

Expansion of the School-based Human Papillomavirus (HPV) Vaccine Program

TO: Chair and members of the Board of Health

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PREPARED BY: Marlene Jantzi-Bauman, Manager, Vaccine Preventable Diseases

APPROVED BY: Rita Sethi, Director, Community Health and Wellness

SUBMITTED BY: *Original signed document on file*

Dr. Nicola J. Mercer, MD, MBA, MPH, FRCPC
Medical Officer of Health & CEO

Recommendations

It is recommended that the Board of Health:

1. **Receive this report for information.**
2. **Send a letter to the Honourable Eric Hoskins, Minister, MOHLTC, advocating for the expansion of the HPV Program to include males up to grade 12.**

Key Points

- Based on the National Advisory Committee on Immunization (NACI) recommendations, Ontario's school-based vaccination program for cancer-causing human papillomavirus (HPV) was expanded to include males in the 2016/2017 school year.
- Wellington-Dufferin-Guelph Public Health (WDGPH) successfully implemented the expanded HPV vaccine program. The vaccine uptake rates for round 1 of the school-based HPV vaccine program for males was closely matched to the uptake rate for females with a difference of 6%.
- WDGPH is aware of inequities in the current expansion of the program and commits to advocating to the Ministry of Health and Long-Term Care (MOHLTC) for recommended changes.
- In order to protect vulnerable populations, WDGPH recognizes that there is continued work to be done in order to educate and/or raise awareness regarding the benefits of HPV vaccine in order to improve vaccine uptake rates at a local level.

Discussion

Human Papilloma Virus (HPV) Vaccine:

The HPV vaccine provides protection against HPV-related cancers and diseases.¹ HPV4 (Gardasil), the vaccine currently used in Ontario's publicly-funded HPV immunization program, protects against four types of HPV (types 6, 11, 16 and 18).¹ Gardasil has demonstrated very high efficacy in preventing the types of HPV, for which the vaccine is targeted, as well as the most common health problems caused by them.¹ It is estimated that these four types of HPV cause approximately 92% of anal cancers; 89% of mouth and certain types of throat cancers; 70% of cervical cancers; 63% of penile cancers; and 90% of cases of genital warts.¹ Without vaccination, it is estimated that 75% of Canadians will have a sexually transmitted HPV infection at some point in their lives.¹ Providing the HPV vaccine around 12-13 years of age aligns with expert recommendations from Canada's NACI as this is the age when the benefits of the vaccine are maximized.² Protection from HPV, before young people become sexually active, is considered a valuable investment in long-term health.¹ In January 2012, NACI expanded its recommendations for HPV vaccine to include males from 9-26 years of age.²

There is an HPV9 vaccine (Gardasil 9) available which protects against infection with HPV types 6, 11, 16, 18, 31, 33, 45, 52 and 58. The vaccine manufacturer (Merck Inc.) has completed studies evaluating the immunological non-inferiority of a 2-dose series for younger individuals.² This data was presented by Merck Inc. to the Advisory Committee on Immunization Practices in February 2016. It is anticipated that once the efficacy data is established and supported by NACI, that HPV9 may be available for use in the school-based immunization program given the broader range of protection that the 9-valent vaccine offers.

Background:

In 2014, a Board of Health (BOH) Report was presented to the WDGPH BOH outlining the benefits of expanding the HPV vaccine to boys and moving the program to Grade 7.⁴ This report resulted in the BOH advocating for the expansion of the HPV program, to both genders, and highlighted that the vaccine should be provided to both boys and girls from a health equity perspective. Prior to September 2016, boys had to pay approximately \$400-500 to access the vaccine, whereas the vaccine was publicly-funded for girls. The unaffordability of the vaccine has been a barrier to uptake for boys. It is expected that a universal HPV program will not only decrease cervical cancer in females, it will reduce the burden of genital warts and other cancers for all genders. A universal program may also decrease the stigma around the vaccine and positively effect uptake rates for females.

School based HPV vaccine Program in Ontario:

Based on NACI recommendations, Ontario's school-based vaccination program for cancer-causing HPV was expanded in 2016 to include boys. This program was implemented in September 2016 by WDGPH's Vaccine Preventable Disease (VPD) Program through school-based clinics. Since 2007, girls, in Ontario, had been offered the human papillomavirus (HPV) vaccine in Grade 8. However, this program has been revised to include eligibility for all boys and girls in Grade 7. If a student does not receive the HPV vaccines in Grade 7, they are eligible to receive the vaccines free of charge through their local public health unit until the end of Grade 12. Unfortunately, only the grade 7 boys who are eligible in the 2016-2017 school year and subsequent school years are eligible for publicly-funded vaccine. The HPV program was implemented differently for girls.

In the 2007 implementation year of the HPV vaccine for school age girls, only girls in grade 8 and 9 were eligible to receive the publicly-funded vaccine. In 2012, the Ontario government expanded the HPV program to all female students until end of grade 12 (females born 1993-1998 were eligible for the HPV vaccine). They also offered a one-time catch-up program (Sept. 2012 to June 2013) for females in the 2007/2008 school cohort year who were no longer in high school. Offering a one-time catch up program to all males currently in school up to grade 12 would make the administration of the universal program more equitable for all students, male or female.

Currently, Public Health Ontario (PHO) is collecting baseline numbers for HPV coverage rates from all local public health units. See Figure 1 for the 2016 WDGPH rates for HPV vaccine uptake for boys versus the rate for girls. The second dose of HPV vaccine for this cohort of students will be offered after the minimum interval of six months in May and June 2017. The HPV vaccine is currently not a required vaccine under the *Immunization of School Pupil's Act* (ISPA). It is important to note that the data in Figure 1 may not include all HPV vaccines received at community healthcare provider offices if the record of immunization was not reported to WDGPH. There is currently no comparison data available to measure Wellington, Dufferin and Guelph (WDG) uptake rates against other public health units.

The local coverage rates for girls receiving both doses of the HPV vaccine in the 2015/2016 school year was 55.8%. Given that the 2016 uptake for boys on the initial year of implementation was almost equal to that of girls, future health promotion activities aim to increase HPV coverage rates for all students inclusively. In order to increase vaccination rates, there needs to be an investment in education and advocacy so that the parents of school age children understand and appreciate the importance of vaccinating their children.

Figure 1.

	Number of students eligible for HPV vaccine in WDG	Number of students immunized with 1 st dose HPV vaccine in WDG	Percentage of students immunized with 1 st dose HPV vaccine
Female Students	1637	985	60%
Male Students	1641	891	54%

In 2016-2017, WDGPH increased the number of school immunization clinics offered from 2 to 3 clinics per year (see Figure 2). The number of clinics was increased in response to the changes in the timing of vaccine (females in grade 7 receiving the HPV vaccine) and grade 7 males eligible for the HPV vaccine. This increase addresses safe vaccination processes and allows for the vaccination of the grade 8 females for HPV in the 2016/2017 school year. For students unable to receive vaccines in the school setting for various reasons, WDGPH VPD nurses also offered appointments at WDG clinics. Publicly-funded vaccines are easily accessed through WDGPH by community healthcare providers for eligible Grade 7 students who prefer to have vaccines delivered in a medical office setting.

Figure 2.

Antigen	1 st Dose HPV & 1 st dose HBV	Menactra (meningitidis serogroups A, C, Y, W-135)	2 nd Dose HPV & 2 nd dose HBV
Clinics offered to Grade 7 in the school setting	September - November	November-December	April-June

Resources:

In the 2016/2017 school year, WDGPH expanded the school-based immunization program to include boys, using the current compliment of full-time staffing. The use of casual staffing was significantly increased to accommodate the additional nursing time required to meet basic program needs and requirements. WDGPH receives \$8.50 per dose of HPV vaccine administered in the school program. The addition of males in the fall of 2016 generated approximately \$7,575. This funding helps to offset the cost of administering the program. However, it does not cover the entire cost of delivering the program in the school especially this year with additional one-time costs and two years of students to immunize. November 2016, WDGPH submitted a one-time grant application for the additional costs associated with the addition of males in the program (Figure 3). WDGPH has not learned whether or not this application has been approved.

Figure 3.

Resource Requested	Cost
Public Health Nurse (Set up, assess and immunize students)	11,908
Registered Practical Nurse (immunize students)	8,259
Registration Clerk (Support at School Clinics)	2,730
Data Entry Clerk (input data into panorama)	1,625
Materials and supplies (needles, sharps disposal containers and sharps disposal costs, advertising and promotion)	3,000
Total	27,522

Implications for the Future:

The VPD program aims to provide HPV vaccine to all Grade 7 students, including local rural Amish and Mennonite schools and other small private schools, although participation is voluntary. The VPD public health nurses maintain communication with principals and supervisors of these schools to ensure that they are aware of the benefits of the HPV vaccine and the option to provide the HPV vaccine in the school setting. While cultural and religious values are a barrier to offering the program, in some private schools, the number of private schools offering HVP vaccine in the upcoming school year has increased.

WDGPH has partnered with several local public health units to create a whiteboard video to reach vaccine-hesitant parents, in general. This video will be available to parents following the completion of a WDGPH distribution plan. In addition, we continue to collaborate with the education sector in regards to action 10 of the *Immunization 2020* document which states:

We believe by explaining the benefits of immunization to children and youth early in schools, they will make more informed immunization decisions when they become adults and parents. We will collaborate with the education sector to develop an immunization teaching module that public health units could offer to interested schools, explaining the history of vaccines, how the immune system works, and the benefits of immunization.³

Until this education module is available to students, WDGPH continues to works with schools and school boards to ensure that parents and students have access to educational material related to vaccine preventable diseases and, particularly HPV, to assist in improving the overall Grade 7 coverage rates for HPV, now that some of the barriers to access for boys have been reduced.

Advocacy:

When the school-based HPV vaccine program for girls was rolled out in Ontario, the vaccine was also retrospectively publicly-funded. For example, in 2007 the MOHLTC added the HPV vaccine to the publicly-funded schedule for girls in grade 8. An additional catch-up program was introduced in September of 2012, to include girls born in 1993-1998 who had not received all of

the recommended doses in grade 8. Females born in 1993 had until June 2013 to begin the series in order to have it remain publicly-funded. A publicly-funded catch-up program was also offered for girls born in 1994-1999.

In 2016, when the program was expanded to include boys, the MOHLTC was very clear that there would be no catch-up program offered to any male student who was not currently in grade 7, in the 2016/2017 school year. Only the grade 7 boys who missed the vaccine offered in the school programs in 2016/2017 and subsequent years would be eligible for publicly-funded vaccine moving forward. There is a cohort of males currently in grade 8 through grade 12 who are not eligible to receive publicly-funded HPV vaccine, at all, unless they identify as MSM. If these boys wish to obtain vaccine, they must pay out-of-pocket or apply for reimbursement through private insurance companies. For a short time after the expansion of publicly-funded HPV vaccine for boys, private insurance companies were declining to reimburse the cost of HPV vaccine, at all, citing that it was now publicly-funded. Some of these companies have since began to reimburse for HPV9, but continue to decline reimbursement for HPV4 (the current publicly-funded HPV vaccine). As it stands, there is inequitable access to HPV vaccine for male students currently in grade 8-12 since not all families in our community would be able to afford the high cost of either HPV4 or HPV9 vaccine.

Conclusion

After several years of continuing advocacy by public health units across Ontario, WDGPH was pleased when the MOHLTC expanded the HPV vaccine program to include males last year. WDGPH immediately and successfully implemented the expansion of the school-based HPV vaccination program 2016/2017 school year and will move forward with the goal of improving uptake rates. It is recommended that the BOH advocate for equitable access to HPV vaccine for male students currently in grades 8 through 12. A retrospective catch-up program would ensure access to publicly-funded HPV vaccine for all males in this vulnerable age group and remove potential financial barriers to access.

Investing in knowledge about vaccine hesitancy and addressing it at a local level is necessary to plan and implement meaningful and impactful promotion of the school-based vaccines and to build rapport with the community.

Ontario Public Health Standard

Vaccine Preventable Diseases Standard

Goal:

To reduce or eliminate the burden of vaccine preventable diseases.

Assessment and Surveillance:

The board of health shall assess, maintain records and report, where applicable, on:

- The immunization status of children enrolled in child care centres as defined in the Child Care and Early Years Act;
- The immunization status of children attending schools in accordance with the Immunization of School Pupils Act; and
- Immunizations administered at board of health-based clinics as required in accordance with the Immunization Management Protocol, 2016 (or as current) and the Infectious Diseases Protocol, 2016 (or as current).
- The board of health shall conduct epidemiological analysis of surveillance data, including monitoring of trends over time, emerging trends, and priority populations, in accordance with the Infectious Diseases Protocol, 2016 (or as current) and the Population Health Assessment and Surveillance Protocol, 2016 (or as current).

Health Promotion and Policy Development:

The board of health shall work with community partners to improve public knowledge and confidence in immunization programs by:

- Supplementing national and provincial health communications strategies
- Developing and implementing regional/local communications strategies

Disease Prevention:

The board of health shall promote and provide provincially funded immunization programs to any eligible person in the health unit, including:

- Board of health-based clinics;
- School-based clinics (including, but not limited to, hepatitis B and meningococcal immunization);
- Community-based clinics; and
- Outreach clinics to priority populations.

WDGPH Strategic Direction(s)

Health Equity

We will provide programs and services that integrate health equity principles to reduce or eliminate health differences between population groups.

Organizational Capacity

We will improve our capacity to effectively deliver public health programs and services.

Service Centred Approach

We are committed to providing excellent service to anyone interacting with Public Health.

Building Healthy Communities

We will work with communities to support the health and well-being of everyone.

Health Equity

The cohort of males currently in grades 8 through 12 may not have the opportunity to access HPV vaccine based as per previous discussion. It is recommended that the BOH advocate to the MOHLTC for publicly-funded HPV vaccine for this cohort.

In private schools, where cultural and religious beliefs dictate that HPV vaccine will not be offered, students and parents have less opportunities to understand the benefits of and access the HPV vaccine. It is important that WDGPH maintain and build relationships with the leaders of private schools and to recognize any cultural or religious beliefs that may impact the effect of health promotion activities.

Appendices

N/A

References

1. Ministry of Health and Long term Care. Ontario's HPV Immunization Program. <http://www.health.gov.on.ca/en/ms/hpv/>
2. National Advisory Committee on Immunization (NACI). Update On Human Papillomavirus (HPV) Vaccines. <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/12vol38/acs-dcc-1/index-eng.php>
3. Immunization 2020. Modernizing Ontario's Publicly Funded Immunization Program http://www.health.gov.on.ca/en/common/ministry/publications/reports/immunization_2020/immunization_2020_report.pdf
4. BOH Report.MAR0514.R07 - Expansion of the Human Papilloma Virus (HPV) Vaccine Program.