

**INTERIM INFECTION PREVENTION AND CONTROL GUIDELINES –
NOVEL A/H1N1 INFLUENZA**

EXECUTIVE SUMMARY:

This Infection Prevention and Control Guideline is intended for health care workers in the management of suspect / known cases of the novel A/H1N1 influenza. This includes all health care settings, community settings, physician offices and first responders. At the present time, this influenza virus appears to be transmitted in the same manner as other influenza strains and Droplet and Contact precautions are appropriate

It is important to ensure Routine Practices are followed for all direct care with Additional Precautions, Droplet and Contact, are implemented for suspect and known cases with infection

**I. A. Routine Practices
Hand Hygiene**

- Health care workers (HCWs) should perform hand hygiene frequently (as per local facility policy) using either alcohol-based handrubs (60 – 90%), or soap and water.

Respiratory Etiquette

- Suspect Influenza-like (ILI) cases instructed to perform hand hygiene.
- Suspect ILI cases should also be taught to follow respiratory etiquette practices (coughing into sleeve, using tissues, wearing a mask).
- Suspect ILI cases should wear a surgical or procedure mask when HCWs or other staff or visitors are present. If the patient cannot tolerate a mask, the patient should be placed in a separate room.

Definition of Influenza-like Illness

A person presenting with:

Fever* > 38 ° C AND cough AND one or more of sore throat, arthralgia myalgia or prostration**.

*In patients < 5 or ≥ 65, or in those receiving corticosteroids, fever may not be prominent.

**In children < 5 years of age, gastrointestinal symptoms may also be present. Cough may not be prominent in young children.

B. Droplet / Contact Precautions (for those meeting the definition of ILI) – Refer to page 8.

Accommodation

- In ambulatory care settings, patients should be separated by at least one meter, and if possible two meters.
- If this is not possible, the patient should be placed in a separate room.
- Care should be provided in single rooms or cohorted with cases with the same exposure history.
- Infection, Prevention and Control signage should be placed on the room door indicating the precautions required.
- Suspect or known ILI cases should only leave their rooms for medically necessary procedures.

Respiratory Precautions

- Surgical or procedure mask is required for all staff when entering the room, or providing direct care to a suspect or known ILI case.

Other personal protective equipment

- Gloves should be worn for any patient contact or contact with the environment.
- Long sleeved gowns should be worn for any patient contact or contact with the environment.
- Eye protection must be worn if contact with droplets is anticipated.

II Aerosol Generating Respiratory Procedures for Patients with ILI – Refer to page 13

- Health care workers (HCW's) require an N95 respirator.
- Administrative engineering and environmental controls must be in place.

Procedures

- In circumstances where emergent resuscitation efforts are anticipated.
- Nebulized therapy
- Use of bag-valve mask to ventilate a patient
- Endotracheal intubation, including during cardiopulmonary resuscitation
- Open airway suctioning
- Tube or needle thorascopomy
- Bronchoscopy or other upper airway endoscopy
- Tracheostomy
- Sputum induction

INTERIM INFECTION PREVENTION AND CONTROL GUIDELINES – NOVEL A/H1N1 INFLUENZA

This Infection Prevention and Control Guideline is intended for health care workers in the management of suspect / known cases of the novel A/H1N1 influenza. This includes all health care settings, community settings, physician offices and first responders. At the present time, this influenza virus appears to be transmitted in the same manner as other influenza strains and Droplet and Contact precautions are appropriate. Refer to the Public Health Agency document entitled Routine Practices and Additional Precautions <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/99vol25/25s4/>.

It is important to ensure Routine Practices are followed for all direct care with Additional Precautions, Droplet and Contact, are implemented for suspect and known cases with infection.

I A. Routine Practices

The purpose of Routine Practices is to prevent the transmission of microorganisms between patients/residents/clients or from patients/residents/clients to healthcare workers following direct contact with blood, body fluids or secretions, and moist body substances with non-intact skin or mucous membranes.

Specific practices include hand hygiene, use of personal protective equipment (PPE), and patient management issues.

Routine Practices when consistently adhered to, will optimize patient and healthcare worker safety by preventing the transmission of most infections.

For Routine Practices patient will include patient/residents/clients.

1. Hand Hygiene

Hand washing/hand hygiene reduces the number of microorganisms on the hands, and is the most important practice to prevent the spread of infection between patients or to patients to healthcare workers. (Refer to Appendix A).

1.1 Important Factors in Hand Hygiene:

- Hands must be washed with soap and water when hands are visibly soiled with blood, body fluids, secretions, excretions, and exudates from wounds.
- When hands are not visibly soiled, an alcohol-based hand rub or wash with soap and water are both acceptable.
- HCWs should be vigilant to avoid touching their face with their hands, as well as to avoid hand contact with mucous membranes, including the eyes.
- If the patient bathroom is used, avoid contamination of hands from potentially contaminated surfaces and objects after washing.
- Frequently missed areas of the hand include the thumbs, under nails, backs of fingers and hands.

- **Fingernails:**
 - Artificial fingernails, gel nails, or extenders shall not be worn
 - Natural nail tips should be no longer than 0.635 centimetres (¼ inch) long
 - Nail polish can be worn but should be removed when chipped.
- **Hand Jewellery:**
 - Avoid wearing hand jewellery
- **Hand Lotions:**
 - Health care workers should be provided with lotion to minimize skin irritation that may occur with frequent hand washing/hand hygiene
 - Select only lotions that are compatible with hand hygiene products and gloves being used.
- **Hand Hygiene or Dispensers:**
 - Do not add fresh soap hand rub or lotions to a partially empty dispenser. The practice of “topping up” can lead to bacterial contamination of product.
 - Reusable dispensers, if used must be emptied, washed and dried prior to refilling.
 - Hand lotion bottles should not be reused.

1.2 When to Perform Hand Hygiene:

Before:

- Direct, hands-on care with a patient.
- Performing invasive procedures.
- Handling dressings or touching open wounds.
- Preparing and administering medications.
- Preparing, handling, serving, or eating food.
- Feeding a patient.
- Beginning a shift or break.

After:

- Contact with blood, body fluids, non-intact skin, and/or mucous membranes.
- Contact with items known or considered to be contaminated.
- Removal of gloves.
- Personal use of toilet or wiping of nose.
- At the end of each shift or break.

Between:

- Procedures on the same patient where soiling of hands is likely, to avoid cross-contamination of body sites.

1.3 Patient, Visitor and Family:

- Patient, visitor and family should be instructed in proper hand hygiene.
- The patient must performed hand hygiene before eating, after personal use of toilet and when soiled.

1.4 Agents Used for Hand Hygiene:

Alcohol-Based Handrub:

- Must contain a minimum of 60% alcohol.
 - Use in all clinical situations, except when hands are visibly soiled.
NOTE: Alcohol-based handrubs do not inactivate the spores of *C. difficile*.
- Use as an alternate to plain or antimicrobial soap except when hands are visibly soiled.

Plain Soap:

- For routine hand washing.

Antimicrobial Soap:

- Before contact with invasive devices.
- Before performing any invasive procedures.
- Before contact with immunosuppressed patients.
- Before/after contact with patients on infection control precautions/isolation.
- Use in critical care areas: ICU, OR, Burn Unit, Dialysis, Intensive Care Nurseries.

2. **Cough Etiquette**

- Refers to simple measures both patients and health care workers can utilize to minimize spread of respiratory microorganisms. In the health care setting such as cover your cough and practice hand hygiene.

A Manitoba Health and Healthy Living poster entitled “Cover your Cough” can be found at the following website: <http://www.gov.mb.ca/health/flu/docs/cough.pdf>

A Manitoba Health and Healthy Living poster entitled “Hand Hygiene: can be found at the following website: <http://www.gov.mb.ca/health/flu/docs/hand.pdf>

3. **Personal Protective Equipment (PPE)**

3.1 **Gloves**

Gloves are used as an additional measure to, not as a substitute for, hand hygiene.

Clean, non-sterile gloves of appropriate size should be worn:

- For contact with blood, body fluids, secretions and excretions, mucous membranes, draining wounds, or non-intact skin.
- For handling items visibly soiled with blood, body fluids, secretions, or excretions.
- When the health care worker has open lesions of his/her hands.
- When indicated, gloves should be put on directly before contact with patients or just before the task/procedure requiring gloves.
- Gloves should be changed between care activities and procedures with the same patient, and after contact with materials that may contain high concentrations of microorganisms, e.g., after open suctioning of an endotracheal tube.
- Gloves should be removed prior to leaving the patient’s room.
- Hand hygiene must be performed immediately after removing gloves.
- Single-use, disposable gloves should not be reused or washed.
- Gloves should be selected based on the task and personal comfort and fit.

NOTE: Health care workers with open skin lesions, dermatitis, or wrist splints or casts must be assessed by Occupational Health to determine fitness for work.

3.2 Gowns

- Routine use of gowns for patient care is not recommended.
- Gowns should be used to protect uncovered skin and prevent soiling of clothing during procedures and patient care activities likely to generate splashes or sprays of blood, body fluids, secretions or excretions.
- Gowns should be large enough to overlap at the back.
- Sleeves should be to the wrist and cuffed for snug fit.
- A disposable impervious/water repellent apron may be used under the gown to prevent contamination of clothing from leakage or large volumes of blood, body fluids, secretions or excretions. Disposable impervious gowns are available and should be considered in these situations.
- When a gown has been worn, it should be removed in a manner which prevents contamination after completion of the patient care activity requiring its use.
- Gowns are to be worn once. Disposable impervious gowns are discarded and cloth gowns are laundered after use.

3.3 Masks

- Standard surgical or procedure masks should be worn where appropriate to protect the mucous membranes of the nose and mouth during procedures and patient care activities likely to generate splashes or sprays of blood, body fluids, secretions or excretions.
- Masks are to be worn within one metre of a coughing patient.
- Discard a mask that is crushed, wet, or has become contaminated by patient secretions.
- Perform hand hygiene after removal of the mask.

3.4 Eye Protection – Goggles and Face Shield

- Eye protection (goggles or face shield) should be worn where appropriate to protect the mucous membranes of the eyes likely to generate splashes or sprays of blood, body fluids, secretions or excretions during procedures and patient care activities.
- When removing eye protection, take care to avoid self-contamination. Prescription eyeglasses are not adequate for eye protection, as they do not provide protection from splashes or sprays.
- Eye protection (goggles or face shield) must fit over prescription glasses and protect the eyes from splashes or sprays.
- If reusable, eye protection must be easy to clean and able to be cleaned in a manner which avoids contamination of the health care workers.

4. Accommodation

- Generally single rooms are not required for routine patient care.
- A single room with dedicated toilet facilities should be considered for Patients who visibly soil the environment, e.g., draining wounds and fecal incontinence that is not containable. If this is not feasible, contact Infection Control for recommendations for cohorting.

5. Equipment

- Reusable non-critical equipment that has been in direct contact with the patient must be cleaned with a facility-approved disinfectant before use on another patient.
- A routine cleaning schedule should be established, assigning responsibility and accountability for cleaning of the equipment, e.g., electronic thermometer, commodes.
- Equipment that is visibly soiled must be cleaned immediately after use.
- Soiled patient care equipment must be handled in a manner that prevents contact to the health care workers skin and mucous membranes or contamination of clothing and the environment.
- Where possible, dedicated patient care equipment should be considered for ICU and other high-risk areas.
- Toilets must be cleaned regularly and when soiled.
- Bedpans must be reserved for use for a single patient and labeled appropriately.
- Mouthpieces, resuscitation bags, or other ventilation devices must be provided for use in facility areas where the need to resuscitate is likely to occur.
- Personal care supplies, e.g., lotions, creams, soaps, are not to be shared between patients.

6. Environmental Control/Housekeeping

- Procedures should be established for routine care, cleaning and appropriate disinfection of patient furniture and environmental surfaces with a facility-approved disinfectant.
- All horizontal and frequently touched surfaces should be cleaned daily, and more often visibly soiled.
- Immediately clean all spills of blood and/or body fluids with a facility-approved disinfectant according to facility approved policy.

7. Specimen Collection

- All clinical specimens are considered potentially infectious and should be handled with appropriate care.
- All specimens must be placed in leak proof containers. Care must be taken to avoid contamination of the outside of the specimen container and the laboratory requisition. If contamination of the outside of the container occurs, the container must be cleaned with a facility-approved disinfectant prior to transport to the laboratory.
- Specimens should be transported to the laboratory according to facility policy.
- Practice hand hygiene after collecting and handling specimens.

8. Dishes

- There is no need for any special precautions for dishes.
- There is no need for disposable dishes.
- Hand hygiene must be performed after contact with dishes.

9. Linen

- Linen should be handled with a minimum of agitation and bagged at the site of collection in a manner that prevents contamination or soaking through. Double bagging is not routinely necessary. A second outer bag is only required to contain a leaking inner bag.

10. Waste

- Clinical waste should be contained in waste-holding bags that prevent contamination. Double bagging of waste is not required.

11. Sharps

- Used needles and other sharp instruments must be handled with care to avoid injuries during disposal or reprocessing. Used sharp items should be disposed of immediately in designated puncture-resistant containers located in the area where the items were used.

B. Droplet / Contact Precautions: for suspect /known ILI cases

Definition of Influenza-like Illness

A person presenting with:

- Fever* > 38 ° C AND cough AND one or more of sore throat, arthralgia, myalgia or prostration**.

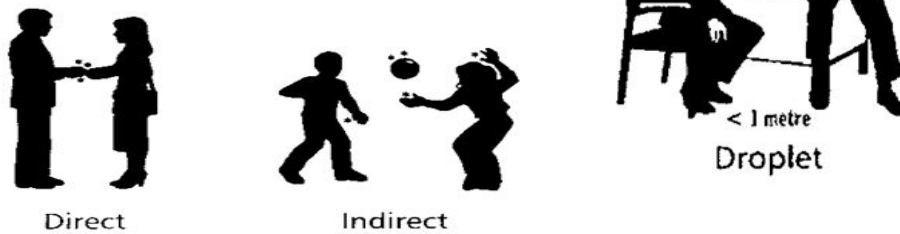
*In patients < 5 or ≥ 65, or in those receiving corticosteroids, fever may not be prominent.

**In children < 5 years of age, gastrointestinal symptoms may also be present. Cough may not be prominent in young children

1. Introduction

Droplet/Contact Precautions are required for patients diagnosed with, or suspected of having infectious microorganisms transmitted by the droplet route and contact routes.

Droplet/Contact Precautions are followed in addition to Routine Practices. Routine Practices shall be adhered to at all times by all healthcare workers.



2. Accommodation

Patients shall preferably be placed in a single room. No special air handling and ventilation are necessary.

- The door may remain open.
- Room should have dedicated toilet, hand hygiene, and bathing facilities.
- In instances where there are not a sufficient number of single rooms, cohort patients with the same microorganism together. This shall be done in consultation with Infection Prevention and Control.

If a single room is not available and cohorting is not possible consult Infection Prevention and Control.

- Maintain a separation of one metre if possible two between patients.
- Roommates and all visitors shall be aware of precautions to follow
 - Select roommates for their ability, and that of their visitors, to comply with Droplet/Contact Precautions
 - Roommates should not be at high risk for acquiring infections (e.g., chronic lung disease, severe congenital heart disease, immunodeficiency).

3. Hand Hygiene

Healthcare workers shall remove gloves and gown and perform hand hygiene before leaving the room/cubicle. After hand hygiene take care not to contaminate hands before leaving the room.

Healthcare workers shall perform hand hygiene after removal of the surgical or procedure mask.

4. Personal Protective Equipment

Masks

A surgical or procedure mask shall be worn by all healthcare workers when within one metre if possible two meters of patient, and for procedures that may result in coughing, splashing and aerosol production.

Masks shall be

- Worn once
 - Changed
 - When wet
 - If the front of the mask has been touched, and/or
 - When contaminated with patient secretions
 - Removed in a manner preventing contamination.

Masks shall never dangle around the neck.

Eye Protection

Goggles, glasses, or face shields are worn when within 1 metre or if possible 2 metres of a coughing patient with symptoms of respiratory infection and for procedures that may result in coughing, splatter.

- Goggles, glasses or face shields shall be removed in a manner preventing contamination.
- If reusable, send the eye protection for cleaning and disinfection according to facility policy.

Gloves

- Are worn when entering the room or patient's designated bed space in shared room.
- Are removed before leaving the room or the patient's designated bed space.

Gowns

- Are worn if clothing or forearms will have direct contact with the patient.
- Are worn if it is anticipated clothing or forearms will be in direct contact with frequently touched environmental surfaces or objects, and there is an increased risk of the environment being contaminated (e.g. respiratory secretions) Remove gown before leaving the room or patient's designated bed space.

5. Patient Transport

Patient transport out of the room is for medically essential purposes only.

In advance of the procedure, notify the Patient Transport Services and the receiving department regarding the need for Droplet/Contact Precautions.

Maintain Droplet/Contact Precautions while the patient is outside the isolation room.

- Before use, cover the clean transport chair or stretcher with a cover sheet.
- Put on a clean gown and gloves for patient transport. Take care not to contaminate the environment with soiled gloves.
- The patient wears a surgical or procedure mask.
- The patient performs hand hygiene prior to leaving the room.
- Transport staff do not need to mask if patient wears a mask.
- After use, clean and disinfect the transport chair/stretcher in the room.

- Remove gown and gloves and perform hand hygiene before leaving the room.
- The patient perform hand hygiene after removal of the surgical or procedure mask.

6. Equipment and Environment

Patient-care equipment (e.g., thermometers, blood pressure cuffs, lifts/slings) should be dedicated to the use of the patient and cleaned and disinfected before reuse with another patient.

Disposable patient care equipment and supplies shall be discarded.

Toys and personal effects should not be shared with other patients.

The patient record and other papers shall not be taken into the room. If the patient record is required to accompany the patient for tests or treatments, it shall be placed in a protective cover to prevent contamination.

If personal documents are required to be taken into the room

- Wipe the table the document is to be signed the facility-approved disinfectant.
- The patient shall perform hand hygiene.
- Patient should have a dedicated pen in the room. If not, after signing, wipe the pen with facility-approved disinfectant.
- All horizontal and frequently touched surfaces shall be cleaned daily and immediately when soiled.

Special cleaning procedures may be required in an outbreak situation. This will be determined in consultation with Infection Prevention and Control.

7. Patient/Family/visitor

The patient and/or family should be educated about the nature of the patient's infectious disease, the precautions to adhere to, and the length of time the precautions will be in place.

Instruct the patient/family/visitor regarding Respiratory Hygiene/Cough Etiquette

- When coughing or sneezing, cover the nose and mouth with a tissue, or cough into his/her shoulder.
- Immediately dispose of the tissue in the appropriate waste receptacle, and
- Perform hand hygiene.
- Patient/Family/ Visitors shall wear a surgical or procedure mask when within one metre of the patient.

Instruct the patient about the appropriate use and management of PPE

- How to correctly apply and wear a surgical or procedural mask.
- How to remove the surgical or procedure mask to prevent contamination.
- Know the procedure and importance of hand hygiene following removal of the surgical or procedure mask.

II **Aerosol Generating Respiratory Procedures on suspect/known ILI cases**

- HCW's require an N95 respirator
- Administrative , Engineering and Environmental Controls must be in place

Procedures

- In circumstances where emergent resuscitation efforts are anticipated.
- Nebulized therapy
- Use of bag – valve mask to ventilate a patient
- Endotracheal intubation, including during cardiopulmonary resuscitation
- Open airway suctioning
- Tube or needle thorascopomy
- Bronchoscopy or other upper airway endoscopy
- Tracheostomy
- Sputum induction

Necessary Controls for Aerosol-Generating Patient Procedures

Administrative Controls:

- Most experienced personnel performs the aerosol-generating procedure
- Signage which indicates Infection Control precautions
- Keep the number of people in the room to a minimum (no more than 4)
- Procedures should be conducted in a controlled non-emergent manner e.g., elective intubation
- Sedate patient if intubation is required
- Ensure adequate equipment in the room

Engineering Controls:

- Maximize available air changes
- Perform the procedure in a negative pressure, private room
- Vent exhausted air directly to the outside, or if air is recirculated, it must be passed through HEPA filters

Environmental Controls:

- Discard contaminated disposable equipment
- Clean/disinfect contaminated equipment before leaving the room
- All personnel in the room must wear:
 - N95 respirator
 - Eye protection
 - Gloves
 - Long sleeved gown

These Infection Prevention and Control recommendations may change as further information about the epidemiology and spread of this virus is available.

REFERENCES

Draft –Manitoba Health Infection Control Guidelines for the Management of Respiratory Infection, 2007

Provincial Infectious Diseases Advisory Committee (PIDAC), Preventing Febrile Respiratory Illness. Revised edition, August 2006, reprint March 2008.

Public Health Agency of Canada, Prevention and Control of Influenza During a Pandemic for all Health Care Facilities, Draft 2009.

Public Health Agency of Canada, Interim Guidance: Infection, Prevention and Control Measures for Health Care Workers in Acute Care Facilities, Human Cases of Swine Influenza A (H1N1), Version 1, 22:30 April 29, 2009.

World Health Organization, Infection Prevention and Control in providing Care for Confirmed or Suspected A (H1N1) Swine Influenza Patients – Interim Guidance, April 29, 2009.