Management of Influenza in Acute Care Settings

Draft Guidelines for Oseltamivir Use

Health Protection Branch
Department of Health and Human Services
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Purpose

The following guidelines have been drafted by the Department of Health & Human Services (the department) to assist in the future development of recommendations on the management of influenza and influenza-like illness in acute care settings in Victoria, in particular the use of oseltamivir for the treatment and prophylaxis of influenza.

Influenza is an acute viral respiratory infection that causes significant morbidity and mortality in Australia. Oseltamivir is an antiviral medication that can reduce influenza illness duration and severity. The timely and effective management of influenza and influenza outbreaks in acute care settings is important to reduce further spread and to minimise complications from influenza, and in certain cases it may be that oseltamivir is recommended.

The Communicable Diseases Network Australia (CDNA) has developed recommendations for influenza management and oseltamivir use in residential aged care facilities, including in the event of an outbreak of influenza.\(^1\) However, guidelines on the use of oseltamivir for influenza treatment and prophylaxis in acute care settings in Victoria have not previously been developed.

This document has been formulated for use in acute care settings during inter-pandemic periods, acknowledging that during a pandemic outbreak control of influenza will be guided by the Australian Health Management Plan for Pandemic Influenza (AHMPPI).\(^2\)

This guideline is not intended to provide a comprehensive response plan to influenza outbreaks and should be approached as a supplement to existing infection prevention and control guidelines at individual acute care facilities. While this guideline focuses primarily on recommendations for oseltamivir use, general advice on laboratory testing, personal protective equipment use and infection control as they apply to influenza are also included.

These guidelines are in draft form and will be used to gather feedback during the 2018 influenza season. Definitive guidelines may be developed in 2019 by the department to further guide influenza management and the use of oseltamivir in acute care settings in Victoria.

Feedback and comments to the department are welcome during the 2018 season and will be gathered until 1 October 2018. To submit your feedback, please send an email with the subject line “Feedback – Influenza in acute care settings” to deputycho.cds@dhhs.vic.gov.au. We value your input and suggestions.

Yours sincerely

[Signature]

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Scope

This guideline provides recommendations on the use of oseltamivir in acute care settings for treatment and prophylaxis of influenza. The scope is limited to emergency department presentations and inpatients in acute care settings during inter-pandemic periods. The following recommendations are not intended to be applied to patients attending outpatient clinic appointments or for day procedures, because the patient risk profile, and likely benefits, will differ substantially from the inpatient context. While this guideline includes general advice on laboratory testing, personal protective equipment and infection control, it is not intended to provide a comprehensive response plan to influenza outbreaks and should be approached as a supplement to existing infection prevention and control guidelines at individual acute care facilities.

Introduction

Influenza is an acute viral respiratory infection that causes significant morbidity and mortality in Australia. In 2017, the Department of Health & Human Services (the department) was notified of 48,199 confirmed cases of influenza in Victoria. The timely and effective management of influenza and influenza outbreaks in acute care settings is important to reduce further spread and to minimise complications from influenza. This guideline has been created to provide recommendations on antiviral use, in particular oseltamivir, for influenza treatment and prophylaxis in acute care settings. Oseltamivir reduces illness duration and severity in influenza and may reduce the incidence of secondary complications.

Effective outbreak management in the acute care setting requires clear governance, advance planning and a multifaceted approach. It is important to involve staff and to implement cleaning and personal protective equipment (PPE) recommendations. Health services should refer to existing protocols in relation to other aspects of the management of influenza outbreaks. It should be noted that during an influenza pandemic, outbreak control will be guided by the Australian Health Management Plan for Pandemic Influenza (AHMPPI)² and jurisdictional plans.

The Communicable Diseases Network Australia (CDNA) has developed recommendations for how oseltamivir can be used for both treatment and prophylaxis in residential aged care facilities in the event of an outbreak of influenza.¹ Those recommendations have been adapted for use in acute care settings, in order to guide decision making in relation to the use of oseltamivir including for single cases of influenza and influenza-like illness, prophylaxis of contacts of influenza cases, and influenza outbreaks.

Definitions

Acute Care Setting

An acute care setting is defined as a health services that provides acute inpatient medical services to patients. Acute care settings include hospitals, hospices, inpatient rehabilitation centres and short-term nursing home facilities.
Case Contact
Case contact is defined as a person who was in a common physical or geographical context such as a shared room with a case of influenza while infectious (one day prior to five days after onset of illness) while not wearing personal protective equipment including a surgical mask. Outside of a shared geographical area, contact also includes scenarios when a plausible mode of transmission has occurred while a case was infectious (one day prior to five days after onset of illness) including using a shared bathroom, equipment, objects, surfaces or any interactions within one metre of the case.

Cohorting
Cohorting is an infection control method that can be used to reduce the risk of transmission of influenza in patients presenting with laboratory confirmed influenza or influenza-like illness (ILI). Cohorting primarily pertains to Emergency Department settings. Patients presenting to Emergency Departments with Influenza or Influenza-like Illness should be treated in an isolation or single room if available, which does not need to be negative pressure. All patients with influenza or ILI who are not isolated in a single room should wear a surgical face mask. Offering a surgical face mask as early in the presentation as possible, including at triage, may be appropriate.

When single rooms are unavailable, two or more patients presenting with ILI or influenza should wear a surgical face mask and be cohorted together in an area at least 1 metre apart from other patients. Cohorting should be continued until admission, preferably to a single room, or discharge. The patient should continue wearing a surgical face mask at all times while not in isolation.

Influenza Case Definition
The National Notifiable Diseases Surveillance System (NNDSS) has established a nationally agreed case definition for influenza. Only confirmed cases are required to be notified.

A confirmed case of influenza requires ‘laboratory definitive evidence’.  

Laboratory definitive evidence is:
1. Isolation of influenza virus by culture from appropriate respiratory tract specimen
   OR
2. Detection of influenza virus by nucleic acid testing from appropriate respiratory tract specimen
   OR
3. Laboratory detection of influenza virus antigen from appropriate respiratory tract specimen
   OR
4. IgG seroconversion or a significant increase in antibody level or a fourfold or greater rise in titre to influenza virus
   OR
5. Single high titre by Complement fixation test (CFT) or Haemagglutination inhibition (HAI) to influenza virus.

Influenza-like Illness
A patient with symptoms and signs that are clinically compatible with influenza in the absence of laboratory confirmation may be classified as having an influenza-like Illness (ILI). Laboratory evidence is required to confirm or reject the diagnosis of influenza in patients with ILI. The following case definition for ILI is derived from the Victorian Respiratory illness in residential and aged care facilities Guidelines. 

The case definition for Influenza-like Illness (ILI) requires
1. Sudden onset of symptoms

AND

2. At least one (1) of the following:
   • Cough (new or worsening)
   • Sore throat
   • Shortness of breath

AND

3. At least one (1) of the following:
   • Fever
   • Malaise
   • Headache
   • Myalgia.

**Nosocomial Influenza**

The definition for a nosocomial confirmed case of influenza would require the following evidence in addition to the laboratory confirmation above:

1. Confirmed diagnosis ≥ 7 days after admission to an acute care setting
   OR
2. Onset of symptoms ≥ 72 hours after admission.

**Notification**

Influenza is a Group B condition that is notifiable by laboratories under the Public Health and Wellbeing Regulations 2009. State public health authorities also must report influenza to the national system under the NNDSS. Confirmed cases of influenza must be notified to the department in writing within five days of diagnosis from laboratories and clinicians.

From 1 September 2018, clinicians will no longer be required to notify confirmed cases of influenza. Laboratory notification requirements will remain unchanged.

Respiratory outbreaks of influenza or influenza-like illness involving three or more cases should be notified to the acute care facility infection control. In the event of a suspected or confirmed outbreak, the department can be contacted for advice by calling 1300 651 160, 24 hours a day, and recommend public health actions that can be undertaken.

**Outbreak of Influenza**

An outbreak of influenza must involve three (3) or more cases of influenza and can be classified as a potential influenza outbreak or confirmed influenza outbreak.

**Potential Influenza Outbreak** is defined as three (3) or more cases of influenza and/or influenza-like illness (ILI) in patients of a facility within 72 hours.

**Confirmed Influenza Outbreak** is defined as three (3) or more cases of influenza and/or influenza-like illness (ILI) in patients of an acute care facility within 72 hours.

AND
All cases are epidemiologically linked*

AND

At least one case has a positive laboratory test for influenza (meeting laboratory definitive testing above)

* An epidemiological link is defined as:

Cases occur in a common physical or geographical context (such as a shared room or ward)

AND

a plausible mode of transmission accounts for the spread infection (such as shared bathroom, equipment, objects, or any interactions within 1 metre)

AND

This occurred when a case was likely to have been infectious (1 day prior to onset of clinical illness up to 5 days after)

AND

After contact with the infectious case, other cases have an onset of illness within one incubation period (two to four days)

**Standard and droplet precautions**

Standard precautions include infection prevention practices that should always be used in healthcare settings, including in a suspected or confirmed influenza outbreak. Standard and droplet precautions include performing hand hygiene (Appendix 1), respiratory hygiene (Appendix 2), and the use of PPE including gloves, gown, mask and eye protection (Appendix 3). A sign for staff summarising the required standard and droplet precautions is included in Appendix 4.

**Background**

**Influenza virus**

Influenza is an acute viral infection that infects the respiratory system. Influenza viruses are RNA viruses from the Orthomyxoviridae viral family, with three types (A, B, C) able to infect humans.

Influenza is transmitted by the direct route through contact with infected people or animals, or through airborne transmission or contact with contaminated objects (fomites) or surfaces. Large respiratory droplets are the main transmission route and are produced during coughing and sneezing.

Depending on environmental conditions, influenza viruses can survive outside of a host for up to seventeen days, and if frozen can remain viable for several years. Reassortment of the influenza A virus can increase its pathogenicity, and highly pathogenic avian influenza (HPAI) historically has been the main causative agent in pandemic influenza.

Influenza can present with fevers, cough, sore throat and myalgia. The incubation period is between one to four days with an average of two days. Up to one third of cases are asymptomatic. Infected individuals are infectious from one day prior to clinical onset to 3-5 days after. In a minority of individuals, influenza viral shedding can persist up to 7-10 days after clinical onset.

Depending on the virulence of the strain and the health status and age of the infected person, influenza is capable of progressing to viral pneumonia and/or secondary bacterial pneumonia and in some cases results in acute respiratory distress syndrome (ARDS) or death.
In 2017, there were 745 laboratory confirmed deaths due to influenza viruses in Australia, with more than 91 per cent occurring in those 65 years and older.\(^5\)

**Oseltamivir**

Oseltamivir is a neuraminidase inhibitor that prevents successful influenza viral budding through enzymatically cleaving cellular envelope attachments just prior to virion release. Studies have shown that oseltamivir administered to patients with acute influenza within the first 36 hours of onset reduce symptom duration by 23 hours on average.\(^6\) The effectiveness of oseltamivir is reduced in some influenza strains that have point neuraminidase mutations.

In intention-to-treat analyses the effect was lower, at 18 hours on average.\(^7\) However, in those analyses illness severity was reduced by oseltamivir administration, with a decreased rate of lower respiratory tract complications and requirement for antibiotics. Oseltamivir must be dose-adjusted in renal impairment and is contraindicated in end stage renal disease in patients not on dialysis. Oseltamivir administration can result in side effects including headache, nausea and vomiting which may reduce treatment compliance.

Oseltamivir has no effect on other common respiratory viruses and therefore is only indicated for the treatment and prevention of infections due to influenza. For effective treatment, oseltamivir should be administered within 48 hours of symptom onset.\(^8\) Administration after 48 hours may not affect symptom duration or likelihood of complications after this time. Oseltamivir probably reduces virus shedding soon after commencement, with the greatest benefit the earlier it is given in an illness.

The prophylactic dosage of oseltamivir is 75mg once daily for ten days and the treatment dosage is 75mg 12-hourly for five days in adult patients without renal impairment. Dose adjustment based on age and renal function is shown in Table 1. Oseltamivir (brand name Tamiflu\(^\text{®}\)) is administered as an oral capsule of 75mg or as an oral suspension of 12mg/ml.

Despite ongoing widespread use of oseltamivir in influenza outbreaks around the world, there has not been evidence of significant resistance in the influenza A and B virus strains in circulation. However resistance to neuraminidase inhibitors may develop in the future. In certain scenarios if an oseltamivir-resistant virus is found to be circulating or is implicated in an outbreak, zanamivir (brand name Relenza\(^\text{®}\)) may be the preferred antiviral treatment for treatment and prophylaxis. The recommended dose of zanamivir is 10mg inhaled twice a day for five days for both adults and children aged five years and older. Advice on dosing is provided here as an example only – prescribers should always refer directly to established and current national guidelines such as Therapeutic Guidelines.

Table 1. Oseltamivir dosage for treatment and prophylaxis by age and renal function. Adopted from Therapeutic Guidelines 2014.\(^9\) **Use the below as an example only and always refer to the latest guidelines before prescribing any medication.**

<table>
<thead>
<tr>
<th>Age</th>
<th>Weight</th>
<th>Renal Status</th>
<th>Prophylaxis Dosage</th>
<th>Treatment Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child ≥ 1 year old</td>
<td>&lt; 15kg</td>
<td>Normal</td>
<td>30mg daily for 10 days</td>
<td>30mg every 12 hours for 5 days</td>
</tr>
<tr>
<td>Child ≥ 1 year old</td>
<td>15 to 23 kg</td>
<td>Normal</td>
<td>45mg daily for 10 days</td>
<td>45mg every 12 hours for 5 days</td>
</tr>
<tr>
<td>Child ≥ 1 year old</td>
<td>23 to 40 kg</td>
<td>Normal</td>
<td>60mg daily for 10 days</td>
<td>60mg every 12 hours for 5 days</td>
</tr>
<tr>
<td>Adults and adolescent ≥ 13 years old</td>
<td>≥ 40 kg</td>
<td>Normal GFR &gt; 60 ml/min or Continuous Renal Replacement Therapy</td>
<td>75mg daily for 10 days</td>
<td>75mg every 12 hours for 5 days</td>
</tr>
<tr>
<td>Adults and adolescent ≥ 13 years old</td>
<td>≥ 40 kg</td>
<td>GFR 31 - 60 ml/min</td>
<td>30mg daily for 10</td>
<td>30mg every 12</td>
</tr>
<tr>
<td>years old</td>
<td>days</td>
<td>hours for 5 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Adults and adolescent ≥ 13 years old</td>
<td>≥ 40 kg GFR 10 - 30 ml/min</td>
<td>30mg every 48 hours for 10 days</td>
<td>30mg every 24 hours for 5 days</td>
<td></td>
</tr>
<tr>
<td>Adults and adolescent ≥ 13 years old</td>
<td>≥ 40 kg GFR &lt;10 ml/min</td>
<td>No data; not recommended</td>
<td>No data; not recommended</td>
<td></td>
</tr>
<tr>
<td>Adults and adolescent ≥ 13 years old</td>
<td>≥ 40 kg Haemodialysis</td>
<td>30mg before dialysis, 30mg after alternate dialysis</td>
<td>30mg before dialysis, 30mg after each dialysis</td>
<td></td>
</tr>
<tr>
<td>Adults and adolescent ≥ 13 years old</td>
<td>≥ 40 kg Continuous Ambulatory Peritoneal dialysis</td>
<td>30mg before dialysis, then 30mg every 7 days</td>
<td>30mg at onset of symptoms, then 30mg at 5 days</td>
<td></td>
</tr>
</tbody>
</table>

**Influenza in acute care settings**

Influenza contributes to a significant number of acute care admissions, with substantial hospitalisation rates during the peak of the influenza season. An outbreak in a hospital setting occurs when three or more patients develop symptoms compatible with influenza or influenza-like illness. Given the higher prevalence of risk factors for severe and complicated influenza in hospital inpatients, and the predominantly airborne and droplet route of transmission, timely actions should be undertaken to treat symptomatic cases and reduce onward transmission.

**Rationale for oseltamivir in acute care settings**

Influenza is readily transmissible through respiratory droplets and can cause significant complications in individuals with pre-existing conditions and/or impaired immunity. Given the risk of influenza within acute care settings, the use of oseltamivir in addition to non-pharmaceutical measures may be indicated to reduce overall case numbers and protect patients at higher risk for influenza complications.

Guidelines in Canada\(^{10}\) and the United States\(^{11}\) recommend the use of neuraminidase inhibitor antivirals as treatment in patients at high risk of complications from influenza if commenced within 48 hours of clinical symptom onset. Offering prophylaxis to case contacts can result in prompt termination of influenza outbreaks in residential aged care facilities.\(^{12}\) Guidelines in the United Kingdom recommend prophylaxis in acute care settings for contacts ‘at risk’ of the complications of influenza.\(^{13}\)

**Individuals at high risk of influenza complications**

Complications of influenza can include primary viral or secondary bacterial pneumonia, worsening of pre-existing respiratory or cardiac illness, febrile seizures and encephalitis. Certain populations are at higher risk of severe disease and developing complications.\(^{14}\)

In this guideline, at-risk patients are considered to include:

- Children aged less than five years old;
- Adults 65 years and older;
- Pregnant women at any stage of pregnancy;
- Aboriginal and Torres Strait Islander people;
- Current smokers;
- Persons with asthma or chronic obstructive pulmonary disease;
• Persons with cardiac disease;
• Persons with immunosuppressive disorders or on immunosuppressive therapy;
• Persons with cancer;
• Persons with chronic renal dysfunction or disease;
• Persons with Down syndrome;
• Persons with a body mass index 30 kg/m$^2$ or more;
• Persons with diabetes mellitus or other metabolic disease; and
• Persons with neurological or neuromuscular disorders or inability to clear respiratory secretions.

Diagnosis

Symptoms and signs

Clinical symptoms and signs of influenza can be difficult to distinguish from other respiratory illnesses. Symptoms and signs of influenza may include the following:

• Acute fever ($\geq 38^\circ \text{C}$);
• new or worsening cough;
• shortness of breath and/or
• sore throat.

Systemic symptoms may include:

• Headache;
• myalgia;
• malaise;
• confusion and/or
• worsening of pre-existing conditions such as congestive heart failure and chronic obstructive pulmonary disease.

Laboratory testing

If a hospital inpatient has symptoms consistent with influenza, laboratory testing is indicated for confirmation. Testing should take place as soon as possible and preferably within two days of symptom onset, but can be completed up to five days from onset.

The recommended test for influenza is a nucleic acid amplification test (NAT), a form of polymerase chain reaction (PCR) testing. Respiratory samples should be obtained through nasopharyngeal aspirates or nasal swab or, if the patient is critically ill or intubated, through endotracheal aspirate or bronchioalveolar lavage fluid.$^{15}$ Samples should be sent for detection of influenza virus by NAT/PCR.

At the peak of the influenza season (usually August/September) laboratory testing may not be indicated in all cases of influenza-like illness presenting to Acute Care Facilities, in particular Emergency Departments. However, it is recommended that all facilities undertake laboratory testing for influenza unless directed elsewhere by the department.

Rapid Influenza Diagnostic Tests (RIDTs) are available for rapid antigen detection and a single positive result confers a high predictive value for influenza. Some facilities may have RIDTs available. However,
RIDTs have a lower sensitivity, so confirmation with NAT laboratory testing is recommended in all positive and negative cases if influenza is suspected.

Oseltamivir Recommendations

Single case or multiple cases of Influenza-like illness

If a current patient or multiple patients in an acute care setting are suspected to have influenza or meet the above criteria for influenza-like illness, confirmatory laboratory testing is recommended.

Oseltamivir use: not recommended for the patient/s or contacts of the patient/s until there is laboratory confirmation of influenza. Special recommendations on testing and treatment may apply during peak influenza season.

During the height of the influenza season (usually August/September) some flexibility in oseltamivir recommendations may be communicated by the department based on the level of influenza activity in the community. Proportions of 30-50% influenza positivity through influenza-like illness sentinel surveillance may prompt recommendations to expedite management by not requiring awaiting laboratory results. This may also include recommendations on commencing oseltamivir in patients at high risk of influenza complications within 48 hours of symptom onset in the absence of confirmed influenza.

Emergency Department (ED) management of Influenza-like illness

Emergency Departments are the most likely settings to experience one or more cases of influenza-like illness and will have significant bed pressures that warrant rapid determination of diagnosis, treatment and onward care — short-stay, admission, transfer or discharge. The recommendation for laboratory confirmation of influenza prior to commencing oseltamivir for treatment still applies generally but flexibility may be required at the height of the influenza season (usually August / September).

The department will communicate with Emergency Departments on the level of influenza activity, including the proportion of influenza-like illness that is confirmed influenza. Proportions of 30-50% influenza positivity through influenza-like illness sentinel surveillance may prompt recommendations to expedite management by not awaiting laboratory results and/or require laboratory testing. This may also include recommendations on commencing oseltamivir in patients at high risk of influenza complications within 48 hours of symptom onset in the absence of confirmed influenza.

Oseltamivir use: not recommended for ED patient/s or contacts of the patient/s until there is laboratory confirmation of influenza. Special recommendations on testing and treatment may apply during peak influenza season.

Single case of Influenza

If a single current inpatient in an acute care setting is confirmed to have influenza by definitive laboratory testing in the absence of other confirmed cases, oseltamivir can be considered for treatment and prophylaxis.

Oseltamivir use: If the clinical onset date is within the last 48 hours and there are no medical contraindications, oseltamivir can be offered to the confirmed case to reduce symptom severity, risk of complications and to reduce onwards transmission. Dosage guidelines in Table 1 should be followed.

If a confirmed case of influenza occurs in a patient who has been in a single room from 24 hours prior to onset of clinical illness, only case contacts as defined above should be considered for oseltamivir use.
If the patient was in a shared room facility while infectious, oseltamivir (at prophylactic dosage) may be offered to room contacts whom themselves are at-risk of the complications of influenza regardless of vaccination status, if there are no medical contraindications. If indicated, oseltamivir should be commenced as soon as possible and up to 48 hours after exposure. Staff contacts and patient contacts on the ward outside of the patient room and visitors to the hospital are not recommended to be offered oseltamivir in the event of a single case.

**Single ward outbreak**

If three or more cases of influenza or influenza-like illness (ILI) are detected in current inpatients in an acute care setting in a single ward that meet the above case definitions with onsets of illness within a five day time period, an outbreak should be considered. Laboratory confirmation of influenza should be sought in all cases and an outbreak is declared if there are three or more cases of influenza that meet the laboratory definitive evidence for confirmation.

**Oseltamivir use:** For each confirmed case or patient with ILI, if the clinical onset date is within the last 48 hours and there are no medical contraindications, oseltamivir can be offered to reduce symptom severity, risk of complications and to reduce onwards transmission. Dosage guidelines in Table 1 should be followed. Otherwise, oseltamivir is not recommended in ILI patients unless an outbreak is present.

In the event of a ward influenza outbreak that includes a nosocomial confirmed case of influenza, all patients in the hospital ward in which the patients were treated while infectious who are at-risk are recommended to receive oseltamivir at the prophylactic dose described in Table 1 regardless of vaccination status, if there are no medical contraindications. If all cases of confirmed influenza on the ward are assessed as arising from the community, or all rooms are single patient rooms, it may not be necessary to widen the offer of oseltamivir to all well at-risk patient contacts on that ward.

**Multiple ward outbreaks**

If two or more wards are affected by outbreaks (as defined above) where the outbreaks commenced within five days of each other, a wider outbreak should be considered to be declared. Laboratory confirmation of influenza should be sought in all cases of ILI and an outbreak will be confirmed in each ward if there are three or more cases of influenza that meets laboratory definitive evidence for confirmation. Each ward should be managed according to the approach outlined above. The terminology of a ‘hospital-wide outbreak’ should be considered if there are confirmed cases in geographically dispersed wards.

**Oseltamivir Summary Table**

Table 2. Summary of oseltamivir recommendations for influenza cases in the acute care setting.

<table>
<thead>
<tr>
<th>Case(s)</th>
<th>Oseltamivir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single case or multiple cases of influenza-like illness</td>
<td>Not recommended unless laboratory confirmed influenza</td>
</tr>
<tr>
<td></td>
<td>Note that the department may offer special recommendations on testing and treatment during peak influenza season.</td>
</tr>
</tbody>
</table>
| Emergency Department (ED) management of influenza-like illness | Not recommended unless laboratory confirmed influenza  
Note that the department may offer special recommendations on testing and treatment during peak influenza season. |
|---|---|
| Single case confirmed influenza | Recommended for confirmed cases of influenza if within 48 hours of clinical onset  
**AND**  
at-risk* contacts |
| Three or more cases of confirmed influenza or influenza-like illness in one ward | Recommended for confirmed cases of influenza if within 48 hours of clinical onset  
**AND**  
Patients with influenza-like illness within 48 hours of symptom onset  
**AND**  
at-risk* ward contacts |
| Three or more cases of confirmed influenza or influenza-like illness in multiple wards | Recommended for confirmed cases of influenza if within 48 hours of clinical onset  
**AND**  
Patients with influenza-like illness within 48 hours of symptom onset  
**AND**  
at-risk* ward contacts |

*At-risk includes all patients at high risk of the complications of influenza, as outlined above.

**Additional Recommendations**

To reduce the risk of transmission of influenza, the below recommendations can be used as general advice by staff. However, it should be noted that each facility will have infection control guidelines which should be followed in all cases of influenza-like illness and confirmed influenza.

**Patient Personal Protective Equipment**

For all suspected and confirmed cases of influenza, a surgical face mask should be placed on the patient, as early in presentation or admission as possible. Masks are single-use only and must comply with the Australian Standard AS/NZS 4381:2015 Single-use face masks for use in health care settings. The patient should wear the mask whenever they are not in a single room, and when they are within one metre of another patient or staff. Masks should be recommended to be worn until the patient is no longer considered infectious, for a minimum of five days from clinical onset, and ideally seven days in adults and ten days in children under the age of 15. Viral shedding can persist in some immunocompromised patients up to several weeks and sustained infectivity should be assessed on a case-by-case basis.
**Patient Placement**

When available, the patient should be isolated in a single room with own ensuite facilities in order to reduce transmission to other patients and staff. Single rooms do not require negative pressure ventilation. If a patient must be placed in a shared room, the beds should be a minimum of 1 metre apart and the curtains should be drawn as a further barrier.

Patients presenting to Emergency Departments with Influenza or Influenza-like Illness should be treated in a single room when possible. If a single room is not available they may be placed in a cubicle with the curtains drawn. Patients should wear a surgical mask if not in an isolation room. Two or more patients presenting with ILI may be cohorted in a separate area with the patients wearing a surgical mask and placed at least 1 metre apart from each other and curtains drawn where possible. All infection control precautions should be continued until discharge.

Patients should be advised of the need for respiratory hygiene, cough etiquette and hand hygiene measures to help them prevent transmission of their illness.

**Patient Transfers**

During an outbreak on a ward or multiple wards, transfers and new admissions to the involved ward should be minimised where possible, to prevent new infections and onward spread.

**Cleaning Recommendations**

Infection control guidelines at the facility should be followed with regards to room and equipment cleaning, patient movement and overall governance for outbreak management. The patient area should be cleaned at least twice daily during an outbreak with a TGA listed or registered disinfectant such as 1000ppm (0.1 per cent) sodium hypochlorite. Shared patient equipment should also be cleaned and disinfected between each patient use.

**Discharge Recommendations**

Discharged patients should be recommended to remain excluded from workplaces, school and childcare for a minimum of five days from clinical onset or until they are no longer experiencing symptoms, whichever is longer.

**Staff Personal Protective Equipment (PPE)**

All staff should adhere to droplet precautions and wear a single-use face mask when providing care to a patient with ILI symptoms. Eye protection, gloves and gown need only be worn as per standards precautions, that is, if contact or splash with blood or body fluids is anticipated. Recommended hand hygiene protocols, including the five moments of hand hygiene, must be practiced by all staff (Appendix 1).

Masks are single-use only and must comply with the Australian Standard AS/NZS 4381:2015 Single-use face masks for use in health care. When conducting aerosol generating procedures*, a P2/N95 respirator should be used by staff instead of a surgical style mask.

Refer to Appendix 3 on how to don and remove personal protective equipment.

*Aerosol generating procedures include endotracheal intubation, open airway suctioning, non-invasive ventilation (CPAP or biPAP), nasopharyngeal aspirate collection and diagnostic sputum collection. Nebulised medication administration is not considered an aerosol generating procedure but spacer devices are recommended whenever possible.
Other Staff Recommendations

Annual influenza vaccine should be offered to all healthcare workers and staff where possible. Unvaccinated staff are at a high risk of acquiring influenza and transmitting to other staff and patients. During a suspected or confirmed influenza outbreak unvaccinated staff may be required to wear a mask when providing care to any patients or be redeployed to a low risk area of the facility. Oseltamivir is not recommended for prophylaxis for staff as a result of routine care of patients with influenza or when staff are caring for patients on a ward identified as affected by a ward outbreak of influenza.

Staff Illness

Staff should be aware of the symptoms of influenza and report to their supervisor if they develop symptoms consistent with an influenza-like illness. Staff should not work while unwell, including with suspected or confirmed influenza. If staff have influenza-like illness or confirmed influenza, they should be excluded from work for a minimum of five days from symptom onset and ideally seven days.

Recommendations for Visitors

In the event of an outbreak or confirmed case of influenza, minimising contact with visitors can help reduce transmission. It is recommended that visitors are informed of suspected and confirmed cases and limit themselves to only essential visitations. Signage should be posted at the entrance to the involved isolation room, ward and/or hospital to alert external visitors upon arrival.

Visitors to ill patients or wards where there is a suspected or confirmed outbreak should follow droplet precautions and receive guidance from staff regarding the use of surgical masks and hand hygiene protocols. Oseltamivir is not recommended for prophylaxis for visitors. Visitors should not visit patients while unwell.


Outbreak Monitoring

In the event of a suspected or confirmed outbreak in an acute care setting, active monitoring that includes screening patients for new or worsening respiratory symptoms during their admission should be undertaken to detect emerging cases and implement control measures in a timely fashion.

Patients and staff should monitor for the symptoms of influenza and Influenza-like Illness above and report to the treating team any concerns. All confirmed cases of influenza must be notified within five days to the Department of Health and Human Services (Category B).

If a patient is suspected to have acquired influenza in an acute care setting, the facility’s infection prevention and control guidelines and procedures should be reviewed.

Declaring an Outbreak Over

Respiratory outbreaks due to influenza can be considered over if no new cases of influenza or influenza-like illness are detected within eight days from the onset of clinical symptoms in the last inpatient case. Isolation of patient(s) can cease after five days from onset of clinical illness if symptoms are improving, however, this may be extended if the patient remains severely unwell or is immunosuppressed.
Appendix 1 – Hand Hygiene

1. The 5 moments of hand hygiene (Hand Hygiene Australia)

2. WHO ‘How to handwash?’ poster
   Hand Hygiene Australia (http://www.hha.org.au/AboutHandHygiene.aspx)
How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

Duration of the handwash (steps 2-7): 15-20 seconds
Duration of the entire procedure: 40-60 seconds

0. Wet hands with water;
1. Apply enough soap to cover all hand surfaces;
2. Rub hands palm to palm;
3. Right palm over left dorsum with interlaced fingers and vice versa;
4. Palm to palm with fingers interlaced;
5. Backs of fingers to opposing palms with fingers interlocked;
6. Rotational rubbing of left thumb clasped in right palm and vice versa;
7. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;
8. Rinse hands with water;
9. Dry hands thoroughly with a single use towel;
10. Use towel to turn off faucet;
11. Your hands are now safe.

World Health Organization
Patient Safety
SAVE LIVES
Clean Your Hands
3. WHO ‘How to handrub?’ poster

Hand Hygiene Australia (http://www.hha.org.au/abouthandhygiene.aspx)

Appendix 2 – Respiratory Hygiene
Appendix 3 – Personal Protective Equipment

• When coughing or sneezing, use a tissue to cover your nose and mouth
• Dispose of the tissue afterwards
• If you don’t have a tissue, cough or sneeze into your elbow

• After coughing, sneezing or blowing your nose, wash your hands with soap and water
• Use an alcohol-based hand cleanser if you do not have access to soap and water

Remember: hand hygiene is the single most effective way to reduce the spread of germs that cause respiratory disease.

Anyone with signs and symptoms of respiratory infection, regardless of the cause,
• should be instructed to cover their nose/mouth when coughing or sneezing;
• use tissues to contain respiratory secretions;
• dispose of tissues in the nearest waste receptacle after use; and
• wash or cleanse their hands afterwards.
1. Instructions for donning Personal Protective Equipment after performing hand hygiene.¹

SEQUENCE FOR PUTTING ON PPE

**GOWN**

＞ Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
＞ Fasten at the back of neck and waist

**MASK**

＞ Secure ties or elastic bands at middle of head and neck

**PROTECTIVE EYEWEAR OR FACE SHIELD**

＞ Place over face and eyes and adjust to fit

**GLOVES**

＞ Extend to cover wrist of isolation gown
1. **Instructions for removing Personal Protective Equipment.**

<table>
<thead>
<tr>
<th>SEQUENCE FOR REMOVING PPE</th>
<th>REMOVE PPE AT DOORWAY OR IN ANTEROOM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GLOVES</strong></td>
<td></td>
</tr>
<tr>
<td>➢ Outside of gloves is contaminated!</td>
<td></td>
</tr>
<tr>
<td>➢ Grasp outside of glove with opposite gloved hand; peel off</td>
<td></td>
</tr>
<tr>
<td>➢ Hold removed glove in gloved hand</td>
<td></td>
</tr>
<tr>
<td>➢ Slide fingers of ungloved hand under remaining glove at wrist</td>
<td></td>
</tr>
<tr>
<td>➢ Peel glove off over first glove</td>
<td></td>
</tr>
<tr>
<td>➢ Discard gloves in waste container</td>
<td></td>
</tr>
</tbody>
</table>

**PERFORM HAND HYGIENE**

**PROTECTIVE EYEWEAR OR FACE SHIELD**

➢ Outside of eye protection or face shield is contaminated!
➢ To remove, handle by head band or ear pieces
➢ Place in designated receptacle for reprocessing or in waste container

**GOWN**

➢ Gown front and sleeves are contaminated!
➢ Unfasten ties
➢ Pull away from neck and shoulders, touching inside of gown only
➢ Turn gown inside out
➢ Fold or roll into a bundle and discard

**MASK**

➢ Front of mask is contaminated — DO NOT TOUCH!
➢ Grasp bottom, then top ties or elastics and remove
➢ Discard in waste container

Perform hand hygiene immediately after removing all PPE.
Appendix 4 – Signage for Infection Control

1. Infection Control Poster outlining Droplet Airborne and Contact Precautions.¹

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**Visitors**
See a nurse for information before entering the room

**For all staff**

**Droplet Precautions**
in addition to Standard Precautions

**Before entering room**

1. Perform hand hygiene
2. Put on a surgical mask

**On leaving room**

1. Dispose of mask
2. Perform hand hygiene

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**Standard Precautions**
And always follow these standard precautions

- Perform hand hygiene before and after every patient contact
- Use PPE when risk of body fluid exposure
- Use and dispose of sharps safely
- Perform routine environmental cleaning
- Clean and reprocess shared patient equipment
- Follow respiratory hygiene and cough etiquette
- Use aseptic technique
- Handle and dispose of waste and used linen safely

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¹ Australian Commission on Safety and Quality in Health Care
References


14 Therapeutic Guidelines. Treatment of influenza for individual benefit. eTG Online. 2018 Jul 17. Available from: 