Preventive Medicine 105 (2017) 372–377

Contents lists available at ScienceDirect

Preventive Medicine

journal homepage: www.elsevier.com/locate/ypmed

Primary HPV testing recommendations of US providers, 2015

Crystale Purvis Cooper[a], Mona Saraiya[b,*]

[a] Soltera Center for Cancer Prevention and Control, Tucson, AZ 85704, United States
[b] Division of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, GA 30341, United States

ARTICLE INFO

Keywords:
Cervical cancer screening
Providers
HPV testing
United States

ABSTRACT

Objective: To investigate the HPV testing recommendations of US physicians who perform cervical cancer screening.
Methods: Data from the 2015 DocStyles survey of U.S. health care providers were analyzed using multivariate logistic regression to identify provider characteristics associated with routine recommendation of primary HPV testing for average-risk, asymptomatic women ≥ 30 years old. The analysis was limited to primary care physicians and obstetrician-gynecologists who performed cervical cancer screening (N = 843).
Results: Primary HPV testing for average-risk, asymptomatic women ≥ 30 years old was recommended by 40.8% of physicians who performed cervical cancer screening, and 90.1% of these providers recommended primary HPV testing for women of all ages. The screening intervals most commonly recommended for primary HPV testing with average-risk, asymptomatic women ≥ 30 years old were every 3 years (35.5%) and annually (30.2%). Physicians who reported that patient HPV vaccination status influenced their cervical cancer screening practices were almost four times more likely to recommend primary HPV testing for average-risk, asymptomatic women ≥ 30 years old than other providers (Adj OR = 3.96, 95% CI = 2.82–5.57).
Conclusion: Many US physicians recommended primary HPV testing for women of all ages, contrary to guidelines which limit this screening approach to women ≥ 25 years old. The association between provider recommendation of primary HPV testing and patient HPV vaccination status may be due to anticipated reductions in the most oncogenic HPV types among vaccinated women.

1. Introduction

The US Food and Drug Administration approved a human papillomavirus (HPV) test that can distinguish vaccine HPV types from other oncogenic HPV types for primary cervical cancer screening in 2014 (Nelson, 2014). In 2015, the American Society for Colposcopy and Cervical Pathology (ASCCP) and the Society of Gynecology Oncology (SGO) issued clinical guidance recommending primary HPV testing every 3 years for women ≥ 25 years old as one of several screening strategies (Huh et al., 2015), and the American College of Obstetricians and Gynecologists (ACOG) recommended this screening strategy in 2016 (American College of Obstetricians and Gynecologists, 2016). However, primary screening with the HPV test has not been recommended by the American Cancer Society (ACS) (Saslow et al., 2012) and the US Preventive Services Task Force (USPSTF) (US Preventive Services Task Force, 2012), which endorse two screening options: 1) Papanicolaou (Pap) testing every 3 years for women 21–65 years old and 2) Pap testing every 3 years for women 21–29 years old followed by testing with both the Pap test and the HPV test (co-testing) administered every 5 years for women 30–65 years old.

This study investigated US physicians' HPV testing recommendations in 2015 to assess uptake of this newer screening strategy.

2. Methods

The 2015 DocStyles survey was administered online in June by Porter Novelli (Washington D.C.). Participants were recruited from SERMO's Global Medical Panel® (> 330,000 US health professionals, verified through telephone confirmation at their place of work). Participants included physicians practicing in a variety of settings (solo practices, group practices, managed care organizations, etc.), but were limited to providers who worked in the United States, actively saw patients, and had practiced for at least 3 years. The survey included a variety of provider groups, but the analyses reported here were limited to primary care physicians (internists and family practitioners) and obstetrician-gynecologists.

* Corresponding author at: Division of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion, CDC, 4770 Buford Hwy, MS K76, Atlanta, GA 30341, United States.
E-mail address: msaraiya@cdc.gov (M. Saraiya).

http://dx.doi.org/10.1016/j.ypmed.2017.08.006
Received 26 March 2017; Received in revised form 10 August 2017; Accepted 13 August 2017
0091-7435/ Published by Elsevier Inc.

An invitation to participate in the survey was emailed to randomly-selected panel members—1569 (1122 primary care physicians and 347 obstetrician-gynecologists). Of this sample, 1250 (79.7%) comprised of 1000 primary care physicians and 250 obstetrician-gynecologists completed the survey. Quota sampling (Cumming, 1990) was used to ensure adequate representation of all provider groups surveyed; the quotas were filled: 1000 primary care physicians and 250 obstetrician-gynecologists. Fifty-eight (3.7% of sample, 44 primary care physicians and 14 obstetrician-gynecologists) were terminated based on screening questions; 30 (1.9% of sample, 23 primary care physicians and 7 obstetrician-gynecologists) did not complete the survey; 24 (1.5% of sample, 10 primary care physicians and 14 obstetrician-gynecologists) were terminated due to filled quotas; 107 (6.8%, 45 primary care physicians and 62 obstetrician-gynecologists) did not respond to the invitation to participate in the survey or responded after the survey closed. Of the 1250 providers who completed the survey, 407 (399 primary care physicians and 8 obstetrician-gynecologists) were excluded because they reported that cervical cancer screening was not within the scope of their practice or performed no cervical cancer screening within a typical month, resulting in a sample of 843 (601 primary care physicians and 242 obstetrician-gynecologists).

Respondents were not required to participate and could exit the survey at any time. Respondents were paid $35–$80 depending on specialty. The survey questions analyzed in the present study were developed by multi-disciplinary team of researchers from CDC and Porter Novelli. The study complied with the ICC/ESOMAR International Code for ethical research (ESOMAR, 2008) and was not subject to CDC IRB review as it involved secondary data analysis, and no individual identifiers were included in the dataset received by investigators.

In addition to providing demographic characteristics and practice information, respondents rated the influence of four factors on their cervical cancer screening practices: “clinical experience,” “patient preference,” “patient HPV vaccination status,” and “practice guidelines.” Responses provided were “not at all,” “slightly,” “somewhat,” and “very much” and were dichotomized into “does not influence” (“not at all” and “slightly”) and “influences” (“somewhat” and “very much”).

Respondents were also asked which cervical cancer screening options and intervals they routinely recommended to average-risk, asymptomatic women in three age groups: “24 years and younger,” “25–29 years,” and “30 years and older.” Screening options listed for each age group of patients were “co-testing (Pap test in combination with HPV test),” “Pap test alone,” and “HPV test alone” (screening options were listed in this order together in a single block beneath each age-specific scenario). Responses provided were “do not recommend,” “annual,” “every 2 years,” “every 3 years,” “every 4 years,” “every 5 years,” and “other.” A single response was accepted for each screening option. Routine recommendation of HPV test alone was dichotomized into “do not recommend” and “recommend” (all other responses).

Pairwise Pearson Chi-square tests were performed to test the associations between the routine recommendation of primary HPV testing for average-risk, asymptomatic women ≥ 30 years old and provider characteristics. Variables significantly associated ($p < 0.05$) with routine recommendation of primary HPV testing in the bivariate analyses were included in a forward stepwise multivariate logistic regression model predicting routine recommendation of primary HPV testing for average-risk, asymptomatic women ≥ 30 years old. The data were analyzed in 2016 using IBM SPSS Statistics 21.0.

3. Results

The most common influences on cervical cancer screening practices were practice guidelines (89.1%) and clinical experience (73.1%) (Table 1). For average-risk, asymptomatic women, the Pap test alone was the most popular screening recommendation for women < 25 years old (81.4%) and 25–29 years old (80.9%), and co-testing was recommended most often for women ≥ 30 years old (94.4%).

Primary HPV testing for average-risk, asymptomatic women ≥ 30 years old was recommended by 40.8% of physicians who performed cervical cancer screening. Among these, 90.1% (36.8% of sample) recommended primary HPV testing for women of all ages (< 25 years old, 25–29 years old, and ≥ 30 years old). The screening intervals most commonly recommended for primary HPV testing for average-risk, asymptomatic women ≥ 30 years old were every 3 years (35.5%) and annually (30.2%) (Fig. 1).

In the bivariate analyses, routine recommendation of primary HPV testing to average-risk, asymptomatic women ≥ 30 years old was more likely among internists, male providers, Asian providers, Hispanic providers, and providers who reported that their cervical cancer screening practices were influenced by patient preference or patient HPV vaccination status (Table 2). And, routine recommendation of primary HPV testing to average-risk, asymptomatic women ≥ 30 years old was less likely among providers who screened ≥ 45 women for cervical cancer during a typical month, and providers who reported that practice guidelines influenced their cervical cancer screening practices. Years in practice, number of providers in practice, teaching hospital privileges, region, financial status of majority of patients treated, and one of the four factors influencing cervical cancer screening practices (clinical experience) were not associated with routine recommendation of primary HPV testing to average-risk, asymptomatic women ≥ 30 years old.

In the adjusted logistic regression model, physicians who reported that patient HPV vaccination status influenced their cervical cancer screening practices were almost four times more likely to routinely recommend primary HPV testing to average-risk, asymptomatic women ≥ 30 years old than other providers (Table 3). The observed associations with specialty, gender, race, ethnicity, and practice guidelines influencing cervical cancer screening practices also persisted in the adjusted model.

4. Discussion

The Pap test alone and co-testing remained the dominant cervical cancer screening modalities recommended by providers, but > 40% recommended primary HPV testing. This result was surprising given the recency of SGO/ASCCP (Huh et al., 2015) and ACOG (American College of Obstetricians and Gynecologists, 2016) recommendations for primary HPV testing, and the absence of guidelines on this screening strategy from ACS (Saslow et al., 2012) and USPSTF (US Preventive Services Task Force, 2012). However, prior national surveys of US providers found widespread agreement that the HPV test administered alone is an effective screening modality in 2012 (79.5%–91.8%, depending on provider specialty) and 2009 (75.3%–86.1%) (Cooper and Saraiya, 2015).

Provider HPV testing recommendations were not consistent with available guidance. Most providers who endorsed primary HPV testing in our survey recommended it for women of all ages, despite guidance to limit this strategy to women ≥ 25 years old (Huh et al., 2015; American College of Obstetricians and Gynecologists, 2016). The rationale for extending primary HPV testing to younger women is not clear, but may be indicative of a universal screening mentality or a lack of understanding that the HPV infection in teenagers and women in their early 20's often resolves or clears without intervention (Boardman and Robison, 2013). Many providers also followed an annual or 2-year screening interval for primary HPV testing, despite recommendations for a 3-year interval (Huh et al., 2015; American College of Obstetricians and Gynecologists, 2016) and evidence in other countries which supports the effectiveness of even longer intervals, up to 10 years (Peto and Gilham, 2017; Elfström et al., 2014; Dillner et al., 2008; Gage et al., 2014; Isidean et al., 2016). This preference for more frequent screening may reflect a lack of familiarity with screening