Update on HPV Vaccination Coverage in the US

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National Center for Immunization and Respiratory Diseases

National Vaccine Advisory Committee Meeting
September 11, 2013
Overview

- Activities since Feb NVAC meeting
- HPV vaccine recommendations for females and males
- HPV vaccination coverage among adolescents
- CDC activities
Key Articles published since Feb NVAC meeting

  - among those aged 14-19, vaccine-type HPV prevalence decreased 56 percent, from 11.5% in 2003-2006 to 5.1% in 2007-2010


- Updated estimates of HPV-attributable cancers (http://www.cdc.gov/cancer/hpv/statistics/cases.htm)
## Average Annual Number of HPV-Associated* and HPV-Attributable** Cancers, United States

<table>
<thead>
<tr>
<th>Anatomic Area</th>
<th>HPV Associated*</th>
<th>HPV Attributable**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cervix</td>
<td>11,279</td>
<td>10,300</td>
</tr>
<tr>
<td>Vagina</td>
<td>694</td>
<td>500</td>
</tr>
<tr>
<td>Vulva</td>
<td>3,039</td>
<td>2,100</td>
</tr>
<tr>
<td>Anus (F)</td>
<td>3,084</td>
<td>2,800</td>
</tr>
<tr>
<td>Oropharynx (F)</td>
<td>2,317</td>
<td>1,700</td>
</tr>
<tr>
<td><strong>Total (Females)</strong></td>
<td><strong>20,413</strong></td>
<td><strong>17,400</strong></td>
</tr>
<tr>
<td>Penis</td>
<td>1,003</td>
<td>600</td>
</tr>
<tr>
<td>Anus (M)</td>
<td>1,687</td>
<td>1,500</td>
</tr>
<tr>
<td>Oropharynx (M)</td>
<td>9,312</td>
<td>6,700</td>
</tr>
<tr>
<td><strong>Total (Males)</strong></td>
<td><strong>12,002</strong></td>
<td><strong>8,800</strong></td>
</tr>
</tbody>
</table>

Source: [http://www.cdc.gov/cancer/hpv/statistics/cases.htm](http://www.cdc.gov/cancer/hpv/statistics/cases.htm)

*Cancer that is diagnosed in a part of the body where HPV is often found.

**Cancer that is probably caused by HPV (determined by multiplying the number of HPV-associated cancers by the percentage of these cancer that are probably caused by HPV).
## HPV vaccines

<table>
<thead>
<tr>
<th></th>
<th>Quadrivalent (Gardasil)</th>
<th>Bivalent (Cervarix)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>Merck</td>
<td>GlaxoSmithKline</td>
</tr>
<tr>
<td>VLP types</td>
<td>6, 11, 16, 18</td>
<td>16, 18</td>
</tr>
<tr>
<td>Schedule (IM)</td>
<td>3 doses</td>
<td>3 doses</td>
</tr>
<tr>
<td>Genital warts</td>
<td>90%</td>
<td>-</td>
</tr>
<tr>
<td>Cervical cancers*</td>
<td>70%</td>
<td>70%</td>
</tr>
</tbody>
</table>

And majority of other HPV-associated cancers

VLP – virus like particle; IM - intramuscular
Evolution of recommendations for HPV vaccination in the United States

- **2006**: Quadrivalent (HPV 6, 11, 16, 18) vaccine; Bivalent (HPV 16, 18) vaccine
- **June 2006**: Quadrivalent
  - Routine, females 11 or 12 yrs and 13-26 yrs not previously vaccinated
- **October 2007**: Quadrivalent or Bivalent
  - Routine, females 11 or 12 yrs and 13-26 yrs not previously vaccinated
- **2008**: Quadrivalent
  - May be given, males 9-26 yrs
- **2009**: Quadrivalent or Bivalent
  - Routine, males 11 or 12 yrs and 13-21 yrs not previously vaccinated
  - May be given, 22-26 yrs
- **October 2010**: Quadrivalent (HPV 6, 11, 16, 18) vaccine; Bivalent (HPV 16, 18) vaccine
- **October 2011**: Quadrivalent
  - Routine, males 11 or 12 yrs and 13-21 yrs not previously vaccinated
  - May be given, 22-26 yrs
- **2012**: Quadrivalent (HPV 6, 11, 16, 18) vaccine; Bivalent (HPV 16, 18) vaccine

* Can be given starting at 9 years of age; ** For MSM and immunocompromised males, quadrivalent HPV vaccine through 26 years of age
US HPV Vaccination Program

- HPV is one of several vaccines recommended for the adolescent age group
- Majority of vaccines are administered in primary care provider offices and publicly funded clinics
- National survey of physicians found that 98% of pediatricians and 88% of family physicians stocked and administered HPV vaccine*
- Vaccine covered by most private health insurance companies and government insurance programs
- In 2011, 39.4% of adolescents 13-17 years of age were eligible for VFC vaccine

National Estimated Vaccination Coverage Levels among Adolescents 13-17 Years, NIS-Teen 2006-2012

Source: MMWR. 2013;62;685-93
Coverage of 1 of More Doses of HPV among Adolescent Girls 13-17 Years by State, NIS-Teen 2012

Source: MMWR. 2013;62;685-93
Vaccination Estimates among Adolescents 13-17 Years by Poverty Status, NIS-Teen 2012

**statistically different (p<0.05)
Source: MMWR. 2013;62;685-93
HPV Vaccination Estimates among Adolescent 13-17 Years by Race/Ethnicity, NIS-Teen 2012

** Statistically different (P<0.05) from White-NH.
Source: MMWR. 2013;62;685-93
Completion of the HPV series

- Completion: among the girls that started the series, the proportion that received all 3 doses
  - Nationally, 67% of girls that start the HPV series, complete the series

** Statistically different (P<0.05) from White-NH.
Source: MMWR. 2013;62;685-93
HPV Vaccine Intentions (in the Next 12 Months) Among Parents of Adolescent Girls 13-17 Years, NIS-Teen

- 2008: 37% Vaccinated, 28% Somewhat/Very Likely, 26% Not Likely, 9% Unsure/Unknown
- 2009: 44% Vaccinated, 21% Somewhat/Very Likely, 27% Not Likely, 8% Unsure/Unknown
- 2010: 49% Vaccinated, 17% Somewhat/Very Likely, 28% Not Likely, 7% Unsure/Unknown
- 2011: 53% Vaccinated, 17% Somewhat/Very Likely, 25% Not Likely, 5% Unsure/Unknown
- 2012: 54% Vaccinated, 17% Somewhat/Very Likely, 23% Not Likely, 7% Unsure/Unknown
Top 5 reasons for not vaccinating daughter, among parents with no intention to vaccinate in the next 12 months, NIS-Teen 2012

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not needed or necessary</td>
<td>19.1%</td>
</tr>
<tr>
<td>Not recommended by provider</td>
<td>14.2%</td>
</tr>
<tr>
<td>Safety concern/side effects</td>
<td>13.3%</td>
</tr>
<tr>
<td>Lack of knowledge</td>
<td>12.6%</td>
</tr>
<tr>
<td>Not sexually active</td>
<td>10.1%</td>
</tr>
</tbody>
</table>

MMWR. 2013; 62:591-5
Current Strength of Recommendation in Females, Pediatricians and Family Physicians (N=609)*

11-12 yo females
- Strongly recommend: 53%
- Recommend, but not strongly: 37%
- Other: 8%

13-15 yo females
- Strongly recommend: 82%
- Recommend, but not strongly: 15%
- Other: 3%

16-18 yo females
- Strongly recommend: 87%
- Recommend, but not strongly: 10%
- Other: 2%

Factors that influence parental decisions to vaccinate their adolescents by HPV vaccination status, NIS-Teen 2010

<table>
<thead>
<tr>
<th>Factor</th>
<th>Vaccinated (%)</th>
<th>Not Vaccinated (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At visits made for [TEEN]'s vaccinations, did his/her healthcare provider:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Talk to you about the vaccine</td>
<td>89.6</td>
<td>68.4*</td>
</tr>
<tr>
<td>Recommend the vaccine</td>
<td>87.8</td>
<td>54.4*</td>
</tr>
</tbody>
</table>

*Significantly different (p<0.05)
HPV Vaccine Communications During the Healthcare Encounter

- HPV vaccine is often presented as ‘optional’ whereas other adolescent vaccines are recommended
- Some expressed mixed or negative opinions about the ‘new vaccine’ and concerns over safety/efficacy
- When parents expressed reluctance, providers were hesitant to engage in discussion
- Some providers shared parents’ views that teen was not at risk for HPV and could delay vaccination until older

Goff S et al. Vaccine 2011;10:7343-9
Hughes C et al. BMC Pediatrics 2011;11:74
Actual and potentially achievable vaccination coverage of ≥1 HPV among adolescent girls if missed opportunities* were eliminated, NIS-Teen

Among unvaccinated girls, 84% had a missed opportunity for HPV

*Missed opportunity defined as having a healthcare encounter where at least one vaccine was administered but HPV was not
MMWR. 2013; 62:591-5
Summary

- Progress with improving HPV vaccination coverage among U.S. adolescent girls has stalled
- Vaccination coverage among boys is increasing
- Main reasons parents give for vaccinating daughters indicate lack of awareness/gaps in understanding need for vaccination
- Primary care providers are key to help increase vaccination coverage
  - Provide strong recommendations
  - Do not delay vaccination
  - Implement evidence-based strategies to improve vaccine delivery
  - Prevent missed vaccination opportunities
CDC Activities

- Funding Opportunity Announcement for federal immunization awardees to conduct targeted activities to increase HPV coverage
- Initiating study to improve physicians’ communication skills and comfort level with talking about and recommending HPV vaccines
- Research-based outreach and education to parents to improve awareness and vaccine uptake
Additional CDC Communication Activities

- Developed TIPS sheet for clinicians (http://www.cdc.gov/vaccines/who/teens/for-hcp-tipsheet-hpv.html)
- Created speakers bureau of HPV-related cancer specialists to present to pediatricians and family physicians on the importance of HPV vaccination
- Other outreach activities to clinicians include CME/CNE/CE courses and collaboration with medical professional societies
HPV and HEDIS

- Proposed measure for HPV
  - Percentage of female adolescents 13 years of age who had three doses of the HPV vaccine by their 13 birthday

- Measure has been tested for 2 years

- Final decision on the measure will occur mid-September

- HEDIS currently has reportable measures for Tdap and meningococcal conjugate vaccine (receipt by age 13 years)
Thank you

For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333
Telephone: 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov Web: http://www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.