
Section II - Infection Prevention and Control Surveillance

Surveillance is an essential component of an effective IPC program. It is the systematic method of collecting, consolidating, analyzing, interpreting and disseminating data to those that need to know about the distribution and determinants of a given disease or event for the purpose of action.

Surveillance can be used for the following purposes:

- To determine the **endemic rate** which is the usual presence of a disease or condition in a specific population of a disease or event. This can be used as a **baseline** which is the number or value used as a comparison.
- To detect and investigate clusters or outbreaks.
- To assess the effectiveness of prevention and control measures and interventions.
- To detect and report diseases to the SMDHU as required by legislation.
- To identify organisms and diseases of epidemiological importance such as AROs, MRSA, Tb, and *Clostridium difficile*, and prevent their spread.
- To ensure compliance with agency requirements for accreditation.
- To monitor injuries and identify risk factors for staff.
- To detect a bioterrorist event or an emerging infectious disease.
- To provide data to conduct facility risk assessments.

Surveillance Methodologies

1. Total House Surveillance:

All infections are monitored in the entire population of a LTCH or RH and an overall infection rate is calculated. This total house surveillance infection rate is generally not used as overall rates cannot be adjusted for specific infections or injury risks. It is also not appropriate for measuring trends over time, making comparisons over groups within the facility (or between facilities), or benchmarking.

2. Targeted Surveillance:

This type of surveillance can focus on a particular care area, infections related to medical devices (i.e. urinary tract catheters), or an organism of epidemiological significance (i.e. MRSA). Targeted programs usually focus on **high-risk, high volume** procedures and on those health care-associated infections and adverse outcomes that are potentially preventable.

3. Combination Surveillance Strategy:

In practice, many IPCPs utilize a combination of targeted and modified total house surveillance. An example would be monitoring house wide laboratory reports to detect: MRSA, VRE, reportable diseases, and clusters that may indicate an outbreak or breakdown of IPC practices.

Choosing Indicators (Events) to Monitor

One of the most important steps in designing a surveillance program is the selection of appropriate health related indicators to monitor. A surveillance program should monitor a variety of processes, outcomes, and events that focus on residents and staff.

Process Indicators: Include medication errors; influenza vaccination rates in HCWs and residents; hepatitis B immunization rates in HCWs; and HCWs' compliance with protocols, such as routine practices, additional precautions, and hand hygiene.

Outcome or Event Indicators: Include occurrences of reportable diseases, nosocomial (facility-acquired) infections (i.e. urinary tract, pneumonia, upper respiratory tract, local IV site, or wounds); admission of residents with AROs, resident and HCW infection or colonization with a specific organism (i.e. *C. difficile*, MRSA, VRE, RSV or rotavirus); resident falls; influenza or tuberculin skin test conversions; or incidents involving HCWs such as sharps injury and blood/body fluid exposures.

Rates: When selecting an event and a population for study, both the number of cases (i.e. persons who have the condition), and the number of the total population at risk for the condition must be identified, if rates are to be calculated. Rates, rather than raw numbers, must be used to accurately track trends over time.

Incidence Density: Calculates the number of cases (or events) per total person-time at risk.

Example:

In a LTCH, there were 12 residents from June 1 to 10 of 2006, 9 residents from June 11 to 20, and 8 residents from June 21 to 30. The number of resident-days for the month of June is calculated as follow:

$$(12 \times 10) + (9 \times 10) + (8 \times 10) = 290$$

If there were 2 resident falls in that LTCH in June, the calculation for the fall rate would be:

$$\frac{\text{\# of falls in a LTCH in June}}{\text{\# of resident - days in LTCH in June}} \times 1,000 = \frac{2}{290} \times 1,000 = 6.9$$

The rate is expressed as 6.9 falls per 1000 resident-days in the LTCH in June.

Determining Time Period for Observation

Surveillance data for each indicator should be collected consistently and for a defined period such as a month, quarter, or year. It is difficult to interpret rates for events that rarely occur or procedures that are infrequently performed. If this is done, it is necessary to use an observation period that is long enough to accumulate a sufficient number of events in order for the measurement to be valid.

Identify Surveillance Criteria

Surveillance criteria (i.e. case definitions) must be consistently used to accurately trend surveillance data over time within a facility.

An example of a surveillance case definition is:

“Clinically compatible signs and symptoms AND

- Laboratory confirmation (culture or serology) OR
- An epidemiological link to a lab-confirmed case”.

This would allow for the tracking of health care-associated infections, occurrences of an event, or compliance with a process. If a case definition is changed, then this should be noted in the surveillance report because the number of cases identified will likely change, which would affect the rate.²⁰

Policy for Infection Control Surveillance

There should be a written policy within the facility to closely monitor all residents who exhibit signs/symptoms of infection. All HCWs should notify the IPCP of suspected infections and nursing staff record the information on an Infection Control Surveillance Form (See example below). If this is an unusual infection or if the resident's condition is considered critical, the IPCP should be notified immediately, as well as the Director of Nursing. The physician and the resident's family should also be notified of any change in the resident's condition.

Procedure for Infection Surveillance

When a resident exhibits signs/symptoms of a suspected infection, the nursing staff should:

- Record the resident's name, room number, medications ordered, date started, and any cultures done.
- Follow procedures for notifying the attending physician and family, and begin close monitoring of vital signs, intake and output.
- Document in the narrative nursing progress notes on every shift of the presence or absence of symptoms (i.e. "no cough noted this shift" or "resident c/o burning on voiding x3 this shift"). Continue this documentation until 48 hours after symptoms have subsided, or until 48 hours after the last dose of medications.
- The IPCP will gather further data for infection tracking and reporting, and provide consultation and education as needed. Completed Infection Control reports should be presented at quarterly Infection Control meetings and Medical Staff meetings, and can also be available to all staff for review upon request.¹

Sample Form: Infection Control Surveillance

Month

Unit

Supply the following information each month for any resident who:

- You suspect of having an infection
- Has medications prescribed
- Has had a culture obtained or ordered

Site	Residents Names	Room Number	Medication R _x	Date Initiated	Culture Site
Upper Respiratory					
Lower Respiratory/Pneumonia					
Urinary Tract					
IV Associated					
Skin					
Surgical Wound/Pressure Ulcer					
Eye					
Gastrointestinal					
Other					

Sample Form: Monthly Infection Control Report

Average Daily Census	Month:	Year:
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By Site of Infection	Unit	Unit	Unit	Unit	Unit	Total Percentage
Upper respiratory infections						
Lower respiratory infections						
Urinary Tract infections						
Catheter-associated UTI						
IV-associated infections						
Skin infections						
Eye infections						
Gastrointestinal						
Other (Sepsis, Vaginal, GU, etc.)						
Total # community –acquired infections						
Total # of chronic infections						
Total # of nosocomial infections						
Unit Census						
Total acute nosocomial infections per 1,000 resident days						

Comments

General:

Nursing Department:

Housekeeping Department:

Laundry Department:

Maintenance Department:

Submitted by: _____ Infection Prevention and Control Professional

Preventing Febrile Respiratory Illnesses (FRIs)

A summary of the Ministry of Health and Long-Term Care's *Preventing Febrile Respiratory Illnesses Protecting Patient and Staff, Aug 2006*⁵ is presented below. The best practice for febrile respiratory illness set out in this document should be part of routine practices for all resident care across the continuum of care including LTCHs and RHs.

1. Influenza Immunization.

- Health care and other service providers in facilities and community settings who, through their activities, are potentially capable of transmitting influenza to those at high risk for influenza complications should be immunized annually.
- All health care settings should have staff immunization policies.

2. Case Finding/Surveillance

- All health care settings should ensure that they have the ability to identify cases of FRI and to detect clusters or outbreaks of FRIs (see attached screening tool).
- Once cases are identified, staff should be aware of the need to initiate and maintain IPC practices.

3. Preventive Practices

- Ensure that staff and residents are educated in preventing the spread of FRI, hand washing, staff illness reporting and PPE.
- Maintain routine cleaning and disinfection practices using approved detergents and disinfectants.

4. Reporting

- Establish procedures for proper notification and reporting.
- HCWs who develop FRI symptoms must report to OHS or delegate.
- OHS will report any staff clusters (non-nominally) to IPCP.
- IPCP will alert OHS if FRI clusters are in residents so staff are then monitored.
- Employers must report to Joint Occupational Health and Safety Committee or delegate any occupational infection.
- Employers must report to the Ministry of Labour if a staff member acquired an occupational infection.
- Employers must also report to the Workplace Safety and Insurance Board (WSIB) within 72 hours if a staff member acquires an occupational infection.
- Health care settings must report to the medical officer of health (MOH) of the SMDHU any residents with a new cough, fever and travel history to a country with a health alert or any contact with someone who has traveled to a country with a health alert.
- Health care settings are legally required to report to the local MOH when:
 1. The etiology of a febrile respiratory illness is a reportable disease.
 2. There is an outbreak or cluster of FRI in the facility.

5. Evaluation

- Compliance with influenza immunization, case finding/surveillance, prevention practices and reporting requirements should be evaluated regularly through a measurable auditing process.

Sample Form: Febrile Respiratory Illnesses Surveillance Form

Resident's Name:	Date:
1. Do you have new/worse cough or shortness of breath? if NO stop here (no further questions) if YES continue with next question	
2. Are you feeling feverish*, or have you had shakes or chills in the last 24 hours? if NO take temperature ;if > 38°C, continue with next question, otherwise stop (no further questions) if YES , take temperature and continue with next questions. *NOTE: Some people, such as the elderly and people who are immunocompromised, may not develop fever. If the answer to both questions (1) and (2) is "YES", or if the answer to question 1 is "YES" and the recorded temperature is >38°C, initiate droplet precautions, and notify IPCP	
3. Is any of the following true? Have you traveled within the last 14 days? Where**? _____ or Have you had contact in the last 14 days with a sick person who has travelled? Where**? _____ ** For a current list of countries with health alerts, see: http://www.phac-aspc.gc.ca/tmp-pmv/index.html IPCP should notify SMDHU by phone when: case has a positive travel history and/or there is a possible cluster/outbreak Staff Member: _____ Date: _____	

Staff Illness Reporting

The Ontario Hospital Association states “HCWs have a responsibility to their residents and colleagues regarding not working when ill with symptoms that are likely attributable to an infectious disease. This includes staff with influenza-like illness, febrile respiratory illness, gastroenteritis and conjunctivitis”.²¹

All employees should be educated on the importance of reporting illness (including colds, influenza, diarrhea or when the cause is unknown etc). Staff should be reminded that staying home will reduce the spread of infection within the facility. All employees are responsible for promptly reporting any infections they have, or may have, come into contact with to their supervisor. This step is very important in preventing the infection from spreading to residents.

Febrile Respiratory Illnesses –Staff Requirements for Reporting

Provided is a summary of excerpts from The Ministry of Health and Long-Term Care’s Provincial Infectious Diseases Advisory Committee (PIDAC) document *Preventing Febrile Respiratory Illnesses Protecting Patients and Staff (2006)*⁵. These sections outline the requirements for staff to report Febrile Respiratory Illnesses (FRI).

- All health care settings should establish a clear expectation that staff do not come into work when ill with an FRI, and support that expectation with appropriate attendance management policies.

Note: Attendance management policies must reinforce, rather than act, as a disincentive to staff fulfilling this responsibility. For example, all health care settings should ensure that they:

1. Provide sick leave benefits for all staff (either in the form of paid sick days for full-time staff or compensatory wage rates in lieu of benefits to part time staff).
 2. Avoid reward programs for staff that have no sick days.
 3. Actively exclude ill staff (i.e. send staff home that arrive at work ill).
- Health care institutions should have established procedures for notifying the IPCP of any clusters of FRI in either staff or residents. (To protect employees’ rights to confidentiality, OHS will report staff clusters non-nominally to the IPCP.)

Note: The purpose of reporting to the IPCP is to ensure that the appropriate precautions are taken to protect residents and staff, and to monitor or manage any possible outbreaks.

- HCWs that develop FRI symptoms should call in and report their condition to OHS or delegate.
- IPCP will alert OHS about any FRI clusters in residents, so OHS can monitor staff. OHS will alert (non-nominally) IPCP of any clusters of FRI among staff.
- Employers are required to report to the Joint Occupational Health and Safety Committee or delegate any occupationally acquired infection.
- If a HCW develops an occupational infection, the employer must report the illness to the Ministry of Labour in accordance with occupational health and safety legislation.
- If a HCW develops an occupational infection, the employer must report the illness to the WSIB within 72 hours.
- Health care setting administrators, laboratories and community/attending physicians should report to the local MOH when:
 1. The etiology of an FRI is a reportable disease
 2. There is an outbreak or cluster of FRI in any health care facility.

Note: The purpose of reporting to the health unit is to identify any potential outbreaks or emerging illnesses early, so public health measures can be implemented to prevent and manage transmission.

All LTCHs and RHs should track staff illnesses as a preventive strategy to provide ongoing surveillance for potential outbreaks or increased incidences that would indicate a pandemic or other unknown illness in the community. A tracking tool should be created and designed to ensure that staff illness information can be used to identify and follow potential cases of infection and be communicated and shared appropriately, while safeguarding the right to confidentiality.

Sample Form: Employee Screening Tool to Report Febrile Respiratory Illnesses and Other Potential Communicable Diseases

Employee Screening Tool to Report Febrile Respiratory Illnesses and Other Potential Communicable Diseases		
Name of Employee:	Case ID Number:	Department:
Date:	Shift:	
Symptoms:		
1. Do you believe you acquired this illness at work? <input type="checkbox"/> YES <input type="checkbox"/> NO If "YES" please complete an employee incident report and forward it to Human Resources		
2. Do you have a new/worse cough or shortness of breath? <input type="checkbox"/> YES <input type="checkbox"/> NO If "NO" (no further questions) If "YES" continue with the next question.		
3. Are you feeling feverish*, or have you had shakes or chills in the last 24 hours? <input type="checkbox"/> YES <input type="checkbox"/> NO If "NO" ask to take temperature _____ if >38°C, continue with next question, otherwise stop (no further questions). If "YES" ask to take temperature _____ and continue with next questions.		
* Note: Some people, such as the elderly and people who are immunocompromised, may not develop a fever.		
If the answer to both questions (1) and/or (2) and (3) is "YES", or if the answer to question (2) is "Yes" and the recorded temperature is >38°C, employee should stay home and procedure for notifying Infection Prevention and Control and OHS should be followed.		
4. Are any of the following true? Have you traveled within the last 14 days? <input type="checkbox"/> YES <input type="checkbox"/> NO Where? _____ or Have you had contact in the last 14 days with a sick person who has traveled? <input type="checkbox"/> YES <input type="checkbox"/> NO Where? _____		
**for a current list of countries with health alerts see: http://www.phac-aspc.gc.ca/tmp-pmv/index.html		
Infection Prevention and Control should notify SMDHU by phone when: case has positive travel history and/or there is a possible cluster/outbreak		
Staff Member Completing Screening: _____ Date: ___/___/___		