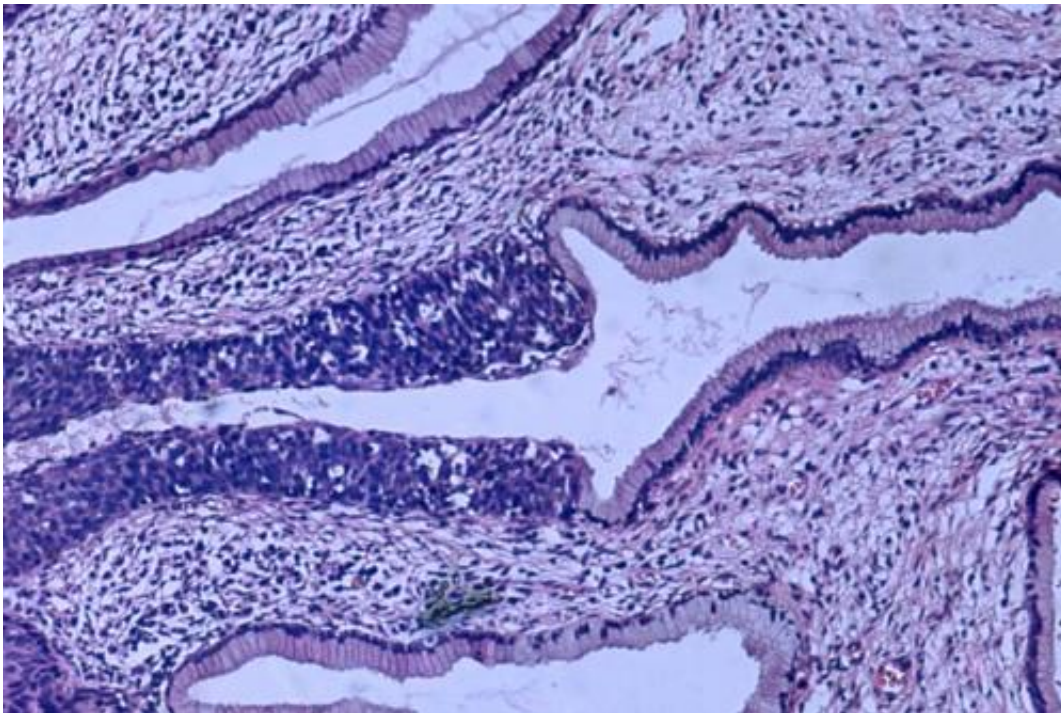


Population scientist identifies rapid rise in cervical cancer in millennial women

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High grade dysplasia (carcinoma in situ) in the uterine cervix. The abnormal epithelium is extending into a mucus gland to the left of centre. This disease can progress to invasive cancer (squamous cell carcinoma) of the cervix. Credit: Haymanj/public domain

MUSC Hollings Cancer Center researcher Ashish Deshmukh, Ph.D., has identified a dramatic recent rise in cervical cancer incidence among women in their early 30s. This work was published Nov. 21 in the *Journal of the American Medical Association (JAMA)*.

Cervical cancer is mostly related to human papillomavirus (HPV), and [screening](#) has made this cancer preventable. Yet, it is estimated that over 14,000 new cases will be diagnosed this year and more than 4,000 deaths will be attributed to [cervical cancer](#).

"HPV is a group of over 200 viruses. At least 14 high-risk HPV types can cause several types of cancers, including cervical, anal and head and neck cancers. In the era of the overall decline in cancer incidence, cancers caused by HPV are unfortunately rising," said Deshmukh, an associate professor in the Department of Public Health Sciences at MUSC.

Deshmukh, who joined Hollings in August as the co-leader of the Cancer Control program, focuses on cancer epidemiology and etiology research, generating an evidence base for [cancer prevention](#) and working with stakeholders and policymakers to develop public policy and inform practice.

An expert in the field of HPV-associated malignancies, Deshmukh has followed the cervical cancer incidence rate in the United States for several years. Previously, he found that evidence-based screening recommendations contributed to the decline in cervical cancer since the 1970s. However, since 2012, [the national rates of cervical cancer incidence have plateaued](#).

"For the last two years, we have been trying to understand why the continuous decline in cervical cancer stopped in 2012 and why we have reached a critical turning point," said Deshmukh.

To get a better understanding, Deshmukh and colleagues, including Hollings researcher Kalyani Sonawane, Ph.D., began to dissect cervical cancer incidence by age using the 2001 to 2019 National Program of Cancer Registries (NPCR) and the Surveillance Epidemiology and End

Results (SEER) dataset. "This dataset includes cancer incidence data from all 50 states and covers over 98% of the U.S. population. Using five-year age cutoffs, we found that in women age 30 to 34, the declining rate of cervical cancer incidence reversed for the first time," said Deshmukh.

A 3% per year increase in cervical cancer incidence in women in their early 30s began in 2012. "What's very surprising is that the rates increased in non-Hispanic white women, Hispanic women and other ethnic groups, but not in non-Hispanic Black women," said Deshmukh.

The researchers' findings showed an increase in both localized and regional disease, and the incidence increased for both squamous cell cervical carcinoma and cervical adenocarcinoma. Deshmukh said squamous cell carcinoma is largely detected by screening, so the public health policy implication of this finding is that we need to improve screening rates.

Cervical cancer screening rates have dramatically declined in the U.S. recently, particularly among young women aged 21-29 years. "It is critically important to determine if the increase in cervical cancer incidence in young women is due to the decrease in screening rates in women age[d] 21 to 29 years or whether it is due to the introduction of more effective HPV testing in recent years. However, we do know that we need future research to understand this problem thoroughly," said Deshmukh.

The U.S. urgently needs national campaigns and innovative ways to improve cervical cancer screening uptake and adherence among women, Deshmukh said. He plans to continue to study reasons that underlie the recent rise in cervical cancer incidence.

As part of Hollings' Cancer Control Program, research such as this helps

to inform cancer epidemiology and public health policy and raise awareness. As a general guideline, women of ages 21 to 29 are advised to screen with a Pap smear every three years, and [women](#) of ages 30 to 65 are advised to continue either with a Pap smear every three years or to move to HPV testing or co-testing, which utilizes both a Pap smear and an HPV test every five years. Doctors might recommend routine screening past 65 years if a patient's previous tests were abnormal.

Promoting HPV vaccinations, along with routine screening, is a crucial strategy to decrease the number of deaths associated with cervical cancer. "Hollings Cancer Center does wonderful work of bringing lifesaving screenings and vaccinations to people across South Carolina. I expect that the HPV vaccination van and mobile health unit that target rural communities to increase vaccination and screening rates in underserved areas will make a difference in South Carolina's HPV-related cancer burden in the coming decades," said Deshmukh.

More information: Zahed Shahmoradi et al, Cervical Cancer Incidence Among US Women, 2001-2019, *JAMA* (2022). [DOI: 10.1001/jama.2022.17806](https://doi.org/10.1001/jama.2022.17806)

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