THE REGIONAL PANDEMIC OUTBREAK RESPONSE PLAN

September 2018

Vancouver CoastalHealth

Promoting wellness. Ensuring care.

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CHAPTER 1
OVERVIEW

1.1 Introduction

The first priority of a pandemic influenza response plan is to save lives and care for the ill, while minimizing social disruption in the community. With this aim, Vancouver Coastal Health established the Regional Pandemic Influenza Response Committee and assigned it the task of researching and developing implementation procedures for areas of responsibility identified in the Canadian Influenza Plan (based on the WHO framework). The Regional Pandemic Outbreak Response Plan (RPORP) outlined below is the result of this work.

Chapter 1 – Overview

This pandemic influenza plan elaborates on principles that are primarily intended for execution at the local and regional levels. We have strived in our planning to be sufficiently flexible to account for the unknown epidemiology of the pandemic virus and the needs of different stakeholders. The outbreak response process, key leads and their roles in the response are described.

Lead: Chief Medical Health Officer

Chapter 2 – Surveillance

Influenza surveillance is required to determine when, where, and which influenza viruses are circulating; the high risk populations; the intensity and impact of influenza activity; and to detect unusual events (e.g., infection by unusual influenza viruses, unusual syndromes caused by influenza viruses, and unusually large or severe outbreaks of influenza). Both virologic and disease surveillance are necessary for identifying influenza virus variants and for determining their ability to spread and cause disease. Surveillance data will drive the pandemic response as it will be used to determine the pandemic phase, and to track progression through the phases.

Lead: Regional Director of PHSU

Chapter 3 - Infection and Environmental Control

Adherence to infection prevention and control policies and procedures minimizes transmission of influenza in health care settings. However it is important to remember that influenza is largely transmitted in the community.

Routine practices are important to prevent the transmission of infection during the delivery of health care in all health care settings during a pandemic. Strict adherence to hand hygiene, isolation and containment of respiratory secretions produced by coughing and sneezing are the cornerstones of infection prevention and may at times be the only significant preventative measure available during a pandemic.

This chapter provides an overview of infection prevention and environmental control guidelines that will be critical to minimizing the transmission of pandemic influenza.

Lead: VCH Regional Medical Director for Infection Prevention and Control, PHSA Director of Infection Control, and Providence Director of Infection Control

Chapter 4 - Emergency Management

The scope of this chapter is to outline Vancouver Coastal Health's (VCH) Emergency Management processes for the Regional Pandemic Response Plan, including; governance, statutory and regulatory compliance, organizational response structures and resources within the organization. External response structures and their relationship to VCH are also reviewed. Additional documentation to support this Plan (e.g. Emergency Operations Centre Setup/Activation Guide) are available in local Emergency Operations Centre(s).

The fundamental concepts and principles outlined in this chapter are consistent with the emergency management activities and measures undertaken throughout British Columbia. This document supports current legal and policy frameworks, programs, activities, standards and other measures that enable VCH to plan and respond effectively and efficiently.

This chapter provides a short overview of the structures and process that provide a foundation for the development and execution of the organization's Pandemic Response plan. The mitigation and preparedness activities that enable VCH's response and recovery from emergencies and disasters, are numerous and complex. More detailed information can be found within the complete VCH Corporate Emergency Management Plan.

Lead: Health Emergency Management BC Lower Mainland West Director

Chapter 5 – Clinical Management

In the early stages of a pandemic, gathering data to characterize the clinical and epidemiologic features of the pandemic influenza strain is a priority. Early surveillance will provide data to assess if and how the mode of transmission, incubation period, period of infectiousness, and most affected populations of the pandemic strain differs from seasonal influenza. Susceptibility to antiviral medications and the propensity to develop resistance also need to be assessed early. Until such information is available, it is reasonable to use the clinical approach to seasonal influenza with cases of pandemic influenza.

Data will also be gathered to estimate the expected number of hospitalizations to allow for an appropriate triage and care plan in health care facilities while maintaining as much of the routine care provided by health care facilities as possible. An important objective of this plan is to coordinate resources in order to ensure equitable health care delivery under emergency conditions.

Lead: Regional Directors of Emergency Medicine, Critical Care, Primary Care and Regional Director of Long Term Care

Chapter 6 – Human Resources

During a pandemic, shortage of personnel can be expected to limit the ability of institutions to respond to a significant increase in patient volume. Health care professionals may need to be moved from vaccination clinics to hospital or between hospitals and alternate care facilities. The plan addresses the need for a regional approach to the redeployment of personnel. It points to the need for a human resources management team to take on responsibility to identify current health care workers, recruit additional professionals and volunteers and to manage the training and assignment of workers. Providing health care services during a pandemic may present challenges to health care workers related to the scarcity of resources, scope of practice, liability and workplace safety. Since front-line health care workers may experience stress during a pandemic, providing timely, reliable communication, a psychosocial response plan and access to mental health services will be important.

Lead: VCH Executive Director of Employee Relations

Chapter 7 – Public Health Measures

For the purposes of this plan, the term Public Health Measures refers to traditional public health interventions such as quarantine, isolation, contact tracing and reducing social distance; the term does not include specific interventions such as administration of vaccines and antivirals. This chapter details the potential public health measures that may be considered during a pandemic. Potential means of increasing public health resources during a pandemic are also provided. Finally, materials developed for public messaging are included. This chapter, in particular, will need to be re-visited and refined during the pre-pandemic period to ensure that all new scientific information is incorporated into the plan.

Lead: Medical Director of Communicable Disease Control

Chapter 8 – Pandemic Vaccine

During a pandemic, as during yearly epidemics of influenza, vaccination will be the primary means to prevent influenza infection and its complications. Manufacturing and licensing the pandemic vaccine may take as long as 4 to 6 months once the pandemic viral strain has been identified. Thus, the vaccine will likely not be available to the wider public until after pandemic influenza becomes established in Vancouver and surrounding areas.

When vaccine first becomes available, it will be in short supply. Therefore, vaccine will initially be distributed according to priority groups, which will have been established nationally. Once vaccine does become widely available, demand for vaccine is expected to be very high. Vaccination of the whole population will require the establishment of mass vaccination clinics. Mass vaccination clinics will require additional space, equipment, and staff. Pandemic immunization programs will need to be flexible and/or tempered based on the availability of the vaccine, and the epidemiological risks of the pandemic virus.

Lead: Medical Director of Immunization Programs

Chapter 9 – Antivirals

Antivirals will be the only specific medical intervention on hand during the initial pandemic response until pandemic vaccine becomes available, which may take 4-6 months. This chapter provides information for Health Care Providers and the public about the two types of antiviral medications approved in Canada. Antiviral drugs can be used to treat cases that are identified early in their illness and can also be used to prevent influenza (prophylaxis). When used for treatment, there is good evidence that antivirals reduce the complications of and mortality from influenza. When antivirals are taken for prophylaxis, their protection is virtually immediate. Taking antivirals does not interfere with the immune response to inactivated influenza vaccines.

Lead: Medical Director of Communicable Disease Control and Regional Director of Pharmacy

Chapter 10 – Communications

Dissemination and sharing of timely and accurate information among public health officials, medical care providers, the media and the general public will clearly be one of most important facets of the pandemic response. Coordination of messages and release of information among international, federal, provincial, and local health officials and affected institutions are critical to avoiding contradictions and confusion that can undermine public trust and impede containment measures. Regional responsibilities in the pre-pandemic period include the development and testing of regional and local communication networks and the division of communication roles and responsibilities at the

regional, local and facility levels. During the pandemic it is the responsibility of the Chief Medical Health Officer or delegate, to provide clear direction to health care providers to ensure continued provision of essential health services and to provide regular, timely information updates about pandemic response to internal and external stakeholders. In the post-pandemic period, the main responsibilities are to determine when facilities will resume normal operations and inform the public.

Lead: Director of Public Affairs

1.2 Objectives

Planning and preparedness are essential to optimally achieve the goals and objectives of a pandemic response. The purpose of this plan is to define the roles, responsibilities, and actions of key stakeholders before a pandemic and at each stage of a pandemic response. Specifically, the plan will:

- Clearly describe the role VCH plays in coordinating the regional outbreak response
- Be sufficiently flexible to account for the unknown epidemiology of a pandemic and the needs of different stakeholders
- Define and recommend preparedness activities that should be undertaken before a pandemic occurs to enhance the effectiveness of the response
- Work collaboratively with and in the context of provincial and federal pandemic planning to clarify roles, responsibilities and actions.
- Provide guidance and tools for the local coordination of the public and private sectors
- Provide guidance for priority research activities
- Provide the technical background and references supporting recommendations
- Provide a review process to ensure the incorporation of new developments and to ensure consistency with best practice

1.3 Authority

The *Public Health Act* was created to address current and emerging public health issues including new challenges in communicable disease prevention and control (e.g. SARS, pandemic influenza), health promotion and health protection, chronic disease and injury prevention, poisonings and bioterrorism threats.

The Act provides health officers the authority and tools to prevent and control the spread of disease and other health hazards by providing the legal framework for preventive interventions (e.g. vaccination, ordering examinations and quarantine). The Act establishes the inspection and enforcement powers of health officers which enable them to monitor and ensure compliance with the Act, enter places, engage the assistance of peace officers, and obtain warrants and court orders. During a public health emergency, such as a pandemic influenza outbreak, public health officers have additional authority to respond immediately to protect the public from significant harm.

Directing response to local public health threats

In the event that a medical health officer determines that public health is threatened by a health hazard, an infectious agent or a hazardous agent:

> (a) the medical health officer is responsible for directing the local response, in respect of public health, to the threat, and
> (b) for the purposes of paragraph (a), the health authority that employs the medical health officer must:
>
> (i) provide the medical health officer with the staff and other resources that the medical health officer reasonably believes are necessary for the response, and

(ii) ensure that its employees and appointees comply with the directions of the medical health officer.

1.4 Response

The VCH pandemic outbreak response is based on the VCH Communicable Disease Outbreak Response Plan Policy (November 2012, available on VCH intranet in the Communicable Disease Control section).

Goal

To promptly identify and manage a pandemic influenza outbreak within VCH in a collaborative, planned and organized manner

Objectives

- To confirm the type and nature of the causative influenza virus.
- To prevent further spread of the virus with appropriate control measures.
- To ensure all individuals, departments and partner agencies involved in the outbreak have a clear understanding of their role(s), and are provided with accurate, up to date information in a timely and effective manner.
- To disseminate information concerning the outbreak in an efficient and effective manner to ensure the rapid mobilization of resources.
- To communicate relevant information in an efficient and effective manner in order to inform and safeguard public health.
- To evaluate and review the outbreak information and surveillance data in order to direct further and future prevention and management.

Declaration of a Pandemic Influenza Outbreak

Within BC the declaration will come from the Provincial Health Officer. Within VCH, the Chief Medical Health Officer will confirm and direct the local response as per the Public Health Act.

The ***Regional Pandemic Response Committee (RPRC)*** will convene at the request of the Chief Medical Health Officer at the first indication there is increased activity with a novel influenza virus taking place somewhere in the world. The Committee will be chaired by the VCH Medical Health Officer for Communicable Disease and will include representative from:

- Providence Health
- BC Women's Hospital
- BC Children's Hospital
- BC Cancer Agency
- BC Centre for Disease Control
- First Nations Health Authority
- Regional Infection Control
- Regional Pharmacy
- Regional Critical Care and Emergency Medicine
- VCH Medical Health Officers
- Executive Director of Public Health,
- Regional Director of Public Health
- Designate Public Health Manager
- Designate Public Health Educator
- CD Director
- CD Educator
- Regional Vaccine Coordinator
- Regional Director of Long Term Care
- Director of Occupational Health
- Director of Public Health Surveillance Unit
- Director of Environmental Health
- Emergency Management
- Human Resources
- Supply Chain

Additional representatives may be added as needed (for example, a family physician or obstetrician).

> NOTE: The PPORP may be activated in the event of any severe influenza outbreak (i.e. non-pandemic influenza) that is impacting clinical care/resources in any area of the organization. Requests for activation of the plan may be made to the Chief MHO by any member of the RPRC recognizing that impacts of severe influenza may not impact all VCH services equally or at the same time.

The RPRC is accountable to the Chief Medical Health Officer and is responsible for implementing the appropriate activities within the VCH Regional Pandemic Outbreak Response Plan at the appropriate time in response to emerging surveillance and clinical/resource impacts.

The Regional Pandemic Response Committee will address:

- Current epidemiology:
  - Orient cases in person place and time
  - Identify unusual epidemiologic features (transmission, susceptible populations, morbidity, mortality patterns)
- Prevention
  - Infection control recommendations: updates and dissemination
  - Vaccination: availability, recommendations for use, distribution and administration
  - Public health measures: updates and dissemination
- Diagnosis and Treatment
  - Testing recommendations: updates and dissemination
  - Treatment recommendations: updates and dissemination
  - Health care resource utilization: Laboratory, primary care, ED, ICU, public health
- Communication needs
  - Early identification of a dedicated single point of communication
- Activation of EOCs in consultation with Communities of Care and Emergency Management

1.5 Ethical Considerations and Framework

With an increased recognition that the volume and complexity of ethically challenging decisions may increase during an influenza pandemic, the Office of the Provincial Health Officer and the Ministry of Health provide a guiding framework for the health care sector.

This framework aims to:

1) Serve as a transparent guide for ethical decision-making before, during and after influenza pandemic.
2) Encourage the integration of shared values into health care practices, treatment and funding decisions.
3) Contribute to improved health outcomes and service delivery, and maximize human and financial resources.
4) Increase public awareness of and confidence in policies.
5) Increase public awareness and preparedness for influenza pandemic.

A list of ethical principles is provided to support ethical planning and coordinated management of pandemic issues in ways that:

- Are fair, accountable, transparent, inclusive and flexible
- Promote solidarity, reciprocity and respect
- Minimize harm and keep things in proportion

This framework does not provide detailed instructions for responding to ethical dilemmas on a case-by-case basis. Instead, it identifies the core ethical principles that should guide decision-making during a pandemic. It also identifies resources to support ministries and health authorities' ethical planning and management of pandemic issues.

BC's Ethical Framework for Decision Making: Supporting BC's Pandemic Planning and Response can be found on the BC MoH website at:

https://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/office-of-the-provincial-health-officer/reports-publications/bc-pandemic-influenza-ethics-framework-2012.pdf

It is the role of the Ministry of Health and PHO to clarify the ethical principles that should be reflected in decision-making by health authorities during influenza pandemics.

1.6 Plan Maintenance

Current Status

This document represents the *sixth* revision of the Vancouver Coastal Health **Regional Pandemic Outbreak Response Plan**. This plan is intended as a manual for health care and public health personnel as well as sites who will be dealing with various aspects of the pandemic influenza response.

Maintenance and Development of Future Versions

In a pandemic, people with a great variety of skills and specializations will gather together to deliver services to the community. The goal will be cooperation and coordination to provide the best possible care for the ill and to minimize the disruptive effects of the pandemic on many levels of life in the Vancouver Coastal Health region.

We are committed to the bi-annual review of the plan and will use those opportunities to assess the effectiveness of the document and to identify further gaps in information. Our planning takes place within a context of international, national and provincial response planning. As guidelines and policies are enunciated at those levels, we will incorporate that new guidance into our planning.

Integrating New Evidence into the Plan

One important feature of pandemic influenza is the unpredictability of its epidemiology. Exploring the biology of the virus and how this influences the emergence of a pandemic is an active field of research. Monitoring advances in scientific research and new software and implementing novel methods and knowledge on a continual basis may benefit the plan by providing information needed for fine-tuning the strategy.

CHAPTER 2
SURVEILLANCE

2.1 Surveillance Overview

Vancouver Coastal Health's pandemic surveillance strategy is designed to align with the national and provincial pandemic strategies and surveillance initiatives. The Public Health Agency of Canada is responsible for coordinating and directing Canada's national influenza surveillance. National surveillance data are collated and reported regularly through weekly FluWatch bulletins. At the provincial level, the BC Centre for Disease Control (BCCDC) manages BC's sentinel physician network, coordinates laboratory testing and reports provincial trends in weekly BCCDC Influenza Bulletins. VCH uses the information provided by these systems to assist in interpreting regional data.

The Public Health Surveillance Unit (PHSU), within the Office of the Chief Medical Health Officer at VCH, conducts health surveillance within the region. PHSU is responsible for coordinating influenza surveillance for VCH and ensuring the timely, relevant and accurate collection, analysis, interpretation and dissemination of surveillance data through all phases of a pandemic. Information needs are expected to change throughout the pandemic phases as the situation evolves, highlighting the need for flexible and adaptable systems. PHSU conducts routine surveillance for influenza-like illness (ILI) using a wide range of data sources to understand influenza activity within the region. These robust routine systems are the foundation of VCH's pandemic surveillance strategy and can be rapidly adjusted to support timely decision-making.

During the interpandemic period (pandemic phases 1 and 2), PHSU conducts routine influenza surveillance in order to:

- Monitor the introduction and spread of influenza and other respiratory viruses, to identify circulating strains and trends in ILI presentations.
- Rapidly identify and characterize facility outbreaks, to inform actions to minimize morbidity and mortality of vulnerable populations.
- Detect and describe unusual events, such as increases in severity or changes in distribution.
- Provide information on influenza epidemiology to hospitals, long term care facilities and physicians.

During the pandemic alert period (pandemic phases 3, 4 and 5), surveillance activities needed to guide and support public health action will change as the situation evolves. At this time and in the context of national and provincial guidance, the Chief Medical Health Officer and the Regional Pandemic Response Committee will determine when enhanced surveillance is required. PHSU will coordinate the shift from routine monitoring to enhanced surveillance activities, including implementing supplementary data collection, in order to:

- Increase vigilance and reporting to identify and monitor the local introduction and spread of the pandemic viral strain.
- Contribute to the characterization of the pandemic epidemiology.
- Monitor the ongoing burden of disease in order to determine appropriate prevention and control measures.

Once a pandemic is declared (pandemic phase 6), PHSU will evaluate the existing surveillance activities and streamline as appropriate to detect any changes in the virus, describe the population affected and monitor the progression of the pandemic throughout the population, while conserving public health resources.

Finally, in the post-pandemic period, PHSU will return to routine surveillance, resuming interpandemic surveillance activities. PHSU will also conduct an evaluation of the surveillance response and revise the surveillance component of the pandemic preparedness plan based on lessons learned.

The following table (Table 1) outlines the roles and responsibilities at the provincial and VCH/regional level by pandemic period.

Table 1: Summary of Provincial & regional Surveillance Responsibilities by Pandemic Phase

PANDEMIC PHASE	BC PROVINCIAL RESPONSIBILITIES	VCH REGIONAL RESPONSIBILITIES
Interpandemic Period Phases 1 & 2 Novel virus in animals but no human cases	Maintain an effective infrastructure to monitor provincial influenza activity, including provincial sentinel physician surveillance and laboratory surveillance.	Monitor routine regional surveillance systems (see section 3.2). Participate in the development and implementation of a provincial surveillance network.
	Develop key messages, strategies and guidelines for communication to regional, provincial, territorial and federal stakeholders.	Ensure timely communication of ILI activity to BCCDC and other stakeholders. Work with MHOs and VCH Communications to distribute surveillance updates via regular communication channels, including Physician Updates.
Pandemic Alert Period Phases 3, 4, 5 New human viral subtype with localized clusters of human-to-human spread; virus may not yet be fully transmissible	Implement enhanced surveillance systems: enhanced sentinel physician surveillance, border monitoring.	Enhance surveillance of travelers returning from areas of pandemic alert; provide returning travelers with information on signs and symptoms and how/when to seek medical assessment (see section 3.3).
		Continue to collect, summarize and distribute information from routine regional surveillance systems to characterize the epidemiology of the pandemic strain and initiate further enhanced surveillance activities as determined by the RPRC.
		Ensure that hospitals, long-term care facilities and physicians receive timely information on influenza epidemiology.

Pandemic Declared Phase 6 Sustained transmission in general populations	Streamline provincial surveillance systems according to resources available to focus on the data most essential to provincial public health decision-making.	Streamline regional surveillance systems according to resources available to focus on the data most essential to regional public health decision-making.
	Direct and coordinate the surveillance network.	Continue to contribute to the provincial surveillance network.
	Provide timely updates to the public and the media throughout the pandemic. Communicate surveillance updates to regional, provincial, territorial and federal stakeholders.	Continue to report regional surveillance to BCCDC and other stakeholders.
Post pandemic period	Develop provincial pandemic surveillance summary and distribute to stakeholders.	Provide regional pandemic surveillance summaries to BCCDC and stakeholders.
	Evaluate and revise surveillance plans as needed.	Evaluate and revise surveillance plans as needed.
	Return to Phase 1 activities.	Return to Phase 1 activities.

Since the actual impact of the pandemic cannot be predicted ahead of time, real time surveillance data will be essential to guide all response activities. The PHSU has the responsibility to provide this data in a timely manner to the Regional Pandemic Response Committee.

2.2 Routine Surveillance Systems

Communicable Disease Surveillance

PHSU monitors laboratory confirmed influenza in the community, which is essential since the signs and symptoms of influenza are similar to those caused by other respiratory pathogens. PHSU produces weekly reports of laboratory confirmed influenza cases in the region and notes when incidence is higher than historical and recent values.

Provincial laboratory data are monitored to detect antigenic drift and shift of influenza viruses circulating among humans allowing for rapid identification of a novel strain. This information contributes to the early development of a vaccine and implementation of prevention and control measures.

Surveillance for ILI Outbreaks in Facilities

PHSU monitors outbreaks of influenza-like illness occurring in acute care and long-term care facilities. An outbreak of ILI is defined as two or more cases of ILI within a one-week period in the facility. Facilities report outbreaks to regional medical health officers and complete outbreak summary report forms. PHSU runs weekly analyses to review facility outbreaks to facilitate the identification of high-risk groups and to detect changes in incidence compared to past influenza seasons. PHSU reports outbreaks to BCCDC.

Emergency Room Surveillance

PHSU collects weekly data from nine of thirteen hospital emergency departments in the region. When CST is completed, PHSU will have data from thirteen emergency departments in the region. Data collected from chief presenting complaints and discharge diagnoses are used to identify respiratory and influenza-like illness presentations. The surveillance data are used to understand severity of influenza activity in the community. PHSU analyses the data weekly and generates alerts for unusual increases in visits compared to recent weeks and historical trends.

Healthlink BC Calls

HealthLink BC is a provincial health service phone line that connects patients to a registered nurse, pharmacist or dietician 24 hours a day, seven days a week. PHSU monitors ILI-related calls from VCH residents, conducts weekly analyses and generates alerts for unusual increases in calls compared to recent weeks and historical trends. HealthLink BC surveillance data provide information on influenza activity occurring in the community. An example of a weekly report can be found in the Appendix.

2.3 Enhanced Surveillance Systems

Initiation of Enhanced Surveillance

A decision that enhanced surveillance is required will be based on an agreement that a novel influenza virus or other respiratory pathogen is emerging which is unlike anything previously encountered. Features may include an unknown or unclear mode of transmission, unexpectedly high attack rate, unusual presentations or disproportionate morbidity and/or mortality. This decision for enhanced surveillance will be made regionally by the Chief Medical Health Officer and implemented by the Regional Pandemic Response Committee within the context of federal and provincial directives.

The Chief Medical Health Officer and RPRC will determine the required elements of enhanced surveillance including:

- Defining actions that will be informed by the surveillance results (such as vaccine distribution, treatment recommendations, infection control measures, resource planning and allocation)
- Case definition
- Case identification and notification and by whom
- Information required and who will gather
- Analysis required and by whom
- Communication requirements (to whom and by whom)
- Trigger to stop doing a surveillance activity
- Identifying resources required to do the necessary activities
- Review of results and actions taken based on the results to determine value of activities and incorporate successful activities in to Pandemic Plan

PHSU will take leadership within the RPRC to ensure agreed upon plans, activities and roles are documented and implemented.

Enhanced Sentinel Physician Surveillance

During the interpandemic period, BCCDC coordinates routine provincial sentinel physician surveillance. Each week, physicians participating in the surveillance network report the proportion of weekly patient visits presenting with influenza-like illness.

However, during the pandemic alert period, VCH, with the support of BCCDC if necessary/appropriate, is responsible for identifying additional sentinel physicians that could be called upon during immediate pandemic phases. The sentinel physician surveillance could expand to include the monitoring of special populations such as student health facilities, emergency rooms, the military and/or travel destinations (e.g. Whistler). VCH is responsible for providing contact information of its sentinel physicians to BCCDC.

Enhanced Border Surveillance

The federal government is responsible for enhanced border surveillance at ports of entry. VCH contains two major ports of entry: Vancouver International Airport (Richmond HSDA) and Port Metro Vancouver (Vancouver HSDA). During the pandemic alert phase, some countries may elect to begin screening visitors to the region arriving from areas affected by the pandemic. Due to the nature of influenza illness, this is not typical practice in British Columbia. Quarantine officers may be involved in pandemic surveillance and can be contacted using the numbers below.

To contact VCH regarding quarantine issues call:

- 604-527-4893 - to be directed to VCH Communicable Disease Control or the MHO on call

To contact quarantine services directly call:

- 604-317-1720

Enhanced Surveillance of Severe Influenza Outcomes

PHSU may conduct active surveillance of cases hospitalized due to influenza or other identified cases with severe outcomes in order to assess the severity of the virus strain and to identify factors associated with increased risk of experiencing adverse consequences of the disease. The development of this surveillance system will be based on the unique epidemiology of the pandemic and the availability of resources. If BCCDC initiates a provincial active surveillance, VCH, including PHSU staff, will participate in the system development, implementation and evaluation.

2.4 Resources

Influenza pandemics can be highly variable in their population impact. Resources are available to determine impacts on the population based on age risk status, outpatient visits, hospitalizations and death for each local health area.

The following resources provide the background and tools for executing the health impact calculations.

The British Columbia Statistics Agency:

https://www2.gov.bc.ca/gov/content/data/statistics

Canadian Census Program:

https://www12.statcan.gc.ca/census-recensement/index-eng.cfm

Population of BC: Population Estimates & Projections:

https://www2.gov.bc.ca/gov/content/data/statistics/people-population-community/population/population-estimates

Basic Reproduction Number

The initial rate of spread measures the pace at which an infectious disease first spreads within a population. It is determined by the average number of new infections caused by the index case(s). More specifically, in the absence of prior immunity to an emergent strain of influenza, at the population level, this parameter reflects the basic reproduction number, denoted by *Ro.* Within the literature, conservative estimates of *Ro* for the past three pandemics (1957, 1968/69 and 2009) ranged from 1.2 to 2.1. In the event of a pandemic, dynamic modeling of the real time experience in other jurisdictions will be used to estimate the impact to the VCH population.

When a pandemic has been declared, and the initial epidemiology of the virus is determined, the VCH Public Health Surveillance Unit will produce estimates using resources and methods mentioned above. As the epidemiology of the virus evolves, changes to the estimates may need to be made to better reflect the health impact.

CHAPTER 3
INFECTION AND ENVIRONMENTAL CONTROL

3.1 Infection Control Guidelines

Assumptions Concerning Infection Control in a Pandemic

The principles of containment and infection control for pandemic influenza are based on the premise that pandemic influenza has similar properties to seasonal influenza. These should only be changed if there is evidence to do so based on surveillance and epidemiology of the pandemic virus. The principles are:

- Person to person spread of human influenza is well established.
- The modes of transmission are:
    - **Droplet contact** of the oral, nasal or possibly conjunctival mucous membranes with the oropharyngeal secretions of an infected individual
    - **Indirect contact** from hands and articles freshly soiled with discharges of the nose and throat of an acutely ill individual
    - **Droplet transmission** from the respiratory tract of an infected individual
    - **Possible airborne transmission** during aerosol generating procedures only
- The incubation period of human influenza is 1 to 4 days.
- Period of communicability of influenza is 24 hours before symptom onset and up to 5 days after the onset of symptoms (may be up to 7 days in children and some adults). People are most infectious when symptomatic. Virus shedding may be considerably longer in immunocompromised individuals.
- Influenza virus can survive on hard surfaces for 24 to 48 hours, on softer, porous surfaces for 8 to 12 hours and on the hands for up to 5 minutes.
- Influenza viruses are easily deactivated by washing with soap and water, or alcohol hand rub and by cleaning and disinfecting surfaces with normal household detergents and cleaners.
- There may be a mix of circulating respiratory viruses in the community, so principles of containment and cohorting of patients need to be appropriately assessed.

Infection Control Practices

The following documents contain key infection control guidelines that may apply during a pandemic:

- VCH Infection Control Manuals. Found at: http://ipac.vch.ca/resource-manuals
- PICNet Reference for Respiratory Outbreak Prevention and Control Guidelines (2011). Found at:
  https://www.picnet.ca/wp-content/uploads/PICNet_RI_Outbreak_Guidelines.pdf
  http://ipac.vch.ca/Documents/Cleaning%20and%20Disinfection/British-Columbia-Best-Practices-for-Environmental-Cleaning%202016.pdf
- Patient Safety Branch, BC Ministry of Health (2007). *Best Practice Guidelines for the Cleaning, Disinfection and Sterilization of Medical Devices in Health Authorities.* Found at: http://www.health.gov.bc.ca/library/publications/year/2007/BPGuidelines_Cleaning_Disinfection_Sterilization_MedicalDevices.pdf
- Canadian Committee on Antibiotic Resistance (2007) *Infection Prevention and Control Best Practices for Long Term Care, Home and Community Care including Health Care Offices and Ambulatory Clinics.* Found at: http://www.cpsa.ca/wp-content/uploads/2015/04/IPAC-Best_Practices_general.pdf

Routine Practices (a.k.a Standard Precautions)

The consistent and appropriate use of routine practices by all health care providers with all client encounters will lessen microbial transmission in the health care setting and reduce the need for additional precautions.

The Elements of Routine Practices are:

- Point of Care Risk Assessment (PCRA) related to client's ILI symptoms and care requirements.
- Hand hygiene
- Respiratory etiquette
- Risk reduction strategies through use of personal protective equipment (PPE), cleaning and disinfection of the environment, laundry, disinfection and sterilization of equipment or single use equipment, client placement,
- Healthy workplace practices
- Education of HCW's, clients and families/visitors

Additional Precautions

In addition to routine practices, Contact, Droplet and Airborne precautions may be required in certain situations to prevent transmission of influenza.

- **Droplet and Contact Precautions**
  Droplet and Contact precautions for influenza include wearing a gown, gloves and a procedure mask with eye protection, when providing care and when in contact with frequently touched environmental surfaces or objects that may be contaminated.

- **Airborne and Contact Precautions**
  Airborne and Contact Precautions for confirmed and suspected influenza patients receiving aerosol generating medical procedure (AGMP) and for patients on respiratory isolation admitted to ICU. Includes wearing a gown, gloves, N95 respirator and eye protection.

Risk Assessment

The key to implementing routine practices is to assess the risk of transmission of microorganisms before any interaction with clients.

To perform a risk assessment, consider the following:

- Do they have a fever?
- Do they have a cough and are not able to follow respiratory etiquette?
- Do they have drainage or leakage? Is it contained?
- What task am I doing?
- What is the risk of exposure to blood, body fluids, mucous membranes, aerosols, non-intact skin in the tasks I am about to do?
- What is my skill level for this task?
- How cooperative is the client?

Risk Reduction Strategies

Risk reduction strategies are actions taken based on the risk assessment that will assist the health care worker in minimizing his or her exposure. Strategies include use of personal protective equipment (PPE), waste disposal, sharps management, client placement, cleaning and disinfection of equipment, etc. to reduce the risk of transmission of microorganisms.

Source Controls

The importance of applying administrative (e.g. patient flow) and engineering (e.g. glass or acrylic partitions in triage areas) controls as the first strategies in protecting the HCW from exposure to infectious agents in the health care setting cannot be overemphasized. This is especially important for patient care areas/settings where patients appear for initial assessment/investigation before a diagnosis of influenza has been made.

Health care organizations should complete assessments of each area within their acute care facilities including:

- Physical settings (e.g. single rooms, use of partitions, ability to establish 2 meter distance between ILI cases and others),
- The types of patients seen, and
- The types of patient care activities undertaken.

Based on these assessments, organizations need to determine what administrative and engineering controls are needed.

Personal Protective Equipment (PPE)

The following are general guidelines, which should be revised once the mode of transmission of the circulating pandemic influenza virus is understood.

1. **Gloves:**

   - Gloves are NOT a substitute for hand hygiene.
   - Gloves are task-specific and single-use for the task.
   - Gloves should be available in multiple sizes to provide adequate protection.
   - Gloves should be readily accessible to all health care workers.
   - Single use disposable gloves must not be reused or washed**.**

2. **Gowns**

   - The routine use of gowns and aprons is not recommended, gowns are task-specific.
   - Do not re-use gown or apron. They are only fluid resistant, not waterproof.
   - Do not go from client to client wearing the same gown or apron.
   - Take off gloves and gown, and perform hand hygiene.
   - Remove gown before leaving patient room.

3. **Masks**

   HCWs should wear respiratory protection when within 2 meters of a suspect ILI case. The choice between a procedure mask and N95 respirator should be based on the point of care risk assessment.

   Proper wearing of a mask includes:

   - Select a mask based on risk assessment and that is appropriate to the activity.
   - Ensure a snug fit over the nose and under the chin.
   - Molding the metal bar over the nose.
   - Change mask if it becomes wet.
   - Do not touch mask while wearing it.
   - Careful removal after use, touching only the elastic ear loops or ties.
   - Discard mask immediately after the task is complete into an appropriate waste receptacle.
   - Hand hygiene must be performed before and after mask removal.
   - Do not allow mask to hang or dangle around the neck.

- Do not re-use disposable masks.
- Do not fold the mask or put it in a pocket for later use.

Wear a surgical/procedure mask:

- Symptomatic patient to wear surgical/procedure mask while in public area of health care facility as per respiratory hygiene etiquette.

Wear an N95 respirator:

- If conducting an aerosol-generating medical procedure (AGMP).
- If the client is known or suspected of an airborne infection i.e. active tuberculosis, varicella or measles.

4. Eye Protection

- Choose eye protection that protects the eye from all directions. Eyeglasses do not provide this protection. Wear eye protection (goggles, face shield or mask with visor) over eyeglasses when required.
- Eye protection must be removed immediately after use and discarded into a waste receptacle if disposable. If reusable it should be cleaned after it has been used, following manufacturer's directions.

Cleaning, Disinfection and Sterilization of Patient Care Equipment

Facilities should adhere to the previously established policies and procedures for the cleaning, disinfection and sterilization of client care equipment.

Environmental Control (housekeeping, laundry, waste)

- Facilities should adhere to their established policies and procedures for housekeeping, laundry and waste disposal including regular garbage and biomedical waste.
- Special handling of linen or waste contaminated with secretions from clients suspected or confirmed to have influenza is not required.
- Enhanced cleaning and disinfection of common touch surfaces (handrails, door knobs, sink/toilet) may be required.
- Strategically place alcohol based hand sanitizers, boxes of tissues and no touch waste receptacles to support hand hygiene and respiratory etiquette.

Healthy Workplace

- Perform proper and frequent hand hygiene.
- **Do not come to work ill.** Management should communicate to staff that there is an expectation that they do not come to work if they have symptoms of influenza-like illness
- Maintain your immunizations. Influenza can be serious or lethal for clients within your facility. It is important to receive yearly influenza vaccinations.
- Ensure patient care equipment used on ill clients are properly cleaned and disinfected with the appropriate technique and materials.

Education

HCW Education and Training

- Infection prevention and control education should be provided to all HCWs as part of their orientation and as ongoing continuing education on a scheduled basis, in addition to just-in-time teaching.

Education of Clients/Family/Visitors
Education should include:

- Hand hygiene
- Respiratory etiquette
- Distancing recommendations (2 meter separation to prevent droplet inhalation)
- Not sharing personal items
- Education about personal protective equipment and other precautions that might be required
- The value of immunization in protecting both oneself and patients/residents
- For family and visitors only: not visiting people in a health care facility when ill with a respiratory infection

Client Placement

Transport /Client Placement
Apply the following principles when making decisions on placement of clients with influenza:

- Ideally, clients with influenza should be placed in single-bed rooms. If single-bed rooms are unavailable, cohort clients ill with **confirmed** influenza, according to the Influenza type, if available. Cohorting patients based on symptoms alone may not be appropriate when a mix of respiratory viruses is circulating.
- In multi-bed rooms a two meter separation between beds is advised to reduce the opportunities for inadvertent sharing of items between clients
- Draw the privacy curtains to minimize opportunities for close contact
- Change PPE and perform hand hygiene between clients in the same room
- Post a sign "droplet/contact precautions" outside the door/area

Examples of placement algorithms:

- http://ipac.vch.ca/Documents/Routine%20Practices/IPAC%20Private%20Room%20Priotrity%20Patient%20Placement%20Algorithm.pdf
- http://ipac.vch.ca/Documents/Routine%20Practices/VRI%20Patient%20Placement%20Algorithm.pdf

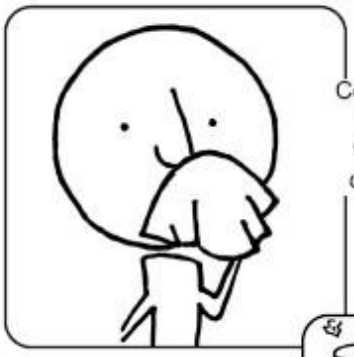
Client Transport

- Clients with ILI symptoms should only leave their room for urgent/necessary procedures. Notify the receiving department when the client is expected. The need for the procedure and the scheduling of the time for the procedure need to be considered so that non-influenza clients are not exposed to those with influenza. Symptomatic patients leaving their room should wear a surgical mask.

3.2 Forms and Tools

Stop the spread of germs that make you and others sick!

Cover your Cough



Cover your mouth and nose with a tissue when you cough or sneeze

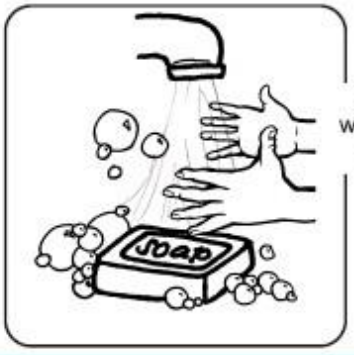
or

cough or sneeze into your upper sleeve, not your hands.

Put your used tissue in the waste basket.

Clean your Hands

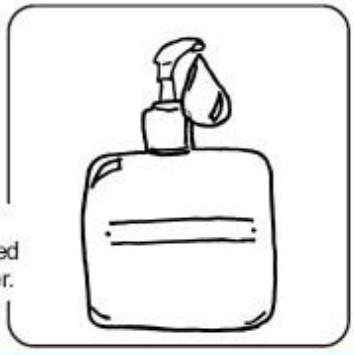
after coughing or sneezing.



Wash hands with soap and warm water

or

clean with alcohol-based hand cleaner.



Vancouver Coastal Health

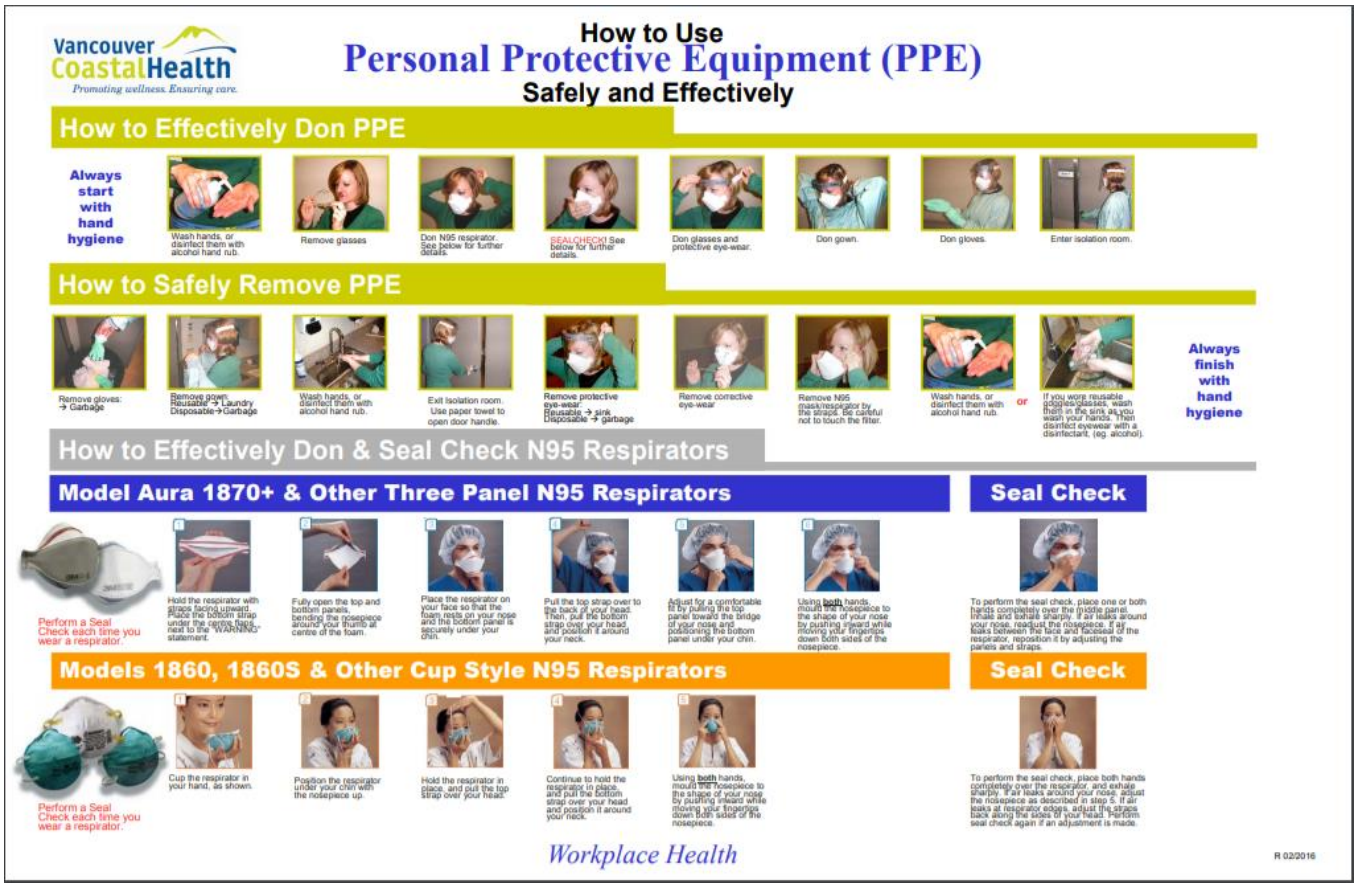
MINNESOTA MDH DEPARTMENT OF HEALTH

Minnesota Antibiotic Resistance Collaborative

APIC

PPE Donning and Doffing

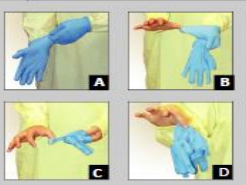
https://my.vch.ca/working-here-site/Documents/How-to-Use-Personal-Protective-Equipment-Safely-and-Effectively.pdf



BC Children's Hospital | BC Mental Health & Addiction Services | Routine Practices Rev Mar 2017

Taking off (Doffing) Personal Protective Equipment (PPE)

1 Gloves



A. Grasp the outside edge of the glove near the wrist and peel away from the hand, turning the glove inside-out.
- Hold the glove in the opposite gloved hand.

B. Slide an ungloved finger or thumb under the wrist of the remaining glove.

C. Peel the glove off and over the first glove, making a bag for both gloves.
- Place into patient's garbage can.

2 Gown

A. Carefully unfasten ties.

B. Grasp the outside of the gown at the back of the shoulders and pull the gown down over the arms.

C. Turn the gown inside out during removal.
- Put in hamper or, if disposable, place into patient's garbage can.

3 HAND HYGIENE

A Using an alcohol-based hand rub is the preferred way to clean your hands.

B If your hands look or feel dirty, soap and water must be used to wash your hands.

4 Eye protection or face shield

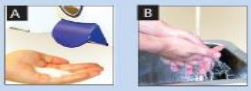
- Handle only by headband or ear pieces.
- Carefully pull away from face.
- Put reusable items in appropriate area for cleaning.
- Put disposable items into the anteroom garbage can.

5 Mask or N95 respirator

- Bend forward slightly and carefully remove the mask from your face by touching only the ties or elastic bands.
- Start with the bottom tie, and then remove the top tie.
- Throw the mask into the anteroom garbage can.

There are different styles of N95 respirators but all styles have the same basic steps for doffing.

6 HAND HYGIENE



A Using an alcohol-based hand rub is the preferred way to clean your hands.

B If your hands look or feel dirty, soap and water must be used to wash your hands.

Adapted from: Alberta health Services

Poster: Personal Protective Equipment (PPE) | Infection Prevention & Control Manual | Page 1 of 1

BC Cancer Agency CARE + RESEARCH | Routine Practices

Putting on (Donning) Personal Protective Equipment (PPE)

1 HAND HYGIENE

A Using an alcohol-based hand rub is the preferred way to clean your hands.

B If your hands look or feel dirty, soap and water must be used to wash your hands.

2 Gown

A Make sure the gown covers from neck to knees to wrist.

B Tie at the back of neck and waist.

3a Procedure/Surgical mask

- Secure the ties or elastic around your head so the mask stays in place.
- Fit the moldable band to the nose bridge. Fit snugly to your face and below chin.

3b N95 respirator

There are different styles of N95 respirators (pictured below). They include: a) molded cup, b) duckbill, c) flat-fold and d) v-fold

All styles have the same basic steps for donning; molded cup and duckbill are pictured below. Refer to the manufacturer for specific donning instructions.

A Pre-stretch both top and bottom straps before placing the respirator on your face.

B Cup the N95 respirator in your hand.

C Position the N95 respirator under your chin with the nose piece up. Secure the elastic band around your head so the N95 respirator stays in place.

D Use both hands to mold the metal band of the N95 respirator around the bridge of your nose.

E Fit check the N95 respirator.

4 Eye protection or face shields

- Place over the eyes (or face).
- Adjust to fit.

5 Gloves

- Pull the cuffs of the gloves over the cuffs of the gown.

Adapted from: Alberta health Services

Poster: Personal Protective Equipment (PPE) | Infection Prevention & Control Manual | Page 1 of 1

CHAPTER 4
EMERGENCY MANAGEMENT

4.1 Health Emergency Management BC (HEMBC)

Emergency Management within VCH is the responsibility of Health Emergency Management BC (HEMBC). HEMBC is a program of Provincial Health Services Authority. HEMBC provides leadership, expertise, education, tools, and support for the BC health system to effectively mitigate, prepare for, respond to, and recover from the impacts of emergency events. HEMBC's goal is to bring consistent and effective emergency management processes, plans and procedures to the BC health system.

4.2 Emergency Response

Vancouver Coastal Health's (VCH) emergency response plans and manuals contain information, procedures and protocols designed to ensure VCH is capable of responding anywhere within its area of operations, to an emergency in an effective, coordinated and integrated manner.

When an emergency or disaster exceeds the normal management capabilities of the organization, an incident management system is utilized to provide effective management of the event on the operational capability of the health system, infrastructure, environment and the people. Incident management systems are designed to allow rapid decision making and planning while providing effective logistics, administration and financial management. Additionally, such systems are designed to provide consistent management methodology and jargon amongst stakeholder organizations.

The VCH response plan utilizes an Incident Command based management structure, allowing any VCH Executive Administrator to manage the response and recovery of a major event in a consistent and organized manner.

4.3 Consistency with the BC Emergency Management System

The Ministry of Health policy requires the adoption of the British Columbia Emergency Management System (BCEMS) standard by all health authorities. BCEMS is a comprehensive all-hazard management scheme that ensures a coordinated and organized provincial response and recovery to all emergency incidents. BCEMS was developed and adopted by Emergency Management British Columbia to assist the provincial government, authorities, Crown Corporations, municipalities and businesses to deal with the complexity of disaster management. BCEMS ensures a scalable, coordinated and organized response to any and all emergency incidents. BCEMS is recognized for its ability to assist with the growing need for multi-jurisdictional and multi-functional system for a response to complex incidents and events.

4.4 Response Objectives

BCEMS supports a prescribed set of response objectives, set out in an order of priority that is common to all responders, allowing a common understanding of government priorities. The BCEMS objectives are:

- Ensure the health and safety of responders
- Save lives
- Reduce suffering
- Protect public health

- Protect infrastructure
- Protect property
- Protect the environment
- Reduce economic and social losses

4.5 Emergency Operations Centres

An Emergency Operations Centre (EOC) is a predesignated location for managing the response to an event that has overwhelmed a site/department or program. An EOC is responsible for:

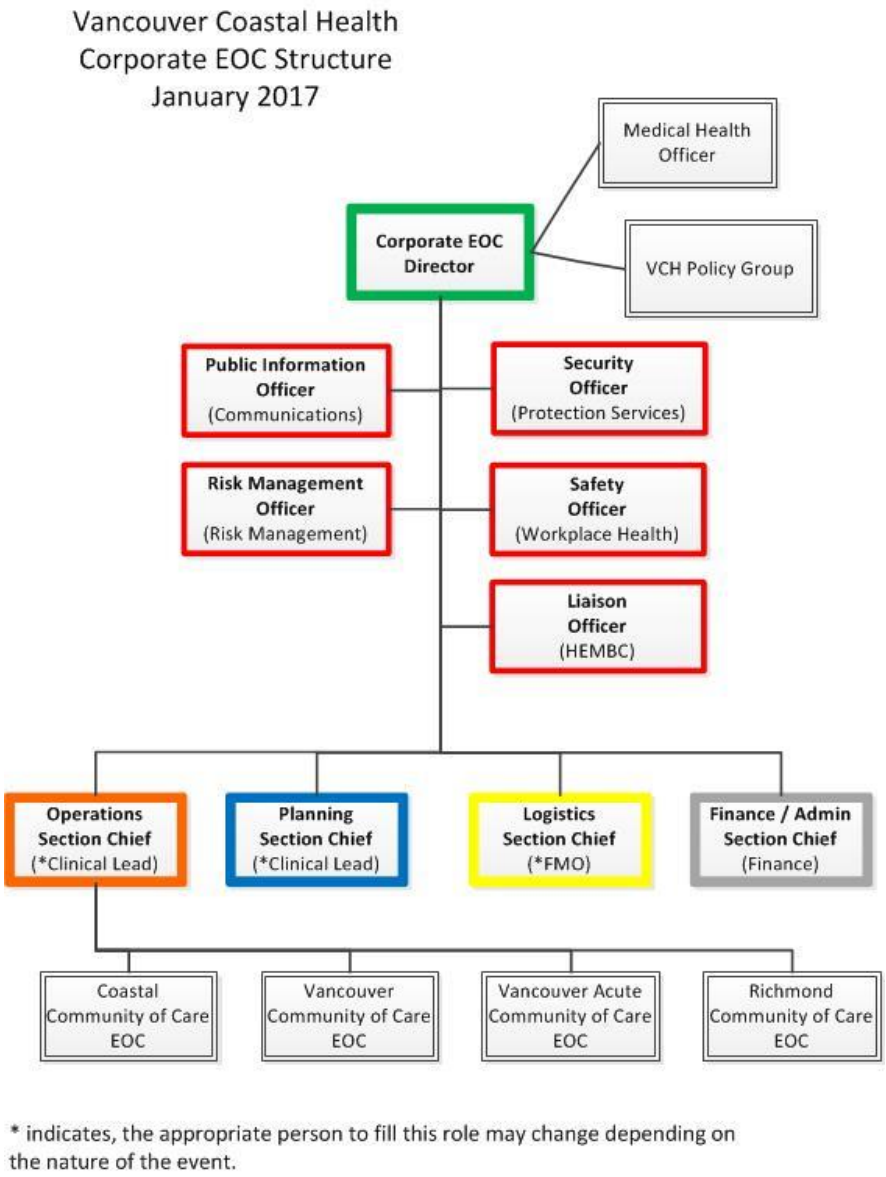
- Providing policy and strategic direction
- Providing site support and consequence management
- Collecting, evaluating and distributing information
- Coordinating agencies and/or departments
- Managing resources
- Providing both internal and external communication regarding situation

The VCH Corporate EOC is located in the Vancouver General Hospital (VGH) EOC, adjacent to and accessed through the Rehabilitation Unit in the Jim Pattison South Pavilion, between the Laurel Street entry and the VGH main entrance.

EOCs can be activated at the request of a VCH Administrator, Site Administrator/On-Call or VCH senior official to provide overall direction and control, coordination and resource support to health authority operations before, during or following an emergency or disaster.

The EOC uses the ICS system as a basis for internal management structure. The structure is modular and can be adjusted as needed for response to various types of events. Subsidiary EOCs report to the VCH Corporate EOC through the Operations unit. Reporting to higher level EOCs is through the Corporate EOC Director/Incident Commander.

A site/program or Community of Care EOC normally turns to the VCH Corporate EOC for support when their resources or capabilities are (or will be) exceeded or they require coordination support that is outside of their jurisdiction. In this case, the VCH Corporate EOC will provide policy direction and guidance with respect to Authority wide impact and will manage issues that cannot be resolved by site based EOCs. The Corporate EOC will directly manage events when there is a regional impact and where no singular site is identified as the most affected; for example, mass casualty events with patient distribution to multiple sites, large geography power failures, and infectious disease outbreaks. Advanced planning for an event may also be managed by a Corporate EOC. The Corporate EOC is activated by the Tier 2 Executive On-Call.



* indicates, the appropriate person to fill this role may change depending on the nature of the event.

The Health Authority wide response structure is activated when a large or more involved response is required (example: H1N1 in 2009) or if an event escalates to involve multiple communities of care. Senior Executives will hold leadership roles in the activation of a Corporate EOC, in particular the EOC Director/Incident Commander position. Ideally, this role will be filled by a person who has extensive knowledge of the organization, critical operations and the authority to make high level decisions.

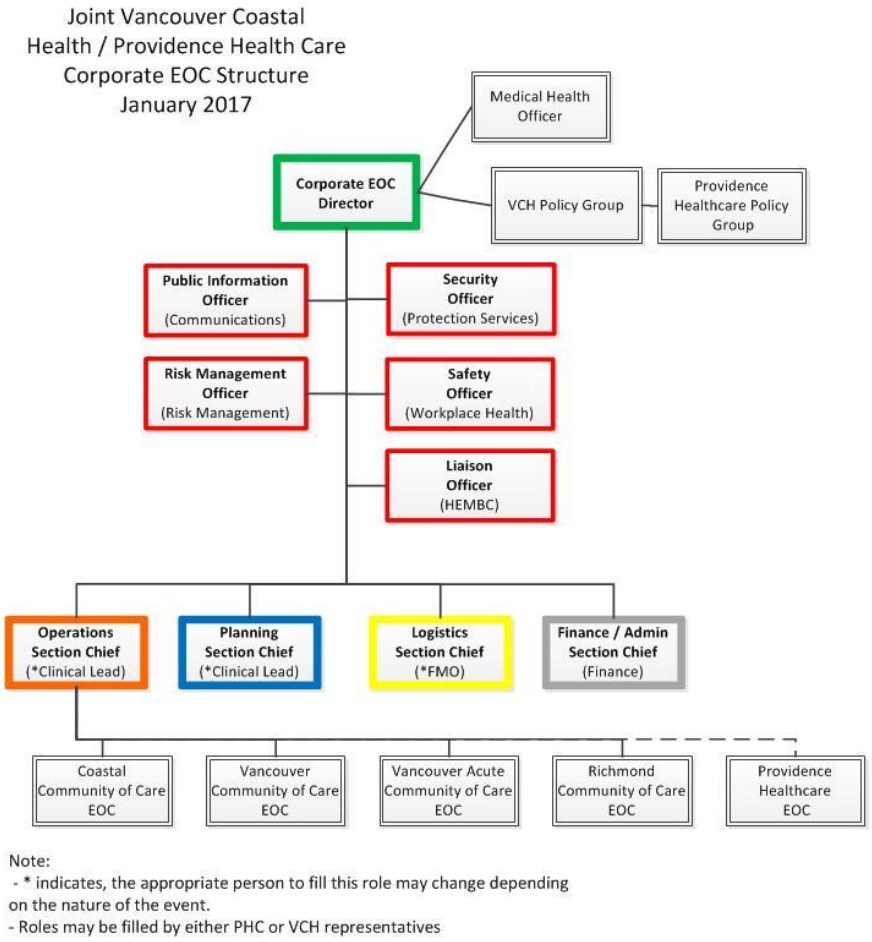
Other management roles will be filled by leaders identified in the following organizational chart. General EOC Functions should be filled by senior clinical leaders who have appropriate expertise based on the type of event. For example, the Operations Section would be filled by an Acute Clinical leader for a mass casualty or Facilities Maintenance and Operations for an infrastructure failure.

4.6 Joint VCH and Providence Health Care (PHC) Corporate Level Response

To effectively manage the impacts of a regional emergency or disaster, PHC and VCH will work together and enhance their coordination and collaboration by establishing a Joint VCH/PHC Corporate EOC (see illustration). The Joint VCH/PHC Corporate EOC will support sharing of resources, consistent communication to staff and community partners, and effective and consistent support across both

areas of responsibility, among other things.

In order to be successful, this arrangement requires that the policy groups of VCH and PHC are closely linked.



4.7 EOC Locations

- Corporate EOC - Vancouver General Hospital (VGH) EOC, adjacent to and accessed through the Rehabilitation Unit in the Jim Pattison South Pavilion, between the Laurel Street entry and the VGH main entrance.
- Vancouver Acute EOC - Vancouver General Hospital (VGH) EOC, adjacent to and accessed through the Rehabilitation Unit in the Jim Pattison South Pavilion, between the Laurel Street entry and the VGH main entrance.
- Vancouver Community EOC - Vancouver General Hospital (VGH) EOC, Room 1770/1771. Accessed through the Rehabilitation Unit in the Jim Pattison South Pavilion, between the Laurel Street entry and the VGH main entrance.
- Coastal EOC – Lion's Gate Hospital, Evergreen Conference Room, 1st floor Room B36
- Richmond EOC – Richmond Hospital, Westminster Health centre, 3rd Floor, Admin Conference Room
- Providence Health Care EOC – Saint Paul's Hospital, GI Conference Room, Mail Floor, Providence Building

4.8 EOC Activation Criteria

The EOC can be activated either virtually or physically and is determined by the magnitude, scope and stage of the event.

Virtual EOC

Possible or actual threat which has the potential to affect the business responsibilities of an individual/multiple VCH site/program/service, the incident is expected to be managed with existing resources and the EOC group only needs to monitor in case the situation worsens or in case of escalation. A virtual EOC can also be activated to manage a wide spread evolving event which requires the input of numerous parties, but does not necessitate full-time attention.

Physical EOC Activated

Potential or actual threat which places a significant number of people at risk, the event may require coordination of resources and response activities across the organization as well as units/departments/programs/facilities. In this situation, the physical EOC is activated and staffed.

The VCH Pandemic Influenza Response Plan should be activated as soon as the Provincial Health Office declares the beginning phase of a pandemic (see Chapter 1). The Corporate EOC is activated at the direction of the VCH President and Chief Executive Officer and/or designate. It may also be activated at the request of the Ministry of Health or the Provincial Health Officer. In the event of a pandemic and as per the Public Health Act, the Chief Medical Health Officer (MHO) is responsible for directing the response in respect to Public Health (see Chapter 1).

The EOC Director/Incident Commander will establish the Corporate EOC management team and will ensure affected Communities of Care have activated their plans. The EOC Director will activate the VCH Pandemic/Outbreak Management Team.

Activation Triggers

The Health Authorities do not have the authority declare a State of Emergency. The Medical Health Officers, however, have extensive powers to protect public health and may recommend a declaration to the appropriate authorities. These states of emergency may allow external authorities to undertake certain actions or provide certain services appropriate to the conditions found at the time. The VCH Pandemic Response Plan can and may be activated without a declaration of a local or provincial State of Emergency. If a declaration has made as a result of a pandemic threat, this plan will be automatically activated.

A number of circumstances could prompt activation of the Pandemic Response Plan. These include:

- Identification of a potential or actual case of pandemic influenza in a Canadian province other than British Columbia
- Identification of a potential or actual case of pandemic influenza in British Columbia including the identification of significant influenza-like illness in VCH
- Identification of potential or actual disease outbreaks that could rapidly expand across multiple countries, regions or provinces
- Response to requests to assist other facilities or jurisdictions with their response
- Response to a formal request by external agencies including the Ministry of Health or the Provincial Health Officer
- Severe influenza (non-pandemic) impacting clinical care and resources requiring a response

4.9 World Health Organization Pandemic Phases

The World Health Organization (WHO) Pandemic Influenza Plan identifies specific phases for identifying the spread or potential spread of the virus. These triggers do not replace VCH's response but are intended to provide triggers for plan activation. Further, they do not indicate the level of impact of the pandemic on VCH.

Table 2: Summary of Emergency Response Plans by Pandemic Phase

WHO	Definition	VCH	Emergency Response
Phase 1	No animal influenza virus circulating among animals has been reported to cause infection in humans	Pre-Pandemic Planning	• In coordination with the Chief MHO, encourage coordinated planning within VCH's Community of Care • Test and update plans as necessary
Phase 2	An animal influenza virus circulating in domesticated or wild animals is known to have caused infection in humans and is therefore considered a potential pandemic threat.		
Phase 3	An animal or human-animal influenza reassortant virus has caused sporadic cases or small clusters of disease in people but has not resulted in human-to-human transmission sufficient to sustain community-level outbreaks.	Novel Virus Alert	• Keep planning or review plans • In coordination with MHO and Chief MHO, support notification of novel virus alert to: hospitals; local, private and public partners; HEMBC; local First Nations Communities • Participate as member of Regional Pandemic Response Committee activated by Chief MHO • VCH's EOC may be virtually activated
Phase 4	Human-to-human transmission (H2H) of an animal or human-animal influenza reassortant virus able to sustain community-level outbreaks has been verified.		
Phase 5	The same identified virus has caused sustained community level outbreaks in two or more countries in one WHO region.	Pandemic Alert	• Enhance staffing and resources for the VCH Regional Pandemic Response Committee as needed • Activate EOC's as required • Track costs using a Pandemic Response Cost Centre
Phase 6	In addition to the criteria defined in Phase 5, the same virus has caused sustained community level outbreaks in at least one other country in another WHO region.	Pandemic	• Coordinate use of available local resources, including private, public and volunteer in consultation with HR and EOCs • Track and report pandemic related information
Post-Peak Period	Levels of pandemic influenza in most countries with adequate surveillance have dropped below peak levels.		

Possible New Wave	Level of pandemic influenza activity in most countries with adequate surveillance rising again.		• Continue all activities • Review, evaluate, and modify as needed • Monitor resources and staffing needs
Post-Pandemic Period	Levels of influenza activity have returned to the levels seen for seasonal influenza in most countries with adequate surveillance.	Pandemic Over/ Recovery	• Assess fiscal impact of pandemic response • Report results of assessment to local authorities and MOH

4.10 Resource Management

VCH Corporate EOC will liaise with all Communities of Care to coordinate allocation of resources identified as critical or have the potential to become a critical. The VCH Corporate EOC will determine allocation of resources based on the needs identified across the Region (including Providence Health Care).

The VCH Corporate EOC will coordinate with the Ministry of Health and/or Health Shared Services BC for specific health related supplies. Using established mechanisms, the Ministry of Health will coordinate with Emergency Management BC for non-health related supplies.

4.11 Recovery Operations

As the pandemic response begins to taper, the EOC will make the transition to recovery operations. This may require re-evaluating which EOC functions are required and which departments and personnel are best suited to staff the functions, as appropriate. The Planning Section is responsible for overseeing the transition from response to recovery.

The recovery phase begins during response and recovery planning should begin while response operations are still underway. This will speed recovery time and reduce losses. Immediate, intermediate and long-term recovery goals should all be considered. Recovery activities can take place within days or months of the incident or can take years. In the case of a pandemic, this will depend of several factors, including scope, duration, number of illnesses and deaths, and the public perception of government's response.

Recovery considerations may include, but are not limited to:

- Programs to support psycho-social and emotional support for those affected by the pandemic, including staff and the public (immediate and long term)
- Staff debriefing
- Recommendations for site/facility/equipment needs to improve response capabilities
- Resumption of clients services that were postponed or cancelled
- Development and implementation of new services as a result of event
- Return of leased, purchased, or borrowed items
- Receipt of equipment that was loaned out
- Refurbishment and replenishment of 'routine' supplies
- Refurbishment of stockpiles and/or establishment of new stockpiles
- Review of current plans, development and implementation of new plans, procedures, programs, and mitigation efforts for the prevention of, or response to, future pandemics

- Reconciliation and completion of paperwork, including after-action reports, filing of activity logs, and financial accounting

4.12 Debriefing, Evaluation and Review

In the event of a pandemic or a pre-pandemic response in which a pandemic was not fully realized, a debrief will be held to solicit feedback from stakeholders across all levels of the organization. The debrief will focus on the effectiveness of all levels of the Pandemic Plan including Planning, Response and Recovery measures. The feedback will be used to develop an After Action Report where areas of improvement will be identified and then used to update the organization's Pandemic Influenza Plan.

CHAPTER 5
CLINICAL MANAGEMENT

5.1 Clinical Care

Case Definitions

The spectrum of illness associated with influenza virus infections is wide, and ranges from asymptomatic infection to fatal disease.

- Clinical Case Definition: When influenza is circulating in the community, the presence of fever and cough of acute onset are good predictors of influenza. The positive predictive value of these symptoms increases when fever is higher than 38°C and when the onset is acute (less than 48 hours after the prodrome). Other symptoms, such as sore throat, rhinorrhea, malaise, rigors or chills, myalgia and headache, although non-specific, may also be present.
- Confirmed cases of influenza are cases 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.

For surveillance purposes, the Public Health Agency of Canada's definition of influenza like illness (ILI) is: "Acute onset of respiratory illness with fever and cough accompanied by one or more of the following: sore throat, arthralgia, myalgia or prostration, which is likely due to influenza. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent." Source: PHAC *FluWatch 2013-2014*

Early clinical data will be gathered to identify unique clinical features of the pandemic influenza strain.

Most Common Clinical Presentations

The onset of disease is usually abrupt: headache, chills and dry cough, followed by fever of 38-40°C that may peak as high as 41°C within the first 24 hours, together with myalgia, malaise, and anorexia.

Chest x-rays and respiratory examination are usually normal, with occasional crackles and wheeze on auscultation. Cough, weakness and fatigue can persist for 1 to 2 weeks and up to 6 weeks.

- The highest rate of seasonal influenza-related serious illness in children occurs in the 6 to 12 months- old age group, after the waning of maternal antibodies. Although uncomplicated influenza in children may be similar to the disease in adults, there are some age-related differences in toddlers and infants: Young children usually develop higher temperatures (over 39.5°C) and may have febrile seizures.
- Unexplained fever can be the only manifestation of the disease in neonates and infants.
- Influenza viruses are an important cause of laryngotracheobronchitis (croup), pneumonia, and pharyngitis-bronchitis in young children. Both types A and B are significant causes of lower respiratory tract infections.
- Gastrointestinal manifestations, such as nausea, vomiting, diarrhea and abdominal pain are found in 40-50% of children, with an inverse relation to age (mainly in 3 years old or younger).

- Otitis media and non-purulent conjunctivitis are more frequent in the young.
- A variety of central nervous system findings, including apnea, opisthotonos (an abnormal posturing condition characterized by rigidity and severe arching of the back, with the head thrown backwards). Seizures may appear in as many as 20% of the infants. Children may also present with symptoms suggestive of meningitis; e.g., headache, vomiting, irritability and photophobia.
- Myositis (inflammation of skeletal muscles) is a complication in young children, especially after infection with influenza B.

The presentation of influenza in the elderly is discussed in section 5.3.

Communication to Clinicians

Clear communication with clinicians in community, residential care and acute care will be crucial and the following steps should be taken:

1. The Chief Medical Health Officer should designate a single source of communication with clinicians.
2. The VP of Communications should designate a communications lead.
3. Provide the first communication the day that novel influenza virus is identified.
4. The first communication should include:
    - When and how information will be provided (faxes, e-mails, websites, etc.).
    - Epidemiology including: incubation period, period of infectivity, those at highest risk of infection, and those at highest risk of complications, current local influenza activity, and activity elsewhere (i.e. is travel a risk).
    - Clinical features: symptoms, complications, mortality
    - Laboratory testing recommendations
    - Antiviral treatment recommendation
    - Antiviral prophylaxis recommendations
5. Recommendations for isolation, personal protective equipment and basic infection control. If no other information is available, provide information based on previous pandemic influenza and seasonal influenza strains.
6. Clearly indicate that information and recommendations will change as the epidemic progresses and clinical and epidemiologic information becomes available.

The use of clinical algorithms and medical directives are recommended as strategies to decrease the strain on clinicians during a pandemic. It must be clear who has authorized the directive and is taking legal responsibility for it, and who is authorized to carry out the directive.

Rapid Isolation of Cases to Reduce Risk of Transmission

Ill individuals in acute or community care who are suspected, or known, to be infected by a novel virus, should be placed on droplet precautions immediately and until the diagnosis is ruled out or the period of communicability is over. Until the period of communicability of the pandemic strain is characterized, patients in health care facilities should be isolated for 7 days. Cohorting confirmed cases in health care facilities of pandemic influenza could be considered.

Airborne precautions are not generally needed for the care of patients with influenza, but are recommended when aerosol-generating procedures are performed. For routine care, airborne precautions are not needed and not recommended. The capacity to provide airborne precautions is quickly overwhelmed in a pandemic, and a change in isolation recommendations causes unnecessary anxiety and confusion among staff.

Microbiologic Diagnostic Tests

The most commonly used laboratory test for influenza is a nasopharyngeal swab or wash. Early in the pandemic, clinicians may be asked to test all patients presenting with influenza like illness. Clearly indicate to clinicians that this is a time-limited recommendation to help characterize the epidemic and that, as the pandemic progresses testing of all patients with ILI will stop**.** Once the pandemic strain is confirmed in a community, virologic tests will be needed only to confirm diagnosis in atypical cases and for surveillance purposes. Rapid tests may be useful for diagnostic and treatment decisions, but in the majority of cases treatment decisions will be based on clinical assessment.

Microbiologic diagnostic tests (bacteriologic or virologic) may be appropriate for secondary assessment (see table 1).

Table 1: Microbiologic Diagnostic Tests

Sample	Test
Sputum (purulent)	Bacteriologic: Gram stain and culture
Blood (only for very ill patients or for patients who do not respond to 48h of treatment with antibiotics)	Bacteriologic: Culture
Nasopharyngeal aspirate (only for atypical cases or for surveillance)	Virologic: Virus antigens, RNA, culture

Health care planners should provide clear information on the expected roles clinicians have in the early detection of pandemic influenza activity, including information regarding:

- when they need to notify their local public health officials,
- when they need to take samples to be sent for virologic testing
- what information should be included with the viral sample
- how to test for influenza

Communicate at the earliest stage that testing recommendations will change as the epidemic evolves. Evaluate testing supplies and ability to stockpile, including examining expiration dates.

Treatment Recommendations Antiviral

Therapy

Initiation of treatment of uncomplicated seasonal influenza in healthy adults with neuraminidase inhibitors within 36-48 hours of illness onset is efficacious. Optimal benefits are obtained if treatment is initiated as early as possible during this 36- to 48-hour window. Starting treatment within 12 hours of illness is desirable. A similar approach is recommended for pandemic influenza.

As with seasonal influenza, antiviral therapy in pandemic influenza should be initiated even if the interval between illness onset and administration of antiviral medication exceeds 48 hours if:

- The illness is severe enough to require hospitalization,
- The illness is progressive, severe or complicated, regardless of previous health status,
- The individual belongs to a group at high risk* for severe disease.

Otherwise healthy patients with relatively mild, self-limited influenza caused by seasonal influenzas are not likely to benefit from neuraminidase inhibitor therapy initiated more than 48 hours after illness onset. A similar approach to pandemic influenza is recommended. However, clinical

judgment is always an essential part of the decision to treat with antiviral drugs.

*At-risk groups and co-morbid medical conditions that predispose to severe influenza (with early surveillance these criteria may change)

- Pregnant women and women up to 4 weeks postpartum regardless of how the pregnancy ended
- Asthma and other chronic pulmonary disease, including bronchopulmonary dysplasia, cystic fibrosis, chronic bronchitis and emphysema
- Cardiovascular disease (excluding isolated hypertension, including congenital and acquired heart disease such as CHF and symptomatic coronary artery disease)
- Diabetes mellitus and other metabolic diseases
- Malignancy
- Chronic renal insufficiency
- Immunodeficiency or immunosuppression due to disease (e.g. HIV infection, especially if CD4 is <200, or iatrogenic, due to medication
- Hemoglobinopathies such as sickle cell disease
- Neurologic disease and neurodevelopmental disorders that compromise handling of respiratory secretions (cognitive dysfunction, spinal cord injury, seizure disorders, neuromuscular disorders, cerebral palsy, metabolic disorders)
- Children younger than 5 years of age (children who are two through four years of age also have a higher rate of complication compared to older children, however, the risk for these children is lower than the risk for children younger than two years of age)
- Individuals 65 years of age and older
- People of any age who are residents of nursing homes or other chronic care facilities
- Individuals<18 years of age who are on chronic aspirin therapy
- Obesity with a BMI≥40 or a BMI>3 z-scores above the mean for age and gender
- Indigenous people

Source: *The use of antiviral drugs for influenza: A foundation document for practitioners.* AMMI Canada Guideline Autumn 2013 available at:

https://www.ammi.ca/Content/Guidelines/Flu%20%28published%20version%29%20FINAL.pdf

Note: Antiviral treatment algorithms and regimens are included in this reference Health care planners should provide clinicians with information about:

- the National and Provincial Antiviral Stockpiles and their intended use for early treatment (within 48 hours of onset of symptoms);
- recommendations for prophylactic use of antivirals
- prescribing information on the two major antiviral medications -- oseltamivir and zanamivir.
- the latest recommendations for the treatment of community acquired pneumonia
- the availability and cost of antivirals and if, when and how antiviral stockpiles will be released.

Planners may need to contact manufacturers to assess availability of antivirals. If antiviral supplies are limited, designate a limited number of pharmacies where available supplies will be deposited. This will limit the necessity for the public to visit multiple pharmacies.

Advise clinicians that treatment recommendations will change as the pandemic evolves and those at greatest risk are identified.

Treatment of Secondary Bacterial Pneumonia

Antimicrobial therapy is indicated for treatment of patients with secondary bacterial pneumonia. Mortality is higher in patients who have pneumonia secondary to influenza. In September 2012, based on the 2009 H1N1 influenza outbreak, the BC Ministry of Health released guidelines for antibiotic treatment of pneumonia secondary to pandemic influenza. These guidelines are for both community and acute care settings and are available at: https://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/office-of-the-provincial-health-officer/antibiotic_therapy_guidance.pdf

Depending on future pandemic viruses and organisms associated with secondary pneumonia that emerge at that time, these guidelines will be amended accordingly. Stockpiling of medications and supplies for treatment of pneumonia based on the most recent consensus guidelines may be required.

5.2 – Acute Care

Once a pandemic is declared, central system awareness and control of critical care resources is required to ensure that, as much as possible, a consistent and equitable standard of care is accessible across the region. The Public Health Agency of Canada's Pandemic Influenza Committee and the associated communications network will activate the influenza contingency plan after the WHO informs them of the onset of the pandemic and will update the provinces about the evolution of the pandemic. Ensure that those who are responsible for making resource allocation decisions in acute and community care are represented on the Regional Pandemic Response Committee.

Portions of the plan may also be activated in severe influenza outbreaks (non-pandemic) that create significant clinical and/or resource challenges. Requests to activate may be brought forward to the Chief MHO by any member of the RPRC recognizing that all areas may not be impacted equally or at the same time.

Acute Care Surge Triggers

It is assumed that all VCH acute care sites have standard protocols and procedures in place to manage a surge of additional patients, including those presenting with influenza-like illnesses. These protocols and procedures should include:

- Patient flow processes
- Over capacity protocol which can be found at: http://shop.healthcarebc.ca/PHCVCHPolicies/BD-00-11-40010.pdf

Emergency Departments

- Emergency departments and primary care physicians will see the largest number of patients. The physical layout of emergency departments and primary care offices may present challenges to provide adequate infection control.
- Public Health will provide infection control recommendations for clinicians in the community and for contracted facilities. Ensure that advice is consistent across the province and is approved by the Regional Pandemic Response Committee.
- Infection control will provide infection control recommendations for acute care and owned and operated residential care facilities. Ensure that advice is consistent across the province and is approved by the Regional Pandemic Response Committee
- Determine patient flow in EDs and establish a contingency plan for a patient surge.
- Determine patient flow and methods of increasing capacity with acute and long-term care.
- A triage tool specific to persons presenting with ILI (see tools and forms 7.4) must be

reviewed, updated and disseminated.

- A communication linkage must be established whereby clinical algorithms and medical directives reach the ER physicians and are disseminated to staff immediately.

Bed Capacity

The Capacity Management Suite (CMS) has been implemented in order to standardize and automate acute patient and bed flow. The CMS provides clinical staff with decision-making capability pertaining to the supply and demand of beds. Status is tracked through real-time bed boards with information to coordinate patient care.

The scope is inclusive of all acute bed resources including planned and unplanned requirements. The unplanned component is the result of the unpredictable nature of Emergency Department patient flow. Balancing requirements for all admissions is a key aspect, given that much of the inpatient caseload is unplanned. CMS can be found at:

http://vch-connect/programs/pcis_corp/Pages/default.aspx

Critical Care -- Ventilator Capacity and Emergency Triage

The emergency ventilator capacity will need to be confirmed at the outset of a pandemic. The Critical Care Regional Council has the responsibility to track regional ventilator capacity. Form 7.5.6 in the Forms and Tools section of this chapter contains the current regional ventilator capacity summary as of December 2013. This information is excerpted from a document entitled "VCH/PHC Regional Ventilator Requirements for Meeting Surge Requirements" (updated December 2013) and is available from the Critical Care Council.

The Ministry of Health, British Columbia Critical Care Services, have done pandemic planning at the provincial level and produced a document entitled "Emergency Triage in a Pandemic: Ventilator Allocation Framework" (October 2012). The framework "highlights the clinical, ethical, and operational structures and principles that must be considered to effectively manage the increased clinical volume during a sustained increase in demand to the health system" and is intended for use in both pandemic planning and outbreak response. Upon a decision by the Provincial Health Officer to commence application of the framework (in an outbreak situation and after consultation with clinical, public health and health system administrators), Health Authorities will implement the framework's processes and protocols for emergency triage in each impacted ICU across BC.

Staffing Capacity

Identifying current health care workers; recruiting additional professionals, non-professionals and volunteers; and managing the training, assignment and support of health care workers to various locations and tasks will be some of the most important pandemic preparedness tasks. Establishment of a team or subcommittee that could take on these responsibilities in each jurisdiction is an important step. For more detail see Chapter 8 – Human Resources. To update individual unit staffing capacity, use form 7.3 in the Forms and Tools section of this chapter.

Bulk Purchases and Stockpiling

VCH needs to review the possibility of rotating stockpiles of critical supplies for health care facilities within their own health service delivery areas. Institutions may specifically wish to keep some older equipment such as beds, which need little maintenance and have no specific "shelf life". Appropriate assessment should be made of the maintenance and training required to ensure the safety and effectiveness of older equipment, and the training needed by staff to use unfamiliar equipment, etc.

The stockpiling of antiviral drugs is performed at the provincial level, however, the need for and feasibility of stockpiling critical medications for the management of patients with influenza and

secondary pneumonia should be addressed further at the regional level. In addition, the region will have to discuss the need to stock larger quantities of medications and equipment to manage persons with co-morbidities, e.g., chronic cardiac and respiratory disease, diabetes, renal failure, that may be exacerbated by influenza infection.

The BC Clinical and Support Services (BCCSS) Supply Chain who provides purchasing, warehousing and delivery functions on behalf of all BC's health authorities needs to be involved in the planning of necessary stockpiling.

- The Supply Chain process includes creating a request for supplies, submitting the order to a supplier/distributor, receiving the product at a regional warehouse, delivering to the end customer/user and paying the supplier/distributor.
- Each Health Authority has a regional HSSBC Supply Chain branch office that services that health authority's requirements.

5.3 Long-Term Care

The symptoms and signs of influenza seen in older adults are similar to those in younger individuals, but most cases are characterized by the presence of dyspnea, wheezing, sputum production and fever. In some, especially the older and frailer, there may be no or minimal febrile response, and they may simply develop confusion or loss of functional capability. Thus, any unexplained acute deterioration in health status associated with or without fever may be a manifestation of influenza infection in elderly individuals.

Although influenza viral pneumonia and bacterial pneumonia following influenza are considered the main causes of influenza-related hospitalization in the elderly, many such hospitalizations are attributed to the exacerbation of chronic obstructive pulmonary disease or congestive heart failure following the viral infection.

General Management
The goals of general management are to maintain comfort, to preserve functional status and to limit complications. Specific aspects of management for influenza and its complications include:

- **Maintenance of hydration:** LTCFs should be proactive in providing additional supports to prevent dehydration (see "Early Detection and Prevention of Dehydration on Older Adults, Quick Reference Guide," available from Professional Practice). This may be achieved through oral fluids or if necessary through parenteral fluids. Where parenteral fluids are required, hypodermoclysis is an option rather than intravenous therapy and may be more practical in the long-term care setting.
- **Oxygenation:** Patients with an oxygen saturation of <90% on room air should have oxygen supplementation – this may require additional preparation in early pandemic phases as not all facilities will have piped in oxygen.
- **Antipyretics and analgesics: Medications** may be required to limit discomfort associated with myalgia and arthralgia. Acetaminophen will usually be sufficient.
- **Other therapies: Medications** such as antitussives may occasionally be indicated depending on the clinical features of the given patient.
- **Specific therapy:** Specific therapy is directed at the influenza infection itself and influenza complications including secondary pneumonia or aggravation of pre-existing disease.

During the early stages of the pandemic, LTCFs should facilitate access to antivirals and antibiotics as appropriate (see antivirals chapter for further details on antiviral-related processes). When antivirals/antibiotics are not available, symptom control, hydration and oxygenation may be the only management approaches. To ensure this level of care is available, LTCFs need to:

- Determine and order necessary medical supplies
- Develop clinical procedures/protocols and provide the necessary training to staff on clinical management in the absence of antivirals/antibiotics

Transfer to and from Acute Care Facilities
In a pandemic situation, the goal will be to manage patients with influenza within the LTCF. This may require the establishment of acute care areas within LTCFs and installation of additional equipment to support such areas.

Discharge Criteria from the "Acute Care Area" Designated for Influenza Patients
It is important to define when patients are clinically stable and can be moved back to the usual residential area. Patients will be considered clinically stable when, in the preceding 24 hours:

- They are not acutely confused
    - Assessment may use a standardized tool like the CAMI
- They are able to be fed orally or by nasogastric tube
    - Note that nasogastric tubes are not typically supported in residential care, but may be considered in the context of managing acute care patients out of hospital
- Their vital signs are stable. Values should be established ahead of time. (e.g., O_2 saturation >90%, heart rate <100/minute, respiratory rate < 24/minute, blood systolic pressure >90 mm Hg, temperature <38°C).

5.4 Primary Care

With the emergence of the 2009 pandemic H1N1 influenza (pH1N1), the importance of the primary care provider's (PCP) role in the community healthcare response has become increasingly evident. Often serving as the entrance into the healthcare system, PCP offices are likely to play a large role in limiting morbidity and mortality and alleviating surge on the hospital emergency department. Previous pandemic plans did not fully support these roles. To address this issue, the following tools have been developed.

The Ministry of Health has created "*Guidelines for Pandemic Infection-related Office Management and Infection Control for Private Physicians"* (September 2012). This document provides information, tools and resources to assist primary care providers in caring for patients during a pandemic outbreak. The document is available at:

https://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/office-of-the-provincial-health-officer/reports-publications/bc-pandemic-influenza-private-physican-office-infection-control-guidelines-2012.pdf

The *"Abbreviated Pandemic Influenza Plan Template for Primary Care Provider Offices"* is a planning tool developed based on input from stakeholders (PCPs, PCP office managers, hospitals, local and state public health departments, and local and state emergency management agencies) during a CDC-sponsored meeting in August 2009. It is intended to assist PCPs and office managers with preparing their offices for quickly putting a plan in place to handle an increase in patient calls and visits, whether during the 2009-2010 influenza season or future influenza seasons. It can be found at:

https://www.cdc.gov/h1n1flu/guidance/pdf/abb_pandemic_influenza_plan.pdf

5.5 Forms and Tools

Form 5.5.1 Emergency Ventilator Capacity Considerations Worksheet
Form 5.5.2 Inventory of Ventilators Worksheet
Form 5.5.3 Staffing Capacity Assessment Tool
Form 5.5.4 IPAC Guidelines for Patients Presenting to Triage in the Emergency Department with Influenza-Like Illness (ILI)
Form 5.5.5 VCH/PHC Regional Critical Care Contingency Plan
Form 5.5.6 Province of BC Emergency Triage in a Pandemic: Ventilator Allocation Framework Total Regional Requirements to Meet Escalating Surge Levels for Vancouver Coastal and Providence Health Care (December 2013 update).

Form 5.5.1 Emergency Ventilated Bed Capacity Considerations Worksheet

Property	Intensive Care (ICU)	Coronary Care (CCU)	High Dependency	Recovery Room (PAR)	Operating Room (OR)	Emergency Department	Neuro-Science	Sleep Study Laboratory	Other
Suction									
Oxygen outlet									
Medical air outlet									
Airflow (negative pressure)									
Airflow (positive pressure)									
Room monitoring									
Physical bed									
Space, but no physical bed									
Total									

Form 5.5.2 Inventory of Ventilators Worksheet

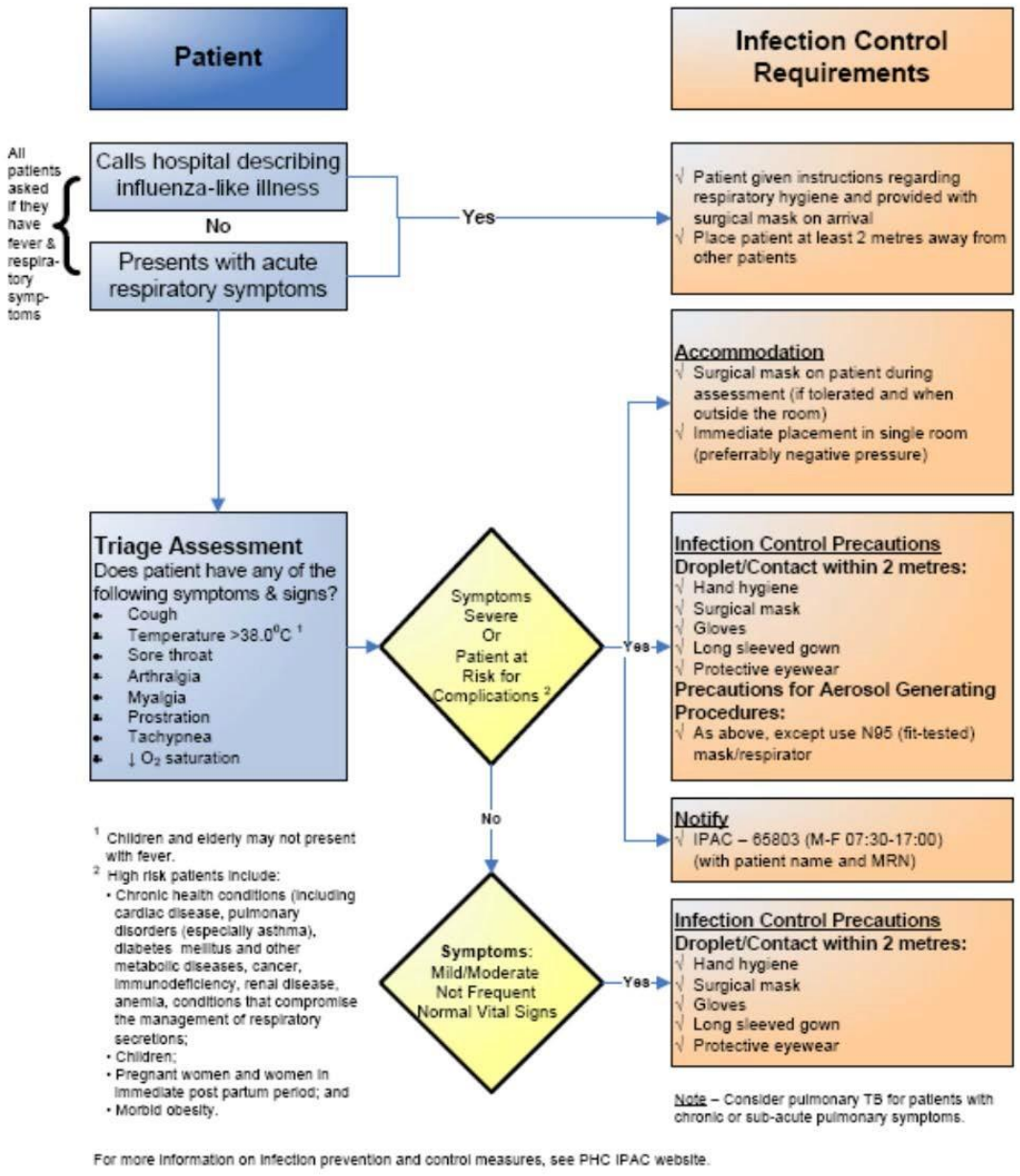
Type of Ventilator	Intensive Care (ICU)	Coronary Care (CCU)	CSICU	Recovery Room (PAR)	Operating Room (OR)	Emergency Department	Storage	In Repair	Sleep Study Laboratory	Physiotherapy	Other
PB 840`											
Avea											
PB7200											
Transport LTV's											
Siemens 300											
Siemens 900C											
High Frequency Oscillator											
Noninvasive Ventilators (BiPAP)											
Babylog (Neonatal Vent)											
Totals											
TOTAL NUMBER OF VENTILATORS											

Form 5.5.3 Staffing Capacity Assessment Tool

Patient Care Area	RN/RPN Staffing					LPN Staffing					PCA Staffing				
	D8	D12	N8	N12	Casual	D8	D12	N8	N12	Casual	D8	D12	N8	N12	Casual
Totals															

D8 / D12 = 8 / 12 hour day shift; N8 / N12 = 8 / 12 hour night shift;

Form 5.5.4 Guidelines for Persons Presenting to ER's With Influenza-Like Illness (ILI)



Resource: Providence Health Care

Form 5.5.5

VCH/PHC REGIONAL CRITICAL CARE CONTINGENCY PLAN

Latest Revision: July 2013

Definition and Purpose

The Regional Critical Care Contingency Plan (CCCP) is a staged VCH-wide response that is used to manage decision-making for incoming patients to the ICUs, combined ICU/CCUs and other Critical Care Units (relevant for a specific site) within all Vancouver Coastal Health (VCH) hospitals, inclusive of Providence Health Care (PHC) sites. The CCCP is initiated when individual sites are at or above capacity and have commenced their individual site-based response plans to address the situation. The decision to escalate beyond an individual site or sites can be activated when demand for placement of incoming patients (internal or external to the site) persists and represents a potentially unsafe situation for accommodating an additional patient.

Rationale, Breadth and Scope of Responsibilities

The CCCP was developed to ensure that critically ill patients receive safe and appropriate care irrespective of their place of origin. As a general rule, all physicians and staff at VCH/PHC hospitals have a shared responsibility to respond to a pending critical care capacity overload situation using the staged response outlined within the CCCP. However, given the specific population addressed by the CCCP, site-based Intensivist leads, their delegates combined with direct input from their nursing and allied health colleagues, The Patient Transfer Network (PTN) will ultimately be responsible to determine, in partnership with the referring physician, as to the best decision for assuming transfer of duty to care to VCH/PHC.

Relationship to Emergency Management Plans

Emergency plans such as Code Orange, Emergency Operations Centre activation procedures, and related plans and procedures exist and may be employed or activated at any stage of the Critical Care Contingency Plan (CCCP). Note that the CCCP is *not* a Code Orange Plan (i.e., multi- or mass-casualty response plan) and does not trigger Code Orange activation. However, the reverse may be true, i.e., that a Code Orange plan activation may trigger a stage change for the CCCP (e.g., the Code Orange situation may prompt an ICU to move to Stage 3 from Stage 2). Note also that the Emergency Operations Centre (EOC) is an emergency coordination point for the hospital and/or health authority, and is an important resource in emergencies and disasters. The hospital's EOC (or, in smaller hospitals, the Incident Command Post) will likely be activated in a Code Orange response, and can provide coordination resources and support across departments (including the ICU) and agencies. In the event the CCCP requires inter-agency coordination (e.g., within the health or between VCH/PHC and other health authorities, as the stages escalate, the EOC should be considered as a possible coordination resource. For Emergency Management advice, resources and/or EOC activation support:

HEMBC can be reached at 1-855-675-2436

The VCH Admin on Call or PHC Leader on Call may also provide support.

Guiding Principles for Decision Making

STAGE 1 (Within site response)

Guiding principle
All ICU beds ought to be utilized prudently and accessed regularly for the right patient in the right bed at the right time**.**

STAGE 2 (Multiple sites in the region)

Guiding principle
Critically ill patients should not be transferred to alternate ICU's if they are already being cared for in a CC setting unless such transfer are to a higher level of care as this would unnecessarily expose critically ill patients to the increased risk assumed by transferring a critically ill patient.

STAGE 3 (All sites in region)

Guiding principle
Depending on specific needs of the critically ill patient population, it may be necessary to initiate a Stage 3 response/coordination for a specific site to ensure the site specific mandate and specialty services can be maintained.

STAGE 4 (Escalation beyond VCH boundary)

Guiding principle
The Health Authority has an obligation to coordinate a plan to look for resources to provide care for critically ill patients if unable to meet demand. In order to ascertain appropriate resources for patients, facilitating transfer to external partners is required.

Refer to "Summary of Actions and Responsible Parties Table" for detail.

De - activation of Critical Care Contingency Plan (CCCP)

The CCCP (at any Stage) is considered "non-active" when the over-capacity situation within the ICU or combined ICU/CCU or other relevant CC Units at the respective site(s) is declared resolved and the Critical Care Units impacted can function safely and can accommodate the "normal" flow of incremental patients for placement in the Unit(s).

3rd Party Partner Roles

PTN's role is that of facilitator, advisor and implementer of aligned action plans in direct dialogue with VCH staff.

Documentation of Decision Process and Outcomes (During any stage of CCCP)

- Legal input provided to VCH has indicated that all decisions regarding the result of any stage of the CCCP, and with respect to any and all individual patients, be documented on the patient's chart by the physician of record. That is, when the patient is received by the receiving site, the care documentation should reflect the transfer decision and the time the patient arrived and when patient care commenced by the receiving site. Similarly, the transferring (or sending site) can document the decision to transport and the time that the transport was requested and when the transport team arrived to transport to referring site.

- PTN recorded information is considered valid as evidence of decision process between sending and receiving physicians. There is no requirement to provide further evidence of decision process but decision outcomes should be documented.
- During the various stages of the CCCP (whether at site or multi-site levels) within VCH/PHC, it is considered valuable to document the outcome of the decision process. This can take the form of notes taken by Access Staff including decisions taken, parties involved on conference call and date and time that conference call commenced and concluded.

Critical Care Contingency Plan (CCCP): Summary of Actions and Responsible Parties (Stage 1 through Stage 4)

Stage	Initiator	Responsible for Action	Actions
Critical Care Contingency (STAGE 1)			
Demand exceeds capacity for a given ICU or combined ICU/CCU within the region; Stage 1 of Contingency Plan represents a "routine occurrence" for all sites;	ICU and ICU/CCU Managers (or designate) Other Critical Care Managers/ MD Leads specific to a given Site	1. ICU or combined ICU/CCU Managers or other Critical Care Unit Managers 2. ICU/CCU Charge RN (by shift) and Clinical Coordinator (if on shift) 3. Site Critical Care Medical Director or designate 4. Site Access Leader ***On ALERT:*** PTN/BCAS - update for anticipated triage of incoming patients prior to arrival at a given VCH site	• Unit review of all patients in Critical Care Unit or Units to assess patient condition and scope of options likely to need consideration when over capacity within Unit(s). • Identify patients meeting internal or external discharge criteria (bed, service and transfer location within the site) • Identify patients that can be repatriated to home hospital (within or outside of VCH) and assemble roster of applicable patients. • Activate internal transfer process or to home region via PTN where feasible • Review nursing workload (for changes in patient condition) that would facilitate 2:1 nursing coverage for specific patients and consolidate care as deemed safe • If physical space permits, authorize staffing over capacity as immediate, short term response including overtime and call-back • In community hospital sites, review ability for hospital-wide reallocation of nursing coverage to support combined ICU/CCU staff (assigning unit-based staff to less complex patients or buddy with ICU RN to extend patient management capacity) • At quaternary & specialized tertiary sites, review options for skilled staff from other Critical Care units/High Acuity Units to assist ICU staff (this would include PAR, CSICU & related Units within a site • Mandatory attendance of ICU Charge RN at VCH Hospital Access meeting (typically 1100 hours) is required.

Stage	Initiator	Responsible for Action	Actions
			• Access leader to communicate at 1100 region-wide call to PTN to alert regarding full capacity (or directly from ICU/CCU Charge RN) • All sites to update PTN web site (for bed status at site) q4h and when status changes • IF UNRESOLVED, SITE INITIATES ACTIVATION FOR STAGE 2
Critical Care Contingency (STAGE 2)			
Demand exceeds capacity for 1 or more sites within the Region and requires placement access to alternate Critical Care site within VCH or to home region. PTN to initiate call as needed and/or when region-wide status changes. Existing use of 1100 region-wide call will continue, but augmented with 2nd Call (ICU specific) during late	ICU and ICU/CCU Managers(or designate) Other Critical Care Managers/ MD Leads specific to a given Site	1. ICU or combined ICU/CCU Managers or other Critical Care Unit Managers ICU/CCU Charge RN/ delegate (by shift) 2. ICU Site Medical Directors or designate 3. Site Access Coordinator • BCAS/PTN – engage for triage of incoming patients prior to arrival at a given VCH site ***On ALERT:*** Site Access Leader/Evening	• Site review of patients meeting transfer criteria from critical care (bed, service, external transfer location to home region) including need for alternate critical care Unit within region (or incoming ER patient who requires critical care within region) • ICU or combined ICU/CCU site(s) (at or exceeding capacity) or other relevant Critical Care Unit, call PTN to alert of requirement to place patient(s) in alternate VCH facility (or home region) in discussion with attending physician (dependent on patient condition and managed on an individual case by case basis) • PTN to engage Access Leaders, ICU Managers (or designate),other relevant CC Managers/MD Leads and Site Critical Care Medical Directors/Intensive On Service on teleconference (as required) ; PTN to maintain contact roster at provincial level; VCH to maintain contact roster for all acute hospital sites internal to VCH; • PTN to action transfer to alternate VCH ICU, combined ICU/CCU or other appropriate critical care unit within region or to home region under appropriate direction from Site or Unit Medical Leads (in consultation with other site-based clinical personnel)

Stage	Initiator	Responsible for Action	Actions
afternoon hour TBD by PTN; Other calls PRN as deemed necessary		Supervisor at relevant site(s)	• Fan-out call placed by PTN to all regional Critical Care Units to advise of status from teleconference (i.e. either RESOLVED OR UNRESOLVED); If UNRESOLVED, MOVE TO STAGE 3
Critical Care Contingency (STAGE 3)			
Demand exceeds capacity for all ICUs and combined ICU/CCUs within the Region	ICU and ICU/CCU Managers (or designate) Other Critical Care Managers/ MD Leads specific to a given Site	1. ICU or combined ICU/CCU Managers or other Critical Care Unit Managers 2. ICU Charge RN (by shift) 3. ICU Site Medical Directors or designate 4. Acute Care Service Directors 5. Critical Care Regional Medical Director 6. Site Access Coordinators 7. BCAS/PTN – engage for triage of incoming patients prior to arrival at any VCH site ***On ALERT:*** Site Access Leader/Evening Supervisor at relevant site(s); Site Exec. on Call	• PTN to engage Site Access Leaders, ICU or combined ICU/CCU Managers (or designate), other relevant Critical Care Units/MD Leads, Critical Care Medical Directors, Acute Care Service Directors, Regional Critical Care Medical Director, PTN and SL Exec On Call on teleconference • Assembled team assesses capability for managing ANY additional patients identified in Stages 1 and 2 (including use of PAR overflow, high-dependency units (primarily VGH and LGH) and overflow capacity (all sites) • Pending conclusions drawn from region- wide assessment and if deemed, UNSAFE for ANY ADDITIONAL PATIENTS TO BE ADMITTED WITHIN REGION, then Stage 4 ICU Contingency is ACTIVATED • Provisions made to advise Surgery regarding high potential to impact OR Site schedule for patients that would require high Acuity unit and/or ICU or combined ICU/CCU or other Critical Care Unit stay for the recovering patient (within first 24 – 48 hours) and/or alternate options from Surgery (to mitigate high risk situation for critical care capacity) Fan-out call placed by PTN to all regional ICUs or combined ICU/CCUs to advise of status from teleconference (i.e. either RESOLVED OR UNRESOLVED); If UNRESOLVED, MOVE TO STAGE 4

Stage	Initiator	Responsible for Action	Actions
Critical Care Contingency (STAGE 4)			
Demand exceeds capacity for all ICUs and combined ICU/CCUs within the Region and NO options exist to manage ANY ADDITIONAL PATIENTS WITHIN REGION	Regional Critical Care Medical Director and ICU Medical Directors with ICU or combined ICU/CCU Managers (or designate) Other Critical Care Managers/ MD Leads specific to a given Site	1. Critical Care Site Medical Directors 2. Acute Care Service Directors 3. Critical Care Regional Medical Director 4. ICU or combined ICU/CCU Managers 5. ICU Charge RN (by shift)or other Critical Care Unit Managers 6. Site Access Coordinators 7. PTN/BCAS 8. Site and VCH Executive On Call	• PTN to engage Site Access Leaders, Critical Care Area Patient Care Managers, Critical Care Area Medical Directors/designate, Regional Critical Care Medical Director, BCAS, Site Medical Directors and SLExec On Call, engage on priority teleconference • Assembled team determines alternate locations (outside of geographic accountability) for placement of patients • All pending critically ill patients are assessed by Site Intensivist On Call with Critical Care Regional Medical Director (or designate) as deemed appropriate, PTN (regarding care and transfer/transport arrangements) to alternate location within BC or externally to BC (e.g. Calgary, Edmonton, and Washington State (Seattle) as deemed appropriate by Sending/Receiving Physicians with input from PTN. • SL Exec On Call notifies Site Medical VPs and Corporate VP Medical of Stage 4 Critical Care Contingency Status. Team sessions continue as necessary until situation is resolved and/or alternate solutions developed to mitigate against risk to safe care of the critically ill (irrespective of current location) • Fan-out call placed by bcBedline to all Critical Care Units to advise of status from teleconference (i.e. either RESOLVED OR UNRESOLVED). • If declared. UNRESOLVED, then the Executive Leader on Call may determine to invoke SYSTEM WIDE ALERT INCLUDING NOTIFICATION OF OTHER HEALTH REGIONS, MOH & OTHER RELEVANT 3RD PARTY PARTNERS; • As a last resort, the CCCP can be over- ridden to activate the VCH Disaster Response Plan.

Form 5.5.6

Emergency Triage in a Pandemic: Ventilator Allocation Framework - Regional Status

The ***Provincial Ventilator Allocation Framework*** has made recommendations as to what each site ICU should be able to support in the event of a pandemic surge. Listed below are the estimated **ADDITIONAL** ventilators that would be required by each site to meet this surge demand. Currently, the sites within the region have the following ventilator inventories.

It is important to consider that the site "total" ventilator fleet cannot be relied upon as a means to meet surge capacity. In fact – many sites achieve a "low" to "medium" surge in the absence of pandemic and ventilator resources become scarce and limited without the pandemic lens.

Day to day workflow needs to be maintained in the event of "surge". This document serves to "estimate" the ventilator requirement for daily workflow in order to clearly identify the ventilator resource availability in the event of a 15% / 25% / 35% / 40% surge.

Total Regional Requirements to meet escalating surge levels for Vancouver Coastal and Providence Health Care (December 2013 update).

Site	Total Ventilator Count	Available machines (excludes ventilators presumed out for repair OR dedicated to specific areas)	15% Ventilator Surge Requirement	25% Ventilator Surge Requirement	40% Ventilator Surge Requirement	Total Site Ventilator Surge Requirement
VGH	80	54	36	39	43	**Surplus of 11 machines**
Richmond (RH)	12	8	9	10	11	**DEFICIT of 3 ventilators to meet surge**
Lion's Gate (LGH)	13	11	10	11	13	**DEFICIT of 2 ventilators to meet surge**
St. Paul's (SPH)	41	24	17	19	21	**Surplus of 3 machines**
Mt. St. Joseph's (MSJ)	8	5	5	5	6	**DEFICIT of 1 ventilator to meet surge**
Total Region	**154**	**104**	**77**	**84**	**94**	**Regional Surplus of 8 ventilators**

Total Number of Ventilators that would be required to meet a 40% Surge Capacity as per the Province of British Columbia Emergency Triage in Pandemic Ventilator allocation Framework (December 2013) is 94.
The region (excluding ventilators that are used to support daily work in other areas than critical care and excluding regular biomed maintenance) has 104 ventilators available.
Regionally there is an 8 ventilator surplus above the 40% surge requirement.

CHAPTER 6
HUMAN RESOURCES

6.1 – Human Resources Management

Planning Assumptions

Current disaster plans primarily address multi-casualty, short-term, localized emergency situations. In a pandemic the impact is virtually worldwide and the duration in any one location may be up to 12 weeks. Since most BC regions will be affected simultaneously, the sharing and exchange of resources may not be possible between regions.

For the purposes of resource planning for pandemic influenza the following assumptions have been made:

- **It is unlikely that there will be a "Declaration of Emergency".**
  Our plan does not assume that a National or Provincial Emergency would be declared, as this is unlikely to occur in the event of a pandemic.
- **The health care system may be overwhelmed.**
  There may be an increase in physician visits, hospitalizations and deaths putting the health care system under stress. BC hospitals are presently running at or close to maximal bed capacity and budget cutbacks and staff shortages have meant that we have already reduced elective admissions. Increasing or even maintaining existing bed capacity requires committed human resources. During a pandemic, shortages of personnel, supplies and equipment can be expected to limit the ability of institutions to respond to a significant increase in patient volume.
- **The best use of resources will be achieved through system-wide prioritization.**
  A pandemic will require a regional prioritization of needs and resources, across the health care system, not just a review of resources at a single institution. For example, in terms of human resources, health care professionals may need to be moved from immunization clinics to hospitals or from one hospital to another. Beds, ventilators and other equipment may need to be moved to alternate care sites. This still requires a review of logistical, ethical, and practical issues throughout the region.
- **There will be limited transfer of resources.**
  The global nature of the pandemic means resources from other regions cannot be depended upon for meeting additional requirements during a pandemic. However, peaks in local activity may allow for transfer of resources within the province.
- **The usual supply lines will be disrupted.**
  The demand for medications, medical/surgical and other supplies will increase substantially around the world and across the country. Suppliers may experience difficulties responding to increased demand due to staff shortages, raw material shortages and transportation disruptions. Because most medications, equipment and supplies are produced outside of Canada, there will be barriers to obtaining supplies, which include embargoes on medications, cross-border issues and transportation problems resulting from staff shortages.
- **Enact the essential services plan.**
  Staffing for health care workers across program areas may be effected by increased demand across the health care system. There may also be increased staff sick time due to the pandemic. This means the essential services plans may need to be enacted. Managers can refer to pre-established essential services plans when making staffing decisions.

6.2 Planning for Optimal Use of Health Care Workers

The work involved in identifying current health care workers who could be re-located within an institution and recruiting additional health care professionals, other health care workers and volunteers who could offset some of the increased demands on health care workers is described below:

Planning Considerations:

- Appoint a human resource/psychosocial support management team. A combination of professionals with expertise in human resource issues, pandemic planning, health care administration, infection control, occupational health and safety, and volunteer organizations would be desirable for this planning team or subcommittee.
- Identifying current health care workers; recruiting additional professionals, non- professionals and volunteers as needed; and managing the training, assignment and support of health care workers to various locations and tasks will be some of the most important pandemic preparedness tasks.
- Establishment of a team or subcommittee that could take on these responsibilities in each HSDA is an important step.

Placement of Personnel:

During a pandemic, health care workers may need to be reallocated from their usual roles and settings. For example, trained health care professionals may be required to expand their role to include the supervision of volunteers and other staff in the acute care settings, affiliated clinics and non-traditional sites.

While it is likely that all health care workers will be needed at their usual acute care facility, consideration should be given to the source of staff for other sites including:

- Triage Sites – community triage sites: at clinics, non-traditional sites, attached to an existing hospital.
- Non-Traditional Sites – including emergency care centres, emergency hospitals, support hotels, nursing stations, etc.
- Vaccination Clinics –clinics in acute care sites, etc.

It is important to recognize that the expertise needed for the clinical management of influenza patients predominantly resides within the health care facilities. Positioning some staff at these sites may offset the demands on the health care facilities and ultimately lead to the optimal use of human resources.

See BC's Pandemic Influenza Response Plan – Human Resource Planning Guide Appendix A: Care Competencies.

This site provides an overview of both the skill-sets required for each category of competencies, along with breaking-down the various roles required during a pandemic according to competences. It can be found at:
http://www.health.gov.bc.ca/pandemic/response/psychosocial.html

Review Scopes of Practice:
Even in acute care settings, delegation of tasks and authority will, by necessity, change during a pandemic. A shortage of staff and increase in the number of patients may necessitate cancellations of surgery, tests and other procedures. Staff may be reassigned from their usual roles to make best use of their skills. Retired and foreign-trained personnel may be asked to step in.

- Establish a process, in conjunction with existing emergency plans, to assess the work needed and skills required for each task. Regions need to look at the process of intake, reception, triage, clinical care, clean up, etc. and assess additional workers or sources of workers who already have the skills to be slotted into these jobs.
- Review the recommendations on patient assessment and management in the Clinical Management Guidelines in this chapter that will indicate the needs for various skills at various points in patient care and determine who may provide those during a pandemic.
- Communicate with health care professionals about pandemic needs.

Recruit Professional Staff for the Pandemic Response:
Within facilities, consideration should be given to reassigning medical and nursing personnel with administrative, research and educational assignments to clinical duties. Alternate sources of HCW would include, but are not limited to:

- Retired physicians or nurses (need to have assurance that work during a pandemic would not affect their pension plans)
- Physicians or nurses currently not working in clinical health care (i.e., working in education, administration, research, private industry)
- Trainees (i.e., medical students and nursing students)
- Registered nursing assistants
- Patient care assistants
- Emergency medical technicians
- Veterinarians
- Pharmacists
- Therapists (respiratory, occupational and physiotherapists)
- Technicians (laboratory, radiography)
- Health care aides

See BC's Pandemic Influenza Response Plan – Human Resource Planning Guide Appendix C: Key Priority Health Professionals.

This appendix provides an overview of health professionals, their regulatory body, regulations and union affiliation. It can be found at: http://www.health.gov.bc.ca/pandemic/response/psychosocial.html

6.3 – Management of Public Health Care Resources

Expanding Surge Capacity
An effective response must allow for maximizing the capacity of public health personnel from varied backgrounds to respond quickly, including medical health officers, environmental health officers, public health nurses, and infection control officers. Several interdependent issues require further consideration in planning pandemic human resource requirements, including licensing, delegation, liability, and organizational infrastructure.

Licensing and Delegation

Increased workload may necessitate hiring staff to work under the authority of Medical Health Officers (MHO's). Professionals who have recently retired or moved to BC from other jurisdictions may be an important source of staff. However, without a current license to practice, there is potential delay, while respective licensing bodies process applications for (re) licensure. Public Health Nurses and Environmental Health Officers (EHO's) routinely work under delegated function, and the capacity of MHO's to delegate will increase the ability of current and newly hired staff to respond quickly. Provincial legislation also allows for "emergency officers" to be appointed as part of emergency response. As for all work of MHO's, the following will apply during an emergency:

- The MHO has immunity when operating within the scope of the Public Health Act. MHO's are appointed by Regional Health Authority Boards and have immunity through Order in Council (OIC) appointment from the Lieutenant Governor in Council. An MHO has a specific geographic area of responsibility (Health Service Delivery Area), but can act in any part of the Health Authority.
- MHO's have coverage for liability/negligence through the public employee's Health Care Protection Program (HCPP).
- The delegation of a medical act to persons other than physicians may be appropriate in certain circumstances in the interests of good patient (population) care and efficient use of health care resources (College of Physicians and Surgeons of BC). However, certain medical acts under the authority of the OIC cannot be delegated, and additional staff may require OIC for duration of response.

Liability

HCPP provides liability coverage for salaried employees. Contracted professional staff is normally required to purchase liability insurance privately.

Table 1

Reserve Sample Pools of Health Care Personnel to be Contacted in Order to Expand Surge Capacity

INSTITUTION/ORGANIZATION	DEPARTMENT/TRAINING
Canadian Institute for Public Health Inspectors (CIPHI)	• Public health inspectors
British Columbia Institute of Technology (BCIT)	• Environmental Health • Nursing
University of British Columbia (UBC)	• Nursing • Pharmacy • Dental • Health Care and Epidemiology
Langara College	• Nursing
Vancouver Community College	• Nursing

INSTITUTION/ORGANIZATION	DEPARTMENT/TRAINING
Vancouver Coastal Health (VCH)	• Employee Engagement • Casual employees/nursing • Physicians • Pharmacists • Dentists • Public health inspectors • Occupational health • Epidemiologists
Pension Plan of British Columbia	• Recently retired nurses, physicians, EHO's , epidemiologists

6.4 – Psychosocial Services for Health Care Providers

Although psychosocial pandemic planning may place additional demands on planning processes that are already stretched for resources, not addressing these concerns could have a cascading effect that derails existing plans. The primary objective of a psychosocial response to any disaster or public health emergency is to restore and increase individuals' capacity to go on with their lives by addressing their social, emotional, psychological and physical needs. It includes supporting and strengthening social systems (e.g. social support networks) and helping individuals to regain a sense of control, diminish psychological arousal, effectively manage stress and improve adaptive coping strategies. There a number of specific goals:

- Protect and promote psychosocial well-being and resilience;
- Mitigate, prevent or treat the mental and/or behavioural health issues that arise for individuals in response to the disaster and/or the process of recovery from that disaster;
- Support or restore a sense of confidence, competence, efficacy and trust;
- Support or enhance individuals' adaptation to the stress and distress and their capacity to respond to the adverse impacts of a disaster through a sense of empowerment and responsibility, and an action orientation;
- Support workers' willingness and ability to continue to work;
- Improve support of and adherence to other public health measures

Planning Considerations:

Please refer to the Canadian Pandemic Influenza Plan, Annex P entitled Pandemic Influenza Psychosocial Annex found at:

https://www.canada.ca/en/public-health/services/flu-influenza/canadian-pandemic-influenza-preparedness-planning-guidance-health-sector/pandemic-influenza-psychosocial-annex.html

This document outlines a suggested planning framework for addressing the psychosocial implications of a pandemic influenza or any large-scale public health emergency and is intended for, but not limited to, planners at all levels of government and non-governmental organizations.

CHAPTER 7
PUBLIC HEALTH MEASURES

7.1 Introduction

This chapter summarizes the range of measures that can be used in the community to reduce transmission of infection during a pandemic, collectively known as public health measures. The evidence document to support these recommendations can be found on the Public Health Agency of Canada web page found at: https://www.canada.ca/en/public-health/services/flu-influenza/canadian-pandemic-influenza-preparedness-planning-guidance-health-sector/public-health-measures.html.

Additional information can be found on the Public Health Agency of Canada site entitled: *Canadian Pandemic Influenza Preparedness: Planning Guidance for the Health Sector*. The web page can be found at: https://www.canada.ca/en/public-health/services/flu-influenza/canadian-pandemic-influenza-preparedness-planning-guidance-health-sector.html.

Implementation of any public health measures should be based on the severity of disease caused by the pandemic virus. The severity may range between mild, moderate, and severe disease, and will be assessed based on epidemiology of the virus and disease outcomes.

Decisions made by public health will be influenced by the emerging information on the pandemic virus. As cases appear in multiple jurisdictions, the MoH and BCCDC, in consultation with local MHOs, will make decisions about the use of particular public health measures.

Each health authority will attempt to use the same triggers to activate the same measures; however the timing of measures may vary from health region to health region depending of the epidemiology of the pandemic locally.

Unique Settings

The unique characteristics of certain settings (e.g., homeless shelters) and communities (e.g., remote or isolated or communities with a large proportion of high risk individuals) may require that these recommendations be adapted to individual circumstances.

For example, **communal settings** such as shelters may wish to develop processes for identifying ill individuals, isolating ill individuals that do not require hospitalization, education on respiratory and hand hygiene, and connecting individuals to medical care if needed.

Being well prepared is critical to ensuring that **on-reserve First Nations communities** can mitigate the effects of influenza pandemic. It is important to consider the many variations that exist among jurisdictions in the delivery of health service for on-reserve First Nations communities. Additional information pertaining to First Nations communities planning considerations can be found at: https://www.canada.ca/en/public-health/services/flu-influenza/canadian-pandemic-influenza-preparedness-planning-guidance-health-sector/influenza-pandemic-planning-considerations-in-on-reserve-first-nations-communities.html

Public Health Communications

It is **recommended** that the rationale for each public health measure that is proposed or implemented be communicated to the public, including the ethical framework that guided the decision process.

It is recommended that the rationale for each public health measure that is proposed or implemented

be communicated to the public, including the ethical framework that guided the decision process.

Self-care - including diagnosis, referral, self-treatment, treatment of family members, and preventive measures to avoid exposure to influenza - will be an important public health measure to minimize the effects of the pandemic. The BC Ministry of Health has developed a booklet entitled "*Pandemic Preparedness – Be Prepared, Be Well. How to care for yourself and the people you care about*" (September 2012). By using the information provided in this booklet, members of the public can safely look after themselves and people at home and will know whom to contact if they need advice. This publication contains a series of fact sheets and tools to help you and your family through a pandemic. This booklet can be found at: https://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/office-of-the-provincial-health-officer/reports-publications/bc-pandemic-influenza-self-care-guide-2012.pdf Measures to Reduce Risk of Transmission of Infection

Isolation:

- It is **recommended** that people with influenza-like-illness, regardless of diagnosis or laboratory testing results, be advised to self-isolate while they are symptomatic.
- It is **recommended** that the duration of self-isolation be until symptoms have resolved and the person is able to fully participate in normal daily activities.
- It is **recommended** that self-isolated patients and household contacts contact HealthLink BC for up-to-date guidance. Guidance should include instructions surrounding use of separate bedrooms and bathrooms, use of masks, and household cleaning.

Face Masks:

Symptomatic Persons

- It is **recommended** that symptomatic individuals wear facemasks when around others in the household or if they must go out in public to decrease transmission to others. However, self-isolation is still preferable as masking does not fully reduce the risk of transmission. There is little evidence that N95 respirators offer significant additional risk reduction of transmission from symptomatic individuals above that of surgical masks; therefore surgical masks are recommended for symptomatic individuals.
- It is **recommended** that people ill with influenza-like illness wear a facemask when a caregiver is in the room, and that caregivers wear a facemask when providing care within 2m of a symptomatic patient who is unable to wear a facemask.

Exposed Persons

- It is not recommended that exposed but *asymptomatic* individuals wear masks.

Well Persons

- It is **not recommended** that well individuals who are not caring for ill persons wear masks. Ongoing hand hygiene for everyone and cough hygiene/masks for symptomatic individuals are more likely to be effective control measures.

7.2 Disinfection Measures

Hand Hygiene

- It is **recommended** that hand washing with soap and water or the use of alcohol-based hand

rubs is strongly encouraged. A communications strategy that emphasizes the proper use of each of these products should be adopted (see Forms and Tools 9.3).

Hand Sanitizing Stations in Public Settings

- It is **not recommended** that alcohol-based hand rubs be installed in uncontrolled public settings. Private institutions and companies are encouraged to consider such measures for their own sites where hand hygiene stations can be easily monitored and maintained.

Cleaning of Surfaces in Public Settings

- It is **not recommended** that there be specific cleaning measures undertaken in uncontrolled public settings. Private institutions and companies are encouraged to consider such measures for their own sites, particularly in high touch areas such as food courts, elevators and washrooms.

Household Disinfection of Potentially Contaminated Surfaces

- It is **recommended** that frequently touched surfaces in the homes of infected individuals be disinfected 2-3 times per day. Such surfaces include doorknobs, light switches, countertops, telephones and faucets, among others. Routine household cleaners are effective against influenza.

Air Disinfection

- It is **not recommended** that air disinfection approaches be taken, given insufficient evidence of effectiveness

7.3 Measures to Increase Social Distance

School Closure

- Widespread proactive school closures are **not recommended** given the limited severity of disease in this age group and the social and economic impact of closures. Proactive school closures should only be considered if there is increased severity in the school- aged population and mitigation programs could be implemented to overcome the economic and social consequences. This measure should only be implemented in the context of widespread community and workplace closures as a method to blunt transmission until a vaccine is available.
- It is **not recommended** that schools be reactively closed based on any particular number of cases among students or staff. While it is recognized that, if implemented, early closures are likely be more effective than later closures, it is also important to consider the potential impact of closures in terms of shifting the locus of transmission to other community sites.
- It is **recommended** that voluntary withdrawal (self-isolation) of symptomatic individuals from schools occur just as with any other symptomatic individuals.

Workplace Closure

- It is **not recommended** that workplaces be closed. Focus should be on self-isolation of ill workers, ill workers staying home, hand hygiene and cough etiquette in the workplace and enhanced environmental cleaning.

Mass Gatherings

- It is **not recommended** that mass gatherings be cancelled. While there appears to be broad public acceptance of the need to personally avoid mass gatherings, there is scant evidence to suggest that canceling such gatherings brings additional benefit. It is suggested, though, that organizers of such gatherings continue to reiterate appropriate public messaging regarding hand hygiene, cough etiquette, ill people staying home and basic social distancing concepts.
- It may be worth considering canceling events that attract a particular segment of the population, if the epidemiology of the pandemic influenza demonstrates higher morbidity and/or mortality in individuals from that specific population segment.

7.4 Domestic Travel Measures

Advice to high-risk travelers

- It is **recommended** that advice be provided to people with underlying health conditions that put them at high risk of severe disease or complications from influenza to consider avoiding uncontrolled situations like crowds where they may have a higher risk of exposure to influenza when the pandemic strain is circulating in their community.

Travel Advisories

- It is **not recommended** that travel advisories recommending deferral of non-essential travel to affected areas be issued. Such advisories are usually intended to protect individuals but are not expected to be effective population-level control measures. Persons at risk may consider deferral of travel for personal reasons.

Travel Restrictions

- It is **not recommended** that travel restrictions be implemented in British Columbia. The purpose of travel restrictions is usually to prevent the importation of disease.

7.5 - International Travel Advisories

International travel advisories may be put in place during a pandemic and travelers should consult the Public Health Agency of Canada's Travel Health page for information. This page may be accessed at: www.**phac**-aspc.gc.ca/tmp-pmv/**notices**-avis/index-eng.php

7.6 Measures to Reduce Contact with At-Risk Animals

Animal Contact

- It is **recommended** that the public limit visits to swine and poultry farms, and that symptomatic individuals be restricted from visiting/working in swine/poultry farms. There should be adherence to current Canadian Food Inspection Agency recommendations.

7.7 Psychosocial Services for the Public

Although psychosocial pandemic planning may place additional demands on planning processes that are already stretched for resources, not addressing these concerns could have a cascading effect that derails existing plans. The primary objective of a psychosocial response to any disaster or public

health emergency is to restore and increase individuals' capacity to go on with their lives by addressing their social, emotional, psychological and physical needs. It includes supporting and strengthening social systems (e.g. social support networks) and helping individuals regain a sense of control, diminish psychological arousal, effectively manage stress and improve adaptive coping strategies. Specific goals are to:

- Protect and promote psychosocial well-being and resilience;
- Mitigate, prevent or treat the mental and/or behavioural health issues that arise for individuals in response to the disaster and/or the process of recovery from that disaster;
- Support or restore a sense of confidence, competence, efficacy and trust;
- Support or enhance individuals' adaptation to the stress and distress and their capacity to respond to the adverse impacts of a disaster through a sense of empowerment and responsibility, and an action orientation;
- Improve support of and adherence to other public health measures

Please refer to the Canadian Pandemic Influenza Plan, Annex P entitled Pandemic Influenza Psychosocial Annex found at: http://www.phac-aspc.gc.ca/cpip-pclcpi/ann-p-eng.php

This document outlines a suggested planning framework for addressing the psychosocial implications of a pandemic influenza or any large-scale public health emergency and is intended for, but not limited to, planners at all levels of government and non-governmental organizations.

7.8 Forms and Tools

Tool 7.1	Pandemic Influenza in British Columbia Sample Public Communication
Tool 7.2	Hand Hygiene Procedures
Tool 7.3	Public Education
Tool 7.4	Sick Passenger Protocol

Tool 7.1 Pandemic Influenza in British Columbia Sample Public Communication

A new subtype of influenza has been causing outbreaks in_____. People do not have immunity against this new influenza and it has spread rapidly throughout the world. Cases of this influenza have now been confirmed in our health region. There have been_____human cases in Vancouver/Richmond/North Shore/Coast Garibaldi. This is a *mild, moderate, severe* form of influenza.

Influenza is spread from person to person in respiratory droplets of coughs and sneezes. It can also be spread when a person touches respiratory droplets of another person or an object (such as a doorknob) and then touches their own mouth or nose before washing their hands. The virus enters through the nose or mouth and into the throat and lungs and begins to multiply.

Protect yourself and others by frequently washing your hands with soap and water and avoiding groups/crowds of people. Postpone travel to areas where influenza is known to be infecting people. Wearing a facemask will not stop the spread of influenza in the community.

If you have the following:

- Fever of 38 °C or higher **AND** a cough

Immediately call

- HealthLink (BC Nurse Line) 811
- VCH Influenza Line TO BE ADDED AT THE TIME

If you are well enough, you will be given information about:

- Staying at home while you are ill
- When and how to get medical help if your symptoms worsen

If you have more questions, please contact your family doctor or your local public health office. Further information is also available at:

Vancouver Coastal Health	www.vch.ca
BC Center for Disease Control	www.bccdc.ca
BC Ministry of Health	www.health.gov.bc.ca/pandemic/response/
Public Health Agency of Canada	www.phac-aspc.gc.ca/influenza/pandemic_e.html

Tool 7.2 Hand Hygiene Procedures

Hand Hygiene Using Soap and Water

- Remove jewelry before hand washing.
- Rinse hands under warm running water.
  - This allows for suspension and washing away of the loosened microorganisms.
- Lather with soap and, using friction, cover all surfaces of the hands and fingers. The minimum duration for this step is 10 seconds; more time may be required if hands are visibly soiled.
  - The influenza virus is readily inactivated by regular soap, hand wash or hand hygiene products. Frequently missed areas are thumbs, under nails, backs of fingers and hands.
- Rinse under warm running water.
  - Washes off microorganisms and residual hand washing agent.
- Dry hands thoroughly with a single-use towel.
  - Drying achieves a further reduction in the number of microorganisms. Avoid re-useable towels because of the potential for microbial contamination.
- Turn off faucet without re-contaminating hands (e.g. use single use towel).
  - Avoids re-contamination of the hands.
- Keep fingernails short and avoid the use of fingernail polish or artificial nails.
  - Chipped nail polish may increase bacterial load. Artificial nails including wraps, acrylics or tips increase bacterial load. Nail polish and artificial nails impede visualization of soil under nails.

Hand Hygiene Using an Alcohol-Based Hand Sanitizer

To decontaminate hands that are not visibly soiled* using an alcohol-based hand rub:

- Follow the manufacturer's recommendations on the volume of product to use;
- Apply product to palm of one hand and rub hands together, covering all surfaces of hands and finger, until hands are dry.

*If hands are visibly dirty or soiled, wash with soap and water. Routine use of antimicrobial soap is not necessary.

(Adapted from the Canadian Influenza Plan and Hand Hygiene Practices in Healthcare Settings, https://www.canada.ca/en/public-health/services/infectious-diseases/nosocomial-occupational-infections/hand-hygiene-practices-healthcare-settings.html)

Tool 7.3 Public Education

Originally adapted from the Public Health Agency of Canada web page titled "Individual and Community Based Measures to Help Prevent Transmission of Influenza-Like-Illness (ILI) in the Community, Including the Pandemic Influenza (H1N1) 2009 Virus," no current link available.

Public health messages that target all sectors of the public, including at risk and marginalized populations will help to inform the general public in regards to illness prevention and management.

Key messages regarding prevention of transmission of the pandemic influenza virus should include information regarding:

- Getting immunized as soon as possible;
- Early identification and isolation of ill persons exhibiting ILI symptoms:
- Signs and symptoms of ILI;
- Staying home when sick with ILI until feeling well enough to be able to fully participate in all normal day to day activities;
- When ill, staying away from others as much as possible to help prevent infecting others; and,
- Planning ahead on how to return home as soon as possible by a means that will minimize exposure to others, should symptoms of ILI develop while at work or school.
- Use of appropriate hand hygiene and respiratory etiquette at all times;
- Avoiding touching one's eyes, nose and mouth; not sharing drinks, eating utensils, cigarettes, etc., to help prevent the virus from entering the body; and
- Avoiding contact with people who are sick with ILI and, if unable to do so, maintaining a 2-metre separation from others as much as possible.

Other important public messaging might include:

- Information on where to call for/seek medical advice (e.g., health information hot lines, vaccination centres, flu assessment clinics) and when to seek medical care;
- Implementing a "Flu Buddy" system whereby neighbors would check on each other, particularly the elderly, singles, and single parent families to help ensure assistance is available, if required;
- Information for individuals at high risk for serious illness or complications from influenza regarding the importance of:
- Consulting with their physicians to plan what they can do to protect themselves, what to do if they do become ill, where and when to get immunized and how to access anti-viral medication rapidly, should it be needed; and
- Consider avoiding large gatherings when ILI is circulating in their community in order to minimize potential exposure to the virus.
- Advice to all individuals regarding the importance of planning for the possibility of getting sick and ensuring an adequate in-house supply of groceries and other necessities should they be isolated at home for several days.

Tool 7.4 Sick Passenger Protocol

In case of a report of a sick passenger on a conveyance arriving in Canada, the following protocol should be followed to ensure the health and safety of Canadians.

- The captain of an airplane arriving on an international flight is obliged by International

Health Regulations to make notification to authorities on the ground that there is a sick passenger on board.

- If the passenger's presenting symptoms are in keeping with a communicable or infectious illness, the Airport Authority will notify the Quarantine Officer* who will assess in person or by telephone consultation, or
- Canadian Border Security Agency personnel acting as an extension of Quarantine Officers in remote places, will contact, via 24/7 telephone access, the Quarantine Officer or Public Health Agency of Canada Duty Officer.
- Quarantine Officers will advise Canadian Border Security, ambulance and airport personnel of appropriate personal protective precautions to be taken.
- Quarantine Officers assess ill travelers in person or by information relayed in telephone consultation and advise whether hospitalization or detention is required.
- The sick passengers are transported to hospital when necessary.
- In situations when the *Quarantine Act* does not apply and there is a sick passenger on board, airport authorities arrange for emergency medical care for the individual.
- The transfer of sick passengers from an airplane normally takes precedence over the deplaning of the other passengers.

Airport Authorities or Canadian Border Security staff should not call local Public Health Units unless it is part of the local emergency protocol.

*The *Quarantine Act and Regulations* helps protect Canadians from dangerous and infectious diseases. Under this Act, Public Health Quarantine Officers have the authority to ask a person suspected of having an infectious disease to undergo a medical examination and to detain that person if necessary.

7.9 Additional Resources for Public Education

Some useful web-based information to support public education includes:

- How to recognize symptoms of ILI: Symptoms and Information
  https://www.canada.ca/en/public-health/services/diseases/flu-influenza/symptoms-flu-influenza.html
- Prevention of flu
  https://www.canada.ca/en/public-health/services/diseases/flu-influenza/prevention-flu-influenza.html
- Hand hygiene
  https://www.canada.ca/en/public-health/services/healthy-living/hand-hygiene.html
- How to look after someone at home with influenza
  https://www.cdc.gov/flu/pdf/freeresources/general/influenza_flu_homecare_guide.pdf
- Public Health Agency of Canada Travel Health Notice
  http://www.phac-aspc.gc.ca/tmp-pmv/index-eng.php

CHAPTER 8 VACCINES

8.1 VCH Pandemic Vaccine Program

The BC Ministry of Health has prepared an Immunization Response Plan as part of British Columbia's Pandemic Influenza Response Plan (2012). The Response Plan incorporates lessons learned from the 2009 H1N1 outbreak and response that resulted in the immunization of over 2 million individuals in BC in less than 2 months.

Guiding Principles

The Ministry document outlines the following principles that will be used by VCH in implementing a pandemic vaccine response:

- The priority in a pandemic is to reduce illness and save lives
- Essential services need to be maintained; values-based decisions will be required should there be a conflict about priorities
- Pandemic influenza impacts are hard to predict and therefore all pandemic plans should be flexible and scalable
- Existing vaccination distribution models, distribution systems, communication and decision making structures are easiest to bolster and deploy during a pandemic. Additional delivery models should only be added when existing models are at capacity.
- During the inter-pandemic period, the health care sector should work together to increase the number of community vaccine providers

VCH will base its pandemic immunization response on the approach outlined in the Ministry document, using and building upon the existing infrastructure for the annual influenza immunization campaign in VCH. This includes a mix of community vaccine providers (physicians/pharmacists), public health organized immunization clinics, and tailored approaches to target high-risk populations i.e. pregnant women, young children, DTES residents, remote communities ("seek-and-immunize" groups). The region also works with First Nations stakeholders to support their immunization initiatives.

8.2 Pandemic Vaccine Planning

The existing Regional Immunization Committee will oversee planning for pandemic immunization, reporting to the Regional Pandemic Response Committee for the duration of the pandemic. This committee will add representatives from Human Resources, Facilities Management, Emergency Planning, HSSBC (Supply Chain), Communications, Volunteers and others as required. Operations Leads from each Community of Care will also participate to enable clear communication between the Regional Immunization Committee and local operations.

Within the local Communities of Care (CoC), pandemic immunization planning committees will be established. These committees may be built on existing committees enhanced with expertise in human resources, facilities, emergency management, volunteers and others as required. Their role will be to implement vaccine strategies locally including the "seek and immunize" target groups and mass clinics. These committees will receive direction from and provide feedback to the Regional Immunization Committee.

8.3 Vaccine Distribution and Prioritization

Within Canada, vaccine is approved and procured by Health Canada. Contracts are in place with suppliers to produce vaccine for all Canadians in the event of a pandemic. BCCDC is responsible for receipt and transport of vaccine to British Columbia and for re-packaging and further distribution to Health Authorities. For further information refer to Pandemic Influenza Vaccine Storage, Transfer and Security Plan in BC's Pandemic Influenza Response Plan (2012).

https://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/office-of-the-provincial-health-officer/reports-publications/bc-pandemic-influenza-vaccine-storage-transfer-security-plan-2012.pdf

VCH will distribute vaccine within the Health Authority using existing structures. Flexibility may be required depending on volumes of vaccine, storage capacity, and human resources. VCH may use a central depot to serve urban areas with deliveries provided from this central location to urban sites to address local storage limitations.

Although vaccine will be manufactured in sufficient quantity to immunize all Canadians, the new pandemic vaccine will become available in batches, necessitating decisions regarding how these doses will be distributed across Canada and whether to prioritize certain subgroups of the population ahead of others. The degree to which prioritization is needed will be linked to the rate of vaccine production and administration. Decisions on priority groups will be determined nationally.

Vaccine priority groups will change depending on the goals of vaccination at the time of arrival of the vaccine. If influenza activity is already high in a community, priority will be to those at greatest risk of morbidity and mortality. If pandemic influenza has not yet arrived in a community, vaccine may be prioritized to those who are most likely to transmit influenza. The amount of vaccine will also determine which immunizers will provide vaccine first. When vaccine is in very limited supply, mass clinics may be the only practical place to provide influenza vaccine to the target population.

8.4 Immunization Providers

Immunization during a pandemic requires collaboration between all areas within the health care sector. While specific plans will be developed at the time based on the epidemiology of a particular virus and availability of vaccine, VCH anticipates using its existing immunization providers in both facilities and community to vaccinate all residents within a short period of time. If required, additional health care staff will participate in immunization in circumstances, where existing human resources are inadequate to meet the need (see Human Resources chapter for additional information).

Community Vaccine Providers

Assuming adequate vaccine supplies, pandemic vaccine will be given to those community providers who are regularly involved in seasonal and ongoing immunization programs that are publicly funded. These community providers have established working relationships and communication protocols with VCH and experience immunizing clients. Physicians have longstanding relationships with clients and are trusted sources of both information and care. Pharmacies/pharmacists are readily available across communities, often have extended hours, have longstanding client relationships and also provide access to those who may not have a regular primary care provider.

Community vaccine providers are responsible for following the immunization guidelines set by BCCDC; ensure that vaccine maintains potency (optimal storage and handling), report on doses given in a timely manner, and report adverse events following any immunization to the local health unit.

Public Health
Public Health will provide immunizations to the public through the establishment of mass immunization clinics designed to immunize large numbers of people over a short time period. Detailed information on the operation of mass clinics is included later in this chapter. In addition, Public Health will work with partners across the health care sector to identify populations at particular risk who will require a "seek and immunize" approach using targeted strategies.

The importance of community vaccine providers was clear in the 2009 pH1N1 outbreak. Within VCH, 37% of vaccines were administered by public health (41,000) and 63% by other vaccine providers (71,000).

8.5 Seek and Immunize Approaches

Populations may be at high priority for influenza vaccination either due to their vulnerability to infection due to epidemiological and/or social circumstances or due to their increased risk of spreading influenza (e.g. health care workers). While populations at most risk in a pandemic will be determined at the time based on the particular virus, the following populations are most likely to be included.

First Nations and Aboriginal Communities
On reserve, vaccinations will be given using mass immunization clinics. The clinics will be staffed by local vaccine providers, and may be supplemented by public health nurses and community vaccine providers as necessary.

Off reserve, vaccinations will be given using mass community immunization clinics or by local community vaccine providers.

Health Care Workers (HCW)
The Ministry of Health has a policy requiring all HCWs to be immunized for influenza. HCWs are at risk for both becoming infected with the influenza virus and transmitting it to patients who are vulnerable to severe influenza outcomes (morbidity, mortality). In order to maintain a healthy workforce and avoid transmission of influenza in health care settings, HCWs will be a priority population for immunization. VCH has successfully implemented (through Workplace Health) a combined strategy of peer immunization in the workplace, access to public health clinics and community vaccine providers to achieve high levels of HCW immunization. An online reporting system facilitates capture of data from HCWs to monitor immunization rates. In a pandemic this approach will be used with consideration for supplementation with additional staff immunization clinics as required.

Pregnant Women
Pregnant women are considered to be more at risk for influenza and are therefore a priority group for immunization. Physicians and midwives providing care to pregnant women will receive supplies of vaccine to immunize their clients.

Young Children
Public Health will consider working with local school districts to provide opportunities for children to receive immunization in the school setting. Clinics for younger children will also be considered. Children can be immunized at mass clinics for all ages and Public Health Nurses with expertise in immunizing children will be present in these clinics. Physicians providing care to children will receive vaccine to immunize patients. Pharmacists are not able to immunize children less than 5 years of age.

Individuals with Chronic Illness

Vaccine will be placed in locations such as chronic disease outpatient clinics, physician offices and pharmacies to immunize individuals with chronic illness. Home Care Nurses should also immunize clients under their care. Other health services employing staff able to immunize (e.g. Mental Health & Addictions programs) will also receive vaccine to immunize their clients.

Seniors

Vaccine will be provided to all long term care facilities to immunize residents. In addition, clinics can be planned for sites that serve seniors such as Seniors Centres. Physicians and pharmacists will also be provided with vaccine for seniors.

Remote Communities

Community vaccine providers in remote communities will be critical to provide immunizations in the local area. For communities without local community vaccine providers, a travelling team may be required to visit multiple communities. Communication/advertising in advance will be essential for those who must travel to receive immunization services.

Homeless/Poorly Housed

Targeted strategies will be required to immunize those who are homeless or poorly housed and with multiple barriers such as mental health and/or addictions issues. Local areas will need to identify these populations and implement specific plans for immunization. Within Vancouver's Downtown Eastside a successful outreach program for seasonal flu has operated for many years using outreach teams of nurses and local community volunteers to visit Single Room Occupancy hotels, shelters, drop-ins, and offer immunization on the street. Other health service locations in the community (Insite, Primary Care Clinics) also immunize clients for influenza. This strategy will be used for pandemic immunization in this community.

Foreign Born

Given the significant rate of immigration into VCH from many parts of the world, all communities will need to consider all opportunities to provide and distribute translated information in multiple languages across the community. Use of multicultural media will also be essential to convey accurate information to all residents regarding pandemic influenza and availability of vaccine. VCH Communications (see Communication chapter) can support this initiative.

8.6 Mass Vaccination Clinics

Once the vaccine for the pandemic influenza strain becomes available, mass vaccination clinics will be established throughout VCH to efficiently handle the large number of people expected to seek vaccination. An overview of the details of setting up and managing mass vaccination clinics is given in the Forms and Tools section of this chapter. Implementation of the vaccine plan during the pandemic has to take into account the size of the current population, availability of the vaccine and antiviral medications, availability of immunizers, and the epidemiology of the disease.

Mass Vaccination Clinic Sites

A site selected for holding mass clinics must meet specific space requirements and must have adequate capacity to handle the expected traffic flow. The site must include the following areas:

- Reception area
- Orientation and registration area
- Waiting area (including provision for the elderly, handicapped and a children's play area)

- Immunization area
- Post-immunization waiting area including first aid space
- Washrooms and kitchen/staff space
- Administration space
- Storage space – secure (locked) space is required for vaccine

Clinic Flow

Line-ups outside the entrance can be expected in times of high vaccine demand and plans should be made for ropes to designate the line. If a permanent cover is not available, tents can be used to provide some shelter to those waiting outside. A numbered ticketing system should be used for clients and a manager or director should be available to answer any questions of clients in the line and to manage media who may arrive at the site. Estimates of wait time are helpful and may allow people to leave and return rather than wait.

In situations of limited vaccine, immunization may only be available to specific priority groups. Screeners should be available to determine eligibility quickly as people arrive to reduce unnecessary waiting. Security staff may be required to assist with line-up management and/or situations where clients are turned away due to not meeting eligibility requirements.

The clinic should be set up to allow for uni-directional flow in the following sequence:

- External waiting area (line-up/numbers provided in order of arrival)
- Screening for eligibility (in external area if necessary)
- Greeting and registration
- Education/questions/information for informed consent
- Waiting area (TV, magazines, play area)
- Immunization area
- Post-immunization waiting area
- Exit

Considerations in selecting appropriate space include:

- Seek out school gyms, churches, auditoriums, theaters or other large covered public spaces accessible to the elderly, persons with disabilities and young children (wheelchair, stroller access)
- Work with local municipalities, VCH Facilities and Emergency Management who can assist in locating suitable spaces
- Sites should be spread out around the city and available on weeknights and weekends
- Ensure proximity to population centers and mass transit, ample parking, separate entry and exit doors, adequate lighting and heating, functional and accessible restrooms, and adequate space for all clinic functions such as screening, registration, vaccine storage, vaccination, and staff breaks
- Select a facility with space for reasonably large and well-delineated covered gathering areas outside and inside of the clinic
- At each clinic plan for a nursing station large enough to accommodate 3-4 people

Staffing Requirements Vaccine

Providers

Staff with the ability to immunize will be the key requirement for mass clinics. Assuming 7 minutes

per immunization, the BC Ministry of Health has calculated that 393,750 hours of vaccine provider time would be required to immunize 75% of BC's population – a total of 1875 vaccine providers working full time for six weeks.

VCH will need to determine the mix of community vaccine providers and public health providers required to immunize 75% of the VCH population at the time of the pandemic and derive the number of mass clinics and associated staffing required. Given the volume of individuals who commute into the urban area daily for work, VCH may also experience a greater number of individuals seeking immunization than actually reside in the area.

Number of Staff Needed

Additional staff will be required to operate mass vaccination clinics. This need may be met by re-deploying health authority staff. Existing activities and programs may need to be deferred or down-sized to essential services during the pandemic immunization period in order to free up staff to immunize. Other potential sources of additional immunizers include health care students, recently retired health care workers, allied health professionals and emergency response personnel. Non-clinical staff and volunteers may be used for support functions (registration directing clients, etc.).

The number of staff required for each clinic is provided in Table 2. This is an example only and numbers can be adjusted depending on immunization targets for the clinic.

Table 2: Staff required for Mass vaccination Clinics subdivided by Functional Area

Functional Area	Number
Clinical Staff	
Registration	1
Pre-intervention patient holding/ Waiting	2
intervention	16
Medical care and holding	1
Subtotal	**20**
Volunteer Staff	
Registration	4
Patient flow	1
Intervention	2
Post-intervention holding	1
Subtotal	**8**
Logistic Staff	
General administration/ finance	1
Medical supply/General supply	1
Receiving	1
Transportation	1
Cleaners	1
Subtotal	**4**

Functional Area	Number
Security Staff	
Parking and traffic control	1
Crowd control	1
Facility security	2
Subtotal	4
TOTAL	**36**

Training

All staff and volunteers working at mass clinics will require orientation to the clinics. This will include information on the clinic itself, client flow, roles and responsibilities and safety. Clinical staff may require specific training related to their clinical roles. Job information sheets for clinical staff, volunteers and "others" are found in the Forms and Tools section.

Clinic Supplies

The list of medical and general supplies needed for mass vaccination clinics is given in the Forms and Tools section. The total requirement for each item depends on whether or not the item will be reused at each clinic shift. For items that are reusable such as computers and furniture, the total requirements will depend on the number of clinics taking place simultaneously.

The BC Clinical and Support Services (BCCSS) under PHSA provides purchasing, warehousing and delivery functions on behalf of all BC's health authorities and needs to be involved in the planning of necessary stockpiling. Each Health Authority has a regional BCCSS Supply Chain branch office that services that health authority's requirements.

8.7 Roles and Responsibilities for Vaccine Program

Roles and responsibilities for the organization and management of the VCH vaccine program are outlined in Table 1. The identified Regional Leads will work with the Regional Immunization Committee in completing the actions noted. Community of Care Leads will provide local leadership to implement the actions within the CoC. The main areas of action include site selection and preparation for mass vaccination clinics, vaccine safety, and the management and coordination of staff functions.

Table 1: Roles and Responsibilities

ACTION	LEAD PERSON REGIONAL	LEAD PERSON HSDA
Site Selection and Preparation for Vaccination Clinics		
Consult with municipalities to identify clinic sites/ and secure storage areas (vaccine/supplies)	Regional Director of Emergency Management	Emergency Management Lead/Facilities
Establish plans for clinic operations.	Director of CDC	PH Director/ Manager
Identify supplies required and ordering process (non-vaccine)	BCCSS	BCCSS/PH Director
Establish a protocol for timely information dissemination and 2-way communication at sites	MHO	PH Director/Manager

ACTION	LEAD PERSON REGIONAL	LEAD PERSON HSDA
Plan staff training/educational materials for traditional and non-traditional providers i.e. LPN's.	Immunization Program Lead	Educators
Determine vaccine transport within the HSDA.	Regional Vaccine Coordinator and BCCSS	BCCSS
Consult with Security re: vaccine security.	Integrated Protection Services	Director Risk Management
Identify strategies and personnel for crowd control at clinic sites.	Facilities and Integrated Protection Services(IPS)	Facilities and Director Risk Management
Establish methods to account for vaccines received and vaccines wasted.	Regional Vaccine Coordinator and BCCSS	PH Director
Establish a process for monitoring vaccines administered and further ordering of product.	Director of CDC	PH Director /CD Lead
Establish a protocol for biomedical waste management and disposal.	Regional Vaccine Coordinator	PH Director/CD Lead
Confirm immunization documentation process for staff/clients	CDC Director/MHO	PH Director/Manager
Vaccine Safety Issues		
Identify, designate and train traditional and non-traditional personnel within the region to administer vaccine and epinephrine.	CDC MHO and Immunization Program Lead	PH Educators and CD and Immunization Clinical Resource
Establish a strategy to conduct follow-up of adverse events.	CDC MHO	MHO
Determine procedures for reporting vaccine use/adverse events to BCCDC.	CDC MHO	MHO
Management and Coordination of Staff Functions		
Identify clinic leaders	Director of CDC	PH Director /Manager
Determine human resource needs for mass clinics	Director of CDC	PH Director /Manager
Identify medical screeners (physicians/nurses who assess vaccine eligibility/contraindications, counsel and gain consent)	CDC Director/MHO	PH Director /Manager
Identify vaccine administrators		Director /Manager
Establish a list of alternate vaccine administrators (i.e. retired health care providers)	V.P. of Employee Engagement	Employee Engagement personnel
Identify volunteers	Designated PH Director	Volunteer Manager
Identify security and crowd management strategy	Facilities/Integrated Protection Services	Facilities/Emergency Management/IPS

Clinic Planning Considerations:

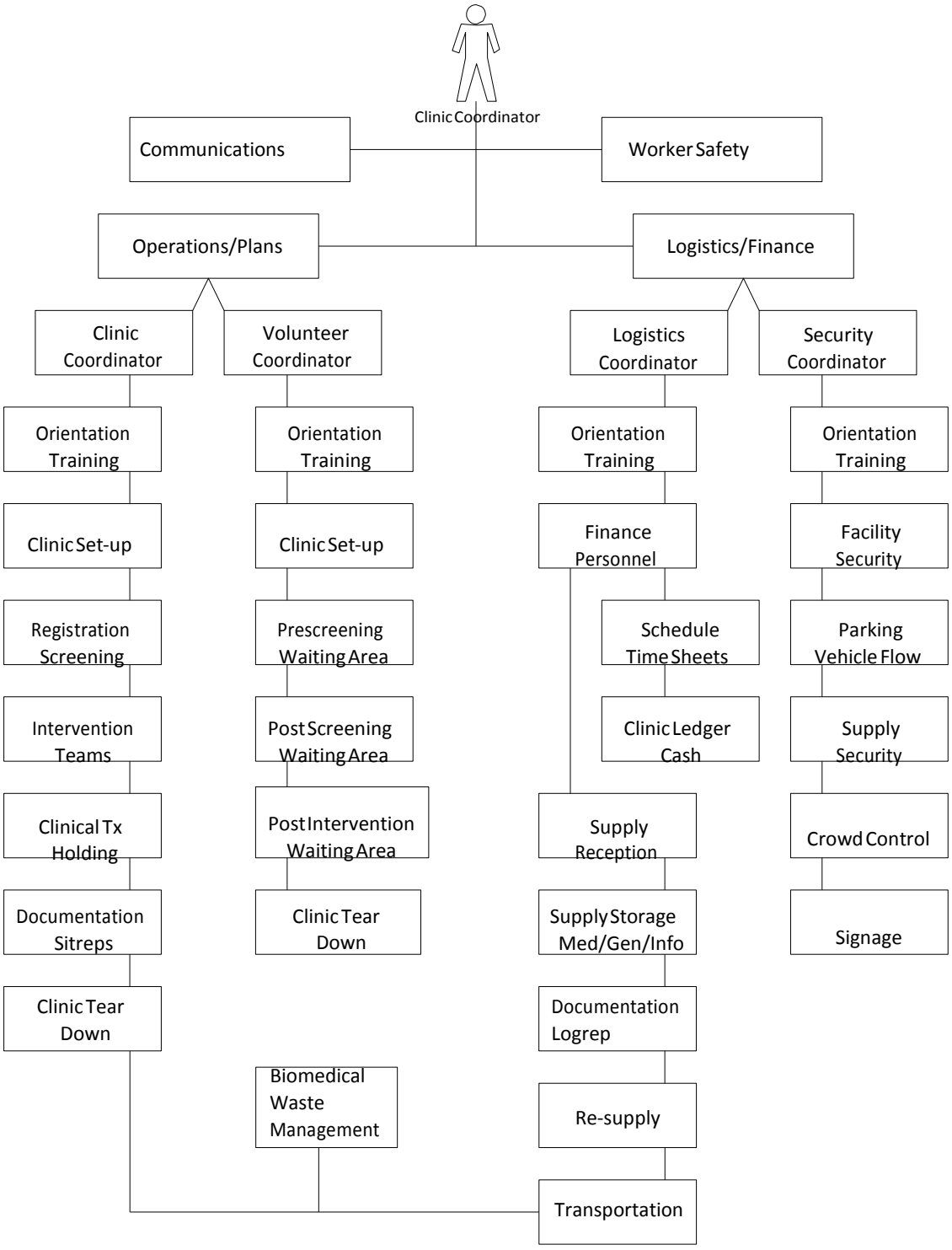
- Provide in-service sessions to all clinic staff, and staff immunizing in other settings, and have an alternate source of orientation for those unable to attend.
- Clinic leaders need to be flexible, able to make decisions, and connected to distributors of key messages.
- A Director or Manager must be accessible at all times to Clinic leaders to address any unique or unforeseen circumstances in a timely manner.

- Ensure that each clinic site has the same up-to-date information each day. Before and after clinic huddles/debriefs is helpful.
- Ensure access to online sources of information (i.e., email or internet) at venues or in the field for immunizing staff.
- Have clear signage at each site to direct the public including information on eligibility for vaccine if vaccine is not available to the entire population.
- Have health files, aftercare sheets for children and resources for pregnancy on site including translations of all information.
- Meet the language needs of the community using multi-lingual staff/volunteers.
- Cross-train staff to enable flexibility in meeting needs at various stations as demands fluctuate.
- Make provisions for surge capacity staffing, particularly at clinic opening time or when large numbers of clients are anticipated.
- Ensure staff well-being by scheduling times for rests and snacks in a designated area.
- Advertise the location and hours of operation of clinic sites widely.
- Use the duplicate client receipt for documentation.

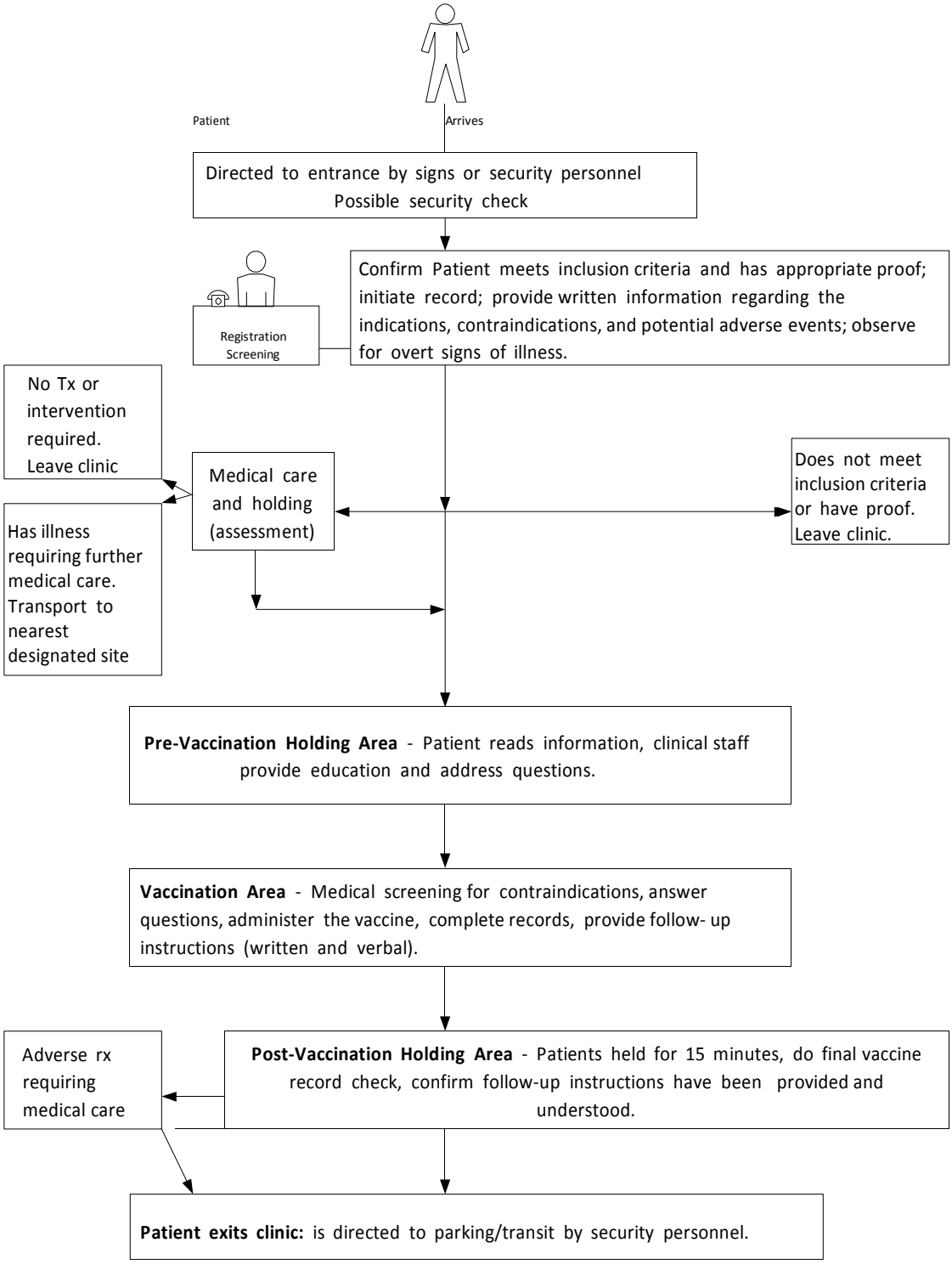
8.8 Forms and Tools

Form 8.1 Clinic Operations: Personnel Roles and Responsibilities Algorithm
Form 8.2 Patient Flow Algorithm
Form 8.3 Formulas for Estimating the Number of Clinic Sites
Form 8.4 Clinic Set-up Job Activity Sheet
Form 8.5 Staff Orientation and Job Action Sheet for Clinical
Form 8.6 Staff Orientation and Job Action Sheet for Volunteers
Form 8.7 Mass Immunization Clinic Documentation
Form 8.8 Mass Clinic Supplies

Form 8.1 Clinic Operations: Personnel Roles and Responsibilities Algorithm



Form 8.2 Patient Flow Algorithm



Form 8.3 Formulas for Estimating Number of Clinic Sites

Population Size (P)
Estimated from PEOPLES 28

Number of Doses of Vaccine (D)
P*1 or P*2 - for one or two doses respectively depending on the number of doses needed for full protection

Number of Clinics Required to Immunize 100% of the population in four months (17 weeks)
D / 2500 - for areas that can immunize 2500 / Day D / 1000 - for areas that can immunize 1000 / day
D / 3750 - for areas that can immunize 3750/ day
D / 1500 - for areas that can immunize 1500 / day

Number of Clinics / Weeks (CW)
C / (number of weeks in 4 months) = C / 17

Number of Clinics / Day (CD)
C / (number of days in 4 months) = C / 119

Form 8.4 Clinic Set-up Job Activity Sheet

Clinic Site: _____

Facility Name: _____ Location: _____

Dates Clinic Operational: _____ Hours: _____

The clinical coordinator, volunteer coordinator, logistics coordinator, and security coordinator are to supervise the set-up.

- Prepare a diagram of the proposed clinic set-up and patient flow to work from
- Request non-clinical and/or volunteer staff that are readily available to do the main set-up, clinical staff availability for set-up may be limited by their need for orientation and training, ensure staff know when and where they are to report.
- Request equipment and supplies as soon as possible; indicate when and where they can be delivered
- Organize a bio-hazardous waste pick-up service
- Request the necessary communications links, especially telephone and Internet access
- Establish the Clinic Coordination and Staff sign-in area
- Establish logistics/ secure supply storage area to receive and distribute supplies
- Ensure cold chain will be maintained throughout the clinic
- Set-up Staff Orientation area (and immunization as required)
- Conduct Staff Orientation and Training as necessary
- Facility security, signage, and crowd management need to be established concurrently
- Set up remaining clinic areas in accordance with planned patient flow
- The CD Nurse specialist/delegate will supervise the final set-up of the patient care/ treatment areas
- Arrange for cleaning of site during the day and at the end

Form 8.5 Staff Orientation and Job Action Sheet for Clinical

- Determine the number of clinical staff requiring orientation.
- Establish a schedule for orientation and training – including what, when, where, who and by whom (see details below).
- Determine and request the necessary training materials
- Conduct the orientation and training
- Assess if the training standard has been achieved
- Provide staff immunization or chemoprophylaxis as required
- Confirm work schedules with staff

What should be included in the training?

- Human resources briefing including staff procedures
- Brief summary of influenza disease
- Infection control principles
- Ongoing security requirements
- Explanation of the public health response strategy
- Orientation to the clinic area (walk through or from diagram), including patient flow, functions to be conducted in each area, key personnel in each functional area
- Action in the event of a fire, power failure, or other emergency (facility may already have a plan in place that can be modified for the clinic)
- Work responsibilities – dependent upon the necessary medical intervention (the most current recommendation to have been determined by the health authority)
- Training on the medical intervention – review of patient handouts, documentation procedures, intervention indications (including the inclusion criteria to receive the vaccine) and contraindications, adverse effects, follow-up requirements, and practicing the technique (as necessary), assessment of knowledge and skill
- Medical care and holding staff should also know the anaphylaxis protocol
- Staff immunization/ chemoprophylaxis if required prior to exposure to clients
- Resources available for staff.

When? (As soon as possible)

- Orientation and training facilities are available and ready
- Orientation and training staff are prepared
- Clinic staff are available

Where?

- Preferably in the facility where the clinic is to be established

Who needs training?

- All clinical staff

By Whom?

- CD Leads Clinical Coordinator (Immunization Program Lead in conjunction with the CD and Immunization Clinical Resource Nurses) prepare and deliver the orientation and training (these team leaders must be available at the earliest time possible, and ideally each team leader will only have to train their own team)

Form 8.6 Staff Orientation and Job Action sheet for Volunteers

- Determine the number of volunteer staff requiring orientation.
- Establish a schedule for orientation and training – including what, when, where, who and by whom (see details below)
- Determine and request the necessary training materials
- Ensure volunteer staff are informed about the orientation and training schedule
- Conduct the orientation and training
- Assess if the training standard has been achieved
- Provide staff immunization as required
- Confirm work schedules with staff

What training?

- Human resources briefing including staff procedures
- Brief summary of influenza disease
- Infection control principles
- Ongoing security requirements
- Explanation of the public health response strategy
- Orientation to the clinic area (walk through or from diagram), including patient flow, functions to be conducted in each area, key personnel in each functional area
- Action in the event of a fire, power failure, or other emergency (facility may already have a plan in place that can be modified for the clinic)
- Work responsibilities – dependent upon the functional area of employment
- Registration/ administrative screeners need to know registration and documentation procedures, the inclusion criteria for receiving the medical intervention, the required proof that they meet the inclusion criteria, how to deal with uncooperative patients/ conflict resolution procedures, and overt signs of illness; cross train as patient flow staff
- Patient flow staff need to know the clinic layout very well, and should be cross trained to replace registration/ administrative screeners
- Intervention team assistants need to know the basic intervention procedures, necessary documentation procedures, handling precautions for medical supplies and waste, and re-supply procedures
- Holding staff need to know post vaccine procedures, how to recognize acute adverse reactions, action in the event acute adverse reaction, necessary follow-up procedures, documentation procedures
- General duty staff will be briefed as duties arise, should be made available as soon as possible to commence set up of facility
- Volunteer immunization/ chemoprophylaxis if required prior to exposure to clients

When? (As soon as possible)

- Orientation and training facilities are available and ready
- Orientation and training staff are prepared
- Volunteer staff are available

Where?

- Preferably in the facility where the clinic is to be established

Who needs training?

- Registration and screening volunteers
- Patient flow volunteers
- General duty volunteers
- Security personnel

By Whom?

- Volunteer Coordinator
- Security Coordinator

Form 8.7 Mass Immunization Clinic Documentation

Form	Format	Purpose	Travel Path
Registration form	Paper	To collect information about client	Remains at registration table
Consent/Assessment form	Paper	• To obtain informed consent from client • To assess clients for immunization	• From registration clerk to client during registration • From client to nurse assessor for assessment • From nurse assessors to client after
Information sheets (Health Files, aftercare etc.)	Paper	To provide information to client about the vaccine	From registration clerk to client upon registration
Immunization record	Paper	To provide a record of immunization for the clinic	Remains at immunizer's station
Immunization receipt	Paper	• To certify that client has received vaccine • To show vaccine lot #, site, route, amount and nurses signature • To provide info for Adverse Event follow-up	From immunizer to client upon vaccination
Clinic Stats form	Paper	To collect daily clinic statistics information	Remains with the Clinic site leader
Clinic assignment sheet	Paper	To document who and the # of staff working at the clinic	Remains with the Clinic site leader
Supply ordering form	Paper	To order supplies from the product distribution centre	Remains with the Supply lead
Adverse event form	Paper	To document all relevant information related to the adverse event	Remains with the Clinic site leader
Referral sheet	Paper	To provide contact information for patients requiring additional care	From nurse to client

Form 8.8 Mass Clinic Supplies

- Clinic Supplies

Items	Number of Items / Clinic Session	Reusable or Disposable
Ampules of epinephrine 1:1000 SQ (1 / nurse)	20	Reusable
Ampules of diphenhydramine 50 mg IM (1 / nurse)	20	Reusable
Tuberculin syringes with 5/8" needles (for epinephrine)	100	Reusable
Adult airways	2	Reusable
Pediatric airways	2	Reusable
Tourniquet	20	Reusable
BP cuff and stethoscope	2	Reusable
Flashlight	4	Reusable
Cots/Mats	10	Reusable
Blankets	10	Reusable
Pillows	10	Reusable
Hard-sided coolers	10	Reusable
Refrigerator	1	Reusable
Vaccine	3,000	Disposable
3 cc syringes 1", 25 gauge needles	3,000	Disposable
3 cc syringes 1 ½, 25 gauge needles	400	Disposable
Alcohol wipes	6,000	Disposable
Vaccine information sheets	3,000	Disposable
Sharps containers (300 syringe capacity)	20	Disposable
Latex-free gloves (1 small, 2 medium 1 large)	4	Disposable
Sanitizing hand washing solutions (bottles)	20	Disposable
Q-tips	4,000	Disposable
Rectangle Band-Aids	2,000	Disposable
Adhesive tape (rolls)	10	Disposable
Spray bottle of bleach solution	1	Disposable

- General Supplies

Items	Number of Items / Clinic	Total Number of Items for All Clinics
Signage	TBD	Reusable
Tables	16	Reusable
Chairs	500	Reusable
Portable partitions	TBD	Reusable
Stapler/staples	4	Reusable
Scissors	4	Reusable
Clipboards	20	Reusable
File boxes	5	Reusable
Telephone (fixed and mobile)	10	Reusable
ID badges for staff (Color coded T-shirts)	33	Reusable
Water and cups	2,500	Disposable
Pads of paper	5	Disposable
Pens, pencils	100	Disposable
Rubber bands	1 box	Disposable
Tape	20	Disposable
Post-it notes	2 pkgs	Disposable
Paper towels (rolls)	10	Disposable
Kleenex tissue (boxes)	20	Disposable
Table pads and clean paper to cover table for work site	20	Disposable
Garbage containers and trash bags	25	Disposable
Canteen supplies (i.e. juice, cookies)	TBD	Disposable

- Administration Supplies

Items	Number of Items / Clinic Session	Total Number of Items for All Clinics
Computers	TBD	Reusable
Printers	TBD	Reusable
Photocopier Paper (perhaps already in facility)	TBD	Reusable
Video Camera (for orientation & training as necessary)	1	Reusable
VCR/TV (for orientation & training as necessary)	1	Reusable
Two-way hand-held radios or messaging devices	2	Reusable

CHAPTER 9
ANTIVIRALS

9.1 VCH Pandemic Antiviral Program

As it is highly likely that pandemic influenza will reach the region before a vaccine becomes available, antivirals are expected to be the only initial virus-specific intervention available.

The objectives of the pandemic antiviral program are to:

- Obtain a secure supply of antiviral drugs.
- Collect data on antiviral procurement, allocation, distribution, safety, effectiveness, and resistance.
- Determine the appropriate use of antivirals for treatment and prophylaxis.
- Store, distribute, and allocate antiviral drugs efficiently and appropriately.
- Describe and plan for risk communication activities and methods to enable the public and providers to access information on antiviral use and availability.

9.2 Roles and Responsibilities for Antivirals

Roles and responsibilities for the organization and management of the VCH antiviral program are outlined in Table 1. The main areas of action include antiviral issues, and the management and coordination of staff functions.

Table 1: Roles and Responsibilities

ACTION	LEAD PERSON REGIONAL	LEAD PERSON HSDA
Anti-viral Issues		
Determine the estimated number (12.5% and 25% attack rate) of influenza cases based on HSDA population for antivirals.	Regional Director of the Public Health Surveillance Unit	MHO
Obtain and maintain memorandums of agreement with community pharmacies that agree to dispense antivirals to infected individuals in accordance with BCCDC's tracking requirements.	CDC MHO/VCH Legal Department	MHO
Develop and maintain standing orders and policies and procedures for antiviral distribution	CDC MHO	MHO
Establish a process for monitoring antiviral coverage, and further ordering of product	Director of Public Health Surveillance/Regional Coordinator of Vaccine Distribution	Director* / CD Leads
Establish a process for reporting suspected adverse reactions due to Antiviral use	CDC MHO/Director of CDC	Director / CD Leads

Management/Coordination of Staff Functions		
Identify a surveillance analyst for analyzing regional antiviral data	Director of Public Health Surveillance	
Identify on call medical staff (physicians/nurses/pharmacists) for reporting and addressing adverse events	CDC MHO/Director of CD	Director / CD Leads

*Director responsible for public health programs

9.3 Classes of Antiviral Drugs

During a pandemic, two classes of antivirals may be considered for treatment and prophylaxis; these are M2 Ion channel blockers or cyclic amines such as amantadine and neuraminidase inhibitors zanamivir and oseltamivir. Neuraminidase inhibitors are preferred for the treatment of pandemic influenza because emergence of resistance during treatment is less likely than with amantadine; neuraminidase inhibitors have activity against both influenza A and B viruses whereas adamantanes have activity only against influenza A viruses. Also, neuraminidase inhibitors have fewer side effects and a simpler dosing schedule.

9.4 Current National Strategy for Use of Antivirals

Early Treatment Strategy

Treatment with neuraminidase inhibitors has been shown to decrease severe complications such as pneumonia and bronchitis and to reduce hospitalizations.

The selection of a treatment strategy recognizes that treatment is more efficient than prophylaxis in preventing adverse health outcomes. Indirect benefits of early treatment include the possible reduction of transmission of infection to close contacts and the positive impact on maintaining the critical infrastructure by shortening the duration of illness, thereby reducing absenteeism.

It will be extremely important to monitor the use of antiviral medications. While these medications are already in use during regular influenza seasons, there are no data available at this time on the large-scale use of these medications in a pandemic situation (for side effects, resistance, etc.).

Implementation of the Early Treatment Strategy

It is intended that the National Antiviral Stockpile will be used at the time of a pandemic (Phase 6) for early treatment of persons:

- With influenza-like illness;
- Assessed within 48 hours of the onset of symptoms; and
- When there is laboratory evidence that the pandemic influenza virus is known to be circulating in the community.

A resource for family physicians:
The use of antiviral drugs for influenza: A foundation document for practitioners AMMI Canada Guideline Autumn 2013. Available at:

https://www.ammi.ca/Content/Guidelines/Flu%20%28published%20version%29%20FINAL.pdf

Prophylaxis Strategy

The use of antiviral drugs to control outbreaks of influenza in health care settings, such as long-term care facilities and hospitals, is standard practice in Canada. It was recommended that this practice continue in a pandemic along with its consideration for other types of closed facilities, such as correctional facilities, where persons at high risk for the complication of influenza reside. Effective control of influenza outbreaks in these settings is expected to provide significant benefits in terms of hospitalizations averted and lives saved. Depending on the characteristic of the virus, recommendations for antiviral prophylaxis may change.

The current prophylaxis recommendations are as follows:

Pandemic Alert Period (Phases 4 and 5):

- As part of an early response strategy, provide post-exposure prophylaxis of close contacts of cases, together with treatment of cases.

Pandemic Period (Phases 6):

- Focus on early treatment of people with influenza and no post-exposure prophylaxis of close contacts of cases;
- Use antivirals for outbreak control, including treatment of cases and prophylaxis of close contacts of cases in closed health care facilities and other closed facilities where high-risk people reside.

9.5 Adverse Drug Reaction Reporting

In a pandemic, antiviral medications may be used for longer periods than indicated for prophylaxis during seasonal influenza epidemics. Therefore, monitoring of adverse drug reactions will become particularly important.

Suspected adverse reactions to either antiviral medication should be reported through the Canadian Adverse Drug Reaction Monitoring Program. The provider of the antiviral medication should make these reports when an adverse reaction occurs after the administration of a drug. Since the provider may not know if the reaction is a result of the medication, these reactions are referred to as suspected adverse drug reactions. Suspected adverse drug reactions should be reported by the medication provider if the adverse reaction is:

- **Unexpected** (not consistent with product information or labeling), regardless of its severity;
- **Serious** *, whether expected or not;
- In an individual from a group for whom the medication was recently licensed (in the last five years)

*A serious adverse reaction is one which requires inpatient hospitalization or prolongation of existing hospitalization, causes congenital malformation, results in persistent or significant disability or incapacity, is life-threatening or results in death. Adverse reactions that require significant medical intervention to prevent one of these outcomes are also considered serious**.**

9.6 Distribution Plan

VCH needs to consider arrangements for the acquisition and distribution of this medication because:

1. The provincial and national antiviral stockpile lies outside the usual pharmaceutical supply chain.

2. It is a centrally held supply that will be distributed according to local attack rates. While all planning is carried out on an assumption of an average attack rate of 25%, local attack rates may be higher or lower and antivirals will be distributed according to need.
3. There may be issues around security although these will be minimized if the health care system creates public confidence that those who need the medication will receive it.

The Province of BC has an Antiviral Distribution Plan (September 2012) that outlines how antivirals will move from the manufacturer to the local communities and the plan is available at:

https://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/office-of-the-provincial-health-officer/reports-publications/bc-pandemic-influenza-antiviral-distribution-plan-2012.pdf .

The VCH Regional Pandemic Committee should appoint an individual to lead this part of the pandemic response plan. This individual will work in partnership with BCCDC pharmacy, community pharmacists, HSDA pandemic antiviral distribution leads, and community physicians to refine the plan.

Daily-expected demand during a pandemic wave should be estimated (see table 2). At the peak of the pandemic approximately 22% of all those who will become ill do so during one week. Plans should be able to cope with this workload and systems planned for should be able to scale up further if necessary.

Table 2: Estimated Antiviral Demand per 100,000 populations

	Antivirals available for 12.5% of the population	**Antivirals available for 25% of the population**
Number of patients who are to receive antivirals in peak week	**2,700**	**5,400**
Number of patients who are to receive antivirals per day in peak	**385**	**770**

CHAPTER 10
COMMUNICATIONS

10.1 Overview

Clear, rapid and accurate communication before, during and after a pandemic will facilitate implementation of the pandemic response, allow healthcare workers to function most effectively, and address fears and concerns among the public.

Objectives

The overall objectives of the communications plan are to:

- Provide clear, accurate, rapid messaging to internal and external stakeholders during all pandemic phases;
- Ensure timely communications by a variety of means appropriate to the target audiences;
- Incorporate risk communication principles in all messaging.

Internal Stakeholders – Objectives

Communication to staff and other health care workers involved in the pandemic response must:

- Allow staff to understand their role in the pandemic response;
- Ensure staff know how to protect themselves, their families and their patients or clients;
- Provide accurate information regarding the pandemic;
- Address concerns in a timely manner.

External Stakeholders – Objectives

Communication to external stakeholders, including the public and the media must:

- Provide instructions for cases, contacts and family members regarding prevention and treatment;
- Clearly describe the VCH planned pandemic response at each stage;
- Tell the public what to expect next.

10.2 Core Communication Committee

- In the pre pandemic phase establish a core communications committee will be established.
- The Ministry of Health, BCCDC and VCH need to confirm the integrated communication plan to determine roles and responsibilities for each organization. including the lead role(s) for different audiences.
- Within VCH, the communication linkages for municipalities, stakeholders and partners will be identified
- The primary source(s) of validated pandemic information will be determined.
- Quality checks in the sign off process to ensure the integrity and key message of the information are maintained will be developed.

- The media will be engaged, as a partner to develop communication strategies that meet both parties' needs during a pandemic.
- Media releases will be created by VCH when there is a need to:
    - Communicate a change in the status of pandemic threat;
    - Report new information;
    - Advise public of immunization clinics;
    - Reiterate key messages or address rumours and trends.

Core Communication Committee Tasks

- Arrange meetings of the Core Communication Committee as needed.
- Activate the Communications Plan under direction of the MOH and the Emergency Operations Centre (EOC).
- Ensure that risk communication principles are used in all contact with the public, the media and all community stakeholders.
- Compile key messages for each pandemic phase, as received from federal and provincial governments. Develop or adjust messages as needed for VCH audience.
- Coordinate preparation and distribution of information for the public, including media advisories, news releases, public health alerts and public health updates under direction of MOH or EOC.
- During Interpandemic and Pandemic Alert stages, disseminate information to the public, the media and all community stakeholders' organizations as needed.
- Ensure all communication with the media is logged.
- Prepare spokesperson(s) for interviews.
- Arrange news briefings & public information sessions.
- Serve as point of contact for Ministry of Health and BCCDC communications staff (e.g. attend teleconferences).
- Evaluate communications activities and response efforts: re-adjust strategies as necessary.
- Ensure the website (both news section and staff pages) is always up-to-date with the most current information and that web usage statistics are tracked.
- Ensure VCH social media channels are updated regularly
- Monitor radio, television and newspaper reports, Internet sites and social media, and devise plans to address rumours or trends from media reports.
- Help identify critical groups and the appropriate channels to reach the identified groups.

10.3 Key Spokespersons

Communication Lead

The Vice President, Communications & Public Affairs, as primary communication lead, is responsible for communications execution in conjunction with the Chief Medical Health Officer, and for liaison with and updating the Board and Senior Executive Team. The Director, Public Affairs, or designate, will coordinate all information released to the media; ensure key messaging is consistent with the Chief

Medical Health Officer or designate; recommend appropriate response strategies; approve all written, electronic, or photographic information for media use; and act as official spokesperson as needed, along with the Chief Medical Health Officer or designate**.**

Primary: Vice President Communications & Public Affairs
Secondary: Director of Public Affairs and delegated Key Spokespersons

As per the media relations/spokesperson policy, the official spokesperson during a pandemic is the Chief Executive Officer or designate. In the case of a pandemic or influenza outbreak, the Chief Medical Health Officer will be the primary designate for speaking to and answering media queries.

Primary:

Chief Medical Health Officer (or designate)
604-675-3900

Director, Public Affairs
604-708-5312
All media inquiries forwarded to Director, Public Affairs

Secondary:

Medical Health Officer On-Call (available 24/7)
604-675-4893

Senior Media Relations Officer
604-708-5340

After-hours Media Line
604-202-2012
For media inquiries after regular office hours and on weekends

10.4 Internal Stakeholders

Internal stakeholders are groups who work, train, and volunteer or reside in Vancouver Coastal Health facilities or provide services on behalf of Vancouver Coastal Health in the community. Staff includes those who are paid directly by VCH as well as those funded from elsewhere (or unfunded) who provide service. This latter group includes physicians, contracted staff, volunteers and students.

Internal Stakeholder	Primary Vehicles of Communication	Lead Responsibility
VCH Board	E-mail Confidential Communications Summary	• VP Communications & Public Affairs
VCH Senior Executive Team	E-mail Confidential Communications Summary	• VP Communications &, Public Affairs • Director, Public Affairs
VCH Staff • Physicians • Nurses • Pharmacy services	• E-mail • Intranet VCH News • Bulletin boards (posters) • VCH Connect	• VCH Communications and Public Affairs Team

• Emergency department • Community staff • Other facility staff • Volunteers • Residents	• Internal Newsletter • VCH Facebook • VCH Twitter • Medical staff website	
Long Term Care Facilities	• E-mail • MyVCH Intranet • Fax • Website: www.vch.ca	• Office of the Chief Medical Health Officer (CDC)
Providence Health Care	• E-mail • Intranet site • PHC News • Providence communications network • PHC Twitter • PHC Facebook	• Providence Communications team • Office of the Chief Medical Health Officer (CDC)
Students	• E-mail • Intranet site • Bulletin boards	• Supervisors • Educational Institutions
Contracted Staff	• Through BISS, which is led by PHSA	Contracting agencies
Medical Advisory Committees of Hospitals	• E-mail • Intranet site	• MAC Chairs
Patients and residents	• Website vch.ca • Posters • Leaflets • Signage • VCH Facebook, Twitter and Instagram • News release/media	• Communications • Site managers

10.5 External Stakeholders

External stakeholders include customers and clients, partners, government, non-governmental organizations, industry, media and the general public.

Stakeholder Group	Members	Lead Responsibility
Public		Key Spokesperson
	Municipalities	VCH Communications
	First Nations Communities	VCH Communications FNHA
Governments	Provincial Government • BCCDC • Provincial Health Officer • Ministry of Health • MoH Communications	• Office of the Chief Medical Health Officer • Communicable Disease Control (CDC), • Communications & Public Affairs
	Federal Government • Quarantine Officers • Public Health Agency of Canada	• CDC • BCCDC
	Internal Governments	Public Health Agency of Canada
External Health Authorities & Groups	Provincial Health Services Authority • BC Children's & Women's Health Centre • BC Cancer Agency	CDC
	Other Regional Health Authorities	CDC Communications
	HealthLink BC	CDC
	BC BedLine	CDC
	BC Ambulance Services	CDC
	Physicians	CDC
	Dentists	CDC
	Pharmacists	CDC
	Private Laboratories	CDC
	Other Private Health professionals	CDC
	Health Unions • BCNU • HEU • CUPE	Employee Engagement CDC
Community Agencies and Groups	School Board and Schools	Medical Health Officers (MHOs)
	Post Secondary institutions	MHOs
	Daycares	Licensing Officers
	Community Centres	MHOs
	Ethnic Community Organizations	Communications

Stakeholder Group	Members	Lead Responsibility
Other Service Organizations	BC Transit	CDC
	BC Ferries	CDC
Private Industry	Medical Equipment Suppliers	Purchasing
	Pharmaceutical Company Representatives	CDC
	Vancouver Airport Authority	Richmond MHO
	Other large industry	
Media	TV	Communications
	Radio	Communications
	Print	Communications
	Online media (i.e. VanCity Buzz)	Communications

10.6 Vehicles of Communication

Internet Website

For external audiences: www.vch.ca

Information on influenza and the VCH Pandemic Influenza Plan is posted on the Communicable Disease pages of vch.ca. When a pandemic is declared, information will be available on the home page with a dedicated web presence set up.

Information on the site will include:

- Up-to-date pandemic information
- Pandemic plan information, including availability of vaccine and eligible groups for vaccination
- Information for travelers returning from or travelling to pandemic areas (coordinated with Health Canada)
- Information on seeking medical care during the pandemic
- Information on prevention and self-care
- Links to other sites including:
    - BCCDC: www.bccdc.ca
    - Public Health Agency of Canada: www.phac-aspc.gc.ca
    - U.S. Centers for Disease Control: www.cdc.gov
    - World Health Organization: www.who.int

Intranet Site

For internal audiences: my.vch.ca

The Intranet site (my.VCH.ca), the Infection Control, Employee Engagement pages and VCH News, will contain information for staff, including staff bulletins, policies and procedures and question and answer documents.

Toll-free Hotline for External Audiences
1.888.875.4334

The toll-free hotline for the public has pre-recorded messages that can be updated as needed. During the pandemic, trained personnel at a central location to answer questions from the public will staff it.

Toll-free Hotline for Employees
1.877.822.4646

The toll-free hotline for employees will have pre-recorded information and will be important for staff calling from home or without access to e-mail.

An auto response with information about the pandemic will also be set up from VCH's centralized Feedback email account (feedback.vc@vch.ca) for members of the public sending emails, directing them to the VCH website where they can find more information in the meantime.

Fax and E-mail Distribution Lists

1. Maintained by VCH Communications and Public Affairs:
    - Government officials
    - News media
    - MoH and Health Authority communications departments

2. Maintained by the Office of the Chief Medical Health Officer, Communicable Disease Control:
    - VCH Physician network
    - (Richmond and North Shore/Coast Garibaldi Physician network – maintained by HSDA MHOs)
    - BCCDC
    - Ministry of Health
    - HealthLinkBC
    - BC BedLine
    - BC Ambulance Services

Media Materials

Developed and maintained by VCH Communications and will include:

- News releases, public service announcements, and advisories for media
- Press conferences to be held in collaboration with Ministry of Health, BCCDC and other stakeholders when:
    - Pandemic influenza arrives in the region
    - Important recommendations/interventions for the public are required such as availability of vaccine, implementation of public health measures to control the spread of the virus, etc.

Other material will be developed as required and may include:

Vehicle	Audience
Question and Answer documents	Public healthcare providers; public
Surveillance bulletins	Healthcare providers
Canned presentations/Slide sets	VCH staff and other healthcare providers
Posters	Public
Brochures and pamphlets	All stakeholders

10.7 Key Messages

Key messages will be developed in partnership with the Ministry of Health and BCCDC, and will be coordinated with messages from the Public Health Agency of Canada and the World Health Organization. As information will have the propensity to change quickly, VCH messaging should focus on strategies in place to address the pandemic, reassure the public and what the public can do to protect themselves; e.g., handwashing. Given the uncertainty, actual key messages will be developed at the time and should also incorporate the following:

For the Public:

- Where pandemic has been declared and details that can be provided
- For updated information, please do not call local health units, instead reinforce that regular updates will be posted to the VCH website at www.vch.ca or by calling our Vancouver Coastal Health Influenza Line at 604 875-4252, press 3
- Details as they become available
- Information on where to get influenza vaccine when available and eligible groups
- Individuals with flu and flu-like symptoms should stay home – instructions on when to seek medical care
- Provide information on special or temporary pandemic clinics if required; i.e., local schools or community centres

For Staff:

- In the event of an emergency or pandemic situation, please call the Staff Information Hotline at 1.877.822.4646 for regular updates
- Instructions in the event of staff illness or illness among family members

For Physicians:

- Epidemiology of the pandemic
- Infection control recommendations for office settings
- Patient management
- Reporting
- Eligibility criteria for influenza vaccinations and antiviral medication

Translations

To serve the multicultural community of Vancouver Coastal Health (VCH), information leaflets and brochures may be translated into Chinese (simplified and traditional), Punjabi, Farsi and French. Prior to the onset of the pandemic, periodic updates to the public education information material will be made. Translations will be delayed until the pandemic is confirmed, to ensure that the translated information is current.

The Provincial Language Service, a program of PHSA, is to be used for translations.

http://pls.phsa.ca/Translation/default.htm

(604) 297-8400 or toll-free at 1-877-BC Talks (228-2557) Select option 2.

Fax: (604) 297-9304

Email: plstranslations@phsa.ca

Some translated HealthLinkBC files can be found at

http://www.healthlinkbc.ca/servicesresources/healthlinkbcfiles/index.html