

6 RESPIRATORY BORNE

Respiratory diseases are those diseases that are transmitted via the respiratory route. For many respiratory diseases a vaccine is available. Immunity from vaccine varies however by disease/ vaccine and may not last a lifetime.

6.1 Transmission

Respiratory infections are spread by direct or indirect transmission or via the air-borne route.

Sneezing, coughing and talking spreads respiratory droplets from an infected person to someone else via contact with mucous membranes (eye, nose or mouth). Droplets from the mouth or nose may also contaminate hands, cups, toys and other items or surfaces and spread infection to others who may use or touch these items.

Pathogens may also be transmitted through the air as microbial aerosols and can be inhaled.

6.2 Risk Factors

The following risk factors may be associated with an increased risk of acquiring and / or spreading illness:

- Lack of hand hygiene.
- Lack of respiratory etiquette.
- Sharing of eating utensils, drinks, lipsticks, cigarettes and any other objects used on the nose and mouth with anyone.
- No or incomplete immunization.
- Travel to areas endemic for certain pathogens.
- Specific settings/facilities (for example overcrowded residential facilities/housing or daycare facilities).

The following individuals may be associated with increased risk of severe illness:

- Residents of nursing homes (the elderly).
- Immunocompromised persons.
- Infants.

6.3 Diagnosis and Laboratory Guidelines

Regional Laboratories:

- Process clinical samples and perform isolation and basic identification techniques.
- Perform antimicrobial susceptibility testing, if applicable.
- Send isolates to the Reference Laboratory, if necessary.
- Refer isolates to external laboratories for testing not available locally.
- Report their data to regional public health.

Influenza Reference Laboratory (Georges-L-Dumont):

- The microbiology laboratory of the Georges-L-Dumont Hospital is the New Brunswick reference center for influenza.

Laboratory Guidelines:

- Collect samples per current regional laboratories procedures.
- Submit samples to regional laboratories.

Please refer to disease specific guidelines for information on laboratory guidelines or your local laboratory.

6.4 Prevention

Education

Educate cases and contacts about the specific disease, symptoms, diagnosis, period of communicability, and applicable preventative measures. If required inform persons of any prophylaxis and/or exclusion measures (refer to specific disease guidelines).

Prevention Messages:

- Hand Washing
- Cough/Sneeze Etiquette
- Respiratory Disease Precautions
- Environmental Management

More information is in the prevention messages section.

Immunization

Educate on the importance of immunization for vaccine preventable respiratory diseases. There are more benefits than disadvantages associated with immunization.

A number of respiratory diseases are vaccine preventable. Provide immunization as per the New Brunswick Immunization Guide. Routine immunization is available for the following respiratory diseases:

- Diphtheria
- *Haemophilus influenzae* (invasive) – type B
- Influenza
- Measles
- Mumps
- Pertussis
- Pneumococcal disease
- Polio
- Rubella
- Varicella

For immunization as a public health measure see Case Management sections and individual specific disease guidelines.

6.5 Case Management

Investigation

Investigations of respiratory diseases should start as soon as reasonably possible after notification. Start case finding to identify cases that will benefit from treatment and contacts that will benefit from prophylaxis, the population at risk, to identify outliers who may give important clues about the source of infection and to identify a potential outbreak. Collect required information by conducting case and

contact interviews. Actively look for new cases and interview contacts to determine if they fit the case definition; or contact identified institutions, health care providers, the public (as required) to ask to report individuals who meet the case definition.

Provide advice and education to cases about symptoms, communicability period, and applicable preventative measures. Advise cases to consult with a health care provider as needed.

Exclusion/ Social Distancing

Exclusion and/ or social distancing may need to be considered depending on the disease. Refer to disease specific guidelines.

Treatment

Treatment may be provided for respiratory diseases as needed and directed by a health care provider.

Immunization

The immunization history for vaccine preventable diseases should be obtained from and reviewed with cases and contacts. Every effort should be made to ensure that a case and/or contact is up to date with immunizations as per the New Brunswick Routine Immunization Schedule. Make sure a case is up-to-date and immunized accordingly upon recovery.

6.6 Contact Management

Investigation

Provide advice and education to symptomatic contacts about symptoms, communicability period, and applicable preventative measures. Advise symptomatic contacts to consult with a health care provider as needed.

Collect required information by conducting contact interviews. Interview contacts to determine:

- If they fit the case definition.
- Nature of the contact with the case.
- Susceptibility to the disease and risk for severe disease.
- Requirements for post-exposure prophylaxis.
- If working/ attending a high risk setting.

Alternatively contact identified institutions, health care providers, the public (as required) to ask them to report individuals who meet the case definition.

The definition of a close contact varies by respiratory disease. The following guidance may be used to determine closeness of a contact and should be assessed with the specific disease information in mind.

Close contacts of persons with diagnosed or suspect respiratory diseases are usually those who:

- Had direct face-to-face exposure for five or more minutes with a symptomatic case during the infectious period.
- Shared a confined space in close proximity for a prolonged period of time, such as one hour or longer, with a symptomatic case during the infectious period.

- Had direct contact with respiratory, oral or nasal secretions from a symptomatic case during the infectious period such as kissing, being directly sneezed or coughed upon or sharing food or eating utensils during a meal.

Additional considerations for determining close contacts of persons with diagnosed or suspect respiratory diseases:

- Type of agent involved: some agents are more transmissible than others.
- Mode of transmission.
- Severity of symptoms of the case, for example a violent cough may generate higher velocity of droplets.
- Infectious period of the case.
- Age or underlying conditions: the young, the elderly and immunocompromised are sometimes at higher risk.
- Proximity: close proximity can be considered with contacts in household, daycare, school and office settings.
- Physical environment in which the contact has occurred; i.e. confined space, poor ventilation.

Exclusion/ Social Distancing

If symptoms of respiratory diseases develop, contacts are advised to isolate themselves at home immediately until an assessment has been done to confirm or rule out a diagnosis of respiratory disease (not applicable to all respiratory diseases). Advise cases to call ahead before going to any health care facility to inform the staff of symptoms so they can be isolated on arrival to avoid exposing any susceptible persons.

Prophylaxis

Advise contacts of cases to seek medical attention if any of the symptoms compatible with respiratory disease occur.

Prophylaxis may be required, please refer to disease specific guidelines.

Immunization

The immunization history for vaccine-preventable diseases should be obtained from and reviewed with contacts. Every effort should be made to ensure a contact is up to date with immunizations as per the New Brunswick Routine Immunization Schedule.

6.7 Outbreak Management

Investigation

Activate the local outbreak plan when an outbreak is declared.

A community outbreak can be declared when there is an increase in illness that is unusual in terms of time and or geography. An outbreak is confirmed through laboratory and or epidemiological evidence. Regional MOHs declare the start and end of regional outbreaks.

An institutional outbreak (eg. nursing home, long term care facility, or correctional) may be declared when two or more cases of acute respiratory tract illness occur within 48 hours of one another, in the same area/ on the same unit.

Exclusion/ Social Distancing

Please refer to the disease specific guidelines for guidance on social distancing/ exclusion.

Treatment/ Prophylaxis

Treatment may be provided for respiratory diseases as needed and directed by a health care provider.

Immunization

The immunization history for vaccine-preventable diseases should be obtained from and reviewed with cases and contacts. Every effort should be made to ensure a case and/or contact is up to date with immunizations as per the New Brunswick Routine Immunization Schedule.

6.8 Other Considerations

Health Care Workers (HCWs)

- HCWs should have their immunization status for vaccine-preventable diseases recorded, ideally before exposure occurs.

Travel

It is recommended that contact tracing be initiated for some respiratory diseases (e.g. TB, measles) if:

- Cases traveled during their infectious period;
- The flight occurred within the previous 10 days and
- The total time spent aboard the aircraft was at least 8 hours, including ground time on the tarmac.

Aircraft passenger manifests are rarely kept after 48 hours so contact tracing may be more difficult after that time.

Attempt to trace, contact, and offer antimicrobial chemoprophylaxis to:

- Persons traveling with the index case who have had prolonged close contact (e.g., household members, roommates). These persons should also be offered vaccine if the disease is vaccine-preventable and the person is not up-to-date according to the Routine Immunization Schedule.
- Passengers who were sitting immediately on either side of the index case (but not across the aisle).
- Passengers and flight staff who have had direct contact with respiratory secretions of the index case.

The above individuals may be at an increased risk as bacteria transmitted through respiratory droplets can be propelled short distances (< 1 meter) during coughing and sneezing.

6.9 Reportable Diseases and Events

- Clusters of severe or atypical illness thought to be respiratory borne
- Diphtheria
- Influenza caused by a new subtype
- Measles

- Severe acute respiratory syndrome
- Smallpox
- Meningococcal (invasive) disease
- Mumps
- *Haemophilus influenzae* (invasive) – type B and non-B
- Influenza (laboratory confirmed)
- Legionellosis
- Leprosy
- Pertussis
- Pneumococcal disease (invasive)
- Rubella
- Streptococcus group A beta-hemolytic (invasive)
- Tuberculosis (active)
- Varicella

Respiratory Education

Disease specific information				
<input type="checkbox"/> Pathogen	<input type="checkbox"/> Mode of transmission	<input type="checkbox"/> Period of communicability	<input type="checkbox"/> Risk factors for transmission	<input type="checkbox"/> Risk factors for susceptibility
Education and control measures				
Hand washing	<input type="checkbox"/> After using the washroom	<input type="checkbox"/> After diapering		
	<input type="checkbox"/> Before contact with children and the elderly	<input type="checkbox"/> After contact with ill persons		
	<input type="checkbox"/> Before giving and taking medication	<input type="checkbox"/> After sneezing or coughing		
Immunization	<input type="checkbox"/> Educate on the importance of immunization	<input type="checkbox"/> Assess immunization status and offer immunization as applicable		
Cough Etiquette	<input type="checkbox"/> Dispose of the tissue in the garbage after use	<input type="checkbox"/> Cover your coughs and sneezes with the inside of your elbow or with a tissue		
Exposure Prevention	<input type="checkbox"/> Avoid sharing personal items	<input type="checkbox"/> Avoid crowds		
	<input type="checkbox"/> Avoid crowding in living quarters whenever practical	<input type="checkbox"/> Reduction of exposure to known risk factors		
Environmental Management	<input type="checkbox"/> Clean and sanitize environmental surfaces on a regular basis	<input type="checkbox"/> Use an appropriate sanitizer solution		
Additional Comments	<input type="checkbox"/> Information provided verbally <input type="checkbox"/> Information provided electronically			

Date

Regional Public Health