

A Physician's View of the Ethics of HPV Vaccination

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Statement of the Issue

Human papilloma virus (HPV) related infection is an issue of great medical and social importance. Each year in the United States 39,000 new cases of HPV related cancers occur: 23,000 among women and 16,000 among men.¹ Infection with cancer-causing strains of HPV is thought to be responsible for the majority of cases of cervical, vaginal, anal and oropharyngeal cancers in the U.S.² Despite this, adoption of the HPV vaccine in the U.S. has been met with significant resistance. Though the vaccine is widely available and covered by insurance carriers, Medicaid and the Vaccines for Children Program³ only of 42 percent of teen girls and 28 percent of teen boys in the U.S. have received the full series of HPV shots.⁴ This is significantly below the rate of compliance for other vaccines

typically given at the same age, such as Tdap (86 percent vaccination rate) and meningitis (81 percent vaccination rate).⁵ When questioned about their reasons for refusing HPV vaccination for their teen daughters, the most frequent category of reason for vaccine refusal (42 percent) was parents' negative or mistaken beliefs about the vaccine. These beliefs included the ideas that the vaccine would promote sexual activity in their daughter, or that the vaccine was not needed if their daughter was not yet sexually active.⁶ Persistent negative attitudes toward this vaccine, including voices from the Catholic Church, are leading to missed opportunities to prevent disease, suffering and death.

Clinical Perspective

HPV has long been recognized as a

causative agent in cervical cancer and other kinds of cancer in humans. The first HPV vaccine was approved by the FDA in 2006 for females only, and required a three dose schedule. Currently, the CDC recommends a two-dose schedule for females and males at age 11-12 years (but allowed between 9-14 years). If adolescents are older than 14 years when starting the series, they should use a three dose schedule.⁷

There is excellent evidence of the efficacy of the HPV vaccine. After introduction of the HPV vaccine, the prevalence of HPV vaccine-sensitive strains was reduced by 56% among females aged 14-19.⁸ More importantly, the vaccine protects against the most deadly outcome of infection: cervical cancer. A 2012 study showed that vaccinated women were strongly protected against high grade (precancerous) cervical lesions caused by HPV. Protection was greater than 90 percent for women who were demonstrated to be free of cancer-causing HPV strains before the time of vaccination, and who received at least one dose of vaccine. Importantly, vaccine efficacy was greatest when administered at a younger age; efficacy declined if vaccine was administered later.⁹ The vaccine also works

well in males. A 2011 study showed that boys who received the series were significantly protected against genital warts and against persistent infection with vaccine-sensitive strains of HPV.¹⁰ Presumably, future partners of these young men would benefit as well, through lower infection rates. The vaccine is regarded by the mainstream medical community as safe and effective.¹¹

Reasons for Resistance to the HPV

In light of clinical evidence, the question is why would anyone oppose a vaccine which has a proven record of cancer prevention? Parents' reluctance to accept this vaccination is linked to a belief that their child will never be infected with HPV, or that administering this vaccine will increase the likelihood of early sexual activity. Both of these ideas are demonstrably not true. The lifetime likelihood of infection with some strain of HPV is greater than 80% for women and greater than 90% for men.¹² Trying to predict which children will someday become infected with HPV is guaranteed to result in many missed cases and missed opportunities for protection. In addition, there is no evidence that receiving the HPV vaccines

influences an adolescent's sexual behavior. A 2012 study examined outcomes for girls who received the vaccine and girls who did not receive the vaccine. There was no difference in outcomes related to sexual activity, such as pregnancy, sexually transmitted infections, or contraceptive counseling.¹³

Ethical Perspectives

Catholic tradition teaches that sex is a gift for married people that should be used responsibly and lovingly. It considers any sexual activity outside of marriage to be sinful. Treating the gift of sexuality with respect will allow faithful people to avoid some negative outcomes, including premarital pregnancy and sexually transmitted diseases. However, given the reality of frequent premarital sex and infection with HPV, is it ethical to allow our children to contract a preventable disease? Is it possible to teach our children responsible behavior *and* protect them against disease if they fail to heed these teachings?

Do we as Catholics really want a devastating disease to be a possible consequence of an adolescent's risky choice? Although we all

wish that our children engage in responsible sexual behavior, few people would argue for cancer or other illness as a just punishment for a mistake. Is it ethically defensible to use the threat of cancer as a deterrent against unmarried sexual activity? Moreover, there is a need to consider the possibility of the "innocent victim". Imagine a young woman who abstains from sex until marriage, but who nonetheless is exposed to HPV via her husband. Given the high rate of HPV infection, is it ethical to fail to protect her from this realistic possibility? Infection may also occur via sexual assault.

The Catholic Medical Association would respond with a qualified "yes." In their 2007 position paper, they suggest that it is possible to separate the decision to vaccinate from any implied encouragement of sexual behavior. They further state that the prevention of disease is a moral good regardless of the behavior which caused the disease.¹⁴ CMA opposes *mandating* HPV vaccination as a requirement for school attendance, citing respect for parental autonomy and a lack of risk to other students while at school. Unlike influenza or pertussis, HPV will not be spread by ordinary contact in a school setting. CMA

does not comment on the possibility that unvaccinated students are a risk to others *outside* of the school environment (they may transmit HPV to others outside of school.) Any implied social responsibility to prevent infection to others appears to be outweighed by parents' right to make medical decisions for their child.

Importantly, the CMA addresses HPV infection as only one of several negative health outcomes associated with premarital sex and encourages parents, physicians and society to promote chastity as the ideal for emotional and physical well-being. In addition, they encourage attention to the full spectrum of risky adolescent behaviors, not just sexual activity.

Other Catholic voices oppose widespread HPV vaccination. A 2007 article by John Brehany and Maricela Moffit argues against HPV vaccination for boys, mainly on the basis of economic factors including the influence of pharmaceutical manufacturers who stand to profit if vaccinations are made mandatory. They conclude that at least for boys, vaccination is “neither sound ethics nor sound public policy.”¹⁵ From a public policy standpoint the argument has some

economic logic, as it costs far more to prevent a case of cancer in boys than in girls, due to the lower incidence of HPV-related cancer in males. However, these authors also argue from a behavioral standpoint, stating, “If immunized boys feel protected, and engage in more risky, immoral behavior, while seeking less medical attention, the consequences for their physical and moral health will be devastating.” As stated above, there is no evidence to support the idea that vaccination changes sexual behavior. In addition, the very notion that the threat of cervical cancer will deter teens from engaging in sex defies logic. Negative consequences of premarital sex, including untimely pregnancy, sexually transmitted disease and even HIV have failed to deter teens from engaging in sex. Will the threat of developing cervical cancer 10-20 years in the future suddenly keep teens chaste? In a 2007 article, Susan Wills says vaccination may not be necessary because only a small percentage of infected girls go on to develop cervical cancer, and that these cases can be addressed by adequate screening and treatment.¹⁶ The National Catholic Bioethics Center recommends that each family make its own assessment when considering whether to vaccinate their child.

NCBC expresses concern that the vaccine could give young people a false sense of security when considering whether to become sexually active. However, the author does acknowledge that a chaste young newlywed could become infected by his or her spouse and therefore might choose to leave nothing to chance. Given the very high rate of infection, why would any parent choose to leave that possibility to chance? The author also acknowledges that it is not necessary for parents to frame the vaccine in terms of sexual activity, but rather call it a cancer-prevention vaccine, thereby lowering any perception of permission to engage in premarital sex.

In a 2007 article in *Health Care Ethics USA*,¹⁷ Ron Hamel asks whether it is morally permissible for Catholic health care facilities to administer the HPV vaccine. His answer, based on Catholic health care's commitment to human life, human dignity and the common good, requires the provision of this immunization. However, he also acknowledges the problem of scandal, or leading others to spiritual ruin, via the perception that the church may be condoning extramarital sex. The author provides several reasons why the good of

preventing a life-threatening illness outweighs the negative of possible scandal. The desired outcome is the prevention of a devastating disease. Prevention of this disease is not the same as endorsing extramarital sex. The author notes that disease prevention is the proper domain of the medical provider, while education about moral behavior is the responsibility of parents, and adherence to moral behavior ultimately falls upon patients themselves. In addition, withholding the vaccine could be viewed as "harsh, judgmental and punitive."

In his 2014 paper entitled, *A Lutheran Defense of HPV Vaccination*, Thor Swanson, MD echoes many of the pro-vaccine arguments regarding efficacy and safety. He raises the additional issue of justice. HPV related disease disproportionately affects the poor and vulnerable who may also have trouble accessing screening and treatment for cancer.¹⁸ Advocating for universal vaccination would have the greatest impact on this population, and is therefore beneficial from both ethical and public policy perspectives.

Finally, we should look to the ultimate healer for his example of mercy. The reader

should recall that Jesus himself often engaged in fellowship with the fallen of the world, by sitting down at table with tax collectors or allowing a sinful woman to anoint his feet. We may also recall Jesus' reaction to the woman caught in adultery. Did Jesus insist that she suffer the natural consequences of her sin, which would be stoning? Regarding the HPV vaccine, this would mean acknowledging that many young people may engage in premarital sex and disapproving of this choice, but attempting to mitigate the harm that comes from it anyway. Can someone who chooses *not* to mitigate a foreseeable harm really claim to be acting from non-maleficence?

As a physician practicing in a fallen world, I have an opportunity to continue the healing ministry of Jesus. People present to me in all varieties of health and brokenness. While on an individual level it is preferable to *prevent* a sinful act, it is also necessary to show mercy after the fact. At a policy level, this distinction between prevention and mitigation becomes less clear. Given that we know for sure that some teens will engage in risky sexual behavior despite our warnings, it is ethically mandatory to minimize negative outcomes. This does not lessen our

obligation to counsel teens on both an individual and societal level. This is a case where we must attempt both to prevent risky behavior and also (knowing that our efforts will be imperfect) minimize the harm which results.

References

1. Viens, L.J., et al., *Human Papillomavirus-Associated Cancers - United States, 2008-2012*. *Morb Mortal Wkly Rep*, 2016. 65(26): p. 661-6. A recent article said that more than 42% of Americans between 18 and 59 are infected. See Nicholas Bakalar "Close to Half of American Adults Infected with HPV", *New York Times* (April 6, 2017).
2. Saraiya, M., et al., *US assessment of HPV types in cancers: implications for current and 9-valent HPV vaccines*. *J Natl Cancer Inst*, 2015. 107(6): p. djv086.
3. Jeyarajah, J., et al., *Human Papillomavirus Vaccination Coverage Among Girls Before 13 Years: A Birth Year Cohort Analysis of the National Immunization Survey-Teen, 2008-2013*. *Clin Pediatr (Phila)*, 2016. 55(10): p. 904-14.
4. *Preventive Services Covered by Private Health Plans under the Affordable Care Act*. August 4, 2015; Available from:

- <http://kff.org/health-reform/fact-sheet/preventive-services-covered-by-private-health-plans/>.
5. Reagan-Steiner, S., et al., *National, Regional, State, and Selected Local Area Vaccination Coverage Among Adolescents Aged 13–17 Years – United States, 2015. Morb Mortal Wkly Rep*, 2016. **65**(33): p. 850–8.
 6. Cheruvu, V.K., M.P. Bhatta, and L.N. Drinkard, *Factors associated with parental reasons for "no-intent" to vaccinate female adolescents with human papillomavirus vaccine: National Immunization Survey – Teen 2008–2012. BMC Pediatr*, 2017. **17**(1): p. 52.
 7. Meites, E., A. Kempe, and L.E. Markowitz, *Use of a 2-Dose Schedule for Human Papillomavirus Vaccination – Updated Recommendations of the Advisory Committee on Immunization Practices. Morb Mortal Wkly Rep*, 2016. **65**(49): p. 1405–1408.
 8. Markowitz, L.E., et al., *Reduction in human papillomavirus (HPV) prevalence among young women following HPV vaccine introduction in the United States, National Health and Nutrition Examination Surveys, 2003–2010. J Infect Dis*, 2013. **208**(3): p. 385–93. See also Jan Hoffman, "HPV Sharply Reduced in Teenage Girls Following Vaccine", *New York Times* (February 22, 2016).
 9. Lehtinen, M., et al., *Overall efficacy of HPV-16/18 AS04-adjuvanted vaccine against grade 3 or greater cervical intraepithelial neoplasia: 4-year end-of-study analysis of the randomised, double-blind PATRICIA trial. Lancet Oncol*, 2012. **13**(1): p. 89–99.
 10. Giuliano, A.R., et al., *Efficacy of quadrivalent HPV vaccine against HPV Infection and disease in males. N Engl J Med*, 2011. **364**(5): p. 401–11.
 11. Van Damme, P., et al., *Immunogenicity and Safety of a 9-Valent HPV Vaccine. Pediatrics*, 2015. **136**(1): p. e28–39.
 12. Chesson, H.W., et al., *The estimated lifetime probability of acquiring human papillomavirus in the United States. Sex Transm Dis*, 2014. **41**(11): p. 660–4.
 13. Bednarczyk, R.A., et al., *Sexual activity-related outcomes after human papillomavirus vaccination of 11- to 12-year-olds. Pediatrics*, 2012. **130**(5): p. 798–805.
 14. Association, C.M., *Catholic Medical Association Position Paper on HPV Immunization*. 2007: Bala CynWyd, PA.
 15. Brehany, J. and M. Moffitt, in *National Catholic Register*. 2011.
 16. Wills, S.E., "HPV Vaccine". *National Catholic Register*, 2007.

17. Hamel, Ron, "HPV Vaccine (Gardasil)". *Health Care Ethics USA*, 2007. 15(1): p. 16-17.
18. Benard, V.B., et al., *Examining the association between socioeconomic status and potential human papillomavirus-associated cancers*. *Cancer*, 2008. 113(10 Suppl): p. 2910-8.