

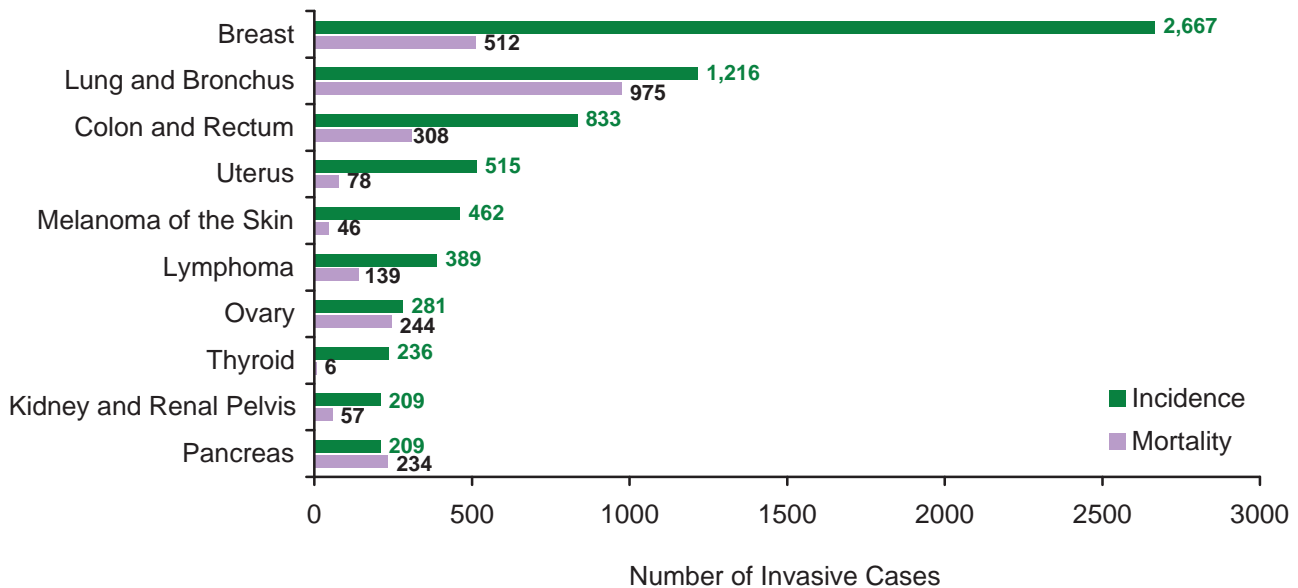
Cancer Data Overview

During 2004, 19,683 new, reportable cancers were diagnosed among Oregonians; of these, 17,946 were invasive. Also during 2004, 7,320 Oregonians died due to cancer as the underlying cause of death. The 2004 Oregon total cancer mortality rate was 20% above the Healthy People 2010 target of 159.9 deaths per 100,000.

A brief overview of Oregon's 2004 cancer data reveals the following:

1. Oregon's 2004 age-adjusted cancer incidence rate of 475.0 per 100,000 was 1 percent higher than the 2004 national rate of 470.7.
2. Oregon's age-adjusted cancer mortality rate of 192.1 was 3 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, ovarian, and pancreatic cancers.

**Leading Sites of Cancer Incidence and Mortality,
Oregon Females, 2004**



Cancer Data Overview

6. Among Oregon males, prostate cancer was the most frequently diagnosed, followed by lung, colorectal, and urinary bladder cancer, and by lymphoma. Lung cancer had the highest mortality for males followed by prostate, colorectal, and pancreatic cancer, and again by lymphoma.
7. Of the 45 states with central registry data meeting national data quality standards in 2003, Oregon males ranked 42nd for all-cancer incidence and Oregon females ranked 15th. For state rankings, see <http://apps.nccd.cdc.gov/uscs/>.
8. Among all 50 states, Oregon males ranked 34th, and Oregon females ranked 12th in all-cancer mortality for 2003. The higher ranking for Oregon females is primarily due to higher rates of lung cancer mortality.

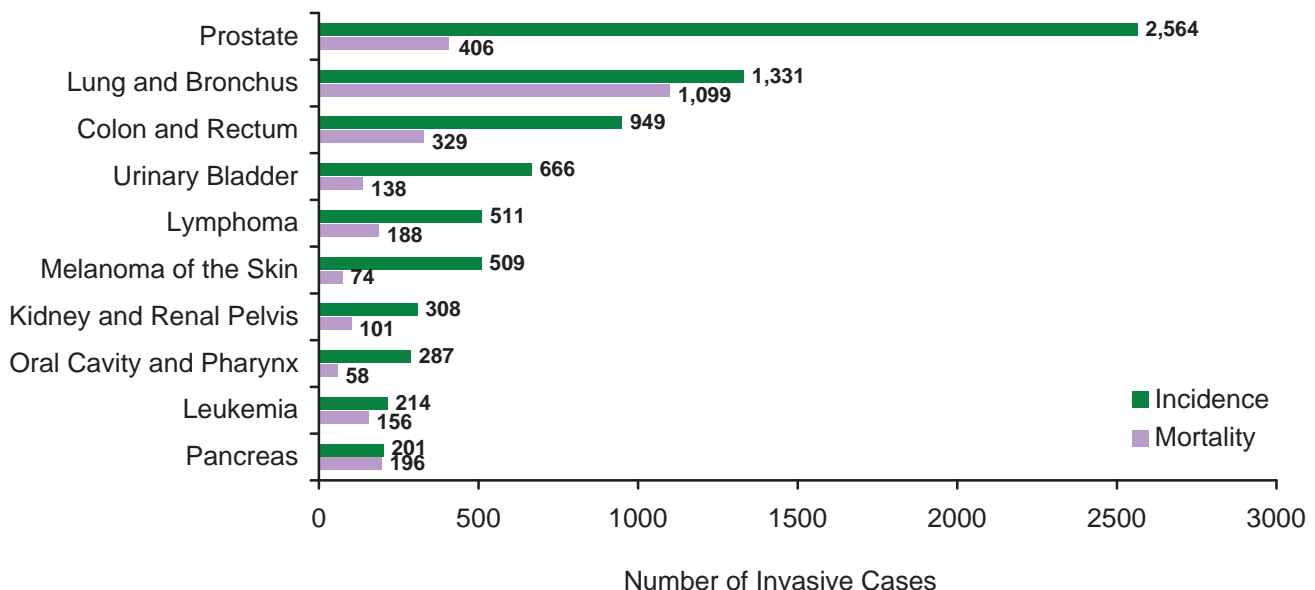
Stage at Diagnosis

For some cancers, early stage diagnosis is a measure of success for population-based screening efforts. (See figures on opposite page.) From 1996 through 2004, 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 also increased.

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.

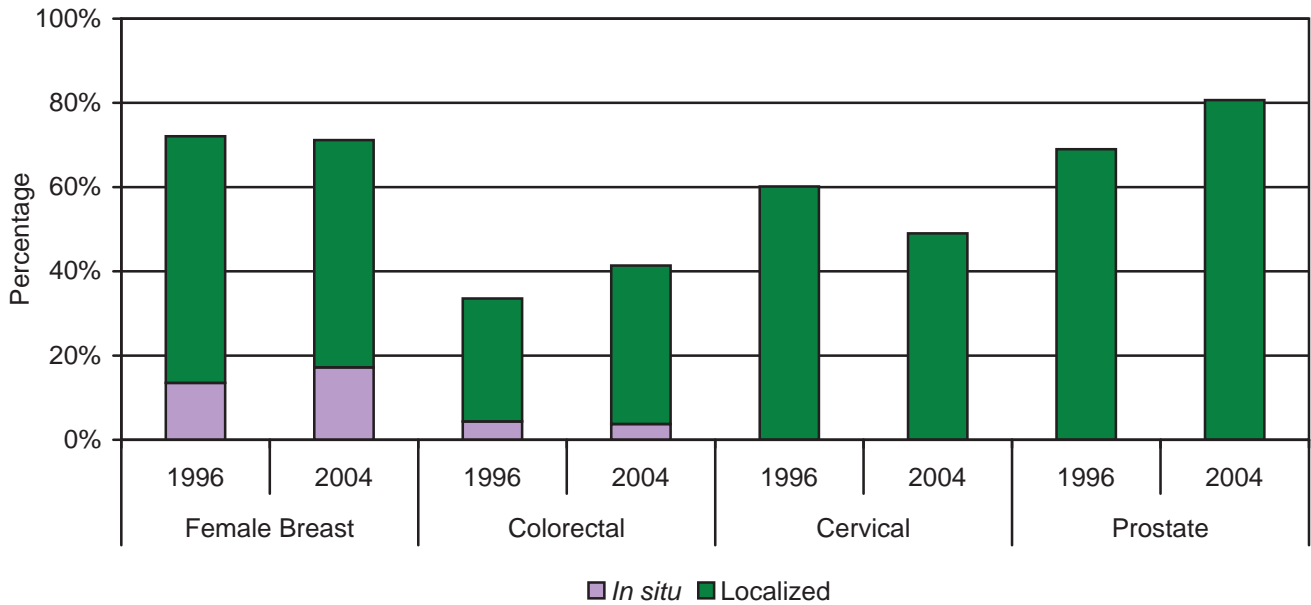
Despite variability in the percentage of cases diagnosed at an early stage, all of these screenable cancers demonstrated reductions in mortality—likely due to a combination of improved screening and enhanced treatment.

**Leading Sites of Cancer Incidence and Mortality,
Oregon Males, 2004**

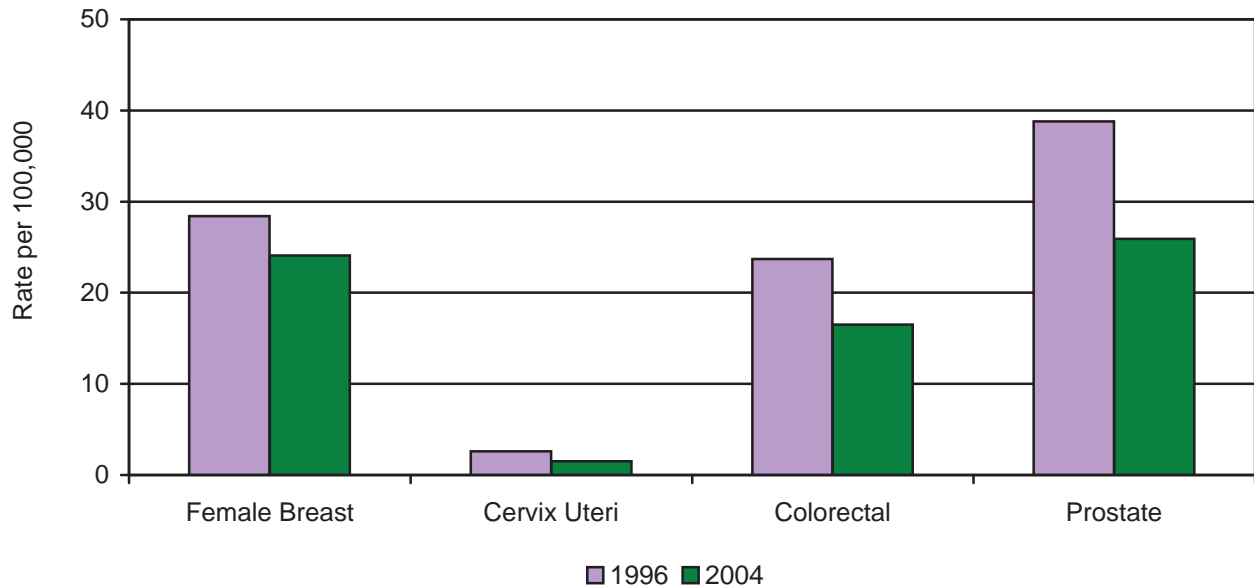


Cancer Data Overview

**Screenable Cancers Diagnosed at an Early (In situ or Local) Stage
Oregon, 1996 and 2004**



**Screenable Cancers, Age-Adjusted Mortality Rates,
Oregon, 1996 and 2004**



Cancer Data Overview

Mortality to Incidence (M/I) Ratios, Oregon, 2000-2004

	Total	Male	Female
All Malignant Sites	0.41	0.41	0.40
Pancreas	1.00	1.00	1.00
Mesothelioma	0.97	0.97	0.97
Liver and Intrahepatic Bile Duct	0.95	0.87	1.11
Esophagus	0.93	0.95	0.85
Lung and Bronchus	0.81	0.83	0.80
Myeloma	0.81	0.76	0.86
Brain and CNS	0.76	0.75	0.77
Ovary	0.72	n/a	0.72
Leukemia	0.68	0.68	0.68
Gallbladder	0.59	0.60	0.58
Stomach	0.57	0.53	0.63
Soft Tissue including Heart	0.45	0.43	0.48
Bones and Joints	0.40	0.50	0.29
Lymphoma	0.39	0.38	0.40
Colorectal	0.37	0.37	0.37
Larynx	0.36	0.33	0.45
Kidney and Renal Pelvis	0.34	0.36	0.32
Cervix Uteri	0.32	n/a	0.32
Oral Cavity and Pharynx	0.24	0.22	0.29
Urinary Bladder	0.22	0.21	0.26
Small Intestine	0.20	0.15	0.26
Breast	0.19	0.22	0.19
Uterus	0.17	n/a	0.17
Prostate	0.16	0.16	n/a
Melanoma of the Skin	0.14	0.17	0.11
Eye and Orbit	0.09	0.12	0.05
Thyroid	0.06	0.10	0.05
Testis	0.06	0.06	n/a

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 2000-2004. Pancreatic cancer had the worst prognosis with a ratio of 1.00. This was followed by mesothelioma with a ratio of 0.97.

Cancer Data Overview

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

Oregon, Years 2000-2004	Total	Male	Female
All Causes of Death	122,126	76,951	45,175
Accidents and Adverse Effects	23,662	16,523	7,139
All Malignant Cancers	22,059	11,085	10,974
Lung and Bronchus	4,433	2,392	2,040
Breast	2,464	13	2,451
Brain and CNS	1,841	1,089	752
Colon and Rectum	1,609	905	704
Leukemias	1,432	825	607
Lymphomas	1,068	669	399
Pancreas	925	557	368
Melanomas of Skin	781	505	277
Liver and Intrahepatic Bile Duct	740	517	222
Ovary	667	n/a	667
Esophagus	563	469	94
Kidney and Renal Pelvis	522	356	166
Soft Tissue Including Heart	494	283	211
Cervix Uteri	422	n/a	422
Stomach	396	233	163
Oral Cavity and Pharynx	368	286	82
Bones and Joints	301	208	92
Myeloma	270	177	93
Urinary Bladder	228	157	71
Uterus	203	n/a	203
Prostate	183	183	n/a
Diseases of the Heart	11,943	8,479	3,464
Suicide and Self-Inflicted Injury	10,458	8,218	2,240
Homicide and Legal Intervention	3,385	2,522	863
Chronic Liver Disease and Cirrhosis	3,212	2,097	1,115
Diabetes Mellitus	2,790	1,664	1,126
Cerebrovascular Diseases	2,478	1,333	1,145
Chronic Obstructive Pulmonary Disease and Allied Conditions	1,637	821	817
HIV (Human Immunodeficiency Virus)	1,546	1,368	178
Pneumonia and Influenza	966	553	414

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

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. Lost productivity due to an individual dying prematurely of cancer represents a loss of both economic and non-economic contributions to society.

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.

Cancer Data Overview

Lung cancer is the leading cancer-related cause of YPLL for all Oregonians, followed by breast, brain/central nervous system, and colorectal cancer. 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 two additional cancer sites each having over 1,000 YPLL each year.

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

MEN			WOMEN		
U.S.		OREGON	U.S.		OREGON
African American Men			African American Women		
Prostate	38%	31%	Prostate		
Lung and Bronchus	16%	19%	Breast	31%	31%
Colon and Rectum	10%	9%	Colon and Rectum	13%	12%
Lymphoma	4%	4%	Lung and Bronchus	13%	12%
Oral and Pharynx	3%	4%	Corpus Uteri	5%	5%
			Lymphoma	4%	5%
American Indian or Alaska Native Men			American Indian or Alaska Native Women		
Prostate	20%	19%	Breast	28%	25%
Lung and Bronchus	15%	18%	Colon and Rectum	13%	18%
Colon and Rectum	14%	13%	Lung and Bronchus	10%	10%
Kidney and Renal	6%	5%	Corpus Uteri	5%	5%
Stomach	5%	4%	Ovary	4%	4%
Asian or Pacific Islander Men			Asian or Pacific Islander Women		
Prostate	25%	19%	Breast	33%	32%
Lung and Bronchus	15%	14%	Colon and Rectum	12%	11%
Colon and Rectum	14%	14%	Lung and Bronchus	9%	9%
Liver and Bile Duct	6%	10%	Corpus Uteri	6%	6%
Stomach	5%	5%	Thyroid	4%	5%
White Men			White Women		
Prostate	30%	29%	Breast	32%	32%
Lung and Bronchus	13%	16%	Lung and Bronchus	12%	14%
Colon and Rectum	11%	10%	Colon and Rectum	11%	10%
Urinary Bladder	7%	7%	Corpus Uteri	6%	6%
Lymphoma	5%	5%	Lymphoma	5%	4%
Hispanic Men			Hispanic Women		
Prostate	29%	25%	Breast	30%	28%
Colon and Rectum	11%	13%	Colon and Rectum	9%	10%
Lung and Bronchus	9%	8%	Lung and Bronchus	7%	8%
Lymphoma	7%	8%	Cervix Uteri	6%	6%
Leukemia	4%	5%	Corpus Uteri	6%	5%
Non-Hispanic Men			Non-Hispanic Women		
Prostate	31%	29%	Breast	32%	32%
Lung and Bronchus	14%	16%	Lung and Bronchus	12%	14%
Colon and Rectum	11%	10%	Colon and Rectum	11%	10%
Urinary Bladder	6%	7%	Corpus Uteri	6%	6%
Lymphoma	5%	5%	Lymphoma	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

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.

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

MEN			WOMEN		
US	OREGON		US	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%	16% Breast
Colon and Rectum	9%	9% Colon and Rectum	Colon and Rectum	12%	10% 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%	32% Lung and Bronchus	Lung and Bronchus	22%	33% Lung and Bronchus
Colon and Rectum	10%	13% Colon and Rectum	Breast	14%	10% Breast
Prostate	9%	5% Esophagus	Colon and Rectum	10%	9% Colon and Rectum
Liver and Bile Duct	5%	5% Prostate	Pancreas	5%	5% Pancreas
Stomach	5%	4% Brain/Leukemia	Ovary	5%	5% Lymphoma/Leukemia
Asian or Pacific Islander Men			Asian or Pacific Islander Women		
Lung and Bronchus	26%	25% Lung and Bronchus	Lung and Bronchus	18%	18% Breast
Liver and Bile Duct	12%	18% Liver and Bile Duct	Breast	15%	15% Lung and Bronchus
Colon and Rectum	10%	10% Colon and Rectum	Colon and Rectum	10%	9% Colon and Rectum
Stomach	8%	7% Stomach	Stomach	7%	8% Stomach
Prostate	7%	6% Prostate	Liver and Bile Duct	6%	7% 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% Breast
Prostate	10%	10% Prostate	Lung and Bronchus	13%	14% Lung and Bronchus
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% Pancreas	Ovary	6%	6% 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 1996-2004

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 Indian/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.

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 also 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 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. Oregon A/PI have a higher percentage of liver cancer deaths compared to other racial groups. Deaths from stomach cancers are also more common for 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 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.