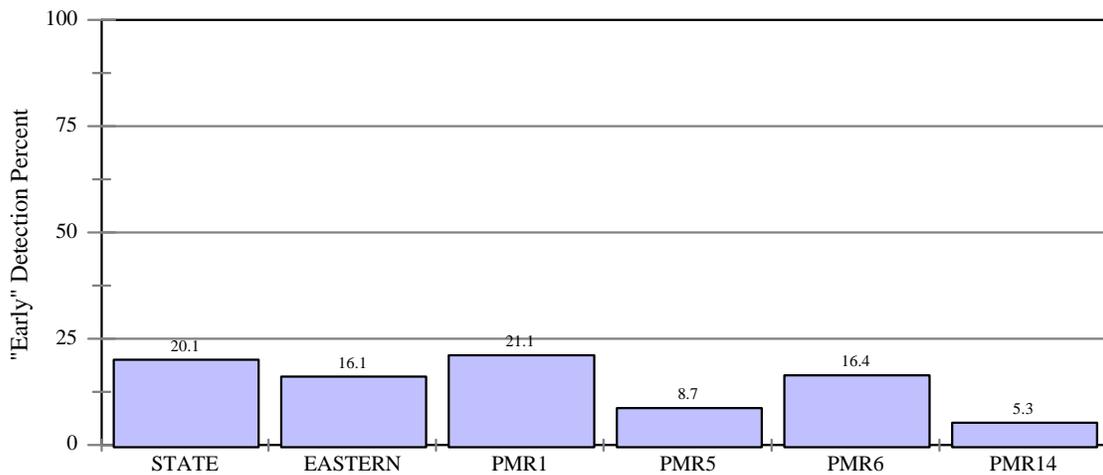
Early Detection: Because symptoms often do not appear until the disease is in an advanced stage, early detection of lung cancer is very difficult. In 1995-96, only 20.1 % of cases were detected early in Colorado, 16.1 % in Eastern Colorado. PMR1 had a slightly higher early detection percentage (21.1%) than the state. The early detection percentages for PMR5, PMR6 and PMR14 were lower (see Figure 4.8). There were 6 counties whose early detection was below 10 percent: Phillips, Elbert, Kit Carson, Bent, Huerfano, and Las Animas (see Table 5.8 in Appendix).

**Figure 4.9   Lung Cancer – Average Annual Age-Adjusted Mortality
Rate per 100,000 by Region and Sex, 1996-1997**
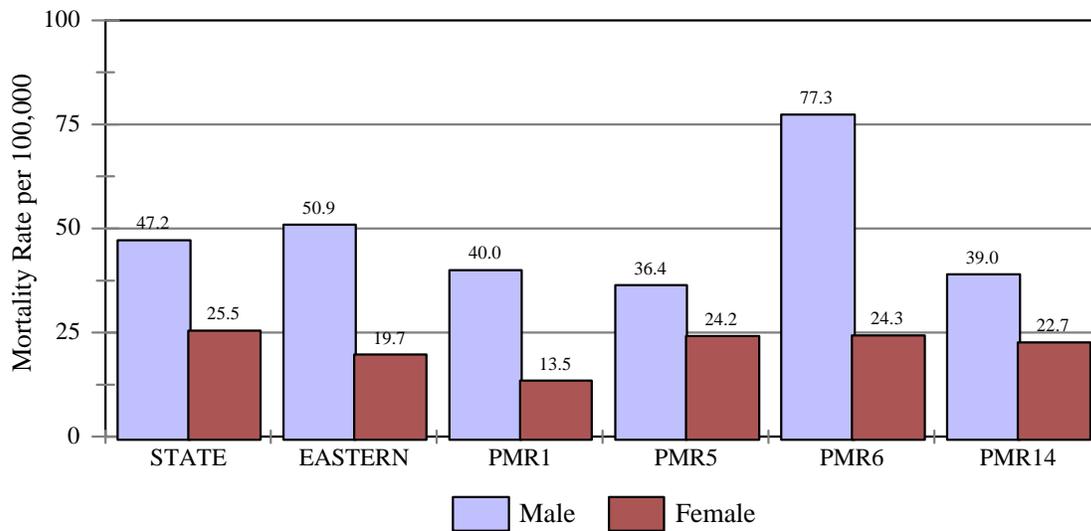
Mortality Rate: Lung cancer is the leading cause of cancer death in Colorado for both men and women.   During the 1996-97 time period, 1,570 men and 1,098 women died of lung cancer in Colorado, and 107 men and 49 women from Eastern Colorado died of lung cancer. The age-adjusted lung cancer mortality rates for Eastern Colorado for men and women were generally similar to the state rate. However, the PMR6 male rate was 64% higher than the state rate. All but Kiowa County in PMR6 had male lung cancer mortality rates higher than the state rate. In the region, the Baca, Bent,

and Crowley county rates for males were 50% or more higher, but the rates were based on a small

number of cases. During the previous 1994-95 time period, the Baca, Bent, and Crowley county rates

were also above the state rate. Prowers County's 168% higher male mortality rate was statistically

significant. The higher male mortality rate in Prowers county was likely due to its higher incidence rate

during 1995-1996 (see Figure 4.9 for regional rates and Table 5.9 for county-specific data).

Melanoma

Melanoma is the most deadly type of skin cancer. Other types of skin cancer are highly curable

basal or squamous cell cancers. Though representing only less than 5% of all skin cancers, melanoma

accounts for the majority of deaths caused by skin cancer. Melanoma is the fastest growing major

cancer in Colorado, and during 1991-95 the melanoma incidence rates were higher than U.S. rates.

The cumulative risk of being diagnosed with melanoma before age 85 is 1 in 39 for men, and 1 in 66 for

women. Melanoma ranks fifth among the most commonly diagnosed cancers in Colorado men during

the 1992-1996 time period, and fourth among Colorado women.

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, 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 involves limiting sun exposure, avoiding tanning facilities, wearing protective

clothing and applying sunscreen preparations. The American Cancer Society recommends monthly

skin self-examination for all adults and physician skin examination every 3 years in persons 20-39 years

old and annually in persons of 40 years and older.

Early detection of melanoma is critical. Over 90% 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.

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

**Figure 4.10   Melanoma – Average Annual Age-Adjusted Incidence Rate
per 100,000 by Region and Sex, 1995-1996**
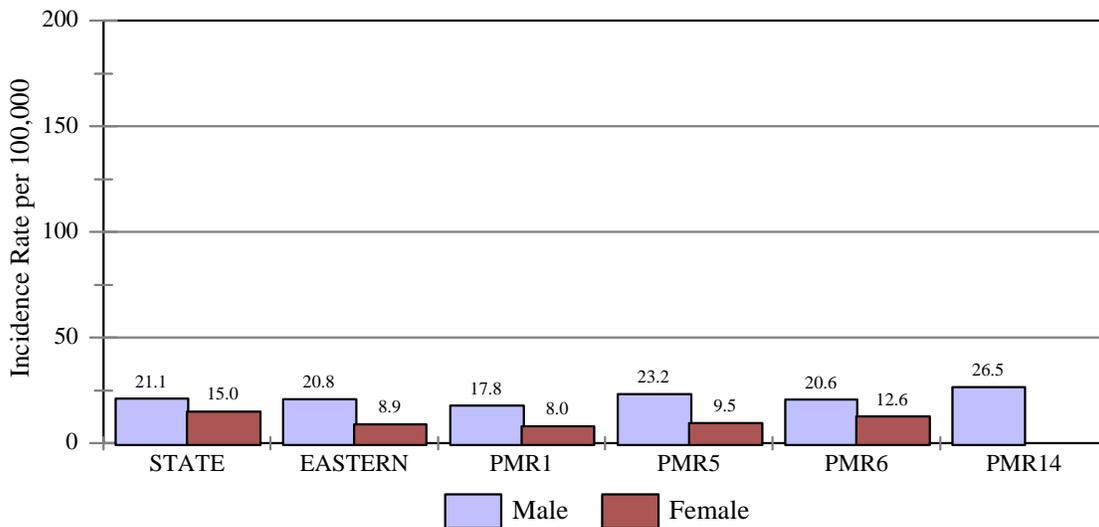
Note: PMR14 female rate was suppressed due to a small number of cases in the category.

Incidence Rate: The male melanoma incidence rate in Eastern Colorado was similar to the state rate during the 1995-96 time period, while the female incidence rate in Eastern Colorado and PMR1 was statistically lower than the state rate. Yuma, Cheyenne, Elbert, Otero, and Huerfano counties had male rates 46% or more higher than the state rate. Again, this elevation was based on a

small number of cases, and the previous 1991-93 time period did not show much higher rates than the state rate.

**Figure 4.11   Melanoma -- Percent of "Early" Detection
by Region, 1995-1996**
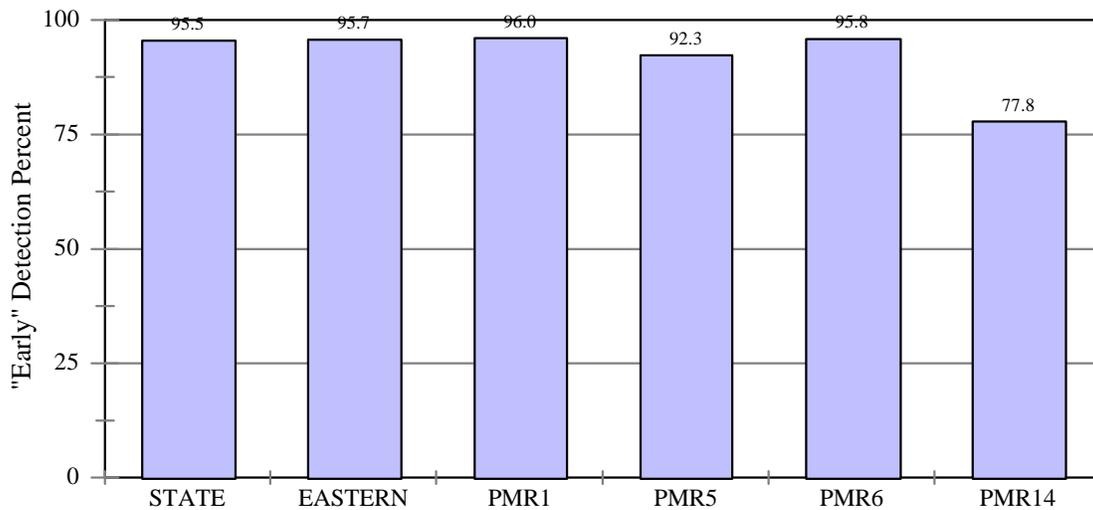
Early Detection: During 1995-96, 95.5% of melanoma cases were detected early in Colorado, and a similar percentage were detected early in Eastern Colorado. PMR14 had a lower early detection percentage (77%), but this statistic was based on only 10 cases (see Figure 4.11).

Mortality Rate: The male and female melanoma mortality rates in Eastern Colorado were lower than the state rate during the 1996-97 time period, but the Eastern Colorado rates were based on less than 5 cases of each sex. County specific rates were suppressed due to a small number of cases.

Female Breast Cancer

The cumulative risk for Colorado women being diagnosed with breast cancer before age 85 is 1 in 7.   Breast cancer ranks first among the most commonly diagnosed cancers in Colorado women during the 1992-1996 time period.

Risk Factors: Breast cancer risk rises 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 (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 (The American Cancer Society).

Prevention: The American College of Radiology, American Medical Association, and American College of Obstetricians and Gynecologists recommend that women aged 40 and over have a screening mammogram every 1-2 years and an annual clinical physical 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 have a mammogram and a clinical breast exam every year, and do a breast self-exam each month.

Cancer Incidence: Female breast cancer incidence for Colorado during the 1995-96 time period was 4,662, and 193 for Eastern Colorado. The age-adjusted female breast cancer incidence rate for Eastern Colorado was statistically 23% lower than the state rate. The same was true for rates of breast cancer in PMR5 (50.8% lower), PMR6 (29% lower), and PMR14 (31% lower). The PMR1 rate was also lower than the state rate (5% lower), but not statistically significant. For individual counties in Eastern Colorado, the Las Animas county rate was

**Figure 4.12　Female Breast Cancer – Average Annual Age-Adjusted Incidence
Rate per 100,000 by Region, 1995-1996**
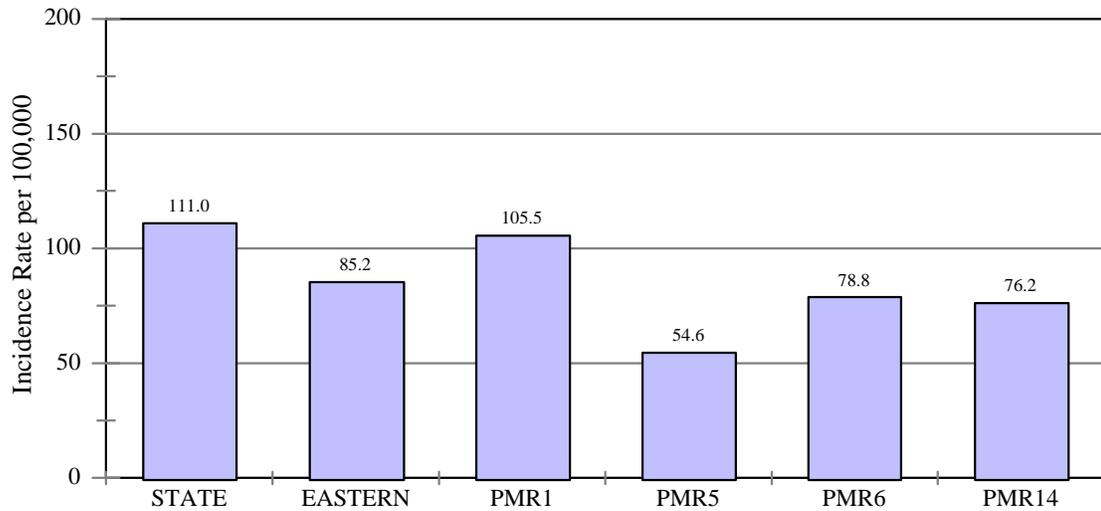
statistically lower than the state rate (50% lower). No individual county incidence rates were

statistically higher than the state rate (see Figure 4.12 for regional rates and Table 5.12 in Appendix for

county-specific data).

**Figure 4.13　Female Breast Cancer -- Percent of "Early" Detection
by Region, 1995-1996**
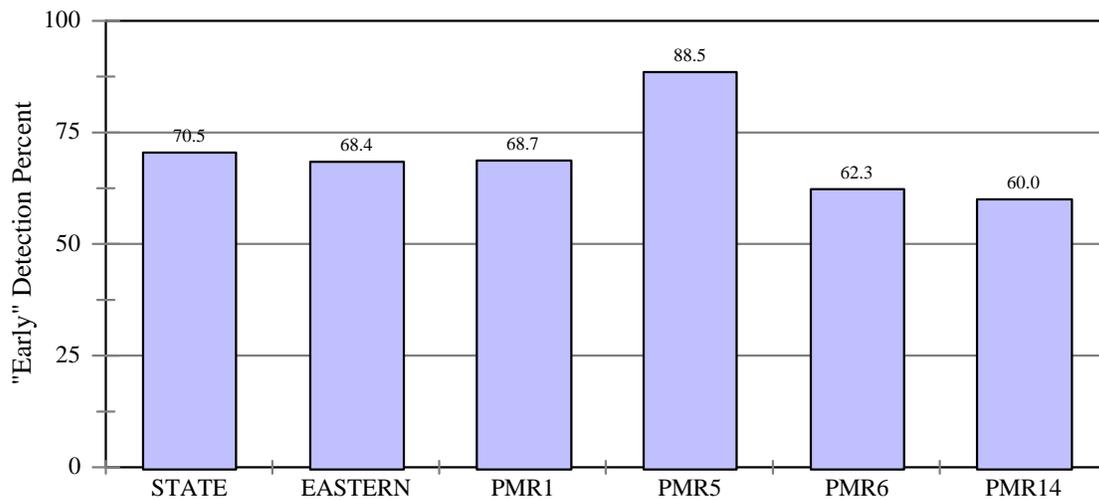
Early Detection: In Colorado during the 1995-96 time period, 70.5% of female breast cancers were detected early. In Eastern Colorado, 68.4% of female breast cases were detected early. Early detection within the individual Planning and Management Regions was somewhat worse than the state percentage, except for PMR5 which had almost 89% early detection (see Figure 4.13) Three counties had better early detection percentages than the state. The three counties were: Phillips, Elbert and Lincoln (see Table 5.14 in Appendix).

Figure 4.14   Female Breast Cancer – Average Annual Age-Adjusted Mortality Rate per 100,000 by Region, 1996-1997
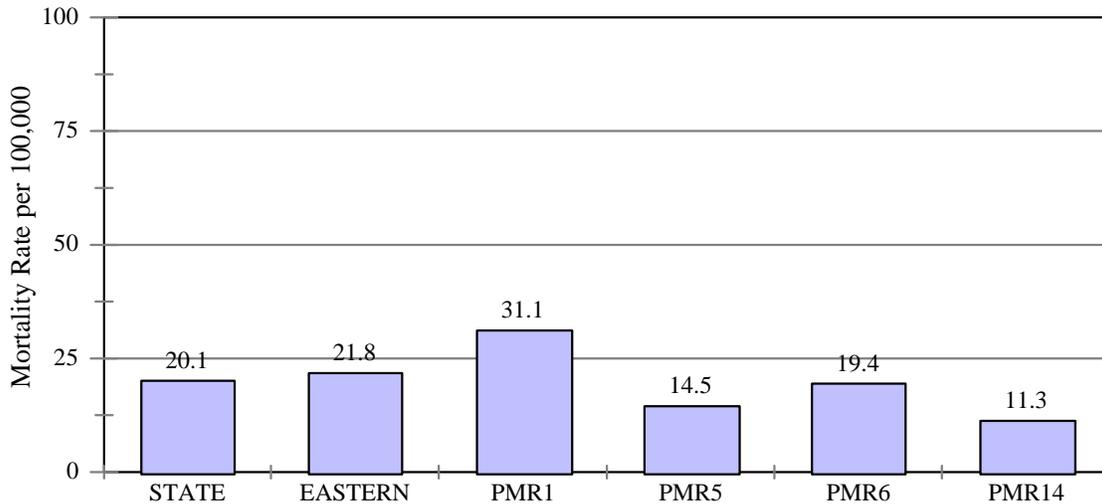
Cancer Mortality Rate: The female breast cancer mortality rate in Eastern Colorado was similar to the state rate. The PMR1 mortality rate was 55% higher, though within expected statistical variation. Other Planning and Management Regions showed lower rates than the state rate (see Figure 4.14). No individual county mortality rates were statistically different from the state rate (see Table 5.15 in Appendix).

Invasive Cervix Cancer

The cumulative risk of Colorado women being diagnosed with invasive cervix cancer before age 85 is 1 in 115. Invasive cervix cancer ranks eighth among the most commonly diagnosed cancers in Colorado women during the 1992-1996 time period.

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

Prevention: The American Cancer Society and the National Cancer Institute recommend pelvic exams every 1 to 3 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 1 to 3 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 1 to 2 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.

Figure 4.15   Invasive Cervix Cancer – Average Annual Age-Adjusted Incidence Rate per 100,000 by Region, 1995-1996
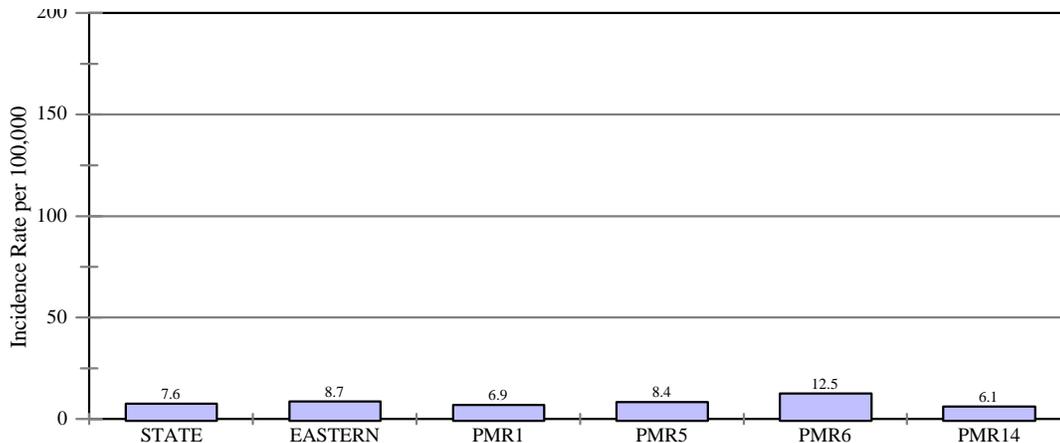
Cancer Incidence: Over 80% of cervix cancers are detected at the in-situ or pre-invasive stage, when the cancer is very curable. In Colorado there were 348 invasive cervical cases diagnosed during the 1995-96 time period, of which 20 cases were found in Eastern Colorado. The age-adjusted cervix cancer incidence rate in Eastern Colorado was 14% higher than the state rate, but within expected statistical variation. The Otero county rate was 163% higher than the state rate, and during the previous 1991-93 time period, its rate was 111% higher. PMR6, which includes Otero county, had an incidence rate 64% above the state rate, but this difference, along with the Otero county differences, were within expected statistical variation (see Figure 4.15 for regional rates and Table 5.16 in Appendix for county-specific data).

Early Detection: Early Detection was not calculated for cervical cancer, because in-situ cervix cancer is not reportable to the Colorado Central Cancer Registry. However, Eastern Colorado, as well as every PMR, had higher percentages of distant stage cases than statewide.

Mortality Rate: The invasive cervix cancer mortality rate in Eastern Colorado was 32% lower than the state rate, though the Eastern Colorado rate was based on a small number of cases.   There were too few cervix cancer deaths in Eastern Colorado to report data by PMR.

Prostate Cancer

The cumulative risk of Colorado men being diagnosed with prostate cancer before age 85 is 1 in 4.   Prostate cancer ranks first among the most commonly diagnosed cancers in Colorado men during the 1992-1996 time period.

Risk Factors: Incidence increases with older 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 (The American Cancer Society).

Prevention: The American Cancer Society recommends that both Prostate-Specific-Antigen (PSA) testing and Digital Rectal Examination (DRE) should be offered annually, beginning at age 50, to men who have at least a 10-year life expectancy, and to younger men who are at high risk. The PSA test measures PSA levels in the blood and is used to help detect prostate cancer earlier. Other organizations (e.g. the National Cancer Institute) believe that there is not enough scientific evidence to support regular screening with the PSA test. Men should discuss the appropriate screening tests with their health care providers.

Figure 4.16   Prostate Cancer – Average Annual Age-Adjusted Incidence Rate per 100,000 by Region, 1995-1996
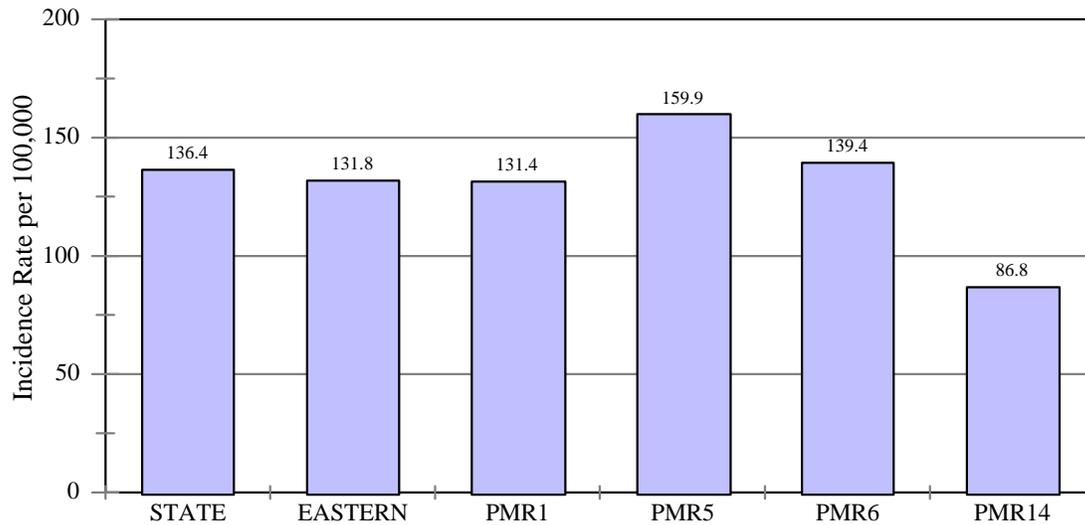
Incidence: According to the Cancer Registry Annual Report, prostate cancer incidence rose sharply in Colorado from the late 1980's to 1992, with a similarly sharp drop in rates through 1995-96. This phenomenon has been attributed to changes in prostate specific antigen (PSA)

screening rates.

During the 1995-96 time period, 4,318 new cases were detected in Colorado, and 269 in Eastern Colorado. The age-adjusted prostate cancer incidence rate in Eastern Colorado was slightly lower than the state rate. The incidence rates in Morgan and Las Animas counties were both statistically 35% lower than the state rate, and in the previous 1991-93 time period, the rates in the two counties were also lower. Washington, Bent, and Huerfano Counties all had a lower rate in both the 1991-93 and 1995-96 time periods, but the rates were not statistically significant. Phillips, Sedgwick, Kit Carson, and Crowley counties all had 60% or higher rates than the state rate, but in the previous 1991-93 time period, these counties showed lower rates. These elevations over the state rate in the 1995-96 time period were likely reflecting a late peak in incidence in these individual counties, and likely a result of early detection differences due to PSA testing (see Figure 4.16 for regional rates and Table 5.19 for county-specific data).

**Figure 4.17   Prostate Cancer -- Percent of "Early" Detection
by Region, 1995-1996**
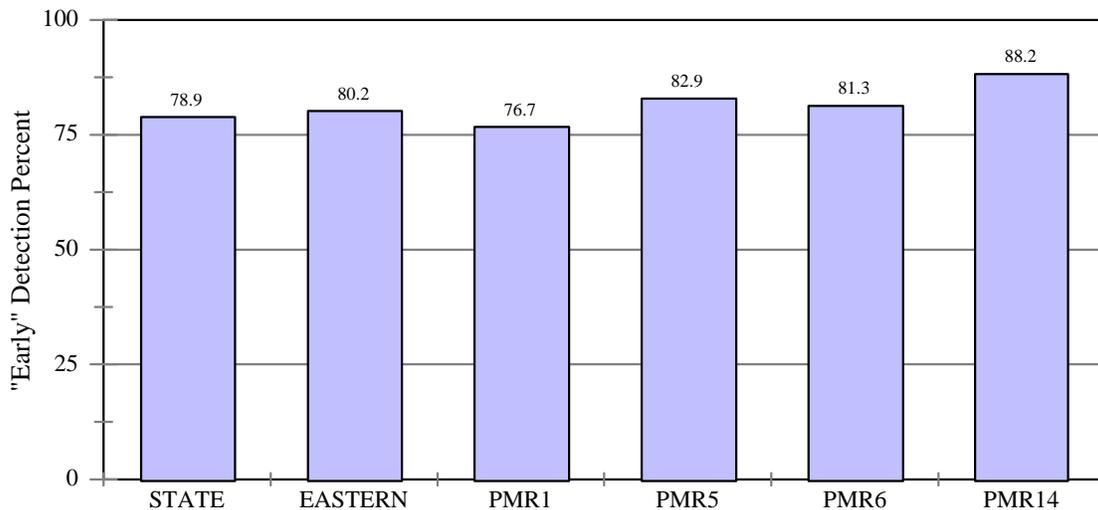
Early Detection: In Colorado during the 1995-96 time period, 78.9 % of prostate cancers were detected at early stages, and 80.2 % of the cancers were detected early in Eastern Colorado. Except PMR1, every region in Eastern Colorado had a better early detection percentage than the state (see Figure 4.17). Most of the counties in Eastern Colorado had as good or better early detection percentage than the state percentage. Three counties had early detection percentages that were less than 70%. These counties were: Logan, Washington, and Crowley (see Table 5.20 in Appendix).

**Figure 4.18   Prostate Cancer – Average Annual Age-Adjusted Mortality
Rate per 100,000 by Region, 1996-1997**
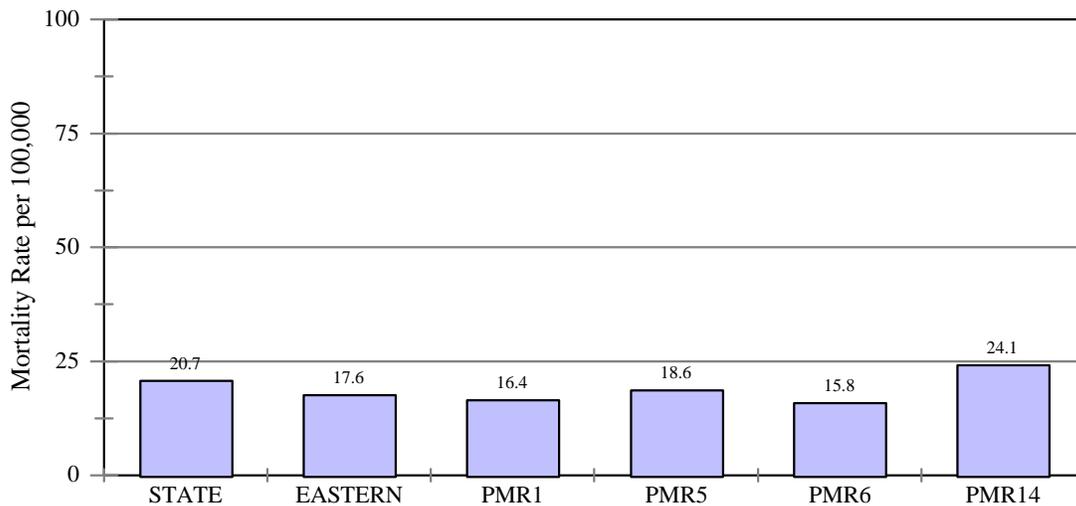
Mortality Rate: The Eastern Colorado prostate cancer mortality rate was similar to the overall state rate during the 1996-97 time period (17.6 vs. 20.7). More than half of the counties had less than three deaths in the two years. Four counties had a rate 50% higher than the state rate, but these elevations were based on a small number of cases. None of the individual PMR or county mortality rates were statistically different from the state rate (see Figure 4.18 for regional rates and Table 5.21 in Appendix for county-specific data).

Chapter V
Appendix

Incidence,
Staging
and
Mortality
by
County

Table 5.1   All Cancers Combined - Number of Diagnosed Cancers and Average Annual Age-Adjusted Incidence Rates per 100,000 by Sex and Place, 1995-1996

Place	Male		Female	
	N	Rate	N	Rate
Colorado	14612	439.5	14146	332.8
Eastern Colorado	856	420.5	680	284.8 ■
PMR1[1]	338	428.9	275	292.0 ■
Logan	91	411.5	77	281.4
Morgan	100	361.2 ■	96	304.5
Phillips	37	615.3	23	341.2
Sedgwick	20	479.7	9	172.8 ■
Washington	21	302.6	26	289.4
Yuma	65	533.7	45	295.5
PMR5	127	400.2	91	236.2 ■
Cheyenne	7	269.1	7	319.1
Elbert	38	298.8 ■	35	237.3 ■
Kit Carson	44	506.3	25	232.6 ■
Lincoln	33	420.5	23	221.7 ■
PMR6	284	451.3	227	326.4
Baca	30	429.3	28	370.9
Bent	41	502.0	30	365.6
Crowley	23	506.7	12	215.6
Kiowa	13	546.6	9	362.9
Otero	111	424.9	90	303.6
Prowers	68	484.4	58	357.2
PMR14	107	349.8 ■	87	233.9 ■
Huerfano	37	389.1	33	284.7
Las Animas	70	333.0 ■	52	199.8 ■

*   Data not displayed due to small number of events in the category.

★   Rate is statistically higher than Colorado rate.

■   Rate is statistically lower than Colorado rate.

[1]   PMR = Planning and Management Region.

**Table 5.2   All Cancers Combined - Stage of Disease at Diagnosis
by Place, 1995-96**

Place	In-Situ %	Local %	Regional %	Distant %	Unknown %	Cases N	% "Early" Detection
Colorado	7.1	43.7	18.7	20.2	10.3	31202	56.7
Eastern Colorado	4.8	42.2	19.1	21.1	12.8	1633	53.9
PMR1[1]	4.8	45.4	19.8	19.8	10.2	650	55.8
Logan	5.6	38.9	24.4	21.7	9.4	180	49.1
Morgan	5.2	46.2	20.0	19.0	9.5	210	56.8
Phillips	4.6	55.4	13.8	16.9	9.2	65	66.1
Sedgwick	0.0	41.4	17.2	20.7	20.7	29	52.2
Washington	5.9	35.3	23.5	23.5	11.8	51	46.7
Yuma	3.5	53.9	14.8	18.3	9.6	115	63.5
PMR5	6.8	45.3	18.6	16.9	12.3	236	59.4
Cheyenne	11.1	66.7	16.7	0.0	5.6	18	82.4
Elbert	6.2	49.4	16.0	19.8	8.6	81	60.8
Kit Carson	5.3	41.3	22.7	17.3	13.3	75	53.8
Lincoln	8.1	38.7	17.7	17.7	17.7	62	56.9
PMR6	4.4	40.2	18.3	23.2	13.9	540	51.8
Baca	6.8	33.9	18.6	18.6	22.0	59	52.2
Bent	1.4	44.4	15.3	22.2	16.7	72	55.0
Crowley	2.9	37.1	20.0	25.7	14.3	35	46.7
Kiowa	0.0	31.8	27.3	18.2	22.7	22	41.2
Otero	5.6	42.1	19.0	21.8	11.6	216	53.9
Prowers	4.4	39.7	16.9	27.9	11.0	136	49.6
PMR14	3.9	33.8	19.3	24.2	18.8	207	46.4
Huerfano	3.9	40.8	23.7	18.4	13.2	76	51.5
Las Animas	3.8	29.8	16.8	27.5	22.1	131	43.1

* Data not displayed due to small number of events in the category.

[1] PMR = Planning and Management Region.

Table 5.3   All Cancers Combined - Number of Deaths and Average Annual Age-Adjusted Mortality Rates per 100,000 by Sex and Place, 1996-1997

Place	Male		Female	
	N	Rate	N	Rate
Colorado	5859	172.7	5435	120.3
Eastern Colorado	357	165.1	299	112.3
PMR1[1]	136	157.5	116	111.1
Logan	47	194.0	41	144.8
Morgan	38	131.0	40	105.8
Phillips	14	195.6	11	113.8
Sedgwick	8	142.0	4	78.2
Washington	10	140.0	5	53.1
Yuma	19	145.6	15	95.4
PMR5	43	138.8	49	129.3
Cheyenne	3	129.4	3	67.1
Elbert	14	127.6	20	154.9
Kit Carson	16	158.1	14	135.4
Lincoln	10	125.8	12	119.8
PMR6	121	181.3	97	116.4
Baca	17	204.0	12	121.1
Bent	15	165.4	14	150.4
Crowley	9	162.3	3	68.5
Kiowa	4	189.6	6	200.4
Otero	45	166.4	36	90.8
Prowers	31	214.9	26	140.2
PMR14	57	178.5	37	92.4
Huerfano	21	193.3	11	77.0
Las Animas	36	172.0	26	100.5

* Data not displayed due to small number of events in the category.

★   Rate is statistically higher than Colorado rate.

■   Rate is statistically lower than Colorado rate.

[1] PMR = Planning and Management Region

Table 5.4   **Colon and Rectum Cancer - Number of Diagnosed Cancers and Average Annual Age-Adjusted Incidence Rates per 100,000 by Sex and Place, 1995-1996**

Place	Male		Female	
	N	Rate	N	Rate
Colorado	1463	44.9	1502	34.4
Eastern Colorado	99	47.6	86	32.5
PMR1[1]	52	66.4★	44	41.2
Logan	15	69.5	17	51.3
Morgan	16	57.5	10	30.1
Phillips	8	132.1	*	*
Sedgwick	3	61.7	*	*
Washington	3	41.1	7	66.9
Yuma	7	58.6	7	44.2
PMR5	15	46.1	6	13.9■
Cheyenne	*	*	*	*
Elbert	*	*	*	*
Kit Carson	5	59.0	*	*
Lincoln	6	71.9	3	26.5
PMR6	22	32.2	29	38.3
Baca	*	*	4	66.5
Bent	*	*	*	*
Crowley	*	*	*	*
Kiowa	*	*	*	*
Otero	12	41.7	15	42.7
Prowers	4	25.9	7	41.0
PMR14	10	34.5	7	18.4■
Huerfano	3	30.5	*	*
Las Animas	7	37.2	*	*

*   Data not displayed due to small number of events in the category.

★   Rate is statistically higher than Colorado rate.

■   Rate is statistically lower than Colorado rate.

[1]   PMR = Planning and Management Region.

Table 5.5   Colon and Rectum Cancer - Stage of Disease at Diagnosis by Place, 1995-96

Place	In-Situ %	Local %	Regional %	Distant %	Unknown %	Cases N	% "Early" Detection
Colorado	6.1	31.2	36.4	19.6	6.7	3170	40.0
Eastern Colorado	5.9	26.7	43.1	13.9	10.4	202	36.5
PMR1[1]	7.6	28.6	36.2	18.1	9.5	105	40.0
Logan	10.8	24.3	35.1	21.6	8.1	37	38.2
Morgan	7.1	28.6	32.1	21.4	10.7	28	40.0
Phillips	9.1	45.5	18.2	9.1	18.2	11	66.7
Sedgwick	0.0	0.0	75.0	25.0	0.0	4	0.0
Washington	9.1	45.5	36.4	9.1	0.0	11	54.5
Yuma	0.0	21.4	50.0	14.3	14.3	14	25.0
PMR5	8.3	37.5	45.8	0.0	8.3	24	50.0
Cheyenne	*	*	*	*	*	*	*
Elbert	*	*	*	*	*	*	*
Kit Carson	12.5	37.5	50.0	0.0	0.0	8	50.0
Lincoln	10.0	40.0	50.0	0.0	0.0	10	50.0
PMR6	3.6	23.2	51.8	8.9	12.5	56	30.6
Baca	0.0	14.3	42.9	14.3	28.6	7	20.0
Bent	*	*	*	*	*	*	*
Crowley	0.0	66.7	33.3	0.0	0.0	3	66.7
Kiowa	*	*	*	*	*	*	*
Otero	6.5	16.1	51.6	9.7	16.1	31	26.9
Prowers	0.0	27.3	63.6	9.1	0.0	11	27.3
PMR14	0.0	11.8	52.9	23.5	11.8	17	13.3
Huerfano	0.0	0.0	80.0	20.0	0.0	5	0.0
Las Animas	0.0	16.7	41.7	25.0	16.7	12	20.0

* Data not displayed due to small number of events in the category.

[1] PMR = Planning and Management Region.

41

Table 5.6   Colon and Rectum Cancer - Number of Deaths and Average Annual Age-Adjusted Mortality Rates per 100,000 by Sex and Place, 1996-1997

Place	Male		Female	
	N	Rate	N	Rate
Colorado	587	17.3	590	12.4
Eastern Colorado	35	16.3	33	10.4
PMR1[1]	16	18.8	17	15.9
Logan	5	19.7	6	21.7
Morgan	5	18.4	7	15.6
Phillips	*	*	*	*
Sedgwick	*	*	*	*
Washington	*	*	*	*
Yuma	*	*	3	22.3
PMR5	6	19.1	3	5.2
Cheyenne	*	*	*	*
Elbert	3	30.2	*	*
Kit Carson	*	*	*	*
Lincoln	*	*	*	*
PMR6	8	11.7	12	10.5
Baca	*	*	*	*
Bent	*	*	*	*
Crowley	*	*	*	*
Kiowa	*	*	*	*
Otero	*	*	6	12.6
Prowers	*	*	3	9.6
PMR14	4	12.0	*	*
Huerfano	*	*	*	*
Las Animas	*	*	*	*

* Indicates less than three events in the category.

★   Rate is statistically higher than Colorado rate.

■   Rate is statistically lower than Colorado rate.

[1] PMR = Planning and Management Region

Table 5.7   Lung Cancer - Number of Diagnosed Cancers and Average Annual Age-Adjusted Incidence Rates per 100,000 by Sex and Place, 1995-1996

Place	Male		Female	
	N	Rate	N	Rate
Colorado	2039	63.5	1433	35.1
Eastern Colorado	136	66.6	65	25.9■
PMR1[1]	49	60.6	28	28.5
Logan	11	53.3	8	34.8
Morgan	18	65.9	11	29.5
Phillips	*	*	*	*
Sedgwick	*	*	*	*
Washington	4	52.2	5	51.3
Yuma	11	83.5	*	*
PMR5	13	41.1	13	33.5
Cheyenne	*	*	*	*
Elbert	*	*	5	33.0
Kit Carson	7	82.9	6	56.5
Lincoln	3	38.4	*	*
PMR6	57	92.3★	19	24.2
Baca	7	96.2	3	40.3
Bent	15	182.6★	*	*
Crowley	*	*	*	*
Kiowa	*	*	*	*
Otero	14	53.0	6	14.0■
Prowers	18	134.5★	6	35.0
PMR14	17	55.6	5	13.0■
Huerfano	3	31.1	*	*
Las Animas	14	66.0	*	*

*   Data not displayed due to small number of events in the category.

★   Rate is statistically higher than Colorado rate.

■   Rate is statistically lower than Colorado rate.

[1]   PMR = Planning and Management Region.

Table 5.8   **Lung Cancer - Stage of Disease at Diagnosis**
by Place, 1995-96

Place	In-Situ %	Local %	Regional %	Distant %	Unknown %	Cases N	% "Early" Detection
Colorado	0.1	17.7	19.7	50.8	11.6	3484	20.1
Eastern Colorado	0.0	13.9	17.3	55.0	13.9	202	16.1
PMR1[1]	0.0	19.5	14.3	58.4	7.8	77	21.1
Logan	0.0	10.5	15.8	63.2	10.5	19	11.8
Morgan	0.0	24.1	17.2	51.7	6.9	29	25.9
Phillips	*	*	*	*	*	*	*
Sedgwick	*	*	*	*	*	*	*
Washington	0.0	11.1	0.0	77.8	11.1	9	12.5
Yuma	0.0	23.1	7.7	61.5	7.7	13	25.0
PMR5	0.0	7.7	30.8	50.0	11.5	26	8.7
Cheyenne	*	*	*	*	*	*	*
Elbert	0.0	0.0	42.9	42.9	14.3	7	0.0
Kit Carson	0.0	0.0	30.8	61.5	7.7	13	0.0
Lincoln	*	*	*	*	*	*	*
PMR6	0.0	13.0	16.9	49.4	20.8	77	16.4
Baca	0.0	30.0	20.0	20.0	30.0	10	42.9
Bent	0.0	5.9	23.5	35.3	35.3	17	9.1
Crowley	*	*	*	*	*	*	*
Kiowa	*	*	*	*	*	*	*
Otero	0.0	9.5	19.0	57.1	14.3	21	11.1
Prowers	0.0	8.3	12.5	62.5	16.7	24	10.0
PMR14	0.0	4.5	13.6	68.2	13.6	22	5.3
Huerfano	0.0	0.0	25.0	75.0	0.0	4	0.0
Las Animas	0.0	5.6	11.1	66.7	16.7	18	6.7

* Data not displayed due to small number of events in the category.

[1] PMR = Planning and Management Region.

Table 5.9   Lung Cancer - Number of Deaths and Average Annual Age-Adjusted Mortality Rates per 100,000 by Sex and Place, 1996-1997

Place	Male		Female	
	N	Rate	N	Rate
Colorado	1570	47.2	1098	25.5
Eastern Colorado	107	50.9	49	19.7
PMR1[1]	34	40.0	14	13.5
Logan	7	30.2	7	26.8
Morgan	9	32.1	4	9.5
Phillips	4	52.7	*	*
Sedgwick	3	46.3	*	*
Washington	5	67.7	*	*
Yuma	6	47.9	*	*
PMR5	11	36.4	9	24.2
Cheyenne	*	*	*	*
Elbert	4	38.7	3	18.3
Kit Carson	*	*	5	51.3
Lincoln	*	*	*	*
PMR6	50	77.3	18	24.3
Baca	5	70.9	*	*
Bent	7	78.8	*	*
Crowley	*	*	*	*
Kiowa	*	*	*	*
Otero	15	54.1	5	8.6
Prowers	18	126.5 ★	6	35.2
PMR14	12	39.0	8	22.7
Huerfano	5	45.0	*	*
Las Animas	7	36.7	*	*

* Data not displayed due to small number of events in the category.

★   Rate is statistically higher than Colorado rate.

■   Rate is statistically lower than Colorado rate.

[1] PMR = Planning and Management Region

Table 5.10   Melanoma - Number of Diagnosed Cancers and Average Annual Age-Adjusted Incidence Rates per 100,000 by Sex and Place, 1995-1996

Place	Male		Female	
	N	Rate	N	Rate
Colorado	795	21.1	680	15.0
Eastern Colorado	42	20.8	23	8.9 ■
PMR1[1]	15	17.8	8	8.0 ■
Logan	*	*	*	*
Morgan	5	17.1	7	17.5
Phillips	*	*	*	*
Sedgwick	*	*	*	*
Washington	*	*	*	*
Yuma	6	54.5	*	*
PMR5	8	23.2	4	9.5
Cheyenne	3	84.3	*	*
Elbert	4	29.6	*	*
Kit Carson	*	*	*	*
Lincoln	*	*	*	*
PMR6	12	20.6	10	12.6
Baca	*	*	3	31.5
Bent	*	*	*	*
Crowley	*	*	*	*
Kiowa	*	*	*	*
Otero	7	30.8	3	10.7
Prowers	3	19.8	*	*
PMR14	7	26.5	*	*
Huerfano	*	*	*	*
Las Animas	*	*	*	*

*   Data not displayed due to small number of events in the category.

★   Rate is statistically higher than Colorado rate.

■   Rate is statistically lower than Colorado rate.

[1]   PMR = Planning and Management Region.

Place	In-Situ %	Local %	Regional %	Distant %	Unknown %	Cases N	% "Early" Detection
Colorado	25.5	67.3	1.7	2.6	2.8	1977	95.5
Eastern Colorado	13.3	74.7	2.7	4.0	5.3	75	95.7
PMR1[1]	8.0	88.0	4.0	0.0	0.0	25	96.0
Logan	0.0	100.0	0.0	0.0	0.0	3	100.0
Morgan	7.7	84.6	7.7	0.0	0.0	13	92.3
Phillips	*	*	*	*	*	*	*
Sedgwick	*	*	*	*	*	*	*
Washington	*	*	*	*	*	*	*
Yuma	0.0	100.0	0.0	0.0	0.0	7	100.0
PMR5	14.3	71.4	0.0	7.1	7.1	14	92.3
Cheyenne	25.0	50.0	0.0	0.0	25.0	4	100.0
Elbert	0.0	83.3	0.0	16.7	0.0	6	83.3
Kit Carson	*	*	*	*	*	*	*
Lincoln	*	*	*	*	*	*	*
PMR6	15.4	73.1	0.0	3.8	7.7	26	95.8
Baca	25.0	25.0	0.0	0.0	50.0	4	100.0
Bent	0.0	66.7	0.0	33.3	0.0	3	66.7
Crowley	*	*	*	*	*	*	*
Kiowa	*	*	*	*	*	*	*
Otero	9.1	90.9	0.0	0.0	0.0	11	100.0
Prowers	28.6	71.4	0.0	0.0	0.0	7	100.0
PMR14	20.0	50.0	10.0	10.0	10.0	10	77.8
Huerfano	14.3	57.1	14.3	14.3	0.0	7	71.4
Las Animas	33.3	33.3	0.0	0.0	33.3	3	100.0

* Data not displayed due to small number of events in the category.

[1] PMR = Planning and Management Region.

Table 5.12   Melanoma - Number of Deaths and Average Annual Age-Adjusted Mortality Rates per 100,000 by Sex and Place, 1996-1997

Place	Male		Female	
	N	Rate	N	Rate
Colorado	116	3.1	95	2.1
Eastern Colorado	4	2.0	3	1.5
PMR1[1]	*	*	*	*
Logan	*	*	*	*
Morgan	*	*	*	*
Phillips	*	*	*	*
Sedgwick	*	*	*	*
Washington	*	*	*	*
Yuma	*	*	*	*
PMR5	*	*	*	*
Cheyenne	*	*	*	*
Elbert	*	*	*	*
Kit Carson	*	*	*	*
Lincoln	*	*	*	*
PMR6	*	*	*	*
Baca	*	*	*	*
Bent	*	*	*	*
Crowley	*	*	*	*
Kiowa	*	*	*	*
Otero	*	*	*	*
Prowers	*	*	*	*
PMR14	*	*	*	*
Huerfano	*	*	*	*
Las Animas	*	*	*	*

* Data not displayed due to small number of events in the category.

★   Rate is statistically higher than Colorado rate.

■   Rate is statistically lower than Colorado rate.

[1] PMR = Planning and Management Region

Table 5.13   Breast Cancer - Number of Diagnosed Cancers and Average Annual Age-Adjusted Incidence Rates per 100,000 by Sex and Place, 1995-1996

Place	Male		Female	
	N	Rate	N	Rate
Colorado	32	0.9	4662	111.0
Eastern Colorado	*	*	193	85.2 ■
PMR1[1]	*	*	91	105.5
Logan	*	*	22	86.3
Morgan	*	*	35	120.2
Phillips	*	*	8	109.7
Sedgwick	*	*	*	*
Washington	*	*	*	*
Yuma	*	*	17	129.2
PMR5	*	*	20	54.6 ■
Cheyenne	*	*	*	*
Elbert	*	*	12	73.6
Kit Carson	*	*	*	*
Lincoln	*	*	4	37.9
PMR6	*	*	54	78.8 ■
Baca	*	*	*	*
Bent	*	*	9	119.1
Crowley	*	*	*	*
Kiowa	*	*	*	*
Otero	*	*	25	85.4
Prowers	*	*	13	78.2
PMR14	*	*	28	76.2 ■
Huerfano	*	*	12	104.9
Las Animas	*	*	16	60.1 ■

*   Data not displayed due to small number of events in the category.

★   Rate is statistically higher than Colorado rate.

■   Rate is statistically lower than Colorado rate.

[1]   PMR = Planning and Management Region.

**Table 5.14   Female Breast Cancer - Stage of Disease at Diagnosis
by Place, 1995-96**

Place	In-Situ %	Local %	Regional %	Distant %	Unknown %	Cases N	% "Early" Detection
Colorado	14.6	53.6	24.9	3.7	3.2	5464	70.5
Eastern Colorado	14.6	50.4	25.7	5.3	4.0	226	68.4
PMR1[1]	11.7	54.4	26.2	4.9	3.9	103	68.7
Logan	15.4	46.2	26.9	7.7	3.8	26	64.0
Morgan	12.5	52.5	30.0	2.5	2.5	40	66.7
Phillips	11.1	66.7	22.2	0.0	0.0	9	77.8
Sedgwick	*	*	*	*	*	*	*
Washington	*	*	*	*	*	*	*
Yuma	5.6	61.1	27.8	5.6	0.0	18	66.7
PMR5	23.1	65.4	11.5	0.0	0.0	26	88.5
Cheyenne	*	*	*	*	*	*	*
Elbert	25.0	62.5	12.5	0.0	0.0	16	87.5
Kit Carson	*	*	*	*	*	*	*
Lincoln	20.0	80.0	0.0	0.0	0.0	5	100.0
PMR6	16.9	41.5	29.2	6.2	6.2	65	62.3
Baca	*	*	*	*	*	*	*
Bent	0.0	55.6	33.3	0.0	11.1	9	62.5
Crowley	*	*	*	*	*	*	*
Kiowa	*	*	*	*	*	*	*
Otero	22.6	41.9	22.6	9.7	3.2	31	66.7
Prowers	23.5	41.2	35.3	0.0	0.0	17	64.7
PMR14	12.5	43.8	28.1	9.4	6.3	32	60.0
Huerfano	14.3	42.9	35.7	0.0	7.1	14	61.5
Las Animas	11.1	44.4	22.2	16.7	5.6	18	58.8

* Data not displayed due to small number of events in the category.

[1] PMR = Planning and Management Region.

Table 5.15   Breast Cancer - Number of Deaths and Average Annual Age-Adjusted Mortality Rates per 100,000 by Sex and Place, 1996-1997

Place	Male		Female	
	N	Rate	N	Rate
Colorado	7	0.2	896	20.1
Eastern Colorado	*	*	53	21.8
PMR1[1]	*	*	29	31.1
Logan	*	*	12	43.0
Morgan	*	*	8	26.4
Phillips	*	*	*	*
Sedgwick	*	*	*	*
Washington	*	*	*	*
Yuma	*	*	7	48.6
PMR5	*	*	6	14.5
Cheyenne	*	*	*	*
Elbert	*	*	6	47.8
Kit Carson	*	*	*	*
Lincoln	*	*	*	*
PMR6	*	*	14	19.4
Baca	*	*	4	36.6
Bent	*	*	3	42.3
Crowley	*	*	*	*
Kiowa	*	*	*	*
Otero	*	*	4	13.2
Prowers	*	*	*	*
PMR14	*	*	4	11.3
Huerfano	*	*	*	*
Las Animas	*	*	*	*

* Data not displayed due to small number of events in the category.

★   Rate is statistically higher than Colorado rate.

■   Rate is statistically lower than Colorado rate.

[1] PMR = Planning and Management Region

Table 5.16   Invasive Cervix Cancer - Number of Diagnosed Cancers and Average Annual Age-Adjusted Incidence Rates per 100,000 by Place, 1995-1996

Place	Female	
	N	**Rate**
Colorado	348	7.6
Eastern Colorado	20	8.7
PMR1[1]	5	6.9
Logan	*	*
Morgan	*	*
Phillips	*	*
Sedgwick	*	*
Washington	*	*
Yuma	*	*
PMR5	4	8.4
Cheyenne	*	*
Elbert	*	*
Kit Carson	*	*
Lincoln	*	*
PMR6	8	12.5
Baca	*	*
Bent	*	*
Crowley	*	*
Kiowa	*	*
Otero	5	20.0
Prowers	*	*
PMR14	3	6.1
Huerfano	*	*
Las Animas	*	*

*   Data not displayed due to small number of events in the category.

★   Rate is statistically higher than Colorado rate.

■   Rate is statistically lower than Colorado rate.

[1]   PMR = Planning and Management Region.

Table 5.17   Invasive[1] Cervix Cancer - Stage of Disease at Diagnosis by Place, 1995-96

Place	Local %	Regional %	Distant %	Unknown %	Cases N
Colorado	56.6	28.9	11.6	2.9	346
Eastern Colorado	45.0	25.0	25.0	5.0	20
PMR1[2]	40.0	40.0	20.0	0.0	5
Logan	*	*	*	*	*
Morgan	*	*	*	*	*
Phillips	*	*	*	*	*
Sedgwick	*	*	*	*	*
Washington	*	*	*	*	*
Yuma	*	*	*	*	*
PMR5	25.0	25.0	25.0	25.0	4
Cheyenne	*	*	*	*	*
Elbert	*	*	*	*	*
Kit Carson	*	*	*	*	*
Lincoln	*	*	*	*	*
PMR6	50.0	25.0	25.0	0.0	8
Baca	*	*	*	*	*
Bent	*	*	*	*	*
Crowley	*	*	*	*	*
Kiowa	*	*	*	*	*
Otero	40.0	40.0	20.0	0.0	5
Prowers	*	*	*	*	*
PMR14	66.7	0.0	33.3	0.0	3
Huerfano	*	*	*	*	*
Las Animas	*	*	*	*	*

* Data not displayed due to small number of events in the category.

[1] Invasive cases only; in-situ stage not reportable to CCCR.

[2] PMR = Planning and Management Region.

Table 5.18   Cervix Cancer - Number of Deaths and Average Annual Age-Adjusted Mortality Rates per 100,000 by Place, 1996-1997

Place	Female	
	N	Rate
Colorado	84	1.9
Eastern Colorado	4	1.3
PMR1[1]	*	*
Logan	*	*
Morgan	*	*
Phillips	*	*
Sedgwick	*	*
Washington	*	*
Yuma	*	*
PMR5	*	*
Cheyenne	*	*
Elbert	*	*
Kit Carson	*	*
Lincoln	*	*
PMR6	*	*
Baca	*	*
Bent	*	*
Crowley	*	*
Kiowa	*	*
Otero	*	*
Prowers	*	*
PMR14	*	*
Huerfano	*	*
Las Animas	*	*

* Data not dislayed due to small number of events in the category.

★   Rate is statistically higher than Colorado rate.

■   Rate is statistically lower than Colorado rate.

[1] PMR = Planning and Management Region

Table 5.19   Prostate Cancer - Number of Diagnosed Cancers and Average Annual Age-Adjusted Incidence Rates per 100,000 by Place, 1995-1996

Place	Male	
	N	Rate
Colorado	4318	136.4
Eastern Colorado	269	131.8
PMR1[1]	103	131.4
Logan	30	132.5
Morgan	24	88.8 ■
Phillips	13	225.2
Sedgwick	10	262.1
Washington	4	61.5
Yuma	22	180.0
PMR5	49	159.9
Cheyenne	*	*
Elbert	13	113.6
Kit Carson	19	217.7
Lincoln	*	*
PMR6	89	139.4
Baca	11	163.9
Bent	7	92.4
Crowley	10	219.9
Kiowa	6	180.1
Otero	39	145.3
Prowers	18	127.6
PMR14	28	86.8 ■
Huerfano	9	87.0
Las Animas	19	88.0 ■

*   Data not displayed due to small number of events in the category.

★   Rate is statistically higher than Colorado rate.

■   Rate is statistically lower than Colorado rate.

[1]   PMR = Planning and Management Region.

Table 5.20   Prostate Cancer - Stage of Disease at Diagnosis by Place, 1995-96

Place	In-Situ %	Local %	Regional %	Distant %	Unknown %	Cases N	% "Early" Detection
Colorado	0.0	66.0	12.1	5.5	16.4	4238	78.9
Eastern Colorado	0.0	64.7	10.0	5.9	19.3	269	80.2
PMR1[1]	0.0	67.0	14.6	5.8	12.6	103	76.7
Logan	0.0	60.0	26.7	6.7	6.7	30	64.3
Morgan	0.0	66.7	12.5	4.2	16.7	24	80.0
Phillips	0.0	76.9	7.7	7.7	7.7	13	83.3
Sedgwick	0.0	60.0	10.0	10.0	20.0	10	75.0
Washington	0.0	25.0	50.0	0.0	25.0	4	33.3
Yuma	0.0	81.8	0.0	4.5	13.6	22	94.7
PMR5	0.0	59.2	10.2	2.0	28.6	49	82.9
Cheyenne	*	*	*	*	*	*	*
Elbert	0.0	78.6	0.0	0.0	21.4	14	100.0
Kit Carson	0.0	59.1	18.2	4.5	18.2	22	72.2
Lincoln	*	*	*	*	*	*	*
PMR6	0.0	68.5	5.6	10.1	15.7	89	81.3
Baca	0.0	63.6	18.2	9.1	9.1	11	70.0
Bent	0.0	100.0	0.0	0.0	0.0	7	100.0
Crowley	0.0	60.0	0.0	30.0	10.0	10	66.7
Kiowa	0.0	66.7	0.0	0.0	33.3	6	100.0
Otero	0.0	71.1	2.6	7.9	18.4	38	87.1
Prowers	0.0	58.8	11.8	11.8	17.6	17	71.4
PMR14	0.0	53.6	7.1	0.0	39.3	28	88.2
Huerfano	0.0	77.8	0.0	0.0	22.2	9	100.0
Las Animas	0.0	42.1	10.5	0.0	47.4	19	80.0

* Data not displayed due to small number of events in the category.

[1] PMR = Planning and Management Region.

56

Table 5.21   Prostate Cancer - Number of Deaths and Average Annual Age-Adjusted Mortality Rates per 100,000 by Place, 1996-1997

Place	Male	
	N	**Rate**
Colorado	682	20.7
Eastern Colorado	44	17.6
PMR1[1]	16	16.4
Logan	9	33.8
Morgan	5	16.2
Phillips	*	*
Sedgwick	*	*
Washington	*	*
Yuma	*	*
PMR5	6	18.6
Cheyenne	*	*
Elbert	*	*
Kit Carson	3	29.2
Lincoln	*	*
PMR6	13	15.8
Baca	5	43.5
Bent	*	*
Crowley	*	*
Kiowa	*	*
Otero	4	11.2
Prowers	*	*
PMR14	9	24.1
Huerfano	5	40.0
Las Animas	4	16.2

* Data not displayed due to small number of events in the category.

★   Rate is statistically higher than Colorado rate.

■   Rate is statistically lower than Colorado rate.

[1] PMR = Planning and Management Region

57

References:

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

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 and Control Plan Advisory Committee. *Colorado Cancer Prevention and Control Plan: Objectives for the Year 2000.* Denver, Colorado: Colorado Department of Public Health and Environment, April, 1996.

Colorado Central Cancer Registry. *Cancer in Colorado 1991-1996: Incidence and Mortality by County.* Denver, Colorado: Colorado Central Cancer Registry, Colorado Department of Public Health and Environment, 1999.

Health Statistics Section. *Health-Related Behaviors in Eastern Plains*. Brief, No.25, July 1998. Denver, Colorado: Health Statistics Section, Colorado Department of Public Health and Environment.

Health Statistics Section. *Colorado Vital Statistics 1997.* Denver, Colorado: Health Statistics Section, Colorado Department of Public Health and Environment, 1999.

Murphy, G.P., Lawrence, W. Jr., Lenhard, R.E. Jr. *American Cancer Society Textbook of Clinical Oncology*, 2nd ed. Washington, D.C.: American Cancer Society, 1995.

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 fro 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.