



The HPV Vaccine

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Human papillomavirus (HPV) infects nearly one in four adults in the U.S. It is known to be a precursor to cervical cancer, as well as anal, penile, and mouth/throat (oropharyngeal) cancers and genital warts. An estimated 27,000 new HPV-related cancers occur in the United States each year: 17,600 among females (of which 10,400 are cervical cancer) and 9,300 among males (of which 7,200 are oropharyngeal cancers).⁽¹⁾ Treatment often involves surgery which can impair fertility. Many of these cancers could be prevented with HPV vaccination.

A safe, effective, vaccine prevents most of these cancers

Two effective vaccines (Cervarix® and Gardasil®), offer protection from several cancer-causing types of HPV, including the two most prevalent. Available since 2006, they have been approved by the U.S. Food and Drug Administration. More than 57 million doses have been distributed, with no reports of serious safety concerns—the most common side effects are mild (pain near site of shot; fever, dizziness, and nausea).

Vaccinate preteens early, before exposure to HPV

The U.S. Advisory Committee on Immunization Practices (ACIP) recommends giving the HPV vaccine series (three doses given over six months) to males and females when they are 11 to 12 years old, well before they are exposed to the virus and when their immune response to the vaccine is best.⁽²⁾ However, in 2012 only about one-third of 13- to 17-year-old girls in the U.S. had received all three recommended doses in the series.⁽³⁾

States with lower HPV vaccination rates have higher rates of cervical cancer

Researchers at the University of North Carolina Gillings School of Global Public Health recently released a study showing that states with higher rates of cervical cancer incidence and mortality had much lower rates of adolescent girls receiving human papillomavirus (HPV) vaccines. In Arkansas, for example, 41 percent of teen girls have initiated HPV vaccination and 10 in 100,000 women develop cervical cancer each year. But in Massachusetts, where 69 percent of teen girls have initiated HPV vaccination, only 6 of 100,000 women develop cervical cancer each year. The states with the highest vaccination rates include Massachusetts, Rhode Island, and Vermont.⁽⁴⁾

Barriers to HPV Vaccination

Researchers at Norris Cotton Cancer Center in Lebanon, NH, collaborated with the State Immunization Program of New Hampshire to look at attitudes and practices related to HPV vaccination when it was first introduced in 2007. They conducted a small study of 52 primary care clinicians who cared for adolescents and found the most common barriers perceived for parents were:

- lack of understanding about HPV diseases,
- safety concerns,
- implied consent for early onset of sexual behaviors.

In December 2013, the NH state chapter of the American Academy of Pediatrics surveyed 200 primary care clinicians about their perceptions about HPV vaccination and again found the most common barrier to HPV immunization was lack of knowledge about HPV diseases, lack of parental acceptance, preference to wait until older, or sexual activity concerns. Of note, 33 percent of clinicians also cited patient fear of side effects as a barrier.

Similar barriers were reported by parents in a national immunization survey of 2008-2010 (*Pediatrics* 2013; 131; 645-651). Over three years, the proportion of parents refusing HPV vaccination because of safety concerns or side effects increased from 4.5 to 16.4 percent, despite the absence of any newly reported adverse events. In contrast, for other adolescent vaccines, the rate was stable at less than 1 percent.

Clearly, public perceptions about HPV vaccinations have not improved over the years. We need to reassess current messaging, publically and in the primary care setting.

Physicians play important role in pre-teen HPV vaccination

A recent report from the Centers for Disease Control and Prevention (CDC) found that missed clinical opportunities are an important factor in the low rate of HPV vaccine uptake in the United States.⁽⁵⁾ Physicians can play an important role in increasing HPV vaccination rates by providing information and recommending the complete 3-dose series of HPV vaccine during preventative care visits when other vaccines are administered. According to the CDC, as many as two-thirds of 11- and 12-year-old vaccine-eligible girls may not be receiving HPV vaccines when visiting their doctor for other pre-teen vaccines (Tdap, meningococcal, and influenza).⁽⁶⁾

Current HPV vaccination activity in New Hampshire and Vermont

There currently are organized HPV vaccination efforts in both New Hampshire and Vermont:

- The Vermont State Cancer Plan 2015 was revised and re-released on February 28, 2014, and now includes updated objectives for achievement by 2015 of HPV immunization in 80 percent of females and 30 percent of males.
- In New Hampshire, the 2015-2020 NH Comprehensive Cancer Plan includes an objective to increase the percentage of youth who complete the HPV vaccination series.
- Both the NH and VT state chapters of the American Academy of Pediatrics received grants from their national organization to conduct awareness campaigns among their members. The leaders of both state immunization programs have been strong advocates for advancing HPV immunizations.
- Legislative support and partnerships with insurers in both states have resulted in coverage of vaccine costs for all children. This coverage includes adolescent HPV vaccines.
- Dartmouth-Hitchcock has a well-established primary care research network, the Dartmouth CO-OP Research Network under the leadership of NCCC member Ardis Olson, which has contributed significantly to date in studies related to promotion of cancer control initiatives. NCCC members have participated in the development and revision of both state plans. Their ongoing work promotes collaborations between NCCC, the Dartmouth CO-OP Research Network, state and local cancer organizations, and HPV immunization programs so that resources and best practices can be shared.

Coordinated effort needed to accelerate HPV Vaccine Uptake

Accelerating HPV Vaccine Uptake: Urgency for Action to Prevent Cancer: A Report to the President of the United States from the President's Cancer Panel, issued in February, 2014, called increasing the rate of HPV vaccinations one of the most profound opportunities in cancer prevention today.⁽²⁾ Increasing HPV vaccination rates from current levels to 80 percent, according to CDC estimates, would prevent an additional 53,000 future cervical cancer cases in the United States among girls who now are 12 years old or younger over the course of their lifetimes. A growing number of other HPV-associated cancers in the U.S., like oropharyngeal cancers, will occur in males, who now also remain vaccinated at very low rates.⁽⁷⁾

Individuals and organizations need to coordinate their efforts to create a well-organized system that can deliver clear messaging to providers and parents in New Hampshire and Vermont about the importance of early HPV vaccination as a cancer prevention strategy.

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