

Shots in the Dark:

How Can Clinicians Bridge the
Immunization Gaps Widened by the
COVID-19 Pandemic?



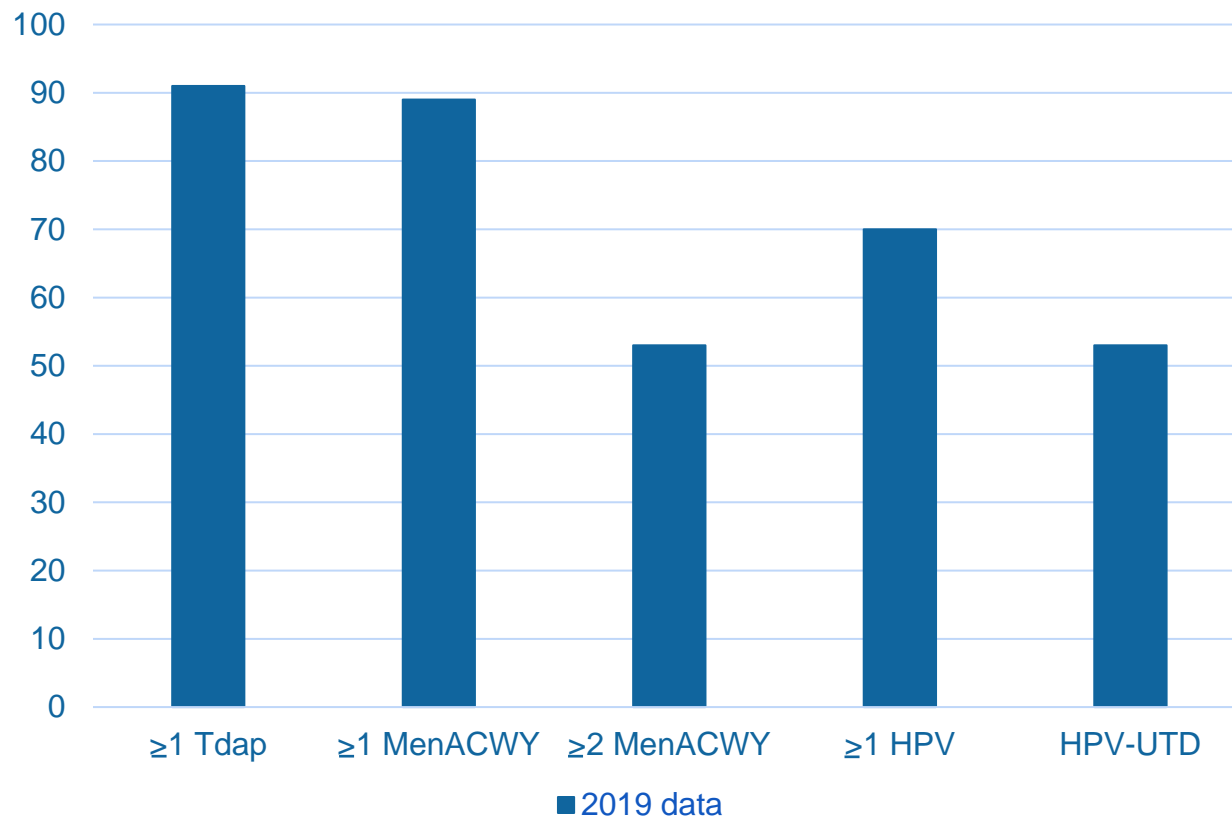
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Estimated Vaccination Coverage Among Adolescents 13-17 Years 2006-2019



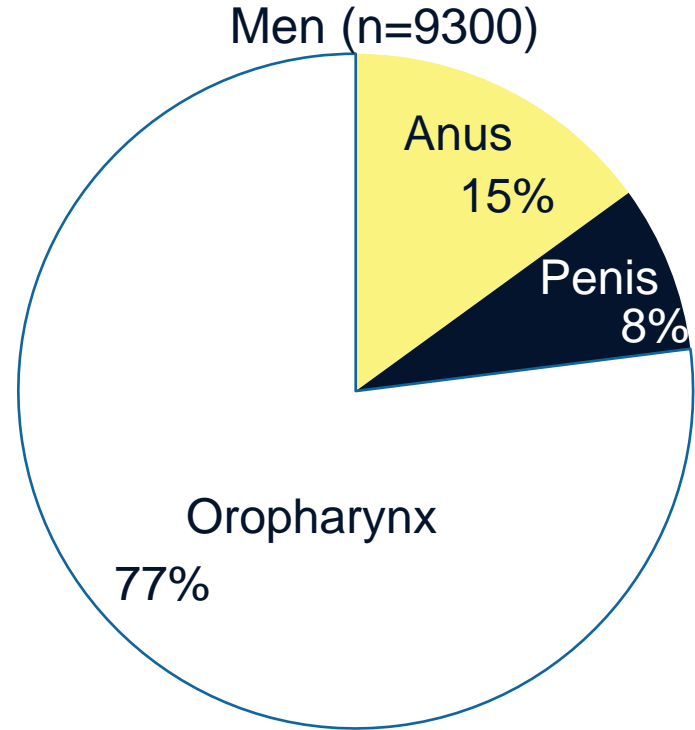
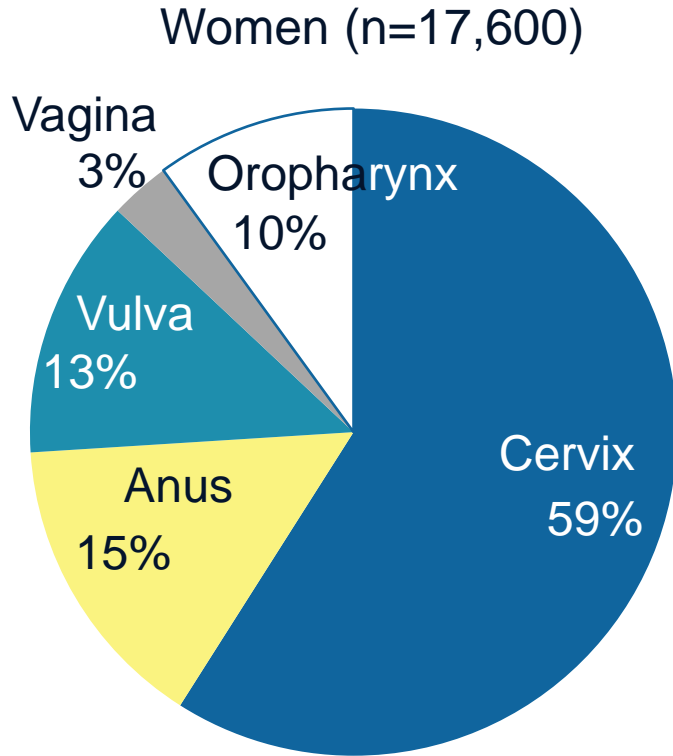
HPV = human papillomavirus; HPV-UTD = receiving at least 2 shots of HPV vaccine; MenACWY = meningococcal conjugate, serogroups A, C, W, and Y; Tdap = tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis





- Since the onset of the pandemic, HPV vaccine administration has dropped 21% from prepandemic levels

HPV-Attributable Cancers



HPV Vaccines and Recommendations



2006

Quadrivalent vaccine (4vHPV: 6, 11, 16, and 18) licensed for 3 doses in females 9-26 years

2009

Bivalent vaccine (2vHPV: 16 and 18) licensed for 3 doses in females

ACIP recommends that males 9-26 years may be vaccinated with 4vHPV

2011

ACIP recommends routine vaccination for boys 11-12 years and for those through 21 years not vaccinated previously

2014

9-valent HPV vaccine (9vHPV: 6, 11, 16, 18, 31, 33, 45, 52, and 58) licensed for 3-dose schedule in females and males

2016

ACIP recommends 2-dose schedule for persons 9-14 years

9vHPV only HPV vaccine marketed in US

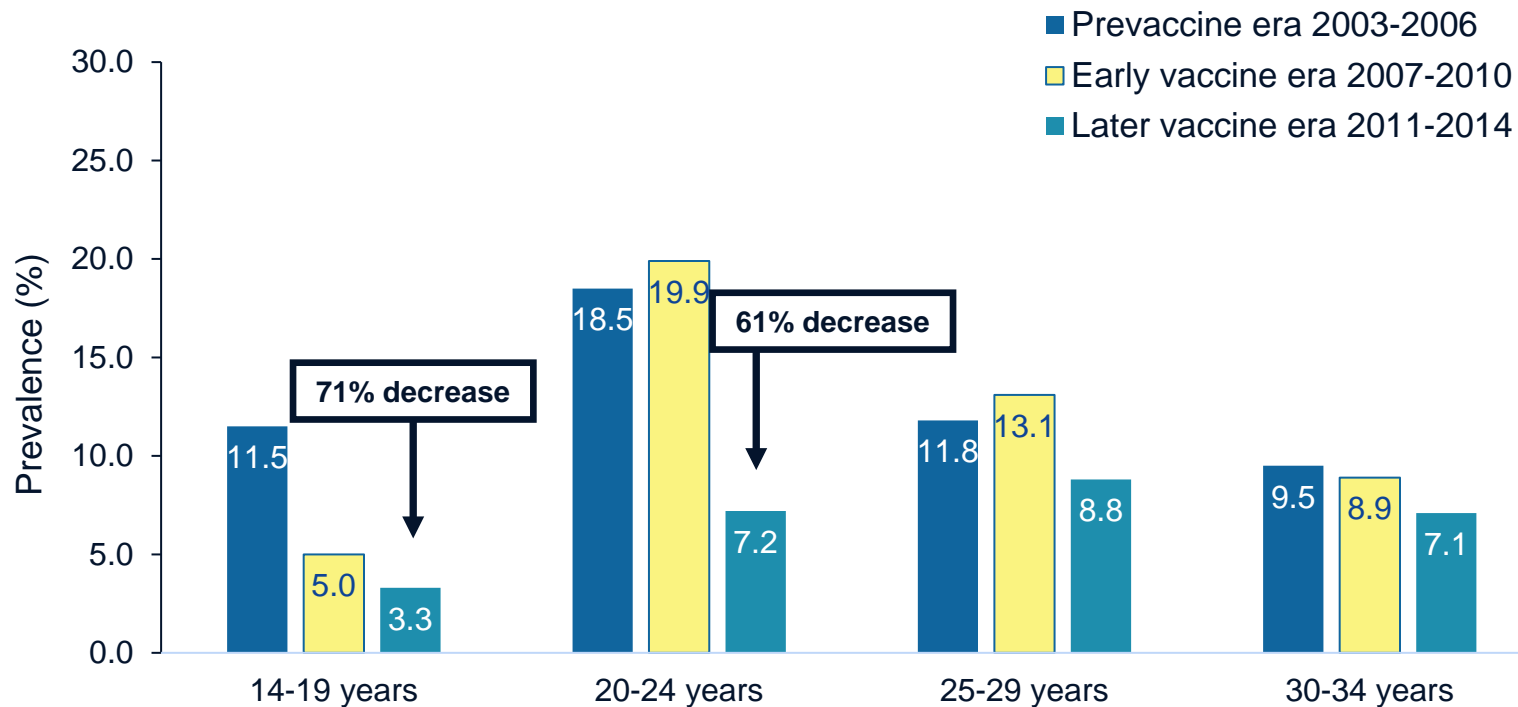
2019

9-valent HPV vaccine licensed for adults up to 45 years

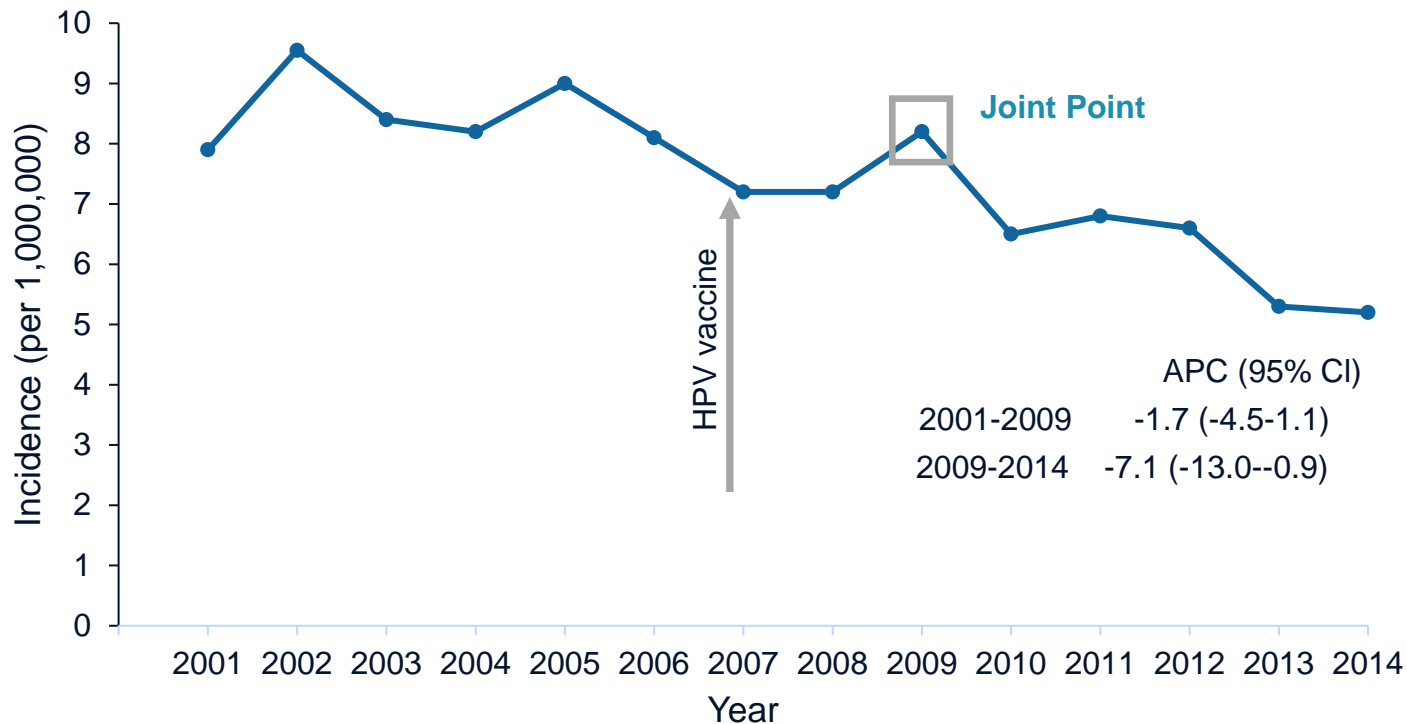


- HPV vaccines are cutting cases of cervical cancer by nearly 90%
- Patients who are vaccinated may also require fewer cervical smear tests
- 9 out of 10 cervical cancer deaths are in low- and middle-income countries where there is little access to cervical cancer screening
- Study estimated Cancer Research UK HPV program prevented 450 cancers and 17,200 precancers

Decreased HPV Prevalence After Vaccination



Decreased Incidence of Cervical Cancer After Vaccine Introduction



APC = annual percentage changes; CI = confidence interval

Adapted from Guo F et al. *Am J Prev Med.* 2018;55(2):197-204.



Routine Vaccination	11-12 Years; Can Be Started at 9 Years
Catch-up vaccination	13-26 years, if not adequately vaccinated
Shared clinical decision making	Some adults 27-45 years, if not adequately vaccinated



- 2 doses of HPV vaccine are recommended for most persons starting the series before their 15th birthday
 - 2nd dose of HPV vaccine should be given 6 to 12 months after 1st dose
 - Adolescents who receive 2 doses less than 5 months apart will require a 3rd dose of HPV vaccine
- 3 doses of HPV vaccine are recommended for teens and young adults who start the series at 15 through 26 years, and for immunocompromised persons
 - Recommended 3-dose schedule is 0, 1-2, and 6 months
 - 3 doses are recommended for immunocompromised persons (including those with HIV infection) 9 through 26 years



- HPV vaccine misconceptions
 - Safety
 - Promiscuity
 - Child too young
 - Perceived low risk for HPV infection
 - General mistrust of vaccines



- COVID-19 vaccines may be administered without regard to timing of other vaccines. This includes simultaneous administration of COVID-19 vaccine and other vaccines on the same day
- If multiple vaccines are administered at a single visit, administer each injection at a different injection site
- For people ≥ 11 years, the deltoid muscle can be used for more than 1 intramuscular injection administered at different sites in the muscle
- For children (5-10 years), if more than 2 vaccines are injected in a single limb, the vastus lateralis muscle of the anterolateral thigh is the preferred site because of greater muscle mass



- Presumptive language: words conveying assumption of vaccine delivery
- Announcements: brief statements that assume parents/patients are ready to vaccinate

Both of the above have been shown to improve vaccination rates

- Visits where a pediatrician used presumptive language had HPV vaccine acceptance 73% of the time vs 22% of the time when presumptive language was not used
- Brief 1-hour training in using announcements increased HPV vaccine initiation by 5 percentage points over control in 11- and 12-year-old adolescents