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Increasing HPV Vaccination in Adolescents

Emily Martin

Southern Illinois University Edwardsville

Emily Hartmann

Southern Illinois University Edwardsville

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DNP Executive Summary

Introduction of the Problem

Human papillomavirus (HPV) is a sexually transmitted virus that can lead to cervical, vaginal, vulvar, anal, penile, and oropharyngeal cancer. In the United States alone, there are currently 42 million people infected with HPV; 13 million people become infected yearly (CDC, 2021). When left untreated, HPV infection may progress to malignancy.

HPV vaccinations are an effective prevention method against HPV. With nearly 16 years of research and more than 135 million doses administered across the nation, the HPV vaccine proves to be a safe option to help prevent an infection that can lead to significant health-related consequences (CDC, 2021). The CDC (2021) recommends HPV vaccination be included in the routine immunization schedule starting at age 11. The Advisory Committee on Immunization Practices (ACIP) recommends this vaccination for every person through the age of 26 years. Patients who start the vaccine series before the age of 15 are considered fully vaccinated after receiving a total of two doses, whereas three doses are required for those who wait until after 15 (CDC, 2021). According to the American College of Obstetricians and Gynecologists (ACOG, 2020), the 9-valent HPV vaccine protects against more than 99% of HPV infections.

Although incidence continues to decline, HPV infections and HPV-associated cancers continue to create a large burden on individuals, as well as the healthcare system (ACOG, 2020). Despite the vaccine safety record and considerable morbidity risk associated with infection, this percentage still persists far below the Healthy People 2020 target HPV vaccination goal of 80% (Healthy People, 2022). Pediatric providers should encourage and recommend HPV vaccines to all adolescents, while addressing and easing parental hesitancy surrounding HPV vaccination. Other factors that can negatively affect HPV vaccination rates include gender and racial

disparities, social media influences, and the education and communication approaches utilized by providers (Dela Cruz et al., 2020).

Literature Review

There are multiple barriers the healthcare system must overcome to improve HPV vaccinations, including gender, racial, and socioeconomic factors. Historically, the healthcare system has promoted HPV vaccinations more often in females when compared to males. As the HPV vaccine evolved, parents of adolescent males were not receiving education on the oncogenic benefits of the HPV vaccine for their sons (Daley et al., 2017). Non-Hispanic Black and Hispanic women are less likely to have heard of the HPV vaccine and, therefore, less likely to have been recommended to receive the vaccine when compared to Caucasian women (Adjei et al. 2017, Agenor et al., 2020, & Boakye et al., 2017). Choi & Choi (2022) found that more children in the highest socioeconomic level had received the HPV vaccine compared to middle and lower socioeconomic levels, with the middle level being the lowest to receive the vaccine. This is not surprising, as those in higher socioeconomic statuses are generally more educated and can understand the importance of HPV vaccinations. Lower socioeconomic levels are more likely to receive government assistance for free vaccinations and potentially free transportation to clinician appointments. In contrast, the middle-class group may have insufficient insurance coverage with large copays.

Parents continue to have safety concerns about the HPV vaccine, even though safety data is reassuring (Zheng et al., 2021 & Sonawane et al., 2021). The worries over HPV vaccine safety are unfounded but perpetuated by social media sites. Social media continues to be a substantial barrier to HPV vaccination uptake among adolescents. Even though most of the information is

untrue, social media sites appeal to parents' emotions, and this has a strong influence over parents' decision to vaccinate their children.

HPV vaccination rates remain low in the U.S. in part due to missed opportunities from healthcare providers and healthcare systems. One of the essential components to increasing HPV vaccination in adolescents is a strong recommendation from a trusted healthcare provider (Zheng et al., 2021). Providers should assess parental knowledge regarding the vaccine to be sure they understand the long-term health implications of declining the vaccine for their child. Providers must not hesitate to recommend HPV vaccination and help parents understand the importance of this cancer-preventing vaccine. Clinicians should use the announcement approach, in addition to bundling, when recommending the HPV vaccination (Brewer et al. (2017), Shah et al. (2021), & CDC (2021)). This method has been proven to increase vaccination rates compared to other provider communication techniques. Health care systems should offer provider training on the announcement approach, as well as support staff training, initiating EMR reminders, improving workflows, and creating quality improvement projects that will increase HPV vaccination uptake (Yared et al., 2021).

Project Methods

This project took place at a rural pediatric office in southern Illinois where HPV vaccination rates in the target population were lower than expected. There was no standard approach or procedure in place for HPV vaccination education between the provider, patient, and parent/guardian. Previous efforts to address this problem had not been made.

This project was submitted to the IRB at Southern Illinois University Edwardsville as a quality improvement project. After approval was obtained, an educational session with providers and office staff was held. Clinical staff was trained on the goals of the project, the clinical

significance of increasing HPV vaccination rates, and the use of a shared Excel drive for data tracking. A PowerPoint presentation was shown to discuss current HPV vaccine guidelines, benefits, expected side effects, myths, common parental questions, and communication tips. A CDC handout titled “Talking to Parents About HPV Vaccines” was reviewed. Providers were trained in communication techniques, specifically the ANNOUNCE method and bundling technique. The ANNOUNCE method involves direct communication and assumes the parents are ready for their child to receive the HPV vaccine. Providers were instructed to bundle the HPV vaccine with other vaccinations that are due at the same time.

Parental education included a one-minute video published by Merck, targeting parents of both males and females. The nursing staff used iPads that were already in place in the clinic, and the video was easily accessible via a provided hyperlink. Additionally, posters available on the CDC website were placed in exam rooms to emphasize the importance of HPV vaccination.

The project included a convenience sample of male and female adolescent patients aged 11 to 14 being seen at a rural pediatric practice over an eight-week period in Summer 2022. Collected data consisted of age, gender, race, and HPV vaccination status during the intervention period. The post-intervention (May through July 2022) vaccine rates were compared to pre-intervention vaccination rates (May through July 2019) to determine if the intervention was effective in improving HPV vaccination acceptance. The practice does not participate in the Vaccine for Children (VFC) program; therefore, Medicaid patients could not receive vaccines at this office. Approximately 40% of the patient population at this site has Medicaid as their primary insurance. Following the intervention, we tracked vaccination acceptance for all patients regardless of insurance payer using a data collection form.

Evaluation

There were 44 patients who qualified for the sample, 45% (n=20) identified as female and 55% (n=24) as male. Of the female patients, 55% (n=11) received the HPV vaccine compared to 37% (n=9) of male adolescents. More males than females declined the HPV vaccine, 29% (n=7), and less than one percent (n=1), respectively. Due to the insurance limitations with the Vaccines for Children (VFC) program, some patients wanted to receive the HPV vaccine but were not able to receive the vaccine the same day as their appointment. When comparing those with VFC-eligible insurance, 33% (n=8) of males and five percent (n=9) of females intended to receive the HPV vaccine at their local health department. Race was also collected; however, the sample was overwhelmingly Caucasian, and there was not enough data to predict HPV vaccine acceptance variation by race. The data was compared to vaccination rates from May through July 2019. Our initial plan was to compare May to June 2021, however, this was not possible due to the COVID pandemic and clinic transition to an electronic medical record. More adolescents received the HPV vaccine post-intervention (45%) than they did pre-intervention (37%). Additionally, more patients who are VFC-eligible planned to receive the vaccine post-intervention (36%, n= 16) when compared pre-intervention (10%, n=8). From a provider perspective, they felt the educational posters in exam rooms were more impactful than the HPV educational video. The posters were utilized in addition to a strong provider recommendation for the HPV vaccine.

Impact on Practice

Combining a solid provider recommendation with different educational delivery tools made an overall clinical practice improvement. Instead of providers simply offering the HPV vaccine to the parents at the beginning of the conversation to see if they are interested, providers

now utilize the ANNOUNCE method to direct parents to the fact that their child is due for the HPV vaccine and the vaccination is recommended. A strong provider recommendation remains a substantial influential factor at the forefront of the effort to increase HPV vaccination rates among adolescents. Future plans of the rural pediatric office include continuing all of the project intervention methods and remaining committed to fully educating any new staff on the process.

Limitations of this project included the inability to confirm vaccination of the HPV vaccine for VFC eligible patients due to the restricted timeframe of data collection before vaccine reconciliation could occur at a subsequent visit. Another limitation of this study was the lack of racial diversity among the patient population. Given that most of the sample was Caucasian, the attitudes and vaccine compliance behavior outcomes from this project cannot be reliably correlated with those of non-Caucasian patients. An aim of a future project could be focused on evaluating the gender and racial differences in HPV vaccination rates among adolescents aged 11 to 14 years old and exploring interventions to close any potential gaps discovered.

Conclusion

HPV remains a prevalent and persistent infection that contributes to the development of cancer and other health consequences among affected men and women of all ages. The HPV vaccine is critical in preventing cancer caused by this virus. Increasing HPV vaccination rates among adolescents aged 11 to 14 with a multifactorial approach will help move healthcare another step forward in addressing the critical preventative care needs of this patient population. Long-term use of the ANNOUNCE method, educational material, and a strong provider recommendation enables providers with the tools they need to lower HPV rates at this practice.