

Surveillance Activities in Interior Health during an Influenza Pandemic

Surveillance is a key component in pandemic preparedness. The goals of surveillance during a pandemic are:

- To recognize promptly the emergence of a potential pandemic strain of virus and monitor its course in Interior Health, thereby reducing morbidity, mortality, and hospital admissions from influenza illness.
- To rapidly identify outbreaks in facilities and communities.
- To provide accurate information to Interior Health that will assist in decision-making.
- To understand the impact of a pandemic on Interior Health.

During a pandemic, surveillance activities will be directed by the Public Health Agency of Canada (PHAC) and British Columbia Center for Disease Control (BCCDC). Case definitions will be established by the World Health Organization (WHO); however, the epidemiology of the pandemic virus may change and the case definition will need to be reevaluated over the course of the event. In Interior Health, the Senior Medical Health Officer and/or an appointed designate will provide leadership in surveillance and will have responsibility to review and revise the health authority's surveillance activities during a pandemic.

National and Provincial Surveillance Activities

National Surveillance

FluWatch is the National surveillance program conducted by the Viral Respiratory Diseases section, Division of Immunization and Respiratory Diseases, Center for Infectious Diseases Prevention and Control (CIDPC). Weekly reports summarizing influenza surveillance activities in Canada are produced during the influenza season from October to May, while biweekly reports are produced from June through September. Data is collected through laboratory-based influenza virus identification, ILI reports from sentinel physicians, and reports of influenza activity by provincial and territorial epidemiologists. FluWatch can be found at <http://www.phac-aspc.gc.ca/fluwatch/index.html>.

Provincial Surveillance

The BC Center of Disease Control, Epidemiology Services, produces weekly reports during the influenza season.

These reports are available on-line at <http://www.bccdc.org/content.php?item=35> and are disseminated through a provincial distribution group (ILIBC), which includes key personnel in public health, emergency operations, hospital, and laboratories.

These surveillance reports include information from BC sentinel physicians, laboratories, and outbreak information from residential facilities, schools, and acute care hospitals. A summary of National and International surveillance is also included.

Overview of Surveillance Activities according to WHO Phases

INTERPANDEMIC PERIOD			
Phase 1	<ul style="list-style-type: none"> No new influenza subtypes in humans Influenza subtype that has caused human infection may be present in animals, but risk* of human infection is low 	PRE PANDEMIC PLANNING	<p>In the pre-pandemic period, the following surveillance activities should be annually reviewed (as is feasible):</p> <ol style="list-style-type: none"> The IH surveillance network distribution list and distribution activation for accuracy and completeness including: <ul style="list-style-type: none"> All IH Physicians IH Walk in Clinics IH Hospital Emergency Rooms IH Laboratories (hospital and private) and BCCDC IH Medical Health Officers IH Public Health Nursing IH Home and Community Care IH Contracted Care Facilities IH Infection Control Practitioners IH Mental Health IH Health Protection IH Communications IH Senior Executive Team IH Population and Public Health Surveillance Committee BC Ambulance First Nations Health Administrators First Nations Health Nurses CFIA Veterinarians Morticians in Interior Health Alternate Care sites as identified by each HSA Schools of Nursing (UBCO, Thompson Rivers, UNBC, Selkirk College, BCIT) British Columbia Centers for Disease Control (BCCDC) Transport Canada (airports) The Sentinel physician network <ul style="list-style-type: none"> Are sufficient numbers of physicians available? Are current lists accurate? Laboratory testing <ul style="list-style-type: none"> Review procedure for specimen collection, transport, testing and reporting in: <ul style="list-style-type: none"> IH laboratories Private laboratories within IH BCCDC Community and facility influenza surveillance review <ul style="list-style-type: none"> BCCDC ILI Weekly Surveillance Information Sentinel Physician reports School and LTC influenza surveillance Reports Infection Control Practitioners surveillance in acute, residential and other care facilities IH protocols for reporting and responding during influenza outbreaks <ul style="list-style-type: none"> Refer to the IH Infection Control Manual IH influenza mortality rates and other related infectious
Phase 2	<ul style="list-style-type: none"> No new influenza virus subtypes have been detected in humans Circulation animal subtype poses a substantial risk* of human disease 		

			diseases summarized in Population Health Profile.
PANDEMIC ALERT PERIOD			
Phase 3	<ul style="list-style-type: none"> Human infection(s) with a new subtype No human spread or rare spread to close contacts 	NOVEL VIRUS ALERT	<p><u>Review weekly:</u></p> <ol style="list-style-type: none"> Information from World Health Organization (WHO), PHAC ,British Columbia Ministry of Health (BC MoH) and BCCDC Case definition for pandemic influenza Confirm triggers for distribution pandemic influenza alert information to IH surveillance network. Receive, review, adapt as necessary and distribute pandemic influenza alerts to IH surveillance network. Identify triggers for additional community and facility surveillance measures. Review and revise as necessary IH protocols and forms for reporting influenza Review the specimen collection requirements for influenza from BCCDC <ul style="list-style-type: none"> Initiate the procedure for ordering specimen collection kits, and for collecting and transporting specimens to the laboratory IH influenza and pneumonia mortality rates
Phase 4	<ul style="list-style-type: none"> Small cluster(s), limited to human-to-human transmission Spread highly localized, virus not well adapted to humans 		
Phase 5	<ul style="list-style-type: none"> Large cluster(s), human-to human still localized Increasingly better adapted to humans, not fully transmissible, substantial pandemic risk¹ 	PANDEMIC ALERT	
PANDEMIC PERIOD			
Phase 6	Increased and sustained transmission in general populations	PANDEMIC	<p>Case Confirmed In North America – Remote to IH</p> <p>Cases identified in North America but not in jurisdiction contiguous with BC – no cases in IH.</p> <p><u>The following activities and information should be reviewed daily:</u></p> <ol style="list-style-type: none"> Information received from WHO, PHAC, BC MoH and BCCDC Case definition for pandemic influenza Receive, review, adapt as necessary and distribute pandemic influenza alerts to IH surveillance network. Receive and review weekly the number of : <ul style="list-style-type: none"> hospital admissions related to influenza and pneumonia hospital and residential deaths related to influenza or pneumonia emergency department visits related to influenza and pneumonia people seen in physician’s offices and walk-in clinics related to influenza and pneumonia number of residents ill with influenza or pneumonia in facilities ill IH staff members (in all work sites) related to influenza and pneumonia ill students in schools deaths in the community from influenza or pneumonia confirmed lab reports from BCCDC Review the specimen collection requirements for influenza from BCCDC

		<p>6. Submit daily surveillance report to Senior Medical Health Officer</p> <p>Case Confirmed in Region Adjacent to IH</p> <p>Cases identified in a jurisdiction adjacent to IH or in BC – no cases in IH</p> <p><u>Review daily:</u></p> <ol style="list-style-type: none"> 1. Information received from WHO, PHAC, BC MoH and BCCDC, Alberta Ministry of Health, and the State Departments of Health responsible for Washington State, Idaho, Montana, Alaska 2. Case definition for pandemic influenza 3. Receive, review, adapt as necessary and distribute pandemic influenza alerts to IH surveillance network. 4. Receive and review daily the number of : <ul style="list-style-type: none"> • hospital admissions related to influenza and pneumonia • hospital and residential deaths related to influenza or pneumonia • emergency department visits related to influenza and pneumonia • people seen in physician’s offices and walk-in clinics related to influenza and pneumonia • number of residents ill with influenza or pneumonia in facilities • ill IH staff members (in all work sites) related to influenza and pneumonia • ill students in schools • deaths in the community from influenza or pneumonia • confirmed lab reports from BCCDC 5. Initiate case contact tracing and follow-up (low level outbreak) <ul style="list-style-type: none"> • review contacts of other jurisdictions bordering IH 6. Submit daily surveillance report to Senior Medical Health Officer <p>Outbreak in IH Confirmed</p> <p><i>ONCE A PANDEMIC IS CONFIRMED IN INTERIOR HEALTH, ONGOING ACTIVE SURVEILLANCE MAY NOT BE FEASIBLE, REEVALUATION OF SURVEILLANCE ACTIVITIES MAY NEED TO OCCUR</i></p> <p><u>Review daily:</u></p> <ol style="list-style-type: none"> 1. Information received from WHO, PHAC, BC MoH and BCCDC, Alberta, Ministry of Health, and the State Departments of Health responsible for Washington State, Idaho, Montana, Alaska 2. Case definition for pandemic influenza 3. Distribute pandemic influenza alerts to IH surveillance network. 4. Receive and review daily the number of : <ul style="list-style-type: none"> • hospital admissions related to influenza and pneumonia • hospital and residential deaths related to influenza or pneumonia
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			<p>pneumonia</p> <ul style="list-style-type: none"> • emergency department visits related to influenza and pneumonia • people seen in physician’s offices and walk-in clinics related to influenza and pneumonia • number of residents ill with influenza or pneumonia in facilities • ill IH staff members (in all work sites) related to influenza and pneumonia • ill students in schools • deaths in the community from influenza or pneumonia • confirmed lab reports from BCCDC <p>5. Communicate to IH surveillance network regarding number of cases, age, sex, address, vaccine status so that epidemiology of the virus in IH can be assessed</p> <p>6. Initiate case finding and contact tracing</p> <ul style="list-style-type: none"> • feasible early on in pandemic to contain spread of virus <p>7. Consider cohorting contacts e.g. closing workplaces or schools</p> <p>8. Submit surveillance report daily or as often as requested to the Senior Medical Health Officer</p>
POSTPANDEMIC PERIOD			
	Return to interpandemic period	PANDEMIC OVER / RECOVERY	<p>Post Outbreak in IH</p> <p><i>Restart Routine Business Operations</i></p> <p>1. Review surveillance system in preparation for second wave:</p> <ul style="list-style-type: none"> • Estimate burden of disease during outbreak period • Determine on-going surveillance needs for documentation of end of first wave • Detection of any new cases/outbreaks. • Evaluate surveillance system and make changes as necessary. <p>2. Report review of findings to the Senior Medical Health Officer</p> <p><i>Debrief and Review</i></p> <p>1. Resume routine ongoing laboratory and disease surveillance.</p> <ul style="list-style-type: none"> • Submit initial impact report and subsequent follow-up reports to Senior Executive Team <p>2. Review and update surveillance plan related to lessons learned for pandemic influenza.</p>