

PANDEMIC INFLUENZA RESPONSE PLAN

SECTION TWO - BACKGROUND TABLE OF CONTENTS

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PRINCIPLES AND ASSUMPTIONS

Health Canada “Principles and Assumptions”, as written in the discussion document “Public Health Measures for Pandemic Influenza”, Interim Guidelines, Version 1: Feb 25, 2005:

- The incubation period, period of communicability, and method of transmission for the novel virus will be consistent with other known influenza strains, that is:
 - Incubation period: 1 to 7 days.
 - Period of communicability: 24 hours before and up to 7 days after onset of illness or until 24 hours after symptoms have resolved, or whichever is longer.
 - Predominant method of transmission: contact (direct and indirect) and large droplet.
 - Possibility of transmission by the airborne route is controversial, but regardless, is not likely to be the predominant method of transmission.

- The novel virus will be highly infectious.
- The initial clinical presentation will be consistent with known influenza strains.
- Sub-clinical infection will occur.
- It is unlikely that an effective vaccine will be available at the start of pandemic influenza activity in Canada.
- Public health authorities will play a major role in the distribution and administration of vaccine.
- Mass immunization campaigns will occur once sufficient quantities of the new vaccine are available, which will increase the demand for public health human resources.
- Use of antivirals for the purpose of decreasing the risk of transmission from the first cases and contacts identified in Canada will be considered as a strategy to delay or slow the evolution of the pandemic in Canada. The use of this strategy will be limited to cases identified early in the Pandemic Alert Phase in Canada after which the strategy will change and focus on pre-established priority groups.
- Individuals who recover from illness caused by the pandemic strain will be immune to further infection by that strain.
- The novel influenza strain and first human cases will be identified outside of Canada.
- Surveillance measures are in place to detect Influenza-Like Illness (ILI) across Canada.
- The pandemic strain may cause more than one wave of illness. The World Health Organization (WHO) has noted that in the past, more severe disease has tended to arrive with the second wave.
- The public will be interested in all methods of personal protection against infection.
- Public acceptance of restrictive control measures will positively correlate with the proximity of cases. *(cont'd next page)*

PRINCIPLES AND ASSUMPTIONS CONT'D

- It may be possible to delay introduction of pandemic influenza into isolated communities, however, it is not likely that this strategy will be sustainable.
- The latest WHO Pandemic Phases terminology will be used in planning and response.

Manitoba Health “Planning Assumptions”, as written in the “Pandemic Influenza, Preparedness Guidelines for Manitoba Local Governments”, November 2005:

- One of the key planning assumptions held by public health experts is that a pandemic influenza will behave somewhat like ordinary influenza.
- Influenza transmission: Influenza is highly contagious and spreads very quickly among the population, especially in crowded situations.
- The influenza virus enters the body through the nose or throat by:
 - inhaling droplets produced by the coughing or sneezing of infected persons.
 - touching the mouth, eyes, or nose after:
 - hand to hand contact with infected individuals.
 - touching surfaces or handling objects contaminated by infected individuals.
- Once someone is infected with the influenza virus, it usually takes from one to seven days to develop symptoms.
- The disease typically follows these steps:
 - Persons with influenza can be contagious from the day before they develop symptoms up to seven days afterwards (typically three to five days in healthy adults and up to seven days in children). This time frame may be longer in people with decreased immune systems.
 - Not everyone who comes in contact with influenza virus will become ill.
 - However, they may still spread the infection to others.
 - Flu symptoms can last four to seven days. A cough and general fatigue may persist for several weeks afterward.
 - It is important to note that people can be infected and contagious before they become ill. This is why it is difficult to contain influenza.
 - Some people who get influenza also develop secondary bacterial infections including pneumonia, which can result in prolonged illness or death.

When a pandemic does begin, the assumptions about the strain of the disease will need to be checked against the latest available information. Plans can then be updated as necessary.

PRINCIPLES AND ASSUMPTIONS CONT'D

Assiniboine Regional Health Authority's Planning Assumptions

- Simultaneous outbreaks in communities across the ARHA and the province.
- Enormous demands on the healthcare system, both internal and external.
- Assistance from external agencies/organizations may be severely reduced or non-existent.
- Delays and shortages in the availability of supplies; including vaccines and antivirals.
- Potential disruptions of community infrastructures; including transportation, commerce, utilities and public safety.

ARHA Pandemic Plan Abbreviations/Acronyms/Definitions	
A	
Acute	Short Term, Intense symptoms or pathology, as distinct from chronic. Many diseases have an acute phase and chronic phase.
Acute Care	Refers to services provided by physicians and other health professionals and staff in the community and in hospitals. These include emergency, general medicine, surgical, psychiatric, obstetric and diagnostic services
AP	Additional Precautions
Airborne Precautions	Precautions taken to prevent and control the spread of infection for organisms spread by airborne transmission.
Airborne Transmission	Refers to dissemination of microorganisms by aerosolization. Organisms are contained in droplet nuclei (small airborne particles <5 microns in size, that result from evaporation of large droplets) or in dust particles containing skin cell slough/debris that remain suspended in the air for long periods of time. Such microorganisms are widely dispersed by air currents.
AIDS	Acquired Immune Deficiency Syndrome
ARDS	Acute Respiratory Distress Syndrome
ARHA	Assiniboine Regional Health Authority
Antiseptic	A chemical that either inhibits the growth of microorganisms or destroys them.
B	
C	
CBRN	Chemical, Biological, Radiological or Nuclear Incident
CCRA	Canadian Customs and Revenue Agency
CDC	Centres for Disease Control and Prevention
CEO	Chief Executive Officer
CFIA	Canadian Food Inspection Agency
CHN	Community Health Nurse
CIDPC	Centre for Infectious Disease Prevention and Control
CME	Chief Medical Examiner
CMHW-A	Community Mental Health Worker – Adult
CMHW-C	Community Mental Health Worker – Child
CMOH	Chief Medical Officer of Health (Provincial)
CO	Communications Officer
CPIP	Canadian Pandemic Influenza Plan
CPNP	Canada Prenatal Nutrition Program
CUPE	Canadian Union of Public Employees
Contingency	A contingent event; a chance, accident, or possibility conditional on something uncertain
D	
DERP	Disaster & Emergency Response Plan
DERPC	Disaster & Emergency Response Planning Committee
DHAC	District Health Advisory Council
DMO	Disaster Management Officer
Diagnostic	Diagnostic includes lab and x-ray

E	
EMO	Emergency Medical Organization
EMS	Emergency Medical Services
EOC	Emergency Operations Centre
EPC	Emergency Preparedness Committee
Epidemic	An outbreak of infection that spreads rapidly and affects many individuals in a given area or population at the same time.
Epidemiology	The study of epidemics and epidemic diseases.
EPP	Emergency Preparedness Plan
ERAP	Emergency Response Action Plan
ESS	Emergency Social Services
F	
Flu	Another name for an influenza infection, although it is often mistakenly used in reference to gastrointestinal and other types of clinical illnesses.
F/P/T	Federal/Provincial/Territorial
FNIH	First Nations and Inuit Health
G	
H	
Hand Hygiene	Hand washing/Hand antisepsis. The process of removing all soil and transient microorganisms from the hands. Hand hygiene is a general term that applies to hand washing or hand antisepsis. Hand washing refers to washing hands with soap and water. Hand antisepsis refers to hand washing with an antiseptic hand wash
HC	Health Canada
HCA	Health Care Aide
HCC	Home and Community Care
HCW	Health Care Worker
HD	Health Director
HEICS	Hospital Emergency Incident Command System
HR	Human Resources
H1N1	A strain of influenza type A virus that caused the pandemic influenza of 1918-1919 and that continues to circulate in humans.
H3N2	A strain of influenza type A virus that caused the pandemic infections of 1968-1969. Of the three influenza viruses that currently circulate in humans, this type causes the greatest morbidity and mortality.
H5N1	A strain of influenza type A virus that moved in 1997 from poultry to humans. While the outbreak of this virus was rapidly contained, it produced significant morbidity and mortality in persons who became infected, probably from direct contact with infected poultry.
Health Info Line	A 24/7 telephone line that is staffed to provide health information to the citizens of the ARHA.
Hemagglutinin	A protein on the surface of the influenza virus that helps the virus attach to the respiratory tract. Also used to identify and label subtypes and strains of influenza.
HIV	Human Immunodeficiency Virus
I	
IC	Incident Commander
ICM	Infection Control Manual
ICP	Infection Control Practitioner
ICS	Incident Command System

ILI	Influenza-Like Illness
Immunize	To make immune, as in making able to resist a particular disease.
Infection	Condition in which virulent organisms are able to multiply within the body and cause a response from the host's immune defenses. Infection may or may not lead to clinical disease.
Influenza	A highly contagious, febrile, acute respiratory infection of the nose and throat, bronchial tubes and lungs caused by the influenza virus. It is responsible for severe and potentially fatal clinical illness of epidemic and pandemic proportions.
Influenza Type A	A category of influenza virus characterized by specific internal proteins and further subgrouped according to variations in their two surface proteins (hemagglutinin and neurominidase). It infects animals as well as humans and has caused the pandemic influenza infections occurring this century.
Influenza Type B	A category of influenza virus characterized by specific internal proteins. It infects only humans, causes less severe clinical illness than type A, and spreads in regional rather than pandemic outbreaks.
Influenza Type C	A category of influenza virus characterized by specific proteins. It does not cause significant clinical illness.
Inpatient	An individual who receives health care services while admitted in a health care facility overnight or longer.
Isolation	Isolation means the separation (for the period of communicability of the disease) of an infected person or animal from others in a place and under conditions to prevent the conveyance of the infectious agent to others.
IASC	Inter-Agency Standing Committee
J	
K	
L	
LPN	Licensed Practical Nurse
LRTI	Lower Respiratory Tract Infection
LTCF	Long-Term Care Facility
M	
MB	Manitoba
MGEU C/S	Manitoba Government Employees Union Community/Support
MGEU P/T	Manitoba Government Employees Union Professional/Technical
MHHL	Manitoba Health & Healthy Living
MNU	Manitoba Nurses Union
MOH	Medical Officer of Health
MTO	Maximum Tolerable Outage
Morbidity	Illness. Departure from a state of well-being, either physiological or psychological illness.
Morbidity Rate	The number of cases of an illness (morbidity) in a population divided by the total population considered at risk for that illness
Mortality	Death, as in expected mortality (the predicted occurrence of death in a defined population during a specific time interval).
Mortality Rate	The number of people who die during a specific time period divided by the total population.
MSDS	Material Safety Data Sheet
Mutation	A permanent, transmissible change in the genetic material of a cell.

Myositis	Inflammation of a muscle, especially a voluntary muscle, characterized by pain, tenderness, and sometimes spasm in the affected area
N	
NACI	National Advisory Committee on Immunization
NAS	National Antiviral Stockpile
NBC	Nuclear, Biological, Chemical
NESS	National Emergency Stockpile System
Neurominidase	A protein of the surface of the influenza virus that helps the virus to leave one cell in order to spread and infect other cells. Also used to identify and label subtypes and strains of influenza. Neurominidase is the site of action of recently licensed anti-influenza drugs - which are effective against both influenza A and B.
NGO	Non-government Organization
Non-Traditional Site	The following is a definition of a Non-Traditional Site for the purposes of Pandemic Influenza planning: A site offering care for influenza patients. These sites are currently not an established health care site, or are established sites which usually offer a different type of level of care. The functions 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.
Novel Virus	A new, unusually virulent strain of virus arising from a mutation, which endows the virus with the capacity to be easily transmitted from one person to another.
NPT	Nasopharangeal Throat
O	
Opisthotonos	An abnormal posturing condition characterized by rigidity and severe arching of the back, with the head and the heels touching the supporting surface.
Oseltamivir	An anti-viral drug effective against Influenza A and B viruses that inhibits the neurominidase protein, effectively trapping the influenza virus within the host cell and preventing it from infecting new cells. This can help in preventing infection (prophylaxis) or in reducing the duration and severity of illness once infected. It is effective if treatment is started within 48 hours of symptom onset. In Canada and the USA, Oseltamivir is sold under the brand name Tamiflu.
Outbreak	An increase in disease activity above expected levels. Also know as an epidemic. The latter term has more serious connotations.
P	
P/T	Provincial/Territorial
PAC	Provider Advisory Council
Pandemic	Worldwide outbreaks of disease occurring over a wide geographic area and affecting an exceptionally high proportion of the population.
Pathogen	Any disease producing microorganism or material.
PCH	Personal Care Home
PH	Public Health
PHAC	Public Health Agency of Canada
PHM	Public Health Measures
PHN	Public Health Nurse
PHO	Provincial Health Officer
PIC	Pandemic Influenza Committee
PPE	Personal Protective Equipment

Primary Care	Primary Care is the first level of care, and usually the first point of contact that people have with the health care system. Primary care involves the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing and sustaining partnerships with patients and practicing in the context of family and community. It includes advice on health promotion and disease prevention, assessments of one's health, diagnosis and treatment of episodic and chronic conditions and supportive and rehabilitative care.
Prophylaxis	Prevention of or protective treatment for disease
Public Health	The art and science of protecting and improving community health by means of preventative medicine, health education, communicable disease control and the application of social and sanitary services.
Q	
Quarantine	The limitation of freedom or movement of a susceptible person or domestic animal, suspected of being or known to have been exposed to a communicable disease, for a period of time equal to the longest usual incubation period of that disease from the last date of exposure.
R	
RCMP	Royal Canadian Mounted Police
Resistance	The development of strains of a pathogen that are able to withstand the effects of an antimicrobial agent.
Respiratory Tract	Structures contained in the respiratory system, including the nasopharynx, oropharynx, laryngopharynx, trachea, bronchi, bronchioles and lungs.
Risk Management	The process of making and carrying out decisions that will minimize the adverse effects of injuries, accidental losses and liability upon the organization.
RDO	Respiratory Disease Outbreak
RDOP	Respiratory Disease Outbreak Plan
RHA	Regional Health Authority
RHAPP	Regional Health Authorities Purchasing Plan
RN	Registered Nurse
RNEP	Registered Nurse Extended Practice
ROC	Regional Operations Centre
RP	Routine Practices
RPN	Registered Psychiatric Nurse
RSV	Respiratory Syncytial Virus
S	
SARS	Severe Acute Respiratory Syndrome
SLP	Self Learning Package
SRI	Severe Respiratory Illness
Strain	A group of organisms within a species or type that share a common quality. A mutant variation of the influenza virus within a given subtype.
Subtype	A classification of the influenza type A virus based on the surface antigens hemagglutinin (H) and neuraminidase (N).
Symptoms	Any perceptible, subjective change in the body or its functions that indicates disease or phases of disease, as reported by the patient
T	
Tamiflu	Name under which Oseltamivir is marketed in Canada and the USA (see Oseltamivir)

Triage	A system whereby a group of casualties or patients is sorted according to the seriousness of their illness or injuries, so that treatment priorities can be allocated between them. In emergency situations it is designed to maximize the number of survivors.
U	
V	
Vaccine	A substance that contains antigenic components from an infectious organism. By stimulating an immune response (but not disease), it protects against subsequent infection by that organism.
VAER	Vaccine Adverse Events Reporting
Virus	A group of infectious agents characterized by their inability to reproduce outside a living host cell. Viruses may subvert the host cells' normal functions, causing the cell to behave in a manner determined by the virus.
VTM	Viral Transport Medium
W	
WHO	World Health Organization
X	
Y	
Z	

ORGANIZATION OF THE PLAN

The ARHA Pandemic Influenza Plan has been organized with reference to and in a manner consistent with various other plans, in particular:

- WHO Global Influenza Preparedness Plan
- Canadian Pandemic Influenza Plan
- British Columbia Pandemic Influenza Preparedness Plan
- Fraser Health Authority Pandemic Influenza Preparedness Plan
- Vancouver Coastal Health Regional Pandemic Influenza Response Plan
- Vancouver Island Health Authority Pandemic Influenza Plan

The ARHA Pandemic Influenza Plan is integrated with the ARHA Disaster Plan, with cross reference made to the Disaster Plan throughout. The Disaster Plan contains information, procedures and protocols designed to ensure effective and coordinated response to any emergency or disaster. The ARHA Pandemic Influenza Plan should be used in conjunction with the ARHA Disaster Plan when pandemic influenza occurs.

The ARHA Pandemic Influenza Plan begins with an introduction and concludes with a number of appendices. The main part of the plan is divided into 17 sections according to key planning components. Each section begins with a list of the actions that may be required; the position responsible is identified, and there is cross-reference to the Disaster Plan. Each section describes provincial/regional sharing of responsibilities during all pandemic phases, includes available local planning data, and addresses relevant issues. The 17 sections of the main part of the ARHA's plan are:

Section 1	Introduction
Section 2	Background
Section 3	Response Levels
Section 4	Public Health Measures
Section 5	Infection Control
Section 6	Surveillance
Section 7	Communications
Section 8	Antivirals
Section 9	Vaccines
Section 10	Human Resources Management
Section 11	Safety & Security/Materials Management
Section 12	Clinical Management
Section 13	Community Services
Section 14	Mass Fatalities
Section 15	Psychosocial Support
Section 16	Financial Resource Planning
Section 17	Evaluation

ORGANIZATION OF THE PLAN CONT'D

There are three phases in a pandemic: Pre-pandemic (preparation)
Pandemic (response)
Post-pandemic (recovery)

Pre-Pandemic Phase

This is the critical preparation stage. There are three important goals:

- To build capacity to respond effectively.
- To build co-operation among stakeholders.
- To build communication networks to support both planning and response.

Pandemic Phase

The Provincial Health Officer (PHO) will declare when it is time to activate the response plans for the pandemic phase. Plans will need to be adapted to reflect circumstances and situations as they arise. The two key goals during this phase are:

- To minimize morbidity and mortality.
- To minimize social upheaval.

Post-Pandemic Phase

The post-pandemic recovery period begins when the PHO declares that the influenza pandemic is over. The three key goals are:

- To deactivate pandemic response activities.
- To review their impact.
- To use the lessons learned to guide future planning.

Epidemiology of Pandemic Influenza

Influenza viruses cause infections of the respiratory tract (breathing tubes and lungs). In some persons, complications of influenza can be severe, including pneumonia. Pandemics are the most dramatic presentation of influenza and it is difficult to predict with any certainty when the next pandemic influenza will occur. A pandemic can occur at any time. The longest recorded interval between pandemics is 39 years. Pandemic influenza is a global outbreak of disease from a new Influenza-A virus that is unlike past influenza viruses. Because people have not been infected with a similar virus in the past, most or all people will not have any natural immunity to a new pandemic virus. Once the next pandemic influenza emerges and it has been identified, due to global travel and urbanization, complete spread of the virus is likely to occur and could potentially arrive in Canada within 3 months or less. It is impossible to predict the increase in mortality. There is likely to be more than one wave of infection and health services in most countries will be hard pressed to provide vaccines or to manage the increased demand for both primary and secondary health care services.

PREPARING FOR PANDEMIC INFLUENZA

Why plan for a pandemic?

Pandemics are unpredictable, but occur on average three or four times a century. Planning ahead for such an event is important in order to minimize serious illness and overall deaths. It is also important in order to minimize the social disruption that would probably result.

How will Pandemic Influenza begin?

It is not possible to predict with certainty when or where the next pandemic will begin. However, one possibility is that it may first develop in a region of central Asia. The appearance of influenza-like illness within a local area would lead to notification. If a new subtype of influenza virus were identified, and if human cases were dying, the WHO would initiate further action. A surveillance warning would be issued to enhance detection of further cases, and vaccine production would begin. If the virus were to start spreading throughout other regions of Asia, the WHO would alert all federal authorities, including Canada, indicating confirmation of the onset of a pandemic. Health Canada would notify provincial and territorial authorities of the alert.

How will Pandemic Influenza spread globally?

If the pandemic begins in Asia, it is likely that pandemic influenza will be present in Canada within three months. The first peak of illness will occur in five to seven months; the first peak of deaths will occur in six to eight months. There will be several waves of illness, with the second and third possibly being the worst. Outbreaks will take place simultaneously, in multiple waves, and with devastating societal impact. It is anticipated that it will take at least six months from the onset of the pandemic to achieve vaccine readiness.

PREPARING FOR PANDEMIC INFLUENZA CONT'D

What should the ARHA do to prepare for pandemic influenza?

All Regional Health Authorities (RHA's) should prepare plans for rapid response to the next identified influenza pandemic. This is necessary in order to reduce illness, death and societal disruption. ARHA's plan should be consistent with frameworks outlined in recent Canadian and Manitoba provincial documents. It should also be a living document that will change as required to meet future needs.

LEGAL CONSIDERATIONS

During a pandemic, it may be necessary to overrule existing legislation or individual human rights. Examples are the enforcement of quarantine (overruling individual freedom of movement), facilities may need to recruit volunteer health professionals who do not have privileges at the facility, use of privately owned buildings for hospitals, off-license use of drugs, compulsory vaccination or implementation of emergency shifts in essential services. These decisions need a legal framework to ensure transparent assessment and justification of the measures that are being considered, and to ensure coherence with international legislation (International Health Regulations). (*WHO Checklist for Influenza Pandemic Preparedness Planning 2005*).

ETHICAL CONSIDERATIONS

Ethical issues are closely related to legal issues as mentioned above. During a pandemic, tough decisions may have to be made about medicines, antivirals and which health care services will need to be temporarily suspended. (*WHO Checklist for Influenza Pandemic Preparedness Planning 2005*). Key issues in the health care sector will be health workers' duty to provide care during a communicable disease outbreak; restricting liberty in the interest of public health by measures such as quarantine; priority setting, including the allocation of scarce resources, such as vaccines and antiviral medicines and global governance implications, such as travel advisories. Planners and decision makers need to be vigilant for other ethical challenges that will need to be managed. (*Ethical considerations....Stand on Guard for Thee*) It is essential that plans are developed and communication programs implemented that will not only inform but also create an atmosphere of mutual trust and solidarity; qualities that at the time of a pandemic will be much needed.

In Manitoba, there has been a provincial ethical committee established to create the framework and guidelines for pandemic planning. More information will be forthcoming and will be implemented as it becomes available.