



# New Brunswick Pandemic Influenza Plan

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*For the Health Sector*

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## **PREFACE**

Influenza viruses periodically cause worldwide epidemics, or pandemics, with high rates of illness and death. Increasingly, health officials are talking not about “if” but “when” the next pandemic will occur. Advance planning for a large scale and widespread health emergency in the province of New Brunswick is required to optimize delivery of health care and other essential services during a pandemic. In addition, all sectors of society must consider the impact of large absenteeism rates and supply interruptions as businesses and municipalities plan for how they will continue their mission critical business.

The Department of Health and Wellness has been working on the development of a pandemic influenza contingency plan for several years. This Pandemic Influenza Plan is and will continue to be an evergreen document, being modified as new information becomes available and/or new appendices are drafted or completed. This plan was prepared by the provincial pandemic influenza committee planning group, which had representation from several Departmental sectors including Public Health, Institutional Services, Mental Health, Ambulance Services, Communications and Emergency Management Services as well as representatives from the Department of Family and Community Services and the Emergency Measures Organization.

Realizing that the pandemic will affect all sectors of health care, and in keeping with the Departmental “all hazards” approach to emergency planning, The Director of Health Emergency Management Services (HEMS), working cooperatively with the Office of the Chief Medical Officer of Health, will further develop components to assist in operationalization of the plan, particularly the response and recovery phases. This will be achieved under the direction of the Provincial Pandemic Preparedness Steering Committee (PPPSC), of which the Director of HEMS is the chair.

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## **BACKGROUND**

Human influenza is a viral respiratory infection that spreads easily from one person to another. Most people will recover from influenza after 10 days or so, however others, particularly the elderly or those with certain underlying medical conditions, may develop severe medical consequences such as pneumonia or bronchitis. It is important to understand that influenza can be a serious illness. Between 4,000 and 8,000 Canadians can die of influenza and its complications annually, depending on the severity of the season. Vaccination, hand washing and just staying home when you are ill are measures that reduce the possibility of influenza being transmitted from one person to another.

Influenza viruses are very adaptable and change their genetic makeup slightly every year. This is one reason why influenza vaccination is needed every year to ensure protection against the current circulating virus strains.

Historic evidence suggests that three to four times each century a radical change takes place in the influenza A virus causing a new strain to emerge. This can result in a pandemic influenza, which is a worldwide outbreak of influenza characterized by the rapid spread of a new type of influenza virus to which most, if not all, people will have no immunity. There were three influenza pandemics in the 20th century: the 1918 Spanish influenza, the 1957 Asian influenza, and the 1968 Hong Kong influenza. The Spanish Influenza pandemic was by far the most devastating disease outbreak recorded in the last century; over 20 million people died and more than 200 million were affected. The Asian influenza outbreak of 1957 resulted in 1 to 2 million deaths and the Hong Kong influenza outbreak of 1968 resulted in 1 to 4 million deaths world wide.

Avian influenza viruses affect all species of birds but can, less commonly, infect mammals - including people. Since January 2004, widespread outbreaks of H5N1 in birds in Asian countries have been associated with human cases and deaths in Asia. There is concern in the scientific community that currently avian influenza H5N1 is the influenza strain with the most potential to become a pandemic. However, to this point there has been no efficient transmission from human to human. There is concern that the more people affected by an avian influenza virus, the greater the likelihood the virus will mutate to create a new influenza strain to which humans will have no immunity. If it develops the ability to transmit efficiently from person to person, the virus could spread rapidly and result in significant illness, death and social disruption.

Planning for pandemic influenza has been underway in Canada for several years. The Canadian Pandemic Influenza Committee provides expert knowledge and advice on influenza and potential pandemics and has developed the Canadian Pandemic Influenza Plan that maps out how Canada will prepare for and respond to a pandemic influenza. The Canadian Pandemic Influenza Plan is available on the Public Health Agency of Canada website at [www.phac-aspc.gc.ca](http://www.phac-aspc.gc.ca). With the support and direction of the Canadian Pandemic Influenza Plan, provinces and territories, including New Brunswick, continue to work on their pandemic planning processes.

## **NEW BRUNSWICK PANDEMIC INFLUENZA PLANNING APPROACH**

### **Goal:**

To minimize serious illness and overall deaths and to minimize societal disruption among New Brunswickers as a result of an influenza pandemic.

### **Objectives:**

- Clarify roles and responsibilities during implementation of the Pandemic Influenza Plan
- Implement a functioning infrastructure for influenza surveillance in the interpandemic period (the time between influenza pandemics) that can be used during a pandemic
- Identify and prepare for other surveillance needs as required (e.g. adverse event following immunization of a vaccine developed to provide protection against pandemic influenza)
- Establish immunization and anti-viral use guidelines for implementation during a pandemic
- Develop and/or approve guidelines for use by health care responders during a pandemic response (e.g. clinical care, infection control, essential health services).
- Establish plans to obtain, secure, and distribute adequate supplies of vaccines and anti-virals and other medical supplies required to support the pandemic response
- Create a communication framework in the interpandemic period that will provide timely, accurate and consistent information to and among health care providers, the media and the general public during a pandemic
- Establish and support regional pandemic influenza steering committees in the interpandemic period and support the development of regional and local emergency preparedness and response plans to optimize delivery of health care and other essential services during a pandemic
- Identify and develop relationships with relevant stakeholders required to support the pandemic response (e.g., funeral home association, pharmacy association, municipalities)

## **PLANNING ASSUMPTIONS**

The New Brunswick Pandemic Influenza Plan is based on the following planning assumptions:

### ***The course of an influenza pandemic***

- An influenza pandemic is inevitable.
- Based on the last two pandemics it is estimated that the next pandemic virus will arrive in Canada within three months after it emerges in another part of the world. This time could be much shorter due to increases in the volume and speed of air travel.
- An influenza pandemic may spread in two or more waves, either in the same year or in successive influenza seasons.
- If a second wave occurs, it would likely be within 3 to 9 months of the initial outbreak wave and may cause more serious illnesses and deaths than the first.
- Each wave of illness will last approximately 6 to 8 weeks.

### ***The extent and severity of illness***

- Because the population will have had limited, if any, prior exposure, most people will be susceptible.
- More severe illness and mortality than the usual annual influenza is likely in all population groups
- The first peak in mortality will be one month after the first peak in illness.

### ***Access to Vaccines and Anti-virals***

- Vaccine will be the primary means of pandemic influenza prevention. The supply will unlikely be available in time for the first wave of illness; therefore, plans for the first wave should assume lack of influenza vaccine. The vaccine may be available in time to mitigate the impact of the second wave.
- Once available, the vaccine will be in short supply and high demand.
- Anti-viral drugs are a treatment option during a pandemic but must be started within 48 hours of the onset of symptoms. The efficacy of anti-viral drugs against a pandemic strain is unknown but is expected to shorten the length of time people are ill and reduce hospitalizations.
- Prophylactic anti-virals can be effective in preventing influenza and reducing impact of outbreaks within institutions



- Initially there will not be enough vaccine for the entire population; priority groups have been established to determine who receives the initial supply of vaccine.
- There will not be enough antivirals for the entire population and priority groups have been established to determine who receives the limited supply.
- Depending on the epidemiology of the pandemic influenza strain, the priority groups may change.

#### ***The impact on health care and other essential services***

- A substantial proportion of the workforce will not be able to work for some period of time due to illness in themselves or in their family members.
- Laboratory testing capacity will be challenged.
- Hospital capacity is already limited and could be further challenged.
- Care protocols may change and standards of practice for “normal” operating conditions may need to be adapted to meet emergency needs.
- Essential services in communities may be disrupted.

#### ***Managing a Pandemic***

- The disease will not be localized to individual regions or communities but will be widespread throughout the province which will restrict the ability of one community helping another.
- A clear understanding of the roles and responsibilities of the various responders (health and societal) is required.
- Effective and streamlined lines of communication will be required at the local, provincial, and federal levels

## **OVERVIEW**

The New Brunswick Pandemic Influenza Plan provides a comprehensive province wide approach to health preparedness and pandemic planning by providing information to guide provincial and local pandemic planning groups. The phased planning and response approach prepares responders to be ready with the appropriate actions at the appropriate time. The provincial plan is an evolving document and will change as new information comes to light. The following five components are modeled after the national plan and are considered to be the most crucial areas to be considered in planning for an influenza pandemic:

### **1) Surveillance**

The goal of the provincial surveillance and monitoring program is to develop, improve and maintain a system for the ongoing collection, analyses, interpretation and timely dissemination of health data essential for measuring changes in population health. Effective surveillance programs are essential for studying the course of the disease and are crucial in the development of vaccines. Since the influenza A virus constantly changes, surveillance is essential to provide timely and sufficient information on the influenza activity in order to make adequate public health decisions. Influenza surveillance occurs year round in New Brunswick. Enhancements to the existing surveillance systems will increase the probability for adequate warning and better monitoring of the novel virus activity in the province. The enhanced plan will augment the already existing Severe Respiratory Infection surveillance in hospitals. The objectives of the enhanced plan are:

- To define any modifications to surveillance activities and methodology in the event of the pandemic as per national guidelines
- To communicate a need for diligent influenza surveillance and available information related to the detection of a novel virus outside of North America to all stakeholders

## **2) Public Health Activities**

### *A) Vaccine and Anti-Virals Management*

Since their discovery more than half a century ago, influenza vaccines have been the most important development in decreasing the morbidity and mortality of influenza. Promoting an annual influenza shot has become a routine public health activity across Canada. With a good match between the vaccine and the circulating virus, the influenza vaccine is 70% - 90% effective in preventing the influenza in healthy adults. It provides protection against the virus types that are in the vaccine. The protection generally lasts for 4-6 months. Vaccination continues to be recognized as the primary tactic of prophylaxis.

It is expected that, because vaccine production is dependent on the identification of circulating virus strains, supply delays will be experienced in the event of an emerging novel virus as in a pandemic. Contingency plans must take into consideration this delay and the potential need to prioritize recipients for receipt of the initial supplies of vaccine.

While vaccines, when available, will become the primary public health intervention during the pandemic, anti-viral drugs will play a role in the pandemic response. Anti-virals, effective for the prevention and treatment of Influenza A, are anticipated to be in limited supply during a pandemic. Consequently, a national stockpile has been established and guidelines regarding their use and priority groups have been developed and are currently under review. Depending on the epidemiology and impact of the pandemic influenza virus strain, the priority groups may change to target the most affected groups.

### *B) Public Health Measures*

Historically, public health authorities have used the notion of "social distance" to assist in the control of a communicable disease. Social distance is an action that limits the mingling of persons in a community, thus, decreasing the risk of exposure to a disease like influenza. Decisions such as banning public gatherings or closing schools would be included in social distance measures. Decisions regarding the use of appropriate public health measures will occur during the pandemic alert phases when it is better known how the virus is behaving or may behave.

### **3) Essential Health Services**

For purposes of this plan, Health Services encompasses responsibilities both regionally and Departmentally and refers to: a) Regional Health Authorities (delivery of services); b) Hospital Services (Institutional services, laboratory services, Extra-Mural Program, Tele-Care); c) Mental Health Services; d) Ambulance Services. The Department of Health and Wellness, along with the provincial Regional Health Authorities, are currently developing strategies to maintain services during a pandemic influenza. Any change from regular delivery of service will be communicated to the public.

### **4) Communications**

The goals for the communications component of the plan include:

- Creating a rapid transfer of information (from local to regional to provincial to federal levels and vice versa) and updates
- Creating the ability to assimilate rapid information such as illness, vaccine uptake, adverse events, etc.
- Effective distribution of information to the medical community, the media, and the public.

### **5) Community Emergency Response**

An influenza pandemic will undoubtedly constitute a health emergency in New Brunswick. Typically, emergencies have been perceived as disasters, e.g. plane crashes, hurricanes, floods or other phenomena that may last hours or days. They may result in many casualties creating a one time demand on health services. A health emergency such as a pandemic influenza however, can be expected to be prolonged with two or more successive waves creating multiple demands on multiple sectors. Each wave is expected to last approximately six to eight weeks. The resulting impact on human resource infrastructure can, potentially, be staggering.

One of the assumptions that the provincial plan makes is that essential services may be interrupted due to the high illness rate expected to impact all organizations. It is the intent of the plan that municipalities and organizations responsible for providing essential community services plan for operations during the pandemic period.

The emergency community response components of the plan are intended to provide guidance to the non-health sector in terms of planning for pandemic influenza. Planning for emergencies is crucial for any business or municipality. Pandemic influenza is one of those emergencies for which we must all be prepared. Planning is being initiated now in the non-health sector to ensure that all sectors of our society are prepared.

The plan is based on a coordination and collaborative approach among governments and stakeholders as they work together to ensure continuation of their mission critical business and support of the pandemic response. An influenza pandemic will have an impact throughout society and, depending on the impact, may involve the broader provincial Emergency Measures Organization. Should this occur, the Minister of Public Safety or the Director of New Brunswick Emergency Measures Organization may activate the Provincial Emergency Response Plan to coordinate the whole of government response.

Public Health has brought together relevant partners and stakeholders to facilitate the development of coordinated response plans to pandemic influenza. In the case of local prevention and response, Regional Pandemic Influenza Steering Committees have been established to support the development of local pandemic influenza plans. Regional Pandemic Influenza Steering Committees and plans also require a multi-discipline approach and should include community groups and organizations as well as relevant Government departments (e.g. municipalities, local service districts, nursing homes, Family and Community Services, Emergency Measures Organization representatives, and others that may serve the community in an emergency response capacity). At the regional and local level, Regional Public Health, Regional Health Authorities, municipalities and other organizations are, in consultation with the appropriate stakeholders, responsible for developing their own specific pandemic plans. By following the established provincial guidelines, consistency among the response plans will be assured.

## **ESTIMATING IMPACT OF PANDEMIC INFLUENZA**

Predicting when and how severely a pandemic influenza will affect the population is difficult. During a pandemic, it is anticipated that the impact will be greater and that the age specific morbidity and mortality may be quite different from the annual influenza outbreaks, which typically affect most severely the very young, the elderly and those with underlying medical conditions. However, until the epidemiology of the pandemic is known, it is not possible to definitively predict the actual impact.

An estimate of the health impact of a pandemic has been based on a model by Meltzer and colleagues, from the Centers for Disease Control, Atlanta. The model has utilized data from past epidemics and pandemics and *impact estimates are intended to facilitate planning only* and are not intended to be a precise prediction as to how a specific pandemic influenza virus actually behaves. The model can be used for a population in a community, region or province; and has attack rates of 15%, 25% and 35%. The attack rate describes the impact over the entire duration of the pandemic, that is: the proportion of the population that will be infected over the multiple waves of influenza that usually occur during a pandemic. For example a 35% attack rate means that, over the entire course of a pandemic, about 35% of the people would have influenza severe enough to be unable to attend work or other activities for at least half a day.

The following shortcut formulas are derived from the Health Impact model and include, but do not differentiate risk factors and age ranges. Because pandemic influenza impact predictions are derived from a mathematical model and not an epidemiological model, they provide total impact estimations only. As research in this field evolves, it is anticipated that the impact prediction models will be refined.

*Formula:*

**Y = Population X Attack Rate**

Y x 0.41% = Number of deaths

Y x 1.09% = Number hospitalized

Y x 45.57% = Number seeking medical care

Y x 52.97% = Number ill, not seeking medical care

**Population:** The population in region, province or community

**Attack Rate:** The proportion of the population who will become clinically ill (unable to attend work or other activities for at least half a day) such that there are consequences for health resources consumed.

Based on this, the calculated impact of pandemic influenza on New Brunswick with an estimated population in 2003 of 756,256 (Statistics Canada, 2003) would be:

**Estimated Impact of an Influenza Pandemic on New Brunswick by Attack Rate**

<b>Estimated Number of Cases by Outcome</b>			
<b>Outcome</b>	<b>Attack Rate</b>		
	<b>15%</b>	<b>25%</b>	<b>35%</b>
<b>Ill, Self Care</b> (Population X Attack Rate) X 52.97%	60,088	100,147	140,206
<b>Outpatient Care</b> (Population X Attack Rate) X 45.57%	51,694	86,156	120,619
<b>Hospitalization</b> (Population X Attack Rate) X 1.09%	1,237	2,061	2,885
<b>Death</b> (Population X Attack Rate) X 0.41%	465	775	1,085

Although the estimations are gross numbers only, they are dramatic. The projected number of people who may be sick and not seek care is significant. Presumably, a large number of those have jobs to which they would be unable to go because of illness. Based on the modeling process, the potential for lost productivity and the interruption of essential services could be significant, further providing evidence that a well developed contingency plan is crucial. *Again, it must be emphasized that this model is intended to facilitate planning only and is not intended to be predictive.*

## **PANDEMIC PLANNING PHASES**

The World Health Organization (WHO) has developed detailed pandemic planning phases, summarized in the table below. This plan is based on and reflects the planning phases as triggers for provincial and regional responses. The pandemic planning phases in Canada will align with these WHO phases.

<b>Period</b>	<b>WHO Phase</b>	<b>Description</b>
<b>Interpandemic Period</b>	Phase 1	No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human infection is considered low.
	Phase 2	No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses substantial risk of human disease.
<b>Pandemic Alert Period</b>	Phase 3	Human infection(s) with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact.
	Phase 4	Small cluster(s) with limited human-to-human transmission, but spread is highly localized, suggesting that the virus is not well adapted to humans.
	Phase 5	Large cluster(s) but human-to-human spread still localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk).
<b>Pandemic Period</b>	Phase 6	Increased and sustained transmission in general population.
<b>Post Pandemic Period</b>		Return to Interpandemic Period.



## **ACTIVATION OF THE PANDEMIC INFLUENZA RESPONSE PLAN**

The Chief Medical Health Officer (CMOH) and relevant staff, in consultation with the national Pandemic Influenza Committee, will monitor and respond to reports of novel influenza viruses circulating the world or in Canada. The CMOH will review the progression of disease caused by a novel influenza subtype and advise the Minister and Deputy Minister of Health and Wellness, as well as the Director of Health Emergency Management Services, as to the need of convening the Provincial Pandemic Preparedness Steering Committee (PPPSC). The PPPSC will provide support, information coordination and direction to the regions in mobilizing appropriate and timely responses based on current pandemic phases.

At the Departmental level, the pandemic emergency response will be coordinated through the DHW Emergency Operations Centre (EOC). The primary functions of the DHW EOC are: to act as the provincial decision making and policy direction body on health matters; operational support; internal and external communication; planning and analysis of incoming data; and administration and financial matters. Each Regional Health Authority, in addition to and in collaboration with its community partners, will operate a regional EOC to coordinate the response and facilitate effective communications.

There will be a time when the response and recovery effort no longer requires the EOC and it will be deactivated. The authority to deactivate the EOC rests with the Director of Health Emergency Management Services. This process of activation, response and deactivation may occur in response to local pandemic influenza activity and to declarations by Health Canada.

## **THE ROLE OF THE EMERGENCY MEASURES ORGANIZATION**

In the event the impact of the pandemic extends beyond the health care system, the Minister of Public Safety or the Director of New Brunswick Emergency Measures Organization (NB EMO) may activate the Provincial Emergency Response Plan to coordinate the whole of government response. In the event that the societal impact of the pandemic is such that the Minister of Public Safety decides to declare a "state of emergency" under the Emergency Measures Act, the Minister of Public Safety may then do everything necessary for the protection of property, the environment and the health or safety of persons, including the use of the emergency powers provided for in the Act.

The NB EMO is the provincial lead agency for overall emergency management. NB EMO coordinates emergency preparedness, response and recovery programs with all levels of government in the province, including Federal, with neighboring provinces and states, and with the private sector. NB EMO is responsible for the Provincial Emergency Measures Plan.

When activated, the Provincial Emergency Measures Plan coordinates the whole response of government in New Brunswick. For a pandemic scenario, the Provincial Plan would support the Health Response as appropriate. In addition, the Provincial Plan would coordinate the whole of government response in concert with local governments and the federal government, to manage the impact on sectors other than health.

## **PLAN COMPONENTS**

This section addresses prevention and preparedness activities that occur in the interpandemic period, that is the time between influenza pandemics. This is the critical stage for pandemic preparedness. The section also addresses, in part, the pandemic alert period, which is the time when the risk of a pandemic is increasing. To date, the planning components include surveillance, public health activities (vaccines and anti-virals; public health measures), essential health services, communications and community emergency response. The following table provides an overview of provincial and regional responsibilities during the interpandemic and pandemic alert periods.

### **Overview of Responsibilities during the Interpandemic and Pandemic Alert Periods**

<b>Component</b>	<b>Provincial Responsibilities</b>	<b>Regional Responsibilities</b>
<b>Surveillance</b>	<ul style="list-style-type: none"> <li>○ Provincial surveillance of influenza and influenza like illness and viral strain identification</li> <li>○ Participate in national surveillance</li> <li>○ Establish enhanced surveillance system</li> <li>○ Refer influenza A isolates to National Microbiology Laboratory as per national guidelines</li> <li>○ Establish hospital mortality surveillance</li> <li>○ Activate enhanced surveillance activities</li> <li>○ Establish surveillance of adverse events related to use of vaccine programs and anti-virals</li> </ul>	<ul style="list-style-type: none"> <li>○ Support and participate in provincial surveillance of influenza and influenza like illness</li> <li>○ Participate in hospital mortality surveillance</li> </ul>

Component		Provincial Responsibilities	Regional Responsibilities
Public Health Activities	Vaccines & Anti-virals	<ul style="list-style-type: none"> <li>○ Plan to obtain and distribute vaccine</li> <li>○ Set guidelines for vaccine use</li> <li>○ Promote annual vaccination</li> <li>○ Plan to obtain and distribute anti-virals</li> <li>○ Set guidelines for anti-viral use</li> <li>○ Plan for security of supply of vaccines, anti-virals and associated supplies (needles, syringes, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>○ Promote annual vaccination</li> <li>○ Develop implementation protocols for anti-viral use</li> <li>○ Plan for mass immunization clinics</li> <li>○ Plan for distribution and dispensing of anti-viral medication</li> </ul>
	PH Measures	<ul style="list-style-type: none"> <li>○ Establish guidelines for public health measures</li> <li>○ Develop educational materials for public and professional use</li> </ul>	<ul style="list-style-type: none"> <li>○ Develop plan to implement public health measures</li> </ul>
Essential Health Services		<ul style="list-style-type: none"> <li>○ Develop provincial guidelines for clinical care, infection control and triage during a pandemic and communicate same to RHAs</li> <li>○ Facilitate and support regional pandemic influenza planning efforts</li> <li>○ Adapt and/or adopt the recommendations of National Pandemic Influenza Committee</li> <li>○ Develop provincial health emergency response plan</li> </ul>	<ul style="list-style-type: none"> <li>○ Assess clinical capacity</li> <li>○ Prepare to implement established pandemic guidelines</li> <li>○ Estimate pandemic needs</li> <li>○ Identify additional and alternative care locations and resources</li> <li>○ Participate on Regional Pandemic Steering Committees</li> <li>○ Prepare comprehensive plans with reasonable contingencies that anticipate pandemic events</li> </ul>
Communications		<ul style="list-style-type: none"> <li>○ Inform public, media and health care officials of provincial pandemic response plans</li> <li>○ Develop key messages, strategies and guidelines for Communications through all pandemic phases</li> <li>○ Support pandemic communications planning</li> </ul>	<ul style="list-style-type: none"> <li>○ Develop Health Authority/local communications networks</li> <li>○ Define communications roles and responsibilities</li> <li>○ Develop regional communication strategies, prepare to communicate provincial messaging in regional context</li> <li>○ Support development of provincial health emergency communications network</li> </ul>

<b>Component</b>	<b>Provincial Responsibilities</b>	<b>Regional Responsibilities</b>
<b>Community Emergency Response</b>	<ul style="list-style-type: none"> <li>○ Facilitate and support regional pandemic influenza planning</li> <li>○ Develop provincial emergency response plan</li> </ul>	<ul style="list-style-type: none"> <li>○ Participate on Regional Pandemic Steering Committees</li> <li>○ Prepare comprehensive plans that anticipate pandemic events with reasonable contingencies</li> </ul>

## **SURVEILLANCE**

Influenza surveillance is required to determine when, where and which influenza viruses are circulating and the intensity and impact of the activity. Both laboratory surveillance and epidemiologic surveillance are necessary. Laboratory surveillance involves the isolation of influenza viruses for analysis of antigenic and genetic properties. The signs and symptoms of influenza can be similar to those caused by other respiratory pathogens therefore laboratory testing must be used to confirm the presence of influenza in the province. The collection of epidemiologic data regarding influenza-like illness (ILI) is essential for determining the extent and severity of influenza activity.

The influenza surveillance system is built upon the existing systems for communicable disease control. The systems support surveillance during the interpandemic and pandemic alert periods.

### **National Surveillance**

Surveillance for influenza in New Brunswick is conducted as part of the national influenza surveillance program called FluWatch. This Program provides information on influenza activity across Canada during the influenza season. The information collected on influenza activity across the country is available through weekly or biweekly FluWatch reports at <http://www.phac-aspc.gc.ca/fluwatch/index.html>.

### **Provincial Surveillance – Interpandemic period**

Sentinel surveillance sites (designated physicians and emergency rooms in each Regional Health Authority) collect nasopharyngeal specimens from patients deemed highly likely to have influenza and submit these specimens for laboratory testing. The Laboratory at the Dr. Georges L. Dumont Regional Hospital provides viral antigen detection and culture identification.

In addition to laboratory surveillance there is:

- School reporting: during influenza season, schools are asked to report when 10% or more students are absent most likely due to ILI
- Reports of sporadic influenza-like illness cases by FluWatch sentinel physicians (recruitment of the FluWatch sentinel physicians is the responsibility of the College of Family Physicians of Canada)
- Respiratory infection outbreaks in nursing homes: nursing homes are asked to report any outbreaks of influenza like illness on any day each week
- Severe Respiratory Illness Surveillance (SRI)

As a result of SARS outbreaks in 2003, there was an expansion of the respiratory surveillance activities to include severe respiratory illness (SRI) surveillance in hospitals. This surveillance is aimed at early detection of emerging respiratory infections, including SARS or novel influenza viruses of pandemic potential. Hospitals are alert for persons presenting with a severe respiratory illness who have traveled to either a potential zone of re-emergence of SARS or an area affected by avian influenza (H5N1) within 10 days prior to the onset of symptoms or had known close contact with a symptomatic person with a history of such travel.

Hospitals must report the following to the Regional Medical Officer of Health within 24 hours of admission:

- SRI hospitalizations: all persons admitted to hospitals who meet current national SRI case definitions
- SRI clusters: all clusters of severe respiratory illness in acute care facilities
- SARS-Co-V infections: all persons who have laboratory evidence of SARS-CoV infection
- Confirmed and probable SARS: all persons who meet current national SARS case definitions
- Laboratory confirmed influenza A (H5N1) infection or other novel influenza virus infection

### **Enhancing Provincial Surveillance**

In the pandemic alert period, the number of FluWatch sentinel physicians will be increased to enhance the surveillance system for influenza like illness. Surveillance activities will be “ramped up” by phase in response to national and international events. Once the pandemic is declared, it is assumed that all physicians and laboratories will direct most of their efforts toward clinical patient care.

When a novel virus is detected in North America, enhanced surveillance will be initiated and all health care institutions and physicians will be asked to obtain specimens from as many as possible patients presenting with ILI. In addition, all laboratories will be asked to process specimens from patients with ILI as priority to the largest extent possible.

## Overview of Surveillance during the Interpandemic and Pandemic Alert Period

Component	Provincial Responsibilities	Regional Responsibilities
<b>Interpandemic</b>	<ul style="list-style-type: none"> <li>○ Develop surveillance network to enable early detection of influenza activity</li> <li>○ Identify list of potential sentinel sites for enhanced ILI surveillance</li> <li>○ Use surveillance network to determine when influenza arrives in the province, the extent and distribution of the illness and to confirm when each outbreak is over.</li> <li>○ Disseminate surveillance information to key stakeholders</li> <li>○ Support influenza surveillance activities at the regional, national and international levels.</li> <li>○ Establish process for influenza-related hospitalizations and mortality surveillance</li> <li>○ Review/enhance protocols and mechanism for recording and reporting of Vaccine Associated Adverse Events</li> <li>○ Develop, maintain and enhance surveillance activities for adverse drug reactions and emergence of anti-viral resistance</li> <li>○ Ensure laboratories are aware of testing protocols including prioritization or special handling of specimens</li> <li>○ Establish protocols for surveillance in morgues, daycares, worksites and pharmacies</li> </ul>	<ul style="list-style-type: none"> <li>○ Support and participate in surveillance of influenza activity</li> <li>○ Ensure personnel (primary and secondary) has been designated for reporting activities</li> <li>○ Ensure timely reporting of influenza activity</li> <li>○ Commence additional activities when directed by the Office of the Chief Medical Officer of Health (O/CMOH)</li> </ul>
<b>Surveillance Pandemic Alert</b>	<ul style="list-style-type: none"> <li>○ Assess and update provincial surveillance strategies with national guidelines</li> <li>○ Refer representative influenza A isolates to National Microbiology Laboratory as per NML guidelines</li> <li>○ Implement hospital mortality surveillance</li> <li>○ Implement investigation protocols for clusters</li> <li>○ Activate enhanced surveillance activities as necessary - e.g. reporting of absenteeism rates in daycares and workplaces, reporting of sales</li> </ul>	<ul style="list-style-type: none"> <li>○ Continue with surveillance activities as directed by the O/CMOH</li> </ul>



Component	Provincial Responsibilities	Regional Responsibilities
	activities in pharmacies ○ Establish/update as necessary, and in cooperation with Public Health Agency of Canada, surveillance of adverse events related to use of anti-virals and vaccines	

## **PUBLIC HEALTH ACTIVITIES: VACCINES AND ANTI-VIRALS**

Immunization is the most effective means to reduce the impact of influenza. The National Advisory Committee on Immunization provides annual recommendations on the use of influenza vaccine in persons most at risk for severe complications from influenza or those who could spread influenza to persons at greatest risk.

Vaccines, when available, will become the primary public health intervention during a pandemic. However, because of the time frames required to manufacture vaccine, it is unlikely that vaccine will be available early in the pandemic. Additionally, two doses of vaccine may be necessary to achieve an adequate immune response.

Thus, priority groups for immunization in the event of a pandemic will be determined in the inter-pandemic phase. The national Pandemic Influenza Committee has developed nationally recommended priority groups, which will be adopted by New Brunswick. Depending on the epidemiology and impact of the pandemic influenza virus strain, the priority groups may change to target the most affected groups.

The storage and allocation of the pandemic vaccine is the responsibility of the Chief Medical Officer of Health. Each Regional Health Authority is responsible for creating an operational vaccination plan that includes provisions for vaccinating priority groups and mass community vaccinating. For example, using strategies to vaccinate the general population may not be feasible in the event of a vaccine shortage and those receiving vaccines will be prioritized. Options could include organizing worksite clinics in hospitals or other sites where priority groups would be working.

In planning community vaccine clinics, the needs of vulnerable populations within the regions should be considered. Such groups may include the homeless, mentally ill, and drug users. The large rural areas in New Brunswick must also be considered in the planning of vaccine clinics. Innovative ideas such as mobile vaccination units may be viable options within provincial and regional plans.

Vaccine Associated Adverse Events (VAAEs) and their appropriate recording must be included in the planning process. The current process for reporting VAAEs will remain until a more pandemic appropriate or expedited process is identified.

While vaccines, when available, will become the primary public health intervention during a pandemic, anti-virals (anti-influenza drugs) will have a role in the pandemic response.

Anti-viral medication is anticipated to be in limited supply. Consequently, the national Pandemic Influenza Committee will recommend priority groups for receipt of the anti-viral medications as well as stockpile recommendations to ensure supply to support the pandemic response. Depending on the epidemiology and impact of the pandemic influenza virus strain, the priority groups may change to target the most affected groups.

The Office of the Chief Medical Officer of Health will control the supply and allocation of publicly funded anti-viral drugs in the province during a pandemic. The utilization of the anti-virals within the province will be as per the nationally agreed upon priority groups and guidelines.

**Overview of Vaccines and Anti-Virals during the  
Interpandemic and Pandemic Alert Periods**

<b>Component</b>	<b>Provincial Responsibilities</b>	<b>Regional Responsibilities</b>
<b>Vaccines Interpandemic</b>	<ul style="list-style-type: none"> <li>○ Promote annual influenza vaccination programs for recommended groups</li> <li>○ Promote increased update of pneumococcal vaccine</li> <li>○ Define vaccine priority groups based on national guidelines</li> <li>○ Set priorities and guidelines for vaccine use during a pandemic</li> <li>○ Communicate priority groups and provide predictive formulas for calculating numbers in priority groups</li> <li>○ Develop plans for storing, transporting, distributing and administering vaccines</li> <li>○ Develop information packages regarding flu vaccine for use by the public and health care providers</li> <li>○ Develop "train the trainer" package for training non-traditional vaccinators</li> </ul>	<ul style="list-style-type: none"> <li>○ Promote local immunization programs for recommended groups</li> <li>○ Monitor adverse vaccine effects and report them in a timely fashion</li> <li>○ Identify priority groups for vaccine and calculate number</li> <li>○ Coordinate planning with other government agencies to ensure vaccine delivery to target groups, including "hard to reach" groups (e.g. homeless and homebound)</li> <li>○ Develop plans to employ alternate immunizers (those for whom the task would be outside routine job descriptions).</li> <li>○ Ensure immunization plans include vaccine storage and distribution plans</li> </ul>

Component	Provincial Responsibilities	Regional Responsibilities
	<ul style="list-style-type: none"> <li>○ Work with professional organizations and unions to develop guidelines to employ alternate immunizers</li> <li>○ Develop documentation processes for recording immunizations</li> </ul>	<ul style="list-style-type: none"> <li>○ Plan mass immunization clinics including: adequate medical supplies, medical directives, site identification, clinic layout, plans for traffic control internally and externally, identify staff who can assess patients for eligibility, and identify vaccinators</li> <li>○ Develop call back and follow up procedures should a two dose vaccine regime be required</li> </ul>
<b>Vaccine Pandemic Alert</b>	<ul style="list-style-type: none"> <li>○ Confirm triggers for distributing vaccine</li> <li>○ Ensure secure distribution processes</li> </ul>	<ul style="list-style-type: none"> <li>○ Review and update mass immunization plans with staff and relevant stakeholders</li> <li>○ Ensure staff are trained and infrastructure in place to support the immunization delivery</li> </ul>
<b>Anti-Virals Interpandemic</b>	<ul style="list-style-type: none"> <li>○ Determine need for and acquire stockpile to support response</li> <li>○ Develop plans for securely storing, transporting, distributing and administering anti-virals</li> <li>○ Communicate priority groups and provide predictive formulas for calculating numbers in priority groups</li> <li>○ Develop educational and promotional resources for the proper use of anti-virals for the public and health care providers</li> <li>○ Determine documentation requirements</li> </ul>	<ul style="list-style-type: none"> <li>○ Develop plans for anti-viral administration which include storage, staffing requirements, medical directives, etc.</li> <li>○ Maintain up-to-date priority list for anti-viral target groups</li> </ul>
<b>Anti-virals Pandemic alert</b>	<ul style="list-style-type: none"> <li>○ Confirm triggers for distributing anti-virals</li> </ul>	<ul style="list-style-type: none"> <li>○ Ensure staff are trained and infrastructure in place to track who receives anti-virals for treatment or prophylaxis</li> </ul>

## **PUBLIC HEALTH ACTIVITIES: PUBLIC HEALTH MEASURES**

The Medical Officer of Health (MOH) has the legislative authority to “take all measures, which have proven practical in public health administration and which have been accepted by public health authorities, to carry out any preventive measure considered necessary to control and prevent the diffusion of a notifiable disease” (Regulation 88-200 of the Health Act). Public Health measures are non-medical interventions used to reduce the spread of disease. These measures will range from individual measures (e.g. whether members of the public should wear masks) to population-based recommendations (e.g. whether to cancel public gatherings or close schools).

The actions of the Medical Officers of Health will be guided by the authority of the Health Act in response to the epidemiology of the disease. For example, should the need for quarantine, restriction of travel or community mixing be required, processes for drafting these directives, disseminating them and policing them will be implemented. This discussion will take place at the direction of the Chief Medical Officer of Health. Findings from the SARS experience demonstrate that traditional public health interventions (case finding and isolation, quarantine, and stringent infection control) were effective in containing the 2003 outbreak of SARS-CoV. It is difficult to conclude that these measures would be just as effective in a more efficiently transmitted disease like influenza, however, their application will be required to some extent. Any measures identified will be within the national guidelines currently being drafted.

In the pandemic alert period, the focus is anticipated to be on identifying ill individuals early, as well as those who had contact with them, in order to contain the spread of the virus (case management and contact tracing). To the extent possible, there will be aggressive follow up of confirmed and suspect cases. Once the pandemic arrives, it is unlikely that case management and contact tracing will be manageable or effective. At that time Public Health measures affecting the broader society may be implemented.

A comprehensive approach to Public Health measures includes:

- Individual measures to protect those who have contact with people with influenza such as: the use of personal protective equipment and practices (e.g. respiratory etiquette, hand hygiene, stay home if ill, self care if ill), case management and contact tracing, self isolation, and individual activity restrictions.
- Community measures, such as canceling public gatherings and closing schools

### Overview Public Health Measures during the Interpandemic Period

Component	Provincial Responsibilities	Regional Responsibilities
<b>Public Health Measures</b>	<ul style="list-style-type: none"> <li>○ Establish guidelines for the use of measures to increase social distance</li> <li>○ Develop educational materials on influenza and personal protective practices</li> <li>○ Develop guidelines for Public Health staff on how to implement public health measures</li> <li>○ Establish protocols for case management and contact tracing at different phases of the pandemic outbreak</li> <li>○ Develop alternative contact tracing/case management mechanisms as conventional methods (i.e. individual case management) may no longer be feasible during a pandemic</li> </ul>	<ul style="list-style-type: none"> <li>○ Develop plans for implementation of Public Health measures</li> </ul>

## **ESSENTIAL HEALTH SERVICES**

During the pandemic there will be a marked increase in demand for people (health care workers and others) to care for the sick, as well as for appropriate locations and equipment to facilitate the provision of health care. Communities and health care organizations need plans that will address what will be done when the health care system is overwhelmed and care must be provided by persons, both health care workers and volunteers, doing work which is not normally part of their daily activities and potentially in settings not usually used for health care provision. Laboratories, ambulances, mental health, hospitals and home care services are all key components in the essential health services response.

National clinical care guidelines have been developed to assist with planning for and coping with large numbers of influenza cases, some of whom may have severe disease or life-threatening complications. The surge in demand is expected to occur over a six to eight week period in two or more successive waves. These clinical care guidelines are included as annexes in the Canadian Pandemic Influenza Plan and are broadly classified into the following categories: infection prevention and control, clinical management of influenza, resource management, and non traditional workers including health care workers and volunteers.

Regional Health Authorities (RHAs) are responsible for developing contingency plans for the delivery of health services in the event of a pandemic. This planning should be in conjunction with other stakeholders in the community to ensure a coordinated response. Due to the expected increase in demand for health services, RHAs are responsible to estimate the potential impact of pandemic influenza by:

- Evaluating the ability to cope with increased demand (surge capacity) and the existing resources: e.g. beds with and without oxygen and suctioning capacity, ventilators, ICU beds, antibiotics and anti-virals, staffing levels, mortuary capacity and mental health facilities/capabilities
- Estimating the number of non funded beds and the amount of available space that may need to be utilized; and at what care level those spaces may be utilized
- Evaluating the ability to operate the facility on reduced staffing levels and increased demand for care
- Consulting, and adapting as appropriate, the Canadian Pandemic Influenza Plan for evidenced based guidelines in the clinical care of influenza and infection control recommendations for health care facilities

- Considering homeless, vulnerable populations – Populations that tend not to access formal health services should be included in the health services plan. In conjunction with the community steering group, strategies for delivering care and information to these groups should be undertaken.

### Overview of Essential Health Services during the Interpandemic Period

Component	Provincial Responsibilities	Regional Responsibilities
<p><b>Essential Health Services</b></p>	<ul style="list-style-type: none"> <li>○ Develop guidelines for prioritizing health care needs and service delivery (including hospitals, labs, ambulance services and mental health services), accessing resources, and implementing infection control measures during a pandemic</li> <li>○ Establish guidelines to support alternate care providers in a pandemic, including insurance issues</li> <li>○ Determine and develop role of Tele-Care in pandemic response</li> <li>○ Provide information and educational materials about pandemic influenza to health care providers</li> <li>○ Clarify and/or adapt national infection control guidelines in terms of their relevance to NB hospitals</li> <li>○ Support stockpiling of essential medical supplies</li> </ul>	<ul style="list-style-type: none"> <li>○ Plan for sustained high volume health care needs</li> <li>○ Identify strategies to ensure adequate human resources</li> <li>○ Identify strategies to ensure adequate material resources</li> <li>○ Plan for triage</li> <li>○ Identify alternate care sites for clinical service delivery</li> <li>○ Purchase/stockpile extra medical supplies needed for pandemic preparedness</li> <li>○ Hospitals should assess the adequacy of: triage, space, beds, ventilators, antibiotics, medical and nursing staff, and morgue capacity</li> </ul>



## **COMMUNICATIONS**

Communication is an integral part of all emergency planning responses. Communications serves as a vehicle to ensure that appropriate messages and information reaches the appropriate target groups.

The goals for the Communications component of this plan include:

- Create a rapid transfer of information (from local to regional to provincial to federal levels and vice versa) and updates (*Internal Communication*);
- Create the ability to assimilate rapid information such as illness, vaccine uptake, adverse events, etc. (*Internal Communication*);
- Have effective distribution of information, for instance, information packages to the medical community, the media, and the public (*Public Communication*).

### **Internal Communications**

Effective internal communications provide the backbone for a coordinated response to an influenza pandemic. A wide range of stakeholders will need to share accurate, timely and consistent information about what is known about the pandemic strain and the risks to public health as well as advice on how to manage those risks at each stage of a pandemic.

Internal stakeholders involved in information sharing with the New Brunswick Pandemic Influenza Committee include: relevant Government departments, federal, provincial, territorial and international health agencies, health care professionals, infectious disease experts, Regional Health Authorities, Medical Officers of Health, and the network of New Brunswick Health Emergency Management.

Communication tools to share disease surveillance information have been developed and are utilized by designated users at the federal, provincial and territorial levels. This provides a venue for the rapid dissemination of information across jurisdictions. A similar process is being utilized at the provincial level to facilitate exchange of health related information between the provincial and regional levels.

### **Public Communications**

Communications Branch of DHW has drafted an Emergency Communications Plan as an annex to this plan. If the situation escalates within the province, the Emergency Communications Plan will

link to a broader structure coordinated by Communications New Brunswick. Communications New Brunswick will then oversee the activity of several Departments.

The key message in the Emergency Communications Plan is preventing the spread of influenza, particularly by adopting good hygienic measures like hand washing. These messages will be relevant to all New Brunswickers and specific target audiences, such as seniors, health care providers, essential service workers, large employers, children, workers, government, media, stakeholders, students and institutions, may be identified. The objectives of the communications plan differ according to the phase of pandemic preparedness:

- Interpandemic and pandemic alert phase: To educate and create good practices.
- Pandemic Phase: To minimize the spread of illness, to minimize social disruption, and to manage expectations.
- Post-Pandemic Phase: To return to normal and to sustain good hygienic practices.

#### **Overview of Communications during the Interpandemic Period**

<b>Component</b>	<b>Provincial Responsibilities</b>	<b>Regional Responsibilities</b>
<b>Internal Communications</b>	<ul style="list-style-type: none"> <li>○ Adapt provincial Emergency Communications Plan to guide Communications during an influenza pandemic</li> <li>○ Develop detailed strategies and guidelines for Communications for all three phases</li> <li>○ Provide regular timely information updates</li> <li>○ Build capacity for rapid internal Communications</li> </ul>	<ul style="list-style-type: none"> <li>○ Support and participate in provincial Emergency Communications Plan</li> </ul>
<b>Public Communications</b>	<ul style="list-style-type: none"> <li>○ Inform public, media and health care providers of provincial pandemic and emergency response plans</li> <li>○ Communications Branch will: identify spokesperson and an alternate to convey information to public; provide template for public information; and ensure key messages are consistent with national messages,</li> </ul>	<ul style="list-style-type: none"> <li>○ Identify regional spokesperson</li> <li>○ Coordinate public awareness efforts with Communications branch</li> </ul>

Component	Provincial Responsibilities	Regional Responsibilities
	<ul style="list-style-type: none"> <li>○ Provide regular timely information updates</li> <li>○ Public Communications also encompasses the production and dissemination of educational pieces, planning media, advertisements, and planning for communication challenges and risks and modify public awareness efforts accordingly.</li> </ul>	

## **COMMUNITY EMERGENCY RESPONSE**

A pandemic influenza is anticipated to cause significant stress and potential disruption in normal community services. Because of the diversity of community and regional needs throughout the province, regional steering committees must identify their own community needs and develop plans to meet those needs. The national and provincial pandemic plans serve as a resource for planning for the unique pandemic impact.

### **Municipal Government Planning Considerations**

Essential services provided in every community include water, power, transportation, communications, food and other essentials. One of the assumptions that the provincial plan makes is that essential services may be interrupted due to the high illness rate expected to impact all sectors. It is imperative that municipalities and organizations responsible for providing essential services plan for operations during the pandemic period. Examining the appropriateness of existing disaster plans is essential in beginning the planning process. Planning for redundancy in operations is crucial to maintain them during disasters and health emergencies. Municipalities are advised to consider the following with respect to pandemic influenza planning and response:

- Initiation and maintenance of communication with local pandemic influenza steering committees
- Continuity of local government
- Maintenance of essential services such as those described above and fire/police service
- Communications messages about disruption or delays in services should they occur
- Provision of support to the Regional Health Authority and the local Public Health region upon request. Such requests may include, but are not limited to, transportation to and from/traffic control during immunization clinics, assistance in mobilizing the regional plan
- Assistance in any community infection control measures such as closure of public buildings
- Plan for continuity of commerce such as food purchases and gasoline

### **Volunteer Mobilization**

The use of volunteers in disaster relief has been invaluable in the past. In the event of a pandemic when human resources are expected to be particularly challenged, it is considered inevitable that planners consider the use of volunteer services in their emergency response. A coordinated approach to the identification, recruitment and deployment of volunteers will help to ensure access to the most appropriate responder at the appropriate time. It is recommended that each regional steering committee have volunteer representatives to provide guidance and assistance in the development of a regional volunteer plan.

### **Family and Community Services**

The Department of Family and Community Services has two important functions in relation to emergencies such as a potential pandemic influenza: continuing to provide departmental services to the citizens of New Brunswick and providing emergency social services. Family and Community Services' mandate during an emergency includes providing services to vulnerable populations, basic social assistance, housing services, and protection services, to name a few. Family and Community Services has established a coordinating committee involving all regional offices in order to plan the response to pandemic influenza issues, to coordinate actions in regions and to maintain service delivery.

## **OPERATIONALIZATION AND RECOVERY**

Specific technical appendices are used to support the operationalization (response) of the pandemic plan. These appendices continue to be developed and modified as new information becomes available. During the pandemic, ongoing evaluation of the response will occur to determine if any changes need to be made so pandemic influenza plans can be adapted and refined as required. The recovery phase will involve deactivating the response activities, reviewing their impacts and using the lessons learned to guide future planning.