

Obstacles and opportunities for including males in Canadian human papillomavirus vaccination programs

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Disclosure Statement

I have no affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

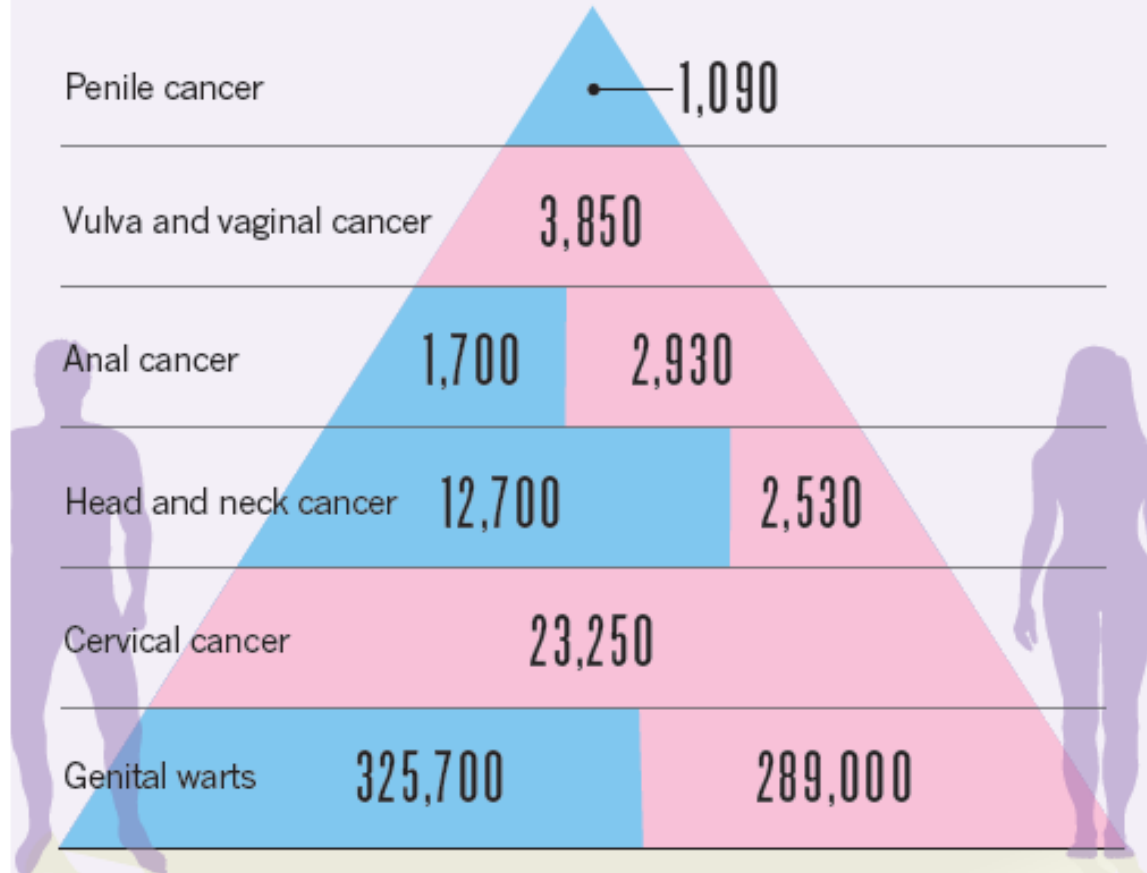
HPV-Associated Health Problems for Males



A SEX-NEUTRAL BURDEN

Estimated number of new annual cases of cancers and genital warts in Europe*

Male
Female



*related to HPV types 6, 11, 16 and 18

Burden of HPV-Associated Cancers in Canada

Projections to 2016 (all HPV-associated cancers combined*)

Incidence	Males	Females
Number of new cases	1,700	2,675 [†]
Age-standardized rate (per 100,000) [‡]	9.3	14.3 [†]
% of all new cancers	1.7	2.7
Mortality		
Number of deaths	395	780 [§]
Age-standardized rate (per 100,000) [‡]	2.2	3.8 [§]
% of all cancer deaths	0.9	2.1

HPV=human papillomavirus

* The definitions of HPV-associated cancers can be found in Tables A.12 and A.13.

[†]When cervical cancer is excluded, the number of new cases is estimated to be 1,258 and the age-standardized incidence rate is 6.5 per 100,000 females.

[‡]Rates were standardized to the 2011 Canadian population.

[§]When cervical cancer is excluded, the number of deaths is estimated to be 402 and the age-standardized mortality rate is 1.8 per 100,000 females.

A Growing Burden of HPV-Associated Cancers in Males

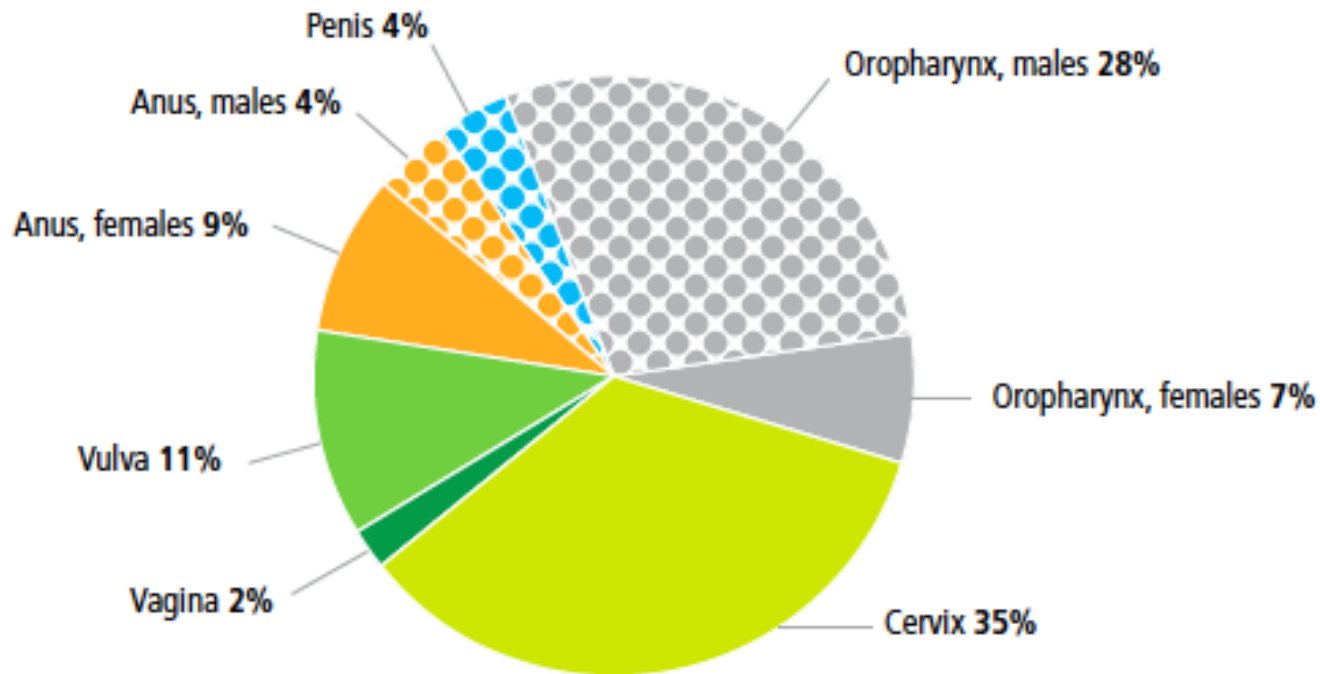
- Projected increase in incidence of anal/ oral cancers in the future

“[u]nless preventive measures are put in place, the annual number of HPV-positive OSCC [Oral Squamous Cell Carcinoma] cases in the United States is predicted to exceed that of cervical cancer by 2020”

Stanley, M. (2012). *Nature*

Proportion of New Cases of HPV-Associated Cancers in Canada

FIGURE 7.1 Proportion (%) of new cases for selected HPV-associated cancers*, Canada, 2012†



* Includes selected topographies and morphologies. Refer to Table A12 for definitions.

† Quebec data are from 2010.

Analysis by: Health Statistics Division, Statistics Canada

Data source: Canadian Cancer Registry database at Statistics Canada

Opinion: Give HPV vaccine to prevent mouth and throat cancers



JULIET GUICHON

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For 30 years now, the Canadian Cancer Society has been partnering with Statistics Canada and the Public Health Agency of Canada to publish annual data about cancer in Canada. This year's report was just released and warns of an alarming increase in mouth and throat cancers caused by the human papillomavirus (HPV), especially among men.

Vaccinating Males also Protects Females

- As HPV is an Sexually Transmitted Infection, both males and females contribute to spreading of HPV
- HPV in males can affect cancers in women (e.g. cervical cancers), i.e. herd protection



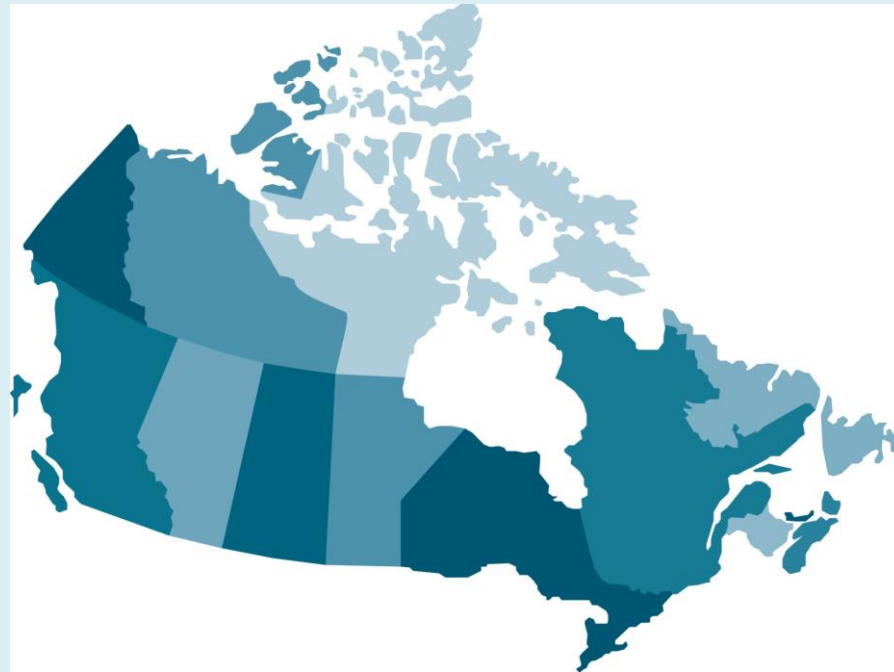
Reasons to Vaccinate Boys

- Growing burden and prevalence of HPV-associated cancers in males
- Vaccinating males ensures greatest protection for women

And:

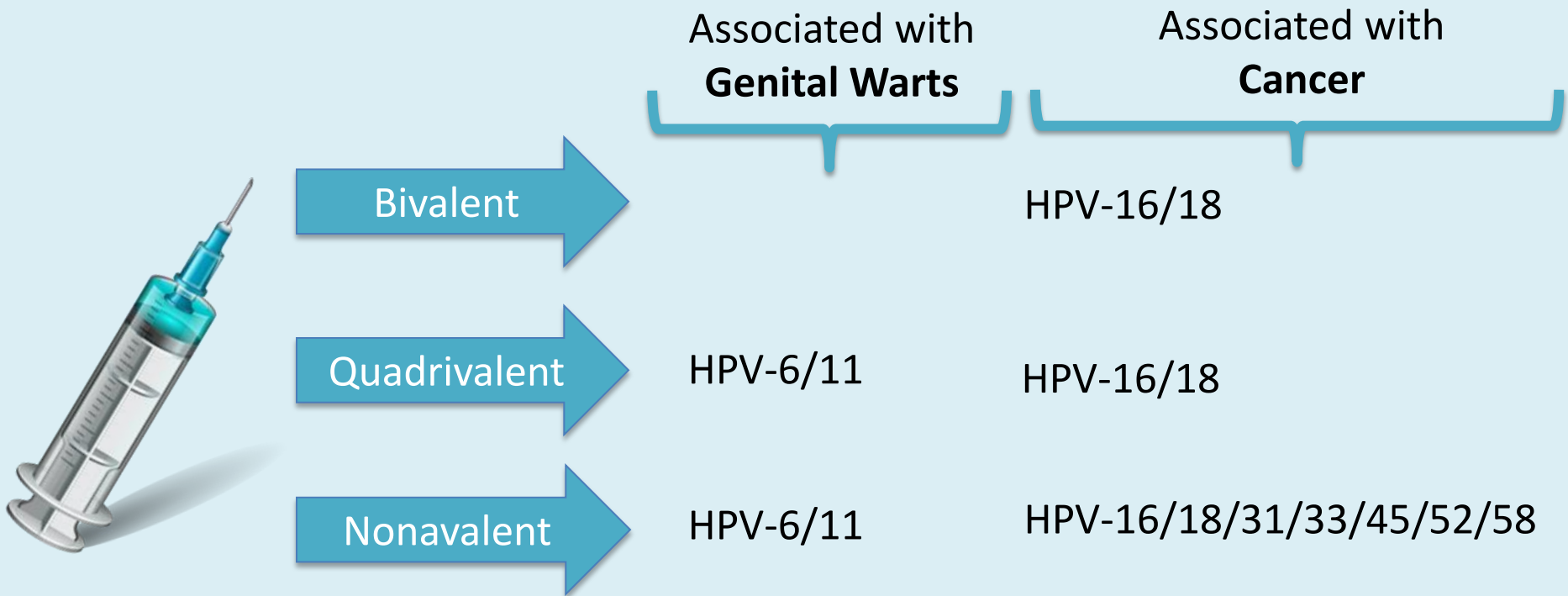
- Gender-neutral approach is *more equitable*
- *Protecting MSM* (Men who have sex with men)
- Some cultures may perceive it as *more acceptable* to vaccinate males over females
- Gender-neutral program is *less confusing* to the public
- Genital warts & HPV-related cancers in males are *very costly*
- *Female coverage suboptimal*

HPV Vaccination Programs across Canada



HPV Vaccination

- Three Vaccines (Cervarix, Gardasil4, Gardasil9) offers protection
- The HPV vaccine is safe and effective, and has demonstrated strong immunogenicity
- Most effective prior to sexual debut and at young age
- NACI (2015) recommends HPV vaccination for females and males (9-26; including MSM)



A Timeline of HPV Immunization in Canada

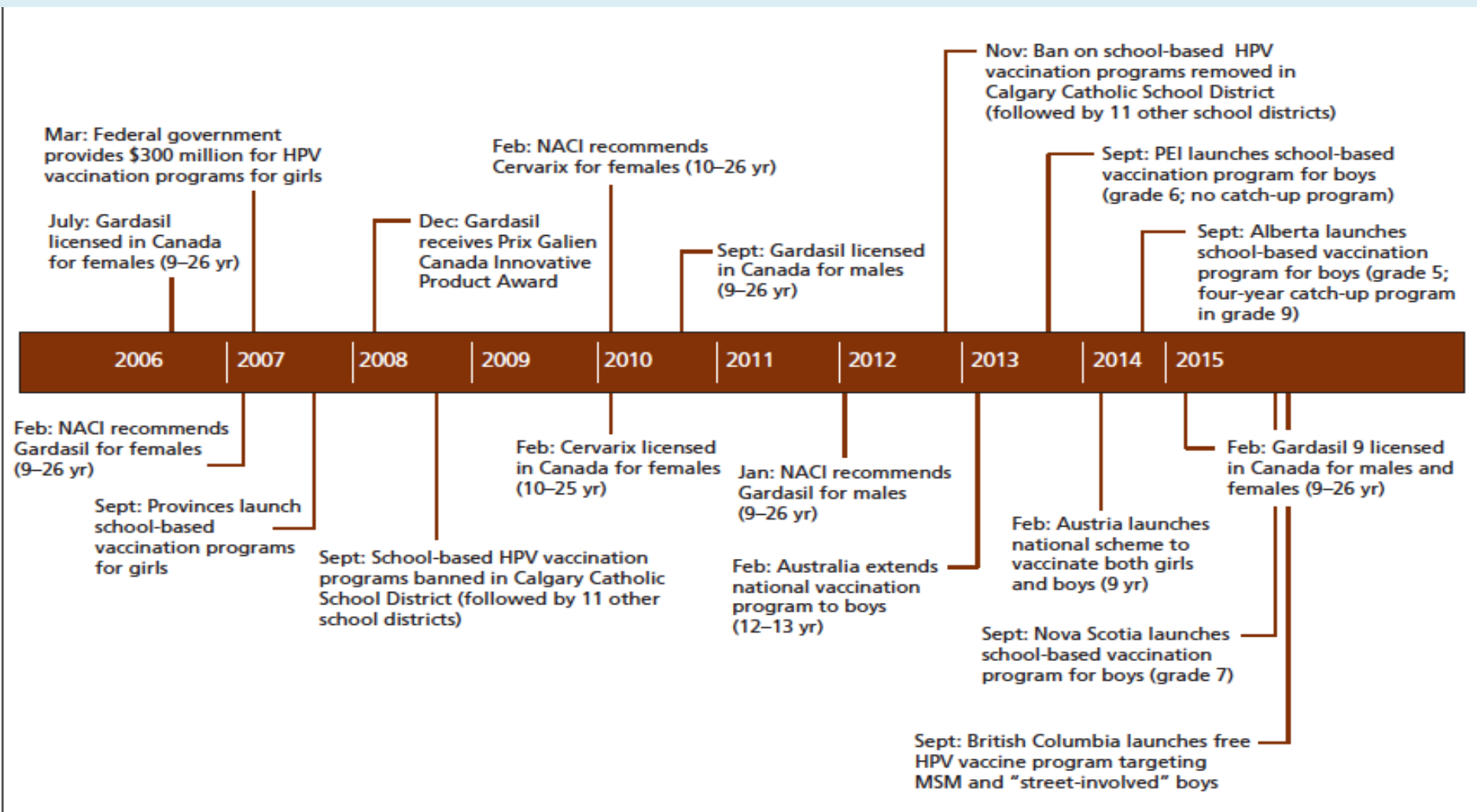


Figure 1: Timeline of events affecting the human papillomavirus (HPV) vaccination program in Canada.^{1,2} MSM = men who have sex with men, NACI = National Advisory Committee on Immunization.

Summary of HPV Vaccine Programs in Canada

P/T	Females		Males		Number of doses
	Start year	Grade(s)	Start year	Grade	
BC	2008	6	2015	— ¹	2
AB	2008	5	2014	5	3
SK	2008	6	—	—	3
MB	2008	6	2016	6	3
ON ^a	2007	7	2016	7	2
QC	2008	4 and 9	2016	4 ^b	2
NB	2008	7	—	—	3
NS	2007	7	2015	7	3
PE	2007	6	2013	6	3
NL	2007	6	—	—	3
NT	2009	5	—	—	3
YT	2009	6	—	—	3
NU	2010	6 (or ≥9 years old)	—	—	3

Uptake in the absence of school-based vaccination programs

Psycho-Oncology

Psycho-Oncology (2015)

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'I didn't even know boys could get the vaccine': Parents' reasons for human papillomavirus (HPV) vaccination decision making for their sons

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Abstract

Objective: The study's objective was to examine parents' reasons for their decision to vaccinate their 9–16-year-old sons with the human papillomavirus (HPV) vaccine.

Methods: Using the precaution adoption process model (PAPM), parents were classified according to one of six stages of decision making: unaware, unengaged, undecided, decided not to vaccinate, decided to vaccinate, or vaccinated. Parents responded to an open-ended question: 'What would influence your decision to have your son vaccinated or not against HPV?'

Results: Three thousand one hundred and seventeen parents provided 2,874 interpretable narrative responses that were coded using thematic content analyses. The majority of parents were in the earlier precaution adoption process model stages, that is, unaware that the HPV vaccine could be given to boys (57.0%), unengaged (20.9%), or undecided (9.1%). Needing more information, vaccine cost, risks associated with vaccination, and wanting a doctor's recommendation influenced these earlier-staged parents' decisions. Parents who decided not to vaccinate their sons (6.8%) reported their decision was due to the risks, insufficient research, lack of confidence in vaccines, and/or no need for the vaccine (as their sons are not sexually active and/or too young). Parents who had decided to vaccinate their sons (5.0%) or who had vaccinated their sons (1.1%) reported that their decisions were based on protecting their sons' health and preventing disease.

Conclusion: There are important differences in the factors that influence parents' decision depending on where they are along the decision-making trajectory. Assuring that parents are well informed about the importance of male vaccination, reducing vaccine cost, accurately communicating vaccine safety, and improving patient-provider communication may augment vaccine coverage and prevent HPV-associated cancers in Canada.

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“Only 1.1% of our sample reported that their sons have been vaccinated”
(2014 data)

The Need for School-Based Vaccination Programs

- A systematic review and meta-analysis of interventions to improve coverage of adolescent immunizations found school-based programs as important strategy (Das et al., 2016)
- Swedish evaluation of HPV catch-up vaccination identified school-based catch-up programs as preferable (compared to health care centers) (Rehn et al., 2016)
- When the government does not fund a vaccine, Canadians may perceive vaccination as superfluous (Scheifele et al. 2014)
- Without government-funded school-based programs, parents must negotiate logistical challenges (e.g., scheduling appointments, making private insurance claims...etc.) (Shapiro et al., 2016)

Obstacles and opportunities for including males in Canadian human papillomavirus vaccination programs



Including males in Canadian human papillomavirus vaccination programs: a policy analysis

Gilla K. Shapiro MPA MPP, Samara Perez BSc, Zeev Rosberger PhD

KEY POINTS

- The prevalence of human papillomavirus (HPV)–associated cancers in men is increasing, and males may transmit HPV to female partners.
- The HPV vaccine is safe and effective, and has demonstrated strong immunogenicity.
- A number of obstacles to uptake of the HPV vaccine in boys include not receiving a recommendation from a doctor or health care provider, lack of information about the HPV vaccine, negative attitudes toward the HPV vaccine or other vaccines, HPV being overidentified as a woman’s disease, cost and logistical challenges.
- Some provinces have decided to fund the HPV vaccine for boys following clearer evaluation of cost-effectiveness models, reduction of vaccine costs, consideration of principles of equity and public advocacy efforts.
- Including boys in HPV vaccination programs across all Canadian jurisdictions will ensure equity in protection from HPV-associated disease for men.

1. Reducing Cost of Male HPV Vaccination

- Cost of HPV vaccine for individuals is expensive (\$100-150 CAD)
- *Closer evaluation of cost-effectiveness models* (e.g. including oropharyngeal cancers and genital warts)
- *Reducing the cost* of the HPV vaccine (through price negotiations with pharmaceutical companies and provincial collaboration)
- *Transition* from 3 to 2 doses (as recommended by NACI) reduces cost of male HPV vaccination (e.g. Manitoba)
- *Federal government funding* was important in initiating female HPV vaccination programs across the provinces in 2007

“[V]accination against meningococcal infection in children is not cost effective, for example, but society accepts it because the prevention of such a serious disease is a worthwhile public-health goal”

Stanley, 2012. *Nature*

2. Considering Principles of Equity

- Not all Canadian males could be protected by female vaccination programs including:
 - MSM (a group known to have higher rates of HPV infection)
 - Males who have relationships with individuals from countries without HPV program or with low uptake rates (e.g., Japan).
 - Males who are uninsured and cannot afford the vaccine without public programs, will have reduced access to the health benefits of HPV vaccination
- Excluding males discriminates against their well-being



Teen wants free HPV vaccine for all boys in B.C.



BETHANY LINDSAY
More from Bethany Lindsay

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3. Public Advocacy

- Male HPV vaccination is supported by: the National Advisory Committee on Immunization, Canadian Cancer Society, Canadian Medical Association, Canadian Paediatric Society, Canadian Pharmacists Association, ... among others
- Government advocates who were diagnosed with throat cancer, have been influential in having the HPV vaccine program extended to boys (e.g. in Nova Scotia)
- Such advocacy will continue to be extremely important in influencing policy change across other Canadian jurisdictions




MP Gordon Gosse, ON



MLA Gordon Gosse, NS

4. Vaccination Programs for Males *Could* Improve Uptake in Females

In support of the call for a gender-neutral HPV vaccination in Canada 

Cyra Patel, Research Officer A/Prof Kristine Macartney, Deputy Director
National Centre for Immunisation Research and Surveillance

Re: **"Including males in Canadian human papillomavirus vaccination programs: a policy analysis"** Shapiro, et al.,
188:881–886doi:10.1503/cmaj.150451

We commend Shapiro and colleagues on their recent policy analysis of HPV vaccination for males in Canada and their call for gender-neutral programs in all provinces and territories. As Australia has the highest uptake of HPV vaccine in males at a country-level worldwide, we write to add evidence that may inform Canada's approach. Quadrivalent HPV vaccine was included for males under the Australian National [More...](#)

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Published October 21, 2016

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....“Female HPV vaccination coverage [in Australia] has also increased by approximately 6% since male immunisation was funded (from 71.0% to 77.4% for 3-dose coverage between 2013 and 2015)”

Even if all Canadian jurisdictions offer gender-neutral HPV vaccination... *some challenges will remain:*

- *Lack of awareness* about HPV-associated cancers in males and recommendations for male vaccination
- *Misconceptions* about, and *negative attitudes* towards, HPV vaccination (e.g. in the media, by parents and adolescents)
- Lack of *recommendation* from doctor/ health care provider
- *Stigma*: HPV over-identified as a woman's vaccine ('feminization of HPV'), and vaccine for 'gay men'
- Not signing consent forms, missed doses, receiving reminders (*logistical challenges*)



Thank You for Your Attention!

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