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Attitudes Surrounding Implementation of the HPV Vaccine for Males Among Primary Care Providers Serving Large Minority Populations

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Abstract

Background—Minority populations in the United States are disproportionately affected by Human Papilloma Virus (HPV) infection and related diseases. We examined the attitudes of primary care providers serving large minority populations towards the implementation of the HPV vaccine for males in their practices.

Design—Cross-sectional survey of randomly selected primary care providers in Brooklyn, NY.

Results—93 eligible providers responded to the survey of which 62% were pediatricians. 62% reported that they were very likely or will definitely be offering the vaccine to their male patients particularly providers that reported higher minority patient population and that acknowledge a high risk of HPV infection among their patient population.

Conclusions—Primary care providers in the study are likely to incorporate the HPV vaccine for males as part of their regular clinical practice. Their adoption and dissemination of the vaccine will be a significant factor in determining whether its full benefits are achieved.

Keywords

HPV Vaccine; Boys and Men; Primary Care; Implementation

Minority populations in the United States are disproportionately affected by Human Papilloma Virus (HPV) infection and HPV-related diseases^{1–3}. Rates of HPV-related cancers are higher among males of minority populations, particularly among Hispanics and Blacks^{4–6}. Between 1998 and 2003, the rate of penile cancer among Hispanic or Latinos in the U.S. was 1.3 per 100,000 men compared to 0.8 among non-Hispanic men⁴. HPV-associated anal cancer rates are higher among Black men in the U.S.⁵ Approximately 3000 cases of anal and penile cancer are estimated to occur in 2011 in the U.S. and almost 1% of all sexually active men will have genital warts at one time in their lives, most of these cases occurring among minority men.⁷ The HPV vaccine could potentially reduce or eliminate the

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majority of these cases and reduce the associated morbidity, mortality, and financial burden.^{8–10}

HPV types 6 and 11 are the most common types associated with genital warts, and types 16–18 are high risk for penile and anal cancer and a number of oropharyngeal cancers.¹¹ The HPV vaccine was licensed by the United States Food and Drug Administration (FDA) in October 2009 for use in males ages 9 through 26 years for prevention of genital warts, anal and penile cancer caused specifically by HPV.^{12,13} Previously, in 2006, the vaccine was approved for girls and women for the prevention of cervical, vulvar and vaginal cancers and genital warts.¹⁴

In recent years, a significant amount of evidence has been published that supports the use of the HPV vaccine among females to prevent HPV related diseases, and to support its efficacy and safety.^{15–18} Similarly, a number of studies provided evidence that led to FDA approval of the HPV vaccine for use in boys and men.^{19–22} An analysis by Elbasha et. al., determined that offering the HPV vaccine to males between the ages of 9 to 26 years could have a considerable public health benefit and should be considered a cost-effective clinical practice.⁸ Despite these findings, clinicians have found multiple barriers for implementing the vaccine in their practices including logistical issues (storage needs), time constraints, limited availability of information about, and overall acceptance of, the vaccine by their patient population.^{23–26} Patient and parent/guardian barriers include limited access to tailored information, cost, cultural barriers perceived risks and perceived benefits, among others.^{25,27–29}

Primary care providers are the most common regular source of health care in the United States and are at the vanguard of improving health outcomes and reducing health care disparities through the adoption of evidence-based preventive practices such as HPV vaccination.^{30–33} It is essential to understand the factors affecting primary care providers' implementation of the HPV vaccine for boys and men. This study describes primary care providers' (PCP) knowledge, beliefs and attitudes towards the delivery of HPV vaccine to boys and men, and the factors that could influence providers' utilization of the vaccine.

Methods

Study Design and Sampling Method

We conducted a cross-sectional study of PCPs serving large minority populations at high risk for HPV infection in Brooklyn, New York between June and December 2010. The provider population included pediatricians, family practitioners, and internal medicine physicians serving neighborhoods identified from the American Community Survey³⁴ as having large minority populations (greater than 30%) in Brooklyn, New York. Other inclusion criteria included: 1) New York State registered general pediatrician, internal medicine or family practitioner, 2) minimum one half of their patient population belong to minority populations (physician-reported), 3) minimum one third of their patient population is between the ages of 9 and 26 years old (physician-reported).

An inventory of these providers was created from the New York State Department of Health provider database and medical organization membership lists (i.e. the local Chapters of the American Academy of Pediatrics). Multiple sources were used to increase accuracy. 552 providers met criteria. A random sample was generated until the proposed sample size of 93 was reached. The sample size was calculated using a 95% confidence interval. Randomization was stratified by zip code of practice and type of provider (pediatrician, family practitioner or internist) to obtain a proportionally distributed number of subjects in the study.

Survey

A survey was developed by a group of 3 physicians (pediatrician, Internist and family practitioner) and 2 behavioral scientists and was based on the Theory of Planned Behavior as the conceptual framework. The survey included questions in the areas of HPV vaccine for males, including knowledge, beliefs, barriers to administration and clinical practices. The survey was piloted with a group of six physicians. Based on the pilot results, questions were revised as needed and all points made by physicians included in the pilot group were addressed. The survey also included information on demographic variables, medical training history and a description of the respondents' patient populations. By the time the survey was developed and implemented, the FDA had approved the HPV vaccine for males but a recommendation for use was not included in any vaccination guidelines or vaccination schedules.

Data Collection

Providers randomly selected to participate in the study received the survey by mail, together with an information sheet that explained the study and the eligibility criteria. As proposed by Delnevo et al., we used an up-front-incentive for participating in the study to increase the response rate.³⁵ The package mailed to the physician included as the incentive the most recent edition of the "Epidemiology and Prevention of Vaccine-Preventable Diseases: The Pink Book: Course Textbook," with the mailed survey. If we did not receive the completed questionnaire approximately two weeks after the initial mailing, we contacted the physician by mail and by phone. This was repeated at weeks 4 and 6 if there was no response. If there was no response after 8 weeks, we considered that subject a "non-responder".

Data were entered, stored and analyzed using IBM SPSS Statistics® version 19. This study was approved by the State University of New York, Downstate Medical Center Institutional Review Board.

Results

Ninety three providers completed the survey out of 168 eligible providers that were contacted. This survey response rate of 55% is similar to other published manuscripts that have used comparable methodology. Out of the 93 providers that participated in the study, 62% (58) were pediatricians, 21% were internists and 17% were family practitioners. There was no difference in the response rate for each of these groups. Forty-seven of the participants were female (51%) and the average age was 53 years (range 33–85). Other

socio-demographic data are presented in Table 1. Over 70% of the providers included in the study reported that at least 75% of their patient population belonged to minority groups; other characteristics of their patient population are shown in Table 2.

Eighty five percent of providers in the study believed that HPV infection and its complications warranted a vaccine in general and 86% thought the HPV vaccine is safe, although 82% felt that long lasting immunity from the vaccine was still not known. Based on their current experience using the HPV vaccine with their eligible female patients, 80% reported that handling of the vaccine, including the storage requirement, was not a difficulty. 89% reported that they had sufficient personnel and equipment to offer the vaccine to their patients and 79% thought that there were enough local sites to refer their patients for HPV Vaccine if they did not offer it in their setting. 67% of the providers in the study thought the vaccine was too expensive.

When asked about their likelihood to offer the HPV vaccine to their eligible male patients, 62% of respondents reported that they were very likely or will definitely be offering the vaccine, 25% would consider it and 13% responded that it was very unlikely that they will be offering the vaccine to their eligible male patients. Family practitioners and pediatricians in the study reported a higher likelihood, although not statistically significant, of offering the vaccine to their male eligible patients than internists (70%, 64% vs 47% respectively, $p=0.35$). Providers that reported having a patient population comprised of 75% or more of minorities were more likely to offer the vaccine than those with a smaller percentage of minority patient population (73% vs 39% respectively, $p=0.002$), as were providers that acknowledge a high risk of HPV infection among their patient population (72% vs. 50%, $p=0.05$). Providers that self reported race other than white had a higher likelihood of recommending the vaccine to boys, although not statistically significant (67% vs 55% respectively, $p=0.23$). Female providers in the study were more willing to offer the vaccine to their eligible male patients than male providers (72% vs. 50%, $p=0.02$).

When providers in the study were asked if offering the HPV vaccine for males in their practice would have any effect on their overall utilization of the HPV vaccine, 36% reported that offering the vaccine to their male patients will not change their use of the vaccine among their female patients and 46% reported that they will offer the vaccine similarly to males and females. 42% of providers thought that offering the HPV vaccine to boys would have no effect on perceptions about whether girls should get the vaccine and the rate of parents' acceptance to vaccinating their daughters. 40% of providers in the study were not sure if it would have any effect and 18% thought that it would increase parents' acceptance of vaccinating.

We asked providers in the study about their perceived barriers against administering the HPV vaccine to their eligible patients. 24% of providers cited lack of time to educate their patients about the vaccine as a barrier, 24% cited cost as a barrier. 26% of providers in the study cited "competing priorities, other issues more pressing" as barriers for recommending the HPV vaccine and 20% cited cultural beliefs (patient/parents/or guardian will not accept the HPV vaccine because of cultural beliefs) as a barrier against recommending HPV vaccine.

Discussion

As the approval by the FDA of the HPV vaccine for boys and men translates into practice, primary care providers will be at the frontline in offering this preventive measure. To the best of our knowledge, this is the first study that looks at attitudes surrounding the implementation of the HPV vaccine for males among primary care providers serving large minority populations. Their adoption and dissemination of HPV vaccination will be a significant factor in determining whether the full benefits of the vaccine are achieved, particularly among high risk populations. In our study, primary care providers had a positive attitude overall towards offering the HPV vaccine to their eligible male patients and reported being highly likely to incorporate it as part of their regular clinical practice.

A large percentage of providers in the study thought the HPV vaccine was important and regarded it as safe. In addition, the majority believed that their clinical settings were able to manage the requirements of handling the vaccine as well as the added burden on their limited resources. This is particularly important because more than 70% of the providers in the study practice in small private settings and, according to the Community Health Survey, more than 50% of minority adults in New York City visit a private doctor for their health care needs as opposed to large medical centers or outpatient clinics.³⁶ Attitudes of providers in the study indicate a great opportunity to disseminate the vaccine to a large portion of the eligible population. However, as reported in this and other studies, cost remains a key barrier for providers in offering the HPV vaccine to their eligible patients.³⁷ Although a small percentage of our respondents' patient populations were uninsured, coverage for the vaccine varies among patients and insurance policies. Efforts should be targeted to include the coverage of the HPV vaccine for both eligible females and males to improve access. According to Elbasha et al, and Kim et al, expanding coverage for the HPV vaccine to include boys and males is cost-effective at conventional thresholds and it could provide substantial public health benefit.^{8,38} This should encourage public and private insurance to expand coverage and reduce barriers for providing this preventive measure.

Pediatricians and family practitioners in the study were more likely to offer the HPV vaccine to their male patients than internists. This may be attributed to their more common use of vaccines in general. However, general internists are major providers of primary care to adults in the United States and have a unique opportunity to provide preventive care to their adult patients. Because the FDA has approved the HPV vaccine for adults up to 26 years of age to prevent genital warts and HPV-related cancers, it is necessary to encourage internists to incorporate this service into their regular clinical practices, through the provision of simple and cost effective solutions. In our study, providers identified lack of time, cost, competing priorities and patient cultural beliefs as barriers for recommending the HPV vaccine to their female patients. We believe these barriers will also play a significant role when recommending the vaccine to males. Improving coverage, as described above, and identifying appropriate mechanisms that will reduce the time providers spend recommending the vaccine (for example a patient educator/patient navigator, targeted educational materials) will help diminish these barriers. HPV vaccine information, presented in written or visual media, should be tailored to the population to address their cultural

beliefs, their native or preferred language and should have a health literacy level that will allow the majority of the population to access the information.

Having a large minority patient population, and being aware of their patients' risk for HPV related diseases, were factors significantly associated with a higher willingness among providers to offer the HPV vaccine to their male eligible patients. Providers in this study served in areas with populations at high risk of HPV and HPV related diseases, perhaps increasing their understanding of the need for this preventive measure and increasing the likelihood to utilize the vaccine. This finding supports our proposal that future work should focus on disseminating clear information to primary care providers serving minority populations about the disparities in HPV related diseases that afflict minority populations, and the importance of implementing this preventive service while tailoring it to the needs of their particular patient population.

It is possible that providers in the study were overestimating the likelihood to which they will be offering the HPV vaccine to their male patients. The up-front incentive for participating in the study could have contributed to this. While we evaluated self-reported rates, the purpose of this study was to describe the providers' attitudes towards implementing the HPV vaccine for their male patients, and the challenges they foresee when they will be offering the vaccine. These findings provide areas that should be addressed to facilitate the translation of this evidence-based preventive service to their practices.

It is estimated that 3000 new cases of HPV-related cancer occur among men each year in the U.S., with the majority of them occurring among minority populations, specifically Hispanic or Latinos and blacks.⁷ Similarly, it is estimated that 1% of sexually active men in the U.S. have genital warts, and almost 90% of cases are related to HPV.³⁹ The use of the HPV vaccine among men has the potential to reduce and eliminate the majority of these cases. Primary care physicians will be at the frontline of this effort. Innovative, time saving, and culturally tailored interventions should be tested and implemented to facilitate the dissemination of the HPV vaccine among primary care providers that serve large minority populations.

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Table 1

Socio-Demographic Characteristics (N=93)

Age	
mean(range)	53yo (33–85)
Female	
	51%
Male	
	49%
Country of Origin	
U.S.	36%
Asia	17%
Easter Europe	13%
Caribbean	12%
Latin-America	3%
Africa	5%
Other	14%
Ethnicity	
Non-Hispanic	42%
Hispanic	15%
Other	43%
Race	
White	52%
Asian	28%
Afro-Caribbean	8%
Black	4%
Other	8%
Primary Language	
English	62%
Russian	9%
Spanish	7%
Haitian Creole	2%
Cantonese	2%
Other	25%
Specialty	
Pediatrician	62%
Internist	21%
Family Practitioner	17%
Practice Setting	
Group or Individual	
Private Practice	71%
University Affiliated	12%

Community based Clinic 12%

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Table 2

Physician-Reported Patient Population Characteristics

> 75% of Total Patients from Minority Populations	71%
% of Patient Population from each Race/Ethnicity	
White Hispanic	37%
Black-African American Non-Hispanic	41%
Black-African American Hispanic	10%
Asian	5%
>20% Immigrants	54%
% Uninsured Median(Range)	5% (1–40)

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