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SCREENING FOR CERVICAL CANCER, 2003

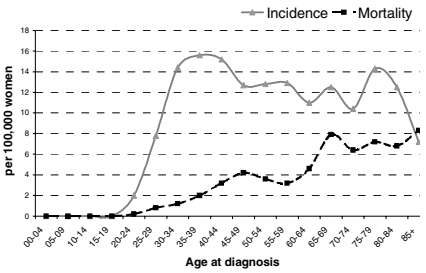
THE OVERALL decline of invasive cervical cancer and cervical cancer deaths among women in the United States and in Oregon is a public health success story. Nationally, the incidence of cervical cancer and cervical cancer-related deaths declined by almost 50% from 1973 to 1999.[1] In Oregon, cervical cancer deaths declined 50% between 1979 and 1999. These decreases are attributed to the widespread use of Papanicolaou (Pap) testing beginning in the 1950s.

Screening has the potential to virtually eliminate invasive cervical cancer. Still, Oregon State Cancer Registry (OSCaR) data indicate 146 cases of invasive cervical cancer were diagnosed and 36 women died of it in 2000.[2] Each case of invasive cervical cancer represents a failure of the system to provide adequate outreach, screening, and early detection and treatment of pre-cancerous conditions for women in Oregon. In this issue of the *CD Summary*, we report on the epidemiology of cervical cancer and on Pap screening rates in Oregon, and we describe the new screening guidelines from the American Cancer Society (ACS) and the U.S. Preventive Services Task Force (USPSTF).

INCIDENCE, MORTALITY AND SURVIVAL

Oregon's 2000 age-adjusted incidence rate of 8.2 cases of invasive cervical cancer per 100,000 women was lower than the latest available national rate of 9.5 in 1999.[3] Our 2000 mortality rates also compare favorably, with 2.0 deaths per 100,000 women in Oregon vs. 2.9 in the U.S. as a whole in 1999.[4] Rates in Oregon reflect a 1.3% average annual increase in incidence and a 10.8% average annual decrease in mortality between 1996 and 2000.[5] The incidence of invasive cervical cancer increases sharply between age 20 and age 35, and is then relatively stable for older age groups (see figure, center). Mortality rates increase most sharply after age 60.

Invasive cervical cancer incidence and mortality rates by age, Oregon 1996–2000



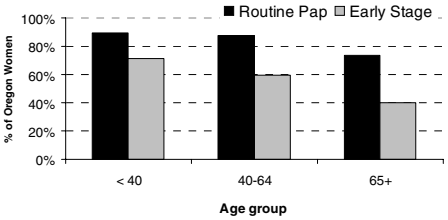
Chances for survival are greatest when cancers are diagnosed in the earliest stage. Among invasive cervical cancer cases in the U.S., those diagnosed while the cancer is still localized have a five-year survival rate of 92%.[5] OSCAR data from 1996–2000 show that 59% of our invasive cases were diagnosed at the localized stage. Data are not collected on in situ cases.

SCREENING FOR CERVICAL CANCER

The most important risk factor for invasive cervical cancer is a lack of screening.[6] Cervical cancer is generally slow-growing, and screening can detect cervical human papillomavirus (HPV) infections and severe cervical intraepithelial neoplasia (CIN3) pre-cancerous lesions before they develop into invasive cancer.

According to Oregon Behavioral Risk Factor Surveillance System (BRFSS) data, routine Pap testing rates are generally high for Oregon women, similar to the U.S. as a whole. Even so, in 2001, 14% of Oregon women reported not having had a Pap test within the past three years. Of more concern is the fact that the percentage of Oregon women reporting regular screening for cervical cancer decreases with age, and especially after age 65. Those decreases in screening as women age parallel the decrease in percentage of invasive cervical cancers diagnosed at an early stage in women over 40 years (see figure, right). Routine cervical cancer screening is needed to assure early stage diagnosis, especially in women beyond childbearing years.

Screening and early detection of cervical cancer, Oregon 1996–2000



Nationally, routine Pap screening is less common among women who are uninsured, have less than a high school education, or live in poverty. In Oregon, low income, low education, and a lack of insurance coverage adversely affect cervical cancer screening behavior (74% vs. 86%). Among Oregon racial and ethnic groups, Asian/Pacific Islander women (76%) and American Indian/Alaska Native women (85%) are less likely than the general population to obtain a routine cervical cancer screening, while African American (93%) women are more likely.

SCREENING RESOURCES

While Oregon state law mandates insurance coverage for Pap tests for all insurance originating in Oregon, an estimated 13% of women in Oregon, and 24% of low-income women are uninsured.[8] The Oregon Breast and Cervical Cancer (BCC) Program provides Pap tests and pelvic exams, as well as breast screening services to uninsured or underinsured low-income women. Program objectives include an emphasis on serving women who have never received a Pap test or who are not regularly screened. Since its inception in 1995, the BCC Program has served over 26,000 women, and 17 invasive cervical cancers and 260 pre-cancerous lesions have been diagnosed through the program.

* All rates are age-adjusted to the U.S. year 2000 standard. Cancer data is supplied by the Oregon State Cancer Registry, which began data collection in 1996. Registry data are lagged due to delays in cancer reporting. Some of the difference between state and national rates may be due to differences in ICD coding schemes and population files.

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DEVELOPMENTS IN TECHNOLOGY

The primary risk factor for pre-cancerous cervical conditions is infection with one of thirteen known oncogenic strains of HPV.[7] Early first intercourse and multiple sexual partners are directly related to the risk of acquiring HPV infection. Smoking, diet, genetic susceptibility and immunosuppression (due to HIV infection or drug use) are risk factors for acquisition of both HPV infection and the progression to cancer.

Testing for HPV DNA can now be performed on specimens collected by cervicovaginal lavage or in the newer liquid-based Pap tests. HPV testing is now advised for women with mildly abnormal or atypical squamous cells of undetermined significance (ASCUS) Pap test results and of low-risk post-menopausal women with low grade squamous intraepithelial lesion (LSIL) results. As of this printing, however, the FDA has not approved HPV testing as a routine screening tool.

Vaccines are under development that would protect from infection by the oncogenic strains of HPV, especially type 16, which accounts for about one half of cervical cancer cases in the U.S, and to boost the immune systems of those already infected. None of these vaccines is yet licensed.

CHANGES IN SCREENING GUIDELINES

Both the American Cancer Society and the U.S. Preventive Services Task Force (USPSTF) have issued revised guidelines in the past 3 months. While the guidelines still differ somewhat, they are now more closely aligned with regard to screening frequency, women with total hysterectomies and lower/upper age group limits for screening.

According to USPSTF, evidence is insufficient to recommend for or against HPV testing as a primary screening test and liquid based technologies in place of traditional Pap tests.

Even with new guidelines, the care of each woman should still be determined in collaboration with her provider. Outreach is still necessary to reach the key high-risk group: women who have never been screened or who are not regularly receiving screening services. Changes in cervical cancer screening guidelines do not mean that teens or older women should alter their plans for annual preventive health exams, since, in addition to the Pap test when indicated, those exams likely include screening for a variety of other important threats to a woman's health.

REFERENCES

1 Surveillance, Epidemiology and End Results. At *http://seer.cancer.gov/faststats/htmlmor_cervix.html*
2 Oregon State Cancer Registry. At *http://www.dhs.state.or.us/publichealth/oscar/*
3 U.S. Cancer Statistics Working Group. United States Cancer Statistics: 1999 Incidence. Atlanta (GA): Department of Health and Human Services, Centers for Disease Control Prevention and National Cancer Institute; 2002.
4 Centers for Disease Control and Prevention. At *http://wonder.cdc.gov.*
5 American Cancer Society, Cancer Facts and Figures, 2002.
6 CDC. Invasive cervical cancer among Hispanic and non-Hispanic women—United States, 1992–1999. MMWR 2002; 51:1067–70.
7 Castle PE, Wacholder S., et al. A prospective study of high-grade cervical neoplasia risk among human papillomavirus-infected women. J Natl Cancer Inst 2002; 94:1406–14.
8 DHS Health Services analysis of Oregon population survey, 2000.

RESOURCES

- See DHS Health Services' Health Promotion and Chronic Disease Prevention website for cancer registry and BCC program contacts: *http://www.dhs.state.or.us/publichealth/hpcdp/*
- U.S. Preventive Services Task Force Screening Guidelines. *http://www.preventiveservices.ahrq.gov*
- American Cancer Society Guideline for the Early Detection of Cervical Neoplasia and Cancer. Saslow D, Runowicz CD, et al. CA Cancer J Clin 2002; 52:342–62.

	American Cancer Society (November 2002)	US Preventive Services Task Force (January 2003)
When to begin Pap screening	Within 3 years after start of vaginal intercourse, but no later than age 21	Within 3 years after start of sexual activity, but no later than age 21
Routine Pap screening	▪ ≤ age 30, annual traditional Pap tests; or ▪ ≤ age 30, every other year liquid-based test; ▪ After age 30, every 2–3 years after 3 consecutive normal test results	▪ At least every 3 years for women who have a cervix; interval frequency based on risk factors
When to discontinue Pap screening	▪ Age 70 or older, if at least 3 normal test results and no abnormal results in 10 years; ▪ Women who have had a total hysterectomy with removal of the cervix	▪ After age 65 for women who have had adequate recent screening with normal Pap tests and are not at high risk; or ▪ Women who have had a total hysterectomy for benign disease