

Cancer Data Overview

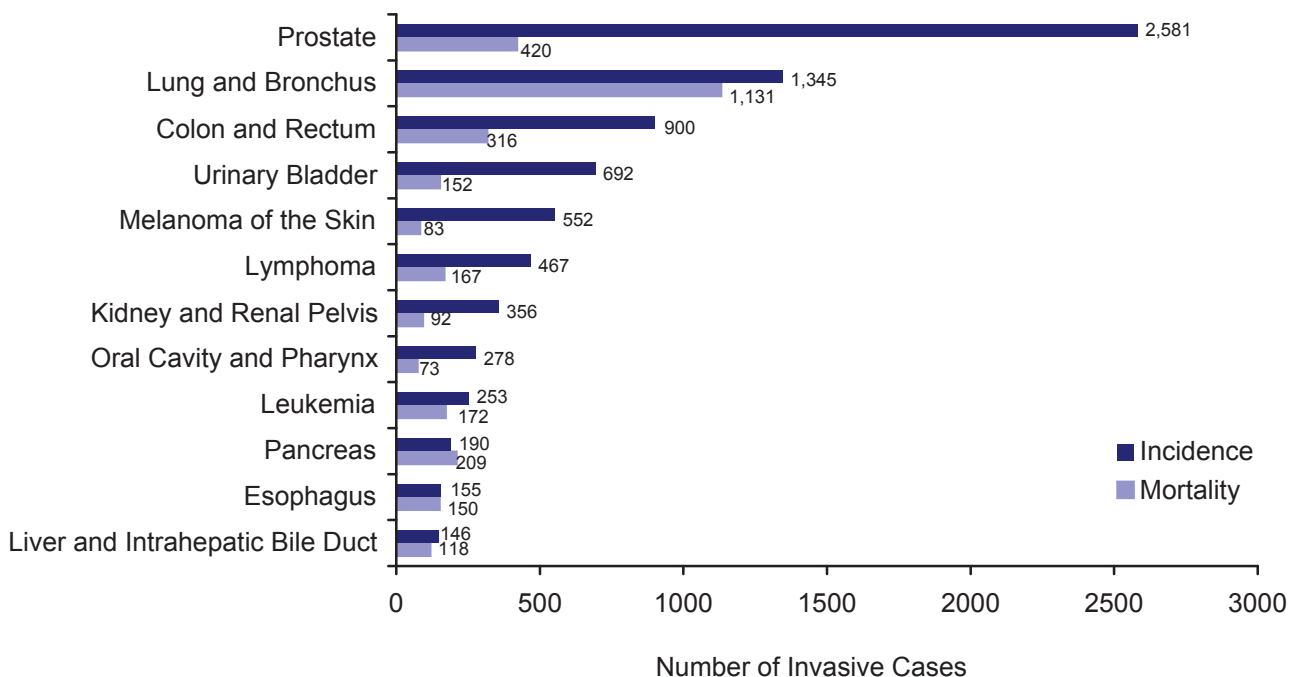
Cancer Data Overview

During 2005, 19,788 new, reportable cancers were diagnosed among Oregonians; of these, 18,083 were invasive. Also during 2005, 7,396 Oregonians died due to cancer as the underlying cause of death. The 2005 Oregon total cancer mortality rate, 189.4, was 18% above the Healthy People 2010 target of 159.9 deaths per 100,000.

A brief overview of Oregon's 2005 cancer data reveals the following:

1. Oregon's 2005 age-adjusted cancer incidence rate of 467.4 per 100,000 was 1 percent lower than the 2004 national age-adjusted rate of 470.7.
2. Oregon's age-adjusted cancer mortality rate of 189.4 was 2 percent higher than the 2004 national rate of 185.7.
3. Although more cancers were reported in women, men had a higher incidence rate of invasive cancers and a higher mortality rate than women.
4. Breast cancers have the highest incidence in Oregon and lung cancers have the highest mortality.
5. Among Oregon females, breast cancer was the most frequently diagnosed cancer followed by lung, colorectal, and uterine cancer, and then melanoma. Lung cancer had the highest mortality for females, followed by breast, colorectal, pancreatic, and ovarian cancers.
6. Among Oregon males, prostate cancer was the most frequently diagnosed, followed by lung, colorectal, and urinary bladder cancer, and by melanoma. Lung cancer had the highest mortality for males followed by prostate, colorectal, and pancreatic cancer, and by leukemia.

**Leading Sites of Cancer Incidence and Mortality,
Oregon Males, 2005**



Cancer Data Overview

7. Of the 49 states with central registry data meeting national data quality standards in 2004, Oregon males ranked 27th for all-cancer incidence and Oregon females ranked 10th. For state rankings, see <http://www.statecancerprofiles.cancer.gov/incidencrates/index.php>.
8. Among the 50 states, Oregon males ranked 28th, and Oregon females ranked 14th in all-cancer mortality for 2004. The higher ranking for Oregon females is primarily due to higher rates of lung cancer mortality.

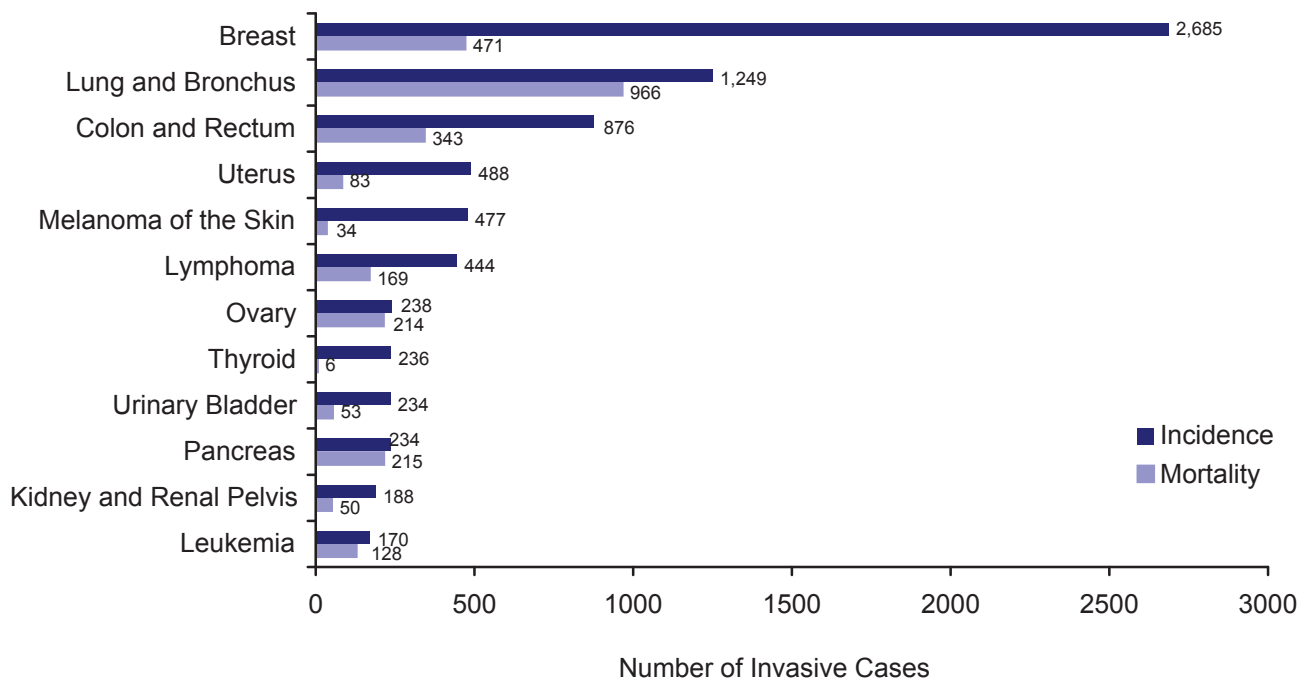
Stage at Diagnosis

For some cancers, early stage diagnosis is a measure of success for population-based screening efforts. (See figures on opposite page.) From 1996 through 2005, the percentage of early stage diagnoses decreased for cervical

cancer. The percentage of early stage diagnoses for colorectal cancers increased, and, though there is no national recommendation for prostate cancer screening, the percentage of early stage prostate cancer diagnoses has also increased. Although the percentage of female breast cancers diagnosed at an early stage has remained stable, the percentage of *in situ* diagnoses has increased, which will likely improve outcomes.

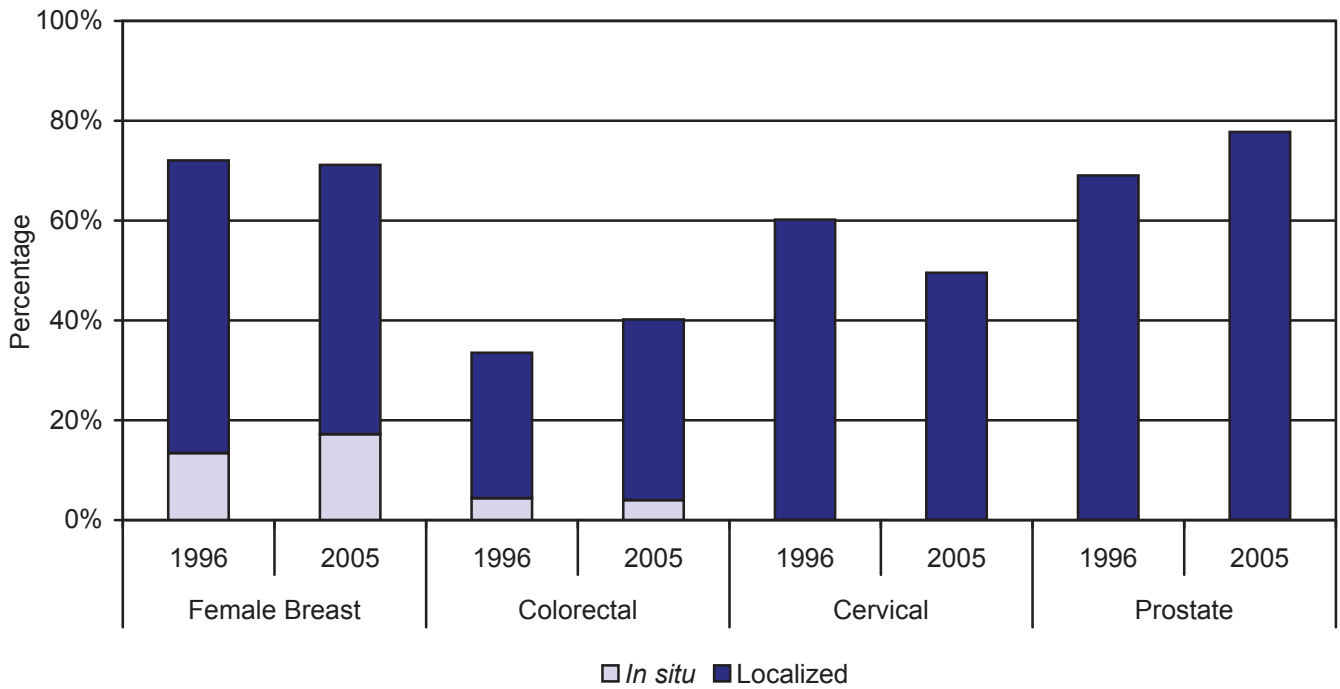
Despite variability in the percentage of cases diagnosed at an early stage, all of these screenable cancers demonstrated mortality reductions—likely due to improved screening and enhanced treatment.

**Leading Sites of Cancer Incidence and Mortality,
Oregon Females, 2005**

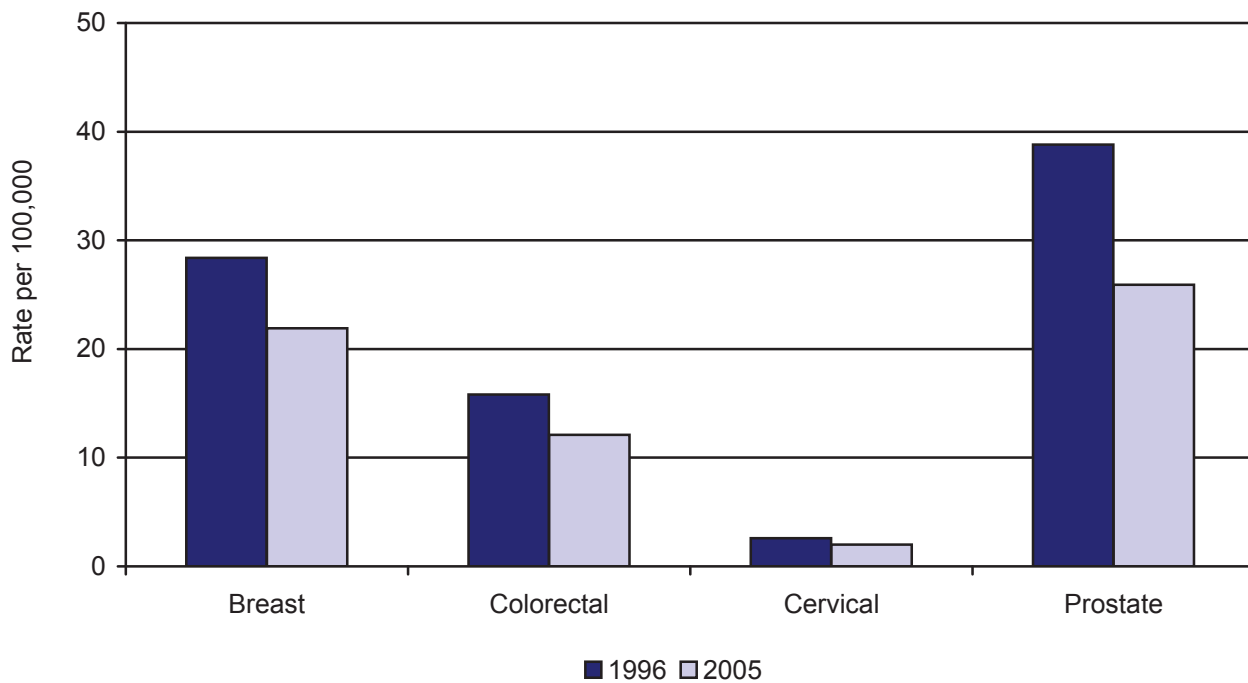


Cancer Data Overview

Screenable Cancers Diagnosed at an Early (In situ or Local) Stage, Oregon, 1996 and 2005



Screenable Cancers, Age-Adjusted Mortality Rates, Oregon, 1996 and 2005



Cancer Data Overview

Mortality to Incidence (M/I) Ratios, Oregon, 2001-2005

	Total	Male	Female
All Malignant Sites	0.41	0.41	0.40
Pancreas	1.00	1.01	0.99
Esophagus	0.96	0.96	0.94
Mesothelioma	0.95	1.02	0.70
Liver and Intrahepatic Bile Duct	0.92	0.86	1.08
Lung and Bronchus	0.81	0.82	0.79
Myeloma	0.81	0.79	0.85
Brain and CNS	0.78	0.81	0.75
Ovary	0.77	n/a	0.77
Leukemia	0.69	0.68	0.70
Gallbladder	0.59	0.60	0.58
Stomach	0.58	0.55	0.62
Soft Tissue including Heart	0.46	0.44	0.48
Non-Hodgkin Lymphoma	0.41	0.41	0.42
Lymphoma	0.39	0.38	0.39
Bones and Joints	0.38	0.50	0.24
Colorectal	0.38	0.37	0.38
Cervical	0.35	n/a	0.35
Larynx	0.34	0.32	0.39
Kidney and Renal Pelvis	0.31	0.32	0.30
Oral Cavity and Pharynx	0.25	0.23	0.31
Bladder	0.22	0.21	0.25
Small Intestine	0.21	0.17	0.27
Breast	0.19	0.25	0.19
Uterine	0.17	n/a	0.17
Hodgkin Lymphoma	0.16	0.17	0.16
Prostate	0.16	0.16	n/a
Melanoma of the Skin	0.13	0.17	0.10
Eye and Orbit	0.10	0.12	0.07
Testis	0.06	0.09	n/a
Thyroid	0.06	0.06	0.05

Oregon Data Sources: OSCaR (Incidence) and Center for Health Statistics (Mortality)

n/a = Not applicable

Disease Severity

The mortality-to-incidence (M/I) ratio provides a measure of disease severity. In general, the higher the M/I ratio, the poorer the expected outcome for a patient with cancer of that type. An M/I ratio over 1.0 indicates the poorest prognosis. This means more people died due to the particular cancer type than were diagnosed during the same year.

Overall, Oregon's M/I ratio for all cancers was 0.41 for the years 2001-2005. Pancreatic cancer had the worst prognosis with a ratio of 1.00. This was followed by cancer of the esophagus with a ratio of 0.96.

Cancer Data Overview

Years of Potential Life Lost (YPLL) by Average Number of Years Lost Annually, Prior to Age 65, Oregon, Years 2001-2005

	Total	Male	Female
All Causes of Death	136,880	79,353	57,527
Accidents and Adverse Effects	23,959	16,630	7,328
All Malignant Cancers	23,097	11,595	11,502
Lung and Bronchus	4,539	2,488	2,051
Breast	2,480	19	2,461
Brain and CNS	1,926	1,119	807
Colorectal	1,725	927	798
Leukemia	1,536	887	650
Lymphoma	1,182	712	470
Pancreas	977	573	404
Liver and Bile Duct	801	548	253
Melanoma of the Skin	771	481	290
Ovary	682	n/a	682
Esophagus	552	444	108
Kidney and Renal Pelvis	513	354	159
Soft Tissue including Heart	503	308	195
Cervical	431	n/a	431
Stomach	429	253	176
Oral Cavity and Pharynx	393	293	100
Prostate	320	320	n/a
Bones and Joints	296	211	84
Myeloma	293	191	102
Urinary Bladder	269	179	90
Testis	190	190	n/a
Uterus	180	n/a	180
Diseases of Heart	16,937	9,393	7,544
Suicide and Self-Inflicted Injury	10,451	8,263	2,188
Congenital Anomalies	4,820	2,564	2,256
Cerebrovascular Diseases	4,167	1,658	2,509
Homicide and Legal Intervention	3,493	2,528	965
Chronic Liver Disease and Cirrhosis	3,444	2,232	1,212
Diabetes Mellitus	3,299	1,977	1,322
Pneumonia and Influenza	2,096	775	1,321
Chronic Obstructive Pulmonary Disease and Allied Conditions	2,028	951	1,077
Human Immunodeficiency Virus (HIV)	1,496	1,320	176

Data source: Center for Health Statistics

YPLL calculations are rounded to the nearest whole year.

n/a = not applicable

Years of Potential Life Lost

Years of potential life lost (YPLLs) are a measurement of the risk of early death due to a particular cause. For example, using 65 years as a standard age of death, a person dying of cancer at age 25 would have 40 years of potential life lost before age 65. The YPLL measure is one way of evaluating the burden of a disease upon a defined population.

Unintentional injury was the leading cause 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 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.

Among the various cancer sites, lung had the highest YPLL for men (2,488) and breast had the highest YPLL for women (2,461). For men, the second highest YPLL was due to brain cancer and for women, it was lung cancer. Colorectal cancer, leukemia, and lymphomas all caused over 1,000 YPLL per year.

Cancer Data Overview

Race and Ethnicity

Differences in age-adjusted incidence and death rates among population groups 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.

**Incidence - Five Most Common Cancers
Percentage of All Cancer Cases by Sex, Race, and Ethnicity
Oregon (1996 - 2005) vs US (SEER 1996 - 2004)**

MEN			WOMEN		
U.S.		OREGON	U.S.		OREGON
African American Men			African American Women		
Prostate	38%	32%	Prostate		
Lung and Bronchus	16%	19%	Lung and Bronchus	13%	13%
Colon and Rectum	10%	9%	Colon and Rectum	13%	12%
Lymphoma	4%	5%	Kidney and Renal	5%	5%
Oral and Pharynx	3%	4%	Lymphoma	4%	5%
American Indian or Alaska Native Men			American Indian or Alaska Native Women		
Prostate	20%	18%	Prostate		
Lung and Bronchus	15%	18%	Lung and Bronchus	13%	18%
Colon and Rectum	14%	13%	Colon and Rectum	10%	10%
Kidney and Renal	6%	6%	Lymphoma	5%	6%
Stomach	5%	4%	Oral	4%	5%
Asian or Pacific Islander Men			Asian or Pacific Islander Women		
Prostate	25%	19%	Prostate		
Lung and Bronchus	15%	14%	Lung and Bronchus	12%	11%
Colon and Rectum	14%	14%	Colon and Rectum	9%	9%
Liver and Bile Duct	6%	11%	Liver and Bile Duct	6%	6%
Stomach	5%	6%	Lymphoma	4%	5%
White Men			White Women		
Prostate	30%	29%	Prostate		
Lung and Bronchus	13%	15%	Lung and Bronchus	12%	14%
Colon and Rectum	11%	10%	Colon and Rectum	11%	10%
Urinary Bladder	7%	7%	Urinary Bladder	6%	6%
Lymphoma	5%	5%	Melanoma	5%	5%
Hispanic Men			Hispanic Women		
Prostate	29%	24%	Prostate		
Colon and Rectum	11%	13%	Lung and Bronchus	9%	9%
Lung and Bronchus	9%	8%	Lymphoma	7%	8%
Lymphoma	7%	8%	Colon and Rectum	6%	6%
Leukemia	4%	5%	Leukemia	6%	5%
Non-Hispanic Men			Non-Hispanic Women		
Prostate	31%	29%	Prostate		
Lung and Bronchus	14%	16%	Lung and Bronchus	12%	14%
Colon and Rectum	11%	10%	Colon and Rectum	11%	10%
Urinary Bladder	6%	7%	Urinary Bladder	6%	6%
Lymphoma	5%	5%	Melanoma	4%	4%

US Data: Incidence SEER 13 Registry Data using SEER Stat 6.3.5 released April 2007

Oregon Data: OSCaR 1996-2004

Cancer Data Overview

As seen nationally, African American (AA) men in Oregon have the highest rate of cancer incidence and mortality, followed by whites. Among women in Oregon and nationally, whites have the highest cancer incidence rates, but AA women have higher mortality rates. American Indians/Alaskan Natives (AI/AN) in

Oregon have higher cancer rates than are seen nationally. Nationwide, AI/AN cancer incidence and mortality are the lowest among the four reported racial groups. Hispanics have lower cancer incidence and mortality rates than non-Hispanics both in Oregon and nationally.

Mortality - Five Most Common Cancers
Percentage of All Cancer Cases by Sex, Race, and Ethnicity
Oregon (1996 - 2005) vs US (SEER 1996 - 2004)

MEN				WOMEN			
U.S.		OREGON		U.S.		OREGON	
African American Men				African American Women			
Lung and Bronchus	32%	32%	Lung and Bronchus	Lung and Bronchus	20%	21%	Lung and Bronchus
Prostate	16%	17%	Prostate	Breast	19%	17%	Breast
Colon and Rectum	9%	8%	Colon and Rectum	Colon and Rectum	12%	11%	Colon and Rectum
Pancreas	5%	5%	Pancreas	Pancreas	6%	9%	Pancreas
Esophagus	4%	4%	Stomach	Ovary	4%	4%	Lymphoma
American Indian or Alaska Native Men				American Indian or Alaska Native Women			
Lung and Bronchus	30%	31%	Lung and Bronchus	Lung and Bronchus	22%	32%	Lung and Bronchus
Colon and Rectum	10%	13%	Colon and Rectum	Breast	14%	11%	Breast
Prostate	9%	7%	Prostate	Colon and Rectum	10%	8%	Colon and Rectum
Liver and Bile Duct	5%	5%	Brain and CNS	Pancreas	5%	6%	Lymphoma
Stomach	5%	5%	Esophageal	Ovary	5%	5%	Leukemia
Asian or Pacific Islander Men				Asian or Pacific Islander Women			
Lung and Bronchus	26%	24%	Lung and Bronchus	Lung and Bronchus	18%	17%	Breast
Liver and Bile Duct	12%	19%	Liver and Bile Duct	Breast	15%	16%	Lung and Bronchus
Colon and Rectum	10%	9%	Colon and Rectum	Colon and Rectum	10%	10%	Colon and Rectum
Stomach	8%	7%	Stomach	Stomach	7%	8%	Stomach
Prostate	7%	6%	Pancreas	Liver and Bile Duct	6%	6%	Liver and Bile Duct
White Men				White Women			
Lung and Bronchus	32%	31%	Lung and Bronchus	Lung and Bronchus	24%	27%	Lung and Bronchus
Prostate	11%	12%	Prostate	Breast	16%	15%	Breast
Colon and Rectum	10%	9%	Colon and Rectum	Colon and Rectum	11%	10%	Colon and Rectum
Pancreas	5%	5%	Pancreas	Pancreas	6%	6%	Ovary
Lymphoma	5%	5%	Lymphoma	Ovary	5%	6%	Pancreas
Hispanic Men				Hispanic Women			
Lung and Bronchus	22%	23%	Lung and Bronchus	Breast	17%	15%	Lung and Bronchus
Prostate	10%	10%	Prostate	Lung and Bronchus	13%	13%	Breast
Colon and Rectum	10%	8%	Leukemia	Colon and Rectum	10%	9%	Colon and Rectum
Liver and Bile Duct	6%	8%	Lymphoma	Pancreas	6%	7%	Leukemia
Stomach	6%	7%	Colon and Rectum	Ovary	6%	7%	Pancreas
Non-Hispanic Men				Non-Hispanic Women			
Lung and Bronchus	33%	31%	Lung and Bronchus	Lung and Bronchus	24%	27%	Lung and Bronchus
Prostate	12%	12%	Prostate	Breast	16%	15%	Breast
Colon and Rectum	10%	9%	Colon and Rectum	Colon and Rectum	11%	10%	Colon and Rectum
Pancreas	5%	5%	Pancreas	Pancreas	6%	6%	Ovary
Lymphoma	4%	5%	Lymphoma	Ovary	5%	6%	Pancreas

US Data: SEER*Stat database, Mortality-All Cause of Death, Public-Use

Oregon Data: OSCaR 1996-2005

Cancer Data Overview

Historically, Oregon's American Indian/Alaska Native (AI/AN) population has had the lowest incidence and mortality rates of cancer of all racial/ethnic groups. 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. Perhaps this is why Oregon has higher rates than those seen nationally.

There are differences in distribution of cancer by site among racial and ethnic groups. Regardless of race or ethnicity, prostate cancer was the most common cancer for men in Oregon and nationwide, while breast cancer was the most common cancer for women. However, lung cancers represent a greater burden among Hispanics and AI/AN women in Oregon than nationally. Cervical cancer could potentially be eliminated with appropriate, population-based screening and early Human Papilloma Virus (HPV) vaccination, but it is the 4th most common cancer among Hispanic women for both Oregon and the nation. Melanoma of the skin is the 5th most common cancer among white men and women in Oregon, but is not among the five leading cancer sites nationally. 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. For women, lung cancers were also the leading cause of cancer death except among Asian and Pacific Islanders (A/PI), where breast cancers were the leading cause of cancer death. Nationally and in Oregon

A/PI have a higher percentage of liver cancer deaths compared to other racial groups. Deaths from stomach cancers are also more common in A/PI men 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 men and AI/AN men, respectively.

Some of these differences in mortality may be driven by stage at diagnosis. Whites have the highest percentage of cancers diagnosed at an early stage and AI/AN have the lowest. Hispanics have a lower percentage of cases diagnosed at an early stage than non-Hispanics.