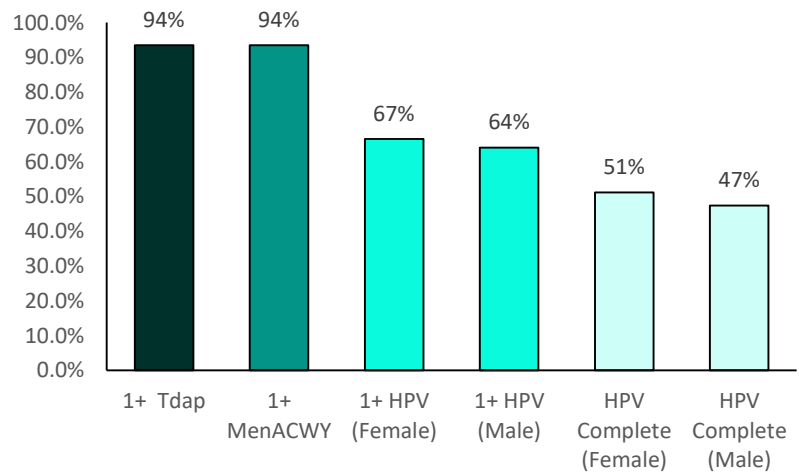


- Human papillomavirus (HPV) is a group of more than 200 related viruses and is the most common sexually transmitted disease. ¹
- HPV types are referred to as 'low-risk' (wart causing) or 'high-risk' (cancer causing). ¹
- Persistent infections with high-risk HPV types can lead to cell changes that, if left untreated, may progress to cancer. HPV is associated with cancer at the following sites: cervix, vagina, vulva, anus, penis, and oropharynx. ¹

HPV Vaccination

- The Centers for Disease Control and Prevention recommends HPV vaccination for both **girls and boys at age 11 or 12**; however people can be vaccinated from age 9 to age 26. ²
- A **two-dose vaccine** is the best way to protect men and women from the most common types of HPV. ²
 - Adolescents who start the vaccine after age 15 should have three doses. ²
- **The biggest predictor of HPV vaccination uptake is an effective recommendation from a health care provider.** ³
- Health providers should **recommend** the HPV vaccination in the **same way** and on the **same day** as the other recommended adolescent vaccines. ³
 - By the end of 2018, 94% of children 13 through 17 had received the recommended dose of MenACWY and Tdap.
 - In comparison, only 67% of girls and 64% of boys aged 13 through 17 had received the first dose of the HPV vaccine.
- **HPV vaccination completion rates have increased significantly** among females and males from 2013 (24% and 7%) to 2018 (51% and 47%). ⁴
 - Vaccination completion rates vary by county. Alcona has the highest completion rate for both females and males.

Vaccination Coverage among Adolescents Aged 13 through 17 in Michigan, 2018

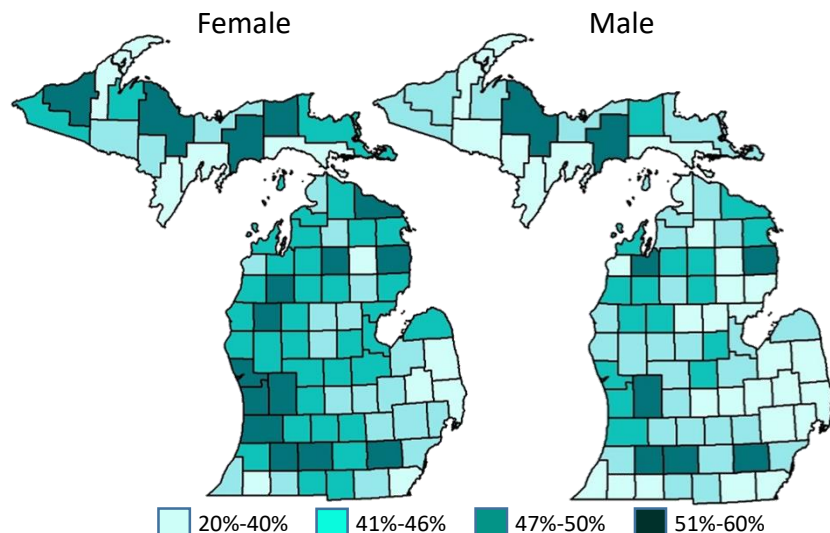


Tdap Vaccine: contains vaccination for tetanus, diphtheria, and pertussis

MenACWY: Meningococcal conjugate

Source: Prepared by the Michigan Department of Health and Human Services using data from the Michigan Care Improvement Registry

HPV Vaccination Completion Rate in Michigan by Gender, 2018

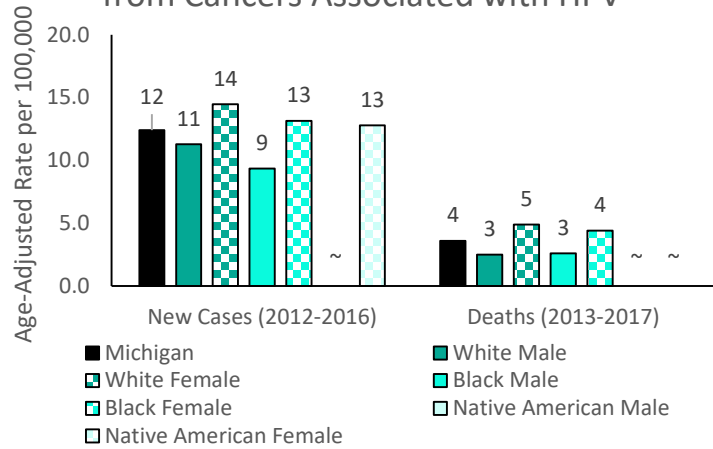


Source: Prepared by the Michigan Department of Health and Human Services using data from the Michigan Care Improvement Registry

HPV-Associated Cancers ⁵

- An estimated **1,500 cases** of cancer are attributed to HPV each year in Michigan. ⁶
 - In 2016 there were **14 new diagnoses** of HPV-related cancers per 100,000 **females** and **11 new diagnoses** per 100,000 **males**.
- Approximately **350 deaths** from cancers that are attributed to HPV occur each year in Michigan. ⁶
 - In 2017 there were **5 deaths** from HPV-related cancers per 100,000 **females** and **3 deaths** per 100,000 **males**.
 - **White females** had the **highest rate** for deaths from HPV-associated cancers compared to other groups (5 per 100,000 females).
- The 9-valent HPV vaccine protects against the seven high-risk HPV types that cause most HPV-related cancers. ¹
 - With this vaccine about 722 (**76%**) cancer cases attributable to HPV in females and 469 (**68%**) in males could be **prevented**. ⁵
- Cervical cancer is the most common HPV-associated cancer in women. ¹
 - 81% of cervical cancers can be prevented by the 9-valent vaccine. ⁵
- Oropharyngeal cancer is the most common HPV-associated cancer in men. ¹
 - 67% of oropharynx cancers can be prevented by the 9-valent vaccine. ⁵

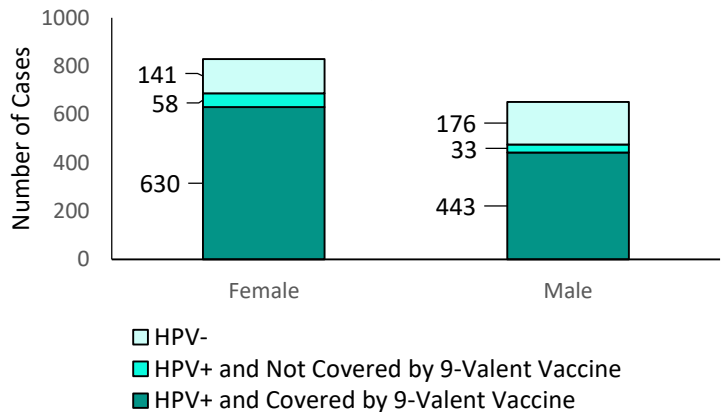
New Cases and Deaths in Michigan from Cancers Associated with HPV



~ Data suppressed due to less than 20 cases

Definition of HPV associated cancers based on Viens et al. MMWR 2016
Source: Michigan Cancer Surveillance Program (MCSP), Division of Vital Records and Health Statistics. Based on data released Apr 2019.

Number of HPV-Associated Cancer Cases in Michigan by Vaccination Coverage, 2016



Definition of HPV Associated cancers based on Viens et al. MMWR 2016
Source: Michigan Cancer Surveillance Program (MCSP), Division of Vital Records and Health Statistics. Based on data released Apr 2019.

Australia is Predicted to Eliminate Cervical Cancer! ⁷

Australia was one of the first countries to introduce the HPV vaccination; 80% of girls and 74% of boys are fully vaccinated against HPV. Australia has the lowest incidence rate for cervical cancer in the world (6.0 per 100,000) and the rates continue to decrease. A recent study estimates cervical cancer will be considered to be eliminated as a public health problem in Australia within the next 20 years if screening and vaccination rates remain constant.

References: 1) HPV and Cancer. National Cancer Institute. 2019. Accessed: <https://www.cancer.gov/about-cancer/causes-prevention/risk/infectious-agents/hpv-and-cancer> 2) HPV Vaccine Recommendations. Centers for Disease Control and Prevention. 2016. Accessed: <https://www.cdc.gov/vaccines/vpd/hpv/hcp/recommendations.html> 3) Steps for Increasing HPV Vaccination in Practice. American Cancer Society. 2018. Accessed: <https://www.cancer.org/content/dam/cancer-org/online-documents/en/pdf/flyers/steps-for-increasing-hpv-vaccination-in-practice.pdf> 4) Michigan Care Improvement Registry (MCIR). Division of Immunizations. Michigan Department of Health and Human Services. 5) Viens LJ, Henley SJ, Watson M, et al. Human Papillomavirus–Associated Cancers — United States, 2008–2012. MMWR Morb Mortal Wkly Rep 2016;65:661–666. DOI: <http://dx.doi.org/10.15585/mmwr.mm6526a1>. 6) Michigan Cancer Surveillance Program (MCSP), Division of Vital Records and Health Statistics. Based on data released April 2019. 7) Hall et al. The projected timeframe until cervical cancer elimination in Australia: a modelling study. The Lancet, Public Health. 2019.