

INFLUENZA A PREVENTION GUIDELINES FOR HEALTH CARE WORKERS

What about Influenza A (H1N1)?

Influenza A (H1N1) is a highly contagious acute respiratory disease caused by Type A influenza virus' strain H1N1. The virus is spread by aerosol, direct and indirect contact. Transmission has been documented limited to close contacts and close groups of people. Currently, cases of Influenza A have been reported in many countries such as United States, Australia, Indonesia and other countries including Malaysia.

When is the infectious period of the disease?

The infectious period for a confirmed case of Influenza A virus infection is defined as 1 day prior to the case's illness onset to 7 days after onset.

What is its mode of transmission?

- Respiratory droplets
- Direct contact (skin or fomites)

What are the signs and symptoms of the disease?

- Fever **AND any of the following symptoms**
- Cough
- Sore throat
- Body ache
- Headache

Other symptoms include :

- Chills
- Fatigue
- Vomiting
- Diarrhoea

What are the case definitions ?

- **Confirmed case:** A person with an acute febrile respiratory illness with laboratory confirmed Influenza A (H1N1) virus infection by one or more of the following tests:
 - Real time RT-PCR
 - Viral culture
 - Four-fold rise influenza A (H1N1) virus specific neutralizing antibodies.

Suspected case: A **Patient Under Investigation** of Influenza A / H1N1 virus infection is defined as an individual presenting with

- a. fever , **AND**
- b. One or more of the following respiratory symptoms: cough, sore throat, body ache, difficulty in breathing, **AND**
- c. One or more of the following: close contact with a person diagnosed as Influenza A/H1N1 **OR** within 7 days of travel to an area reporting cases of confirmed Influenza A/H1N1 (within 7 days of exposure / contact)

Other Definitions

- **Acute febrile respiratory illness:** Fever $>38^{\circ}\text{C}$ and recent onset of at least one of the following: rhinorrhoea or nasal congestion, sore throat, or cough.
- **Close contact:** a person having cared for, lived with, or had direct contact with respiratory secretions or body fluids of a probable or confirmed case of Influenza A (H1N1).

The involved health care workers should at all times comply with strict infection control measures.

What prevention measures may be taken for the Health care workers?

1. Limiting contact with patients as much as possible.

- Health care facilities must identify dedicated teams who will manage suspected influenza patients.
- The number of staff directly involved in handling the patients should be kept to the minimum and should only be from the dedicated team identified.
- The schedule / roster created should avoid prolonged exposure of staff to influenza cases.

2. Hygiene measures

- Frequent Hand Hygiene and Disinfection
- Wash hands with soap and water or alcohol-based hand sanitizer

1. before and after patient contact
2. after removing gloves or other personal protective equipment (PPE)
3. -after any contact with respiratory secretions

Steps of hand washing are :

- Remove jewelry before hand wash procedure.
 - Rinse hands under warm running water
 - Lather with soap; cover all surfaces of the hands and fingers using friction.
 - Rinse under warm running water.
 - Dry hands thoroughly with a single-use towel
 - Turn off faucet without recontaminating hands, e.g. use single use towel.
 - Keep fingernails short and do not use fingernail polish or artificial nails.
- Alcohol-based hand sanitizer may be used to decontaminate hands that are not visibly soiled
 - Apply alcohol-based hand sanitizer to palm of one hand and rub hands together, covering all surfaces of hands and finger, until hands are dry.
 - Respiratory hygiene practices:
 - Cover nose and mouth with hand or tissue when coughing or sneezing.
 - Wash hands with soap and water or clean hands with alcohol-based hand sanitizer after coughing or sneezing
 - Throw used tissue into the trash.
 - Avoid unnecessary touching of eyes, nose or mouth.

3. What about Personal Protective Equipment (PPE) ?

- PPE should be made available for all workers who is at high risk of contact with suspect or probable pandemic influenza cases

Types and Indications of PPE

a) Type 1: N100 Respirator

- all workers working in Biosafety Level 3 Laboratory
- anyone who is at high risk of exposure to a high inoculum of the virus e.g. during the conduct of viral studies

b) Type 2: N95 Respirator

- all personnel involved in screening of passengers or travelers at entry points
- all personnel who enter the rooms of patients in isolation for swine influenza. Respiratory protection should be donned upon room entry.
- all personnel providing direct patient care or engaged in aerosol generating activities (e.g., collection of clinical specimens, endotracheal intubation, nebulizer treatment, bronchoscopy, nasopharyngeal or laryngeal lavage, and resuscitation involving emergency intubation or cardiac pulmonary resuscitation)

c) Type 3: 3-ply surgical facemask

- all health care workers and hospital personnel who is at high risk of contact with suspect or probable influenza patients which include:
 - doctors, nurses, other health care workers and all other workers working at the hospitals not in direct contact with suspected or possible influenza cases.
 - all health care workers working at entry points and not directly involved in screening
 - all health personnel transporting suspected patients to designated hospitals including sending them home

Other PPE (gloves, gown, goggles, cap)

- all workers working in Biosafety Level 3 Laboratory
- all personnel who enter the rooms of patients in isolation for H1N1 influenza.
- all personnel providing direct patient care or engaged in aerosol generating activities (e.g., collection of clinical specimens, endotracheal intubation, nebulizer treatment, bronchoscopy, nasopharyngeal or laryngeal lavage, and resuscitation involving emergency intubation or cardiac pulmonary resuscitation)
- **Proper techniques of PPE usage. Refer to Appendix 1**

4. Is surveillance / staff monitoring necessary?

- A register of staff attending to influenza cases should be created which includes:
 - Identification data
 - The dates when they start and stopped handling patients
- The registry of health care workers handling influenza patients is as shown in Appendix 2.
- All personnel handling pandemic influenza patients are to monitor their body temperature twice a day (morning and evening).
- Any health care worker who develops fever within one month of nursing or handling the patient should report to Physician-in-charge / Infectious Diseases Specialist as soon as possible.
- The team leader is to note if any designated staff managing pandemic influenza patients develop fever.
- The staff member will then be taken out of the team and treated as a suspect.
- Details of all health care workers who fulfill the criteria for suspected / probable cases of pandemic influenza should be notified to the Hospital Director and the District Health Officer for further action as part of the hospital surveillance of pandemic influenza.
- The monitoring forms for health staff handling patients with influenza is as shown in Appendix 3.

5. Any other issues relating to Occupational Safety and Health?

a. Staff Uniforms

For staff handling Influenza H1N1 patients, uniforms should be transported home in a sealed plastic bag, washed separately from other linen in hot water.

b. Patient care equipment

All patient care equipment should be effectively cleaned as a pre requisite to disinfection and sterilization.

- Gloves should be worn while handling and transporting patient- care equipment
- Reusable equipment should be (e.g. stethoscope) should be decontaminated between each patient according to the manufacturers recommendations
- External surfaces or portable equipment for performing x-rays and other procedures should be wiped with a neutral detergent and hot water
- Whenever possible, non critical patient equipment should be dedicated for use by pandemic influenza patients only
- Avoid use of equipment that re-circulates air (e.g. fans)

c. Environmental Cleaning and Disinfection

- Clinical rooms should be cleaned at the end or beginning of the day especially surfaces frequently touched (e.g. door knobs)
- Wet cleaning should be performed using neutral detergent and hot water
- Dedicated equipment should be used for cleaning areas where H1N1 influenza patients are being handled
- Any spillage or contamination of the environment with secretions, excretions or body fluids should be treated in line with the local spillage policy
- Domestic staff should be allocated to specific areas and not moved between influenza and non- influenza areas.

d. Transport of patients

- Use designated ambulance to transport patients to the hospital
- Minimal accompanying staff (staff nurse and driver who sit in front of the ambulance unless the patient is ill and needs monitoring
- Practice barrier nursing if patient has to be monitored
- If patient is a child then one parent may accompany the child, if not no relatives may accompany patient
- Ambulance should not stop along the way to the hospital and should not transport back any other patient.
- On returning, the ambulance should be cleaned as follows:

- Non patient care areas should be cleaned and disinfected according to manufacturers instructions
- Cleansing personnel should wear non sterile gloves disposable gloves, disposable gowns and face shields while cleaning the patient care compartment.
- Patient care compartments (including stretchers, railings, medical equipment control panels and adjacent flooring, walls and work surfaces likely to be contaminated) should be cleaned using 1 % Sodium Hypochlorite 1 in 10 dilution in accordance to the manufacturers recommendations.
- Body fluid spills during transport should be cleaned by placing non absorbent material over the spill and collecting the used cleaning material in a biohazard bag. The area of spill should be cleaned with Sodium Hypochlorite 1 in 10 dilution. Cleaning personnel should be notified of the location of the spill and initial location clean up performed.
- Contaminated reusable patient care equipment should be placed in biohazard bags and labeled for cleaning and disinfection.
- Personnel should wear non sterile gloves disposable gloves, disposable gowns and face shields while cleaning reusable patient care equipment
- Reusable equipment should be cleaned and disinfected according to manufacturers instructions
- All waste disposals should follow guideline of Clinical Waste Management.

REFERENCES:

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2. CDC. Interim Guidance on Case Definitions to be used for Investigations of Swine Influenza a (H1N1) Cases. April 29, 2009 Available at: http://www.cdc.gov/swineflu/casedef_swineflu.htm (Accessed 29 April 2009).
3. CDC. Interim Guidance for Infection Control for Care of Patients with Confirmed or Suspected Swine Influenza A (H1N1) Virus Infection in a Healthcare Setting. April 29, 2009. Available at: http://www.cdc.gov/swineflu/guidelines_infection_control.htm (Accessed 29 April 2009).
4. KKM. National Influenza Pandemic Preparedness Plan. 2006
5. KKM. Medical Strategies In the Management of Pandemic Influenza and Guidelines of Influenza Pandemic Management in Designated Hospitals, District Hospitals and Private Hospitals. 2006.

Guidelines on wearing the N95 or N 100 Masks

1. Wash hands before wearing a mask and after taking one off.
2. Make sure the mask fits properly. To check the fit, cover the front of the mask completely with both hands, being careful not to disturb the position of the mask. Inhale sharply. A negative pressure should be felt inside the mask. (no air is felt flowing from outside)
3. The mask should fully cover the nose, mouth as well as the chin. Make sure the strap is well adjusted and tight.
4. The metallic wire part of the mask should be fixed securely over the bridge of the nose to prevent leakage
5. Change the mask once it is wet or contaminated with secretions or splashes from the patient's body fluids or if it is damaged.
6. Discard masks into the clinical waste bin (yellow plastic bin) provided at point of care, each time after usage.
7. Do not bring used mask home.
8. Do not share mask with other staff.

9. Each mask should only be used during one shift. (NOT more than 8 hours)

Guidelines on wearing surgical masks (3 Ply)

1. If you have running nose or flu like symptoms, you are advised to stay at home. If you need to go out, make sure you wear a surgical mask.
2. Avoid crowded places. Wear a surgical mask if you cannot avoid them
3. Wash hands before wearing a surgical mask and after taking one off.
4. When wearing surgical mask , the following should be noted:
 - 4.1. The facemask should fit snugly over the face
 - 4.2. The coloured side of the mask should face outside
 - 4.3. Tie all the strings that keep the mask in place
 - 4.4. The mask should fully cover the nose, mouth as well as the chin.
 - 4.5. The metallic wire part of the mask should be fixed securely over the bridge of the nose to prevent leakage

- 4.6. The surgical mask should not be used more than a day but if it is wet, damaged or soiled by secretions or body fluid at any time, change the mask immediately.
- 4.7. Discard all used masks into a plastic bag which should then be tied properly before disposing it into a rubbish bin.

**MONITORING FORM FOR
HEALTH STAFF HANDLING/NURSING PI PATIENTS**

Name of clinic :

District :

State :

Date :

Health Staff Particulars

Name :

Sex :

Age :

Ethnic group :

Category (eg: Dr, S/N, MA etc):

Place of contact with PI patient:

Triage area/room	
Physical Examination Room	
Transportation	

Date of contact with PI patient:

Date of presenting symptoms :

Presenting symptoms :

Fever	
Cough	
Breathing difficulty	
Others	

	Date	Temperature (Morning)	Temperature (evening)

- Body temperature must be recorded from the armpit