HUMAN PAPILLOMA VIRUS VACCINE IS CANCER PREVENTION

Adapted by: Mary Porter, RN, BSN
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Immunization Outreach, Broward
DOH Broward has obtained a grant from the National Association of County and City Health Officials (NACCHO) to work with community partners to increase Human Papillomavirus vaccination rates in Broward County.
Objectives

- Describe the cancer risks that have been linked to HPV infection.
- Define the benefits of HPV vaccination for cancer prevention and the rationale for vaccination.
- Provide information on current CDC vaccination recommendations.
- Provide tips on overcoming barriers to vaccination.
Human Papillomavirus (HPV)

BACKGROUND
What is HPV?

- The most common sexually transmitted infection (STI) in the U.S.
- Transmitted person to person by close contact
- Most people infected with HPV are asymptomatic or may not develop symptoms until years after infection (This Makes the virus easier to spread)
HPV Prevalence & Incidence

Most sexually-active females and males will be infected with at least one type of HPV at some point in their lives

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

Source: CDC (2014)
HPV-Related Health Problems

- 40 different types
- Most go away on their own and do not cause health problems
- Cases that do not go away can cause serious health problems such as *genital warts* or *cancer:*
  * Cervical
  * Oropharyngeal
  * Anal
  * Vulvar
  * Vaginal
  * Penile

Source: CDC (2014)
Numbers of Cancers & Genital Warts Attributed to HPV Infections in the U.S.

Source: CDC (2014)
Every year in the United States 27,000 people are diagnosed with a cancer caused by HPV.

That’s 1 case every 20 minutes.
HPV-Associated Cervical Cancer Rates by State, 2006-2010

Source: CDC (2012)
HPV-Associated Anal Cancer Rates by State, 2006-2010

Source: CDC (2012)
HPV-Associated Oropharyngeal Cancer Rates by State, 2006-2010

Rate per 100,000: 0.57-0.94  0.95-1.12  1.13-2.79  Data not shown

Source: CDC (2012)
Human Papillomavirus (HPV) PREVENTION
Prevention Strategies

**Vaccination**
- Safe and effective vaccines are available and recommended for certain age groups

**Screening**
- Routine screening recommended for women ages 21-65 to detect cervical cancer

**Safer Sex**
- If you are sexually active:
  - condoms
  - mutually monogamous relationship

Source: CDC (2014)
Vaccination

3 Dose Series

- Inactivated viral / IM injection
- Prevents infection from HPV types that cause the majority of HPV-related cancers
- Prevents infection from HPV types that cause the majority of genital warts cases

Source: CDC (2015)
## Vaccination

<table>
<thead>
<tr>
<th>Trade Name</th>
<th>Abbrev</th>
<th>HPV Types Protected Against</th>
<th>Which Cause</th>
<th>Licensed For</th>
<th>Dose Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gardasil®</strong></td>
<td>HPV 4</td>
<td>6, 11, 16, &amp; 18</td>
<td>Most HPV-related cancers and genital warts</td>
<td>Males &amp; Females: 9-26 years</td>
<td>3 dose series: 0, 2, 6 months</td>
</tr>
<tr>
<td></td>
<td>HPV 9</td>
<td>6, 11, 16, 18, 31, 33, 45, 52, &amp; 58</td>
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<tr>
<td><strong>Cervarix®</strong></td>
<td>HPV 2</td>
<td>16 &amp; 18</td>
<td>Most HPV-related cervical, anal, &amp; throat cancer</td>
<td>Females: 10-25 years</td>
<td>3 dose series: 0, 1, 6 months</td>
</tr>
</tbody>
</table>

HPV Vaccine Comparison

HPV Types Included in Vaccine

<table>
<thead>
<tr>
<th>HPV Vaccine</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>
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<tr>
<td>Bivalent</td>
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<td>Quadrivalent</td>
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<td>9-valent</td>
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</table>

These HPV Types Cause:

- Genital warts: ~66% of Cervical Cancers
- ~15% of Cervical Cancers
HPV vaccine is most effective when administered before exposure to the virus

Age recommendations based on:
- Research on safety and efficacy
- Average age of sexual debut in the U.S.
- Cost-effectiveness evaluations

Source: Petrosky et al. (2015)
Safety & Efficacy

- No serious safety concerns
- Continuously monitored for adverse events
- Extremely effective
- Long-lasting

Source: CDC, 2015
The Journey of Your Child's Vaccine

How a Vaccine's Safety Continues to Be Monitored

FDA and CDC closely monitor vaccine safety after the public begins using the vaccine.

The purpose of monitoring is to watch for adverse events (possible side effects).

Monitoring a vaccine after it is licensed helps ensure that possible risks associated with the vaccine are identified.

Vaccine Adverse Event Reporting System

VAERS collects and analyzes reports of adverse events that happen after vaccination.

Anyone can submit a report, including parents, patients and healthcare professionals.

Vaccine Safety Datalink

Network of healthcare organizations across the U.S.

Healthcare information available for a population of over 9 million people.

Scientists use VSD to conduct studies to evaluate the safety of vaccines and determine if possible side effects are actually associated with vaccination.

Vaccine recommendations may change if safety monitoring shows that the vaccine risks outweigh the benefits (like if scientists detect a new serious side effect).
Vaccination Trends in the U.S.

Source: Stokley et al. (2014)

Note: The Healthy People 2020 Goal is for boys and girls age 13-15 years
Vaccination Trends in the U.S. & FL

HPV Vaccination Among Adolescents Aged 13-17 Years in 2014

Source: Stokley et al. (2014)
HPV Vaccine Three-Dose Coverage

Among Girls in High-Income Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>71.2%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>60.4%</td>
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<tr>
<td>United States</td>
<td>33.4%</td>
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</tbody>
</table>
## Local Vaccination Trends

<table>
<thead>
<tr>
<th>DOH-BROWARD</th>
<th>Age Group</th>
<th>Totals</th>
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<tbody>
<tr>
<td></td>
<td>10-15 years</td>
<td>16-18 years</td>
</tr>
<tr>
<td>Total patients who received 1 dose of HPV</td>
<td>455</td>
<td>374</td>
</tr>
<tr>
<td>Total patients receiving ≥ 3 dose</td>
<td>146</td>
<td>146</td>
</tr>
<tr>
<td>Percentage of patients receiving ≥ 3 dose</td>
<td>32%</td>
<td>39%</td>
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Source: Florida SHOTS (2014)
Human Papillomavirus (HPV)

CHALLENGES & OPPORTUNITIES
Provider Perspectives

**Costs**
- Some insurance companies do not cover vaccine
- Inadequate reimbursement rates
- "Up-front" costs to purchase vaccine

**Parents**
- Concerns about safety
- Moral and religious objections
- Concerns that vaccination encourages risky sexual behavior
- Concerns about efficacy

Source: Daley et al. (2010)
Parents’ Perspectives

Top 5 Reasons Parents of **Girls** Reported Not Vaccinating their Child Against HPV:

1. Lack of knowledge
2. Not needed or necessary
3. Safety concern/side effects
4. Not recommended
5. Child not sexually active

Top 5 Reasons Parents of **Boys** Reported Not Vaccinating their Child Against HPV:

1. Not recommended
2. Not needed or necessary
3. Lack of knowledge
4. Child not sexually active
5. Safety concern/side effects

Source: Stokley et al. (2014)
Let parents know that:

- This vaccine is to protect your patients from cancer, not an attempt to promote sexual activity.
- HPV vaccine needs to be given now, before age 13.
- HPV vaccination is especially important for preventing cancers for which there isn’t routine screening.
References


QUESTIONS??