D. Lung Cancers

Lung cancer is Oregon's leading cause of cancer-related death and is the state's 3rd most frequently reported cancer. Tobacco use is the primary cause of lung cancer. In 2003, 80% of lung cancer deaths in Oregon were linked to tobacco use. According to data from the Oregon Behavioral Risk Factor Surveillance System (BRFSS), in 2003, an estimated 21% of Oregon adults smoked cigarettes. From Oregon Healthy Teens survey data, an estimated 11% of 8th graders and 19% of 11th graders smoked in 2003.

The 2003 Oregon lung cancer mortality rate of 55.7 was 24% above the Healthy People 2010 target of 44.9 deaths per 100,000 persons. Due to the potential for primary prevention through tobacco control efforts, the reduction of lung cancer incidence and mortality has been identified as a priority for the Oregon Partnership for Cancer Control.

Lung cancer mortality rates have been increasing among Oregon women about 1% a year. In 2003, the mortality rate for women was 14% higher than the national rate.

Lung Cancers Fast Facts Overview

A brief overview of Oregon's lung cancer data shows the following: (See Figure VII-D-1.)

1. In 2003, 2,448 new cases of invasive lung cancer were diagnosed in Oregonians. There were 2,069 Oregonians who died of lung cancer. Age-adjusted incidence and mortality rates were higher for men than women, as anticipated due to the higher smoking rates among men.

2. Lung cancer incidence in Oregon decreased 2% annually from 1999 to 2003. Mortality rates have been declining for men–2% a year nationally and 1% per year among Oregon men. Mortality rates have been increasing among Oregon women–about 1% a year.

3. Oregon's age-adjusted 2003 lung cancer incidence rate of 66.5 per 100,000 was 9% higher than the national rate of 61.1. The excess is largely due to a 23% higher rate of lung cancer among Oregon women than their national counterparts. Oregon's 2003 mortality rate was 3% higher than the national mortality rate again driven by a higher rate among Oregon women than that seen nationally.

4. Of the 44 states with central registries meeting national data quality standards in 2002, Oregon ranked 28th for men and 14th for women in lung cancer incidence. In 2003, among all 50 states, Oregon's lung cancer mortality rate ranked 32nd for men and 5th for women.

5. Lung cancer is the 2nd most common cancer for Oregon men, except for Asian/Pacific Islanders for whom it is the 3rd most common cancer. Lung cancer is also the 2nd most common cancer for Oregon women, except for African American and Asian/Pacific Islanders for whom it is the 3rd most common cancer. Lung cancer is the most common cause of cancer mortality for all race and ethnic groups, except for Asian/Pacific Islander women for whom it is the 2nd most common cause of cancer mortality.

6. In 2003, only 20% of lung cancers among Oregonians were diagnosed at an early stage. Currently, there are no population-based screening recommendations to detect lung cancer in its early stages.

7. During 1999-2003, Oregon's M/I ratio for lung cancer was 0.81, suggesting a poor prognosis for this disease. The M/I ratio was worse for men than women. Lung cancer is the leading cancer site for YPLL with 4,342 years lost annually.

Lung Cancers Fast Facts

Figure VII-D-1

LUNG CANCERS FAST FACTS YEAR 2003			
Oregon	***All Sexes*** [1]	***Male***	***Female***
CANCER INCIDENCE			
All Cases Total	***2,448***	***1,265***	***1,183***
In Situ	0	0	0
Localized	436	212	224
Regional	594	298	296
Distant	1,176	641	535
Unstaged	242	114	128
Incidence Rates			
Oregon Crude	68.8	71.5	66.0
Oregon Age-adjusted	66.5	76.9	58.9
Oregon Current Annual Trend (1999-2003)	*-2.2	*-3.2	-1.5
US SEER Age-adjusted[2]	58.5	73.0	48.0
US SEER Annual Trend (1999-2003)[2]	*-1.6	*-2.2	-0.9
CANCER MORTALITY			
Total Deaths	***2,069***	***1,104***	***965***
Mortality Rates			
Oregon Crude	58.1	62.4	53.9
Oregon Age-adjusted	55.7	67.6	46.9
Oregon Current Annual Trend (1999-2003)	-0.1	-1.3	+0.9
US Age-adjusted[3]	54.2	71.9	41.2
US Annual Trend (1999-2003)[3]	-0.6	*-1.7	+0.6
PROGNOSIS AND BURDEN [4]			
Prognosis: M/I Ratio	0.81	0.82	0.79
Burden: YPLL before age 65	4,342	2,335	2,007

Incidence and death rates are per 100,000 and age-adjusted to the 2000 US Standard Population (19 age group)

* Indicates a statistically significant trend

[1] *All Sexes* counts may exceed male/female combined due to additional sex coding

[2] SEER 13 Registry Data, SEER Stat 6.2.3 (See *Technical Section, National Data,* for a description of SEER 13)

[3] National Center for Health Statistics (NCHS) US Mortality Public Use Data

[4] Calculations based on combined years 1999-2003

M/I = Mortality-to-Incidence Ratio

YPLL = Years of Potential Life Lost

Stage at Diagnosis

Lung cancer is typically asymptomatic in the early stages, and currently there are no widely accepted screening methods for this cancer type. Therefore, the majority of lung cancers are diagnosed at a late stage. (See Figure VII-D-2.) Late detection contributes to the fact that lung cancer has one of the poorest prognoses of all cancers.

Regardless of the absence of population-based screening recommendations, there are several consistent patterns in the percentage of early stage diagnoses for lung cancer by sex, age, and population density.

Women have a higher percentage of early stage diagnoses. (See Figure VII-D-3).

Oregonians diagnosed before age 30 have the highest percentage of early stage diagnoses. After age 50, the percentage of early stage diagnoses increases with age. (See Figure VII-D-4.)

Figure VII-D-2

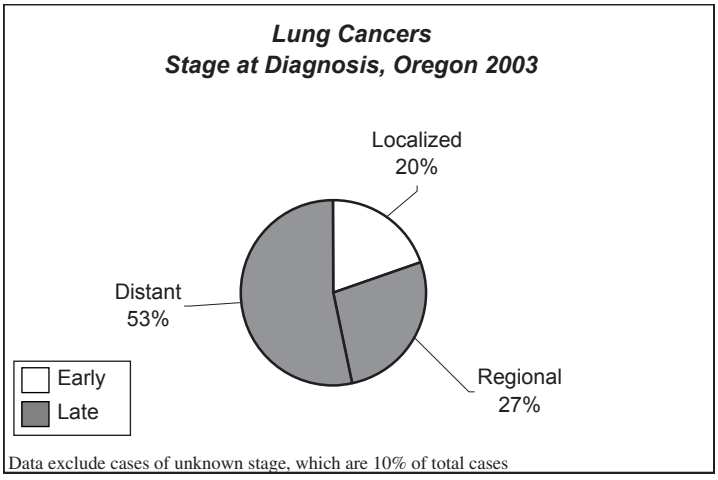


Figure VII-D-3

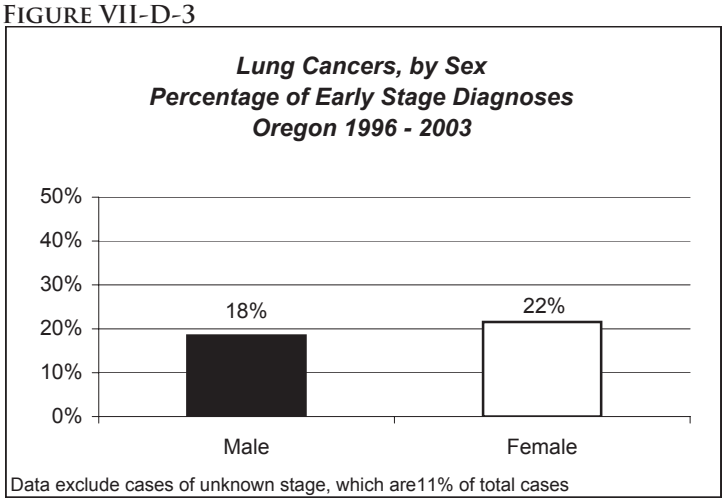
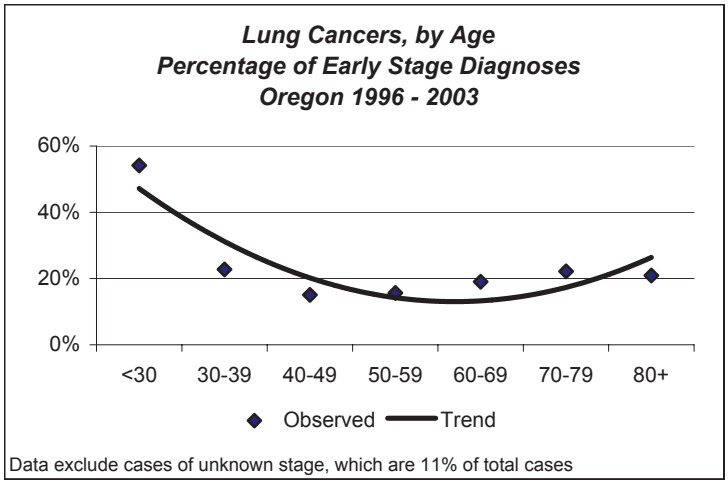
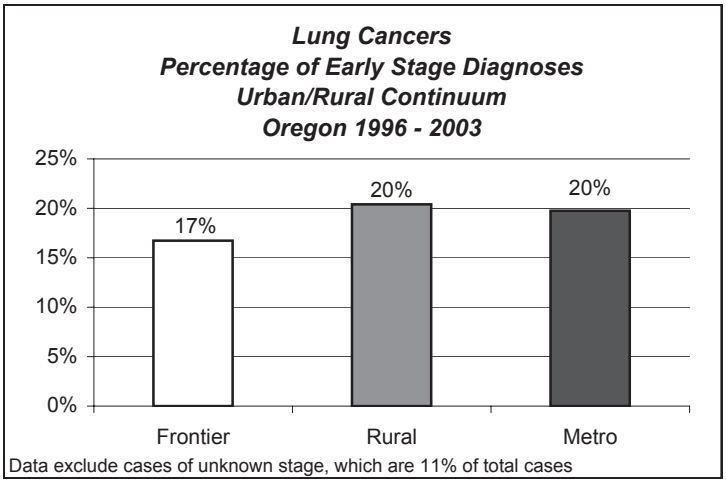


Figure VII-D-4



Although the percentage of lung cancer diagnosed at an early stage is similar for Urban and Rural counties, Frontier counties (< 6 persons per square mile) have a lower percentage of early stage cases. (See Figure VII-D-5.)

Figure VII-D-5



Race and Ethnicity

Although race and ethnicity data need to be interpreted cautiously due to reporting issues (see the *Technical Section* for additional details), lung cancer rates vary by race and ethnicity. (See Figure VII-D-6.) African Americans (AA) and American Indian/Alaskan Natives (AI/AN) have the highest rates of lung cancer incidence, and Asian/Pacific Islanders (A/PI) have the lowest lung cancer incidence and mortality rates in Oregon. AI/AN have higher lung cancer incidence than is seen nationally, which may be partially explained by the improved race reporting for this group in Oregon. As seen nationally, Hispanics in Oregon have lower lung cancer incidence and mortality rates than Non-Hispanics.

Variations by race and ethnicity for lung cancer rates could be related to variations in smoking rates among the different populations. (See Figure VII-D-7.) AI/AN report the highest percentage while A/PI report the lowest percentage of smokers in the adult population. Hispanics report lower smoking rates than Non-Hispanic Whites.

Figure VII-D-6

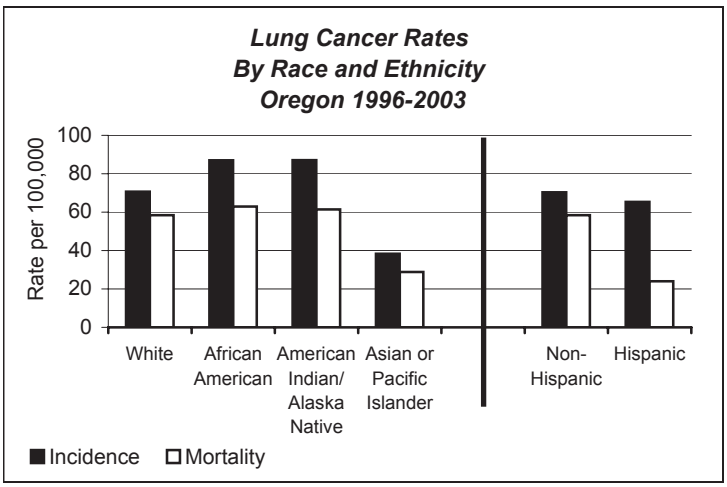


Figure VII-D-7

Percentage of Adults Who Smoke
By Race and Ethnicity
Oregon 2000 - 2001

Race and Ethnicity	Percent
American Indian	44%
African American	27%
White (Non-Hispanic)	21%
Hispanic	18%
Asian/Pacific Islander	14%

Oregon BRFSS

African Americans (AA) and Asian/Pacific Islanders (A/PI) have the lowest percentage of lung cancers diagnosed at an early stage. (See Figure VII-D-8.) Whites and AI/AN have comparable percentages of lung cancer cases diagnosed at an early stage.

There are also differences in percentage of cases unstaged at diagnosis by race and ethnicity. Generally, lung cancer is not staged at diagnosis because of an extremely poor prognosis, comorbidities, advanced age, contraindicate surgery, and/or treatment. All cases that are identified by death certificate are reported as unstaged-at-diagnosis cases. These cases may represent patients that had difficulty getting access to health care or were only using health care services near the end of their life.

Although the percentage of unstaged lung cancer cases is similar among Hispanics and Non-Hispanics, there is variation in the percentage of unstaged, or unknown stage, lung cancer cases among the four race categories. (See Figure VII-D-8.)

Figure VII-D-8

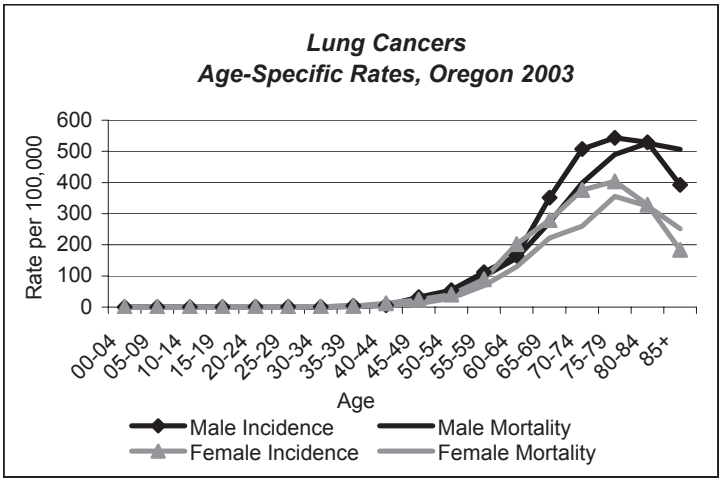
Lung Cancers, Stage at Diagnosis By Race and Ethnicity Oregon 1996-2003

Race and Ethnicity	*Percent of Early Stage*	*Percent Unstaged*
White	20%	12%
American Indian/Alaska Native	22%	8%
African American	17%	10%
Asian or Pacific Islander	17%	9%
Non-Hispanic	20%	12%
Hispanic	22%	13%

Age-Specific Incidence and Mortality

Lung cancer incidence increases with age until age 75 when rates begin to taper off. Oregon's age-specific data show incidence rates higher among men than women for all age groups. Mortality rates show similar sex and age patterns. (See Figure VII-D-9.)

Figure VII-D-9

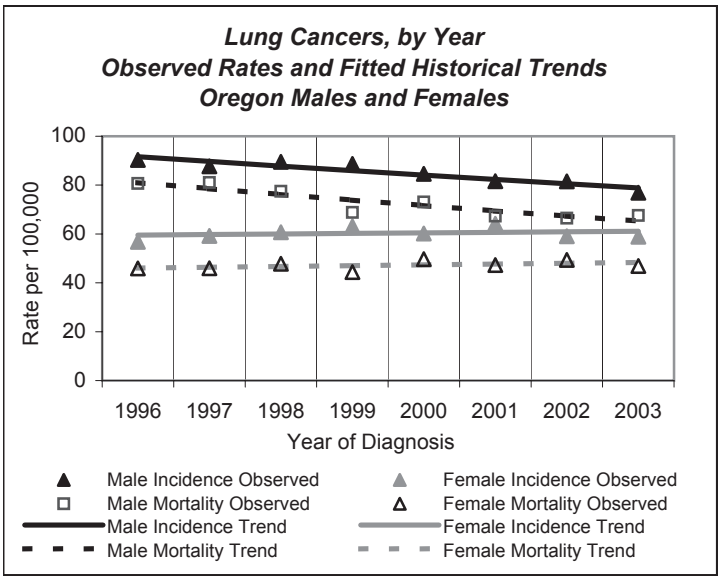


Historical Trends (1996-2003)

Lung cancer incidence for men in Oregon has been decreasing 2% a year while incidence for women in Oregon has been increasing 0.4% a year since 1996. (See Figure VII-D-10.) Nationally, lung cancer incidence has been decreasing 2% a year for men and increasing 0.3% a year for women, over a similar time period.

Following incidence trends, lung cancer mortality has been decreasing for men and increasing for women since 1996. (See Figure VII-D-10.) Mortality has been decreasing 3% a year for men and increasing 1% a year for women. Nationally among men there has been a 2% annual decrease over a similar time period compared to < 0.2% a year increase among women since 1996. However, lung cancer mortality is difficult to compare over this time period due to changes in coding in 1999 that affect the mortality numbers for lung cancer. Please see the *Technical Section* for information about the change to ICD-10 mortality coding.

Figure VII-D-10



Regional Variation (Combined Five-Year Rates: 1999-2003)

Much of the state has lung cancer incidence rates that are higher than the national rate. (See Figure VII-D-11.) Only Baker and Malheur Counties have lung cancer incidence rates lower than the national average.

As seen with lung cancer incidence, much of the state (including the Columbia River Gorge, the Metro area, the coast and southern Oregon) has mortality rates that are higher than the national average. (See Figure VII-D-12.) Eastern Oregon, Deschutes, Linn, Marion and Polk Counties have mortality rates below the national average.

Areas of high incidence and mortality, such as the northern counties in Oregon, may indicate areas that would benefit from targeted tobacco cessation programs.

Figure VII-D-11

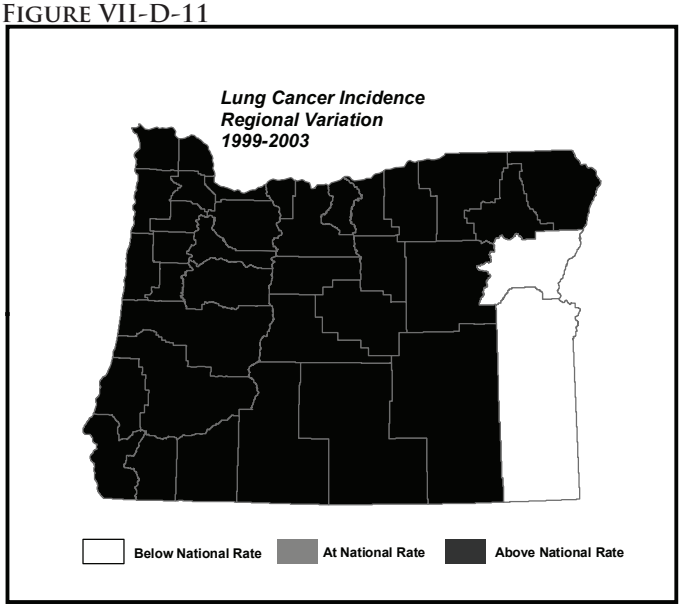


Figure VII-D-12