# Ontario Health Plan for an Influenza Pandemic

## Chapter 7: Immunization

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Ontario

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# Ontario Health Plan for an Influenza Pandemic

Chapter 7: Immunization

# Audience

- those who contribute to the influenza pandemic immunization strategy as planners, coordinators and/ or immunizers, including public health units (PHUs) and other vaccine delivery agents (VDAs) such as nurses, physicians and pharmacists

# Chapter objectives

- to provide an understanding of the roles and responsibilities of organizations involved in the delivery of the provincial influenza pandemic immunization strategy
- to outline the determining factors and components of the provincial influenza pandemic immunization strategy
- to provide recommendations and guidance for PHUs on establishing and operating regional influenza pandemic immunization programs

# Immunization response summary

Response objective: to minimize the spread of influenza in Ontario through the development and implementation of a safe and effective immunization strategy

### *Immunization activities before severity is known*

The Ministry of Health and Long-Term Care (MOHLTC) develops the provincial influenza pandemic immunization strategy in consultation with PHUs, Public Health Ontario (PHO) and other health system partners

### *Immunization activities across all severity scenarios*

The provincial influenza pandemic immunization strategy is based on the Universal Influenza Immunization Program (UIIP); in addition, it is based on severity, timing in relation to seasonal influenza immunization, technical vaccine considerations, federal prioritization recommendations, federal data requirements, public demand and vaccine effectiveness

The provincial influenza pandemic immunization strategy outlines key immunization population groups, vaccine administration model, relative priority and timing, vaccine distribution, inventory management, data requirements, flexibility versus consistency, and public and health system communications

# Introduction

Immunization is an essential component of the response to an influenza pandemic as it prevents influenza in individuals and minimizes its spread within the community.

During an influenza pandemic, vaccine is available at no cost to individuals aged six months or older who live, work or attend school in Ontario and who meet eligibility requirements (e.g., no clinical contraindications).

Because of the scale and scope of a provincial influenza pandemic immunization strategy, all levels of the health system – including the Public Health Agency of Canada (PHAC), MOHLTC, PHO, PHUs, health sector employers and health care providers – play a role in its success.

In order to mount effective pandemic immunization programs, provincial health system partners must build upon the lessons learned and best practices from the UIIP, Ontario's annual seasonal influenza immunization program. This involves continually identifying effective ways to increase health worker and the general public's acceptance of influenza immunization, as well as refining approaches to immunize different segments of the population, such as high-risk groups and vulnerable populations.

# Assumptions

In addition to the assumptions outlined in Chapter 1: Introduction, the provincial strategy is also based on the following vaccine-specific assumptions:

- As the pandemic vaccine is not available for several months into an influenza pandemic, PHUs and other health system partners have time to adapt their seasonal influenza immunization programs to meet the requirements of the provincial pandemic immunization strategy.
- Given the limited supply and high demand for vaccine in the initial rollout of the strategy, the MOHLTC may need to identify key population groups that receive the vaccine first (e.g., high risk groups, health workers).
- As key population groups complete their immunizations, additional groups are added and therefore the target population changes over the course of the strategy.
- Vaccine supply is not consistent throughout the rollout of the strategy; therefore, the strategy must be adaptive.
- There is significant media interest, especially in the initial stages of the rollout when the demand for vaccine is likely greater than the supply.
- Large numbers of health care providers are mobilized to support rollout of the immunization strategy, especially when public demand and vaccine supply are both high. Over time, these resources can be deployed to support other pandemic response activities.

# Roles and responsibilities

Table 1 describes roles and responsibilities related to immunization during an influenza pandemic. General roles and responsibilities can be found in Chapter 1: Introduction.

**TABLE 1. IMMUNIZATION ROLES AND RESPONSIBILITIES**

| Party | Roles and responsibilities |
|---|---|
| WHO | Identify seed strain(s)<br>Identify vaccine components and make recommendations about vaccine products (e.g., use of adjuvanted vaccine, relationship to seasonal influenza vaccine, requirements for multiple administrations) |
| Public Health Agency of Canada (PHAC) | License and distribute the pandemic vaccine[1]<br>Develop and implement the national pandemic immunization strategy that includes:<br>• federal prioritization recommendations<br>• federal data requirements<br>• a national vaccine allocation and distribution system<br>• the start date for national immunization activities<br>• federal-provincial-territorial (F/P/T) coordination |

[1] The Government of Canada is responsible for managing the contract(s) for the supply of pandemic vaccine for all provinces and territories. As announced in March 2011, the federal government has a ten year contract in place for the domestic supply of vaccine for Canadians in the event of an influenza pandemic, as well as a contract for a back-up supply if needed.

| Party | Roles and responsibilities |
|---|---|
| MOHLTC[2] (through the Ministry Emergency Operations Centre (MEOC)) | Order vaccine through the federal contract(s)<br><br>Develop, finalize and implement the provincial influenza pandemic immunization strategy[3] that includes:<br>• the key immunization population groups<br>• guidance for PHUs on the development of regional influenza immunization programs, including the vaccine administration model, relative priority and timing, and the balance between flexibility versus consistency<br>• data requirements for PHUs and VDAs<br>• information about procurement, allocation and distribution of vaccine and supplies & equipment (needles and syringes)<br>• information about vaccine repackaging (if required)<br>• public and health sector communications<br><br>Support PHUs during the planning and implementation of regional pandemic immunization programs<br><br>In collaboration with PHO, develop and implement an evaluation process to understand the impact of the provincial pandemic immunization strategy<br><br>Participate in F/P/T coordination processes |
| PHO (through the MEOC) | Analyze immunization data to assess vaccine coverage rates and adverse events following immunization<br><br>Provide scientific and technical advice to the MOHLTC<br><br>In collaboration with the MOHLTC, develop and implement an evaluation process to understand the impact of the provincial pandemic immunization strategy |

[2] Throughout the OHPIP, the MOHLTC includes the Minister, the Chief Medical Officer of Health (CMOH) and the rest of the MOHLTC. For information on how decisions are made in the MOHLTC during an emergency, see the Ministry Emergency Response Plan.

[3] The provincial pandemic immunization strategy builds upon the national pandemic immunization strategy.

| Party | Roles and responsibilities |
|---|---|
| PHUs[4] | Develop and implement a regional pandemic immunization program[5] that includes:<br>• identification and engagement of local VDAs<br>• inventory management that addresses the receipt of vaccine from the MOHLTC and the allocation and distribution to local VDAs<br>• public and health sector communications, including communication with local VDAs<br>Support local VDAs during the planning and implementation of their organizational pandemic immunization programs<br>Administer vaccine, as per the PHU role in the regional pandemic immunization program<br>Participate in the evaluation process developed by PHO and the MOHLTC |
| VDAs | Develop an organizational pandemic immunization program[6]<br>Report immunization data to the MOHLTC<br>As possible, contribute to the development of the regional pandemic immunization program<br>Administer vaccine to clients/ patients / residents (C/P/Rs), health sector employers and health workers, as per the organizational pandemic immunization program |

[4] Throughout the OHPIP, PHU includes boards of health, medical officers of health (MOHs) and other PHU health workers (e.g., public health inspectors, epidemiologists, public health nurses, etc.). See the Health Protection and Promotion Act (HPPA) and Ontario Public Health Standards for more information on the roles and responsibilities of various PHU parties.

[5] Regional pandemic immunization programs build upon the provincial pandemic immunization strategy. Appendix A provides recommendations for regional pandemic immunization programs.

[6] Organizational pandemic immunization programs build upon the regional pandemic immunization program.

| Party | Roles and responsibilities |
|---|---|
| Common responsibilities across the health system | Understand the vaccine product(s) and licensing provisions<br>Understand the provincial pandemic influenza strategy and, where applicable, regional and organizational pandemic immunization programs<br>Promote immunization uptake among health sector employers, health workers, C/P/Rs, friends and family<br>Practice and role model appropriate behaviour to protect C/P/Rs and prevent further spread of influenza (e.g., get immunized as soon as possible) |

# Provincial pandemic immunization strategy

The provincial strategy will be finalized during an influenza pandemic. A set of influencing factors specific to the pandemic must be considered when finalizing the strategy to ensure that it is responsive and makes the best use of existing health system capacity. The strategy includes the known components described in this chapter.

## Influencing factors

The pandemic immunization strategy is dependent on a number of factors that cannot be known in advance of a pandemic, such as:

- severity
- timing in relation to seasonal influenza immunization
- technical vaccine considerations
- federal prioritization recommendations
- federal data requirements
- public demand
- vaccine effectiveness

**Preparedness tip**

Although it will not be finalized until the time of a pandemic, the provincial pandemic immunization strategy will leverage the structures, lessons learned and best practices of the UIIP. The most effective way for PHUs and VDAs to prepare for a pandemic is to have an effective seasonal influenza immunization program in place every year.

## Severity

The transmissibility and clinical severity of the pandemic virus are important considerations in the development of the strategy (See Chapter 1: Introduction for information on severity). These variables impact the degree of consistency included in the strategy. Severity also impacts the speed or urgency of the program as well as preferred administration models.

## Timing in relation to seasonal influenza immunization

The timing of the UIIP influences the development of the immunization strategy. For example, there may be opportunities to merge some components of the strategy if the recommended recipient population groups are the same. Clinical contraindications for concurrent seasonal and pandemic immunizations are identified by PHAC and taken into account in the provincial strategy.

## Technical vaccine considerations

The immunization strategy takes into account technical considerations such as the number of vaccine administrations to reach immunity, clinical contraindications, differences among available vaccines (e.g., adjuvanted vs. non-adjuvanted vaccines), vaccine packaging and delivery restrictions (e.g., specific needle & syringe requirements).

## Federal prioritization recommendations

As outlined in Canadian Pandemic Influenza Plan for the Health Sector's (CPIP's) Pandemic Vaccine Prioritization Framework, the federal government's recommended vaccine prioritization groups are based on a number of factors, including impact on pandemic response goals, operational considerations, difference in vaccine effectiveness among population groups (e.g., vaccine effectiveness in the elderly and immunocompromised), populations most likely to have negative outcomes from being infected, populations most likely to transmit the virus and ethical considerations. According to the CPIP, "The national policy decision regarding the order in which the population subgroups should be immunized across Canada would likely be made by Ministers of Health on the advice of the Chief Medical Officers of Health and the Public Health Network Council, with the strong recommendation that the order decided on would be consistently applied across Canada."

## Federal data requirements

The federal government identifies data requirements at the time of an influenza pandemic. This may include enhancements to the Canadian Adverse Events Following Immunization Surveillance System (CAEFISS) to expand the data collected on adverse events following immunization.

## Public demand

Public demand for the vaccine may vary considerably across different severity scenarios, could rapidly change over the course of the pandemic and could vary across the province. Public demand may be influenced by the perceived risk of morbidity and mortality. The MOHLTC monitors public demand through public opinion surveys and consultation with PHUs and other health sector partners. The degree of public demand determines the relative emphasis on immunization promotion and immunization provision.

## Vaccine effectiveness

The MOHLTC monitors available research on the differences in vaccine effectiveness among population groups (e.g., vaccine effectiveness in the elderly and immunocompromised).

# Known components

The immunization strategy includes the following components:

- key immunization population groups
- vaccine administration model
- relative priority and timing
- vaccine distribution
- inventory management
- data requirements
- flexibility versus consistency
- public and health sector communications

## Key immunization population groups

Ontario's key immunization population groups are based on surveillance information, the federal prioritization recommendations, and any available data on the difference in vaccine effectiveness among population groups.

Ontario also considers ethical principles[7] and impacts of critical infrastructure service continuity when identifying key immunization population groups. For example, health workers may be a key immunization population because of the ethical principle of

[7] Work is underway federally to develop an ethical framework for the CPIP. Future versions of the Ontario Influenza Response Plan (OIRP) will include an ethical framework that aligns with that in the CPIP.

reciprocity[8] and the need for continuity of the health system response, especially during a more severe pandemic.

## Vaccine administration model

The immunization strategy specifies health care providers/ organizations well positioned to administer the pandemic vaccine. The model may involve the range of VDAs that participate in the UIIP, a focus on PHU-led clinics, or a new type of administration that is not typically used for seasonal influenza (e.g., school based immunization clinics implemented by PHUs). The model is based on the following factors:

- the key immunization population groups and the types of health care providers/ organizations most suitable to reach these groups (e.g., primary health care providers are well positioned to immunization population groups with co-morbidities as they can easily identify individuals in these groups; workplace occupational health & safety (OHS) programs are good access points for health workers and other critical infrastructure workers; school-based immunization clinics are good access points for children)
- the resources that health care providers/ organizations can allocate to immunization given their other roles in the pandemic response, particularly in influenza care & treatment strategies

The administration model may evolve over the course of the pandemic immunization strategy, especially as key population groups change and the supply of vaccine increases. Therefore, health care providers/ organizations may have different roles over the course of the immunization strategy.

## Relative priority and timing

The immunization strategy provides PHUs and VDAs with information on the relative priority of the immunization campaign compared to other health system response activities, as well as targets for moving through the key immunization groups. This helps health organizations determine the resources that should be dedicated to immunization.

## Vaccine distrubution

The MOHLTC may distribute or redistribute vaccine to specific geographic areas of the province facing high vaccine demand. In addition, local redistribution of vaccine among VDAs may help meet local demands.

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[8] "Reciprocity requires that society support those who face a disproportionate burden in protecting the public good, and take steps to minimize burdens as much as possible. Measures to protect the public good are likely to impose a disproportionate burden on health care workers, patients, and their families." University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group (2005) Stand on guard for thee: Ethical considerations in preparedness planning for pandemic influenza

## Inventory management

The immunization strategy addresses the need for effective inventory management practices in order to minimize the potential for vaccine wastage. This includes developing and communicating recommendations on best practices for PHUs and VDAs (e.g., strategies to maximize output from multi-dose vials), implementing effective order management practices and providing guidelines on maintaining and managing vaccine cold chain.

## Data requirements

The specific type of data that needs to be collected by immunizers depends on federal reporting requirements. The requirements are not expected to greatly exceed data that are routinely collected as part of the UIIP for UIIP-defined reimbursable clinics (i.e., location of clinic, clinic date, lot numbers used at clinic, vaccine wastage, total doses administered, immunizations administered for key population groups and the general population as well as subtotals by sex and age categories). To the fullest extent possible, regular reporting processes are leveraged. Depending upon implementation of new technologies (i.e., implementation of Panorama and electronic medical records) automated processes may be used to report data.

## Flexibility versus consistency[9]

The strategy indicates the degree of flexibility for local decision making by PHUs and VDAs on all aspects of regional and organizational immunization programs.

## Public and health sector communications

The strategy outlines key messages and methods for communicating with the public, health sector employers and health worker regarding the strategy, including information sharing with PHUs and VDAs. It also includes messages and methods for communicating with the public and health workers regarding the importance of immunization, including vaccine safety information.

# Next steps

In the development of the Ontario Influenza Response Plan, the MOHLTC will work with its partners to:

- monitor research on the effectiveness of influenza immunization in different population groups, as well as different delivery models

[9] As per the HPPA, the CMOH may issue directives to boards of health or MOHs requiring the adoption or implementation of policies or measures concerning infectious diseases. The CMOH could use this power to support consistency in the rollout of the provincial influenza pandemic immunization strategy.

- identify best practices and lessons learned from the delivery of the UIIP to incorporate into the response to both seasonal and pandemic influenza

# Appendix A – Regional pandemic immunization program recommendations

This appendix outlines recommendations and requirements for PHUs to organize their regional influenza immunization programs. The content in this appendix is based on lessons learned from the UIIP and 2009 H1N1 influenza pandemic immunization program. Some of this information may also be useful for VDAs.

PHUs need to verify the vaccine storage and handling capacity of their local VDAs to ensure they have the systems in place to participate in the regional program. See the MOHLTC's Vaccine Storage and Handling Guidelines and the Vaccine Storage and Handling Protocol for more information.

In addition to the guidance that will be provided by the MOHLTC on the provincial influenza pandemic immunization strategy at the time of a pandemic, PHUs should consider the following factors when developing their regional pandemic immunization programs:

- human resources
- clinic logistics
- administration models
- communication processes and strategies
- an evaluation process to adapt to the evolving situation

## Human resources

Organizational pandemic immunization programs should address the roles and responsibilities required to operate an immunization clinic, as well as a training program. PHUs may be able to support training for community-based health care organizations.

Training content should include:

- a review of the skills and knowledge required to administer a vaccine
- proper vaccine storage and handling practices
- information about the technical requirements of the vaccine
- information about recommended vial and syringe formats
- OHS and infection prevention & control (IPAC) requirements, including use of personal protective equipment (see Chapter 5: Occupational Health & Safety and Infection Prevention & Control for more information)
- information on the provincial, regional and organizational immunization programs
- other organizational processes and procedures

Every immunization clinic requires a regulated health care provider with the authority to prescribe and administer the vaccine (i.e., physician, nurse practitioner, or pharmacist). The organization may need a process to delegate these controlled acts. For more information, see the College of Physicians and Surgeons of Ontario's fact sheet on Delegating the Prescription and Administration of the Influenza Vaccine and the Federation of Health Regulatory Colleges of Ontario's Interprofessional Guide on the Use of Orders, Directives and Delegation for Regulated Health Professionals in Ontario.

Immunization clinic efficiency can be enhanced by establishing clearly defined roles to enable all health workers to concentrate on well-understood tasks. The required roles depend upon the location, the administration model and the size of the clinic. In some cases, individuals may take on multiple roles. Clinic roles[10] might include:

- clinic leader (responsible for managing the clinic and assigning staff)
- line manager (responsible for managing patient flow)
- screener
- patient registrar
- immunization nurse
- after-care nurse
- loading nurses (to pre-load syringes with vaccine)
- logistics (responsible for ensuring the clinic, as well as each station, has supplies to continue service provision)
- information technology support staff
- courier and transportation staff
- greeters
- child and youth workers
- security
- housekeeping
- volunteer coordinators
- knowledge translation (responsible for collecting, synthesizing and communicating new information from the PHU and/ or MOHLTC; reviewing epidemiological data and clinical literature relevant to immunization efforts; developing training programs; and sharing information with local partners)
- data coordinators

[10] Depending upon the scale and types of clinic, staff may be able to take on multiple roles.

Staff could wear coloured vests to delineate roles (e.g., red for clinic leader).

# Clinic logistics

Immunization clinics require both physical preparation and the development of administrative processes.

## Physical preparation

The locations and physical spaces for clinics must be identified as part of the organization's immunization program. Consideration should be given to storage needs for immunization equipment and clinic supplies. If the clinic is held in a space that is separate from where supplies are received and stored, transportation of supplies must be addressed. All immunization clinics must have adequate fridge capacity to meet storage requirements.

For organizations operating immunization clinics across multiple sites, standardizing the clinic layout may prove useful. Additionally, in larger clinics with more immunization stations, one station could be assigned for each vaccine/ antigen product in order to reduce error.

## Administrative processes

Administrative processes that must be developed include:

- appointment reservations (if needed)
- registration upon arrival
- collection and storage of informed consent
- immunization administration and adverse event data collection and storage
- medical record keeping requirements
- patient education processes
- patient flow and queue management (e.g., wrist bands to identify patients that have registered for immunization, enabling them to maintain their position in the queue; using colour-coded cards to identify which vaccine a patient needs)
- OHS & IPAC processes, including the disposal of bio-hazardous material (see Chapter 5: Occupational Health & Safety and Infection Prevention & Control)
- vaccine storage and handling processes
- processes for receiving vaccine supplies (note that PHUs require processes for both receiving vaccine supplies from the MOHLTC and for distributing them to local VDAs)
- logistics for loading vaccines (if needed); only pre-loading the most commonly used vaccines (or avoiding pre-loading) reduces wastage

# Administration models

PHUs may use different vaccine administration models to reach different populations. PHUs should consult with C/P/Rs and review lessons learned from UIIP to identify effective approaches, including the preferred service models for different population groups and ways to reduce access barriers (e.g., hours or operation, location of service, language of service provision). After-hours and weekend access should be provided to accommodate the needs of individuals who work during the day.

An outreach model may also be considered to bring an immunization clinic to C/P/Rs. This may include hosting clinics in community spaces such as community centres, civic centres, malls or schools.

**Preparedness tip**

To support an outreach model approach, flexible memoranda of understanding can be developed with local partners. PHUs may use 911 service usage data and their understanding of their local community to identify appropriate locations for an outreach clinic, such as apartment buildings with large populations of high-risk seniors. Outreach clinics can also be used to immunize hard-to-reach populations, such as setting up clinics at shelters, meal programs or organizations that offer harm reduction programs. Partnerships with nursing agencies can allow immunization outreach to clients and patients in their homes.

Collaborations with schools and boards of education are valuable, either through leveraging an existing public health partnership or creating a new relationship. For example, a PHU and board of education could partner to designate specific schools as student immunization clinics. In this scenario, the PHU could provide the vaccine and immunization staff, the school could distribute and collect consent forms from parents, and the student services consortium (which manages student transportation) could arrange for the transport of students to and from the clinic.

# Communications

During an influenza pandemic, PHUs should develop plans to communicate with employees and the public. PHUs must also develop plans to communicate with all VDAs in their jurisdiction, as well as other health care providers. PHUs should reinforce MOHLTC communications, which address the importance of immunization, the immunization strategy and vaccine safety. PHUs may need to adapt these provincial-level messages to meet the needs of their jurisdictions. Communications tools such as Twitter and Facebook can be used to update the public about wait times at specific clinics.

For those groups with the responsibility to communicate in both official languages, processes should be developed to access expedited translation services. Similarly, for organizations that routinely use other languages to communicate with the public and C/P/Rs, rapid translation processes should be established.

**TABLE 2. COMMUNICATION ROLES FOR PHUS**

| Internal communication – for health workers | External communication – for C/P/Rs and partners |
|---|---|
| Convey vaccine information and processes (e.g., eligibility, changes in clinic operations) to immunizers<br><br>Ensure continuous information flow, which can be enabled through staff meetings and web-based tools, such as Wiki technology to maintain an information repository<br><br>Promote immunization of health workers within the organization, including working with colleges and universities to promote the immunization of students working within the organization<br><br>Promote participation of local health care providers in immunization program | Convey regional immunization program information and promote immunization programs and opportunities (e.g., clinic locations)<br><br>Reinforce MOHLTC communications, which address the importance of immunization, the immunization strategy, the key immunization populations and the safety of the vaccine<br><br>Use teleconferences, e-bulletins, websites, social media and presentations to ensure that immunization messages are communicated to VDAs, schools and boards of education, universities, colleges, child care providers, community support agencies, faith groups, seniors' groups, emergency responders, multicultural groups, correctional services and workplaces |

# Evaluation

PHUs should assess their immunization programs and make adjustments as needed. The clinic sites can be periodically evaluated to gauge suitability and efficiency. This could include assessments of internal layout, patient flow, parking and traffic control.

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