# Wisconsin Cancer Data Bulletin

Wisconsin Department of Health Services
Information from the Wisconsin Cancer Reporting System

## Cervical Cancer in Wisconsin

### Introduction

Cervical cancer was a major cause of death for women in the United States during the 1940s. After the introduction of the Papanicolaou (Pap) smear in the 1950s, the incidence of cervical cancer decreased dramatically. By the early 1990s, cervical cancer incidence and mortality decreased by more than 60 percent. Today in the United States, cervical cancer ranks 14th in frequency of all cancers, because precancerous lesions found by Pap smears can be treated before developing into cancer.[1] In 2014 (the most recent year for which numbers are available), 12,578 women in the United States were diagnosed with cervical cancer and 4,115 women in the United States died from cervical cancer.[2] In Wisconsin during 2015 (the most recent year), 214 women were diagnosed with cervical cancer and 69 women died from cervical cancer.

This report provides data about cervical cancer incidence (newly diagnosed cases) reported to the Wisconsin Cancer Reporting System and cervical cancer mortality (deaths) reported by the National Center for Health Statistics, as of December 2017. All health care facilities in Wisconsin are required to report cancers to WCRS, as specified by state statute 255.04, Cancer Reporting. (See www.legis.state.wi.us/rsb/Statutes.html.)

### Definitions

Cervical Cancer - Invasive malignant cancer or tumor that has invaded cervical tissue or surrounding organs. This bulletin focuses on invasive cervical cancer data.

Age-adjusted rates – The rates in this report are age-adjusted using the 2000 U.S. standard population. This bulletin uses the direct method of calculating rates, in which the actual age-specific rate in the Wisconsin population is weighted by the proportion of the standard U.S. population.

Cancer incidence – The number of new invasive cancer cases that occur during a specified period for a population at risk for developing the disease, expressed as the number of cases or as a rate per 100,000 population.

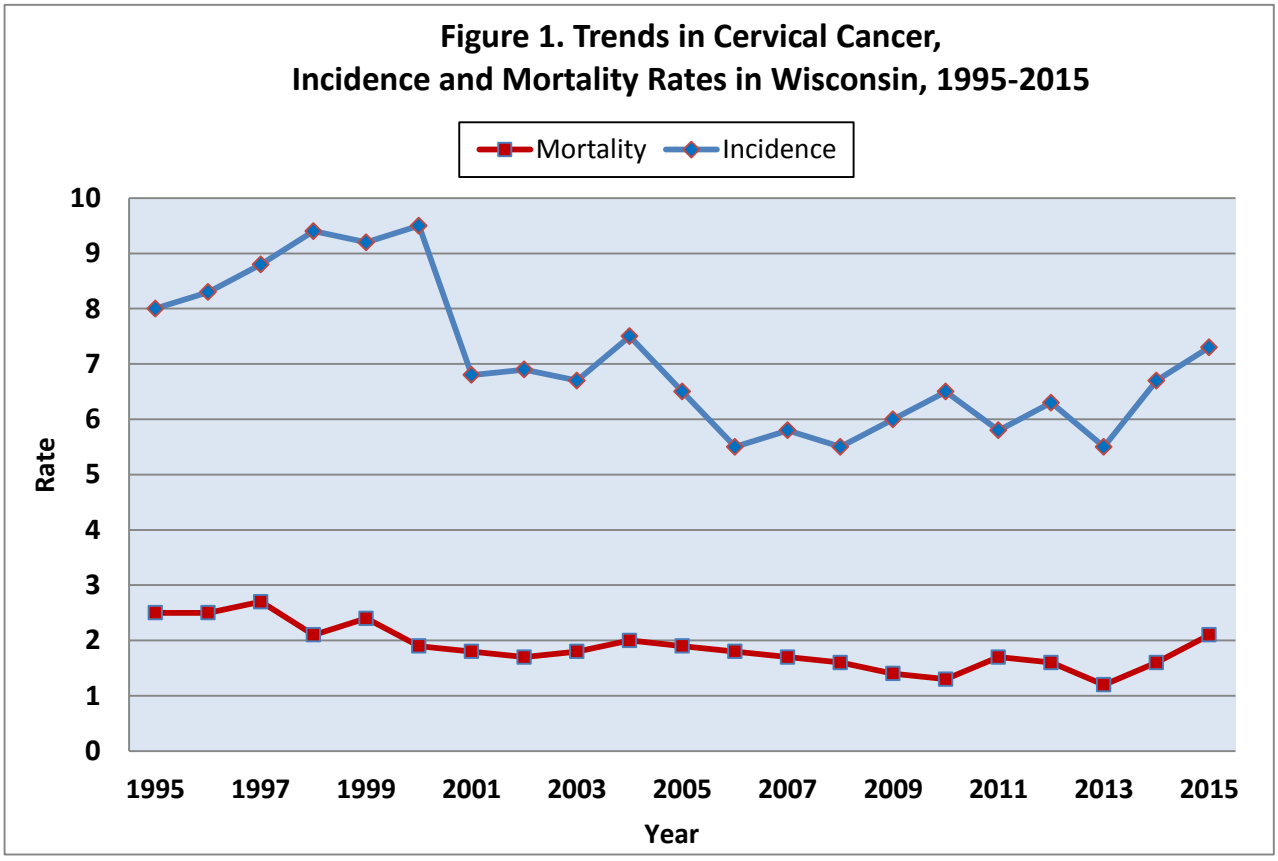
Cancer mortality – Deaths from cancer that occur during a specified period of time for a particular population, expressed as the number of deaths or a rate per 100,000 population.

Stage of Disease at Diagnosis:

- Localized – An invasive tumor (has penetrated the surrounding tissue) that is confined to the organ of origin.
- Regional – A tumor that has spread beyond the organ of origin to an adjacent organ, tissue or lymph nodes.
- Distant – The tumor has spread beyond adjacent organs, tissue or lymph nodes, or has metastasized through the bloodstream or lymph system.
- Unknown/Unstaged – Insufficient information is available to determine the stage or extent of the tumor at the time of diagnosis.

**Burden of Cervical Cancer in Wisconsin**

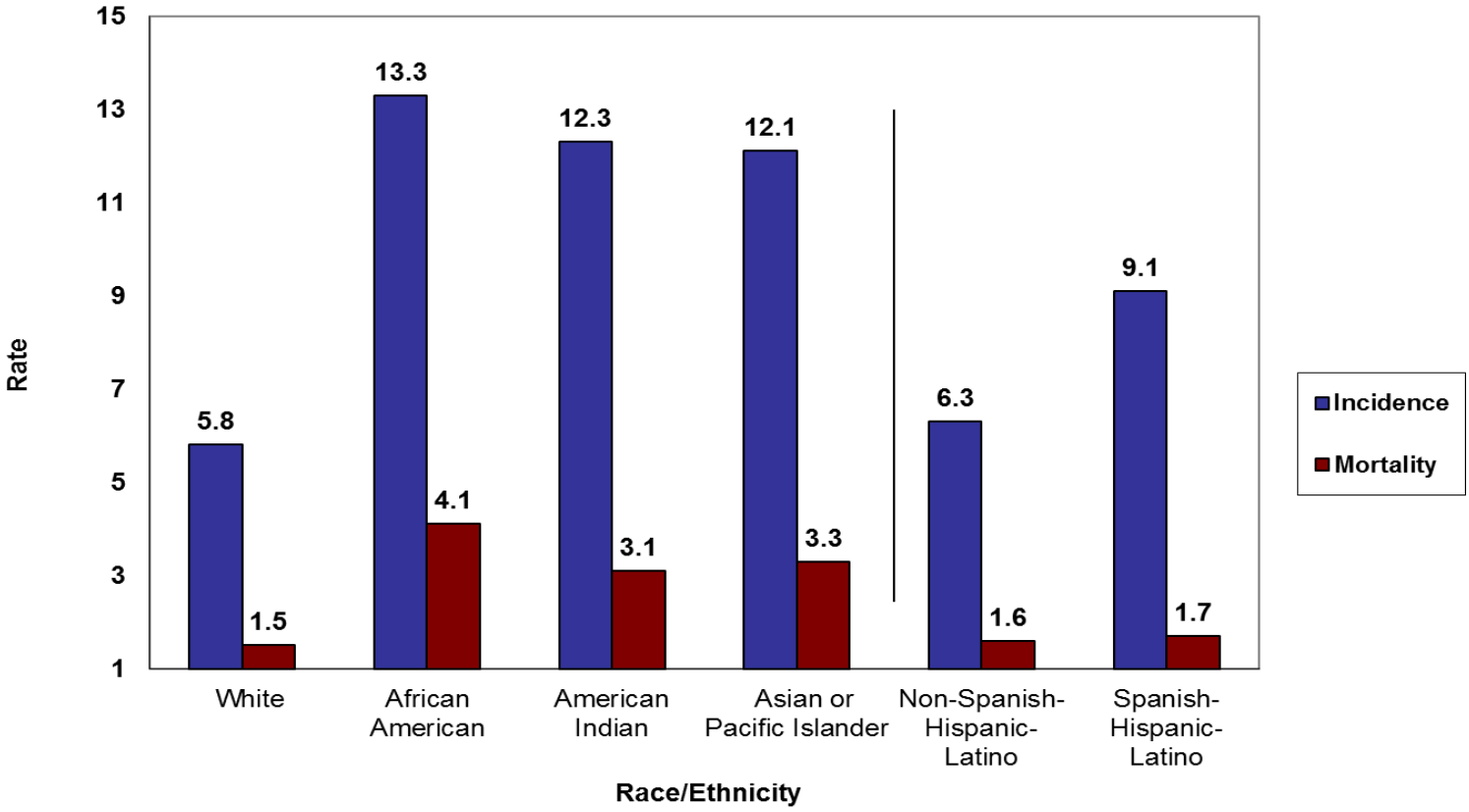
Figure 1 shows the progress made in reducing the burden of cervical cancer in Wisconsin. It shows cervical cancer incidence peaking in 2000 and then a general decline until 2006, while mortality rates declined more steadily between 1995 and 2013. Both incidence and mortality rates have increased slightly since 2013. In 2015, the age-adjusted incidence rate was 7.3 and the age-adjusted mortality rate was 2.1.




Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Department of Health Services and National Center for Health Statistics, public-use mortality data, accessed in SEER*Stat software.
Notes: Rates are per 100,000 female population and age-adjusted to the 2000 U.S. standard population.

Figure 2 illustrates age-adjusted rates for cervical cancer by racial and ethnic groups in Wisconsin. Cervical cancer incidence and mortality vary greatly by race/ethnic group. Hispanic women in Wisconsin are more likely than non-Hispanic women to be diagnosed with cervical cancer. The incidence rate of cervical cancer is over twice as high among African American women as among White women. African American women also had the highest mortality rate, followed closely by American Indian and Asian/Pacific Islander women.

**Figure 2. Cervical Cancer Incidence and Mortality Rates by Race*and Ethnicity, Wisconsin, 2011-2015**

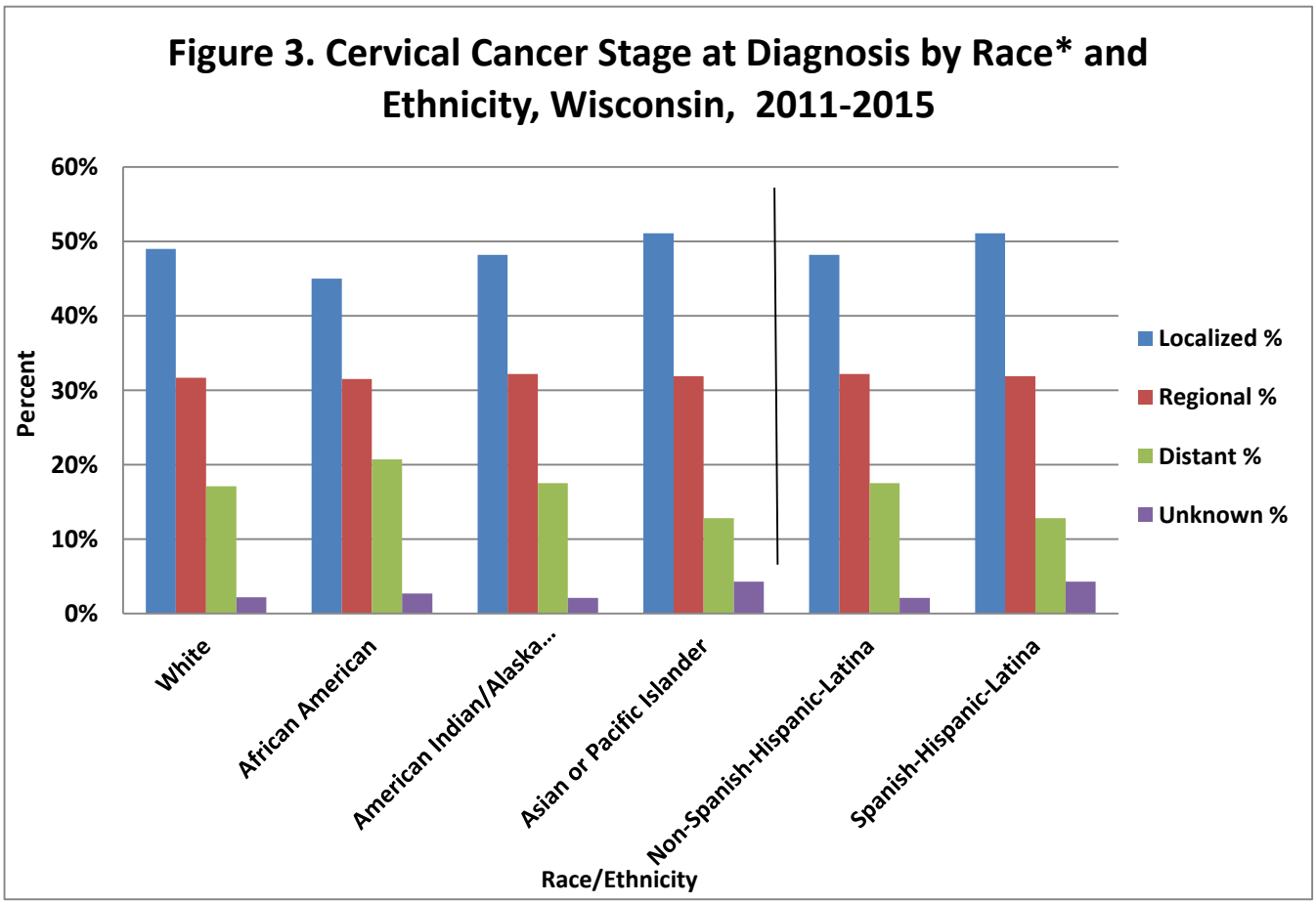



Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Department of Health Services and National Center for Health Statistics, public-use mortality data, accessed in SEER*Stat software.
Notes: Rates are per 100,000 female population and age-adjusted to the 2000 U.S. standard population. The Non-Spanish-Hispanic-Latina and Spanish-Hispanic-Latina categories include all races.
**American Indian and Asian/Pacific Islander rates are based on small numbers (n = <10 annually,) so may be unstable.*

**Early Diagnosis Leads to Decline in Mortality**

In 2015, approximately 51 percent of all cervical cancers in Wisconsin were detected at the local (early) stage; 29 percent were detected at the regional stage, 17 percent at the distant stage, and 3 percent were unstaged. According to national estimates, five-year survival for women diagnosed with cervical cancer (2007-2013) at the local stage was 91 percent.

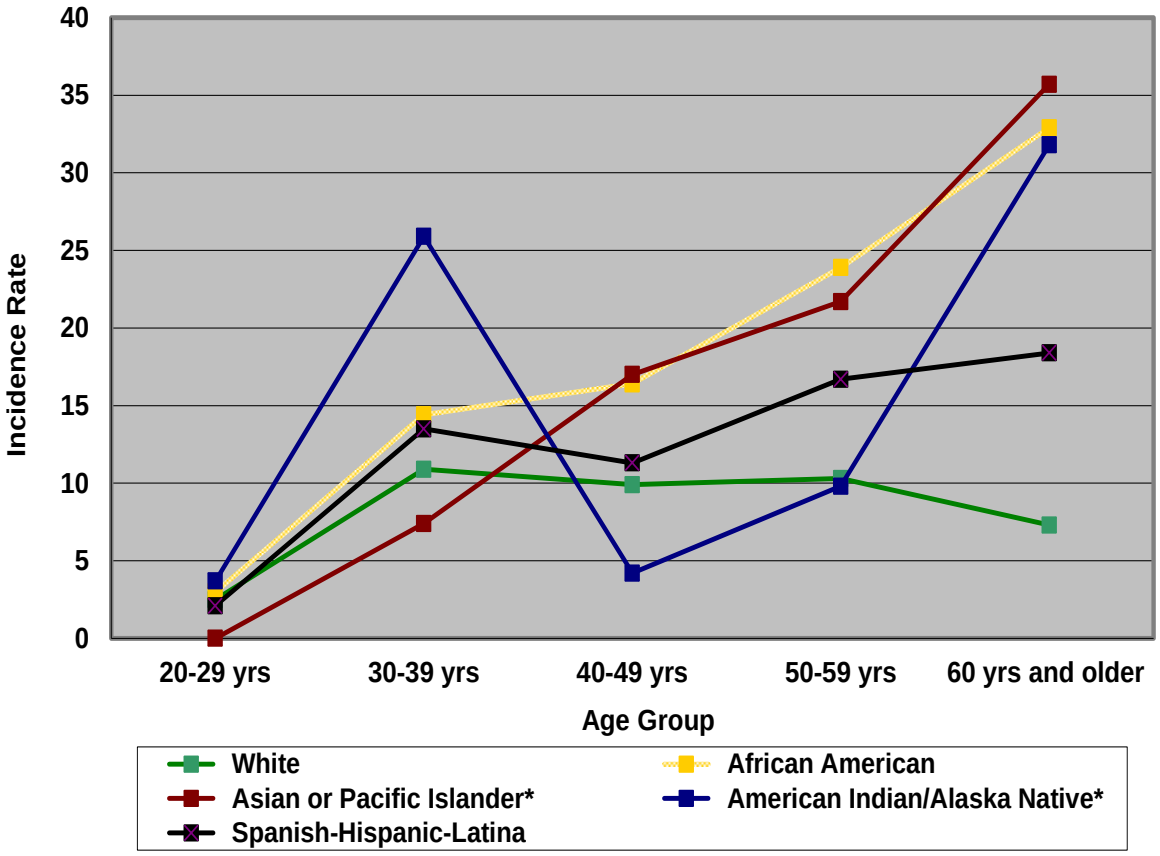
Figure 3 shows how stage at diagnosis varies by race and ethnicity in Wisconsin. Interestingly, Hispanic-Latina women, who experienced a higher cervical cancer incidence rate, were the most likely of all groups to be diagnosed at the early, localized stage. Cervical cancers were diagnosed at an early stage in 49 percent of white women and 45 percent of African American women.




Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Department of Health Services.
Non-Spanish-Hispanic-Latina and Spanish-Hispanic-Latina categories include all races.
**American Indian and Asian/Pacific Islander percentages are based on small numbers (n = <10 annually,) so may be unstable.*

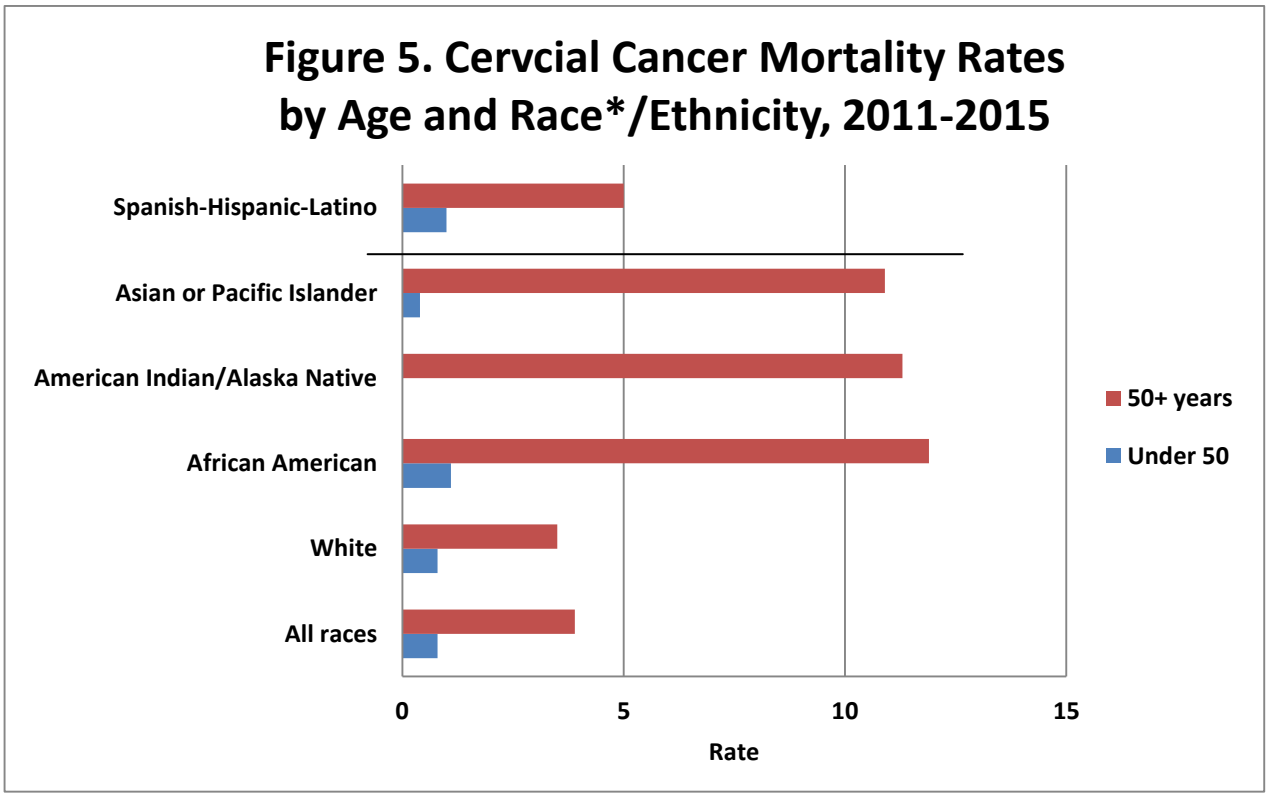
The earliest cases of cervical are diagnosed in women around age 20 and incidence increases steadily with age among minority populations (Figure 4). Incidence among white women peaks at younger ages (30-39) and then remains relatively stable with little change throughout the life span. This pattern suggests that white women were screened at earlier ages and higher rates than women in other groups.

**Figure 4. Cervical Cancer Incidence Rates by Race/Ethnicity and Age, Wisconsin, 2011-2015**




Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Department of Health Services.
Notes: Rates are per 100,000 female population and age-adjusted to the 2000 U.S. standard population.
The Spanish-Hispanic-Latina category includes all races.
**American Indian and Asian/Pacific Islander rates are based on small numbers (n = <10 annually), so may be unstable.*

Older women of color are at higher risk for dying from cervical cancer. Figure 5 shows that older Hispanic women, Asian women and American Indian women have much higher mortality rates from cervical cancer than do white women of the same age group.

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## Factors that Contribute to Greater Burden of Cervical Cancer among Hispanic/Latina and African American Women

The National Cancer Institute conducted a study of regions in the United States with high cervical cancer rates and found that the disproportionate burden of cancer among Hispanic/Latina and African American women was primarily due to lack of screening, reflecting the problem of unequal access to health care. (http://www.cancer.gov/about-nci/organization/crchd/about-health-disparities/resources/excess-cervical-cancer-mortality.pdf)

## Prevention of Cervical Cancer

### HPV Vaccine

Virtually all cervical cancers are caused by the human papillomavirus (HPV). Certain types of HPV are considered high-risk types because they are strongly linked to cancers, including cancer of the cervix, vulva, and vagina, penile cancer, anal cancer and oral cancer. CDC estimated that approximately 39,800 cancers associated with HPV occurred each year in the U.S. during 2009-2013, 23,300 among females and 16,500 among males.

The Food and Drug Administration has approved three vaccines, Gardasil, Gardasil 9, and Cervarix, which prevent infections with the two HPV types found in most cervical cancers and other genital cancers as well as some oropharyngeal cancers. [3] CDC recommends that 11-to-12-year-old (pre-teen) girls and boys receive the HPV vaccine to protect against cervical cancer and other cancers.[4] For more complete information from CDC about HPV and HPV vaccines, refer to: https://www.cdc.gov/hpv/parents/vaccine.html

### Cervical Cancer Screening Recommendations

In March 2012, the United States Preventive Services Task Force (USPSTF) released cervical cancer guidelines that increase the recommended interval between screening tests for most women at normal risk. [5] A group of three cancer organizations, the American Cancer Society, the American Society for Colposcopy and Cervical Pathology, and the American Society for Clinical Pathology, released screening guidelines that are consistent with the Task Force recommendations. [6]

Two types of tests are used for cervical cancer screening:

- The Pap test can find early cell changes and treat them before they become cancer. The Pap test can also find cervical cancer early, when it is easier to treat.

- The HPV (human papillomavirus) test finds certain infections that can lead to cell changes and cancer. The HPV test may be used along with a Pap test, or to help doctors decide how to treat women who have an abnormal Pap test.

The USPSTF recommends screening for cervical cancer in women age 21 to 65 years with cytology (Pap smear) every three years, or for women age 30 to 65 years who want to lengthen the screening interval, screening with a combination of cytology and HPV testing every five years. USPSTF recommendations for cervical cancer screening are available at: http://www.uspreventiveservicestaskforce.org/uspstf/uspscerv.htm

The Wisconsin Well Woman Program, administered by the Wisconsin Department of Health Services, provides specified breast and cervical cancer screening to low income, uninsured, and underinsured women. The National Breast and Cervical Cancer Early Detection Program provides funding for the Wisconsin Well Woman Program. More information about covered services and eligibility criteria is available at:
http://www.dhs.wisconsin.gov/womenshealth/wwwp/

**Risk Factors for Cervical Cancer Development**

According to the CDC, risk factors for cervical cancer include the following:

- Rarely or never screened for cervical cancer
- Immune system suppression: HIV, high-dose steroid use
- History of lower genital tract neoplasia (vaginal, vulvar, or anal)
- Increasing number of lifetime sexual partners (increases risk of HPV acquisition)
- Early age of sexual activity (increases risk of HPV acquisition)
- Infection with Chlamydia add possibly herpes simplex virus (HSV)
- Tobacco smoking: Current, and to a lesser extent, past tobacco smoking
- Use of oral contraceptives: long-term use (greater than 10 years; possible slight increase after 5 years)
- More than three full-term pregnancies

**More Information about Cervical Cancer - Web Resources**

American Cancer Society – Learn About Cervical Cancer
http://www.cancer.org/Cancer/CervicalCancer/index

National Cancer Institute – Cervical Cancer
http://www.cancer.gov/cancertopics/types/cervical

ACS: Risk Factors for Cervical Cancer
http://www.cancer.org/Cancer/CervicalCancer/DetailedGuide/cervical-cancer-risk-factors

CDC: Basic information about cervical cancer
http://www.cdc.gov/cancer/cervical/basic_info/

CDC: More information about cervical cancer prevention
http://www.cdc.gov/cancer/cervical/basic_info/prevention.htm

CDC: Breast and Cervical Early Detection Program
http://www.cdc.gov/cancer/nbccedp/

**References**

1. National Institutes of Health, Research Portfolio Online Reporting Tools - Cervical Cancer. Available at: https://report.nih.gov/nihfactsheets/viewfactsheet.aspx?csid=76

2. U.S. Cancer Statistics: 1999-2014 Incidence and Mortality Web-based Report. Department of Health and Human Services, Centers for Disease Control and Prevention, and National Cancer Institute; 2013. Available at http://www.cdc.gov/uscs

3. CDC. HPV Vaccine Information for Clinicians. Available at: https://www.cdc.gov/hpv/hcp/need-to-know.pdf

4. CDC. HPV Vaccines: Vaccinating Your Preteen or Teen. Available at: https://www.cdc.gov/hpv/parents/vaccine.html

5. U.S. Preventive Services Task Force Recommendation Statement. Ann Intern Med. 2012 June19; 156(12):880-91.

6. American Cancer Society, American Society for Colposcopy and Cervical Pathology, and American Society for Clinical Pathology screening guidelines for the prevention and early detection of cervical cancer. CA Cancer J Clin. 2012 May-June;147-72.

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