V. Cancer Data

During 2002, 18,713 new, reportable cancers were diagnosed among Oregonians[1]; of these, 17,122 were invasive[2]. The 2002 Oregon total cancer mortality rate was 25% above the Healthy People 2010 target of 159.9 deaths per 100,000. Note that the Oregon total cancer mortality rate includes cases that became reportable in 2001. If these cases are excluded for comparison purposes, the Oregon mortality rate is 23% above the Healthy People 2010 target.

Cancer Data Overview and Leading Sites

A brief overview of Oregon's 2002 cancer data reveals the following: (See Figure V-1.)

1. Overall, Oregon's 2002 age-adjusted cancer incidence rate of 469.3 per 100,000 was 1% higher than the 1997-2001 national rate of 462.8. Oregon's age-adjusted cancer mortality rate of 199.2 was 2% higher than the 2002 national rate of 195.6.

2. Although more total cancers were reported in women, men had a higher incidence rate of invasive cancers and a higher mortality rate than women.

3. Breast cancers have the highest incidence in Oregon; lung cancers have the highest mortality.

4. Among Oregon females, breast cancers were the most frequently diagnosed cancer followed by lung, colorectal, and uterine cancers[3], and then lymphomas. Lung cancer had the highest mortality for women, followed by breast, colorectal, ovarian, and pancreatic cancers. (See Figure V-2.)

5. Among Oregon males, prostate cancers were the most frequently diagnosed cancers followed by lung, colon, and bladder cancers, and melanomas of the skin. Lung cancers had the highest mortality for men followed by prostate, colorectal, and pancreatic cancers and then lymphomas. (See Figure V-3.)

6. Of the 43 states with central registry data meeting national data quality standards in 2001, Oregon men ranked 23rd for all-cancer incidence and Oregon women ranked 8th. Oregon women ranked in the top ten due to high rates of breast and lung cancers.

7. Among all 50 states, Oregon men ranked in the lower half, 29th, and women ranked 8th in all-cancer mortality for 2002. The higher ranking for Oregon women is primarily due to the high rates of lung cancer mortality.

[1] These numbers represent the cancers that are reportable to OSCaR, which exclude the most frequently diagnosed cancers (*in situ* cervical cancers as well as basal and squamous cell carcinomas of the skin [except if skin of genitalia]).
[2] Invasive cancers exclude *in situ* diagnoses with the exception of in situ bladder cancers.
[3] Uterine cancers include uterine sarcomas.

All Cancers Fast Facts

Figure V-1

All Cancers Fast Facts Oregon 2002	***All Sexes*** [1]	***Male***	***Female***
Cancer Incidence			
All Cases Total	***18,713***	***9,152***	***9,559***
In situ	2,053	868	1,184
Localized	7,807	3,889	3,913
Regional	3,773	1,680	2,093
Distant	3,566	1,882	1,685
Unstaged	1,514	828	683
Invasive Rates			
Oregon Crude	486.6	494.1	479.0
Oregon Age-adjusted	469.3	525.8	430.9
Oregon Current Annual Trend (5-Year)	-0.9	-1.4	-0.5
US SEER Age-adjusted[2]	462.8	539.9	409.9
US SEER Annual Trend (5-Year)[2a]	*-1.1	*-1.2	*-1.3
Cancer Mortality			
Total Deaths	***7,334***	***3,732***	***3,602***
Mortality Rates			
Oregon Crude	205.4	210.3	200.6
Oregon Age-adjusted	199.2	235.1	174.8
Oregon Current Annual Trend (5-Year)	-0.8	*-1.4	-0.4
US Age-adjusted[3]	195.6	241.8	164.6
US Annual Trend[4]	*-1.1	-0.4	*-1.5
Prognosis and Burden [5]			
Prognosis: M/I Ratio	0.41	0.42	0.41
Burden: YPLL before age 65	22,736	11,264	11,472

* Indicates a statistically significant trend

M/I = Mortality-to-Incidence Ratio

YPLL = Years of Potential Life Lost

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

[2] Year 2001, SEER 9 Registry data, SEERSTAT 5.2.2

[2a] Years 1997-2001, SEER 9 Registry data, SEERSTAT 5.2.2

[3] 2002 mortality rate calculated from CDC Wonder: http://wonder.cdc.gov

[4] *Annual Report to the Nation on the Status of Cancer*, most current trend of 3 years or more.

[5] Calculations based on combined years 1998-2002

Leading Sites of Cancer Incidence and Mortality

Figure V-2

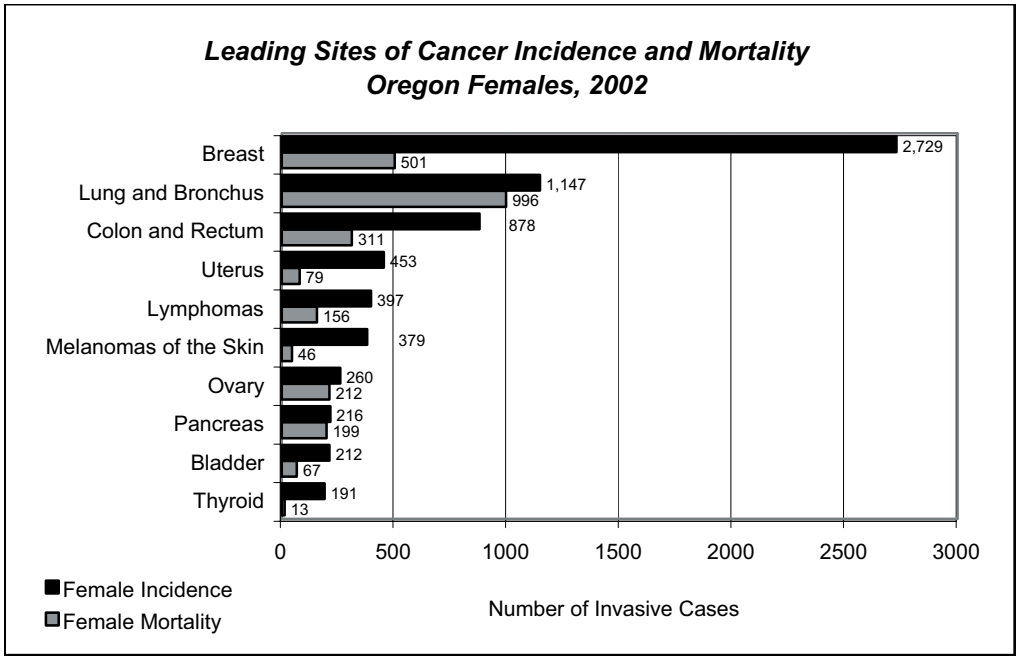
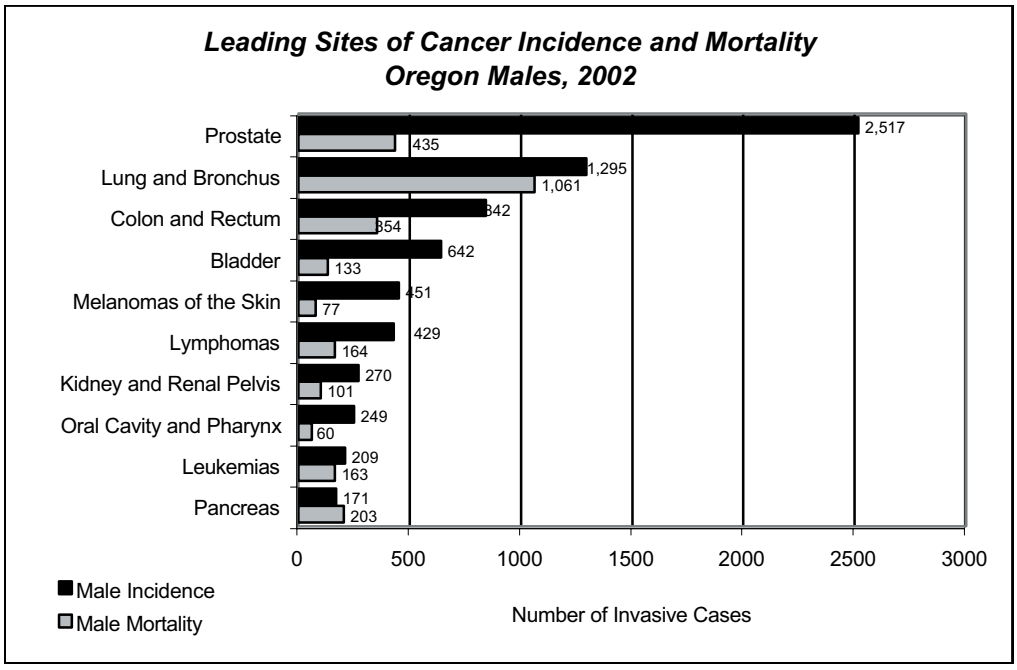


Figure V-3



Stage at Diagnosis

Of public health importance is the percentage of early stage diagnoses, which is a proxy for success of population-based screening efforts. From 1996 to 2002, the percentage of early stage diagnoses remained the same for female breast cancers and decreased for cervical cancers. The percentage of early stage diagnoses for colorectal cancers increased, and, although there is no national recommendation for prostate cancer screening, the percentage of early stage prostate cancer diagnoses has increased since 1996. (See Figure V-4.)

Although the percentage of female breast cancers diagnosed at an early stage has remained the same, the percentage of *in situ* diagnoses has increased, which will likely improve outcomes. The percentage of colorectal cancers diagnosed both *in situ* and localized has increased from 1996 to 2002.

Despite variability in the percentage of cases diagnosed at an early stage, all of these screenable cancers demonstrated reductions in mortality. (See Figure V-5.) It is likely that the decrease in mortality is due to a combination of improved screening and enhanced treatment.

Figure V-4

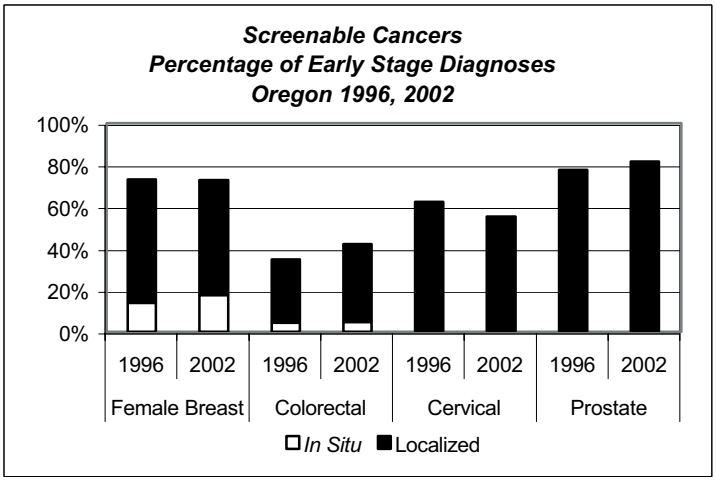
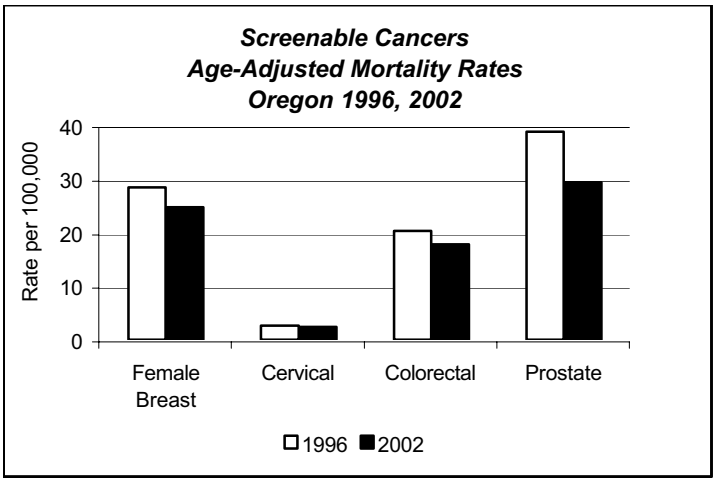


Figure V-5



Disease Severity

The M/I (mortality-to-incidence) ratio, also known as case-fatality ratio, provides a measure of disease severity. In general, the closer a M/I value is to 1.0, the poorer the expected outcome for a patient with cancer of that type. A M/I value over 1.0 indicates the poorest prognosis. This means more people died of the particular cancer type than were diagnosed in the same year.

Overall, Oregon's M/I ratio for all cancers was 0.41 for the years 1998 - 2002. Pancreatic cancer had the worst prognosis, with a M/I ratio of 1.00, and was followed by esophageal cancer with a ratio of .96. Figure V-6 shows M/I ratios for each cancer site.

Figure V-6

M/I (Mortality-to-Incidence) Ratios
Oregon 1998 - 2002

Selected Sites	*Total*	*Male*	*Female*
All Sites	0.41	0.42	0.41
Pancreas	1.00	1.01	1.00
Esophagus	0.96	0.97	0.92
Liver and Intrahepatic Bile Duct	0.93	0.87	1.05
Lung and Bronchus	0.81	0.82	0.79
Brain and CNS	0.80	0.78	0.84
Myeloma	0.78	0.74	0.84
Ovary	0.68	n/a	0.68
Mesothelioma	0.67	0.66	0.76
Leukemias	0.65	0.65	0.66
Stomach	0.61	0.56	0.69
Soft Tissue including Heart	0.52	0.45	0.59
Gallbladder	0.51	0.55	0.50
Lymphomas	0.42	0.41	0.44
Bladder	0.21	0.19	0.25
Bones and Joints	0.38	0.43	0.32
Kidney and Renal Pelvis	0.38	0.39	0.37
Colon and Rectum	0.38	0.39	0.37
Larynx	0.32	0.32	0.33
Cervix Uteri	0.28	n/a	0.28
Oral Cavity and Pharynx	0.27	0.24	0.31
Small Intestine	0.19	0.14	0.24
Breast	0.19	0.24	0.18
Uterus	0.18	n/a	0.18
Prostate	0.17	0.17	n/a
Melanomas of Skin	0.14	0.17	0.11
Eye and Orbit	0.11	0.08	0.14
Thyroid	0.07	0.09	0.07
Testis	0.06	0.06	n/a

n/a = not applicable

Years of Potential Life Lost

The measure of Years of Potential Life Lost (YPLL) takes into consideration the greater societal costs of a person dying young. For example, using 65 years as a standard age of death, a person dying of cancer at age 25 would have 40 YPLL. The YPLL measure is one way of evaluating the burden of a disease upon a defined population. Lost productivity due to an individual dying prematurely of cancer should be interpreted as a loss of both economic and non-economic contributions to society.

Figure V-7 shows the leading causes of YPLL for Oregonians. *Accidents and Adverse Effects* were the leading causes of YPLL for male Oregonians, and cancer was the leading cause of YPLL for female Oregonians. However, due to the high injury rate for men, unintentional injuries were the leading cause of YPLL with both sexes combined. It is interesting to note that, when a preset standard age at death of 70 or greater (rather than 65) is used in the calculation, cancer becomes the leading cause of YPLL among all Oregonians.

Lung cancers are the leading cancer-related cause of YPLL for all Oregonians, followed by breast, brain/central nervous system, and colorectal cancers. Brain cancer is not a leading cancer site but is a leading cause of YPLL because over half of deaths from this cancer occur in Oregonians younger than 65. Leukemias and lymphomas are additional cancer sites with over 1,000 YPLL each year.

Figure V-7

Leading Causes of YPLL (Years of Potential Life Lost) Prior to Age 65, Average Numbers of Years Lost Annually Oregon 1998 - 2002

Cause of Death	*Total*	*Male*	*Female*
All Causes of Death	132,889	77,530	55,359
Accidents and Adverse Effects	23,697	16,946	6,752
All Malignant Cancers	**22,736**	**11,264**	**11,472**
Lung and Bronchus	**4,361**	**2,330**	**2,032**
Breast	**2,671**	**9**	**2,662**
Brain and CNS	**2,007**	**1,162**	**845**
Colon and Rectum	**1,684**	**996**	**688**
Leukemias	**1,359**	**785**	**575**
Lymphomas	**1,215**	**795**	**419**
Pancreas	**884**	**522**	**362**
Melanomas of the Skin	**873**	**575**	**298**
Ovary	**753**	**n/a**	**753**
Liver/Intrahepatic Bile Duct	**614**	**441**	**173**
Kidney and Renal Pelvis	**525**	**371**	**154**
Esophagus	**510**	**419**	**91**
Soft Tissue including Heart	**481**	**252**	**228**
Cervix Uteri	**466**	**n/a**	**466**
Oral Cavity and Pharynx	**432**	**327**	**105**
Stomach	**378**	**233**	**145**
Myeloma	**265**	**161**	**104**
Bones and Joints	**240**	**163**	**77**
Bladder	**238**	**143**	**95**
Prostate	**229**	**229**	**n/a**
Uterus	**188**	**n/a**	**188**
Diseases of Heart	17,398	9,544	7,854
Suicide and Self-Inflicted Injury	10,507	8,433	2,074
Cerebrovascular Diseases	3,725	1,402	2,323
Homicide and Legal Intervention	3,721	2,648	1,073
Chronic Liver Disease/Cirrhosis	2,809	1,898	912
Diabetes Mellitus	2,499	1,350	1,149
Pneumonia and Influenza	2,225	804	1,421
Chronic Obstructive Pulmonary Disease (COPD)	1,757	796	961
Human Immunodeficiency Virus (HIV)	1,610	1,449	161

Counts for total may exceed male and female combined; YPLL calculations are rounded to the nearest whole year.
n/a = Not applicable

Race and Ethnicity

Age-adjusted cancer rates by race and ethnicity are shown in Figures V-8-11. These differences among racial/ethnic populations are important because they may reflect differences in screening rates, treatment, access to care, or modifiable risk behaviors. However, due to issues with completeness and accuracy of race and ethnicity reporting, data must be interpreted with care. Please refer to the *Technical Section* for additional information.

As seen nationally, African American (AA) men in Oregon have the highest rate of cancer incidence and mortality, followed by whites. (See Figures V-9 and V-11.) Among women in Oregon and nationally, whites have the highest cancer incidence rates, but AA women have higher mortality rates. (See Figures V-8 and V-10.) Oregon American Indian/Alaskan Natives (AI/AN) have higher cancer rates than are seen nationally. Nationwide, AI/AN cancer incidence and mortality are the lowest among the four racial groups. Hispanics have lower cancer rates than Non-Hispanics both in Oregon and nationally.

Historically, Oregon's AI/AN population had the lowest rate of cancer of all racial/ ethnic groups. The low incidence rate among AI/AN persons was a phenomenon reported by other population-based cancer registries. OSCaR and other registries have found that AI/AN cases are often misclassified as another race or Hispanic. When AI/AN individuals are properly classified, rates are substantially higher. OSCaR links annually with local and national Indian Health Service and tribal clinic registries to correct racial coding for AI/AN persons. Because of this, Oregon may have higher rates than those seen nationally. As similar linkage projects are conducted in more states, it is hoped racial misclassification will have a progressively smaller effect in artificially suppressing AI/AN cancer rates nationally.

There are also differences in distribution of cancer by anatomic site among the race and ethnic groups. Regardless of race or ethnicity, among men, prostate was the most common cancer site for men in Oregon and nationwide, while breast was the most

Figure V-8

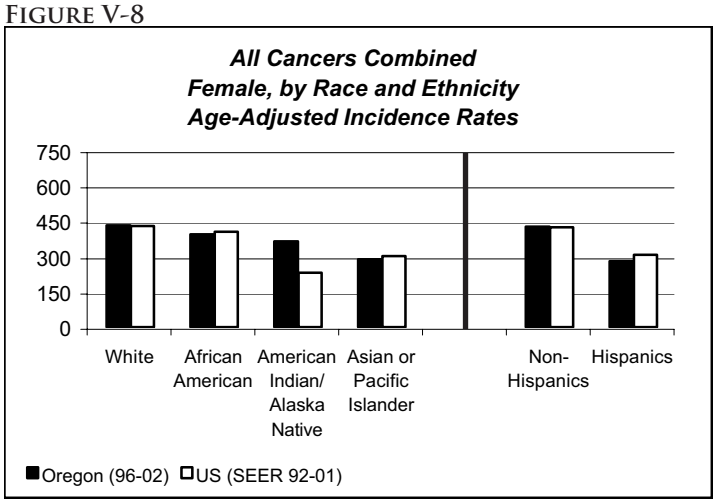


Figure V-9

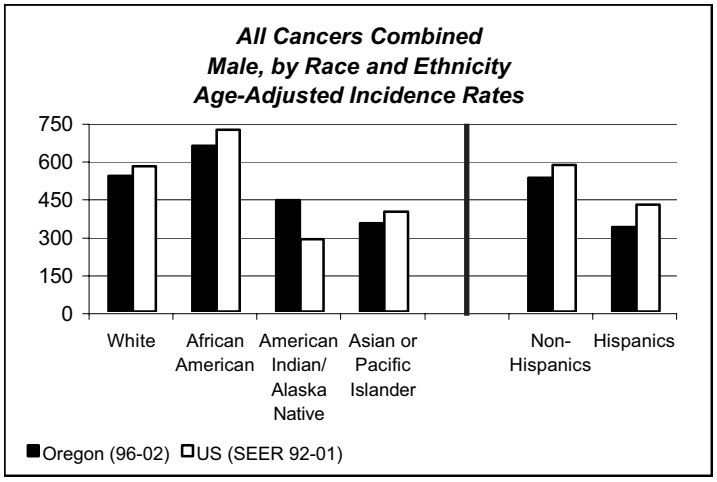
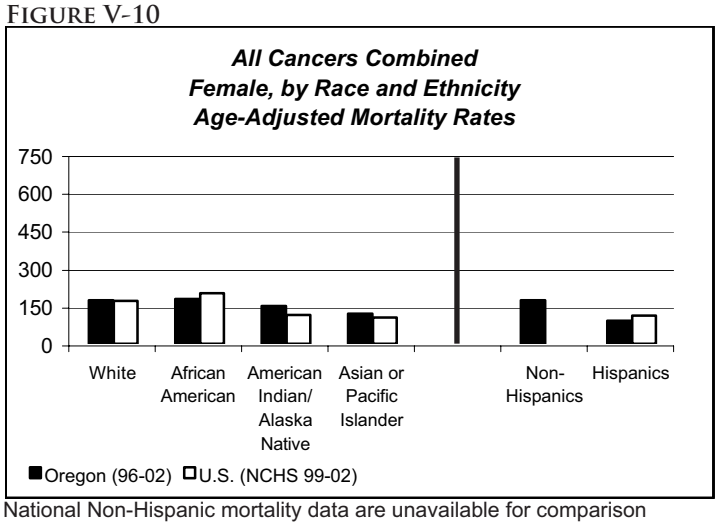
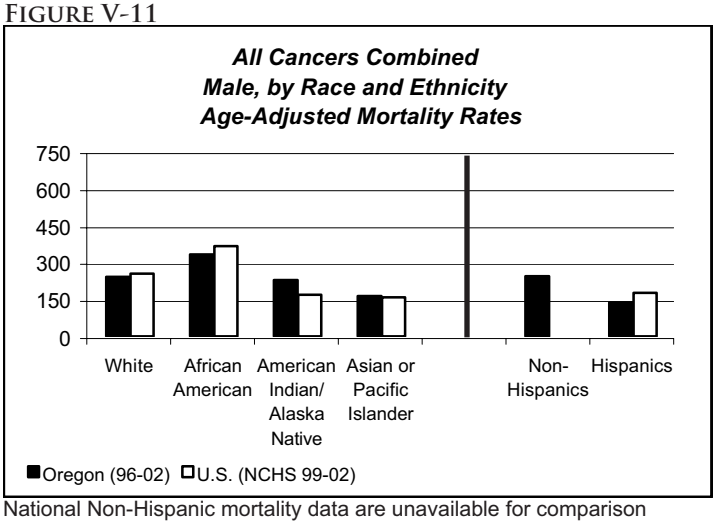


Figure V-10



National Non-Hispanic mortality data are unavailable for comparison

Figure V-11



National Non-Hispanic mortality data are unavailable for comparison

common cancer site for women. (See Figure V-12.) However, lung cancers represent a greater burden among Oregon Hispanics and AI/AN women in Oregon than nationally. Cervical cancers could potentially be eliminated with appropriate, population-based screening, but are the third most common cancer among Hispanic women for both Oregon and the nation. Melanomas of the skin are the 5th most common cancer among White Oregonians, but are not in the top 5 leading cancer sites nationally for Whites. Lymphomas also represent a greater burden among AI/AN and AA women in Oregon than they do nationally.

For men, lung cancers were the most common cause of cancer death among all racial and ethnic groups in Oregon (See Figure V-13.) For women, lung cancers were also the leading cause of cancer death except among Asian/ Pacific Islanders (A/PI) and hispanics, where breast cancers were the leading cause of cancer death. Oregon A/PI have a higher percentage of liver cancer deaths compared to other racial groups. This may be because hepatitis B is more prevalent among this group. Deaths from stomach cancers are also more common in this group as well as in AA men. Generally considered rare cancers, multiple myeloma and brain/central nervous system cancers are among the top 5 cancer causes of death among AA women and AI/AN men, respectively.

Race and Ethnicity—Top 5 Most Common Cancer Incidence Sites

Figure V-12

Top 5 Most Common Cancers

Percentage of Incidence by Sex and by Race and Ethnicity

Oregon (1996 - 2002) vs US (SEER 1996 - 2001)

MEN				WOMEN			
US		**OREGON**		**US**		**OREGON**	
African American				***African American***			
Prostate	38%	30%	Prostate	Breast	31%	32%	Breast
Lung and Bronchus	17%	20%	Lung and Bronchus	Colon and Rectum	13%	13%	Colon and Rectum
Colon and Rectum	10%	10%	Colon and Rectum	Lung and Bronchus	13%	11%	Lung and Bronchus
Lymphomas	4%	5%	Lymphomas	Uterus	4%	5%	Lymphomas
Bladder	3%	4%	Kidney Renal	Pancreas	3%	4%	Uterus
American Indian or Alaska Native				***American Indian or Alaska Native***			
Prostate	18%	19%	Prostate	Breast	28%	23%	Breast
Lung and Bronchus	16%	19%	Lung and Bronchus	Colon and Rectum	13%	20%	Lung and Bronchus
Colon and Rectum	14%	13%	Colon and Rectum	Lung and Bronchus	9%	11%	Colon and Rectum
Kidney Renal	6%	6%	Lymphomas	Uterus	5%	5%	Lymphomas
Stomach	5%	4%	Bladder	Ovary	4%	3%	Pancreas
Asian or Pacific Islander				***Asian or Pacific Islander***			
Prostate	25%	19%	Prostate	Breast	33%	32%	Breast
Lung and Bronchus	15%	14%	Lung and Bronchus	Colon and Rectum	12%	12%	Colon and Rectum
Colon and Rectum	14%	14%	Colon and Rectum	Lung and Bronchus	9%	9%	Lung and Bronchus
Stomach	5%	8%	Liver	Uterus	6%	5%	Uterus
Liver	6%	6%	Stomach	Thyroid	4%	5%	Stomach
White				***White***			
Prostate	30%	29%	Prostate	Breast	32%	32%	Breast
Lung and Bronchus	14%	16%	Lung and Bronchus	Lung and Bronchus	12%	14%	Lung and Bronchus
Colon and Rectum	11%	8%	Colon and Rectum	Colon and Rectum	11%	10%	Colon and Rectum
Bladder	7%	8%	Bladder	Uterus	6%	6%	Uterus
Lymphomas	5%	5%	Melanomas of Skin	Lymphomas	4%	4%	Melanomas of Skin
Hispanic				***Hispanic***			
Prostate	29%	21%	Prostate	Breast	30%	29%	Breast
Colon and Rectum	11%	13%	Lung and Bronchus	Colon and Rectum	9%	9%	Lung and Bronchus
Lung and Bronchus	9%	8%	Colon and Rectum	Cervix Uteri	7%	8%	Cervix Uteri
Lymphomas	7%	8%	Lymphomas	Lung and Bronchus	7%	7%	Colon and Rectum
Stomach	4%	4%	Bladder	Uterus	5%	5%	Uterus
Non Hispanic				***Non Hispanic***			
Prostate	30%	29%	Prostate	Breast	32%	32%	Breast
Lung and Bronchus	15%	16%	Lung and Bronchus	Lung and Bronchus	12%	14%	Lung and Bronchus
Colon and Rectum	11%	10%	Colon and Rectum	Colon and Rectum	12%	10%	Colon and Rectum
Bladder	6%	7%	Bladder	Uterus	6%	5%	Uterus
Lymphomas	5%	5%	Melanomas of Skin	Lymphomas	4%	4%	Melanomas of Skin

11 SEER Registries for Expanded Race (1996-2001)
11 SEER Registires for Hispanics (1996-2001)
OSCaR (1996-2002)

Race and Ethnicity—Top 5 Most Common Cancer Mortality Sites

Figure V-13

Top 5 Most Common Cancer Deaths
Percentage of Mortality, by Race and Ethnicity
Oregon 1996 - 2002

MEN			WOMEN
	African American (AA)		
Lung	32%	18%	Lung
Prostate	17%	17%	Breast
Colon and Rectum	8%	12%	Colon and Rectum
Pancreas	6%	10%	Pancreas
Stomach	3%	4%	Myeloma; Uterus (tied)
	American Indian or Alaska Native (AI/AN)		
Lung	36%	31%	Lung
Colon and Rectum	13%	11%	Breast
Prostate	5%	9%	Colon and Rectum
Esophagus	5%	5%	Lymphomas; Leukemias (tied)
Brain and CNS	5%	5%	Pancreas
	Asian or Pacific Islander (A/PI)		
Lung	25%	19%	Breast
Liver and Bile Duct	16%	15%	Lung
Colon and Rectum	11%	10%	Colon and Rectum
Stomach	8%	8%	Stomach
Prostate	5%	7%	Liver and Bile Duct
	White		
Lung	31%	27%	Lung
Prostate	13%	15%	Breast
Colon and Rectum	9%	10%	Colon and Rectum
Pancreas	5%	6%	Ovary
Lymphomas	5%	6%	Pancreas
	Hispanic		
Lung	23%	14%	Breast
Prostate	11%	14%	Lung
Pancreas	8%	9%	Colon and Rectum
Leukemias	8%	5%	Pancreas; lymphomas (tied)
Lymphomas	7%	5%	Stomach
	Non Hispanic		
Lung	29%	27%	Lung
Colon and Rectum	10%	15%	Breast
Prostate	7%	10%	Colon and Rectum
Pancreas	5%	6%	Pancreas
Lymphomas	5%	6%	Ovary

Oregon data 1996-2002
Due to incompatibility of race/ethnicity coding, national mortality data are not presented for comparison

There is also variation in the M/I ratios, or prognosis for cancers, by race and ethnicity. (See Figure V-14.) Although Whites have the second highest incidence and mortality rates, they have the lowest M/I ratio among Oregonians, which indicates better survival. Nationally, A/PI have the lowest M/I ratio followed by Whites.

Some of the disparity may be driven by differences in stage at diagnosis. (See Figure V-15.) Whites have the highest percentage of cancers diagnosed at an early stage and AI/AN have the lowest. Although Hispanics have a lower M/I ratio, they also have a lower percentage of cases diagnosed at an early stage than Non-Hispanics. This discrepancy could result from differences in how the Cancer Registry and the Oregon Center for Health Statistics record ethnicity. This divergence could also be seen if Hispanics were more likely to leave Oregon after a diagnosis of cancer than are other groups.

Figure V-14

All Cancers Mortality/Incidence (M/I) Ratios By Sex, Race and Ethnicity

	Male		Female	
Race and Ethnicity	***Oregon***	***US***	***Oregon***	***US***
White	0.45	0.44	0.40	0.39
African American	0.51	0.51	0.45	0.50
American Indian/ Alaska Native	0.52	0.59	0.41	0.50
Asian or Pacific Islander	0.47	0.40	0.42	0.34
Non-Hispanics	0.46	n/a	0.41	n/a
Hispanics	0.41	0.42	0.32	0.37

Oregon Data 1996-2002—National Data 1992-2001

Figure V-15

Percentage of Early Stage Diagnoses By Sex, Race and Ethnicity

	Male		Female	
Race and Ethnicity	***Oregon***	***US***	***Oregon***	***US***
White	56%	58%	57%	58%
African American	43%	52%	49%	49%
American Indian/ Alaska Native	41%	44%	46%	50%
Asian or Pacific Islander	44%	48%	50%	54%
Non-Hispanics	56%	57%	57%	57%
Hispanics	45%	51%	50%	54%

Oregon Data 1996-2002—National Data 1992-2001

Age-Specific Cancer Rates

The greatest risk factor for developing and dying from cancer is age. Figure V-16 shows age-specific cancer incidence and mortality rates for Oregon men and women. For diagnosis year 2002, cancer occurred at a rate of less than 100 per 100,000 Oregonians before age 35. Between the ages of 40 and 54, the rate of increase is nearly 2-fold for each 5-year incremental increase in age. After age 50, incidence rates continue to rise, but the rate of the rise slowly declines. After age 60, cancer incidence was greater than 1,000 per 100,000.

Cancer mortality generally increased with age for both men and women. The *All Cancers* mortality was greater for men than women for most age-groups.

Figure V-17 shows the same data on a log-scale to demonstrate the variation in rates among Oregon's younger populations. Between the ages of 15 and 24, the rate increases nearly 2-fold with each 5-year increment in age. Between the ages of 25 and 39, the rate increases about 1.5-fold with each 5-year increment in age.

Males under 5 and ages 10-14 had a higher incidence of cancer. Then from age 15 to age 54, women had a higher incidence of cancer. The situation reversed again in those aged 55 and older when men had a higher rate of cancer. This is most likely due to female-specific cancers (i.e., breast, cervix, and uterine cancers), which begin to affect women after puberty. National data follow similar patterns.

In Oregon, age-specific mortality rates were higher for men compared to women except for children under 10 and the 40-59 age group. This mortality pattern was similar to the national data with female mortality rising at an earlier age. The higher mortality from women age 40-59 is predominately due to the rate of female breast cancer.

Figure V-16

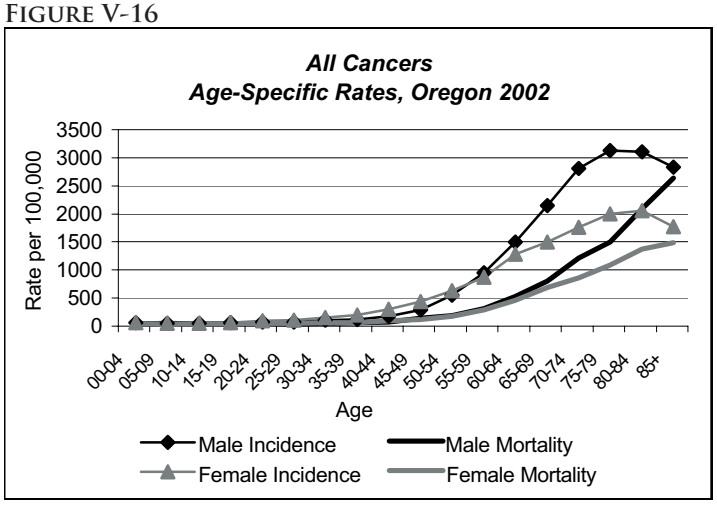
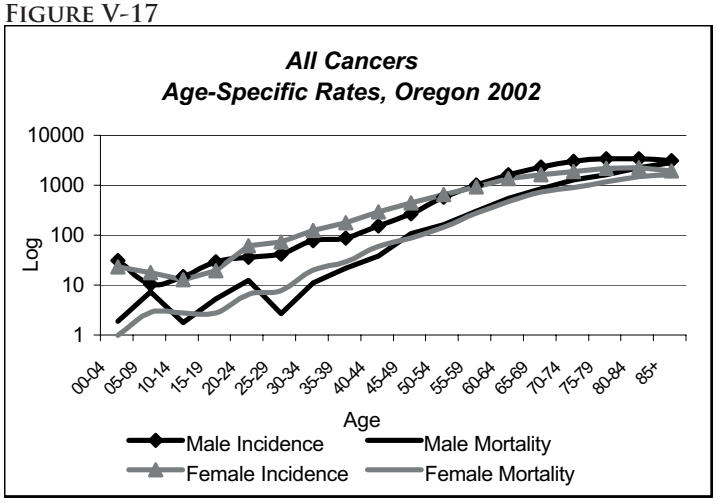


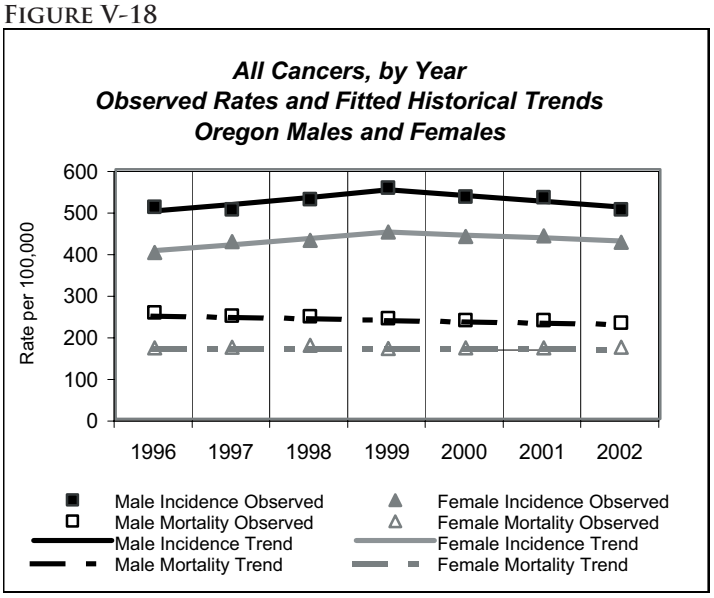
Figure V-17



Historical Trends (1996 - 2002)

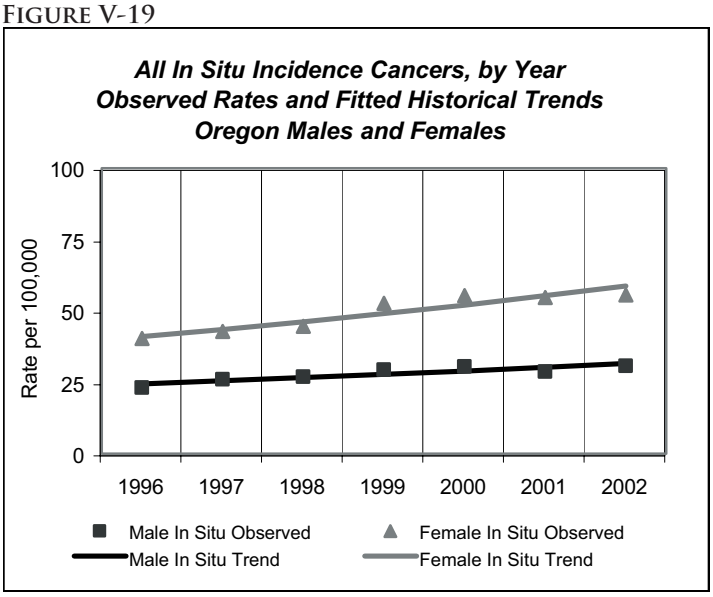
Total invasive cancer incidence for both men and women has been variable since 1996. (See Figure V-18.) Originally, all-sites cancer incidence increased 4% annually for men and women from 1996-1999. This trend was followed by an annual decrease from 1999-2002—3% for men and 2% for women. This variation is likely due to improvements in reporting from the early years of the Cancer Registry. Cancer mortality has been more constant since 1996 with a steady 1% annual decrease among men. Mortality among women, however, has been increasing slightly (<½% a year) since 1996.

Figure V-18



Incidence for *in situ* cancers has been steadily increasing. (See Figure V-19.) The rate of *in situ* cancers has increased 4% annually for men and 6% for women. This increase in *in situ* diagnoses likely reflects a combination of improved reporting for these cases, which are often diagnosed and treated outside of the rigorous hospital cancer reporting system, as well as improvements in cancer screening across the state.

Figure V-19



Regional Variation (Combined Five-Year Rates: 1998-2002)

Cancer rates vary across the state of Oregon. Differences in screening and reporting rates, access to medical services, and underlying risk factors, such as regional smoking rates, affect these patterns.

All-Sites Cancer Incidence has a clear regional pattern. In general, the I-5 corridor and surrounding counties have higher incidence rates than are seen nationally, and most of the coastal region and Eastern Oregon have lower incidence rates than are seen nationally. The Northeast region along the Columbia Gorge has rates similar to those seen nationally.

All-Sites Cancer Mortality does not follow the same patterns as incidence. The northern portion of the state and the Southwest have cancer mortality rates higher than rates seen nationally. Central Oregon and parts of Southern Oregon have mortality rates lower than are seen nationally. The remainder of the state reflects similar rates to those seen nationally.

Figure V-20

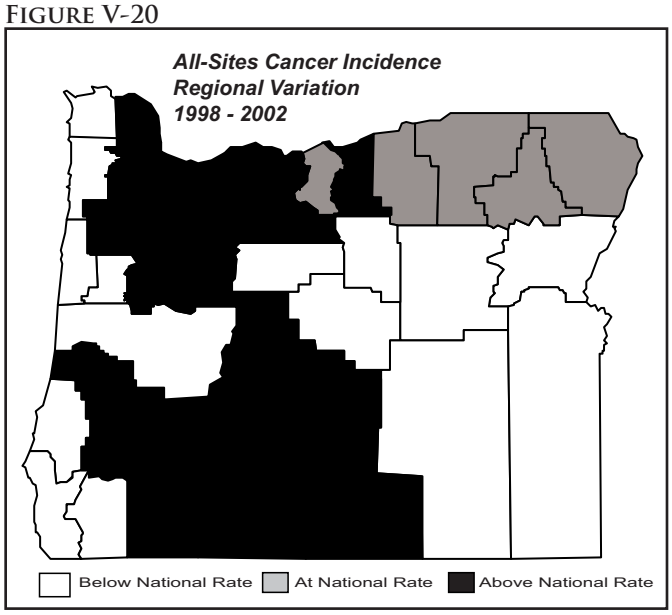
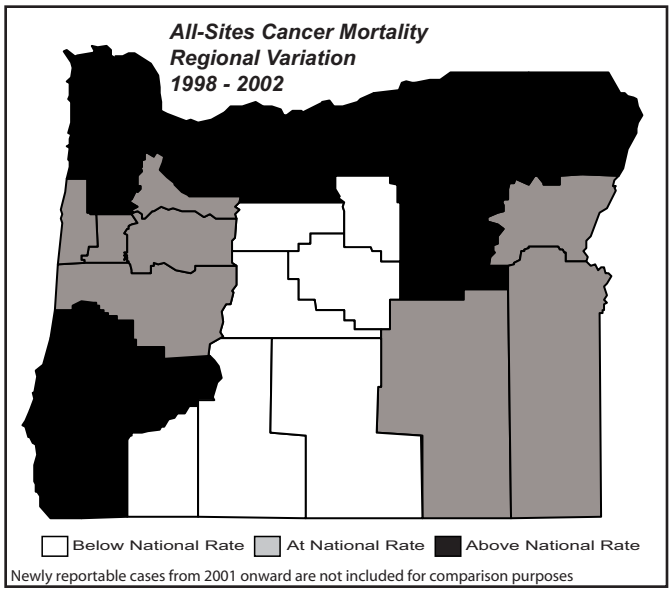


Figure V-21



These patterns in incidence and mortality are not entirely explained by differences in effective screening. The percentage of cancers diagnosed at an early stage is generally lower in Eastern Oregon and higher in Western Oregon. (See Figure V-22.) Although Washington and Multnomah Counties have average percentages of cases diagnosed at an early stage, some of the surrounding region has higher percentages. These variations are likely a combination of regional reporting differences, regional screening practices, and differences in health behaviors of the underlying county populations.

Figure V-22