

A. BREAST CANCERS

Although the cause of breast cancer is unknown, the major risk factors for breast cancer are one's sex (female) and age (older). These risk factors, like heredity, cannot be controlled. Having a first-degree relative (i.e., mother or sister) with breast cancer increases an individual's risk, yet over 80% of individuals with breast cancer have no family history of the disease. Early detection through routine mammograms and breast exams can decrease severity of illness and mortality rates.

As seen nationally, breast cancer is the most common invasive cancer among women and the 2nd leading cause of cancer death among women in Oregon. In Oregon, however, breast cancer is the most common invasive cancer in the state—even among men and women combined. Oregon consistently ranks among the top five states for breast cancer incidence.

The Oregon female breast cancer mortality rate of 26.1 for 2003 was 17% above the Healthy People 2010 target of 22.3 deaths per 100,000 women. Reducing breast cancer incidence and mortality has been identified as a priority by the Oregon Partnership for Cancer Control, which produced Oregon's first cancer plan in 2005 (www.healthoregon.org/cancer).

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FEMALE BREAST CANCERS FAST FACTS OVERVIEW

A brief overview of breast cancer in Oregon shows the following: (See Figure VII-A-1.)

1. In 2003, 3,117 new cases of breast cancer were diagnosed among Oregon women. Of these, 2,565 were invasive cases. In all, 548 women died of breast cancer. (14 men were diagnosed with invasive breast cancer, and 2 men died of breast cancer.)
2. Current five-year trends show age-adjusted, invasive female breast cancer incidence rates have been decreasing about 4% annually in Oregon—3% nationally. Oregon's mortality rate mirrors the national mortality trend with a 0.4% decline.
3. Oregon's age-adjusted 2003 incidence rate for female breast cancer was 6% higher than the 2003 national rate, while Oregon's 2003 mortality rate was 4% higher than the 2003 national rate.
4. Of the 44 states with central registries meeting national data quality standards in 2003, Oregon was 2nd highest in breast cancer incidence. Among all 50 states, Oregon ranked in the lower half, tied for 29th, for breast cancer mortality.
5. Breast cancer is the leading cancer incidence site for all Oregon women regardless of race or ethnicity. It is the 2nd leading cause of cancer mortality for most Oregon women, but it is the leading cause of cancer mortality for Asian/Pacific Islander women.
6. In Oregon in 2003, 18% of breast cancers were diagnosed at the *in situ* stage, 56% were diagnosed at the localized stage, and 26% were diagnosed at later stages. (See Figure VII-A-2)
7. Current five-year trends show incidence of *in situ* breast cancers has been increasing in Oregon about 4% annually while the nation has shown a nearly 3% decline in *in situ* breast cancers.
8. During 1999-2003, Oregon's M/I ratio for female breast cancer was 0.19, suggesting a relatively good prognosis for this disease. However, breast cancer is the 2nd leading cancer site for YPLL with an average of 2,534 years lost annually.

FEMALE BREAST CANCERS FAST FACTS

FIGURE VII-A-1

FEMALE BREAST CANCERS FAST FACTS	
YEAR 2003	
Oregon	Female
CANCER INCIDENCE	
All Cases Total	3,117
<i>In Situ</i>	552
Localized	1,702
Regional	700
Distant	101
Unstaged	62
<i>In Situ Rates</i>	
Oregon Crude	30.8
Oregon Age-adjusted	27.8
Oregon Current Annual Trend (1999-2003)	-1.1
US SEER Age-adjusted ²	29.8
US SEER Annual Trend (1999-2003) ²	-0.7
<i>Invasive Rates</i>	
Oregon Crude	143.2
Oregon Age-adjusted	128.6
Oregon Current Annual Trend (1999-2003)	*-3.9
US SEER Age-adjusted ²	121.1
US SEER Annual Trend (1999-2003) ²	*-2.7
CANCER MORTALITY	
Total Deaths	548
<i>Mortality Rates</i>	
Oregon Crude	30.6
Oregon Age-adjusted	26.1
Oregon Current Annual Trend (1999-2003)	-0.4
US Age-adjusted ³	25.2
US Annual Trend (1999-2003) ³	*-1.5
PROGNOSIS AND BURDEN⁴	
Prognosis: M/I Ratio	0.19
Burden: YPLL before age 65	2,534

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

At present, breast cancer cannot be prevented. However, mortality can be reduced by early detection through mammography and breast examinations. Breast cancers detected at early stages are the most easily treated. Although there is some controversy over the benefits of mammography screening for women 40-49 years of age, there is agreement on the benefits for women ages 50 and older. Routine screening is now recommended for women starting at age 40. (See Section IV-C of *Cancer Overview* for mammography recommendations.)

In 2003, 74% of females were diagnosed at an early stage. (See Figure VII-A-2.) Although the percentage of cases diagnosed *in situ* has been increasing since 1996, the percentage of cases diagnosed at a localized stage has been declining at a similar rate. Therefore, the overall percentage of cases diagnosed at an early stage has remained about the same. (See Figure VII-A-3.) Targeted screening efforts that increase the percentage of cases diagnosed at *in situ* and localized stages could further decrease the burden of female breast cancer in Oregon.

Up to age 80, as age increases, the percentage of early stage diagnoses also increases. (See Figure VII-A-4.) This pattern may be due to increased awareness of risk among older women, screening recommendations and programs targeting older women, the greater effectiveness of mammography for older women, or increased severity and quicker progression of the cancer when diagnosed in younger women. It is likely a combination of all of these factors.

FIGURE VII-A-2

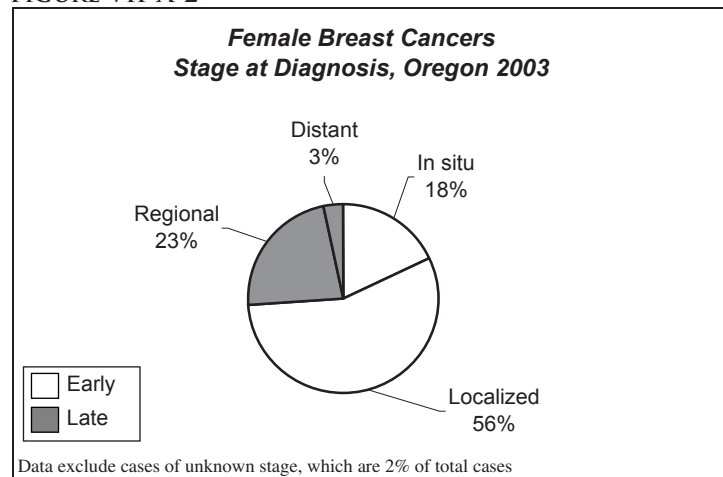


FIGURE VII-A-3

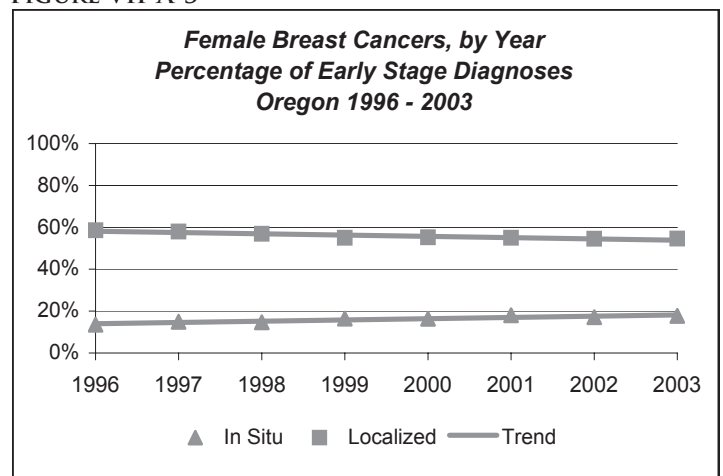
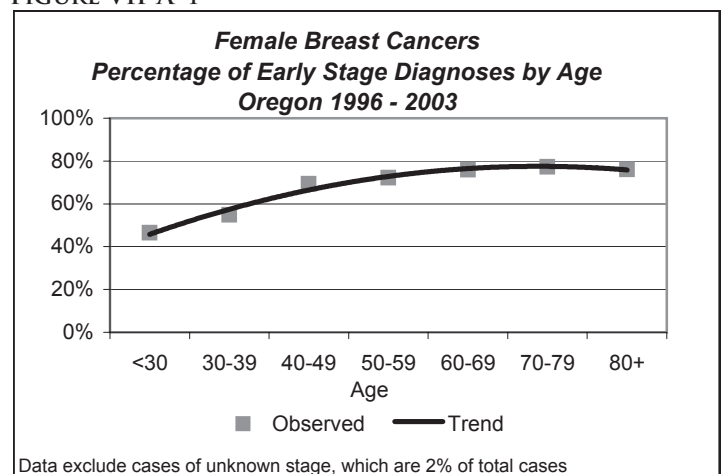


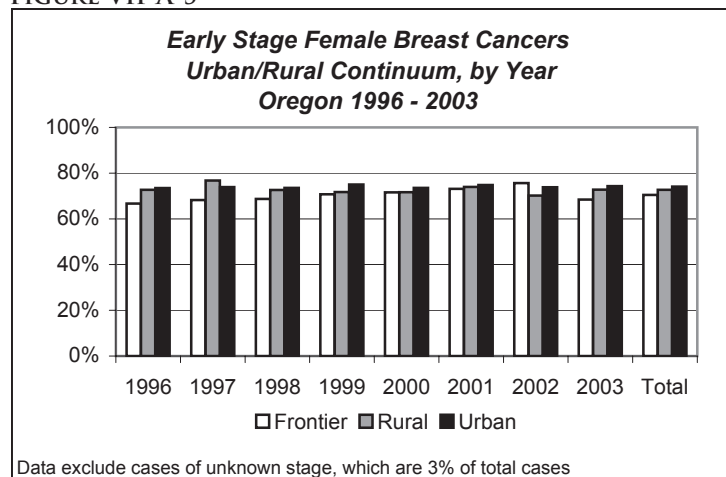
FIGURE VII-A-4



Where a woman resides could influence whether or not her breast cancer is diagnosed at an early, more treatable stage. Historically, there had been a higher percentage of *in situ* diagnoses in the Portland metropolitan area compared to the rest of the state. Differences in access to screening facilities and differences with transportation distance and infrastructure across the state are plausible explanations. Using census categories, which divide counties into Frontier (<6 persons per square mile), Rural, and Urban, we can evaluate the percentage of early stage diagnoses by population density.

Although there is variation from year to year, in general, increasing population density correlates with the increasing percentage of early stage diagnoses. (See Figure VII-A-5.) Please review *Appendix C* for a list of counties and Urban/Rural codes.

FIGURE VII-A-5



ROUTINE SCREENING

During the past decade, rates of routine mammography screening (women aged 52 or older receiving a mammogram within the last two years) have been steadily increasing in Oregon. (See Figure VII-A-6.) According to the 2004 National Healthcare Quality Report, Oregon ranked “Average” for routine mammography screening for both 2000 and 2002.

The trend for mammography by age initially mirrors the early stage by age trend. However, mammography rates increase up to age 70, and then decline slightly for the 70 - 79 age groups. The 80+ group has lower mammography rates similar to the 40 - 49 group. (See Figure VII-A-7.)

The percentage of women reporting routine mammography also increased by population density. (See Figure VII-A-8.)

FIGURE VII-A-6

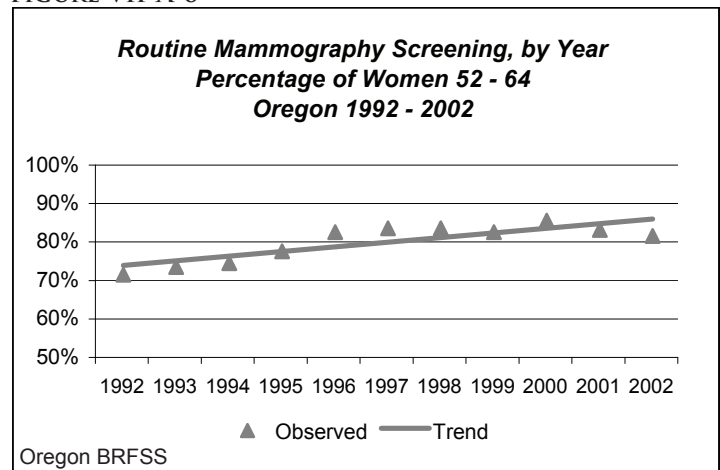


FIGURE VII-A-7

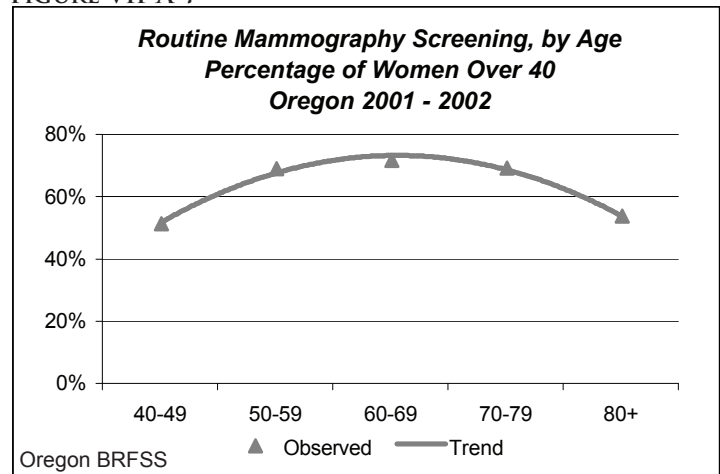
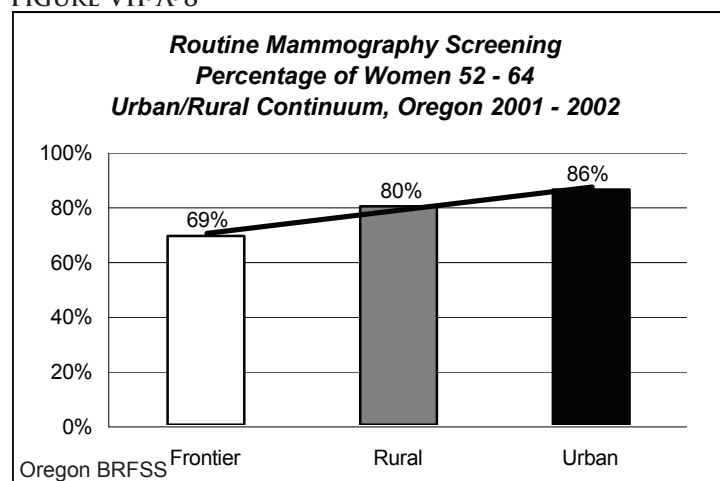


FIGURE VII-A-8



RACE AND ETHNICITY

Although race and ethnicity data need to be interpreted cautiously due to reporting issues (see the *Technical Section* for additional details), breast cancer is the leading cancer site among all women regardless of race or ethnicity. Breast cancer is the 2nd leading cause of cancer mortality for most Oregon women except for Asian/Pacific Islanders (A/PI) for whom it is the leading cause of cancer mortality.

As is seen nationally, Whites have the highest incidence rates, African Americans (AA) have the highest mortality rates, and Non-Hispanics have higher incidence and mortality rates than Hispanics. (See Figure VII-A-9.)

Differences in prognosis may be explained by differences in stage at diagnosis. Among the four race categories, AA women have the lowest percentage of breast cancers diagnosed at an early stage; White women have the highest. (See Figure VII-A-10.)

Overall mortality for Hispanic women is lower than for Non-Hispanics, yet Hispanic women have a low percentage of breast cancers diagnosed at an early stage. (See Figure VII-A-10.) This incongruence between prognosis and stage at diagnosis may reflect differences in how the Registry and Center for Health Statistics report ethnicity. This divergence could also be a result of Hispanic women leaving Oregon after a diagnosis of breast cancer.

There are also racial differences in the percentage of cases unknown at stage at diagnosis. Generally, a breast cancer is not staged at diagnosis because of an extremely poor prognosis or because of comorbidities, like advanced age, contraindicate surgery, and/or treatment. Some unstaged breast cancers may be

FIGURE VII-A-9

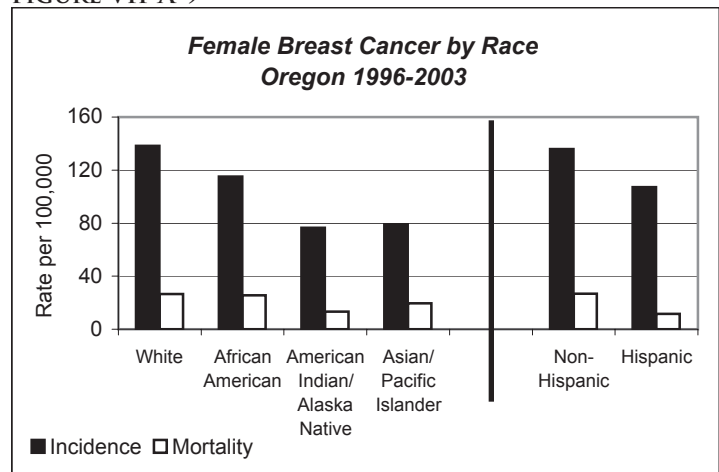
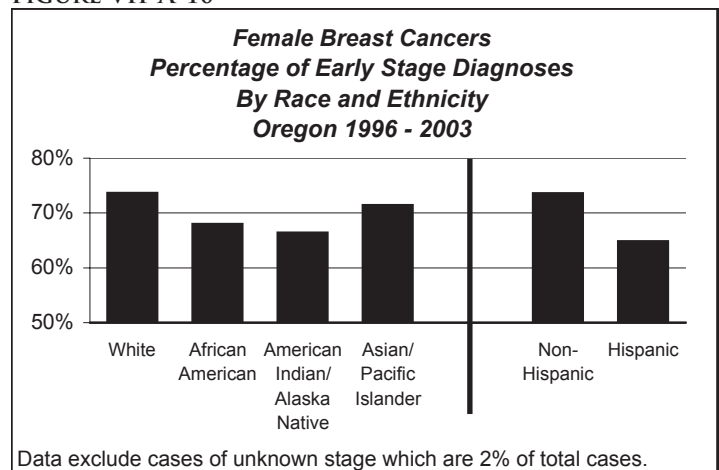


FIGURE VII-A-10



early stage for women who refuse clinical treatment. All cases identified by death certificate are reported as unstaged-at-diagnosis cases. These cases may represent patients who had difficulty getting access to health care or only using health care services near the end of their life.

AA and AI/AN women have more unstaged cases than other women (4% versus 3%) and more breast cancers identified by death certificate only. These stage-at-diagnosis differences may indicate differences in treatment options/choices, disease severity, or access to health care among racial groups. No differences were found between Hispanics and Non-Hispanics.

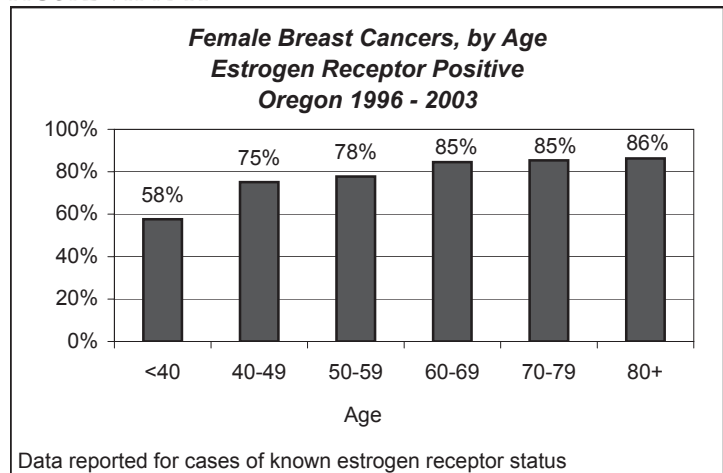
ESTROGEN RECEPTOR STATUS

While the cause of breast cancers remains unknown, exposures to hormones, including estrogen and progesterone, are a significant risk factor. This is why certain life choices (not having children, having a first child after age 30, lack of breast-feeding) and individual factors (early menstruation and late menopause) are associated risk factors for breast cancer. It also suggests why modifiable behaviors (alcohol use, lack of physical exercise, and weight gain after menopause) that increase estrogen levels are associated with higher breast cancer risk.

Some breast cancers respond to hormones and some do not. The cancers that do respond have receptors on the cell that are stimulated by hormones. This stimulation causes growth and division of the cancer cells. An estimated

70% of breast cancers are estrogen receptor positive. As you can see in Figure VII-A-11, this percentage is higher in older women and lower in younger women. Hormone receptor status gives us information about how a given cancer will behave (prognostic factor) and how it will respond to treatment (predictive factor).

FIGURE VII-A-11



MALE BREAST CANCER

Everyone is at risk of breast cancer. Many men do not know they can get breast cancer, and this lack of awareness may contribute to the low percentage of men diagnosed at an early stage compared with women. (See Figure VII-A-12.) Self-exams, clinical exams, and x-rays or ultrasounds of the chest are tools to aid in early detection of breast cancer among men. However, there are no recommended tests for population-based screening for male breast cancer.

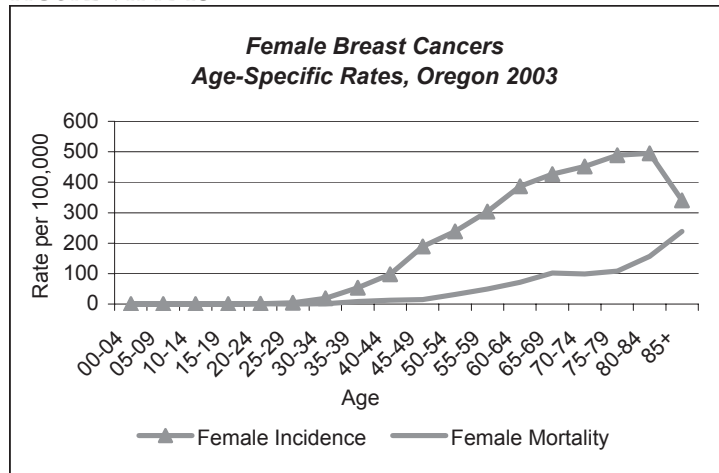
FIGURE VII-A-12

	Male	Female
Percentage of Early Stage	50%	74%

AGE-SPECIFIC INCIDENCE AND MORTALITY

As with other types of cancer, the risk of developing breast cancer increases with age. Figure VII-A-13 shows the age-specific incidence and mortality rates for breast cancer. About 80% of breast cancers occur in women aged 50 years or older. Age-specific breast cancer incidence rates increase sharply around age 40 and drop after age 80, which is similar to the national trend. Breast cancer mortality increases steadily with age.

FIGURE VII-A-13

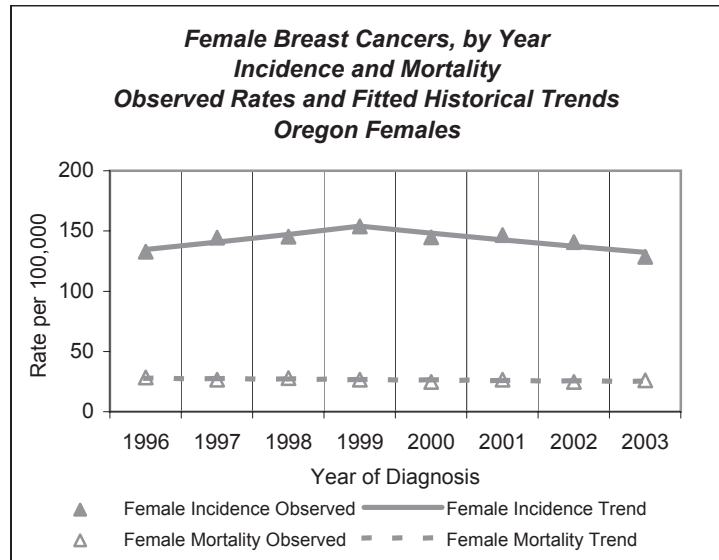


HISTORICAL TRENDS (1996-2003)

Historically, female breast cancer incidence in Oregon increased 4% annually from 1996-1999. From 1999-2003, female breast cancer incidence decreased nearly 4% a year. (See Figure VII-A-14.) This is consistent with national patterns of a 2% annual increase from 1995-1998 followed by a decrease of 2% a year from 1998-2002.

While incidence has been variable, female breast cancer mortality has been steadily decreasing about 1% a year since 1996 in Oregon. This also follows national patterns with a steady decrease of about 2% a year since 1990. With the recent decline in breast cancer incidence, mortality rates may decrease more sharply in the next few years.

FIGURE VII-A-14



REGIONAL VARIATION (COMBINED FIVE-YEAR RATES: 1999-2003)

The western half of Oregon generally has higher female breast cancer incidence rates than the national average. (See Figure VII-A-15.) Northeast Oregon, the eastern border counties, the north coast and Curry County have rates that are lower than the nation.

Female breast cancer mortality rates are higher than the national average for the Willamette Valley, the Columbia River Gorge, the central coast, and much of central, southern, and eastern Oregon. (See Figure VII-A-16.) Southern Oregon, the eastern border counties, and Clatsop, Columbia, and Deschutes Counties have mortality rates that are lower than seen nationally.

The northern and southern coast regions and the southeast portion of Oregon have both low incidence and low mortality, which may be of epidemiologic interest for investigating risk factors for breast cancer.

FIGURE VII-A-15

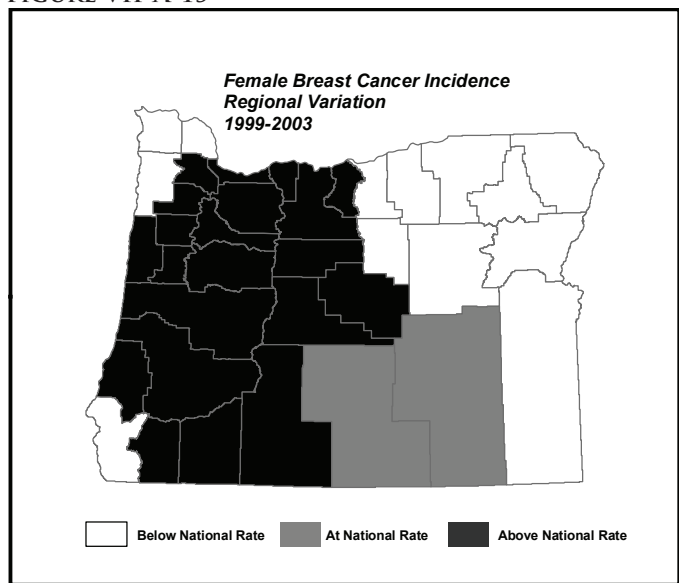


FIGURE VII-A-16

