

**Infection
Control
Resource
Manual**

SWINE FLU
Influenza A H1N1
(Grey Base Hospital)

Version 11

West Coast
District Health
Board

Greymouth
West Coast
New Zealand

**PLEASE NOTE: THE INFORMATION CONTAINED WITHIN THIS
GUIDEBOOK IS SUBJECT TO CHANGE AND UPDATING AS FURTHER
INFORMATION AND DIRECTION COMES FROM THE MINISTRY OF
HEALTH (MOH), WORLD HEALTH ORGANISATION (WHO) AND
CENTRE FOR DISEASE CONTROL (CDC)**

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1.00 INTRODUCTION

SWINE FLU (Influenza A H1N1) is a new type of influenza. Our knowledge about preventing and managing it is constantly evolving.

This Guidebook contains information for staff regarding the management of SWINE FLU patients, and WCDHB facilities associated with their care.



1.01 SYMPTOMS OF SWINE FLU

People with SWINE FLU develop a high fever (> than 38 C) and respiratory symptoms such as cough, shortness of breath and difficulty breathing. Other less common symptoms include headache, muscular stiffness, and loss of appetite, unexplained tiredness, confusion rash and diarrhoea.

1.02 CAUSE OF SWINE FLU

The World Health Organisation has confirmed that the SWINE FLU virus is a newly formed Influenza virus. Because the virus is newly recognised much about its behaviour is currently not well understood.

1.03 TRANSMISSION OF SWINE FLU

At present there are two known routes of transmission. The first is via respiratory droplets when someone coughs or sneezes. Current evidence suggests that SWINE FLU is spread via droplet transmission. (Seasonal Influenza is via droplet.) To get SWINE FLU a person needs to be within coughing or sneezing distance – approximately 6 feet. (2 metres)

The second route is via contact. This can be by Direct Contact (contact with patient or their bodily substances) or Indirect Contact (contact with objects contaminated with patient's bodily fluids or substances).



1.04 CASE DEFINITIONS

The case definition has been altered as incubation time is now considered to be one week or less.

Diagnosis will be based largely on history and clinical presentation. In most people, it will not be possible to distinguish Novel Influenza A (H1N1) 09 infection from seasonal influenza. However, management will be similar in most cases, in particular for people with mild to moderate disease.

Confirmed Case

A confirmed case of novel influenza A H1N1 09 virus infection is defined as a person with laboratory confirmed novel influenza A H1N1 09 virus infection by one or more of the following tests:

- real-time RT-PCR
- viral culture
- four-fold rise in novel influenza A H1N1 09 virus specific neutralising antibodies

Probable case

A probable case of novel influenza A H1N1 09 virus infection is defined as a person who meets the suspected case definition

AND

Tests positive for influenza A

Suspected case

A suspected case of novel influenza A H1N1 09 virus infection is defined as a person with an influenza like illness (fever $>38^{\circ}\text{C}$ plus cough or sore throat) who has developed symptoms within 4 days of returning from overseas travel.

OR

A suspected case of novel influenza A H1N1 09 virus infection is defined as a person with an influenza like illness (fever $>38^{\circ}\text{C}$ plus cough or sore throat) who is considered to be a close contact of a probable or confirmed case.

Close contact

Close contact is defined as having cared for, lived with, or had direct contact with respiratory secretions or bodily fluids of a probable or confirmed case.

NB ONLY people who meet the case definition and who are admitted to a WCDHB facility is to have a nasal - pharyngeal swab taken

REPORTING PROCEDURES

All probable SWINE FLU cases should be managed in the same way for the purposes of infection control and outbreak containment

At this time, all reporting is to be directly to the Medical Officer of Health, Community and Public Health and to the DHB's Quality and Risk Manager



1.05 TESTING

Routine collection of nasopharyngeal samples in primary care is not recommended. Health workers should prioritise taking nasopharyngeal samples according to this guidance and any further guidance from local Public Health Units, in light of local laboratory capacity. Nasopharyngeal viral samples should only be taken from people with symptoms. If the health worker is not confident in their ability to take a pernasal nasopharyngeal sample, then a nasal sample can be substituted.

Testing should now be limited to the following three indications:

- General practices who are part of the national influenza **sentinel surveillance** programme, which is currently being enhanced, should continue collecting samples as per the usual protocol. This will be an important part of overall surveillance for Novel Influenza A (H1N1) 09.
- Where **clinically indicated** for individuals
- Where indicated for **public health or infection control** reasons.

Nasopharyngeal samples for Novel Influenza A (H1N1) 09 testing are to be taken within the first 48 hours of symptom onset for people presenting with influenza-like illness [defined as (i) history of fever, chills and sweating **or** clinically documented fever $\geq 38^{\circ}\text{C}$, **plus** (ii) cough **or** sore throat].

When To Take Samples

Testing should generally be done where a result is important for the management of an individual.

The Ministry of Health recommends the following may be clinical indications for testing, if required to inform clinical management decisions:

Patients with severe clinical influenza-like illness, regardless of whether they are admitted to hospital

- 1. Hospitalized patients with upper or lower respiratory tract symptoms**
- 2. People with influenza-like illness at high risk of influenza-related complications.**

The Ministry of Health recommends testing if there is a public health or infection control rationale in the following situations:

- 3. For people who live or work in high risk institutions (see below)**
- 4. For the purpose of cluster identification and control, or infection control.**

It is likely to be sufficient to test a small sample of close contacts in the identification of clusters. The extent of testing is at the discretion of the local Public Health Unit. Nasopharyngeal samples are appropriate to diagnose Novel Influenza (H1N1) 09 and inform outbreak control among people who work in health care settings and essential services.



Samples From People On Antiviral Medication

Antiviral medication reduces the yield from viral samples. If an adult case has commenced a twice-daily treatment course of antiviral medication, do not take a sample. Children excrete a higher viral load. If a child case has been on a twice-daily treatment course of antiviral medication for >48 hours do not take samples. For contacts on once-daily prophylaxis with antiviral medication who develop symptoms, a sample, if indicated, should be taken within 48 hours of commencing antiviral medication.



1.06 TREATMENT

The Ministry of Health does **not** currently recommend the routine use of antivirals for pre- or post-exposure prophylaxis.

The Ministry of Health recommends the prudent use of antivirals for treatment.

Treatment should begin within 48 hours of symptom onset for people presenting with influenza-like illness [defined as (i) history of fever, chills and sweating **or** clinically documented fever $\geq 38^{\circ}\text{C}$, **plus** (ii) cough **or** sore throat].

Treatment should start immediately where indicated, rather than waiting for the results of testing if this has been done.

Only consider initiating antiviral treatment after 48 hours of the onset of symptoms for people with severe clinical illness, where possible in discussion with an infectious disease physician.

Antiviral use should be confined to the following groups:

1. All patients with severe clinical influenza-like illness, regardless of whether they are admitted to hospital

Symptomatic patients should be treated as with seasonal flu. People with moderately-severe and severe illness should be referred to hospital.

A sepsis assessment tool, such as the SIRS (see below), may be useful in deciding who to treat with Tamiflu and/or refer to hospital. This should not replace clinical judgment but rather support and/or confirm it. Note that the CRB-65 was provided in version 1 of this advice but has been removed as it is less suitable in this role.

2. Hospitalised patients with upper or lower respiratory tract symptoms

This includes:

- people who are hospitalised for any reason, but who are symptomatic with respiratory symptoms that could be due to influenza
- hospitalised patients who are close contacts of a confirmed case.

3. Symptomatic people at high risk of influenza-related complications

- People who are immune compromised or suppressed due for example to transplantation, haematological and solid organ malignancy on chemotherapy/radiotherapy, HIV, autoimmune disorders, the anti-psychotic drug clozapine (because of white cell suppression), etc.
- Pregnant women: Pregnant women appear to have higher rates of hospitalisation with influenza for variety of reasons and fever in the first trimester is associated with twice the rate of neural tube defects in the fetus. Therefore both antipyretics and antivirals may be useful. Influenza close to the time of delivery poses extra challenges for maternal and newborn health, as well as challenges to infection prevention in the delivery suite. The Ministry's Pandemic Influenza Technical Advisory Group recommends early administration with either oseltamavir (Tamiflu) or Zanamavir (Relenza) when indicated, and oseltamavir may be more easily accessed. Neither medicine is contraindicated during pregnancy, however there is limited information related to their use.



Whereas preclinical studies suggest that the risks are low, their potential to cause fetal toxicity or malformations in humans is currently unknown; therefore it is recommended that they should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. A local obstetric or infectious diseases specialist should be consulted where there are concerns.

- Anyone over six months of age with chronic medical conditions, such as:
 - Severe or poorly controlled congestive heart failure
 - Severe chronic respiratory disease
 - More severe asthmatics (e.g. people on oral steroids, high dose steroid inhalers, or steroids and long-acting beta-agonists)
 - Renal replacement therapy.

4. Symptomatic people who live or work in high risk institutions, where appropriate

These groups of people may warrant antiviral treatment if symptomatic. Antivirals should not be used prophylactically in these groups.

- Health care and other care providers in facilities and community settings who, through their activities, are capable of transmitting influenza to those at high risk of influenza complications.
- People who provide services within closed or relatively closed settings to persons at high risk (e.g. prisons, early child care centres).
- People of any age who are residents of a nursing home and other chronic care facilities.

5. As part of cluster and/or infection control, where appropriate

The Ministry of Health does **not** currently recommend the routine use of antivirals for pre- or post-exposure prophylaxis. However, there may be situations where post-exposure prophylaxis is indicated e.g. for essential workers and hospital staff where there have been significant breaches of PPE, on a case by case basis. If considering the post-exposure prophylactic use of antiviral medication (Tamiflu or Relenza), this should be discussed with your local Public Health Unit.

SIRS (systemic inflammatory response syndrome) criteria

These signs may indicate significant physiologic disruption, including sepsis. White cell count is the fourth criterion, but is not included for this purpose. SIRS can be diagnosed when two or more of the following criteria are fulfilled:

- Temperature ≥ 38 degrees Celsius
- Heart Rate >90
- Respiratory Rate >20 .



1.07 SWINE FLU PATIENTS IN GENERAL PRACTICE, RURAL NURSE CLINICS, BULLER & REEFTON HOSPITALS

Introduction

GP Practices, Rural Nurse Clinics and Buller and Reefton Hospitals are to identify a member of staff who is to take responsibility for keeping the practice up-to-date with current SWINE FLU information. Practices, Clinics and Hospitals are also advised to put together a SWINE FLU pack that includes:

- N95 mask (8 hrs)
- surgical mask (20 minutes)
- gown
- goggles
- gloves
- thermometer (disposable)
- alcohol hand rub (microshield gel)
- sphygmomanometer (portable)
- stethoscope

Place a sign on outside doors advising people suspected to have SWINE FLU to take a mask from the supply inside the door, and ensure that there are masks within easy reach inside the entrance to the practice.

1.00 Preparing the Practice/Clinic

- 1.01 Place a sign on the practice door advising people suspected to have SWINE FLU to take a mask from the supply inside the door and approach the receptionist and inform the receptionist.
- 1.02 Identify a specific consulting room which is to be designated an ISOLATION ROOM. This room should preferably have an external window that can be kept open.
- 1.03 Remove all non-essential items from the room to avoid unnecessary contamination.
- 1.04 As far as possible keep all pens, papers etc outside the Isolation Room.
- 1.05 DO NOT USE air conditioning or heaters in the room.
- 1.06 Keep masks, gowns, goggles and gloves OUTSIDE the Isolation Room.
- 1.07 Place a double yellow rubbish bag inside the Isolation Room.
- 1.08 Place an INFECTION CONTROL PRECAUTIONS REQUIRED sign on the door into the Isolation Room.



2.00 **When a Patient Telephones For an Appointment**

- 2.01 The receptionist is to ask callers if they have had contact with someone with suspected SWINE FLU. The signs and presenting symptoms, if patient is pregnant or is immunocompromised or has co-morbidities
- 2.02 If the patient answer is YES they are passed on to a Nurse who is to make necessary Arrangements for triaging of patient.
- 2.03 If possible, arrange to visit patient in their own home when they indicate they may be a SWINE FLU patient.
- 2.04 If patient is advised to attend your practice/clinic/hospital arrange for the patient to be provided a surgical mask on their arrival. Put on PPE and take them immediately into a separate consulting room. **DO NOT LEAVE THEM SITTING IN THE WAITING AREA.**

3.00 **Patient Contact**

- 3.01 Before entering the Isolation Room ensure staff wear personal protective equipment (PPE).
- 3.02 Routine investigation of suspected SWINE FLU patients is to be performed in general practice/clinic/hospital.
- 3.03 When taking the patient's temperature stand avoid standing directly in front of patient
- 3.04 Leave window open and door shut.
- 3.05 Avoid touching your face with your hands if adjusting your mask
- 3.06 If using the phone during the consultation, take your gloves off and wash hands first. After the phone call has been completed, Wipe phone re-glove.
- 3.07 At all times **TAKE EXTREME CARE TO AVOID CONTAMINATION.**

4.00 **Determining SWINE FLU Status**

- 4.01 Ask patient the following questions:
 - i) Have you been in close contact with anyone who has SWINE FLU?
- 4.02 Examine the patient to determine if they:
 - i) have a fever (>38°C);
 - ii) display influenza-like symptoms
- 4.03 If the patient meets the above criteria, then they are to be treated as a suspected SWINE FLU case. (Influenza A H1N1)



5.00 Swabbing the Patient

- 5.01 Put on PPE in this order:
- i) Gown (Disposable with cuffed sleeves)
 - ii) N95 Face Mask
 - iii) Goggles (Ordinary spectacles are not sufficient)
 - iv) Gloves (Ensuring glove wrist goes over cuff of sleeve)
- 5.02 Nasopharyngeal swabs are to be used – plain wire swab (no culture medium)
- 5.03 Stand **BEHIND or to the side** of the patient when taking the sample
- 5.04 Double bag the sample
- 5.05 Clearly label “Suspected swine influenza” on the requisition form along with patient details
- 5.06 Send sample to Grey Base Hospital Laboratory
- 5.07 Samples will be tested by PCR at Canterbury Health laboratories
- 5.08 **Contact C&PH** to inform them of the suspected case.

6.00 Cleaning the Isolation Room

- 6.01 Wear PPE when cleaning the room. The staff member who saw the suspected patient should keep their PPE on and clean the Isolation Room. Where this is not possible then cleaning staff are to wear PPE.
- 6.02 All surfaces and non-disposable equipment are to be washed using disposable cloths, hot water and precept. Cloths are double bagged into yellow clinical rubbish bags
- 6.03 Door handles should be cleaned once the patient leaves.
- 6.04 Keep all rubbish and used linen in the Isolation Room and is double bagged into white impervious bag with yellow stripe. Notify Laundry
- 6.05 Clinical waste is to be placed into double yellow rubbish bags and incinerated.
- 6.06 Follow routine sharps procedures.
- 6.07 Disinfect or destroy magazines and toys if there is any possibility that they may have been contaminated.
- 6.09 If the suspected SWINE FLU patient has used the toilet, ensure all toilet surfaces have been disinfected.



1.08 SWINE FLU PATIENTS AT GREYMOUTH HOSPITAL

1.00 INTRODUCTION

- 1.01 Signs are to be placed on all Hospital entrances directing possible SWINE FLU patients to the ED Department.
- 1.02 A supply of surgical masks is to be kept inside the main Hospital entrance and the entrance to the ED Department.
- 1.03 The sign on the main Hospital entrance and the entrance to the ED Department is to advise people suspected to have SWINE FLU to take a mask from the supply inside the door.

2.00 SERIOUSLY ILL PATIENTS ARRIVING FROM GPs, RURAL NURSE CLINICS OR BULLER/REEFTON HOSPITALS

- 2.01 If the patient has been seen at a GP practice, Rural Nurse Clinic or Buller or Reefton Hospitals, **meets the current case definition**, and is **seriously ill (e.g. pneumonia)**, Greymouth Hospital will be notified in advance that St Johns is transferring a suspected SWINE FLU patient. St Johns is to be informed that the ambulance is to take the suspected SWINE FLU patient to the Emergency Dept Triage Isolation room
- 2.02 Staff designated to manage the patient are to meet the ambulance. They are to be wearing mask, gowns and eye protection.
- 2.03 Staff designated to manage the patient are to triage and then admit to either medical or Pediatric ward.

**GO TO SECTION 7.00
MANAGEMENT OF SERIOUSLY ILL SWINE FLU PATIENT IN
PARFITT WARD
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3.00 PERSONS ARRIVING AT ED DEPARTMENT

- 3.01 If a person who suspects they may have SWINE FLU approaches the ED Reception, the Receptionist is to ensure that the person wears a mask and then the receptionist is to notify the ED Nurse, who is to immediately triage and assess the person.
- 3.02 The ED Nurse is to apply an N95 Mask, gown, gloves and goggles to themselves and then to the person. Eye protection is also to be worn by the ED Nurse.
- 3.03 The person is to be taken to the Isolation Room for assessment.
- 3.04 Before entering the Isolation Room ensure staff wear personal protective equipment



(PPE).

- 3.05 Routine investigation of suspected SWINE FLU patients is to be performed in general practice/clinic/hospital.
- 3.06 When taking the patient's temperature avoid standing directly in front of the patient.
- 3.07 Leave window open and door shut.
- 3.08 Avoid touching your face with your hands if adjusting your mask
- 3.09 If using the phone during the consultation, take your gloves off and wash hands first. After the phone call has been completed, re-glove.
- 3.10 At all times **TAKE EXTREME CARE TO AVOID CONTAMINATION.**

4.00 Determining SWINE FLU Status

- 4.01 Ask patient the following questions:
 - i) Have you traveled through North America or Mexico within the last 7 days
 - ii) Have you been in close contact with anyone who has SWINE FLU or had close contact with travelers to these areas ?
- 4.03 Examine the patient to determine if they:
 - iii) have a fever ($>38^{\circ}\text{C}$);
 - iv) display influenza-like symptoms
- 4.04 If the patient meets the above criteria, then they are to be treated as a suspected SWINE FLU case.

5.00 Swabbing the Patient

- 5.02 Put on PPE in this order:
 - i) Gown (Disposable with cuffed sleeves)
 - ii) N95Face Mask
 - iii) Goggles (Ordinary spectacles are not sufficient)
 - iv) Gloves (Ensuring glove wrist goes over cuff of sleeve)
- 5.02 Nasopharyngeal swabs are to be used – plain wire swab (no culture medium)
- 5.03 Stand **BEHIND or to the side of the patient** when taking the sample
- 5.04 Double bag the sample
- 5.05 Clearly label “Suspected swine influenza” on the requisition form along with patient details
- 5.06 Send sample to Grey Base Hospital Laboratory



5.07 Samples will be tested by PCR at Canterbury Health laboratories (CHL)

5.08 **Contact C&PH** to inform them of the suspected case.

6.00 Cleaning the Isolation Room

6.01 Wear PPE when cleaning the room. The staff member who saw the suspected patient should keep their PPE on and clean the Isolation Room. Where this is not possible then cleaning staff are to wear PPE.

6.02 All surfaces and non-disposable equipment are to be washed using disposable cloths hot water, detergent and precept.

6.03 Door handles should be cleaned once the patient leaves.

6.04 Keep all rubbish and used linen in the Isolation Room and place into appropriate containers for transport.

6.05 Clinical waste is to be placed into double yellow rubbish bags and incinerated.

6.06 Follow routine sharps procedures.

6.07 Disinfect or destroy magazines and toys if there is any possibility that they may have been contaminated.

6.09 If the suspected SWINE FLU patient has used the toilet, ensure all toilet surfaces have been disinfected.



7.00 MANAGEMENT OF SERIOUSLY ILL SWINE FLU PATIENT IN PARFITT WARD

- 7.01 ED staff is to notify medical / pediatrics staff regarding admission of the seriously ill SWINE FLU or patient.
- 7.02 Medical / Pediatrics staff is to organise and carry out transfer of any existing patients and necessary equipment to other wards immediately. (call for assistance from other wards as required)
- 7.03 ED staff are to notify Morice Ward CNL/ Paed CNL and/or AHC/Duty Manager regarding admission
- 7.04 Staff is to set up as Respiratory isolation room immediately and arrange appropriate staffing. (After -hours, AHC to ring CNLs if any problems arranging staffing).
- 7.05 Once Ward is set up, (ideally within 30-45 minutes of initial notification) contact ED and ask them to transport the patient to either medical or Paed Ward
- 7.06 When exiting the infectious area staff will remove their PPE in the correct manner and dispose of appropriately. Rubbish is to be placed in double yellow rubbish bags and incinerated. Linen is to be double bagged into a white impervious bag with yellow stripe. Notify Laundry
- 7.07 Before leaving the sluice room staff must ensure they wash their hands, followed by microshield antimicrobial hand gel and have donned clean overshoes and cap.
- 7.12 Nursing staff caring for SWINE FLU or suspected SWINE FLU patients should not leave Parfitt unit during their shift. All breaks must be taken within the unit.
- 7.13 Nursing staff will wear theatre scrubs under their PPE, at the end of their shift they will shower, change into their own clothes and leave the hospital via the external doors near the entrance. Staff should avoid moving around the rest of the hospital as much as possible.
- 7.14 Visitors should be kept to an absolute minimum. All visitors must wear PPE.
- 7.15 Good hand washing technique before and after contact with SWINE FLU or suspected SWINE FLU patients is essential, followed by use of the microshield antimicrobial hand gel.
- 7.16 Staff who are pregnant, have pre-existing lung conditions or are immuno-suppressed should not care or SWINE FLU or suspected SWINE FLU patients.
- 7.17 If the patient requires mechanical ventilation this will be done in Isolation Room off CCU. Use the LTV 1000 ventilator with disposable tubing. When setting up the circuit



include a MDI insert and a bodai peep safe connector. (use of the bodai peep safe connector reduces the aerosol risk during suctioning)

- 7.18 Use of the fixed wall suction units is safe providing a hydrophobic filter has been place between the suction gauge and the rest of the circuit.
- 7.19 Staff who wear glasses should not use the P100 or P3 masks, as they will not seal effectively. Staff with glasses should use the N95 mask with a full-face visor.
- 7.20 Staff who will only be entering the infectious area for a short time, eg. Radiology or laboratory staff should wear the N95 and visor



1.09 EQUIPMENT REQUIRED FOR NURSING SWINE FLU PATIENTS IN PARFITT WARD

The following is a list of equipment that is held in Morice Ward/ Pediatrics ward for the nursing of seriously ill SWINE FLU patients in Parfitt Ward. Upon notification of a SWINE FLU patient admission, CNL Morice or AHC is to arrange for the equipment to be transferred to Parfitt Ward.

- 1 box visor masks
- 2 visor helmets
- 2 boxes gloves – small, medium, large
- 1 box N95 masks
- 2 boxes dermigrip gloves
- 2 boxes hats
- 2 boxes overshoes
- 2 boxes gowns
- 1 portable sphygmomanometer
- 2 portable stethoscopes
- 1 box disposable thermometers
- 1 admission pack
- 1 portable pulse oximeter
- 1 portable blood glucose kit
- 2 nasal prongs
- 2 Hudson masks
- Intravenous fluids:
 - 2 bags 1000mls Normal Saline
 - 2 bags 1000mls Dextrose Saline
- Intravenous antibiotics
- Linen:
 - 4 impervious linen bags with yellow stripe
 - 2 linen carriers
 - 10 sheets
 - 10 fitted sheets
 - 10 pillow cases
 - 10 blankets
 - 10 towels
 - 10 face clothes
 - 10 drawer sheets and Mackintoshes
- Linen Bin with foot operated lid
- Rubbish Bin with foot operated lid
- Isowipes
- Precept
- Sharps container
- 10 Sage bed bath packs



1.10 INFECTION CONTROL PRACTICE FOR SERIOUSLY ILL SWINE FLU PATIENTS

- 1.00 All seriously ill SWINE FLU patients are to be managed in isolation.
- 1.01 Handwashing is the most important hygiene measure for preventing the spread of infection.
- 1.02 Microshield antiseptic handwash/handgel should be used for all handwashing within the Isolation Room and at adjacent washbasins outside the room immediately following removal of protective clothing on exiting the Isolation Room.
- 1.03 Gloves are not a substitute for handwashing - hands must be washed and gloves replaced before and after significant contact with the patient and after activities involving handling of contaminated items. Hands must be washed after removal of gloves.
- 1.04 All staff and visitors must put on mask, gowns, gloves and eye protection as specified before entering the Isolation Room. These are single use items - new gowns, gloves and masks must be put on for any subsequent entry into the isolation room.
- 1.05 On leaving the Isolation Room, staff and visitors should remove gloves, then wash hands and put on clean gloves. Then remove glasses/Respirator hood, mask gown, overshoes and then gloves.
- 1.06 Provide patients with ample supplies of disposable tissues and teach them to cover their mouth and nose when coughing or sneezing. Tissues must be handled and disposed of as Biohazard waste.
- 1.07 Patient notes, including medicine and observation charts (and clinical staff's pens and pagers or cellphones) must not be kept or taken into the room.

2.00 Standard (blood/body fluid) Precautions

- 2.01 Especially use of barrier protection when dealing with any blood or body fluids; use of masks (see airborne precautions below) plus eye protection (such as goggles or visor or use of a mask with attached eye guard) when in close proximity to patients who are coughing (i.e. all cases who meet the "probable" SWINE FLU case and for all "suspect" SWINE FLU patients when procedures are done which are likely to generate splashes or sprays of respiratory secretions (eg. taking respiratory samples or suctioning) and scrupulous handwashing after removing gloves (see contact precautions below)

3.00 Airborne Precautions

- 3.01 Placement of the patient in a negative pressure air-conditioned room and use of respiratory protection - particulate filter respirator masks (N95, Secureguard 74535) - by all staff and visitors.



4.00 Contact Precautions

- 4.01 Use of non-sterile gloves and disposable, impervious isolation gown by all staff and visitors for any contact with the patient, the patient's body fluids, with patient care equipment or with used linen or with waste plus (new local recommendation).
- 4.02 Masking will not be required for paediatric patients, or patients who are intubated or using oxygen masks.

5.00 Patient Masking And Staff Protection For Transport (Ambulance Or Internal Transport) And Essential Short Visits To Other Clinical Departments (Eg. Radiology)

- 5.01 Patient movement outside negative pressure rooms should be avoided as much as possible.
- 5.02 A N95 mask must be placed over the patient's mouth and nose for transport through corridors and public areas (eg. between clinical areas such as Emergency Department and Radiology wards/units) or for investigation in departments such as Radiology.
- 5.03 Attending and transport staff must continue full use of all barrier protection i.e. mask, eye protection, gloves and gown for direct contact with the patient, with blood or body fluids or with patient equipment.
- 5.04 Receiving departments and the Orderly service should be advised of the patient's isolation status when transfer or investigations are ordered and patients must be escorted during transport between negative pressure areas to ensure that appropriate precautions are maintained.

6.00 Safe Removal & Disposal Of PPE

- 6.01 It is crucial that PPE is removed without accidental contamination of facial skin, mucous membranes, clothing and hands.
- 6.02 Outside the Isolation Room in the anteroom:
 - i) If wearing visors and N95 mask, remove visor and cap
 - ii) Remove gloves, was hands, put on clean pair of gloves
 - iii) Remove N95 mask by tapes and dispose of as appropriate
 - iv) Remove shoe covers, dispose of into yellow rubbish bag
 - v) grasp gown at shoulders and peel off so that it is turned inside out.
 - vi) roll up gown and dispose of into yellow rubbish bag
 - vii) peel off gloves turning them inside out and dispose of in yellow rubbish bag
 - viii) Wash hands thoroughly using 20 seconds standard handwashing process and then use microsheid gel.



7.00 Cleaning Procedure For Non-Disposable Goggles & Visor

7.01 In a sink in a suitable area:

- i) staff member cleaning goggles/visor is to wear gloves and surgical mask (plastic apron can also be worn);
- ii) Place goggles/visor into adequately sized container;
- iii) Fill container with clean warm water and precept;
- iv) Using a disposable cleaning cloth and working under the surface of water wipe all surfaces of the goggles/visor;
- v) when goggles/visor have been washed:
 - discard the cloth into yellow rubbish bag;
 - drain washing water out of container and fill again with clean warm water and rinse well;
 - drain again;
 - dry the clean goggles/visor and container with dry paper towel (dispose of in yellow rubbish bag;
 - with goggles/visor and container with Isowipes.

8.00 Infection Control Advice For Discharged Patients

8.01 Patient is to stay indoors and keep contact with other persons to a minimum until 10 days after resolution of symptoms

8.02 Hand washing with liquid soap instead of bar soap, and using disposable tissues to dry hands which are to be discarded after use.

8.03 Family members are to practice frequent handwashing and avoid touching eyes, nose, and mouth with their hands.

8.04 Patient is to wear a mask and avoid close contact (hugging, kissing etc) with others

8.05 Household facilities (especially furniture and toilet) are to be daily washed with diluted bleach (10ml to 1 litre water), rinsed and then wiped dry

8.06 If facilities become contaminated with vomit or body secretions from patient, they are to be wiped/washed using domestic bleach (200mls to 1 litre water) immediately.

8.07 Good ventilation is to be maintained.



1.11 TREATMENT OF SERIOUSLY ILL SWINE FLU PATIENTS

Introduction

- Most patients present with influenza-like illness (ILI) and have radiological evidence of pneumonia which may be lobar but most commonly has bilateral patchy infiltrates.
- Female gender, obesity, pregnancy and Pacific Islander ethnicity seem to be risk factors for ICU admission
- Severe oxygenation impairment, hypotension requiring inotropic support and moderate liver derangement are common; renal failure and thromboembolism occur less often. Prolonged ventilator support (2-4 weeks) for ARDS is usually required.
- Mortality in ventilated patients is currently unknown but may be high (~20%).

Standard Management

Isolation:	Standard droplet precautions with mask, gown and gloves. Eye protection and N95 masks only for aerosol generating procedures (e.g. Laryngoscopy, taking of nasopharyngeal samples). See PPE precautions document for details.
Testing:	Nasopharyngeal swab (and tracheal aspirate if intubated) for influenza PCR including pandemic (H1N1) 2009
Micro:	Blood cultures, tracheal aspirate or sputum bacterial culture, urinary antigen tests for <i>S.pneumoniae</i> and <i>L. pneumophila</i> , standard paired serology for atypical organisms.
Oseltamivir:	Standard dosing is 75mg b.d. for 5 days. Consider 150mg b.d. for 10 days if critically ill. Adjust dosing for renal failure and dialysis
Antibiotics:	Treatment for community acquired (bacterial) pneumonia is recommended. (e.g. cefuroxime plus macrolide, or moxifloxacin alone)
BP support:	Noradrenaline may be required in moderate doses.
DVT/PE prophylaxis:	Heparin SC, calf compressors, TEDs
Steroids:	Not indicated
Ventilation:	Pressure limited mode (e.g. PRVC, PC or similar) Moderate to high PEEP (often 12-20 cm H ₂ O) Plateau pressures <30 cm H ₂ O, Increased I:E ratio, often 1:1 Reduced SpO ₂ target e.g. 88 – 92% Permissive hypercarbia if necessary
Nitric oxide:	Trial of inhaled NO (~8 ppm) if severe hypoxaemia (e.g. PEEP>12 cm H ₂ O, FIO ₂ >0.8)



Proning:	Trial of prone turns if feasible.
Diuresis:	Continue until evidence of hypovolaemia or mild renal impairment. Trial of ultrafiltration (200-500 ml/hr) in patients receiving renal replacement therapy.
ECMO:	Consult early for advice on ECMO/HFOV if severe oxygenation failure (e.g. PO ₂ /FIO ₂ ratio <100mmHg) especially if this is associated with circulatory impairment.



1.12 EQUIPMENT AND SUPPLIES FOR SERIOUSLY ILL SWINE FLU PATIENTS

1.00 General

- 1.01 Disposable equipment should be used wherever possible in the treatment of seriously ill patients with SWINE FLU.
- 1.02 Disposable, impermeable isolation gowns are recommended
- 1.03 A range of sizes of non-sterile gloves must be available inside and at the entrance to the Isolation Room. Gloves must be changed as clinically indicated and removed and disposed of in the yellow rubbish bags each time staff leave the isolation room.
- 1.04 Gowns are single use items and may not be kept for reuse - they must be removed and disposed of in the yellow rubbish bags when staff leave the isolation room and a new gown must be worn for re-entry.

MASKS ARE SINGLE USE ITEMS AND MUST BE REMOVED AND DISPOSED OF IN THE YELLOW RUBBISH BAGS EACH TIME STAFF AND VISITORS LEAVE THE ISOLATION ROOM AND A NEW MASK MUST BE WORN FOR RE-ENTRY.

- 1.05 Equipment and supplies necessary for patient treatment, safety and comfort must be available in the isolation room but storage of supplies and equipment within the room must be kept to a minimum and be replenished daily if necessary.
- 1.06 All non-disposable equipment (eg. blood pressure cuffs, stethoscopes and including mobile units such as X-ray machines, IV pumps etc.) that are taken into the room must be decontaminated immediately after removal from the isolation room and before it may be reused in the care of other patients. At a minimum, items will require cleaning by surface wiping with a disposable cloth, detergent and water (or specialist products if these are normally used) and usual disinfection and sterilisation processes should be used for items normally reprocessed by these methods.
- 1.07 It is recommended that some dedicated items of non-disposable equipment (eg. blood pressure cuffs) are left in the room for the duration of the patient's isolation so that discharge/terminal cleaning only is likely to be required.
- 1.08 Bedpans and urinals should be emptied and reprocessed (immediately after use) by the usual method in sanitisers.
- 1.09 The isolation nurse may need assistance from other nursing staff outside the isolation room to facilitate this (these staff should use gloves, disposable aprons and facial protection when handling used toilet items and plan the transfer of items so that minimal contamination of environmental surfaces occurs).



- 1.10 Metal surgical instruments requiring sterilisation by CSSD can be placed in a clear plastic bag, the opening secured and then returned in the usual container to CSSD for routine decontamination (full body and facial protective equipment is worn routinely in the CSSD decontamination area).
- 1.11 A designated sharps container must be available in the room.
- 1.12 For bed sponges use disposable bath washes.



1.13 SPECIMEN COLLECTION FOR SERIOUSLY ILL SWINE FLU PATIENT

- 1.00 Specimens are to be collected as per normal procedure.
- 1.01 Before leaving the Isolation Room, staff member is to change gloves and wipe specimen container with Isowipe.
- 1.02 Specimen container is then placed into Biohazard bag.
- 1.03 Biohazard bag is then placed inside 2nd Biohazard bag held by the second person outside the Isolation Room.
- 1.04 Lab request form is to be labelled “SWINE FLU” in the clinical details section. Form is to be completed by “clean” person outside Isolation Room.
- 1.05 Lab request form is to be placed in pocket of Biohazard bag with clinical details visible.
- 1.06 Yellow sticker is attached to outside of Biohazard bag.
- 1.07 Sample is sent to Lab. Lab is contacted and informed that SWINE FLU sample is being sent to them.

1.14 FOOD SERVICE FOR SERIOUSLY ILL SWINE FLU PATIENTS

- 1.00 Usual meal trays, plates and cutlery may be used.
Trays with crockery and utensils are collected last and are placed into clear plastic bags so that Dish-wash process Isolation dishes last
- 1.01 After use, waste food should be disposed of within the isolation room and the trays and utensils wiped with soap and disposable paper towels and Precept and placed in clear plastic bag then returned directly (with assistance from staff working outside the isolation area) to the Food Services trolley for return to the kitchen for reprocessing.
- 1.03 Staff in this area are to wear protective clothing and the usual machine dishwashing process is adequate to decontaminate the trays and utensils.



1.15 LAUNDRY SERVICE FOR SERIOUSLY ILL SWINE FLU PATIENTS

- 1.00 All linen used by a SWINE FLU patient is to be treated as infectious. Used linen is to be double bagged into white impervious bag with yellow stripe. Care should be taken not to shake or flap the bed linen. Ensure Laundry are notified of Infectious Case
- 1.01 Bed linen is to be changed completely each morning shift and carefully scoop and fold used linen to place it in the used linen container.
- 1.02 Linen bags are to be replaced at least daily or when 2/3 full. Nursing staff are responsible for the closure and replacement of bags. Bags are to be placed at ante-room door into sluice room for transport to Laundry.
- 1.03 When linen bags arrive at the laundry, the LINEN IS NOT TO BE SORTED but the linen bag is to go directly into the washing machine.
- 1.04 Laundry Staff are to wear gloves, N95 masks, eye protection and impervious gowns at all times when handling seriously ill SWINE FLU patient linen. Hands must be washed and gloves replaced before and after activities involving handling of contaminated items.
- 1.05 Hands must be washed after removal of gloves using Microshield antiseptic handwash.

1.16 VISITORS FOR SERIOUSLY ILL SWINE FLU PATIENTS

- 1.00 Visitors other than close family members should be discouraged as the causative organism and infectivity of SWINE FLU is not yet clear and specific treatments have not yet been identified.
- 1.01 Request visitors not to visit other patients in hospital if they are visiting patients with seriously ill SWINE FLU.
- 1.02 All visitors must wear full protective clothing (gown, gloves, masks and eye protection) to enter the isolation room.
- 1.03 Nursing staff are responsible for ensuring that visitors comply with isolation procedures and should explain and assist as necessary.



1.17 WASTE SERVICE FOR SWINE FLU PATIENTS

- 1.01 All waste from seriously ill SWINE FLU patients is to be placed into yellow rubbish bags at source, and then double bagged at point of exit
- 1.02 Yellow rubbish bags are to be secured when 2/3 full.
- 1.03 Nursing staff are responsible for the closure and replacement of yellow rubbish bags.
- 1.04 Yellow rubbish bags are to be collected as per normal procedure, and incinerated as per normal procedure.
- 1.05 Staff are to wear gloves at all times when handling seriously ill SWINE FLU patient yellow rubbish bags. Hands must be washed and gloves replaced before and after activities involving handling of waste. Hands must be washed after removal of gloves using Microshield antiseptic handwash.
- 1.06 At no time are seriously ill SWINE FLU patient yellow rubbish bags to be opened or punctured once they have been secured.
- 1.07 All sharps are to be discarded into sharps containers as per standard procedure.



1.18 CLEANING

1.00 General Information

- 1.01 The Isolation Room is to be cleaned daily.
- 1.02 Under the direction of the CNL/AHC, the cleaner must be directed and shown how to use full protective clothing (gown, gloves, mask and eye protection).
- 1.03 Disposable cleaning cloths must be used for cleaning.
- 1.04 The cleaner must dust to a height of 6 feet the door, bed frame, bed light, window sills and furniture, shelves and ledges, trolleys and equipment. Dust must not be shaken out of cleaning cloths but must be contained by folding inwards.
- 1.05 Locker tops, washbasins, taps and door handles must be cleaned with clean cloths, fresh hot water and detergent, and disinfected with Precept.
- 1.06 The floor must be wet mopped with clean hot water and detergent and disinfected with Preset.
- 1.07 Isolation bathroom areas must be cleaned following the isolation room, using the same precautions.
- 1.08 Dispose of all cleaning cloths in the yellow rubbish bags in the Isolation Room. The disposable squeazy mop is disposed off after each use. Ensure replacements are available
- 1.09 The bucket is to be washed thoroughly with hot water and detergent, wiped with Precept, and turned upside down to dry.
- 1.10 The cleaner must be shown how and where to take off protective clothing in a safe manner, dispose of it into a Biohazard container and instructed to wash their hands immediately.

2.00 Terminal cleaning (on patient discharge)

- 2.01 Infection Control advice must be sought for the decontamination of complex equipment.
- 2.02 Nursing staff are responsible for supervising the safe stripping and cleaning of the isolation room and bathroom including instructing and supervising the cleaner in putting on protective clothing.



- 2.03 The bed is to be stripped of linen. Check for breaks in the impervious covering of the pillow and mattress are to be made. Only when breaks are detected - dispose of these items as biohazard waste (pillows can be placed in a yellow rubbish bag; if mattresses are to be disposed of they must be contained within clean large plastic bags, clearly labelled as intended for biohazard waste and Orderlies should be contacted to collect and place them directly into a large yellow Biohazard waste bin for transport to the Incinerator
- 2.04 Dispose of disposable equipment (used or unused stock) and other waste into the yellow rubbish bag.
- 2.05 Leave the waste and linen bags to be tied off by the cleaner once cleaning is completed so that cleaning cloths and protective clothing can be discarded safely.
- 2.06 The cleaner must clean all the surfaces including isolation bathrooms and floors as listed in the daily cleaning requirements with clean disposable cloths, clean hot water, detergent, and Precept.
- 2.07 All cleaning cloths must be disposed of into the Biohazard waste bag. Squeazy Mop is disposed off after use.

3.00 Curtains

- 3.01 In the A&E Department, ask the cleaner to check the curtains for soiling; if present, ask for the curtains to be changed.
- 3.02 In the Ward or Unit setting, ask the cleaner to change the curtains. (New curtains must not be put up until the room has been fully cleaned and aired for 1 hour following completion of cleaning).
- 3.03 The cleaner must be shown how and where to take off protective clothing in a safe manner, dispose of it into a Biohazard container and instructed to wash their hands immediately.
- 3.04 The rooms should be left with the door closed for 1 hour before the bed is remade, curtains are re-hung and the room is re-occupied. This is to allow for sufficient air changes to occur to ensure removal of all possibly contaminated air.



1.19 INFORMATION FOR TRADES & TECHNICAL SUPPORT STAFF

- 1.00 Trade and Technical Support Staff are to contact CNL/AHC before entering Isolation Rooms.
- 1.01 Trade and Technical Support Staff are to always work in pairs. I person is to assess the situation wearing full PPE, while the other person is to remain in clean area outside the Isolation Room.
- 1.02 Only the minimum amount of equipment is to be taken into the Isolation Room.
- 1.03 When using any electronic or technical equipment inside the Isolation Room, this equipment is to be used inside a plastic bag (where practicable).
- 1.04 All equipment is to be washed in detergent and hot water after use, and then wiped with Isowipes.
- 1.05 Plastic bags and clothes used to clean equipment are to be disposed of in double yellow rubbish bags.
- 1.06 Hands must be washed at the completion of all activities using Microshield antiseptic hand gel.



1.20 RADIOLOGY FOR SERIOUSLY ILL SWINE FLU PATIENTS

- 1.00 The patients must not present to the Radiology department, but rather are to be done as a mobile procedure in the Isolation Room.
- 1.01 A nurse must be present with the patient at all times.
- 1.02 The Patient must wear a N95 mask at all times.
- 1.03 All staff must use full personal protective equipment i.e. mask, gloves, eye protection and gown, for all direct patient contact.
- 1.04 Standard isolation 2 person Radiographic technique must be used i.e. one person touches cassette and patient and one person positions equipment and takes exposure.
- 1.05 Hand washing is essential after examination is completed.
- 1.06 All linen used must be doubled in an Isolation bag (impervious with yellow stripe)
- 1.07 Minimum of 2 staff for any x-ray procedure, one may be a nurse although 2 MRT's is ideal.
- 1.08 One MRT will remain the “clean” person and will operate the x-ray machine. The clean person should still wear protective clothing etc as they will be in the room to operate and position the machine.
- 1.09 The staff attending to the patient will don full protective gear for the procedure. While preparing the patient they should not touch the x-ray equipment. They may retire to a safe distance during the x-ray exposure but must not touch the x-ray unit's console.
- 1.10 Handling film cassettes: the x-ray cassette is to be covered in plastic. If the “clean” MRT is required to handle the cassette they will need to don full protective equipment to do this. If the cassette becomes contaminated by blood or body fluids or any other potential contaminant the cassette must be placed in another plastic bag to be removed from the room.
- 1.11 Before returning to the x-ray department the cassette must be decontaminated by swabbing with suitable detergent agents. The plastic can then be removed. With each layer of plastic removed further decontamination swabbing is to take place. Once the cassette is fully decontaminated the MRT can remove protective clothing and return to the x-ray department to develop the film.
- 1.12 As the mobile x-ray machine will remain in the isolation unit no cleaning between patients is necessary.



- 1.13 If the machine is to be removed from the isolation unit the following is to be followed:
- i) When possible work in pairs to observe and assist each other to maintain safe Decontamination technique when removing equipment and protective clothing at End of cleaning procedure.
 - ii) Staff cleaning x-ray machine must wear full protective clothing.
 - iii) Linen used goes into contaminated linen bag provided in the isolation unit.
 - iv) Remove protective clothing once outside the isolation unit and place into linen bag provided. Then wash hands.
 - v) Leave clean x-ray machine in well-ventilated area for half an hour before using for any other procedure



1.21 ACCESSING TAMIFLU

- 1.00 Currently, the District Health Board holds two different stocks of Tamiflu:
 - a. Normal use
 - b. Pandemic use (part of the Ministry of Health stockpile)
- 1.01 Stocks are held in the Grey Base Hospital Pharmacy, as well as at Buller and Reefton Hospitals, and the Rural Health Clinic at Whataroa.
- 1.02 A proportion of the Ministry of Health stockpile has been distributed to:
 - a) Westland Pharmacy (Hokitika)
 - b) Masons Pharmacy (Greymouth)
- 1.03 A prescription will need to be written, using a standard prescription form/pad.
- 1.04 Any prescription for national stockpile antivirals must be marked “endorsed by Community and Public Health”. This is the responsibility of the prescribing doctor. Prescriptions that do not carry this endorsement cannot be used for national stockpile antivirals.
- 1.05 Antivirals will be supplied free of charge via the community pharmacies listed above.
- 1.06 Complete the **notification form** below and fax it to Community and Public Health on: **03 768 1169**. *(NOTE: The Ministry of Health requires clear documentation of the person’s illness and that you confirm they meet the eligibility criteria. The form sent to CPH meets this requirement).*
- 1.07 For Greymouth and Westland, ask the patient if someone can collect their prescription for them and either fax the script to the community pharmacy or, if this is not possible, ask that a family/whanau member or friend take the script to an authorised pharmacy for the patient. If the patient has to go to one of the community pharmacies please provide them with a plain surgical mask to wear to the pharmacy while they collect their prescription. Please inform them to phone the pharmacy first before going to collect the antiviral.
- 1.08 For Buller and Reefton, arrange for the antivirals to be dispensed from the stockpile held at each Hospital. *(NOTE: the notification form still needs to be sent through to CP&H).*
- 1.09 For Greymouth ED Department, during work hours follow steps as above. After hours arrange for the antivirals to be dispensed from the stockpile held at the Hospital Pharmacy. *(NOTE: the notification form still needs to be sent through to CP&H).*



Infection Control Guidebook – H1N1 Influenza A (Swine Flu) - Grey Base Hospital

Version

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REQUEST FOR ANTI-VIRAL MEDICATION

This Form is for notifying Community and Public Health where the patient clearly meets the criteria for anti-viral medication. Once you have notified CPH you are automatically authorised to prescribed anti-viral medical from the national stockpile.

Notifier Identification					
Reporting Source:	<input type="checkbox"/> GP <input type="checkbox"/> Hospital Based Practitioner <input type="checkbox"/> Lab <input type="checkbox"/> Other				
Name:		Phone:			
Organisation:		Date:			
Case Identification					
First Name:		Surname:			
NHI Number:		DOB:	/	/	Sex: M / F
Address:					
Home Phone:		Mobile:			
Email:					
GP Name:		GP phone:			
Practice					
Basis of Referral					
CLINICAL CRITERIA					
Symptoms:					
Fever >38°					<input type="checkbox"/> Yes
Cough					<input type="checkbox"/> Yes
Sore throat					<input type="checkbox"/> Yes
Other please specify:					
ELIGIBILITY CRITERIA (Refer to CPH advisory)					
1. Severe clinical influenza-like illness (ILI)					<input type="checkbox"/> Yes
2. Symptomatic with high risk of influenza complications					<input type="checkbox"/> Yes
3. Lives/Works in high-risk institutions e.g. prison, healthcare					<input type="checkbox"/> Yes
4. Other please specify:					
Comments:					
Patient has been informed that Community and Public Health will be notified					
					<input type="checkbox"/> Yes
I confirm that the patient has ILI and meets eligibility criteria for anti-viral medication. <input type="checkbox"/> Yes					
Signature:		Date:	/	/	



Please fax completed form to Community and Public Health on 03 768 1169

1.22 ACCESSING ADDITIONAL PERSONAL PROTECTIVE EQUIPMENT (PPE)

Currently the District Health Board holds additional supplies of the following personal protective equipment:

- N95 masks
- Surgical masks
- Gowns – water resistant
- Gloves
- Goggles
- Disposable thermometers
- Waterless hand wash gel

These are available as individual items or made up into packs (containing all these items)

All District Health Board GP Clinics, RNS Clinics Buller and Reefton Hospitals should have a supply of PPE in stock.

Additional supplies of these PPE items can be obtained from the Stores Department, Grey Base Hospital.

NOTE: When ordering these items, please inform the Stores Department that they are for Pandemic influenza purposes.



1.23 MANAGEMENT OF PREGNANT WOMEN WITH SWINE FLU

Pregnant women have a higher risk of severe disease than other women following infection with influenza, whether seasonal or pandemic influenza A H1N1 09. These guidelines provide recommendations for managing pregnant women presenting with an influenza-like illness (ILI).

To avoid influenza, it is recommended that pregnant women are advised to take sensible precautions including:

- Avoid close contact with people who have symptoms, if possible
- Wash hands with soap and running water or use an alcohol based hand rub after contact with symptomatic people or their secretions e.g. on used tissues
- Get immunised against influenza if they will be in their 2nd or 3rd trimesters during winter
- Encourage symptomatic people in the household to keep at least 1 metre away and follow cough etiquette and good hand hygiene
- Avoid large, crowded gatherings during the influenza season.

Antiviral prophylaxis is not generally recommended for pregnant women, except in specific circumstances. For example, it may be considered in a pregnant woman who has had close contact with a patient with laboratory proven pandemic influenza A H1N1 09, especially in the second or third trimester and in the presence of other co-morbidities.

Treatment

Treatment of patients with ILI should not be delayed while awaiting test results. Treatment with anti viral medicine (either Oseltamivir [Tamiflu] or Zanamivir [Relenza]) may be offered to pregnant woman at any stage of pregnancy. Although both drugs are classified as B1 (limited data indicating safety in pregnancy), use in pregnant women to date (mostly in second and third trimester) has not been associated with adverse fetal outcomes. Experience of antiviral medication use in the first trimester of pregnancy remains very limited, so a careful discussion of the potential risks and benefits is essential before prescribing such agents.

Considerations In The Management Of Influenza In Each Trimester

First trimester

- In the first trimester, the concern is largely about the effect the mother's fever may have on the developing fetus, including miscarriage
- Symptomatic treatment with Paracetamol is recommended to reduce fever
- Treatment with antiviral medicine should be discussed with the mother, taking into account other conditions that may increase her risk of severe disease.

Second and third trimester

- In the second and third trimesters, the concern is largely for severity of illness in the mother, as well as the potential effects of the mother's fever on the developing fetus
- Symptomatic treatment with Paracetamol is recommended to reduce fever
- Assessment of maternal and fetal wellbeing is recommended at every presentation
- Treatment with antiviral medicine is strongly recommended to reduce the severity of disease in the mother.



Time Of Birth

- Around the time of birth, the concern is about both the severity of illness in the mother and the risk of transmission to the baby
- Symptomatic treatment with Paracetamol is recommended to reduce fever
- Treatment with antiviral medicine of the mother is strongly recommended to reduce the severity of disease
- While the baby is <3 months old, treatment of the mother is also recommended to reduce the risk of transmission to the baby
- The mother should not be asked to wear a mask during labour and birth, but others in the room should follow infection control guidelines
- There is usually no advantage in expediting the birth of the baby.

Minimising The Risk Of Infection From Mother To Baby

- The spectrum of disease of pandemic influenza A H1N1 09 in newborns is unclear
- Breast feeding should be strongly encouraged
- Sensible efforts should be made to reduce the likelihood the baby will be infected, while minimising the effect on the mother-baby relationship. These include:
- treating the mother to reduce the risk of transmission (the mother is considered noninfectious after 72 hours of treatment with antiviral medicine)
- the mother and baby should sleep at least 1 metre apart, in the same room (at least while in hospital), in separate beds
- when breast feeding, bathing, caring for, cuddling, or otherwise being within 1 metre of the baby, the mother should:
 - wear a surgical mask
 - wash her hands thoroughly with soap and water before interacting with the baby
- the mother should avoid coughing and practice cough etiquette near the baby.

Although these measures can be ceased when the mother is no longer infectious, continued good hygiene should be encouraged at all times these measures should apply to any carer or family member with influenza.

- Mothers requiring hospital care should not be prematurely discharged because they have influenza
- If discharged while still infectious, mothers should be provided with a sufficient supply of surgical masks to take home
- Prophylaxis is not recommended for the baby. Should the baby develop symptoms, the baby should be isolated from other babies, assessed urgently by a Pediatrician, and if influenza is diagnosed, considered for treatment with antiviral medicine.

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists have also issued a statement that outlines prevention of infection and treatment strategies with antiviral medication. This is available at:

http://www.ranzcog.edu.au/connexion/pdfs/17_July_2009_Swine_Flu_and_Pregnancy_Statement.pdf



1.24 ADVISE FOR PREGNANT STAFF MEMBERS

Internationally it has been noted that infection with pandemic H1N1 Influenza Virus (swine flu) poses a specific risk for pregnant women. Therefore we advise that staff who are pregnant should not undertake direct hands on care for patients with suspected or confirmed H1N1Influenza A.

This is a precaution noting the additional risk in pregnancy, but all staff should note that proper use of PPE (Personal Protective Equipment) will provide them a very high level of protection against infection with the pandemic virus and other forms of winter viral infections.

Pregnant staff should note that Oseltamivir (Tamiflu) is safe in pregnancy and if they feel that they have been significantly exposed to H1N1 influenza



1.24 ADVISE FOR PAEDIATRIC PATIENTS

Influenza presents in infancy and childhood as a wide variety of clinical syndromes.

The diagnosis needs to be considered and if any suspicion of influenza exists, appropriate precautions taken to prevent spread.

Presentations may include:-

1. Fever and misery
2. Bronchiolitis
3. Asthma exacerbation
4. Acute otitis media
5. Lower respiratory infection
6. Convulsion with fever
7. Dehydration
8. Fever, lethargy, irritability meningitis not excluded
9. Toxic bacteraemic type illness
10. Aponea
11. Diabetic instability

The focus of care needs to relate to the presenting clinical syndrome and be managed appropriately.

Wherever possible infants and children with uncomplicated influenza should not be seen in hospital or admitted.

Thresholds for admission may be lowered where underlying conditions exist:-

- infants under 6 months
- infants with a history of prematurity especially if any ongoing lung disease
- immunosuppression
- children with cerebral palsy or weakness that may impair coughing
- underlying heart disease
- lung disease

Four Life Threatening Clinical Scenarios that Need Special Attention

Within the high levels of workload generated related with influenza cases these clinical scenarios need to be looked for identified early and managed/treated.

1. **Vulnerable Infant Developing Bronchiolitis Picture** Some infants will develop a bronchiolitis picture with the steady increase in respiratory compromise over 3-5 days. The development of hypoxia is usually marked by slowing feeds, marked pallor and lethargy. Systems need to be in place to identify these risks and manage them.



2. **Early rapidly progressive respiratory distress** This is likely to be an uncommon symptom and seen in young people and older children. It results as a dramatic inflammatory response – “cytokine-storm”, follows very quickly (hours) after first epithelial colonization in the respiratory tract. Massive out-pouring of fluid occurs very early in the flu like illness. Supportive care should be offered, possibly including steroids, as well as seeking urgent specialist advice.
3. **Late onset deterioration in respiratory status** Influenza leaves the respiratory tree very vulnerable to secondary bacterial infection because of the epithelial debris, increased secretions and immune compromise. Secondary bacterial invaders are typically streptococcal or staphylococcal. Symptoms may include increasing fever, toxicity, tachycardia, grunting and increasing oxygen requirement typically 3 – 10 days after influenza illness starts. Early treatment with antibiotics can be life saving. The best antibiotic is cefuroxime although in some cases ceftriaxone may be an alternative especially if out of hospital care planned. Amoxicillin clavulanate (Augmentin) is an alternative oral antibiotic.
4. **Influenza Encephalitis** Influenza is often associated with irritability, distress and at times simple febrile convulsions. Where seizures, atypical, prolonged, frequent or difficult to treat or other signs of CNS dysfunction occur. Consideration should be given to the diagnosis of Influenza Ecephalitis a rare complication that will require specialist advice about management

Antiviral Medication usage in Infants and Children

Antiviral medications have value in reducing:-

1. Duration of illness
2. Severity of illness
3. Duration of viral shedding

Best results occur if treatment begins within 48 hours of symptoms but some benefit may occur out to 72 hours after symptoms start.

Indications for Treatment

- a) Infants and children with complications that lead to admission to hospital should be treated with antiviral medications.
- b) Infants and children with medical fragility such that they are at higher risk of influenza complications.

Although safety data for infants under one is limited, CDC supports **use with caution**: <http://www.cdc.gov/h1n1flu/recommendations.htm#table2> This use should be restricted to those admitted to hospital, or who are otherwise under the supervision of a pediatrician.



Dosing

Table 1. Dosing recommendations for antiviral treatment of children younger than 1 year using oseltamivir.

Age	Recommended treatment dose for 5 days
<3 months	12 mg 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
6-11 months	25 mg twice daily

Note: Capsule contents can be mixed with something sweet, e.g. chocolate sauce, honey, or yogurt.

Table 2. Antiviral medication dosing recommendations for treatment or chemoprophylaxis of novel influenza A (H1N1) infection.
(Table extracted from [IDSA guidelines for seasonal influenza.](#))

Agent, group	Treatment	Chemoprophylaxis	
Oseltamivir			
Children ≥ 12 months	15 kg or less	60 mg per day divided into 2 doses	30 mg once per day
	16-23 kg	90 mg per day divided into 2 doses	45 mg once per day
	24-40 kg	120 mg per day divided into 2 doses	60 mg once per day
	>40 kg	150 mg per day divided into 2 doses	75 mg once per day

Parents/Caregivers of Inpatient Children with Influenza

Consideration should be given to treating parents/caregivers of inpatient children with influenza with antiviral agents if they develop or have had influenza-like symptoms for less than 48 hours.

The aim is to reduce nursing workload by increasing ability of adults to care for the child and reducing infectious potential.

Cases should be assessed on an individual basis. Adults and siblings not directly involved in care should generally not be spending time in the ward. Careful hand hygiene remains the primary focus for reducing infection.



1.25 COMMUNITY & PUBLIC HEALTH CONTACTS

Office Hours - 03 7681160

After Hours - 03 7680499 and ask for the On Call Health Protection Officer.