Translating Evidence into Practice: Human Papillomavirus Vaccination

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LEARNING OBJECTIVES

1. Identify groups recommended by the Advisory Committee on Immunization Practices (ACIP) for human papillomavirus (HPV) vaccination.
2. Analyze the impact of various decision support methods on HPV vaccination.
3. Evaluate the benefits of clinician- and family-focused decision support for decreasing missed opportunities for HPV vaccination.

ABBREVIATIONS IN THIS CHAPTER

ACIP	Advisory Committee on Immunization Practices
CHOP	Children's Hospital of Philadelphia
DTaP	Diphtheria, tetanus, and acellular pertussis vaccine
EHR	Electronic health record
HPV	Human papillomavirus
HPV-1	Human papillomavirus vaccine dose 1
HPV-2	Human papillomavirus vaccine dose 2
HPV-3	Human papillomavirus vaccine dose 3
HPV2	Bivalent HPV vaccine (Cervarix)
HPV9	9-valent HPV vaccine (Gardasil 9)
HPV4	Quadrivalent HPV vaccine (Gardasil)
MCV	Meningococcal vaccine
PCV12	Pneumococcal conjugate vaccine
PBRN	Practice-based research network
PPSV23	Pneumococcal polysaccharide vaccine
Tdap	Tetanus, diphtheria, and acellular pertussis vaccine

TRANSLATING EVIDENCE INTO PRACTICE

Topic Article

- Mayne SL, duRivage NE, Feemster KA, et al. Effect of decision support on missed opportunities for human papillomavirus vaccination. Am J Prev Med 2014;47:734-44.

On-demand Webcast

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Self-Assessment Questions

11. The HPV vaccine received an approved indication in 2006 to prevent HPV infections in female patients; this was expanded in 2009 to cover male patients. Which one of the following patient and product combinations best meets the vaccination recommendations of the Advisory Committee on Immunization Practices (ACIP)?

    A. A 7-year-old girl, bivalent HPV vaccine (HPV2)
    B. An 8-year-old boy, quadrivalent HPV vaccine (HPV4)
    C. A 9-year-old girl, 9-valent HPV vaccine (HPV9)
    D. A 10-year-old boy, HPV2

12. An 11-year-old girl presents to her pediatrician with cough, runny nose, and mild fever for the past 3–4 days. Her mother brought her to the office for these symptoms and for a note excusing her from school because she has missed several days. Which one of the following factors places this girl most at risk of a missed opportunity to administer the HPV vaccine?

    A. She is currently not feeling well.
    B. She is not at the appropriate age.
    C. She is presenting for an acute visit.
    D. Her physician may not recommend it.

13. Using the Recommended Immunization Schedule published by the CDC and endorsed by ACIP, which one of the following vaccines presents the best opportunity for also administering the HPV vaccine?

    A. PCV12
    B. PPSV23
    C. DTaP
    D. Tdap

14. An 11-year-old boy presents to his pediatrician for a preventive visit. He has not previously received the HPV vaccine. Which one of the following vaccines is most appropriate to recommend for this patient at this time?

    A. HPV4
    B. HPV2
    C. HPV9
    D. HPV4 or HPV9

15. A researcher wants to determine the effectiveness of an intervention to improve adolescent vaccination rates targeted to clinicians within primary care practices. The intervention involves implementation of a system of electronic health record vaccine alerts. Which study design would best answer this research question?

    A. Observational cohort study
    B. Cluster randomized controlled trial
    C. Randomized controlled trial with individual-level randomization only
    D. Cross-sectional study

Questions 16–20 pertain to the following case.

The study by Mayne et al (Effect of decision support on missed opportunities for human papillomavirus vaccination) aimed to compare the impact of clinician- versus family-focused decision support, none, or both on captured opportunities for HPV vaccination.

16. Which one of the following statements best describes the greatest limitation of the study?

    A. Randomization of study practices and participants was not stratified to provide balance between groups.
    B. Generalizability of the study may be limited because the study was only conducted in Philadelphia and the surrounding areas.
    C. Statistical models did not control for patient, clinician, and practice characteristics.
    D. The demographic characteristics of the study groups were very different.

17. According to the findings of the study, which one of the following interventions will most likely improve rates of captured opportunities for HPV vaccination?

    A. Prompt families to visit an educational website before office visits so that they can learn more about the HPV vaccine.
    B. Remind families that their child is due for the HPV vaccine through phone calls before the visit.
    C. Provide educational content, vaccine alerts, and performance feedback to clinicians.
    D. Provide text message reminders to families about upcoming vaccinations.

18. Which one of the following statements most accurately reflects the results of the study by Fiks et al that differed from the results of the study by Mayne et al?

    A. The family-focused intervention improved rates of HPV vaccination for dose 1 only.
    B. The family-focused intervention improved rates of HPV vaccination for doses 2 and 3 only.
    C. The family-focused intervention improved rates of HPV vaccination for all 3 doses.
    D. The family-focused intervention did not improve rates of any HPV vaccination dose.

19. Which one of the following statements best describes the study findings regarding the effectiveness of clinician-focused intervention in different practice settings?

    A. The clinician intervention increased captured opportunities for HPV 1 at preventive visits to a greater extent at suburban practices than at urban practices.
    B. The clinician intervention increased captured opportunities for HPV 1 at preventive visits to a greater extent at urban practices than at suburban practices.
    C. The clinician intervention increased captured opportunities for all three doses at acute visits at suburban practices only.
    D. The clinician intervention increased captured opportunities for all three doses at both urban and suburban practices.

20. In the study by Mayne et al, the researchers used marginal standardization to transform the logistic regression model into standardized proportions. Which one of the following is the most appropriate interpretation of the standardized proportions?

    A. The actual proportion of captured opportunities in each study arm
    B. The expected proportion of captured opportunities if the entire sample was in the control group
    C. The expected proportion of captured opportunities if the entire sample received both interventions
    D. The expected proportion of captured opportunities if the entire sample was alternately subjected to each intervention arm or monitored as a control group