INSPQ
INSTITUT NATIONAL DE SANTÉ PUBLIQUE DU QUÉBEC
Centre d'expertise et de référence

Best and promising practices in HPV vaccination program implementation

Marc Steben

Medical advisor, STI Unit, INSPQ

Chair, Canadian HPV prevention network, ICID

Shelly McNeil

Professor of Medicine, Infectious diseases

Dalhousie university

www.inspq.qc.ca

Institut national de santé publique Québec

Disclosure Statement Marc Steben

Disclosure of Relationship	Company/Organization
I am a member of an Advisory Board or equivalent with a commercial organization.	Merck, Genocea, Innovio
I am a member of a Speaker Bureau.	Merck
I have received payment from a commercial organization (all payments were for honorarium).	Beckton-Dickinson, Cepheid, Hologic/Gen-Probe, Genocea, Innovio, Merck/Merck Sharp Dohme/Sanofi-Pasteur, Paladin, Roche molecular systems, Valeant.
I have received a grant(s) or an honorarium from a commercial organization.	Cepheid, Genocea, Innovio, Merck/Merck Sharp Dohme/Sanofi-Pasteur, Paladin, Roche molecular systems, Valeant.
I hold a patent for a product referred to in the CME/CPD program or that is marketing by a commercial organization	No
I hold investments in a pharmaceutical organization, medical devices company or communications firms.	I own a communication compagny (Communications Action-Santé Inc.)
I am currently participating in or have participated in a clinical trial within the past two years.).	No

Learning objectives

- **Summarize the effectiveness and safety of HPV immunization**
- Describe the uptake of current Canadian HPV immunization programs
- Describe the emerging best and promising practices in HPV immunization program implementation
- Discuss the challenges of program implementation

Institut national de santé publique Québec

CIC 2016 CCI | December 6-8 6 - 8 décembre OTTAWA

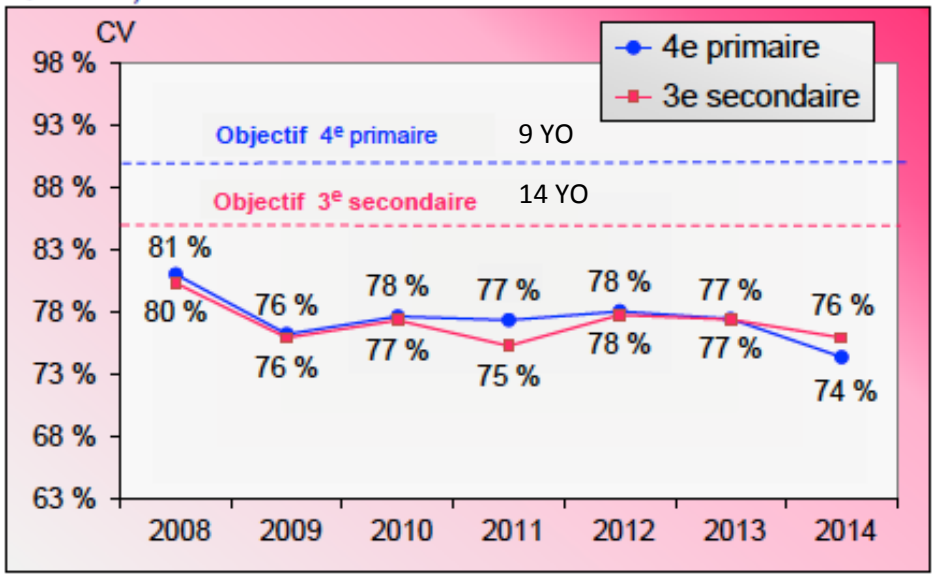
HPV Immunization
10 years of experience in Canada!

Marc Steben MD
Medical advisor, STI unit, INSPQ
Chair, Canadian network on HPV prevention, ICID

Outcomes	Province	Methodology	Population used in the review
HPV prevalence			
1. Goggins et al. Poster presented at EUROGIN, Sevilla, Spain, Feb. 4-7, 2015	Quebec	Population-based survey on sexual health assessing the prevalence of HPV infections using a questionnaire and vaginal self-samples collected from March 2013 to July 2014.	Women 18-29 years of age (yoa) recruited through educational institutions, hospitals and community pharmacies.
Genital warts			
2. Steben, M. et al. Abstract presented at IPV, Seattle, USA, Aug. 21-25, 2014	Quebec	Study estimating the incidence rates of genital warts among individuals covered by the public drug plan (insures 41 % of the population), calculated according to the pre-vaccine (2004-2007) and vaccine (2009-2012) periods.	Girls <20 yoa with incident case of genital warts.
3.Smith, L. et al. Pediatrics 2015; 135:1131-1140	Ontario	Retrospective base cohort study of girls in grade 8 before (2005/2006–2006/2007) and after (2007/2008–2008/2009) program implementation. assessing incidence rates of genital warts using administrative provincial health databases.	Girls age 14-17 yoa
4. Willows, K. et al. Abstract presented at the GOC 37 TH AGM meeting. Vancouver. June 16-18, 2016	Manitoba	Population based cohort study to assess cases of incident genital warts using Manitoba vaccine registry and hospital, physician and drug prescription database.	Females >9 yoa who received the qHPV vaccine between September 2006 and March 2013.
Cervical Dysplasia			
5. Ogilvie, GS et al. Int. J. Cancer 2015;137:1931-1937	British Colombia	Ecological analysis reporting on rates of cervical dysplasia extracted from the BC Cancer Agency's population based cervical cancer program before and after HPV vaccine program.	Young women 15-17 yoa between 2004-2012.
3. Smith, L. et al. Pediatrics 2015; 135:1131-1140	Ontario	Retrospective base cohort study of girls in grade 8 before (2005/2006–2006/2007) and after (2007/2008–2008/2009) program implementation assessing incidence rates of cervical dysplasia using administrative provincial health databases.	Girls age 14-17 yoa
6.Kim, J. et al., CMAJ 2016, 188(12):e281-8	Alberta	Nested case control study to assess Pap test cytology results using provincial repositories for vaccination status and Pap Test results.	Women in Alberta borned between 1994 and 1997 who had at least 1 Pap test between 2012 and 2015.
JoRRP			
7.Campisi, P. Canadian Juvenile Onset Recurrent Respiratory Papillomatosis Working Group, Abstract, EUROGIN. Sevilla, February 4-7, 2015	National	Retrospective multi-centric national surveillance study monitoring prevalence and incidence of JoRRP. Cases reported to a national database from 11 pediatric academic centers.	Pre and post-analysis of incidence and prevalence of JoRRP in kids 0-17 years old.

Estimated vaccination coverage for complete schedule

Couverture vaccinale contre les VPH, filles de 4e année du primaire (classe régulière) et de 3e secondaire, Québec, saisons 2008 à 2014



Note : La CV est estimée sur le nombre de filles inscrites.

Source : BSV à partir des données colligées par les DRSP, données au 10 septembre 2015.

Institut national de santé publique Québec

HPV Prevalence: Pixel study, Québec province in women 18-29 in post HPV vaccination introduction period

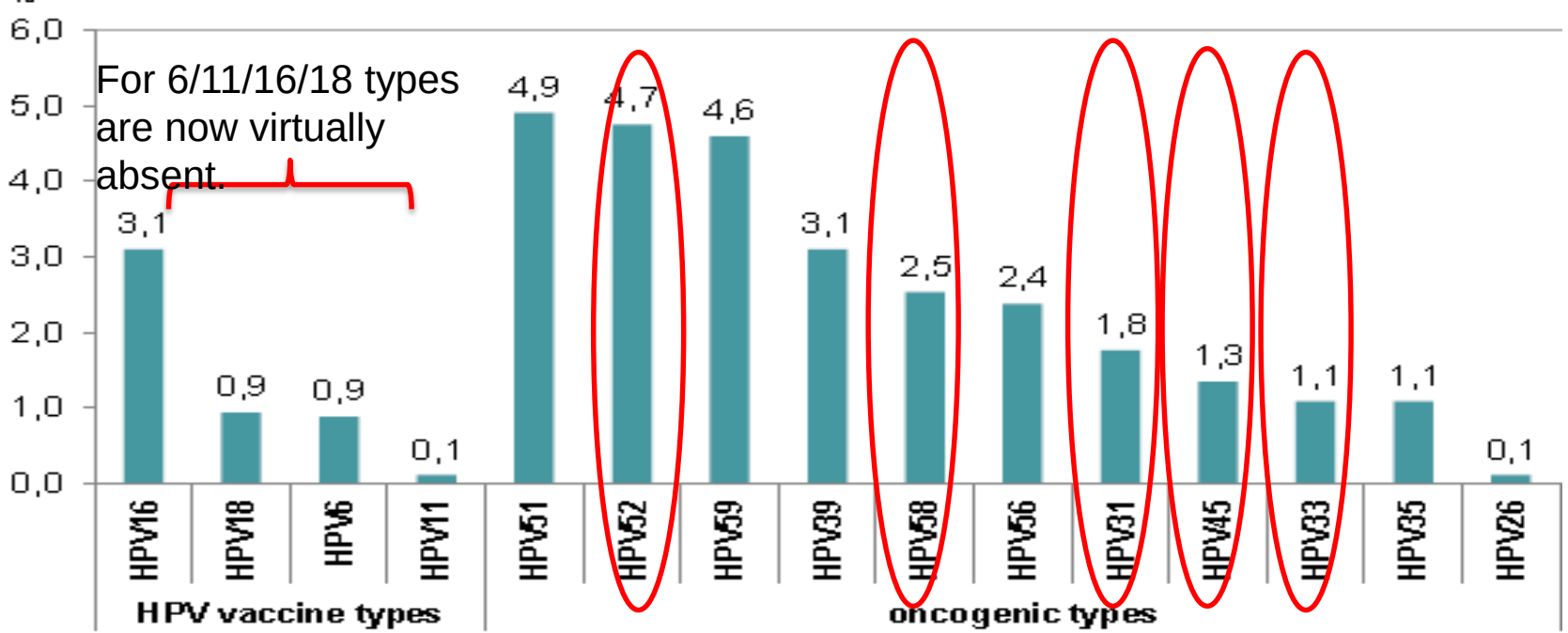
	Vaccinated	HPV+	HPV 16	HPV 6/11/16/18	HPV 31/33/45
17-19 y	OUI (n=594)	32%	0.3%	**0.3%****	1.5%
17-19 y	NON (n=52)	32.7%	1.9%	7.7%	5.8%
20-22 y	OUI (n=374)	39.6%	**1.6%****	**1.6%****	4.8%
20-22 y	NON (n=150)	48%	6.7%	9.3%	4.7%
23-29 y	OUI (n=86)	45.4%	7%	10.5%	10.5%
23-29 y	NON (n=320)	48.6%	7.6%	11.6%	6.1%
17-29 y	OUI (n=1054)	**35.8%***	**1.3%***	**1.6%***	3.4%
17-29 y	NON (n=531)	**46.9%**	**6.8%**	**10.6%**	5.7%

Institut national de santé publique Québec

Adapted from Goggin P et al. Poster EUROGIN, Séville, Espagne, Février 4-7, 2015

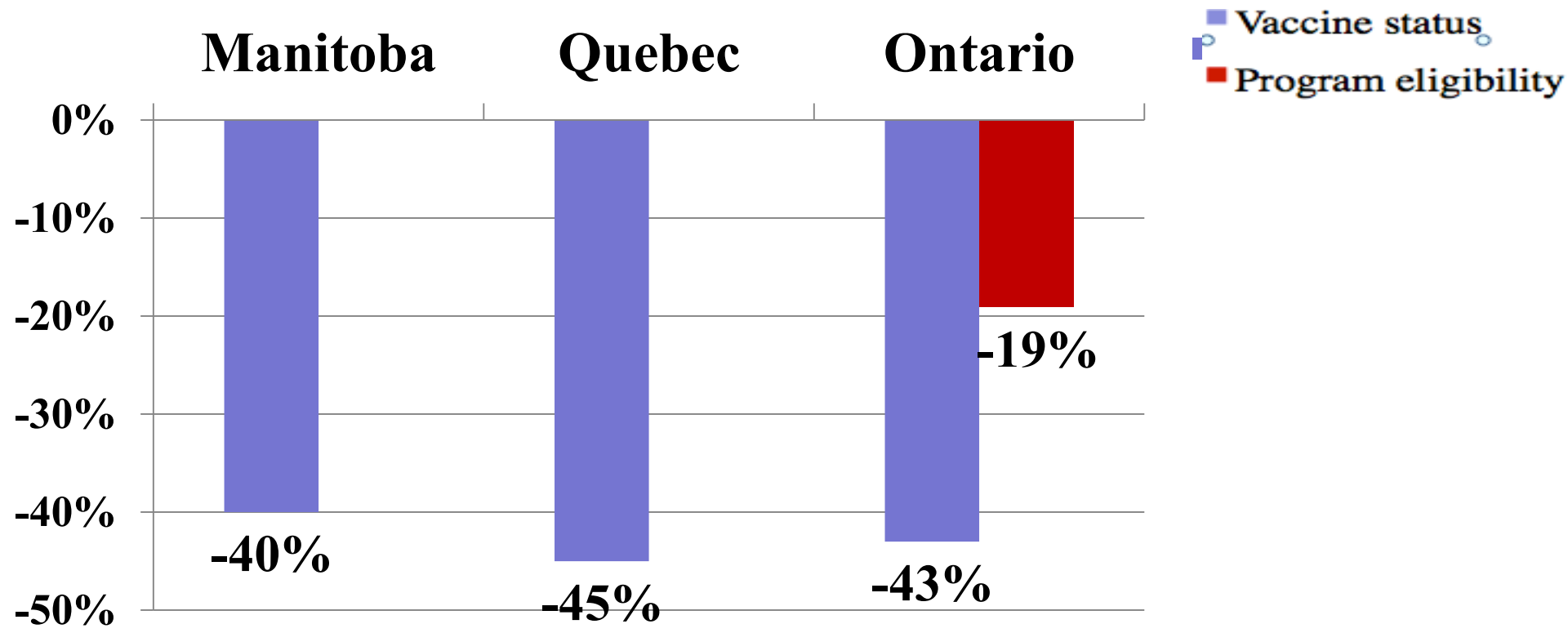
Prevalence of HPV genotypes

Prevalence 17-29 years: 11.4 % 31, 33, 45, 52 and 58



Adapted from Goggin P et al. Poster EUROGIN, Séville, Espagne, Février 4-7, 2015

Impact on genital warts



INSPQ
INSTITUT NATIONAL DE SANTÉ PUBLIQUE DU QUÉBEC
Centre d'expertise et de référence

Institut national de santé publique Québec

HPV vaccination program impact on Genital Warts in Quebec

Marc Steben

Najwa Ouhoummane

Paul Brassard

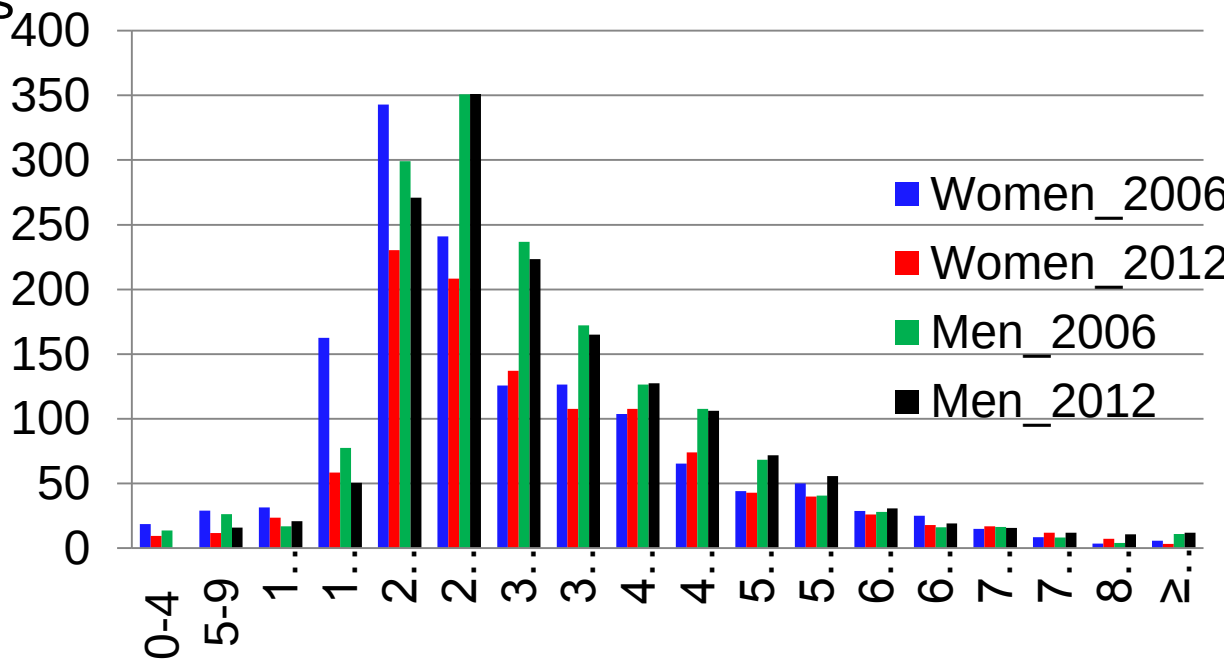
Caroline Rodier

Oral Poster IPV 2014, Seattle

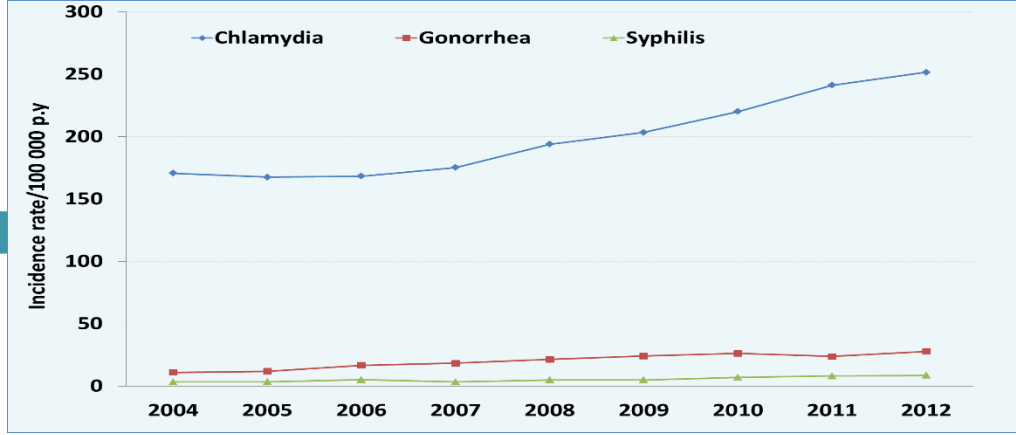
www.inspq.qc.ca

Institut national de santé publique Québec

- The median age of an episode of GWs:
  - ♀ increased from 27 in 2004 to 31 years old in 2012 among women.
  - ♂ remained stable going from 31 to 32 years old (Figure 1).
- The peak rate remained stable for ♂ but for ♀ ↓ from 343 to 230/100000 py
- The incidence rate of GWs
- ♀
  - significant ↓
  - < 20 = 45 % (p<0.0001)
  - 20-24 = 19 % (p<0.0001)
  - 25-29 = smaller ↓ in 25-29
- ♂
  - ↓ in <20 = 21 % (p=0.004)
  - No change after this age



Conclusion



Incidence rate of Chlamydia, Gonorrhea and Syphilis in Quebec, 2004-2012

- While other STI's were increasing in Quebec over the study period, our data indicates that the HPV vaccination program is associated with an important short-term reduction of incidence of GWs mainly among young women aged < 25 years old and young men < 20 years old in Quebec .
- Benefit more pronounced among ♀ <20 years old, who were eligible for vaccination.
- Why we did not see the same reduction in the rate of GW in females and males that was observed in Australia which has the same rate of completed vaccination remains to be explored.

Institut national de santé publique Québec

Impact of vaccination on JoRRP

	HPV pre-vaccination era 1994-2007±	HPV vaccination era 2008-2012 *
Incidence /100,000 children	0.24	0.168
Prevalence /100,000 children	1.11	0.778

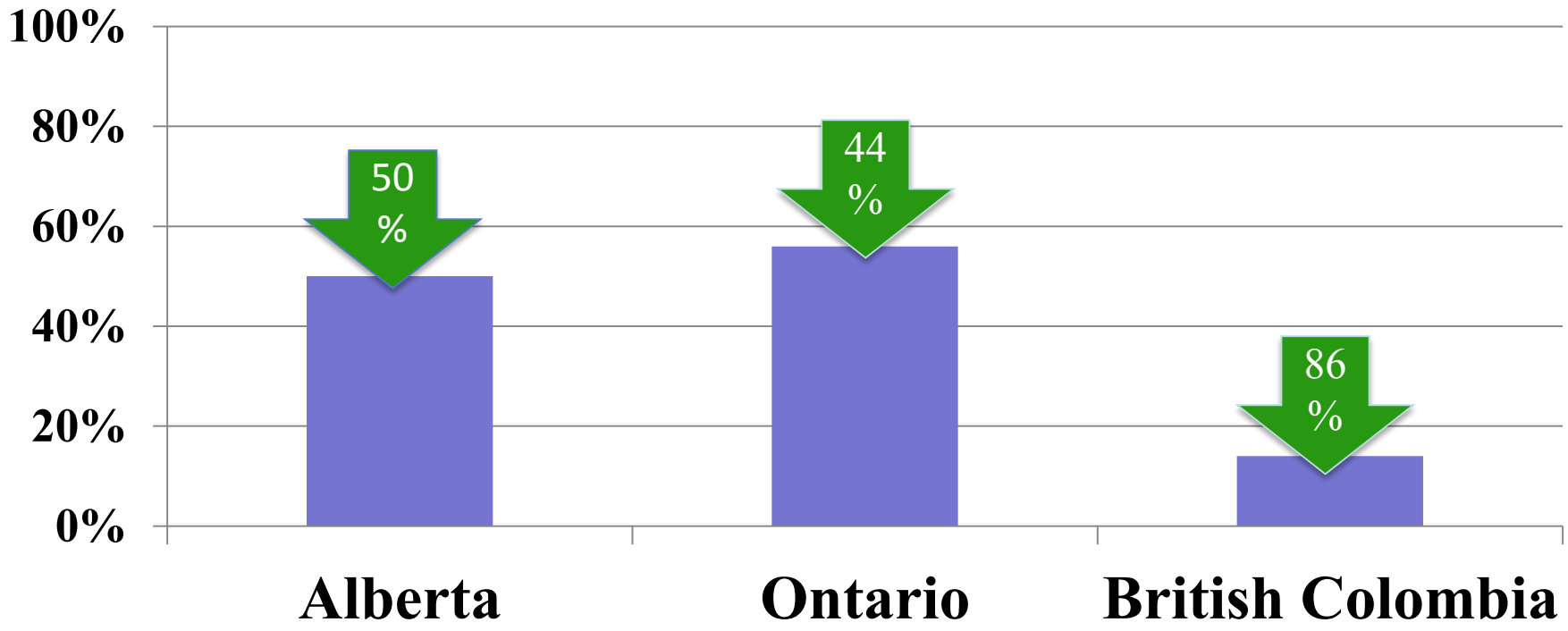
±Campisi P et al. The Laryngoscope 2010; 120:1233-1245

*Campisi, P. Canadian Juvenile Onset Recurrent Respiratory Papillomatosis Working Group, Abstract, EUROGIN. Sevilla, February 4-7, 2015

Institut national de santé publique Québec

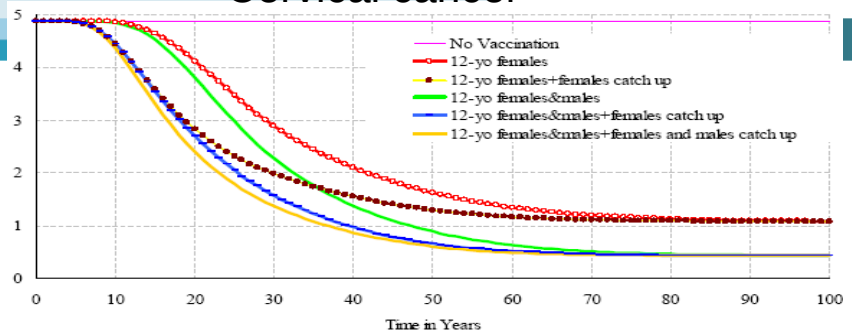
Impact on abnormal cervical cancer screening tests

Cervical dysplasia reduction in Canadian girls.

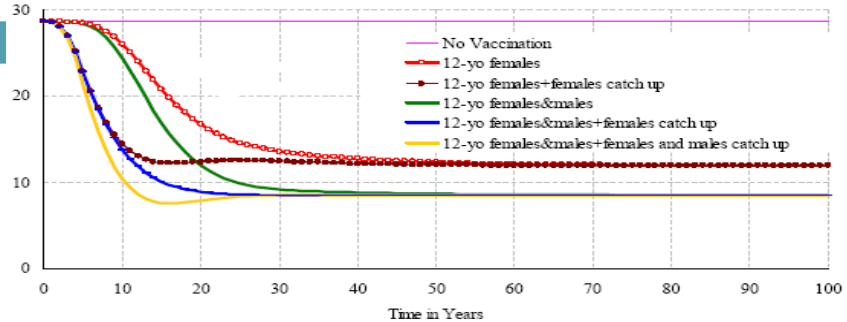


When would real results from vaccination be seen?

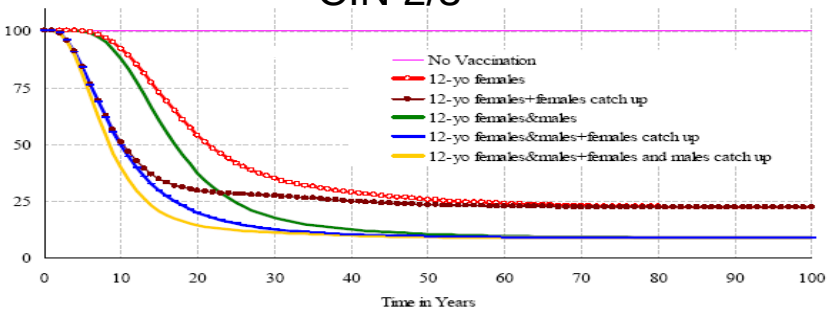
Cervical cancer



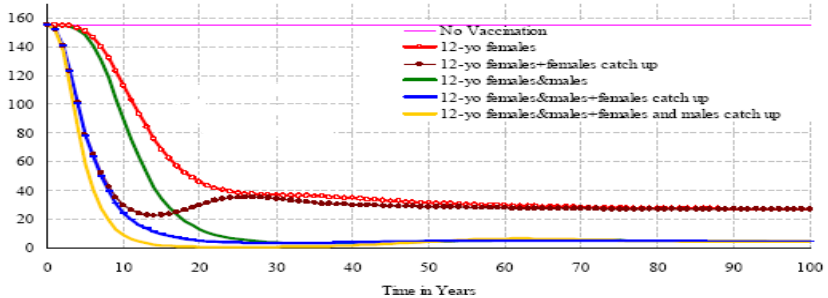
CIN 1



CIN 2/3



Genital warts



Incidence per 10,000. Based on US epidemiology. Assumes life-long protection from vaccine, 100% efficacy; 70% coverage at 5 years for routine, 50% for catch-up. Full cost of vaccination $ 360. Direct medical costs only. Vulvar/vaginal disease not included.

Source: Dasbach E., Elbasha E., Insinga R. *Presentation at the International Papillomavirus Conference,* September 2006. Prague.

Institut national de santé publique Québec

What about Canadian data on safety?

HPV Vaccine Safety

Major agencies endorsing HPV vaccine safety:[1,2]

World Health Organization (WHO)

Public Health Agency of Canada (PHAC)

Centers for Disease Control and Prevention (CDC)

Food and Drug Administration (FDA)

European Medicines Agency (EMA)

Medicines & Healthcare Products Regulatory Agency of the UK (MHRA)

Therapeutic Goods Administration of Australia (TGA)

International Federation of Gynecology and Obstetrics (FIGO)

International Papillomavirus Society (IPVS)

Institut national de santé publique Québec

Merck Data on File, May 3, 2016;
1. Papillomavirus Research 2016 (2):9-10;

EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

20 November 2015
EMA/749763/2015

HPV vaccines: EMA confirms evidence does not support that they cause CRPS or POTS

Reports after HPV vaccination consistent with what would be expected in this age group

EMA has now completed its review of the evidence surrounding reports of two syndromes, complex regional pain syndrome (CRPS) and postural orthostatic tachycardia syndrome (POTS) in young women given human papillomavirus (HPV) vaccines. These vaccines are given to protect them from cervical cancer and other HPV-related cancers and pre-cancerous conditions. In line with its initial recommendations, EMA confirms that the evidence does not support a causal link between the vaccines (Cervarix, Gardasil/Silgard and Gardasil 9) and development of CRPS or POTS. Therefore there is no reason to change the way the vaccines are used or amend the current product information.

THE SOCIETY OF OBSTETRICIANS AND GYNAECOLOGISTS OF CANADA
LA SOCIÉTÉ DES OBSTÉTRICIENS ET GYNÉCOLOGUES DU CANADA
SCC Society of Canadian Colposcopists Société canadienne des colposcopistes
GOC LA SOCIÉTÉ DE GYNÉCO-ONCOLOGIE DU CANADA THE SOCIETY OF GYNECOLOGIC ONCOLOGY OF CANADA
THE COLLEGE OF FAMILY PHYSICIANS OF CANADA LE COLLÈGE DES MÉDECINS DE FAMILLE DU CANADA

February 13th, 2015

JOINT POSITION STATEMENT: Safety of Gardasil HPV vaccine

The Society of Obstetricians and Gynaecologists of Canada (SOGC), the Society of Canadian Colposcopists (SCC), the Society of Gynecologic Oncology of Canada (GOC), and the College of Family Physicians of Canada (CFPC) are releasing this joint position statement to reaffirm that the Gardasil HPV vaccine, based on the very extensive evidence available to us, is safe and that vaccination remains one of the recommended actions for prevention of cervical cancer and other HPV associated diseases.

As professional medical associations, our work is founded on using evidence-based science to guide recommendations for ensuring that patients receive the highest standards of quality care. The Gardasil HPV vaccine has been thoroughly tested and extensive pre- and post-licensure data on the safety of HPV vaccines are available. The Government of Canada's decision to approve use of HPV vaccination in Canada was based on many clinical trials and studies, all of which concluded that it is safe. Internationally, the safety of HPV vaccination has been reviewed, tested, and approved by the Global Advisory Committee on Vaccine Safety (GACVS) of the World Health Organization (WHO).

The Gardasil HPV vaccine has been used in more than 130 countries, with more than 175 million doses distributed globally. The vaccine has been in clinical use for 8 years and has been found to be both safe and effective in reducing pre-cancers and the high risk HPV lesions that lead to cancers of the cervix, the second most common cancer in Canadian women aged 20 – 45 years, along with several other HPV-related cancers affecting both men and women.

A review of the safety of Gardasil by Health Canada was triggered by media reports of autoimmune and cardiovascular diseases. The safety review by Health Canada concluded that there is no evidence of an increased risk of autoimmune or cardiovascular diseases. Recent international reports are in line with Health Canada's findings.

Since its authorization in 2006, nearly 2 million Canadians, and more than 63 million people worldwide, have been vaccinated with Gardasil. Approximately 1800 people in Canada, which represents approximately 1 out of 1,000 Canadians, reported side effects following vaccination with Gardasil. These include light-headedness, dizziness, nausea, headache, fever, and pain, swelling or redness at the injection site. The side effects are known and described in the Canadian labelling information. The benefits of using the vaccine outweigh the risks and potential side effects http://www.hc-sc.gc.ca/dhp-mps/medeff/reviews-examens/gardasil-eng.php

Institut national de santé publique Québec

http://www.hc-sc.gc.ca/dhp-mps/medeff/reviews-examens/gardasil-eng.php

NO INCREASE IN GUILLAIN-BARRE SYNDROME HOSPITALISATIONS AFTER HPV VACCINE PROGRAM IMPLEMENTATION: AN ADMINISTRATIVE DATABASE ANALYSIS IN QUÉBEC, CANADA

Hospital discharge records of children aged 7 to 17 main diagnosis of GBS were analyzed. Age- and sex-specific incidence rates according to HPVV program eligibility were period October 1999 to March 2014.

Results

One hundred SGB cases were retrieved and included in the analysis.

The total hospitalisation rate for GBS in 7-17 year-olds was 0.73/100 000 person-years.

Increasing age and H1N1 pandemic period were significantly associated with higher risk of hospitalisation for GBS.

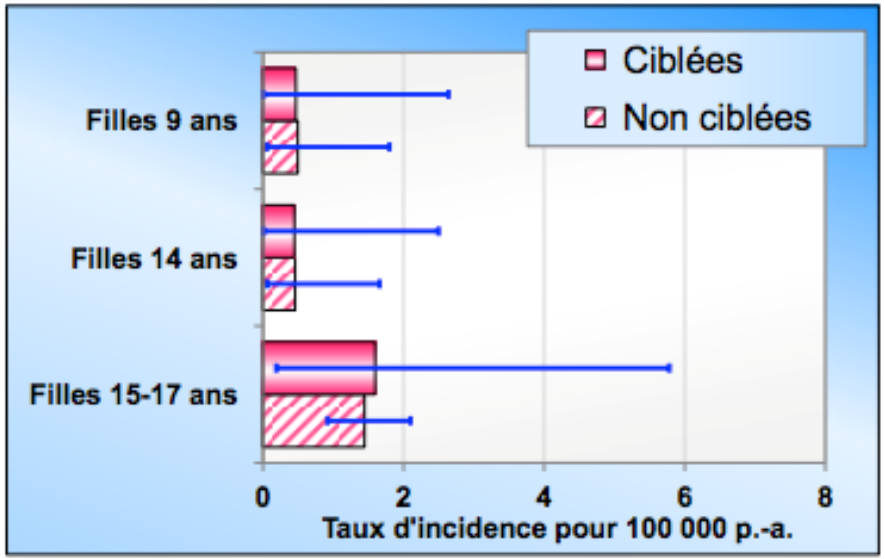
The adjusted relative risk of GBS in the HPVV targeted population (grade 4 and 9 girls) was estimated **at 0.86 (**95%CI: 0.29-2.26).

Conclusion: In Québec, no increase in hospitalisation rates for GBS was observed in HPVV targeted compared to non-targeted cohorts. This study eliminates the possibility of an excess of 1 /100,000 GBS case in HPV immunized girls

Institut national de santé publique

http://publications.msss.gouv.qc.ca/msss/fichiers/flashvigie/FlashVigie_vol11_no9.pdf Novembre 2016

Taux d'incidence de SGB et intervalle de confiance selon l'âge et l'exposition des cohortes à la vaccination



Source : Fichier MED-ÉCHO (1999-2014) et Estimations et projections de population comparables (1996-2036) du Ministère de la Santé et des Services sociaux (MSSS), Direction de la gestion intégrée de l'information (DGII).

Auteures : Geneviève Deceuninck, Centre de recherche du CHU de Québec-Université Laval; Chantal Sauvageau, Vladimir Gilca, Nicole Boulianne et Gaston De Serres, Centre de recherche du CHU de Québec-Université Laval et Institut national de santé publique du Québec.

Reassuring Patients/Parents About Safety of HPV Vaccines

- The vaccines do not contain any living virus
- More than 225 million doses of the quadrivalent vaccine have been distributed globally
  - 8 million in Canada
- Approximately 7 million doses of the bivalent vaccine have been distributed worldwide
  - 6,473 in Canada
- There is ongoing surveillance by healthcare authorities, companies and registries
- No serious adverse events found to be associated with the vaccine and with no greater risk of adverse events than with placebo

The HPV Vaccine and Autoimmunity: Reviewing the Research, Paul A. Offit, MD

What Is Needed to Prove That HPV Vaccines Induce Autoimmunity?

1. Investigators must show that one or more of the L1 proteins that comprise HPV4 mimic self antigens and that self antigen–specific T or B cells are present in the circulation.

2. Second, self antigens must be present in quantities necessary to evoke autoimmune responses.

- The HPV4 vaccine contains 20µg, 40 µg, 40 µg, and 20 µg of the L1 proteins from HPV serotypes 6, 11, 16, and 18, respectively. That is not likely to be enough protein to induce autoimmunity.

- Another way to look at this would be to note the differences between Lyme disease and Lyme vaccine. Lyme disease causes autoimmune arthritis, but Lyme vaccine doesn't, even though the Lyme vaccine contains a protein that mimics a self antigen. Lyme bacteria replicate in joints, generating large amounts of self proteins. The Lyme vaccine (LYMErix™), on the other hand, contained only 30 µg of the outer surface A protein, which—although it mimicked the LFA1 self antigen—wasn't enough to induce autoimmunity.

3. Co-stimulatory signals, cytokines, and other activation signals produced by antigen presenting cells like dendritic cells are necessary to drive autoimmune responses.

- Although live viruses and bacteria can drive these responses at levels necessary to induce autoimmunity, inactivated viruses or purified proteins don't drive these response nearly as strongly—at least not without a powerful adjuvant, like squalene or oil in water emulsions.

4. Peripheral tolerance mechanisms, which the body uses to prevent autoimmune responses from the moment of birth, must fail.

Again, no evidence for breaking tolerance has been shown for HPV vaccines.

Institut national de santé publique Québec

The HPV Vaccine and Autoimmunity: Reviewing the Research. Medscape. Sep 15, 2016.

Original Article | Journal of INTERNAL MEDICINE

doi: 10.1111/joim.12535

Incidence of new-onset autoimmune disease in girls and women with pre-existing autoimmune disease after quadrivalent human papillomavirus vaccination: a cohort study

O. Grönlund[1], E. Herweijer[1], K. Sundström[2] & L. Arnheim-Dahlström[1]

From the [1]Department of Medical Epidemiology and Biostatistics, Karolinska Institutet; and [2]Department of Laboratory Medicine, Karolinska Institutet, Karolinska University Hospital Huddinge, Stockholm, Sweden

- A total of 70 265 girls and women had at least one of the 49 predefined autoimmune diseases;
- 16% of these individuals received at least one dose of qHPV vaccine.
- In unvaccinated girls and women, 5428 new-onset autoimmune diseases were observed during 245 807 person-years at a rate of 22.1 (95% CI 21.5–22.7) new events per 1000 person-years.
- In vaccinated girls and women, there were 124 new events during 7848 person-years at a rate of 15.8 (95% CI 13.2–18.8) per 1000 person-years.
- There was no increase in the incidence of new-onset autoimmune disease associated with qHPV vaccination during the risk period;
- On the contrary, we found a slightly reduced risk (incidence rate ratio 0.77, 95% CI 0.65–0.93).

Institut national de santé publique Québec

Promiscuity is an issue for vaccinated females?

Population-based cohorts

- 2 years before HPV vaccine program (2005-6 and 2006-7)
- 2 years after HPV vaccine program (2007-8 and 2008-9)
- Data on indicators of sexual behaviour
  - Pregnancies
  - Non HPV-STI

Effect of HPV vaccination on clinical indicators of sexual behaviour among adolescent girls: the Ontario grade 8 HPV vaccine cohort study. Smith LM et all. CMAJ2015 Feb 3;187(2): E74-E81

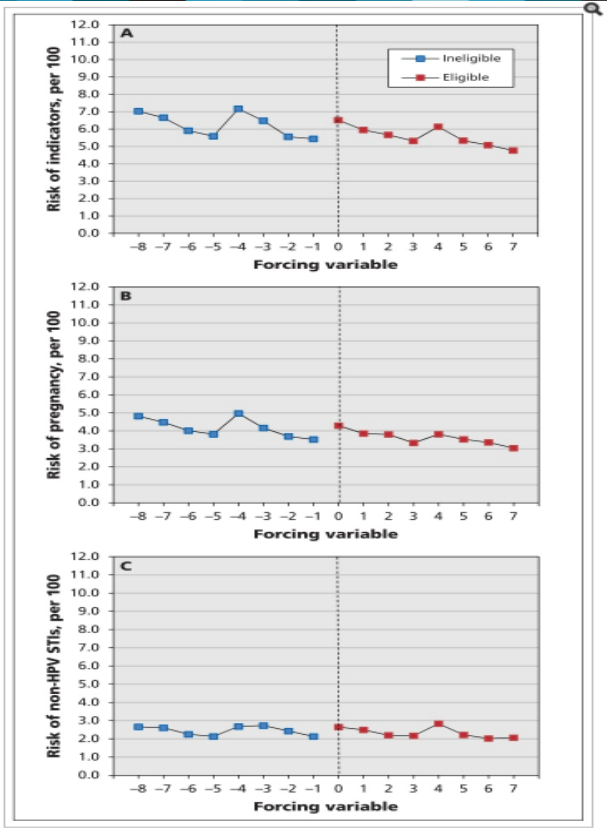
Effect HPV vaccination on clinical indicators of sexual behaviour among adolescent girls: the Ontario grade 8 HPV vaccine cohort.

Table 2:

Cumulative risk of outcomes, according to eligibility for Ontario's quadrivalent human papillomavirus vaccination program and birth year

	Program eligibility; birth year; no. (%) of participants				
	Ineligible		Eligible		
Clinical indicator of sexual behaviour	**1992 (*n* = 66 653)**	**1993 (*n* = 65 128)**	**1994 (*n* = 64 818)**	**1995 (*n* = 63 894)**	**Total (*n* = 260 493)**
Composite outcome	4 203 (6.3)	4 032 (6.2)	3 801 (5.9)	3 405 (5.3)	15 441* (5.9)
Pregnancy	2 854 (4.3)	2 658 (4.1)	2 476 (3.8)	2 199 (3.4)	10 187 (3.9)
STIs	1 609 (2.4)	1 653 (2.5)	1 541 (2.4)	1 456 (2.3)	6 259 (2.4)

Effect HPV vaccination on clinical indicators of sexual behaviour among adolescent girls: the Ontario grade 8 HPV vaccine cohort.



«Strong evidence that HPV vaccination does not have any significant effect on clinical indicators of sexual behaviour among adolescent girls»

Institut national de santé publique Québec

Promiscuity is an issue for vaccinated boys?

This issue has never brought up by parents!

Institut national de santé publique Québec

Not having cervical cancer screening in vaccinated females an issue?

Concerns have been raised that HPV-vaccination might affect women's cervical cancer screening behaviour

Cohort of 629,703 women born 1977-87 was invited to screening with a follow-up from 10-2006 to 12-2012

Attendance after 3 years of FU, first round of screening

- 86% in vaccinated cohort
- 75% in unvaccinated cohort

Institut national de santé publique Québec

Herweijer E, Feldman AL, Ploner A, Arnheim-Dahlström L, Uhnoo I, Netterlid E, et al. (2015) The Participation of HPV-Vaccinated Women in a National Cervical Screening Program: Population-Based Cohort Study. PLoS ONE 10(7):e0134185. doi:10.1371/journal.pone.0134185

Not having cervical cancer screening in vaccinated females an issue?

Table 2. Crude and adjusted hazard ratios from the main effects model of screening attendance in HPV-vaccinated women compared to unvaccinated women during the entire study period, and by round 1 and 2 during follow-up.

	Attendance over entire study period			
	Crude HR (95% CI) [a]	***P* value**	**HR_{adj} ≥1 dose (95% CI)**[b]	***P* value**
Unvaccinated	Ref.		Ref.	
HPV-vaccinated	1.28 (1.24–1.32)	*<0.0001*	1.05 (1.02–1.08)	*0.004*
	Attendance to screening round 1			
Unvaccinated	Ref.		Ref.	
HPV-vaccinated	1.31 (1.27–1.35)	*<0.0001*	1.09 (1.05–1.13)	*<0.0001*
	Attendance to screening round 2			
Unvaccinated	Ref.		Ref.	
HPV-vaccinated	1.26 (1.21–1.32)	*<0.0001*	1.15 (1.10–1.20)	*<0.0001*

[a] Unadjusted hazard ratios (HRs) with corresponding confidence intervals (CIs).

[b] HRs with corresponding CIs adjusted for income and education. Women were HPV-vaccinated with at least 1 dose.

Québec

Herweijer E, Feldman AL, Ploner A, Arnheim-Dahlström L, Uhnoo I, Netterlid E, et al. (2015) The Participation of HPV-Vaccinated Women in a National Cervical Screening Program: Population-Based Cohort Study. PLoS ONE 10(7):e0134185. doi:10.1371/journal.pone.0134185

Learning objectives

- Summarize the effectiveness and safety of HPV immunization
- **Describe the uptake of current Canadian HPV immunization programs**
- Describe the emerging best and promising practices in HPV immunization program implementation
- Discuss the challenges of program implementation

Institut national de santé publique Québec

INSPQ
INSTITUT NATIONAL
DE SANTÉ PUBLIQUE
DU QUÉBEC

Centre d'expertise
et de référence

HPV Immunization Programs in Canada

www.inspq.qc.ca

Institut national
de santé publique
Québec

Major components of vaccination programs in Canada and participating groups

Vaccine production and distribution	Vaccine industry (production); Provincial, territorial and local government (public distribution)
Regulation	Federal government (Health Canada)
Vaccine policy	Vaccine schedule and recommendations: NACI; Recommendations on program options - CIC (federal, provincial and territorial governments)
Vaccine financing	Provincial and territorial governments; Federal Trust Fund
Vaccine administration	Local public health or health care provider-delivered (publicly funded programs), health care providers (non-publicly funded)
Settings for vaccine delivery	Provincial, territorial and local governments (public health clinics, school-based settings, health care providers)
Monitoring vaccine use	School-based programs through local public health (primary setting), immunization coverage surveys
Monitoring vaccine effectiveness	Provincial, territorial and local governments; federal government for national level monitoring; vaccine industry
Monitoring vaccine safety	Federal government coordinates the national vaccine safety monitoring system (CAEFISS, IMPACT), with reporting through provincial, territorial and local governments; vaccine industry
Vaccine injury compensation and liability	Federal government (VICP) Province of Quebec has the only vaccine injury compensation program in Canada

Vaccine 26S (2008) K68–K75

Contents lists available at ScienceDirect

Vaccine

journal homepage: www.elsevier.com/locate/vaccine

ICO Monograph Series on HPV and Cervical Cancer: General Overview

Early Experience with Human Papillomavirus Vaccine Introduction in the United States, Canada and Australia

Abigail Shefer[a,*], Lauri Markowitz[b], Shelley Deeks[c], Theresa Tam[d], Kathleen Irwin[e,1], Suzanne M. Garland[f], Anne Schuchat[a]

INSPQ
INSTITUT NATIONAL
DE SANTÉ PUBLIQUE
DU QUÉBEC

Centre d'expertise
et de référence

HPV Immunization Programs in Canada

www.inspq.qc.ca

Institut national
de santé publique
Québec

Publically Funded HPV Immunization Programs Canada *(as of May 16, 2017)*

(Gardasil® / 4vHPV unless otherwise indicated)

Province/ Territory	Programs & Eligibility	Uptake Rate
British Columbia ∇	• Males (Sept'15)[23]/Females: Gr. 6 (2 dose)[1] [9v][19] • HR males 9-26yo (Sept'15)[8] [4v], HIV+ females 9-26yo (Sept'16) [9v] • Catch up: females born 1994-2004 (up to 26yo) [4v]	64.8%[15]
Alberta	• Males (Sept'14)/Females: Gr. 5; catch up Gr. 9 (ends '18)[1] [9v – all][20]	64.9%(M);66.3%(F)[22]
Saskatchewan	• Males (Sept'17)[25]/Females: Gr. 6 (2 dose)[1] • HIV+ males 9-17yo (Feb'16)[12]	73.7%[14]
Manitoba	• Males (Sept'16)/Females: Gr. 6 (2 dose)[1]; catch up Gr. 9 boys (2016-19)[2]	58.6%[14]
Ontario	• Males (Sept'16)/Females: Gr. 7 (2 dose)[1]; catch up until Gr. 12[5] • MSM: up to 26yo[18] • Females: Gr. 8 (2016-17)[5]	80.2%[14]
Quebec ++	• Males (Sept'16)/Females: Gr. 4 (2 dose)[1] [9v][21] ; catch up <18yo[3] [4v] • MSM: 9-26yo (Jan'16)[9] [4v] • Males (9-26yo)/Females (18-26yo):Immunosuppressed/HIV+ (Apr'14)[4] [4v]	73%[17]
New Brunswick	• Males (Sept'17)[24]/Females: Gr. 7 (2 dose)[1] [9v][26]	73.0%[14]
Nova Scotia	• Males (Sept'15)/Females: Gr. 7 (2 dose)[1]	75.0%[14]
Prince Edward Island *	• Males (Apr'13)/Females: Gr. 6 (2 dose)[10] • HR males (18-26yo), MSM (all ages), HR females (18-45yo) (Apr'16)[11]	84.9%[14]
NFL & Labrador	• Males Gr 6 (Sept'17)[27]/Females: Gr. 6 (2 dose)[1]	88.7%[14]
NWT	• Females: Gr. 4-6 (2 dose)[1]; catch up to 26yo (3 dose)[6]	39.3%[14]

HR = High-Risk ; MSM = Men who have sex with men ; ≥ 15 year old or immunocompromised = 3 dose ; <15 year old & Immunocompetent = 2 dose

British Columbia ∇ [8, 19, 23]

- 9vHPV:
  - Gr. 6 (born on or after Jan 1, 2005)
  - HIV+ females 9 to 26 years of age
- 4vHPV:
  - Females born 1994-2004.
  - High Risk males, 9 to 26 years of age (inclusive) who :
    - have sex with men (MSM) including those who are not yet be sexually active and are questioning their sexual orientation
    - Are Street involved
    - Are HIV+
    - 9 to 18 years of age in care of the Ministry of Children and Family Development (MCFD)
    - In youth custody services centres

- The HPV vaccines are given as either 2 or 3 doses over a 6 month period. Immunocompetent individuals 9 to 14 years of age need 2 doses given at least 6 months apart. Individuals 15 years of age and older need 3 doses.[8]

Institut national de santé publique Québec

Quebec + +

- 9vHPV:
  - Gr. 4 Males & Females (2 dose)
  - Other publicly-funded populations to switch to 9vHPV once Gardasil inventories have been depleted

Boys and men aged 9-26 who are immunosuppressed or infected with HIV

- As of January 1st, 2016, men having sex with men (MSMs) who are 26 years of age or less will be able to receive the HPV vaccine for free. Men of this age group who were HIV+ or immunosuppressed were already covered as part of the program since 2014.

- Starting September 1st, 2016, the vaccine will be offered for free to boys in 4th grade, as part of school-based immunizations. No catch up will be offered.

For Immunosuppressed or HIV-Infected:

- Males: 9-26 year old
  - 9-13 year old use a 3-dose schedule: 0, 6, 12mos
  - 14-26 year old use regular 3-dose schedule: 0, 2, 6mos
- Females: 18-26 year old

Institut national de santé publique Québec

Prince Edward Island *

Adult males (18-26), with the following risk factors:

- having unprotected sex with multiple partners (male and female)
- history of genital warts
- individuals who missed the HPV immunization in Grade 6 since 2012

All MSM, regardless of age.

Adult females (18-45), with the following risk factors:

- having unprotected sex with multiple partners (male and female)
- history of genital warts
- an abnormal PAP test
- individuals who missed the HPV immunization in Grade 6 since 2007

Institut national de santé publique Québec

References

(1) http://healthycanadians.gc.ca/healthy-living-vie-saine/immunization-immunisation/children-enfants/schedule-calendrier-table-1-eng.php

(2) http://www.gov.mb.ca/health/publichealth/cdc/div/schedules.html

(3) http://www.msss.gouv.qc.ca/sujets/santepub/vaccination/index.php?aid=193

(4) http://publications.msss.gouv.qc.ca/acrobat/f/documentation/pig/html/web/Pig.htm (10.4.4)

(5) http://www.health.gov.on.ca/en/ms/hpv/

(6) http://www.hss.gov.nt.ca/sites/default/files/nwt_immunization_schedule_0.pdf

(7) http://www.hss.gov.yk.ca/pdf/im-manual.section1.pdf

(8) http://www.bccdc.ca/health-info/immunization-vaccines/vaccines-in-bc/human-papillomavirus-(hpv)-vaccine

(9) http://www.fil-information.gouv.qc.ca/Pages/Article.aspx?aiguillage=ajd&type=1&idArticle=2312038377

(10) Personal communications - PEI Department of Health and Wellness (Dec 1, 2015) (Website Update In-Progess).

(11) Adult Immunization. Department of Health and Wellness. Chief Public Health Office. Prince Edward Island. April 2016. http://www.gov.pe.ca/photos/original/cpho_aischedule.pdf

(12) Saskatchewan Immunization Manual. Chapter 10 – Biological Products. February 2016. http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter10.pdf

(13) http://gov.nu.ca/sites/default/files/files/Nunavut%20HPV%20Immunization%20Program_28Aug2013.pdf

(14) The 2016 Cancer System Performance Report. July 2016. Figure 1.3

(15) Immunization Uptake in Grade 6 Students (2002-2015). BC Centre for Disease Control. http://www.bccdc.ca/resource-gallery/Documents/Statistics%20and%20Research/Statistics%20and%20Reports/Immunization/Coverage/Grade6_Coverage_Results.pdf

(16) Recommendations for Human Papillomavirus Immunization Programs. Table 1. Canadian Immunization Committee. April 2014.

(17) FlashVigie, Février 2017, Volume 12(1). http://publications.msss.gouv.qc.ca/msss/fichiers/flashvigie/FlashVigie_vol12_no1.pdf

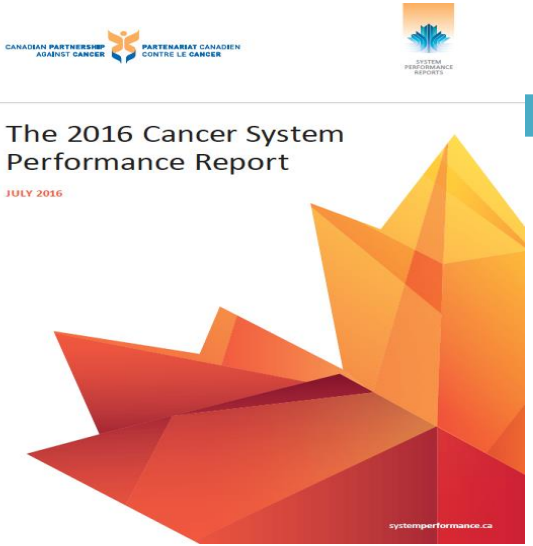
(18) http://chd.region.waterloo.on.ca/en/partnersProfessionals/resources/HPV_expanded_eligiblity_Q_and_A_for_Health_Care_Providers.pdf (19) http://immunizebc.ca/diseases-vaccinations/hpv

(20) http://www.albertahealthservices.ca/assets/info/hp/phys/if-hp-phys-moh-advisory-netcare-hpv9-infanrixhexa-sz.pdf

(21) http://publications.msss.gouv.qc.ca/msss/fichiers/2016/16-291-05W.pdf

Institut national de santé publique Québec

How is it across Canada?



Measured Since

The 2011 *Cancer System Performance Report*.

In 2016, the Partnership changed the indicator definition reported in the Cancer System Performance Reports from first dose to completion of the HPV vaccine series, as defined in provincial/territorial vaccination schedules. This was the first year all reporting provinces/territories were able to provide this information.

Indicator Definition

The percentage of girls in the age group (or school grades) targeted for immunization who have completed the HPV vaccine series based on the provincially/territorially recommended vaccination schedule.[a]

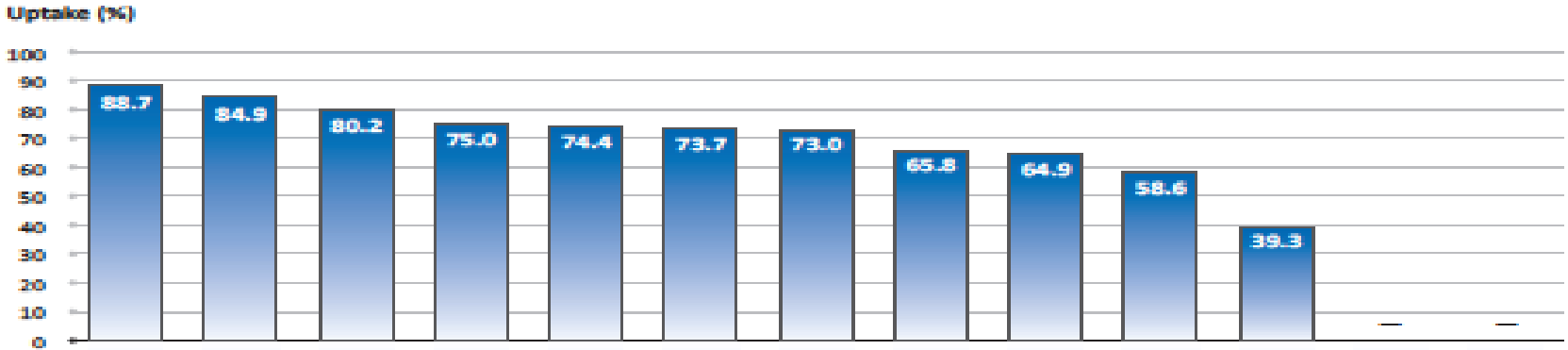
39–89%

range of provincial/territorial results for HPV vaccination uptake

Institut national de santé publique Québec

FIGURE 1.3

Percentage of girls in immunizing grade who completed human papillomavirus vaccine series based on provincially/territorially recommended vaccination schedules,* by province/territory — most recent vaccination year



	NL	PE	ON	NS	QC	SK	NB	BC	AB	MB	NT	YT	NU
School year	2013/14	2013/14	2012/13	2013/14	2014/15	2012/13	2014/15	2013/14	2013/14	2014/15	2013/14	—	—
Grade	8	8	Age 13	7	4	Age 13	7	8	5	6	7	—	—
First dose uptake (%)	92.8	90.6	—	88.8	78.2	80.3	>73.0	—	74.2	70.1	46.7	—	—
Second dose uptake (%)	88.7	88.7	—	84.5	74.4	78.4	>73.0	65.8	—	65.8	44.2	—	—

Province/Territory

Key Message

Collecting consistently defined data to enable reporting of comparable pan-Canadian indicators of human papillomavirus (HPV) vaccination remains a challenge. The available data suggest there is considerable variation in HPV vaccination uptake across Canada.

www.inspq.qc.ca

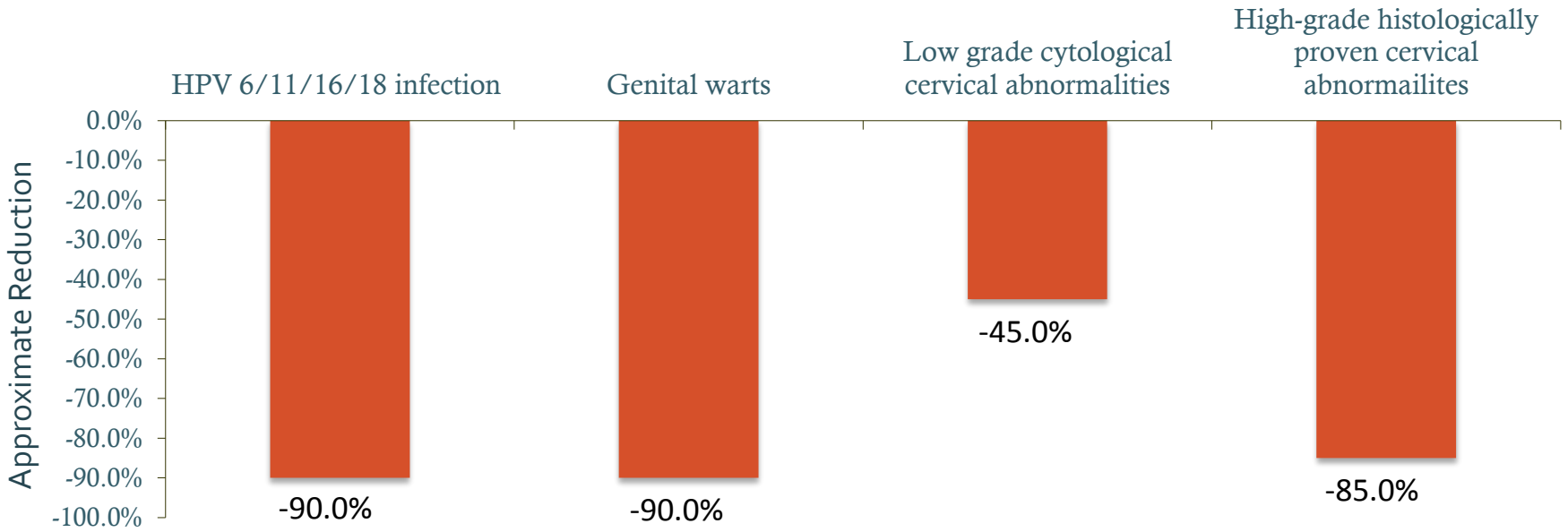
Impact and Effectiveness of the 4vHPV Systematic Review of 10 Years of Real-world Experience

S. M. Garland, et al

Clin Infect Dis. 2016;63(4):519-527. Published June 14, 2016

Institut national de santé publique Québec

4vHPV Vaccine: Systematic Review of 10 Years of Real-world Experience



4v:quadrivalent.

1. Garland et al. Clin Infect Dis. 2016 May 26. [Epub ahead of print]..

Institut national de santé publique Québec

Learning objectives

- Summarize the effectiveness and safety of HPV immunization
- Describe the uptake of current Canadian HPV immunization programs
- **Describe the emerging best and promising practices in HPV immunization program implementation**
- Discuss the challenges of program implementation

Institut national de santé publique Québec

HPV Vaccine Lessons Learnt

Implementing HPV Vaccination: A review of seven key themes for decision-makers

London School of Hygiene & Tropical Medicine, PATH

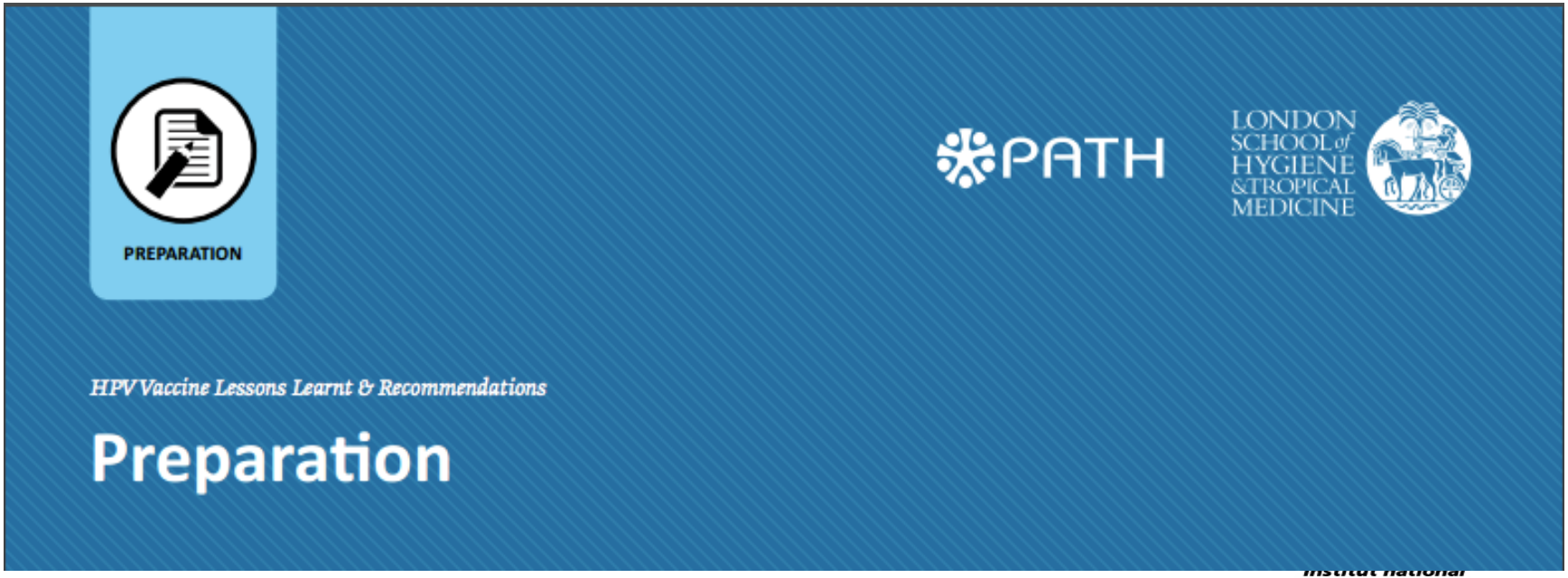
2016

PATH/David Jacobs

Findings, lessons learnt, and recommendations for decision makers on seven themes:

- Preparation
- Communications
- Delivery
- Achievements
- Sustainability
- Value
- Pitfalls

Institut national de santé publique Québec


PREPARATION
PATH
LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE
HPV Vaccine Lessons Learnt & Recommendations
Preparation

Lessons learnt

- Timely intersectoral planning and coordination – across health, education and finance (particularly for national programmes) – was critical to successful implementation and sustainability.
- Cooperation between local representatives from the health and education sectors facilitated effective microplanning.
- Where the national immunisation programme led HPV vaccine demonstration projects,integration with routine activities was generally strong, and existing human resources and infrastructure were used to deliver the HPV vaccine.
- The ‘cascade’ approach was the most common method of training and supervising staff. Carefully supervised training proved critical to preparing vaccination teams.
- When HPV vaccination training was combined with training for another vaccine, inadequate emphasis on each vaccine compromised its quality.

Institut national de santé publique Québec

Recommendations

1. Ensure that the national-level planning process includes leadership and endorsement from the ministry of health, ministry of education and particularly for national programmes – the ministry of finance. Allow at least nine months in most cases or decision-making and planning at national and subnational levels.

2. Make certain that the national immunisation programme feels ownership of HPV vaccination and is actively involved in each phase. This support and participation in planning and implementation are critical for effective delivery.

3. Conduct a human resources capacity assessment to determine vaccination team size. Team size will depend on the number and size of schools in the catchment area and organisation of other outreach activities.

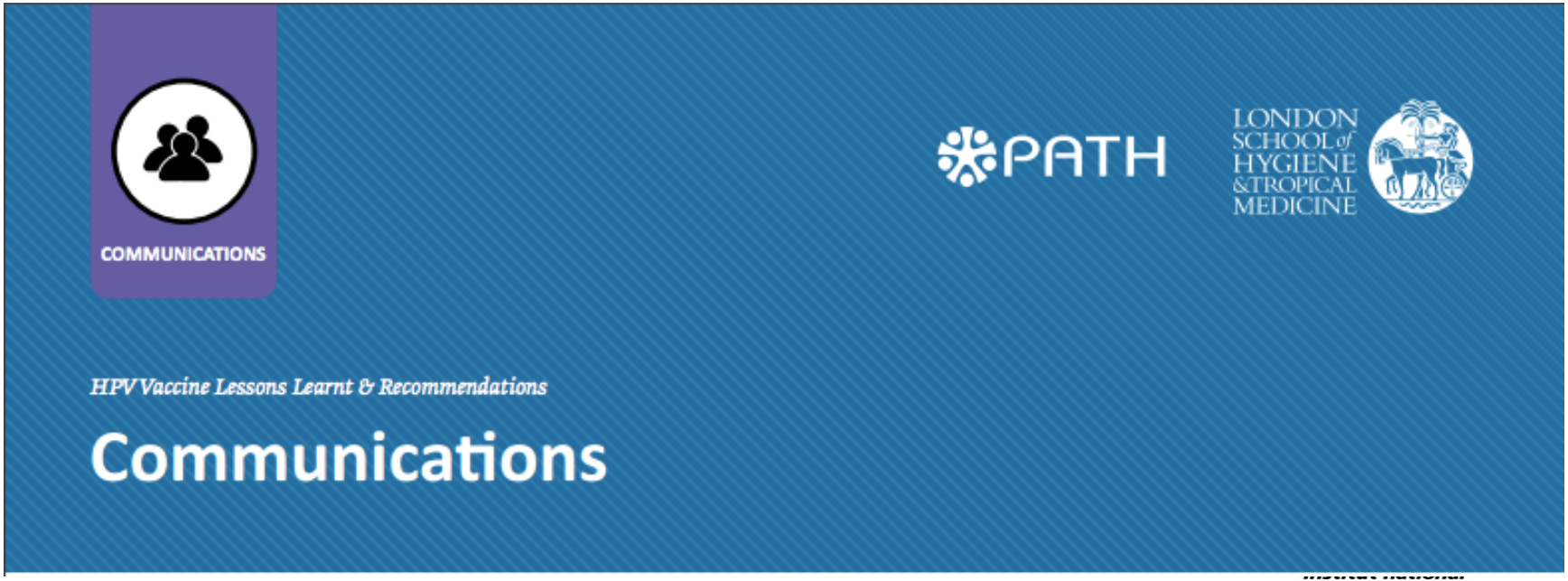
4. Ensure adequate supervision when adding HPV vaccination to health workers' training and workload. Integrating HPV supervision with other routine oversight can decrease costs.

5. Carefully consider whether and how to allocate allowances during planning. Integrating HPV activities with other outreach and school health programmes so that allowances are shared can help to minimize costs.

6. Plan HPV vaccine management closely and well in advance with the broader national immunisation system. Transporting HPV vaccine with other routine vaccines maximizes cost efficiencies.

7. Conduct training at least two months before delivery and include all involved teachers and health workers, not only those delivering the HPV vaccine. Allowing adequate time between training and delivery improves community response to credible influencers.

Institut national de santé publique Québec


COMMUNICATIONS
PATH
LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE
HPV Vaccine Lessons Learnt & Recommendations
Communications

Lessons learnt

1. Most countries used the following messages to encourage parental and community acceptance: HPV vaccine prevents cervical cancer, is safe, will not harm future fertility, and is endorsed by the government and the World Health Organization.

2. Face-to-face interaction was the most effective way of mobilising parents and communities, especially with groups that were likely to refuse vaccination or that were exposed to antivaccination rumours.

3. The most effective influencers were health workers, teachers and community leaders.

4. Community sensitisation and mobilisation activities that were conducted at least one month prior to vaccination were most effective.

5. Logistical challenges, such as lack of awareness of vaccination days and school absenteeism, were common reasons for nonvaccination and incomplete vaccination.

6. Vaccine safety concerns, rumours and attending a private school were associated with nonvaccination.

7. Opt-in consent, where not used for routine vaccines, increased rumours that the vaccine was experimental and unsafe. An opt-out approach appeared acceptable where implemented.

8. Lengthy consent procedures decreased consent/uptake, as parents found it logistically difficult.

Institut national de santé publique Québec

Recommendations

1. Develop a communication plan to inform social mobilisation activities. This should include strategies to prevent and manage rumours, measures to adequately mobilise private schools, training to sensitise health workers not involved in HPV vaccination, and a plan for delivering messages to out-of-school and hard-to-reach girls.

2. Engage early with community groups, including schools and churches. In-person meetings are the most effective method for increasing acceptance and confidence in vaccination.

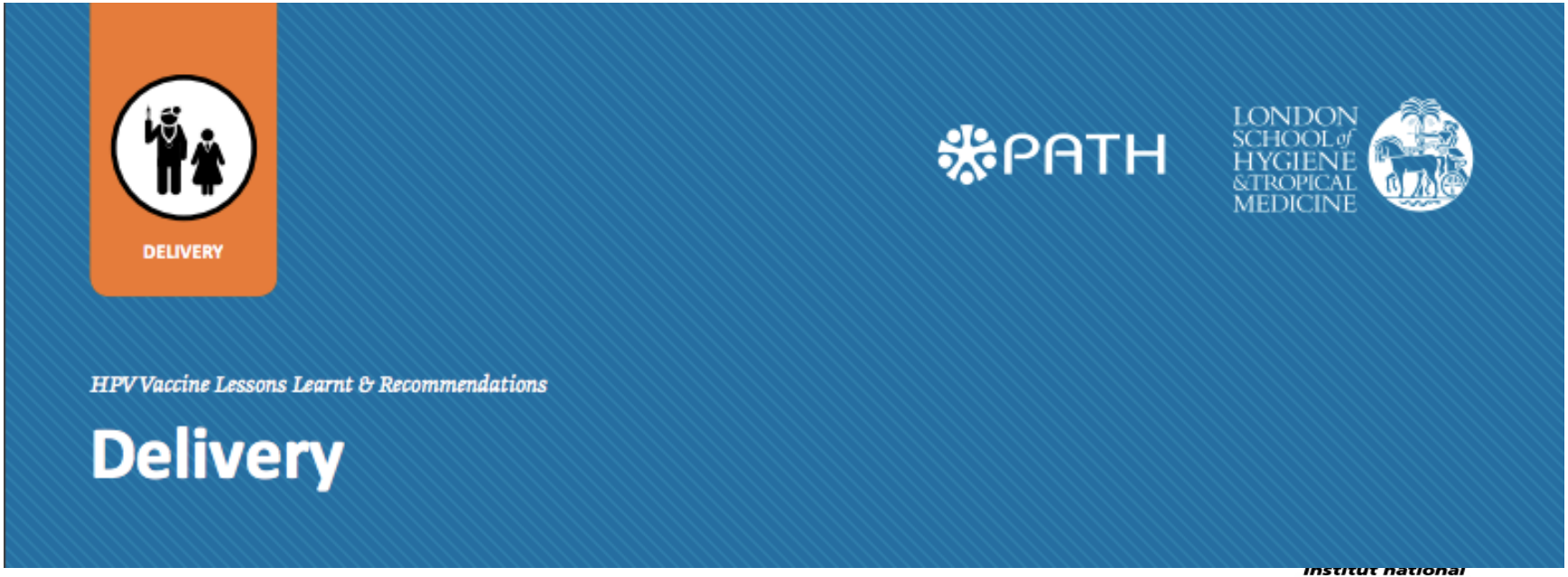
3. Focus messages on cervical cancer prevention, vaccine safety and efficacy, government endorsement, and when and where to get vaccinated. Train teachers, community leaders and health workers to deliver messages, and adequately respond to questions and concerns from parents and the community.

4. Tackle emerging rumours as soon as possible. To do so, use respected institutions and high-level officials.

5. Begin social mobilisation at least one month before vaccination. In addition, ensure adequate and timely funding and preparation time to develop social mobilisation materials.

6. Ensure consistency with existing consent policy. Where possible, use opt-out processes and determine whether the consent process should be modified in private schools.

Institut national de santé publique Québec


DELIVERY
PATH
LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE
HPV Vaccine Lessons Learnt & Recommendations
Delivery

Lessons learnt

1. Delivery strategies that used schools reached arge proportions of 9- to 13-year-old girls and benefited from coordination with teachers. However, these strategies were resource intensive.

2. Engaging community health workers ncreased community acceptance and coverage, and assisted in identifying girls who were out of school or who missed doses.

3. Grade-based eligibility was simpler to implement on vaccination days in schools, although it was challenging to communicate why same-age girls in different grades would not be vaccinated.

4. Age-based eligibility was easier to explain to health workers and the community and could be applied consistently to both girls in and out of school. Age-based eligibility aligns with the routine vaccination programme but may not be reliable if determining age is challenging for parents and health workers and could also cause greater disruption in schools by vaccinating girls across multiple grades.

5. Across nearly all countries, estimating the target population for demonstration projects posed a considerable challenge.

6. Microplanning can include an exercise to enumerate all schools – including those not registered with the ministry of education – and establish reliable registers to be validated during first-dose delivery

7. The scope of follow-up activities for girls who did not receive the first dose was generally governed by country-specific factors such as school absenteeism, perceived ‘adequate’ coverage and available resources.

8. Delivery of all doses within one school year minimised dropouts and facilitated tracking girls to complete all doses.

9. Where resources allowed, providing a second opportunity for vaccination was successful in reaching girls and parents who initially refused.

10. Delivery of a two-dose schedule, including 12 months between doses, was easier and cheaper than three doses.

Institut national de santé publique Québec

Recommendations

1. Vaccinate in schools as an efficient way to reach most 9- to 13-year-old girls. However, where school enrolment is low or resources are unavailable, a combination of delivery strategies are essential to achieve high coverage.

2. Consider a range of factors when selecting a delivery strategy. These should include the proportion of the target group in school, absenteeism rates, operational costs, desired/ adequate coverage, and human and financial resources required for programme sustainability.

3. Clearly define eligible populations. Age-based eligibility was easier to understand, utilized census estimates for denominators and was relevant for both in- and out-of-school girls. However, selecting a single age group across grades in school-based programmes can be challenging and not all populations may know their ages.

4. Implement a specific mobilisation strategy for out-of-school girls. This might include using health workers or volunteers to track girls, disseminate messages in the community about the nearest health facility where the vaccine can be accessed or target other vaccination opportunities.

5. Use two-dose vaccination schedules, as they are easier to implement than three-dose schedules. Considerations for how to give a third dose to HIV-positive girls need careful planning to avoid stigmatization (e.g., provision of first and second doses at school [months 0 and 6] and dose three at a clinic at 12 months).

6. Assess the cost-effectiveness of follow-up activities, such as return visits to schools that have low uptake rates. This will be important for future target group calculations and for tracking subsequent doses.

7. Vaccinate all 9- to 13-year-old girls in the first year of national rollout, which can act as catchup. Funding needs to be secured for this, and subsequent years would only need to target 9-yearold girls.

8. Have standardised national guidelines and training procedures for reporting and responding to adverse events. Stakeholders, such as teachers and parents, can be a useful resource in monitoring and reporting adverse events.

Institut national de santé publique Québec


ACHIEVEMENTS
PATH
LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE
HPV Vaccine Lessons Learnt & Recommendations
Achievements

Lessons learnt

1. Achieving high HPV vaccine coverage is feasible in low- and middle-income countries.
2. Vaccine delivery strategies that included a school-based component resulted in higher coverage, compared with those that only used health facilities for vaccinations.
3. Vaccination registers, immunisation cards and utilisation of community members facilitated tracking girls to ensure completion of all vaccine doses.
4. High coverage may be harder to achieve in urban areas due to more exposure to negative media, greater mobility in the population and difficulty in enumeration compared with rural areas.
5. Data collection and achieving data accuracy posed challenges for most countries, based on a range of factors specific to HPV vaccination.

Institut national de santé publique Québec

Recommendations

1. Conduct joint planning with the national immunisation programme and education sector at national and local levels well in advance of vaccine launch. This will ensure well-coordinated activities and more accurate data on the target population.

2. Distribute funds early for planning, mobilisation and implementation activities. Delays negatively affect coverage.

3. Offer vaccination in schools because it is likely to maximize. Ensure that vaccination opportunities are in place for absentee and out-of-school girls.

4. Clearly define eligibility criteria for efficient delivery in schools. Grade-based eligibility criteria are easier to implement but can be challenging to use when calculating coverage. Age-based eligibility criteria facilitate enumeration and coverage calculations but can be more disruptive in schools.

5. Engage teachers, community health workers and the wider community to identify out-of-school or absentee girls and track girls between doses. Community involvement increases uptake and completion of all doses.

6. Carefully monitor and evaluate coverage, including target numbers, doses delivered and age of the girl. These are important in order to understand whether approaches are effective or changes are needed during the project/programme.

Institut national de santé publique Québec


SUSTAINABILITY
PATH
LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE
HPV Vaccine Lessons Learnt & Recommendations
Sustainability

Lessons learnt

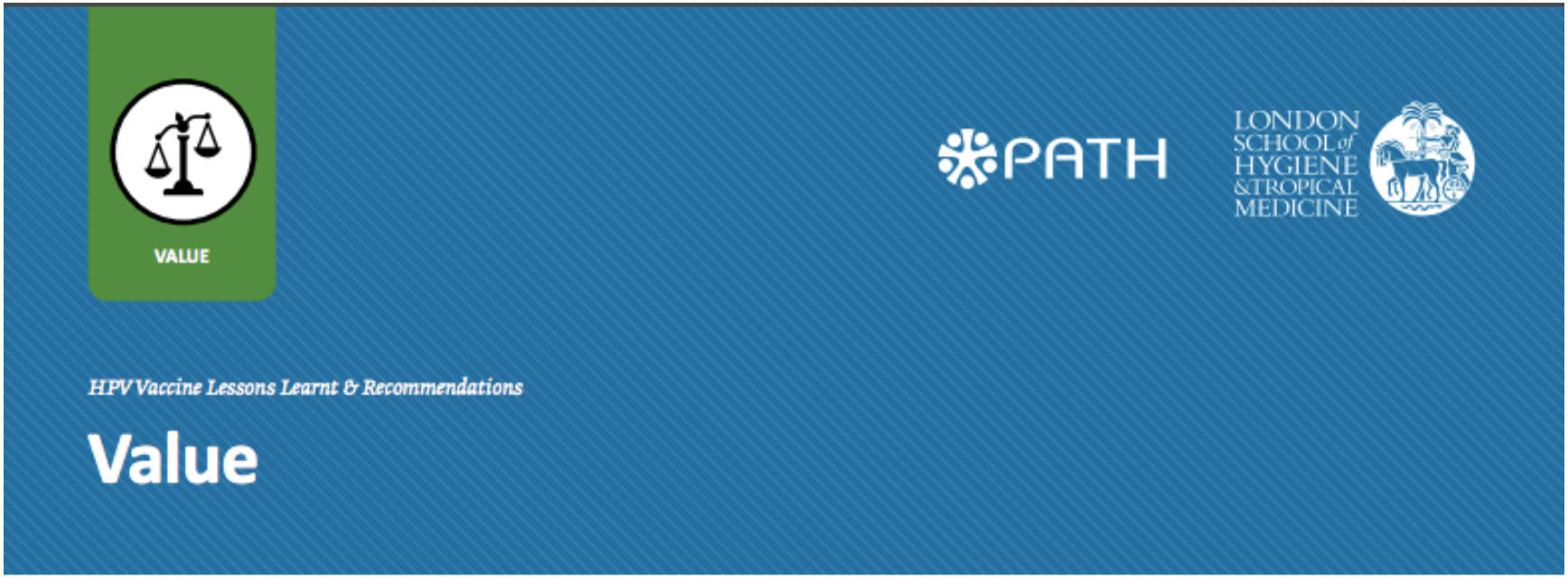
1. The financial cost of vaccine delivery was perceived to be high by project/programme implementers and was driven by allowances and transport costs for health workers and supervisors and social mobilization activities.
2. Funding provided for implementation typically covered a share of delivery costs, although some countries reported this was inadequate.
3. Start-up costs represented up to 50% of financial and economic costs and were particularly challenging to finance; underestimating them led to disruption of activities.

Institut national de santé publique Québec

Recommendations

1. Use available tools to model the costs of different strategies for national scale-up. Technical support is available to countries to use these tools effectively.
2. Share operational costs with the national immunisation programme to reduce costs of implementation. This might include costs for allowances or transportation.
3. Explore sustainable funding options and expand the funding base beyond Gavi. Countries no longer qualifying for Gavi support should note that vaccines are offered at the Gavi-purchased price following the countries' graduation from eligibility for Gavi support.
4. Call for and facilitate additional research on scaleup experiences. In particular, countries would profit from further research on the costs of a variety of HPV vaccine delivery approaches at national scale.
5. Test different delivery strategies, if implementing a demonstration project, to compare implementation costs and identify a sustainable option. Strategic design and implementation can help identify efficiencies, areas for cost savings and the best delivery options.

Institut national de santé publique Québec


VALUE
PATH
LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE
HPV Vaccine Lessons Learnt & Recommendations
Value

Lessons learnt

1. Experiences from the last nine years of demonstration projects were generally consistent across countries. Early demonstration projects were critical for gaining experience and support for national implementation. Lessons from recent and ongoing projects have been consistent with those experiences.
2. Well-designed demonstration projects assessed different delivery strategies, tested how to achieve high coverage in populations and areas with specific challenges, and focused on integration with national systems.
3. Integration of HPV vaccine delivery with other services was operationally challenging.
4. Countries have not yet fully taken advantage of demonstration projects, which can be used to test different combinations of vaccination venues, timing, eligibility criteria in different populations and co-delivery of other health interventions.

Institut national de santé publique Québec

Recommendations

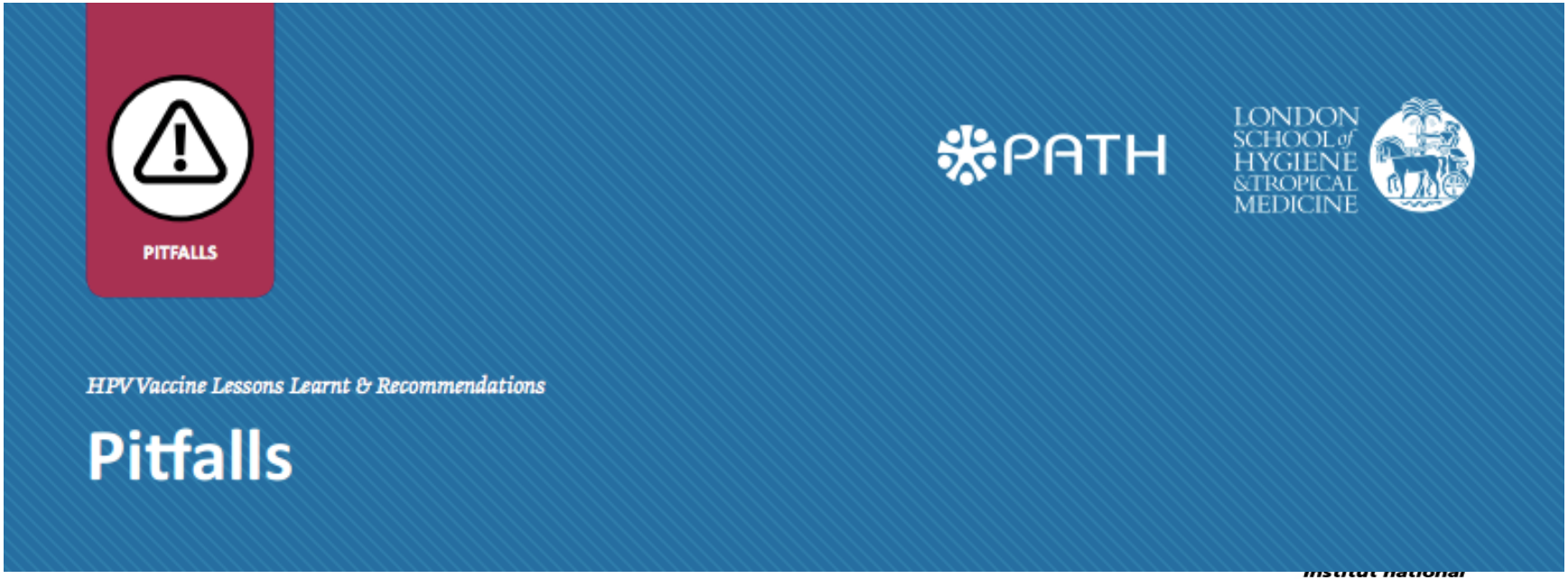
1. Regularly re-evaluate policy around assisting countries to gain HPV vaccine experience and ensure that policy is as flexible as possible. Countries should consider leveraging the extensive lessons learnt to implement a phased national rollout.

2. Consider a higher initial investment. Start-up costs for a phased national rollout for HPV vaccine may be higher than other new vaccines, but recurring costs will reduce over time.

3. Convert demonstration projects to a phased national rollout, which might accelerate decision-making for national introduction. This approach may help maintain political commitment for HPV vaccination.

4. Be aware that introducing a new vaccine through a demonstration project creates distortions to normal procedures of the national immunisation programme because of the proportionally high investment made in developing, implementing and evaluating the project. This tends to promote the establishment of vaccination approaches that operate separately from the national programme, which may not be easily scalable.

Institut national de santé publique Québec


PITFALLS
PATH
LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE
HPV Vaccine Lessons Learnt & Recommendations
Pitfalls

Lessons learnt

1. Not engaging, or engaging too late, with local community leaders derailed social mobilisation efforts in some cases.
2. Insufficient training of school staff and lack of a crisis communications plan perpetuated the spread of rumours.
3. Failure to engage sufficiently or early enough with private schools led to resistance by some school leaders and parents.
4. A limited focus on developing and evaluating strategies to deliver HPV vaccine to out-of-school girls led to low coverage in that group.
5. Failure to correctly understand and implement eligibility criteria during enumeration and vaccine delivery resulted in difficulties in accurately estimating coverage.

Institut national de santé publique Québec

Recommendations

1. Train teachers and community leaders to answer questions and combat rumours. Social mobilisation efforts can be derailed by rumours that are allowed to take hold.
2. Develop a crisis communications plan to address rumours in communities and media. Having risk mitigation strategies in place can help dispel rumours quickly.
3. Allow adequate time for private-school coordination. Private schools require more time and information for decision-making and engaging parents.
4. Develop additional delivery strategies to reach outof-school girls. Simply making the vaccine available at health facilities is not enough to ensure uptake.
5. Clearly define eligibility criteria in advance. Schools and health workers need to be adequately trained to both implement and explain these criteria to the community.
6. Ensure adequate time and capacity and funding to conduct proper enumeration. Failing to adequately calculate the target population can lead to inaccurate coverage estimates.
7. Ensure sufficient funds for vaccine delivery. Failing to secure and distribute financial resources on time can result in low coverage.

Institut national de santé publique Québec

Real world experience: Alberta by Juliet Guichon

www.inspq.qc.ca

Institut national de santé publique Québec

HPV vaccine: Canadian challenges

1. **Promiscuity attack on HPV4 vaccine**
2. Safety attack on HPV4 vaccine –
    - 3.1 Toronto Star
    - 3.2. University of Toronto anthropology
    - 3.3 McGill and Concordia Researchers

Public health was under threat from a promiscuity attack on the HPV4 vaccine
starting in 2007 in Canada

PROBLEM:

In 12 Canadian school districts

The most just

effective,

simplest,

least expensive and

traditional

method of vaccine delivery was

blocked by elected officials who oversee

Catholic school boards ban HPV vaccination program

Sep 26, 2008 | Full story: Calgary Sun

Thu, September 25, 2008 Calgary Catholic school trustees last night voted against offering the controversial human papillomavirus vaccine to Grade 5 girls.

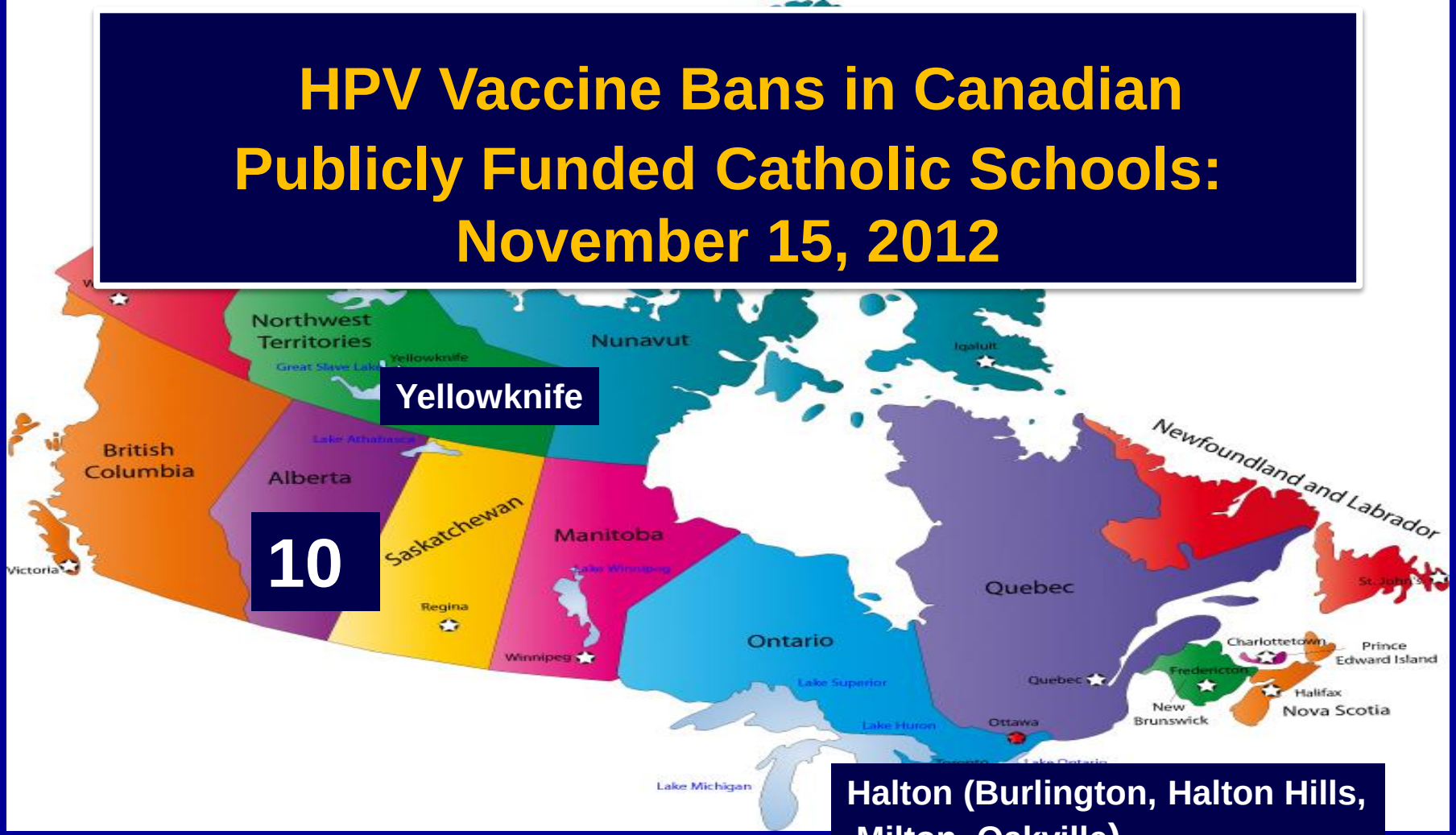
The vaccine was banned in:

10 school districts in Alberta

1 in Ontario; and

1 in the Northwest Territories

HPV Vaccine Bans in Canadian Publicly Funded Catholic Schools: November 15, 2012



Halton (Burlington, Halton Hills, Milton, Oakville)

Consider this scenario

- Child has Type One diabetes
- Insulin dependent
- Requires injection at school
- Bishop states that insulin injection is likely to bring the school into grave moral compromise
- Elected school board forbids insulin

Illegal

- Violated Alberta’s School Act
- Violated Canadian Charter of Rights and Freedoms

Province of Alberta

SCHOOL ACT

Revised Statutes of Alberta 2000
Chapter S-3

Current as of May 14, 2014

Office Consolidation

Alberta Queen's Printer
5th Floor, Park Plaza
10611 - 98 Avenue
Edmonton, AB T5K 2P7
Phone: 780-427-4952
Fax: 780-452-0668

E-mail: qp@gov.ab.ca
Shop on-line at www.qp.alberta.ca

Responsibility to students

45(1) A board shall ensure that each of its resident students is provided with an education program consistent with the requirements of this Act and the regulations.

(2) Subject to subsection (3) and section 13(3), a board shall direct a resident student of the board to enroll in and attend a particular school operated by the board.

(3) A board shall enroll a resident student of the board or of another board in the school operated by the board that is requested by the parent of the student if, in the opinion of the board asked to enroll the student, there are sufficient resources and facilities available to accommodate the student.

(4) Notwithstanding subsection (3), a board may direct a student who requests enrolment in a senior high school program beyond a 3rd school year to attend a school designated by the board.

(5) A board shall enroll a resident student of the Government in a school operated by the board as requested by the Minister.

(6) A parent of a student enrolled in a school shall not request that the student be enrolled in another school during a school year unless the board operating the other school consents.

(7) A board shall provide to each student enrolled in a school operated by the board an education program consistent with the requirements of this Act and the regulations that will give the student the opportunity to meet the standards of education set by the Minister.

(8) A board shall ensure that each student enrolled in a school operated by the board is provided with a safe and caring environment that fosters and maintains respectful and responsible behaviours.

1988 cS-3.1 s28;1990 c36 s13;1994 c29 s13;1997 c25 s7;
1999 c28 s9

CANADIAN CHARTER OF RIGHTS AND FREEDOMS

Whereas Canada is founded upon principles that recognize the supremacy of God and the rule of law:

Guarantee of Rights and Freedoms

1. The *Canadian Charter of Rights and Freedoms* guarantees the rights and freedoms set out in it subject only to such reasonable limits prescribed by law as can be demonstrably justified in a free and democratic society.

Fundamental Freedoms

2. Everyone has the following fundamental freedoms: (*a*) freedom of conscience and religion; (*b*) freedom of thought, belief, opinion and expression, including freedom of the press and other media of communication; (*c*) freedom of peaceful assembly; and (*d*) freedom of association.

Democratic Rights

3. Every citizen of Canada has the right to vote in an election of members of the House of Commons or of a legislative assembly and to be qualified for membership therein. 4.(*1*) No House of Commons and no legislative assembly shall continue for longer than five years from the date fixed for the return of the writs at a general election of its members. (*2*) In time of real of apprehended war, invasion or insurrection, a House of Commons may be continued by Parliament and a legislative assembly may be continued by the legislature beyond five years if such continuation is not opposed by the votes of more than one-third of the members of the House of Commons or the legislative assembly, as the case may be. 5. There shall be a sitting of Parliament and of each legislature at least once every twelve months.

Mobility Rights

6. (*1*) Every citizen of Canada has the right to enter, remain in and leave Canada. (*2*) Every citizen of Canada and every person who has the status of a permanent resident of Canada has the right (*a*) to move to and take up residence in any province; and (*b*) to pursue the gaining of livelihood in any province. (*3*) The rights specified in subsection (*2*) are subject to (*a*) any laws or practices of general application in force in a province other than those that discriminate among persons primarily on the basis of province of present or previous residence; and (*b*) any laws providing for reasonable residency requirements as a qualification for the receipt of publicly provided social services. (*4*) Subsections (*2*) and (*3*) do not preclude any law, program or activity that has as its object the amelioration in a province of conditions of individuals in that province who are socially or economically disadvantaged if the rate of employment in that province is below the rate of employment in Canada.

Legal Rights

7. Everyone has the right to life, liberty and security of the person and the right not to be deprived thereof except in accordance with the principles of fundamental justice. 8. Everyone has the right to be secure against unreasonable search or seizure. 9. Everyone has the right not to be arbitrarily detained or imprisoned. 10. Everyone has the right on arrest or detention (*a*) to be informed promptly of the reasons therefor; (*b*) to retain and instruct counsel without delay and to be informed of that right; and (*c*) to have the validity of the detention determined by way of *habeas corpus* and to be released if the detention is not lawful. 11. Any person charged with an offence has the right (*a*) to be informed without unreasonable delay of the specific offence; (*b*) to be tried within a reasonable time; (*c*) not to be compelled to be a witness in proceedings against that person in respect of the offence; (*d*) to be presumed innocent until proven guilty according to law in a fair and public hearing by an independent and impartial tribunal; (*e*) not to be denied reasonable bail without just cause; (*f*) except in the case of an offence under military law tried before a military tribunal, to the benefit of trial by jury where the maximum punishment for the offence is imprisonment for five years or a more severe punishment; (*g*) not to be found guilty on account of any act or omission unless, at the time of the act or omission, it constituted an offence under Canadian or international law or was criminal according to the general principles of law recognized by the community of nations; (*h*) if finally acquitted of the offence, not to be tried for it again and, if finally found guilty and punished for the offence, not to be tried or punished for it again; and (*i*) if found guilty of the offence and if the punishment for the offence has been varied between the time of commission and the time of sentencing, to the benefit of the lesser punishment. 12. Everyone has the right not to be subjected to any cruel and unusual treatment or punishment. 13. A witness who testifies in any proceedings has the right not to have any incriminating evidence so given used to incriminate that witness in any other proceedings, except in a prosecution for perjury or for the giving of contradictory evidence. 14. A party or witness in any proceedings who does not understand or speak the language in which the proceedings are conducted or who is deaf

Equality Rights

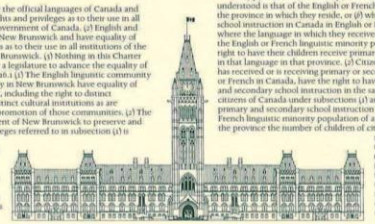
15. (*1*) Every individual is equal before and under the law and has the right to the equal protection and equal benefit of the law without discrimination and, in particular, without discrimination based on race, national or ethnic origin, colour, religion, sex, age or mental or physical disability. (*2*) Subsection (*1*) does not preclude any law, program or activity that has as its object the amelioration of conditions of disadvantaged individuals or groups including those that are disadvantaged because of race, national or ethnic origin, colour, religion, sex, age or mental or physical disability.

Official Languages of Canada

16. (*1*) English and French are the official languages of Canada and have equality of status and equal rights and privileges as to their use in all institutions of the Parliament and government of Canada. (*2*) English and French are the official languages of New Brunswick and have equality of status and equal rights and privileges as to their use in all institutions of the legislature and government of New Brunswick. (*3*) Nothing in this Charter limits the authority of Parliament or a legislature to advance the equality of status or use of English and French. 16.1 (*1*) The English linguistic community and the French linguistic community in New Brunswick have equality of status and equal rights and privileges, including the right to distinct educational institutions and such distinct cultural institutions as are necessary for the preservation and promotion of those communities. (*2*) The role of the legislature and government of New Brunswick to preserve and promote the status, rights and privileges referred to in subsection (*1*) is affirmed. 17. (*1*) Everyone has the right to use English or French in any debates and other proceedings of Parliament. (*2*) Everyone has the right to use English or French in any debates and other proceedings of the legislature of New Brunswick. 18. (*1*) The statutes, records and journals of Parliament shall be printed and published in English and French and both language versions are equally authoritative. (*2*) The statutes, records and journals of the legislature of New Brunswick shall be printed and published in English and French and both language versions are equally authoritative. 19. (*1*) Either English or French may be used by any person in, or in any pleading in or process issuing from, any court established by Parliament. (*2*) Either English or French may be used by any person in, or in any pleading in or process issuing from, any court of New Brunswick. 20. (*1*) Any member of the public in Canada has the right to communicate with, and to receive available services from, any head or central office of an institution of the Parliament or government of Canada in English or French, and has the same right with respect to any other office of any such institution where (*a*) there is a significant demand for communications with and services from that office in such language; or (*b*) due to the nature of the office, it is reasonable that communications with and services from that office be available in both English and French. (*2*) Any member of the public in New Brunswick has the right to communicate with, and to receive available services from, any office of an institution of the legislature or government of New Brunswick in English or French. 21. Nothing in sections 16 to 20 abrogates or derogates from any right, privilege or obligation with respect to the English and French languages, or either of them, that exists or is continued by virtue of any other provision of the Constitution of Canada. 22. Nothing in sections 16 to 20 abrogates or derogates from any legal or customary right or privilege acquired or enjoyed either before or after the coming into force of this Charter with respect to any language that is not English or French.

Minority Language Educational Rights

23.(*1*) Citizens of Canada (*a*) whose first language learned and still understood is that of the English or French linguistic minority population of the province in which they reside, or (*b*) who have received their primary school instruction in Canada in English or French and reside in a province where the language in which they received that instruction is the language of the English or French linguistic minority population of the province, have the right to have their children receive primary and secondary school instruction in that language in that province. (*2*) Citizens of Canada of whom any child has received or is receiving primary or secondary school instruction in English or French in Canada, have the right to have all their children receive primary and secondary school instruction in the same language. (*3*) The right of citizens of Canada under subsections (*1*) and (*2*) to have their children receive primary and secondary school instruction in the language of the English or French linguistic minority population of a province (*a*) applies wherever in the province the number of children of citizens who have such a right is sufficient to warrant the provision to them out of public funds of minority language instruction; and (*b*) includes, where the number of those children so warrants, the right to have them receive that instruction in minority language educational facilities provided out of public funds.



Enforcement

24. (*1*) Anyone whose rights or freedoms, as guaranteed by this Charter, have been infringed or denied may apply to a court of competent jurisdiction to obtain such remedy as the court considers appropriate and just in the circumstances. (*2*) Where, in proceedings under subsection (*1*), a court concludes that evidence was obtained in a manner that infringed or denied any rights or freedoms guaranteed by this Charter, the evidence shall be excluded if it is established that, having regard to all the circumstances, the admission of it in the proceedings would bring the administration of justice into disrepute.

General

25. The guarantee in this Charter of certain rights and freedoms shall not be construed so as to abrogate or derogate from any aboriginal, treaty or other rights or freedoms that pertain to the aboriginal peoples of Canada including (*a*) any rights or freedoms that have been recognized by the Royal Proclamation of October 7, 1763; and (*b*) any rights or freedoms that now exist by way of land claims agreements or may be so acquired. 26. The guarantee in this Charter of certain rights and freedoms shall not be construed as denying the existence of any other rights or freedoms that exist in Canada. 27. This Charter shall be interpreted in a manner consistent with the preservation and enhancement of the multicultural heritage of Canadians. 28. Notwithstanding anything in this Charter, the rights and freedoms referred to in it are guaranteed equally to male and female persons. 29. Nothing in this Charter abrogates or derogates from any rights or privileges guaranteed by or under the Constitution of Canada in respect of denominational, separate or dissentient schools. 30. A reference in this Charter to a province or to the legislative assembly or legislature of a province shall be deemed to include a reference to the Yukon Territory and the Northwest Territories, or to the appropriate legislative authority thereof, as the case may be. 31. Nothing in this Charter extends the legislative powers of any body or authority.

Application of Charter

32. (*1*) This Charter applies (*a*) to the Parliament and government of Canada in respect of all matters within the authority of Parliament including all matters relating to the Yukon Territory and Northwest Territories; and (*b*) to the legislature and government of each province in respect of all matters within the authority of the legislature of each province. (*2*) Notwithstanding subsection (*1*), section 15 shall not have effect until three years after this section comes into force. 33. (*1*) Parliament or the legislature of a province may expressly declare in an Act of Parliament or of the legislature, as the case may be, that the Act or a provision thereof shall operate notwithstanding a provision included in section 2 or sections 7 to 15 of this Charter. (*2*) An Act or a provision of an Act in respect of which a declaration made under this section is in effect shall have such operation as it would have but for the provision of this Charter referred to in the declaration. (*3*) A declaration made under subsection (*1*) shall cease to have effect five years after it comes into force or on such earlier date as may be specified in the declaration. (*4*) Parliament or a legislature of a province may re-enact a declaration made under subsection (*3*). (*5*) Subsection (*3*) applies in respect of a re-enactment made under subsection (*4*).

Citation

34. This Part may be cited as the *Canadian Charter of Rights and Freedoms*.

"We must now establish the basic principles, the basic values and beliefs which hold us together as Canadians so that beyond our regional loyalties there is a way of life and a system of values which make us proud of the country that has given us such freedom and such immeasurable joy."

P.E. Trudeau 1981

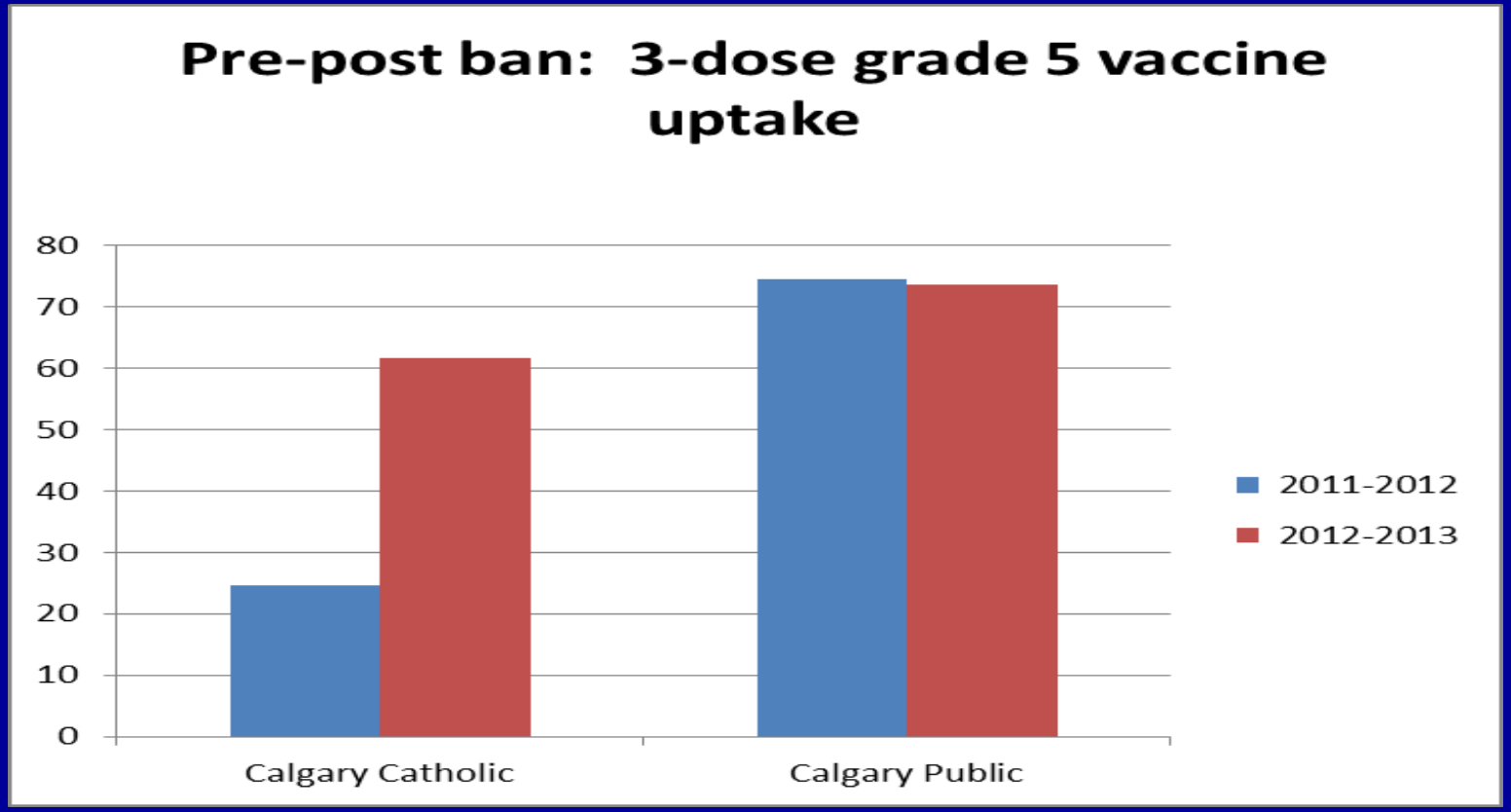
Equality Rights

Equality before and under law and equal protection and benefit of law

15. (1) **Every individual** is equal before and under the law and **has the right to the** equal protection and **equal benefit of the law without discrimination and, in particular, without discrimination based on** race, national or ethnic origin, colour, **religion, sex, age** or mental or physical disability.

(2) Subsection (1) does not preclude any law, program or activity that has as its object the

Successes showed worth of effort



Overview of Talk

1. Promiscuity attack on HPV4 vaccine
2. **Safety attack on HPV4 vaccine –**
   - **3.1 Toronto Star**
   - 3.2. University of Toronto anthropology
   - 3.3 McGill and Concordia Researchers

February 5, 2015

TORONTO STAR

WEATHER HIGH -11 C | PARTLY SUNNY | MAP S12

THURSDAY, FEBRUARY 5, 2015

> STAR INVESTIGATION

A wonder drug's dark side

Hundreds of thousands of teen girls in Canada have safely taken Gardasil, a vaccine shown to prevent HPV. But a Star investigation has found that since 2008, at least 60 Canadians experienced debilitating illnesses after inoculation. Patients and parents say the incidents point to the importance of full disclosure of risks

DAVID BRUSER AND JESSE MCLEAN
STAFF REPORTERS

By the time Kaitlyn Armstrong received her third and final injection of the popular HPV vaccine Gardasil, pain had spread through the Whitby teen's body, migrating from her back to her knees to her hips.

After her first dose, Natalie Kenzie of London developed egg-size lumps on the soles of her feet, her joints swelled and her limbs twitched uncontrollably.

Before getting the shots, both 13-year-old girls were told the vaccine had no significant risks. And as they struggled to learn what ailed them, and began to believe Gardasil played a role, doctors dismissed their concerns.

Hundreds of thousands of teenage girls in Canada have received the vaccine's three doses, the vast majority without incident.

Regulators, including Health Canada and the FDA in the United States, cite comprehensive clinical trials and other data that show the vaccine's well-studied safety and efficacy.

But since 2008 at least 60 girls and women in Canada have convulsed or developed disabling joint and muscle pain and other debilitating conditions after receiving Gardasil.

One needed a wheelchair, another a feeding tube. A 14-year-old Quebec girl, Annabelle Morin, died two weeks after receiving the second injection of the vaccine.

It was 7:30 p.m. on the night of Dec. 9, 2008, when her mother, Linda, found her in the tub, her head underwater and turned to the side.

The paramedics lifted Annabelle's body on to a stretcher. "I put a blanket on her, saying, 'She's going to freeze,' " Linda recalled. "I did not know she was already dead."

The Quebec coroner's office said the cause of death was drowning, yet also said that any role Gardasil might have played should be further investigated.

In the cases discussed in this article, it is the opinion of a patient or doctor that a particular drug has caused a side-effect.

There is no conclusive evidence showing the vaccine caused a death or illness.

Like Kenzie and Armstrong, many of the girls say the vaccine was pushed on them by school officials, nurses or doctors who understated the risks, sometimes claiming zero significant side effects despite the existence of a list of rare but serious vaccine-related reactions published by the drug's maker.

The Star has found the girls' concerns are not isolated, that in Canada important safety information about the vaccine has not been communicated to many young patients and their parents.

As part of its ongoing investigation into drug safety, the newspaper analyzed side-effect reports from a Health Canada database, and interviewed regulators, a doctor closely involved in the vaccine's clinical trial and, in 12 cases, young women and parents who believe the vaccine caused considerable suffering.

Some of the girls have, after several years, made partial recoveries and are trying to live normal lives. Others are still bouncing from doctor to doctor, looking for answers.

GARDASIL continued on A10

RANDY RISLING/TORONTO STAR

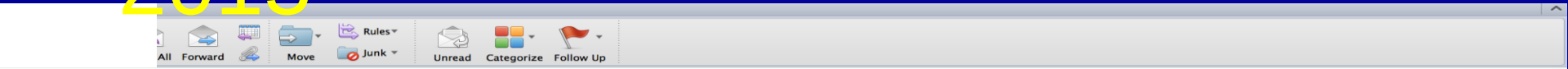
Kaitlyn Armstrong says the nurses giving her the HPV vaccine Gardasil ignored her when she said she was allergic to metal.

> WHAT IS GARDASIL?

> A vaccine delivered in a series of shots. The $400-$500 cost paid by province. Public health nurses administer the inoculations in schools.

> Approved in more than 130 countries, the vaccine protects against strains of human papillomavirus (HPV) that cause 70 per cent of cervical cancer cases. Roughly 400 Canadian women die of cervical cancer each year.

February 6, 2015



FW: Toronto Star anti-HPV vaccine article

McGeer, Dr. Allison
Sent: Friday, February 6, 2015 at 10:03 AM
To: 'Juliet Guichon'

You replied to this message on 2015-02-06, 10:08 AM. Show Reply
You forwarded this message on 2015-03-12, 11:20 AM. Show Forward

From: William Navarre [mailto:william.navarre@utoronto.ca]
Sent: Friday, February 06, 2015 11:48 AM
To: McGeer, Dr. Allison; Nahuel Fittipaldi; George Broukhanski; Muller, Matthew - St. Michael's Hospital; Poutanen, Susan; Scott Gray-Owen; Catherine OBrien; vivek.goel@utoronto.ca
Subject: Toronto Star anti-HPV vaccine article

Dear Colleagues,

Perhaps yesterday you read an article that appeared simultaneously in the Toronto Star and Toronto Metro (free newspaper on subways) entitled "The Dark Side of the HPV Vaccine". The Star website also includes a very provocative video.

Both the video and article are extremely slanted in their presentation and the reporting can only serve to reduce HPV vaccination rates. The video has scary music, scary anecdotes, and is clearly out to stir up a controversy and make public health professionals look like they are in the pockets of "big pharma", etc. The major criticism, that patients aren't informed of risks, is conflated with an unsupported attack on the effectiveness of the vaccine itself (the "dark side" of Gardasil). Supportive stats are thrown into the background and diminished compared to extensive interviews with potential vaccine victims. I find the reporting to also be quite odd given that other articles in the same papers take great joy at slamming parents who don't vaccinate their kids for measles. Also an article today on "Why the flu shot is still your best bet against infection".

The fact this newspaper is talking out of both sides of its mouth also only serves to confuse the public and reduce overall immunization rates.

I'm writing to ask -

1. Is there a response underway already to this report from anybody you know? I worry people in Health Canada, etc, will be accused of "bias" and may not have the autonomy to speak out. Professors in academic settings have far more latitude to make a clear statement.

2. If not can you help dig up some people to come up with a clear and effective response to this video? I say "effective" because it may take more than a simple letter to the editor to really make the point clear that this kind of reporting won't go unnoticed.

Thanks. I know you are all extremely busy and may not have time to take this on (I certainly am maxed out) but at the same time I just want to make sure this doesn't fly without a serious and very public criticism of the approach the Star took on this occasion.

Link to article and video: http://www.thestar.com/news/canada/2015/02/05/hpv-vaccine-gardasil-has-a-dark-side-star-investigation-finds.html

Thanks,

William Wiley Navarre, Ph.D., Associate Professor
Associate Chair and Undergraduate Coordinator
University of Toronto - Department of Molecular Genetics

February 6, 2015

From:
Date: Friday, February 6, 2015 at 11:03 AM
Subject: FW: Toronto Star anti-HPV vaccine article

HELP!

[mailto:william.navarre@utoronto.ca]
Sent: Friday, February 06, 2015 11:48 AM
To: McGeer, Dr. Allison; Nahuel Fittipaldi; George Broukhanski; Muller, Matthew - St. Michael's Hospital; Poutanen, Susan; Scott Gray-Owen; Catherine OBrien; vivek.goel@utoronto.ca
Subject: Toronto Star anti-HPV vaccine article

Dear Colleagues,

Perhaps yesterday you read an article that appeared simultaneously in the Toronto Star and Toronto Metro (free newspaper on subways) entitled "The Dark Side of the HPV Vaccine". The Star website also includes a very provocative video.

Both the video and article are extremely slanted in their presentation and the reporting can only serve to reduce HPV vaccination rates. The video has scary music, scary anecdotes, and is clearly out to stir up a controversy and make public health professionals look like they are in the pockets of "big pharma", etc. The major criticism, that patients aren't informed of risks, is conflated with an unsupported attack on the effectiveness of the vaccine itself (the "dark side" of Gardasil). Supportive stats are thrown into the background and diminished compared to extensive interviews with potential vaccine victims. I find the reporting to also be quite odd given that other articles in the same papers take great joy at slamming parents who don't vaccinate their kids for measles. Also an article today on "Why the flu shot is still your best bet against infection".

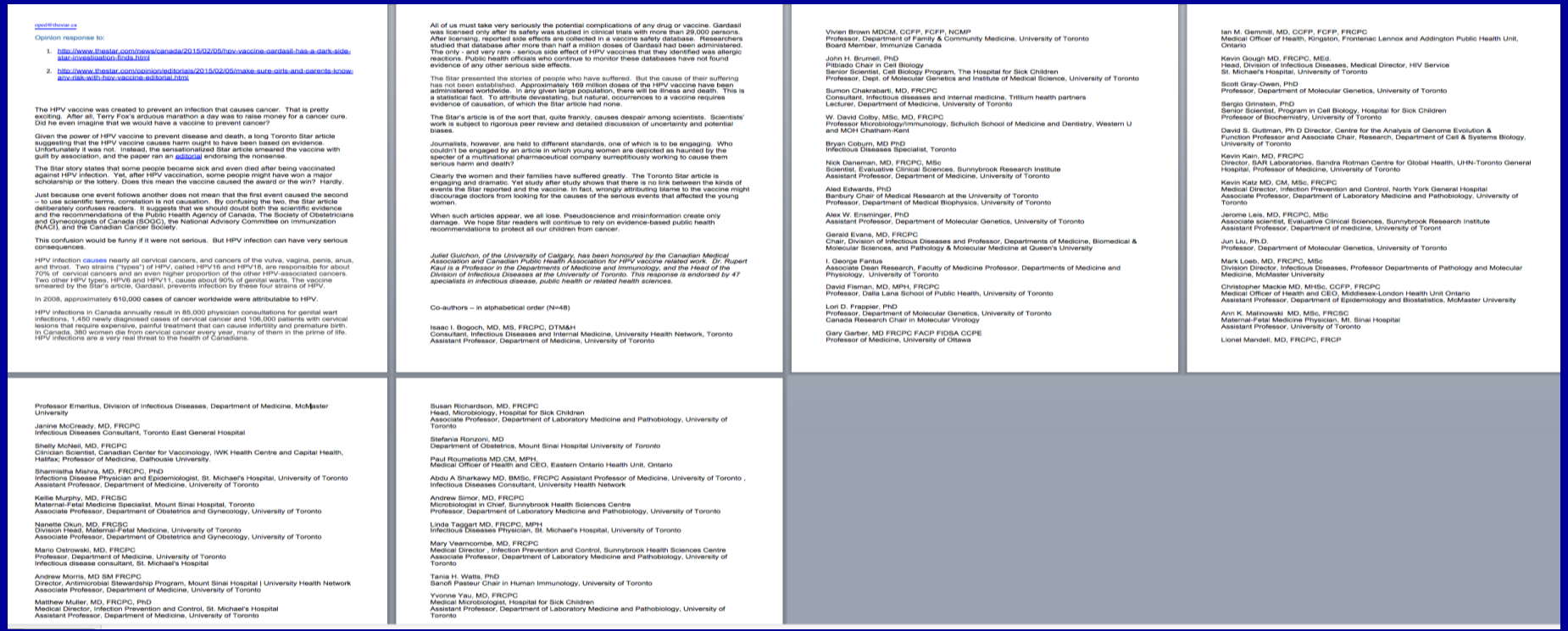
The fact this newspaper is talking out of both sides of its mouth also only serves to confuse the public and reduce overall immunization rates.

I'm writing to ask -

1. Is there a response underway already to this report from anybody you know? I worry people in Health Canada, etc, will be accused of "bias" and may not have the autonomy to speak out. Professors in academic settings have far more latitude to make a clear statement.

2. If not can you help dig up some people to come up with a clear and effective response to this video? I say "effective" because it may take more than a simple letter to the editor to really make the point clear

Full Opinion Article sent to Toronto Star:



oped@thestar.ca

Opinion response to:

1. http://www.thestar.com/news/canada/2015/02/05/hpv-vaccine-gardasil-has-a-dark-side-star-investigation-finds.html
2. http://www.thestar.com/opinion/editorials/2015/02/05/make-sure-girls-and-parents-know-any-risk-with-hpv-vaccine-editorial.html

The HPV vaccine was created to prevent an infection that causes cancer. That is pretty exciting. After all, Terry Fox's arduous marathon a day was to raise money for a cancer cure. Did he even imagine that we would have a vaccine to prevent cancer?

Given the power of HPV vaccine to prevent disease and death, a long Toronto Star article suggesting that the HPV vaccine causes harm ought to have been based on evidence. Unfortunately it was not. Instead, the sensationalized Star article smeared the vaccine with guilt by association, and the paper ran an editorial endorsing the nonsense.

The Star story states that some people became sick and even died after being vaccinated against HPV infection. Yet, after HPV vaccination, some people might have won a major scholarship or the lottery. Does this mean the vaccine caused the award or the win? Hardly.

Just because one event follows another does not mean that the first event caused the second – to use scientific terms, correlation is not causation. By confusing the two, the Star article deliberately confuses readers. It suggests that we should doubt both the scientific evidence and the recommendations of the Public Health Agency of Canada, The Society of Obstetricians and Gynecologists of Canada (SOGC), the National Advisory Committee on Immunization (NACI), and the Canadian Cancer Society.

This confusion would be funny if it were not serious. But HPV infection can have very serious consequences.

HPV infection causes nearly all cervical cancers, and cancers of the vulva, vagina, penis, anus, and throat. Two strains ("types") of HPV, called HPV16 and HPV18, are responsible for about 70% of cervical cancers and an even higher proportion of the other HPV-associated cancers. Two other HPV types, HPV6 and HPV11, cause about 90% of genital warts. The vaccine smeared by the Star's article, Gardasil, prevents infection by these four strains of HPV.

In 2008, approximately 610,000 cases of cancer worldwide were attributable to HPV.

HPV infections in Canada annually result in 85,000 physician consultations for genital wart infections, 1,450 newly diagnosed cases of cervical cancer and 106,000 patients with cervical lesions that require expensive, painful treatment that can cause infertility and premature birth. In Canada, 380 women die from cervical cancer every year, many of them in the prime of life. HPV infections are a very real threat to the health of Canadians.

All of us must take very seriously the potential complications of any drug or vaccine. Gardasil was licensed only after its safety was studied in clinical trials with more than 29,000 persons. After licensing, reported side effects are collected in a vaccine safety database. Researchers studied that database after more than half a million doses of Gardasil had been administered. The only - and very rare - serious side effect of HPV vaccines that they identified was allergic reactions. Public health officials who continue to monitor these databases have not found evidence of any other serious side effects.

The Star presented the stories of people who have suffered. But the cause of their suffering has not been established. Approximately 169 million doses of the HPV vaccine have been administered worldwide. In any given large population, there will be illness and death. This is a statistical fact. To attribute devastating, but natural, occurrences to a vaccine requires evidence of causation, of which the Star article had none.

The Star's article is of the sort that, quite frankly, causes despair among scientists. Scientists' work is subject to rigorous peer review and detailed discussion of uncertainty and potential biases.

Journalists, however, are held to different standards, one of which is to be engaging. Who couldn't be engaged by an article in which young women are depicted as haunted by the specter of a multinational pharmaceutical company surreptitiously working to cause them serious harm and death?

Clearly the women and their families have suffered greatly. The Toronto Star article is engaging and dramatic. Yet study after study shows that there is no link between the kinds of events the Star reported and the vaccine. In fact, wrongly attributing blame to the vaccine might discourage doctors from looking for the causes of the serious events that affected the young women.

When such articles appear, we all lose. Pseudoscience and misinformation create only damage. We hope Star readers will continue to rely on evidence-based public health recommendations to protect all our children from cancer.

Juliet Guichon, of the University of Calgary, has been honoured by the Canadian Medical Association and Canadian Public Health Association for HPV vaccine related work. Dr. Rupert Kaul is a Professor in the Departments of Medicine and Immunology, and the Head of the Division of Infectious Diseases at the University of Toronto. This response is endorsed by 47 specialists in infectious disease, public health or related health sciences.

Co-authors – in alphabetical order (N=48)

Isaac I. Bogoch, MD, MS, FRCPC, DTM&H
Consultant, Infectious Diseases and Internal Medicine, University Health Network, Toronto
Assistant Professor, Department of Medicine, University of Toronto

Vivien Brown MDCM, CCFP, FCFP, NCMP
Professor, Department of Family & Community Medicine, University of Toronto
Board Member, Immunize Canada

John H. Brumell, PhD
Pitblado Chair in Cell Biology
Senior Scientist, Cell Biology Program, The Hospital for Sick Children
Professor, Dept. of Molecular Genetics and Institute of Medical Science, University of Toronto

Sumon Chakrabarti, MD, FRCPC
Consultant, Infectious diseases and internal medicine, Trillium health partners
Lecturer, Department of Medicine, University of Toronto

W. David Colby, MSc, MD, FRCPC
Professor Microbiology/Immunology, Schulich School of Medicine and Dentistry, Western U
and MOH Chatham-Kent

Bryan Coburn, MD PhD
Infectious Diseases Specialist, Toronto

Nick Daneman, MD, FRCPC, MSc
Scientist, Evaluative Clinical Sciences, Sunnybrook Research Institute
Assistant Professor, Department of Medicine, University of Toronto

Aled Edwards, PhD
Banbury Chair of Medical Research at the University of Toronto
Professor, Department of Medical Biophysics, University of Toronto

Alex W. Ensminger, PhD
Assistant Professor, Department of Molecular Genetics, University of Toronto

Gerald Evans, MD, FRCPC
Chair, Division of Infectious Diseases and Professor, Departments of Medicine, Biomedical & Molecular Sciences, and Pathology & Molecular Medicine at Queen's University

I. George Fantus
Associate Dean Research, Faculty of Medicine Professor, Departments of Medicine and Physiology, University of Toronto

David Fisman, MD, MPH, FRCPC
Professor, Dalla Lana School of Public Health, University of Toronto

Lori D. Frappier, PhD
Professor, Department of Molecular Genetics, University of Toronto
Canada Research Chair in Molecular Virology

Gary Garber, MD FRCPC FACP FIDSA CCPE
Professor of Medicine, University of Ottawa

Ian M. Gemmill, MD, CCFP, FCFP, FRCPC
Medical Officer of Health, Kingston, Frontenac Lennox and Addington Public Health Unit, Ontario

Kevin Gough MD, FRCPC, MEd.
Head, Division of Infectious Diseases, Medical Director, HIV Service
St. Michael's Hospital, University of Toronto

Scott Gray-Owen, PhD
Professor, Department of Molecular Genetics, University of Toronto

Sergio Grinstein, PhD
Senior Scientist, Program in Cell Biology, Hospital for Sick Children
Professor of Biochemistry, University of Toronto

David S. Guttman, Ph D Director, Centre for the Analysis of Genome Evolution & Function Professor and Associate Chair, Research, Department of Cell & Systems Biology, University of Toronto

Kevin Kain, MD, FRCPC
Director, SAR Laboratories, Sandra Rotman Centre for Global Health, UHN-Toronto General Hospital, Professor of Medicine, University of Toronto

Kevin Katz MD, CM, MSc, FRCPC
Medical Director, Infection Prevention and Control, North York General Hospital
Associate Professor, Department of Laboratory Medicine and Pathobiology, University of Toronto

Jerome Leis, MD, FRCPC, MSc
Associate scientist, Evaluative Clinical Sciences, Sunnybrook Research Institute
Assistant Professor, Department of medicine, University of Toront

Jun Liu, Ph.D.
Professor, Department of Molecular Genetics, University of Toronto

Mark Loeb, MD, FRCPC, MSc
Division Director, Infectious Diseases, Professor Departments of Pathology and Molecular Medicine, McMaster University

Christopher Mackie MD, MHSc, CCFP, FRCPC
Medical Officer of Health and CEO, Middlesex-London Health Unit Ontario
Assistant Professor, Department of Epidemiology and Biostatistics, McMaster University

Ann K. Malinowski MD, MSc, FRCSC
Maternal-Fetal Medicine Physician, Mt. Sinai Hospital
Assistant Professor, University of Toronto

Lionel Mandell, MD, FRCPC, FRCP

Professor Emeritus, Division of Infectious Diseases, Department of Medicine, McMaster University

Janine McCready, MD, FRCPC
Infectious Diseases Consultant, Toronto East General Hospital

Shelly McNeil, MD, FRCPC
Clinician Scientist, Canadian Center for Vaccinology, IWK Health Centre and Capital Health, Halifax; Professor of Medicine, Dalhousie University.

Sharmistha Mishra, MD, FRCPC, PhD
Infectious Disease Physician and Epidemiologist, St. Michael's Hospital, University of Toronto
Assistant Professor, Department of Medicine, University of Toronto

Kellie Murphy, MD, FRCSC
Maternal-Fetal Medicine Specialist, Mount Sinai Hospital, Toronto
Associate Professor, Department of Obstetrics and Gynecology, University of Toronto

Nanette Okun, MD, FRCSC
Division Head, Maternal-Fetal Medicine, University of Toronto
Associate Professor, Department of Obstetrics and Gynecology, University of Toronto

Mario Ostrowski, MD, FRCPC
Professor, Department of Medicine, University of Toronto
Infectious disease consultant, St. Michael's Hospital

Andrew Morris, MD SM FRCPC
Director, Antimicrobial Stewardship Program, Mount Sinai Hospital | University Health Network
Associate Professor, Department of Medicine, University of Toronto

Matthew Muller, MD, FRCPC, PhD
Medical Director, Infection Prevention and Control, St. Michael's Hospital
Assistant Professor, Department of Medicine, University of Toronto

Susan Richardson, MD, FRCPC
Head, Microbiology, Hospital for Sick Children
Associate Professor, Department of Laboratory Medicine and Pathobiology, University of Toronto

Stefania Ronzoni, MD
Department of Obstetrics, Mount Sinai Hospital University of *Toronto*

Paul Roumeliotis MD,CM, MPH,
Medical Officer of Health and CEO, Eastern Ontario Health Unit, Ontario

Abdu A Sharkawy MD, BMSc, FRCPC Assistant Professor of Medicine, University of Toronto ,
Infectious Diseases Consultant, University Health Network

Andrew Simor, MD, FRCPC
Microbiologist in Chief, Sunnybrook Health Sciences Centre
Professor, Department of Laboratory Medicine and Pathobiology, University of Toronto

Linda Taggart MD, FRCPC, MPH
Infectious Diseases Physician, St. Michael's Hospital, University of Toronto

Mary Vearncombe, MD, FRCPC
Medical Director , Infection Prevention and Control, Sunnybrook Health Sciences Centre
Associate Professor, Department of Laboratory Medicine and Pathobiology, University of Toronto

Tania H. Watts, PhD
Sanofi Pasteur Chair in Human Immunology, University of Toronto

Yvonne Yau, MD, FRCPC
Medical Microbiologist, Hospital for Sick Children
Assistant Professor, Department of Laboratory Medicine and Pathobiology, University of Toronto

Feb. 11, 2015

thestar.com

COMMENTARY

Opinion / Commentary

Science shows HPV vaccine has no dark side

To attribute rare devastating occurrences to a vaccine requires evidence of causation, which the Star didn't have in its article on Gardasil.

VOISIN/PHANIE/REX FE

Given the power of HPV vaccine to prevent disease and death, a long Toronto Star article that appears to suggest that the HPV vaccine causes harm is troubling and disappointing, write Juliet Guichon and Dr. Rupert Kaul.

By: Juliet Guichon Dr. Rupert Kaul Published on Wed Feb 11 2015

The HPV vaccine was created to prevent an infection that causes cancer. That is pretty exciting. After all, Terry Fox's arduous marathon a day was to raise money for a cancer cure. Did he even imagine that we would have a vaccine to prevent cancer?

Given the power of HPV vaccine to prevent disease and death, a long Toronto Star article that appears to suggest that the HPV vaccine causes harm is troubling and disappointing. Although the article states in the fifth paragraph that "there is no conclusive evidence showing the vaccine caused a death or illness," its litany of horror stories and its innuendo give the incorrect impression that the vaccine caused the harm.

Very unfortunately, this article may well lead readers to doubt both the scientific evidence and the recommendations of the Public Health Agency of Canada, the Society of Obstetricians and Gynecologists of Canada, the National Advisory Committee on Immunization, and the Canadian Cancer Society about vaccination.

The Star story states that some people became sick and even died after being vaccinated against HPV infection. Yet, after HPV vaccination, some people might have won a major scholarship or the lottery. Does this mean the vaccine caused the award or the

69 Signatures

optimales en santé, Centre de recherche du CHU de Québec Professeur titulaire, Département de médecine sociale et préventive, Faculté de médecine Université Laval, Médecin-conseil, Institut national de santé publique du Québec

57. Dr. Catherine Dubé MD, MSc, FRCPC, Gastroenterologist and Clinical Lead for Ontario's Colorectal cancer screening program, University of Ottawa.

58. Dr. Alaa Rostom MD, MSc, FRCPC, Chief, Division of Gastroenterology, University of Ottawa.

59. Wendy Vaudry MD, CM, FRCPC, Professor, Department of Paediatrics, Division of Infectious Diseases, University of Alberta

60. Anne Pham-Huy MD, FRCPC, Assistant Professor, University of Ottawa, Program Director, Pediatric Infectious Diseases Training Program, Division of Pediatric Infectious Diseases, Children's Hospital of Eastern Ontario (CHEO)

61. Jonathan B Kronick, Chief of Education, The Learning Institute, The Hospital for Sick Children, Professor of Pediatrics, Division of Clinical and Metabolic Genetics, University of Toronto

62. Dr. Robert Strang, Chief Medical Officer of Health, Department of Health and Wellness, Halifax, Nova Scotia

63. Chris Kaposy, Ph.D., Assistant Professor of Health Care Ethics, Faculty of Medicine, Memorial University of Newfoundland

64. Shaun Morris, MD, MPH, FRCPC, FAAP, Clinician-Scientist Division of Infectious Diseases, Hospital for Sick Children, Assistant Professor, Department of Pediatrics, University of Toronto

65. Audrey Steenbeek PhD, Associate Professor and Assistant Director of Graduate Programs, Dalhousie School of Nursing & Dept. of Community Health & Epidemiology, Halifax, NS

66. Shannon MacDonald, PhD, RN, Post-Doctoral Fellow, University of Calgary Department of Paediatrics; Adjunct Assistant Professor, University of Alberta Faculty of Nursing

67. Morley D. Hollenberg, D. Phil., MD, FRSC, Professor, Department of Physiology & Pharmacology and Department of Medicine, University of Calgary Cumming School of Medicine

68. Jordan Tustin CPHI(C) MHSc, Assistant Professor and Epidemiologist, School of Occupational and Public Health, Ryerson University, Toronto

69. Jeff Kwong, MD MSc CCFP FRCPC, Associate Professor, Dept. of Family & Community Medicine, Dalla Lana School of Public Health, University of Toronto

We choose a title for the group requested retraction: February 18, 2015

Canadian Alliance to Support Immunization

February 18, 2015

Mr. John D. Cruickshank
Publisher
[illegible] Star Newspapers Limited
1 Yonge Street
Toronto, ON M5E 1E6

Dear Mr. Cruickshank,

On behalf of the Canadian Alliance to Support Immunization (CASI), we write to thank you for the opportunity provided by your editors to address misunderstandings created by the front page story February 5, 2015 "HPV vaccine Gardasil has a dark side investigation finds" and its accompanying colour photographs and on line video. Many CASI members authored or endorsed the article that the Star published February 11, "Science shows that the HPV vaccine has no dark side".

Thank you also for amending the headline of the original article so that it now reads, "Families seek more transparency on HPV vaccine", and for inserting in the original article these qualifications:

> "This article has come under global criticism by the medical and public health communities for not making clear the scientific evidence of the safety of the HPV vaccine Gardasil. There is no scientific medical evidence of any "dark side" of this vaccine."
>
> Public Editor's column: The Toronto Star acknowledges it failed in not giving proper weight to evidence-based science in this article.
>
> Editor's Note-February 13, 2015: The original headline on this story has been edited to reflect a better description of the story's content.
>
> READ REBUTTAL OP-ED:
> Doctors say the HPV vaccine is proven safe

We appreciate also your candid statement to the CBC: 'We failed.' Toronto Star publisher says the paper's HPV vaccine article let down readers.

Nevertheless, the Star's original article remains on your website with its colour photographs, and the video remains accessible there with young women speaking and music playing in the background, all of which continues to suggest

women suffered.

There [illegible] public benefit in keeping this incorrect article on line. In fact, the article is almost certainly [illegible] dissemination and is in stark contrast to the myriad of evidence-based recommendations made by national medical bodies.

We write respectfully request that the Toronto Star:

> Immediately retract the article and video, and remove them from the Star website;
>
> Work with our organization to create guidelines that might prevent future media vaccine attacks that are not based on reliable scientific evidence; and
>
> Publish a "news investigation" of 6 cases of vaccine-preventable diseases that occurred in unimmunized children, in which at least one person died. The Star should state the evidence-based likelihood that vaccination would have prevented the illness or death. The article ought to be accompanied by the patient or family member's story and photos, along with an on-line version with video with sad music. We will help the Star find the cases so that it might interview those involved.

The third request stems from our acceptance that volumes of peer-reviewed research including meta-analyses often cannot compete with the power of anecdote, and that it is important to attempt to put the Star's readership in the position it would have been had the original article not been published.

We look forward to hearing from you at PubHealthInfor@gmail.com by February 22, 2015.

Thank you very much.

Yours sincerely,

1. Juliet Guichon BA, MA BCL SJD, University of Calgary, Assistant Professor, Cumming School of Medicine
2. Rupert Kaul is a Professor in the Departments of Medicine and Immunology, and the Head of the Division of Infectious Diseases at the University of Toronto.
3. David Scheifele OC MD, Professor of Pediatrics, UBC and Director, Vaccine Evaluation Center, BC Children's Hospital, Vancouver

Feb. 20, 2015

thestar.com
NEWS

News

A note from the publisher

Published on Fri Feb 20 2015

On Feb. 5, the Toronto Star published a Page 1 article with the headline “A wonder drug’s dark side” beneath a “Star investigation” label.

The article focused on several young women who had grown sick sometime after taking the anti-papillomavirus vaccine Gardasil.

The story included the caveat that none of these instances had been conclusively linked to the vaccine.

However, the weight of the photographs, video, headlines and anecdotes led many readers to conclude the Star believed its investigation had uncovered a direct connection between a large variety of ailments and the vaccine.

Some doctors and public health officials were troubled by the story treatment and by the lack of reference to the many studies which conclude the risks of Gardasil are low.

All major studies conducted after widespread inoculations began in 2006 have concluded the risks posed by Gardasil are no greater than those identified in the trial period before the vaccine was licensed and accepted for widespread use.

These include a study by researchers from the U.S. Centers for Disease Control and the U.S. Food and Drug Administration and an analysis of Gardasil safety issues in 37 countries by the World Health Organization's Collaborating Centre for International Drug Monitoring, published in 2011. As well, an abstract from a Canadian study of the results of several million inoculations between 2006 and 2010 was presented to American Public Health Association meetings in 2013.

The Star story also drew responses from health researchers who praised the Star's attempts to sift through data in which the red flag of an undiscovered side-effect might be found.

No drug is absolutely safe for all people in all conditions of health. Now that tens of millions of young women have taken the vaccine, it is conceivable that very rare reactions may emerge that weren't identified earlier.

All vaccines, including Gardasil, have side-effects. The better known they are, the more safely the vaccine can be deployed.

This is what the article sought to achieve as well as to note that acknowledged risks are not [illegible] properly communicated.

We remain committed to this line of reporting. However, we have concluded that in this case our story [illegible] and evidence.

For that reason, the Gardasil story package of Feb. 5 will be removed from our website.

Overview of Talk

1. Promiscuity attack on HPV4 vaccine
2. Safety attack on HPV4 vaccine –

    3.1 Toronto Star

    3.2. University of Toronto anthropology

    3.3 McGill and Concordia Researchers

The same month:

February 28, 2015

THE GLOBE AND MAIL

University of Toronto instructor and speaker boosts 'alternative vaccines'

CARLY WEEK
Globe and Mail Update (includes correction)
Published Saturday, Feb. 28 2015, 12:00 AM EST
Last updated Saturday, Feb. 28 2015, 10:43 AM EST

A homeopath who promotes ineffective "alternative vaccines" and counsels patients about the dangers of immunization is an instructor at the University of Toronto and a headline speaker at a university-sponsored conference on non-traditional health care on Saturday.

The university is facing intense criticism from public health experts who question why it is aligning itself with an anti-vaccine advocate and sponsoring a conference focusing on alternative health care, homeopathy and unproven complementary therapies.

MORE RELATED TO THIS STORY

- Queen's anti-vaccine instructor will no longer teach Health 102 course
- Harper unveils foreign vaccination funding, chides anti-vaxxers
- Queen's instructor assailed for anti-vaccine teaching granted leave

Specious use of free speech argument angers many.

If engineering professor misstates laws of physics, then could he or she remain employed?

On Saturday, Ms. Landau-Halpern is slated to speak at the Population Health and Policy Conference at the Scarborough campus. The event – sponsored by the University of Toronto International Health Program, a non-profit student organization, the anthropology/health studies department, and others – also features a naturopath who claims to treat cancer, heart disease and fibromyalgia with vitamin injections.

In an e-mailed response to an interview request, Ms. Landau-Halpern said she was unavailable to comment on Friday. She added: "I in no way consider myself to be an 'anti-vaxxer,' but believe in a nuanced and individualized approach to vaccination."

Althea Blackburn-Evans, director of media relations at U of T, said the university encourages faculty and students to engage in "controversial topics in their research and scholarship" and that the school is "committed to the principles and policies of academic freedom and freedom of speech." Conference organizers did not respond to a request for comment by late Friday.

Earlier this month, Queen's University in Kingston, Ont., was at the centre of controversy after students complained a health instructor included anti-vaccine information in course material. The instructor is on leave and will no longer teach the course.

Across Canada, more academic institutions are offering alternative health courses . The problem is that alternatives to evidence-based medicine are not rooted in science, says Timothy Caulfield, Canada Research Chair in health law and policy at the University of Alberta's School of Public Health. He worries about the consequences of holding events such as U of T's alternative health conference. "It's problematic when a university, an institution, lends credibility to these kinds of presentations with its name and support," he said. "[illegible] name next to their names on these [promotional] posters legitimizes their position and can be used to legitimize their unscientific views."

Dr. [illegible] said he understands the importance of free [illegible] expression, especially on a university campus, but adds, "there really has to be a line that gets drawn somewhere."

Editor's Note: An earlier version of this story incorrectly stated Yoni Freedhoff is a professor at the University of Toronto. Dr. Freedhoff is an assistant professor at the University of Ottawa. This version has been updated

Letter with 45 signatures sent the following day: March 1, 2015

CASI ACI
Canadian Alliance to Support Immunization
Alliance Canadienne pour l'Immunisation

March 1, 2015

Meric Gertler, PhD, FRSC, FAcSS, MCIP
President
University of Toronto
27 King's College Circle,
Toronto, Ontario, M5S 1A1

Dear President Gertler,

Thank you very much for your long and distinguished service to the University of Toronto.

As you know, the University of Toronto is "committed to being an internationally significant research university, with undergraduate, graduate and professional programs of excellent quality." We are concerned about the quality of one of the University's undergraduate courses and respectfully request that you inquire into this matter.

We refer to the course titled, "Alternative Health: Practice and Theory, HLTD04H3-S, Special Topics in Health". We have examined only the syllabus, which, on its face, raises a number of concerns. A significant concern is its presentation of vaccine safety and efficacy; we draw your attention to Week 9 (the week after next), the reading for which is pasted below:

Week 9 March 12
Vaccination – the King of Controversy

38. Anthony B. Schryvers, Ph.D., M.D., Professor, Department of Microbiology, Immunology and Infectious Diseases, Faculty of Medicine

39. James R. Smiley, Professor, Dept. of Medical Microbiology & immunology, University of Alberta, Canada Research Chair in Molecular Virology

40. Marc Steben, M.D Medical advisor, Sexually Transmitted Disease Unit, Québec national public health institute

41. Dr. Robert Strang, Chief Medical Officer of Health, Department of Health and Wellness, Halifax, Nova Scotia

42. Jordan Tustin, HBSc Biology, BASc Public Health, CPHI (C)- Certified Public HealthInspector (Canada), MHSc Epidemiology, PhD candidate Epidemiology

43. Mary Vearncombe, MD, FRCPC, Medical Director, Infection Prevention and Control, Sunnybrook Health Sciences Centre, University of Toronto

44. Brian J Ward MSc, DTM&H, MDCM, Professor of Medicine & Microbiolog, McGill University

45. Tania J. Watts, Ph.D. Professor and Sanofi Pasteur in Human Immunology, University of Toronto

Cc. Trevor Young, MD, PhD, FRCPC, FCAHS Dean, Faculty of Medicine and Vice Provost, Relations with Health Care Institutions University of Toronto; ltrevor.young@utoronto.ca

Howard Hu M.D., M.P.H., Sc.D., Dean and Professor of Environmental Health, Epidemiology, and Global Health, Dalla Lana School of Public Health, <dean.dlsph@utoronto.ca>

The Canadian Alliance to Support Immunization is publically recognized

THE GLOBE AND MAIL

Search: | News & Quotes | Jobs

Enter a term, stock symbol or company name

Home | News | Opinion | Business | Investing | Sports | Life | Arts | Te

Health & Fitness | Food & Wine | Fashion & Beauty | Parenting | Relationships

Health | Fitness | Ask a Health Expert

Home » Life » Health & Fitness » Health

U of T investigates instructor over anti-vaccine course materials

CARLY WEEKS
The Globe and Mail
Published Tuesday, Mar. 03 2015, 9:19 PM EST
Last updated Tuesday, Mar. 03 2015, 9:21 PM EST

67 comments | 289 | 171 | 116 | 2 | 0 | Print / License | AA

The University of Toronto has launched an investigation to determine whether an instructor is presenting inaccurate, biased information about vaccines and other

The Canadian Alliance to Support Immunization, a coalition of doctors and public health experts from across Canada, sent a letter to university [illegible] Meric Gertler this week urging him to scrutinize the [illegible] health course taught by [illegible], which includes a video interview with disgraced anti-vaccine researcher Andrew Wakefield as required viewing. And on Tuesday, Howard Hu and Trevor Young, the deans of U of T's Dalla Lana School of Public Health and its faculty of medicine, wrote an open letter stating that vaccine hesitancy and refusal is contributing to a rise in outbreaks of preventable diseases.

MORE RELATED TO THIS STORY

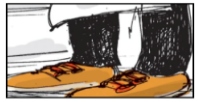
- University of Toronto instructor and speaker boosts 'alternative vaccines'
- Queen's anti-vaccine instructor will no longer teach Health 102

Overview of Talk

1. Introduction
2. Promiscuity attack on HPV4 vaccine
3. Safety attack on HPV4 vaccine –
    - 3.1 Toronto Star
    - 3.2. University of Toronto anthropology
    - **3.3 McGill and Concordia Researchers**

Oct. 5, 2015

LE DEVOIR
LIBRE DE PENSER



Garnotte et Pascal
Caricature du jour

Appel urgent à un moratoire sur la vaccination contre les VPH

5 octobre 2015 | Geneviève Rail, Luisa Molino et Abby Lippman - *Chercheuses à l'Université Concordia et chercheuse et professeure émérite à l'Université McGill* | Santé

Photo: Jacques Nadeau Le Devoir
Les campagnes de vaccination actuelles sont telles que ni les jeunes ni les parents ne peuvent donner de consentement éclairé.

Depuis 2008, le ministère québécois de la Santé finance des campagnes de vaccination contre les infections par les virus du papillome humain (VPH). Dès la 4e année du primaire, les jeunes Québécoises reçoivent gratuitement ce vaccin. Compte tenu des études en cours (dont la nôtre) et des événements actuels à l'échelle de la planète, nous croyons qu'il faut de toute urgence cesser d'administrer ce vaccin. Voici les raisons qui motivent notre demande d'un moratoire.

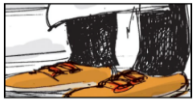
Les plus populaires

1 **Le 98,5 FM met un terme au contrat de l'animateur Benoît Dutrizac**
2 juin 2017 22h07

2 **Et si c'est non?**
2 juin 2017

Oct. 8, 2015

LE DEVOIR
LIBRE DE PENSER



Garnotte et Pascal
Caricature du jour

LA REPLIQUE › VACCINATION CONTRE LE VPH

Une prise de position irresponsable!

Les risques reliés à l'infection par le VPH dépassent largement ceux qui sont associés à la vaccination

8 octobre 2015 | Marc Steben, François Boucher, Juliet Guichon et Eduardo L. Franco* - *Respectivement président du Réseau canadien de prévention du VPH; professeur agrégé de pédiatrie à la Faculté de médecine de l'Université Laval; professeure agrégée à la Cumming School of Medicine de l'Université de Calgary; professeur et directeur du Département d'oncologie, et directeur de la Division épidémiologie du cancer de l'Université McGill* | Santé

Photo: John Amis Associated Press
Les succès du programme québécois de vaccination sont clairs: il a diminué de façon importante les quatre VPH ciblés par le vaccin en plus d'avoir diminué de 50% les verrues génitales chez les femmes de moins de 20 ans.

L'article d'opinion publié lundi dernier dans *Le Devoir* exige de façon irresponsable un moratoire sur le programme de vaccination contre le VPH au Québec. Ce programme public d'immunisation vise à prévenir l'infection par un virus qui peut conduire à un certain nombre de cancers — potentiellement mortels. Ce vaccin prévient également la plupart des formes cliniques de verrues génitales, qui affectent considérablement la qualité de vie.

Les succès du programme québécois de vaccination sont clairs : il a diminué de façon importante les quatre VPH ciblés par le vaccin en plus d'avoir diminué de 50 % les verrues génitales chez les femmes de moins de 20 ans. Ce n'est vraiment pas le moment de suspendre ce programme ! Mais c'est ce que l'article exige sur la base d'arguments qui sont fallacieux, ou simplement faux.

Tout d'abord, on y critique le formulaire de consentement à la vaccination. Mais la brochure du ministère déclare à juste titre que des réactions allergiques peuvent survenir à la suite de la vaccination, et que celles-ci sont très rares.

Deuxièmement, l'article affirme à tort qu'il n'y a pas de recherche longitudinale fiable sur la sécurité du vaccin contre le VPH. Précisons que plus de 72 millions de personnes ont été vaccinées à ce jour contre le VPH. Une revue récente de plus de 15 études portant sur plus de un million de personnes a démontré que le vaccin Gardasil est

Les plus populaires

1 **Le 98,5 FM met un terme au contrat de l'animateur Benoît Dutrizac**
2 juin 2017 22h07

2 **Et si c'est non?**
2 juin 2017

Oct. 29, 2015

LE DEVOIR
LIBRE DE PENSER

Garnotte et Pascal
Caricature du jour

Contre la loi du silence

29 octobre 2015 | Santé

Geneviève Rail et Luisa Molino - *Chercheuses de l'Université Concordia et chercheuse et professeure émérite de l'Université McGill*
Abby Lippman

Dans un récent article publié dans ces pages (*Appel urgent à un moratoire sur la vaccination contre les VPH*, *Le Devoir*, 5 octobre 2015), nous demandions un moratoire sur la vaccination contre les virus du papillome humain (VPH) au Québec, puisque notre étude en cours ainsi que plusieurs autres au Canada comme ailleurs dans le monde nous amènent à remettre en question l'approbation précipitée de ce vaccin (innocuité et efficacité réelles), son administration sans consentement éclairé des parents et le fait que notre système de pharmacovigilance ne nous permet pas de bien saisir l'impact de ce vaccin sur nos jeunes Québécoises.

Depuis, des critiques nous ont été adressées dans quelques médias canadiens et notamment dans *Le Devoir* (*Une prise de position irresponsable !*, page Idées du 8 octobre 2015). Nous sommes ravies qu'un débat s'installe sur cette vaccination au Québec et ailleurs. Ce débat, à lui seul, justifie la demande d'un moratoire.

Une campagne de peur, un pari risqué

L'industrie pharmaceutique a gagné des prix en marketing pour avoir convaincu les professionnels de la santé et le public du lien « *direct* » entre une infection aux VPH et le cancer du col de l'utérus. Il faut toutefois rappeler que l'infection à un VPH à haut risque est une condition nécessaire pour qu'un cancer se développe, mais qu'elle n'est pas une condition suffisante. La grande majorité des infections à VPH à haut risque disparaissent d'elles-mêmes en une ou deux années sans causer de cancer.

Le test Pap demeure le seul moyen bien établi pour détecter le cancer du col de l'utérus et c'est très probablement grâce à lui que l'incidence de ce cancer au Canada a baissé de 1,4 % par année entre 1998 et 2007, c'est-à-dire avant l'arrivée du coûteux vaccin anti-VPH. Le cancer du col de l'utérus est seulement la 51e cause de décès chez

Nov. 7, 2015

LE DEVOIR
LIBRE DE PENSER

Caricature du jour

LA RÉPLIQUE > VACCINATION CONTRE LES VPH

Des arguments sans fondement scientifique

Le vaccin est sécuritaire et efficace pour prévenir les infections par le VPH à l'origine d'immenses souffrances, voire de la mort

7 novembre 2015 | Texte collectif* | Santé

Mesdames Rail, Molino et Lippman semblent ignorer que le virus du papillome humain (VPH) cause le cancer du col utérin. Un prix Nobel a pourtant été décerné pour cette découverte en 2008. Malgré cela, ces auteures insistent et soutiennent que le Québec devrait cesser d'administrer le vaccin contre le VPH qui a été approuvé et recommandé par presque toutes les organisations médicales d'importance dans le monde entier, y compris l'Institut national de santé publique du Québec (INSPQ), la Coalition Priorité Cancer et l'Association des obstétriciens et gynécologues du Québec.

Il nous a été impossible de retrouver le rapport, ni les données, ni les méthodes de l'étude effectuée sur le vaccin anti-VPH par ces auteures, qui publient leur diatribe dans des blogues plutôt que dans des revues scientifiques. Comment alors peuvent-elles prétendre qu'il soit éthique de dénoncer un programme de santé publique sécuritaire et efficace, uniquement sur la base de prétendues anecdotes individuelles et sans la réalisation et la rédaction d'une étude en bonne et due forme, soumise à un examen par les pairs et critiquée par la communauté scientifique ? Ces auteures ont le devoir moral de publier leur soi-disant étude, d'autant plus que cette étude a été financée en 2012 avec 270 000 $ fournis par les contribuables. Mais ces auteures semblent peu familières avec la littérature scientifique, et aucune d'entre elles n'est considérée experte en vaccinologie, en immunologie, en virologie ou en oncologie.

Pourtant, des centaines d'articles scientifiques publiés dans des revues médicales rigoureuses ont démontré que le vaccin contre le VPH, qui a été administré à des centaines de milliers de femmes et d'hommes à travers le monde, est sécuritaire et efficace.

On peut se demander pourquoi *Le Devoir* publie les opinions de ces auteures une seconde fois étant donné la conséquence potentielle d'une perte de confiance du public dans un programme d'immunisation dont la sécurité a été prouvée. Cela est d'autant plus surprenant qu'il est évident que ces opinions sont fondées uniquement sur des anecdotes et des allégations, et non sur des données scientifiques évaluées par des pairs. L'insistance obtuse de ces auteures sur une interdiction du vaccin est injustifiée et comparable au fait de crier « il y a une bombe » dans un avion en vol.

Sur les tests Pap

Oct. 8, 2015

NATIONAL POST

TRENDING Real estate | Lotto Max | Andrew Scheer | Trump | Oh, the Humanities! | Karla Homolka

Concordia professor condemns HPV vaccine after winning $270K federal grant to study it

Tom Blackwell | October 8, 2015 | Last Updated: Oct 9 9:12 AM ET
More from Tom Blackwell | @tomblackwellNP

A Montreal social scientist and the federal agency that awarded her almost $300,000 to study the HPV vaccine are facing criticism after the professor condemned the vaccine and called for a moratorium on its use.

Concordia University's Genevieve Rail also said there is no proof that the human papillomavirus directly causes cervical cancer, though a German scientist was awarded the Nobel Prize five years ago for discovering the link.

Experts say Rail's public attacks are seriously misinformed and risk undermining an important public-health program — and they question why the Canadian Institute for Health Research (CIHR) would fund her work.

The $270,000 that Rail — who has a doctorate in kinesiology — received is to examine HPV vaccination "discourses" and their effect on teenagers, using in part interviews and drawings.

"This is akin to funding research that purports to show tobacco smoking does not cause lung cancer," charged Eduardo Franco, head of cancer epidemiology at McGill University. "And that tobacco cessation, rather than helping reduce risk, is actually causing harm ... CIHR would not fund such a study, would it?"

Concordia University professor Genevieve Rail — Handout

Marc Steben, a Montreal family doctor and chair of the Canadian Network on HPV Prevention, was more blunt.

"I don't know who was on her (grant awarding) jury," he said. "Someone was really sleeping."

The uproar arose after Rail and co-author Abby Lippman, a McGill University professor emeritus, published an op-ed article in Le Devoir newspaper questioning the safety and benefits of human papillomavirus vaccines, and urging Quebec to halt HPV immunization until its alleged dangers are independently investigated.

Recognize the need for societal actors to:

1. Defend
   - Our enviable in-school vaccination program and
   - The vaccine safety evidence;
2. Show up where decisions are taken
   - In the board room; and
   - In newspapers and on line
3. Engage in continuous surveillance
   - for political threats to public health that could result in disease and death.

Real world experience: Italy

BMJ Open

Association between mothers' screening uptake and daughters' HPV vaccination: a quasi-experimental study on the effect of active invitation campaign.

Journal:	*BMJ Open*
Manuscript ID	Draft
Article Type:	Research
Date Submitted by the Author:	n/a
Complete List of Authors:	Venturelli, Francesco; Azienda Unita Sanitaria Locale di Reggio Emilia, Interinstitutional Epidemiology Unit; Universita degli Studi di Modena e Reggio Emilia, Department of Biomedical, Metabolic and Neural Sciences Baldacchini, Flavia; IRCCS Istituto Scientifico Romagnolo per lo Studio e la Cura dei Tumori, Romagna Cancer Registry Campari, Cinzia; Azienda Unita Sanitaria Locale di Reggio Emilia, Coordination screening center; Azienda Ospedaliera Santa Maria Nuova di Reggio Emilia, Infrastructure Research and Statistics Perilli, Cinzia; Azienda Unita Sanitaria Locale di Reggio Emilia, Public Health Service Pascucci, Maria Grazia; Agenzia sanitaria e sociale regionale Regione Emilia-Romagna, Directorate General for Health and Social Policy Finarelli, Alba Carola; Agenzia sanitaria e sociale regionale Regione Emilia-Romagna, Directorate General for Health and Social Policy Giorgi Rossi, Paolo; AUSL Reggio Emilia, Servizio Interaziendale Epidemiologia; Arcispedale Santa Maria Nuova-IRCCS

- Invitation led to overall higher HPV vaccine coverage and increased in pap smear for the highly educated mothers' group

Institut national de santé publique Québec

Real world experience: Montréal

www.inspq.qc.ca

Institut national de santé publique Québec

I'm happy to share with you what we've done at concordia Health services in the last 3 years to boost vaccination.

Nous avons fait une revue de dossier sur une certaine population d'étudiants, et nous avons vérifié si la vaccination avait été abordé par un prof de la sante.
Par la suite nous avons revu nos priorités et avons refait notre « health questionnaire » afin de stimuler la conversation avec le patient.
Prof. Development pour l'equipe de la clinique et finalement un boost de publicité sur le campus.

Nous avons vu un bond très important de la vaccination depuis.
Malheureusement nous sommes toujours aux dossiers papiers alors le Data collection prend bcp plus de temps, nous allons refaire une revue de dossiers en juin et pourrons comparer nos résultats.

Cervical Cancer Awareness Week – The McGill Chapter
"Don't Let Cervical Cancer Ruin your plans"
October 17-23 2015

Lead Resident : Sabrina Piedimonte (PGY-1)
Collaborators: Dr. Pierre-Paul Tellier, Annie Leung (PGY-3), Andrew Zakhari (PGY-3), Celine Giordano (PGY-1), Christine Pelletier (Merck Canada), Kimberley Grubb (GLG media), Students: Patrick O'Farell, Raphael Gotlieb, Stephanie Dufour, Chloe Tardif, Farnoush Harendieh, Carina D'Aiuto, Ana Maria Misariu
Supervising staff: Dr. Susie Lau, Department of Gyne Oncology, Jewish General Hospital

SUMMARY

For Cervical Cancer awareness week, we chose to focus on primary prevention targeting a high risk population; university students. Given the recent availability of a nanovalent vaccine and a common misconception that women aged 20-26 years old have missed their window to be vaccinated, we developped and executed a HPV vaccination and education program among university students at two universities between October 19-23 2015.

Veille médiatique du contenu sur la vaccination contre les virus du papillome humain (VPH) au Québec du 30 avril 2015 au 1er juin 2016

Lire le document

Au Québec, le programme de vaccination scolaire contre les virus du papillome humain (VPH) des filles en 4e année du primaire a été implanté en 2008. Depuis le 1er septembre 2016, le vaccin est maintenant offert gratuitement aux garçons en 4e année du primaire. Depuis son implantation, le programme de vaccination scolaire contre les VPH a fait l'objet de certaines critiques et préoccupations dans l'espace public. C'est dans ce contexte qu'une veille médiatique des contenus francophones et canadiens traités par les médias traditionnels (articles, communiqués de presse, émissions de radio ou de télévision) et Internet (sites Web et pages Facebook ciblées) a été réalisée.

Auteur(s):

Real world experience: Melbourne

Human Vaccines & Immunotherapeutics

ISSN: 2164-5515 (Print) 2164-554X (Online) Journal homepage: http://www.tandfonline.com/loi/khvi20

Adverse Events Following HPV Immunisation in Australia: Establishment of a Clinical Network

Nigel W Crawford, Kate Hodgson, Mike Gold, Jim Buttery, Nicholas Wood & on behalf of the AEFI-CAN network

To cite this article: Nigel W Crawford, Kate Hodgson, Mike Gold, Jim Buttery, Nicholas Wood & on behalf of the AEFI-CAN network (2016): Adverse Events Following HPV Immunisation in Australia: Establishment of a Clinical Network, Human Vaccines & Immunotherapeutics, DOI: 10.1080/21645515.2016.1192737

To link to this article: http://dx.doi.org/10.1080/21645515.2016.1192737

AEFI were categorised as: rash 24% of reports (n=28), urticaria/angioedema 23% (n=27), anaphylaxis 3% (n=4). Syncope was also reported (n=12, 10%) and other neurological events (n=22, 19%).

Conclusions

We demonstrated the advantages of a national network, providing a collaborative approach to AEFI review and management. The vaccine safety network has applicability to any vaccination program, and has potential to collaborate more broadly with regional pharmacovigilance partners such as New Zealand.

Mass psychogenic response to human papillomavirus vaccination

Jim P Buttery, Simon Madin, Nigel W Crawford, Sonja Elia, Sophie La Vincente, Sarah Hanieh, Lindsay Smith and Bruce Bolam

All AEFI reported by patients, parents and clinicians must be investigated appropriately. This is especially important for potentially serious events. AEFI may be caused directly or triggered by a vaccine or the process of vaccination, or may have occurred coincidentally. It is important that all such events be responded to in the same manner, regardless of suspected cause. Post-licensure surveillance of AEFI is critical for all vaccines and therapeutic drugs, as pre-licensure trials are not large enough to reliably detect rare adverse events and are conducted in well controlled conditions that are less influenced by the vagaries of community interpretation.

Prompted by a talkback radio telephone call by the mother of one of the four girls taken to hospital, there was considerable media interest in and public anxiety about this series of events, with national and international coverage.[6] The national response included radio interviews with the then federal health minister and the Victorian state premier.[7]

Prompted by a talkback radio telephone call by the mother of one of the four girls taken to hospital, there was considerable media interest in and public anxiety about this series of events, with national and international coverage.[6] The national response included radio interviews with the then federal health minister and the Victorian state premier.[7]

Responses of this type may be expected with the mass introduction of a new vaccine to adolescents in a school setting. The requirement to complete a course of three vaccinations for a large population by the end of the school year limited the time available for education and consultation before commencement of vaccinations.

As for any population-wide strategy of giving injections to healthy individuals, immunisation programs will continue to be challenged by reports of adverse event clusters in the future. The ability to rapidly detect and assess these cases to determine whether they represent real vaccine-associated AEFI or are due to other factors is critical to maintaining long-term community support for vaccination.

Syncope and seizures following human papillomavirus vaccination: a retrospective case series

Nigel W Crawford, Hazel J Clothier, Sonja Elia, Teresa Lazzaro, Jenny Royle and Jim P Buttery

ABSTRACT

Objective: To quantify and characterise the reports of syncope and seizures following quadrivalent (4v) human papillomavirus (HPV) vaccination.

Design and setting: Retrospective case series of notifications to SAEFVIC (Surveillance of Adverse Events Following Vaccination In the Community), May 2007 – April 2009.

Main outcome measures: Incidence of syncope and seizure following 4vHPV vaccination; clinical outcomes.

Results: 97/1653 SAEFVIC reports met the study criteria: afebrile seizures (3), syncopal seizures (31) and syncope alone (63). Median age at vaccination was 15 years (range, 8–26 years). Injuries were reported in seven cases, including one vertebral fracture. A SAEFVIC clinic review was undertaken in 41% (40/97) and 22 patients received further 4vHPV vaccine doses administered supine, with no recurrences. The reporting rate after 4vHPV vaccine for syncope and syncopal seizures was 7.8/100 000 and 2.6/100 000 doses distributed, respectively.

Conclusion: Syncope and syncopal seizures occurred after 4vHPV vaccination in Victoria at rates similar to those seen internationally. Clinical review allowed clarification of the diagnosis and management, including safe administration of further doses under supervision.

MJA 2011; 194: 16–18

Real world experience: Belleville, Ontario

Attached is a summary report of a low tech strategy we utilized to improve our HPV rates.
At our local health unit - we called clients that missed their initial HPV vaccine while we were in the school.
500 phone calls were made. ~100 students were scheduled for immunizations at our public health office.
I still need to run a final report to determine if those 100 students actually arrived and received their immunization.
But I thought you may be interested in our progress so far.

Regards,
Bill

Bill Sherlock RN BScN
Program Manager
Health Protection Department
Hastings Prince Edward Public Health
179 North Park Street
Belleville Ontario
K8P 4P1
(613) 966-5513 ext.245

Real world experience: Ontario province

www.inspq.qc.ca

Institut national de santé publique Québec

Ontario's HPV Vaccination Program

Grade 7 gender neutral program

- Initiated in 2016/17 school year (previously females only)
- 2 doses six months apart
- Access to publicly funded vaccine until end of grade 12

School Board Participation

- Since program's launch, non-participation by 2 Catholic School Boards at different points in time
- Since 2013/14 school year, all publicly-funded School Boards in Ontario participate

Males ≤ 26 years who identify as gay, bisexual or MSM

Institut national de santé publique Québec

*2 doses considered a complete series if 6 months between doses

HPV Vaccine Coverage in School-based Program

During first 6 years coverage assessed by legacy immunization repository (IRIS) which over-estimated series completion due the methods in use

Over 2013-2016, implementation of a new provincial immunization repository ("Panorama")

Among grade 8 girls, assessed at the end of the school year (August 31, 2016)

- 71% initiate the series (receive at least 1 dose)
  - 86% of girls who receive the first dose, complete the series
    - 61% series completion*
- Cohorts remain eligible to receive vaccine until end of high school

Institut national de santé publique Québec

*2 doses considered a complete series if 6 months between doses

Real world experience: Nova Scotia province

www.inspq.qc.ca

Institut national de santé publique Québec

The Nova Scotia Experience

- NS HPV Immunization Advisory Committee formed April 2007
- Recommended Hep B/ HPV to be given in Grade 7
- Program announced in May 2007
- Information materials for teachers, parents/students, public health nurses developed June 2007
- Information Sessions provided to all PH Nurses August 2007
- Planned start date Sept.15, 2007

HPV VACCINE- What we knew but hadn't had time to communicate….

An excellent vaccine that promises to decrease HPV cancers dramatically

•Immunogenicity:	~100% seroconversion
•Efficacy:	nearly 100% type specific efficacy protects against infection and CIN2
•Safety:	side effects are mild and short-lived fewer reactions than with placebo
•Duration of protection:	unknown but at least 5 years Antibody decay curve looks promising ? 10 years to lifelong
Cross-protection:	HPV 45 & possibly HPV 31

What they heard…..

Canadian Medical Association Journal
28 August 2007

‘Human papillomavirus, vaccines and women's health: questions and cautions’

Abby Lippman PhD, Ryan Melnychuk PhD, Carolyn Shimmin BJ, Madeline Boscoe inf. DU

Maclean's Magazine
CATHY GULLI, 27 August 2007

Our girls are not guinea pigs'

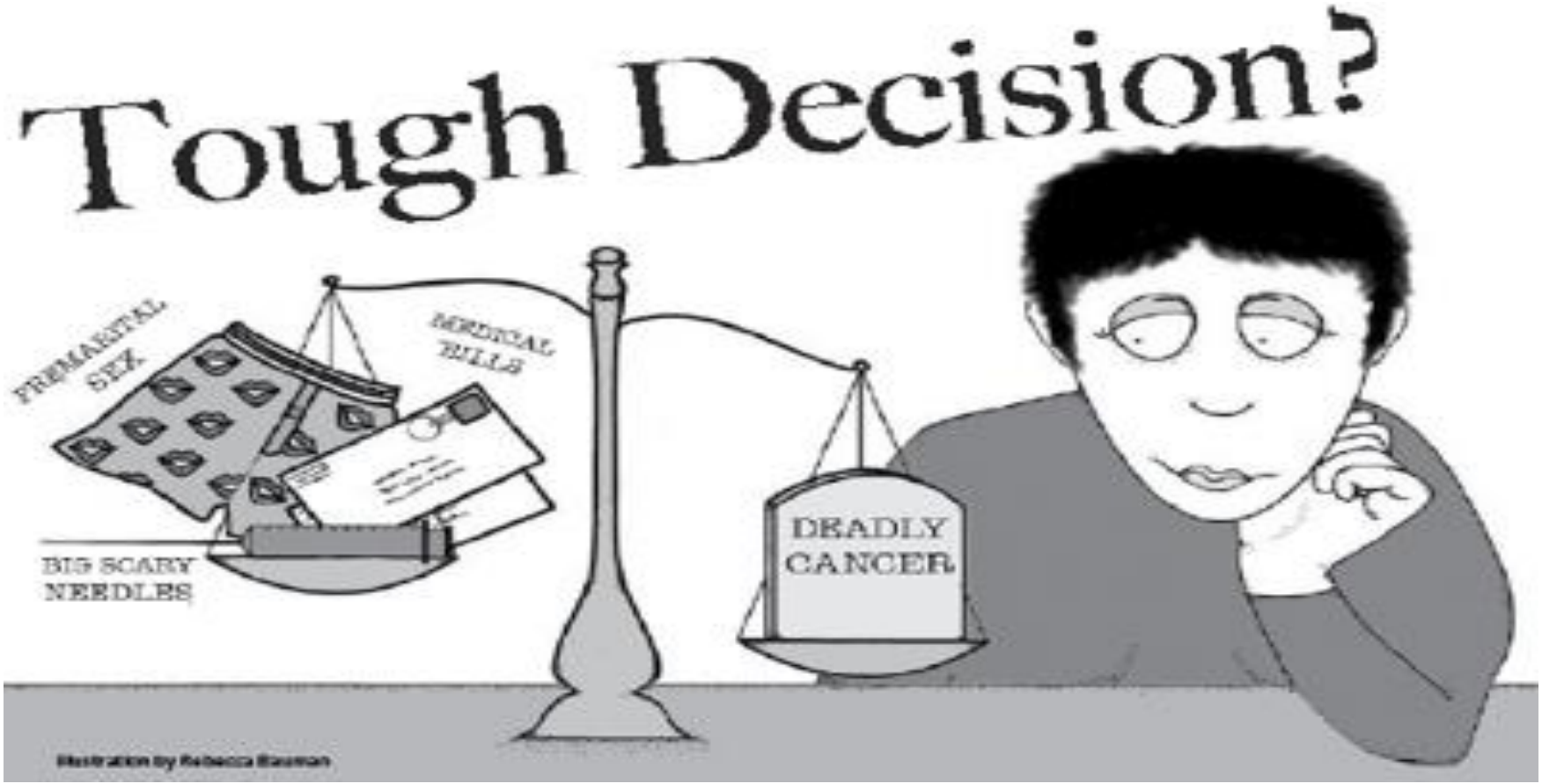
'Is an upcoming mass inoculation of a generation unnecessary and potentially dangerous?'

'Maclean's cover story re-ignites Gardasil debate'

'Canada's top doctor expresses concern'

The Fallout…

- PH nurses question whether program should be implemented…..
- Public concern…
- Family Physicians express concern….


Tough Decision?
PREMARITAL SEX
MEDICAL BILLS
BIG SCARY NEEDLES
DEADLY CANCER
Illustration by Rebecca Bauman

The Response

- Within 2 weeks
  - Repeat educational sessions with PH nurses
  - Cancer Care NS publishes “In Practice” responding to concerns arising from media coverage (distributed to all Family Physicians, OB/GYN, and oncologists)

- Letter to parents providing more detailed safety info and balanced response to media claims mailed to all Grade 7 parents with info/consent package
- Info sessions for teacher/students on request

Letter to Parents included in school immunization consent package

- Sept. 17, 2007
-
- Dear Grade 7 Parent,
-
- In the next few weeks your daughter will be offered a new vaccine to help protect her from infection with a common virus called human papillomavirus, or HPV, which can cause cervical cancer and genital warts. Over the last few weeks, you may have heard things in the media, on television and in magazines, which question how good, and safe, this vaccine really is. **As physicians and parents who have very carefully read all of the scientific information about this vaccine, we wanted to take a few minutes to try to provide you with accurate information about the vaccine to help you make an informed decision about whether your daughter should receive it. This same information makes us confident recommending this vaccine to our friends and families.**

- **Why is getting HPV vaccine important for your daughter?**
- **Does HPV vaccine really work?**
- **Is HPV vaccine safe?** Yes. The HPV vaccine is a very safe vaccine….. There have been no deaths caused by HPV vaccine.
- **Shouldn't we wait for more information before immunizing Nova Scotia girls against HPV?** No. Even though we don't know everything about the HPV vaccine, we do know that it is safe and that it will prevent about 70% of all cervical cancer in the girls who receive it…….. As physicians we believe that it is extremely important that we not risk the lives of young girls while waiting for answers that may not come for many years.

We urge you to make a careful and informed decision about HPV vaccination this fall. Talk to your doctor or public health nurse and look at reliable information available on the internet such as that available from the Society of Obstetrics and Gynecology of Canada (sogc.medical.org).

Sincerely,

Dr. Shelly McNeil
Infectious Diseases Specialist
QEII Health Sciences Centre

Dr. Robert Grimshaw
Gynecologic Oncologist
Medical Director,
NS Cervical Cancer Prevention Program

Success

- Province reporting ~80% uptake; no districts with uptakes <75%
- PH nurses reporting very little difference in parental response compared to prior launches in this age group
- virtually no local media coverage (and most reasonably positive)
- Similar uptake being reported in PEI and NFLD (CBC News, Feb. 27, 2008)

2012

- Article by Tomljenovic and Shaw UBC
- Fall Gr. 7 immunization program about to start
- Mom from local private school posts Mercola article to FB
- “OMG- I already signed the consent! Why would they not tell us that this vaccine is dangerous”
- School PH nurse notes 80% of parents withdraw consent

The response

- Active social media engagement
- Publicly posted rebuttle to Mercola/UBC article
- PM to most vocal moms with direct rebuttle
- “Coffee house” at school to allow discussion
- Several private meetings with concerned parents/teachers
- Outcome: all but the daughter of the original poster vaccinated

Real world experience: Canada

www.inspq.qc.ca

Institut national de santé publique Québec

And not being afraid of joining debates

Debates

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.

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

Québec

HPV awareness corporation: creating a multiprong alliance for HPV prevention across Canada!

End of May = Canadian first HPV week announced in the parliament

HPV awareness corporation:

HPV prevention in booths and schools across Canada!

Canada Declares World's First HPV Prevention Week: October 1-7, 2017

Leading healthcare providers, patient organizations and Members of Parliament gathered today on Parliament Hill to mark the announcement that Canada has become the first country in the world to declare a HPV ...

Veille médiatique du contenu sur la vaccination contre les virus du papillome humain (VPH) au Québec du 30 avril 2015 au 1er juin 2016

Lire le document

Au Québec, le programme de vaccination scolaire contre les virus du papillome humain (VPH) des filles en 4e année du primaire a été implanté en 2008. Depuis le 1er septembre 2016, le vaccin est maintenant offert gratuitement aux garçons en 4e année du primaire. Depuis son implantation, le programme de vaccination scolaire contre les VPH a fait l'objet de certaines critiques et préoccupations dans l'espace public. C'est dans ce contexte qu'une veille médiatique des contenus francophones et canadiens traités par les médias traditionnels (articles, communiqués de presse, émissions de radio ou de télévision) et Internet (sites Web et pages Facebook ciblées) a été réalisée.

Auteur(e):

Institut national de santé publique Québec

E-news distributed to appr

Promotional products to do anizations
i.e. SOGC, I Boost Immuni

Webinars & seminars on H

Links to promotional event of Canada HPV
Prevention Week (October

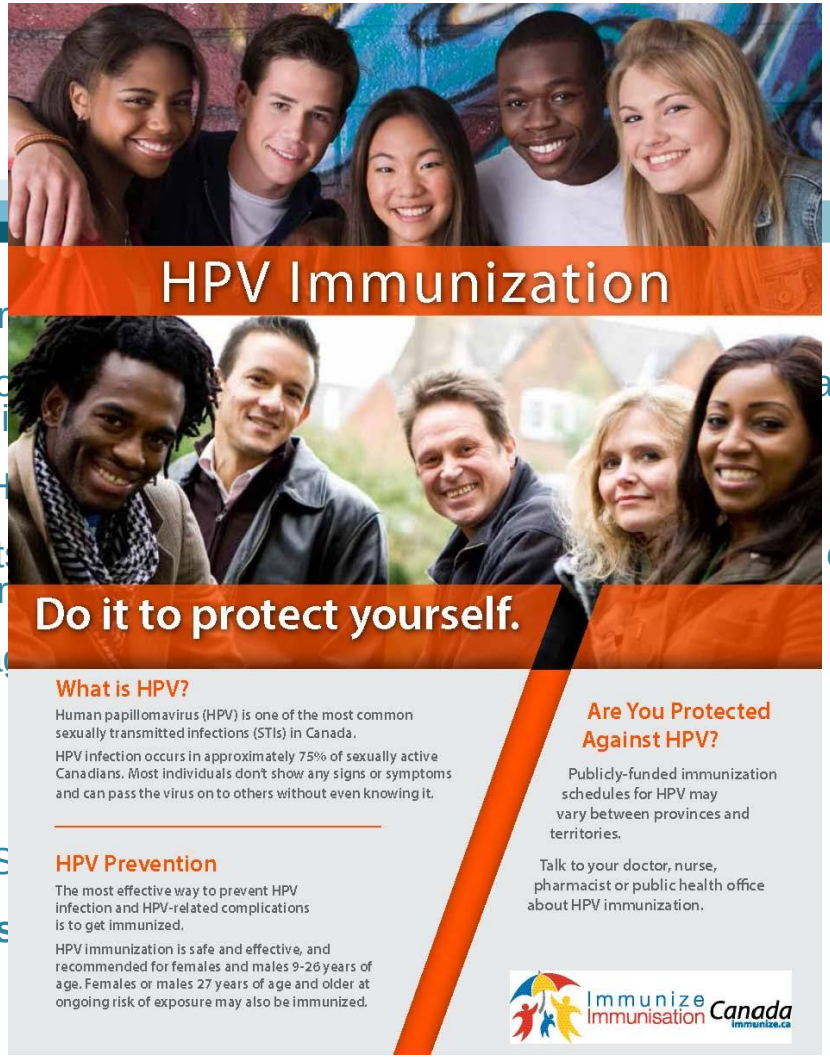
Immunize Canada web pa

Facebook postings

Tweeting & re-Tweeting to

Links to studies e.g. QUES

Immunization Awareness



Institut national de santé publique Québec

Canada Declares World's First HPV Prevention Week: October 1-7, 2017

Share +1 Pin it English

Leading healthcare providers, patient organizations and Members of Parliament gathered today on Parliament Hill to mark the announcement that Canada has become the first country in the world to declare a HPV ...

Looking for solutions

- Training session for nurses in schools where vaccine uptake was low and high immigrant population
- Webinar for nurses
- Focus groups specific to language, culture and religion to better understand their decision making process
- Part of a bigger comprehensive vaccine strategy

Institut national de santé publique Québec

Learning objectives

- Summarize the effectiveness and safety of HPV immunization
- Describe the uptake of current Canadian HPV immunization programs
- Describe the emerging best and promising practices in HPV immunization program implementation
- **Discuss the challenges of program implementation**

Institut national de santé publique Québec

The effects of pseudoscience

What will it take to stop the pseudoscience to influence parents/patients mind?

This is not only for HPV vaccine!

HPV is seen as the test before more STI vaccines such as HIV, HSV, CT and GC become available

Cancer is not enough to have some people imunized!

Institut national de santé publique Québec

http://scienceblogs.com/insolence/2016/11/18/torturing-more-mice-in-the-name-of-antivaccine-pseudoscience/

The future of politics

How are politicians going to make preventive care decisions where long-term effects do not match politicians electoral interests?

Where will vaccines fit in the list of acceptable preventive measures?

Donald J. Trump

Gage Skidmore/Flickr (CC BY-SA 2.

Trump met with prominent anti-vaccine activists during campaign

By Zack Kopplin | Nov. 18, 2016 , 4:30 PM

This past August, Republican presidential nominee Donald Trump spoke with prominent proponents of the discredited link between vaccine and autism, including disbarred British physician Andrew Wakefield, at a fundraiser in Florida.

Trump chatted with a group of donors that included four antivaccine activists for 45 minutes, according to accounts of the meeting, and promised to watch ***Vaxxed***, an antivaccine documentary produced by Wakefield, the senior author of a **now retracted 1998 *Lancet* study linking autism to the measles-mumps-rubella (MMR) vaccine**. Trump also expressed an interest in holding future meetings with the activists, according to participants.

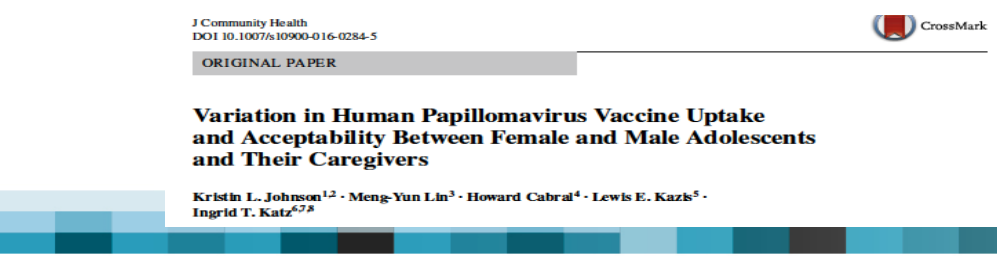
The Trump transition team did not respond to requests to confirm the content of the 11 August event.

"There was a concentrated opportunity to discuss autism" with Trump, says **Mark Blaxill**, one of the participants. Blaxill is executive directo of XLP Capital, a technology investment firm with offices in New York City and Boston, and editor-at-large of the **Age of Autism website**, which says it gives "voice to those who believe autism is an environmentally induced illness, that it is treatable, and that children can recover."

Gary Kompothecras, a chiropractor and Trump donor from Sarasota, Florida, and Jennifer Larson, a Minnesota-based technology

Non medical exemption grows

What can we do?



- Are caregivers really delivering HPV vaccines as recommended?
- I see a lot of differences between surveys and action on the ground!
- In a Léger poll for the SOGC
  - Patients seems not informed but willing when informed and
  - Physicians underestimate the patient's intent to be vaccinated (to be presented at IPV in CapeTown)

Institut national de santé publique Québec

Are we delivering to those that need it the most?

- Are worried well shadowing the situation for most at risk population
  - Vulnerable women: aboriginals, street-involved, IDU, refugees and immigrants, immunocompromised and HIV+
  - Vulnerable men: MSM HIV- as well as HIV+ and other immunocompromised men…

Institut national de santé publique Québec

Are we reaching the optimal return reach on our investment?

- Marc Brisson's mathematical modeling projected maximum return and benefits would be seen if we adapted our cervical cancer screening

Conclusion: Vaccinating adolescent girls against HPV is likely to be cost-effective. The main benefit of vaccination will be in reducing CC mortality. However, unless screening is modified, the treatment costs saved through vaccination will be insignificant compared to the cost of HPV immunization.

ELSEVIER

Available online at www.sciencedirect.com

ScienceDirect

Vaccine 25 (2007) 5399–5408

Vaccine

www.elsevier.com/locate/vaccine

The potential cost-effectiveness of prophylactic human papillomavirus vaccines in Canada

Marc Brisson [a,b,*], Nicolas Van de Velde [a,c], Philippe De Wals [a,c], Marie-Claude Boily [d]

We will cause more harm than benefit if we dot not change our screening paradigm!

REVIEW ARTICLE

The Expected Impact of HPV Vaccination on the Accuracy of Cervical Cancer Screening: The Need for a Paradigm Change

Eduardo L. Franco,[a,b] Salaheddin M. Mahmud,[a,c,h] Joseph Tota,[a,b] Alex Ferenczy,[d,e,f] and François Coutlée[a,g]

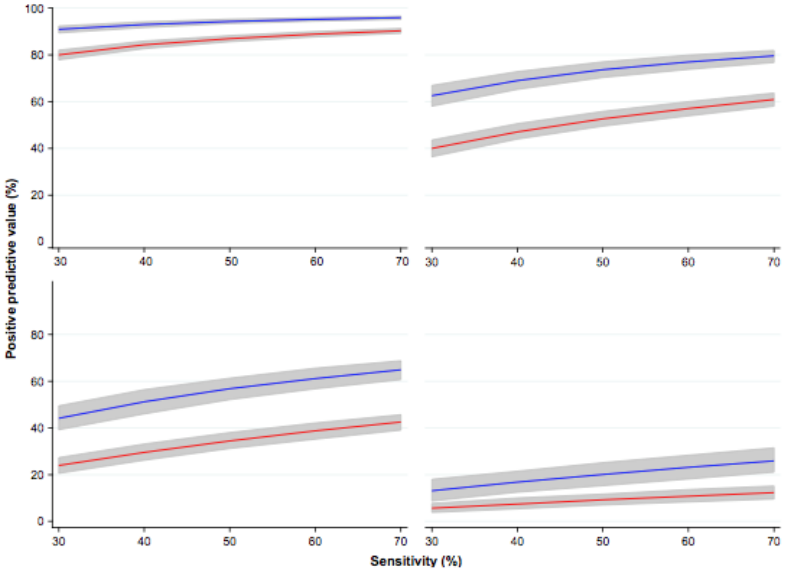


Figure 2. Joint effects of changes in sensitivity, specificity, and cervical lesion prevalence on the positive predictive value of cytology as a primary screening test. The two curves in each graph represent different specificity values of 98% (blue line) and 95% (red line). Each graph represents a different prevalence rate as follows: upper left: 40%, upper right: 10%, lower left: 5%, and lower right: 1%. The gray bands represent 95% credibility intervals (see text and legend for Figure 1 for details). Three of the prevalence scenarios are intended to illustrate situations found in Pap cytology screening in different settings as well as the ones anticipated post-vaccination. A 40% prevalence is shown to represent the situation found in triage following an initially positive referral HPV test.

But to optimize the value of the HPV vaccine program we need new screening guidelines

- Vaccinated women should start screening at age 30, instead of 25, with HPV test.
- Furthermore, there is a strong rationale for applying longer intervals for re-screening HPV negative women than the currently recommended 5 years.
- For non-vaccinated women and for women vaccinated in their fifteenth year or later, the current protocol should be kept

Contents lists available at ScienceDirect

Preventive Medicine

journal homepage: www.elsevier.com

Cervical cancer screening in women vaccinated against human papillomavirus infection: Recommendations from a consensus conference

Paolo Giorgi Rossi [a, b], Francesca Carozzi [c, *], Antonio Federici [d], Guglielmo Ronco [e], Marco Zappa [f], Silvia Franceschi [g]

The Italian Screening in HPV vaccinated girls Consensus Conference group [1]

http://dx.doi.org/10.1016/j.ypmed.2016.11.020

Institut national de santé publique Québec

Will we flatly accept that we are loosing the communication war?

Wrong articles attract more attention than true articles!

Why can’t we use the same language and tactics as anti-vaxxer

Spreading wrong information about vaccination is morally and ethically wrong

It equates to denial of care!

Tuskegee, Oslo, Krever inquest… are we just in the same denial mood and leave it to the population’s appreciation

Institut national de santé publique Québec

Will we flatly accept that we are loosing the communication war?

Faut-il vacciner les filles contre le VPH?

14 comme

Ses convictions :

Faut-il vacciner nos filles contre le VPH? C'est une question que se posent tous les parents, d'autant que la campagne de vaccination touche des petites filles de moins de 13 ans. J'ai personnellement beaucoup travaillé sur le sujet. J'ai d'ailleurs co-préfacé un livre tout récent, *La piqûre de trop*, de Jean-Pierre Spinosa et Catherine Riva, respectivement gynécologue obstétricien et journaliste. L'ouvrage est paru en Suisse, et n'est pas disponible encore dans les librairies du Québec, mais on peut le commander sur les sites de librairies en ligne d'Europe.

http://www.passeportsante.net/fr/Communaute/Blogue/Fiche.aspx?doc=faut-il-vacciner-les-filles-contre-le-vph

Immunization Information on the Internet: Can you trust what you read?

The goal of this fact sheet is to help you decide if vaccine information you find on the Internet is accurate.

http://resources.cpha.ca/immunize.ca/data/0288e.pdf

Institut national de santé publique Québec

Will we flatly accept that we are loosing the communication war?

“I’m sorry, Jeannie, your answer was correct, but Kevin shouted his incorrect answer over yours, so he gets the points.”

Are we in a control or an elimination mode?

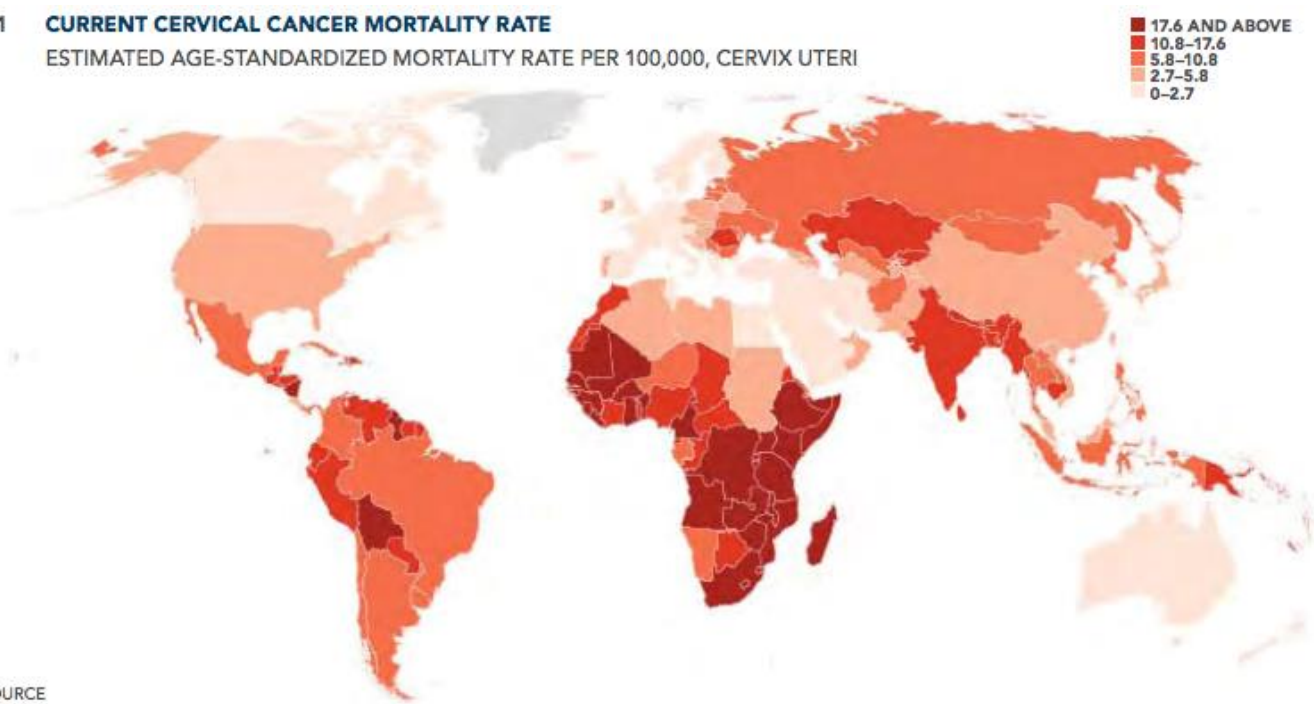
We are satisfied just being in a control mode while we should be in an elimination mode…

Institut national de santé publique Québec

Where is cervical cancer risk the worst?

1.1 **CURRENT CERVICAL CANCER MORTALITY RATE**

ESTIMATED AGE-STANDARDIZED MORTALITY RATE PER 100,000, CERVIX UTERI



SOURCE

- Ferlay J, Soerjomataram I, Ervik M, et al. GLOBOCAN 2012 v1.0, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11. Lyon, France: International Agency for Research on Cancer; 2013. Available at: http://globocan.iarc.fr. Accessed September 21, 2015.

Institut national de santé publique Québec

The misdistribution of preventive resources!

Global Progress in HPV Vaccination

Status: November 2016

National programs

American Samoa, Andorra, Argentina, Aruba, Australia, Austria, Bahamas, Barbados, Belgium, Belize, Bermuda, Bhutan, Bonaire, Botswana, Brazil, Brunei, Bulgaria, Canada, Cayman Islands, Chile, Colombia, Cook Islands, Curacao, Czech Republic, Denmark, Dominican Republic, Ecuador, Fiji, Finland, France, French Polynesia, Germany, Greece, Guam, Guyana, Honduras, Hungary, Iceland, Ireland, Israel, Italy, Japan, Kiribati, Latvia, Lesotho, Libya, Lichtenstein, Luxembourg, Macedonia, Malaysia, Malta, Marshall Islands, Mexico, Micronesia, Monaco, Netherlands, New Caledonia, New Zealand, Niue, Northern Marianas, Norway, Palau, Panama, Paraguay, Peru, Philippines, Portugal, Romania, Rwanda, San Marino, Seychelles, Singapore, Slovenia, South Africa, Spain, St. Eustatius, Suriname, Sweden, Switzerland, Trinidad and Tobago, Uganda, United Arab Emirates, United Kingdom, United States, Uruguay, Uzbekistan, Vanuatu

Pilot programs

Angola, Bangladesh, Benin, Bolivia, Burkina Faso, Burundi, Cambodia, Cameroon, Cote d'Ivoire, Ethiopia, Gambia, Georgia, Ghana, Haiti, India, Indonesia, Kenya, Lao PDR, Liberia, Madagascar, Malawi, Mali, Moldova, Mongolia, Mozambique, Nepal, Niger, Papua New Guinea, Sao Tome, Senegal, Sierra Leone, Solomon Islands, Tanzania, Thailand, Togo, Vietnam, Zambia, Zimbabwe

Global Progress in HPV DNA Testing for Cervical Cancer Screening

Status: November 2016

National programs

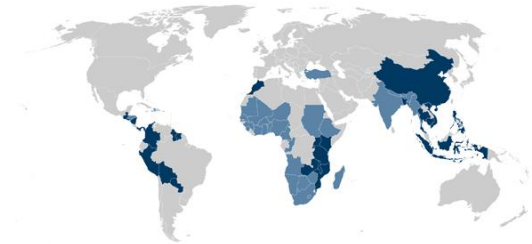
Argentina, Guatemala, Honduras, Italy, Mexico, Netherlands, Spain, United States

Pilot programs

China, Colombia, El Salvador, Germany, India, Nicaragua, Paraguay, Peru, Republic of Georgia, Rwanda, Uganda

Global Progress in Visual Inspection (VIA) for Cervical Cancer Screening

Status: November 2016



National programs

Bangladesh, Bolivia, Cambodia, China, Colombia, El Salvador, Guatemala, Guyana, Indonesia, Kenya, Kiribati, Malawi, Morocco, Mozambique, Nicaragua, Panama, Paraguay, Peru, Philippines, Rwanda, Suriname, Tanzania, Thailand, Uganda, Vietnam, Zambia

Pilot programs

Angola, Benin, Bhutan, Botswana, Burkina Faso, Cameroon, Côte d'Ivoire, Ethiopia, Gambia, Ghana, Grenada, Guinea, Haiti, Honduras, India, Lesotho, Madagascar, Maldives, Mali, Mauritania, Myanmar, Namibia, Nepal, Niger, Nigeria, Republic of Congo, Senegal, Sierra Leone, South Africa, St. Lucia, Sudan (North), Togo, Turkey, Vanuatu, Zimbabwe

Institut national de santé publique Québec

HPV Awareness Day

Uniting on 4th March: HPV Awareness Day

On 4 March 2017, during the HPV2017 Conference in Cape Town, South Africa, the International Papillomavirus Society announced the Human Papilloma virus (HPV) Awareness Day initiative to unite women and men, civil societies, governmental organizations, researchers and other stakeholders to prevent and fight against the global HPV cancer epidemic.

Conclusion

- As many preventive issues, Canada as shown great results within the first 10 years of vaccine availability
- The greatest impact has been seen where the vaccine is routinely administered before HPV exposure.
- Vaccination of catch-up cohorts has accelerated observed benefits.
- Some HPV immunized are not even at risk for STIs yet!
- But we need to be vigilant that our decision makers do not stop endorsing our vaccine efforts
- With all we have learned in the last 10 years, we can safely upgrade our efforts
- There is a lot more to do but we are up to a good start!

Institut national de santé publique Québec

Go for goal

Thank you