

# HPV Update: What Nurse Practitioners Need to Know Practical Strategies for Helping Patients and Parents Understand the Importance of HPV Vaccination



■ Mary Rubin, RNC, PhD, CRNP, FAANP

**Part 2 of a 2-part series** based on a roundtable dialogue among clinicians held on October 14, 2011, at the annual meeting of the National Association of Nurse Practitioners in Women's Health. During the dialogue, practitioners from all settings described challenges to patient vaccination and identified solutions they have implemented to improve patient outcomes.

The benefits of vaccination can be illustrated by considering an infectious disease familiar to almost everyone—smallpox. This disfiguring and deadly virus originated as early as 10,000 BC.<sup>1</sup> The worldwide death toll over the

intervening centuries is unknown, but it is thought that 300 million to 500 million people died from the virus in the 20th century alone.<sup>2</sup>

Smallpox was finally vanquished worldwide in 1980, thanks to a vaccine developed by Edward Jenner and to the efforts of many people who worked to improve and disseminate the vaccine over the years. A disease so ravaging could be eliminated on a global basis only through widespread, concerted effort to immunize every individual.

In the United States, much of this effort centered on schoolchildren. If smallpox and other vaccinations had not been required for all schoolchildren, we would still be battling a host of serious infections. For example, a polio epidemic in the early 1950s affected 25,000 people every year—most of

## CE INFORMATION

### ■ FACULTY

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For the live interactive event, Dr. Rubin provided expert commentary.

The roundtable was moderated by  
Susan Wysocki, WHNP-BC, FAANP  
Editor in Chief

*Women's Health Care Journal*  
Past President and CEO

National Association of Nurse Practitioners in Women's Health  
Washington, DC

### ■ INTENDED AUDIENCE

This continuing education (CE) activity has been designated to meet the educational needs of nurse practitioners (NPs) involved in women's health.

- CE Approval Period: December 1, 2011 through November 30, 2012
- Estimated Time to Complete This Activity: 0.5 hour

### ■ PROGRAM DESCRIPTION/IDENTIFICATION OF NEED

In the live 1-hour interactive roundtable discussion on which this activity is based, NPs discussed barriers, challenges, and solutions to incorporating HPV vaccination into their practice settings.

This program was developed to address educational needs identified by surveys and feedback following the 2010 NPWH annual meeting. A 2011 survey emailed to nearly 10,000 NPs garnered nearly 300 responses. It revealed that only 39.6% of clinicians review vaccination status with all adolescent and adult

patients. Of clinicians surveyed, 53.3% provide HPV vaccination to <10% of their patients, 19.4% to 11-20%, 13.2% to 21-40%, 6.2% to 41-60%, 4.4% to 61-80%, and 3.5% to >81%.

### ■ EDUCATIONAL OBJECTIVES

Following completion of this CE program, participants should be better able to:

- Describe prevalence of HPV
- Review options for vaccination
- Discuss HPV vaccination in women and men
- Review utilization issues
- Discuss expectations for a post-vaccinated population

### ■ ACCREDITATION STATEMENT

This activity has been evaluated and approved by the Continuing Education Approval Program of the National Association of Nurse Practitioners in Women's Health (NPWH), and each e-newsletter has been approved for 0.5 contact hour of CE credit, including 0.25 contact hour of pharmacology content.

### ■ FACULTY DISCLOSURES

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- Mary Rubin, RNC, PhD, CRNP, FAANP  
Consulting fees: GlaxoSmithKline, Cx CA Advisory Board, Graceway, EGW Advisory Committee

- Susan Wysocki, WHNP-BC, FAANP  
Advisory Board/Panel: Bayer HealthCare, TEVA, Upsher-Smith, Boehringer, NovoNordisk, GlaxoSmithKline, Watson, Azur, Church and Dwight  
Speaker's Bureau: Bayer HealthCare, TEVA, NovoNordisk

### ■ DISCLAIMER

Participating faculty members determine the editorial content of CE activity; this content does not necessarily represent the views of NPWH, or Merck & Co., Inc. This content has undergone a blinded peer review process for validation of clinical content. Although every effort has been made to ensure that the information is accurate, clinicians are responsible for evaluating this information in relation to generally accepted standards in their own communities and integrating the information in this activity with that of established recommendations of other authorities, national guidelines, FDA-approved package inserts, and individual patient characteristics.

### ■ SUCCESSFUL COMPLETION OF THE ACTIVITY

Successful completion of this activity requires the participant to: (a) read the learning objectives, disclosures, and disclaimers; (b) study the material in the learning activity; (c) during the approval period: 1. Print out the CE post test and evaluation, 2. complete and return the activity evaluation and post-test answers only to the address or fax number on the post-test/evaluation form, (d) to receive CE credit, a score of 70% or better on the post test is required.

### ■ COMMERCIAL SUPPORT

This program is made possible by an unrestricted educational grant from Merck & Co., Inc.

them children—until 1955, the year the polio vaccine was developed. By 1960, the number of polio cases had declined to 3,000. By 1979, there were 10 cases.<sup>3</sup>

Similarly, before the measles vaccine was licensed in the United States in 1963, almost every child developed measles by the age of 15 years.<sup>4</sup> Today, measles has almost been completely eliminated in this country.<sup>5</sup>

The history of the smallpox, polio, measles, and other vaccines should be instructive to us as well as our patients. Vaccination works best when everybody participates. We need to stress this concept to patients and their parents. This e-newsletter offers strategies for driving home the importance of immunization against human papillomavirus (HPV), not only to prevent cervical cancer, but to reduce the incidence of cervical precancers, genital warts, and other anogenital lesions.

### Emphasizing the Safety of Vaccination

The rise of vaccines—and the requirement for schoolchildren to submit to some of them—hasn't come without some backlash. Roughly one in five Americans is afraid that vaccination is linked to autism, despite recent evidence to the contrary,<sup>6</sup> and 40% of adults have delayed or refused at least one vaccination for their child.<sup>7</sup>

Countering these fears can be a challenge. As we know, vaccination is not without some risk, but the likelihood of a serious adverse event is extremely low to nil.

For the quadrivalent vaccine (Gardasil), the most common adverse events among girls and women involve the injection site; they include pain, swelling, erythema, pruritus, and bruising. Among girls and women who reported one or more of these effects, 94.3% judged them to be mild to moderate in intensity.<sup>8</sup>

Headache was the most commonly reported systemic effect, but it did not occur as frequently among vaccine recipients as it did among an unvaccinated reference group.<sup>8</sup> Effects that occurred slightly more frequently among vaccine recipients than among the reference group included pyrexia, nausea, dizziness, diarrhea, vomiting, cough, toothache, malaise, arthralgia, insomnia, and nasal congestion.<sup>8</sup>

For boys and men, the injection site was also the most commonly affected area, with subjects reporting pain, erythema, swelling, and hematoma.<sup>8</sup> Of affected males, 96.4% judged these complaints to be mild to moderate in intensity.<sup>8</sup> The most common systemic effects among boys and men were headache and fever, followed by pyrexia, oropharyngeal pain, diarrhea, nausea, upper respiratory tract infection, myalgia, dizziness, and vomiting—but most occurred at a rate within 2 percentage points of the unvaccinated reference group.<sup>8</sup>

The picture is similar for the bivalent vaccine, with most minor adverse events affecting the site of injection, and

systemic effects consisting predominantly of headache, fever, and other complaints similar to those associated with the quadrivalent vaccine.<sup>9</sup>

More serious effects have been reported for both the quadrivalent and bivalent vaccines through the Vaccine Adverse Event Reporting System (VAERS). However, as the Centers for Disease Control and Prevention (CDC) points out, “VAERS data cannot be used to prove a causal association between the vaccine and the adverse event. The only association between the adverse event and vaccination is temporal, meaning that the adverse event occurred sometime after vaccination. Therefore, the adverse event may be coincidental or it may have been caused by vaccination; however, we cannot make any conclusions that the events reported to VAERS were caused by the vaccine.”<sup>10</sup> Among these serious adverse events are Guillain-Barré syndrome, blood clots, and death.<sup>10</sup>

Patients may be surprised to learn that even deaths that occur in a motor vehicle accident are included in the VAERS report when they involve participants in a study of the HPV vaccine.<sup>10</sup> In addition, patients and parents often fail to comprehend the lack of correlation in many reports of vaccine-related adverse events. For example, one death that occurred after vaccination with the bivalent formulation received widespread media attention: A young girl in the United Kingdom died shortly after receiving the vaccine. However, postmortem assessment revealed the cause of death to be a cardiac-related tumor that had no association with the vaccine.<sup>11</sup>

### Being Proactive in Regard to Syncope

Fainting (syncope) has been reported after administration of vaccines, including both HPV formulations.<sup>8,9,12</sup> These episodes are reported to the VAERS program and reviewed by the Advisory Council on Immunization Practices (ACIP). Because serious injury can occur if a patient faints during activities such as walking and driving, the ACIP currently recommends that all patients who undergo vaccination be observed for 15 minutes after administration.<sup>12</sup> If syncope occurs, the patient should be monitored until symptoms resolve.<sup>12</sup>

Syncope may occasionally be associated with tonic-clonic movements and “seizure-like activity.”<sup>8,9</sup> The manufacturers of both HPV vaccines note that this activity is “usually transient and typically responds to restoring cerebral perfusion by maintaining a supine or Trendelenburg position.”<sup>8,9</sup>

### Assuaging Parental Concerns Related to Sexual Activity

Parents often believe that vaccination against HPV is unnecessary because they expect their children to delay sexual activity until marriage. Conversely, they may be afraid that vaccina-

tion will make their children more likely to engage in sexual activity before marriage. Both perspectives are unrealistic, but they may prove to be some of the most intractable beliefs about the HPV vaccine.

Counseling such as the following may be helpful in clarifying the risks of delayed or no vaccination:

It is commendable that, as a parent, you are encouraging your daughter to delay the onset of sexual activity. However, delaying sexual activity until marriage provides no guarantees. If your daughter's partner has been sexually active, that individual may be infected and can pass on the infection. If your daughter marries a man who has had multiple partners (that is, more than one), it is very possible that she will acquire HPV and be at risk for cervical cancer because she has waited and has not been vaccinated. The issue is whether her husband has had sex before. The only way your daughter can be sure that she won't develop an HPV infection is if she marries a man who has never had sex.

One nurse practitioner related the story of a man who was twice widowed. His first wife died of cervical cancer. Then his second wife died of cervical cancer. He was the carrier of high-risk HPV, so any unvaccinated woman that he has sex with is at risk for infection.

Other counseling should include mention of the fact that, by age 14 to 15, 28% of girls in the United States are sexually active.<sup>13</sup> And although multiple factors go into a teen's decision to initiate or abstain from sexual activity, fear of sexually transmitted infection does not figure highly on the list.<sup>13</sup>

Last, parents may benefit from graphic illustrations of some of the effects of HPV infection, such as genital warts and cervical lesions.

Surveys suggest that 75% of "well-informed" parents are accepting of the vaccine for their young daughters.<sup>13</sup>

### Importance of Emphasizing Other Benefits of Vaccination

It is vital that nurse practitioners and other clinicians help parents and patients see the link between HPV vaccination and a reduced incidence of cervical abnormalities. As was outlined in the first e-newsletter in this series, not only does the vaccine prevent cervical cancer, it reduces the rate of abnormal Pap tests and cervical precancers. The quadrivalent formulation also prevents genital warts related to HPV 6 and 11. By preventing high-grade cervical intraepithelial neoplasia (CIN) and condyloma, the vaccine also reduces the need for procedures such as colposcopy and biopsy and invasive treatments

### Resources for Patients, Parents, and Providers

**Kidshealth.org.** This site has separate portals for parents, kids, and teens. Among the list of topics on the teens' pages is the HPV vaccine ([http://kidshealth.org/teen/sexual\\_health/stds/hpv\\_vaccine.html#cat20017](http://kidshealth.org/teen/sexual_health/stds/hpv_vaccine.html#cat20017)), with easy-to-read text on the link between HPV infection and cervical cancer and genital warts, as well as an explanation of the rationale behind and importance of vaccination. There is a comparable page for parents on the topic of genital warts ([http://kidshealth.org/parent/infections/std/genital\\_warts.html#cat20046](http://kidshealth.org/parent/infections/std/genital_warts.html#cat20046)).

**Center for Young Women's Health.** Children's Hospital Boston offers information geared to teenagers on HPV infection, genital warts, and vaccination at <http://www.youngwomenshealth.org/hpv.html>

**Worth the Wait** is a program developed by clinicians at Scott & White, a Texas-based health care system, to encourage abstinence and educate teens about the risks of sexual activity. It offers a website geared to teens at <http://www.worththewait.org/teens.html>, with information on STDs, among other topics, and a separate portal for parents (<http://www.worththewait.org/parents.html>).

**Association of Reproductive Health Professionals.** This organization offers patient resources on a number of topics related to reproductive health. A brochure for patients entitled "A Woman's Guide to Understanding HPV and Cervical Cancer" can be downloaded in English or Spanish by visiting <http://www.arhp.org/publications-and-resources/patient-resources/printed-materials/understanding-hpv-cervical-cancer>

such as loop electrosurgical excision procedure (LEEP), which can have an adverse impact on fertility.

### Linking the HPV Vaccine to Other Immunizations in Childhood

Another helpful strategy for convincing parents and patients of the importance of vaccination against HPV is placing it in the context of the childhood immunization schedule. HPV is just one of the infectious agents that children need to be protected against, along with tetanus, diphtheria, pertussis, meningococcus, polio, and measles, to name a few. The ACIP

recommends the HPV vaccine in its guidelines for immunizations for all girls. The vaccine is optional for boys but can help prevent genital warts. The quadrivalent vaccine has been approved for the prevention of anal cancer and associated precancerous lesions (anal intraepithelial neoplasia [AIN] grades 1, 2, and 3) in persons aged 9 through 26 years.<sup>14</sup>

### Explaining That HPV Is a Serious Sexually Transmitted Disease (STD)

With some patients and parents, it may be helpful to emphasize the sexually transmitted nature and ubiquity of HPV infection. For example, the CDC conducted surveillance for cervical infection with high-risk HPV types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, or 68 in 26 STD, family planning, and primary care clinics in six locations to estimate the national burden of disease. During 2003–2005, the CDC documented an overall prevalence of high-risk HPV of 23%. Prevalence was:

- 35% in women 14 to 19 years old
- 29% in women 20 to 29 years old
- 13% in those 30 to 39 years old
- 11% in those 40 to 49 years old
- 6.3% in those 50 to 65 years old.<sup>15</sup>

Note that the highest prevalence was found among the youngest women.

Compare these findings with those related to *Chlamydia trachomatis*, one of the most common reportable STDs in the United States.<sup>16</sup> In 2010, the prevalence of chlamydial infection was approximately 6.8% among sexually active females 14 to 19 years old.<sup>15</sup>

### Conclusion

There are many barriers to widespread vaccination against HPV, including resistance among some parents to vaccination in general, a lack of awareness of the risks of HPV infection, a

fear that vaccinating a girl against an STD will promote sexual activity at an early age, and a lack of knowledge of the full roster of vaccinations recommended for children in the United States.

Providers who ask patients and parents about the vaccine and address any concerns clearly and factually can make vaccination more likely and, ultimately, lower the burden of HPV-related disease in the United States. ■

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1. What percentage of parents in the United States has delayed or refused at least one vaccination for their child?
  - a. 10%
  - b. 25%
  - c. 40%
  - d. 50%
  
2. The most frequently reported adverse effect of the HPV vaccine is:
  - a. pain at the injection site
  - b. syncope
  - c. headache
  - d. seizure
  
3. Because of the risk of syncope after administration of a vaccine, providers are advised to monitor the patient for:
  - a. 5 minutes
  - b. 15 minutes
  - c. 30 minutes
  - d. no monitoring is required
  
4. A girl need not be vaccinated if she plans to abstain from sex until marriage.
  - a. True
  - b. False
  
5. The Centers for Disease Control and Prevention Advisory Council on Immunization Practices recommends the quadrivalent HPV vaccine in its guidelines for all females and males aged 9 to 26 years.
  - a. True
  - b. False

NAME & DEGREE \_\_\_\_\_

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■ **Post-Test Answers:** 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_

■ **Evaluation (Check all that apply)**

1. **Faculty was knowledgeable and effective.** (Please use the "additional comments" field to provide further information)
 

Strongly Agree    Agree    No Opinion    Disagree    Strongly Disagree
2. **The format was appropriate for the subject matter and I was able to access all components of the activity without difficulty.** (Please use the "additional comments" field to provide further information)
 

Strongly Agree    Agree    No Opinion    Disagree    Strongly Disagree
3. **This activity will assist in the improvement of my:**

Competence    Performance    Patient Outcomes
4. **I plan to make the following changes to my practice:**

Modify treatment plans  
 Change my screening/prevention practice  
 Incorporate different diagnostic strategies into patient evaluation  
 Use alternative communication methodologies with patients and families  
 Other (Please explain in the "additional comments" field below)  
 None; the activity validated current practice
5. **What is your level of commitment to making the changes stated above?**

Very committed    Somewhat committed    Not very committed    Do not expect to change practice
6. **What are the barriers you face in your current practice setting that may impact patient outcomes?**

Lack of evidence-based guidelines  
 Lack of applicability of guidelines to my current practice / patients  
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 Organizational / institutional  
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 Patient adherence / compliance  
 Treatment-related adverse events  
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7. **This activity supported achievement of each of the learning objectives.** (Please use the "additional comments" field to provide further information)
 

Strongly Agree    Agree    No Opinion    Disagree    Strongly Disagree
8. **The material was organized clearly for learning to occur.**

Strongly Agree    Agree    No Opinion    Disagree    Strongly Disagree
9. **The content learned from this activity will impact my practice.**

Strongly Agree    Agree    No Opinion    Disagree    Strongly Disagree    I am not currently in practice
10. **The activity was presented objectively and was free of commercial bias.** (Please use the "additional comments" field to provide further information)
 

Strongly Agree    Agree    No Opinion    Disagree    Strongly Disagree
11. **I would recommend this activity to others.**

Strongly Agree    Agree    No Opinion    Disagree    Strongly Disagree

12. **Additional Comments:**

\_\_\_\_\_

\_\_\_\_\_