GYNECOLOGY

A human papillomavirus vaccination program for low-income postpartum women

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BACKGROUND: Effective interventions are needed to address the low rate of human papillomavirus (HPV) vaccination in the United States, particularly among girls and women 16-26 years old. Counseling and offering the vaccine to postpartum patients could be an effective strategy to increase uptake among young women who did not complete the 3-dose series at an earlier age.

OBJECTIVE: The purpose of this evaluation was to assess the effectiveness of a multicomponent program designed for postpartum women that used patient navigators (PNs) and reminders for follow-up visits to improve uptake and completion of the HPV vaccine series.

STUDY DESIGN: As part of standard care, patients ≤26 years of age from Galveston County, Texas, who delivered an infant from November 2012 through June 2014 at a public hospital were counseled and offered the HPV vaccine postpartum. PNs assisted with scheduling follow-up injections during postpartum or well-child visits. A program evaluation was conducted after 20 months.

RESULTS: Of 1038 patients approached, only 161 (15.5%) had previously completed the vaccine series. Of the 877 patients who had not completed the series, 661 (75.4%) received at least 1 dose postpartum, with 575 patients receiving their first dose and 86 receiving their second or third doses. By April 2015, initiation rates had increased as a result of this program from 25.4% before the program was initiated to 80.8% and completion rates from 15.5-65.1%. Missed appointments for injections were less likely among those who received text message reminders and more likely among those with ≥2 prior pregnancies. Those who were Hispanic or had received an influenza vaccination in the last year were more likely to initiate and complete the series through this program. Patients who missed ≥1 follow-up appointments were less likely to complete the vaccine series.

CONCLUSION: Offering the HPV vaccine postpartum dramatically increased initiation rates among postpartum patients. PN and text messages ensured that a high percentage completed all 3 doses.

Key words: human papillomavirus, human papillomavirus vaccine, patient navigator, postpartum women, vaccine completion, vaccine initiation, vaccine uptake

Introduction

The human papillomavirus (HPV) is the cause of almost all cases of cervical cancer as well as many cases of vulvar, vaginal, and anal cancers in women.[1] In 2006, the US Food and Drug Administration approved a vaccine that has the potential to markedly decrease the incidence of these diseases. Almost a decade after its introduction, however, uptake of the HPV vaccine in the United States remains below that of several other countries, including England, Scotland, and Australia.[2-5] By 2014, only 60% of US girls 13-17 years of age had obtained even 1 of the 3 required doses, demonstrating the need for catch-up vaccination.[6] From 2008 through 2010, only 28% of surveyed 18- to 26-year-old females had initiated and 17% had completed the series.[7] By 2013, initiation rates rose to only 37% among women 19-26 years of age.[8]

Although recommended at a younger age, vaccination is effective among women 18-25 years old. A clinical trial demonstrated that it reduces abnormal Pap test findings, referral for colposcopy, and treatment related to abnormal cervical cytology when given to women at these ages.[9] Thus, vaccination is recommended for women up to 26 years of age not previously vaccinated.[10]

Surveys of pregnant women demonstrate low rates of HPV vaccination.[11] This is especially true among low-income women and women from minority backgrounds. At our institution, only 13% among 500 pregnant patients seen in public clinics in 2012 had initiated the HPV vaccine.[12] These low rates may be due to a lack of routine care among low-income adolescents and young adult women.[13] Most US women do obtain medical care during pregnancy,[14] but the HPV vaccine is not usually discussed during prenatal care as it is not administered during pregnancy. Other barriers facing low-income women include the high cost of HPV vaccination and the challenge of receiving all 3 doses, even when the vaccine is free of charge.[15,16]

Due to low rates of vaccine uptake in the United States, new strategies for increasing opportunities and acceptance for HPV vaccination are needed. The postpartum period could be an opportunity to increase HPV vaccination rates among low-income women. Studies have demonstrated that vaccines are well accepted by women when offered postpartum. For example, 91% of women accepted the hepatitis B vaccine when offered postpartum in 1 study, while 96% of eligible postpartum women accepted the tetanus, diphtheria, and pertussis vaccine in another.[17,18] An examination of the feasibility of postpartum HPV vaccination found an acceptance rate of 95% among 150 women offered the first dose prior to

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hospital discharge.[19] However, only 31% of those patients completed the 3-dose series.

At the University of Texas Medical Branch (UTMB), we surveyed 500 patients attending 5 prenatal clinics in 2012 to determine whether a postpartum vaccination program would be acceptable among women residing in southeast Texas.[12] Over 80% said they were willing to receive a free HPV shot in the hospital after childbirth. Based on these findings, UTMB obtained funding to begin a prevention program that offered counseling for pregnant and postpartum women about HPV and the HPV vaccine. Here, we report on the success of this program during the first 20 months of its implementation.

Materials and Methods

Through a grant funded by the Cancer Prevention and Research Institute of Texas (CPRIT), UTMB established a program in November of 2012 to offer the quadrivalent HPV vaccine to postpartum women from Galveston County, Texas, free of charge. Vaccinations were offered prior to hospital discharge. Follow-up doses were given at postpartum visits and, through collaboration with the Department of Pediatrics, at well-child visits for patients' infants. To reduce missed appointments and increase the rate of series completion, patient navigators (PNs) used multiple reminder methods (texting, mailing reminders, and placing calls) and patient tracking. The Obstetrics and Gynecology Department at UTMB serves a low-income population with approximately 88% reporting a family income <$29,900 annually and 63% reporting a family income <$15,000 annually.[20] The majority are uninsured, although 40% do qualify for expanded Medicaid coverage during pregnancy. This report describes HPV vaccinations administered on the postpartum unit during the first 20 months (November 2012 through June 2014) of this program with follow-up doses administered through April 2015.

English and Spanish fact sheets about HPV and the HPV vaccine developed by the Centers for Disease Control and Prevention (CDC)[21-23] were distributed in waiting rooms of all UTMB Health Prenatal Clinics in Galveston County, Texas, to educate patients. This information was also distributed in the hospital after delivery. Patients then received face-to-face counseling from PNs who had been trained by the first author (A.B.B.). Providers involved in the care of pregnant and postpartum women and their infants were educated through a series of lectures on HPV given across the UTMB campus to attending physicians, residents, medical students, nurses, physician assistants, and staff.[24]

PNs reviewed the electronic medical records (EMRs) and State of Texas immunization records daily of all patients who delivered a liveborn infant at UTMB in the previous 24 hours to identify those eligible for this program (females ≤26 years old residing in Galveston County, Texas, who were unvaccinated or incompletely vaccinated against HPV). Eligible patients were then offered written materials and personal counseling about HPV and the vaccine. Non-UTMB medical records were checked, as possible, for those who reported they had already been vaccinated. If it was determined that the patient had not completed the series, she was offered the vaccine postpartum. Patients were informed that 1 dose could be administered prior to discharge and follow-up doses in conjunction with other scheduled appointments. In addition, patients who agreed to be vaccinated selected the type(s) of reminders (automated telephone calls and/or text messages) they wished to receive prior to appointments. Adequate time was given for PNs to address all questions.

Those who agreed to receive a dose of the HPV vaccine postpartum reviewed and signed the State of Texas consent form. For patients age <18 years, parental consent was required as mandated by the state. To facilitate tracking, PNs obtained mailing and e-mail addresses and both home and cell telephone numbers as well as contact information for up to 3 individuals who could reach the patient if needed. The patient's obstetric provider was then asked to place an order for HPV vaccination in the EMR.

A month before the next dose was due, PNs reviewed each patient's and her infant's EMRs to identify upcoming appointments (eg, postpartum checks or well-child visits) during which the next vaccine dose could be administered. When an appropriately timed appointment was identified, the PN added a HPV vaccination request to the entry for that visit in the EMR for the mother and informed the patient she would receive the next dose at that time. If it was not possible to coordinate the next dose with an already scheduled appointment for the mother or infant at UTMB (ie, the patient selected outside providers), a vaccine-only appointment was scheduled at the closest UTMB facility. Typically, a vaccination-only appointment for the third dose was scheduled at the time the patient received the second dose. To remind patients of their follow-up appointments, automated telephone calls or text messages (or both, depending on patient preferences) set up by the PNs through a commercial service were delivered 4 days, 1 day, and 2 hours before the appointment.

If a patient missed an appointment, a PN telephoned her the next day to reschedule. If a patient could not be reached by telephone, alternative contacts were called when available. Patients who could not be reached by these methods were sent physical letters by mail and, finally, a notice by e-mail to contact UTMB to reschedule the appointment. Patients who missed ≥5 appointments or could no longer be reached were considered inactive. Patients who informed a PN that they were not willing to complete the vaccine series were no longer contacted or tracked.

For billing purposes, UTMB personnel obtained information to determine if the patient had current coverage for vaccinations through Medicaid or another insurance provider. If not, CPRIT paid the costs of all vaccines. Women and girls were excluded from this evaluation if they: (1) were minors whose parents did not sign the vaccination consent form, or (2) did not receive the vaccine postpartum due to hospital error. With approval from the UTMB Institutional Review Board,