Proposed recommendations for 2-dose HPV vaccination

Elissa Meites, MD, MPH

Division of Viral Diseases

Advisory Committee on Immunization Practices

October 19, 2016

Background

- Three HPV vaccines are licensed for use in the United States:
  - 9-valent HPV vaccine (9vHPV, Gardasil 9, Merck)
  - Quadrivalent HPV vaccine (4vHPV, Gardasil, Merck)
  - Bivalent HPV vaccine (2vHPV, Cervarix, GlaxoSmithKline)
- Recently, 9vHPV was approved by the FDA for use in a 2-dose series for girls and boys at ages 9–14 years.

Current ACIP recommendations

- HPV vaccine is recommended for routine vaccination at age 11 or 12 years. The vaccination series can be started beginning at age 9 years.
- ACIP also recommends HPV vaccination for:
  - Females age 13 through 26 years not vaccinated previously,
  - Males age 13 through 21 years not vaccinated previously*
  - Immunocompromised persons (including those with HIV infection) and men who have sex with men through age 26 years, if not vaccinated previously

* Males aged 22 through 26 years may be vaccinated

Rationale for vote

- HPV vaccines are highly effective and safe, and a powerful prevention tool for reducing the burden of HPV infections and associated disease.
- Evidence suggests that a 2-dose schedule (0, 6–12 months) will have efficacy equivalent to a 3-dose schedule (0, 1–2, 6 months) if the HPV vaccination series is initiated before the 15th birthday.

Proposed recommendations

Outline of proposed recommendations

- Routine and catch-up age groups (no changes)
- **Dosing schedules**
- **Persons with prior vaccination**
- Interrupted schedules
- Special populations
- Medical conditions
- Contraindications and precautions (no changes)
- Summary

Routine and catch-up age groups (no changes)

- ACIP recommends routine HPV vaccination for girls and boys at age 11 or 12 years. Vaccination can be given starting at age 9 years.
- ACIP also recommends vaccination for females through age 26 years and for males through age 21 years who were not adequately vaccinated previously. Males aged 22 through 26 years may be vaccinated.
- (See also: Special populations, Medical conditions)

Proposed: Dosing schedules

- For persons initiating vaccination before the 15th birthday, the recommended immunization schedule is 2 doses of HPV vaccine. The second dose should be administered 6–12 months after the first dose (0, 6–12 month schedule).*
- For persons initiating vaccination on or after the 15th birthday, the recommended immunization schedule is 3 doses of HPV vaccine. The second dose should be administered 1–2 months after the first dose, and the third dose should be administered 6 months after the first dose (0, 1–2, 6 month schedule).*

* See footnote defining minimum intervals

Proposed: Persons with prior vaccination

- Persons who initiated vaccination with 9vHPV, 4vHPV, or 2vHPV before the 15th birthday, and received 2 doses at the recommended dosing schedule, or 3 doses at the recommended dosing schedule, are considered adequately vaccinated.
- Persons who initiated vaccination with 9vHPV, 4vHPV, or 2vHPV on or after the 15th birthday, and received 3 doses at the recommended dosing schedule, are considered adequately vaccinated.

Proposed: Persons with prior vaccination

- 9vHPV may be used to continue or complete a series started with 4vHPV or 2vHPV.
- For persons who have been adequately vaccinated with 2vHPV or 4vHPV, there is no ACIP recommendation for additional vaccination with 9vHPV.

Supplemental information and guidance for vaccination providers regarding use of 9-valent HPV vaccine: www.cdc.gov/hpv/downloads/9vhpv-guidance.pdf

Proposed: Interrupted schedules

- If the vaccine schedule is interrupted, the vaccination series does not need to be restarted.
- Number of recommended doses is based on age at administration of the first dose.

Background on minimum intervals

- Current ACIP guidelines:
  - Minimum interval between first and third dose is 24 weeks.
- In 2-dose and 3-dose 9vHPV trials:
  - 6-month interval was defined as 180 days (or 26 weeks).
  - Participants received vaccine within 4 weeks of target date.
- 9vHPV trial data support a minimum interval of 5 months (or 22 weeks).
- Updated FDA label states a minimum interval of 5 months between doses in a 2-dose series.

Proposed: Minimum intervals

- Footnote defining minimum intervals:
  - In a 2-dose series of HPV vaccine, the minimum interval is 5 months between the first and second dose.
  - In a 3-dose series of HPV vaccine, the minimum intervals are 1 month between the first and second dose, 3 months between the second and third dose, and 5 months between the first and third dose.
  - A vaccine dose administered at a shorter interval should be readministered.

Proposed: Special populations

- For children with history of sexual abuse or assault, ACIP recommends routine HPV vaccination beginning at age 9 years.

Proposed: Special populations

- For gay, bisexual, and other men who have sex with men (MSM), ACIP recommends routine HPV vaccination as for all adolescents, and initiation of vaccination through age 26 years for those who were not adequately vaccinated previously. For transgender persons, ACIP recommends HPV vaccination through age 26 years for those who were not adequately vaccinated previously.

Lesbian, Gay, Bisexual, and Transgender Health: www.cdc.gov/lgbthealth Gay and Bisexual Men's Health: www.cdc.gov/msmhealth
Gay, Bisexual, and Other Men who have Sex with Men (MSM): www.cdc.gov/std/life-stages-populations/m sm

Proposed: Medical conditions

- ACIP recommends HPV vaccination for immunocompromised females and males aged 9 through 26 years with three doses of HPV vaccine (0, 1–2, 6 months). Persons who should receive 3 doses are those with primary or secondary immunocompromising conditions that might reduce cell-mediated or humoral immunity, such as B lymphocyte antibody deficiencies, T lymphocyte complete or partial defects, HIV infection, malignant neoplasm, transplantation, autoimmune disease, or immunosuppressive therapy, since immune response to vaccination may be attenuated.*

* The recommendation for a 3-dose schedule does not apply to children aged <15 years with asplenia, asthma, chronic granulomatous disease, chronic heart/liver/lung/renal disease, CNS anatomic barrier defects (e.g., cochlear implant), complement deficiency, diabetes, or sickle cell disease.

Contraindications and precautions (no changes)

- Contraindications and precautions, including those related to pregnancy, are unchanged from previous recommendations.
- Adverse events occurring after administration of any vaccine should be reported to the Vaccine Adverse Event Reporting System (VAERS). Reports can be submitted to VAERS online, by fax, or by mail. Additional information about VAERS is available by telephone (1-800-822-7967) or online (https://vaers.hhs.gov).

Markowitz 2014, Petrosky 2015

ACKNOWLEDGMENTS

- ACIP HPV Vaccines Work Group

ACIP Members
Allison Kempe (Chair)
Cynthia Pellegrini
Jose Romero

Ex Officio Members
Carolyn Deal (NIH)
Bruce Gellin (NVPO)
Jeff Roberts (FDA)
Joohee Lee (FDA)

CDC Lead
Lauri Markowitz

Consultants
Joseph Bocchini
Tamera Coyne-Beasley
John Douglas
Sam Katz
Aimee Kreimer (NCI)
Debbie Saslow (ACS)
Rodney Willoughby

Liaison Representatives
Shelley Deeks (NACCI)
Linda Eckert (ACOG)
Sandra Fryhofer (ACP)
Amy Middleman (SAHM)
Chris Nyquist (AAP)
Sean O'Leary (PIDS)
Margot Savoy (AAFP)
Patricia Whitley-Williams (NMA)
Jane Zucker (AIM)

- CDC Contributors

Jorge Arana
Harrell Chesson
Robin Curtis
Julianne Gee
Elissa Meites
Jeanne Santoli
Mona Saraiya
Shannon Stokley
Lakshmi Sukumaran
Elizabeth Unger

Recommendation vote

Summary

- Proposed recommendation: ACIP recommends a 2-dose schedule of HPV vaccine for girls and boys who initiate the vaccination series at ages 9 through 14 years
- Proposed category: Category A recommendation

Discussion and vote

- Routine and catch-up age groups (no changes)
- **Dosing schedules**
- **Persons with prior vaccination**
- Interrupted schedules
- Special populations
- Medical conditions
- Contraindications and precautions (no changes)
- Summary

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 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.