

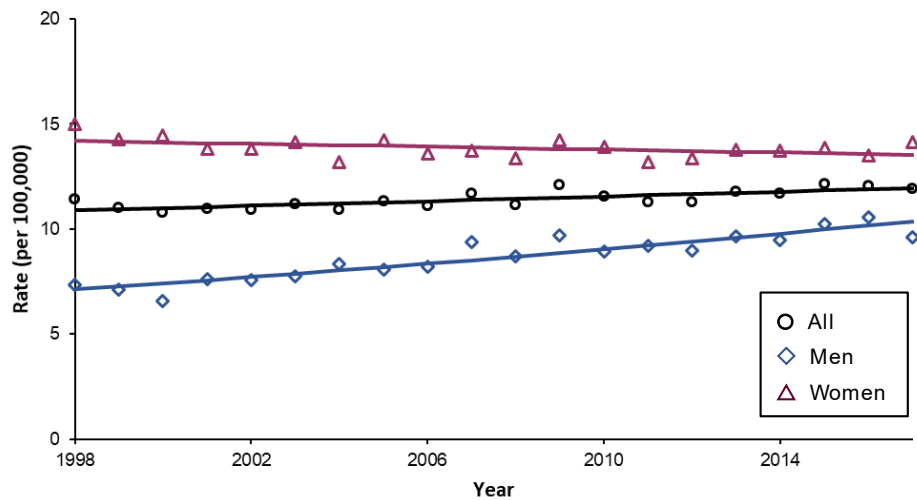
# HPV-Related Cancer Incidence and HPV Vaccination Rates in New York State, 2013-2017

## Cancers associated with human papillomavirus (HPV)

- Human papillomavirus (HPV) is the most common sexually transmitted infection in the United States.
- Two high-risk HPV types, types 16 and 18, account for most HPV-related cancers.<sup>1</sup>
- HPV infection is thought to cause almost all cervical cancers, over 90% of anal cancers, 70% of oropharyngeal cancers, 75% of vaginal cancers, 70% of vulvar cancers, and 60% of penile cancers.<sup>1</sup>
- To protect against cancers caused by HPV, CDC recommends two doses of HPV vaccine for boys and girls vaccinated before age 15, and three doses for older teens and young adults who start the vaccine series at ages 15 through 26 and for immunocompromised persons.<sup>2</sup>
- The New York State Cancer Registry does not routinely collect information on HPV status. In this report, HPV-related cancers were categorized using the criteria from Viens et al. (2016).<sup>3</sup>

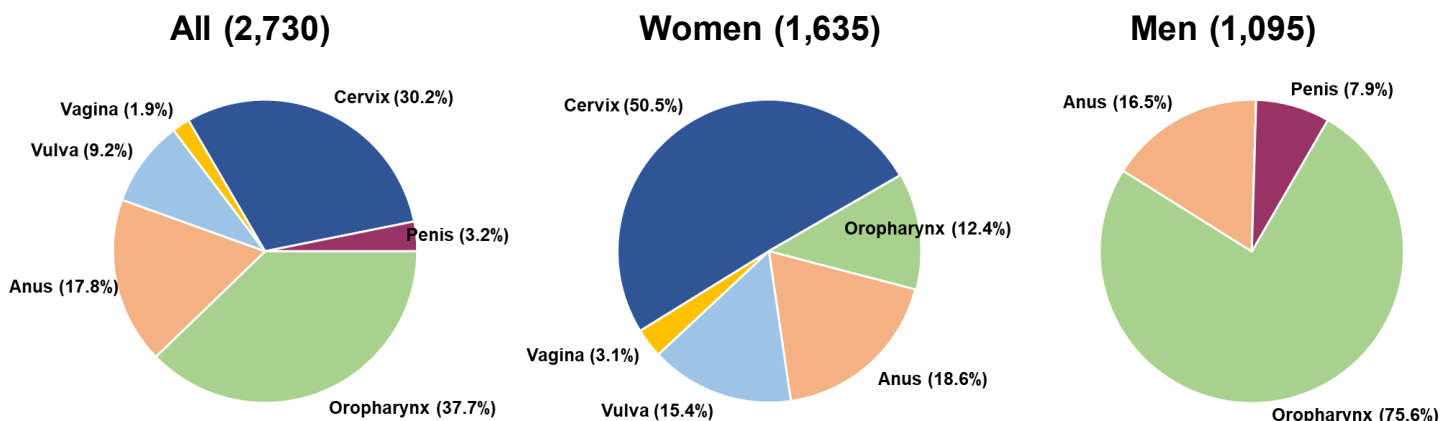
## Trends\* in cancer incidence (per 100,000 persons) by sex<sup>†,§</sup>, 1998-2017

- For all HPV-related cancers combined, the overall incidence rate has been increasing with a statistically significant annual percentage change (APC) of 0.5 from 1998 through 2017.
- The incidence rate among men has been increasing with a statistically significant APC of 5.0.
- The incidence rate among women has been decreasing with a statistically significant APC of -0.2.



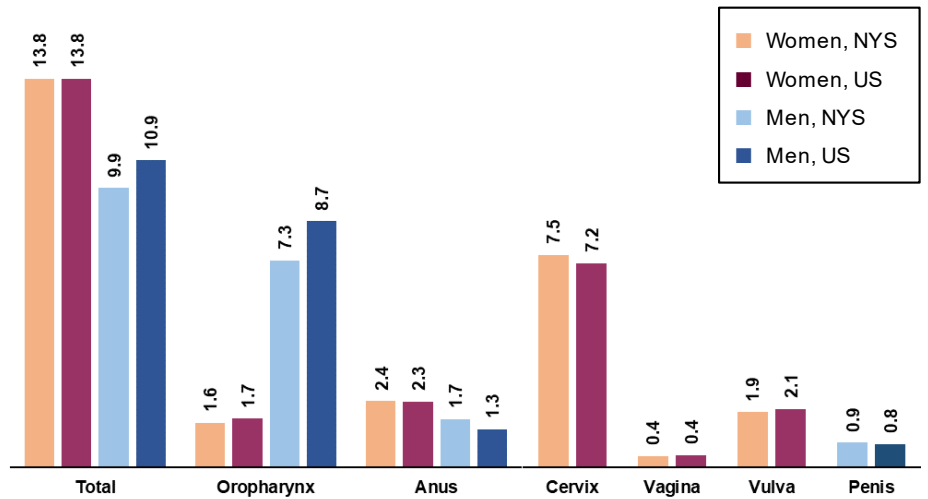
## Number of cancer cases

- An average of 2,730 New York State (NYS) residents were diagnosed with an HPV-related cancer each year between 2013 and 2017, with about 60% of cases in women and 40% in men.
- Cervical cancer was the most common HPV-related cancer among women, and oropharyngeal cancer was the most common among men.



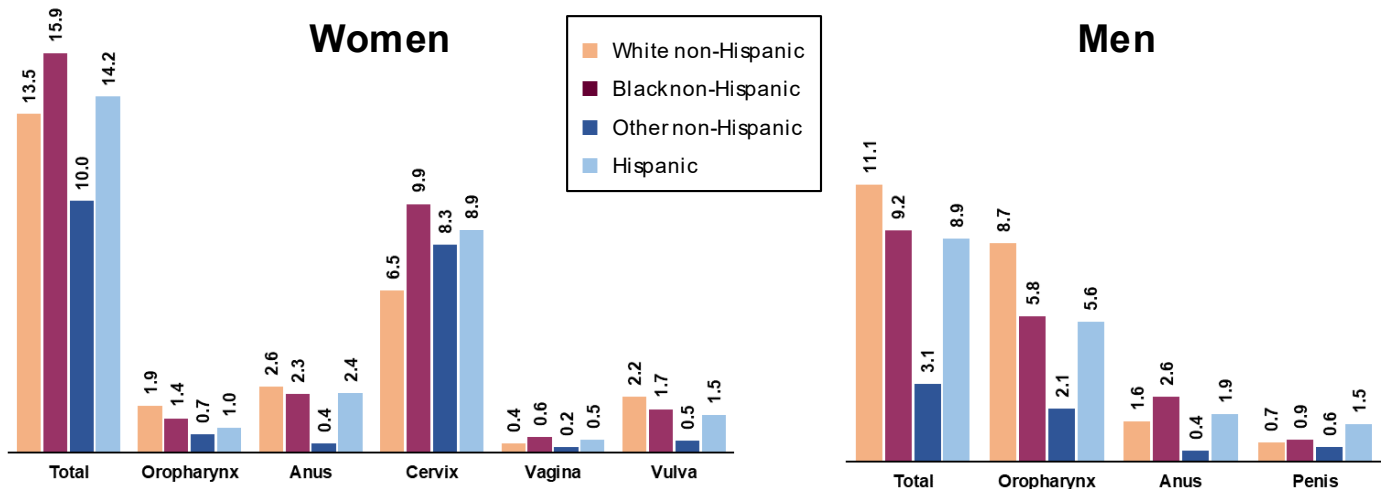
## Cancer incidence (per 100,000 persons) by sex<sup>†</sup>, New York State<sup>§</sup> vs. United States<sup>¶</sup>

- Among women, the rates of HPV-related cancers in NYS were similar to those for the US.
- Among men, rates of anal cancer were 27% higher in NYS than in the US and oropharyngeal cancer rates were 16% lower in NYS than in the US.
- Among men, for all HPV-related sites combined and for penile cancer, rates in NYS and the US were within 10%.



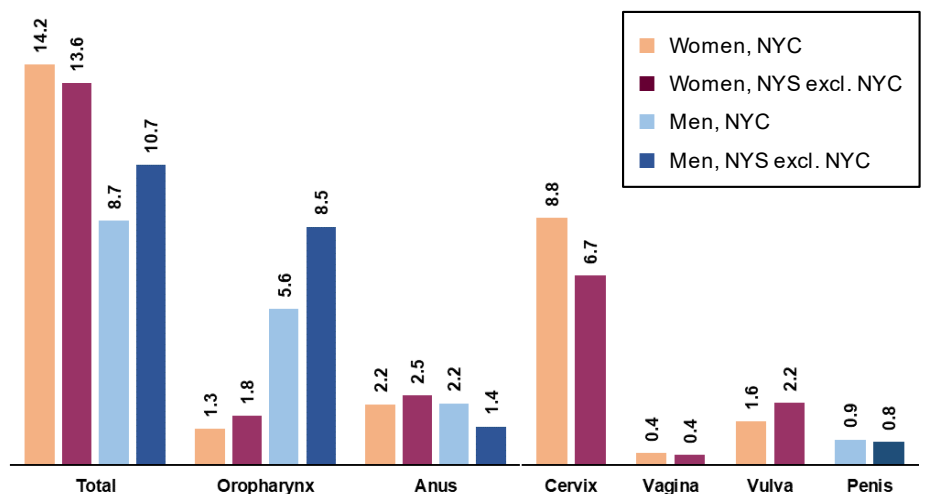
## Cancer incidence (per 100,000 persons) by sex and race/ethnicity<sup>†,§</sup>

- Among women in NYS, Black non-Hispanics had the highest rate of all HPV-related cancers combined, primarily because of their higher rates of cervical cancer.
- Among men, White non-Hispanics had the highest rate of oropharyngeal cancer and as a result had the highest incidence of all HPV-related cancers combined.
- For both sexes, incidence was lowest among non-Hispanic individuals of other race.



## Cancer incidence (per 100,000 persons) by sex and region<sup>†,§</sup>

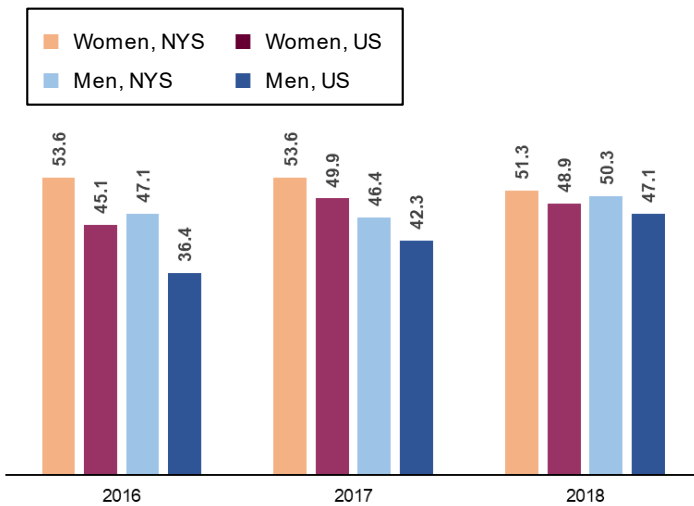
- For all HPV-related cancers combined, New York City (NYC) had lower incidence than NYS excluding NYC among men, but higher incidence among women.
- Compared to the rest of the state, NYC had statistically significantly higher rates of cervical and male anal cancer, but lower rates of vulvar, female anal, and oropharyngeal cancer in both men and women.



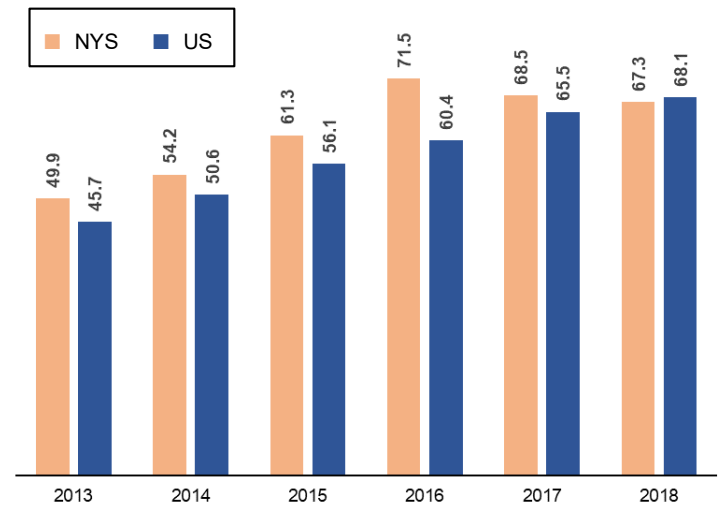


# HPV vaccination coverage, New York State vs. United States\*\*

Percentage of adolescents aged 13-15 who received 2-3 doses of HPV vaccine, by sex



Percentage of adolescents aged 13-17 who received ≥1 dose of HPV vaccine



## HPV vaccination outreach

The New York State Department of Health (Department) is engaged in a variety of outreach activities to improve HPV vaccine awareness and uptake across the state and reduce the burden of HPV-related cancers and diseases. The Department:

- Partners with other immunization and cancer prevention partners from across the state, including the American Cancer Society, in the New York State HPV Coalition (<http://www.nyshpv.org/>) to promote statewide collaboration to increase HPV vaccination rates and decrease HPV-related disease.
- Works with all local health departments to conduct Immunization Quality Improvement for Providers visits to improve HPV immunization practices and rates.
- Collaborated with the SUNY Albany School of Public Health to develop a live webcast and a webinar for healthcare providers to encourage them to recommend HPV vaccination, available at: <https://www.albany.edu/sph/cphce/vaccinateny.shtml>.
- Utilized a multi-media approach to educate the public about HPV vaccine to improve uptake and conducted focus groups to assess parent HPV vaccine knowledge, attitudes, beliefs and barriers to vaccination.

## Footnotes

- \* Trend analysis was conducted using the Joinpoint Regression Program, Version 4.6.0.0, April 2018; Statistical Research and Application Branch, National Cancer Institute. <https://surveillance.cancer.gov/joinpoint>
- † Rates are per 100,000 persons, age-adjusted to the 2000 U.S. standard population.
- § Source of data: New York State Cancer Registry. Data provisional, November 2019. <https://www.health.ny.gov/statistics/cancer/registry/>
- ¶ Data are from population-based registries that participate in the National Program of Cancer Registries (NPCR) and/or the Surveillance, Epidemiology, and End Results (SEER) program and meet high-quality data criteria. These registries cover approximately 99% of the U.S. population.
- \*\* Teen vaccination coverage data are collected through the National Immunization Survey-Teen (NIS-Teen). <https://www.cdc.gov/vaccines/imz-managers/nis/about.html>

## References

1. National Cancer Institute (NCI). 2020. HPV and Cancer. Accessed on April 4<sup>th</sup>, 2020. On line: <https://www.cancer.gov/about-cancer/causes-prevention/risk/infectious-agents/hpv-and-cancer>
2. Meites E, Kempe A, and Markowitz LE. Use of a 2-Dose Schedule for Human Papillomavirus Vaccination — Updated Recommendations of the Advisory Committee on Immunization Practices. *MMWR Morb Mortal Wkly Rep* 2016; 65(49): 1405–1408.
3. Viens LJ, Henley SJ, Watson M, *et al.* Human papillomavirus-associated cancers — United States, 2008–2012. *MMWR Morb Mortal Wkly Rep* 2016; 65(26): 661–666.