

PANDEMIC **INFLUENZA**

Nova Scotia Health System

Pandemic Influenza Plan

Version 2
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Nova Scotia Health System Pandemic Influenza Plan

Chapter 1 Introduction

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Context

Pandemic influenza is a type of influenza that occurs every few decades and spreads rapidly to affect most countries and regions around the world. Unlike the “ordinary” influenza that usually occurs every winter in Canada, pandemic influenza can occur at any time of year and is much more serious. It is estimated that between 500 and 1500 Canadians die each year from ordinary influenza and its complications. Three pandemics of influenza occurred during the 20th century and were responsible for many thousands of deaths. Experts predict another pandemic of influenza, but they cannot say exactly when it will happen. When it does, it may come in two or more waves several months apart, and each wave may last two to three months. As much as a quarter of the population may be affected, maybe more.

Pandemic influenza is likely to cause the same symptoms as an ordinary influenza, but the symptoms may be more severe because nobody will have any immunity or protection against that particular virus. A serious pandemic is also likely to cause many deaths, disrupt the daily lives of many people, and cause intense pressure on health and other services. Every pandemic is different, and until the virus starts circulating, it is impossible to predict its full effects.

The Nova Scotia Health System Pandemic Influenza Plan, based on the Canadian Pandemic Influenza Plan (2004), will outline roles, responsibilities, and key activities of the health-sector response before, during, and following an influenza pandemic.

Influenza Background

Influenza A, B, and C viruses are known to cause disease in humans. While influenza B viruses are strictly human pathogens, influenza A viruses are readily isolated from avian species, pigs, and other animals. Influenza A viruses cause moderate to severe illness and affect all age groups; influenza B viruses generally cause milder illness. Influenza C is associated with mild respiratory disease and does not cause the type of potentially serious illnesses associated with A and B.

The onset of influenza A is typically sudden and may include fever, cough, sore throat, headache, and prostration. The disease process may lead to primary pneumonia or give rise to secondary bacterial complications such as streptococcal, staphylococcal, and *Haemophilus influenzae* infections that may lead to death from pulmonary complications

(Hilleman 2002). Pneumonia and influenza are among the leading causes of death in Canada contributing to over 8000 deaths in 1997 (Statistics Canada 2002).

A human influenza epidemic is a widespread occurrence of influenza in a community at a particular time. An influenza pandemic is an outbreak of the disease typically characterized by the rapid spread of a new type of influenza virus to all areas of the world, resulting in an unusually high number of illnesses and deaths, over a period of approximately two to three years.

The Influenza Virus

The influenza virus is spherical in shape and consists of genetic material within a lipid envelope. On the surface are proteins that attach the virus to a host cell and allow the genetic material to escape and invade other cells. During infection or vaccination, the human immune system recognizes these surface antigens and forms antibodies to fight them.

Influenza A viruses are divided into subtypes based on differences in their surface glycoprotein antigens: haemagglutinin (HA) and neuraminidase (NA). The HA helps the virus attach to the respiratory cells, and the NA helps the virus penetrate into the cells after attachment.

Fifteen distinct forms of HA have been discovered for Influenza A and are designated H1 to H15. The neuraminidase is known to exist in nine distinct forms, designated N1 to N9. Various combinations of HA and NA have been found. For example, two influenza A subtypes, H3N2 and H1N1, have been known to circulate in the human population since 1977.

To date, only three different HA and two different NA subtypes have been known to cause human epidemics. However, all of the influenza subtypes are known to exist in avian (bird) populations, particularly ducks, which are thought to be the primary reservoir for influenza viruses. The ducks, in turn, can transmit these viruses to pigs and to chickens. It is theorized that pigs act as “mixing vessels” for human and bird viruses and can pass on new viruses to humans; however, there is no evidence to fully support this theory (Laver and Garman 2002).

Antigenic Drift

The influenza season accounts for many illnesses and deaths each year. The annual recurrence of illness is caused by subtle genetic changes in the virus types, known as antigenic drift. Both influenza A and B undergo these changes, which account for different epidemiologies, strains, and vaccines each season. Since successful immunization requires antigenic match between the vaccine and the circulating strains, the changes that occur to the virus from year to year necessitate an annual influenza vaccination.

Antigenic Shift

Occasionally, major changes to the surface proteins occur, and an entirely new subtype of influenza A virus emerges. When this happens, pandemics are possible. These new subtypes, which may be particularly virulent strains of virus, cause pandemics when

- There is susceptibility in the population.
- Human-to-human transmission is evident.
- There is evidence that the virus is virulent and will cause serious disease.

There is no way of predicting when a new subtype will emerge and cause disease in humans.

Influenza Pandemics

Three documented influenza pandemics occurred during the 20th century: the Spanish pandemic in 1918–19, the Hong Kong influenza pandemic in 1968, and the Asian influenza pandemic in 1957. Of the three, the most devastating outbreak was the Spanish flu, which killed over 21 million people worldwide—more deaths than during the First World War. Over one half million people were affected in Quebec, and over 1600 people died in Toronto (Tamblyn 1999). During this particular pandemic the traditional *U*-shaped mortality curve that reflects deaths of the very young and the very old, was *W*-shaped to reflect the large number of deaths in the young adult range. It has subsequently been discovered that the virus that caused this pandemic was a H1N1 subtype. It remains unknown as to why this particular virus was so virulent.

Preparedness Planning

Preparedness planning for pandemic influenza is occurring around the world. The World Health Organization (WHO) will announce the onset of a new influenza pandemic and coordinate international surveillance. In Canada, the federal government through Health Canada and the Public Health Agency of Canada provides nationwide coordination of the health response to pandemic influenza.

Pandemic influenza response plans exist at the national, provincial, and local levels. The Nova Scotia plan, flowing from the Canadian Pandemic Influenza Plan (CPIP), guides and supports the provincial health sector response. Each health-care agency is planning for action during a pandemic.

Minimizing the societal disruption of pandemic influenza involves more than a health-care sector response for the population of Nova Scotia. Any response to any emergency is graduated and in line with the severity of the event. The provincial government through its business continuity planning initiative is establishing plans that will see minimum service levels from all departments and agencies should the province be faced with a pandemic event. Government is also encouraging non-government organizations, industry, and other private business to do the same, through the development of mitigation projects and internal planning to ensure continuity of service delivery.

This plan was drafted by the Nova Scotia Pandemic Influenza Working Group, a joint committee of the Departments of Health, Health Promotion and Protection, and Community Services. It was developed in collaboration with the Nova Scotia Emergency Management Office, district health authorities, and the IWK Health Sciences Centre, together with other provincial, federal, and health-sector partners.

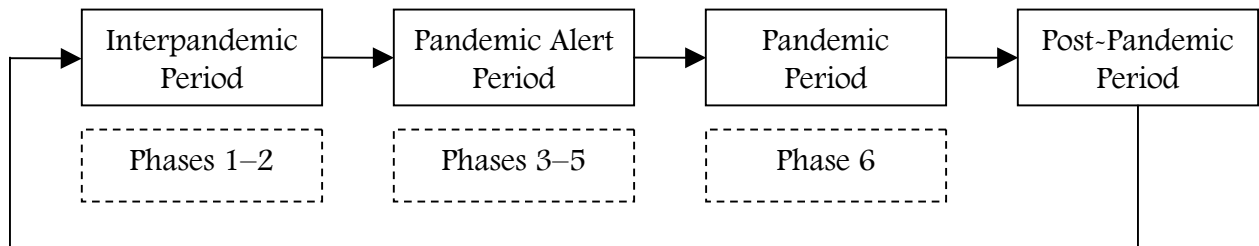
This plan will continue to evolve, as new information and evidence come forward, and as decisions are finalized or modified in the Canadian plan. It complements similar health services plans that are in development in each of the district health authorities.

The Plan

The Nova Scotia Health System Pandemic Influenza Plan describes action, organized by phase corresponding to the likely course of spread, in areas of

- Communications
- Surveillance
- Public health measures
- Vaccines
- Antivirals
- Health services

Each individual component is organized according to activities required during specific periods and phases of a pandemic.



The following table defines each phase within the pandemic period. Note: This table uses the nomenclature for Canadian pandemic phases revised following the 2005 WHO global influenza preparedness plan (Public Health Agency of Canada 2006).

Canadian Pandemic Phase Terminology

Interpandemic Period (Phases 1 and 2)

Phase	Definition
1.0	No new virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals located outside of Canada. If present in animals, the risk of human infection/disease is considered to be low.
1.1	No new virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection is present in animals in Canada, but the risk of human infection/disease is considered to be low.
2.0	No new virus subtypes have been detected in humans. However, an animal influenza virus subtype that poses substantial risk to humans is circulating in animals located outside of Canada.
2.1	No new virus subtypes have been detected in humans. However, an animal influenza virus subtype that poses substantial risk to humans is circulating in animals in Canada.

Pandemic Alert Period (Phases 3, 4, and 5)

Phase	Definition
3.0	Outside Canada human infection(s) with a new subtype are occurring, but no human-to-human spread (or, at most, rare instances of spread to a close contact) has been observed. No cases identified in Canada.
3.1	Sporadic human infection(s) with a new subtype detected in Canada. Virus is not known to be spreading from human to human, or at most, rare instances of spread to a close contact have been observed.
4.0	Outside Canada small cluster(s) with limited human-to-human transmission are occurring, but spread is highly localized, suggesting that the virus is not well adapted to humans. No cases identified with these cluster(s) have been detected in Canada.
4.1	Sporadic infection(s) with virus that has demonstrated limited human-to-human transmission detected in Canada. No cluster(s) identified in Canada.
4.2	Small, localized clusters with limited human-to-human transmission are occurring in Canada, but spread is highly localized, suggesting that the virus is not well adapted to humans.

Phase	Definition
5.0	Outside Canada larger cluster(s) are occurring, but human-to-human spread is still localized, suggesting that virus is becoming increasingly better adapted to humans but may not yet be fully transmissible (substantial pandemic risk). No cases identified with these clusters have been detected in Canada.
5.1	Sporadic infection(s) with virus that is better adapted to humans detected in Canada. No cluster(s) identified in Canada.
5.2	Larger localized cluster(s) with limited human-to-human transmission are occurring in Canada, but human-to-human spread is still localized, suggesting that virus is becoming increasingly better adapted to humans but may not yet be fully transmissible (substantial pandemic risk).

Pandemic Period (Phase 6)

Phase	Definition
6.0	Outside Canada increased and sustained transmission in general population has been observed. No cases identified with the affected populations have been detected in Canada.
6.1	Sporadic infection(s) with the pandemic virus detected in Canada. No cluster(s) identified in Canada.
6.2	Localized or widespread pandemic activity observed in the Canadian population.

Post-Pandemic Period

In the current WHO document this period is not associated with a numerical phase or specific WHO or national actions. It is indicated that a period of recovery would be expected but that following Phase 6 (the Pandemic Period) there would be a return to the Interpandemic Period (global pandemic phase 1 or 2). This may be due to the problematic issue of determining when “recovery” has been completed. In Canada we will also move from the Post-Pandemic Period back to the appropriate Interpandemic Period phase. National indicators for this change are yet to be determined.

Command and Control

Command and control refers to the process by which decisions are made within government. This process can be different during an emergency or crisis situation than the process used during business as usual.

Command and control for government during an influenza pandemic can be complex, as decisions will involve more than one government department.

A command and control process for emergency operations is in the process of being revised and will be included in a future version of the Nova Scotia Health System Pandemic Plan.

Planning Assumptions

The following assumptions provide a foundation for the action described in the plan. The assumptions are based on historical experience, scientific knowledge, and expert consensus.

- Based on the last two pandemics, it is estimated that the next pandemic virus will be in Canada within three months after it emerges in another part of the world, but it could arrive much sooner due to the increases in the volume and speed of air travel.
- Upon arrival, the virus may spread across Canada with great speed.
- The first peak of illness in Canada may occur within two to four months after the virus arrives in Canada.
- The first peak in mortality will be one month after the peak in illness.
- It is believed that if the pandemic virus arrives close to the usual annual influenza season, the time interval for the virus to have its maximum impact on the population in terms of morbidity, mortality, and societal consequences will be shortened.
- A pandemic usually spreads in two or more waves, either in the same year or in successive influenza seasons.
- A second wave may occur within three to nine months of the initial outbreak wave and may cause more serious illnesses and deaths than the first.
- In any locality, the length of each wave of illness is likely to be six to eight weeks.
- Vaccine will be the primary means of prevention of pandemic influenza. The supply may be limited during the early stage of the pandemic; therefore, priorities for vaccination will need to be established. Vaccine when available should be

distributed in an equitable manner, and provinces/territories should adhere to similar vaccination protocols.

- A substantial portion of the workforce may not be able to work for some period of time due to illness in themselves or their family members.
- Effective preventive and therapeutic resources will likely be in short supply.
- Essential community services are likely to be disrupted.

Additional planning assumptions specific to plan components will be reported in the relevant chapters of this plan.

Estimated Impact of an Influenza Pandemic on Nova Scotia

The impact of the next influenza pandemic is difficult to predict and will depend on how virulent the virus is, how rapidly it spreads from population to population, and the effectiveness of prevention and response efforts. Despite the uncertainty about the magnitude of the next pandemic, estimates of the health and economic impact remain important to aid public health policy decisions and guide pandemic planning.

Based upon the mathematical model presented in the 2006 *Canadian Pandemic Influenza Plan for the Health Sector*, the following impact is estimated for Nova Scotia.

Figure 1: Estimated number of cases by outcome for a pandemic of mild to moderate severity

Outcome (based on a Nova Scotia population of 937,889) ¹	Attack Rate 15%			Attack Rate 35%		
	Mean Number	5th Percentile	95th Percentile	Mean Number	5th Percentile	95th Percentile
Death ²	563	334	791	1,313	779	1,844
Hospitalization with recovery	1,407	1,027	1,785	3,283	2,396	4,165
Outpatient care	70,341	68,357	72,332	164,130	159,502	168,775
Ill, no formal care	68,372	66,690	70,130	159,535	155,610	163,635
Total	140,683	136,421	145,030	328,261	318,315	338,404

Note: This is a modified table based on the format in the 2006 *Canadian Pandemic Influenza Plan for the Health Sector*, www.phac-aspc.gc.ca/cpip/pclcpi/pdf-e/CPIP-2006_e.pdf.

1. Population as of July 1, 2005, from www.gov.ns.ca/finance/publish/FACTS/2005/NS-At-A-Glance.pdf

2. Those who die in hospital are not counted in the “hospitalization with recovery” outcome; therefore, the number hospitalized during a pandemic will be all of the “hospitalization with recovery” group plus likely a large proportion of the fatal cases.

The (CDC) has created and made available a software program, FluAid (<http://www2.cdc.gov/od/fluid/>), which uses the model developed by Meltzer and colleagues to provide an estimate of mortality, hospitalizations, and outpatient visits for a particular population in the event of pandemic influenza.

FluAid is available as downloadable software or an online calculator from the above website. Documentation and other important background papers are also available from this site.

Scope of the Provincial Health System Plan

The Nova Scotia Health System Pandemic Influenza Plan will

- guide and support health-sector response between the Nova Scotia Department of Health, Nova Scotia Department of Health Promotion and Protection, the district health authorities (DHAs), the IWK, Continuing Care, and other health system employers
- develop a process to manage health-care issue resolution
- develop a process for collecting, analysing, and summarizing information from district health authorities and other sources regarding the health-sector impact of the pandemic:
 - human impact (morbidity, mortality, epidemiology)
 - health-sector resource impact
- develop a communication strategy including
 - a process for sharing information and updates to DHAs, other provinces, the federal government, and other stakeholders
 - a process for informing the public and addressing their concerns
- clarify command and control structure and function for provincial leadership during a pandemic of influenza
- clarify the structure and access to expert subject matter specific to pandemic influenza via the Health System Professional Advisory Group

As the planning progressed since the creation of the PIWG, the need for further sub-working groups was identified, and these working groups were created and populated. The working groups were created to manage the many issues identified by the district health authorities for resolution by the Department of Health. The department accepted responsibility for resolving those issues over which it has jurisdiction and ensuring that

any other identified issues are passed along with understanding, to those departments or agencies that are responsible.

Ethical Framework for Decision Making

When an influenza pandemic occurs, individuals in virtually every sector and at all levels of the health care system will be required to make decisions that will fundamentally affect health-care delivery and access to health-care services. It was decided early in the province's planning that a framework for public health decision making would be a valuable tool for decision makers.

Therefore, government has engaged a bioethicist to develop a document to promote thought and reflection on the values inherent in decisions that will have to be made before and during a pandemic. A decision-making framework and toolkit are near completion. The work on ethical decision making that is under way in Nova Scotia is being shared with other jurisdictions through national committees and will be consistent with federal guides and decisions.

A copy of the draft *Ethical Considerations and Decision-Making Framework* is available as Reference 1 of this plan.

Conclusion

Pandemic influenza planning goes beyond the work taking place throughout the health system. As planning evolves, further versions will be developed. Individuals and businesses, too, have a responsibility to seek information from reliable sources and to be discerning about what information they accept and the source of the information.

Provincial planning for the health system will continue to be led jointly. The Departments of Health and Health Promotion and Protection have created a new shared branch, the Health Emergency Management Centre, which will have responsibility for leading all-hazards emergency planning and will continue to advance pandemic planning activities in the province. It will be responsible for the production of future versions of the Nova Scotia Health System Pandemic Influenza Plan.

A full copy of this plan, as well as the Executive Summary and other supporting documents, can be found on the province's pandemic influenza website (www.gov.ns.ca/pandemic).

Reference List

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Nova Scotia Health System Pandemic Influenza Plan

Chapter 2: Communications

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Background

Accurate, consistent, and timely communication is essential as pandemic activity approaches and reaches Canada. Information about the level of influenza activity, the risk to the public, and advice on how to manage it will need to come from a variety of sources in a coordinated manner. The demand for information will be intense and sustained; therefore, spokespeople and information must be readily prepared and available across the province.

Communications will need to support other aspects of the pandemic plan during each phase of the pandemic. The communications plan supports internal communications within government and between governments and other health-care organizations. The focus is also on external communications to the public, health-care stakeholders, and the media. Finally, the communications plan complements communication to health-care professionals.

Health communicators from the province will have primary responsibility for meeting the communications objectives of this plan. They will work closely with communicators from the district health authorities and other government agencies and will take the lead in certain areas of pandemic planning, as appropriate.

Objectives

Overall, the objectives of pandemic influenza communication are to

- instill and maintain public confidence in the province's public health system and its ability to respond to and manage the appearance of pandemic influenza.
- provide accurate, rapid, and complete information before, during, and after an outbreak
- provide accurate, consistent, and comprehensive information about the health threat
- address rumours, inaccuracies, and misconceptions as quickly as possible and prevent stigmatization of affected groups

Communications Planning Assumptions

- Communication will be critical to the success of the pandemic plan.
- Communications will support each chapter of the pandemic plan.
- Demand for information will be intense and sustained.
- Communication must be timely, accurate, coordinated, appropriate, and consistent.
- Communication will need to come from federal, provincial, and local sources.
- Key partners and stakeholders will help communicate key messages to Nova Scotians.
- Media will be a key partner in communicating to Nova Scotians during a pandemic.
- Communication will be a tool to motivate action.
- Communication must balance the public's right and need to know, without generating fear or complacency.
- All Nova Scotians should have equal access to information.
- There are numerous audiences, both internal and external, to consider.
- There will be a need for both education and awareness, as well as information.
- Communication resources, like all others, will be compromised during a pandemic.
- Media resources, like all others, will be compromised during a pandemic.
- Communicators will rely on medical experts and health administrators and officials for key information during a pandemic.

Coordinated Pandemic Communications Planning

Pandemic communications planning is ongoing at the federal, provincial, and district health authority levels. Communicators from each level are coordinated through the provincially led Critical Issues Communications Working Group. Also represented in this group is the Emergency Management Office and Communications Nova Scotia. This group is charged with developing, implementing, and updating the provincial pandemic influenza communications plan.

The provincial communications plan will be integrated with the district health authority communications plans through the Critical Issues Communications Working Group and the Public Relations Working Group, made up of health communicators from the province and the district health authorities. In the event of a pandemic, members of these groups would meet regularly to coordinate communications and implement the communications

plan. The Roles and Responsibilities (Annex D) will help to integrate communications planning, with roles to be fleshed out as planning progresses.

At any phase of a pandemic, existing channels of communication will be employed through the following key players:

- Nova Scotia Department of Health
- Nova Scotia Department of Health Promotion and Protection
- Communications Nova Scotia
- Health Canada
- Public Health Agency of Canada
- District health authorities and the IWK Health Centre

The Department of Health works with various communications partners to help develop key messages and distribute important messages, information, and materials to various publics. As planning progresses, organizations will be contacted and invited to participate in communications planning.

Key audiences are listed in Annex A. General public information on pandemic influenza is referenced in Annex B.

In the later stages of a pandemic, communications would be coordinated through Communications Nova Scotia and the Joint Emergency Operation Centre. Media will be advised to access key health spokespeople through the Department of Health communications section. A list of authorized spokespeople is contained in Annex C, and the roles and responsibilities of those involved in communications planning are outlined in Annex D.

Communications Tools

There are a number of existing communication tools to build upon and develop as the pandemic develops. The following tools, or any combination of the following, will serve to get important health messages to Nova Scotians:

- fact sheets
- websites
- newsletter and rural newspaper articles
- news releases

- backgrounders
- press conferences
- technical briefings
- editorial boards
- PowerPoint presentations
- regular media availabilities
- teleconferences, messages to DHAs
- advertisements, public service announcements
- toll-free telephone information line

Activities by Pandemic Phase

During a pandemic, key messages tailored to the specific nature of the outbreak will be developed, based on surveillance information and scientific analysis. Messaging to the public during a pandemic will include information on the outbreak; what individuals, families, and communities can do to protect themselves and cope with the situation; what steps they should take to manage their daily activities; how they can help to respond; and what steps to take if they are ill, including how and where to access health services.

Consistent with this approach, three stages of communications will be employed:

- Interpandemic Period and Pandemic Alert Period: Raising awareness and education levels among key audiences; encouraging good hygiene practices; testing the plan
- Pandemic Period: Communications response to a pandemic and implementation of tactics; helping to minimize the spread of illness and social disruption while managing expectations.
- Post-Pandemic Period: Evaluating communications; helping to sustain hygiene practices

A number of the activities listed in the Interpandemic and Pandemic Alert Phases have been completed or are in progress.

Interpandemic and Pandemic Alert Period

- Create a Critical Issues Communications Working Group (consisting of communicators from provincial government, federal government, DHAs).
- Research current levels of education and awareness around pandemic influenza.
- Identify overarching key messages for all stages of pandemic.
- Clarify roles and responsibilities of federal, provincial, and district level communicators.
- Develop message map (who says what, when, and where and to whom).
- Create visual identity and guidelines to be applied to all pandemic materials.
- Develop general pandemic material (key facts, FAQ).
- Develop pandemic website; post materials.
- Engage non-health response partners in planning.
- Send fact sheets to DHAs and key audiences.
- Carry out ongoing briefings (Cabinet, caucus offices, senior leadership teams, provincial medical officers of health, DHA communications directors).
- Develop media relations and media-monitoring strategies.
- Identify spokespeople and back-up spokespeople.
- Provide media training to key spokespeople.
- Coordinate media information requests.
- Coordinate provincial editorial boards.
- Develop media guidelines for pandemic period.
- Articulate the Nova Scotia approach to pandemic—what we’re doing to prepare.
- Develop speakers bureau material for presenters from government departments and DHAs.
- Develop infection-control materials for health professionals and the general public.
- Develop ad campaign for pandemic phase.
- Set up and activate toll-free telephone information line to handle public inquiries.
- Develop list of potential questions for toll-free telephone information line.
- Implement stakeholder/partner education/information sessions.

- Develop business continuity plan for communications team.
- Develop materials for physicians (in hospitals and community clinics) and health-care professionals.
- Develop self-care materials.
- Cross-reference and integrate federal, provincial, and district communications plans.

Announcement of Nova Scotia Pandemic Influenza Plan

- Send letter and copy of plan to key audiences.
- Prepared key messages and briefings for DHA CEOs, medical officers of health, Cabinet and caucus, senior leadership teams, DHA communications directors.
- Develop plan for general public.
- Post plan on website.
- Carry out technical briefing with media.
- Hold press conference and distribute news release.

Pandemic Period

- Set up a permanent media briefing location with appropriate backdrops, etc.
- Coordinate regular technical briefings and/or news conferences to provide background information and set expectations.
- Maintain/update communications materials as scientific evidence and cases change.
- Maintain/update print material/website/speakers bureau material.
- Implement ad campaign.
- Send official (internal) statement from the Chief Medical Officer of Health.
- Respond to frequently occurring media questions by preparing and updating fact sheets, talking points, and Q&A documents to post on website.
- Coordinate requests for spokespersons and subject matter experts.
- Ensure that public information corrects misunderstandings and inaccuracies.

- Determine health professionals' knowledge of surveillance and reporting, diagnostics, transmission, exposure management, and issues such as concern for self-protection and possible use of quarantine and isolation. If areas of concern are identified, promptly address with mail-outs and communications through district health authorities.
- Hold regular teleconferences with communicators.
- Implement continuity plan for communicators.
- Provide regularly updated information to key audiences.
- Implement self-care campaign.
- Track toll-free telephone information line calls; update information.
- Carry out ongoing media analysis.
- Prepare and distribute e-mail from Minister or Premier to all government employees indicating what is being done, personal prevention, community assistance.

End of First Wave

- Develop messages around preparation for possible second wave, community support, mental health, and other appropriate topics.
- Develop and distribute messages around rebuilding capacity in the health-care system.
- Conduct a communications debriefing to determine what worked and where improvements are needed.
- Work with DHA communications directors, medical officers of health, and appropriate partners to determine where improvements are needed.
- Analyse media coverage to determine the nature of the coverage.
- Develop a revised communications plan based on feedback for use in second wave or other health emergency situations.
- Scale back communications staffing as need diminishes.

Second or More Waves

- Carry out plan for the previous phases, with modifications to be determined as the pandemic progresses.

Post-Pandemic Period

- Review performance measurement criteria and evaluate response.
- Coordinate debriefing with key partners.
- Engage independent body to assess/audit communications plan.
- Update the plan based on evaluation results.
- Return to the Interpandemic Phase.

Annex 2-A: Key Audiences

General Public

Parents, youth, and children
Seniors
Aboriginals
Persons with disabilities
Hearing and visually impaired
French-speaking Nova Scotians

Governmental

Public Health Agency of Canada
Health Canada (including First Nations and Inuit Health Branch)
Department of National Defence
Other provincial Departments of Health
Other provincial chief medical officers of health
Emergency Management Office
Department of Environment and Labour (Minister responsible for Occupational Health and Safety)
Department of Community Services
Department of Education
Department of Justice
Department of Agriculture
Department of Finance
Office of Economic Development
Department of Tourism, Culture and Heritage
Seniors' Secretariat
Office of Aboriginal Affairs
Public Service Commission
Communications Nova Scotia
Cabinet
MLAs
Government Caucus Offices
Disabled Persons Commission
Regional housing authorities

Partners

South Shore Health
South West Health
Annapolis Valley Health
Colchester East Hants Health Authority
Cumberland Health Authority
Pictou County Health Authority
Guysborough Antigonish Strait Health Authority
Cape Breton District Health Authority
Capital Health
IWK Health Centre
Nova Scotia Association of Health Organizations
Doctors Nova Scotia
Nova Scotia Government and General Employees Union
Nova Scotia Nurses Union
Pharmacy Association of Nova Scotia
Nova Scotia Dental Association
College of Physicians and Surgeons
College of Registered Nurses
College of Licensed Practical Nurses
Nova Scotia College of Paramedics
Red Cross
Victorian Order of Nurses
Abilities Foundation of Nova Scotia
Continuing Care Association of Nova Scotia
Public Health Association of Nova Scotia
Dalhousie Medical School
Long-term care facilities (publicly and privately funded)
Residential care facilities
Community Based Options
Nova Scotia municipalities
Canadian Mental Health Association
Children's aid societies
Nova Scotia Association of Social Workers
Child Care Connections
Continuing Care Association of Nova Scotia
Nova Scotia Residential Agencies Association

Adult Residential Centre/Regional
Rehabilitation Centre Association

Private Sector

Large employers (Imperial Oil, Aliant, Nova
Scotia Power, Irving, Sobeys, Atlantic
Superstore,
Michelin, Neenah Paper, Stora, Bowater)
Halifax International Airport Authority
Halifax Port Authority
Chambers of commerce

Media

Chronicle Herald
Transcontinental Media
Eastlink
CTV Atlantic
Global
CBC TV
CBC Radio
RDI Radio and TV
Rogers Radio
Community radio stations
MRG
The Coast
Community weeklies
University papers and radio
Church bulletins
Programs for Seniors

Annex 2~B: General Information on Pandemic Influenza

Visit www.gov.ns.ca/pandemic for general information on pandemic influenza.

Annex 2~C: Key Health Spokespeople

Department of Health

- To access key spokespeople from the Department of Health, media must contact Communications at 902-424-5886.

Department of Health Promotion and Protection

- To access key spokespeople from the Department of Health Promotion and Protection, media must contact Communications at 902-424-4410.

Public Health

- Dr. Jeff Scott, Chief Medical Officer of Health
Alternate: Dr. Robert Strang, Deputy Chief Medical Officer of Health
- Dr. Shelly Sarwal, Medical Officer of Health, Colchester Health Authority, Cumberland Health Authority, Pictou County Health Authority, Guysborough Antigonish Strait Health Authority, Cape Breton Health Authority
- Dr. Richard Gould, Medical Officer of Health, South Shore Health, South West Health, Annapolis Valley Health
- Dr. Gaynor Watson-Creed, Medical Officer of Health, Capital District Health Authority
- Dr. Ann Roberts, Medical Officer of Health, Department of Health Promotion and Protection

Emergency Planning

- Jim Millar, Chief of Program Delivery, Department of Health

Annex 2~D: Roles and Responsibilities

(Nova Scotia Pandemic Influenza Roles and Responsibilities—Summary Report)

By Audience

Parents, Children, and Youth

- Public Health Agency of Canada (PHAC) and Department of Health (DOH) to develop messages, including self-care information
- District health authorities (DHAs)/IWK to provide information on access to services
- Distribution through partner departments, organizations

Seniors

- PHAC and DOH to develop messages, including self-care information
- Province to lead communications with seniors in the community and in care through DOH Continuing Care Branch and the Seniors' Secretariat
- Department of Community Services (DCS) to distribute to public housing residents through regional housing authorities

Persons with Physical Challenges

- PHAC and DOH to develop messages
- Province to lead communications

Persons with Mental Challenges

- PHAC and DOH to develop messages
- Province to lead communications; some distribution through DHA/IWK mental health programs
- DCS to distribute to clients through service providers

Persons with Chronic Conditions

- PHAC and DOH to develop messages
- Province to lead communications; distribution through DHA/IWK outpatient clinics
- Distribution through health-related non-governmental organizations (NGOs), family physicians, pharmacists, community-based outpatient clinics.

First Nations

- Health Canada and DOH to develop messages
- Health Canada to work on pandemic preparedness training and communicate the need for people to listen to provincial/DHA messaging and access provincial services
- Province to lead/distribute communications

Immigrants (ESL)

- PHAC and DOH to develop messages; consider translation into languages other than English or French
- Province to lead communications

Government

Public Health Agency of Canada/Health Canada

- Information to flow between PHAC/HC and DOH

Provincial government

- Information to flow between provincial government departments
- DHAs and PHAC can use DOH as a conduit for information to other provincial government departments

District health authorities and IWK Health Centre

- Information to flow between DOH and DHAs/IWK
- Information from DHAs to federal government or vice versa to flow through DOH

Health departments in other provinces/territories

- Information to flow between provincial health departments and through PHAC/HC when appropriate

Members of the Legislative Assembly (MLAs) and caucus offices

- DOH to provide proactive information to MLAs and caucus offices; DHAs/IWK to respond to requests for information from MLAs and caucus offices

Members of Parliament (MPs)

- PHAC to provide proactive information to MPs; DHAs/IWK to respond to requests for information from MPs

Health Professionals

Physicians in hospitals

- PHAC and DOH to develop general messages, DHAs/IWK and DOH to develop specific messages
- Distribution by DHAs/IWK

Family physicians

- PHAC and DOH to develop general messages, DHAs/IWK; DOH to develop specific messages with Q&A documents
- DHAs/IWK to distribute specific messages
- Possible distribution through partners

Mental health professionals

- PHAC and DOH to develop general messages; DHAs/IWK, DOH to develop specific messages with Q&A documents
- DHAs/IWK to distribute specific messages
- Public Service Commission to distribute to Employee Assistance Programs

Nurse practitioners

- PHAC and DOH to develop general messages
- Province to distribute messages/materials

Other health-care staff, support staff, and management companies

- PHAC and DOH to develop general messages; DHAs/IWK, DOH to develop specific messages with Q&A documents
- DHAs/IWK to distribute specific messages

Pharmacists

- PHAC and DOH to develop general messages
- Distribution through the Pharmacy Association of Nova Scotia, colleges
- DHAs to distribute to hospital-based pharmacists

Paramedics

- PHAC and DOH to develop general messages; DOH to develop specific messages
- Distribution through EHS/EMC

Dentists

- PHAC and DOH to develop general messages; DHAs/IWK and DOH to develop specific messages
- Distribution through the Nova Scotia Dental Association

Other regulated health professionals

- PHAC and DOH to develop general messages
- Distribution through professional colleges

Community health boards

- PHAC and DOH to develop general messages
- DHAs/IWK to develop specific messages if required
- Distribution through DHAs/IWK

Other

Educational institutions

- PHAC and DOH to develop general messages
- Province to communicate with school boards overall
- DHA/IWK to lead in some logistics

Long term-care facilities, residential care facilities, community-based options

- PHAC and DOH to develop general messages
- DOH to distribute to LTC/RCFs; DCS to distribute to CBOs
- Possible distribution also through Nova Scotia Association of Health Organizations (NSAHO)

Unions

- DOH and DHAs/IWK to jointly develop general messages (based on operational decisions)
- DOH, DCS, and DHAs to distribute messages depending on topic area

Non-governmental organizations:

- PHAC and DOH to develop general messages

Military

- PHAC/Department of National Defence (DND) to develop messages
- Possible distribution through DND, Military Family Resource Centres

Municipalities

- PHAC and DOH to develop general messages
- DHAs to provide specific messages on operations in district
- Emergency Management Office (EMO) and DHAs connecting with municipalities

Large employers/small businesses

- PHAC and DOH to develop general messages
- Province to communicate with key business/essential services
- DHAs to connect with local chambers of commerce

Airport authority/port authority

- PHAC and NSDOH to make connections, develop messages

Churches/religious groups

- Provincial government to contact church umbrella groups as distribution channels and sources of emotional support for some Nova Scotians

Media

- PHAC/DOH and DHAs/IWK all have a role
- DOH/DHAs to draft media guidelines for use during a pandemic, with input from media
- PHAC/DOH to lead discussion with major media outlets regarding guaranteed public service

By Tool

Key Messages

- PHAC and DOH to develop messages, including self-care information
- DHAs/IWK/DOH to develop information on access to services
- DHAs/IWK to distribute information on access to services

Fact Sheets/Backgrounders

- PHAC and DOH to develop fact sheets
- PHAC to distribute federal fact sheets
- DHAs/IWK/DOH to distribute provincial fact sheets

Websites (Public And Private)

- Province to create a provincial public website
- Provincial site to link to federal site
- DHAs/IWK to post district/site information on their websites, with link to provincial site
- Province to create a provincial private website to be accessed by DHAs/IWK to post completed documents and works in progress
- Back-up web resources will be required for the provincial site

Newsletter Articles

- PHAC produces *It's Your Health*, posted on the PHAC website
- DOH to produce newsletter articles for provincial newsletters and organizations
- DHAs/IWK to produce newsletter articles for district newsletters

News Releases/News Conferences

- PHAC/DOH/DHAs/IWK to release news releases as required
- Office of the Chief Medical Officer of Health to lead provincial news conferences

Technical Briefings

- PHAC conduct federal technical briefings with information provided to provinces
- DOH to conduct provincial technical briefings with input from DHAs/IWK
- DHAs/IWK to conduct district technical briefings with information provided to DOH

Editorial Boards

- DOH to conduct provincial editorial boards

PowerPoint Presentations/Framework

- DOH/CNS to produce and share

Regular Media Availabilities

- All parties to all arrange media availabilities with appropriate spokespersons

Teleconferences to Update on Issues/Messages

- PHAC to lead Pandemic Influenza Committee (PIC) and Health Emergency Communications Network (HECN) calls
- DOH to lead provincial calls with DHAs/IWK
- DOH to also arrange provincial calls on behalf of DHAs/IWK

Advertisements/Public Service Announcements

- All parties to develop and place advertisements and public service announcements

Media Training

- PHAC to provide media training to federal/regional spokespersons
- DOH/CNS to provide media training to provincial spokespersons
- DHAs/IWK to provide media training to district experts as required

Research/Evaluation

- All parties to take part in research and evaluation activities

Application of Visual Identity

- PHAC to use their own visual identity
- Provincial government/DHAs/IWK to use pandemic influenza visual identity

Distribution of Pandemic Print Materials

- Provincial government/DHAs/IWK to distribute materials.

Communications Business Continuity

- All parties to be responsible for business continuity plans for their own branches or districts
- Consideration also to be made for website back-up

Co-ordination of Media Requests

- Media guidelines to be developed jointly by DOH/DHAs with feedback from media

Toll-free Telephone Information Line/Q&A Documents

- Province/DHAs/IWK to jointly develop Q&A document
- DOH to establish line with Access Nova Scotia

Stakeholder/Partner Education Sessions

- All parties to be responsible for educating their key partners

Monitoring/Addressing Rumours and Misinformation

- PHAC to address misinformation in national media
- Province/DHAs/IWK to address misinformation in provincial and local media; the organization that initiated the coverage or handled the media call should address the misinformation

Town Halls

- DHAs/IWK may choose to conduct town hall meetings in the early phases of a pandemic; the province may also use this tool for targeted groups

Nova Scotia Health System Pandemic Influenza Plan

Chapter 3: Surveillance

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Background

Surveillance has been defined as the ongoing, systematic collection, analysis, and interpretation of health data essential to the planning, implementation, and evaluation of public health practice, closely integrated with the timely dissemination of these data to those who need to know (U.S. Centers for Disease Control 1988). In Canada, surveillance of communicable diseases is supported by provincial legislation that mandates the reporting or notifying of diseases by laboratories and physicians. The list of such diseases differs by province/territory; therefore, in order to facilitate comparability across jurisdictions, national disease-specific case definitions have been developed that provide standardized criteria for reporting those diseases nationally to the Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, (Health Canada 2000).

Monitoring influenza is an ongoing activity in Nova Scotia. The existing system will be enhanced for use during a pandemic. During a pandemic, surveillance data will be used to track the spread and impact of the disease, to monitor the effectiveness of control programs, and to determine response activities. The surveillance system will have multiple components, and many different groups will be responsible for surveillance activities, including primary care practitioners, hospitals, long-term care facilities, schools, laboratories, and public health.

As the pandemic progresses, the ability to collect and analyse data and the type of data that will be useful will change. Early in the pandemic, it will be important to identify the arrival of the pandemic strain in Nova Scotia and to track its movement through the population. Once influenza becomes widespread, the actual number of cases will become less important and measures of morbidity, mortality, societal disruption, and health resources capacity will be monitored.

Objectives

The objectives of pandemic influenza surveillance are

1. to permit early detection of the strain of influenza associated with the pandemic
2. to collect data that will provide the information necessary to trigger activities outlined in the Nova Scotia Health System Pandemic Influenza Plan
3. to monitor when and where the influenza strain is circulating in Nova Scotia
4. to describe the ill population

5. to collect data that will assist in identifying groups at high risk of acquiring influenza and of developing complications
6. to estimate the impact of influenza (e.g., hospitalizations, case fatality rate, absenteeism)
7. to evaluate the effectiveness of control strategies
8. to effectively communicate surveillance information to the appropriate stakeholders

Planning Assumptions

- Surveillance needs will change as the pandemic progresses. During the pandemic alert period, detailed reporting of epidemiologic data will be possible and necessary. As influenza activity becomes widespread, resources available for surveillance will be limited. This will impact routine surveillance activities, such as sentinel reporting of influenza-like illness (ILI), so that the data may not be representative or reliable.
- There are many partners in surveillance.
- Surveillance data may be used to trigger other activities.

Influenza Surveillance

The pandemic influenza surveillance system will be built on the existing system used for surveillance of seasonal influenza and other respiratory viruses, such as parainfluenza, adenovirus, and respiratory syncytial virus (RSV). The components of the current influenza surveillance system (notifiable diseases, FluWatch, and severe respiratory illness surveillance) are described below.

Notifiable Diseases

Both influenza of pandemic potential and laboratory-confirmed influenza are notifiable diseases in Nova Scotia under the Health Protection Act.

FluWatch

FluWatch is a national influenza surveillance program, administered by the Public Health Agency of Canada. Data are collected on several key indicators of influenza activity including

- rate of influenza-like illness (ILI) activity in the general population
- number of laboratory-confirmed influenza cases
- number of influenza outbreaks in long-term care facilities and hospitals
- number of schools/workplaces with greater than 10 per cent (>10%) absenteeism due to ILI

A network of sentinel physicians report ILI activity in the general population directly to FluWatch. The number of laboratory-confirmed cases, outbreaks, and schools/workplaces with >10% absenteeism are obtained by district Public Health Services and used to determine the overall level of influenza activity in each region of the province. These data are compiled provincially and reported to FluWatch weekly.

The FluWatch program produces a summary report of influenza activity in Canada that is published on a weekly basis during the influenza season (October to April) and biweekly during the off-season (May to September). This report is available on the FluWatch website and is updated every Friday (www.phac-aspc.gc.ca/fluwatch/). For definitions of terms used in FluWatch, please see Annex A in this chapter.

Rate of Influenza-Like Illness Activity in the General Population (Sentinel Physician Surveillance)

Influenza-like illness (ILI) is defined as the acute onset of respiratory illness with fever and cough and with one or more of the following: sore throat, arthralgia, myalgia, or prostration that could be due to influenza virus. In children under 5 years, gastrointestinal symptoms may also be present. In patients under 5 years of age or 65 years and older, fever may not be prominent.

Sentinel physicians report the extent of ILI activity in the general population across the province directly to the FluWatch program office in Ottawa. Once a week, on a specified day, each sentinel physician reports the number of patient visits that were due to ILI and the total number of patients seen, by age group. The FluWatch program compiles the information from each sentinel physician and calculates an overall rate of ILI activity for the province (i.e., number of patient visits due to ILI per 1000 patient visits).

The recruitment of sentinel physicians for participation in the national influenza surveillance program is the responsibility of the College of Family Physicians of Canada.

Prior to the beginning of the influenza season, the college canvasses family physicians in each province and territory with the goal of having at least one sentinel physician for each census subdivision. As participation in this sentinel surveillance program is voluntary, the list of sentinel physicians may change from year to year and is kept confidential.

Number of Laboratory-Confirmed Cases

Clinical specimens collected by sentinel and non-sentinel physicians, long-term care facilities, emergency departments, and public health nurses are submitted to the virology laboratory at the QEII Health Sciences Centre in Halifax for testing (see Annex 3-B). Positive results are downloaded by the QEII laboratory into the Electronic Laboratory Reporting (ELR) database and are accessible by selected communicable disease staff in the district health authorities (DHAs) and the Department of Health Promotion and Protection. On a weekly basis, the QEII laboratory also forwards the aggregate number of specimens tested and the number (%) positive for influenza, parainfluenza, adenovirus, and RSV directly to the FluWatch program office in Ottawa.

In addition, a subset (10 per cent to 15 per cent) of all of the positive specimens is sent to the National Microbiology Laboratory (NML) in Winnipeg for antigenic strain characterization. Typically, a few specimens from both the beginning and the end of the influenza season are also sent to the NML for sub-typing. This information is used to determine the influenza strain(s) in circulation for a given season.

Number of Influenza Outbreaks in Long-Term Care Facilities and Hospitals

Outbreaks are reported by the facility (e.g., school, daycare, acute or long-term care institution) to district Public Health Services, which then designates a public health nurse to investigate. When an outbreak is suspected, the reporting district health authority faxes an initial outbreak investigation report to the Department of Health Promotion and Protection; this is followed up with a final report when the outbreak is declared over.

Influenza Activity Reporting

The level of influenza activity is determined by the presence of ILI in the community, the identification of lab-confirmed cases, and the number of facilities reporting outbreaks (i.e., either lab-confirmed or >10% absenteeism, depending on the type of facility). Based on these indicators, an activity level (no activity, sporadic, localized, or widespread) is assigned to each of the province's nine district health authorities.

Severe Respiratory Illness Surveillance

Following the emergence of severe acute respiratory syndrome (SARS) and outbreaks of avian influenza affecting humans, the World Health Organization and the Public Health Agency of Canada recommended increased vigilance for the surveillance of severe respiratory illnesses (SRI).

Enhanced SRI surveillance ensures rapid recognition and appropriate management of emerging respiratory infections. Surveillance efforts are focused on specific clinical syndromes (e.g., pneumonia or respiratory distress syndrome) in hospitalized patients who may have been exposed to these viruses during international travel.

In order to assist local health care professionals with SRI surveillance, the Nova Scotia Department of Health Promotion and Protection publishes a list of the current “areas of concern.” Areas of concern are defined as “countries or regions with ongoing transmission of avian influenza (H5N1) in humans and/or poultry OR countries or regions where the potential emergence/re-emergence of SARS is likely to occur.” The list is updated as required based on the most current information from the World Health Organization. The Department of Health Promotion and Protection distributes this list to physicians, infection control practitioners, emergency health services, regional communicable disease nurse managers, and hospital CEOs on a weekly basis (www.gov.ns.ca/hpp/ocmoh/sri.htm).

Communication

The Department of Health Promotion and Protection produces a weekly report called *Respiratory Watch*, which summarizes respiratory virus activity in the province. This report includes detailed information on the level of influenza activity (sentinel ILI rates, number of lab-confirmed cases, and number of outbreaks collected through the FluWatch program) for each of the nine reporting regions (DHAs) in Nova Scotia. It also includes a summary of the lab-based surveillance system for RSV as, well as lab-confirmed cases of parainfluenza virus and adenovirus.

This weekly report is distributed via e-mail to staff in the Department of Health Promotion and Protection, regional communicable disease managers, medical officers of health, Health Promotion and Protection Communications, and the Director of Long-Term Care, as well as selected infectious disease physicians, microbiologists, and infection control practitioners. Other individuals can be added to this mailing list on request. The weekly *Respiratory Watch* is posted on the department’s website, where it is accessible to the public (www.gov.ns.ca/hpp/ocmoh/flu.htm).

Public health alerts concerning influenza or avian influenza are posted on the password-protected Canadian Integrated Outbreak Surveillance Centre (CIOSC) website. When an alert is posted, an e-mail notification is sent to all individuals on the CIOSC distribution list. This list is routinely updated, and new names may be added upon request to the Department of Health Promotion and Protection.

Roles and Responsibilities

World Health Organization

- Provide global guidance regarding the pandemic to the Public Health Agency of Canada

Federal

- Gather global data and disseminate the information to the provinces and territories
- Provide national coordination of the FluWatch program
- Maintain communication tools such as CIOSC, which can be used for alerts and for routine FluWatch
- Maintain an up-to-date surveillance strategy in the Canadian Pandemic Influenza Plan (Public Health Agency of Canada)

Provincial

- Establish and maintain a provincial influenza surveillance system
- Annually review, evaluate, update, and report on the Nova Scotia influenza surveillance system:
 - Disease surveillance
 - Ensure that there is at least one sentinel physician per DHA
 - Laboratory surveillance
 - Determine, in consultation with the public health laboratory program, the appropriate tests required to support surveillance activities and to assist in management of the public health response

Communications

- Ensure that global, national, and provincial influenza surveillance information is gathered and disseminated to decision makers and to the public
- Ensure that communication tools such as CIOSC are made available to appropriate stakeholders
- Develop a business continuity plan for surveillance, including cross-training of staff for respiratory virus surveillance activities

Districts

- Continue to participate in influenza surveillance according to the provincial influenza surveillance plan
- Maintain a designated contact person for sentinel physicians
Monitor absenteeism in selected workplaces
- Develop a business continuity plan for surveillance, including cross-training of staff for respiratory virus surveillance activities

Physicians

- Report by telephone to the medical officer of health as soon as an influenza virus of pandemic potential is suspected.

Activities by Pandemic Phase

Interpandemic Period

Canadian Pandemic Phase		Activities
1.0	No new virus subtype is present in humans. Subtype that has caused human infection may be present in animals <u>outside</u> Canada. Risk to humans is low.	<ul style="list-style-type: none"> <input type="checkbox"/> Routine annual influenza surveillance <input type="checkbox"/> Disease surveillance <ul style="list-style-type: none"> <input type="checkbox"/> ILI activity by DHA (FluWatch) <input type="checkbox"/> Rate of ILI activity in the general population (sentinel physicians) <input type="checkbox"/> Number of laboratory-confirmed outbreaks in long-term care facilities <input type="checkbox"/> Number of influenza-associated hospitalizations and influenza-associated deaths in children 0–18 years through the Immunization Monitoring Program ACTIVE (IMPACT) <input type="checkbox"/> Laboratory surveillance <ul style="list-style-type: none"> <input type="checkbox"/> Number of laboratory-confirmed cases <input type="checkbox"/> Percentage of positive influenza tests <input type="checkbox"/> Strain characterization, number identified for each strain and subtype, and percentage of total for approximately 10% of isolates <input type="checkbox"/> Routine SRI surveillance
1.1	No new virus subtype is present in humans. Subtype that has caused human infection is present in animals <u>inside</u> Canada. Risk to humans is low.	<ul style="list-style-type: none"> <input type="checkbox"/> As for Phase 1.0.
2.0	No new virus subtype present in humans. Animal influenza virus subtype that poses substantial risk to humans circulating in animals <u>outside</u> Canada.	<ul style="list-style-type: none"> <input type="checkbox"/> As for Phase 1.0.
2.1	No new virus subtype present in humans. Animal influenza virus subtype that poses substantial risk to humans circulating in animals <u>inside</u> Canada.	<ul style="list-style-type: none"> <input type="checkbox"/> As for Phase 1.0.

Pandemic Alert Period (Phases 3, 4, and 5)

Canadian Pandemic Phase		Activities
3.0	New virus subtype is present in humans <u>outside</u> Canada (single cases). No or rare instances of human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> Continue usual surveillance activities as for Phase 1.0 <input type="checkbox"/> Track, collate, and disseminate international surveillance information (through PHAC, PIC, CIOSC); update areas of concern lists for SRI and distribute to stakeholders
3.1	New virus subtype is present in humans <u>inside</u> Canada (single cases). No or rare instances of human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> Continue usual surveillance activities as for Phase 1.0 <input type="checkbox"/> Monitor for unusual outbreaks and cluster activity <input type="checkbox"/> Track, collate, and disseminate national surveillance information (through PHAC, PIC, CIOSC); update areas of concern lists for SRI and distribute to stakeholders <input type="checkbox"/> For each case, provide a detailed epidemiological description including estimation of incubation and communicability periods <input type="checkbox"/> If antiviral drugs are used for post-exposure prophylaxis (PEP), provide details on the length of time individuals were given PEP, the number of individuals on PEP who developed ILL, and serious adverse events.
4.0	New virus subtype is present in humans <u>outside</u> Canada (small clusters). Limited human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> As for Phase 3.0.
4.1	New virus subtype is present in humans <u>inside</u> Canada (single cases; no clusters). Limited human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> As for Phase 3.1
4.2	New virus subtype is present in humans <u>inside</u> Canada (small localized clusters). Limited human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> As for Phase 3.1. <input type="checkbox"/> For each cluster, conduct an outbreak investigation, including the number and epidemiological description of the settings involved, and report to PHAC.

Pandemic Alert Period (Phases 3, 4, and 5) Cont'd

Canadian Pandemic Phase		Activities
5.0	New virus subtype is present in humans outside Canada (large clusters). Localized human-to-human spread.	<input type="checkbox"/> As for Phases 3.0 and 4.0
5.1	New virus subtype is present in humans <u>inside</u> Canada (single cases; no clusters).	<input type="checkbox"/> As for Phases 3.1 and 4.1
5.2	New virus subtype is present in humans <u>inside</u> Canada (large clusters). Localized human-to-human spread.	<input type="checkbox"/> As for Phase 4.2

Pandemic Period (Phase 6)

Canadian Pandemic Phase		Activities
6.0	New virus subtype in humans outside Canada (in the general population). Sustained human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> As for Phase 3.0
6.1	Pandemic virus subtype in humans inside Canada (single cases; no clusters).	<ul style="list-style-type: none"> <input type="checkbox"/> As for Phases 3.1 and 4.1
6.2	Pandemic virus subtype in humans inside Canada (localized or widespread activity). Sustained human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> Track, collate, and disseminate national and provincial surveillance information; minimum data elements to be collected being developed nationally <ul style="list-style-type: none"> <input type="checkbox"/> Disease surveillance <ul style="list-style-type: none"> <input type="checkbox"/> Discontinue surveillance of rate of ILI activity in the general population by sentinel physicians <input type="checkbox"/> Discontinue surveillance of number of laboratory-confirmed outbreaks in long-term care facilities <ul style="list-style-type: none"> <input type="checkbox"/> Continue surveillance of ILI outbreaks in long-term care facilities <input type="checkbox"/> Continue surveillance of influenza mortality through IMPACT <input type="checkbox"/> Continue surveillance of school and workplace absenteeism <input type="checkbox"/> Laboratory surveillance <ul style="list-style-type: none"> <input type="checkbox"/> Discontinue tracking percentage of positive influenza tests <input type="checkbox"/> Discontinue laboratory surveillance once the novel strain is identified in Nova Scotia <input type="checkbox"/> Discontinue laboratory testing for adenovirus (RSV testing will continue on select specimens) <input type="checkbox"/> Certain proportion (approximately 1–2 specimens a week) of specimens from clinical sites (e.g., flu clinics) will be sent to the NML for characterization <input type="checkbox"/> Discontinue routine SRI surveillance

Annex 3~A: FluWatch Definitions

The case definition for influenza-like illness is developed by a pan-Canadian surveillance committee and is available on the Public Health Agency of Canada's FluWatch website, www.phac-aspc.gc.ca/fluwatch/ (click on Definitions & calendar for the 2006/07 season). The case definition may change based on available epidemiological data.

Influenza-like illness (ILI)

Acute onset of respiratory illness with fever and cough and with one or more of the following: sore throat, arthralgia, myalgia, or prostration that could be due to influenza virus. In children under 5 years, gastrointestinal symptoms may also be present. In patients under 5 years or 65 years and older, fever may not be prominent.

Laboratory-confirmed influenza

A confirmed case is defined as clinical illness (i.e., ILI) with laboratory confirmation of infection through

- isolation of influenza virus from an appropriate clinical specimen

OR

- demonstration of influenza virus antigen in an appropriate clinical specimen.

Outbreaks

Surveillance for outbreaks of ILI and influenza is conducted in long-term care facilities, other residential facilities, acute care hospitals, schools, and day-care centres. The definition of an outbreak of ILI/influenza depends on the type of facility:

- *Schools, workplaces, day-care centres*

Greater than 10 per cent absenteeism on any day that is most likely due to ILI.

- *Residential facilities*

Two or more cases of ILI within a seven-day period, including at least one laboratory-confirmed case.

Activity levels

The level of influenza activity in each reporting region (district health authority) is determined by the presence of both laboratory-confirmed cases and outbreaks and may be defined as one of the following:

1. No activity reported: no laboratory confirmed influenza detections during the prior four weeks; however sporadically occurring ILI may be reported.
2. Sporadic activity: Sporadically occurring ILI and confirmed influenza¹ with NO outbreaks detected within the influenza surveillance region².
3. Localized activity: Sporadically occurring ILI and confirmed influenza¹ together with outbreaks of ILI in schools and worksites or laboratory-confirmed influenza in residential institutions occurring in less than 50 per cent of the influenza surveillance region².
4. Widespread activity: Sporadically occurring ILI and confirmed influenza¹, together with outbreaks of ILI in schools and worksites or laboratory-confirmed influenza in residential institutions occurring in greater than or equal to 50 per cent of the influenza surveillance region².

-
1. Confirmation of influenza within the surveillance region at any time within the prior four weeks.
 2. Sub-regions within the province or territory as defined by the provincial/territorial epidemiologist.

Annex 3~B: Nasopharyngeal Swab Procedure (PHAC 2006)

Please note that point of care testing is not recommended during an influenza pandemic.

Nasopharyngeal Swab Procedure

1. Use the swab supplied with the viral transport media.
2. Explain the procedure to the patient.
3. When you collect specimens, wear gloves and a mask. Change gloves and wash your hands between each patient.
4. If the patient has a lot of mucus in the nose, this can interfere with the collection of cells. Either ask the patient to use a tissue to gently clean out visible nasal mucus or clean the nostril yourself with a cotton swab.
5. Estimate the distance to the nasopharynx: Prior to insertion, measure the distance from the corner of the nose to the front of the ear and insert the shaft **only half this length**.
6. Seat the patient comfortably. Tilt the patient's head back slightly to straighten the passage from the front of the nose to the nasopharynx to make insertion of the swab easier.
7. Insert the swab provided along the medial part of the septum, along the floor of the nose, until it reaches the posterior nares; gentle rotation of the swab may be helpful. (If resistance is encountered, try the other nostril; the patient may have a deviated septum.)

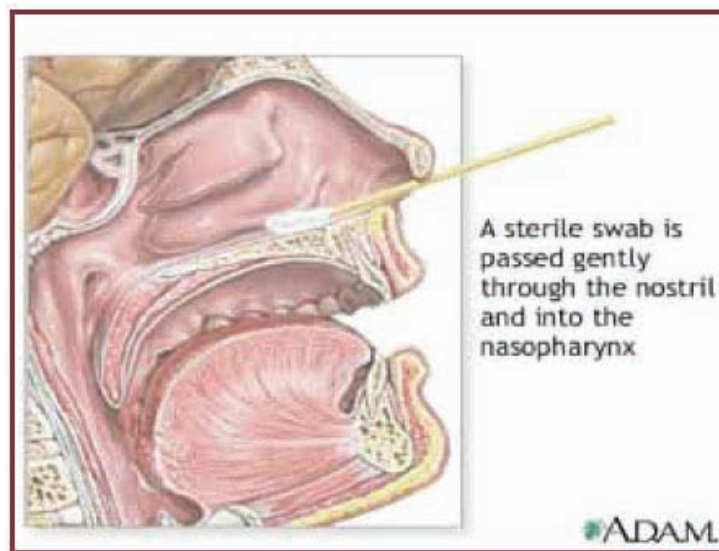


Image obtained from www.nlm.nih.gov/medlineplus/ency/imagepages/9687.htm

8. Allow the swab to sit in place for 5–10 seconds.
9. Rotate the swab several times to dislodge the columnar epithelial cells. *Note: Insertion of the swab usually induces a cough.*
10. Withdraw the swab and place it in the collection tube.
11. Refrigerate immediately.
12. Remove gloves
13. Wash hands.
14. Attach completed requisition.
15. Transport specimen to the laboratory.

Reference List

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Nova Scotia Health System Pandemic Influenza Plan

Chapter 4: Public Health Measures

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Background

A variety of public health measures will be used during the management of pandemic influenza. Public health measures include public education, case and contact management, and strategies for social distancing. These public health measures may be voluntary or involuntary and may be implemented at the individual or at the community level. Surveillance, the coordination and delivery of vaccine programs, and the antiviral drug strategy are discussed elsewhere.

Objectives

The objectives of public health measures change as a pandemic progresses. During the pandemic alert period, the objectives are

- to contain the novel virus at its source
- to prevent further human cases caused by a virus that has not yet established efficient human-to-human transmission
- to slow the spread of the pandemic and thus gain time for strengthening preparedness measures, including the augmentation of vaccine supplies.

During the pandemic period, the objectives are

- to reduce the impact of the first wave of a pandemic (WHO 2004).

The effectiveness of control strategies used in the absence of treatment or a vaccine— isolation of symptomatic cases and tracing and quarantining of their contacts—is limited by the influenza virus’s short incubation period, its ability to survive for extended periods of time on environmental surfaces, its non-specific clinical symptoms, and the potential for sub-clinical infection and transmission from individuals prior to the onset of symptoms.

As the pandemic progresses, sustained human-to-human transmission is established, and the number of cases increases, these measures will cease to be effective or feasible, and containment of the disease will be impossible.

Planning Assumptions

- The novel influenza strain and the first human cases will be identified outside of Canada.
- Surveillance measures are in place to detect influenza-like illness (ILI).
- The pandemic strain may cause more than one wave of illness, with the second wave being more severe than the first.
- The incubation period, period of communicability and mode of transmission for the novel strain will be consistent with other known influenza strains, that is:
 - Incubation period: 1 to 3 days
 - Period of communicability: 24 hours prior to up to five days after onset of symptoms (usually three to five days in immunocompetent adults and seven days in young children)
 - Method of transmission: large droplet and contact (direct and indirect);
 - Airborne transmission has been hypothesized but is not thought to be clinically significant (Moser et al. 1979; Bridges, Kuehnert, and Hall 2003)
 - Transmission while asymptomatic is possible but is more efficient when symptoms, such as coughing, are present and viral shedding is high (i.e., early in the symptomatic period).
- The novel virus will be highly infectious, i.e., transmitted efficiently from person to person.
- The initial clinical presentation will be consistent with known influenza strains.
- Sub-clinical infection will occur (Nguyen-Van-Tam et al. 1999).
- Individuals who recover from illness caused by the pandemic influenza strain will be immune to further infection by that strain.
- It is unlikely that an effective vaccine will be available at the start of pandemic influenza activity in Canada, but it may be available for a second wave. Mass immunization campaigns will occur when sufficient quantities of the vaccine are available.
- The use of antiviral drugs to decrease the risk of transmission from the first cases infected with a novel virus and their contacts will be considered as a strategy to contain or slow the spread of novel viruses that have pandemic potential and that are identified in Canada. The use of this strategy will be limited to cases identified in the Pandemic Alert Period. During the Pandemic Period, this strategy will change to focus on early treatment.

- In the absence of data on the duration of viral shedding and the effect of neuraminidase inhibitors on viral load and shedding, the objective of treatment with antiviral drugs is to improve clinical outcome, which is assumed to correlate with decreased communicability.
- Public acceptance of restrictive control measures will positively correlate with the proximity of cases.
- It may be possible to delay introduction of pandemic influenza into isolated communities; however, it is not likely that this strategy could be sustained, especially if the virus has acquired the ability to efficiently spread from human to human.

Public Health Measures

Public Education

Public education is a key activity for the Department of Health Promotion and Protection (NSHPP) and district health authority (DHA) Public Health Services during all pandemic phases. A prepared and well-coordinated education and communication plan will increase baseline public knowledge during the Interpandemic Period, will minimize the time needed to disseminate educational materials to the public as the pandemic evolves, and will establish HPP as an accurate, reliable, and trusted source of information. Further details are included in the Communications section of this plan (Chapter two).

Public Health Case Management

(Refer to Annex 4-A)

During the Pandemic Alert Period when the number of cases is relatively small, it may be possible to contain the outbreak through isolation of cases and treatment with antiviral drugs. These measures may prevent secondary cases and slow the spread of the infection within the population.

Isolation of Cases

Timely identification and immediate isolation of cases may prevent secondary cases. However, individuals may be communicable before the onset of symptoms; therefore, isolation of symptomatic cases in itself will not be successful in stopping disease

transmission. In a recent mathematical model, even 100 per cent efficacy in isolating symptomatic cases was insufficient to control the outbreak (Fraser et al. 2004).

Antiviral Drugs

It is hypothesized that treating influenza patients with antiviral drugs will reduce their communicability. Therefore, during the Pandemic Alert Period, antiviral drugs will be used to treat ill individuals in an attempt to prevent spread from these cases. A portion of the antiviral stockpile will be set aside for this purpose.

Public Health Contact Management

(Refer to Annex 4-A)

If single cases or small clusters of pandemic influenza occur in Canada while transmission of the virus is still relatively inefficient, it may be possible to contain the outbreak through prompt and effective contact management, including activity restriction, quarantine, and post-exposure prophylaxis with antiviral drugs.

A contact is defined as a person with face-to-face exposure within one metre of a case. Tracing and follow-up of contacts would (a) identify contacts prior to their becoming communicable and (b) detect cases early on, decreasing the interval between the onset of symptoms and isolation. This could potentially limit or slow the spread of the disease.

Quarantine

The use of quarantine is not anticipated to be as effective for influenza as it is for infections with longer incubation periods. The success of quarantining contacts as a containment and control strategy is contingent on the thoroughness of contact tracing, rapid implementation, and ongoing monitoring (Svoboda et al. 2004). Additionally, this measure requires extensive public health resources. Given these caveats, the decision on whether to use individual quarantine measures will be made as the pandemic progresses, based on the size of the outbreak, the current epidemiologic data, and the availability of public health resources.

In a recent mathematical model, 100 per cent effective isolation of symptomatic cases and contact tracing and quarantine were necessary to control the outbreak. If the effectiveness of isolation decreased to 90 per cent, these measures were insufficient to control disease transmission (Fraser et al. 2004).

It is believed that quarantining contacts will not be sustainable beyond the Pandemic Alert Period. As the pandemic progresses, contact follow-up will become less focused toward the individual. Messages for contacts will be conveyed primarily by public education campaigns, and public health resources will be redirected towards other control strategies.

Antiviral Drugs

Providing chemoprophylaxis with antiviral drugs to the contacts of the first cases may also decrease the spread of the virus. A portion of the antiviral stockpile will be set aside for use during the Pandemic Alert Period. This strategy, however, will not be feasible once widespread community transmission occurs.

Community-Based Disease Control Strategies

Until epidemiological data on the pandemic influenza virus are known, it is difficult to predict which public health measures will be effective and should, therefore, be implemented. Additionally, the effectiveness of most community-based measures under consideration has not been evaluated. The recommendations made below are based primarily on expert opinion, particularly that of the Pandemic Influenza Committee (PIC) National Working Group on Public Health Measures and WHO (2004). Detailed descriptions of these control measures and the rationale for the recommendations can be found in Annex 4-G of this chapter.

Cancellation of Public Gatherings and Closure of Schools

Disease transmission in the community may be reduced by increasing social distance. Medical Officers of Health have the authority under the Health Protection Act to institute community-based infection control measures such as

- closure of community facilities (e.g., community centres, schools)
- cancellation of group events.

The restriction of public activity has economic and social implications. For example, the closure of schools affects parents who work outside the home, with consequences for child-care needs, as well as impacting the children's education. Therefore, decisions must be based on the expected level of effectiveness of the measure balanced with the degree of disruption it is likely to cause.

The following decision matrix was developed by Vancouver Coastal Health (2005). Issues to consider when implementing community-based strategies include the following:

- the epidemiology of the pandemic including
 - high-risk groups
 - high-risk settings
 - severity of the disease
- the transmission of other diseases in similar settings
- the probable effectiveness of public health measures
- the loss of workforce and ensuing complications due to closures
- the necessity for maintenance of essential services

As an aid in the decision-making process, the decision matrix in figure 1 considers the intensity and the duration of exposure. Both the decision-making process and the criteria for closures may need to be modified according to prevailing conditions experienced during the pandemic and the phase of the pandemic.

Figure 1: Vancouver Coastal Health decision matrix for measures to increase social distance

Note: Not all activities are identified; those listed are examples.

		Exposure Intensity		
		High <i>Very crowded</i>	Intermediate	Low
Exposure Duration	Prolonged duration > 4 hrs	Day-care centres Schools Post-secondary institutions (including dormitories)	Closed workplaces	
	Intermediate duration > 1 hr	Entertainment venues Sporting venues (participants and spectators) Special events	Day tours via buses Weddings, funerals Business conventions, trade shows	Restaurants Shopping malls
	Short duration < 1 hr	Public transit during rush hour Retail stores during major sale events	Public waiting areas and lines (e.g., banks, store checkout lines)	
Priority for cancellation—consider restriction at first confirmation of local cases.				
Cancellation or modification or event should be considered as local circumstances evolve.				
Cancellation unlikely to be of value. Public education recommended.				

Infection Control and Environmental Measures

The following measures are **not recommended**:

- the use of masks by well individuals
- hand-sanitizing stations in public settings
- increased frequency of cleaning of surfaces in public settings
- widespread environmental or air disinfection

Other measures

The following measures are **not recommended**:

- having the population in an affected area check for fever at least once daily
- thermal scanning in public places
- disinfection of clothing, shoes, or other objects of persons exiting affected areas
- restriction on travel to and from affected areas
- cordon sanitaire—quarantining all inhabitants of an area (e.g., a neighbourhood or community) and restricting movement in and out of that area

Travel and Border-Related Issues

Please refer to the *Canadian Pandemic Influenza Plan for the Health Sector*, Annex M, Public Health Measures, Section 9.0.

Roles and Responsibilities

(Outstanding issues are italicized)

Roles and responsibilities may vary depending on whether a public health, provincial, or national emergency is declared.

World Health Organization

- Provide global guidance regarding public health measures during a pandemic to the Public Health Agency of Canada

Federal Government

- Maintain an up-to-date public health measures strategy in the Canadian Pandemic Influenza Plan

Provincial Government

Department of Health Promotion and Protection

(Minister for this department is responsible for the Health Protection Act.)

- Develop policies and standards for public health measures during a pandemic
- Declare the beginning and end of a public health emergency on the advice of the Chief Medical Officer of Health

Chief Medical Officer of Health

- Prepare for and respond to the public health aspects of an influenza pandemic
- Recommend to the Minister responsible for the Health Protection Act if a public health emergency should be declared and if it cannot be mitigated or remedied without special measures
- Implement a broad range of special measures when a public health emergency exists
- Advise the Minister responsible for the Health Protection Act when the public health emergency has ended

District Health Authorities

Medical Officer of Health (MOH)

- Investigate any situation that may constitute a risk to public health and take action to decrease the risk
- Take reasonable action to protect the public health, including issuing public advisories and bulletins
- Write an order to deal with a case or contact of a communicable disease or to prevent transmission of a communicable disease
- Monitor the treatment and condition of a detained person and issue a certificate for release

- Take such action as the MOH reasonably believes is necessary to prevent, control, or deal with a public health emergency

Public Health Services

- Case management
- Contact management
- Operationalize public health measures under the direction of the Medical Officer of Health

Annex 4~A: Public Health Management of Novel Influenza Virus Cases and Contacts

Note: These recommendations regarding the public health management of novel influenza virus cases and contacts may change as the epidemiology of the virus becomes available.

1.0 General Information

1.1 Case Definition

For up-to-date case definitions, please refer to the Public Health Agency of Canada FluWatch website, www.phac-aspc.gc.ca/fluwatch/06-07/def06-07_e.html, Definitions for the 2006-2007 Season.

1.2 Causative Agent

Refer to the Influenza chapter, *Nova Scotia Communicable Disease Control Manual*. The subtype will not be known until the novel virus emerges.

1.3 Symptoms

Refer to the Influenza chapter, *Nova Scotia Communicable Disease Control Manual*.

1.4 Incubation Period

Refer to the Influenza chapter, *Nova Scotia Communicable Disease Control Manual*.

1.5 Source

Refer to the Influenza chapter, *Nova Scotia Communicable Disease Control Manual*.

1.6 Transmission

Refer to the Influenza chapter, *Nova Scotia Communicable Disease Control Manual*.

1.7 Communicability

Refer to the Influenza chapter, *Nova Scotia Communicable Disease Control Manual*.

1.8 Treatment

Treat with neuraminidase inhibitors (oseltamivir and zanamivir). M2 ion channel inhibitors (e.g., amantadine) are not recommended for treatment. Refer to Antiviral Drug Strategy chapter and Health Services chapter, *Nova Scotia Health System Pandemic Influenza Plan*.

Table 1: Recommended pediatric and adult doses of antiviral drugs for the treatment of influenza

Drug (trade name)	Treatment doses
Oseltamivir (Tamiflu®)	<i>Children</i> ^a
	See Table 2
Zanamivir (Relenza®)	<i>Adults</i>
	75 mg twice a day for 5 days
	<i>Adults and children >7 years</i> ^b
	10 mg (2 puffs) twice a day for 5 days

^a Oseltamivir should not be used for treatment of influenza in pediatric patients less than one year of age. See Important Safety Information Regarding TAMIFLU® (Oseltamivir Phosphate) and Prescription in Children Less Than 1 Year of Age (www.hc-sc.gc.ca/dhp-mps/medeff/advisories-avis/prof/2004/tamiflu_hpc-cps_e.html).

^b The safety and efficacy of zanamivir for treatment of influenza in pediatric patients less than 7 years of age have not been established.

Table 2: Recommended dose of oseltamivir for children one year of age and older for the treatment of influenza

Body weight (kg)	Dosage
≤15	30 mg twice daily for 5 days
>15–23	45 mg twice daily for 5 days
>23–40	60 mg twice daily for 5 days
>40	75 mg twice daily for 5 days
<ul style="list-style-type: none"> Oseltamivir is not indicated for treatment of influenza in patients less than one year of age. Dose should be reduced by one-half in patients with creatinine clearance <30 mL/min 	

1.9 Core Messages for Prevention

- Identify cases early and isolate; educate about
 - symptoms of ILI and when and how to seek medical attention
 - proper infection control procedures, including procedures to use if leaving the home to seek medical care (e.g., using a private vehicle rather than public transit, phoning ahead, wearing a mask)
 - contact tracing and quarantine
 - basic personal hygiene (e.g., covering nose and mouth when sneezing and coughing) and hand washing

1.10 Post-exposure Prophylaxis

Post-exposure prophylaxis with oseltamivir or amantadine

Zanamivir was recently approved for prophylaxis in Canada, and recommendations as to its use are pending. Refer to Antiviral Drug Strategy chapter, *Nova Scotia Health System Pandemic Influenza Plan*.

Post-exposure prophylaxis should begin within 48 hours of exposure to the case and continue for at least seven days.

Table 3: Recommended pediatric and adult doses of antiviral drugs for the prophylaxis of influenza

Drug (trade name)	Prophylaxis doses
Oseltamivir (Tamiflu®)	<i>Adults and children >13 years</i> ^a 75 mg once a day ^b
Zanamivir (Relenza®)	<i>Adults and children >7 years</i> ^{c,d} 10 mg (2 puffs) once a day ^e
Amantadine (Symmetrel®)	See Table 4

^a Oseltamivir is not indicated for prophylaxis of influenza in pediatric patients less than 13 years of age.

^b The safety and efficacy of oseltamivir for prophylaxis of influenza in patients less than 13 years of age have been demonstrated for up to 6 weeks.

^c Zanamivir was recently approved for prophylaxis in Canada; recommendations for its use are pending.

^d The safety and efficacy of zanamivir for the prophylaxis of influenza in pediatric patients less than 7 years of age have not been established.

^e The safety and efficacy of zanamivir for prophylaxis of influenza in patients less than 7 years of age have been demonstrated for up to 4 weeks.

Table 4: Recommended adult and pediatric doses of amantadine for the prophylaxis of influenza

NO RENAL IMPAIRMENT		
Age	Dosage	
1–9 years	5 mg/kg once daily, or divided doses twice daily, total daily dose not to exceed 150 mg	
10–64 years	200 mg once daily, or divided doses twice daily	
>=65 years	100 mg once daily	
RENAL IMPAIRMENT		
Creatinine clearance (mL/min)	Dosage	
	10–64 years	>=65 years
>=80	100 mg twice a day	100 mg once a day
60–79	Alternating daily doses of 200 mg and 100 mg	Alternating daily doses of 100 mg and 50 mg
40–59	100 mg once a day	100 mg every two days
30–39	200 mg twice weekly	100 mg twice weekly
20–29	100 mg three times a week	50 mg three times a week
10–19	Alternating weekly doses of 200 mg and 100 mg	Alternating weekly doses of 100 mg and 50 mg

2.0 Procedure

2.1 Roles and Responsibilities

2.1.1 Medical Officer of Health (MOH)

In the event of a case of influenza-like illness (ILI) or a laboratory-confirmed novel influenza virus during the pandemic alert period (phases 3, 4, and 5), the MOH

- takes the lead immediately to initiate follow-up, contact tracing, and containment;
- informs health professionals about precautionary measures including quarantine and isolation
- informs the Office of the Chief Medical Officer of Health (OCMOH) about the case.

2.1.2 Investigator

During the pandemic alert period

- follows up cases
- assesses homes for suitability for isolation of cases

- monitors home isolation
- carries out contact tracing
- carries out active daily surveillance of contacts

2.1.3 *Physician*

- ensures that appropriate infection control procedures are in place in practice.
- ensures that patients are triaged. See *Nova Scotia Health System Pandemic Influenza Plan*, Health Services chapter.

2.1.4 *Laboratory*

The QEII Laboratory is providing direction on laboratory investigations for novel influenza viruses. See *Nova Scotia Health System Pandemic Influenza Plan*, Surveillance chapter, for laboratory procedures.

2.2 **Public Health Management of Novel Influenza Virus Cases and Contacts**

2.2.1 *Definitions*

Quarantine: The restriction of the activities of well persons who have been exposed to a case during its period of communicability.

Isolation: The separation, for the period of communicability of ill (i.e., symptomatic) persons from others in such places and under such conditions as to prevent or limit the direct or indirect transmission of the infectious agent.

Close contact: A person with face-to-face exposure within 1 metre of a case.

2.2.2 *Pandemic Alert Period: Steps in Public Health Management*

1. Public health case and contact management differ according to the pandemic phase (see Table 5).

Table 5: Public Health Management of Novel Influenza Viruses Cases and Contacts by Pandemic Phase

Interpandemic Period	Contact Management
Case Management	
1.0 No new virus subtype in humans. Subtype that has caused human infection may be present in animals <u>outside</u> Canada. Risk to humans is low.	
1.1 No new virus subtype in humans. Subtype that has caused human infection is present in animals <u>inside</u> Canada. Risk to human is low.	
2.0 No new virus subtype in humans. Animal influenza virus subtype that poses substantial risk to humans is circulating in animals <u>outside</u> Canada.	
2.1 No new virus subtype in humans. Animal influenza virus subtype that poses substantial risk to humans is circulating in animals <u>inside</u> Canada.	
<input type="checkbox"/> Refer to Influenza chapter, <i>Nova Scotia Communicable Disease Control Manual</i> .	<input type="checkbox"/> Refer to Influenza chapter, <i>Nova Scotia Communicable Disease Control Manual</i> .
<input type="checkbox"/> Refer to <i>Guide to Influenza Control for Long-Term Care Facilities</i> .	<input type="checkbox"/> Refer to <i>Guide to Influenza Control for Long-Term Care Facilities</i> .
Pandemic Alert Period	
3.0 New virus subtype in humans outside Canada (single cases). No or rare instances of human-to-human spread.	
<input type="checkbox"/> As for Phase 1.0.	<input type="checkbox"/> As for Phase 1.0.
3.1 New virus subtype in humans inside Canada (single cases). No or rare instances of human-to-human spread.	
<input type="checkbox"/> Isolate ill individuals in hospital according to infection control guidelines or at home for 5 days after onset of symptoms (7 days for young children) or until symptoms have resolved, whichever is longer.	<input type="checkbox"/> Trace contacts. Active surveillance for symptoms of illness for 3 days after last exposure (or for the duration of the incubation period of the novel virus, if different).
<input type="checkbox"/> Laboratory testing of cases	<input type="checkbox"/> No activity restrictions.
<input type="checkbox"/> Treat with antiviral drugs.	<input type="checkbox"/> Antiviral drug prophylaxis for contacts not necessary unless a severe or unusual case or human-to-human transmission cannot be ruled out.
<input type="checkbox"/> Report cases according to the surveillance plan.	<input type="checkbox"/> Recommend annual influenza vaccine.

Pandemic Alert Period

Case Management

Contact Management

- 4.0 New virus subtype in humans outside Canada (small clusters). Limited human-to-human spread.
- 4.1 New virus subtype in humans inside Canada (single cases; no clusters). Limited human-to-human spread.
 - As for Phase 3.1.
- Trace contacts. Active surveillance for symptoms of illness for 3 days after last exposure (or for the duration of the incubation period of the novel virus, if different).
- Quarantine or, at a minimum, restrict activity and contact with others for 3 days after the last exposure to the case or for the duration of the incubation period, whichever is longer.
- Antiviral drug post-exposure prophylaxis (depending on the resistance status of the virus).

- 4.2 New virus subtype in humans inside Canada (small localized clusters). Limited human-to-human spread.

- As for Phase 3.1.
- As for Phase 4.1.

- 5.0 New virus subtype in humans outside Canada (large clusters). Localized human-to-human spread.

- 5.1 New virus subtype in humans inside Canada (single cases; no clusters).

- As for Phase 3.1.
- As for Phase 4.1.

Pandemic Alert Period**Case Management****Contact Management**

5.2 New virus subtype in humans inside Canada (large clusters). Localized human-to-human spread.

- As for Phase 3.1.

Close contacts

- Trace close contacts if feasible (e.g., household contacts). Active surveillance for symptoms of illness for 3 days after last exposure (or for the duration of the incubation period of the novel virus, if different).
- Quarantine or, at a minimum, restrict activity and contact with others for 3 days after the last exposure to the case or for the duration of the incubation period, whichever is longer.
- Antiviral drug post-exposure prophylaxis (depending on the resistance status of the virus).

Other potential contacts

- For other potential contacts, identify exposure sites (e.g., school, workplace) rather than individuals.
- Recommend those linked to the exposure site (even if exposure status is unknown) to self-monitor for ILI for 3 days after last exposure (or for the duration of the incubation period of the novel virus, if different).
- Recommend those linked to the exposure site to restrict activity and contact with others for 3 days after the last exposure to the case or for the duration of the incubation period, whichever is longer.
- Recommend those self-monitoring for ILI immediately report if symptoms develop in order to receive instructions on isolation and medical management.
- Antiviral drug post-exposure prophylaxis is not recommended.

Pandemic Alert Period**Case Management**

6.0 New virus subtype in humans outside Canada (in the general population). Sustained human-to-human spread.

6.1 Pandemic virus subtype in humans inside Canada (single cases; no clusters).

- As for Phase 3.1.
 - Identify possible exposure settings. Instruct close contacts of the case as well as those linked with the setting to self-monitor for ILI for 3 days after last exposure (or for the duration of the incubation period of the novel virus, if different).
 - Recommend those self-monitoring for ILI to immediately report if symptoms develop in order to receive instructions on isolation and medical management.
 - Recommend that individuals isolate themselves immediately if ILI symptoms develop.
 - Antiviral drug post-exposure prophylaxis is not recommended.

Contact Management

6.2 Pandemic virus subtype in humans inside Canada (localized or widespread activity). Sustained human-to-human spread.

- Isolate ill individuals in hospital according to infection control guidelines or at home. Currently recommended duration of isolation for individuals at home is 24 hours after symptom resolution; however, this may change based on available epidemiological data.
 - Laboratory testing according to protocol.
 - Treat with antiviral drugs according to clinical care guidelines.
 - Report cases according to surveillance plan.
- Contact tracing is not recommended.
 - Quarantining of contacts is not recommended.
 - Antiviral drug post-exposure prophylaxis is not recommended.
 - Provide information to the general public on how to self-monitor for ILI and steps to take if symptoms develop.

2.2.2 *Pandemic Alert Period: Steps in Public Health Management (Cont'd)*

2. During the pandemic alert period, individuals with symptoms and possible exposure will come to the attention of the health system when they contact their physician or an emergency department or, in the case of travellers, through PHAC. These individuals will be triaged and referred for assessment. This procedure will be different during the pandemic period (see Health Services chapter).
3. Once assessed, physicians will report to the MOH any patient who meets the following criteria:
 - a history of possible exposure to a novel influenza virus with either:
 - close contact in the previous three days with a case of a novel influenza virus *or*
 - recent travel within the previous three days to a WHO reported affected area or to a defined setting that is associated with a cluster of novel influenza virus cases
 - OR
 - compatible symptoms, according to the case definition, with no other known cause of the illness
 - OR
 - laboratory-confirmed novel influenza virus
4. **Pandemic Alert Period Case Management**
 - a) The case's physician will treat the case with antiviral drugs (see Health Services chapter).
 - b) The MOH in discussion with the clinician jointly determine, according to the clinical severity, the location where the case should be managed. The options are
 - isolation in hospital
 - isolation at home

Several conditions must be met before a client can be placed on home isolation:

 - The case must be able to separate himself/herself from the rest of the family in his/her own room and wear a mask for any interaction with others.
 - Someone should be available to be a caregiver for the person on home isolation. Discuss on a case-by-case basis.
 - c) The public health nurse (PHN) will

- interview the patient using the Case Report Form (Annex 4-B) as a guide
 - educate the individual on influenza and how to prevent transmission to others
 - assess the suitability, by phone, of the home/residence if the case is being placed on home isolation (Annex 4-E). If a home visit is required, the PHN may contact a public health inspector for assistance
 - advise the case that a PHN will contact him/her on a daily basis in order to
 - monitor symptoms
 - assess compliance with isolation
 - obtain a list of contacts
 - ask the case if his/her contacts are aware of the diagnosis of influenza and whether he/she knows that they are contacts
 - provide the case with a telephone number to call for concerns or questions
- d) For those placed on home isolation:
1. MOH recommends home isolation for the client and provides a letter with this recommendation (Annex 4-F).
 2. PHN conducts assessment of the home situation by phone.
 3. If a home visit is required and the PHN requires assistance, the MOH may contact a public health inspector.
 4. If the case's residence is not suitable, recommend to the clinician that the case be admitted to hospital.
 5. If suitable, provide client and family with the following:
 - Recommendations for Care Providers at Home (Annex 4-F)
 - Fact sheets (Annex 4-F)
 - General Guidance for the Use of Surgical Face Masks
 6. Inquire if the client has regular service providers entering the home (e.g., homecare workers). If so, ensure that appropriate agencies are aware of infection control precautions.
 7. Conduct active daily surveillance
 8. If there are any concerns regarding compliance, discuss the situation with the MOH.

9. MOH will write a letter to the client to be hand-delivered (Annex 4-F).
10. If concerns regarding compliance with isolation continue, inform the MOH. The MOH will discuss this with the Chief Medical Officer of Health and legal counsel on a case-by-case basis.

8. **Pandemic Alert Period Contact Tracing and Follow-Up**

Contact tracing will be initiated according to the following guidelines:

- a) All close contacts will be identified and interviewed.
- b) If the case traveled on a plane while symptomatic, inform the Office of the Chief Medical Officer of Health (OCMOH) as soon as possible so that appropriate passenger follow-up can be initiated.
- c) Any contacts with symptoms should be referred for assessment of influenza as soon as possible (see Health Services chapter).
- d) According the pandemic phase and degree of contact, contacts should be educated about influenza and directed to either
 - active daily surveillance (ADS) and quarantine at home *or*
 - self-monitoring.

Quarantine at Home Plus Active Daily Surveillance

For those placed on home quarantine:

- MOH recommends home quarantine for a contact and provides letter with this recommendation (Annex 4-F).
- PHN educates contact and provides Fact Sheets (Annex 4-F)
- PHN carries out active daily surveillance using contact tracing and tracking forms (Annexes 4-C and 4-D).

Self-Monitoring

Contacts should be advised to monitor themselves for fever, cough, shortness of breath, difficulty breathing, malaise, chills, rigors, or headache. Instruct the individual to seek medical attention at the nearest emergency department or Alternative Assessment site (see Health Services chapter) if any of these symptoms develop.

- e) Contact tracing forms
 1. The contact should be called and the following information should be noted on the Active Daily Surveillance of Contacts of a Novel Influenza Virus form (Annex 4-D):
 - address, date of birth, and family physician of the contact
 - date of initial contact with the case

- status of the contact:
 - self-monitoring
 - home quarantine + active daily surveillance (HQ+ADS)
 - case
2. The individual should be educated on the wearing of masks.
 3. The individual should be educated on his/her responsibility to actively monitor his/her own health:
 - i. Temperature should be taken twice daily at least 4 hours after the last dose of any fever-reducing medicine.
 - ii. Presence and nature of cough or any change in cough should be noted.
 - iii. Shortness of breath or difficulty breathing should be noted.
 4. Date ADS is initiated should be recorded.
 5. Contacts should be called daily and any change in status noted.
 6. ADS should be continued for up to 3 days after the date of last contact with the case.
 7. Upon completion of surveillance, date of discharge should be recorded.
 8. If there are any concerns regarding compliance, discuss the situation with the MOH.
 9. MOH will write a letter to the client to be hand-delivered (Annex 4-F).
 10. If concerns regarding compliance with quarantine continue, inform the MOH. The MOH will discuss this with the Chief Medical Officer of Health and legal counsel on a case-by-case basis.

2.3 Guidelines for Long-Term Care and Home Care

Long-term care facilities should follow the guidelines in the Health Services chapter of the *Nova Scotia Health System Pandemic Influenza Plan*.

2.4 Guidelines for Child-Care Centres

2.5 Guidelines for Institutions

Health facilities should follow the Infection Control Guidelines in the Health Services chapter of the *Nova Scotia Health System Pandemic Influenza Plan*.

Annex 4-B: Pandemic Alert Period Novel Influenza Virus Case Report Form

Pandemic Alert Period Novel Influenza Virus Case Report Form, 2006

Check one:		<i>Initial Report</i>	<i>Update (new info only)</i>	<i>Final Report (new info only)</i>
DISTRICT HEALTH AUTHORITY INFORMATION				
Date of report (dd/mm/yyyy) ____/____/____			DHA:	
Person Reporting:			Phone: (902) _____	
PATIENT INFORMATION				
Last Name:			First Name:	
Male	Female		Date of Birth (dd/mm/yyyy) ____/____/____	
City:		Postal code:	Occupation:	
CASE TYPE				
ILI	Laboratory-confirmed	Influenza ruled out	Discharged: Date discharged (dd/mm/yyyy) __/__/__	
CLINICAL INFORMATION				
When did symptoms first start? (dd/mm/yyyy) ____/____/____				
Fever >38 ⁰ C	Yes	No	Unknown	Arthralgia Yes No Unknown
Rigor & chills	Yes	No	Unknown	Myalgia Yes No Unknown
Cough	Yes	No	Unknown	Headache Yes No Unknown
Shortness of breath	Yes	No	Unknown	Vomiting Yes No Unknown
Sore throat	Yes	No	Unknown	Diarrhea Yes No Unknown
Other	Yes	No	Unknown	
Chest X-ray performed	Yes	No	Unknown	
Chest X-ray summary _____				
Was patient hospitalized?	Yes	No	Unknown	If Yes, name of hospital _____
City:	Physician:		Physician phone: _____	
If Yes, admission date ____/____/____ (dd/ mm/ yyyy)	Discharged		Yes	No
	Discharge date		____/____/____ (dd /mm/ yyyy)	
Diagnosis at time of this report:	Influenza	Pneumonia	Other _____	
Disposition at time of this report:	Recovering	ICU	Dead: Date of death: _____	
SIGNIFICANT FACTORS				
Patient vaccinated for influenza in 2006/2007 season	Yes	No		
Underlying medical conditions	Yes	No		
If yes, Heart Lung Immune system Other: _____				
Note: Patient ID code number is to be completed by the reporting DHA. It should include a two-letter code for the province followed by an investigation number assigned by the province (e.g., health card number).				

EXPOSURE HISTORY

This section of the form will be developed once a novel influenza virus emerges

Travel to XXXX within 10 days of disease onset? Yes** No If yes, date left XXXX_ ___/___/___

(dd/mm/yyyy):

Specify country(s) of travel: _____

Contact in XXXX with: Hospital Doctor's office Person known to be ill with respiratory illness

Contact of previously identified case? Yes No Name: _____

Type of contact: Household Health care worker Airline Other: _____

First contact with case: (dd/mm/yyyy) ___/___/___ Last contact: (dd/mm/yyyy) ___/___/___

**If patient was ill during flight, notify OCMOH of airline, flight, and seat number.

SPECIMENS COLLECTED

Blood culture	Yes	No	Nasopharyngeal	Yes	No	Stool		
Whole blood	Yes	No	swab	Yes	No	Cerebral spinal	Yes	No
Acute sera	Yes	No	Bronchoscopy	Yes	No	fluid	Yes	No
Convalescent sera	Yes	No	Tracheal aspirate	Yes	No	Autopsy specimens	Yes	No

Annex 4~C: Novel Influenza Virus Contact List

Annex 4~D: Form for Active Daily Surveillance of Contacts of a Novel Influenza Virus

Active Daily Surveillance of Contacts of a Novel Influenza Virus

CONFIDENTIAL

CASE INFORMATION

Case Name

Case Unique Identification Number

(PI - NS - Health Card or Unique ID #) **PI-NS-**

Status of Case

- ILI
 Laboratory-confirmed

CONTACT INFORMATION

Contact Name

Date of birth (dd/mm/yyyy)

___ / ___ / _____

Sex

- Male Female

HCN

Address

(City)

(Prov)

(Postal code)

Phone ()

Name of family physician

Phone number of family physician ()

Date of last contact with case (dd/mm/yyyy)

___ / ___ / _____

Type of contact (e.g. HCW, household)

Contact is under (check all that apply)

- Self-monitoring
 Active Daily Surveillance
 Home Quarantine

Start date of surveillance (dd/mm/yyyy)

___ / ___ / _____

Final date of surveillance (dd/mm/yyyy)

___ / ___ / _____

Final assessment of contact

- Asymptomatic
 ILI
 Laboratory-confirmed case

Active Daily Surveillance of Contacts of a Novel Influenza Virus

Name of Contact:				
Date of Surveillance	Symptoms			Daily Assessment (Check one)
Day 1 Date (dd/mm/yyyy) ____ / ____ / ____	Yes	No		<input type="checkbox"/> Asymptomatic <input type="checkbox"/> Symptomatic
	<input type="checkbox"/>	<input type="checkbox"/>	Fever >38° C	
	<input type="checkbox"/>	<input type="checkbox"/>	Rigor or chills	
	<input type="checkbox"/>	<input type="checkbox"/>	Cough	
	<input type="checkbox"/>	<input type="checkbox"/>	Shortness of breath	
	<input type="checkbox"/>	<input type="checkbox"/>	Sore throat	
	<input type="checkbox"/>	<input type="checkbox"/>	Arthralgia	
	<input type="checkbox"/>	<input type="checkbox"/>	Myalgia	
	<input type="checkbox"/>	<input type="checkbox"/>	Headache	
	<input type="checkbox"/>	<input type="checkbox"/>	Vomiting	
	<input type="checkbox"/>	<input type="checkbox"/>	Diarrhea	
	<input type="checkbox"/>	<input type="checkbox"/>	Other _____	
Day 2 Date (dd/mm/yyyy) ____ / ____ / ____	Yes	No		<input type="checkbox"/> Asymptomatic <input type="checkbox"/> Symptomatic
	<input type="checkbox"/>	<input type="checkbox"/>	Fever >38° C	
	<input type="checkbox"/>	<input type="checkbox"/>	Rigor or chills	
	<input type="checkbox"/>	<input type="checkbox"/>	Cough	
	<input type="checkbox"/>	<input type="checkbox"/>	Shortness of breath	
	<input type="checkbox"/>	<input type="checkbox"/>	Sore throat	
	<input type="checkbox"/>	<input type="checkbox"/>	Arthralgia	
	<input type="checkbox"/>	<input type="checkbox"/>	Myalgia	
	<input type="checkbox"/>	<input type="checkbox"/>	Headache	
	<input type="checkbox"/>	<input type="checkbox"/>	Vomiting	
	<input type="checkbox"/>	<input type="checkbox"/>	Diarrhea	
	<input type="checkbox"/>	<input type="checkbox"/>	Other _____	

Active Daily Surveillance of Contacts of a Novel Influenza Virus

Name of Contact:				
Date of Surveillance	Symptoms			Daily Assessment (Check one)
Day 3 Date (dd/mm/yyyy) ___ / ___ / _____	Yes	No		<input type="checkbox"/> Asymptomatic <input type="checkbox"/> Symptomatic
	<input type="checkbox"/>	<input type="checkbox"/>	Fever >38° C	
	<input type="checkbox"/>	<input type="checkbox"/>	Rigor or chills	
	<input type="checkbox"/>	<input type="checkbox"/>	Cough	
	<input type="checkbox"/>	<input type="checkbox"/>	Shortness of breath	
	<input type="checkbox"/>	<input type="checkbox"/>	Sore throat	
	<input type="checkbox"/>	<input type="checkbox"/>	Arthralgia	
	<input type="checkbox"/>	<input type="checkbox"/>	Myalgia	
	<input type="checkbox"/>	<input type="checkbox"/>	Headache	
	<input type="checkbox"/>	<input type="checkbox"/>	Vomiting	
	<input type="checkbox"/>	<input type="checkbox"/>	Diarrhea	
<input type="checkbox"/>	<input type="checkbox"/>	Other _____		
Day 4 Date (dd/mm/yyyy) ___ / ___ / _____	Yes	No		<input type="checkbox"/> Asymptomatic <input type="checkbox"/> Symptomatic
	<input type="checkbox"/>	<input type="checkbox"/>	Fever >38° C	
	<input type="checkbox"/>	<input type="checkbox"/>	Rigor or chills	
	<input type="checkbox"/>	<input type="checkbox"/>	Cough	
	<input type="checkbox"/>	<input type="checkbox"/>	Shortness of breath	
	<input type="checkbox"/>	<input type="checkbox"/>	Sore throat	
	<input type="checkbox"/>	<input type="checkbox"/>	Arthralgia	
	<input type="checkbox"/>	<input type="checkbox"/>	Myalgia	
	<input type="checkbox"/>	<input type="checkbox"/>	Headache	
	<input type="checkbox"/>	<input type="checkbox"/>	Vomiting	
	<input type="checkbox"/>	<input type="checkbox"/>	Diarrhea	
<input type="checkbox"/>	<input type="checkbox"/>	Other _____		

Name of Contact:

Date of Surveillance	Symptoms			Daily Assessment (Check one)
Day 5 Date (dd/mm/yyyy) ____ / ____ / ____	Yes	No		<input type="checkbox"/> Asymptomatic <input type="checkbox"/> Symptomatic
	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Fever >38° C Rigor or chills Cough Shortness of breath Sore throat Arthralgia Myalgia Headache Vomiting Diarrhea Other_____	
Day 6 Date (dd/mm/yyyy) ____ / ____ / ____	Yes	No		<input type="checkbox"/> Asymptomatic <input type="checkbox"/> Symptomatic
	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Fever >38° C Rigor or chills Cough Shortness of breath Sore throat Arthralgia Myalgia Headache Vomiting Diarrhea Other_____	

NOTES

Annex 4~: Guidelines for Evaluating Homes for Quarantine or Isolation

It is important to ensure that the home environment meets the ongoing physical, mental, and medical needs of the individual to be placed in isolation or quarantine. An evaluation of the home for its suitability should be performed before the person is placed in isolation or quarantine. This evaluation may be performed through the administration of a questionnaire to the individual and/or the caregiver or on site by a public health nurse or inspector. Points to be considered in the evaluation include the following.

Item	Yes or No
Infrastructure	
Located in an area with 24-hour access to emergency medical services	
Telephone	
Electricity	
Heat	
Potable water	
Bathroom with toilet and sink	
Waste and sewage disposal	
Air conditioning (if needed)	
Accommodations	
Separate bedroom for patient	
Resources and support	
Primary caregiver who is not at high risk for complications from influenza	
Meals	
Laundry	
Essential shopping	
Other essential needs (e.g., prescriptions)	
Thermometer, hand hygiene supplies	
Radio, reading material, etc	

Annex 4~F: Novel Influenza Virus Public Health Case and Contact Management Fact Sheets and Letters

- Home Isolation Fact Sheet
- Quarantine Fact Sheet
- Fact Sheet for Care Providers at Home
- Letter from the Medical Officer of Health to a Case Recommending Home Isolation
- Letter from the Medical Officer of Health to a Case Requiring Home Isolation Who Is Not in Compliance
- Letter from the Medical Officer of Health to a Contact Requesting Home Quarantine
- Letter from the Medical Officer of Health to a Contact Requiring Home Quarantine Who Is Not in Compliance

Home Isolation Fact Sheet

This fact sheet is for people who have been placed under home isolation and their caregivers.

Q.1. What is isolation?

A. Isolation means keeping people who have an illness away from healthy people and restricting their movements to stop the spread of an illness.

Q.2. Why is home isolation needed?

A. Home isolation is needed to prevent or limit the spread of the influenza germ to other people.

Q.3. What should I do when I am in home isolation?

A. Here are the precautions you should follow.

- Remain at home in a separate room away from others for whichever time is longer:
 - 5 days from the day your symptoms began
 - OR
 - until you no longer have symptomsPublic Health will let you know when it is time to end isolation.
- Keep the door of the room closed and the window open, if possible.
- Do not leave your house for the 5 days (unless you are seeking medical care).
- Do not accept any visitors.
- Avoid any direct contact with others in your home.
- Wear a mask when you are in the same room with another family member. (Public Health Services will provide masks and instructions on how to use them.)
- Change your mask at least twice a day. Family members do not need to wear masks unless they are told to do so.
- Wash your hands often. Public Health will give you information on how to wash your hands properly.

- Promptly throw away any tissues or any articles that come in contact with fluid from your nose, mouth, or eyes. Household cleaning products can be used to clean items that cannot be thrown away.
- Do not share personal items such as towels, drinking cups, cutlery, toothbrush, etc. Other family members can use dishes and cutlery that are properly washed in hot soapy water. They do not need to be thrown away.
- Monitor your health.
 - Take your temperature twice a day at least 4 hours after your last dose of fever-reducing medicine (such as acetaminophen or ibuprofen).
 - Note if you have a cough and what it's like (Is it a dry cough? Are you coughing anything up?)
 - Note if you are short of breath or have difficulty breathing
- If your condition worsens and you become sicker, you should call your physician or the hospital emergency department. Tell them that you are in isolation for influenza, that your condition is getting worse and that you plan to come to the emergency department. Follow their advice and keep your mask on during travel to the hospital. If you have to call an ambulance, tell them about your condition as well.

Q.4. What if a household member develops symptoms?

A. They should call their physician or the emergency department if they develop a cough and a fever over 38 degrees C (100.4 degrees F) and one or more of the following symptoms

- sore throat
- joint aches
- muscles aches
- severe weakness or fatigue

They should say that they are a household contact of a person in isolation for influenza. They should follow instructions provided by the emergency department and put on a mask during travel to the hospital.

Q.5. Do family members of individuals who are in isolation need to stay home?

A. Family members of people who are in isolation may be asked to stay at home. They will be contacted by Public Health with instructions.

Q.6. Will any health-care worker contact me during my isolation?

A. Yes. a public health nurse will contact you once a day. If a home visit is required, a public health nurse will make a visit.

Q.7. What precautions will the public health nurse take?

A. The public health nurse will wear a mask while in the same room with you. You should wear a surgical mask during the visit.

Q.8. What do I do if I have questions or concerns?

A. Call your local public health office between 8:30 am and 4:30 pm if you have questions or concerns. After hours or on weekends, contact your physician or the local emergency department if your symptoms get worse. For more information about influenza, see the Nova Scotia Department of Health Promotion and Protection website (www.gov.ns.ca/hpp/ocmoh/flu.htm).

Quarantine Fact Sheet

This fact sheet is for people who have been placed under quarantine and their families.

Q.1. What is quarantine?

A. Quarantine means restricting the activities of people who are well, but who have been exposed to an illness during the time when the infection can be spread. This is called its period of communicability.

Q.2. Why is quarantine needed?

A. Quarantine is needed to limit public movement of people who may have been exposed to influenza to prevent them from infecting others.

Q.3. Why do I have to stay home for 3 days?

A. It can take up to 3 days from the time someone is infected with influenza to the start of symptoms. This is the incubation period. If you have not developed symptoms within 3 days from your last exposure to a person with influenza, Public Health officials will tell you when to end your quarantine.

Q.4. What should I do when I am in quarantine?

A. Remain at home for 3 days after your last exposure or contact with a person with influenza. Do not leave your house and do not allow people to visit you. Monitor your health in the following ways:

- Take your temperature twice a day. If you take fever-reducing medicine (such as acetaminophen or ibuprofen), wait 4 hours before taking your temperature.
- Note if you have a cough and what it's like (Is it a dry cough? Are you coughing anything up?).
- Note if you are short of breath or have difficulty breathing.

Call your physician or the nearest emergency department if you develop a cough and a fever over 38 degrees C (100.4 degrees F) and one or more of the following symptoms:

- sore throat
- joint aches
- muscles aches

- severe weakness or fatigue

Q.5. Should members of my family stay at home while I am in quarantine?

A. No. Family members of healthy people who are quarantined do not need to stay home. There is no risk of them spreading influenza. If the entire family has been in contact with a case, they will all need to be quarantined.

Q.6. Will any health-care worker contact me during my quarantine?

A. Yes. A public health nurse will contact you once a day. If a home visit is required, a public health nurse will make a visit.

Q.7. What do I do if I have questions or concerns?

A. Call your local public health office between 8:30 am and 4:30 pm if you have questions or concerns. For more information about influenza, see the Nova Scotia Department of Health Promotion and Protection website (www.gov.ns.ca/hpp/ocmoh/flu.htm).

Fact Sheet for Care Providers at Home

The person who is sick should stay isolated at home following the directions of Public Health until they are told that this is no longer necessary.

Isolate the sick person

If possible, only the person who is taking care of the sick person should stay with them. The sick person should stay in one room with the door closed and with the window open, if possible. Other members of the family should stay away from the sick person. They should not handle or share things such as dishes until the care provider has cleaned them thoroughly. Discourage any visits from people who do not live in the house.

Hand washing is important

Everyone in the household should wash their hands often using soap and warm water. The person who is sick should cover their mouth when coughing or sneezing and wash their hands immediately after. The care provider should wash their hands immediately after providing care to the sick person. Waterless hand wash agents can also be used.

Wear masks

Influenza is spread by close contact. The person caring for the sick person should wear a mask. The sick person should always wear a mask if they leave their room or if another person is in the room with them. Anyone going in to the room should put on a mask before entering. You will be given a supply of masks and be told how to use them.

Keep things clean

- Wash the sick person's bed sheets, towels, and clothes in warm water. They can be washed with items belonging to other household members.
- The sick person should put used tissues directly into the garbage. It can be put out with the regular garbage.
- Clean surfaces and items inside the sick person's room with regular household cleansers. Clean items handled by the sick person as soon as you remove them from the sick person's room. Wash dishes, cutlery, and glasses in soap and warm water or in the dishwasher.

Care in the home

The sick person should follow the usual guidelines for taking care of themselves when ill. Rest, drink plenty of fluids, and take acetaminophen or ibuprofen for fever and pain. Taking cough medicine, decongestants, and/or sore throat lozenges may help to relieve symptoms.

Take the sick person's temperature at least twice a day with a thermometer. Write the temperature down. If the sick person is taking acetaminophen (e.g., Tylenol) or ibuprofen (e.g., Advil), wait at least 4 hours after the last dose before taking their temperature.

When to call for help

Public Health will call to check on the sick person's condition. If the symptoms worsen, including increased shortness of breath or fever, call your doctor for instructions.

Call Public Health immediately if other members of the household start to feel unwell and develop a fever or cough or any other respiratory symptoms.

Letter from the Medical Officer of Health to a Case Recommending Home Isolation

Dear _____

It has been reported to me that you are under investigation for a novel influenza virus. Influenza is a communicable disease that is spread to others through close contact. It can lead to very serious illness.

In consultation with your physician, I am recommending that you remain isolated in your home until I advise you otherwise. The time period that you must remain in isolation depends on how quickly you recover from your illness.

I have included some information on influenza and on home isolation. Public Health staff will gladly answer any questions you may have.

It is extremely important that you remain in isolation at home until advised otherwise.

Thank you for your co-operation.

Sincerely,

Letter from the Medical Officer of Health to a Case Requiring Home Isolation Who Is Not in Compliance

Dear _____

It has been reported to me that you are under investigation for a novel influenza virus. I wrote to you on (insert date) requesting that you remain in isolation at home voluntarily until you are advised otherwise.

It has come to my attention that you have not voluntarily isolated yourself. Influenza is a communicable disease that is spread to others through close contact. As you know, it can lead to very serious illness. I have included some information on influenza, and Public Health staff will gladly answer any questions you may have.

It is extremely important that you remain in isolation at home until advised otherwise. Therefore, I am requesting you to remain in isolation as directed.

Thank you for your co-operation in this matter.

Sincerely,

Letter from the Medical Officer of Health to a Contact Requesting Home Quarantine

Dear _____

It has been reported to me that you have been in contact with a novel influenza virus. In consultation with your physician, we are recommending that you remain in quarantine in your home until I advise you otherwise. You should remain in quarantine for 3 days after your last exposure to influenza.

Influenza is a communicable disease that is spread to others through close contact. It can lead to very serious illness. I have included some information on influenza and on home quarantine. Public Health staff will gladly answer any questions you may have.

It is extremely important that you remain in quarantine at home until advised otherwise.

Thank you for your co-operation.

Sincerely,

Letter from the Medical Officer of Health to a Contact Requiring Home Quarantine Who Is Not in Compliance

Dear _____

It has been reported to me that you have been in contact with a case of a novel influenza virus. I wrote to you on (insert date) requesting that you remain in quarantine at home voluntarily until you are advised otherwise.

It has come to my attention that you have not voluntarily quarantined yourself. Influenza is a communicable disease that is spread to others through close contact. It can lead to very serious illness. I have included some information on influenza, and Public Health staff will gladly answer any questions you may have.

It is extremely important that you remain in quarantine at home until advised otherwise. Therefore, I am requesting you to remain in quarantine as directed.

Thank you for your co-operation in this matter.

Sincerely,

Annex 4-G: Detailed Description of Community-Based Disease Control Strategies during the Pandemic Period

Infection Control and Environmental Measures

Use of Masks by Well Individuals

Advantages	Disadvantages
It may decrease exposure to large droplets containing the virus.	Hands and other surfaces may be contaminated when the mask is removed (requires public education).
Psychologically reassures people that they are taking measures to prevent infection.	It may cause panic if the availability of masks is limited.
	Use of masks without using other infection-control practices is of limited effectiveness and may provide a false sense of security.
	It is not feasible to wear masks constantly for the duration of the pandemic wave.
	Not all members of the public can afford to purchase masks
	Public purchase of masks may limit their availability in health-care settings where they are required.
This measure is not feasible or sustainable on a population basis and is not likely to be effective in reducing disease spread in the general population.	
Not recommended.	

Implement Hand-Sanitizing Stations in Public Settings (e.g., public transit settings)

Advantages	Disadvantages
It may increase the frequency of hand washing and thereby reduce the spread of disease.	It will not be effective against droplet spread via coughing and sneezing.
It reinforces key messages about hand washing.	Effectiveness depends on public compliance.
	It requires human and financial resources to keep stations adequately supplied. It is potentially expensive to supply and maintain.
	It may give people a false sense of security.
Frequent hand washing is an effective infection control measure when dealing with people known to be infectious. The public should be educated about hand washing and existing public washrooms should be appropriately stocked at all times. However, maintaining public hand-sanitizing stations during a pandemic is not a feasible strategy for Public Health Services, and its effectiveness in reducing viral transmission is uncertain.	
Not recommended.	

Increase the Frequency of Cleaning of Surfaces in Public Settings

(e.g., public transit settings, large institutions, businesses)

Advantages	Disadvantages
It may remove viable virus from frequently touched surfaces and therefore reduce the spread of disease.	Efficacy depends on the frequency and quality of cleaning (with appropriate supplies and techniques).
It reinforces key messages about the mode of transmission and personal hygiene.	Optimal frequency of cleaning cannot be determined and could be unsustainable during the peak of the epidemic in the community.
	It may be impossible to target cleaning efforts.
	It requires resources to maintain cleanliness.
Environmental cleaning is most effective when dealing with surfaces associated with people known to be infectious. Identifying infectious individuals in public settings is not possible, and virtually constant cleaning would be required to reduce the number of microorganisms on public surfaces.	
Not recommended.	

Other Measures Not Recommended for Implementation

Measure	Comments
Urge entire population in an affected area to check for fever at least once daily.	This is a potential measure to decrease the interval between symptom onset and patient isolation; however, this has not been effective in other situations.
Introduce thermal scanning into public places.	Experience has not shown this measure to be effective.
Carry out widespread environmental or air disinfection	This measure is not practical.
Disinfect clothing, shoes, or other objects of persons exiting affected areas.	This measure is not recommended for public health purposes. It may be required by veterinary authorities to prevent spread of infection in animals.
Restrict travel to and from affected areas.	Enforcement is considered impractical in most countries. It is likely to occur voluntarily when risk is appreciated by the public.
Establish a cordon sanitaire.	Enforcement is considered impractical.

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Nova Scotia Health System Pandemic Influenza Plan

Chapter 5: Antiviral Drug Strategy

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Background

Antiviral medications are effective in both the treatment and prophylaxis of influenza. While limited in supply, they are likely to be the only virus-specific intervention available during the initial response to a pandemic.

Vaccination with an effective vaccine is the primary public health intervention during a pandemic. However, vaccine production requires the acquisition of a seed virus and, therefore, cannot be initiated until the pandemic virus has infected humans. Once a suitable vaccine seed strain is available, it is anticipated that vaccine production will require at least three to four months. Furthermore, each individual may need to receive two doses of vaccine to be protected.

At this time, antiviral drugs are the only specific medical intervention that targets influenza and that will be available during the initial pandemic response. Antiviral drugs can be used to prevent influenza and, unlike vaccines, can also be used to treat cases that are identified early in their illness.

Objectives

The national Pandemic Influenza Committee has developed a national antiviral strategy. The objectives of this strategy are to

- recommend a strategy for the use of antiviral drugs during an influenza pandemic
- address issues around the security of supply of antiviral drugs
- facilitate planning to ensure the distribution of available antiviral drugs to the appropriate groups of people during an influenza pandemic
- support monitoring of drug resistance during an influenza pandemic

Planning Assumptions

- A limited supply of antiviral medications will be available during an influenza pandemic.
- The use of antiviral medications across the province and country must be consistent.
- A quantity of antiviral drugs will be designated for containment during the pandemic alert period.
- The clinical attack rate could be up to 35 per cent over the course of the entire pandemic.
- Of those who are symptomatic, 50 per cent will present to a health-care setting for medical attention.
- Treatment doses will still be required in the second wave even if a vaccine is available.
- Antiviral drugs have a limited shelf life.
- Resistance to antiviral medications may develop.
- The efficacy of antiviral drugs for treatment and prophylaxis of the pandemic influenza strain will not be known until the pandemic begins and may differ from that of seasonal influenza; therefore, recommendations may change.
- The dose and duration of antiviral drugs needed for the treatment and prophylaxis of the pandemic influenza strain will not be known until the pandemic begins and may differ from that of seasonal influenza; therefore, recommendations may change.
- Communication with health-care providers and the public on the use of antiviral medications is necessary.

Key Recommendations

- The recommended use of antiviral drugs changes according to the pandemic period. During the pandemic alert period, the objective is containment, which includes treatment of cases and post-exposure prophylaxis of close contacts. During the pandemic period, the objective is early treatment.
- Neuraminidase inhibitors (oseltamivir and zanamivir) can be used for both treatment and prophylaxis. Amantadine should be used only for prophylaxis and only if the strain is known to be susceptible.

- Treatment with neuraminidase inhibitors should be initiated within 48 hours of symptom onset.
- The susceptibility of the pandemic influenza strain to antiviral drugs should be monitored.

Government Stockpiles

At the time of the next influenza pandemic, antiviral drugs will be in short supply and likely not available through normal commercial channels. Therefore, a national stockpile of antiviral drugs has been created. The current national stockpile of 16 million doses of oseltamivir has been distributed per capita across the country, with Nova Scotia having approximately 500,000 doses. This is sufficient to treat 50,000 people (5 per cent of the population) once. Outside of the stockpiled quantity, the supply of antiviral drugs in Canada is limited.

The national stockpile is being increased to 55 million doses, sufficient to treat 17.5 per cent of the population. This recommendation is based on the assumption that there will be a 35 per cent attack rate, with 50 per cent of patients presenting for medical care. Along with oseltamivir capsules, the stockpile will include oseltamivir solution (4 per cent of stockpile) and inhaled zanamivir (10 per cent of stockpile).

Classes of Antiviral Drugs

Two classes of antiviral drugs are currently available: M2 ion channel inhibitors and neuraminidase inhibitors.

M2 Ion Channel Inhibitors

M2 ion channel inhibitors include amantadine and rimantadine, of which only amantadine is licensed in Canada. Amantadine is effective only against influenza A. It is approximately 65 per cent effective in preventing influenza A cases (Jefferson et al. 2006). When administered within 48 hours of symptom onset, it shortens the duration of fever (Jefferson et al. 2006). Resistance to amantadine develops rapidly when the drug is used for treatment and these resistant strains are readily transmissible.

During a pandemic, amantadine should not be used for treatment. It can be used for prophylaxis if the virus is susceptible.

Neuraminidase Inhibitors

Oseltamivir (Tamiflu®) and zanamivir (Relenza®) are the two currently available neuraminidase inhibitors (NAI) (others are under development). They are active against both influenza A and B. Both drugs are licensed in Canada for treatment and prophylaxis.

Meta-analyses have shown that when administered within 48 hours of symptom onset, NAIs reduce the duration of illness by approximately one day (Cooper et al. 2003; Matheson et al. 2003; Jefferson et al. 2006). These drugs are also effective in preventing lower respiratory tract complications requiring antibiotics (Cooper et al. 2003; Matheson et al. 2003; Jefferson et al. 2006). A 59 per cent reduction in hospitalizations with oseltamivir use was demonstrated in one study (Kaiser et al. 2003). No data on reduction in mortality due to NAI treatment are currently available.

Resistance is less likely to develop than when using amantadine.

Inhaled zanamivir is recommended for treatment and prophylaxis of pregnant women and nursing mothers as there is less drug absorption. Zanamivir may remain effective if resistance to oseltamivir develops. Limitations to the use of zanamivir are that all people may not be able to use the inhalation device successfully and that the drug would not be effective if the virus replicates systemically rather than only in the respiratory tract.

The liquid formulation of oseltamivir is recommended for children and adults who cannot swallow capsules (e.g., intubated). The bioavailability if capsules are opened and the contents administered with applesauce or other substances has not been studied.

Use of the Antiviral Drug Stockpile

During the pandemic alert period (Phases 3, 4, and 5), if a novel influenza virus with pandemic potential is causing illness in Canada prior to the declaration of a pandemic, antiviral drugs will be used for domestic containment: that is, for both treatment of cases and post-exposure prophylaxis of close contacts.

During the pandemic period (Phase 6), antiviral drugs will be used for early treatment of people with influenza-like illness (ILI) who present for assessment within 48 hours of symptom onset and who are ill enough to require medical care. If, during a pandemic, it is necessary to prioritize to whom antiviral drugs will be administered (e.g., a larger dose than anticipated is necessary thereby reducing the number of people who can be treated), priority will be given to those who are deemed to be most at risk of serious morbidity and mortality based on the current epidemiologic data.

Recent evidence and modelling studies suggest that early treatment of patients with ILI is the most efficient way to prevent hospitalization and death of both high-risk patients and the general public.

Storage and Distribution

Antiviral drugs will be stored and distributed through the Provincial Drug Distribution Program (PDDP). During an influenza pandemic, PDDP will courier the drugs to one hospital pharmacy in each district health authority. The districts are responsible for storage and distribution beyond that point.

Security

Security for the antiviral drug stockpile during storage and transportation and in clinics will be provided by the RCMP and municipal police forces. Plans are being developed with the RCMP and the Department of Justice.

Clinical Guidelines

National and provincial clinical guidelines will be developed for the use of antiviral drugs.

Adverse Reaction Monitoring

Adverse reactions associated with antiviral drugs are monitored by the Marketed Health Products Directorate (MHPD) of Health Canada (http://www.hc-sc.gc.ca/ahc-asc/branch-dirgen/hpfb-dgpsa/mhpd-dpsc/index_e.html). Currently, health professionals and patients voluntarily report data on adverse reactions; while it is mandatory for manufacturers to report serious reactions.

In order to deal with adverse reactions to antiviral drugs prescribed during an influenza pandemic, MHPD is modifying this system, including reporting, monitoring, signal identification and prioritization, assessment, risk management, and risk communication.

Health professionals and patients can report data on adverse reactions to the MHPD. The report form is available at <http://www.hc-sc.gc.ca/dhp-mps/alt_formats/hpfb-dgpsa/pdf/medeff/ar-ei_form_e.pdf>.

Reports should be mailed, faxed or phoned to:

Atlantic Regional AR Centre
c/o Drug Information Centre
Queen Elizabeth II Health Sciences Centre
Room 2421, 1796 Summer Street
Halifax NS B3H 3A7
adr@cdha.nshealth.ca
Telephone: 1-866-234-2345
Fax: 1-866-678-6789

Antiviral Drug Susceptibility Monitoring

A protocol for monitoring the susceptibility of the pandemic influenza strain to antiviral drugs is being developed by the National Microbiology Laboratory.

Roles and Responsibilities

(Outstanding issues are italicized)

Federal

- Approve and license antiviral drugs.
- *Coordinate national purchases of antiviral drugs—ongoing* (Public Works and Government Services Canada).
- *Coordinate a national antiviral strategy—ongoing* (Public Health Agency of Canada).
- *Develop a plan for containment activities during the pandemic alert period* (Public Health Agency of Canada).
- *Review and update the system for monitoring adverse drug reactions* (Marketed Health Products Directorate, Health Canada).
- *Coordinate a plan for antiviral drug susceptibility monitoring* (National Microbiology Laboratory).

- *Develop a plan for monitoring the shelf life of antiviral drugs* (Public Health Agency of Canada).

Provincial (Department of Health)

- Purchase and store antiviral drugs.
- *Arrange for security during storage and transportation, as well as in district health authority clinics* (Department of Health, RCMP, Department of Justice).
- *Develop clinical guidelines for the use of antiviral drugs* (Department of Health).
- *Develop a protocol for the use of diagnostic tests in guiding antiviral treatment* (Department of Health).
- *Develop a protocol for monitoring antiviral drug susceptibility* (Department of Health).
- *Develop a protocol for monitoring antiviral drug adverse reactions* (Department of Health).
- During an influenza pandemic:
 - Distribute drugs to the district health authorities.
 - Monitor the use and wastage of antiviral drugs in the province (Department of Health).
 - Monitor antiviral drug susceptibility and adverse drug reactions (Department of Health).

District

- Develop plans for the storage and distribution of antiviral drugs within the district health authority.
- Develop plans to rapidly administer antiviral drugs to patients.
- During an influenza pandemic,
 - Implement provincial clinical care guidelines for the use of antiviral drugs.
 - Implement the provincial protocol for the use of diagnostic tests in guiding antiviral treatment.
 - Report adverse drug reactions.
 - Implement provincial protocol for monitoring antiviral drug susceptibility.
 - Track antiviral drug use and wastage; report to the Department of Health.

Activities by Pandemic Phase

Canadian Pandemic Phase		Activities
Interpandemic Period		
1.0	No new virus subtype is present in humans. Subtype that has caused human infection may be present in animals <u>outside</u> Canada. Risk to humans is low.	<input type="checkbox"/> Usual public health practice for seasonal influenza.
1.1	No new virus subtype is present in humans. Subtype that has caused human infection is present in animals <u>inside</u> Canada. Risk to human is low.	<input type="checkbox"/> Usual public health practice for seasonal influenza.
Pandemic Period		
2.0	No new virus subtype is present in humans. Animal influenza virus subtype that poses substantial risk to humans is circulating in animals <u>outside</u> Canada.	<input type="checkbox"/> Usual public health practice for seasonal influenza.
2.1	No new virus subtype is present in humans. Animal influenza virus subtype that poses substantial risk to humans is circulating in animals <u>inside</u> Canada.	<input type="checkbox"/> Usual public health practice for seasonal influenza.

Canadian Pandemic Phase		Activities
Pandemic Alert Period		
3.0	New virus subtype is present in humans <u>outside</u> Canada (single cases). No or rare instances of human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> Assess size of antiviral drug stockpile. <input type="checkbox"/> Review storage and distribution plans.
3.1	New virus subtype is present in humans <u>inside</u> Canada (single cases). No or rare instances of human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> Carry out limited antiviral drug distribution to district health authorities. <input type="checkbox"/> Treat cases with antiviral drugs. Antiviral drug prophylaxis for contacts is not necessary unless human-to-human transmission cannot be ruled out. <input type="checkbox"/> Monitor adverse drug reactions according to protocol. <input type="checkbox"/> Monitor antiviral drug susceptibility according to protocol. <input type="checkbox"/> Monitor use and wastage of antiviral drugs.
Phase 4		
4.0	New virus subtype is present in humans <u>outside</u> Canada (small clusters). Limited human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> Reassess antiviral drug strategy based on available epidemiologic data. Revise recommendations for antiviral drug use if necessary.
4.1	New virus subtype is present in humans <u>inside</u> Canada (single cases; no clusters). Limited human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> Treat cases with antiviral drugs. <input type="checkbox"/> Treat contacts prophylactically with antiviral drugs. <input type="checkbox"/> Monitor adverse drug reactions according to protocol. <input type="checkbox"/> Monitor antiviral drug susceptibility according to protocol. <input type="checkbox"/> Monitor use and wastage of antiviral drugs.
4.2	New virus subtype is present in humans <u>inside</u> Canada (small localized clusters). Limited human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> As for Phase 4.1.

Canadian Pandemic Phase		Activities
Pandemic Alert Period cont'd		
5.0	New virus subtype is present in humans outside Canada (large clusters). Localized human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> Reassess antiviral drug strategy based on available epidemiologic data. Revise recommendations for antiviral drug use if necessary.
5.1	New virus subtype is present in humans inside Canada (single cases; no clusters).	<ul style="list-style-type: none"> <input type="checkbox"/> Treat cases with antiviral drugs. <input type="checkbox"/> Treat contacts prophylactically with antiviral drugs. <input type="checkbox"/> Monitor adverse drug reactions according to protocol. <input type="checkbox"/> Monitor antiviral drug susceptibility according to protocol. <input type="checkbox"/> Monitor use and wastage of antiviral drugs.
5.2	New virus subtype is present in humans inside Canada (large clusters). Localized human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> As for Phase 5.1.
Pandemic Period		
6.0	New virus subtype is present in humans <u>outside</u> Canada (in the general population). Sustained human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> Carry out large-scale antiviral drug distribution to district health authorities. <input type="checkbox"/> Reassess antiviral drug strategy based on available epidemiologic data. Revise recommendations for antiviral use if necessary. <input type="checkbox"/> Review recommended dosage and duration of treatment. <input type="checkbox"/> Treat cases with antiviral drugs according to clinical guidelines. <input type="checkbox"/> Monitor adverse drug reactions according to protocol. <input type="checkbox"/> Monitor antiviral drug susceptibility according to protocol. <input type="checkbox"/> Monitor use and wastage of antiviral drugs. <input type="checkbox"/> Provide ongoing information on antiviral drug effectiveness, adverse reactions, and resistance (if available) to health-care providers. <input type="checkbox"/> Provide ongoing information to the public and media about protocols for antiviral drug use.
6.1	Pandemic virus subtype is present in humans <u>inside</u> Canada (single cases; no clusters).	
6.2	Pandemic virus subtype is present in humans <u>inside</u> Canada (localized or widespread activity). Sustained human-to-human spread.	

Annex 5~A: People at High Risk of Seasonal Influenza-Related Complications (NACI 2005)

- Adults and children with chronic cardiac or pulmonary disorders (including bronchopulmonary dysplasia, cystic fibrosis, and asthma) that are severe enough to require regular medical follow-up or hospital care
- People of any age who are residents of nursing homes and other chronic care facilities
- Adults and children with chronic conditions, such as diabetes mellitus and other metabolic diseases, cancer, immunodeficiency, immunosuppression (due to underlying disease and/or therapy), renal disease, anemia, and hemoglobinopathy
- People aged over 65 years
- Adults and children with any condition that can compromise respiratory function or the handling of respiratory secretions or that can increase the risk of aspiration
- Healthy children aged 6 to 23 months (Children in this age group are at increased risk of influenza-associated hospitalization, compared with healthy older children and young adults.)
- Children and adolescents (aged 6 months to 18 years) with conditions treated for long periods with acetylsalicylic acid

Annex 5-B: Recommended Doses of Antiviral Drugs

Table 1: Recommended pediatric and adult doses of antiviral drugs for the prophylaxis and treatment of influenza

Drug (trade name)	Prophylaxis doses	Treatment doses	Level of evidence and grade of recommendation*
Oseltamivir (Tamiflu®)	Adults and children >13 years ^a 75 mg once a day ^b	Children > 1 year ^c See Table 2 Adults 75 mg twice a day for 5 days	Children Prophylaxis no data Treatment IA Adults Prophylaxis IA Treatment IA
Zanamivir (Relenza®)	Adults and children >7 years ^{d,e} 10 mg (2 puffs) once a day ^f	Adults and children >7 years ^e 10 mg (2 puffs) twice a day for 5 days	Children Prophylaxis pending Treatment IA Adults Prophylaxis IA Treatment IA
Amantadine (Symmetrel®)	See Table 3	Not recommended	Children Prophylaxis IA Adults Prophylaxis IA
<p>^a Oseltamivir is not indicated for prophylaxis of influenza in pediatric patients less than 13 years of age.</p> <p>^b The safety and efficacy of oseltamivir for prophylaxis of influenza in patients >13 years of age have been demonstrated for up to 6 weeks.</p> <p>^c Oseltamivir should not be used for treatment of influenza in pediatric patients less than 1 year of age (see www.hc-sc.gc.ca/dhp-mps/medeff/advisories-avis/prof/2004/tamiflu_hpc-cps_e.html for Important Safety Information regarding Tamiflu® (oseltamivir phosphate) and Prescription in Children Less than 1 Year of Age).</p> <p>^d Zanamivir was recently approved for prophylaxis in Canada: recommendations for its use are pending.</p> <p>^e The safety and efficacy of zanamivir for the prophylaxis and treatment of influenza in pediatric patients less than 7 years of age have not been established.</p> <p>^f The safety and efficacy of zanamivir for prophylaxis of influenza in patients less than 7 years of age have been demonstrated for up to 4 weeks.</p>			

*See Table 4.

Table 2: Recommended dose of oseltamivir for children 1 year of age and older for the treatment of influenza

Body Weight (kg)	Dosage
≤15	30 mg twice daily
>15–23	45 mg twice daily
>23–40	60 mg twice daily
>40	75 mg twice daily
<ul style="list-style-type: none"> ☐• Oseltamivir is not indicated for treatment of influenza in patients less than 1 year of age. 	
<ul style="list-style-type: none"> ☐• Duration of therapy is 5 days. 	
<ul style="list-style-type: none"> ☐• Dose should be reduced by one-half in patients with creatinine clearance <30mL/min 	

Table 3: Recommended adult and pediatric doses of amantadine for the prophylaxis of influenza

Age	Dosage	
NO RENAL IMPAIRMENT		
1–9 years	5 mg/kg once daily, or divided doses twice daily, total daily dose not to exceed 150 mg	
10–64 years	200 mg once daily, or divided doses twice daily	
>=65 years	100 mg once daily	
RENAL IMPAIRMENT		
Creatinine clearance (mL/min)	Dosage	
	10–64 years	>=65 years
>=80	100 mg twice a day	100 mg once a day
60–79	Alternating daily doses of 200 mg and 100 mg	Alternating daily doses of 100 mg and 50 mg
40–59	100 mg once a day	100 mg every 2 days
30–39	200 mg twice weekly	100 mg twice weekly
20–29	100 mg three times a week	50 mg 3 times a week
10–19	Alternating weekly doses of 200 mg and 100 mg	Alternating weekly doses of 100 mg and 50 mg

Table 4: Levels of evidence and grades of recommendation

Level	Type of evidence
I	Evidence is obtained from meta-analysis of multiple, well-designed, controlled studies.
II	Evidence is obtained from at least one well-designed experimental study.
III	Evidence is obtained from well-designed, quasi-experimental studies such as non-randomized, controlled single-group, pre-post, cohort, time, or matched case-control series.
IV	Evidence is from well-designed, non-experimental studies such as comparative and correlational descriptive and case studies.
V	Evidence is from case reports and clinical examples.
Grade	Grading of recommendation
A	There is evidence of type I or consistent findings from multiple studies of types II, III, or IV
B	There is evidence of types II, III, or IV and findings are generally consistent
C	There is evidence of types II, III, or IV but findings are inconsistent
D	There is little or no systematic empirical evidence

Annex 5-C: Adverse Reactions

Table 1: Adverse reactions of antiviral drugs

Adverse reaction	Drug		
	Oseltamivir	Zanamivir ^a	Amantadine ^b
Gastrointestinal	Nausea Vomiting (less severe if taken with food)		Anorexia Nausea Vomiting
Neurological			Nervousness Anxiety Insomnia Seizures Delirium Hallucinations
Cardiovascular			Arrhythmias (in overdose)
Respiratory		Bronchospasm Exacerbation of underlying chronic respiratory disease	
<p>^a Zanamivir is not recommended in individuals with asthma or chronic obstructive pulmonary disease; however, if the benefit outweighs the risks, the drug can be used with caution and under proper monitoring.</p>			
<p>^b Side-effects of amantadine are usually mild and diminish or disappear after taking the drug for a week. Toxicity is observed more frequently in individuals with renal insufficiency or seizure disorders, in the elderly, or after higher doses.</p>			

Annex 5-D: Oseltamivir: Patient Handout

Information about Tamiflu® (oseltamivir)

What is Tamiflu®?

Tamiflu® is a prescription drug effective both in preventing and treating influenza. It belongs to a class of antiviral drugs called neuraminidase inhibitors.

Tamiflu® is approved in Canada for treating influenza in people one year of age or older and for preventing influenza in people 13 years of age or older.

How is Tamiflu® administered?

Tamiflu® is available as a capsule that is taken orally (by mouth). For adults, it is taken twice daily for 5 days to treat influenza. For children, the dose depends on the child's weight. A liquid suspension of Tamiflu® can be taken by children or adults who cannot swallow a capsule.

How much do these drugs help?

Studies have shown that Tamiflu® can reduce the duration of influenza symptoms by one day if taken within two days of the onset of the illness. There is no information about how effective the drug is if treatment is started more than two days after the onset of symptoms.

What are the side-effects?

The most common side-effects are nausea and vomiting. These effects do not occur often and do not last long. Taking Tamiflu® with food may help to reduce these side-effects.

Who should not take Tamiflu®?

You should not take this medication if you have had a previous severe allergic reaction to Tamiflu®.

The dose of Tamiflu® may need to be adjusted if you have kidney disease.

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Nova Scotia Health System Pandemic Influenza Plan

Chapter 6: Influenza Vaccine Strategy

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Background

Immunization is the most effective means to reduce the morbidity and mortality associated with influenza. Each year, Nova Scotia conducts an influenza vaccination program in which vaccine is provided at no cost for those in priority groups as identified by the National Advisory Committee on Immunization, that is, those at high risk for influenza-related complications, those capable of transmitting influenza to individuals at high risk for complications, and those who provide essential community services (Public Health Agency of Canada 2005). Approximately 300,000 people were vaccinated through this program in the 2005–2006 influenza season (Nova Scotia Office of the Chief Medical Officer of Health 2006).

The pandemic vaccine strategy will build upon the interpandemic vaccination program, as well as previous experience with mass vaccination clinics for communicable disease outbreaks.

Objectives

The objectives of the Pandemic Vaccine Program are

1. to provide a safe and effective vaccine to all Nova Scotians
2. to allocate, distribute, and administer vaccine as rapidly as possible
3. to monitor the safety and effectiveness of vaccine programs
4. to limit morbidity and mortality
5. to limit societal disruption.

Planning Assumptions

- When available, vaccine will be the principal means for the prevention of pandemic influenza for the population.
- The pandemic vaccine will be administered by injection.
- The pandemic vaccine will require two doses administered one month apart to develop adequate immunity to the novel virus.
- The initial vaccine supply will not be sufficient to immunize the whole population; however, the end goal is to vaccinate the entire population.

- Early on, people will be vaccinated in stages. Priority groups who will receive vaccine first will be set nationally.
- Communication regarding eligibility for the pandemic vaccine is critical.
- The Nova Scotia Department of Health Promotion and Protection and Public Health Services in the district health authorities will control the allocation and distribution of pandemic vaccine.
- The vaccine will require storage, handling, and transport at +2° C to +8°C.
- District health authorities will be responsible for coordinating staff to administer the vaccine.
- Vaccine delivery to the general public will be through mass vaccination clinics.

Vaccine Supply

The Government of Canada has contracted a domestic vaccine supplier, GlaxoSmithKline (GSK), to produce pandemic influenza vaccine for all Canadians. Once the pandemic virus is identified, it will take approximately two to three months to produce the seed strain necessary to manufacture the vaccine. The first batch of vaccine should be available about two months later for safety and efficacy testing. Once production is under way, GSK can produce and distribute approximately eight million doses of vaccine a month.

The vaccine doses allotted to Nova Scotia will be sent to the Department of Health Promotion and Protection and then distributed to Public Health Services in the district health authorities.

The vaccine supply will be monitored through the Biological Inventory Management System.

Use of the Vaccine Stockpile

Priority Groups

The goal of the vaccine strategy is to immunize the entire population. However, vaccine supply will be limited initially, and the population will be vaccinated in stages, with nationally agreed-upon priority groups receiving vaccine first (Annex 6-A). These priority groups will be reassessed once epidemiologic data on the pandemic virus are available to ensure that they are consistent with the overall goal of the pandemic response. The priority groups will be reviewed by the national Pandemic Influenza Committee, and national guidelines will be distributed to the provinces and territories.

Storage and Distribution

The vaccine will be stored and distributed by the Department of Health Promotion and Protection. Vaccine will be distributed equitably to the main Public Health Services office in each shared service area. The district health authorities are responsible for storage and distribution beyond that point.

Security

Security for the vaccine stockpile during storage in the provincial depot and in the depots in the district health authorities, during transportation, and in clinics will be provided by the RCMP and municipal police forces. Plans are being developed with the RCMP and the Department of Justice.

Mass Vaccination Clinics

Public Health Services in the district health authorities will conduct mass vaccination clinics to deliver vaccine to the general public. Organizations employing health-care providers may be required to vaccinate their own staff; however, vaccine management and distribution will continue to be the responsibility of Public Health Services.

Annexes 6-B to 6-F provide detailed guidelines and tools for planning and conducting mass influenza immunization clinics.

Vaccine Coverage

Vaccine coverage will be monitored through the Application for Disease Notification System (ANDS) until Panorama (Infoway) is functional.

Adverse Events Monitoring

In Nova Scotia, an adverse event following immunization is a notifiable condition under the Health Protection Act.

Adverse events following immunization are monitored by the Canadian Adverse Events Following Immunization Surveillance System through the Public Health Agency of Canada (Adverse Events Following Immunization Reporting Form, Immunization & Vaccines, Public Health Agency of Canada). This is a voluntary reporting system.

The Canadian Pediatric Society operates the Immunization Monitoring Program ACTIVE (IMPACT), a pediatric hospital-based national active surveillance network. This system also monitors vaccine-associated adverse events, as well as vaccine failures and selected vaccine-preventable pediatric diseases (Immunization Monitoring Program, ACTIVE). The IWK Health Centre is part of this program.

Mandatory Vaccination

In Nova Scotia, immunization of the general public is not required by law; however, it is strongly recommended as it is an important aspect of maintaining health.

Vaccination is also not mandatory for health-care workers; however, it is strongly recommended that health-care workers are vaccinated against influenza in order to protect their patients.

Under the Health Protection Act, the Minister of Health Promotion and Protection may declare a public health emergency. During a public health emergency, the Chief Medical Officer of Health is granted the authority to establish *voluntary* immunization programs.

Roles and Responsibilities

(Outstanding issues are italicized)

World Health Organization

- Provide global guidance regarding the pandemic to the Public Health Agency of Canada.

Federal (Public Health Agency of Canada)

- Secure a supply of the pandemic influenza vaccine.
- Arrange for the purchase and licensing of pandemic vaccine and distribution to the provinces and territories.

- Allocate pandemic influenza vaccine on an equitable basis to the provinces and territories based on the recommendations of the Pandemic Influenza Committee.
- Make pandemic influenza vaccine available for specific populations (e.g., military, RCMP, First Nations, and others) and coordinate with the provinces and territories in the distribution and administration of influenza vaccine to those specific populations.
- Through the Pandemic Influenza Committee and the National Advisory Committee on Immunization, make recommendations on vaccine composition, dosage, priority groups to receive vaccine, and standards or acceptable rates for adverse reactions to pandemic influenza vaccine.

Provincial (Department of Health Promotion and Protection)

- Promote annual influenza immunization.
- *Improve overall vaccine storage and distribution capacity—ongoing* (Department of Health Promotion and Protection).
- *Arrange for security during storage and transportation as well as in district health authority clinics—ongoing* (Department of Health Promotion and Protection, RCMP, Department of Justice).
- *Develop provincial guidelines for mass vaccination clinics* (Department of Health Promotion and Protection).
- *Stockpile supplies and equipment for mass vaccination clinics* (Department of Health).
- During an influenza pandemic,
 - allocate and distribute vaccine to the district health authorities
 - monitor vaccine use, coverage rate, and adverse reactions

District (Public Health Services)

- Improve uptake of the annual influenza vaccine.
- Determine local vaccine requirements based on population and priority groups.
- Determine local storage for the vaccine.
- Arrange for sites and staffing for mass immunization clinics. Train vaccine providers.
- Develop plans to vaccinate hard-to-reach populations, e.g., those with language or cultural barriers, the homeless, and those with mental illness.
- During an influenza pandemic,
 - store vaccine locally and distribute to mass immunization clinics
 - administer vaccine
 - monitor vaccine use, coverage rates, and adverse reactions; report to Department of Health Promotion and Protection

Activities by Pandemic Phase

Canadian Pandemic Phase		Activities
Interpandemic Period		
1.0	No new virus subtype is present in humans. Subtype that has caused human infection may be present in animals <u>outside</u> Canada. Risk to humans is low.	<ul style="list-style-type: none"> <input type="checkbox"/> Refer to the <i>Nova Scotia Immunization Manual</i>. <input type="checkbox"/> Refer to the <i>Guide to Influenza Control for Long-Term Care Facilities</i>.
1.1	No new virus subtype is present in humans. Subtype that has caused human infection is present in animals <u>inside</u> Canada. Risk to humans is low.	<ul style="list-style-type: none"> <input type="checkbox"/> As for Phase 1.0.
<hr/>		
2.0	No new virus subtype is present in humans. Animal influenza virus subtype that poses substantial risk to humans is circulating in animals <u>outside</u> Canada.	<ul style="list-style-type: none"> <input type="checkbox"/> As for Phase 1.0.
2.1	No new virus subtype is present in humans. Animal influenza virus subtype that poses substantial risk to humans is circulating in animals <u>inside</u> Canada.	<ul style="list-style-type: none"> <input type="checkbox"/> As for Phase 1.0.
Pandemic Alert Period		
3.0	New virus subtype is present in humans outside Canada (single cases). No or rare instances of human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> As for Phase 1.0.
3.1	New virus subtype is present in humans <u>inside</u> Canada (single cases). No or rare instances of human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> As for Phase 1.0.

Canadian Pandemic Phase		Activities
Pandemic Alert Period Cont'd		
4.0	New virus subtype is present in humans <u>outside</u> Canada (small clusters). Limited human-to-human spread.	<input type="checkbox"/> As for Phase 1.0. <input type="checkbox"/> Review priority group enumeration
4.1	New virus subtype is present in humans <u>inside</u> Canada (single cases; no clusters). Limited human-to-human spread.	<input type="checkbox"/> As for Phase 1.0.
4.2	New virus subtype is present in humans <u>inside</u> Canada (small localized clusters). Limited human-to-human spread	<input type="checkbox"/> As for Phase 1.0.
<hr/>		
5.0	New virus subtype is present in humans <u>outside</u> Canada (large clusters). Localized human-to-human spread	<input type="checkbox"/> As for Phase 1.0.
5.1	New virus subtype is present in humans <u>inside</u> Canada (single cases; no clusters).	<input type="checkbox"/> As for Phase 1.0.
5.2	New virus subtype is present in humans <u>inside</u> Canada (large clusters). Localized human-to-human spread.	<input type="checkbox"/> As for Phase 1.0.

Canadian Pandemic Phase		Activities
Pandemic Period		
6.0	New virus subtype is present in humans <u>outside</u> Canada (in the general population). Sustained human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> Reassess priority groups based on available epidemiological data. <input type="checkbox"/> Activate storage, security and distribution plans. <input type="checkbox"/> Carry out ongoing education campaigns for priority groups and the general public.
6.1	Pandemic virus subtype is present in humans <u>inside</u> Canada (single cases; no clusters).	<ul style="list-style-type: none"> <input type="checkbox"/> As for Phase 6.0.
6.2	Pandemic virus subtype is present in humans inside Canada (localized or widespread activity). Sustained human-to-human spread.	<ul style="list-style-type: none"> <input type="checkbox"/> Take delivery of vaccine at the provincial depot. <input type="checkbox"/> Ensure that vaccine is stored and transferred appropriately and safely. <input type="checkbox"/> Distribute vaccine to district health authorities based on, initially, priority group enumeration and then on a per capita basis. <input type="checkbox"/> Monitor vaccine use in each district health authority in order to transfer supply from one district health authority to another if necessary. <input type="checkbox"/> Monitor vaccine coverage. <input type="checkbox"/> Monitor adverse events following immunization. <input type="checkbox"/> Carry out ongoing education campaigns for priority groups and the general public.

Annex 6~A: Recommended Priority Groups for Pandemic Vaccination

Once epidemiologic data on the specific pandemic virus are available, the priority groups will be reassessed and possibly altered to ensure that they are consistent with the overall goal of the pandemic response.

Group 1: Health-Care Workers, Public Health Responders, and Key Health Decision Makers

Rationale

The health-care and public health sectors will be the first line of defence in a pandemic. Maintaining the health service response and the vaccine program is central to the implementation of the response plan in order to reduce morbidity and mortality. Members of this group may be considered in the following work settings for vaccine program planning:

- acute care hospitals
- long-term care facilities and nursing homes
- private physician offices
- home care and other community care facilities
- public health offices
- ambulance and paramedic services
- pharmacies
- laboratories

Group 2: Pandemic Societal Responders and Key Societal Decision Makers

Rationale

The ability to mount an effective pandemic response may be highly dependent on individuals in the groups listed below being in place to maintain key community services. While those individuals that are essential to the response or to maintaining key community services may vary among jurisdictions, they are likely to include the following:

- police
- firefighters

- armed forces
- key emergency response decision makers (e.g., elected officials, essential government workers, disaster services personnel)
- utility workers (e.g., water, gas, electricity, essential communications systems)
- funeral service and mortuary personnel
- people who work with institutionalized populations (e.g., corrections)
- persons who are employed in public transportation and the transportation of essential goods (e.g., food)
- key government employees (e.g., ministers, mayors)

Group 3: Persons at High Risk of Severe or Fatal Outcomes Following Influenza Infection

Rationale

To meet the goal of reducing morbidity and mortality, persons most likely to experience severe outcomes should be vaccinated. For planning purposes, this priority group has been based on the high-risk groups identified by the National Advisory Committee on Immunization for annual vaccine recommendations. Additional groups have also been included, based on evidence indicating an elevated risk (e.g., during the annual epidemics, young infants experiencing rates of hospitalization similar to the elderly).

Prioritization of the following subgroups within Group 3 would depend on the epidemiology of influenza disease at the time of a pandemic:

- A. Persons in nursing homes, long-term care facilities, and homes for the elderly
- B. Persons with high-risk medical conditions living independently in the community
- C. Persons over 65 years of age living independently and not included in 3A and 3B
- D. Children, 6 months to 23 months of age (current vaccines are not recommended for children under 6 months of age)
- E. Pregnant women

Currently, NACI does not consider pregnant women as a high-risk group in its recommendations for annual influenza vaccination. However, pregnant women have been at elevated risk during past pandemics.

Group 4: Healthy Adults (Adults aged 18–64 Years Who Do Not Fall into Groups 1–3)

Rationale

This group is at lower risk of developing severe outcomes from influenza during annual epidemics, but comprises the majority of the workforce and represents the most significant segment of the population from the perspective of economic impact. Vaccination of healthy adults would reduce the demand for medical services and allow individuals to continue normal daily activities. Simultaneous absences of large numbers of individuals from their places of employment, even for non-essential personnel, could produce major societal disruption. Medical facilities could also be overwhelmed by health-care demands, even for outpatient services. This might compromise the care of those with complications.

Group 5: Children, 24 Months to 18 Years of Age

Rationale

This group is at the lowest risk of developing severe outcomes from influenza during annual epidemics but plays a major role in the spread of the disease. While children's absence from school might not have the same direct economic and disruptive impact as adults' absence from work, it could indirectly have that effect if adults stay at home to care for ill children.

Annex 6-B: Vaccine Priority Groups Enumeration Tool

Estimates of Health-Care Workers

One of the groups identified as a priority group for receiving vaccine consists of health-care workers. In order to minimize morbidity and mortality, the health service response and the vaccination program need to be maintained. Immunization of health-care workers will reduce transmission to patients, staff, and families within facilities.

Health-care workers may be considered in the following work settings for the purpose of the immunization program:

- acute care hospitals
- long-term care facilities and nursing homes
- private physician offices
- home care and other community care facilities
- public health offices
- ambulance and paramedic services
- pharmacies
- laboratories

Each district health authority needs to determine its own priorities, but health-care workers may include the following:

Health-Care Providers

Nurses
Nurse practitioners
Physicians
Paramedics
Health-care aides, personal support workers
Laboratory workers
X-ray technicians
Respiratory therapists
Physiotherapists
Occupational therapists
Public health staff
Vaccinators

Health Support Staff

911 dispatchers
Kitchen staff
Housekeeping
Porters
Receptionists
In-hospital pharmacy staff
Maintenance staff
Shipping and receiving staff
Managers

Estimates of Emergency and Essential Service Workers

One of the groups identified as a priority group for receiving vaccine consists of essential service providers. An effective response to an influenza pandemic will depend on whether these persons are in place to maintain key community services.

Each municipality needs to determine its own priorities but essential service workers may include the following:

Police officers

Firefighters

Emergency response decision makers (e.g., Emergency Management Office, police chiefs, fire chiefs)

Public works and utility workers

Water

Wastewater

Electricity

Essential communications systems

Funeral service/mortuary personnel

Provincial correctional service officers

Public transit workers

Air traffic controllers

Persons involved in the transportation of essential goods (e.g., food)

Religious leaders

Personnel of key community groups (e.g., Meals on Wheels, shelters)

Estimates of Persons at High Risk of Severe or Fatal Outcomes Following Influenza Infection

One of the groups identified as a priority group for receiving vaccine is persons at high risk of morbidity and mortality following influenza infection. Prioritization of individuals within this group will depend on the epidemiology of the disease at the time of an influenza pandemic.

- A. Persons in nursing homes, long-term care facilities and homes for the elderly
- B. Persons with high-risk medical conditions living independently in the community
- C. Persons over 65 years of age living independently and not included in 3A and 3B
- D. Children, 6 months to 23 months of age (current vaccines are not recommended for children under 6 months of age)
- E. Pregnant women

Vaccine Priority Groups Enumeration Tool

Please complete and return to the Chief Medical Officer of Health.

District Health Authority: _____

Completed by: _____ Date: _____

Table 6-1: Estimates of health-care providers and health support staff

Site	Estimate	
	Health-care providers	Health support staff
<i>Priority workers</i>		
Acute care hospitals		
Long-term care facilities		
Physician offices		
Public health offices		
EHS staff and paramedics		
Pharmacies		
Laboratories		
<i>Non-priority workers</i>		
Licensed homes for special care		
Mental health clinics		
Health-care students		
Volunteers at any site		
Others (e.g., dentists)		

Table 6-2: Estimates of essential service workers

Essential service worker	Estimate
Police (local/provincial)	
Firefighters (including volunteers)	
Emergency response decision makers	
Utility workers	
Water	
Wastewater	
Electricity	
Telecommunications	
Funeral services/mortuary personnel	
Provincial correctional service officers	
Public transit workers	
Air traffic controllers	
Persons involved in the transportation of essential goods (e.g., food)	
Religious leaders	
Personnel of key community groups (e.g., Meals on Wheels, shelters)	

Table 6-3: Estimates of high-risk persons

High-risk category	Estimate
Persons in nursing homes, long-term care facilities and homes for the elderly	
Persons with high-risk medical conditions living independently in the community	<i>Method for identifying this group yet to be determined</i>
Persons over 65 years of age living independently and not included in the above two categories	
Children, 6 months to 23 months of age (based on birth cohort)	
Pregnant women	

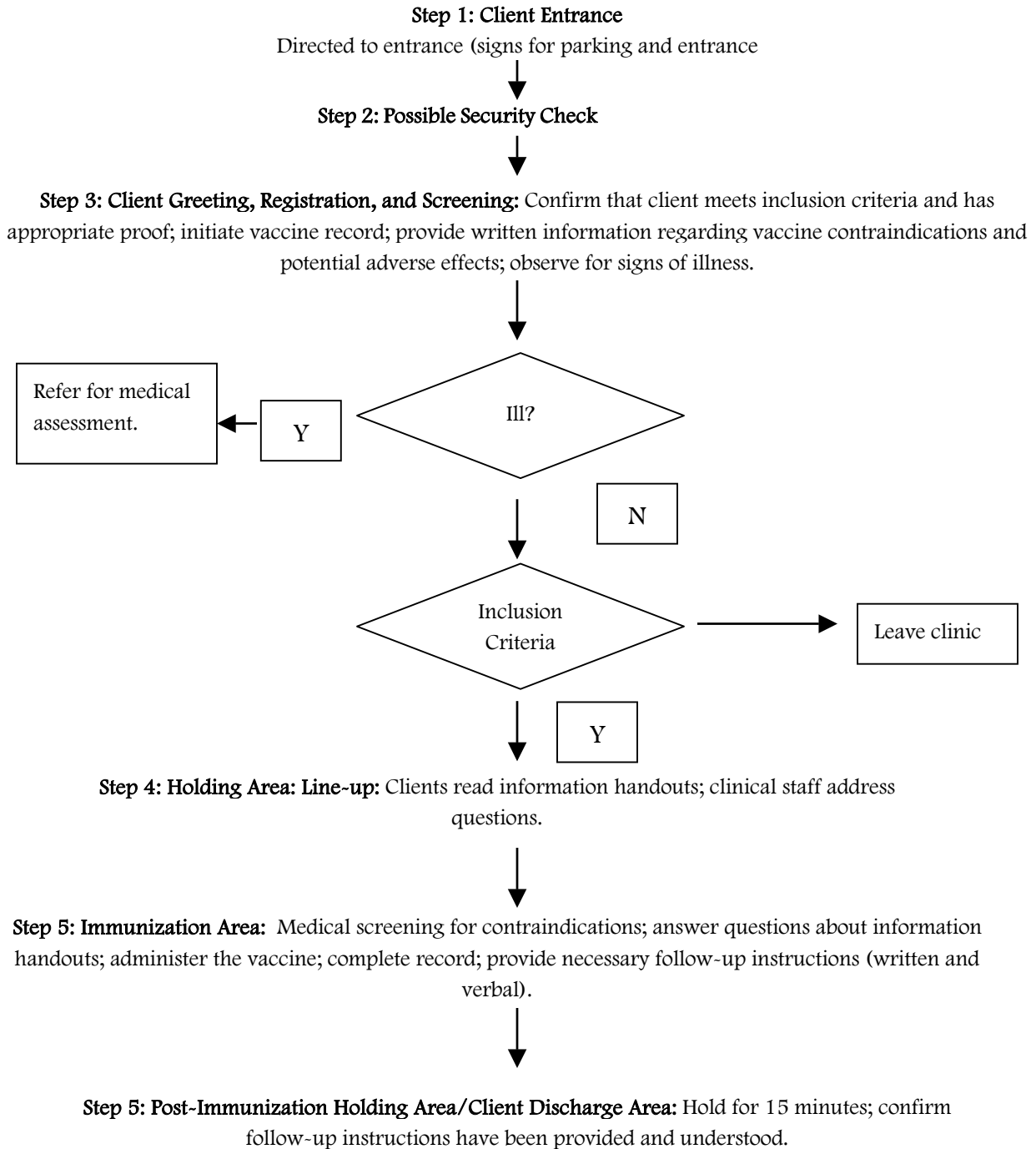
Annex 6-C: Mass Immunization Clinics

Mass Clinic Preparation

Planning for mass clinics will be based on the following expectations:

- The target population for vaccination will be expanded far beyond the typical high-risk groups to encompass the entire population.
- It is likely that vaccine shortages will exist, especially during the early phases of the pandemic. Consideration must be given to flexibility in planning for (a) severe vaccine shortages, (b) moderate vaccine shortages, and (c) no shortages.
- It is likely that a two-dose vaccine schedule will be needed. The second dose will be administered one month after the first dose.

Figure 1: Clinic/Client Operational Flow Chart



Annex 6-D: Immunization Team “In-A-Box”

The concept of a “team in a box” can be adapted to meet the needs of the population to be immunized, the size of the immunization facilities, and so on. It has been formulated to immunize 2,500 people per day during an eight-hour shift at one site.

- 1 nurse team leader
- 20 certified vaccine providers: to carry out screening, medical assessment, addressing questions, immunizing, and medical management of adverse events
- 8 volunteers: 1 greeter, 4 for registration, 2 for directing traffic flow, 1 runner
- 2 clerical staff: 1 to maintain supplies at stations, 1 to collect data
- 2 security people (minimum)

** Adapted from *BC Pandemic Influenza Preparedness Plan*.

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Nova Scotia Health System Pandemic Influenza Plan

Chapter 7: Health Services

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Background

During a pandemic there will be a marked increase in demand for human resources to care for the sick and for appropriate material resources to facilitate the provision of health care. While a pandemic is often defined as a public health emergency, it will indeed have a significant impact across the continuum of care that will change the context in which services are provided to individuals and communities. In Nova Scotia, health-care delivery reflects the provincial vision of an integrated, community-based health-care system. Health-care delivery facilities, agencies, and communities are in the process of planning what will be done when the health-care system is overwhelmed and care must be provided by both health-care workers and volunteers who may be performing different roles in uncustomary settings.

The Nova Scotia Health System Pandemic Influenza Plan, together with district health authority (DHA) and other system component plans, addresses clinical and resource management for health services across the continuum of care. The plan acknowledges the role of individuals in accessing information for decision-making about their home care needs in the event of a pandemic. They may decide on self-care or may access health services. Health services include the out-of-hospital emergency health system; primary health care; mental health and addiction treatment services; public health; acute, and tertiary care; and continuing care (home care and long-term care).

Objectives

The objectives of health service response during influenza pandemic are to

- strive for safe care for those with influenza in primary, secondary, and long-term residential and community-based care
- continue to provide safe care for those with other conditions in primary, secondary, and long-term residential and community-based care
- minimize the risk of transmission of influenza to other patients/clients, health-care workers, and volunteers
- maximize the efficiency of the delivery of appropriate care to all Nova Scotians

Planning Assumptions

- The pandemic will hit all areas of the province fairly quickly; the transfer of staff or patients between facilities and districts will be difficult.
- The need for health services will exceed the available resources, necessitating triage.
- Hospital capacity will be challenged.
- Elective/non-essential health services may be suspended during the pandemic.
- Care protocols may change, and standards of practice may need to be adapted to emergency requirements.
- Health services managers, professionals, and staff in all settings will require support and coordination.
- All bargaining units, professional associations, and health-care workers will need to work co-operatively during the pandemic.
- Infection-control guidelines, including those in this plan, will be used to reduce the spread of infection to patients, health-care staff, and the community.
- A substantial proportion of the workforce will be unable to work, either because of their own illness or the illness of family members.
- The strain of the pandemic may create additional demand for mental health and addiction treatment services for patients, their families, and health-care workers.
- Volunteers and alternative care deliverers may be required, as may alternative sites of care delivery.
- Health services will be delivered on a priority basis.
- Standardized assessment of health conditions will be required to guide uniform service delivery across the province.
- District health authorities will each have in place pandemic plans that address the health services components.
- Home care agencies, nursing homes, and residential care facilities funded under the mandate of the Departments of Health and Community Services will each have in place pandemic plans that address the health services components.
- The Department of Health will be responsible for coordinating a health-care plan for the province, which will include stockpiling of supplies.
- Operational planning will be done with full co-operation of all DHAs, IWK, and other stakeholders, as appropriate.

- The DHA pandemic plans and the staff within the authorities and IWK will inform the ongoing work of the related health services components of the plan and its operationalization.

Health Services Preparedness and Response

The key pillars of health service pandemic influenza preparedness and response are infection control, clinical management, resource management, and communication and education.

Pandemic Model of Care Description

The Model of Care depicts steps that may be taken by Nova Scotians, alone or in concert with health-care professionals or volunteers, in making decisions about their care during a pandemic. Ideally, many active healthy individuals who take preventive measures, such as being immunized and practising rigorous handwashing, will avoid contracting influenza. However, during an influenza pandemic the public will need access to information that provides information on how to access health services and how to care for themselves or family members who are ill.

The Model of Care is depicted as a flow chart that provides options for the location of and responsibility for information, assessment, and treatment based on a hierarchy of assessment outcomes. The model will assist health-care agencies and the Department of Health in their pandemic planning by providing process steps that must be available to all citizens. Guidelines for the process steps are detailed in chapters as noted.

PANDEMIC MODEL OF CARE

December 2007

An individual may enter or exit using the steps at any time and more than once.

DEFINITIONS (Adapted)

Information

Prevention & Mitigation: Prevention is actions taken to avoid the occurrence of negative consequences associated with a given threat. Prevention activities may be included as part of mitigation. Mitigation is sustained action taken to eliminate or reduce risks and impacts posed by hazards well before an emergency or disaster occurs. Mitigation activities may be included as part of prevention.

Remote Triage: A process whereby patients contact their health-care provider by phone and are sorted according to the seriousness of their illness so that treatment priorities can be allocated among them. It is designed to maximize resources available during a pandemic.

Assessment

Primary Assessment: A short, highly specific face-to-face influenza assessment with fast turnaround with short wait times to avoid transmission of the disease. Primary assessment may be accessed through self-referral. Assessments may be done by clinicians, EHS, physicians, etc., using the Department of Health assessment tools.

Primary Assessment Centres: Areas designated to assess and screen individuals presenting with symptoms of the pandemic influenza strain for the purpose of facilitating transfer to the appropriate level of care and support required. (e.g., designated doctor's offices, clinics and in non-traditional sites such as schools, churches, community centres, military field hospitals, etc.)
Source: PHC Division Working Document on Primary Assessment Centres – Informed from plans: CDHA Nova Scotia, National, and Ontario.

Secondary Assessment: A time-limited, highly specific assessment for influenza and its complications.
(Source: Adapted from CDHA Plan)

REFERENCES

Chapter 2

Chapter 4

Under Development

PROCESS / STEPS

Prevention & Mitigation

Self-Assessment
(Infoline, Web, Media)

Self-Assessment Outcome

Remote Triage (Phone)
(Doctor, Other Health Professional Pharmacy, Clinic, Public Health, Hospital)

Outcome

Primary Assessment
(Primary Assessment Centre)

Assessment Outcome

DISPOSITION

Remain Home with Immunity

Remain Home

Remain Home

Remain Home

Return Home

Return Home with Additional Supports:
Family, Volunteer, Neighbour, Supplies

ER for Acute Event

Non-Traditional Site

Secondary Assessment Centres: Areas designated and designed to provide diagnostic and treatment services only for influenza-like illness (e.g., physically located in a hospital, but outside the emergency department). (Source: Adapted from CDHA Plan).

Home: A place where people reside and may include supports by family caregivers and/or professional care providers (i.e., home-care support). May also be a place where people reside within a long-term care facility.

Home with Additional Supports: Human resources and/or material supplies that do not normally exist in the home.

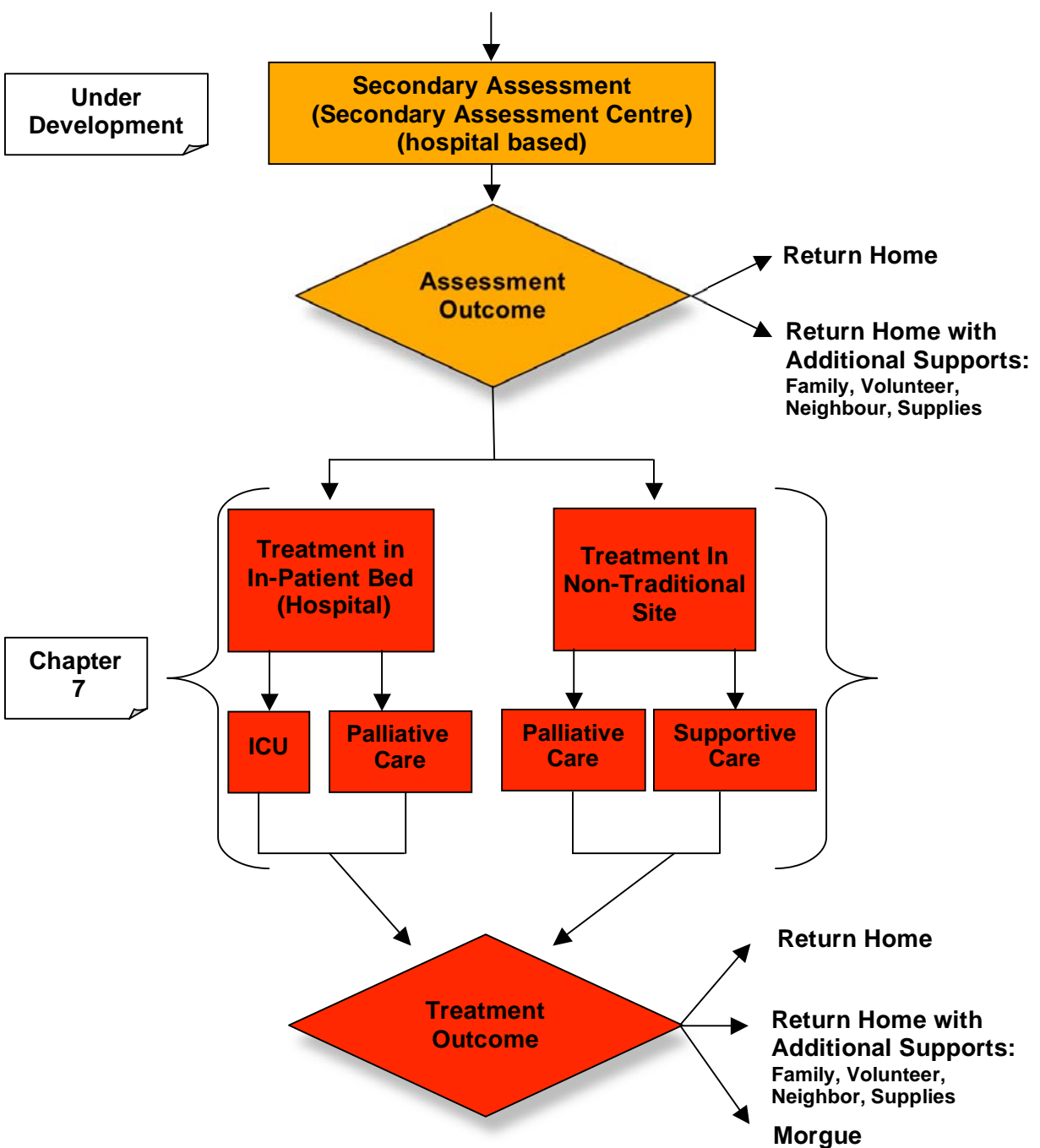
Treatment

Non-traditional Site: Non-traditional site is a site that provides care to groups presenting with influenza who might require personal care and "medical supervision" at a level beyond that available at home and different than is appropriate for a hospital. (Source: Capital District Health Authority Plan).

Non-traditional site is
 a) currently not an established health-care site, or
 b) is an established health care site that usually offers a different level of care. (Source: Annex G: National Plan)

The functions and locations of a non-traditional site will vary depending on the needs of the community but will focus on monitoring, care, and support of influenza patients. (PHAC, *The Canadian Pandemic Influenza Plan for the Health Sector*).

Bed (In-Patient Bed): In any institution a "bed" includes infrastructure support, including staffing, that is required to care for the patient in that bed. Therefore, the requirements for a bed in an intensive care unit, for example, include all the support required for a patient to be cared for at that level." (PHAC, *The Canadian Pandemic Influenza Plan for the Health Sector. Glossary of Terms and List of Acronyms*, website: www.phac-aspc.gc.ca)



Chapter 7

An individual may enter or exit using the steps at any time and more than once.

Infection Control

Influenza Transmission

Influenza is directly transmitted primarily by droplet contact of the oral, nasal, or conjunctival mucous membranes with respiratory secretions from an infected individual. Influenza is indirectly transmitted from hands and objects freshly soiled with discharges from the nose and throat of an acutely ill and coughing individual.

The incubation period for influenza is one to three days. The period of communicability continues for up to seven days after the onset of illness (following the incubation period). Individuals infected with influenza tend to shed more viruses in their respiratory secretions in the early stages of the illness. Patients are most infectious during the 24 hours before the onset of symptoms and during the most symptomatic period. The period of communicability and incubation period may vary with pandemic influenza.

Determination of Influenza Cases

Influenza-Like Illness (ILI)

Influenza-like illness (ILI) is defined as the acute onset of respiratory illness with fever and cough and with one or more of the following: sore throat, arthralgia, myalgia, or prostration, which could be due to influenza virus. In children under 5 years, gastrointestinal symptoms may also be present. In patients under 5 years or 65 years and older, fever may not be prominent.

Clinical Case Definition of Influenza

When influenza is circulating in the community, the presence of acute onset of fever and cough are good predictors of influenza. The positive predictive value increases when fever is higher than 38°C and when the time of onset of the clinical illness is acute (less than 48 hours after the prodromes) (Public Health Agency of Canada 2004). Other symptoms, such as sore throat, rhino rhea, malaise, rigors or chills, myalgia, and headache, although unspecific, may also be present.

Confirmed Case of Influenza

Confirmed cases of influenza are those with laboratory confirmation (i.e., virus isolation from respiratory tract secretions; identification of viral antigens or nucleic acid in the respiratory tract; or a significant rise in serum antibodies) or clinical cases with an epidemiological link to a laboratory-confirmed case.

Routine Practices and Additional Precautions to Prevent the Transmission of Influenza

Routine practices are the infection prevention and control practices for use in the routine care of all patients at all times in all health-care settings. Routine practices include the following (see Health Canada *Infection Control Guidelines: Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Health Care*):

- the importance of hand washing before and after caring for patients
- the need to use gloves, mask/eye protection, face shields, and gowns when splashes or sprays of blood, body fluids, secretions, or excretions are possible
- the cleaning of patient care equipment, the physical environment, and soiled linen
- precautions to reduce the possibility of health-care worker (HCW) exposure to blood-borne pathogens and patient placement.

Strict adherence to hand washing/hand antisepsis is the cornerstone of infection prevention. Proper hand hygiene may be the only preventive measure available during a pandemic.

Health Canada guidelines recommend that in addition to routine practices, additional precautions (droplet and contact precautions) should be taken for pediatric and adult patients with influenza during the Interpandemic Period. Adherence to droplet/contact precautions will not be achievable during a pandemic.

Infection-Control Practices for Pandemic Influenza

Hand Hygiene

Strict adherence to hand washing/hand antisepsis is critical. Hands should be washed or hand antisepsis performed after direct contact with patients/residents with ILI and after contact with their personal articles or their immediate environment. Antibacterial soap is **not** required.

Waterless alcohol hand sanitizers are an effective alternative to hand washing and are especially useful when time for hand washing or access to sinks or running water is limited. Apply product to dry hands and rub vigorously until dry. If there is heavy microbial soiling, first wash hands or wipe with a moist towelette to remove visible soiling. Waterless soap is not currently available in all settings across the continuum of care. This is being considered in the request for stockpiling.

Other Hygiene Measures to Minimize Influenza Spread

Staff, patients, residents, and visitors should all be encouraged to minimize influenza transmission.

- Use disposable, one-use tissues.
- Cover nose/mouth when sneezing/coughing.
- Perform hand antisepsis after coughing, sneezing, or using tissues **and** before and after providing care or visiting patients/residents.
- Keep hands away from the mucous membranes of the eye and nose.

Personal Protective Equipment

Masks (surgical type)

- Masks to minimize the transmission of influenza may be worn when face to face with coughing individuals during the early phases of the pandemic but are not practical or helpful when influenza transmission has entered the community.
- Masks should be worn to prevent the transmission of other organisms when HCWs are face to face with undiagnosed coughing patients/residents.
- Masks and eye protection or face shields **should be worn** to prevent HCW exposure to sprays of blood, body secretions, or excretions.
- Use the mask only once and change when it becomes wet.
- The mask must cover both your nose and mouth.
- Avoid touching the mask during use.
- Discard used masks in the garbage.
- Do not wear a mask dangling around your neck.

Guidelines from the Public Health Agency of Canada (2006), the U.S. Department of Health and Human Services (2005a; 2005b), and the World Health Organization (2005) recommend the use of masks (e.g., surgical or procedure) by health-care workers in pandemic settings who will be within 1 metre (3 feet) of patients either with, or suspected to have, pandemic influenza. For simplicity, health-care facilities also may recommend that health-care workers use such masks whenever entering a room containing a patient diagnosed with pandemic influenza. The use of particulate respirators at 95 per cent efficiency (e.g., N95 or comparable respirators) by health-care workers should be considered when a patient is undergoing a procedure in which the likelihood of the generation of aerosolized particles is considered to be particularly high, for example, during endotracheal intubation, suctioning, or aerosolized nebulizer treatments (Varia, et al. 2003).

Note: This protocol is currently under review and is subject to change as planning progresses.

Gloves

- Gloves are not required for the routine care of patients/residents suspected or confirmed to have influenza. Meticulous hand washing with soap and water or performing hand antisepsis will inactivate the virus.
- Gloves should be worn to provide an additional protective barrier between the HCW's hands and blood, body fluids, secretions, excretions, and mucous membranes to reduce the potential transfer of microorganisms from infected patients/residents to HCWs and from patient to patient via the HCWs' hands.
- Gloves are necessary for HCWs with open lesions on their hands when providing direct patient care.
- Gloves should be used as an additional measure, not as a substitute for hand hygiene.
- Gloves should not be reused or washed.

Gowns

- Gowns are not required for the routine care of patients/residents suspected or confirmed to have influenza.
- Long-sleeved gowns should be used only to protect uncovered skin and to prevent soiling of clothing during procedures and patient-care activities likely to generate splashes or sprays of blood, body fluids, secretions, or excretions.
- HCWs should ensure that any open skin area/lesion on the forearms or exposed skin is covered with a dry dressing at all times. Intact skin that has been contaminated with blood, body fluids, secretions, or excretions should be washed as soon as possible, thoroughly, but gently, with soap and warm running water.

Cleaning, Disinfection, and Sterilization of Patient-Care Equipment

The influenza virus is readily inactivated by hospital germicides, household cleaning products, soap, and hand-wash or hand-hygiene products. Refer to Health Canada's *Infection Control Guidelines: Hand Washing, Cleaning, Disinfection and Sterilization in Health Care* (1998) and *Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Health Care* (1999).

Environmental Control (Housekeeping, Laundry, Waste)

- Adhere to the recommendations for housekeeping, laundry, and waste management as outlined in the Health Canada *Infection Control Guidelines: Hand Washing, Cleaning, Disinfection and Sterilization in Health Care* (1998) and *Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Health Care* (1999).
- Equipment and surfaces contaminated with secretions from patients/residents suspected or confirmed to have influenza should be cleaned before use for another patient/resident.
- Special handling of linen or waste contaminated with secretions from patients/residents suspected or confirmed to have influenza is not required.

Infection-Control Management of Pandemic Influenza in Acute Care Settings

Accommodation

Single-room accommodation is not required for individuals suspected or confirmed with influenza. Single rooms in acute care settings should be designated for those suspected of having or confirmed to have airborne infections, e.g., TB, measles, chickenpox, or disseminated zoster, and for those who visibly soil the environment and for whom appropriate hygiene is difficult to maintain.

Minimize crowding. Maintain 1 metre spatial separation between patients, visitors, and workers whenever possible.

Patient Triage/Cohorting

When Pandemic Phase 4 is declared, the following specified cohort areas/units should be opened in hospitals:

1. ILI Assessment Area: Triage ILI patients promptly to a separate designated influenza assessment area on site
2. Non-ILI Assessment Area: For patients that require acute care assessment for conditions other than influenza. Triage to specific non-ILI waiting and examining areas physically separate from the ILI assessment area
3. Suspected ILI/Confirmed Influenza Unit

4. Not Exposed/Immune* to Influenza Inpatient Units
5. Not Exposed to ILI but at Very High Risk of Complications Inpatient Units: For example, ICUs, nurseries, or units with severely immuno-compromised patients (such as transplant recipients, hematology/oncology patients, patients with chronic heart or lung disease, or patients with HIV/AIDS) and dialysis patients

Cohort areas will be maintained until the pandemic wave has been declared over by the Minister responsible for the Health Protection Act.

Patient Admission (general overview)

Triggers will be developed to address the reduction of elective medical and surgical acute care admissions, prioritized and curtailed to ensure that there is consistency across the system. Depending on the resources of the facility, surgeries may be restricted to emergency cases only

Patients who have recovered from influenza can be moved into the “non influenza” cohort areas after the period of communicability of the pandemic strain has passed. All attempts to discharge these patients should be made.

Patient Activity Restrictions

Limit movement/activities of patients, including transfers within the hospital, unless the patient has recovered from pandemic influenza.

Patients with ILI who are coughing should leave their rooms only for urgent/necessary procedures. When it is necessary for these patients to leave their rooms, they should wear a surgical mask.

Visitor Restrictions

Each facility will restrict flow of people through their facilities. There will be one entry and exit point so visitors can be screened. Visitors with ILI must not visit while symptomatic. Close relatives of terminally ill patients may be exempt, but they must wear a mask upon entry into the facility and conduct hand hygiene before and after their visits. All cases will be reviewed under the advice of the infection-control practitioner. Their visits must be restricted to that patient only.

* Immune are those recovered from the pandemic strain of influenza or those immunized against the pandemic strain of influenza.

The public will be informed when an acute care facility has influenza activity. Those who have not yet had the pandemic strain of influenza or who have not been immunized against the pandemic strain should be discouraged from visiting.

Infection-Control Management of Pandemic Influenza in Long-Term Care (LTC) Settings

(See also: Infection-Control Practices for Pandemic Influenza.)

Care of Residents with ILI/Influenza

When Pandemic Alert Phase 5 is declared, facilities will be expected to care for their own residents who have influenza or influenza-like illness to minimize transfers to acute care hospitals. Careful consideration of many factors must be given before appropriate transfer of residents to acute care settings.

Admission/Readmission

Patients from acute care who have recovered from pandemic influenza or who are immunized against the pandemic influenza strain may be admitted to a LTC facility without restrictions.

Residents who were transferred to acute care and who have recovered from pandemic influenza or who have been immunized against the pandemic influenza strain may be readmitted into the LTC facility without restrictions.

LTC facilities that have remained “influenza free” may admit patients from acute care or the community who have been potentially exposed to influenza. However, such residents must be managed using influenza precautions (maintain 1 metre of spatial separation, mask if within 1 metre of the resident, and emphasize hand hygiene)

- for three days until past the incubation period if no influenza symptoms occur
- until seven days after the onset of symptoms, if influenza develops

Resident Activity Restriction

Once pandemic influenza is identified in the community, LTC facilities will restrict visitation. When influenza has been identified in one area of the LTC facility (via residents, staff, or visitors) efforts will be made to cohort and isolate, as supplies and resources allow.

- Cancel or postpone inside and outside facility procedures, appointments, and activities until influenza activity has stopped.
- Encourage coughing residents to remain in their own rooms. These residents should not attend the dining room, but have meals served in their own rooms.

Visitor Restrictions

There are no restrictions for asymptomatic visitors who have recovered from pandemic influenza or who have been immunized against the pandemic strain. However, visitor restrictions (according to Visitor Restrictions during an Outbreak policy) may be in effect for the district health authority or for individual facilities during the pandemic phase.

Visitors with ILI must not visit while symptomatic. Close relatives of terminally ill patients can be exempt, but they must wear masks upon entry into the facility and conduct hand hygiene before and after the visit, which must be restricted to that patient only.

Visitors should be informed when the long-term care facility has influenza activity. Those who have not yet had the pandemic strain of influenza or who have not been immunized against the pandemic strain should be discouraged from visiting. Close relatives of the terminally ill can be exempt, but they should restrict their visit to that individual only and must wash their hands on exiting from the patient's room.

Infection-Control Management of Pandemic Influenza in Ambulatory Care Settings

(See also: Infection-Control Practices for Pandemic Influenza)

Access to Services

When Pandemic Influenza Alert Phase 5 is declared, senior management will review and prioritize all ambulatory care services and consider cancelling non-urgent and routine ambulatory care visits.

Identify ambulatory care services where ILI assessment should be done on all patients before their visit to the department, e.g., dialysis, rehabilitation services, etc. Each site should consider if this is required and how it will be accomplished.

Accommodation

- Separate well patients from those with ILI as quickly as possible.
- If possible, provide a separate waiting area for those with ILI or place them in an area of the waiting room separated from non-ILI patients by at least 1 metre.
- Minimize time spent in waiting rooms.

- Place patients with ILI directly into a single room.

Other Infection-Control Considerations

- Provide tissues, surgical masks, and alcohol hand sanitizer, with appropriate instructions, in strategic areas of the lobby and waiting room as supplies permit.
- Remove magazines and toys from all waiting rooms.
- Clean equipment and environmental surfaces potentially contaminated by coughing patients as frequently as possible, preferably after each patient. (Increase availability of Environmental Services Staff to these areas; increase routine cleaning schedules in waiting room areas.)

Patient Activity/Transport

Patients with ILI should not leave the ambulatory care area, except for essential procedures. Patients who are coughing should wear a surgical mask when transported to other areas.

Infection-Control Management of Pandemic Influenza in Home Care

Settings

(See also: Infection-Control Practices for Pandemic Influenza)

Access to Services

When Pandemic Alert Phase 5 is declared, evaluate caseload and cancel home care visits that are not absolutely necessary.

ILI Assessment

Perform an ILI assessment of the client and their household contacts by phone (if possible) before the appointment or before going into the home. Assess the risk of influenza in the client or household contacts.

Provide clients/family members with information regarding the symptoms of ILI, self-care guidelines, and the purpose of triage settings (non-traditional sites). Counsel clients/household contacts to avoid public gatherings to minimize exposure.

Visitors

Recommend that only well (asymptomatic/unexposed) visitors should visit severely immuno-compromised patients in the home.

Infection-Control Management of Pandemic Influenza in Community Settings

The Department of Health will play a key support role in preparing and disseminating infection-control guidelines to family physicians and other community/primary care providers.

Clinical Management

Acute Care Services

District health authorities will use the tools and guidelines in this section to assist with their planning for acute care services. This section mirrors much of the work done for pandemic planning nationally and in other provinces across Canada, in particular Ontario, whose planning is informed by their experience in dealing with SARS (Ontario 2006).

Should a pandemic hit Nova Scotia, it is understood that our hospitals that provide the majority of acute care services will be overwhelmed. The impact on the hospital setting will depend on the ability of the province to implement a telephone triage system, as well on the ability of district health authorities to establish community-based primary assessment centres and alternative care centres. These strategies would reduce the pressure on the acute care settings; however, hospital services will still be overburdened.

The Demand for Acute Care

To date, Canada does not have its own approach to flu modelling. The majority of pandemic planners are using two software programs developed by the United States Centers for Disease Control and Protection (CDC), FluSurge and FluAid (2006). While there are limitations with these, given the Canadian context, they provide a planning reference point and as such have been used for Nova Scotia. FluSurge software is a forecasting model developed by the CDC to help public health planners and policy makers plan and prepare for the potential effect of the next pandemic. The model is based on a 35 per cent attack rate over an eight-week period. The provincial FluSurge forecast for Nova Scotia is presented in the following table and is based on the following assumptions:

- average length of non-ICU hospital stay for influenza-related illness (days): 5
- average length of ICU stay for influenza-related illness (days): 10
- average length of ventilator usage for influenza-related illness: 10
- average proportion of admitted influenza patients who will need ICU care: 15%
- average proportion of admitted influenza patients who will need ventilators: 7.5%
- average proportion of influenza deaths assumed to be hospitalized: 70%
- daily percentage increase in cases arriving compared to previous day: 3%

These assumptions are based on a number of factors, including data from the Canadian Institute for Health Information's Discharge Abstract Database for average hospital stay in Nova Scotia for most responsible diagnosis of influenza or pneumonia (excluding those with COPD co-morbidity), other provincial benchmarks, and CDC default assumptions.

Table 1: FluSurge forecast for Nova Scotia: Impact of an influenza pandemic over time

Pandemic Influenza Impact		Weeks									
		1	2	3	4	5	6	7	8	9	10
Hospital Admission	Weekly admissions	282	471	706	895	895	706	471	282		
	Peak admissions per day			139	139						
Hospital Capacity	Number of influenza patients in hospital	282	471	706	895	940	865	670	441		
	Percentage of hospital capacity needed	10%	16%	24%	31%	33%	30%	23%	15%		
ICU Capacity	Number of influenza patients in ICU	42	90	138	182	197	192	152	105		
	Percentage of ICU capacity needed	23%	50%	76%	101%	109%	106%	84%	58%		
Ventilator Capacity	Number of influenza patients on ventilators	21	45	69	91	99	96	76	53		
	Percentage usage of ventilator	15%	31%	48%	63%	66%	66%	53%	36%		
Deaths	Number of deaths from influenza			57	95	142	180	180	142	95	57
	Number of influenza deaths in hospital			40	66	100	126	126	100	66	40

*Population estimates are for 2005 based on 2001 census data.

With most hospitals running at or near capacity, these results indicate that all areas of Nova Scotia will have a difficult time coping with the added strain a pandemic will put on hospital resources. Basic hospital resources in Nova Scotia as of April 1, 2006, include

- 2,981 acute care beds
- 181 ICU beds (2005 data)
- 145 ventilator-supported beds (2005 data)

Based on the FluSurge model and assumptions described, it is anticipated that there will be about 4,700 hospital admissions, peaking in weeks four and five of the pandemic.

Influenza patients will require up to 33 per cent of all acute care beds, 109 per cent of all ICU beds, and 68 per cent of all ventilator-supported beds.

This information refers only to hospital services for influenza patients and does not include the services currently being provided to treat patients with other health problems, such as heart attack, stroke, or trauma.

Nova Scotia will continue to work with district health authorities to update the prediction as more information becomes available and if a Canadian modelling tool is developed.

Acute Care Response

The demand for acute care services during a pandemic as outlined above does not take into consideration that currently in Nova Scotia our average occupancy rate for acute care and ICU beds is high. As well, the projections do not take into consideration the current absenteeism rate among health professions working in Nova Scotia hospitals.

With the expectation that both of these factors will be heightened during a pandemic, districts will be required to apply strategies to assist with the additional demands on the medical care system.

Regular flu season in Nova Scotia creates a strain on the medical system that requires a variety of interventions, such as an increased emphasis on discharge and community placement for non-acute patients, as well as (at times) a reduction of hospital services. These and other approaches will be required to optimize hospital capacity during a pandemic.

The following table from the *Ontario Health Plan for Influenza Pandemic* (Ontario 2006) provides guidance for enhancing hospital capacity for Nova Scotia.

Table 2: Approaches to optimizing hospital capacity in Ontario

Capacity	Activity
Physical Capacity	Defer any services for non life-threatening conditions where no severe adverse health consequences are anticipated from the delay.
	Discharge alternative level of care (ALC) patients to long-term care homes when beds are immediately available.
	Discharge acute inpatients to home care when care can be provided safely in that environment.
	Discharge acute patients to family and self-care when care can be provided safely in that environment.
	Create “flex beds” from reserved beds or recently closed beds.
	Use ventilator capacity anywhere in the hospital where sufficient oxygen capacity exists (e.g., ER, post-anesthetic care units); cohort infectious patients and noninfectious patients.
	Deploy freed-up beds for influenza patients.
Hospital Staffing	Re-deploy clinical staff from deferred services.
	Defer staff holidays and leaves of absence until pandemic ends.
	For staff willing to work extra hours, establish 12-hour shifts up to the maximum recommended number of days per staff member.
	Train non-clinical staff to provide support services such as meals, personal care, and patient movement for treatment, site cleaning, and support for health-care workers and their families so the workers can do their job (e.g., child care, pet care).
	Recruit clinical agency staff in coordination with other hospitals in the immediate geographic area.
	Encourage members of the public to take home health care courses before the pandemic so they know how to prevent infection and provide supportive care for family members who are ill; train family members of hospital patients to provide home health care.
	Cross-train clinical staff for influenza care and other essential services during a pandemic and other large-scale emergencies.
Clinical Practices	Adopt clinical care practices to optimize hospital capacity, pending further development of clinical guidelines.

Source: Ontario Ministry of Health and Long-Term Care. 2006. *Ontario Health Plan for an Influenza Pandemic*, p. 17-4.

Acute Care Surge Capacity

It will be necessary for hospitals in Nova Scotia to develop a phased approach to surge capacity based on trigger points. Ongoing assessment of surge capacity requires the dynamic process of deferring non-urgent non-influenza care while recognizing the human and system impact this will have, as well as the use of influenza triage, admission, and discharge criteria.

Triggers are predefined criteria utilized to signal the implementation of specific actions or phase levels of a pandemic plan. Triggers should be used to initiate such actions as the following:

- Change staff complements or duties, or use alternative staff.
- Increase or reallocate bed capacity.
- Reduce non-essential services and admissions.
- Consolidate services.
- Obtain additional supplies.
- Reallocate or reroute ambulances.
- Establish non-traditional sites for health services.

To the extent possible, triggers for the reduction and reintroduction of hospital-related health services will be informed by planning for business continuity within each district. General strategies to enhance surge capacity by level are provided from Ontario as a planning reference in the following table. These strategies for hospitals should be used in conjunction with Table 4: Actions by key trigger points in a pandemic, a planning tool developed by Capital Health District Authority and IWK Health Centre, and the reduction of services criteria example in Table 5.

Acute Care Surge Capacity

Closely linked to the development of triggers is the development of surge capacity strategies for the hospital sector in Nova Scotia. Considerable work has been completed by the DHAs and IWK to identify physical and human resource capacities, including numbers of acute care beds, oxygen-supported beds, and ventilator capacity within their jurisdictions. Districts have also individually developed strategies to respond to issues associated with increased system demand coupled with limited or reduced capacity.

Table 3: Strategies to enhance surge capacity

Surge Levels during an Influenza Pandemic	Surge Strategies		Response Level	IMS* Command Function
Pre Surge	Basic	<ul style="list-style-type: none"> Staffed and operational beds open Some approved beds closed due to resource constraints 	Intra facility	Hospital
Minor Surge 5% to 10%	Enhanced	<ul style="list-style-type: none"> Open approved ICU and ventilator-supported beds as staff redeployment/recruitment permits Defer elective surgery up to 72 hours as per routine surge protocols Cohort/isolate influenza patients in ER, acute units, and ICU/ventilator units 	Intra facility	Hospital
Moderate Surge 11%–15%	Augmented	<ul style="list-style-type: none"> Establish early discharges; home care transfers; alternate level of care (ALC) transfers to long-term care homes Open more ICU/ventilator beds where oxygen available (e.g., operating rooms or post-anesthetic care units) Defer some treatment for non-life-threatening condition if no severe adverse health consequences anticipated from the delay 	Intra facility	Hospital
Major Surge 16%–20 %	Optimum	<ul style="list-style-type: none"> Defer all treatment for non-life-threatening conditions where no severe adverse health consequences anticipated from the delay 	Intra facility	Region Province
Large-Scale Emergency >20%	Over Capacity	<ul style="list-style-type: none"> No more beds available Maintain services for life-threatening conditions Triage for all treatment Mass emergency care 	Intra facility	Province

*IMS: Incident Management System

Source: Ontario Ministry of Health and Long-Term Care. 2006. *Ontario Health Plan for an Influenza Pandemic*, p. 17-5.

Table 4: Actions by key trigger points in a pandemic (cont'd)

Trigger Point #3: Pandemic virus lands in Nova Scotia; 1st wave (It's here!)
<p><i>Assumption(s)</i></p> <ul style="list-style-type: none"> • Suspect cases; followed by lab-confirmed cases in Nova Scotia • Pandemic-related HR absenteeism less than 10 per cent • Hospital admission rate for ILI-related illness less than 10 per cent • No vaccine available • Limited anti-viral supply • Dormitories available and operational for disposition of patients identified as requiring home care (no family available) <p><i>Key response activities</i></p> <p><i>Surge capacity result</i></p>
Trigger Point #4: First wave peaks (In the thick of it!)
<p><i>Assumption(s)</i></p> <ul style="list-style-type: none"> • Experiencing 35 per cent or greater absenteeism in human resources due to pandemic • ILI-related hospital admissions in excess of 20 per cent of acute care inpatient capacity • No vaccine available • Insufficient anti-viral supply • Limiting factor becomes lack of personnel <p><i>Key response activities</i></p> <p><i>Surge capacity result</i></p>

Table 4: Actions by key trigger points in a pandemic (cont'd)

Trigger Point #5: First wave ends (Take a breathI)
<p><i>Assumption(s)</i></p> <ul style="list-style-type: none"> • ILI outpatient visits/hospitalizations and death rates declining • Sufficient human resources are available to perform some ramp-up services activity • 2nd or 3rd wave is imminent in 3–9 months; requires preparatory activities to gear up <p><i>Key response activities</i></p> <p><i>Surge capacity result</i></p>
Trigger Point #6 2nd or 3rd Wave Arrives (It's BackI)
<p><i>Assumption(s)</i></p> <ul style="list-style-type: none"> • 2nd wave arrives within 3–9 months • Vaccine production begins with limited supply • Within several months mass vaccine becomes available; plan to administer over 3- to 4-month period. <p><i>Key response activities</i></p> <p><i>Surge capacity result</i></p>

Table 4: Actions by key trigger points in a pandemic (cont'd)

Trigger Point #7 Pandemic ends; return to Inter-pandemic Period (It's over!)
<p><i>Assumption(s)</i></p> <ul style="list-style-type: none"> Recovery activities occur <p><i>Key response activities</i></p> <p><i>Surge capacity result</i></p>

Reduction in Non-Influenza Services

The declaration of a pandemic will require district health authorities to scale back services that are not related to influenza. The process will require planning and will be a balance between providing urgent care to those who need it (influenza and non-influenza) while phasing out services to those who may not require immediate care. As learned during the SARS experience, cancelling all elective and non-emergent care had an impact on Ontario's broader health-care system. During a post-pandemic period, the ramping-up of services will be equally important to ensure that those who need care the most will receive it.

A phased approach to the deferral of services by district health authorities is required in order to be responsive. Ontario has developed a set of criteria and indicator conditions for deferring hospital services (Table 5), based on work completed in Alberta. District health authorities in Nova Scotia have completed or are finishing their specific plans for the reduction of hospital services. District health authority acute care services will be represented in their command and control structures for decision making. It is through the appropriate district process that the following is required:

- The *Ethical Considerations and Decision-Making Framework* (Reference 1 of this plan) and an ethics worksheet for pandemic influenza planning decisions (draft) should be used to develop an ethical and legal lens to assist in decision making.
- Decisions related to the reduction of services must be coordinated between hospitals within a district health authority and among district health authorities so the system

can provide urgent care for the population. (Command and control mechanisms to support this are under development/discussion.)

Table 5: Criteria and indicator conditions for deferring hospital services

	Level 1	Level 2	Level 3
Site of Care	Defer services for non-life-threatening conditions immediately if no severe adverse health consequences are anticipated by the delay	Maintain services for non-life threatening conditions as long as resources are available if severe adverse health consequences are anticipated from delay.	Maintain services for life-threatening conditions throughout the influenza pandemic.
Hospital Inpatient Surgery or Procedure	<ul style="list-style-type: none"> • Elective abdominal aortic surgery • Cholecystectomy • Hip/knee replacement • Prostate transurethral resection 	<ul style="list-style-type: none"> • Carotid endarterectomy • Colectomy • Thoracotomy • Total prostatectomy • Lumpectomy/mastectomy 	<ul style="list-style-type: none"> • Initiation of mechanical ventilation
Hospital Outpatient Surgery or Procedure	<ul style="list-style-type: none"> • Vasectomy • Myringotomy • Carpal tunnel release • Cataract surgery 	<ul style="list-style-type: none"> • Breast biopsy • Chemotherapy • Percutaneous coronary intervention (PCI) • Cardiac catheterization 	
Hospital Emergency Department Care	<ul style="list-style-type: none"> • Superficial injuries • Back or neck pain • Extremity strain 	<ul style="list-style-type: none"> • Severe cuts • Upper/lower respiratory infection • Otitis media 	<ul style="list-style-type: none"> • Initiation of mechanical ventilation

Notes to Table:

These criteria are based on the three health-care urgency categories developed by the Institute for Clinical Evaluative Sciences (ICES) to assess the impact of SARS on health services utilization. If the spread of influenza is gradual, scale-back may be time sensitive, with some services deferred earlier than others according to the assessed impact from a delay. These recommendations mirror the Alberta Clinical Subcommittee report (2003, page 21), which states that the exact details of rationing health care resources cannot be anticipated in advance by an algorithm or list of tradeoffs. The report recommends a step-wise process, starting with decisions about elective surgery by the chiefs of surgery, neurosurgery, and medicine, followed with shared decision making among attending physicians, health-care workers, senior physicians, the head of nursing, an ethicist, and the Chief Executive Officer, for all other treatment.

Source: Ontario Ministry of Health and Long-Term Care. 2006. *Ontario Health Plan for an Influenza Pandemic*, p. 17-6.

Critical Care

As identified in the *Canadian Pandemic Influenza Plan for the Health Sector* (Public Health Agency of Canada 2006), “programs that track and manage bed capacity play a key role in the transfer/placement of critical care patients across the province, thus ensuring that staffed beds are used to maximum advantage.” The national resource management subgroup has recommended that each province/territory create a centralized bed registry, call centre, and centralized ambulance dispatch.

Nova Scotia has a centralized call centre and ambulance dispatch and is in the preliminary stages of exploring the capacity to develop a centralized bed registry. The Canadian pandemic plan provides a bed-planning tool that may assist district health authorities in their planning (Public Health Agency of Canada 2006, Annex H, p. 20).

A provincial critical care triage protocol will be required to help front-line workers to provide the most appropriate care in the context of a pandemic. Much work has been done with critical care triage, and it will be reviewed to inform this protocol. Work is ongoing and is in accordance with the *Ethical Considerations and Decision-Making Framework* (Reference 1 of this plan) (Appendix 1).

Clinical Assessment and Management

The ability to direct people to the appropriate care depends on accurate assessment. Accurate assessment will reduce strain on the system, reduce load on physicians’ offices and emergency rooms, and reduce risk of exposure for health-care workers and non-influenza patients.

Clinical assessment will be facilitated through a number of means:

- The DHAs will disseminate self-screening tools to primary care providers.
- Clinical pathways, assessment, and tools are available for adaptation to the resources and plans of care providers. Ongoing education and communication regarding the key pieces of the clinical pathway will be provided. The Department of Health, drawing upon work already begun, will collaborate with the district health authorities to engage physicians, pharmacists, and other primary care providers in the adoption of clinical pathways and standardized assessment tools.
- Triage is an important rung in clinical assessment. Discussion and analysis are ongoing at the Department of Health related to triage.
- The Canadian pandemic plan includes guidelines for secondary assessment as well as clinical care guidelines and tools. Further discussion is required in Nova Scotia related to these.

Resource Management

Protection of Health-Care Workers

Infection Control

The risks of unvaccinated health-care workers acquiring influenza will be similar to the risks faced by the general population. The risks are highest in settings where people first present with symptoms, in settings providing care for vulnerable people, and in settings where staff are performing high-risk procedures, such as endotracheal intubation, suctioning, aerosolized nebulizer treatments (Ontario Ministry of Health and Long-Term Care 2005, p. 49).

Infection-control practitioners will assist in reinforcing and tracking infection-control practices. They will support occupational health programs during a pandemic flu by providing expert advice to determine if it is safe for employees/volunteers to work, based on their symptoms and exposure to the pandemic flu.

Immunity to Influenza

It is likely that during a pandemic most cases of influenza will be caused by the pandemic strain. Therefore, health-care workers who have recovered from an ILI during an earlier pandemic phase may be assumed to be immune to the pandemic influenza strain. Health-care workers who have been immunized against the pandemic strain will also be considered immune but will be monitored for ILI using the ILI Assessment Tool.

Pandemic influenza vaccine and antivirals may be in short supply during the early phases of the pandemic. Priority groups for vaccine will be determined by the Office of the Chief Medical Officer of Health and informed by national guidelines. Antivirals will be in short supply the whole time.

Support

Health-care workers will be under tremendous stress for a prolonged period of time. Critical stress debriefing may be required during and after the pandemic.

Human Resources

Human resources issues in relation to pandemic influenza fall into three areas:

- the utilization/deployment of existing human resources in Nova Scotia’s health system
- the utilization/deployment of additional human resources not currently in Nova Scotia’s health system, such as volunteers and resources from out of province
- the utilization/deployment of additional human resources in roles requiring consultation with provincial regulatory bodies.

Existing System Resources

The Nova Scotia Health System Pandemic Influenza Plan includes developing umbrella agreements among the various stakeholders, such as unions, professional associations, and employers, to facilitate the deployment of current and potential human resources in response to the event and their possible utilization in modified and/or non-traditional roles.

These umbrella agreements will provide the flexibility necessary for other plans, such as those of the district health authorities, to define in more detail the on-site response to an event and on-site management of human resources.

A “good neighbour policy” will be the approach used in Nova Scotia, and a draft policy has been prepared and reviewed to date with most unions present in the health-care system. Upon acceptance by organized labour and employer representatives, this will form the cornerstone of human resource utilization.

Additional Resources

The Nova Scotia Health System Pandemic Influenza Plan includes the development of umbrella agreements among the various stakeholders to facilitate the utilization of human resources that are not part of the system in response to an event. These agreements address policy-level understandings, for example, to allow for the utilization of volunteers or members of a different union or from a jurisdiction other than Nova Scotia in response to an event.

Actual on-site utilization and management of these resources should be contained and reflected in local plans such as that of a district health authority.

Consultation with Regulatory Bodies

The pandemic influenza plan allows for the use of additional resources in areas governed by provincial regulatory bodies, such as the College of Physicians and Surgeons of Nova Scotia and the College of Registered Nurses of Nova Scotia.

Details on actual on-site management and utilization will be reflected in local plans.

Vaccines and Antivirals

(See Chapter 5, Antiviral Drug Strategy, and Chapter 6, Influenza Vaccine Strategy.)

Supplies and Equipment

The Preparedness, Planning and Equipment Resource Working Group (PP&ERWG) has been meeting for many months. The group includes representatives from the materials management departments in each district health authority, as well as provincial and district representatives from other appropriate stakeholders. The working group members have been reviewing the recommendations of the Canadian Pandemic Influenza Plan, engaging in research and best practices, and consulting with subject matter experts. The working group has made recommendations to the Department of Health regarding the resources necessary to mount a health-care sector response to an influenza pandemic .

There are three major components to the recommendations made to the Department of Health: the stockpiling of personal protective equipment (PPE), the identification of a surge inventory of mission-critical resources for the delivery of hospital-based services, and the warehousing necessary to store these resources.

The stockpile recommendations can be summarized as follows:

- The PP&ERWG will recommend the quantity and types of PPE items to be acquired following the recommendations of the provincial infection control consultant and the provincial and federal subject matter expert working groups.
- This personal protective equipment will be for the use of
 - all health-care workers working within the district health authorities, home care, long-term care, and residential care as provided by the Departments of Health and Community Services
 - all physicians and office staff across the province, including primary care physicians and specialists working in district health authorities/hospitals and in community-based settings, including First Nations health-care centres
- The stockpile will include supplies necessary to immunize the entire population of the province of Nova Scotia, except for the vaccine.

To date, surgical masks have been ordered and are in storage. Acquisition of other styles of personal protective mask, such as N95s, will be based upon national recommendations as accepted by provincial authorities.

The surge inventory for acute and tertiary care will provide for the mission-critical medical supplies such as vent tubing, paper products, lab supplies, IV solutions, etc., that will be under heavy demand during a pandemic or other emergency that requires a sustained response by hospitals. A 2-week supply is the current inventory held for many of these items. The PP&ERWG recommends that additional resources be provided for an extended period: a 12-week surge inventory for Capital Health and the IWK and an 8-week surge inventory for all remaining DHAs. These timeframes have been recommended as reflective of the usual length of a wave of influenza, ranging from six to eight weeks, with the extended time being recommended for Capital Health and the IWK, as they should be prepared to cope for a longer period of time since they provide tertiary and quaternary acute care for all of Nova Scotia as well as for the other Maritime provinces.

While recommendations have been made regarding the surge inventories, funding has not yet been approved.

The last major component of the position paper is about the warehousing required to store and rotate the various emergency resources and make them available to those who need them. PP&ERWG recommends a total of four warehouses, regionally located across Nova Scotia. Each warehouse will be under the control of the director of material management of the district health authority within whose area of geographic responsibility the warehouse is located. Three of the four recommended warehouses are to be shared among neighbouring DHAs. In some cases, new or existing warehouses are being expanded and that expansion for emergency supplies will be supported by the Department of Health. At the time of writing this plan, Capital Health was having a new warehouse built for its own storage needs, and the Department of Health had provided funding for a portion of the square footage of that warehouse for storing and managing a portion of the provincial stockpile resources.

Alternative Sites

Each district health authority will have within its plans potential alternative sites that will be ready for use in a pandemic. Such sites may serve as immunization clinics or as locations to cohort influenza patients for assessment and/or treatment. The resourcing of these sites and issues around remuneration and liability are part of ongoing discussions among the Department of Health, the district health authorities, and the Human Resources Working Group.

Laboratory and Diagnostic Services

Laboratory and diagnostic service capacity also play a central role during a pandemic, and as with other areas of the health-care system, resources may have to be redirected to meet increasing demands for influenza-related diagnostics and care.

Non-Traditional Flu Treatment Centres

The extent to which traditional acute care facilities and organizations will be overwhelmed during a pandemic may require the use of non-traditional sites (NT sites) for the provision of medical care. A non-traditional site as defined by Health Canada is a site that is not currently an established health-care facility or is an established health-care facility that usually offers a different level of care.

The role of these alternative sites will depend on the needs of individual district health authorities or communities. To date, individual district health authorities have engaged in planning activity to identify NT sites and the care or services that they will provide.

Communication and Education

Underpinning all of these components within clinical and resource management is the vital role that education and real-time communication play in ensuring that providers are informed and that they are supported in performing their roles. The Department of Health will collaborate and support stakeholders in accessing training and tools to manage patient flow, quality of care, and protection of health-care workers.

As the planning continues, there will continue to be ongoing work by emergency health services; acute, tertiary, and primary care; continuing care; and mental health and addiction treatment divisions of the Departments of Health and Health Promotion and Protection, as well as the Department of Community Services, to coordinate the delivery of consistent patient care throughout the province. As this planning continues, the work will be informed in particular by the planning of the districts, input from primary care providers, and the various pandemic planning working groups. Templates, guidelines, policies, etc., will be continually revised to reflect changing best practices and scientific evidence.

Roles and Responsibilities

Federal

- Provide support to the provinces (e.g., Armed Forces)
- Establish communication linkages
- Provide emergency funding
- Develop necessary legislation

Provincial

- Develop business continuity plans for providing health services during an emergency
- Develop a command and control structure
- Facilitate key provincial planning initiatives related to pandemic planning, e.g., ethics framework
- Coordinate health services delivery through the command and control structure
- Define which activities need to be monitored and evaluated through key indicators
- Provide revisions to policies governing residential support programs for use during a pandemic health emergency
- Develop education packages for use by the residential sector
- Provide planning support to health-care agencies (see Annex 7-B emergency/disaster/pandemic checklist)
- Engage the services of content experts, as required, during the emergency
- Facilitate the training of first responders, volunteers, and primary care providers
- Provide trouble-shooting support to health-care agencies

Districts

- Develop business continuity plans for providing health services during a pandemic influenza emergency
- Ensure that health service continuity plans include triage and priority setting and service availability in primary health centres and alternative care centres
- Develop and coordinate a process of mutual aid in the event that assistance is required from outside the district
- Provide clear, accurate information to the public on how to obtain health services

- Maintain accurate lists of contact persons, contact details, and other relevant information on district providers of health services
- Maintain emergency fan-out lists for contacting staff to employ in the event of an emergency
- Report to the Department of Health on service delivery and human resources indicators
- Develop education packages for use by the residential sector

Residential Care Sector

(Home care agencies, nursing homes, residential care facilities funded under mandate of the Departments of Health and Community Services)

- Develop business continuity plans for providing service during a pandemic influenza emergency
- Develop education packages for use by the residential sector

Activities by Pandemic Period

Interpandemic Period (Phases 1 and 2)

Activity	Responsibility
Develop and maintain a Nova Scotia Health System Pandemic Plan	Department of Health (DOH)/ Department of Health Promotion and Protection (HPP)
Develop business continuity plans	DOH/HPP/district health authorities (DHAs)/continuing care and residential care sector
Prepare, maintain, and update Emergency Health Services integrated plan	DOH
Prepare, maintain, and update pandemic plans for continuing care, residential care, DHAs, and IWK	Continuing care/residential care/DHAs/IWK
Review continuing care, residential care, DHA, and IWK plans for completeness, consistency, and integration	DOH/Department of Community Services (DCS)
Outline policy on stockpiling of supplies and equipment, including funding	DOH/DHAS
Address legal issues and liability issues	DOH
Address health workforce issues in consultation with stakeholders, unions, professional regulatory bodies, associations, and other departments	DOH/HPP
Address worker compensation issues	DOH/PSC/private service providers
Address workforce supports	DOH
Develop guidelines for out-of-district referrals and transfers	DOH/DHAS

Interpandemic Period (Phases 1 and 2) cont'd

Activity	Responsibility
Determine the triggers for activation of plan components (including triggers for the reduction and reintroduction of hospital services)	DOH/DHAs
Education and training <ul style="list-style-type: none"> - generic pandemic education - education on plan and all guidelines, etc. - education of alternative providers 	DOH/DHAs
Assess surge capacity of all inpatient health services	DOH (in consultation with DHAs)
Develop decision-making principles and processes including ethical framework	DHAs (with DOH guidelines)
Determine requirements for and identify alternative care centres required during pandemic	DHAs
Telephone triage	DOH
Develop self-care program	DHAs/DHAs/HPP
Develop human resource inventory and plan; workforce requirements (part of BCP)	DHAs/HPP
Collaborate with Health Canada, First Nations and Inuit Health Branch, to ensure integration with federal plans for First Nations communities	DOH and DHAs
Include workforce supports in plan	DHAs/HPP

Interpandemic Period (Phases 1 and 2) cont'd

Activity	Responsibility
Include employee assistance programs (EAPs)	DOH/PSC/private service providers
Develop clinical pathway and clinical assessment tools for physicians, primary care providers, pharmacists, etc.	DOH/DHAs
Continue work on “good neighbour policy”	DOH
As the planning continues, there is ongoing work by Emergency Health Services, the acute, tertiary, and primary care, continuing care, and mental health and addiction treatment divisions of the Departments of Health and Health Promotion and Protection, as well as the Department of Community Services to coordinate the delivery of consistent patient care throughout the province. As this planning continues, through a project management framework, the work will be informed by the planning of the districts, input from primary care providers, and the various national and provincial pandemic planning groups. Templates, guidelines, policies, etc., will be revised to reflect changing best practices and scientific evidence.	

Pandemic Alert Period (Phases 3, 4, and 5)

Activities	Responsibility
Implement the plan components in association with the agreed-upon triggers	DHAs/IWK/continuing care and residential care facilities

Pandemic Period (Phase 6)

Activities	Responsibility
Activate volunteer plan	DOH/DHAS
Communicate with federal/local governments and coordinate services with bordering jurisdictions	DOH
Facilitate province-wide issues	

Post-Pandemic Period

Activities	Responsibility
Evaluate health service response during pandemic	DOH/DHAS
Evaluate adequacy of clinical guidelines	DOH/DHAS
Evaluate adequacy of alternative sites uses	DOH/DHAS
Co-operate with federal government regarding studies	DOH/DHAS
Ensure that ongoing social and mental health supports are available for health-care workers and their families	DOH/DHAS
Revise plan as necessary	DOH/HPP
Develop and implement plan for recovery of health services, including funding and priorities for recovery	DOH/DHAS
Summarize impact of pandemic on health system	DOH/DHAS

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PANDEMIC INFLUENZA

Nova Scotia Health System Pandemic Influenza Plan Summary

Nova Scotia Health System Pandemic Influenza Plan Summary

New infectious diseases have the potential to take a serious human and economic toll. Influenza viruses are highly contagious and, from time to time, new strains emerge to which humans have little or no immunity. Without vaccines or medicines to prevent the spread of a new virus, many people could become sick and possibly die. The global spread of a new influenza virus that can be easily transmitted is known as an influenza pandemic.

Responding effectively to a pandemic requires close cooperation between all levels of government and at the local and community level and individuals. The challenge for the province of Nova Scotia, and all other provinces and territories, is to take all possible measures to prepare for what the scientific community tells us is inevitable. The impact of a pandemic in Canada will depend on the severity of the illness it causes, how different age groups are affected, and the effectiveness of our response. That is why we have developed the Nova Scotia Health Services Pandemic Response Plan.

The two main goals of Nova Scotia's plan are to minimize serious illness and death and to minimize social disruption. Prevention and preparedness are key pillars within the plan, along with effective communication to ensure Nova Scotians remain informed throughout the various stages leading to the declaration of an influenza pandemic.

The Government of Nova Scotia is concerned about an influenza pandemic because it has the potential to impact many Nova Scotians which could result in a variety of ripple-effects. For example, at any one time, large numbers of people may be off work, which could impact upon the delivery of essential services such as police and fire services and other necessities like grocery stores.

Nova Scotia's health-care sector is planning for an influenza pandemic in order to cope with an increased number of patients. At the same time many staff will be off sick or caring for ill family members. This document presents an overview of Nova Scotia's Health Services Pandemic Influenza Plan. The full plan, which contains considerably more detail and more comprehensive explanations, can be found online at www.gov.ns.ca/govt/pandemic.



Part I: Understanding Seasonal Influenza

Each year, thousands of Nova Scotians get the flu. This highly contagious respiratory illness is caused by the influenza virus and spreads easily through droplets that infected people cough or sneeze into the air, onto their hands or other surfaces. A flu virus can survive several minutes on hands and one to two days on hard surfaces like counters or desks. Once exposed to the virus, people may become ill quickly, usually within one to three days.

Influenza typically causes fever and cough. It may also include other symptoms such as sore throat, aching joints, and headache. It **does not** include gastrointestinal symptoms such as vomiting and diarrhea, except occasionally in very young children.

Most people become ill with mild forms of influenza at some point in their lives. Because of this, they develop some immunity to the disease. New strains of influenza virus emerge regularly. Most of these are slight variations of a previous strain, and a person's existing immunity provides some protection against severe illness.

Although most people recover from the flu in about one week, some people –mostly seniors and individuals with chronic health conditions – can die from the flu or its complications.

Vaccines are the best defence against influenza. New flu vaccine is developed every year to provide more complete protection against the new strains. For this reason, flu vaccine is given annually, beginning in early fall. Influenza vaccines are made to protect against only certain strains of the virus.



Part II: Understanding Pandemic Influenza

Two or three times every century, a new influenza virus emerges to which people have no immunity. Because people have no immunity against it, the virus spreads rapidly around the world, and causes serious illness and death – this is the core difference between seasonal influenza and an influenza pandemic. Due to air travel, global spread may be even faster today than was seen in the past.

In the last century, there were three influenza pandemics:

- the Spanish flu, 1918–19
- the Asian flu, 1957–58
- the Hong Kong flu, 1968–69

Vaccines are the best defence against influenza, but in the case of pandemic influenza, the new virus strain will not be known until the pandemic actually starts. This means that we may be six months or more into a pandemic before vaccine is ready.

It is predicted that between 15 and 35 per cent of people will become ill with influenza during a pandemic. This will put a strain on the health-care system, which will have to take care of influenza patients while continuing to care for people who require medical attention for other illnesses or emergencies.



Part III: Key Components of Pandemic Planning

i. Emergency preparedness

Provincial health sector planning for an influenza pandemic has been under way in Nova Scotia since 2000, under the guidance of the Department of Health and the Department of Health Promotion and Protection. The Nova Scotia plan directs and supports the provincial health sector response and flows from the Canadian Pandemic Influenza Plan for the Health Sector.

The two main goals of Nova Scotia's pandemic influenza plan are to:

1. minimize serious illness and overall death
2. minimize societal disruption

The provincial health services plan for pandemic influenza will guide and support the health sector response between and among the Nova Scotia Department of Health, the Nova Scotia Department of Health Promotion and Protection, district health authorities, the IWK Health Centre, the continuing care sector, and other health system employers. More specifically the plan will:

- identify a process for communicating rapidly, accurately, and frequently within the health system and with the citizens of Nova Scotia;
- identify and develop policies and plans to support the district health authorities' response to pandemic influenza;
- identify a process to resolve issues for health-care workers;
- clarify roles, responsibilities and leadership;
- identify principles and tools to help guide decision making for government and health-care workers;
- clarify plans and procedures for the stockpiling, storage, and distribution of vaccines, anti-virals, and other supplies such as personal protective equipment; and,
- identify procedures for monitoring and tracking the pandemic influenza strain, before, during, and after a pandemic.



Part III: Key Components of Pandemic Planning

An influenza pandemic will be determined and announced by the World Health Organization (WHO). It is unlikely that a pandemic would begin in North America. Nova Scotia will begin implementing parts of our Health Services Pandemic Influenza Plan based on the threat of an influenza pandemic or when a pandemic begins elsewhere.

An influenza pandemic, or threat of one, will initiate the following health emergency preparedness activities:

- The Departments of Health, Health Promotion and Protection, and Community Services will work closely with federal and municipal agencies, provincial agencies such as the Emergency Management Office, and provincial health service delivery agencies such as the district health authorities to provide a coordinated response.
- The Departments of Health and Health Promotion and Protection will initiate their emergency response system, made up of on-call representatives from the departments and district health authorities, to provide the highest level of coordinated response.
- The province will continue to be connected to national decisions and activities at multiple levels.

In planning for an influenza pandemic, Nova Scotia is already linked to an international network of experts on issues such as pandemic information, management strategies, and travel advice. As a result, Nova Scotians can be assured that the information and advice they receive from government will come from the best possible national and international sources.

Citizens, including those living in First Nations communities, can expect to receive specific information on the location of influenza pandemic clinics, what to do and where to go if they are sick, and up-to-date information on disruption to any local or regional services from their district health authorities.



Part III: Key Components of Pandemic Planning

Planning Assumptions

- The pandemic virus is expected to be in Canada within three months after it emerges in another part of the world, but it could arrive much sooner due to air travel.
- Upon arrival, the virus may spread across Canada with great speed, with the first peak of illness occurring within two to four months.
- If the pandemic virus arrives close to the usual annual influenza season, it will probably travel further and faster, and the impact on society will occur sooner.
- An influenza pandemic may spread in two or more waves, either in the same year or in successive influenza seasons. Each wave will probably last six to eight weeks.
- A second wave may occur within months of the initial outbreak and may cause more serious death than the first.
- It is expected that 15 to 35 per cent of the population will become ill. About 0.1 to 0.3 per cent of the population will require hospitalization, or 1,000 to 3,000 people in Nova Scotia. The fatality rate will be about 0.01 to 0.03 per cent, or 300 to 1,000 individuals.
- Vaccine will be the primary means of prevention of pandemic influenza. The supply may be limited during the early stage of the pandemic; therefore, vaccines will be distributed fairly, according to nationally established priorities.
- A substantial portion of the workforce may not be able to work for some period of time due to personal or family illness.
- Effective preventive and therapeutic resources will likely be in short supply.
- Essential community services may be disrupted.

Interpandemic Period



PANDEMIC INFLUENZA

This is the time when an animal influenza virus exists, but no new human subtype has developed. A virus that poses a risk to humans will be circulating among animals, either outside or within Canada.

Pandemic Alert Period

This period includes many phases, starting when a new influenza virus subtype is causing sporadic human-to-human spread outside Canada and going to the point where large but localized cases are occurring within Canada.

Pandemic Period

During this period, there is localized, then widespread pandemic virus activity among humans.



ii. Communications

The communication plan supports internal communications within government and between governments and other health-care organizations. The communication plan also supports external communications to the public, health-care stakeholders, and the media. It complements communication from district health authorities and the federal government.

In the event of an influenza pandemic, the provincial government is committed to:

- provide accurate, rapid, and complete information before, during, and after an outbreak;
- provide accurate, consistent, and comprehensive information about the health threat;
- address rumours, inaccuracies, and misconceptions as quickly as possible and prevent stigmatization of affected groups.

Anxiety and concern in the midst of any health emergency are normal. At the same time, citizens should understand they can count on all levels of government to provide reliable, timely communications before, during, and after a pandemic that should help them to better manage the situation.

Communications materials for individuals and businesses are available and will continue to be updated on the province's pandemic website at www.gov.ns.ca/govt/pandemic.

iii. Surveillance

Both laboratory-confirmed influenza (seasonal flu) and potential pandemic influenza are notifiable diseases in Nova Scotia under the Health Protection Act (which means that they must be reported to public health authorities by law). Nova Scotia currently uses a number of different, but related, systems to monitor influenza each year. These systems will be enhanced and expanded for use during a pandemic.

During an influenza pandemic, health professionals will use surveillance data to track the spread and impact of the disease, to monitor the effectiveness of control programs, and to determine response activities. Once the virus becomes widespread, surveillance can also be used to measure sickness and death and to monitor how hospitals are dealing with the surge of influenza patients. Full details on Nova Scotia's pandemic influenza surveillance system can be found at www.gov.ns.ca/govt/pandemic.

iv. Public Health Measures

Public health measures are used during an influenza pandemic to

protect public health by:

- preventing human cases caused by a virus that has not yet established efficient human-to-human transmission;
- slowing the spread of the disease, allowing more time to prepare, including developing vaccines;
- reducing the impact of the first wave of a pandemic.

Measures that may be taken to limit the spread of the virus may include closing schools or canceling public events. The decision on whether or not to set up these measures will be made when the pandemic starts, based on the information that is available at the time: that is, who is getting sick and how is the virus spreading in a community. Restricting public activity has many economic and social implications. Therefore, decisions to implement these measures will be carefully considered and weighted against how much the measure might limit the spread of the infection versus how much disruption it might cause.

v. Antiviral Drug Strategy

Antivirals are drugs used to prevent or treat viral infections such as influenza. An antiviral is different from a vaccine.

Nova Scotia, like other provinces, is following the national antiviral strategy proposed by the national Pandemic Influenza Committee. The objectives of the strategy are to:

- recommend appropriate use of antiviral drugs during a pandemic;
- address the security of supply of antiviral drugs;
- plan to ensure the distribution of available antivirals during a pandemic;
- support monitoring of drug resistance during a pandemic.

A national stockpile of antiviral drugs has been created. Nova Scotia's share is enough to treat 17.5 per cent of the province's population. This amount is sufficient to treat Nova Scotians who become ill with influenza. Further details on antivirals can be found at www.gov.ns.ca/govt/pandemic.

vi. Vaccine



PANDEMIC INFLUENZA

Immunization is the most effective way to reduce illness and death associated with influenza. A vaccine is produced specifically to protect, or immunize, someone against a specific strain of virus. Therefore, a vaccine against pandemic influenza cannot be developed until we know the specific strain that is causing the pandemic.

The objectives of the pandemic influenza vaccine program are to:

- provide a safe and effective vaccine for all Nova Scotians
- allocate, distribute, and administer vaccine as fast as possible
- monitor the safety and effectiveness of the vaccine

Since the vaccine will not all be available at once, Canadians will be vaccinated in stages. The people who will be vaccinated first will likely be those needed to ensure that the health system and societal infrastructure (e.g., police, utility workers) continue functioning and those most likely to become seriously ill or die from influenza. District health authorities will plan and conduct vaccination clinics in the community for Nova Scotians. People should expect to be vaccinated twice, as a second dose is required one month after the first dose is administered.

The Government of Canada has contracted a vaccine supplier to produce enough pandemic influenza vaccine for all Canadians. Nova Scotia's supply will be sent to the Department of Health Promotion and Protection, who will manage the distribution to the district health authorities.

vii. Health Services



PANDEMIC INFLUENZA

The Nova Scotia Health Services Pandemic Influenza Plan provides direction for clinical and resource management issues in hospitals, long-term care facilities, for mental health and addiction treatment, and for primary health care.

The objectives of health services plans are to:

- ensure that all Nova Scotians receive appropriate health care;
- secure safe care for those with influenza in hospital, long-term care, and community-based care;
- continue to provide safe care for those with other conditions in hospital, long-term care, and community-based care;
- minimize the risk of transmission of influenza to other patients, clients, health-care workers, and volunteers.

The key pillars of health services pandemic influenza preparedness and response are infection control, clinical management, resource management, and communications and education.

Within the district health authorities, specified areas in hospitals or in off-site clinics will be established to assess individuals who may have contracted influenza pandemic. Elective procedures may be reduced and acute procedures prioritized in order to limit the exposure of other patients to those with influenza. Patient and visitor restrictions may also be put into effect.

It will not be business as usual during an influenza pandemic. As such, temporary measures such as resident and visitor restrictions may be applied in long-term care facilities, patients with influenza may be separated from other patients and non-urgent or routine care visits may be cancelled during a pandemic.

Part IV: What can you do?



PANDEMIC INFLUENZA

The cornerstone of infection control is proper hand hygiene. Hands should be washed with soap and warm water, or cleaned with waterless alcohol hand sanitizer, after direct contact with people who are sick or after contact with their personal articles or their immediate environment. The following additional steps can also significantly help to prevent the spread of the influenza virus:

- Use disposable, one-use tissues;
- Cover your nose and mouth when coughing or sneezing;
- Keep your hands away from your eyes and nose;
- Wash your hands thoroughly after coughing, sneezing, or using a tissue and before and after providing care or visiting patients and residents of health-care settings.

During an influenza pandemic, general public health measures will be important in reducing serious illness and death, and minimizing disruption in communities. The measures recommended will vary depending on the level of pandemic activity and the availability of vaccines and antivirals.



PANDEMIC INFLUENZA

Personal Hygiene:

You can reduce, but not eliminate, the risk of getting or spreading influenza during an influenza pandemic by continuing to maintain good basic hygiene. Washing your hands often will help to prevent spreading the virus from your hands to your face. It is also a good idea to cover your nose and mouth with a tissue or shirt sleeve when coughing and sneezing. If you blow your nose, carefully throw the tissues away into the garbage. Avoid crowds whenever possible.

If you do catch influenza, stay at home and rest. Take medicines to relieve the symptoms (following the instructions included with the medicines). Drink plenty of fluids. This is both for your own health and to avoid spreading the illness to others.

“Social Distancing”:

Public health authorities may also consider implementing additional measures in their communities to decrease the impact of an influenza pandemic. Since the virus is spread primarily through close contact with an infectious person, measures may be taken to encourage “social distancing”. During an influenza pandemic, it will be recommended that people with symptoms of illness and who do not require hospitalization, stay at home and away from public events and locations (self-isolate).

Isolation and Quarantine:

Isolation of sick individuals either in hospital or at home is recommended. However quarantine, which involves keeping people who have been exposed to the virus, but who are not ill, at home and away from other people, is not expected to be feasible or effective during an influenza pandemic.



Acknowledgements

This plan was drafted by the Nova Scotia Pandemic Influenza Working Group, a joint committee of the Departments of Health, Health Promotion and Protection, and Community Services. It was developed in collaboration with the Nova Scotia Emergency Management Office, district health authorities, and the IWK Health Sciences Centre, together with other provincial, federal, and health sector partners. It is consistent with the Canadian Pandemic Influenza Plan, recently updated in 2006.

This plan will evolve, depending on new information and evidence, and as decisions are finalized or modified in the Canadian plan. It complements similar health services plans that are in development in each of the district health authorities.

Individuals and businesses too have a responsibility to seek information from reliable sources and to be discerning about what information they accept and the source of the information.

If you would like more information, visit:

www.gov.ns.ca/govt/pandemic

www.phac-aspc.gc.ca



