HPV vaccine is cancer prevention.

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

#UCanStopHPV
Preventing Cancer through HPV Vaccination

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Acting Director, National Vaccine Program Office
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Learning Objectives

• Identify populations recommended to routinely receive HPV vaccine in the United States
• Describe current levels for HPV vaccine among teens in the United States
• Identify at least one action you can take to improve HPV vaccine coverage in your practice or work setting
Vaccine and Immunization Framework

- Disease burden
- Research
- Vaccine development
- Vaccine licensing
- Recommendations for use
- Program implementation
- Surveillance for coverage, safety, and disease
Vaccine Development

Pre-clinical → **Phase 1** → **Phase 2** → **Phase 3** → **Phase 4**

Pre-clinical

- **Safety** (N~20-80)

**Phase 1**

- **Safety**

**Phase 2**

- **Safety, Dose-finding, Efficacy** (N~100’s)
  - Powered for hypothesis-testing

**Phase 3**

- **Safety, Efficacy** (N~100-1,000’s)
- Approval

**Phase 4**

- **Safety, Effectiveness, Inspections, Lot release, Post-approval changes (supplements)**

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**IND, Pre-marketing**

**Post-marketing**

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**Safety**

**Effectiveness**

**Manufacturing Consistency**
What’s in a Label?

• Indications in product label reflects clinical data submitted to FDA
• Indications for prevention of cervical and other anogenital cancers were based on precancer endpoints
Advisory Committee on Immunization Practices

- Makes recommendations to CDC Director for use of vaccines for control of vaccine-preventable diseases in U.S. civilian population
- In making recommendations, ACIP considers:
  - FDA licensed indications and schedule
  - Disease epidemiology and burden of disease
  - Vaccine efficacy and effectiveness
  - Vaccine safety
  - Feasibility of implementation
  - Economic analyses
  - Recommendations of other groups (e.g., AAP)
Figure 1. Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger—United States, 2017.

(FOR THOSE WHO FALL BEHIND OR START LATE, SEE THE CATCH-UP SCHEDULE [FIGURE 2]).

These recommendations must be read with the footnotes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars in Figure 1. To determine minimum intervals between doses, see the catch-up schedule (Figure 2). School entry and adolescent vaccine age groups are shaded in gray.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Birth</th>
<th>1 mo</th>
<th>2 mos</th>
<th>4 mos</th>
<th>6 mos</th>
<th>9 mos</th>
<th>12 mos</th>
<th>15 mos</th>
<th>18 mos</th>
<th>19-23 mos</th>
<th>2-3 yrs</th>
<th>4-6 yrs</th>
<th>7-10 yrs</th>
<th>11-12 yrs</th>
<th>13-15 yrs</th>
<th>16 yrs</th>
<th>17-18 yrs</th>
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<tbody>
<tr>
<td>Hepatitis B (HepB)</td>
<td>1st dose</td>
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<td>2nd dose</td>
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<td>3rd dose</td>
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<td>Rotavirus (RV) (2-dose series); RV5 (1-dose series)</td>
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<td>2nd dose</td>
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<td>3rd dose</td>
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<td>Diphtheria, tetanus, &amp; acellular pertussis (DTaP)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>3rd dose</td>
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<td>Haemophilus influenzae type b (Hib)</td>
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<td>Pneumococcal conjugate (PCV13)</td>
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<td>Inactivated poliovirus (IPV &lt;18 yrs)</td>
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<td>Influenza (IIV)</td>
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<td>Annual vaccination (IIV) 1 or 2 doses</td>
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<tr>
<td>Measles, mumps, rubella (MMR)</td>
<td>See footnote 8</td>
<td>1st dose</td>
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<td>Meningococcal B</td>
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</table>

**NOTE:** The above recommendations must be read along with the footnotes of this schedule.
HPV Vaccine Comparison

HPV Types Included in Vaccine

<table>
<thead>
<tr>
<th>HPV Vaccine</th>
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<td>Bivalent</td>
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<td>9-valent</td>
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</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
- Two doses of vaccine are recommended
- The second dose of the vaccine should be administered 6 to 12 months after the first dose.

Meites et al. MMWR. 2016.
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.
Estimated Vaccination Coverage among Adolescents Aged 13-17 Years, NIS-Teen, United States, 2006-2016

* APD = Adequate provider data
†≥2 doses MenACWY among adolescents aged 17 years
Vaccination Coverage Estimates among Adolescents Aged 13-17 Years by Race/Ethnicity, NIS-Teen, United States, 2016

* Statistically different from White, Non-Hispanic adolescents (p<0.05).
Vaccination Coverage Estimates among Adolescents Aged 13-17 Years by MSA status, NIS-Teen, United States, 2016

MSA = Metropolitan statistical area

* Statistically different from adolescents living in MSA central cities (p<0.05).
Why Is HPV Vaccine Coverage So Low?

Parents
- Parents are not offered vaccination
- Parents perceive vaccine as optional or unnecessary at that time
- Parents perceive that their providers discouraged vaccination
- Parents want information about vaccine safety
- Parents do not understand the reason to vaccinate at 11 to 12 years of age

Providers
- Providers are reluctant to give multiple shots at one visit
- Providers introduce HPV vaccination at age 11 years but do not recommend it strongly
- Providers recommend vaccination based on their estimation of sexual activity
- Providers have limited experience with HPV and underestimate risk
- Providers perceive HPV as more emotionally charged than other vaccines
- Delaying vaccination leads to nonvaccination

Both providers and parents know they are often unaware of the timing of sexual debut.

Perkins RB et al. Pediatrics 2014;134:e666-e674
Physicians’ Perceptions of Adolescent Vaccine Endorsement for Patients Ages 11-12, 2014

Proportion endorsing highly (physicians) and physicians’ estimate of parents

- Tdap
- Meningococcal
- HPV

Gilkey MB et al, Preventive Medicine 2015;77:181-185
Parent opinions on the importance of vaccines and provider estimates of parental responses

Why don’t adolescents finish the HPV vaccine series?

Perkins RB et al. Human Vaccines and Immunotherapeutics, 2016
What can you do to improve HPV vaccine coverage?

• Make sure everyone in your office is on board with HPV vaccine as cancer prevention
• Recommend HPV vaccination for your patients who are vaccine eligible
• Be prepared to answer parents’ questions
• Share information on HPV vaccine in your office or clinic
• Be an advocate
  • Tell other healthcare providers why preventing HPV cancers is important to you
  • Find your local- or state-level HPV vaccine coalition and support it
What can you do to improve HPV vaccine coverage?

• Make sure everyone in your office is on board with HPV vaccine as cancer prevention
• **Recommend HPV vaccination for your patients who are vaccine eligible**
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• Share information on HPV vaccine in your office or clinic
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  • Tell other healthcare providers why preventing HPV cancers is important to you
  • Find your local- or state-level HPV vaccine coalition and support it
“We are seeing more HPV cancers now, so I am so glad that there’s a vaccine that will prevent almost all of them. Make sure that your child gets the HPV vaccine once they turn 11.”
What can you do to improve HPV vaccine coverage?

- Make sure everyone in your office is on board with HPV vaccine as cancer prevention
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Talking to Parents about HPV Vaccine

Why does my child need HPV vaccine?
HPV vaccine is important because it prevents infections that can cause cancer. It’s why we need to start the shot series today.

What do I do if my child is at risk for HPV?
Some HPV infections can cause cancer—like cancer of the cervix or in the back of the throat—but we can protect your child from these cancers in the future by getting the first shot today.

Is my child really at risk for HPV?
HPV is a very common infection in women and men that can cause cancer. Starting the vaccine series today will help protect your child from the cancers and diseases caused by HPV.

How do you know the vaccine works?
Studies show that getting HPV vaccine works extremely well, decreasing the number of infections and HPV cancers in young people since it has been available.

Why do they need HPV vaccine at such a young age?
Like all vaccines, we want to give HPV vaccine earlier rather than later. If you wait, your child may need three shots instead of two.

Can HPV vaccine cause infertility in my child?
There is no known link between HPV vaccination and the inability to have children in the future. However, women who develop an HPV precursor or cancer could require treatment that might limit their ability to have children.

I’m worried about the safety of HPV vaccine. Do you think it’s safe?
Yes, HPV vaccination is very safe. Like any medication, vaccines can cause side effects, including pain, swelling, or redness where the shot was given. That’s normal for HPV vaccine but should go away in a day or two. Sometimes kids feel after they get shots and they could be upset if they feel like listening. We protect your child by having them stay seated after the shot.

Would you get HPV vaccine for your kids?
Yes. I gave HPV vaccine to my children when I had it, and it’s important for preventing cancer.

What vaccines are actually required?
I strongly recommend each of these vaccines and to do experts at the CDC and major medical organizations. School entry requirements are developed for public health and safety, but don’t always reflect the most current medical recommendations for your child’s health.

https://www.cdc.gov/hpv/hcp/answering-questions.html
What can you do to improve HPV vaccine coverage?

- Make sure everyone in your office is on board with HPV vaccine as cancer prevention
- Recommend HPV vaccination for your patients who are vaccine eligible
- Be prepared to answer parents’ questions
- **Share information on HPV vaccine in your office or clinic**
- Be an advocate
  - Tell other healthcare providers why preventing HPV cancers is important to you
  - Find your local- or state-level HPV vaccine coalition and support it
HPV vaccination is recommended for preteen girls and boys at age 11 or 12 years.

All preteenneed HPV vaccination so they can be protected from HPV infections that cause cancer. Teens and young adults who didn’t start or finish the HPV vaccine series also need HPV vaccination. Young women can get HPV vaccine until they are 26 years old and young men can get HPV vaccine until they are 23 years old. Young men who have sex with other men or who have weakened immune systems can also get HPV vaccine until they are 21.

HPV vaccination is a series of shots given over several months. The best way to remember to get your child all of the doses they need is to make an appointment for the remaining doses before you leave the doctor’s office or clinic.

Is the HPV vaccine safe?

Yes, HPV vaccines have been studied very carefully and continue to be monitored by CDC and the Food and Drug Administration (FDA). No serious safety concerns have been linked to HPV vaccination. These studies continue to show that HPV vaccines are safe. The most common side effects reported after HPV vaccination are mild. They include pain and tenderness in the area of the arm where the shot was given, fever, tiredness, and nausea. Some people and teens may faint after getting a shot or any other medical procedure. Sitting or lying down for about 15 minutes after getting shots can help prevent these reactions that could happen if your child were to fall while fainting.
What can you do to improve HPV vaccine coverage?

- Make sure everyone in your office is on board with HPV vaccine as cancer prevention
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Interested in Joining a State Coalition or Roundtable?

- Contact coalition leads identified on the HPV Vaccination Initiatives map: http://bit.ly/HPVVaccineInitiativeMap
- Contact your state Immunization Manager: http://www.immunizationmanagers.org/?MemPage
- Reach out to local American Cancer Society Health Systems staff in your state: 1-800-227-2345
Protecting Your Patients from HPV-associated Cancer:

What Providers Need to Know about Oropharyngeal Cancer

https://www.mysocietysource.org/sites/RoundTable/HPV/SitePages/Home-New.aspx
Thank you