You are the Key to HPV Cancer Prevention

The HPV Vaccine is for All Adolescents and Young Adults

Melissa Wright, Health Systems Manager
American Cancer Society
Objectives

1. Summarize the burden of HPV infection and related disease
2. Review the HPV vaccine—including safety and efficacy
3. Identify ways can we talk to patients and families about HPV & the vaccine
4. Identify “best practices” for increasing vaccination rates
HPV Yoga

https://video214.com/play/xmNx6ytbO2VeoCqUgFt79w/s/dark

Created by Jen Nkonga, HPV VAC’s Team
Can be found on the HPV Roundtable Website
www.hpvroundtable.org
Understanding the Burden

HPV INFECTION & DISEASE
HPV Types Differ in Their Disease Associations

Mucosal sites of infection

- Cervical Cancer
- Anogenital Cancers
- Oropharyngeal Cancer
- Cancer Precursors
- Low-Grade Cervical Disease

Cutaneous sites of infection

- Genital Warts
- Laryngeal Papillomas
- Low-Grade Cervical Disease

- "Common" Hand and Foot Warts

~40 Types

High risk (oncogenic)
HPV 16, 18 most common

Low risk (non-oncogenic)
HPV 6, 11 most common

~80 Types
Most females and males will be infected with at least one type of mucosal HPV at some point in their lives

- Estimated 79 million Americans currently infected
- 14 million new infections/year in the US
- HPV infection is most common in people in their teens and early 20s

Most people will never know that they have been infected
Cancers Caused by HPV per Year, U.S., 2011–2015

<table>
<thead>
<tr>
<th>Cancer site</th>
<th>Percentage probably caused by any HPV type</th>
<th>Number probably caused by any HPV type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Cervix</td>
<td>91%</td>
<td>10,800</td>
</tr>
<tr>
<td>Vagina</td>
<td>75%</td>
<td>600</td>
</tr>
<tr>
<td>Vulva</td>
<td>69%</td>
<td>2,700</td>
</tr>
<tr>
<td>Penis</td>
<td>63%</td>
<td>0</td>
</tr>
<tr>
<td>Anus*</td>
<td>91%</td>
<td>4,000</td>
</tr>
<tr>
<td>Oropharynx</td>
<td>70%</td>
<td>2,200</td>
</tr>
<tr>
<td>TOTAL</td>
<td>20,300</td>
<td>13,400</td>
</tr>
</tbody>
</table>

*Includes anal and rectal squamous cell carcinomas

Number of HPV-associated and HPV-attributable cancer cases per year, United States, 2011-2015

<table>
<thead>
<tr>
<th>Estimated number of cancer cases attributable to HPV by sex, cancer type, and HPV type</th>
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</thead>
<tbody>
<tr>
<td><strong>Females</strong></td>
</tr>
<tr>
<td>Cervix</td>
</tr>
<tr>
<td>Caused by HPV types 16 and 18</td>
</tr>
<tr>
<td>7,900</td>
</tr>
<tr>
<td>Caused by HPV types 31/33/45/52/58</td>
</tr>
<tr>
<td>1,700</td>
</tr>
<tr>
<td>Caused by other HPV types</td>
</tr>
<tr>
<td>1,200</td>
</tr>
<tr>
<td>Vagina</td>
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<tr>
<td>500</td>
</tr>
<tr>
<td>100</td>
</tr>
<tr>
<td>Vulva</td>
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<tr>
<td>1,900</td>
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<tr>
<td>600</td>
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<tr>
<td>200</td>
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<td>Anus*</td>
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<td>3,400</td>
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<td>500</td>
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<td>300</td>
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<td><strong>Males</strong></td>
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<tr>
<td>Penis</td>
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<tr>
<td>600</td>
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<td>9,400</td>
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<tr>
<td>700</td>
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<td>600</td>
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</tbody>
</table>

*b Includes anal and rectal squamous cell carcinomas.

For each cancer type, we estimated HPV-attributable cancers by multiplying the number of cancer cases by the percentage attributable to HPV based on a genotyping study. We estimated that 33,700 cancers (79%) were attributable to HPV each year during 2011–2015. Of these, we estimated that 31,200 cancers could have been prevented by the 9-valent HPV vaccine, including 27,100 caused by HPV types 16 and 18, and 4,100 caused by HPV types 31/33/45/52/58. HPV-negative cancers are not shown in the graph; it is estimated that about 10% of cervical and anal cancers, 30% of oropharyngeal, vaginal, and vulva cancers and 40% of penile cancers are HPV-negative.

Sources: Data are from cancer registries participating in CDC's National Program of Cancer Registries and/or NCI's Surveillance, Epidemiology, and End Results program that met data quality criteria for 2011–2015, covering 100% of the U.S. population. The analysis and methods were based on: Viens et al. Human Papillomavirus-Associated Cancers—United States, 2008–2012. MMWR 2016;65(26):661-666. https://www.cdc.gov/cancer/hpv/pdf/USCS-DataBrief-No4-August2018-508.pdf
Figure 1. Numbers of U.S. Cancers Caused by HPV

HPV-Associated Cancer Rates by Sex, Race, and Ethnicity, United States, 2011–2015

https://www.cdc.gov/cancer/hpv/statistics
HPV-Associated Anal* Cancer Rates by Sex, Race, and Ethnicity, United States, 2011–2015

*Includes anal and rectal squamous cell carcinomas.

https://www.cdc.gov/cancer/hpv/statistics
HPV-Associated Oropharyngeal Cancer Rates by Sex, Race, and Ethnicity, United States, 2011–2015

https://www.cdc.gov/cancer/hpv/statistics
HPV-Associated Vaginal Cancer Rates by Race, and Ethnicity, United States, 2011–2015

- All Races Combined: 0.4
- White: 0.4
- Black: 0.6
- American Indian, Alaska Native Race: 0.3
- Asian/Pacific Islander: 0.2
- Non-Hispanic Ethnicity: 0.4
- Hispanic Ethnicity: 0.4

https://www.cdc.gov/cancer/hpv/statistics
HPV-Associated Vulvar Cancer Rates by Race, and Ethnicity, United States, 2011–2015

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Age-adjusted rate (cases per 100,000 persons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Races Combined</td>
<td>2.1</td>
</tr>
<tr>
<td>White</td>
<td>2.2</td>
</tr>
<tr>
<td>Black</td>
<td>1.5</td>
</tr>
<tr>
<td>American Indian</td>
<td>1.5</td>
</tr>
<tr>
<td>Alaska Native Race</td>
<td></td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>0.4</td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td>2.2</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1.2</td>
</tr>
</tbody>
</table>

https://www.cdc.gov/cancer/hpv/statistics
HPV-Associated Cervical Cancer Rates by Race, and Ethnicity, United States, 2011–2015

https://www.cdc.gov/cancer/hpv/statistics
Cervical Cancer

Cervical cancer is the most common HPV-associated cancer among women

- 528,000 new cases and 266,000 deaths worldwide in 2012
- In 2015 approx. 12,800 new cases and 4,000 deaths in the U.S.

Half of cervical cancers occur in women <50 years

- A quarter of cervical cancers occur in women 25-39 years

Cervical Pre-Cancer in U.S. Females

~300,000 high grade cervical lesions every year

Every year in the United States 33,700 people are diagnosed with a cancer caused by HPV
HPV vaccine is cancer prevention.

Talk to the doctor about vaccinating your 11–12 year old sons and daughters against HPV.

#UCanStopHPV

Evidence-Based HPV Disease Prevention

HPV VACCINE
HPV Prophylactic Vaccines

- Recombinant L1 capsid proteins that form “virus-like” particles (VLP)
- Non-infectious and non-oncogenic
- Produce higher levels of neutralizing antibody than natural infection
HPV Vaccine Comparison

<table>
<thead>
<tr>
<th>HPV Vaccine</th>
<th>HPV Types Included in Vaccine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bivalent</td>
<td>6, 11</td>
</tr>
<tr>
<td>Quadrivalent</td>
<td>6, 11, 16, 18</td>
</tr>
<tr>
<td>9-valent</td>
<td>6, 11, 16, 18, 31, 33, 45, 52, 58</td>
</tr>
</tbody>
</table>

- **Genital warts**: 63% of cancers in body parts where HPV DNA is often found
- **10% of cancers in body parts where HPV DNA is often found**

Adapted from Petrosky et al. MMWR. 2015.
HPV Vaccine Recommendation

CDC recommends routine vaccination at age 11 or 12 years to prevent HPV cancers

- The vaccination series can be started at age 9 years.
- 2 doses of vaccine are recommended.
- The second dose of the vaccine should be administered 6 to 12 months after the first dose.
HPV Vaccine Recommendations: Catch-Up/Late

- Vaccination for females through age 26 years and for males through age 21 years who were not previously adequately vaccinated. Males aged 22 through 26 years may be vaccinated.

- Vaccination is also recommended through age 26 for gay, bisexual, and other men who have sex with men (MSM), transgender people, and people with certain immunocompromising conditions (including HIV infection).

Meites et al. MMWR. 2016.
Dosing Schedules

Starting the vaccine series before the 15th birthday

Recommended schedule is 2 doses of HPV vaccine

- Second dose should be administered 6–12 months after the first dose (0, 6–12 month schedule)
- Minimum interval between dose 1 and dose 2 in a 2-dose schedule is 5 months

Starting the vaccine series on or after the 15th birthday*

Recommended schedule is 3 doses of HPV vaccine

- Second dose should be administered 1–2 months after the first dose, and the third dose should be administered 6 months after the first dose (0, 1–2, 6 month schedule)
- Minimum interval between dose one and dose three in a 3-dose schedule is 5 months

*And immunocompromised persons 9-26 years

Meites et al. MMWR. 2016.
HPV Vaccine Administration

- Administer HPV vaccines via intramuscular (IM) injection
  - Needle size: 1- to 1½- inch, 22- to 25-gauge
  - Site: Deltoid muscle in the upper arm

- Follow proper injection practices
  - Use aseptic technique
  - Use a new needle and syringe for each injection

- Administer at the same medical visit as other adolescent vaccines

CDC Vaccine Administration: https://www.cdc.gov/vaccines/hcp/admin/admin-protocols.html
HPV Vaccine Storage and Handling

- Store HPV vaccine in a refrigerator between 2°C - 8°C (36°F - 46°F)
- Store HPV vaccines:
  - In the original packaging with the lids closed
  - In a clearly labeled bin and/or area of the storage unit
- Do not freeze the vaccine

9vHPV (Gardasil 9)
Administer to females and males

Use for: 9 years through 26 years
Recommended ages: 11 years or 12 years
Catch-up ages: 13 years through 26 years
Route: Intramuscular (IM) injection

CDC Vaccine Storage and Handling at www.cdc.gov/vaccines/hcp/admin/storage/index.html
Vaccine storage labels at www.cdc.gov/vaccines/hcp/admin/storage/guide/vaccine-storage-labels.pdf
PREVENTING CANCER JUST GOT EASIER

HPV vaccine protects against cancers and other diseases caused by human papillomavirus (HPV). Follow the chart below to determine whether your patient needs two or three doses of HPV vaccine.

IS THE PATIENT AGE 11–12?

Yes

Has the patient received any doses of HPV vaccine?

No

See FAQs on reverse side for patients outside this age range.

Yes

More than one?

No

VACCINATE

VACCINATE

The patient should receive the second dose of HPV vaccine 6–12 months after the first dose to complete the series.

Yes

Two doses or three doses?

No

The patient should receive a third dose of HPV vaccine 6–12 months after the first dose to complete the series.

Yes

Administered at least 5 months apart?

The series is complete

No

VACCINATE

CDC recommends 11- to 12-year-olds receive two doses of HPV vaccine 6–12 months apart.

VACCINATE

The patient should receive the second dose of HPV vaccine 6–12 months after the first dose to complete the series.

TALKING TO PATIENTS AND THEIR PARENTS ABOUT 2-DOSE SCHEDULES FOR HPV VACCINATION

With patients aged 11–12 years, start the vaccine discussion with their parents by making the following recommendation: “Now that your child is 11 (or 12) years old, they are due for three vaccines today to help protect them from the infections that cause meningitis, HPV cancers, and pertussis—or whooping cough.”

Many parents are accepting of this bundled recommendation because it demonstrates that HPV vaccination is a normal part of adolescent vaccination. Parents may be interested in vaccinating, yet still have questions. Some parents might just need additional information from you, the clinician they trust. Clarify the parent’s question or what additional information they need.

For parents who have a question or need more information about “why now?” it's important to explain that: “As with all vaccine-preventable diseases, we want to protect your child early. If we start now, it’s one less thing for you to worry about. Also, your child will only need two doses of HPV vaccine at this age. If you wait, your child may need three doses in order to get complete protection. We’ll give the first dose today and then you’ll need to bring your child back in 6 to 12 months from now for the second dose.”

If a parent asks, or needs more information about “How long can we wait and still give just two doses?”

The two-dose schedule is recommended if the series is started before the 15th birthday. However, I don’t recommend waiting to give this vaccine if the child is even slightly younger. As children get older and have busier schedules, it becomes more difficult to get them back in. I’d feel best if we started the series today to get your child protected as soon as possible.

For patients aged 9-14 who have already had two doses given less than 5 months apart

The recommended schedule is two doses given 6 to 12 months apart. The minimum amount of time between these doses is 5 months. Because your child received two doses less than 5 months apart, we’ll need to give your child a third dose.

For parents asking about the duration of protection or how well the vaccine will work with just two doses

Studies have shown that two doses of HPV vaccine work very well in younger adolescents and we expect the same long-lasting protection with two doses that we expect with three doses. You can also access guidance on answering parents’ questions about HPV vaccine by using our tip sheet, Talking to Parents about HPV Vaccine, at www.cdc.gov/HPV.
HPV Vaccination Is Recommended at Age 11 or 12 Years

Girls & Boys can start HPV vaccination at age 9

Preteens should finish the HPV vaccine series before their 13\textsuperscript{th} birthday

Plus girls 13-26 years old who haven’t started or finished HPV vaccine series

Plus boys 13-21 years old who haven’t started or finished HPV vaccine series

Meites et al. MMWR. 2016.
Approved Expansion of HPV Vaccine to Age 45

• October 5th, 2018: FDA approved Gardasil 9 for men and women ages 27-45 years

• October 25th, 2018: ACIP presentations on evidence, cost-effectiveness, potential impact, and policy options

• February 27-28, 2019: ACIP presentations on additional evidence and economic analysis, potential vote
“In patients aged 27 to 45 years, their decision to be vaccinated should be individually based using shared decision making and clinical judgment based on those patients’ circumstances, preferences, and concerns. The vaccine is safe and is effective in preventing new infections with HPV in women aged 27-45 years.”
Not much cervical pre-cancer was prevented by vaccination in 27-45 year old women.
HPV VACCINE SAFETY
Over 10 Years of HPV Vaccine Safety Data

- Is the HPV vaccine safe? Yes!
- As of 2017, over 270 million doses distributed worldwide
- 100 million given in the U.S.
- Over 100 studies including 2.5 million people in 6 different countries have been completed
- No serious side effects reported
## United States Vaccine Safety System

<table>
<thead>
<tr>
<th>System</th>
<th>Collaborators</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaccine Adverse Event Reporting System (VAERS)</td>
<td>CDC and FDA</td>
<td>Frontline, spontaneous reporting system to detect potential vaccine safety issues</td>
</tr>
<tr>
<td>Vaccine Safety Datalink (VSD)</td>
<td>CDC and 8 integrated health care systems</td>
<td>Large-linked database system used for active surveillance and research ~9.4 million members (~3% of US pop)</td>
</tr>
<tr>
<td>Clinical Immunization Safety Assessment (CISA) Project</td>
<td>CDC and 7 academic centers</td>
<td>Expert collaboration that conducts individual clinical vaccine safety assessments and clinical research</td>
</tr>
<tr>
<td>Post-Licensure Rapid Immunization Safety Monitoring Program (PRISM)</td>
<td>FDA and 6 partner organizations</td>
<td>Large distributed database system used for active surveillance and research ~170 million individuals (~53 of US pop)</td>
</tr>
</tbody>
</table>
Over 10 Years of HPV Vaccine Safety Data

- HPV vaccines are safe
- Reactions after vaccination may include:
  - Injection site reactions: pain, redness, and/or swelling in the arm where the shot was given
  - Systemic: fever, headaches
- HPV vaccines should not be given to anyone who has had a previous allergic reaction to the HPV vaccine or who has an allergy to yeast
- Brief fainting spells (syncope) and related symptoms (such as jerking movements) can happen soon after any injection, including HPV vaccine
- Patients should be seated (or lying down) during vaccination and remain in that position for 15 minutes

Evaluating and Monitoring 9-Valent HPV Vaccine Safety in the United States

- Monitoring of VAERS reports
  - Clinical review of serious reports including deaths and other prespecified adverse events
  - Data mining to identify disproportional reporting
- Vaccine Safety Datalink
  - Near real-time monitoring of 10 prespecified outcomes
  - Evaluation of spontaneous abortion
- Sentinel System
  - Active surveillance and surveillance of serious, unexpected events
  - Evaluation of spontaneous abortion
- Manufacturer postmarketing commitments
  - Two 10-year studies to assess long-term safety
  - Observational study to further characterize the safety profile in 10,000 persons
  - Pregnancy registry
HPV Vaccination Is Safe

HPV vaccine safety studies have been very reassuring: HPV vaccine has a good safety profile.

CDC and FDA continue to monitor and evaluate the safety of HPV vaccines, along with all vaccines.

Clinicians can reassure parents who may have concerns that HPV vaccination is safe.

Monitoring Impact of HPV Vaccine Programs on HPV-Associated Outcomes

HPV VACCINE IMPACT
HPV Vaccine Impact Monitoring

- Post-licensure evaluations are important to evaluate real-world effectiveness of vaccines
- Population impact against early and mid outcomes has been reported in many countries, including:

  **HPV prevalence**
  - Australia, Norway, Denmark, Sweden, Switzerland, UK, U.S.

  **Genital warts**
  - Australia, Belgium, New Zealand, Denmark, Sweden, Germany, Quebec, U.S.

  **Cervical lesions**
  - Australia, British Columbia, Denmark, Scotland, Sweden, U.S.
HPV Vaccine Impact in the U.S.

Declines observed in:
- Vaccine type prevalence
- Genital warts
- Cervical pre-cancers
Vaccine Type Prevalence Among Females, NHANES

Early vaccine era compared to pre-vaccine era

- 56% decrease

Prevalence, %

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Pre-vaccine era</th>
<th>Early vaccine era</th>
</tr>
</thead>
<tbody>
<tr>
<td>14–19 years</td>
<td>11.5</td>
<td>5.0</td>
</tr>
<tr>
<td>20–24 years</td>
<td>18.5</td>
<td>19.9</td>
</tr>
<tr>
<td>25–29 years</td>
<td>11.8</td>
<td>13.1</td>
</tr>
<tr>
<td>30–34 years</td>
<td>9.5</td>
<td>8.9</td>
</tr>
</tbody>
</table>
Vaccine Type Prevalence Among Females, NHANES

Later vaccine era compared to pre-vaccine era

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<tr>
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<tbody>
<tr>
<td>14–19 years</td>
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</tr>
<tr>
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<td>7.2</td>
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</tbody>
</table>

61% decrease

71% decrease
Impact of HPV Vaccination in Australia

Proportion of Australian-born females and males diagnosed as having genital warts at first visit, by age group, 2004-11

Systematic Review and Meta-Analysis: Population-Level Impact of HPV Vaccination

- Review of 20 studies in 9 high-income countries
- In countries with >50% coverage, among 13-19 year-olds
  - HPV 16/18 prevalence decreased at least 68%
  - Anogenital warts decreased by ~61%
- Evidence of herd effects
- Some evidence of cross protection against other types

Drolet et al. Lancet Infect Dis. 2015
**HPV Vaccine**

**Duration of Protection**

- Studies suggest that vaccine protection is long-lasting
- No evidence of waning protection
  - Available evidence indicates protection for at least 10 years
  - Multiple studies are in progress to monitor

HPV Vaccination Is Safe, Effective, and Provides Lasting Protection

**HPV Vaccine Is SAFE**
- Benefits far outweigh any potential risks
- Safety studies findings for HPV vaccination are reassuring and similar to MenACWY and Tdap vaccine safety reviews

**HPV Vaccine WORKS**
- Population impact against early and mid outcomes has been reported in multiple countries

**HPV Vaccine Protection LASTS**
- Studies suggest that vaccine protection is long-lasting
- No evidence of waning protection
Talking About HPV Vaccine

FRAMING THE CONVERSATION
Adolescent Vaccination Coverage
United States, 2006-2017

FIGURE. Estimated coverage with selected vaccines and doses* among adolescents aged 13–17 years, by survey year and ACIP recommendations† — National Immunization Survey-Teen, United States, 2006–2017§

Abbreviations: ACIP = Advisory Committee on Immunization Practices; HPV = human papillomavirus; MenACWY = quadrivalent meningococcal conjugate vaccine; Tdap = tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine; UTD = up to date.

* ≥1 dose Tdap at or after age 10 years; ≥1 dose MenACWY or meningococcal-unknown type vaccine; ≥2 doses MenACWY or meningococcal-unknown type vaccine, calculated only among adolescents aged 17 years at time of interview. Does not include adolescents who received their first and only dose of MenACWY at or after 16 years of age; HPV vaccine, nine-valent (9vHPV), quadrivalent (4vHPV), or bivalent (2vHPV). The routine ACIP recommendation for HPV vaccination was made for females in 2006 and for males in 2011. Because HPV vaccination was not recommended for males until 2011, coverage for all adolescents was not measured before that year; HPV UTD includes those with ≥3 doses and those with 2 doses when the first HPV vaccine dose was initiated before age 15 years and at least 5 months minus 4 days elapsed between the first and second dose.

† ACIP revised the recommended HPV vaccination schedule in late 2016. The recommendation changed from a 3-dose to 2-dose series with appropriate spacing between receipt of the first and second dose for immunocompetent adolescents initiating the series before the 15th birthday. Three doses are still recommended for adolescents initiating the series between the ages of 15 and 26 years. Because of the change in recommendation, the graph includes estimates for ≥3 doses HPV from 2011 to 2015 and the HPV UTD estimate for 2016 and 2017. Because HPV vaccination was recommended for boys in 2011, coverage for all adolescents was not measured before that year.

§ NIS-Teen implemented a revised adequate provider data definition (APD) in 2014, and retrospectively applied the revised APD definition to 2013 data. Estimates using different APD definitions may not be directly comparable.
Impact of Eliminating Missed Opportunities by Age 13 Years in Girls Born in 2000

Percent Vaccinated

Stokley et al. MMWR. 2014.
Parents of unvaccinated girls – top reasons for not starting HPV vaccine series

- Not sexually active
- Not recommended
- Safety concern/side effects
- Not needed or necessary
- Lack of knowledge

Source: Stokley et al. MMWR. 2014.
Value Parents Place on the Vaccines

Adapted from Healy et al. *Vaccine*. 2014.
Clinician Estimations

Adapted from Healy et al. *Vaccine*. 2014.
Clinicians Underestimate the Value Parents Place on HPV Vaccine

Adapted from Healy et al. *Vaccine*. 2014.
“The perceived and real concerns of parents influence how clinicians recommend HPV vaccine.”
Give an Effective Recommendation to Receive HPV Vaccine at Age 11 or 12

- An effective recommendation from you is the main reason parents decide to vaccinate.

- Many moms in focus groups stated that they trust their child’s clinician and would get the vaccine for their child as long as they received a recommendation from the clinician.

What is an effective recommendation for HPV vaccination?
Same Way
Same Day
Make an Effective Recommendation

- **Same way: Effective recommendations group all of the adolescent vaccines**
  Recommend HPV vaccination the same way you recommend Tdap and meningococcal vaccines

- **Same day: Recommend HPV vaccine TODAY**
  Recommend HPV vaccination the same day you recommend Tdap and meningococcal vaccines

Your preteen needs three vaccines today to protect against meningitis, HPV cancers, and pertussis.

Preteen Vaccines

- Tdap
- MenACWY
- HPV
Now that Sophia is 11, she is due for three vaccines. These will help protect her from the infections that can cause meningitis, HPV cancers, and pertussis. We’ll give those shots today.
Now that Sophia is 11, she is due today for three important vaccines.

The first is to help prevent an infection that can cause meningitis, which is very rare, but potentially deadly. The second is to prevent a very common infection, HPV, that can cause several kinds of cancer. The third is the tetanus booster which also protects against pertussis, so she doesn’t get whooping cough.

We’ll give those shots at the end of the visit. Do you have any questions for me?
Some Parents Need Reassurance

- Many parents simply accept this bundled recommendation
- Some parents may be interested in vaccinating, yet still have questions. Interpret a question as they need additional reassurance from YOU, the clinician they trust with their child’s health care
- Ask parents about their main concern (be sure you are addressing their real concern)

Unpublished CDC data, 2013.
Why does my child need HPV vaccine?
HPV vaccination is important because it prevents cancer.

That’s why I’m recommending that your child start the HPV vaccine series today.
What cancers are caused by HPV infection?
Persistent HPV infection can cause cancer of the cervix, vagina, and vulva in females, cancer of the penis in males, and cancers of the anus and the throat in both.

We can help prevent infection with the HPV types that cause these cancers by starting the HPV vaccine series today.
Is my child really at risk for HPV?
HPV is a very common virus that infects both females and males.

We can help protect your child from the cancers and diseases caused by the virus by starting HPV vaccination today.
Why at 11 or 12 years old?
When should the bike helmet go on?

A. Before they get on their bike
B. When they are riding their bike in the street
C. When they see the car heading directly at them
D. After the car hits them
When do we put our seat belts on?

A. Before turning on car
B. When leaving driveway
C. After a near accident
As with all vaccine-preventable diseases, we want to protect your child early. If we start now, it’s one less thing for you to worry about.

Also, your child will only need 2 shots of HPV vaccine at this age. If you wait until 15, your child will need three shots.

We’ll give the first shot today and then you’ll bring your child back in 6 to 12 months for the second shot.
I’m just worried that my child will perceive this as a green light to have S-E-X.
Numerous research studies have shown that getting the HPV vaccine does NOT make kids more likely to be sexually active or start having sex at a younger age.

Starting the HPV vaccine series today will give your child the best possible protection for the future.
How long can we wait and still give just two doses?
The two-dose schedule is recommended if the series is started before the 15th birthday. However, I don’t recommend waiting to give this cancer-preventing vaccine. Older teens have busier schedules and it becomes more difficult to schedule an appointment. It’s best to start the series today so your child is protected as soon as possible.
I’m concerned about the safety of the vaccine—I read things online that say HPV vaccine isn’t safe. Do you really know if it’s safe?
It sounds like you want what’s best for your child and have concerns about the safety of HPV vaccine. Is that right?

We both want what’s best for your child. Can you tell more about your concerns?

I have researched HPV vaccine including safety. Can I share with you what I have learned?
I know there are stories in both the media and online about vaccines. However, I want you to know that HPV vaccine has been carefully studied for many years by medical and scientific experts. Based on all these studies, I believe HPV vaccine is very safe.
Vaccines, like any medication, can cause side effects. With HPV vaccination, this could include pain, swelling, and/or redness where the shot is given, or possibly a headache. No serious side effects have been associated with HPV vaccine.
Can HPV vaccine cause future fertility problems?
There is no evidence available to suggest that HPV vaccine will affect future fertility. However, women who develop cervical cancer could require treatment that would limit their ability to have children. Starting the HPV vaccine series today could prevent that from happening and protect your daughter’s ability to bear children.
How do you know if the vaccine works?
“Ongoing studies continue to show that HPV vaccination works very well. HPV infections, genital warts, and cervical precancers in young people have all decreased in the years since the vaccine has been available. Starting the vaccine series today will help ensure your child gets the best protection possible.”
Why do boys need to be vaccinated?
HPV infection can cause cancers of the penis, anus, and throat in men. HPV infection can also cause genital warts.

Getting HPV vaccine today for your son can help prevent the infection that can lead to these diseases.
We only want the vaccines needed for school.
School-entry requirements don’t always reflect the current recommendations to keep your child healthy.

HPV vaccine, along with other adolescent vaccines, will provide your child with the best protection.
Would you give HPV vaccine to your kids?
Yes, I have given HPV vaccine to my child. I believe strongly in the importance of this cancer-preventing vaccine. Also, the American Academy of Pediatrics, the American Academy of Family Physicians, NIH cancer centers, and CDC agree that HPV vaccination is very important for your child.
I heard there is a new HPV vaccine that works better. Should I be getting that for my child who already was vaccinated?
Currently there is no recommendation for additional vaccination for someone who has already completed an HPV vaccine series.

All HPV vaccines protect against the infections that cause most of the cancers.
When do we need to come back?
Since your child is younger than 15, she will need a second shot in 6 months to a year.

When you check out, please make sure to make an appointment for the second shot and put that appointment on your calendar before you leave today!
Since your child is already 15, she will need a second shot in 1-2 months. The third shot is due 6 months from today.

When you check out, please make sure to make an appointment for about 1-2 months from now and 6 months from now, and put those appointments on your calendar before you leave today!
My child is less than 15 years old, so why does she need a third shot?
The recommended schedule is 2 shots given 6 to 12 months apart. The minimum amount of time between those shots is five months. Because your child received two shots less than five months apart, we’ll need to give your child a third shot.
Will my child be protected with just two shots?
Yes! Studies have shown that just two shots given at least six months apart, when the first dose is given between 9 and 14 years, worked as well or better than three shots given to older adolescents and young adults.
If a Parent Doesn’t Say Yes Today...

<table>
<thead>
<tr>
<th><strong>Ask</strong></th>
<th><strong>Advise</strong></th>
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<tbody>
<tr>
<td>• Clarify and restate their concerns to make sure you understand</td>
<td>• Allow time to discuss the pros and cons of the vaccine</td>
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<td></td>
<td>• Be willing to discuss parents’ ideas</td>
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<td></td>
<td>• Offer written resources for parents</td>
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<tr>
<td></td>
<td>• Tailor your advice using this presentation</td>
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</table>

- Emphasize it is the parents’ decision
- Acknowledge risks and conflicting info sources
- Applaud them for wanting what is best for their child
- Be clear that you are concerned for the health of their child—not just public health safety
If a Parent Declines Today

- Declination is not final. The conversation can be revisited
- End the conversation with at least one action you both agree on
- Because waiting to vaccinate is the risky choice, many pediatricians ask the parent to sign a declination form
Ensure ALL Your Patients are Protected

- Align office/clinic policy with mission
  - Immunize at every opportunity
  - Implement and utilize standing orders
  - Prompt the clinician to assess and administer the vaccine
    - EMRs, IIS, etc.
  - Reminder and recall

Human Papillomavirus (HPV)

For Clinicians

**WHY IS HPV VACCINE IMPORTANT?**
HPV is so common that almost everyone will be infected with HPV at some point in their lives. Although most HPV infections are asymptomatic, some persistent infections can lead to cancer in both men and women. Hear stories of people who have been affected by HPV and clinicians who take care of them here.

**CLINICIANS FACTSHEETS AND GUIDANCE**
Discover CDC’s resources for clinicians that discuss the burden of HPV disease, HPV vaccine as a primary cancer prevention tool, effective communication with parents, state vaccination rates, and the most recent HPV vaccine recommendations.

**SCHEDULES AND RECOMMENDATIONS**
Get vaccination schedules to order or print, recommendations to consult, and other helpful tools to download.

**ANSWERING THE QUESTIONS PARENTS MAY HAVE**
Finding ways to answer parents’ HPV vaccination questions with straightforward messages based on CDC research with parents.
Keeping All Staff On the Same Page

- Align communication with mission
  - Give staff a cancer-prevention mission
  - All staff need to be saying the same thing
  - Share talking points
  - Use the Tip Sheet
  - Educate staff about HPV vaccine recommendations including schedule, administration, storage and handling

www.cdc.gov/hpv/hcp/for-hcp-tipsheet-hpv.pdf
Keeping All Staff On the Same Page

- Multiple education products available free through the CDC website:
  - Immunization courses (webcasts and online self-study)
  - Netconferences
  - You Call the Shots self-study modules
  - Continuing education available

CDC immunization education and training: www.cdc.gov/vaccines/ed/index.html
Ensure ALL Your Patients are Protected

Know your coverage rates

Clinic-level rates are great, but rates for individual clinicians are even better

Other than coverage assessment and feedback, rates can come from:
- Data from EHR
- Immunization Information Systems (IIS) inputs
Best Practice Resources & Tools

HPV Roundtable
http://hpvroundtable.org

Clinician & System Action Guides

- MD’s/NP’s/PA’s
- RN’s/MA’s
- Dental Professionals
- Office Admin Staff
- Private Practices
- Large Health Systems
Best Practice Resources & Tools

学术儿科协会（APA）

提高HPV免疫接种率在实践基础上的设置
虚拟工具包
http://www.academicpeds.org/nipa/index.cfm?page=quality-improvement

美国儿科学会（AAP）


CDC

质量改进项目针对免疫
https://www.cdc.gov/vaccines/ed/quality-improvement-proj.html
HPV VACCINE IS CANCER PREVENTION
And YOU are the key!
Thank You

#WeCanStopHPV


• Meites E, Kempe A, Markowitz LE. Use of a 2-Dose Schedule for Human Papillomavirus Vaccination — Updated Recommendations of the Advisory Committee on Immunization Practices. MMWR. 2016;65(49);1405-8.

• Petrosky et al. Use of 9-Valent Human Papillomavirus (HPV) Vaccine: Updated HPV Vaccination Recommendations of the Advisory Committee on Immunization Practices. MMWR. 2015 64(11);300-304


• Temte JL. Comment: Timing of HPV Vaccine. Available at http://pediatrics.aappublications.org/content/early/2014/08/12/peds.2014-0442.comments#-timing-of-hpv-vaccine-