

## Clinical Practice Guideline

For

### *Influenza A (H1N1) 2009* *(Previously known as Swine Flu)*

This guideline is subject to change with evolution of the existing Influenza H1N1 outbreak.



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## Preface

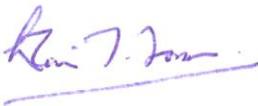
This Clinical Practice Guideline for *Influenza A H1N1* 2009, a collaboration between the Ministry of Health and the Fiji Health Sector Improvement Program represents an undertaking to provide some guidance on the clinical practice for this disease entity.

The guideline is targeted at health care providers across Fiji both in public and private sector. The aim of this guideline is to create awareness, reduce the transmission and severity of the disease and to prevent mortality.

Information covered include: case definition, clinical presentation, high risk groups ,admission to hospital criteria, specific investigations which also covers a section on National Influenza Surveillance System, treatment ,infection prevention and control ,environmental cleaning, management of visitors and general and travel information for staff and patients.

Since information on *Influenza A H1N1* is still evolving, health care personnel are encouraged to keep themselves informed of updated global information (see page 22 of this document for web based and in country support).

Finally I wish to thank all those who have contributed to the development of this guideline.



Dr Eloni Tora  
Deputy Secretary Hospital Services,  
Ministry of Health  
Fiji.

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|             |  |
|-------------|--|
| A&E         | Accident and Emergency                                   |
| CAP         | Community Acquired Pneumonia                             |
| CDC         | Centre for Disease Control                               |
| CC          | Creatinine Clearance                                     |
| COPD        | Chronic Obstructive Pulmonary Disease                    |
| CPG         | Clinical Practice Guideline                              |
| CWMH        | Colonial War Memorial Hospital                           |
| EMA         | Essential Medicines Authority                            |
| GOPD        | General Out Patients Department                          |
| FCCDC       | Fiji Centre for Communicable Disease Control             |
| FPBS        | Fiji Pharmacy and Biomedical Services                    |
| HC          | Health Centre  |
| HCW         | Health Care Worker                                       |
| IC          | Infection Control  |
| ICU         | Intensive Care Unit                                      |
| NMTC (FIJI) | National Medicines and Therapeutic Committee (Fiji)      |
| ILI         | Influenza like illness                                   |
| N/A         | Not available  |
| NHEC        | National Health Executive Committee                      |
| NP          | Nasopharyngeal   |
| NISS        | National Influenza Surveillance System                   |
| NMTC        | National Medicines & Therapeutic Committee               |
| PPE         | Personal Protective Equipment                            |
| rRTPCR      | realtime Reverse Transcription Polymerase Chain Reaction |
| TOR         | Terms of Reference                                       |
| SDMO        | Sub Divisional Medical Officer                           |
| T/F         | Transfer   |
| VIM         | Viral Transport Media                                    |
| WHO         | World Health Organisation                                |
| WWW         | World Wide Web   |

**Author(s):** Ministry of Health and Fiji Health Sector Improvement Program

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Signed.....  
Permanent Secretary for Health  
Ministry of Health  
Fiji



Signed.....  
For Director  
FHSIP

## 1.0 Introduction

*Influenza A (H1N1)*, previously referred to as swine flu is a respiratory disease, and is caused by a type A influenza virus. *Influenza A (H1N1)* can cause a wide range of symptoms, including fever, cough, sore throat, body aches, headache, chills and fatigue. Some people have reported diarrhoea and vomiting associated with *Influenza A (H1N1)*.

Like seasonal flu, *Influenza A (H1N1)* in humans can vary in severity from mild to severe. Severe disease with pneumonia, respiratory failure and even death is possible with *Influenza A (H1N1)* infection. Certain groups might be more likely to develop a severe illness from *Influenza A (H1N1)* infection, such as persons with chronic medical conditions. Sometimes bacterial infections may occur at the same time as or after infection with influenza viruses and lead to pneumonias, ear infections, or sinus infections.

The current *Influenza A (H1N1)* virus contains a unique combination of gene segments that have not been reported previously among swine or human influenza viruses. This strain of *Influenza A (H1N1)* spreads from human to human.

## 2.0 Purpose of this Guideline

- 2.1 To **Reduce Transmission** of *Influenza A (H1N1)* in Fiji and beyond (where applicable).
- 2.2 To **Reduce Severity** of *Influenza A (H1N1)* in Fiji and beyond (where applicable).
- 2.3 To **Create Awareness** among Ministry of Health Clinical, Public Health and Community Health Practitioners and health care workers (HCW) about *Influenza A (H1N1)* and consequently to create awareness among the people of Fiji about *Influenza A (H1N1)*.

## 3.0 Case Definitions for Infection with *Influenza A (H1N1)*

### 3.1 Confirmed case:

A confirmed case of *Influenza A (H1N1)* is defined as a person with an acute febrile respiratory illness with laboratory confirmed A (H1N1) infection by one or more of the following tests.

- 3.1.1 Realtime Reverse Transcription Polymerase Chain Reaction (rRTPCR)  
**(3.1.1 is the only test for A H1N1 currently available in Fiji)**
- 3.1.2 Viral Culture (N/A in Fiji)
- 3.1.3 Four fold rise in influenza A (H1N1) virus specific neutralising antibodies(N/A in Fiji)

### 3.2 Probable Case:

A probable case of influenza A (H1N1) is defined as a person with an acute febrile respiratory illness who is positive for *influenza A*, but negative for H1 and H3 by *influenza RT –PCR*.

### 3.3 Suspected Case:

A suspected case of influenza A (H1N1) is defined as:

- 3.3.1 A person with an acute respiratory illness who, in the 7 days before onset of his/her illness, was in close contact to a confirmed case of *Influenza A (H1N1)* while the case was ill **or**
- 3.3.2 A person with an acute respiratory illness who, in the 7 days before onset of his/her illness, has travelled to an area where there are confirmed cases of *Influenza A(H1N1)*.

\* rRTPCR means Realtime **R**everse **T**ranscription – **P**olymerase **C**hain **R**eaction, which is a DNA amplification technique for diagnosing the virus.

## 4.0 Definitions (other)

### 4.1 Acute Febrile Respiratory Illness:

Recent onset of temperature  $\geq 38^{\circ}$  Celsius and at least one of the following:

- 4.1.1 Rhinorrhea or nasal congestion
- 4.1.2 Sore throat
- 4.1.3 Cough

### 4.2 Influenza-like Illness (ILI):

Sudden onset of fever  $\geq 38^{\circ}$  Celsius and cough or sore throat in the absence of another diagnosis. The onset of fever should be within 3 days of presentation and fever should be measured at the time of presentation.

## 5.0 Infectious Period

Cases should be considered potentially contagious from one day prior to onset for up to seven (7) days following illness onset or until symptoms have resolved. Younger children might be contagious for longer periods.

## 6.0 Clinical Presentation

Clinical presentation is typical of influenza

### 6.1 Specific Symptoms:

- 6.1.1 Fever of  $38^{\circ}$  Celsius ( $100^{\circ}$  Fahrenheit)  
**Plus** one or more of the following:
- 6.1.2 Cough
- 6.1.3 Sore Throat
- 6.1.4 Nasal Congestion or runny nose

### 6.2 Other Non Specific Symptoms:

- 6.2.1 Headaches
- 6.2.2 Body Aches
- 6.2.3 Fatigue
- 6.2.4 Nausea
- 6.2.5 Vomiting
- 6.2.6 Diarrhoea

## 7.0 High Risk Groups (based on experience with seasonal influenza)

- 7.1 Children less than 5 years old
- 7.2 Persons aged 65 years or older
- 7.3 Pregnant women
- 7.4 Adults and children who have chronic pulmonary, cardiovascular, hepatic, haematological, neurological, neuromuscular or metabolic disorders
- 7.5 Adults and children who have immunosuppressant, residents of nursing homes and chronic care facilities

## 8.0 Admission to Hospital Criteria

Admission to hospital is obviously at the discretion of the treating doctor. However the following can be taken into consideration:

- 8.1 Those with worsening of a pre-existing medical condition
- 8.2 Those with an influenza related complication

## 9.0 Specific Investigations

### 9.1 Sample Collection:

- 9.1.1 A nasopharyngeal (NP) sample should be collected for any person who meets the case definition of a suspected case of *Influenza A (H1N1)* (see 3.3).
- 9.1.2 Collection of the specimen should occur within 3 days of onset of symptoms (as after this the sensitivity of the Realtime Real time Reverse Transcription Polymerase Chain Reaction (rRTPCR) to detect the virus is reduced.

**Note: Routine tests/investigations to be carried out at the discretion of the attending doctor.**

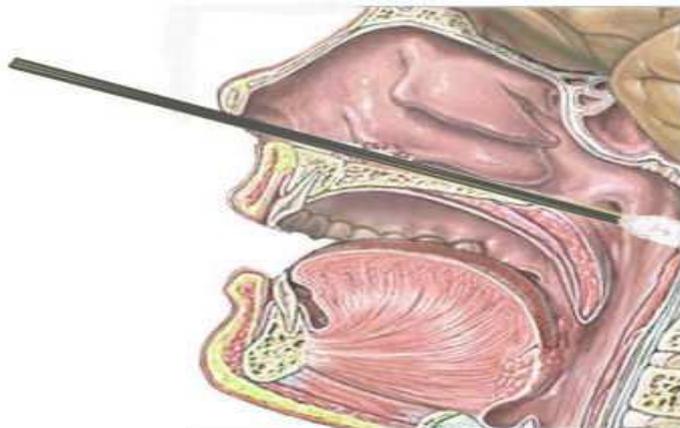
### 9.2 Materials:

To collect the NP swab the following materials are required

- 9.2.1 Personal Protective Equipment (PPE- See 11.6)
- 9.2.2 Swab (Mataika House will provide the swabs to Accident & Emergency (A&E) Departments and General Outpatients departments in Divisional Hospitals).
- 9.2.3 Collecting vial with Viral Transport Media (VTM) (see 9.2.2 above)
- 9.2.4 Specimen collection form
- 9.2.5 Cool box with frozen ice packs/freezer

### 9.3 Procedure:

- 9.3.1 The healthcare worker taking the samples should wear PPE (gloves, goggles, gown, and a surgical or N95 mask). He/she should wash or disinfect hands prior to attending patient.
- 9.3.2 Explain the procedure to the patient
- 9.3.3 Get the patient to sit up straight with head against the wall
- 9.3.4 Insert the swab into one nostril straight back, not upwards in the direction of the ear.



- 9.3.5 Continue along the nostril floor for several centimetres until reaching the nasopharynx (resistance will be met), about 1/2 to 2/3 of the swab should be inserted to reach the nasopharynx (*Note: Do not force swab, if an obstruction is encountered before reaching the nasopharynx, remove the swab and try the other side*).
- 9.3.6 Rotate swab and gently leave in place for 10 seconds
- 9.3.7 Gently remove the swab from the nose
- 9.3.8 Immediately place swab into the collecting vial with the viral transport media (VTM). Break off tip of the swab to allow it to fit into the container.
- 9.3.9 Collection vial to be placed in a biohazard plastic bag, with the completed specimen collection form (in the sleeve of the bag). The bag should be placed in the freezer straight away or cool box with frozen ice packs.
- 9.3.10 Contact **Mataika House, Tamavua, Suva, Fiji** (Telephone: 3320066) or Dr Viema Biaukula on mobile no. 8601399 or Aggie Dawainavesi on 9933623(mobile) to arrange for pick up/transportation of swabs.
- 9.3.11 Swabs collected overnight The biohazard plastic containing the specimen should be placed in the freezer straight away or cool box with frozen ice packs and Mataika House contacted at 8am the following morning.

## 9.4

### Tips

- 9.4.1 The patient will usually gag or show other signs of discomfort. For this reason it is important to get the patient to sit in the position as per 9.3.3 above. This reduces the tendency for the patient to pull away from you during the procedure.
- 9.4.2 Complete the collection form with all information as requested on the form prior to collecting the sample. All this information is essential for contact tracing.
- 9.4.3 For small children, get them to sit on a parent's/guardian's lap and ask the adult to restrain their upper body with a tight hug and to hold the child's lower limbs between their thighs. An assistant can hold the child's head in place with both hands from behind.

## 9.5

### National Influenza Surveillance System (NISS)

#### 9.5.1 Objectives (NISS):

- 9.5.1.1 To identify circulating and potential pandemic influenza viruses
- 9.5.1.2 To provide background epidemiological data on influenza
- 9.5.1.3 To identify severe cases of influenza disease and
- 9.5.1.4 To guide the development of national policy for the control of influenza.

#### 9.6.1 Further information (NISS):

- 9.6.1.1 The NISS is housed at the Fiji Centre for Communicable Disease Control (FCCDC), Mataika House, and it is in its infancy as it only began operations on 20<sup>th</sup> April 2009.
- 9.6.1.2 The system includes a sentinel Influenza like Illness (ILI) surveillance network and a virology laboratory that can operate under World Health Organisations (WHO) Terms of Reference (TOR) for National Influenza Centres.
- 9.6.1.3 The sentinel sites record weekly the ILI cases as well as sending samples of NP swabs to FCCDC for rRTPRC processing to determine the presence of influenza.
- 9.6.1.4 The sentinel sites include Colonial War Memorial Hospital (CWMH), Lautoka Hospital General Out Patients Department (GOPD) and Labasa Hospital GOPD, Valelevu Health Centre (HC), Raiwaqa HC, Nuffield HC and Samabula HC.

- 9.6.1.5 Unidentifiable or representative virus isolates are sent to WHO Collaborating Centre for further testing
- 9.6.1.6 Results are collated monthly via the 'Flu Bulletin' which is a publication of the FCCDC, Mataika House.
- 9.6.1.7 Information is shared with WHO Global Influenza Surveillance Network (GISN) by means of regularly entering data into FluNet.

## 10 Treatment

### 10.1 General (as per World Health Organisation- WHO)

- 10.1.1 The *Influenza A (H1N1)* virus is sensitive to Oseltamivir (TAMIFLU® - **available in Fiji**) and Zanamivir (Relenza® - **N/A in Fiji**). It is resistant to Amantadine and Rimantadine.

Additional therapy with antibacterial agents should be prescribed at the discretion of the clinician if secondary bacterial pneumonia is suspected. These antibiotics should not only cover the normal spectrum of community-acquired pneumonia, but should also cover penicillinase-producing staphylococci, which are a common pathogen causing pneumonia secondary to influenza. For example, Augmentin®, doxycycline, or TMP-SMX are possible choices, but it should ideally be guided by microbiology and antimicrobial susceptibility testing. (**Note: Also refer to - Fiji Essential Medicines Formulary 2<sup>nd</sup> Edition, 2006 and Antibiotic Guidelines 2<sup>nd</sup> Edition 03-04**).

- 10.1.2 For patients in hospital with severe community-acquired pneumonia (CAP) requiring Intensive Care Unit (ICU) admission, methicillin-resistant *Staphylococcus aureus* (MRSA) infection should be suspected and treated empirically in addition to coverage for other causes of community-acquired pneumonia.
- 10.1.3 Necrotizing or Cavitory infiltrates or Empyema may be a sign of staphylococcal superinfection.

### 10.2 General Information - Oseltamivir (Tamiflu)

- 10.2.2 OseltaMivir (Tamiflu) is a neuraminidase inhibitor indicated for the treatment and prevention of influenza A and B. Starting neuraminidase inhibitors within 48 hour on onset of influenza symptoms shortens the duration of illness in otherwise healthy people by around 1-2 days.
- 10.2.3 The earlier treatment is started, the shorter and less severe the illness. More evidence is needed to determine effectiveness in treating people at high risk of serious complications (e.g. elderly, Chronic Obstructive Pulmonary Disease (COPD), asthma, immunosuppression).
- 10.2.4 Oseltamivir is not recommended for routine prophylaxis, but may be used to prevent influenza in conjunction with other measures on the direction of public health authorities.

### 10.3 Criteria for Treatment in Fiji

Oseltamivir may be provided for the following clinical indications when:

- 10.3.2 There is a **confirmed, probable** or **suspected** case of Influenza A (H1N1) (as per **3.1, 3.2, or 3.3** criteria, page 6 above).
- 10.3.3 The current Influenza A (H1N1) is proven to be susceptible to Oseltamivir (Tamiflu)
- 10.3.4 As post prophylaxis for health care workers (HCW) who were not using appropriate personal protective equipment during close contact with a patient confirmed positive via laboratory test during the patients infectious period.
- 10.3.5 When supplies of Tamiflu are limited, then it should be prioritized for those patients and close contacts who are at increased risk for severe illness due to influenza. These risk groups are listed in 7.0.

**10.3.6** Persons who are not in the high-risk groups mentioned above, who are not ill, and who have been potentially exposed, may not be prescribed Tamiflu, but instead be instructed to monitor their health, and seek healthcare immediately when they do become ill.

**10.3.7** If stocks are limited (as they currently are in Fiji), it is recommended that the use of Tamiflu is prioritized

| Priority Level    | Tamiflu usage   |
|-------------------|---|
| Highest priority: | Treatment of suspected and confirmed cases of H1N1 flu, who are at risk of severe illness     |
| Middle priority   | Prophylaxis of persons with real exposure to H1N1 flu, who also are at risk of severe illness |
| Low priority:     | Treatment of other suspected and confirmed cases  |

## 10.4 Dosage (Adults and Children > 12 Months)

**10.4.2** Treatment course: 5 days duration

**10.4.3** Prophylaxis course: to continue for 10 days duration after last known exposure to an ill patient confirmed positive via laboratory test.

**10.4.4** See Table 1 (below) for Adult and child dosage.

Table 1

| Adult or Child                      |              | Treatment        | Prophylaxis |
|-------------------------------------|--------------|------------------|-------------|
| <b>Adult</b>                        |              | 75mg twice daily | 75mg daily  |
| <b>Child</b><br>(12 months or over) | 15kg or less | 30mg twice daily | 30mg daily  |
|                                     | 15-23kg      | 45mg twice daily | 45mg daily  |
|                                     | 24-40kg      | 60mg twice daily | 60mg daily  |
|                                     | >40kg        | 75mg twice daily | 75mg daily  |

**10.4.5** Limited safety data on the use of Oseltamivir is available for children less than one year of age, and it is not licensed for use in children less than 1 year of age. However, because infants typically have high rates of morbidity and mortality from influenza, infants with *Influenza A (H1N1)* infections may benefit from treatment with Oseltamivir (Consultation with a Paediatrician at CWMH, Lautoka or Labasa Hospitals is recommended on a case by case basis).

## 10.5 Dosage (Children < 12 months)

Table 2

| Age         | Recommended Treatment dose for 5 days | Recommended prophylactic dose for 10 days   |
|-------------|---------------------------------------|---|
| <3 months   | 12mg twice daily                      | Not recommended unless situation judged critical due to limited data on use in this age group |
| 3-5 months  | 20 mg twice daily                     | 20mg daily  |
| 6-11 months | 25mg twice daily                      | 25mg daily  |

## 10.6 Administration of Tamiflu in Children

- 10.6.1 Children who are unable to swallow capsules and require a dose different to that available in capsule form may receive appropriate doses of Tamiflu by following the instructions below.
- 10.6.2 Hold one Tamiflu 75 mg capsule over a small bowl, carefully pull the capsule open and pour the powder into the bowl.
- 10.6.3 Using a graduated syringe, add 5 ml water to the powder. Stir for about two minutes.
- 10.6.4 Draw up into the syringe the correct amount of mixture from the bowl (see table below). The recommended dose is body weight dependent (see table above).
- 10.6.5 Push down on the plunger of the syringe, to empty its entire contents into a second bowl. Discard any unused mixture.
- 10.6.6 In the second bowl, add a suitable, small amount (1 teaspoon maximum) of sweetened food product such as regular or sugar-free chocolate syrup, honey (only for children two years or older), light brown or table sugar dissolved in water, dessert toppings, sweetened condensed milk, apple sauce or yogurt to the mixture to mask the bitter taste of the medication.
- 10.6.7 Stir this mixture well and give the entire contents of the second bowl to the patient. This mixture must be swallowed immediately after its preparation. If there is some mixture left inside the bowl, rinse the bowl with a small amount of water and have the patient drink this remaining mixture.

Table 3

| Recommended dose | Amount of Tamiflu mixture for one dose |
|------------------|--|
| 30 mg            | 2 ml                                   |
| 45 mg            | 3 ml                                   |
| 60 mg            | 4 ml                                   |

## 10.7 Dosage for Adults with special conditions

### 10.7.1 Pregnant Women

- 10.7.1.1 No clinical studies have been conducted to assess the safety of Oseltamivir (Tamiflu) for pregnant women.
- 10.7.1.2 Because of the unknown effects of influenza antiviral drugs on pregnant women and their fetus', Oseltamivir should be used during pregnancy only if the potential benefit justifies the potential risk to the embryo or fetus.
- 10.7.1.3 The manufacturers' package inserts should be consulted. Pregnancy should not be considered a contraindication to prescribing Oseltamivir.

### 10.7.2 Renal Impairment

- 10.7.2.1 Dosage of Oseltamivir should be reduced in patients with moderate renal impairment, according to creatinine clearance (CC):
- 10.7.2.2 CC 10 to 30 ml/minute: *treatment of influenza*: 75 mg once daily or 30 mg twice daily; *prevention*: 75 mg on alternate days or 30 mg daily.
- 10.7.2.3 CC less than 10 ml/minute: not recommended
- 10.7.2.4 Dialysis patients: not recommended.

## 10.8 Reported Adverse Events to Oseltamivir (Tamiflu) – (In Adults)

- 10.8.1 The most commonly reported adverse effects associated with Oseltamivir (Tamiflu) treatment or prophylaxis in adults is nausea and vomiting, abdominal pain, bronchitis, insomnia, and vertigo.
- 10.8.2 Diarrhea, dizziness, headache, cough, and fatigue may occur, but many adverse effects may be difficult to distinguish from the symptoms of influenza.
- 10.8.3 Other adverse effects occurring less commonly have included unstable angina, anemia, pseudo membranous colitis, pneumonia, pyrexia, and peritonsillar abscess.
- 10.8.4 There have been occasional reports of anaphylaxis and skin rashes, including toxic epidermal necrolysis, Stevens-Johnson syndrome, and erythema multiforme.
- 10.8.5 Elevated liver enzymes and hepatitis have been reported rarely.
- 10.8.6 Prophylaxis in adults has also been associated with aches and pains, dyspepsia, rhinorrhoea, and upper respiratory-tract infections.

## 10.9 Reported Adverse Events to Oseltamivir (Tamiflu) – (In Children)

- 10.9.1 The most commonly reported adverse effects in children receiving treatment or prophylaxis with Oseltamivir are vomiting and other gastrointestinal problems.
- 10.9.2 Other commonly occurring adverse events in children include asthma, bronchitis, conjunctivitis, dermatitis, epistaxis, ear disorders and otitis media, lymphadenopathy, pneumonia, and sinusitis.

## 10.10 Procedural requirements for prescribing & dispensing Oseltamivir (Tamiflu)

### 10.10.1 Prescribing- Doctor

- 10.10.1.1 Use restricted antibiotic form for prescribing Oseltamivir (Tamiflu)
- 10.10.1.2 In the sub divisions, Tamiflu must be requested by the SDMO who must telephone their divisional hospital pharmacist to validate their order.
- 10.10.1.3 The **restricted antibiotic form** needs to be completed and signed by attending Consultant or Sub Divisional Medical Officer (SDMO) or most senior medical officer in the facility.

### 10.10.2 Dispensing – Pharmacist

- 10.10.2.1 Principle Pharmacist to be notified by the In –Patient Pharmacist (of 10.10.).
- 10.10.2.2 Form (use restricted antibiotic form) to be faxed to Central Pharmacy, Attention to: Essential Medicines Authority (EMA) **Fax no. 3388003.**

### 10.10.3 Central Pharmacy (Fiji Pharmacy and Biomedical Services)

10.10.3.1 The Secretary of the National Medicines and Therapeutic Committee (NMTC) is notified of each request.

10.10.3.2 The Secretary of the NMTC to report all notifications (as per 10.10..2.2) to the NMTC.

## 11.0 Infection Prevention and Control

### 11.1 Critical Measures

11.1.1 Avoid crowding patients together, promote distance between patients;

11.1.2 Protect mucosa of mouth and nose

11.1.3 Perform hand hygiene (See 11.4, page 14-15).

### 11.2 Summary of precautions for staff

11.2.1 Standard (as mentioned below), Droplet (the use of medical masks) and Contact Precautions (the use of gowns and gloves) should be strictly adhered to when working in direct contact with suspected or confirmed A(H1N1) influenza like symptoms.

### 11.3 Standard Precautions

11.3.1 Standard precautions are designed for the care of all patients, regardless of their diagnosis or presumed infection status.

11.3.2 These precautions apply to blood, all body fluids, secretions and excretions regardless of whether or not they contain visible blood, non-intact skin and mucous membranes

11.3.3 These general methods of infection prevention are designed to reduce the risk of transmission of micro-organisms from both recognised and unrecognised sources of infection in hospitals.

11.3.4 Standard precautions involve safe work practices and include the following:

11.3.4.1 Hand Hygiene

11.3.4.2 Respiratory hygiene/cough etiquette

11.3.4.3 Personal protective equipment (PPE)

11.3.4.4 Appropriate handling of laundry

11.3.4.5 Appropriate handling of used patient equipment.

### 11.4 Hand Hygiene ( see diagram on page 14 for hand washing steps)

11.4.1 Hand hygiene **is the single most important technique** to prevent and minimise the spread of infection within hospital environments.

11.4.2 Hand hygiene prevents the spread of infection by removing dirt and most micro-organisms carried on the hands of both staff and patients, and include both hand washing with soap or antimicrobial soap and water, and alcohol-based products (gels, rinses, foams) that do not require the use of water.

11.4.3 ***It is important to note that when hands are visibly soiled, they must be washed with soap and water; if hands are not visibly soiled, then an alcohol hand rub may be used.***

# Wash your hands



Lather hands with soap and water and rub hands palm to palm



Right palm over back of left hand with interlaced fingers and vice versa



Palm to palm with fingers interlaced



Backs of fingers to opposing palm with fingers interlocked



Rotational rubbing of left thumb clasped in right palm and vice versa



Rotational rubbing backwards and forwards with clasped fingers of right hand in left palm and vice versa



Rinse hands with water



Dry hands on a single use towel and your hands are safe

Illustrations: Jodi Le-Burn



Contact: SPC's Public Health Surveillance & Communicable Disease Control Section, Public Health Programme - Email: [phu.cdc@spc.int](mailto:phu.cdc@spc.int)

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Adapted with permission from WHO Guidelines on Hand Hygiene in Health Care [http://www.who.int/patientsafety/information\\_center](http://www.who.int/patientsafety/information_center)

## 11.5 Respiratory hygiene and cough etiquette

- 11.5.1 Respiratory hygiene and cough etiquette procedures should be used by all healthcare workers, patients and family members with respiratory symptoms (e.g. coughing, sneezing).
- 11.5.2 People with respiratory infections should be educated to Cover their mouth and nose with a tissue when coughing, and dispose of used tissue in waste and/or garbage containers. If no tissues are available, cough or sneeze into the hands then wash immediately
- 11.5.3 Spit into tissue if spitting is necessary and dispose of tissue into waste and/or garbage bin.  
Perform hand hygiene (use an alcohol-based hand rub or wash hands with soap and water) each time after contact with respiratory secretions; and Wear a mask (if available) if you are coughing in order to protect other people in the waiting area.

## 11.6 Personal Protective Equipment (PPE)

- 11.6.1 The use of comprehensive PPE is mandatory if direct, close contact with patients suffering from highly pathogenic airborne viruses such as A (H1N1) influenza when caring for patients with pandemic influenza
- 11.6.2 Health Care Workers (HCWs) should take extra care to avoid touching their eyes, nose or mouth with contaminated hands (gloved or ungloved).
- 11.6.3 Careful removal of PPE is also very important and healthcare workers should receive training in how to remove PPE.
- 11.6.4 Additional specialised training should be obtained prior to working with these and other highly pathogenic organisms.

### **In summary, health care workers should:**

- Use surgical mask and pay particular attention to **hand hygiene** when working in direct contact with A(H1N1) influenza or suspected cases;
- Use Eye protection (eye shields/goggles), gown, and gloves if likelihood of splashes onto face is anticipated.
- Use N95 mask, gowns, eye protection and gloves for aerosol generating procedures (e.g. aspiration of respiratory tract, intubation, resuscitation, bronchoscope and autopsy).

11.7 Personal Protective Equipment (PPE) - Sequence for putting on personal protective equipment.

## Sequence for putting on personal protective equipment (PPE)

Before procedure perform hand hygiene using soap and water or alcohol hand rub

### 1. Gown



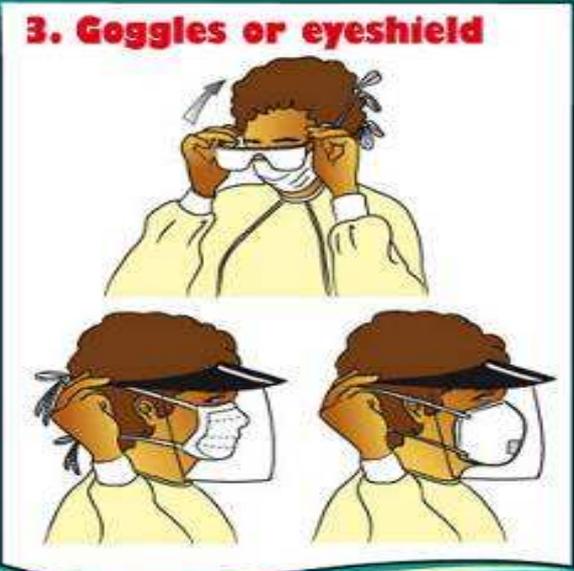
- Long sleeves down to wrist
- Length of gown down to knees
- Ties at back of neck and waist

### 2. Mask or respirator



- Place mask over nose and mouth and below chin
- Tie strings
- Pull elastic bands over head – upper band above ear line, lower band below ear line
- Fit-check respirator by moulding nose strip over bridge of nose to get a snug fit

### 3. Goggles or eyeshield



- Put on goggles or eyeshield

### 4. Gloves



- Put gloves on
- Pull over wrist of isolation gown

#### Safety precautions

- Avoid adjusting PPE once you enter isolation area
- Avoid touching your face
- Minimise contact with environmental surfaces



SPC  
Secretariat  
of the Pacific  
Community

Contact SPC's Public Health Surveillance  
& Communicable Disease Control Services.  
Public Health Programme -  
Email: phc.cdcc@spc.int

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Adapted with permission from the CDC's Sequence for Donning Personal Protective Equipment (PPE): <http://www.cdc.gov/>

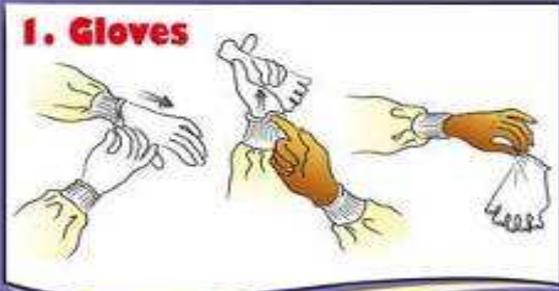
Source: SPC 2008

## 11.8 Personal Protective Equipment (PPE) - Sequence for removing personal protective equipment.

# Sequence for removing personal protective equipment (PPE)

- 1 Remove PPE at doorway or in anteroom.**
- 2 Remove respirator mask after leaving isolation room and closing door.**

### 1. Gloves



- Grasp outside of first glove with opposite gloved hand and peel off
- Hold removed glove in gloved hand
- With ungloved hand slide finger just under wrist of gloved hand
- Roll off over first glove
- Discard in waste bin

### 2. Goggles or eyeshield (front of goggles/eyeshield is contaminated!)



- Do not touch front of goggles or eyeshield
- Hold earpieces of goggles or headband of eyeshield and remove
- Place in container for cleaning and disinfection

### 3. Gown (front of gown is contaminated!)



- Do not touch outside of gown
- Undo ties at neck and waist
- Roll off from neck and shoulders, turning gown inside out
- Discard in waste bin

### 4. Mask or respirator (front of mask/respirator is contaminated!)



- Do not touch front of mask or respirator
- For **respirator mask**: grasp top tape and then bottom tape with your hands
- Lift carefully over head and remove
- For **surgical mask**: untie straps and lift away from face
- Discard in waste bin
- Perform hand hygiene immediately with soap and water or alcohol hand rub



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of the Pacific  
Community

Current SPCV Public Health Surveillance  
& Communicable Disease Control Section,  
Public Health Programs  
Email: phc@spc.org.au

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Adapted with permission from the OCV Network for Setting Personal Protective Equipment (PPE): <http://www.ocv.gov>

Source: SPC 2008

## **11.9 Precautions to be implemented upon admission of a suspected or confirmed Influenza A (H1N1):**

- 11.9.1.** Standard precautions, Droplet and Contact precautions should be adhered to for 7 days after illness onset or until symptoms have resolved
- 11.9.2** Patients should be placed in an isolation room preferably a negative pressure room with doors closed. If a negative pressure room is unavailable, then a single room (doors closed) or isolation ward with open windows for natural ventilation, and use a fan (blowing outward) to control the direction of air flow.
- 11.9.3** Surgical masks, gloves, and disposable gowns should be worn by HCWs and visitors who come within 2 meters of a coughing or sneezing patient..
- 11.9.4** A sign should be placed on the patient's door explaining the necessary precautions
- 11.9.5** Ensure Standard droplet and contact Precautions are adhered to for aerosol generating procedures (e.g. aspiration of respiratory tract, intubation, resuscitation, bronchoscopy and autopsy), an N95 mask and goggles should be worn.

## **11.10 Patient Transfer**

- 11.10.1** Patients should be moved as little as possible out of the room (see 11.9.2 above) but if transfer is necessary all personnel involved in any aspect of patient transfer should wear a surgical mask to minimise dispersion of the virus.

## **11.11 Patient placement**

- 11.11.1** Isolation of patients is very important in preventing the transmission of infection.
- 11.11.2** There should be 1–2 meters space between hospital beds to reduce the risk of cross infection.
- 11.11.3** If single rooms are not available, patients with the same pathogen should be kept together in either a room or a ward.
- 11.11.4** The room or ward should be in a well-defined area that is clearly separated from other patient care areas used for uninfected patients.

## **11.12 Isolation**

- 11.12.1** A sign should be placed on the patient's door explaining the necessary precautions
- 11.12.2** Remove unnecessary furniture.
- 11.12.3** Stock linen.
- 11.12.4** Stock hand hygiene products (e.g. liquid soap, alcohol-based products, paper towels)
- 11.12.5** Personal Protective Equipment (PPE) should be available.
- 11.12.6** Sharps container should be placed inside the isolation room.
- 11.12.7** Garbage bags and bins should be placed in the isolation room.
- 11.12.8** Trolley to hold PPE.
- 11.12.9** Container for collection of used eye shields to be decontaminated.
- 11.12.10** Recording sheet should be placed at the entrance of the isolation room so that staff can record the names and contacts of visitors that enter the isolation room so that contact tracing is possible if necessary.

## **12.0 Environmental cleaning**

- 12.1** To prevent the spread of influenza virus it is important to keep environmental surfaces (especially bedside tables, surfaces in the bathroom etc., clean by wiping them down with sodium hypochlorite 1% (Janola).
- 12.2** Studies have shown that influenza virus can survive on environmental surfaces and can infect a person for up to 2-8 hours after being deposited on the surface. Influenza virus is destroyed by heat (167-212°F [75-100°C]). In addition, several chemical germicides, including chlorine, hydrogen peroxide, detergents (soap), iodophors (iodine-based antiseptics), and alcohols are effective against human influenza viruses if used in proper concentration for a sufficient length of time.

## **13.0 Management of linen, eating utensils and dishes of persons infected with influenza virus.**

- 13.1** Standard precaution must be adhered to at all times when in contact with linens, eating utensils, and dishes belonging to those who are sick do not need to be cleaned separately, but importantly these items should not be shared without washing thoroughly first.
- 13.2** Linens (such as bed sheets and towels) should be washed by using standard procedures. Individuals should avoid “hugging” laundry prior to washing it to prevent contaminating themselves. Wash hands with soap and water or alcohol-based hand rub immediately after handling dirty laundry.
- 13.3** Eating utensils should be washed with hot soapy water.

## **14.0 Management of visitors**

- 14.1** Limit visitors to persons who are necessary for the patient’s well-being and care.
- 14.2** Visitors who are permitted to visit must be offered a gown, gloves, eye protection and a mask and should be instructed by health care personnel on their use of PPE and Hand hygiene and also must be informed to limit opportunities to touch environmental surfaces before entering the patient’s room.

## **15.0 Information for Staff.**

- 15.1** Avoid being face-to-face with the sick person.
- 15.2** When holding small children who are sick, place their chin on your shoulder so that they will not cough in your face.
- 15.3** Clean your hands with soap and water or use an alcohol-based hand rub after you touch the sick person or handle used tissues, or laundry.
- 15.4** Caregivers might catch flu from the person they are caring for and then the caregiver might be able to spread the flu to others before the caregiver shows symptoms. Therefore, the caregiver should wear a mask when they leave their home to keep from spreading flu to others in case they are in the early stages of infection.
- 15.5** Talk to your health care provider about taking antiviral medication to prevent the caregiver from getting the flu.

## 16.0 Information for Patients

- 16.1 Cover your nose or mouth with a tissue when you sneeze
- 16.2 Wash your hands with soap and water, especially after you cough or sneeze. Alcohol based hand cleaners are also effective
- 16.3 Try to avoid close contact with sick people
- 16.4 Avoid touching your eyes, nose or mouth.
- 16.5 If you get sick, stay at home from work or school and limit contact with others to keep from infecting them.

Note: Patients who have been discharged from the hospital should be advised by the doctor who had attended to them in the health facility whether to continue self isolation or not according to the results of their nasopharyngeal swab test.

## 17.0 Travel Information

WHO is not currently (as of 10 May 2009) recommending travel restrictions related to the outbreak. Individuals who are ill should delay travel plans and returning travellers who fall ill should seek appropriate medical care.

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## 18.0 Web Based resources for clinicians for best practice information on Influenza A (H1N1):

[www.who.int/csr/disease/swineflu/en/index.html](http://www.who.int/csr/disease/swineflu/en/index.html)

[www.cdc.gov/h1n1flu](http://www.cdc.gov/h1n1flu)

[www.euro.who.int/swineinfluenza](http://www.euro.who.int/swineinfluenza)

[www.health.gov.fj](http://www.health.gov.fj)

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## 19.0 In Country Resources:

If you do not have access to the world wide web (www) and you would like day to day updated information (via fax or phone) on Influenza A (H1N1).

Contact:

The Clinical Practice Guidelines Development (CGD) team at FHSIP/MoH:

Dr. Asinate Boladuadua (CGD Project Officer) via e mail at [uatale2003@hotmail.com](mailto:uatale2003@hotmail.com) or

Clare Whelan (CGD and Clinical Governance/Clinical Risk Management/QI Adviser) at [clare123whelan@yahoo.com.au](mailto:clare123whelan@yahoo.com.au) or [c.whelan@govnet.gov.au](mailto:c.whelan@govnet.gov.au)

Or contact either of us by Phone on 3221 536 or by Fax on 330 1536.

If you require further information on any aspect of Infection Control in relation to Influenza A (H1N1) (or any other Clinical Governance/Clinical Risk Management/IC (specialist) information:

Contact:

Sr. Margaret Leong, (PAS/ National Clinical Governance/Clinical Risk/Clinical Practice Improvement Coordinator at the Office of the Deputy Secretary for Hospital Services (Dr Eloni Tora), MoH, Head Office, Suva, Fiji. .

Telephone: 3221 519 or via e mail on [margaret.leong@govnet.gov.fj](mailto:margaret.leong@govnet.gov.fj)

## References

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- World Health Organisation (2007), “*Guideline for investigation of human cases of avian influenza A (H5N1)*”, January 2007
- World Health Organisation (2007), “*Interim Guidelines - Infection Prevention and control of epidemic and pandemic prone acute respiratory diseases in health care*”, June 2007.
- Secretariat of the Pacific Community, [www.spc.int/phs/PPHSN/Activities/PICNet/Draft-IC-Guidelines.htm](http://www.spc.int/phs/PPHSN/Activities/PICNet/Draft-IC-Guidelines.htm)

## List of Contributors

Dr. S. Acharya, Specialist Physician, Medical Department, CWMH  
Dr. F. Bingwor, Public Health Coordinator, FHSIP  
Dr. A. Boladuadua, Project Officer-Clinical Guidelines Development, FHSIP.  
Dr. E. Buadromo, Consultant Pathologist, CWMH  
Dr V. Buakula, Fiji Centre for Communicable Diseases Control, Mataika House  
Mrs. L. Cava, Project Officer, Clinical Services Planning, FHSIP  
Dr. M. Cornelius, Clinical Services Coordinator, FHSIP  
Sr. Faga, GOPD, CWMH  
Ms. M. Gounder, Acting Principal Pharmacist, Fiji Pharmaceutical Services, MoH  
Dr. J. Kado, Consultant Paediatrician, CWMH.  
Ms. M. Kama, Fiji Pharmaceutical Services, MoH  
Ms. K. Jenkins, Long Term Adviser, Immunization Program, FHSIP.  
Dr. J. Kool, Communicable Disease Surveillance and Response, WHO - Office for the South Pacific  
Dr. J. Koroivueta, Medical Superintendent, Tamavua/Twoomey Hospitals, MoH  
Sr. M. Leong, Principal Assistant Secretary, Division of Hospital Services, MoH  
S/N Sera Mua, Infection Control Officer, CWMH.  
Dr K. Nadredre, GOPD, CWMH.  
Dr. S. Narayan, Paediatric Registrar, CWMH.  
The National Health Executive Committee, (NMTC) Ministry of Health.  
The National Medicines and Therapeutic Committee, (NMTC), Ministry of Health  
Dr. Amanda Noovau, Junior Consultant, O&G, CWMH  
Ms. V. Prasad, Pharmacist, CWMH  
Sr. L. Raiwalui, A&E, CWMH.  
Ms. S. Singh, Microbiology Laboratory, CWMH  
Sr. K. Soata, Risk Manager, CWMH  
Dr. J. Vuki, A&E, CWMH.  
Dr. E. Tora, Deputy Secretary for Hospital Services, Division of Hospital Services, MoH  
Ms. Clare Whelan, Long Term Adviser, Clinical Guidelines Development/Risk Mgt/QI, FHSIP.

## TARGETED SCREENING OF LARGE GROUPS BY PUBLIC HEALTH STAFF

Public Health staff to wear masks

• Determine if persons have any of the following symptoms:

- Cough
- Sore Throat
- Runny Nose

This can be done by asking persons individually, or having persons self-report (for instance, showing a sign that asks persons with symptoms to identify themselves)

If **YES** to any symptoms | If **NO** to all symptoms

- Take person's temperature
- Be sure to **disinfect thermometer** between patients

- Provide person with Health Alert (ie Info brochure re *Influenza A (H1N1)*)
- Allow person to proceed

If temperature  $\geq 38\text{C} / 100.4\text{F}$

If temperature  $< 38\text{C} / 100.4\text{F}$

- **Assess person for epidemiologic criteria** (within 7 days prior to illness onset):
  - History of **coming from an area** where there are **confirmed\*** cases of influenza A(H1N1)
  - OR**
  - **Close contact** (within 6 feet) with a person who is a **probable\*** case)

- Provide person with Health Alert
- Allow person to proceed

If **YES** to **either** criterion - **PATIENT MEETS DEFINITION OF SUSPECTED INFLUENZA A(H1N1) CASE**

If **NO** to **BOTH** criteria - patient may have influenza-like-illness (ILI) but NOT suspect A(H1N1)

- Alert hospital of suspected influenza A(H1N1) case
- Send patient to hospital to obtain influenza swabs (see protocol) and to be assessed for care needs.
- Patient should be transported wearing mask
- Transport staff should wear gown, mask, eye protection and gloves (drivers with no contact with patient can wear mask and gloves only)

- Provide person with Health Alert
- Recommend person to practice good hygiene
- Allow person to proceed
- If patient had fever and cough or sore throat, this meets standard case definition for **influenza-like-illness (ILI)**. This is a **notifiable disease** and should be reported following the usual local protocols.

\* **PROBABLE** cases are defined as meeting clinical and epidemiologic criteria AND being positive for Influenza A on a laboratory test but negative for seasonal influenza  
 \* **CONFIRMED** cases are cases that are positive for Novel Influenza A(H1N1) on laboratory test

## RESPIRATORY DISEASE DECISION TREE FOR HEALTHCARE FACILITIES

**Triage staff to wear masks**

Assess patients prior to entry into waiting area for clinical criteria:  
 • **Fever** ( $\geq 38^{\circ}\text{C}$  /  $100.4^{\circ}\text{F}$ )  
**AND**  
 • **Cough or sore throat or runny nose**

**If YES to both criteria**

**If NO to one or both criteria**

Assess whether meet epidemiologic criteria (**within 7 days prior to illness onset**):  
 • **History of travel** to an area where there are **confirmed cases of influenza A(H1N1)**.  
**or**  
 • **Close contact** (within 6 feet) with a person who is a **probable case**

• **Provide patient with health alert**  
 • **Allow patient to proceed for usual care**

\* **PROBABLE** cases are defined as meeting clinical and epidemiologic criteria **AND** being positive for Influenza A but negative for seasonal influenza

\* **CONFIRMED** cases are cases that are positive for Influenza A(H1N1) on laboratory test

**If YES to either criterion - PATIENT MEETS DEFINITION OF SUSPECTED INFLUENZA A(H1N1) CASE**

**If NO to both criteria**

• **Alert Public Health immediately**  
 • **Clinician seeing patient must wear gown, eye protection, mask, and gloves**  
 • Obtain influenza swabs (see protocol)  
 • Assess whether patient needs hospitalization

• **Provide patient with health alert**  
 • Allow patient to proceed for **usual care**  
 • Recommend patient to practice good hygiene  
 • Recommend patient stay home and away from others until illness passes (self-quarantine)

**If patient needs hospitalization**

**If patient does not need hospitalization**

• Isolate patient in individual room  
 • Limit unnecessary entry into room (including only one visitor at a time)  
 • **Anyone** entering room must wear **gown, eye protection, mask and gloves**  
 • **Patient must wear mask whenever not in room**  
 • Treat according to latest protocol for influenza A(H1N1)  
 • Discharge when no longer needs hospitalization (if patient is still symptomatic when discharged, see box to right)

• Instruct patient to **remain home and away from others (mandatory isolation)** until totally asymptomatic (at least 7 days)  
 • Instruct patient to practice good hygiene  
 • If contact with others is unavoidable, patient should wear mask and practice frequent hand hygiene