



# The kiss of death: HPV rejected by religion

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Human papilloma viruses (HPVs) are causally linked to cervical, head-and-neck, and oral cancers. Vaccines against HPV are successful at preventing the development of those neoplasms. The principles of most religions provide sound guidance for personal behavior, but some religious leaders advise against acceptance of HPV vaccinations, claiming that their use promotes promiscuity and, specifically, that it encourages sexual activity before marriage.

In this letter, we highlight various HPV species, indicate methods of HPV transmission other than sexual intercourse, and reason that HPV vaccinations are essential because religious prohibitions are contrary to global control of HPV morbidity.

## BACKGROUND AND PROVENANCE

The HPVs now number more than 155. They are known medical pathogens that are highly prevalent in society, being responsible for benign hyperproliferative epithelial conditions and also being causally related to neoplasms<sup>1</sup>. The mucotropic HPVs are classified into nononcogenic and potentially oncogenic types, often called low-risk and high-risk types respectively. The low-risk types such as HPV-6 and HPV-11 (10 species) cause stigmata of the epithelia frequently labelled “warts,” “condylomata,” or “papillomas”—each name being derived from the associated site of infection (for example, “anogenital warts” and so on). Among the high-risk types, HPV-16 (9 species), HPV-18 (7 species), HPV-51 (5 species), and HPV-53 (6 species) are oncogenic and induce lesions of varying degrees of dysplasia, many of which progress to frank neoplasias such as tonsillar, oropharyngeal, penile, vaginal, anal, or cervical cancers, or to other oral and head-and-neck cancers<sup>2</sup>. The HPVs also induce oral lesions such as focal epithelial hyperplasia (previously known as Heck disease<sup>3,4</sup>) and may cause ocular papillomas on the conjunctivae<sup>5</sup>.

Although HPV infections are transmitted mainly through sexual intercourse, they are also frequently transmitted non-sexually; consequently adults and children alike are often infected<sup>6</sup>. Non-sexual forms of transmission include various forms of kissing, vertical transmission from mother to child at birth, social physical contacts, and latency in the respiratory tract<sup>7,8</sup>.

The prevalences of alcohol- and tobacco-derived cancers are waning, but head-and-neck cancers from HPV are increasing<sup>9</sup>.

## VACCINES

Vaccines that protect against the development of HPV morbidity have proved to be effective. The most prevalent vaccines are Gardasil (Sanofi Pasteur MSD, Lyon, France), a quadrivalent vaccine against oncogenic HPV-6, -11, -16, and -18; and Cervarix (GlaxoSmithKline, Brentford, U.K.), a dual vaccine against HPV-16 and -18. Both products, particularly the former, have proved to be effective at preventing HPV morbidity<sup>10,11</sup>. Vaccination programs have targeted young girls, but there is no reason to exclude young boys. Both sexes are affected, and young boys would act as a reservoir for infection should only young girls be immunized. Vaccination before sexual debut for all youth is therefore the logical target<sup>12</sup>.

## THE CHALLENGE

Religion provides many guiding influences on human social behavior. Consequently, religious leaders bear a heavy responsibility in providing leadership and behavioral advice to their adherents. Most exhort health-promoting attitudes, behavioral patterns, and practices, but sometimes, religious leaders, ignorant or immune to scientific evidence, may frankly advise or counsel wrong choices. That case holds for Bishop Frederick Henry of Calgary and other Roman Catholic bishops in Alberta, Canada. According to a recent newspaper report, some 10 religious-based school boards bar the vaccine from being administered on school grounds in Canada, mainly in Alberta<sup>13</sup>.

## DISCUSSION

“Social conservatives oppose the vaccine, arguing [that] it promotes promiscuity and implicitly pre-marital sex.”<sup>13</sup> From the facts already cited, that paradigm as set out by the objectors is spurious reasoning. An infection with HPV may be contracted through non-sexual behavior, transmitted from mother to child at birth, or transmitted through innocent societal contact such as siblings hugging or family members kissing children. Institutions responsible for the immediate and long-term wellbeing of their charges are morally bound to ensure the maximum preparation of those that they care for, direct, and educate for a fulfilled, healthy, and risk-free future. By obfuscating the truths of transmission or ignoring the increased prevalence of HPV morbidity (both non-sexually and sexually transmitted), religiously-based bans on vaccination reflect intellectual ignorance, human indifference to future suffering, and a moral vacuum.

The causes of HPV infections are well known, well-defined, and preventable. Vaccines are available for use, and health authorities designate payments for their administration to all vulnerable youths. The vaccines prevent HPV-mediated pathologies and should be promoted as local, provincial, and national policy for both sexes.

Some religious principles are immutable and have withstood the test of time. We cite the Ten Commandments as an example. But people have a moral right to make free choices and should be free from manipulation or persuasion (whether secular or religious). Although it is true that religious authorities are expected to influence and guide people, religion should not dictate, but rather rationalize, guide, and suggest behavior. At the same time, a vaccine shouldn't necessarily be mandatory, because individuals also have negative moral rights—that is, they have the right *not* to do or want something, free from persuasion, manipulation, or force, whether related to sexual behavior or vaccines. But anecdotal judgments—benignly intended, but lacking foundation and flying in the face of scientific evidence—should not override common sense, reasoned consideration, and rational public health policy.

## CONCLUDING REMARKS

In today's Internet world, with its accelerated transmission of information, traditional institutions should embrace modern technology because the benefits to humanity from technology are available to everyone. The same principle applies to all organized religions. They should adopt contemporary policies and exploit technologies for the overall betterment of society. Such a choice does not mean abandoning principles that dictate sound policies. Human behavior has been directed by faith-based disciplines since time immemorial. Cancer is a curse in modern society, and most causes of cancer remain stubbornly obscure.

However, for those cancers whose causes are known and understood, it behooves all responsible and ethically accountable individuals to apply sound approaches that ensure disease prevention. Embracing modern medicine will ensure that an affectionate kiss between young innocents does not turn out to be the kiss of death in their future because their religion misguided them about HPV vaccination.

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## CONFLICT OF INTEREST DISCLOSURES

The authors have no financial conflicts of interest to declare.

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