

Division of Chronic Disease, Primary Care,
and Rural Health



Cervical Cancer



Bottom Line:

Cervical cancer is almost 100 percent preventable through regular screening, avoidance of controllable risk factors, and vaccination against the human papillomavirus (HPV). Nationally, in 2024, there will be an estimated 13,820 cases of cervical cancer diagnosed and 4,360 deaths due to cervical cancer.¹ Widespread implementation of Pap testing led to large declines in cervical cancer incidence, but there has been little reduction in cervical cancer rates over the past several years. In Indiana, approximately 283 new cases of cervical cancer and 96 cervical cancer deaths occur annually (Table 6).²

What is the Impact on Indiana Residents?

Table 6. Burden of Invasive Cervical Cancer*- Indiana, 2016-2020*

*Age-adjusted to the US 2000 Standard Population. Source: Indiana State Cancer Registry

	Average number of cases per year (2016-2020)	Rate per 100,000 females (2016-2020)	Number of cases (2020)	Rate per 100,000 females (2020)
Indiana Incidence	283	8.4	256	7.6
Indiana Deaths	96	2.8	92	2.7

Who Gets Cervical Cancer?

- Infection with HPV is the single greatest risk factor for cervical cancer as nearly all cervical cancers are caused by persistent infection with certain types of HPV. The Center for Disease Control and Prevention (CDC) estimates that at least 91 percent of cervical cancer cases are caused by HPV each year.³ Other risk factors for cervical cancer include a compromised immune system, a high number of childbirths, and smoking.¹
- HPV is passed person-to-person through skin-to-skin contact with an infected area of the body. Although HPV can be spread through skin-to-skin sexual contact, sex doesn't have to occur for the infection to spread. The HPV virus can be spread through hand to genital contact with an infected area of the body.⁴ Risk of transmission can be reduced by delaying first sexual activity, limiting the number of sexual partners, and using condoms. Using condoms may reduce the risk for HPV infection and HPV-associated diseases (cervical cancer), but they don't completely prevent infection because they don't cover every HPV-infected area of the body.⁵
- HPV vaccination is the best method of prevention. Currently, there is one HPV vaccine available in the U.S. – Gardasil-9. It is FDA-approved for both females and males, aged 9 through 45 years. It is most effective when given in early adolescence. Per the CDC Advisory Committee on Immunization Practices (ACIP), HPV vaccination is recommended for all girls and boys aged 11 and 12 years and catch-up HPV vaccination for all persons through age 26 years. HPV vaccination can be administered to both boys and girls starting at age 9, an approach recommended by the American Cancer Society.⁶ For males



and females aged 27-45 years there is a shared clinical decision-making recommendation, such that the decision regarding vaccination should involve discussions between patients and healthcare providers as to whether patients may benefit from and desire HPV vaccination.⁷ If the first dose is administered before age 15, only two doses are required, six to 12 months apart. If the first dose is administered at age 15 or older, three doses are required, with the second dose administered one to two months after the first dose, and the third dose administered approximately three to four months after the second dose.⁸

- In 2021, only 55.2 percent of adolescents aged 13 through 17 in Indiana were up-to-date on receiving their shots for the HPV vaccine.⁹
- Females are most often diagnosed with cervical cancer during their middle adult years.¹ During 2016-2020, 82 percent of cervical cancer cases occurred among Indiana females less than 65 years of age, comprised of 36.7 percent of cases occurring among females aged 25-44 and 45.2 percent among females aged 45 to 64.² During 2011 to 2020, Black females in Indiana, compared to White females, had an 8 percent higher cervical cancer incidence rate (8.9 versus 8.2 cases per 100,000 females, respectively) and a 23 percent higher mortality rate (3.4 versus 2.7 deaths per 100,000 females, respectively) [Figure 13]. While many factors contribute to this disparity, one is that Black females tend to be diagnosed at a non-localized stage [Figure 14].² Furthermore, national data suggests that, after excluding women who have had hysterectomies, the race-based disparities in cervical cancer mortality are even greater.¹⁰

Figure 13. Cervical Cancer Incidence and Mortality (death) Rates by Race* - Indiana, 2011-2020

*Age-adjusted to the U.S. 2000 Standard Population.

[†]Rate among Black females is significantly higher ($P < .05$) than the rate among White females. Source: Indiana State Cancer Registry

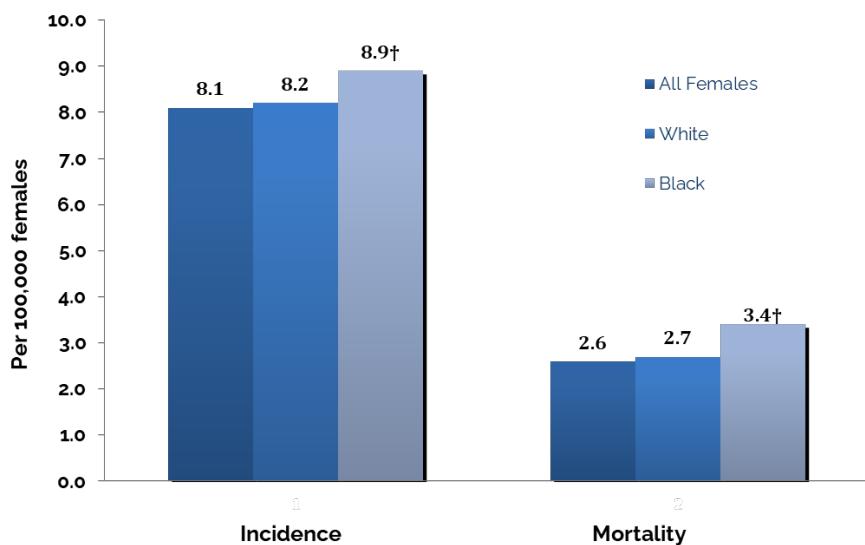
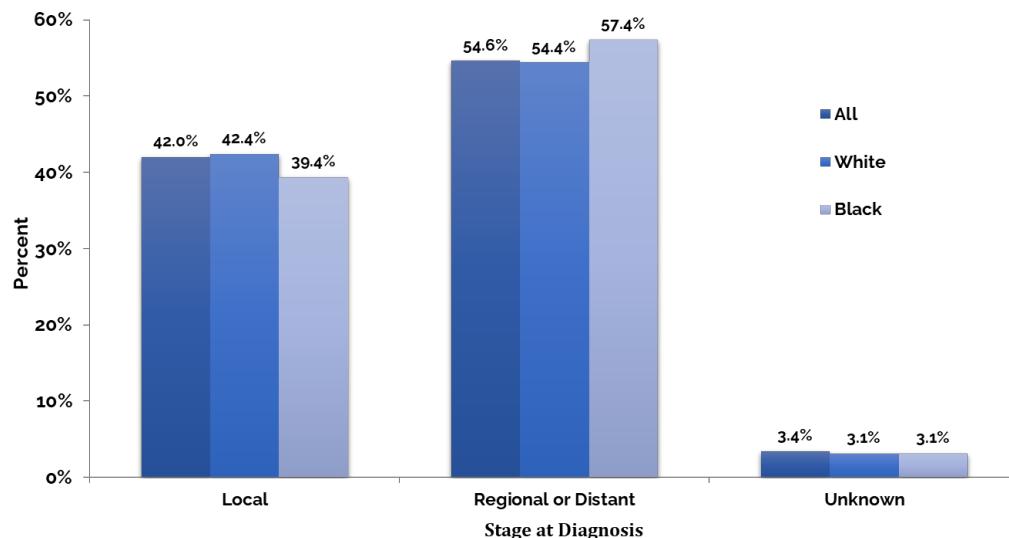


Figure 14. Percent of Invasive Cervical Cancer Cases by Stage of Diagnosis and Race- Indiana, 2011-2020

Note: Excludes in situ

Source: Indiana State Cancer Registry



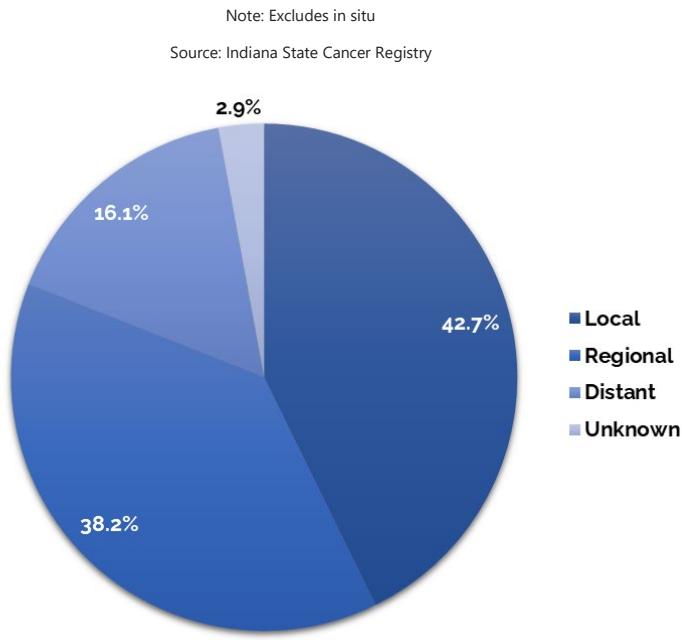
Can Cervical Cancer be Detected Early?

- In the U.S., the cervical cancer death rate declined by over 70 percent between 1955, when cervical cancer screening was first introduced, and 1992, mainly because of the effectiveness of the Pap test.¹¹ Pap screenings allow for early identification and treatment of abnormal cervical cells before they become cancerous. This is important because, typically, the pre-cancerous conditions do not cause pain or other symptoms and are only detected through Pap screenings.
- The United States Preventive Services Task Force (USPSTF) recommends all average-risk females, aged 21 to 29 years receive a routine Pap screening every three years. For women aged 30 to 65 years, the USPSTF recommends screening every three years with Pap alone, every five years with high-risk HPV testing alone, or every five years with high-risk HPV testing in combination with Pap (co-testing).¹² The American Cancer Society (ACS) recommends all average-risk females, aged 25 to 65 years receive routine cervical cancer screening. The ACS-preferred method of screening is primary HPV testing every five years. However, if primary HPV testing is not available, women aged 25- 65 should be screened with HPV and Pap co-testing every five years, or Pap alone every three years.¹³
 - According to the Indiana Behavioral Risk Factor Surveillance System, in 2020, 75.7 percent of Hoosier females aged 21 to 65 years reported having had a Pap screening during the past three years.⁵ The prevalence rates for Black women were higher compared to White and Hispanic women (75.4 vs. 72.4 percent).³
- Figure 15 provides the percentage of Indiana females diagnosed during each stage of cervical cancer from 2016 to 2020. The five-year survival rate for patients diagnosed with cervical cancer at the local stage is 92 percent.¹
- In Indiana, from 2001-2020, the incidence of cervical cancer decreased while the



mortality rate remained constant [Figure 16].

Figure 15. Percent of Cervical Cancer Cases Diagnosed During Each Stage*- Indiana, 2016-2020

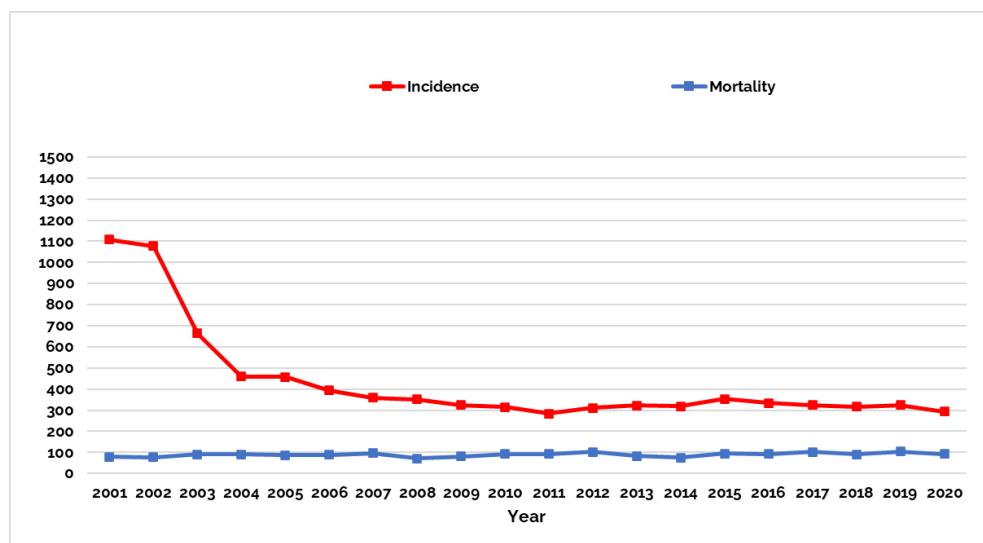


During 2016-2020 of the 1,418 Indiana females who received a diagnosis of invasive cervical cancer, 606 (42.7%) were diagnosed at the local stage, 770 (54.3%) were diagnosed in the regional or distant stages combined, and 42 (2.9%) had unknown staging [Figure 15].

Figure 16. Changes in Cervical Cancer Incidence and Mortality (death) Rates Among Indiana Females Between the Five-Year Periods of 2008-2012 and 2001-2020*

*Age-adjusted to the U.S. 2000 Standard Population.

Source: Indiana State Cancer Registry



Be Aware and Take Charge!

What can you do to help prevent cervical cancer?

- Get vaccinated and vaccinate your children, both boys and girls – Protecting yourself and your children from HPV decreases the risk for cervical cancer, cervical precancer, and other cancers (including vulvar, vaginal and throat cancers)
- Practice safe sex – Limit your number of partners and use condoms
- Be smoke-free—Visit www.in.gov/quitline for free smoking cessation assistance
- Have routine HPV-based cervical cancer screenings
- Ask for the HPV test with your Pap screening if you are aged 30 years or older
- Watch for abnormal vaginal discharge and bleeding and contact your doctor with any concerns



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