



**Section Four**

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**RESPONSE**



## 4.1 Introduction

*I*n the previous sections of this Plan the conceptual and historical basis for pandemic planning were presented, the over-arching principles were highlighted, and preparedness activities corresponding to each component of the response were addressed in terms of current status, including outstanding issues, planning principles and assumptions.

In this, the Response Section of the Canadian Pandemic Influenza Plan, activities corresponding to each component (i.e., surveillance, vaccine programs, the use of antivirals, health services, emergency services, public health measures and communications), have been organized by Pandemic Phase. The tables presented include the key actions necessary to facilitate a comprehensive and consistent response to an influenza pandemic. It is recognized, however, that additional details and modifications will need to be added when the pandemic unfolds. For example, since it cannot determine in advance of the appearance of a novel virus when an effective vaccine might be available, all activities listed under the “Vaccine Programs” component may occur at different phases than as currently listed in this document.

## 4.2 Phased Approach

*T*he use of the WHO Pandemic Phases is helpful for planning purposes and to succinctly describe “the big picture” as the pandemic unfolds. For responders at the time of a pandemic, the focus will be on more localized “triggers” which may or may not correspond to the global situation. Furthermore within Canada there may be a period of time in Phase 2 where outbreaks have occurred in multiple but discrete locations as opposed to multiple nation-wide outbreaks. Therefore planners at all levels in the health and emergency service sectors, from municipal to federal, are encouraged to think about what “phase” their jurisdiction is in order to operationalize an appropriate response and also to recognize that their plans will be affected by the epidemiology of the pandemic nationally and globally. For example, the use of antiviral drugs may not be an option if global supplies are exhausted by other countries affected early in the pandemic.

Other unknown factors like the age distribution and severity of the illness caused by the pandemic strain and efficiency of transmission from human to human will also affect the response measures. This plan assumes the worst-case scenario and therefore may need to be significantly modified if the epidemiology does not support aggressive measures.

## 4.3 Federal Emergency Response

*P*lanning at the federal level has resulted in the development of a generic emergency management structure. This structure, which indicates roles and responsibilities of specific groups in response to an emergency, is included in Annex L. It is envisioned that for pandemic influenza the PIC will provide technical advice, akin to the “Technical Advisory Group” (TAG) in the management structure. However, unlike the TAG, in the case of an influenza pandemic PIC would report to the Deputy Ministers of Health, not the Emergency Manager, as agreed upon in the current Working Agreement (see Introduction Section of the Plan for more detail on the role of PIC). The specific composition, roles and responsibilities of the “Advance Planning Group” still needs to be determined, however, members that can provide technical advice specific to pandemic influenza will be essential.

Also included in Annex L is a flow diagram that aligns response activities with the pandemic phases. This tool provides a visual overview of the response from a federal perspective.

The Canadian Pandemic Influenza Plan is a disease specific plan. It is the most specific, and therefore technical, type of emergency plan being developed as part of much larger initiative to create plans to deal with all types of national emergencies. By creating a set of plans that increase in specificity, that is, range from generic emergency response issues to more specific threats such as infectious diseases and finally to detailed disease-specific threats, it is anticipated that a set of “nested” or linked documents will be available that will be comprehensive enough and flexible enough to cover off any type of national emergency.

## 4.4 Experience to Date

*P*rior to March 2003, when Severe Acute Respiratory Syndrome (SARS) arrived in Canada, the vast majority of health care professionals and certainly the general public had limited personal experience with large outbreaks of serious respiratory infections. The SARS outbreak caused an exponential increase in the knowledge and experience with this type of health threat. Awareness of SARS, the severity of the illness, method of spread and implemented control measures penetrated Canadian society from coast to coast regardless of the actual case count in each province or territory. A previously largely unrecognized vulnerability was exposed in the headlines and on television as images of masked faces dominated the media.

Aware of the vulnerability, those involved in disease surveillance and pandemic planning saw this as a type of “dress-rehearsal” for pandemic influenza, recognizing that many of the response issues would be the same but on a much larger scale for influenza. Despite the high cost in terms of morbidity and mortality and economic losses due to SARS, pandemic influenza has the potential to be much worse. The response to pandemic influenza would need to be sustained for a longer period of time and would likely include a mass immunization effort on top of the acute care demands of caring for patients.

The SARS experience reinforced the need for preparedness activities as cited in the Preparedness Section of this plan. In particular the need for resources and surge capacity within the health system to deal with public health emergencies was highlighted. Advanced

preparation and removal any potential barriers in communication systems, data management technology, acquisition and mobilization of supplemental health care workers and settings, are just a few of the other needs identified in the Plan and validated by the SARS experience.

It is with this experience behind us that those involved in drafting this Plan have identified the key action items listed in this section of the Plan.

## 4.5 Key Response Activities by Pandemic Phase

The key response activities listed below have been organized by the component of the response that they relate to and the phase at which the action should take place. As previously discussed, there needs to be flexibility in the response since the availability of resources, such as vaccine or antiviral drugs, may necessitate deviation from the proposed sequence of response activities. It is expected that many of the response activities within each phase will need to occur simultaneously. The action items have not been prioritized within each phase.

The tables also include “Response level” designations (see Legend below) which have been provided for guidance only. It is likely that many activities, especially those currently designated as a “federal” level response, will be carried out by PIC or FPT-PIC sub-committees. Other non-governmental responders (e.g., Salvation Army, Red Cross) will likely be involved in the response but have not been specifically identified in this plan since it is anticipated that their respective roles/activities would be developed in conjunction with public health authorities.

**Legend:**  
F = Federal      P/T = Province/Territory      L = Local

CPHLN = Canadian Public Health Laboratory Network  
HPFB = Health Products and Food Branch  
NACI = National Advisory Committee on Immunization  
PPHB = Population and Public Health Branch  
PWGSC = Public Works and Government Services Canada  
CIHR = Canadian Institutes for Health Research

Phase 0, Level 1 Novel virus identification in a human			
Component	Focus	Actions	Response Level
Surveillance	Establish/heighten existing surveillance systems Information sharing	<ul style="list-style-type: none"> <li>› Collect and compile epidemiological data from involved countries</li> <li>› Alert those currently involved in influenza surveillance (e.g., PIC, CCMOH, CPHLN, FluWatch) <ul style="list-style-type: none"> <li>→ Messages from Health Canada to include information only</li> <li>→ Recommendations to be included by P/T or L level or, after consensus achieved, by PIC</li> <li>→ All correspondence to include list of recipients</li> </ul> </li> <li>› Review and confirm that all inter-pandemic (L0,P0) surveillance activities (via FluWatch) are operating optimally</li> </ul>	<p>F (Lead: PPHB)</p> <p>F, P/T, L (Lead: PPHB)</p> <p>F,P/T,L</p>
Vaccine Programs	Mitigation of potential complications of influenza through use of current vaccine resources	<ul style="list-style-type: none"> <li>› Promote pneumococcal vaccination of NACI recommended “high-risk” groups (to reduce the incidence and severity of secondary bacterial pneumonia)</li> </ul>	P/T, L
Antivirals	Information gathering	<ul style="list-style-type: none"> <li>› Assess/Re-assess availability of antiviral medications</li> </ul>	F (Lead: PPHB)
Health Services	Evaluation of laboratory capacity Information gathering	<ul style="list-style-type: none"> <li>› Ensuring at least one laboratory within the P/T has the capability to isolate and subtype influenza virus and if not establish anticipatory “back-up” process</li> <li>› Ensure that estimates of health care personnel capacity are current (i.e., estimated number of HCW by type (physician, nurses, respiratory therapists, radiology technicians, etc), and by work setting (hospital, community, LTCF, paramedical); estimated number of non-active HCW (retired) <ul style="list-style-type: none"> <li>→ If possible identify HCW by type of work that they usually do</li> </ul> </li> </ul>	<p>P/T (Lead: CPHLN)</p> <p>F, P/T,L</p>
Emergency Services	Information sharing	<ul style="list-style-type: none"> <li>› Notification of emergency service managers of report of novel virus and current monitoring activities) <ul style="list-style-type: none"> <li>→ Would include Emergency Health Services and Emergency Social Services managers at the P/T level</li> </ul> </li> </ul>	<p>F, P/T (Lead: Each P/T for their respective managers, PPHB for federal/national managers)</p>

Phase 0, Level 1 Novel virus identification in a human			
Component	Focus	Actions	Response Level
Public Health Measures	Information preparation	<ul style="list-style-type: none"> <li>› Review of existing public materials on influenza and influenza pandemics</li> <li>› Review/Update educational materials on all aspects of influenza               <ul style="list-style-type: none"> <li>→ For health care professionals, other special audiences and the general public</li> </ul> </li> </ul>	<p>F,P/T,L</p> <p>F,P/T,L</p>
Communications	Communication of findings with partners and stakeholders	› Notification of the Health Emergency Communications Network (HECN), as well as communications staff with international and non-governmental organizations	F ( <i>Lead: Office of Crisis Communications, Health Canada</i> )
	Evaluation of emergency/rapid communication capacity	› Review existing communication systems (e.g., emergency contact lists, toll free capacity, dedicated Internet site capacity, information sharing systems)	F,P/T,L
	Information collection and dissemination	<ul style="list-style-type: none"> <li>› Work with partners to improve the local, provincial/territorial and federal informatics infrastructure to support the potential information campaign (hardware and software)</li> <li>› Ensure names/numbers/emails are up-to-date and document sharing is possible</li> </ul>	<p>F,P/T,L (<i>Lead: Office of Crisis Communications, Health Canada</i>)</p> <p>F,P/T,L</p>

Phase 0, Level 2 Human infection confirmed (i.e., 2 or more human cases)			
Component	Focus	Actions	Response Level
Surveillance	Monitoring of evolving situation Dissemination of data	<ul style="list-style-type: none"> <li>› Ongoing collection and compilation of epidemiological data from involved country (s)</li> <li>› Review/Revise standard reports for dissemination of epidemiological data               <ul style="list-style-type: none"> <li>→ Consider common strategy for the communication of epidemiological data</li> </ul> </li> <li>› Dissemination of epidemiological data</li> </ul>	<p>F (Lead: PPHB)</p> <p>F (Lead: PPHB)</p> <p>F,P/T (Lead: PIC)</p> <p>F,P/T</p>
Vaccine Programs	Inventory and resource assessment Preparation (Legal, Educational etc.)	<ul style="list-style-type: none"> <li>› Conduct initial availability assessment of supplies (e.g., syringes, adrenalin, sharps disposal units), equipment and locations potentially required for a vaccine-based response (i.e., mass clinics)</li> <li>› Develop list of currently qualified vaccinators and sources of potential vaccinators</li> <li>› Review educational materials re. Administration of vaccines and adapt/update as needed</li> <li>› Ensure that any legal issues that may impede rollout of a mass immunization program are addressed</li> <li>› Collaborate on international vaccine development initiatives</li> <li>› Ensure domestic vaccine manufactures are alerted and participating in international efforts</li> </ul>	<p>F,P/T,L</p> <p>F,P/T,L</p> <p>F,P/T,L</p> <p>P/T,L</p> <p>F (Lead: PPHB with vaccine manufacturers)</p> <p>F (Lead: PPHB)</p>
Antivirals	Antiviral strategy	<ul style="list-style-type: none"> <li>› Perform an inventory assessment (drugs, formulations, and expiry dates)</li> <li>› Determine the appropriate use of existing supplies</li> </ul>	<p>F, P/T (Lead: PPHB)</p>



**Phase 0, Level 2 Human infection confirmed (i.e., 2 or more human cases)**

Component	Focus	Actions	Response Level
Health Services	Guideline review/revision Preparation (Legal, Educational etc.)	<ul style="list-style-type: none"> <li>› Review protocols/guidelines for prioritization of laboratory services during times of high service demand and staff and supply shortages</li> <li>› Ensure that any legal/insurance issues that may impede recruitment and use of active and retired health care workers and volunteers have been addressed with P/T licensing bodies</li> <li>› Prepare/update communications defining the extent of care that health care workers/volunteers can perform according to P/T laws and union agreements</li> </ul>	<p>F,P/T (Lead: CPHLN)</p> <p>P/T</p> <p>P/T</p>
Emergency Services	Education	<ul style="list-style-type: none"> <li>› Review results of any previously conducted simulation exercises and consider what (if any) significant changes have occurred since the exercise was conducted</li> <li>› Educate new staff about pandemic influenza</li> <li>› Acquire (when available) and disseminate any laboratory testing materials (i.e., reagents)</li> </ul>	<p>F,P/T,L</p> <p>F,P/T,L</p> <p>F (Lead: PPHB)</p>
Public Health Measures	Resource assessment and preparation	<ul style="list-style-type: none"> <li>› Review staffing requirements for implementation of a pandemic response including mass immunization clinics, control measures, and public education</li> <li>› Consider delaying introduction of public health programs that may not be adequately resourced if situation evolves into a pandemic or other alternatives such as contracting out</li> <li>› Preparation of educational material for public inquiry phone-line staff</li> </ul>	<p>F,P/T,L</p> <p>P/T,L</p> <p>F,P/T,L</p>

Phase 0, Level 2 Human infection confirmed (i.e., 2 or more human cases)			
Component	Focus	Actions	Response Level
Communications	Ongoing communication with partners and stakeholders	<ul style="list-style-type: none"> <li>› Activate inter- and intra-governmental response through national teleconferences (including the HECN, and the NGO health emergency communications group)</li> <li>› Refine/modify F/P/T communication plans as needed and ensure consistency with the emergency preparedness and response framework to be established by the Special Task Force to the Conference of F/P/T Ministers of Health</li> <li>› Ensure that rapid 24 hour translation capacity is in place and that all responders know how to access this resource</li> <li>› Ensure that web-site production staff are alerted to the potential need for development of sites and linkages</li> <li>› Identify gaps in the existing systems that will require additional resources (e.g., funding for toll free lines, dedicated press conference facilities and HR support for comm. staff)</li> <li>› Stage background technical briefings for media, external experts and other stakeholders</li> </ul>	<p>F (Lead: Office of Crisis Communications, Health Canada)</p> <p>FPT (Lead: Office of Crisis Communications, Health Canada)</p> <p>F (Lead: PPHB &amp;/or Co-ordination and Operations Group H.C.)</p> <p>F,P/T</p> <p>F,P/T,L</p> <p>F,P/T</p>

Phase 0, Level 3 Human to human transmission confirmed			
Component	Focus	Actions	Response Level
Surveillance	Establish / Heighten enhanced surveillance systems	<ul style="list-style-type: none"> <li>› Collect/compile/distribute epidemiologic data from involved country (s)</li> </ul>	F ( <i>Lead: PPHB</i> )
	Border issues	<ul style="list-style-type: none"> <li>› Establish surveillance or increase current surveillance activities</li> </ul>	F,P/T,L
Surveillance	Plan for streamlined data collection	<ul style="list-style-type: none"> <li>› Develop any new/updated case definitions</li> </ul>	F,P/T ( <i>Lead: PIC</i> )
		<ul style="list-style-type: none"> <li>› Implement border-based surveillance (depending on origin of cases) <ul style="list-style-type: none"> <li>→ Including notifications to ill and well travellers</li> </ul> </li> </ul>	F, P/T ( <i>Lead: PPHB</i> )
		<ul style="list-style-type: none"> <li>› Consider implementation of emergency room surveillance (especially in areas known to receive a lot of travelers from affected areas)</li> </ul>	P/T,L
		<ul style="list-style-type: none"> <li>› Implement real-time influenza mortality surveillance</li> </ul>	F,P/T,L
		<ul style="list-style-type: none"> <li>› Determine what information needs to be collected on cases and screening measures and how this will be done (e.g., data collection forms, database issues, data flow)</li> </ul>	F,P/T,L
Vaccine Programs	Planning for vaccine distribution	<ul style="list-style-type: none"> <li>› Ongoing involvement in vaccine development initiatives</li> </ul>	F ( <i>Lead: PPHB with vaccine manufacturers</i> )
	Mass campaign infrastructure	<ul style="list-style-type: none"> <li>› Review and modify if necessary, contingency plans for storage, distribution and administration of influenza vaccine through public health and other providers to nationally defined high-priority target groups</li> </ul>	F,P/T ( <i>Lead: PIC</i> )
		<ul style="list-style-type: none"> <li>› Ensure staff are trained and infrastructure is in place to record immunizations, including requirements for a two-dose immunization program (i.e., re-call and record-keeping procedures)</li> </ul>	P/T,L
		<ul style="list-style-type: none"> <li>› Review estimates of the number of people within the P/T who fall within each of the priority groups for vaccination (i.e., high-risk groups, health care workers, emergency service workers, specific age groups) and access strategies</li> </ul>	F,P/T,L

Phase 0, Level 3 Human to human transmission confirmed			
Component	Focus	Actions	Response Level
Vaccine Programs (continued)		<ul style="list-style-type: none"> <li>› Consider promotion of current (non-novel virus) influenza vaccination (to decrease the likelihood of re-assortment between the currently circulating strains and the novel strain)</li> </ul>	F,P/T (Lead: PIC/NACI)
Antivirals	<p>Supply of antiviral drugs</p> <p>Planning for antiviral drug distribution and tracking</p>	<ul style="list-style-type: none"> <li>› Perform an inventory assessment of available supplies</li> <li>› Review/revise recommended priority groups and plans for antiviral use based on available epidemiological data</li> <li>› Review and modify, if necessary, contingency plans for the availability, distribution and administration of antiviral drugs through public health and other providers to nationally defined high-priority target groups</li> <li>› Review estimates of the number of people within the P/T who fall within each of the priority groups for receipt of antiviral drugs (i.e., high risk groups, health care workers, emergency service workers, specific age groups) and access strategies</li> <li>› Ensure staff are trained and infrastructure is in place to track who is receiving the drugs for the purpose of treatment and prophylaxis</li> </ul>	<p>F,P/T (Lead: PPHB)</p> <p>F,P/T (Lead: PIC)</p> <p>F,P/T (Lead: PIC)</p> <p>F,P/T,L</p> <p>P/T,L</p>
Health Services	<p>Management of suspect cases detected through enhanced surveillance</p> <p>Preparation for increased demand on acute care sites</p> <p>Preparation for providing supportive care in LTCFs</p>	<ul style="list-style-type: none"> <li>› Implement/Review infection control precautions for case management</li> <li>› Anticipate and plan to mobilize human and financial resources</li> <li>› Review/ update local and P/T data on the number &amp; type of health care facilities, and capacity: hospital beds, ICU beds, swing beds, LTC beds with enhanced level of care, emergency department, ventilatory capacity, oxygen supply, antibiotic supply</li> <li>› Review national recommendations for clinical management of cases and modify if necessary</li> </ul>	<p>F,P/T,L (Lead: PPHB)</p> <p>F,P/T,L</p> <p>P/T,L</p> <p>F,P/T (Lead: PIC)</p>

Phase 0, Level 3 Human to human transmission confirmed			
Component	Focus	Actions	Response Level
Health Services <i>(continued)</i>		<ul style="list-style-type: none"> <li>› Conduct availability assessment of medications, supplies and equipment potentially needed for the response</li> <li>› Review/modify/distribute P/T guidelines (or federal guidelines) for prioritizing health care needs and service delivery, accessing resources and implementing infection control measures during a pandemic</li> <li>› Disseminate information on medical supply stockpiles and potential need for need and sources of additional supplies</li> <li>› Review/modify/distribute detailed regional and facility-level plans for providing health services during a pandemic, including the type of care to be delivered at different health care settings and the triage across sites; human resource, material and financial resource needs, and directions regarding prioritizing patient care</li> <li>› Disseminate strategy for collection/monitoring of data on health care service use/demands</li> <li>› Disseminate strategy for tracking of recovered, presumably immune, cases</li> </ul>	<p>P/T,L</p> <p>F,P/T,L</p> <p>F,P/T (Lead: PPHB)</p> <p>P/T,L</p> <p>P/T,L</p> <p>P/T,L</p>
Emergency Services	Resource assessment and classification	<ul style="list-style-type: none"> <li>› Ensure that estimates of numbers of emergency services workers including police, fire, correctional, military, funeral services, utilities, telecommunications and F/P/T/L leaders (political leaders, managers of response teams) essential to pandemic response are current and that lists are available for dissemination</li> <li>› Ensure that list of essential community services (and corresponding personnel) whose absence would pose a serious threat to public safety or would significantly interfere with the ongoing response to the pandemic, is up to date and available for distribution</li> </ul>	<p>F,P/T,L</p> <p>L</p>

Phase 0, Level 3 Human to human transmission confirmed			
Component	Focus	Actions	Response Level
Emergency Services <i>(continued)</i>		<ul style="list-style-type: none"> <li>› Alert military personnel and voluntary organizations which would assist during a pandemic</li> <li>› Consider international travel advisories</li> </ul>	<p>F,P/T (Lead: PPHB)</p> <p>F (Lead: PPHB)</p>
Public Health Measures	Preparation of educational materials and public health resources	<ul style="list-style-type: none"> <li>› Review national recommendations for public health management of cases and other control measures and modify if necessary</li> <li>› Ensure adequate resources are available to implement recommended public health measures including isolation of cases</li> <li>› Prepare/revise educational and guidance materials for public health partners (specifically provincial/territorial and local health departments who will be on the front lines with respect to prevention and control measures), the general public; some documents for the public should emphasize infection control in homes, schools, places of work</li> </ul>	<p>F,P/T (Lead: PIC)</p> <p>P/T,L</p> <p>F,P/T,L</p>
Communications	Ongoing timely communication with stakeholders	<ul style="list-style-type: none"> <li>› Increased engagement with international partners</li> <li>› Establish ongoing communications with media, partners and public</li> <li>› Activate Emergency Communications processes (as set out in the Emergency Communications Plans within each implicated organizations)</li> <li>› Establish 1) communications lead 2) strategic considerations 3) draft initial response</li> <li>› Recruit/supply additional resources to fulfill previously identified gaps in the existing systems</li> <li>› Implement plans and mechanisms for communications with all relevant audiences, including media, key opinion leaders, stakeholders, employees</li> </ul>	<p>F (Lead: Office of Crisis Communication H.C)</p> <p>F,P/T,L</p> <p>F</p> <p>F,P/T</p> <p>F,P/T,L</p> <p>F,P/T</p>

Phase 1 Pandemic confirmed			
Component	Focus	Actions	Response Level
Surveillance	Timely collection, compilation and dissemination of epidemiological and clinical data	<ul style="list-style-type: none"> <li>› Collect/compile/distribute epidemiologic data from involved country (s) (including Canada)</li> <li>› Define clinical spectrum of disease (based on feedback from local level experts), revise case definitions as necessary</li> <li>› Monitor surveillance activities; compile and report outcomes</li> <li>› Distribute data collection forms and database transmission instructions/protocols</li> <li>› Review protocols for special studies and establish dedicated teams to activate the studies in collaboration with PPHB</li> </ul>	<p>F (Lead: PPHB)</p> <p>F,P/T,L</p> <p>F,P/T (Lead: PPHB)</p> <p>F,P/T (Lead: PPHB)</p> <p>F,P/T,L (Lead: possibly PPHB, PIC, and/or CIHR)</p>
Vaccine Programs	Vaccine development Preparation/Implementation of mass immunization clinics	<ul style="list-style-type: none"> <li>› Ongoing involvement in vaccine development/testing/production initiatives</li> <li>› Vaccine purchase</li> <li>› Review/revise recommended priority groups for immunization based on available epidemiologic data</li> <li>› Modify/refine of nationally defined priority target groups depending on local circumstances</li> <li>› Modify/refine other aspect of the federal guidelines, as needed for P/T and local application</li> <li>› Review and modify if necessary, plans for vaccine security (i.e., during, transport, storage and clinic administration)</li> </ul> <p><b>When vaccine is available...</b></p> <ul style="list-style-type: none"> <li>› Activate immunization clinic capability</li> <li>› Implement streamlined VAAE surveillance, in collaboration with PPHB</li> <li>› Arrange for direct shipping of vaccine to health districts</li> </ul>	<p>F (Lead: PPHB, HPFB, manufacturers)</p> <p>F,P/T (Lead: PPHB)</p> <p>F,P/T (Lead: PIC)</p> <p>P/T,L</p> <p>P/T,L</p> <p>P/T,L</p> <p>P/T,L</p> <p>F,P/T,L (Lead : PPHB)</p> <p>F (Lead: PWGSC)</p>

Phase 1 Pandemic confirmed			
Component	Focus	Actions	Response Level
Vaccine Programs (continued)		<ul style="list-style-type: none"> <li>› Communicate with bordering jurisdictions to facilitate awareness of the vaccine distribution plan and coordination of efforts as much as possible</li> </ul>	F,P/T,L
Antivirals	Strategic and controlled use of antivirals	<ul style="list-style-type: none"> <li>› Review/revise recommendations on antiviral use based on available epidemiologic data</li> <li>› Based on local epidemiology and available supplies, consider administering antiviral prophylaxis and treatment to priority groups</li> <li>› Communicate with bordering jurisdictions to facilitate awareness of any antiviral distribution plans</li> <li>› If antivirals are being used, implement adverse drug reaction reporting system</li> </ul>	<p>F,P/T (Lead :PIC)</p> <p>F,P/T,L</p> <p>F,P/T,L</p> <p>F,P/T (Lead: HPFB)</p>
Health Services	Use of optimal infection control practices Management of increased demand on health care system	<ul style="list-style-type: none"> <li>› Evaluate infection control recommendations/practices and revise as necessary</li> <li>› Implement protocols/guidelines for prioritization of laboratory services during times of high service demand and staff and supply shortages</li> <li>› Review/implement mechanisms for coordinating patient transport and tracking/managing beds e.g., central bed registries, call centre and centralized ambulance dispatch</li> <li>› Access sources of additional HCWs and volunteers i.e., Emergency Measures Organizations and NGOs (Red Cross, St. John ambulance)</li> <li>› Acquire extra supplies needed to provide medical care in non-traditional sites and open non-traditional sites as needed</li> <li>› Co-ordinate clinical care and health services activities with bordering jurisdictions to avoid migration to centres of perceived enhanced services</li> <li>› Implement strategy for tracking of recovered, presumably immune, cases</li> </ul>	<p>F,P/T (Lead: PPHB)</p> <p>P/T,L</p> <p>P/T,L</p> <p>F,P/T,L (Lead: PPHB)</p> <p>P/T,L</p> <p>P/T,L</p>



Phase 1 Pandemic confirmed			
Component	Focus	Actions	Response Level
Emergency Services	Mitigation of potential health care and societal disruption due to pandemic activity/ public fear of influenza	<ul style="list-style-type: none"> <li>› Open emergency operation centres</li> <li>› Activate plans to provide food, medical and other essential life-support needs for persons confined to their homes by choice or by direction from P/T/L health officials</li> <li>› Assist with preparation and operation of alternate care sites, and other “over-flow” facilities</li> <li>› Consider travel advisories within Canada</li> </ul>	<p>F,P/T</p> <p>F,P/T P/T,L</p> <p>F,P/T,L</p> <p>F,P/T (Lead: CCMOH)</p>
Public Health Measures	Implementation of public health response	<ul style="list-style-type: none"> <li>› Evaluate interventions and revise recommendations as necessary</li> <li>› Integrate national recommendations for isolation into practice at the local level</li> <li>› Implement use of mandatory isolation orders if necessary</li> <li>› Review/update/disseminate national recommendations regarding containment strategies (i.e., cancellation of public gatherings, school closures)</li> <li>› Monitoring/tracking of compliance with containment recommendations</li> <li>› Participate in strategy for tracking recovered, presumably immune, cases</li> <li>› Development/updating of educational materials for the public and health care providers as the pandemic evolves</li> </ul>	<p>F,P/T,L</p> <p>P/T,L</p> <p>F,P/T</p> <p>P/T,L</p> <p>F,P/T,L</p> <p>P/T,L</p> <p>F,P/T,L (Lead: PIC)</p>

Phase 1		Pandemic confirmed	
Component	Focus	Actions	Response Level
Communications	Ongoing communication with stakeholders and public	<ul style="list-style-type: none"> <li>› Institute daily conference calls of the HECN, ensure it is integrated with PIC meetings</li> <li>› Ongoing communication with global partners</li> <li>› Ongoing communications with media, partners and public</li> <li>› Establishment of joint website/linkages</li> <li>› Launch multi-media campaign targeting specific target groups including the general public, health care workers and local community support networks</li> <li>› Stage joint media and stakeholder briefings with representatives of Health Canada, relevant P/T officials, CMOH rep, etc.</li> <li>› Updating of public resources</li> </ul>	<p>F (<i>Lead: Office for Crisis Communications, HC</i>)</p> <p>F</p> <p>F,P/T,L</p> <p>F,P/T,L</p> <p>F (<i>Lead: Office for Crisis Communications, HC</i>)</p> <p>F,P/T,L (<i>Lead: Office for Crisis Communications, HC</i>)</p> <p>F,P/T,L</p>

Phase 2 Outbreaks in multiple geographic areas (within Canada)			
Component	Focus	Actions	Response Level
Surveillance	Provision of up-to-date epidemiological data on evolving pandemic	<ul style="list-style-type: none"> <li>› Collect/compile/distribute epidemiologic data from involved country (s) and jurisdictions within Canada</li> <li>› Revise surveillance case definitions as necessary</li> <li>› Monitor surveillance activities; compile and report outcomes</li> <li>› Monitor and modify (if necessary) data collection/transmission processes/protocols</li> <li>› Monitor and report on progress of implemented special studies</li> </ul>	<p>F (Lead: PPHB)</p> <p>F,P/T (Lead: PIC)</p> <p>F,P/T (Lead: PPHB)</p> <p>F,P/T,L</p> <p>F,P/T,L (Lead: PPHB and/or CIHR)</p>
Vaccine Programs	Vaccine Development Preparation / Implementation of mass immunization clinics	<ul style="list-style-type: none"> <li>› Ongoing involvement in vaccine development/testing/production initiatives</li> </ul> <p><b>If vaccine is available... (see Phase 1 above)</b></p> <ul style="list-style-type: none"> <li>› Collect and compile reports of total people immunized with one and/or two doses</li> <li>› Ongoing VAAE surveillance</li> <li>› Monitoring of vaccine supply, demand, distribution and uptake</li> <li>› Recruitment of trained immunization staff from unaffected jurisdictions to ease demand in affected areas</li> </ul>	<p>F (Lead: PPHB, HPFB, manufacturers)</p> <p>F,P/T,L</p> <p>F,P/T,L</p> <p>F,P/T</p> <p>F,P/T</p>
Antivirals	Strategic use of antiviral drugs	<ul style="list-style-type: none"> <li>› Ongoing consideration of antiviral use based on priority groups, available supplies and local epidemiology</li> <li>› Monitoring of antiviral availability, demand, distribution and uptake</li> <li>› Monitoring for antiviral resistance</li> <li>› Ongoing monitoring for adverse drug reactions</li> </ul>	<p>F,P/T,L</p> <p>F,P/T (Lead: HPFB)</p> <p>F,P/T,L</p> <p>F,P/T,L</p>

Phase 2 Outbreaks in multiple geographic areas (within Canada)			
Component	Focus	Actions	Response Level
Health Services	Management of increased demand on health care system	<ul style="list-style-type: none"> <li>› Consider prioritization of laboratory services across different jurisdictions in order to accommodate high-service demands and staff and supply shortages</li> <li>› Open additional alternative sites for medical care as required</li> <li>› Monitor capacity of mortuary/burial services, as well as need for social and psychologic services for families of victims, and implement/establish alternative sites for provision of services as necessary</li> <li>› Track national stocks of medications as well as necessary medical equipment and supplies, including ventilators, oxygen, etc. Consider strategies to mitigate shortfalls</li> </ul>	<p>P/T,L</p> <p>F,P/T,L</p> <p>P/T,L</p> <p>F,P/T,L (Lead: PPHB)</p>
Emergency Services	Optimal use of available emergency resources	<ul style="list-style-type: none"> <li>› Determine if international travel advisories are sufficient / still warranted</li> <li>› Declare a P/T or National state of emergency (if necessary)</li> <li>› Evaluate need for use of national stockpile system and distribute supplies as needed</li> <li>› Evaluate need for military assistance with preparation and operation of alternate care sites, and other “over-flow” facilities</li> </ul>	<p>F (Lead: PPHB)</p> <p>F,P/T</p> <p>F (Lead: PPHB)</p> <p>F (Lead: PPHB)</p>
Public Health Measures	Optimization of the public health response	<ul style="list-style-type: none"> <li>› Ongoing evaluation of interventions and revision of recommendations as necessary</li> <li>› Monitor effectiveness of isolation recommendations and other control measures</li> <li>› Review/update/disseminate national recommendations regarding containment strategies (i.e., cancellation of public gatherings, school closures)</li> <li>› Monitoring/tracking of compliance with containment recommendations</li> <li>› Sharing of educational and other resources across jurisdictions</li> </ul>	<p>F,P/T (Lead: PIC)</p> <p>P/T,L</p> <p>F,P/T (Lead: PIC)</p> <p>P/T,L</p> <p>F,P/T,L</p>

Phase 2 Outbreaks in multiple geographic areas (within Canada)			
Component	Focus	Actions	Response Level
Public Health Measures <i>(continued)</i>		<ul style="list-style-type: none"> <li>› Recruitment of trained public health</li> <li>Recruitment of trained immunization staff from unaffected jurisdictions to ease demand in affected areas</li> <li>staff from unaffected jurisdictions to ease demand in affected areas</li> </ul>	F,P/T,L
Communications	Ongoing timely communication with stakeholders and public Evaluation of adopted communication strategy	<ul style="list-style-type: none"> <li>› Ongoing communication with HECN, international organizations and other health partners including NGOs</li> <li>› Ongoing communications with media, partners and public</li> <li>› Training of additional communication leads to allow for staff rotation</li> <li>› Evaluation of implemented communication strategy</li> <li>› Updating of public resources</li> <li>› Ensure that all audiences, including media, key opinion leaders, stakeholders, employees are satisfied with the level of communication</li> <li>› Daily joint briefings of media involving representatives of the implicated organizations</li> </ul>	F ( <i>Lead: Office of Crisis Communications</i> )  F,P/T,L  F,P/T,L  F,P/T,L  F,P/T,L  F,P/T,L  F,P/T

Phase 3 End of first wave			
Component	Focus	Actions	Response Level
Surveillance	Review / evaluation of data and surveillance strategy Ongoing surveillance (especially for un-linked cases)	<ul style="list-style-type: none"> <li>› Estimate burden of disease during outbreak period</li> <li>› Review/modify case definition</li> <li>› Determine ongoing surveillance needs for both documentation of end of first wave and detection of any new cases/outbreaks</li> <li>› Evaluate active surveillance systems</li> </ul>	<p>F,P/T</p> <p>F,P/T</p> <p>F,P/T</p> <p>F,P/T</p>
Vaccine Programs	Vaccine coverage, efficacy and safety	<ul style="list-style-type: none"> <li>› Ongoing involvement in vaccine development/testing/production initiatives</li> </ul> <p><b>If vaccine was not available during earlier phases see Phase 1 &amp; 2 above.</b></p> <p><b>If vaccine was available and administered in earlier phases...</b></p> <ul style="list-style-type: none"> <li>› Expansion of vaccine programs to cover population not yet immunized</li> <li>› Summarize and report coverage data (with one and/or two doses) and VAAE data</li> <li>› Examine vaccine efficacy</li> <li>› Ongoing VAAE surveillance</li> <li>› Restocking of supplies and resumption of routine programs</li> <li>› Review/revise guideline and/or protocols used during the mass campaigns</li> </ul>	<p>F (Lead: PPHB, HPFB, manufacturers?)</p> <p>P/T,L</p> <p>F,P/T</p> <p>F (Lead: PPHB)</p> <p>F,P/T,L</p> <p>P/T,L</p> <p>F,P/T,L</p>
Antivirals	Evaluation of antiviral use (if applicable)	<ul style="list-style-type: none"> <li>› Perform inventory assessment and ongoing monitoring of antiviral availability</li> <li>› Evaluate effectiveness of strategic antiviral use (in Canada and/or based on international reports)</li> <li>› Summarize and report antiviral resistance data</li> <li>› Summarize and report adverse drug reaction data</li> </ul>	<p>F,P/T,L</p> <p>F,P/T</p> <p>F,P/T (Lead: PPHB)</p> <p>F (Lead: HPFB)</p>

Phase 3 End of first wave			
Component	Focus	Actions	Response Level
Health Services	Restocking, evaluation and preparation for next wave	<ul style="list-style-type: none"> <li>› Review/revise clinical management guidelines</li> <li>› Review/revise infection control guidelines</li> <li>› Review/revise guidelines for management of mass fatalities (if applicable)</li> <li>› Across all health care services (including mortuary) - assess status of stocks, impact of first wave, reorder supplies, and ensure circulation of staff to avoid burnout</li> <li>› Closure/reduction in use of “alternate care/over-flow sites”</li> <li>› Restocking of laboratory supplies and resumption of routine laboratory services</li> <li>› Develop projections for future laboratory requirements (i.e., human and physical resources including test kits etc.)</li> <li>› Summarize/evaluate and report on the use of social and psychologic services for families of victims</li> <li>› Track national stocks of medications as well as necessary medical equipment and supplies, including ventilators, oxygen, etc. Consider strategies to mitigate shortfalls in next wave</li> </ul>	<p>F,P/T (<i>Lead: PIC</i>)</p> <p>F,P/T (<i>Lead: PIC</i>)</p> <p>F,P/T (<i>Lead: PIC</i>)</p> <p>P/T,L</p> <p>F,P/T,L</p> <p>F,P/T,L</p> <p>F,P/T</p> <p>P/T,L</p> <p>F,P/T (<i>Lead: PPHB</i>)</p>
Emergency Services	Restocking, evaluation and preparation for next wave	<ul style="list-style-type: none"> <li>› Review/revise travel advisories</li> <li>› Assess need for ongoing state of emergency (if applicable) and criteria for ending the state of emergency</li> <li>› Evaluate use of national stockpile system (if applicable) and restock supplies as needed</li> <li>› Evaluate need for ongoing military assistance with operation of alternate care sites, and other “over-flow” facilities</li> <li>› Review/revise emergency plans</li> </ul>	<p>F (<i>Lead: PPHB</i>)</p> <p>F,P/T (<i>Lead: PPHB</i>)</p> <p>F (<i>Lead: PPHB</i>)</p> <p>F (<i>Lead: PPHB</i>)</p> <p>F,P/T,L</p>

Phase 3			
End of first wave			
Component	Focus	Actions	Response Level
Public Health Measures	Evaluation and preparation for next wave	<ul style="list-style-type: none"> <li>› Review/revise public health management guidelines</li> <li>› Document and report lessons learned</li> <li>› Update educational materials</li> <li>› Resume routine public health activities/programs</li> <li>› Promote immunization for influenza and other secondary infections observed during the first wave (if appropriate and applicable)</li> <li>› Disseminate all revised guidelines to appropriate stakeholders</li> <li>› Evaluate the effectiveness of public health measures (e.g., closure of schools or other institutions etc.)</li> </ul>	<p>F,P/T (<i>Lead: PIC</i>)</p> <p>F,P/T,L</p> <p>F,P/T,L</p> <p>F,P/T,L</p> <p>P/T,L</p> <p>F,P/T,L</p> <p>F,P/T,L</p>
Communications	Evaluation of communication activities	<ul style="list-style-type: none"> <li>› Evaluate communication strategy</li> <li>› Update public education materials and scripts for phone line staff</li> <li>› Scale back staffing as need diminishes</li> </ul>	<p>F,P/T,L</p> <p>F,P/T,L</p> <p>F,P/T,L</p>



Phase 4 Second or later waves			
Component	Focus	Actions	Response Level
Surveillance	Early detection of second wave	<ul style="list-style-type: none"> <li>› Ongoing surveillance</li> <li>› As per Phases 1&amp;2</li> </ul>	F,P/T,L
Vaccine Programs	Immunization of the non-immune	<ul style="list-style-type: none"> <li>› Ongoing involvement in vaccine development/testing/production (if applicable)</li> </ul> <p><b>If vaccine is available...</b></p> <ul style="list-style-type: none"> <li>› As per Phases 1&amp;2, immunization of non-immune population</li> </ul>	F (Lead: PPHB, HPFB, Manufacturers)
Antivirals	Strategic and controlled use of available antiviral drugs	<ul style="list-style-type: none"> <li>› Based on local epidemiology and available supplies, and lessons learned from previous wave (s), recommend administering antiviral prophylaxis and treatment to priority groups</li> <li>› As per Phases 1&amp;2</li> </ul>	F, PT (Lead: PIC)
Health Services	Gearing up to meet increasing demands and control of spread	<ul style="list-style-type: none"> <li>› Implement activities as per updated guidelines</li> <li>› As per Phases 1&amp;2</li> </ul>	F,P/T,L
Emergency Services	Optimal use of emergency resources	<ul style="list-style-type: none"> <li>› As per Phases 1&amp;2</li> </ul>	
Public Health Measures	Efficient and Strategic public health response	<ul style="list-style-type: none"> <li>› As per Phases 1&amp;2, building on lessons learned</li> </ul>	
Communications	Ongoing communication with stakeholders and public	<ul style="list-style-type: none"> <li>› As per previous phases</li> </ul>	

Phase 5 Post-pandemic/recovery			
Component	Focus	Actions	Response Level
Surveillance	Review, evaluation and return to routine operations	<ul style="list-style-type: none"> <li>› Resume routine ongoing laboratory and disease surveillance</li> <li>› Estimate burden of disease during outbreak periods</li> </ul>	F,P/T,L F,P/T
Vaccine Programs	Review, evaluation, resumption of routine programs	› Provide recommendations for routine prevention and control including recommendations for vaccines	F,P/T (Lead: PIC/NACI)
Antivirals	Review and evaluation	› Provide recommendations for the strategic use of antivirals during a pandemic based on lessons learned within Canada and internationally	F,P/T (Lead: PIC)
Health Services	Review, evaluation, return to routine operations	› Review/activate aftercare/recovery plans/guidelines	F,P/T,L
Emergency Services	Review, evaluation, return to pre-emergency activity level	› Review/activate aftercare/recovery plans/ guidelines	F,P/T,L (Lead: PPHB)
Public Health Measures	Review, evaluation, resumption of routing programs	<ul style="list-style-type: none"> <li>› Provide recommendations for routine prevention and control including recommendations for any control measures other than vaccines and antivirals</li> <li>› Provide lessons learned for ourselves and the public and prepare for the next emerging infectious disease</li> </ul>	F,P/T (Lead: PIC) F,P/T,L
Communications	Review, evaluation, return to routine operations	› Review performance measurement criteria and evaluate response	F,P/T,L