



**STAFF REPORT
ACTION REQUIRED**

**Protecting Toronto's School Children through
Immunization**

Date:	September 14, 2016
To:	Board of Health and Board of Health Budget Committee
From:	Acting Medical Officer of Health
Wards:	All
Reference Number:	

SUMMARY

Since 2012 the Ministry of Health and Long-Term Care (MOHLTC) has implemented multiple improvements to the provincial immunization program which have significantly increased local public health unit workload with no sustained increase in resources. In 2013, the Immunization of School Pupils Act (ISPA) was amended to include three additional mandatory vaccines, for a total of nine mandatory immunizations required to attend school. Legislative changes were made to enable public health to enforce ISPA in private schools. These changes came into effect in July 2014, at the same time as the implementation of the new provincial vaccine and immunization information system (Panorama). While these changes are important to ensure school children are protected against vaccine preventable diseases and to prevent outbreaks, local health units need to be able to operationalize these changes to fully realize these benefits.

Under the ISPA, children attending school in Ontario must have proof of immunization for certain diseases unless they have an exemption based on medical or philosophical/religious reasons. Public health units in Ontario are required to implement and enforce the ISPA. This includes collecting, manually entering and assessing the immunization records of all students attending school. Toronto Public Health (TPH) offers several supports to help students and families avoid suspension from school, including TPH-run immunization clinics for the required vaccines.

The implementation and enforcement of the ISPA has traditionally been resource-intensive for health units. It involves assessing the immunization status of every student in every school every year.

However, because TPH has had to absorb added provincial requirements without added resources, we are not able to meet all requirements under the ISPA, including not completing the assessment of immunization records for Toronto's students. In 2015/16, TPH was only able to complete the immunization assessment for grade 2 students (24,727) in publicly funded schools. Students in all other grades and at private schools, were not assessed. Unassessed students are likely to have lower coverage rates for vaccine preventable diseases and this may directly increase the risk of these infections circulating in Toronto.

Toronto Public Health has determined that in order to meet the new and existing requirements of the ISPA, \$773.3 thousand gross and \$193.3 thousand net needs to be included in the 2017 Operating budget submission. The annualized impact of this enhancement will be an additional budget request of \$426.7 thousand gross and \$106.7 thousand net in the 2018 Operating budget.

This report provides a detailed explanation of the resource requirements needed to meet and enforce the ISPA, which is part of TPH's 2017 Operating budget request.

RECOMMENDATIONS

The Acting Medical Officer of Health recommends that:

1. The Board of Health approve the 2017 Requested Operating Budget for New and Enhanced Services including a request for \$773.3 thousand gross and \$193.3 thousand net, including 15 FTEs to deliver the School Immunization Assessment Program. The annualized impact of this enhancement will be an additional budget request of \$426.7 thousand gross and \$106.7 thousand net in the 2018 Operating budget.
2. The Board of Health reiterate its request to the Ministry of Health and Long-Term Care to implement a provincial electronic immunization registry as soon as possible; and
3. The Board of Health forward this report to Ontario's Minister of Health and Long-Term Care, Minister of Education, and the Association of Local Public Health Agencies for information.

Financial Impact

The 2017 Operating Budget submission for TPH includes funding for New and Enhanced Services of \$773.3 thousand gross and \$193.3 thousand net for 15 FTEs for delivery of the Immunization School Assessment Program. The annualized impact of this enhancement will be an additional budget request of \$426.7 thousand gross and \$106.7 thousand net in the 2018 Operating budget.

The program will be cost shared between the Province (75%) and the City (25%). This funding is required to meet the requirements of the Immunization of School Pupils Act and be in compliance with Ontario Public Health Standards.

The Deputy City Manager and Chief Financial Officer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

In the last 10 years there have been many reports to the Board of Health (BOH) on vaccine preventable diseases and immunization. The following are the most recent:

At the January 20, 2012 meeting, the BOH adopted a follow-up report titled *Inequalities and Immunization Rates in Toronto School Children*
<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2012.HL10.4>

At the April 29, 2013 meeting, the BOH adopted a report titled *Toronto Unvaccinated: The Impact of Vaccination on the City's Health*. This report recommended that "the Ministry of Health and Long-Term Care ensure that Panorama is designed to easily accept electronic information directly from health care provider electronic medical records for the efficient capture and sharing of immunization records, and to act as an immunization registry for Ontario."
<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.HL21.3>

At the June 14, 2013 meeting, the BOH adopted a report titled *Human Papillomavirus (HPV) Vaccine Update – Recommendations for Males and Females*.
<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.HL22.2>

At the June 29, 2015 meeting, the BOH adopted a follow-up report titled *Measles Outbreak 2015 and Ontario's Immunization System*. The cost of managing the outbreak was reported at \$500,000. There were several recommendations from this report including that "the Minister of Health and Long-Term Care and the Interim Chief Medical Officer of Health develop a comprehensive provincial immunization registry for all health care professionals to access and input immunization records, covering all Ontarians from birth to adulthood."
<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.HL5.3>

ISSUE BACKGROUND

Since the introduction of publicly funded immunization programs over 50 years ago, the disease burden from vaccine preventable diseases has been greatly reduced. The continued success of these programs depends on maintaining high immunization coverage rates, i.e. ensuring that a large proportion of the population is appropriately immunized.

Multiple activities at the local level are essential to the continued success of Ontario's immunization program, including the provision of publicly funded routine vaccines through health professionals and public health clinics, and the enforcement of legislative requirements by public health units related to children in schools [Immunization of School Pupils Act (ISPA)] and child care centres [Child Care and Early Years Act (CCEYA)]. Public health units are responsible for educating the public and health professionals about immunization, with an increasingly complex immunization schedule, introduction of new vaccines and issues with vaccine hesitancy. Public health units are also responsible for ensuring a safe and viable vaccine supply through conducting cold chain inspections at all community vaccine providers' premises and investigating reports of adverse events following immunization (AEFI).

There is strong evidence of the effectiveness of vaccination requirements for child care and school attendance. In the U.S., a review found that immunization rates were higher in jurisdictions with mandatory immunization and disease rates of measles and mumps were lower in states with mandatory immunization.¹

Reducing disparities is an additional and important benefit of mandatory vaccinations. In a 2012 report to the BOH, TPH research showed that areas of the City with a larger proportion of low-income families had lower immunization rates for the six mandatory diseases in 2010-11; by the end of the ISPA enforcement cycle, immunization rates were similar across the City, regardless of income.² Two additional studies from the U.S. review found improved vaccination rates among racial and ethnic minorities and children in low-income communities in jurisdictions where vaccination requirements were in effect.³

Immunization coverage rates are the best indicators available to TPH to ensure that the population is adequately immunized to protect against vaccine-preventable disease outbreaks. In a 2013 report to the BOH, TPH provided research to show that if children in Toronto stopped receiving routine childhood vaccinations, the incidence of vaccine preventable diseases would rise dramatically, resulting in outbreaks, as well as increased complications and deaths.⁴

While the effectiveness of vaccination requirements for improving coverage rates is well-established, implementation of the ISPA by TPH has become more complex due to several recent provincial changes. These include recent regulatory changes expanding the scope of the ISPA, the implementation of a new provincial immunization information system (Panorama), and the continual expansion of the provincial program.

In 2015, the MOHLTC released Immunization 2020, a strategic framework to modernize immunization in Ontario with the goal of better health outcomes for this Province. In order for TPH to fully implement new MOHLTC initiatives that strengthen our immunization programs we will need additional sustained resources.

COMMENTS

The ISPA is intended to protect school children from vaccine preventable diseases and to prevent disease outbreaks. Under the ISPA and as described in the Immunization Management Protocol of the Ontario Public Health Standards (OPHS), public health units are required to assess and maintain records of the immunization status of every student attending school in their jurisdiction every year.

The ISPA requires school boards and private schools to provide TPH with demographic information for each student. Toronto Public Health then collects and assesses the immunization information for each student with respect to the required diseases. Enforcement of the ISPA is progressive, starting with a notification letter through to a possible 20-day suspension from school to obtain compliance.

In 2013 the ISPA was amended to expand the number of vaccines and require private schools to disclose demographic information to public health units. Vaccines against three new diseases (meningococcal disease, pertussis, and varicella) were added to the ISPA, in addition to the existing six (diphtheria, tetanus, poliomyelitis, measles, mumps, and rubella).

Panorama – Provincial Immunization Information System

All public health units in Ontario are required to enter and maintain the immunization records of all school-aged children in Panorama, the provincial immunization information system which was introduced by the MOHLTC in 2013. Panorama is a comprehensive, secure, web-based information system designed to more efficiently manage immunization information and vaccine inventory. Toronto Public Health began using this new information system in July 2014.

There have been numerous unforeseen issues with the implementation of Panorama. Many are due to its greater complexity compared to the previous DOS-like information system. Data entry is more time-consuming because there are more required data fields and increased number of data entry screens. The system logic and report limitations require TPH to manually review client records related to varicella and meningococcal disease prior to suspension. In the most recent school year, there was significant Panorama downtime to resolve performance issues and to implement new inventory functionality; this downtime significantly limited TPH's ability to perform data entry.

Provincial Immunization Registry

Immunization registries are an accepted best practice to track the vaccination history of each person in a jurisdiction. One of the best ways to improve and maintain vaccination rates is through investments in information technology including an immunization registry and electronic medical records. Until immunization is registered by health-care providers at the time a vaccination is given, Panorama will not provide the data to identify low coverage rates in a timely manner.⁵ A provincial registry, which includes Panorama, would enable TPH to accurately track all vaccines administered to all people, including students, in a timely way, regardless of the provider or the setting where the vaccine was administered. The province's work building the Digital Health Immunization

Repository is an important step forward to advance the vision of a provincial registry but the full benefits to TPH will not be realized until the repository includes Panorama and connects with more health care provider electronic medical record information systems (e.g. physician offices and pharmacies). This would allow for the efficient capture and sharing of immunizations provided in the community. No clear timeline has been identified by the province to resolve technical challenges or update legislation and thus this will likely take many years.

Implementation of the Expanded ISPA at TPH

The ISPA provides a legislative mechanism to ensure high immunization rates for school children, and Panorama is a system to store and assess this information. However, the combination of expanded legislation, a new information system and the lack of additional sustained resources has resulted in TPH experiencing multiple challenges in fully implementing the legislation.

Data Collection, ISPA Compliance Assessment and Follow-Up

Notifying and following up with families has always been a resource-intensive activity, exacerbated by the recent addition of three vaccines. Toronto Public Health must collect, manually enter and then assess the immunization information for all students attending school in Toronto against the required immunizations. If TPH records indicate that a child's immunization is not up-to-date, TPH uses a progressive enforcement approach to obtain compliance with the ISPA. This includes two notification letters, a notice advising that they will be suspended, followed by an active suspension notice (for up to 20 days) issued to the school principal. While it varies from year to year, approximately 20 to 30 % of those assessed are not up to date according to ISPA; however, after TPH intervenes, only 1-3% will actually require suspension and the majority of these return to school in less than two days.

With about 70,000 students in Toronto, TPH nurses work most closely with families when students are facing suspension, providing supports such as language services and assistance in finding a health care provider. They also support school principals and office staff to enforce the suspension requirements. Materials are routinely translated into multiple languages to meet the needs of our diverse school community.

Assessing individual records in Toronto is complex because it also includes reviewing records from other jurisdictions where immunization schedules vary. Given the number of newcomers to Toronto and the complexity and variation of vaccine schedules around the world, TPH invests considerable resources in translating foreign-language vaccine records and providing advice to health-care providers to ensure these children are properly immunized as per the ISPA and Ontario's publicly funded immunization schedule.

Private Schools

Private schools are now required to provide student demographic information to TPH. Over the past several decades, TPH has developed strong partnerships with the Public School Boards, which assist in implementing the ISPA by providing demographic

information and helping to ensure the consistent application of suspension orders. In contrast, there is no similar centralized 'school board' model or information system used by private schools. Toronto Public Health needs to engage each of Toronto's approximately 280 private schools individually to establish an efficient method to transfer and maintain student demographic information, facilitate communication between TPH and parents, manually input student and immunization information into Panorama, assess records, etc. Prior to the 2013 ISPA changes TPH had invested considerable resources to work with the 72 private schools willing to work with us to enforce the ISPA; engaging the remaining private schools will require additional resources.

Access to Vaccines

Toronto Public Health has historically held community immunization clinics throughout the year, including on evenings and weekends, to provide the required vaccines to students without OHIP coverage or who do not have a health care provider. One of the additional vaccines required under the ISPA, Menactra®, is only available through public health units. To meet the increased demand from the ISPA, TPH must increase the number and capacity of community clinics. In the 2015/2016 school year (July 1, 2015-June 30, 2016) TPH administered over 6,000 ISPA vaccine doses at 15 community clinics. Over 50% of the vaccine doses were Menactra® vaccine and a number of strategies were needed to provide this level of service including augmenting the clinics with additional staff from an external agency.

Other Pressures

Since 2012 the MOHLTC has implemented multiple changes to the provincial immunization program which are positive but also increase work for local public health without a sustained increase in funding. These include:

- Expansion of the Universal Influenza Immunization Program in 2012 to include access to influenza vaccine at pharmacies, requiring approximately 450 additional fridge inspections for cold chain compliance.
- Changes to the provincially funded immunization schedule in 2015 requiring communication with the public and education of health care providers.
- Expansion of the HPV school-based program to include boys and moving the program from grade 8 to grade 7 starting in the 2016/17 school year
- Expansion of the HPV eligibility to boys/men aged 9 to 26 years old with risk factors, which requires TPH to develop and implement a process for providing HPV vaccine to community clinics and providers.

The Impact in Toronto

Full implementation of the ISPA by public health clearly increases protection of school children against vaccine preventable diseases. In the 2015/2016 school year TPH fully implemented the ISPA for Grade 2 students (7/8 year olds), resulting in 95.4% compliance with the ISPA, whereas for 16/17 year olds, TPH only sent one letter resulting in only 66.3% compliance with the ISPA. For all other age groups, TPH did not contact families to obtain missing vaccine information. Because TPH is only in partial

compliance with the ISPA and OPHS requirements, Toronto schoolchildren may be more vulnerable to vaccine-preventable diseases.

In addition, management of vaccine-preventable disease cases and/or outbreaks involving a Toronto school can be more resource-intensive because the immunization status of students older than 8 years has not been fully documented and the immunization rate among these older students is likely to be lower (around 70%) due to lack of ISPA enforcement.

In 2015, TPH reported on a measles outbreak involving 10 cases in Toronto. The direct cost for managing the outbreak was approximately \$500,000 and these costs do not include health care costs from the management of these cases. Measles is a vaccine preventable disease covered under ISPA. With enhancements to our systems that support school immunization coverage rates, we can do better at preventing the transmission of these diseases and preventing future outbreaks. The new and enhanced funding in the operating budget will allow us to meet the needs of an expanding Provincial immunization program and meet our mandate under ISPA to ensure every student is protected from important vaccine preventable diseases.

The continuing expansion and strengthening of Ontario's publicly-funded immunization program requires TPH to match this expansion; however, without additional resources, this results in an imbalance between demand and capacity. Toronto Public Health is committed to meeting the requirements of the ISPA and the OPHS and the vision of Immunization 2020. Without additional sustained funding, TPH will not be able to achieve our legislated mandate and ultimately vaccine coverage rates among school children may decrease in Toronto.

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³ The US Community Preventive Services Task Force. (2016) Increasing Appropriate Vaccination: Vaccination Requirements for Child Care, School, and College Attendance. Accessed August 13, 2016 at

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⁴ Toronto Public Health. (2013). Toronto Unvaccinated: The Impact of Vaccination on the City's Health. Accessed August 13, 2016 at

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⁵ Office of the Ontario Auditor General. (2014). Chapter 3, Section 3.04 Immunization. 2014 Annual Report. Accessed September 12, 2016 at

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