

HPV Vaccination of Boys in Primary Care Practices

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The findings and conclusions in this report are those of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention or the US Department of Health and Human Services.

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ABSTRACT

OBJECTIVE: In October 2011, the Advisory Committee on Immunization Practices (ACIP) recommended the quadrivalent human papillomavirus vaccine (HPV4) for the routine immunization schedule for 11- to 12-year-old boys. Before October 2011, HPV4 was permissively recommended for boys. We conducted a study in 2010 to provide data that could guide efforts to implement routine HPV4 immunization in boys. Our objectives were to describe primary care physicians': 1) knowledge and attitudes about human papillomavirus (HPV)-related disease and HPV4, 2) recommendation and administration practices regarding HPV vaccine in boys compared to girls, 3) perceived barriers to HPV4 administration in boys, and 4) personal and practice characteristics associated with recommending HPV4 to boys.

METHODS: We conducted a mail and Internet survey in a nationally representative sample of pediatricians and family medicine physicians from July 2010 to September 2010.

RESULTS: The response rate was 72% (609 of 842). Most physicians thought that the routine use of HPV4 in boys was justified. Although it was permissively recommended, 33% recommended HPV4 to 11- to 12-year-old boys and recommended it more strongly to older male adolescents. The most common barriers to HPV4 administration were related to vaccine financing. Physicians who reported recommending HPV4 for 11- to 12-year-old boys were more likely to be from urban locations, perceive that HPV4 is efficacious, perceive that HPV-related disease is severe, and routinely discuss sexual health with 11- to 12-year-olds.

CONCLUSIONS: Although most physicians support HPV4 for boys, physician education and evidence-based tools are needed to improve implementation of a vaccination program for males in primary care settings.

KEYWORDS: HPV vaccine; immunization; physician attitudes

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WHAT'S NEW

Our survey findings suggest that primary care-focused interventions to improve human papillomavirus (HPV) vaccination of boys should include tools to help providers communicate with parents and patients about HPV vaccine and sexual health, dissemination of data about HPV-related disease severity and vaccine efficacy, and promotion of catch-up vaccination at age 16.

THE QUADRIVALENT HUMAN papillomavirus vaccine (HPV4) protects vaccinated individuals from the cancer-causing human papillomavirus (HPV) strains, 16 and 18, and the wart-causing strains, 6 and 11. Until October 2011, HPV4 was recommended only for females; however, approximately 7000 HPV-associated cancers and 250,000 cases of genital warts occur in males in the United States annually, with the highest risk for immuno-

compromised men, and men who have sex with men.¹⁻⁸

Vaccination of men reduces disease caused by these HPV types in men and also reduces transmission of HPV to females.³ In 2009, the US Food and Drug Administration licensed HPV4 for use in males aged 9 through 26 years for prevention of genital warts.⁹ Soon after licensure, the Advisory Committee on Immunization Practices (ACIP) provided guidance that HPV4 may be used in males aged 9 to 26 years but did not recommend HPV4 for routine use.¹⁰ The vaccine was included in the Vaccines for Children program to enable providers to immunize eligible boys aged 9 through 19. In October 2011, the ACIP modified its guidance and recommended HPV4 for routine use in boys.

Before our study, conducted in 2010 when HPV4 was permissively recommended for boys, limited data were available regarding primary care physicians' knowledge, attitudes, and practices related to HPV4 for males. These data were needed to aid the ACIP in its consideration of

the acceptability of an HPV vaccination program for males among primary care providers and to guide implementation efforts if a recommendation for routine use were made.^{11–15} Because HPV vaccine coverage among girls remained below 50% three years after it was recommended and coverage improved less than for other adolescent vaccines,¹⁶ challenges to implementation were expected for boys. Information about the characteristics of physicians who were recommending HPV4 for boys and the circumstances under which they recommended it when it was permissively recommended by the ACIP could identify interventions to increase physicians' use of HPV4. Therefore, we conducted a survey among a nationally representative sample of pediatricians and family medicine (FM) physicians to: 1) describe their knowledge and attitudes about HPV-related disease and HPV4 for males, 2) describe their recommendation and administration practices regarding HPV vaccine in boys compared to girls, 3) describe perceived barriers to HPV4 administration in boys, and 4) identify physician and practice characteristics associated with recommending HPV4 to boys.

METHODS

STUDY SETTING

The Vaccine Policy Collaborative Initiative, a program designed collaboratively with the Centers for Disease Control and Prevention (CDC) to assess primary care physicians' attitudes about vaccine-related issues, administered a survey to a national network of pediatricians and FM physicians. The human subjects review board at the University of Colorado approved this study as exempt research.

POPULATION

We conducted the survey among networks of physicians who were previously recruited from the American Academy of Pediatrics (AAP) and American Academy of Family Physicians (AAFP) and who agreed to respond to several surveys annually.¹⁷ After obtaining twice the number of recruits needed for each network, a quota strategy was applied to assure the representativeness of the samples.^{17,18} In a previous evaluation, demographic characteristics, practice attributes, and reported attitudes about a range of vaccination issues were generally similar when network physicians were compared with physicians of the same specialty randomly sampled from the American Medical Association master physician listing.¹⁷

SURVEY DESIGN

We developed the survey instrument in collaboration with the CDC. On the basis of the Health Belief Model, we predicted that physicians' recommendation for HPV4 in boys is affected by their perceptions about barriers to HPV4 administration, males' susceptibility to HPV infection and HPV-related diseases, severity of HPV-related diseases, and the benefit of HPV4.¹⁹ Because previous studies of the HPV vaccine have indicated that

some physicians link counseling about the vaccine to counseling about sexual health,^{14,20,21} we also asked about physicians' practices related to discussing sexual health with boys and girls at different ages. We predicted that discussing sexual health issues would be a cue to action for recommending HPV4.

The survey also included questions about physicians' and practices' characteristics, physicians' current practices related to recommendation for and administration of the HPV vaccine, physicians' knowledge about HPV infection and HPV4 among males, the topics physicians would emphasize when discussing HPV4 with male patients, and physicians' intention to recommend HPV4 for boys if recommended for routine use by the ACIP. The survey was pretested in a community advisory panel consisting of 3 pediatricians and 3 FM physicians from across the country and was pilot tested among 41 pediatricians and FM physicians.

We measured physicians' perceived barriers to HPV4 administration to boys, perceptions of HPV4 and HPV-related diseases, current practices regarding recommendation of the HPV vaccine, topics of emphasis when discussing HPV4 with boys, and intention to recommend HPV4 for boys if recommended for routine use by the ACIP using 4-point Likert scales. We measured physicians' current administration practices using 5 choices ranging from "never/almost never" to "always/almost always." We measured physicians' knowledge about the HPV vaccine and HPV-related diseases and perception of HPV4 efficacy in males using statements to which respondents answered "agree," "disagree," or "don't know/not sure." Finally, we measured physicians' discussion of sexual health at different ages using "yes" or "no" choices.

SURVEY ADMINISTRATION

The survey was administered between July 2010 and September 2010 by Internet or regular mail based on physicians' preferences. The Internet survey was administered using a Web-based program (Vovici Corp, Dulles, Va). The Internet group received an initial e-mail with a link to the survey and up to 8 e-mail reminders to complete the survey, while the mail group received an initial mailing and up to 2 additional mailed surveys at 2-week intervals. The Internet nonresponders also received up to 2 paper surveys by mail.

ANALYTIC METHODS

Internet and mail surveys were pooled for all analyses, as provider attitudes have been found to be comparable when obtained by either method.²² We compared pediatricians and FM physicians by chi-square tests for questions with dichotomous responses and Kolmogorov-Smirnov tests for questions with Likert scale responses. Because pediatricians' and FM physicians' responses were similar, they were combined for most subsequent analyses. The Cochran-Armitage test for trend was used to compare the strength of recommendation for HPV across different age groups and the frequency of discussing sexual health issues across different age groups.

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