These guidelines are for use by all healthcare facilities.

They represent the minimum requirements for managing patients with an influenza-like illness (ILI) and should be implemented as standard practice for the routine management of all ILI, including seasonal influenza.

Additional measures may be adopted in some facilities on advice from their Infection Prevention and Control Professionals.

Version 2

These guidelines were commissioned by the Hospital Epidemic Planning Group (HEPG) and have been produced by the Healthcare Associated Infection Unit (HCAIU) at the Communicable Disease Control Directorate.

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Introduction

These guidelines detail the minimum infection prevention and control precautions that should be implemented by healthcare facilities (HCFs) to minimise the impact of any Influenza-Like Illness (ILI), including seasonal influenza. The key focus is to reduce the risk of transmission amongst vulnerable patient populations and Healthcare Workers (HCWs). As of the 16th June 2009, the Commonwealth Government advised that H1N1Influenza 09 is to be managed as per seasonal influenza i.e. standard and droplet precautions.

Background

In late April, The World Health Organisation (WHO) announced the emergence of a novel influenza A virus. The identified H1N1 strain had not previously circulated in humans. The situation has evolved rapidly, and countries from different regions of the globe have been affected. Based on epidemiological data, human to human transmission has been demonstrated along with the ability of the virus to cause community-level outbreaks and sustained human-to-human transmission.

The WHO increased the pandemic level to Phase 6, in recognition that the scientific criteria for a pandemic had been met and declared a global pandemic due to the novel H1N1 influenza strain (now known as pandemic (H1N1) 2009) on 11 June 2009.

It is likely that the situation in Australia will be compounded by both seasonal influenza and pandemic (H1N1) 2009 circulating concurrently. With low vaccination rates amongst healthcare workers (HCWs) for seasonal influenza and a population with no immunity to pandemic (H1N1) 2009, it is critical that HCWs use appropriate infection prevention and control precautions when caring for patients with any influenza-like illness (ILI), in order to minimise the possibility of transmission between patients, visitors and other HCWs.

H1N1 Influenza 09

Based on current epidemiological data, person-to-person transmission of H1N1Influenza 09 virus occurs mainly via droplet transmission or contact with surfaces/objects contaminated with respiratory secretions. The clinical spectrum of H1N1Influenza 09 is still being defined, however in addition to normal ‘flu-like’ symptoms; gastrointestinal symptoms including vomiting and diarrhoea have been frequently reported. Data suggests that the incubation period and transmissibility are congruent with seasonal influenza. Morbidity and mortality data suggest those people with risk factors for influenza complications are most at risk.

Influenza-Like Illness

The clinical criteria for an Influenza-Like Illness (ILI) is documented fever (≥38°C), or a good history of fever (e.g. chills and shakes) AND cough and / or sore throat.
Key Factors for Minimising Transmission of an ILI in a Healthcare Facility

1. HCFs shall have clear signage, advising all persons of the importance of *Respiratory Etiquette* to contain respiratory secretions.

**Respiratory Etiquette**

The flu virus can travel through the air when a person coughs or sneezes. When you cough or sneeze you should always:

- Turn away from other people
- Cover your mouth and nose with a tissue (or your sleeve if tissue unavailable)
- Use disposable tissues rather than a handkerchief
- Dispose of used tissues immediately into the nearest waste receptacle
- Wash your hands, or use an alcohol based hand rub, as soon as possible afterwards
- Wear a surgical mask, where possible, if you are unwell with a cold or flu, to contain the virus and help prevent its spread.

2. HCFs shall have signage, providing clear instructions for patients presenting with an ILI and shall ensure the availability of equipment for adhering to respiratory etiquette in waiting areas:

**Standard Infection Prevention and Control Prior to Entering a Healthcare Facility**

- Provide tissues and no-touch receptacles for used tissue disposal
- Provide conveniently located dispensers of alcohol based hand rub (ABHR)
- Provide soap and disposable paper towels for hand washing where sinks are available
- Provide access to surgical masks for patients presenting with an ILI.

3. HCFs shall ensure all Healthcare Workers adopt Standard and Additional Precautions for all patients presenting with an ILI and are aware of the measures required to minimise transmission.

**Standard Management by HCWs for ILI patient presentations to a Healthcare Facility**

- Triage for early detection, patient placement and reporting
- Avoid crowding; promote spatial separation (>1m between patients)
- Perform hand hygiene frequently
- Strict adherence to standard and additional precautions by all HCWs
- Implement Droplet Precautions for all cases
- Wear a surgical mask and protective eyewear to protect mucosa of the mouth, eyes and nose when in close contact with symptomatic patients
- Wear gown and gloves for direct contact with symptomatic patients
- Single room allocation, with door closed, if admitted to the HCF
- Establish designated ILI wards and cohort patients if no single rooms available
- ILI patients to wear a surgical mask when outside their room
- Nebulisers **should not** be used unless no alternative method of medication delivery
- Aerosol generating procedures shall be performed in single rooms - door closed.
Infection Prevention and Control for ILI

Whenever possible the admission of probable or confirmed cases of influenza should be limited to those who cannot be cared for in the home.

1. Assessment Areas

HCFs are encouraged to have identified ILI assessment areas for the triage process whilst numbers of person presenting with ILI remain high. On presentation to an assessment area (or Emergency Department/ Hospital Reception):

- All persons presenting with an ILI are to be provided with a surgical mask to wear prior to commencing the triage process or if the case is unable to wear a surgical mask, the triage nurse shall wear a surgical mask to complete the triage assessment process.
- Once the patient or nurse is masked, the triage nurse should follow the usual triage assessment process.
- Persons with an ILI shall continue to wear a mask while awaiting medical assessment if medical condition allows.
- A HCW collecting swabs on persons with ILI shall wear gloves, protective eyewear, and a surgical mask.

2. Patient Admission and Placement

- Probable or confirmed cases that require admission to a HCF are to be admitted to a single room when possible and managed under Additional Precautions (droplet transmission).
- Patient cohorts of ILI can be established in designated wards, keeping at least 1 metre distance between beds if single rooms are not available.
- Vulnerable patients are not to be cohorted with ILI patients.
- The door to the patient room is to be kept closed.
- Signage advising of additional precautions / or need to refer to Nurse / Midwife in Charge prior to entering must be evident on patients door.
- The patient shall not be transferred to another ward unless their management will be compromised (e.g. requires admission to intensive care).

2.2 Patient Transport

- Probable or confirmed cases are to wear a surgical mask when transported within the HCF.
- Patients on oxygen therapy should be changed to nasal prongs and then wear a mask for transport if medical condition allows.
- The HCW accompanying the patient is to wear PPE.
- The receiving department must be notified prior to transport.

2.3 Visitors

- HCFs need to display signage advising Visitors with symptoms of an ILI not to visit.
- Visitors should be limited to persons who are necessary for the patient’s emotional well being and care.
- All visitors are to wear a surgical mask, and perform hand hygiene prior to entering and leaving the room. They should not visit other patients in the hospital.
2.4 Allocation of HCWs
- Where possible limit the number of HCWs assigned to care for these patients, including staff assigned for ancillary care i.e. allied health, domestic staff
- HCWs that meet the criteria of increased risk of complications from influenza and who are likely to be in direct contact with ILI patients, should be considered for redeployment (refer Section 16).

3. Hand Hygiene
3.1 Patients and Visitors
- All patients and visitors are to be educated on the importance of performing hand hygiene and ABHRs made available for their use

3.2 Healthcare Workers
All HCWs shall perform hand hygiene in the following situations:
- Before touching a patient
- Before performing a procedure
- After performing a procedure or body fluid exposure risk
- After touching a patient
- After touching a patient’s surroundings

In addition, the requirements for performing hand hygiene associated with donning and removing personal protective equipment (PPE) must be followed.

4. Personal Protective Equipment
*HCWs are to wear PPE in accordance with Table 1 and don and remove PPE as per sequence outlined in Table 2. (Also Refer Appendix 1)*

4.1 General
- PPE supplies are to be stored outside the patient room or in the ante room
- HCWs must be diligent not to touch their eyes, nose, mouth or hair while wearing PPE. Loose hair must be tied back prior to donning PPE
- When PPE is worn, avoid touching and contaminating environmental surfaces e.g. light switches, door handles
- PPE must be changed and hand hygiene performed between contact with patients in the same room
- Protective eyewear, gown and gloves are required as per standard precautions when there is potential for exposure or contact with blood / body fluids, including respiratory secretions.
### Table 1: Summary of PPE Requirements

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Mask</th>
<th>Gown</th>
<th>Eyewear</th>
<th>Gloves</th>
</tr>
</thead>
<tbody>
<tr>
<td>No direct patient contact (&gt;1 metre from patient)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Entering patient room</td>
<td>Surgical</td>
<td>If required as per standard precautions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aerosol generating procedures</td>
<td>P2 (N95)</td>
<td>Yes (&amp; plastic apron if impermeable gown not available)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Cleaning</td>
<td>Surgical</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 4.2 Masks
Masks used by HCWs include surgical masks and P2 (N95) disposable respirators. Fluid repellent surgical masks are used to prevent the wearer from droplet contamination. P2 (N95) masks are utilised when there is a risk of airborne transmission. This can occur following aerosol generating procedures when virus particles may remain suspended in the air for long periods.

- Masks must be changed when they become moist or soiled
- Remove only by touching the ties / loops
- All masks must conform to the relevant Australian Standards (P2 (N95): AS/NZS 1716; Surgical masks: AS/NZS 4381)
- A fit check must be performed after donning a P2 (N95) mask prior to entering the patient’s room and each time a new mask is put on. An effective seal will not be achieved when facial hair is present
- If P2 (N95) masks are in short supply, they should be prioritised for HCWs undertaking aerosol generating procedures

#### 4.3 Gowns
- Long sleeved, fluid repellent, cuffed gowns are preferred. If these are not available, cloth gowns can be used with the addition of a plastic apron
- Gowns are to be worn once and then placed in waste or laundry receptacle as appropriate

#### 4.4 Gloves
- Gloves must be not be used as a substitute for hand hygiene. Hand hygiene must be performed after removal of gloves
- Non sterile disposable gloves are to be worn by all HCWs as per table 1 or when there is a risk of contact with blood / body fluids, mucous membranes or non-intact skin as per standard precautions

#### 4.5 Protective Eyewear
Designated protective eyewear (shields, visor or goggles) are to be utilised – personal prescription spectacles are considered inadequate.
Eyewear should be worn when there is a risk of exposure to blood / body fluids as per standard precautions to protect mucous membranes from droplet contamination e.g. when collecting swabs, performing aerosol generating procedures
Eyewear is to be disposed of if designated single use, or removed and placed in a receptacle for decontamination, between each patient contact

4.6 Fit Testing / Fit Checking
Fit Testing can be performed by those HCFs with resources to perform this; however the HCW must be Fit Tested for each different brand of mask that maybe utilised.

Fit Checking (Appendix 2) is the appropriate minimum standard for HCWs and must be performed each time they don a P2 (N95) mask to ensure there is no air leakage from around the mask. All HCFs must ensure HCWs receive education in relation to donning a P2 (N95) mask and are familiar with the procedure to perform a fit check in accordance with Manufacturers advice. Where a HCW fails a fit check after appropriate education and assessment, an alternative style of mask or size must be sourced.

### Table 2: Sequence for Donning and Removing PPE

<table>
<thead>
<tr>
<th>Donning PPE</th>
<th>Removing PPE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hand Hygiene</strong></td>
<td>Gloves - turn inside out by cuff - discard into general waste</td>
</tr>
<tr>
<td>Gown</td>
<td><strong>Hand Hygiene</strong></td>
</tr>
<tr>
<td>Mask</td>
<td>Protective eyewear</td>
</tr>
<tr>
<td>If P2 (N95) perform fit check</td>
<td>Gown- turning inside itself – dispose directly into waste or laundry skip</td>
</tr>
<tr>
<td>Protective eyewear</td>
<td><strong>Hand Hygiene</strong></td>
</tr>
<tr>
<td>Recheck mask</td>
<td>Mask - handle loops / ties only - discard directly into general waste</td>
</tr>
<tr>
<td>Gloves</td>
<td><strong>Hand Hygiene</strong></td>
</tr>
<tr>
<td>Check comfort / position</td>
<td></td>
</tr>
</tbody>
</table>
5. Aerosol Generating Procedure (AGP)

Aerosol generating procedures are those that stimulate coughing and promote the generation of fine airborne viral particles (aerosols) resulting in the risk of airborne transmission. Procedures include diagnostic sputum induction, bronchoscopy, airway suctioning, endotracheal intubation, positive pressure ventilation via face masks.

Limit performance of AGPs on probable or confirmed cases unless medically indicated

- Perform AGPs in a negative pressure isolation room if available, alternatively, use a single room with the door closed
- Limit the number of HCWs in the room when AGPs are performed
- Anyone who enters the room must wear full PPE as per Table 1
- Nebulisers should not be used and dedicated single patient use spacers are to be used

6. Patient Care Equipment

Disposable, single-use patient care equipment should be used when possible and after use, disposed of appropriately in routine waste streams.

- Dedicate non-critical items to the patient’s room for the sole use of the patient for the duration of their admission eg stethoscope, tourniquet
- Minimal stocks of non-critical disposable items eg dressings, gloves, kidney dishes, are to be stored in the room. On patient discharge these items are to be discarded
- Patient charts should be left outside the room
- Equipment that is designated reusable and required for use on other patients must be cleaned and disinfected prior to leaving the room. Items can be wiped over with warm water and detergent, or detergent based wipes followed by disinfection (Refer Table 3). Items that require further reprocessing can be processed as per standard procedures
- Alcohol impregnated wipes are the preferred disinfection option for specialised medical equipment such as X-ray equipment, ECG, ultrasound machines due to the corrosive nature of sodium hypochlorite
- Intensive Care Units must ensure mechanical ventilation equipment is protected with viral filters and closed suction systems utilised

7. Environmental Cleaning

PPE must be worn by staff performing cleaning as per Table 1

7.1 Cleaning regimes

Must ensure all items in the room are cleaned both on a daily basis and on patient discharge (terminal cleaning). Pay attention to:

- All horizontal surfaces and any walls that are visibly contaminated and frequently touched items such as door handles, bed rails, IV poles, bedside lockers, over-bed table, hand basin fittings, call bell, telephone, TV remote, monitors and cables
- Damp dusting procedures are to be utilised. Vacuums, if utilised, must be fitted with a HEPA filter.
7.2 Daily Cleaning
- The room and patient care equipment is to be cleaned using warm water and detergent.
- Disposable cleaning cloths are to be used and discarded after each use.
- Re-useable mop heads can be used if bagged and sent for laundering at the completion of each use. Alternatively disposable mop heads with a detachable metal handle may be used. Mop handles are to be wiped over with disinfectant solution.
- All cleaning equipment is to be cleaned and stored dry.

7.3 Terminal Cleaning
- The room and patient care equipment is to be cleaned using warm water and detergent followed by a disinfectant solution.
- The room can be used immediately following cleaning.
- Manage cleaning equipment as per daily cleaning regimes.
- Patient bed screens are to be sent for laundering.

7.4 Use of Disinfectants (Table 3)
- All solutions need to be prepared in accordance with the Manufacturers instructions.
- Disinfectants are inactivated by organic material, therefore cleaning with detergent and warm water is required prior to use.
- As sodium hypochlorite solutions are unstable, they are required to be prepared fresh for use and require a contact time with the surface for a maximum of 10 minutes to ensure efficacy. Any prepared solution must be discarded after 24 hours.

Table 3: Recommended disinfectants

<table>
<thead>
<tr>
<th>Disinfectant</th>
<th>Recommended Use</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hypochlorite</td>
<td>Disinfection of surfaces potentially contaminated with blood or body fluids</td>
<td>Use in well ventilated areas</td>
</tr>
<tr>
<td>(1000ppm available chlorine)</td>
<td></td>
<td>PPE required when handling and using product</td>
</tr>
<tr>
<td>(100ml bleach: 5L water)</td>
<td></td>
<td>Corrosive to metals</td>
</tr>
<tr>
<td>(10ml bleach: 500ml water)</td>
<td></td>
<td>Denatures rubber and plastic</td>
</tr>
<tr>
<td>Granular chlorine products</td>
<td>Disinfection of cleaned reusable patient equipment prior to use on another patient</td>
<td>Do not use with other chemicals</td>
</tr>
<tr>
<td>Sachet or tablets can be utilised</td>
<td></td>
<td>Use only on pre cleaned hard surfaces</td>
</tr>
<tr>
<td>Common products i.e. Contain 5000 /contain 5000ppm and will require dilution as 1 sachet: 5L water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol Wipes</td>
<td>Disinfection of cleaned reusable patient equipment prior to use on another patient</td>
<td></td>
</tr>
<tr>
<td>Alcohol isopropyl 70%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethyl Alcohol 70%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8. **Laboratory Specimens**
   - Standard Precautions Apply for handling and transport of specimens.

9. **Disposal of Waste**
   - Standard Precautions Apply
   - The HCFs guidelines for classification and disposal of general, clinical and sharps waste are to be followed.

10. **Crockery and Cutlery**
    - Standard Precautions Apply
    - The combination of hot water and detergents used in automatic dishwashers is sufficient to decontaminate these items.

11. **Linen and Laundry**
    - Standard Precautions Apply
    - Laundry practice is to conform to Australian Standards AS 4146 – 2000
    - Stockpiling supplies of linen in the patient's room is not to occur and any unused linen is not to be returned to general use.

12. **Duration of Precautions**
    Precautions need to be continued for seven days following the onset of symptoms or until the resolution of fever, whichever is the longer or discontinued when the patient has completed 72 hours of antiviral treatment provided they have been afebrile for 24 hours in the absence of antipyretics.

13. **Patient Discharge**
    If the patient is discharged while still symptomatic ensure family members are instructed on appropriate infection prevention and control in the home.

14. **Care of the Deceased**
    Standard Precautions Apply.
    The following additional precautions should be implemented for HCWs attending the deceased and transporting to the mortuary
    - HCWs should wear gown, gloves, mask and eyewear as described in Table 1
    - HCWs are to cover the mouth and nose of the deceased with a surgical mask
    - Mortuary HCWs are to follow routine institutional guidelines for management of the deceased.

15. **Occupational Health and Safety**
    *All HCFs should encourage HCWs to receive annual vaccination for seasonal influenza, particularly those with pre-disposing medical conditions which may place them at higher risk of complications from influenza infection*
    - All HCWs need to be aware of the importance of monitoring their own health and reporting to the HCF if they develop an ILI
    - HCWs that develop symptoms of an ILI should be excluded from the workplace for 7 days or until fever has resolved, whichever is longer
    - HCWs who develop an ILI should be tested if clinically indicated and offered antiviral medication if they are at risk of severe infection. (Refer Section 16)
HCWs who have commenced antiviral treatment can return to work once they have completed 72 hours of antiviral treatment and provided they have been afebrile for 24 hours in the absence of antipyretics.

16. HCWs at increased risk of infection

- All HCWs engaged in direct patient care, including those at increased risk of complications from influenza should ensure strict adherence to infection prevention and control guidelines for all patients, regardless of infection status.
- HCWs who are at increased risk of complications from influenza and who are likely to be in direct contact with ILI patients, should be considered for redeployment.
- If redeployment is not possible, the HCW at increased risk of complications from influenza should maintain a distance of >1 metre from suspected/confirmed cases and not participate in aerosol generating procedures or collection of nose/throat specimens.
- The following groups are believed to be at increased risk of severe Influenza A (H1N1) infection and also secondary complications of influenza infection:
  - Pregnant women (particularly in 2nd and 3rd trimesters);
  - Individuals with chronic respiratory conditions including asthma, Chronic Obstructive Pulmonary Disease (COPD);
  - Persons with morbid obesity
  - Indigenous people of any age
  - Persons with chronic illness predisposing to severe influenza such as:
    - cardiac disease, excluding simple hypertension;
    - diabetes mellitus;
    - chronic renal disease;
    - haemoglobinopathies;
    - immunosuppression, including that caused by cancers, medications or by HIV/AIDS infection and
    - chronic neurological conditions.

Bibliography

1. CDC. Novel Influenza A (H1N1) virus infections among healthcare personnel. MMWR 2009;5:641-645.
5. CDC. Interim guidance for infection control for patients with confirmed or suspected novel influenza A (H1N1) virus infection in a healthcare setting. 13 May 2009.
Appendix 1: Donning and Removing Personal Protective Equipment

**Safe Use of Personal Protective Equipment (PPE)**

**Putting on PPE**
For maximum personal and patient protection it is essential that PPE is put on in the following sequence:

1. Hand washing or alcohol rub
2. Gown
3. P2 or N95 respirator mask
4. Fit check
5. Protective eyewear, re-fit check mask
6. Gloves, pull over cuffs of the gown
7. **STOP.** Check everything is in place

**Removing PPE**
To reduce the risk of self-contamination PPE should be carefully removed in the following sequence:

1. Gloves
2. Hand hygiene
3. Protective eyewear
4. Gown
5. Hand hygiene
6. Mask
7. Hand washing or alcohol rub
Appendix 2: Donning a P2 (N95) Mask and Fit Checking Procedure

“Achieving the Perfect Fit”
Donning and Fit Checking Instructions for P2 (N95) Mask

1. Separate the edges of the mask to fully open it
2. Slightly bend the nose wire to form a gentle curve
3. Hold the mask upside down to expose the two headbands
4. Using your index fingers and thumbs, separate the two headbands
5. Cup the mask under your chin and pull headbands up and over your head
6. Place and position the lower headband at the base of your neck (under your ears)
7. Place the upper headband on the crown of your head. The band should run just above the top of the ears
8. Gently conform/press the nosepiece across the bridge of your nose by pressing down with fingers until it fits snugly.
9. Continue to adjust the mask and edges until you feel you have achieved a good facial fit

Now it is time to do a fit check.

1. Gently inhale. When you breathe in the mask should draw in slightly towards the face and collapse
2. Gently exhale. The mask should fill up with air. It is important at this stage that there is NO air leakage around edges of mask.

A fit check should be done each time a P2 (N95) mask is worn.

If you have not achieved a successful fit as instructed above it is important that you seek advice or have someone assist you with fitting and checking your mask, as an incorrectly fitted mask will not provide you with the intended level of protection.