Chapter 11: Public Health Measures

Public health measures (PHM) refer to non-medical interventions used to reduce the spread of influenza. Public health measures involve strategies for both individuals and communities, and include, but are not limited to, the following:

- Infection prevention and control;
- Case and contact management;
- Social distancing strategies, such as closing schools or restricting public gatherings;
- Public education; and
- Travel restrictions and screening of travellers.

Objectives of Public Health Measures

The overall objectives of implementing public health measures are to:

- Decrease the number of individuals in the Region of Peel exposed to the novel virus, and potentially slow the development or progress of the pandemic;
- Slow disease spread and gain time for implementing medical interventions (e.g. vaccination);
- Reduce the risk of illness and death caused by the pandemic; and
- Reduce the impact on the health care system by lowering the burden of illness and/or spreading pandemic activity over a longer timeframe.

Considerations for the Use of Public Health Measures

Public health measures directed to community disease control have not been well studied. The recommendations in the Canadian and Ontario pandemic plans are largely based on advice from the World Health Organization (WHO) that was gathered through expert opinion and modelling studies. Recent modelling suggests that public health measures, used in combination, could significantly reduce transmission of the pandemic influenza virus and lower attack rates in different age groups.

The strategies to be used will vary according to a number of factors, including:

- *The phase of the pandemic* – aggressive measures might be applied early (i.e. during pandemic alert phases) to try to contain the virus, whereas application of measures later in the pandemic focuses on reducing individual risk;
- *Pandemic severity and epidemiology* – a mild pandemic would not require an aggressive approach to the application of public health measures;
- *The characteristics of the community* – some measures are easier to apply in more remote, or rural areas than in large urban areas;
- *Social disruption* – the impact that a particular measure may have on the public;
• Public acceptance – will the public adhere to and tolerate the measures; and
• Availability – the availability of resources to carry out the measure, if it is labour intensive (e.g. contact tracing).

As a result, some of the strategies outlined in this plan can only be described in a general manner at this time. Public health measures will be modified and clearly identified once the epidemiology of the pandemic virus is known.

Under the authority of the Health Protection and Promotion Act, the Medical Officer of Health (MOH) has the authority to implement public health measures (e.g. isolation, quarantine, or school closures) in the local jurisdiction. In the case of an influenza pandemic, the decision to use particular public health measures will be made by the Ontario Chief Medical Officer of Health, in consultation with MOHs. This will lead to consistency in the application of measures across the province, and thereby help to ensure public confidence, compliance and reduce confusion. The specific timing for the implementation of a measure may vary across the province, as this depends on the phase and severity of the pandemic in each local area.

Timing of Measures by Pandemic Phase

Figure 11.1 provides an overview of the proposed public health measures by pandemic phase. The measures themselves are described in the following sections of the chapter.

Figure 11.1: Timing of Public Health Measures by Pandemic Phase

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Description of Public Health Measures

1. Infection Prevention and Control

*Infection Prevention and Control in Health Care Settings*

Ongoing infection prevention and control programs are important in all health care settings. All health care workers should be familiar with basic infection prevention and control measures. During a pandemic, health care providers in the Region of Peel will be expected to follow federal and provincial infection prevention and control guidelines, and any additional directives from the Peel MOH.

The Public Health Agency of Canada (PHAC) has published *Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Health Care*\(^\text{13}\), which outlines the principles, routine practices, and additional precautions for acute, long-term, ambulatory, and home care settings.

In Ontario, the Provincial Infectious Diseases Advisory Committee (PIDAC) has published two best practice manuals that are relevant to influenza control:

- *Best Practice for Cleaning, Disinfection and Sterilization in all Health Care Settings*\(^\text{14}\); and
- *Preventing Febrile Respiratory Illness*\(^\text{15}\) – this includes recommendations for Febrile Respiratory Illness, or FRI, screening in all health care settings.

For community physicians, the College of Physicians and Surgeons of Ontario has published a guide entitled, *Infection Control in the Physician’s Office.*\(^\text{16}\)

Influenza is thought to be transmitted primarily by droplet and contact spread, thus the current infection control guidelines in the Canadian pandemic plan emphasize droplet and contact precautions. These include the use of surgical (procedure) masks, together with eye protection and gloves and gowns as necessary, for health care encounters within one metre of the influenza patient. Influenza patients should be placed in single rooms or in cohort accommodation. Negative pressure rooms are not necessary.


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The role and contribution of airborne spread remains controversial. As a result, national and provincial recommendations for personal protective equipment (PPE) during a pandemic have not been finalized at the time of writing of this plan. The updated federal and provincial PPE guidelines will be incorporated in future editions of the plan.

In the Region of Peel, infection prevention and control guidelines and initiatives are promoted through several initiatives:

- **The establishment of Regional Infection Control Networks**, which will assist in communication about infection prevention and control strategies. The networks will function as an expert infection and control resource and will maintain an ongoing communication network with health care stakeholders. They are aligned with the Local Health Integration Networks (LHINs) boundaries. Both Regional Infection Control Networks that will serve Peel (Mississauga-Halton and Central West) are in the process of being established, and representatives from Peel Public Health serves as members of their steering committees; and

- **Peel Public Health collaboration with all health care settings in the Region of Peel**, which includes:
  
  - Consultations by certified Infection Control Specialists;
  - Hosting regular infection prevention and control meetings with emergency responders and community health care organizations in the Region of Peel;
  - Participation and membership in Infection Control Committees at all three hospitals and at long term care facilities and retirement homes; and
  - Providing regular Health Professionals Updates to local physicians.

In 2007, PIDAC is expected to provide training packages which will address core competencies in infection prevention and control for all health care workers. It is anticipated that all health care providers in the Region of Peel will take advantage of these materials and conduct the appropriate training for their employees.

**Infection Prevention and Control in the Community**

Basic hygienic practices, such as hand washing and respiratory etiquette, are measures that reduce the impact of seasonal influenza and other respiratory diseases. They will be the cornerstone for reducing the risk of transmission of the pandemic virus. These measures should be adopted by individuals and families, and be promoted in schools and workplaces.

Promotion of cough etiquette, hand hygiene, and related measures is an ongoing public education initiative of Peel Public Health (see Table 11.1 for details).
Table 11. 1: Public Education Messages to Prevent the Spread of Influenza and Pandemic Influenza

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
<th>Pandemic Enhancement</th>
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<tbody>
<tr>
<td>Cough and Sneeze Etiquette (covering your coughs and sneezes)</td>
<td>Messages are to cover one’s cough or sneeze, use the arm or sleeve if tissues are not available, and dispose of tissues appropriately to reduce the spread of respiratory infections.</td>
<td>Messages to promote respiratory etiquette will be reinforced starting at Phase 4 and be maintained during pandemic activity in the Region of Peel.</td>
</tr>
<tr>
<td>Hand Hygiene</td>
<td>Hand hygiene is the most important measure to prevent the transmission of infection. Hand hygiene involves hand-washing with soap and water or use of an alcohol based hand rub (60-95% alcohol).</td>
<td>Messages to increase the frequency and improve the quality of hand hygiene will be reinforced starting at Phase 4 and be maintained during pandemic activity in Peel; and During a pandemic, public institutions (e.g. workplaces, schools, churches, and malls) may consider setting up hand sanitizing stations at entrances and/or exits.</td>
</tr>
<tr>
<td>Self Isolation (stay at home when you are sick)</td>
<td>Staying at home when you are sick (away from work, school or childcare centre) helps to reduce the spread of infection by limiting contact with others.</td>
<td>Messages to encourage ill people to stay home and away from work, schools and childcare centres will be reinforced starting when pandemic flu arrives in the province. Messaging will include the recommended duration of self isolation.</td>
</tr>
<tr>
<td>Keeping Your Environment Clean (increased frequency of surface cleaning in public settings and at home)</td>
<td>The influenza virus can live for minutes to hours on environmental surfaces. Cleaning surfaces with any general cleaning product (using manufacturer’s instructions) may decrease the risk of transmission of infection and help control the spread of infections in the workplace or at home.</td>
<td>Messages to increase the quality and frequency of cleaning in schools, childcare centres, and workplaces will be provided once pandemic flu arrives in the province.</td>
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</tbody>
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2. Case and Contact Management

_Pandemic Alert period (Phases 3, 4, 5)_ – Peel health care practitioners are expected to use the Febrile Respiratory Illness (FRI) screening system to screen for influenza-like illnesses and to report suspect or confirmed influenza cases to the MOH. Prompt reporting and laboratory confirmation allows appropriate public health measures to be implemented as quickly as possible.

Peel Public Health is responsible for case and contact management of suspect or confirmed cases of novel virus infection, including human cases of avian influenza.
Detailed protocols for this follow-up are found in the Public Health Measures Annex of the Canadian Pandemic Influenza Plan and in the Human Health Issues Related to Domestic Avian Influenza Outbreak document.17

In the pandemic alert period, there will be individual public health follow-up of suspect and confirmed cases to prevent transmission through case isolation and contact management. Isolation may be voluntary, or ordered by the MOH, depending on the willingness of the individual. However, Peel Public Health will initially use the least restrictive measure. Contacts will be placed under public health surveillance, and may be formally quarantined. Antiviral drugs will be provided to cases and contacts in accordance with established protocols.

The Public Health Agency of Canada (PHAC) is responsible for public health services at Pearson International Airport. However, Peel Public Health may be involved in case and contact management of returning travelers or visitors who are suspected of having novel virus infection (as requested by PHAC). Under the Quarantine Act, federal Quarantine Officers are posted at the airport and have the authority to take action to prevent the introduction of infectious or contagious diseases into Canada. Peel Public Health liaises with the Greater Toronto Airports Authority, Public Health Agency of Canada, and the federal Quarantine Officers to develop protocols to manage these incidents.

Pandemic (Phase 6) – By the time pandemic influenza arrives in the Region of Peel, individual case and contact management will not be used as a measure to control spread of infection. Due to its labour intensive nature, it will not be effective during this phase against a fast-moving pandemic virus. In Phase 6, Peel Public Health will provide general advice to residents to isolate themselves at home if they are sick with symptoms of influenza. Contacts will be advised to watch for symptoms and to self-isolate immediately should illness develop.

3. Social Distancing Strategies

Social distancing strategies refer to measures designed to reduce the risk of infection by limiting person to person contact and avoiding crowds or situations with very close personal contact. During an influenza pandemic, best practices indicate that all social interactions should be conducted by maintaining a one metre distance between individuals. This practice can be creatively applied at home, in the workplace, and in the community at large. This may include restrictions on public gatherings, school or child care centre closures, or maintaining a distance of one metre between individuals.18

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A brief description of the most likely measures to be employed, and the probable triggers for their use, includes:

- **Strengthened recommendations to stay home if you are ill**
  
  Peel Public Health will reinforce the recommendation for symptomatic persons to stay home, away from schools or work, and to avoid public places and events.
  
  *Trigger for action* – when pandemic flu arrives in the province, which suggests that arrival of the virus in the Region of Peel is imminent.

- **Closure of schools and childcare centres**
  
  School-aged children spread influenza efficiently, as they shed larger amounts of virus than adults and for longer periods of time. School children are a major source of influenza transmission for the community during seasonal outbreaks of influenza. Because of their expected impact on decreasing and slowing transmission, school, and childcare closures will be considered during a moderate or severe pandemic. Recent modelling studies have shown that such closures, when used in combination with other public health measures and medical interventions, can be effective in preventing the spread of infection to the broader community. This could reduce health care utilization and make it easier for local health care providers to keep up with demand.
  
  School closures (and re-openings) would most likely be directed by the MOH; however they could be directed by the Ontario Chief Medical Officer of Health. Alternatively, local school boards might decide to close schools individually, or en masse, if they are severely impacted by pupil or teacher absenteeism.
  
  The impact of school closures on the community (e.g. caring for the children, impact on workplaces) will be considered before this measure is initiated, as it could cause considerable societal disruption. School and childcare centre closures will not be effective in preventing, or delaying, influenza transmission if children continue to congregate in other settings.
  
  Peel Public Health has been working with the Boards of Education to develop pandemic plans for schools, including school closures. The school strategy should include alternative educational plans for children during prolonged school closure. Essential service providers, including health care workers and first responders, are encouraged to develop personal contingency plans for the care of children if schools are closed.
  
  *Trigger for action* – when confirmed cases of influenza are identified in the school system in the Region of Peel. To be an effective strategy, school closures must be initiated before there is a widespread local transmission, and must be maintained for at least 4-6 weeks before reopening.
• **Restriction of Public Gatherings**

Due to close proximity of individuals, large public gatherings increase the risk of transmission of influenza.

Peel Public Health messages will include advice for:

- Individuals with fever and respiratory symptoms to stay home from public events and locations;
- Avoiding crowds and large public events;
- Frequent and meticulous hand-washing; and
- Any other measures that decrease the risk of transmission of the virus.

Actual restrictions on public gatherings may be implemented by the MOH in a moderate or severe pandemic.

*Trigger for action* – when influenza activity is identified in the Region of Peel.

Both the Canadian and Ontario pandemic plans contain detailed discussions of these and other potential social distancing and community-based measures. Please refer to these plans for information about potential benefits and limitations of each strategy.

### 4. Public Education

The best preparation for a pandemic is through public awareness of the personal protective measures that reduce the risk of infection. Although many educational materials are ready, Peel Public Health is currently developing additional educational materials on infection prevention for the general public and stakeholders. All educational materials are available through the pandemic website ([www.peelpandemic.ca](http://www.peelpandemic.ca)) and community outreach activities. As the pandemic progresses, continuing health messages, appropriate for the specific pandemic phase, will be provided by Peel Public Health in conjunction with the Region of Peel, through the Region of Peel website ([www.peelregion.ca](http://www.peelregion.ca)).

Organizations and agencies in the health sector have a responsibility, and opportunity, to provide ongoing education about personal protective measures to their employees, volunteers, and visitors. Schools should be able to reach large numbers of parents with similar messages as part of their pandemic preparedness program. Similarly, businesses should provide ongoing education for their employees. If practised routinely, measures (e.g. hand washing and respiratory etiquette) will help reduce respiratory infections every year, not just during a pandemic.

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Examples of public educational materials that are (and will be) available through Peel Public Health are shown in Table 11.2.

**Table 11.2: Public Education Materials to Support Public Health Measures**

<table>
<thead>
<tr>
<th>Public Health Measure</th>
<th>Materials to be Developed or in Process of Development</th>
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| **Infection Prevention and Control for Pandemic Influenza** | • Posters, pamphlets, and promotional materials will be available via the Region of Peel website for stakeholders and the general public; and  
• Fact sheets will be available on risk reducing measures such as respiratory and hand hygiene, environmental cleaning and disinfection of the home and workplace, dealing with sick people in the workplace, and use of personal protective equipment (PPE). |
| **Case and Contact Management** | • Fact sheets will be available on various topics such as self-isolation, monitoring self for illness, caring for self or sick family members, and when to seek medical attention. |
| **Social Distancing** | • Information on school and childcare centre closures will be provided by Peel Public Health in conjunction with school boards and childcare centres. Regular updates will be posted on the Region of Peel website;  
• The Region of Peel will use outlets such as website, television, radio, and print media to disseminate status information on public gatherings in the Region of Peel; and  
• Fact sheets will be available on practical suggestions for social distancing in a variety of settings. |
| **Travel Restrictions** | • The federal or provincial government will make public service announcements regarding any possible travel advice or restrictions. The pandemic website will have links to travel advisories. |

5. **Travel Restrictions**

International Travel Health Advisories are posted on the Public Health Agency of Canada website to:20

- Inform travellers about occurrence of human infection in specific geographic regions;  
- Recommend personal health measures to reduce health risk; and/or  
- Advise delay of non-essential travel.

Peel Public Health will monitor advisories and will provide updates to local health care professionals so they can appropriately prepare travellers for visits to affected countries. Peel Public Health will also evaluate influenza-like illness in returning travellers.

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Health Alert Notices may be distributed by federal authorities at points of entry (e.g. airports and border crossing) to travellers returning from pandemic affected areas. Health Alert Notices contain outbreak information, guidelines for self-screening, and guidelines for reporting to health care professionals if symptoms of illness develop.

Decisions to implement travel restrictions within Canada will be taken by the federal or provincial government. Such decisions are very complex and have many ramifications. Although travel restrictions may not be formally applied, Peel Public Health messaging may advise people to reduce non-essential travel.

*Trigger for action* – when cases of influenza are confirmed in specific geographic areas.

**Next Steps**

Peel Public Health will continue to:

- Develop educational materials and content appropriate for each pandemic phase;
- Support pandemic planning for school boards and child care centres, including plans for potential closures; and
- Refine and test isolation, quarantine, transfer and follow-up protocols with local port and airport authorities to mitigate spread of infection from ill travellers.

Health care organizations are to:

- Provide infection prevention and control training programs for all staff when MOHLTC program is rolled out.