Cervical Cancer in Ohio, 2011-2015

Incidence and Mortality

Cancers of the cervix (also known as cervical cancer) made up 0.7 percent of newly diagnosed (incidence) cancer cases in Ohio reported to the Ohio Cancer Incidence Surveillance System (OCISS) from 2011 to 2015. An average of 467 cases of cervical cancer were diagnosed annually in Ohio during this time period (Table 1). The average annual age-adjusted cervical cancer incidence rate in Ohio was 7.6 cases per 100,000 females, compared to the national (SEER) incidence rate of 7.4 per 100,000 females. In Ohio in 2011-2015, the cervical cancer incidence rate was highest among white females (7.8 per 100,000 females) and lowest among Asians/Pacific Islanders (3.6 per 100,000 females).

An average of 162 deaths from cervical cancer occurred each year in Ohio in 2011-2015 (Table 1). Ohio's average annual age-adjusted cervical cancer mortality rate was 2.4 per 100,000 females, compared to the U.S. mortality rate of 2.3 per 100,000 females. The mortality rate was higher for blacks (3.2 deaths per 100,000 females) than whites (2.3 per 100,000) in Ohio during this time period. Cervical cancer mortality rates were 2.5 times higher and 3.2 times higher for females 65 and older than those less than 65 in Ohio and the United States, respectively.

Key Findings and Populations at High Risk

- An average of 467 cases of cervical cancer were diagnosed each year in Ohio in 2011-2015.

- The cervical cancer incidence rate in Ohio was 7.6 per 100,000 females, compared to the national rate of 7.4 per 100,000 females in 2011-2015.

- In both Ohio and the United States, blacks had the highest mortality rates of cervical cancer, while Asians/Pacific Islanders had the lowest rates.

- Overall, cervical cancer incidence rates where highest among women ages 40 to 44.

- Incidence rates of cervical cancer decreased 17 percent from 1996 to 2015. Cervical cancer mortality rates in Ohio fell 38 percent from 1996 to 2015.

- Counties located in southern and central northwestern regions of Ohio had the highest Incidence rates of cervical cancer in 2011-2015.

- Cases of cervical cancer diagnosed at an early (local) stage decreased in Ohio, while late (regional and distant) stage cases increased from 1996 to 2015.

- Infection with the human papillomavirus (HPV) is almost always the cause of cervical cancer.

Table 1. Cervical Cancer: Average Annual Number of Invasive Cancer Cases and Deaths and Age-adjusted Incidence and Mortality Rates per 100,000 Females by Race and Age Group, Ohio and the United States, 2011-2015

		Incidence			Mortality		
		Ohio Cases	Ohio Rate	U.S. Rate	Ohio Deaths	Ohio Rate	U.S. Rate
Total		467	7.6	7.4	162	2.4	2.3
Race	White	403	7.8	7.4	136	2.3	2.2
	Black	52	6.8	8.4	24	3.2	3.7
	Asian/Pacific Islander	4	3.6	6.1	2	1.5	1.8
Age Group	<65	381	7.5	7.0	112	2.0	1.8
	65+	86	8.7	10.4	50	5.0	5.7

Sources: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2018; Bureau of Vital Statistics, Ohio Department of Health, 2018; Surveillance, Epidemiology and End Results (SEER) Program, National Cancer Institute, 2018.

Incidence by Age Group

Figure 1. Cervical Cancer: Age-specific Incidence Rates per 100,000 Females by Race and Age Group, Ohio, 2011-2015
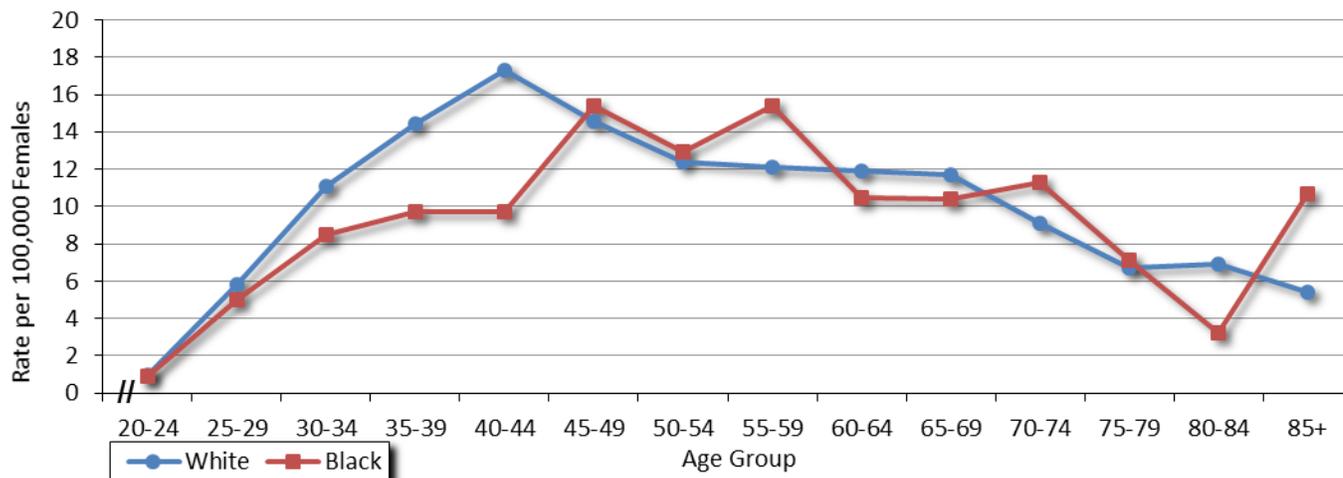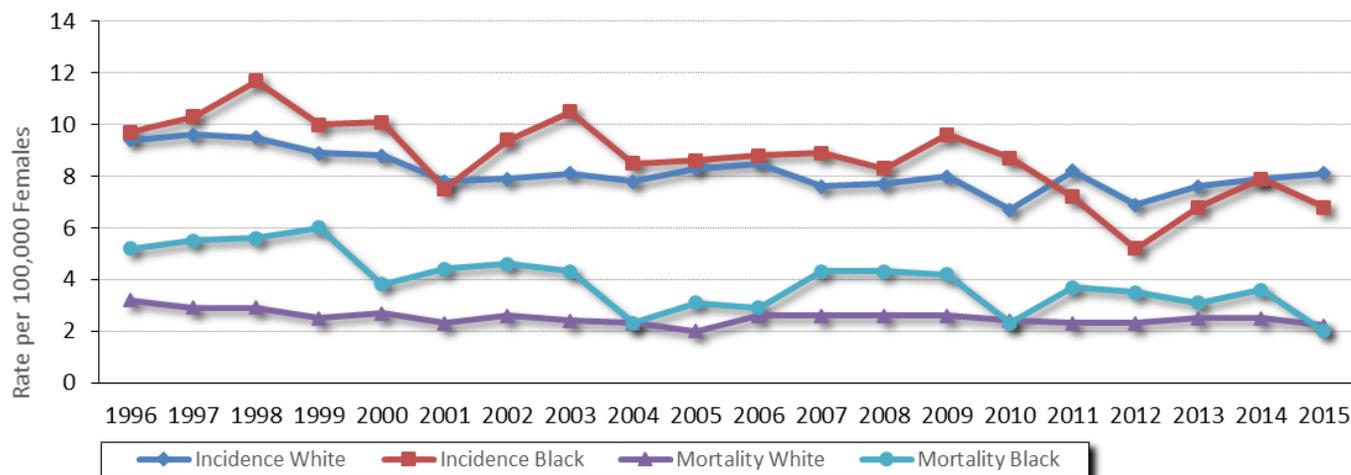

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2018.

Figure 1 shows that cervical cancer incidence rates where highest among white women ages 40-44 and black women ages 55-59. For ages 25 to 44 years, whites had higher incidence rates than blacks; whereas, blacks had higher rates than whites among women ages 45-59 and 70 years and older in Ohio during 2011-2015.

Trends in Incidence and Mortality

Figure 2 shows incidence and mortality rates of cervical cancer according to year of diagnosis (1996 through 2015) by race. Incidence rates of cervical cancer decreased 17 percent from 1996 to 2015 (9.4 per 100,000 and 7.8 per 100,000, respectively). The decline in cervical cancer incidence rates was higher for black females (30 percent) compared to white females (14 percent) in Ohio during this time period. Cervical cancer mortality rates in Ohio fell 38 percent from 1996 (3.4 per 100,000) to 2015 (2.1 per 100,000). Mortality rates of cervical cancer among black females were variable from year to year but decreased 62 percent from 1996 to 2015, compared to a decrease of 31 percent among white females.

Figure 2. Cervical Cancer: Trends in Age-adjusted Incidence and Mortality Rates per 100,000 Females by Race, Ohio, 1996-2015
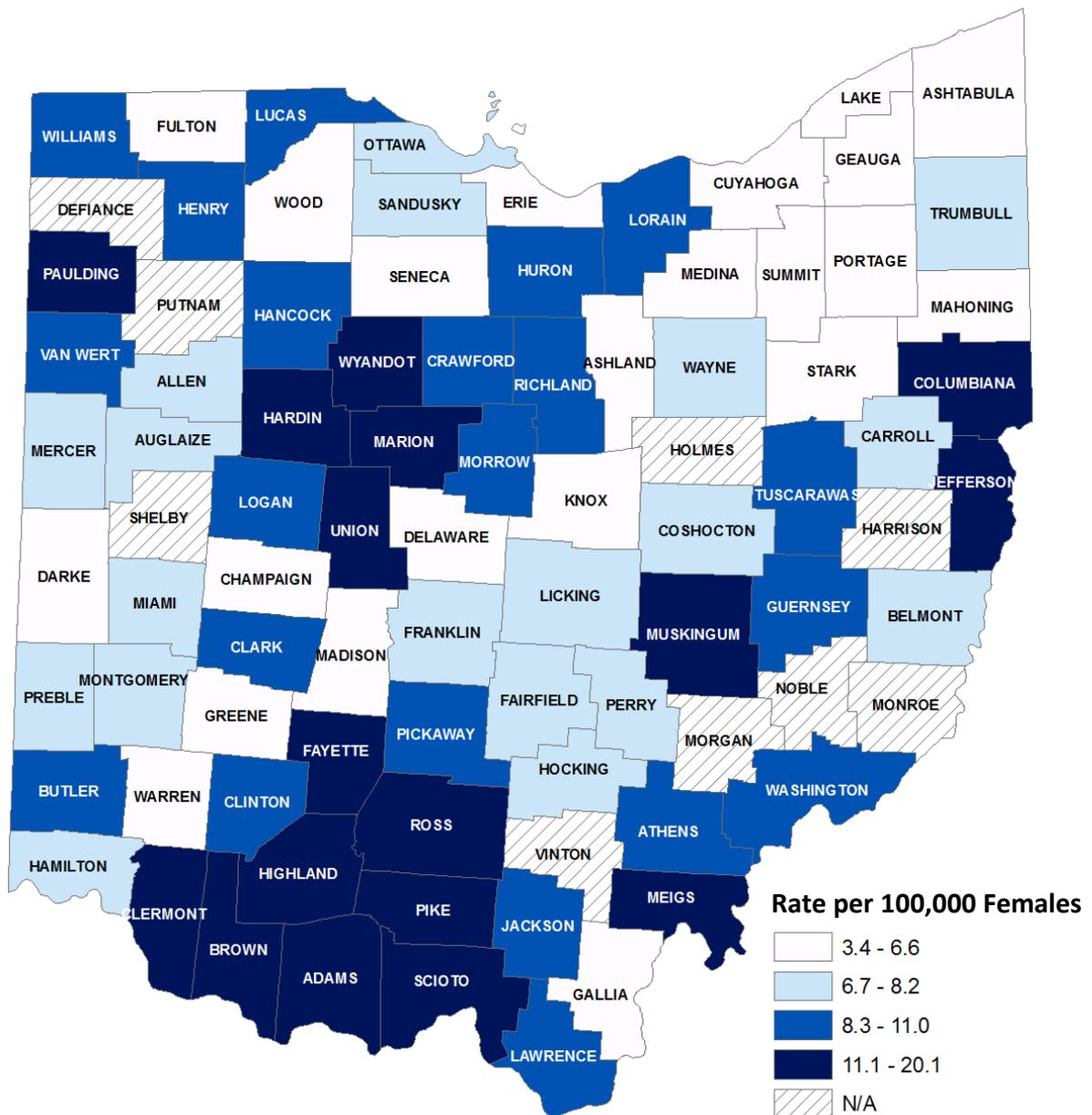

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2018; Bureau of Vital Statistics, Ohio Department of Health, 2018.

Incidence by County

Figure 3 shows 2011-2015 average annual age-adjusted cervical cancer incidence rates by county of residence. County-specific cervical cancer incidence rates in Ohio ranged from 3.4 to 20.1 per 100,000 female residents, compared with Ohio's rate of 7.6 per 100,000 females. Incidence rates for cervical cancer were highest in counties located in the southern and central northwestern regions of Ohio in 2011-2015. The following counties, in decreasing order, had the highest incidence rates (15.0 or more cases per 100,000 females) for this time period: Wyandot, Marion, Hardin, Brown and Pike.

Figure 3. Cervical Cancer: Average Annual Age-adjusted Incidence Rates per 100,000 Females by County of Residence, Ohio, 2011-2015
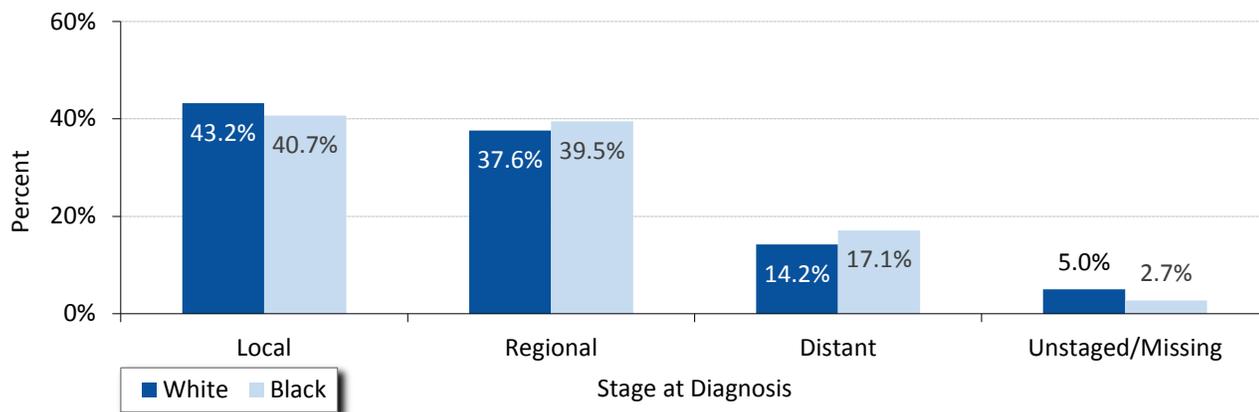

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2018.
Each category represents approximately 25 percent of the 79 Ohio counties for which rates were calculated.
N/A: Rate not calculated when the case count for 2011-2015 is less than five.

Stage at Diagnosis

Cancer stage at diagnosis, which refers to the extent or spread of a cancer in the body, is used to select appropriate treatment and is an important determinant of survival. The 2011-2015 Ohio data presented in Figure 4 show that 43.2 percent of cervical cancers among whites were diagnosed at an early (local) stage, which is greater than the percent of cervical cancers among blacks diagnosed at the local stage (40.7 percent). Blacks had a higher percentage of late (regional and distant) stage diagnoses compared to whites. There was a higher percentage of cervical cancer cases reported unstaged/missing stage among whites (5.0 percent) compared to blacks (2.7 percent). (Please note: *in situ* cervical cancers are not required to be reported in Ohio and thus are not presented).

Figure 4. Cervical Cancer: Proportion of Cases (%) by Stage at Diagnosis and Race, Ohio, 2011-2015
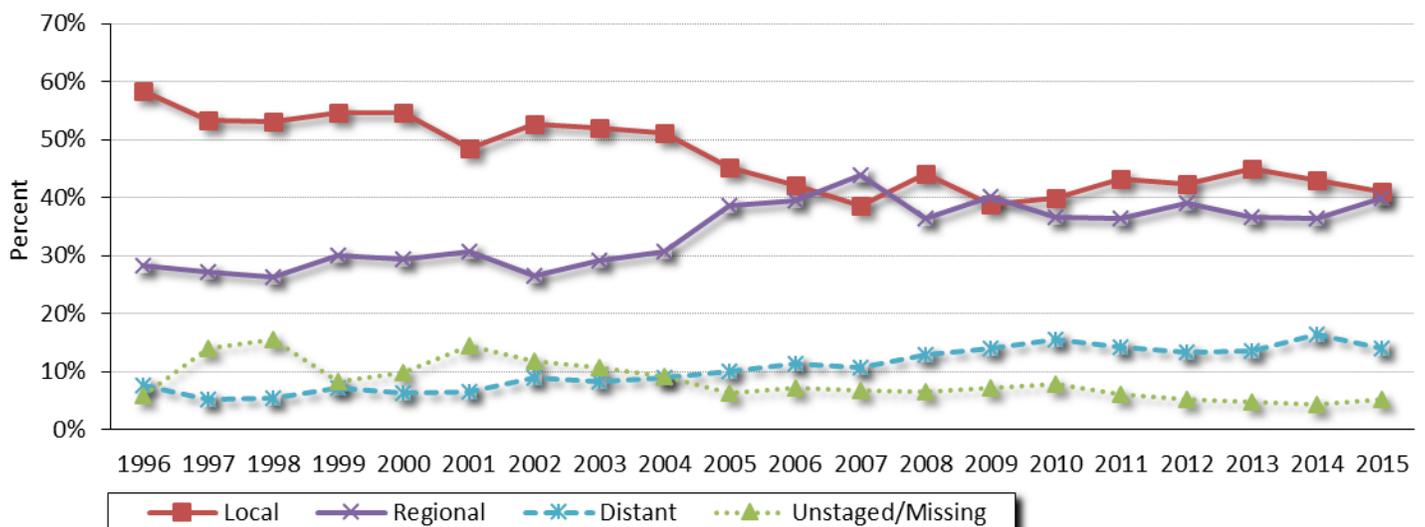

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2018.

Trends in Stage at Diagnosis

Figure 5 shows the distribution of stage at diagnosis of cervical cancer according to year of diagnosis from 1996 to 2015. Local stage cases decreased about 30 percent in Ohio, from 58.3 percent in 1996 to 41.0 percent in 2015, while the proportions of regional and distant stage diagnoses increased by 41 and 83 percent in Ohio from 1996 to 2015, respectively. The proportion of cervical cancers with an unstaged/missing stage decreased 9 percent during this period.

Figure 5. Cervical Cancer: Trends in the Proportion of Cases (%) by Stage at Diagnosis and Year, Ohio, 1996-2015

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2018.

Survival

Relative survival probability is the percentage of people who are alive at a designated time period (usually five years) after a diagnosis divided by the percentage expected to be alive in the absence of a diagnosis based on normal life expectancy. Table 2 shows the U.S. (SEER) five-year relative survival probability for cervical cancer in 2008-2014 was 66.2 percent for all stages combined. Five-year relative survival probabilities were 91.7 percent at the local stage, 56.0 percent at the regional stage and 17.2 percent for distant-stage tumors. The five-year relative survival probability for all stages combined was higher for whites (67.7 percent) compared to blacks (55.5 percent) and was greater for women less than 50 years of age (76.3 percent) compared to women 50 years and older (54.6 percent).

Table 2: Cervical Cancer: Five-year Relative Survival Probability (%) by Stage at Diagnosis, United States, 2008-2014

	All Races			**White**			**Black**		
	All	**<50**	**50+**	**All**	**<50**	**50+**	**All**	**<50**	**50+**
All Stages	66.2%	76.3%	54.6%	67.7%	78.1%	55.1%	55.5%	64.5%	47.2%
Local	91.7%	93.8%	87.3%	92.2%	94.3%	87.4%	86.7%	89.1%	82.7%
Regional	56.0%	60.9%	51.9%	56.8%	62.7%	51.7%	49.1%	52.1%	46.6%
Distant	17.2%	19.9%	15.8%	18.8%	23.0%	16.6%	10.8%	10.7%	11.2%
Unstaged/Missing	50.0%	72.0%	33.1%	50.5%	72.2%	32.9%	42.2%	63.6%	27.2%

Source: Surveillance, Epidemiology and End Results (SEER) Program, National Cancer Institute, 2018.

Types of Cervical Cancer

Cervical cancers and cervical pre-cancers are classified by how they look under a microscope. The main types (histologies) of cervical cancer are squamous cell carcinoma and adenocarcinoma. Squamous cell carcinomas develop from the cells lining the inner part of the cervix. Adenocarcinomas of the cervix develop from the column-shaped cells that line the mucous-producing glands of the cervix. Less commonly, cervical cancers have features of both squamous cell carcinomas and adenocarcinomas—these are called adenosquamous carcinomas or mixed carcinomas.

As shown in Table 3, squamous cell carcinomas made up the majority of cervical cancers in 2011-2015 in Ohio. Blacks had a greater proportion (75.2 percent) of squamous cell cervical carcinomas compared to whites (64.9 percent) during this time period. Whites had a greater proportion (25.9 percent) of cervical adenocarcinomas compared to blacks (13.6 percent) in Ohio from 2011 to 2015. Adenosquamous carcinomas were not as common, making up 2.9 percent and 1.6 percent of cervical cancer cases among whites and blacks, respectively, in Ohio during 2011-2015.

Table 3: Cervical Cancer: Average Annual Number and Proportion of Cases (%) by Race and Histology, Ohio, 2011-2015

Histological Type (Histology Code)	White		Black	
	Cases	**Percent**	**Cases**	**Percent**
Squamous cell carcinoma (8052-8078, 8083-8084)	261	64.9%	39	75.2%
Adenocarcinoma (8140-8147, 8255-8384, 8480-8482, 8570-8575)	100	25.9%	7	13.6%
Adenosquamous carcinoma (8560, 8562)	12	2.9%	1	1.6%
Other histologies (Includes those not listed above.)	30	6.2%	5	9.7%

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2018.

Risk Factors

- **Human papillomavirus (HPV) infection:** HPV is almost always the cause of cervical cancer. Not all women with HPV infection, however, will develop cervical cancer. Women who do not regularly have tests to detect HPV or abnormal cells in the cervix are at increased risk of cervical cancer. Factors that affect the risk of contracting HPV include having multiple sexual partners, having a partner with multiple partners and early age of sexual activity.

In addition to HPV infection, the following are potentially modifiable risk factors for cervical cancer:

- **Smoking:** Women who smoke are about twice as likely as nonsmokers to develop cervical cancer.
- **Oral contraceptives:** Long-term use of oral contraceptives increases risk of cervical cancer.
- **Giving birth to many children:** Risk of cervical cancer increases with the number of childbirths.

The following are non-modifiable risk factors for cervical cancer:

- **Diethylstilbestrol (DES):** Being exposed to DES while in the mother's womb increases the risk of cervical dysplasia and clear cell adenocarcinoma of the cervix.
- **Immunosuppression:** Having a weakened immune system caused by immunosuppression increases the risk of HPV infection and cervical cancer.

Did You Know?

Vaccines are the best way to protect men and women against some of the most common types of HPV, including types 16 and 18, which have been linked to cancer in both men and women. The HPV vaccine, Gardasil 9, is safe and effective. It protects against cancers and genital warts caused by HPV infections. Although the series can be initiated as early as age 9, HPV vaccination is recommended for all boys and girls at age 11 or 12. The body develops better protection against HPV at this age than in the late teens and early 20s. Adolescents vaccinated before their 15th birthday need two doses of the HPV vaccine given 6 to 12 months apart. Teens and young adults who start the series at ages 15-26 years need three doses of HPV vaccine to protect against cancer-causing HPV infections.

National survey data indicate that 41.8 percent of Ohio adolescents received the recommended doses of the HPV vaccine in 2016 compared to 43.4 percent in the United States.

Signs and Symptoms

Signs and symptoms usually do not appear until abnormal cervical cells become cancerous and invade nearby tissue.

- Vaginal bleeding (including bleeding after sexual intercourse)
- Unusual vaginal discharge
- Pain during urination
- Pain during intercourse
- Pelvic pain

Any of these signs/symptoms may be caused by cancer or by other, less serious health problems. If you have any of these signs/symptoms, see your healthcare provider.

Cervical Cancer Screening

Table 4 shows the American Cancer Society (ACS) and U.S. Preventive Services Task Force (USPSTF) recommendations for the early detection of cervical cancer in average risk, asymptomatic women by age.

The ACS recommends the following for the early detection of cervical cancer: for women ages 21 to 29, a Pap test every three years; and for women ages 30 to 65, a Pap test plus an HPV test (called "co-testing") every five years (preferred) or a Pap test alone every three years (acceptable). The ACS also recommends that women older than 65 who have had three or more consecutive negative Pap tests or two or more consecutive negative HPV and Pap tests within the past 10 years, with the most recent test occurring in the past five years, should stop cervical cancer screening. A woman who has had a total hysterectomy should stop cervical cancer screening. A woman who has been vaccinated against HPV should still follow the screening recommendations for her age group.

The USPSTF recommends the following for the early detection of cervical cancer: for women ages 21 to 65, a Pap test every three years; and for women ages 30 to 65 who want to lengthen the screening interval, screening with a combination of Pap and HPV testing every five years. Screening after a hysterectomy with removal of the cervix among women who do not have a history of high-grade precancerous lesions (*i.e.*, cervical intraepithelial neoplasia (CIN) grade 2 or 3) or cervical cancer is not recommended. Women older than 65 who have had adequate prior screenings and are not otherwise at high risk of cervical cancer should not be tested.

Table 4. American Cancer Society and U.S. Preventive Services Task Force Recommendations for the Early Detection of Cervical Cancer in Average Risk, Asymptomatic People

American Cancer Society		U.S. Preventive Services Task Force	
Age	**Test or Procedure**	**Age**	**Test or Procedure**
21-29	Pap test every 3 years. Human papillomavirus (HPV) testing should not be used in this age group unless it is needed after an abnormal Pap test result.	21-65	Pap test every 3 years
30-65	Pap test and HPV test (called "co-testing") every 5 years, or Pap test alone every 3 years	30-65	Screening with a combination of Pap and HPV testing every 5 years (for women who want to lengthen the screening interval)

Source: ACS website: https://www.cancer.org/cancer/cervical-cancer/prevention-and-early-detection/cervical-cancer-screening-guidelines.html and USPSTF website: https://www.uspreventiveservicestaskforce.org/BrowseRec/Search?s=cervical+cancer.

In 2016, 81.9 percent of Ohio women ages 21-65 reported that they had a Pap test in the past three years, compared to 80.1 percent nationally. In Ohio, the prevalence of Pap testing is significantly higher among women ages 25-44 (85.2 percent) compared to women ages 21-24 (71.8 percent) but does not significantly differ by race/ethnicity. In Ohio, the prevalence of Pap testing is significantly higher among women with an annual household income of $75,000 or more compared to those with an annual household income less than $35,000 and among women with a college degree compared to those with a high school diploma or less education (Table 5).

Table 5. Prevalence of Pap Testing among Women Ages 21-65 by Demographic Characteristics, Ohio, United States, 2016

Demographic Characteristics	Ohio		U.S.	
	Prevalence (%)	95% CI	Prevalence (%)	95% CI
Overall	81.9	79.8 - 84.0	80.1	79.6 - 80.6
Age Group				
21-24	71.8	62.7 - 80.9	61.9	59.8 - 64.0
25-44	85.2	81.9 - 88.4	84.0	83.3 - 84.6
45-65	81.0	78.3 - 83.6	80.5*	79.8 - 81.2
Race/Ethnicity				
White, Non-Hispanic	82.1	79.7 - 84.4	81.1	80.6 - 81.6
Black, Non-Hispanic	82.5	76.3 - 88.7	82.1	80.5 - 83.7
Annual Household Income				
<$15,000	73.4	65.6 - 81.2	71.2	69.5 - 72.8
$15,000-$24,999	78.8	73.4 - 84.3	75.1	73.6 - 76.5
$25,000-$34,999	77.5	69.2 - 85.8	77.0	75.4 - 78.7
$35,000-$49,999	80.9	74.6 - 87.1	79.8	78.3 - 81.3
$50,000-$74,999	82.1	76.1 - 88.2	82.1	80.7 - 83.4
$75,000+	89.3	86.2 - 92.4	88.4	87.7 - 89.1
Education				
Less than High School	67.1	54.6 - 79.7	75.2	73.4 - 77.0
High School Diploma	78.9	74.8 - 83.0	75.2	74.0 - 76.3
Some College	82.0	78.1 - 85.8	79.4	85.3 - 86.5
College Graduate	88.0	85.4 - 90.5	85.9	79.6 - 80.6

Source: 2016 Ohio Behavioral Risk Factor Surveillance System, Ohio Department of Health, 2018; Behavioral Risk Factor Surveillance System, CDC, 2018.
*National estimate does not include age 65.
95% CI = 95 percent confidence interval

Did You Know?

The Ohio Department of Health Breast and Cervical Cancer Project (BCCP) can help all women navigate cancer screenings. BCCP's Patient Navigation Program helps guide women through the healthcare system, find providers and community resources, and answer questions about scheduling appointments, using insurance and more. The Ohio BCCP program also offers no-cost breast and cervical cancer screenings and diagnostic testing to qualified participants. For more information about BCCP or to see if you qualify for no-cost screenings, call 1-844-430-BCCP (2227) or visit http://www.odh.ohio.gov/health/cancer/bccp/bccpmap.aspx.

Technical Notes

Age-Adjusted Rate: A summary rate that is a weighted average of age-specific rates, where the weights represent the age distribution of a standard population (direct adjustment). The incidence and mortality rates presented in this report were standardized to the age distribution of the 2000 U.S. Standard Population. Under the direct method, the population was first divided into 19 five-year age groups, i.e., <1, 1-4, 5-9, 10-14, 15-19...85+, and the age-specific rate was calculated for each age group. Each age-specific rate was then multiplied by the standard population proportion for the respective age group.

Average Annual Number: The number of cases or deaths diagnosed per year, on average, for the time period of interest (e.g., 2011-2015). Average annual numbers are calculated by summing the number of cases or deaths for a given time period, dividing by the number of years that comprise the time period and rounding to the nearest whole number.

Census Data: The 1996-2015 rates were calculated using population estimates from the U.S. Census Bureau and National Center for Health Statistics. Population data were compiled from bridged-race intercensal population estimates for July 1, 1990-July 1, 1999; revised bridged-race intercensal population estimates for July 1, 2000-July 1, 2004 (released 10/26/2012); revised bridged-race intercensal population estimates for July 1, 2005-July 1, 2009 (released 6/26/2014) and vintage 2016 bridged-race postcensal population estimates for July 1, 2010-July 1, 2016 (released 6/26/2017).

Incidence: The number of cases diagnosed during a specified time period (e.g., 2011-2015). Cervical cancer cases were defined as follows: International Classification of Diseases for Oncology, Third Edition (ICD-O-3), codes C530-C539.

Invasive Cancer: A malignant tumor that has infiltrated the organ in which the tumor originated. Invasive cancers consist of those diagnosed at the local, regional, distant and unstaged/missing stages. Only invasive cancers were included in the calculation of incidence rates in this document.

Mortality: The number of deaths during a specified time period (e.g., 2011-2015). Cervical cancer deaths were defined as follows: International Statistical Classification of Diseases and Related Health Problems, Ninth Edition (ICD-9), code 180 for 1996-1998 and International Statistical Classification of Diseases and Related Health Problems, Tenth Edition (ICD-10), codes C53.0-C53.9 for 1999-2015.

Rate: The number of cases or deaths per unit of population (e.g., per 100,000 persons) during a specified time period (e.g., 2011-2015). Rates may be unstable and are not presented when the count is less than five.

Relative survival: The percentage of people who are alive at a designated time period (usually five years) after a cancer diagnosis divided by the percentage expected to be alive in the absence of cancer based on normal life expectancy. It does not distinguish between patients who have no evidence of cancer and those who have relapsed or are still in treatment.

Stage at Diagnosis: The degree to which a tumor has spread from its site of origin at the time of diagnosis. Cancer stage is often related to survival and is used to select appropriate treatment. Patients with early stage disease often have better long-term survival, and detecting cancers at an early stage may lead to a reduction in mortality. The stages of cancer, in the order of increasing spread, are *in situ*, local, regional and distant. *In situ* and localized tumors are referred to as early stage tumors, and regional and distant tumors are termed late stage. Cancers diagnosed at the local, regional, distant and unstaged/missing stages are categorized as invasive.

    in situ—Noninvasive cancer that has not penetrated surrounding tissue.
    Local—A malignant tumor confined entirely to the organ of origin.
    Regional—A malignant tumor that has extended beyond the organ of origin directly into surrounding organs or tissues or into regional lymph nodes.
    Distant—A malignant tumor that has spread to parts of the body (distant organs, tissues and/or lymph nodes) remote from the primary tumor.
    Unstaged/Missing—Insufficient information is available to determine the stage or extent of the disease at diagnosis.

Table 6. Cervical Cancer: Average Annual Number and Age-adjusted Rates of Cases and Deaths per 100,000 Females by County of Residence, Ohio, United States, 2011-2015

	Incidence		Mortality			Incidence		Mortality	
	Cases	Rate	Deaths	Rate		Cases	Rate	Deaths	Rate
Ohio	**467**	**7.6**	**162**	**2.4**	Lawrence	3	8.6	1	2.9
U.S.		**7.4**		**2.3**	Licking	6	7.3	2	1.8
Adams	2	13.2	<1	*	Logan	2	9.0	<1	*
Allen	4	7.6	<1	*	Lorain	14	8.3	5	2.8
Ashland	2	6.3	<1	*	Lucas	20	8.7	8	3.4
Ashtabula	3	6.0	1	1.8	Madison	1	5.9	1	4.3
Athens	2	9.5	<1	*	Mahoning	9	6.4	4	2.4
Auglaize	2	7.9	<1	*	Marion	5	19.5	2	5.9
Belmont	2	8.2	2	3.2	Medina	4	3.4	<1	*
Brown	4	15.5	2	7.5	Meigs	1	12.9	<1	*
Butler	16	8.7	5	2.4	Mercer	1	7.0	<1	*
Carroll	1	8.0	<1	*	Miami	4	7.0	2	2.2
Champaign	1	6.2	<1	*	Monroe	<1	*	<1	*
Clark	6	8.5	2	3.0	Montgomery	21	7.6	8	2.3
Clermont	12	11.6	3	2.1	Morgan	<1	*	<1	*
Clinton	2	9.5	<1	*	Morrow	2	11.0	2	8.8
Columbiana	6	11.2	2	2.6	Muskingum	6	12.6	2	3.4
Coshocton	2	7.8	<1	*	Noble	<1	*	<1	*
Crawford	3	10.8	<1	*	Ottawa	2	8.2	<1	*
Cuyahoga	46	6.6	19	2.5	Paulding	1	13.2	<1	*
Darke	1	4.9	<1	*	Perry	2	8.2	<1	*
Defiance	<1	*	<1	*	Pickaway	3	10.1	1	5.2
Delaware	6	5.8	2	1.7	Pike	2	15.5	<1	*
Erie	3	6.6	1	2.1	Portage	5	6.6	2	1.6
Fairfield	5	6.9	1	1.2	Preble	2	8.2	1	4.0
Fayette	2	12.8	<1	*	Putnam	<1	*	<1	*
Franklin	48	7.8	15	2.3	Richland	6	9.4	3	3.9
Fulton	2	6.2	<1	*	Ross	4	11.4	2	3.7
Gallia	1	6.1	<1	*	Sandusky	3	7.7	<1	*
Geauga	2	4.7	1	1.9	Scioto	6	14.3	2	5.3
Greene	4	5.4	2	1.8	Seneca	1	4.7	1	3.8
Guernsey	2	10.6	<1	*	Shelby	<1	*	<1	*
Hamilton	30	7.4	7	1.6	Stark	13	6.6	5	2.4
Hancock	4	8.8	2	3.8	Summit	21	6.6	7	2.0
Hardin	3	18.9	1	5.1	Trumbull	9	7.0	2	1.7
Harrison	<1	*	1	11.3	Tuscarawas	5	8.7	1	1.8
Henry	2	11.0	<1	*	Union	4	13.8	<1	*
Highland	3	13.2	1	4.6	Van Wert	1	8.8	<1	*
Hocking	2	7.8	<1	*	Vinton	<1	*	<1	*
Holmes	<1	*	<1	*	Warren	6	4.8	2	1.3
Huron	4	11.0	1	3.9	Washington	3	8.3	<1	*
Jackson	2	10.3	1	4.5	Wayne	4	6.7	1	1.8
Jefferson	4	12.9	2	4.2	Williams	2	8.8	<1	*
Knox	2	5.9	1	3.4	Wood	2	3.4	2	2.9
Lake	6	4.8	3	1.9	Wyandot	2	20.1	<1	*

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2018; Bureau of Vital Statistics, Ohio Department of Health, 2018; Surveillance, Epidemiology and End Results (SEER) Program, National Cancer Institute, 2018.
*Rate not presented when the count for 2011-2015 is less than five (i.e., the average annual count is less than one).

Sources of Data and Additional Information

Ohio Cancer Incidence Surveillance System:
http://www.odh.ohio.gov/health/cancer/ocisshs/ci_surv1.aspx

National Cancer Institute:
https://www.cancer.gov/types/cervical

American Cancer Society:
https://www.cancer.org/cancer/cervical-cancer.html

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Ohio
Department of Health