

6. Public Health Measures

Nothing could have stopped the sweep of influenza through ... the world – but ruthless intervention ... might have interrupted its progress and created occasional firebreaks. Actions as ruthless as those taken in 2003 to contain the outbreak of SARS could well have had effect. Influenza could not have been contained as SARS was – influenza is far more contagious. But any interruption in influenza's spread could have had significant impact. For the virus was growing weaker over time. Simply delaying its arrival in a community or slowing its spread once there – just such minor successes – would have saved many, many thousands of lives.

The Great Influenza, John M. Barry

Public health measures are non-medical interventions used to reduce the spread of disease, including but not limited to:

- providing public education
- issuing travel restrictions and screening travellers
- conducting case and contact management
- closing schools
- restricting public gatherings.

6.1 Objectives

- To decrease the number of individuals exposed to the novel virus and potentially slow the progress of the pandemic
- To slow disease spread and gain time for implementing medical measures (e.g., vaccine)
- To reduce the morbidity and mortality caused by the pandemic.

6.2 Factors to Consider When Choosing Public Health Measures

The types of public health measures used during an influenza pandemic and their timing will depend on:

- the epidemiology of the virus (e.g., pathogenicity, mode/s of transmission, incubation period, attack rate in different age groups, period of communicability, susceptibility to antivirals)
- the pandemic phase and the amount of virus activity in the region. For example, during phases 4 and 5, the focus of public health measures will be on individual measures to contain the virus (e.g., case and contact management). During phase 6, the focus will be on community measures designed to reduce risk of influenza (e.g., public education, restricting public gatherings).
- the characteristics of the community (i.e., some measures, such as school closures, are more effective in rural than urban areas)
- public acceptance of the measures
- the resources required to implement the measure. Some measures, such as tracing contacts and active surveillance, are labour intensive and may not be an effective use of resources once the virus is widespread in the community.
- the amount of social disruption the measure will cause. For example, the decision to cancel public transit services would be so disruptive; it is unlikely to be used. The decision to cancel sporting events or conferences could cause public

panic. Social isolation measures that kept people home from work would be costly to businesses and could disrupt critical services.

6.3 Factors Affecting the Potential Impact of Public Health Measures

The success of any individual public health measure depends on a variety of factors such as:

- The epidemiology of the strain. If the virus has a longer incubation period than seasonal influenza viruses, local public health authorities will have more time to identify and isolate cases before the virus spreads to others.
- The timing of the measure. For individual public health measures, such as case and contact management, to be effective, they must be used aggressively during the alert phases of the pandemic (i.e., phases 4 and 5) to follow-up confirmed and suspected cases. Once a significant number of people are infected, the focus will shift to community measures such as public education and social distancing (e.g., closing schools, discouraging public gatherings).
- Public compliance with the measure. Past experience with influenza pandemics indicates that people generally comply with personal protective measures at the beginning of the pandemic but, as more people became ill, compliance wanes. To slow the spread of the virus, it will be important to keep the public engaged and encourage compliance.
- Concurrent use of other public health measures. Any single public health measure is unlikely to be effective on its

own; measures are more effective when used together as part of a comprehensive approach that includes both individual measures (e.g., case management and contact tracing, hand hygiene, self isolation) and community measures (e.g., limiting public gatherings). Public health measures are also more effective when used with vaccines and a targeted antiviral strategy.

6.4 The Authority to Use and Enforce Public Health Measures

Under the Health Protection and Promotion Act, the local medical officer of health has the authority to implement public health measures within his or her health unit. In the case of an influenza pandemic, the decision to use particular public health measures will be made by the Chief Medical Officer of Health in consultation with local medical officers of health. While there may be legitimate reasons for some variation in the public health measures used across the province, it is important to have as much consistency as possible between health units. This will help ensure public confidence and compliance, and reduce confusion.

The Chief Medical Officer of Health will make specific recommendations about the measures recommended for use province wide. This should help ensure that the types of public health measures implemented across Ontario are consistent; however, the timing of these public health measures may vary from health unit to health unit, depending on the phase and severity of the pandemic in each part of the province. The decision to use public health measures will be triggered by the epidemiology of the pandemic strain and the phase of the pandemic.

6.5 Public Education as the Key Public Health Measure

In March 2006, medical officers of health and health unit pandemic planners held an expert consultation to discuss the use of public health measures during an influenza pandemic. The group reinforced that the best use of public health resources is to give the public information about personal protective practices, such as hand and respiratory hygiene and social distancing, and about how to care for themselves and others when ill. Public messages should include:

- Wash hands frequently and meticulously
- Reduce non-essential travel
- Avoid crowds
- Increase fresh air in buildings (i.e., open windows)
- If sick, stay home from day-care, school, work and public events
- Practise respiratory hygiene, including covering one's mouth when coughing or sneezing and proper tissue disposal
- How to clean and disinfect environmental surfaces
- When and how to seek medical attention in a way that minimizes exposure to influenza (i.e., where to go for prevention/ treatment; other information resources, such as Telehealth, internet sites, community services; and information on closures, cancellations

and changes to general community services)

- During a pandemic, people will look to public health officials for information and direction. Public health officials will work closely with communications experts to deliver information in effective ways such as media campaigns, posters, pamphlets, special telephone lines and websites. For more information, see Chapter 12, Communications.
- The best preparation for a pandemic is an educated and aware public who know the personal protective measures to reduce the risk of acquiring and/or spreading infection.

6.6 Other Public Health Measures Considered for Use in Ontario

Table 6.1 describes public health measures considered for use during an influenza pandemic.

Note: the effectiveness of public health measures has not been formally evaluated; the measures that Ontario is considering using were selected based on expert consultation, experience from previous pandemics, modeling studies and recommendations from other jurisdictions.

Figure 6.1 illustrates the timing and triggers for use of various public health measures.

Table 6.1: Public Health Measures Considered for Use during an Influenza Pandemic.

Measure	How it would be used	Limitations
<p>Isolating Cases</p> <p>Separating people who have influenza during the period of communicability (when they can pass the virus to others) in a place or under conditions designed to prevent transmission. The purpose of isolation would be to decrease the number of people exposed to the virus and slow the pandemic.</p> <p>Summary: Those who are ill should be separated from others.</p>	<p>Adults would be isolated for 5 days after onset of symptoms (7 days for young children) or until symptoms have resolved, whichever is longer. While isolated, the individual should practice good hand and respiratory hygiene (i.e., frequent, thorough hand hygiene; covering their mouth when coughing or sneezing) and stay at least 1 metre or arms-length away from others (i.e., social distancing).</p> <p>People could be isolated in a hospital or at home, depending on the severity of their illness and hospital capacity. Even when hospital isolation is not clinically indicated (i.e., the person is not sick enough to require hospital care), isolating people in hospital will likely result in more consistent, rigorous adherence to infection control practices.</p>	<p>The influenza virus has a short incubation period (1-3 days) and people who are infected can spread the virus up to 24 hours before they have symptoms. This will make it difficult to identify and isolate cases before they have already exposed others.</p> <p>Even with 100% compliance, not all cases will be identified. This reinforces the importance of educating the public and health care workers about how to protect themselves from the flu.</p>
<p>Quarantining Contacts</p> <p>Restricting otherwise healthy people who have had contact with someone with influenza from traveling or other activities until the incubation period is over. The purpose of quarantine restrictions would be to prevent the spread of influenza during the incubation period should the person develop influenza.</p> <p>Summary: Quarantine likely to be used in pandemic alert phases only.</p>	<p>Contacts of cases would be quarantined and monitored for symptoms of illness for 3 days after last exposure to the person with influenza, or for the duration of the virus's incubation period. For seasonal influenza, adults are infectious from the day before symptoms begin until approximately 5 days after symptoms start; young children and people who are immuno-compromised may be infectious for longer periods.</p> <p>During quarantine, the person should practice good hand and respiratory hygiene, and keep at least 1 metre away from others.</p>	<p>Tracing and quarantining contacts is labour and resource intensive. Quarantine would primarily be used during alert phases of a pandemic when there are few cases and adequate health unit resources to follow cases and their contacts.</p>
<p>Closing Schools</p> <p>Closing schools to reduce the large number of contacts that children have in schools and day care centres. In industrialized countries, the first wave of an epidemic primarily begins in school-aged children. Children shed more virus for a longer period of time than older people, so they are more efficient vectors for spreading influenza viruses. Although there is limited scientific evidence that school closures slow the spread of influenza, anecdotal reports indicate they can limit influenza outbreaks and mathematical modeling suggests that they can flatten the epidemic curve and reduce disease – particularly if schools are closed long enough early in the pandemic.</p> <p>Summary: School closures may be considered but the logistics are formidable.</p>	<p>Public health officials may recommend school closures prior to or during a pandemic, especially if the novel strain preferentially affects school-aged children or causes unusually severe illness in any age group.</p> <p>If public health authorities decide to close schools, they would do so early in the pandemic to have the greatest possible benefit from this measure. To determine whether school closures would be effective, public health authorities would consider the following:</p> <ul style="list-style-type: none"> • Are there contingency plans in place for: alternate methods of schooling (e.g., home teaching tools, internet learning) and alternate childcare supports? • What impact will the closure have on the workforce and the community's ability to maintain critical services? • Are school closures sustainable for long periods of time? • Could other measures be used to curtail transmission (e.g., limiting after-school activities and gatherings)? • Will the public be receptive? • Has there been ongoing dialogue with the community, especially parents? 	<p>There are a number of risks associated with this measure. If schools and day-cares are closed, children may gather in other settings which could limit the effect of school / day-care closures. This measure will also cause considerable societal disruption. Many parents – some of whom may work in critical services -- may not be able to work if they have to stay home to look after their children, and older children may congregate in other setting outside school. This will affect the community's ability to maintain a functional infrastructure.</p> <p>There may also be risks associated with not using this measure. For example:</p> <ul style="list-style-type: none"> • school boards may decide to close schools independently • parents may decide to keep children home even if there is no formal order.

Measure	How it would be used	Limitations
<p>Restricting Indoor Public Gatherings</p> <p>Restricting indoor public gatherings is one method of social distancing. The goal of social distancing would be to reduce or avoid contact with other people as much as possible and, thereby, reduce the risk of coming in contact with someone who has influenza. Social distancing will not stop the spread of influenza but it may slow it enough to make it easier to keep health and other critical services functioning during a pandemic.</p> <p>Summary: Social distancing will be promoted throughout a pandemic. Formal closing of events is unlikely; instead, there will be a focus on public education.</p>	<p>During an influenza pandemic, public health authorities may recommend measures designed to increase social distance, such as closing theaters, canceling sporting events or conferences, and limiting any large indoor public gathering.</p> <p>Public health authorities would use the following criteria to determine whether to restrict public gatherings:</p> <ul style="list-style-type: none"> • Will cancellation of the gathering or activity cause significant public disruption (e.g., closure of transit system)? • Are alternative services in place (e.g., transportation services)? • Will canceling the gathering or activity cause significant public panic? • Are cancellations feasible? • Is implementation sustainable? 	<p>Social distancing can be a useful control measure for diseases that are transmitted by people who are asymptomatic (i.e., are infected but have no symptoms) or mildly ill, as is the case with influenza. However, these measures will have significant impact on the community and workforce, and careful consideration should be given to their potential effectiveness, whether they can be implemented and enforced, and how to maintain critical supplies and infrastructure while limiting community interaction.</p>

For other public health measures not included in this section, see the Canadian Pandemic Influenza Plan, Annex M.

6.7 Supplementary Public Health Measures

Public health officials are responsible for other public health measures before, during and after a pandemic, such as:

- ongoing public education providing support and guidance to health care workers
- providing guidance to organizations and other service providers.

These measures are designed to help prepare the public and health care workers for an influenza pandemic, encourage a more coordinated health response, and promote personal, family, social and workplace activities that will minimize the spread of influenza and reduce the effects of a pandemic. By implementing these measures during the inter-pandemic and pandemic alert periods, public health officials can reduce some of the anxiety associated with a pandemic, increase knowledge and ensure better compliance with public health measures during a pandemic. Best practices should be simplified and incorporated into public

health programming (e.g., vaccine preventable disease programs, school health programs, communicable disease programs and health promotion programs).

Public Education

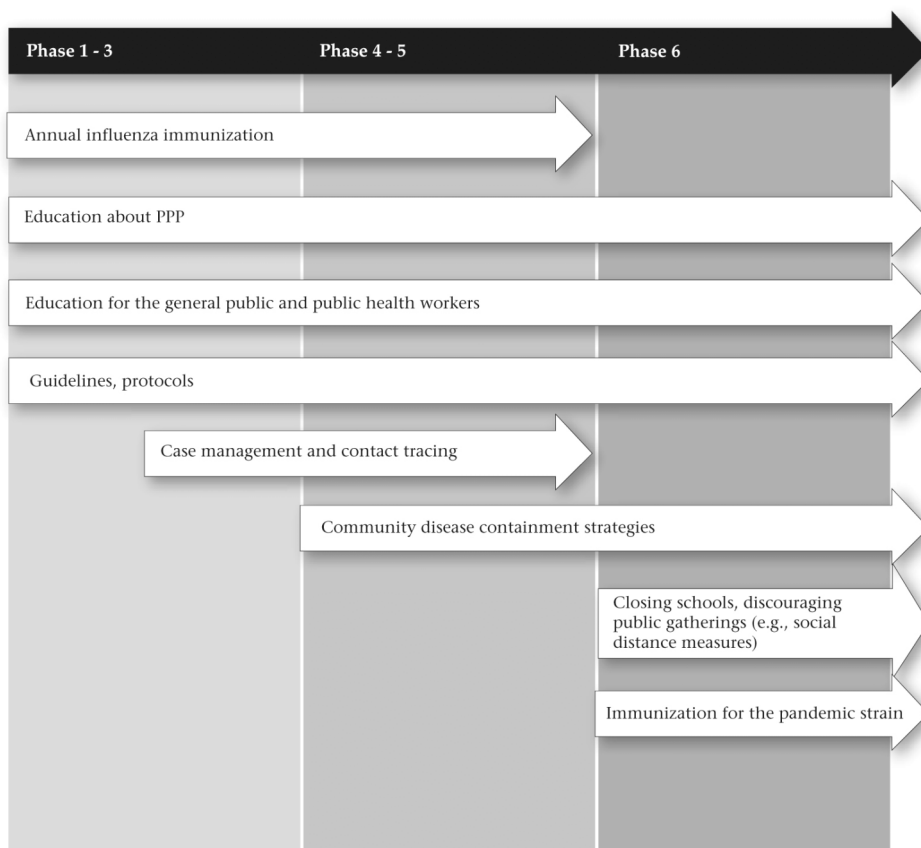
See Chapter 12, Communications.

Support and Guidance to Health Care Workers

Effective management of a pandemic requires close coordination of public health and clinical care activities. Clinical care is provided by a mix of health care workers, (e.g., doctors, nurses, paramedics, respiratory therapists) in many settings (e.g., primary care offices, ambulances, at home, hospitals, long-term care facilities). To provide support and guidance for health care workers in all settings and to encourage a coordinated response, public health officials will:

- provide ongoing professional education, including distributing guidelines and resources.

Figure 6.1: Timing/Use of Public Health Measures During a Pandemic



Note: not all of the public health measures listed below will necessarily be used during an influenza pandemic. The choice of measures will depend on the factors discussed in this chapter.

- promote good respiratory infection control practices in all health care settings by:
 - reinforcing the importance of hand hygiene
 - encouraging health care workers to implement guidelines for febrile respiratory illnesses and infection control practices
- work with health care organizations to develop pandemic preparedness plans
- work with health care organizations to identify appropriate assessment and treatment sites, and to identify strategies for assessing and treating influenza patients

6.8 Next Steps

Ontario will continue to assess the potential efficacy of different public measures in the event of an influenza pandemic. To help health units implement public health measures consistently and the public comply with these measures, Ontario will develop guidelines for the types of measures that may be used during an influenza pandemic, such as:

- case management and contact tracing
- home isolation
- school closures
- restricting public gatherings
- travel advice.