You are the Key to HPV Cancer Prevention

Understanding the Burden of HPV Disease, the Importance of the HPV Vaccine Recommendation, and Communicating about HPV Vaccination

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Disclosure

Please add any financial disclosures or conflicts of interest to this slide
Objectives

1. Define the importance of HPV vaccination for cancer prevention and the rationale for vaccinating at ages 11 or 12.
2. List the recommendations for HPV vaccine for girls and for boys.
3. Provide useful and compelling information about HPV vaccine to parents to aid in making the decision to vaccinate.
4. Locate resources relevant to current immunization practice.
Understanding the Burden

HPV INFECTION & DISEASE
HPV Infection

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

Every year in the United States 27,000 people are diagnosed with a cancer caused by HPV. That’s 1 case every 20 minutes.
# Cancers Caused by HPV, U.S.

<table>
<thead>
<tr>
<th>Cancer site</th>
<th>Average number of cancers per year probably caused by HPV†</th>
<th>Percentage per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Female</td>
<td>Both Sexes</td>
</tr>
<tr>
<td>Anus</td>
<td>1,400</td>
<td>2,600</td>
</tr>
<tr>
<td>Cervix</td>
<td>0</td>
<td>10,400</td>
</tr>
<tr>
<td>Oropharynx</td>
<td>7,200</td>
<td>1,800</td>
</tr>
<tr>
<td>Penis</td>
<td>700</td>
<td>0</td>
</tr>
<tr>
<td>Vagina</td>
<td>0</td>
<td>600</td>
</tr>
<tr>
<td>Vulva</td>
<td>0</td>
<td>2,200</td>
</tr>
<tr>
<td>TOTAL</td>
<td>9,300</td>
<td>17,600</td>
</tr>
</tbody>
</table>
New Cancers Caused by HPV per Year
United States 2006-2010

Women (n = 17,600)
- Cervix: n=10,400 (59%)
- Anus: n=2,600 (15%)
- Vulva: n=2,200 (13%)
- Vagina: n=600 (3%)
- Oropharynx: n=1,800 (10%)

Men (n = 9,300)
- Oropharynx: n=7,200 (77%)
- Penis: n=700 (8%)
- Anus: n=1,400 (15%)

CDC, United States Cancer Statistics (USCS), 2006-2010
Cervical Cancer

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

- 500,000+ new cases and 275,000 attributable deaths worldwide in 2008
- 11,000+ new cases and 4,000 attributable deaths in 2011 in the U.S.

37% cervical cancers occur in women who are between the ages of 20 and 44

- 13% (or nearly 1 in 8) between 20 and 34
- 24% (or nearly 1 in 4) between 35 and 44


<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Age-adjusted rate per 100,000 females</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>7.4</td>
</tr>
<tr>
<td>Black</td>
<td>9.9</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>6.5</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>7.1</td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td>7.4</td>
</tr>
<tr>
<td>Hispanic</td>
<td>11.3</td>
</tr>
</tbody>
</table>

Watson et al. MMWR 2012;61:258-261.
Without vaccination, annual burden of genital HPV-related disease in U.S. females:

- 4,000 cervical cancer deaths
- 10,846 new cases of cervical cancer
- 330,000 new cases of HSIL: CIN2/3 (high grade cervical dysplasia)
- 1 million new cases of genital warts
- 1.4 million new cases of LSIL: CIN1 (low grade cervical dysplasia)
- 3 million cases and $7 billion
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 Vaccines Currently Licensed in U.S.

<table>
<thead>
<tr>
<th></th>
<th>Bivalent 2vHPV (Cervarix)</th>
<th>Quadrivalent 4vHPV (Gardasil)</th>
<th>9-Valent 9vHPV (Gardasil 9)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manufacturer</strong></td>
<td>GlaxoSmithKline</td>
<td>Merck</td>
<td>Merck</td>
</tr>
<tr>
<td><strong>HPV Types Included</strong></td>
<td>16, 18</td>
<td>6, 11, 16, 18</td>
<td>6, 11, 16, 18, 31, 33, 45, 52, 58</td>
</tr>
<tr>
<td><strong>Contraindications</strong></td>
<td>Hypersensitivity to latex*</td>
<td>Hypersensitivity to yeast</td>
<td>Hypersensitivity to yeast</td>
</tr>
<tr>
<td><strong>Dose Schedule</strong></td>
<td>3 dose series: 0, 1, 6 months</td>
<td>3 dose series: 0, 2, 6 months</td>
<td>3 dose series: 0, 2, 6 months</td>
</tr>
</tbody>
</table>

* only contained in pre-filled syringes, not single-dose vials
HPV Vaccine Comparison

HPV Types Included in Vaccine

<table>
<thead>
<tr>
<th></th>
<th>6</th>
<th>11</th>
<th>16</th>
<th>18</th>
<th>31</th>
<th>33</th>
<th>45</th>
<th>52</th>
<th>58</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bivalent</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quadrivalent</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9-valent</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

These HPV Types Cause:

- Genital warts
- ~66% of Cervical Cancers
- ~15% of Cervical Cancers

HPV YOU ARE THE KEY TO CANCER PREVENTION
HPV Vaccine Recommendation

Girls & Boys can start HPV vaccination at age 9

Preteens should finish HPV vaccine series by 13th 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
HPV Vaccination is Routinely Recommended

HPV vaccination is recommended for both females and males ages 11-12 years.

- HPV vaccine series should be completed before the 13\textsuperscript{th} birthday.

Routine immunization for 11- and 12-year-olds includes HPV vaccination.

Clinicians should recommend HPV vaccine on the same day and in the same way as the other vaccines for preteens.

\textit{MMWR}, August 29, 2014, Vol 63, #RR05
ACIP Recommendations:
Timing of the Series

- 2vHPV, 4vHPV and 9vHPV are each administered in a 3-dose schedule
  - Interval between doses 1 → 2: ~6 weeks (1-2 months)
  - Interval between doses 1 → 3: 6 months

- If the vaccine schedule is interrupted, the series does not need to be restarted

MMWR 2015;64:300-4
NEW: Two-Dose Recommendations

October 19, 2016: Only two doses needed!

- Vaccines must be given at least 6 months apart
- Shown to provide safe, effective, and long-lasting protection when given between ages 9 - 14 years
- If two doses were received less than 5 months apart, third dose required
- If series was started before the teen turned 15 years, only one more dose needed
- Three doses still recommended for people with weakened immune systems
HPV Vaccination Is Safe, Effective, and Provides Lasting Protection

- **HPV Vaccine is SAFE**
  - Benefits of HPV vaccination far outweigh any potential risks
  - Safety studies findings for HPV vaccination similar to safety reviews of MCV4 and Tdap vaccination

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

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

HPV VACCINE SAFETY

Vaccine efficacy: Ability of a vaccine to work as intended to protect from illness.

Vaccine-associated risk: Probability increased adverse event that harm the individuals or population.
VAERS: HPV Vaccine Safety Monitoring

Ongoing safety monitoring has shown most reports are non-serious.

Among the 7.6% of reports coded as “serious,” most frequently cited possible side effects are headache, nausea, vomiting, and fever.

Syncope (fainting) continues to be reported following vaccination among adolescents.

Adherence to a 15-minute observation period after vaccination is encouraged.
9vHPV Vaccine Safety

- Seven pre-licensure studies including 15,000 males and females
- Generally well tolerated
  - Adverse event profile similar to that of 4vHPV across age, gender, race, and ethnicity
  - More injection-site reactions expected among those who receive 9vHPV
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 have been reported:

**Genital warts**
- Australia, New Zealand, Denmark, Sweden, Germany, Quebec, US

**HPV prevalence**
- Australia, Norway, Denmark, Sweden, UK, US

**Cervical lesions**
- Australia, British Columbia, Denmark, Sweden, US
Studies suggest that vaccine protection is long-lasting; no evidence of waning immunity

- Available evidence indicates protection for at least 8-10 years
- Multiple cohort studies are in progress to monitor the duration of immunity
HPV Vaccine Three-Dose Coverage

Among Girls in High-Income Countries

- Australia: 71.2%
- United Kingdom: 60.4%
- United States: 33.4%

United States

HPV VACCINE COVERAGE
Adolescent Vaccination Coverage
United States, 2006-2013

MMWR 2014; 63(29);625-633.
Impact of Eliminating Missed Opportunities by Age 13 Years in Girls Born in 2000

Missed opportunity: Healthcare encounter when some, but not all ACIP-recommended vaccines are given. HPV-1: Receipt of at least one dose of HPV. MMWR. 63(29);620-624.
Talking about HPV vaccine

FRAMING THE CONVERSATION
Clinicians Underestimate the Value Parents Place on HPV Vaccine

Make an Effective Recommendation

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

**Same day:** Recommend HPV vaccine *today*
Recommend HPV vaccination the *same day* you recommend Tdap & meningococcal vaccines.

Unpublished CDC data, 2013.
Give a Strong Recommendation to Receive HPV Vaccine at Ages 11 or 12

A strong recommendation from you is the main reason parents decide to vaccinate

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

MMWR 2014; 63(29);625-633;
Unpublished CDC data, 2013.
Some Parents Need Reassurance

- Many parents simply accept of 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.
CASE Method

- A new model for talking to parents
- A mnemonic to organize a rapid, useful response

Created by Alison Singer, MD

- President, Autism Science Foundation

- As taught by Dr. Robert Jacobson, MD

http://www.mnaap.org/pdf/Making_the_CASE_for_Vaccines_MNAAP.pdf
CASE Method

Corroborate:
- Acknowledge the parents’ concern and find some point on which you can agree; set the tone for a respectful, successful talk

About Me:
- Describe what you have done to build your knowledge base and expertise

Science:
- Relate what the science says

Explain/Advise:
- Explain your advice to patient, based on the science
Corroborate

- Acknowledge parent’s concern and find some point of agreement
- Set the tone for a respectful and successful talk
- “What is your main concern?”
  - Do not permit a vague refusal
  - Make the parent get specific
- Then
  - “That’s valid.”
  - “When I heard that, I sought out answers myself.”
  - “We both want your child to be free of illness and disease.”
  - “We both want to avoid unnecessary medications and side effects.”
About Me

Describe what you have done to build your knowledge base and expertise

“I’m committed to your child’s health, and I’ve dedicated my career to that work.”

“I’ve been studying medicine and pediatrics now for $X$ years.”

“One of the areas I read a great deal about is infections, immunity, and vaccines.”

Vaccinations represent a major part of my professional effort as your child’s pediatrician.”
Science

Relate what the science says

“Vaccines are better tested than any other medicine I prescribe or test I order.”

“Every vaccine is safer than any medicine I can prescribe.”

“Vaccines are not fool-proof, but they are the most effective means to prevent certain injuries and illnesses.”
Explain/Advise

Explain your advice to the patient, based on the science
“That’s why I am recommending the vaccine.”
“If this were my child, I would be vaccinating her today.”
“I got this vaccine.”
“I made sure my children got this vaccine.”
“That’s why, if I were you, I would be getting these vaccines for my child.”
Let’s try some examples!
“The vaccine is too new.”
“Doesn’t the HPV vaccine cause…. ?”
“It causes infertility.”
“My child doesn’t need that vaccine.”
“It’s too early. I want to wait.”
HPV PORTAL FOR PROVIDERS

cdc.gov/vaccines/YouAreTheKey
Continuing Education

Communicating Safety and Efficacy of HPV Vaccine to Parents and Preadolescents

Framing the Conversation With Parents About the HPV Vaccine

CME INFORMATION
This activity is intended for physicians, family medicine physicians, and nurses.

The goal of this activity is to educate clinicians on the importance of the human papillomavirus (HPV) vaccine for children approaching adolescence and to provide strategies to educate parents about the importance of the vaccine for their child's well-being.

Upon completion of this activity, participants will be able to:
1. Describe the burden of HPV-related disease in the United States
2. Interpret the Advisory Committee on Immunization Practices recommendations for HPV vaccination
3. Identify successful strategies for improving HPV vaccination rates

Faculty and Disclosures

HPV in Our Midst: Understanding the Problem and Having the Conversation

You are the Key to HPV Cancer Prevention
Factsheets for Parents in English & Spanish

HPV Vaccine for Preteens and Teens

Why does my child need HPV vaccine?

This vaccine is for protection from most of the cancers caused by human papilloma virus (HPV) infection. HPV is a very common virus that spreads between people when they have casual contact with another person. About 14 million people contract it each year, including men, women, and girls aged 15 or older. HPV can also cause anal cancer, throat cancer, and genital warts in both men and women.

When should my child be vaccinated?
The HPV vaccine is recommended for girls and boys at age 11 or 12 years so that they are protected before they become sexually active. If your teen hasn’t gotten the vaccine yet, talk to their doctor about getting it from now on as soon as possible.

The HPV vaccine given in 1 shot. The second shot is given 1 to 2 months after the first shot. Then a third shot is given 6 months after the first shot. Be sure that your child gets all 3 shots for full protection.

What else should I know about HPV vaccine?

There are two HPV vaccines. Girls and young women should get either the HPV vaccine to prevent cervical cancer. One of the HPV vaccines also protects against genital warts and anal cancer in both males and females. Boys should get this HPV vaccine to prevent anal cancer and genital warts. Girls can get this vaccine to prevent cervical cancer, throat cancer, and genital warts.

Both HPV vaccines have been studied very carefully. These studies showed no serious side effects. Common, mild adverse events such as fever, headache, nausea, vomiting, and injection site tenderness usually occur within 2 days. Some parents and their children may report more serious side effects such as swelling, pain, redness, and bruising that last for several days. Other side effects include rash, hives, and severe irritation. It is very rare that a person will have an allergic reaction to the HPV vaccine. If you think your child has an allergic reaction to the HPV vaccine, call your health care provider.

13 Vaccunas recomendadas para los niños de los 7 años hasta los 18 años de edad

11-12 años

13-18 años

2013 Recommended Immunizations for Children from 7 Through 18 Years Old

7-10 YEARS

11-12 YEARS

13-18 YEARS

HPV vaccination is recommended for girls and boys at age 11 or 12 years. HPV vaccine is also recommended for girls aged 13 through 26 years and boys aged 13 through 19 years, who have not yet been vaccinated. If your son or daughter hasn’t started or finished the HPV vaccine series, it’s not too late to talk to their doctor about getting it.

Two vaccines—Gardasil and Cervarix—are recommended for girls at age 11 or 12 years to protect against the 4 HPV types that cause most cervical cancer. Gardasil also protects against 2 HPV types that cause most genital warts. Both vaccines are given in 3 doses at the children’s regular well-child visits at 6, 12, and 18 months.

For more information, call toll-free 1-800-CDC-INFO (1-800-232-4636) or visit http://www.cdc.gov/vaccines.htm

 american Academy of Pediatrics

You Are the Key to Cancer Prevention
Free posters available for ordering in the following sizes: 8.5x11, 11x17, 18x24
Want to know when we have new resources and tools?
Send us an email to request our newsletter:
PreteenVaccines@cdc.gov

We can help provide speakers for grand rounds and continuing education events, as well.
HPV VACCINE IS CANCER PREVENTION
And YOU are the key!

#WeCanStopHPV