



Georgetown University Law Center
Scholarship @ GEORGETOWN LAW

2018

Requiring Human Papilloma Virus Vaccination for School Entry

Michelle J. Bayefsky

Harvard Medical School, Michelle_Bayefsky@hms.harvard.edu

Lawrence O. Gostin

Georgetown University Law Center, gostin@law.georgetown.edu

This paper can be downloaded free of charge from:


<https://scholarship.law.georgetown.edu/facpub/2117>

<https://ssrn.com/abstract=3309890>

JAMA Pediatrics

This open-access article is brought to you by the Georgetown Law Library. Posted with permission of the author.

Follow this and additional works at: <https://scholarship.law.georgetown.edu/facpub>

 Part of the [Health Law and Policy Commons](#)

VIEWPOINT

Requiring Human Papilloma Virus Vaccination for School Entry

Michelle J. Bayefsky, BA

Harvard Medical School, Boston, Massachusetts.

Lawrence O. Gostin, JD

O'Neill Institute for National and Global Health Law, Georgetown University Law Center, Washington, DC.



JAMA Pediatrics Patient Page

Corresponding Author: Lawrence O. Gostin, JD, O'Neill Institute for National and Global Health Law, Georgetown University Law Center, 600 New Jersey Ave, NW, Washington, DC 20001 (gostin@law.georgetown.edu).

jamapediatrics.com

The Centers for Disease Control and Prevention (CDC) estimates that 41 000 people are diagnosed as having a human papilloma virus (HPV)-associated cancer each year, amounting to almost 2.5% of all new cancer diagnoses.¹ For men, the most common associated cancer is oropharyngeal cancer, and for women, it is cervical cancer. More than 250 000 women in the United States live with cervical cancer, and one-third will die within 5 years of diagnosis.² The incidence of cervical cancer has declined considerably since the development of Papanicolaou test screening, but the percentage of women undergoing Papanicolaou tests has decreased since 2000. Furthermore, screening has been inequitably distributed across populations; women insured through Medicaid or without health coverage and women with lower education levels are screened at lower rates.³ Screening for other HPV-associated cancers such as oropharyngeal cancer, anal cancer, vaginal cancer, vulvar cancer, and penile cancer is much less robust. Thus, while screening is an effective prevention tool, the ultimate public health success would be to prevent HPV infection altogether.

Preventing HPV infection is precisely the goal of HPV vaccination. The US Food and Drug Administration first approved of the vaccine for children and young adults in 2006 and recently expanded approval to include adults up to age 45 years. Currently, the CDC recommends HPV vaccination for boys and girls aged 11 and 12 years, as well as women through age 26 years and men through age 21 years who were not previously vaccinated. These recommendations might change given the new expanded US Food and Drug Administration approval. Despite strong evidence of safety and effectiveness, vaccination rates have been disappointingly low. In 2016, only 43% of adolescents were up to date on recommended HPV doses² compared with 81.3% for meningococcal strains ACWY; 86.1% for varicella; 86.4% for tetanus, diphtheria, and pertussis; 90.7% for measles, mumps, and rubella; and 91.1% for hepatitis B.⁴ The highly discrepant vaccination rates stem largely from the fact that HPV vaccination is not uniformly required for school entry, while the other childhood vaccines are required. Only 2 states (Virginia and Rhode Island) and Washington, DC, require HPV vaccination for school entry, and Virginia has a generous opt-out provision.

When the US Food and Drug Administration initially approved HPV vaccination, it was not mandated for 2 primary reasons. The vaccine was too new for long-term safety and effectiveness studies. Further, since the vaccine was approved only for girls, a mandate could be discriminatory. Neither of these concerns is now applicable; the vaccine is approved for both sexes, and 90 million doses over 10 years has amply demonstrated the vaccine's safety and effectiveness.⁵

Resistance to mandating the vaccine now centers on the fact that HPV is sexually transmitted, with some parents wanting autonomy to make decisions for their child regarding what they view as a sensitive subject. Furthermore, some question whether mandatory vaccination can be justified for a disease that is not easily transmissible in the school setting. These critiques cast doubt on the necessity of vaccinating all school-aged children since the harms of HPV materialize much later in life.

We believe these arguments against mandating HPV vaccination are flawed and offer 4 reasons why the HPV vaccine should be urgently mandated. First, HPV vaccination is in the child's best interests. As outlined above, HPV is a major cause of cancer-related morbidity and mortality; given the ubiquity of the virus, individuals engaged in sexual activity are at significant risk. The CDC recommends vaccination at a young age because children should be immunized before they are sexually active and exposed to the virus. A significant minority of young teenagers engage in sexual activity (18% of boys and 13% of girls by age 15 years).⁶ Moreover, there is no moral or public health significance to the argument that vaccines should be required only against diseases immediately transmissible in the school setting. For example, hepatitis B vaccination is required, even though it is transmitted perinatally, sexually, through shared drug injection equipment, or through direct contact with blood.

Second, while parents should be afforded considerable autonomy in raising their children, law and ethics do not support parents making health-related decisions that are contrary to their child's best interests.⁷ Parental autonomy has clear limits that include making decisions that can harm the child's health and safety. In the case of HPV vaccination, the future benefits to children far outweigh the limits on parental rights. Requiring a highly safe and effective vaccine is a relatively minor intrusion on parental autonomy compared with the considerable importance of avoiding a tangible risk of cancer. Parents, moreover, may underestimate the health consequences of resisting HPV vaccination, or they may oppose vaccination nonetheless. In either case, the child's health should take precedence.

Third, HPV vaccination is a form of social solidarity.⁸ The ethical/legal underpinning of mandatory vaccination is about controlling dangerous infections for the public good. Society values each individual child but also whole communities and populations. Widespread vaccination campaigns can establish community or "herd" immunity, reducing childhood diseases to very low levels. Rather than focusing exclusively on individual benefits, we should also strive to protect our neighbors from disease and benefit the public at large.

JAMA Pediatrics Published online December 28, 2018

E1

Public benefits include the avoidance of morbidity and mortality but also limiting the costs of cancer treatment and the lost productivity of those experiencing HPV-associated disease. The annual burden of preventing and treating HPV-associated disease in the United States has been estimated to be \$8 billion,⁹ which is far less than the estimated annual cost of administering approximately 8 million doses of the HPV vaccine (2 doses to 4 million children aged 11 years): \$1.6 billion. Furthermore, studies have demonstrated that HPV vaccination is cost effective in a range of low-income to high-income countries, such as Germany.¹⁰

Finally, mandating vaccination will bring greater health equity with respect to HPV-associated disease. Specifically, black and Hispanic women have long had poorer outcomes from cervical cancer, which is largely due to disparities in access to cancer screening (especially for Hispanic women) and the quality of cancer treatment. Similar inequities burden women without health insurance and those with lower education levels. Disadvantaged and minority women will therefore benefit most from widespread vaccination, which is best accomplished with mandates tied to school entry. To demonstrably improve outcomes for those most vulnerable to

HPV infection, states ought to mandate HPV vaccination prior to the commencement of sexual activity.

For mandatory vaccination to be effective at achieving herd immunity, there must be limited opportunities to opt out. Virginia allows for parents to opt out of mandatory HPV vaccination for any reason, and as a result, the state has an HPV vaccination rate that is lower than the national average. In addition to a medical exemption, we are in favor of a narrow religious exemption, although we acknowledge that it can be difficult to certify genuine religious belief. Otherwise, parents should be required to comply with the mandate for their children to enter school.

The time for action is long overdue. There is now robust safety and effectiveness data to support vaccination of girls and boys. Parental autonomy does not extend to health-related decisions contrary to the child's best interests. The value of social solidarity supports community-wide action, and vaccination can help achieve health equity. Every state legislature should now translate CDC HPV vaccination recommendations into a state immunization mandate just as states already do for a wide range of serious childhood diseases.

ARTICLE INFORMATION

Published Online: December 28, 2018.
doi:10.1001/jamapediatrics.2018.4283

Conflict of Interest Disclosures: None reported.

REFERENCES

1. HPV-associated cancer statistics. Centers for Disease Control and Prevention. <https://www.cdc.gov/cancer/hpv/statistics/index.htm>. Accessed November 15, 2018.
2. HPV vaccine coverage data. Centers for Disease Control and Prevention. <https://www.cdc.gov/hpv/infographics/vacc-coverage.html>. Accessed November 15, 2018.
3. *Health, United States, 2016 With Chartbook on Long-term Trends in Health*. Hyattsville, MD: National Center for Health Statistics; 2017.
4. Reagan-Steiner S, Yankey D, Jeyarajah J, et al. National, regional, state, and selected local area vaccination coverage among adolescents aged 13-17 years: United States, 2015. *MMWR Morb Mortal Wkly Rep*. 2016;65(33):850-858. doi:10.15585/mmwr.mm6533a4
5. Human papillomavirus (HPV) vaccine safety. Centers for Disease Control and Prevention. <https://www.cdc.gov/vaccinesafety/vaccines/hpv-vaccine.html>. Accessed November 15, 2018.
6. Sexual activity, contraceptive use, and childbearing of teenagers aged 15-19 in the United States. Centers for Disease Control and Prevention. <https://www.cdc.gov/nchs/products/databriefs/db209.htm>. Accessed November 15, 2018.
7. Gostin LO. HPV vaccination: a public good and a health imperative. *J Law Med Ethics*. 2018;46(2):511-513. doi:10.1177/1073110518782958
8. Bayefsky MJ. The ethical case for mandating HPV vaccination. *J Law Med Ethics*. 2018;46(2):501-510. doi:10.1177/1073110518782957
9. Chesson HW, Ekwueme DU, Saraiya M, Watson M, Lowy DR, Markowitz LE. Estimates of the annual direct medical costs of the prevention and treatment of disease associated with human papillomavirus in the United States. *Vaccine*. 2012;30(42):6016-6019. doi:10.1016/j.vaccine.2012.07.056
10. Damm O, Horn J, Mikolajczyk RT, et al. Cost-effectiveness of human papillomavirus vaccination in Germany. *Cost Eff Resour Alloc*. 2017;15:18. doi:10.1186/s12962-017-0080-9