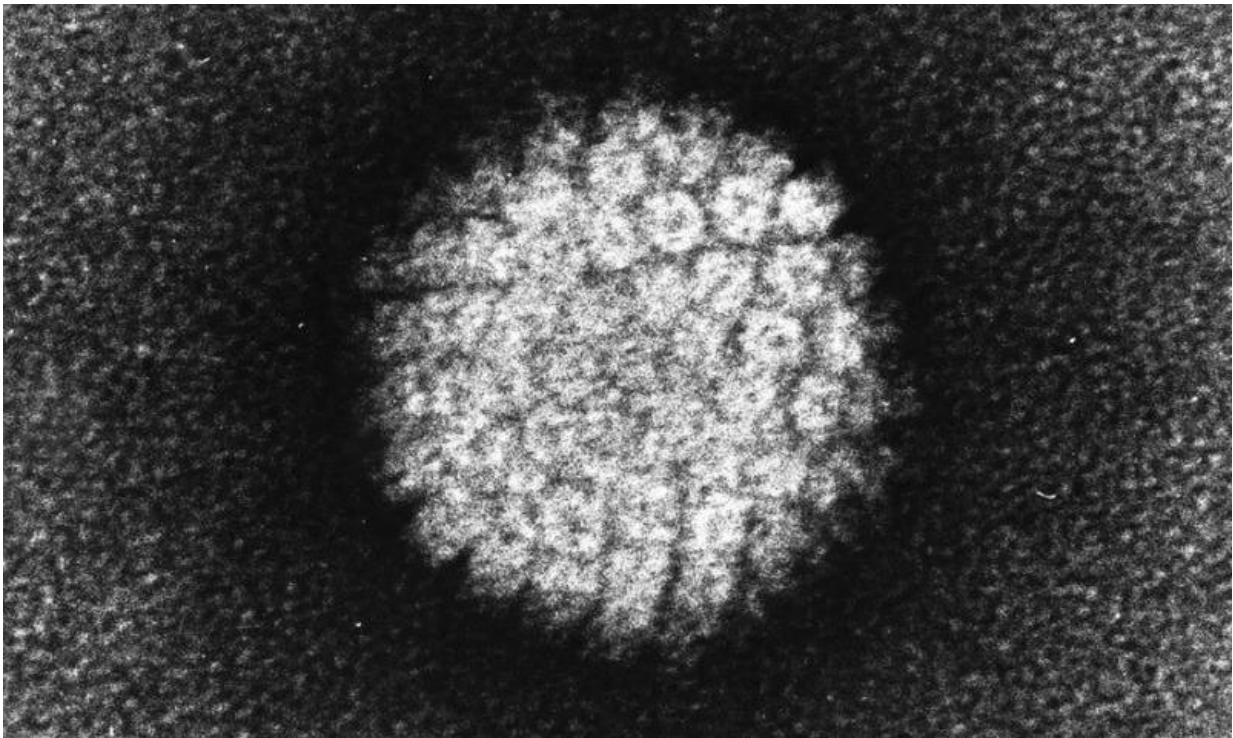


HPV vaccination expected to reduce cancer in all races, may not eliminate all disparities

April 28 2016



Electron micrograph of a negatively stained human papilloma virus (HPV) which occurs in human warts. Credit: public domain

Human papillomavirus (HPV)-associated cancers occur more frequently, and sometimes with more deadly consequences, among Hispanics, blacks, and American Indian and Alaska Natives than among whites. A new study from Harvard T.H. Chan School of Public Health finds that

HPV vaccination is expected to reduce the cancer burden across all racial/ethnic groups. However, some disparities in cancer burden may persist and widen in the years to come if their causes—such as lack of access to diagnoses and treatment—aren't addressed.

The study will appear online April 28, 2016 in the journal *Cancer*.

"As expected, we found HPV vaccination would reduce the overall disease burden for all racial and ethnic groups. However, we also found that some racial and ethnic disparities may continue to exist," said Emily Burger, postdoctoral research fellow at Harvard Chan School's Center for Health Decision Science.

Nearly 80 million people in the U.S.—about one in four—are currently infected with HPV. Roughly 14 million more become infected each year. HPV infections that don't go away can lead to various forms of cancer. HPV vaccines, licensed since 2006 and recommended for boys and girls, are expected to lead to declines in six HPV-associated cancers, including cervical, anal, and oropharyngeal (throat) cancers. A recently licensed 9-valent HPV [vaccine](#) is expected to protect against additional HPV types that cause cancer. HPV vaccination has the potential to prevent up to three out of four HPV-associated cancers.

But, so far, uptake of the vaccines has been slow. Recent data from the Centers for Disease Control and Prevention (CDC) show that less than half of girls—and even fewer boys—aged 13-17 years have received all three recommended doses of the HPV vaccine series. The number of young people who complete the series also differs by racial and ethnic group. By comparison, the vaccination rate for the adolescent Tdap vaccine (for protection against tetanus, diphtheria and whooping cough) is about 85% or higher for all racial and ethnic groups.

Partnering with experts from the CDC, the Harvard Chan researchers

used mathematical modeling to simulate the impact of alternative HPV vaccine coverage scenarios on six HPV-associated cancers for different racial/ethnic groups. They took into account current cancer incidence rates, and survival probabilities; the proportion of cancers due to HPV; and current HPV vaccination rates by age, sex, race, and ethnicity.

The study used both absolute and relative measures to examine the impact of HPV vaccination on racial/ethnic disparities. They found that while the absolute burden of cancer and disparities are expected to decrease with current or improved HPV vaccination coverage, relative disparities may persist and in some cases, increase. For instance, with high uptake of the 9-valent HPV vaccine, the risk of dying from an HPV-associated cancer was expected to decrease by 60% among all men. The estimated decrease in cancer burden was greater among some racial/ethnic groups, which led to an increase in the relative disparity among men. This is partly because HPV causes a smaller proportion of oropharyngeal cancers in black males than in white males, so vaccination would not have as much of an impact of the overall cancer burden for that group.

"Our findings show that vaccination can lead to a dramatic decrease in HPV-associated cancer in all racial and ethnic groups, but HPV vaccination alone will not eliminate existing HPV-associated cancer disparities. Efforts to improve HPV vaccination uptake in the U.S. must also be accompanied by efforts to minimize differences in access to screening for cervical cancer and access to timely diagnoses and treatment for all HPV-associated cancers," said senior author Jane Kim, associate professor of health decision science in the Department of Health Policy and Management.

More information: "Racial and Ethnic Disparities in Human Papillomavirus-Associated Cancer Burden With First-Generation and Second-Generation Human Papillomavirus Vaccines," Emily A. Burger,

Kyueun Lee, Mona Saraiya, Trevor D. Thompson, Harrell W. Chesson, Lauri E. Markowitz, and Jane J. Kim, *Cancer*, online April 28, 2016, DOI: [10.1002/cncr.30007](https://doi.org/10.1002/cncr.30007)

Provided by Harvard T.H. Chan School of Public Health

Citation: HPV vaccination expected to reduce cancer in all races, may not eliminate all disparities (2016, April 28) retrieved 20 April 2024 from <https://medicalxpress.com/news/2016-04-hpv-vaccination-cancer-disparities.html>

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