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Commentary

Getting Human Papillomavirus Vaccination Back on Track: Protecting Our National Investment in Human Papillomavirus Vaccination in the COVID-19 Era

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The adolescent health community must act quickly in the face of the COVID-19 pandemic to protect hard-won gains in human papillomavirus (HPV) vaccination coverage. HPV vaccine protects against six cancers and could nearly eliminate cervical cancer, which disproportionately and unfairly burdens women of color. For more than a decade, U.S. primary care providers have worked tirelessly to establish the adolescent vaccine platform as part of routine care, but they have faced unique challenges with regard to HPV vaccination. HPV vaccination has required sustained investment by federal agencies, professional organizations, researchers, and other adolescent health advocates to achieve widespread use. Recently published surveillance data suggest our collective efforts have yielded results, with HPV vaccine series completion increasing from 30% in 2014 to 54% in 2019 [1]. In this commentary, we describe how the COVID-19 pandemic threatens to wipe out these hard-won gains and argue that interventions are urgently needed to protect our national investment in HPV vaccination.

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The available evidence indicates that the COVID-19 pandemic has dramatically disrupted the delivery of HPV vaccine in recent months. Early reports suggest that ordering and billing dropped by >70% in March 2020 [1,2]. HPV vaccine ordering remained down by 25%–50% in June, in contrast to early childhood vaccine ordering, which rebounded to near prepandemic levels [1]. The pandemic's timing is especially problematic, given that missed opportunities for HPV vaccination are occurring during the spring and summer months when the vast majority of adolescent vaccine doses are typically delivered [3]. Although still emerging, all available data suggest that short-term declines in HPV vaccination coverage will be substantial.

Unfortunately, the COVID-19 pandemic is likely to have longer term consequences for HPV vaccination as well. Many U.S. primary care clinics continue to operate at reduced capacity to accommodate social distancing and more stringent cleaning protocols [4]. Reductions in face-to-face office visits, although clearly warranted, limit opportunities for providers to discuss and deliver vaccines. New barriers to provider communication are likely to be especially harmful for HPV vaccination; some providers have traditionally viewed the vaccine as difficult to recommend because of perceived resistance from parents and the absence of widespread school entry requirements that support other adolescent vaccines [5,6]. Health care systems have similarly deprioritized their HPV vaccine quality improvement efforts. In a recent poll of quality improvement leaders in 64 systems, all respondents reported prioritizing early childhood or adult vaccines over adolescent vaccines in their pandemic recovery efforts [7]. In these ways, the pandemic is exerting pressures on health care systems that threaten to sideline HPV

vaccination and reverse years of progress in normalizing it as routine care for adolescents.

At the same time that COVID-19 is limiting providers' ability to offer HPV vaccination, the pandemic may also be changing parents' willingness to seek out and accept the vaccine. Before the pandemic, parents' reasons for HPV vaccine hesitancy were varied but largely limited to the need for more information or a provider recommendation [8]. With an infectious disease dominating the headlines, some parents may now feel new urgency to accept vaccines, including HPV vaccine. However, other parents may feel greater hesitancy. These parents may fear COVID-19 exposure during preventive care visits, worry they cannot afford HPV vaccine because of a recent job loss, or believe that social distancing precludes the need for vaccination. Such concerns may discourage on-time HPV vaccination, which is critical for protecting adolescents before HPV exposure.

To overcome the challenges of the COVID-19 era, we must quickly implement evidence-based interventions to support frontline pediatric and family medicine providers. The most effective vaccine interventions rely on durable changes to systems and policies [9]. First, we should ensure that providers use every opportunity to vaccinate by giving parents a strong recommendation for HPV vaccination at every visit for adolescents aged ≥ 9 years [10]. Provider prompts, and standing orders can help ensure that all adolescents get an HPV vaccine recommendation, and anticipatory guidance during telehealth visits can also support vaccination [11]. Second, patient reminder/recall will be important for bringing adolescents back into care, even in the absences of sports physicals or the usual "back to school" routine. Reminder/recall messages should clearly communicate steps clinics are taking to prevent COVID-19 exposure and assure parents that programs are available to cover the cost of HPV vaccination for families who are uninsured or underinsured. Finally, we must think creatively about how to safely increase access to HPV vaccination, such as through vaccine-only or "drive-through" appointments through patients' existing medical home and by offering HPV vaccine alongside seasonal influenza vaccination. The National HPV Vaccination Roundtable has developed resources to support these efforts [12].

Research is also needed. Many vaccinations are opportunistic, given at problem or focused visits for other care. Appropriate use of telehealth for visits where physical examination is not required, such as medication checks or results discussions, means that other mechanisms will be needed to facilitate HPV vaccine communication, scheduling, and subsequent administration. Similarly, we must continue to evaluate the role of alternative settings for HPV vaccination, including pharmacies and school health centers. Finally, ongoing surveillance is needed to monitor trust in vaccines, including HPV vaccine, and in the public institutions that support our national immunization programs [13].

It is time to get HPV vaccination back on track. As recently as the start of this year, advances in vaccination and screening had

made possible the goal of the near elimination of cervical cancer. Without intensive efforts, the COVID-19 pandemic will endanger that ambitious goal, pushing HPV prevention further into the future and threatening a generation of adolescents with HPV cancers. We must learn from the pandemic and prioritize health care services that provide long-term protection against disease as essential services. For HPV vaccination, this means ensuring that all adolescents receive provider recommendations, increasing opportunities to vaccinate, and using evidence-based interventions such as reminder/recall. We call on the adolescent health community to lead efforts to reverse the collapse in HPV vaccine uptake, remedy the accumulated deficit in vaccination, and return to pursuing the nation's goal of 80% of adolescents fully vaccinated against HPV cancers.

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