Human Papillomavirus (HPV) Vaccines - Update

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Division of Viral Diseases

Advisory Committee on Immunization Practices
October 25, 2017
Outline

- Selected CDC and other activities after 2-dose recommendation
- Overview of ACIP HPV Vaccines Work Group calls/discussions
- HPV vaccination coverage and impact in the United States
ACIP HPV vaccine 2-dose recommendation and related activities

- ACIP voted to recommend 2-dose schedule
  - October 2016
- MMWR Policy Note published
  - December 2016
- Education and communication
  - Webinars and presentations at scientific conferences
  - CDC websites and fact sheets updated
  - CDC communication campaign
    - Digital media outreach to parents and clinicians
ACIP HPV vaccine 2-dose recommendation and related activities

- **HEDIS**
  - HEDIS 2017 covers performance period for CY2016; this immunization measure (receipt of 3 doses by age 13) will not change
  - HEDIS 2018 measure has been updated to reflect new 2-dose schedule

- **Clinical Decision Support for Immunization (CDSi)**
  - Resources revised

- **National Immunization Survey (NIS) - Teen**
  - 2-dose coverage criteria for NIS-Teen 2016 added to measure for up-to-date vaccination

[Links]
- [NCQA HEDIS website](http://www.ncqa.org/hedis-quality-measurement/hedis-measures/hedis-2018)
- [CDC CDSi website](https://www.cdc.gov/vaccines/programs/iis/cdsi.htm)
Policy issues discussed by HPV Vaccines Work Group

- Wording for routine target age group recommendation
- Harmonization of upper age for male and female vaccination
Policy issues: Wording for routine target age group

- **Current routine recommendation**
  - ACIP recommends routine HPV vaccination at age 11 or 12 years
  - Vaccination can be given starting at age 9 years

- **Potential alternative wording**
  - Routine vaccination at age 9 through 12 years
Policy issues: Wording for routine target age group

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- **Work Group deliberations**
  - Reviewed data and discussed with AAP
    - Most Work Group members favored current wording
  - Decision by ACIP Work Group
    - Will not bring forward any change for consideration by ACIP
    - Ensure option for starting series at age 9 years evident on schedules/other materials
  - AAP/COID recommendations will remain consistent with ACIP
    - Recommend starting the series between 9 and 12 years, at an age the provider deems optimal for acceptance and completion of the vaccination series

AAP, American Academy of Pediatrics; COID, Committee on Infectious Diseases
Policy issues: Harmonization of upper age for male and female HPV vaccination

- **Current recommendation***
  - ACIP recommends 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
  - Recommendations for specific groups to receive HPV vaccine through age 26 years

- **Alternative policy and discussion**
  - Harmonization of upper age: through age 26 years for males and females
  - Many Work Group members favor simplification of vaccination schedule through extension of the male age recommendation

*MMWR 2016;65;1405-8; MMWR 2014:63, #RR05
Policy issues: Harmonization of upper age for male and female HPV vaccination

- In 2011, ACIP recommended vaccination of males*
  - Used GRADE for consideration of evidence and recommendations

- In 2017, ACIP HPV Vaccines Work Group reviewed
  - Updated cost effectiveness modeling data
  - Vaccine coverage among males overall and MSM

- Work Group plans to use new Evidence to Recommendations framework
  - Present to ACIP in 2018

GRADE, Grading of Recommendations, Assessment, Development and Evaluation
MSM, men who have sex with men
*MMWR 2011;60:1705-8
Overview of ACIP HPV Vaccines Work Group calls/discussions over past year

- **Other topics/data reviewed**
  - Simplification of footnotes for child/adolescent and adult schedules
  - 9-valent HPV vaccine safety
    - Update of ongoing analyses; no safety concerns
    - Immunization Safety Office (ISO) to present data to ACIP in February 2018
Outline

- Selected CDC and other activities after 2-dose recommendation
- Overview of ACIP HPV Vaccines Work Group calls/discussions
- HPV vaccination coverage and impact in the United States
Estimated vaccination coverage among adolescents aged 13–17 years, NIS-Teen, United States, 2006–2016

Routine HPV recommendation for females

≥1 Tdap
≥1 MenACWY
≥1 HPV (F)
≥3 HPV (F)

Walker et al. MMWR 2017;66:874-82
NIS-Teen, National Immunization Survey-Teen;
Note: revised definition of adequate provider data in 2013
Estimated vaccination coverage among adolescents aged 13–17 years, NIS-Teen, United States, 2006–2016

- ≥1 Tdap
- ≥1 MenACWY
- ≥1 HPV (F)
- ≥1 HPV (M)
- ≥3 HPV (F)
- ≥3 HPV (M)

Routine HPV recommendation for females
Routine HPV recommendation for males

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Routine HPV recommendation for females

Routine HPV recommendation for males

≥1 HPV (F)

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Walker et al. MMWR 2017;66:874-82  NIS-Teen, National Immunization Survey-Teen;  Note: revised definition of adequate provider data in 2013
Estimated HPV vaccination coverage among adolescents aged 13-17 years and new up-to-date measure, NIS-Teen, United States, 2016

<table>
<thead>
<tr>
<th>Number of doses</th>
<th>% (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥1 dose</td>
<td>60.4 (±1.2)</td>
</tr>
<tr>
<td>≥2 doses</td>
<td>49.2 (±1.3)</td>
</tr>
<tr>
<td>≥3 doses</td>
<td>37.1 (±1.2)</td>
</tr>
<tr>
<td>HPV UTD</td>
<td>43.4 (±1.3)</td>
</tr>
</tbody>
</table>

**HPV UTD**: new measure added for adolescents considered to be up to date with the HPV vaccine series if they have received ≥3 doses of HPV vaccine, or 2 doses according to current recommendation.
Monitoring impact of HPV vaccination

- HPV prevalence
- Genital warts
- Juvenile onset recurrent respiratory papillomatosis
- Cervical precancer lesions
- HPV-associated cancer
Monitoring impact of HPV vaccination

- HPV prevalence
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- Cervical precancer lesions
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Vaccine type prevalence (HPV 6,11,16,18), NHANES

Early vaccine era compared to pre-vaccine era, females

Prevalence, %

56% decrease

14–19 years  20–24 years  25–29 years  30–34 years

11.5  18.5  11.8  9.5
5.0  19.9  13.1  8.9
Vaccine type prevalence (HPV 6, 11, 16, 18), NHANES
Later vaccine era compared to pre-vaccine era, females

Prevalence, %

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Pre-vaccine era 2003-2006</th>
<th>Early vaccine era 2007-2010</th>
<th>Later vaccine era 2011-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>14-19 years</td>
<td>11.5</td>
<td>5.0</td>
<td>3.3</td>
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</tr>
</tbody>
</table>

61% decrease
71% decrease

Oliver et al. JID 2017;216: 594-603
NHANES, National Health and Nutrition Examination Survey
Future plans – 2018 ACIP meetings

- Harmonization of upper age for male and female vaccination
- 9vHPV safety – post-licensure monitoring
- Impact of HPV vaccination in the United States
ACIP HPV Vaccines Work Group

ACIP Members
Peter Szilagyi (Chair)
Cynthia Pellegrini
Jose Romero

Ex Officio Members
Jeff Roberts (FDA)
Joohee Lee (FDA)

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