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Factors Associated With Medicaid Providers' Recommendation of the HPV Vaccine to Low-Income Adolescent Girls

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A B S T R A C T

Purpose: Human papillomavirus (HPV) vaccination in the United States remains a public health challenge with vaccine rates of 50%. Although health care providers can facilitate HPV vaccination, several factors may impede their ability to universally recommend the vaccine. To maximize the potential of HPV vaccines, it is important to understand challenges providers face in the clinical environment. The study sought to identify factors associated with recommendation of the HPV vaccine for low-income adolescents in the early (9–10), target (11–12), early adolescent catch-up (13–14), and late adolescent catch-up (15–17) vaccination groups.

Methods: Surveys were mailed between October 2009 and April 2010 to a random sample of Florida-based physicians serving Medicaid-enrolled adolescents. Data were analyzed in 2013.

Results: Among early adolescents, discomfort discussing sexually transmitted infections (STIs) with teens (odds ratio [OR] = 1.75), difficulty ensuring vaccine completion (OR = .73), and discomfort discussing STIs with parents (OR = .44) were associated with recommendation. For target adolescents, discomfort discussing STIs with teens (OR = 2.45), time constraints (OR = .70), vaccine efficacy concerns (OR = .65), discomfort discussing STIs with parents (OR = .33), obstetrics/gynecology (OR = .25) and family medicine (OR = .24) specialty, and non-Hispanic black patient (OR = .15) were associated with recommendation. In early catch-up adolescents, concerns that teens will practice riskier behaviors (OR = .57), discomfort discussing STIs with parents (OR = .47), and family medicine specialty (OR = .20) were associated with recommendation. For late catch-up adolescents, family medicine specialty (OR = .13) was associated with recommendation.

Conclusions: Modifiable factors that impede or influence provider recommendations of HPV vaccines can be addressed through intervention. Overall, findings suggest that efforts should focus on sexuality communication and family medicine specialty.

IMPLICATIONS AND CONTRIBUTION

Identifying barriers to HPV vaccine recommendation among providers who largely see low-income and minority patients is essential to reducing downstream HPV-associated health disparities. Specifically, efforts to improve recommendation practices should focus on building providers' communication skills around sexual health and more readily engaging family medicine physicians in the vaccination dialogue.

Human papillomavirus (HPV) vaccination rates have gradually increased in the United States. The nationwide vaccine initiation rate (i.e., at least one of three dose series administered) increased by 29% from 2007 (25%) to 2011 (53%) among

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adolescent girls aged 13–17 [1,2]. Despite this increase, the promise of HPV vaccines to effect downstream trends in racial, economic, and geographic health disparities is realized only when vaccination is maximized across populations [3]. Low-income and racial/ethnic minority adolescent girls face additional vaccination challenges such as lower rates of provider recommendation for vaccination and vaccine series completion [2,4,5]. Such findings highlight the urgent need to understand these differences in light of the disproportionate burden of cervical cancer and other HPV-associated diseases among low-income and minority groups [6].

Approximately 74% of all HPV infections occur among young adults aged 15–24 [7]. As such, the Centers for Disease Control and Prevention recommends target vaccination for adolescent girls and boys aged 11–12, early vaccination for those aged 9–10, and catch-up vaccination for 13–26 year olds [8,9]. HPV vaccines have the potential to reduce HPV-related morbidity and mortality through widespread and non-disparate uptake [10,11]. Research suggests that health care provider recommendation is an important contributor to HPV vaccine initiation and completion [4,12–14]. Prior studies have found that adolescent girls who received an HPV vaccine recommendation from their health care provider were 5 to 23 times more likely to vaccinate compared with those without a recommendation [4,13,15].

Few studies have examined health care provider barriers to recommending the HPV vaccine. Daley et al. found that the need to discuss sexuality before recommendation and prior vaccine refusals were barriers to recommendation among adolescents in the target vaccination age range [16]. Another study found that inadequate reimbursement was solely related to not recommending vaccination for adolescent girls of all ages [17]. Other studies found that negative parental perceptions of the vaccine, HPV knowledge deficits, lack of support for mandatory vaccination, lack of office coordination, and difficulty determining insurance coverage were barriers to recommendation [18–20].

Although some studies have outlined provider barriers to HPV vaccine recommendation, these studies did not account for differences by age- and evidence-based recommendation guidelines and have not primarily focused on providers who see low-income patients [16,17]. Such an examination is important given that physicians' vaccination barriers may differ according to age. Likewise, focusing on recommendation patterns among physicians who see low-income and minority patients is important given that these groups carry a disproportionate burden of HPV-associated disease. Thus, the purpose of this study was to assess factors related to Medicaid providers' recommendation of the HPV vaccine across all three vaccination categories: early, target, and catch-up.

Methods

Study design

This study is part of a larger study that assessed HPV information seeking behaviors, knowledge, perceptions, vaccination barriers and practices, and sociodemographic and clinic characteristics of Florida Medicaid providers [21]. Using the Dillman [22] multiphase recruitment approach, surveys were mailed to a random sample of Medicaid providers selected from the Florida Medicaid Master Provider File who had a clinical practice address in Florida. The multiphase recruitment approach consisted of mailing a: (1) postcard to introduce the study; (2) packet containing a cover letter, scannable survey, prepaid return envelope, and $15 cash incentive; (3) reminder card, followed by another copy of the survey to prompt completion by non-responders; and (4) third survey packet along with a $15 cash incentive to those who received the second survey mailing. Physicians who retuned the survey during the first mailing received a $15 cash incentive. If the survey was mailed to physicians a second time, an additional $15 cash incentive was received to equal a maximum of $30. Data were collected between October 2009 and April 2010. The study was approved by the University of South Florida and University of Florida Institutional Review Boards.

Study setting and population

A random sample of 800 physicians generated from the Florida Medicaid Master Provider File was recruited for the study. Physicians eligible for study inclusion included those who saw 25 or more 9- to 17-year-old girls in the past year and had a primary care specialty. Of the 800 mailed surveys, 485 were completed and returned. Of those, 52 did not meet eligibility criteria. The final study sample included 433 physicians. The overall response rate of 68.3% was calculated by dividing the number of respondents by the number of surveys mailed, minus the undeliverable and ineligible surveys (485/[800–90]).

Methods of measurement

A multi-item survey, adapted from a previous national study of HPV vaccination among physicians [23], was used to assess barriers related to HPV vaccine recommendation. Previous research reporting on physicians' barriers to HPV vaccination and recommendations from study co-investigators, who are both clinicians and experts in the field, informed the selection of barrier items for the current survey [16,24,25]. At the time of the study, Gardasil was the only licensed HPV vaccine in the United States; therefore, items referred only to Gardasil.

HPV vaccine recommendation. Physicians were asked "In the past 12 months, how often did you recommend the HPV vaccine to your female Medicaid patients, in the following age groups". Physicians responded to the items on a 5-point Likert scale (1 = never; 5 = always). Because we were interested in modeling barriers associated with recommendation, the five response categories were collapsed into two, "sometimes/often/always" (i.e., recommendation) and "never/rarely" (i.e., non-recommendation). Physicians were asked to respond to the item for four separate age groups: 9–10 (early vaccination), 11–12 (target vaccination), 13–14 (early catch-up vaccination), and 15–17 (late catch-up vaccination). The age groups were categorized based on the Centers for Disease Control and Prevention HPV vaccine recommendation guidelines with further stratification in the catch-up group [8]. The catch-up group was split into two based on earlier work within the Florida Medicaid population suggesting different vaccination patterns within the two groups [26].

Barriers to HPV vaccine recommendation. Physicians were asked a series of 13 items related to their perceptions of vaccination barriers. Specifically, physicians were asked, "How strongly would you agree or disagree that the following are barriers related to immunizing your Medicaid patients against HPV?" The