

# HPV vaccine promotion: Snapshot of two health departments during the COVID-19 pandemic

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## Abstract

The COVID-19 pandemic has impacted routine health care services including immunization delivery. The most common sexually transmitted infection in the United States is the human papillomavirus (HPV), and its sequelae may be prevented by vaccination. Sequelae that can develop if one's immune system is not able to clear the infection include warts, precancerous lesions, and cancer. The American College of Obstetricians & Gynecologists (ACOG) reports almost everyone who is sexually active will encounter the virus at some time during their life. Most of the estimated 79 million infections occur among people who are in their late teens or early 20s. Since 2006, there has been a vaccine available to prevent HPV infections in both males and females; however, administration of this vaccine has only been about half the rate of other vaccines and vaccine hesitancy may play a role. Public health nurses are vital in providing accurate and nonjudgmental vaccine education to their clients, especially unaccompanied minors seeking care in public health department clinics. This paper will explore the recommendations for providing this vaccine as well as a snapshot of current practice in two health departments in the Southeast region of the United States during the COVID-19 pandemic.

## KEYWORDS

adolescents, COVID-19, health department, HPV vaccines, public health, vaccination

## 1 | BACKGROUND

The most common sexually transmitted infection is the human papillomavirus (HPV) (Centers for Disease Control & Prevention [CDC], 2019). Almost every individual who is sexually active will be infected with HPV at some point during his or her life (The American College of Obstetricians & Gynecologists [ACOG], 2017). Of the known 79 million Americans infected, most are in their late teens and early 20s, thus placing adolescents at a higher risk of exposure (CDC, 2019). Sequelae that can develop if one's immune system is not able to clear the infection include genital warts, precancerous lesions, and cancer (ACOG, 2017). There are over 150 types of HPV,

and it is spread through skin-to-skin contact, such as during vaginal, oral, or anal sex (ACOG, 2017). HPV types 6 and 11 can cause genital warts and 13 types, including types 16 and 18, may lead to cancer of the cervix, anus, vagina, penis, mouth, and throat (ACOG, 2017). It may take years and, perhaps, decades for one to develop cancer because of HPV (CDC, 2019). Although it is not possible to identify which individuals with HPV will develop cancer, the HPV vaccine has been found to be an effective preventative measure to protect against HPV-related diseases (CDC, 2019). Amidst positive strides made in prevention, the World Health Organization (WHO) declared COVID-19 a pandemic on March 11, 2020 (Cucinotta & Vanelli, 2020). There is the potential that for any gains that have

been made in the uptake of the HPV vaccine may be reversed because of the pandemic (Elam-Evans et al., 2020).

## 1.1 | Search criteria

A literature search was conducted in PubMed using the keywords "HPV," "vaccine," "adolescent," "education," "United States," "barriers," "trust," "health department," "public health," "COVID-19," "HPV vaccine," and "HPV vaccination" in various combinations.

## 1.2 | Vaccines

The quadrivalent HPV (4vHPV) vaccine was licensed and became available in the United States in 2006 for females, in 2009 for males to prevent genital warts, and in 2011, recommended routinely for males (Coyne-Beasley & Hochwalt, 2016; Petrosky et al., 2015). In 2009, the bivalent HPV vaccine (2vHPV) became available for cervical cancer prevention (FDA, 2009) and in 2014, the nonavalent HPV vaccine (9vHPV) was introduced (Petrosky et al., 2015). The goal of 4vHPV is to protect against genital warts and cervical cancer, and both 4vHPV and 9vHPV protect against vaginal, vulvar, and anal cancer (Coyne-Beasley & Hochwalt, 2016). It is recommended that a series of two shots should be administered to those 9–14 years of age and a series of three shots should be administered to those 15–26 years of age (ACOG, 2017). Although studies have shown that getting the series of vaccines prior to being sexually active can reduce one's risk of developing certain HPV-related cancers by 99%, risk can still be reduced even if already sexually active when the vaccines are administered (ACOG, 2017). Although the side effects are minimal, such as localized mild-to-moderate pain, edema, and erythema with no reported serious side effects, the rate of HPV vaccination has only been about half the rate of tetanus, diphtheria, pertussis vaccination (Shawhan & Ruppe, 2019). Additionally, even though the vaccine is recommended for males and females of ages 11 or 12 (or can initiate at age 9) through age 26 years olds (CDC, 2019) and endorsed by many professional organizations, such as ACOG and 69 National Cancer Institute-designated cancer centers, the initiation/completion rate of vaccination in 2016 nationally was 65.1% and 49.5% for women and 50.6% and 37.5% for men, respectively (Carhart et al., 2018). Although vaccine hesitancy may be a significant factor impacting the decision of parents and adolescents to receive the vaccine (Shawhan & Ruppe, 2019), the COVID-19 pandemic may be linked to further reductions in vaccine uptake (UNICEF, 2020).

## 1.3 | COVID-19 and HPV vaccination

On July 15, 2020, the WHO and UNICEF reported a decline in the uptake of childhood vaccinations because of the COVID-19 pandemic (UNICEF, 2020). Multiple studies have confirmed that the rate

of overall recommended childhood vaccinations has decreased because of the onset of the pandemic (Bramer et al., 2020; McDonald et al., 2020; Saso et al., 2020). Improvements in estimates of vaccine coverage, such as the HPV vaccine which has expanded to 106 countries, are in danger of relapse (UNICEF, 2020). Approaches to reduce the transmission of SARS-CoV-2 include social distancing and quarantine with the implementation of shelter-in-place and stay-at-home orders (Bramer et al., 2020). Essential health services may be disrupted due to the redeployment of health care workers to assist with the pandemic, shifting of resources from immunization activities to pandemic response, health care providers transitioning to telemedicine, lack of personal protective equipment and vaccine supplies, economic hardships, transportation interruptions, and fear of contracting COVID-19 (Bramer et al., 2020; Saso et al., 2020; UNICEF, 2020). In addition, routine immunizations may be less accessible (Bramer et al., 2020) resulting in fewer visits and reduced administration of routine vaccinations (Santoli et al., 2020), leaving individuals at risk for diseases that may have been prevented with immunizations (Bramer et al., 2020).

## 1.4 | Vaccine hesitancy and the role of nurses

Adolescents and their caregivers may be hesitant to agree to the HPV vaccine due to a lack of knowledge about safety or misconceptions regarding the necessity of the vaccine, and the belief that it will promote sexual activity, as well as tentative recommendations by providers (Holloway, 2019; Shawhan & Ruppe, 2019). A confident delivery regarding recommendations by health care providers is often perceived as trustworthy (Holloway, 2019). As such, providers should deliver counseling and education with confidence as an important strategy in overcoming vaccine hesitancy (Holloway, 2019). The nursing profession is considered the most trusted profession and since 1999, nurses have been highly rated for honesty and ethics (Milton, 2018). Further, the American Nurses Association (ANA) revised their position statement on vaccinations to include the belief that everyone should receive vaccinations for vaccine-preventable diseases (2019). Therefore, public health nurses should confidently educate and counsel adolescents and caregivers on the importance of HPV vaccination. Otherwise, there may be critical missed opportunities for nurses in public health departments to improve the rates of vaccination against HPV.

## 1.5 | Minor's consent

Parental consent is required for adolescents who have not attained the age of majority, generally 18 years of age, to receive health care services (English et al., 2008). There are certain health care services that are exceptions to the general rule for minor's consent, including the prevention, diagnosis, and treatment of sexually transmitted or venereal diseases (English et al., 2008). The requirements for minors informed consent for vaccinations are guided by

a combination of federal and state laws (English et al., 2008; Ford et al., 2014). In general, state laws do not specify requirements regarding minor's consent and vaccination, but there are some state statutes which explicitly allow minor's consent for the prevention of sexually transmitted diseases (English et al., 2008; Ford et al., 2014). In North Carolina, this law is § 90–21.1 (North Carolina General Statute Chapter 90 Article 1A, (n.d.). *Treatment of minors*. [https://www.ncleg.net/EnactedLegislation/Statutes/PDF/ByArticle/Chapter\\_90/Article\\_1A.pdf](https://www.ncleg.net/EnactedLegislation/Statutes/PDF/ByArticle/Chapter_90/Article_1A.pdf)). This law allows that a minor can see a medical professional for the diagnosis, treatment, and prevention of pregnancy, STDs, and other diseases reportable under G.S. 130A-135, mental health, or substance abuse (NC ST §90–21.5). Currently all the immunizations that are required or recommended for children and adolescents prevent either venereal diseases or communicable diseases that are reportable under North Carolina law. Therefore, a minor who has the decisional capacity to give informed consent may consent to immunizations.

Minor consent laws are complex, and there is a lack of consistency among state laws regarding HPV vaccination for minors. As such, depending on the health care setting and specific clinic policy, provider interpretation or misperception regarding state minor's consent laws may be a barrier to increasing the rates of HPV vaccination uptake (Fisher et al., 2019; Ford et al., 2014).

## 1.6 | Recommended guidance from state level

### 1.6.1 | Sexually transmitted infection/sexually transmitted disease clinic guidance

In the state where the authors provide the snapshot of current practice at the local level, minors displaying decisional capacity may present to local health departments (LHDs) for services for the prevention, screening, and treatment of sexually transmitted infections. Due to the availability of appointments or walk-in services and the confidential nature of STI/STD services at the local health departments, minors commonly access these services at LHDs. The expectation from the state agency, which provides programmatic guidance to LHDs for communicable disease and STI/STD programs, is that visits are STD-focused; but comprehensive in assessment of risk factors, development of risk reduction plans, and providing appropriate screening, testing, treatment, and appropriate referrals. Immunization status is part of the standard STD visit and is included on the state STD flowsheet, which is used as the template for LHDs when setting up the STD visit format in their electronic health record system. The immunization assessment includes a specific question about whether a client has been vaccinated against HPV, particularly because of the sexual transmission route of the virus and the myriad of long-term impacts of HPV infection. Discussion of the risk for HPV and promotion of the vaccine are a natural fit for a STI/STD clinic.

As adolescents utilize STI/STD services at local health departments, it is an appropriate and ideal setting to advocate for HPV immunization and to promote vaccination during the visit. The state

agency encourages LHDs to offer HPV vaccination to their eligible STI/STD clients and emphasizes the best practice of obtaining consent and administering the vaccine during the STD clinic visit. Depending on LHD clinic practices, some STD clinics refer eligible clients for HPV vaccination either by taking them directly to the Immunization Clinic from the STD Clinic or by scheduling an immunization appointment for a later date. The state agency prefers the best practice of administering vaccine during the STD visit to maximize the opportunity to provide as many services as possible during the same visit and to educate on the follow-up vaccine schedule. Also, as many STD clients are encouraged to return to the clinic every 3–6 months for rescreening, this provides the opportunity to improve uptake on second (or third) HPV vaccine doses.

The minor's consent to treat law in North Carolina will cover immunizations administered in other clinics at the health department as well. If adolescents present for other services, best practice would also be to have immunization status assessed and be counseled on any immunizations that are not up to date and be vaccinated at that time if possible. Being able to vaccinate adolescents when you have them onsite is key to increasing the uptake of HPV and other immunizations.

## 2 | HEALTH DEPARTMENT PRACTICES

In a review of two public health departments (one rural and one urban in the southeastern United States), two similar approaches to administration of the vaccine were noted. In the urban public health department, patients aged 11 to 18 years of age may receive the HPV vaccine in any clinic. Immunizations are reviewed by the public health nurses in the Immunization Clinic, Sexually Transmitted Disease Clinic, and Family Planning Clinics to note any outstanding vaccines. Patients are questioned regarding their willingness to receive the vaccine. If aged 11–18 years of age, patients who are uninsured or on Medicaid do not pay for their vaccine, and those with insurance (e.g., Blue Cross Blue Shield, Medcost) do not have a co-pay. Patients with other insurances pay for their vaccine and then independently file a claim. In practice, it is noted that while patients are asked if they would like their vaccines updated, this questioning does not include discussion of the vaccines and the rationale for their administration. Similarly, the rural health department shared a comparable vaccine administration practice. This practice is of concern based upon the low numbers of male and female adolescents who receive the vaccine for both health departments. Adolescents under the age of 18 years of age may receive the HPV without parental consent, but nurses and providers highly encourage conversations with parents to obtain parental consent. If Medicaid is eligible, it will cover the cost and private insurance will reimburse costs. For patients uninsured or vaccines for children (VFC) qualified, state supplied vaccine is used. By contrast, 340B purchased vaccine is used for patients who are insured, such as Health Choice or patients who pay out of pocket if they do not qualify for VFC state supplied vaccine. The state

supplied vaccine is ordered as needed from the state immunization branch via the state immunization registry. The 340B program is administered through Health Resources & Services Administration (HRSA) and is part of the Public Health Service Act. This federal program is available to limited covered entities and allows them to increase vital resources by providing outpatient drugs (including vaccines) at significantly reduced prices (HRSA, 2021).

### 3 | DISCUSSION

In a time of already low HPV vaccine administration rates, HPV vaccine administration has decreased due to COVID. Testing for COVID, contacting positive patients, and contact tracing have severely limited public health nursing personnel for any activity that is not a mandated service. It is true that vaccine administration is an essential public health service; but, providing the required care in family planning services, prenatal care, and treatment for sexually transmitted diseases for patients have sorely taxed personnel resources and subsequently limited patient education. Many services are provided by telehealth; a wonderful new means to deliver not only care in public health, but also a learning journey for nursing staff, health care providers, and patients (Bashshur et al., 2020). Learning the logistics and living in areas with a limited internet infrastructure further compound the ability to obtain the necessary information to care for the patient's primary issue, and often overlooks the need to include questioning regarding any content that is not required.

Additionally concerning is that both health department immunization nurses, when questioned regarding the practice to provide HPV vaccination for adolescent administration without parental consent based on the minor's consent law, had to review agency policy and procedure manuals, and consult with the state immunization branch for clarification. If nurses are not aware of this practice and have internalized it as not being an option, we can assume their communication with these patients is not one that is providing a confident, unambiguous recommendation for this vaccination, and adds to the barrier of vaccine hesitancy in this vulnerable population (Shawan & Ruppe, 2019).

Another consideration as we seek to improve the uptake of the HPV vaccine at the population level is that public health nurses need to be active in their roles as policy advocates in changing practices that can improve clinic visits with all clients, including adolescents. Changes will be required to support that each interaction is seen as an opportunity to provide comprehensive services, and this includes the provision of the HPV vaccination at the time of the visit. We know many of our adolescent clients, in particular, are often more likely to not return to the clinic for this vaccination due to multiple factors such as lack of transportation, inconvenient clinic times, and insufficient knowledge of the benefits of the vaccine (Brittain et al., 2018). We must always remember that all vaccines, including HPV, are irrelevant without vaccination. If we want to affect a change in reducing cancers related to HPV infections, we need to be cognizant of this challenge as we move forward after the pandemic.

As we discuss the issues that were raised in this practice snapshot (e.g., decreased vaccine uptake, lack of knowledge regarding minor's consent laws, policy changes such as providing the HPV vaccine just in time versus rescheduling another appointment), we must approach these changes from a quality improvement lens. Changes do not "just happen," and it is the public health nurse who must be knowledgeable in which quality improvement tool/model is the best fit for their agency and staff (Reynolds et al., 2021). It is also important to determine what you are trying to change or improve before you begin any quality improvement project (Yukl & Gardner, 2020). Are you trying to increase the staff's knowledge about HPV vaccines and/or what is in the minor's consent law? Or are you wanting to change the clinic policy of giving these vaccines at the visit versus rescheduling and you want to measure actual numbers of vaccinations given since the change? Regardless of which area you wish to improve, leading change is an important and often difficult responsibility of the nurse leader and involves "guiding, encouraging, and facilitating the collective efforts of members to adapt and survive in an uncertain and sometimes hostile environment" (Yukl & Gardner, 2020, p. 126).

### 4 | IMPLICATIONS FOR PUBLIC HEALTH NURSES

The importance of providing the HPV vaccine, especially to minors, remains a public health priority; however, the COVID-19 pandemic has provided a challenge to this priority. With the advent of vaccines for COVID-19 now being administered in the United States as of December 14, 2020, this public health crisis will hopefully be diminished; but the diligence of public health nurses to educate, advocate, and administer HPV vaccines will remain. Being present in clinic is an opportune time to educate patients about the HPV vaccine, counsel, and encourage administration. We also need to be aware of breaking down the silos created within many health departments to achieve this goal. This brief snapshot of two public health departments validates the need for public health nurses and health care providers to embrace their influence in providing accurate education and recommendations for HPV vaccination to prevent cancer and promote the future health of our clients. To be sure, we commend these staff as we know LHDs are working with a decreased number of FTEs in the public health workforce, decreased funding, decreased direct service provision as well as an expected increase in the number of employees who will be eligible for retirement in the coming year, and thus provides a contextual picture to their current practices (ASTHO, 2020). These are not easy times, but it is important to remember that an enormous barrier such as COVID-19 can provide a considerable opportunity in helping public health nurses reevaluate their approach to increasing the uptake of HPV vaccine among this vulnerable population.

#### CONFLICT OF INTEREST

All authors have no relevant conflicts of interest to disclose.

## DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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