An Attainable Step in Preventing Cancer: The HPV Vaccine for Teens

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Preventing cancer may feel like an elusive goal, but cervical cancer can be the exception to the rule thanks to the human papillomavirus (HPV) vaccine. HPV, the most common sexually transmitted infection (STI), currently impacts 79 million Americans and infects approximately 50 percent of men and women at some point in their lives. But HPV isn't just an STI; it causes more than 31,000 cancer cases per year, of which nearly half are patients with cervical cancer.

Unfortunately, even though a vaccine to prevent HPV is widely available, many children and young adults fail to receive it, resulting in a major missed opportunity to impact the more than one-third of cervical cancer cases that occur in women between the ages of 20 and 44 years.

Since HPV is primarily contracted in teenage years or in the early 20s, early prevention is critical. A highly effective two-dose vaccine series is recommended for children and teens aged 9-14, and a three-dose series is recommended for those aged 15-26 by the American Academy of Pediatrics and the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices. However, rates of HPV vaccination remain lower than rates of other adolescent vaccines and vary substantially across states, meaning many adolescents remain unprotected. Each day that HPV rates remain at 30-60 percent instead of 90 percent, another 10 girls in the U.S. will eventually develop cervical cancer, and six to seven boys will eventually develop oral cancer.

One reason for persistently low HPV vaccination rates is a lack of communication between doctors, patients and families about the vaccine. Pediatricians may not recommend the vaccine as strongly as other vaccines due to perceptions that it is not needed unless teens are sexually active. Another barrier to vaccination is that teens are less likely than young children to attend well-child care visits where vaccines are frequently given. Additionally, parents may not have adequate information about the vaccine or realize that it is recommended for

children as young as nine years old.

In order to improve communication and increase HPV vaccination rates, we developed a three-part intervention for pediatricians that involved:

1. education for pediatricians about the HPV vaccine,
2. alerts in the electronic medical record to remind pediatricians when patients were due for the HPV vaccine, and
3. feedback on whether pediatricians utilized all available vaccination opportunities when patients visited their office.

In conjunction with the pediatrician intervention, we created a family-focused intervention in which automatic phone calls went out to families of adolescent girls due for the HPV vaccine reminding their families to bring them to the office to be vaccinated. We tested these interventions in a randomized clinical trial called the *GIVE Teens Vaccines Study* that evaluated the effect of the pediatrician intervention, family intervention, and both combined on HPV vaccination rates.

Among more than 22,000 girls aged 11-17, we found that the pediatrician and parent interventions combined increased vaccination rates and reduced the time to vaccination for all vaccine doses. The pediatrician-focused intervention was more effective than the family-focused intervention for initiating the first dose of the vaccine. For the later follow-up doses, reminding families that the vaccine was due proved highly effective. We also found that the clinician-focused intervention reduced missed opportunities for HPV vaccination, visits during which children or adolescents who are due for the vaccine leave unvaccinated.

The success of the trial allowed the National Cancer Institute to add the *GIVE Teens Vaccine Study* to its Research-Tested Intervention Program (RTIP), a searchable database of evidence-based cancer control programs. The RTIP gives public health practitioners access to intervention materials, publications of study findings, and any program products or materials used in a study to support implementation in other settings.

For this National Cervical Health Awareness Month, it is important to stress that while HPV-related cancers, including cervical cancer, are common, they are preventable through the HPV vaccine. The results of our study indicate that to prevent HPV-related cancers through vaccination, we need to support pediatricians and other clinicians in recommending the HPV vaccine and support parents by reminding them when their child is due for the vaccine. Now, we must standardize these approaches in practice to achieve the attainable target of stopping many forms of cervical cancer. Scaling up these interventions will help to protect young women and men throughout their lives and for generations to come.

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