

Do you approve of spending \$300 million on HPV vaccination?

YES

Marc Steben MD

Following very clear recommendations of the National Advisory Committee on Immunization, the Canadian government has earmarked \$300 million for purchasing human papillomavirus (HPV) vaccine. I am in almost complete agreement with this decision.

I might be seen as biased, as I was an investigator for the quadrivalent vaccine, but I am more biased owing to the fact that I have performed thousands of procedures to burn condylomas and have diagnosed far too many women with cancerous or precancerous lesions of the vulva. Treatment for this condition leaves women with mutilated genitals, and countless women have agonized over abnormal cervical cytology results. Had an infinitesimal fraction of the \$300 million been earmarked for optimizing our cervical cancer screening programs, I would have been in complete agreement.

Enormous burden of HPV

In 2005, British Columbia spent \$10 per capita on all HPV-related diseases. Extrapolated to Canada, this represents \$300 million a year.¹

Two strains of HPV, HPV-6 and HPV-11, cause most of the condylomas and respiratory papillomatosis and at least 10% of squamous atypical lesions of indeterminate origin and low-grade lesions found on cervical cytology.² Two other strains, HPV-16 and HPV-18, are responsible for 73% of uterine cervical cancers,³ most cases of adenocarcinomas,⁴ HPV-related cancers of the vulva and vagina, most anal cancers, and in the case of HPV-16, at least 10% of oropharyngeal cancers of the head and neck.⁵ Progression to high-grade cervical lesions happens 6.5 times more rapidly with HPV-16 and HPV-18 than it does with the 11 other high-risk HPVs.⁶

Without a vaccine, it is virtually impossible to prevent HPV

Primary prevention. Measures to limit the spread of sexually transmitted infections, such as abstinence, use of condoms, and reducing the number of partners, have serious limitations. Abstinence is only good for as long as it is practised, condoms do not protect all anogenital surfaces,⁷ and 25% of girls who had an average of only 2 partners had at least 1 HPV.⁸

Secondary prevention. Measures to contain the disease and prevent complications and transmission simply do not exist. We cannot administer treatment, posttreatment tests, or screening to contacts. Cervical cancer screening has its limitations too: 43.5% of women have never been screened, 53.8% have not been screened according to recommendations, 29.3% have had false-negative cytology results, and 11.9% have had inadequate follow-up.⁹

Access to a super vaccine

Efficacy. The rate of efficacy of this vaccine against intraepithelial lesions of the cervix, vagina, and vulva, and condylomas was found to be 100%.⁷ Even though it has no therapeutic effect on infections already acquired, it provides increasing protection over time for women who have already been infected with at least 1 HPV.

Safety. Serious side effects are reported less frequently with the quadrivalent HPV vaccine than with other vaccines. Many of the side effects reported are already frequently reported by women of this age even when they have not had the vaccine. There are no reports of death associated with the vaccine.¹⁰

Durability. Subjects inoculated with a booster dose at month 60 had a powerful immune memory response.¹¹ In some subjects, the antibodies were no longer detectable after a certain period of time, but these subjects did not develop lesions. This could indicate that the vaccine created a powerful cellular immune response over and above the tumour response that might be so strong that a booster dose is not required.

Cost. When we look at the various parameters for determining the economic viability of the vaccine, such as the number of women who would need to be vaccinated (ie, 8 to avoid 1 case of condylomas and 276 to avoid 1 case of uterine cervical cancer), the cost in years of quality of life (between \$21 000 and \$31 000¹² in Canada), and the fact that the cost of the disease is in excess of \$300 million in Canada, we can conclude that this is an effective program.

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Are the unanswered questions really unanswered?

Many people want to wait until all the questions have been answered or until the vaccine protects against the cancer itself and not just against its precursors. About 10.7 million doses of HPV vaccine have been administered already, and never has a vaccine been so closely scrutinized—by the media. All vaccines are brought to market before every question has been answered. And the same questions are being asked about this vaccine as have been asked about all other vaccines. The answers are often to be found in long-term studies, such as the quadrivalent HPV vaccine studies now taking place in Scandinavia that will go on for at least 10 years.

Conclusion

The sum of \$300 million is a clear gesture of solidarity with Canadian women. We can protect them against condylo- mas and cancer, which, even with the progress that has been made, continue to destroy the lives of women, mothers, daughters, wives, and their families. Both of my goddaugh- ters have been vaccinated. Women who don't want this priv- ilege always have the option of refusing the vaccine. ❁

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Competing interests

Dr Steben is an investigator for Gardasil and part of Merck's publication committee and international speakers board. He has also received travel and research grants from 3M, Adaltis, AutoGenomics, Digene-Qiagen, GlaxoSmithKline, Laboratoire Biron, Merck, Novartis, Roche, and Warnex.

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CLOSING ARGUMENTS

- Human papillomaviruses (HPVs), mostly the 4 contained in the quadrivalent vaccine, place an enormous burden of illness on Canada's health care system.
- Measures to prevent HPV are not effective.
- The HPV vaccine is safe and effective.
- Canadian women, and by extension Canadian men, will enjoy better sexual health thanks to the quadrivalent HPV vaccine.