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***Guidelines for the Prevention, Control
and Public Health Management of
Influenza Outbreaks in Residential Care
Facilities in Australia***

March 2017

Acknowledgements:

This practical guide was developed a by the Working Group on Influenza Outbreaks in Residential Care Facilities on behalf of the Communicable Diseases Network of Australia (CDNA). It was endorsed by CDNA on 1 March 2017.

The document builds on previous work by CDNA, and updates the Guidelines for the Prevention and Control of Influenza Outbreaks in Residential Care Facilities in Australia 2009.

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Disclaimer:

These guidelines are provided to assist public health authorities, residential care services and carers by providing best practice information for the prevention and management of influenza outbreaks in residential care facilities.

These guidelines capture the knowledge of experienced professionals, build on past research efforts, and provide advice on best evidence-based practice at the time of completion.

The guidelines are necessarily general and readers should not rely solely on the information contained within. The guidelines are not intended to be a substitute for advice from other relevant sources and experts. These guidelines are intended for information purposes only.

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Section 1: Preface

1.1 Purpose of the Guidelines:

Influenza is an important issue in residential care. Residents, particularly the elderly, are often vulnerable to influenza due to co-morbidities and/or advanced age, and the environment of communal living facilitates the spread of respiratory agents.

The purpose of this document is to provide national best practice guidelines for, preparing for, preventing, identifying and managing outbreaks of influenza in residential care facilities (RCFs) in Australia.

The Communicable Diseases Network Australia (CDNA) have also reviewed the CDNA Influenza Guidelines for Public Health Units which contains more detail in relation to the public health management of influenza.

1.2 Preparation of Guidelines

A multi-jurisdictional working group of the CDNA prepared these guidelines. The working group members have expertise in the public health management of influenza.

1.3 Using the Guidelines

This document is designed for use during inter-pandemic periods, recognising that in a pandemic period, outbreak control will be determined by the Australian Health Management Plan for Pandemic Influenza (AHMPPI).¹

1.4 Target audience

These guidelines are intended for use by RCF managers and employees, such as health care workers (HCWs) and personal care attendants working in RCF, to guide the management of influenza outbreaks within RCFs. Notes are included to inform public health authorities.

1.5 The Nature of Residential Care

In this document, RCFs mean accommodation facilities where residents sleep, eat and live either temporarily or on an ongoing basis. For example, residential aged care facilities (including nursing homes and hostels), residential care facilities for people with physical and mental disabilities, detention centres and correctional centres. The level of skilled nursing care provided in RCFs differs in keeping with the type of RCF. While this document is primarily intended for RCFs, many principles are applicable to other settings such as hospitals, cruise ships, military barracks and boarding schools.

The primary responsibility of managing any disease outbreak in an RCF lies with the RCF, within their responsibilities for resident care and infection control. Local public health authorities provide advice, as required, to assist facilities in confirming, investigating and managing outbreaks.

1.6 Related legislation

It is the responsibility of residential care approved providers to identify and comply with relevant state and territory legislation and regulations. The relevant jurisdictional legislation defines responsibilities for reporting and managing cases and outbreaks of infectious diseases.

All health care establishments that include residential care should fulfil their responsibilities in relation to infection control by adopting standard and transmission based precautions for infection control, as directed in *Australian Guidelines for the Prevention and Control of Infection in Healthcare* ² and by local public health authorities.

Aged care homes operate under the *Aged Care Act 1997* and are required to be accredited to be eligible for funding.

1.7 Definitions of influenza-like illness (ILI) and influenza

Case definitions set criteria allowing unambiguous classification of an ill person as a case (or not a case) of a syndrome or disease of interest; in this instance, for influenza-like illness and influenza.

When a person meets the case definition for influenza-like illness, they are counted as a 'case of ILI' but a laboratory test confirms (or rejects) a diagnosis of influenza. If positive, the test result changes their status from a 'case of ILI' to a diagnosed 'case of influenza'.

Refer to [Section 4.2](#) for details of ILI and influenza case definitions

1.8 Notification

Influenza (laboratory confirmed) is a notifiable condition under the Australian National Notifiable Diseases Surveillance System (NNDSS). This means that in all Australian states and territories, either the medical officer requesting the test and/or the laboratory performing the test are responsible for notifying the relevant jurisdictional public health authority of the case of influenza, as per local legislative requirements. The notification of communicable diseases and conditions is a confidential process.

Senior staff of RCFs may notify public health authorities of suspected or confirmed *outbreaks* of influenza in accord with jurisdictional arrangements.

Section 2: Influenza

- Influenza viruses are very infectious causes of influenza, an acute respiratory disease that can cause serious illness and death.
- RCFs are high-risk environments for influenza due to communal living arrangements and the continual close proximity of residents.
- The elderly may be particularly vulnerable to influenza due to immune senescence and/or co-morbidities.

2.1. Description

Influenza viruses are highly infectious causes of influenza, an acute respiratory tract disease. Three types of influenza virus, A, B and C, can cause disease in humans. Both type A and B viruses cause large numbers of seasonal influenza cases, while type C influenza is relatively rare.³ A fourth type of influenza virus, D, has not yet been confirmed to cause disease in humans.

Influenza A viruses are further subtyped by the combination of haemagglutinin (H) and neuraminidase (N) glycoproteins or “antigens” present on the virus surface. Combinations of the haemagglutinin and neuraminidase subtypes give rise to specific influenza strains such as H1N1 or H3N2, which have been co-circulating in human populations for many years. Influenza A and B viruses undergo frequent changes in their surface antigens, giving rise to new circulating strains of influenza virus. Immunity from previous infection or vaccination may be relatively poor against new strains of virus. Before each influenza season, vaccination protects vaccinees against the strains of influenza virus predicted to circulate in that season.

Influenza viruses circulate at low levels year-round. Infections increase and typically peak over the winter months as the Australian influenza season, although variable in length, usually extends from winter to early spring. In northern Australia, a second peak often occurs in late summer/autumn.

2.2. Symptoms and signs

Influenza can be difficult to distinguish from other viral respiratory tract infections on clinical signs alone.

Symptoms and signs of influenza may include the following:

- Sudden onset of fever ($\geq 38^{\circ}\text{C}$)
- Respiratory symptoms:
 - New or worsening cough
 - Shortness of breath
 - Sore throat.
- Systemic symptoms:
 - Headache
 - Myalgia (muscle soreness)
 - Malaise.

In the elderly, symptoms may also include:

- Onset of, or increase in, confusion.
- Worsening of underlying conditions including exacerbation of chronic obstructive pulmonary disease or congestive heart failure.³

Of note, elderly residents may not necessarily have an elevated temperature with influenza, due to medical conditions or medications masking rises in temperature.⁴

2.3. Transmission, incubation and communicability

Large droplets are believed to be the primary mode of transmission for influenza viruses, these droplets are produced when infected individuals cough or sneeze. Influenza can also be transmitted by direct contact with respiratory secretions, such as from hard surfaces where influenza viruses can persist.²

The incubation period for influenza is short, on average 2 days (range 1-4 days). People infected with influenza are considered infectious from 1 day before onset of symptoms, and viral shedding is greatest in the first 3-5 days of illness. Young children shed virus for longer, up to 7-10 days; shedding may continue for longer in severely immunocompromised persons.³

2.4. Complications and people at increased risk of complications

Complications of influenza include primary viral and secondary bacterial pneumonia, worsening of chronic conditions, sinusitis, otitis media, febrile seizures, encephalitis, myositis, and Reye's syndrome when salicylates such as aspirin are used.^{3,5}

Those most at risk of complications from influenza include children aged less than two years, adults aged 65 years and over, and those with a range of chronic medical conditions.^{3,5} Smokers and pregnant women are also more susceptible to influenza and its complications.⁶

During influenza seasons, among the elderly and people with chronic diseases, increases occur in the number of deaths, rates of hospitalisation for pneumonia, and in exacerbations of chronic diseases in association with influenza. In the elderly, influenza is a leading cause of serious illness.^{7,8}

Aboriginal and Torres Strait Islander people have higher rates of hospitalisation and death from influenza and pneumonia, compared to non-indigenous Australians.⁹

Compared to adults working in non-health care settings, healthcare workers are at significantly higher risk by influenza¹⁰ because of increased risk of exposure to influenza virus in the course of their work; if infected, they may in turn, infect vulnerable contacts.

Section 3: Vaccination

- Vaccination is the single most important means for preventing influenza.
- Annual influenza vaccination is recommended for all residents and all staff of residential care facilities, unless contraindicated.
- An RCF influenza vaccination policy should actively promote annual influenza vaccination for all residents and staff, including volunteers.
- Facilities should aim for vaccination coverage of 95% or more, in both residents and staff.
- A vaccination register should systematically record the status of all residents and all staff each year, prior to the beginning of influenza season.
- Family members of residents and regular visitors to RCFs should be encouraged to have the recommended current annual influenza vaccine.

During influenza outbreaks:

- All (100%) residents and staff should be protected by either vaccination or, if contraindicated, through optimal use of control measures such as segregation and PPE.
- Catch-up vaccination of previously unvaccinated residents and staff is recommended, unless contraindicated.
- Vaccination is recommended for essential visitors to the facility who are unvaccinated.

3.1 Vaccine

Vaccination is the most effective tool for preventing influenza. The administration of influenza vaccine to persons at risk of complications of influenza is the single most important measure for preventing or attenuating influenza, thereby reducing morbidity, hospitalisation and mortality.

Each year new influenza vaccines are formulated to try to match the strains of virus predicted to predominate in the coming winter influenza season. The effectiveness of an influenza vaccine is reduced when new influenza virus strains emerge that are not well matched to the vaccine strains.

Influenza vaccination reduces the risk of influenza by, on average, 60% in healthy adults under 65 years of age.¹¹ After vaccination, most adults develop antibodies at levels likely to protect them against the strains of virus included in the vaccine.

Elderly people may have a weaker immune response to influenza vaccination but the vaccine can still reduce the duration and severity of symptoms if infection occurs. Influenza vaccination is estimated to reduce the risk of medically attended influenza in elderly people by 28% to 58%, depending on the degree of matching between the vaccine strains and current circulating strains of influenza.¹²

3.2 Seasonal vaccination program for residents and staff

Facilities should aim for *at least* 95% of all staff and all residents of an RCF to be vaccinated prior to the beginning of the influenza season.

3.2.1 Residents

The Australian Immunisation Handbook recommends annual influenza vaccination for all residents of residential aged care facilities and long-term residential facilities due to high rates of influenza transmission and influenza-related complications during outbreaks in these facilities.⁵ In addition, the Handbook recommends annual influenza vaccination for adults aged 65 years and over, and for people at increased risk of complications from influenza.

Vaccination reduces the risk of hospitalisation from influenza and risk of pneumonia, and reduces all-cause mortality in residents aged 65 years and over in residential care settings.¹³ Continuing protection requires timely annual vaccination.

Residents in care facilities may also be recommended to have pneumococcal vaccine: refer to the current edition of *The Australian Immunisation Handbook*.⁵

The vaccination record of each resident should be retained in a vaccination register. Upon transfer to another facility, the vaccination record of the resident should be shared with the receiving facility.

3.2.2 Staff

The Australian Immunisation Handbook recommends annual influenza vaccination for all healthcare providers, staff and volunteers working in nursing homes and other long-term care facilities.³ Influenza vaccination for RCF staff both protects them and provides an additional layer of protection for high-risk residents.

Vaccinating RCF staff against influenza can reduce staff absenteeism during periods of moderate influenza activity and help prevent influenza morbidity, hospitalisation and deaths in residents.^{14, 15, 16, 17}

Vaccination of casual RCF staff working in more than one location can be challenging as they may miss vaccination clinics for regular staff. However, they are an important target group to vaccinate, to reduce the risk of influenza spreading within the RCF and between working locations.

Documented evidence of the vaccination status of each staff member should be recorded in a vaccination register.

3.2.3 Vaccination policies

RCFs should have an influenza vaccination policy for both residents and staff, and ensure the policy is updated and implemented each year.

Free influenza vaccine is currently available for all Australians aged 65 years and over, Aboriginal and Torres Strait Islander peoples up to 5 years and over 15 years of age, pregnant women and individuals aged 6 months and over with medical conditions that can lead to severe influenza.

For further information on groups eligible for free influenza vaccine refer to the [Immunise Australia Program website](http://www.immunise.health.gov.au/) (<http://www.immunise.health.gov.au/>).

RCFs should ensure they:

- Plan for residents to be vaccinated each year, before the influenza season (ideally in March/April).
- Organise regular staff vaccination clinics before each year's influenza season (ideally in March/April).
- Maintain an up-to-date annual vaccination register for both residents and staff.
- Set a target of *at least 95%* for vaccination coverage in both residents and staff, and work towards achieving this.

3.2.4 Staff vaccination strategies

RCFs should consider vaccination programs that use a range of strategies to improve vaccine uptake among staff.

Strategies associated with successful RCF staff vaccination programs include the following:

- Provision of free or subsidised influenza vaccine (a feature of most successful programs).
- Delivering staff vaccinations at clinics in the workplace, ensuring inclusion of all staff including casual, part-time and night shift workers.
- Education to improve knowledge, help dispel vaccine misconceptions and emphasise individual benefits for staff members and residents.
- Participation of local staff leaders and vaccination advocates.
- Clear RCF vaccination policies linked to broader infection control policies and staff health programs.
- Inclusion of recognition, rewards and incentives for vaccinated staff.

3.3. Vaccination of family members and regular visitors

Family members of residents and other visitors can potentially transmit influenza to residents. RCFs should advise all regular visitors to consider annual influenza vaccination for their own and residents' protection.

Section 4: Recognising influenza-like illness and outbreaks

- Residential care facilities require systems for early detection of influenza-like illness (ILI) in staff and residents.
- Three (3) or more people (residents or staff) with ILI within the same 3 days (72hour period) indicates a potential influenza outbreak.
- If an outbreak is suspected, it is important to test some of those with ILI for influenza.
- A sample for respiratory viral pathogens (including influenza) is collected by a throat or nose swab; the preferred type of test is a nucleic acid test (NAT).

4.1 Influenza surveillance

Residential care facilities should monitor staff and residents for influenza-like illness (ILI) and ongoing ILI surveillance should be heightened during the influenza season.

The aim of ILI surveillance in RCFs is to ensure early identification of symptoms in residents and staff that may precede, or indicate early stages of, an outbreak. Identification of a resident or staff member with ILI should be followed by prompt testing for a causative agent. While confirmation of influenza is pending, immediate and appropriate infection control management of the person with ILI may prevent further spread of the disease.

Facilities should have the capacity to count those with ILI each day and identify a potential influenza outbreak (i.e. 3 cases of ILI in a 3-day period). Prompt detection of outbreaks allows early implementation of control measures. Early implementation of control measures and notification have been associated with shorter duration of outbreaks.^{18, 19}

Note for Public health units/authorities (PHU): consider writing to RCFs before the start of the influenza season to recommend a review of outbreak management plans, promote vaccination of residents and staff, and provide advice on how to heighten surveillance and notify public health authorities of any potential or actual outbreaks (refer to [Appendix 5](#) for a pre-season example letter for RCFs).

4.2 Definition of influenza-like illness (ILI) and influenza

Diagnoses of ILI are important for surveillance of influenza activity in the community, case-finding in outbreaks, and to facilitate clinical diagnosis and treatment.

The World Health Organization (WHO) definition for ILI requires sudden onset of symptoms, including fever and cough. This definition has a high predictive value in the general population.²⁰ However, the European Centre for Disease Prevention and Control (ECDC) definition for ILI does not categorically require fever and in some contexts, may be more appropriate for the use in elderly.²¹

Case definitions set criteria that allow unambiguous classification of an ill person as a case, or not a case, of the disease or syndrome of interest; such as influenza-like illness.

The following case definition should be used for ILI in staff and residents of RCFs:

4.2.1 Case definition of influenza-like illness (ILI) for residential care facilities

Sudden onset of symptoms,

AND at least one of the following three respiratory symptoms:

- ***Cough (new or worsening)***
- ***Sore throat***
- ***Shortness of breath***

AND at least one of the following four systemic symptoms:

- ***Fever or feverishness - Malaise***
- ***Headache - Myalgia***

When a person meets the case definition for influenza-like illness, they are counted as a 'case of ILI' but a laboratory test is required to confirm (or reject) a diagnosis of influenza. It is important to arrange laboratory testing for influenza as other respiratory pathogens can be tested for at the same time.

4.2.2 Definition of confirmed case of influenza:

A case of ILI with a positive laboratory test result for influenza meeting the national influenza (laboratory confirmed) surveillance case definition.

This means a laboratory test prescribed in the national surveillance case definition has confirmed the presence of influenza virus in the person with ILI, and changes their status from a 'case of ILI' to a diagnosed 'case of influenza'. See also 4.4. below.

4.3 Testing (including point-of-care tests)

Testing residents or staff with ILI for influenza is critical for establishing a diagnosis so that the RCF can plan an appropriate response. In an outbreak, several people meeting the clinical case definition of ILI should be tested for influenza (preferably 4 - 6 cases of ILI, but up to 10).

The recommended test for influenza is a nucleic acid amplification test (NAAT, also abbreviated as NAT). Nose or throat swabs are collected for NAT. Once requested by a medical officer, collection by the GP or a local pathology provider is the preferred option for obtaining influenza swabs. Guided by the clinical picture, the responsible medical officer may request testing for other respiratory pathogens. Refer to [Appendix 6](#) for a "Who to test" fact sheet for medical officers.

Instructions for obtaining nose and throat swabs are in [Appendix 8](#).

Point-of-care tests (POCT) are available for rapid 'bedside' diagnosis of influenza. However, at the stage of outbreak recognition by the RCF, definitive laboratory testing for confirmation is strongly recommended for residents with both positive and negative point-of-care tests.

As the specificity of POCTs is high, a single positive POCT result has a high predictive value for influenza in the context of an ILI outbreak; that is, a positive POCT result is highly suggestive of influenza. Sometimes this may provide sufficient information for the RCF to trigger an outbreak response.

Negative POCT test results for influenza antigens should be treated with caution due to their relatively low sensitivity compared to laboratory based tests. Further testing should be sought if influenza is suspected in a resident with a negative POCT result.

4.4 National surveillance case & laboratory definitions for influenza

Laboratory confirmed influenza is a notifiable disease in all Australian states and territories. The requesting medical officer and/or the testing laboratory is obligated to notify the infection to the jurisdictional communicable disease authority, depending on local legislative requirements; this notification is confidential.

The current National Notifiable Disease Surveillance System (NNDSS) influenza case definition can be found on the [Department of Health web site](http://www.health.gov.au/casedefinitions) (<http://www.health.gov.au/casedefinitions>) The Public Health Laboratory Network (PHLN) site has laboratory definitions on the [Department of Health web site](http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-cdna-phln-phln.htm) (<http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-cdna-phln-phln.htm>).

4.5 Response to a single case of ILI or influenza in a resident

Residents with confirmed influenza or ILI require support such as hydration, and regular access to their primary care provider for medical review of respiratory status and any pre-existing conditions.

Special issues in the management of residents with ILI or influenza in an RCF include:

- Isolate ill residents or cohort and minimise interaction with other residents.
- If influenza is suspected, have a low threshold for requesting medical review for influenza or other pathogens.
- Antiviral medication: see Section 6.2.9 for details.
- Transfer residents to hospital if their condition warrants. If transfer is required, advise the hospital in advance that the resident is being transferred from a facility where there is potential or confirmed influenza.
Refer to [Appendix 4](#) for a sample transfer advice form.

In the instance of ILI or confirmed influenza, RCF management should consider this an opportunity to:

- Review the current vaccination status of residents and staff.
- Consider and implement infection control measures.
- Heighten surveillance for further cases.

4.6 Response to a single case of ILI or influenza in a member of staff

This should lead to exclusion of the staff member whilst infectious, and heightened surveillance for ILI within the facility. As above, the facility should consider this an opportunity to review vaccination status of staff and residents and outbreak plans.

4.7 Outbreak definitions

Definition of potential influenza outbreak:

Three (3) or more cases of ILI in residents or staff of a facility within 3 days.

If a potential influenza outbreak is identified, the RCF should look for other cases.

Facility management, supported by infection control or other appropriate staff, should implement the response by activating their outbreak plans, with guidance from the local PHU, as needed. An initial response flow chart is in [Appendix 7](#).

Facilities should proceed through actions 6.2.1 – 6.2.4 in [Section 6](#) while laboratory confirmation is pending.

Definition of a *confirmed* influenza outbreak –

also used by PHU to confirm existence of an influenza outbreak:

Three or more epidemiologically linked* cases of ILI in residents or staff of the facility within a period of 3 days (72 hours),

PLUS

- ***At least one case having a positive laboratory test,***

OR

- ***At least two cases having a positive point-of-care test.***

*An epidemiological link exists where cases occur in a common physical or geographical context, and a plausible mode of transmission accounts for the spread infection, AND when one person is likely to have been infectious AND after contact with the infectious person, at least one other person has an illness which starts within the incubation period of the agent of infection.

In RCFs with widespread mixing of residents and staff, the outbreak context may be the entire facility, so three cases in the RCF will meet the definition of an outbreak. In other RCFs, some areas of the facility (e.g. high dependency unit) may have little or no resident or staff contact with other parts of the RCF; in that situation, three cases of influenza in separate sections of the facility may not indicate an outbreak. The PHU may assist the RCF to consider whether to declare an outbreak.

Section 5: Infection control (Controlling the spread of influenza)

Key elements for staff in controlling influenza in an RCF include:

- High staff and resident vaccination rates.
- Performing hand hygiene before and after and patient care activities.
- Use of appropriate personal protective equipment (PPE).
- Understanding respiratory hygiene and cough etiquette.
- Regular cleaning.
- Increased cleaning of shared equipment.
- Infected resident placement - isolation and cohorting.
- Minimising resident transfer or transport.

Both standard and droplet precautions are required for people with influenza.

The spread of respiratory viruses can be reduced by hygiene measures (hand hygiene, cleaning), barriers to transmission (masks, gloves, eye protection, gowns), and isolation of ill residents (social distancing).²² In combination with timely influenza vaccination, these measures should effectively contain epidemics of influenza or other respiratory viruses.

5.1 Infection control measures to prevent spread of influenza:

Standard precautions are a group of infection prevention practices always used in healthcare settings, and in RCFs with a suspected or confirmed influenza outbreak. Standard precautions include performing hand hygiene before and after every episode of resident contact, the use of PPE including gloves, gown, mask and eye protection, depending on the anticipated exposure, good respiratory hygiene/cough etiquette and regular cleaning of the environment and equipment.

Transmission-based precautions are work practices used *in addition* to standard precautions to reduce transmission opportunities due to the specific route of transmission of a pathogen. These practices are implemented depending on the type of spread. For example, respiratory infections are commonly spread by droplet and airborne routes. For influenza, droplet precautions are required.

Key elements of **droplet precautions** are to use PPE, maintain a 1 metre distance between the infected resident and others, encourage good cough etiquette, use resident-dedicated equipment where possible; and allocate ill residents to single rooms or cohort (put in a shared room) those with confirmed influenza.

Additionally, enhanced cleaning and disinfection of the ill resident's environment and minimising transfer of residents within and between facilities may help reduce spread. Detailed advice on these precautions is presented later in this chapter.

All staff in a residential care facility should receive general education on policies, including the principles of infection prevention and control. This would include a review of hand hygiene and infection control precautions, along with refresher training, as required. The use of antivirals should be stated in the RCF's influenza outbreak management policy. During outbreaks, information and education should

be provided for residents and their families, and should include their specific condition, and practices necessary to reduce the risk of infection.

Practical infection control information, tips, diagrams and signs are in [Appendix 1](#).

5.1.1 Hand hygiene

As influenza viruses can be spread by hands, frequent hand cleansing is important. Alcohol based hand rubs are the gold standard for hand hygiene practice in healthcare settings. However, if hands are visibly soiled or had direct contact with body fluids they should be washed with liquid soap and running water then dried thoroughly with disposable paper towel (refer to [Appendices 1.1-1.4](#), and [Hand Hygiene Australia](#) (HHA) (<http://www.hha.org.au/home/>)).

Influenza viruses can persist on hard surfaces and remain viable for up to 24 hours on hard, non-porous surfaces. Infectious influenza virus can be transferred to hands from these surfaces for at least 2 – 8 hours after contamination of the surface. Virus transfer from porous materials to hands is less efficient due to rapid drying of the virus.²³ Increased environmental cleaning can help interrupt virus transmission.

Hands should be cleaned with an alcohol-based hand rub or water and liquid soap solution before and after caring for a resident.

- All staff must perform hand hygiene after every contact with an ill resident.
- Even when hands are visibly clean.
- After being in contact with contaminated surfaces.
- Whether or not gloves are worn.

When visibly soiled with body fluids and/or substances, use water and liquid soap for hand washing. Alcohol-based hand rub solutions can be used when performing procedures whenever hands are not visibly soiled.² Refer to [Hand Hygiene Australia 5 moments](#) (<http://www.hha.org.au/home/5-moments-for-hand-hygiene.aspx>).

5.1.2 Respiratory hygiene and cough etiquette

The importance of respiratory hygiene and cough etiquette for respiratory illnesses should be explained to residents as part of droplet precautions (refer to [Appendices 1.4, 1.5](#)). Encourage residents with respiratory symptoms to cover their nose and mouth when they cough or sneeze, use tissues, and dispose of them into a rubbish bin /receptacle. Bin contents can be disposed of as general waste.

5.1.3 Personal protective equipment (PPE)

Appropriate PPE is important for all staff caring for infected residents requiring standard and droplet precautions (refer to [Appendix 1.6](#)).² RCF staff must change their PPE and perform hand hygiene after every contact with an ill resident, when moving from one room to another, or from one resident care area to another.²⁴

5.1.4 Surgical face masks

Any RCF staff member providing direct care to a resident with an ILI or influenza should wear a surgical mask. Surgical face masks must meet Australian Standards

and be fluid resistant, protecting the wearer from droplet contamination of the nasal or oral mucosa (refer to [Appendix 1](#)). All staff and visitors entering the room of a person with a respiratory illness should wear a single-use surgical face mask for close contact (less than (<)1 metre).

Note. Single-use surgical face masks protect the user against droplets. However, P2 respirators (known as N95 respirators or facemasks (USA equivalent rating)) protect the user against aerosols as well as droplets. Insufficient evidence exists to support the use of P2 respirators to further reduce the risk of infections transmitted by the droplet route.²⁴

Aerosol generating procedures should be avoided, or if necessary, performed in a single room that is properly cleaned before further use.²⁵ This advice extends to nebulisers, which should not be used; use individual patient spacers instead.

Single-use surgical face masks should be worn by RCF staff when exposure to respiratory droplets is likely, that is, when within 1m of an affected resident:

- The mask should be put on when entering the room.
- Remove the mask after leaving the room, handling only by the tapes, and place in a clinical (yellow) waste bin. Perform hand hygiene after disposing of the mask.
- Never re-use masks.

When undertaking activities that require an infected resident to leave their room, the resident should wear a mask if tolerated.² For example, during transfer within or between facilities. RCF staff members and well residents may be required to wear a mask while these activities are undertaken, based on likely exposure.

5.1.5 Gloves and gown

Gloves and gowns should be used as described in standard precautions. After use, they should be removed in a manner which prevents contamination of the hands or surfaces or the workers clothing, then placed in the appropriate waste bin. Hand hygiene should be performed after removing PPE. Refer to [Appendix 1](#)

5.1.6 Eye protection

Eye protection includes the use of safety glasses, goggles or face shields but does not include personal eye glasses. Goggles or other protective eyewear must be disposed of, or where approved for re-use, cleaned after use.²

Eyes should be protected where there is potential for splattering or spraying of blood, body fluids, secretions or excretions, including coughing; or when undertaking aerosol-generating procedures such as nasopharyngeal aspiration.

5.2 Environmental measures

Regular, scheduled cleaning of all resident care areas is essential. Frequently touched surfaces are those closest to the resident, and should be cleaned more often (for example - bedrails, bedside tables, commodes, doorknobs, sinks, surfaces and equipment close to the resident).

During a suspected or confirmed influenza outbreak, an increase in the frequency of cleaning with a neutral detergent is recommended, especially for frequently touched surfaces. Ensure appropriate availability, quantity and placement of disposal units for tissues, used PPE, etc., as well as appropriate cleaning for reusable items.

Suggested minimum cleaning frequencies for many items are specified in the *Minimum Cleaning Frequency* table in the *Australian Guidelines for the Prevention and Control of Infection in Healthcare* (p.159, B 5.1).² As a guide, the risk profiles of most RCFs during an influenza outbreak would be similar to general hospital wards.

Refer to [Appendix 2](#) for further information on cleaning.

Ideally, any care equipment should be dedicated for the use of an individual resident. If resident care equipment must be shared, the items must be cleaned and disinfected between each resident use.

Linen should be laundered using hot water and detergent. Linen should be dried on a hot setting in a dryer. There is no need to separate the linen of ill residents from that of other residents. Appropriate PPE should be used when handling soiled linen.²

Crockery and cutlery should be washed in a dishwasher or if not available, by hand using hot water and detergent, rinsed in hot water and dried. Separation of cutlery and crockery from ill residents is not required.

5.3 Exclusion of staff

RCF staff members with ILI should be excluded from work while they are infectious, that is, at least 5 days after onset of acute illness, or until they are symptom free, whichever is longer. As unvaccinated staff are at higher risk of acquiring influenza, during a confirmed influenza outbreak, unvaccinated staff are recommended to work only if asymptomatic and wearing a mask, or asymptomatic and taking appropriate antiviral prophylaxis, in keeping with the RCF's influenza outbreak management policy. Any antiviral use by staff should be documented.

If issues arise regarding compliance with work exclusions, options should be reviewed by the Outbreak Management Team (refer to [Section 6](#)).

5.3.1 Rationale for allowing staff on antivirals to return to work

Antiviral prophylaxis for staff members works to protect residents from infection, firstly, by reducing the acquisition of infection by staff (and ability to further transmit the virus) and secondly, by reducing viral shedding from asymptomatic infected staff (refer to [Appendix 16](#): Antiviral Prophylaxis in residential care facilities decision tool).

5.4 Isolation and cohorting

5.4.1 Resident placement

Any residents with a respiratory illness should be cared for in a single room, where practicable. Isolating sick residents in single rooms reduces the risk of resident-to-resident transmission. The importance of respiratory hygiene and cough etiquette should be explained to all residents.

If single rooms are not available, the following principles can guide decision-making on resident placement:

- As a priority, place residents with excessive cough and sputum production in single rooms.
- Place together in the same room (cohort) residents infected with the same pathogen and who are assessed by the RCF as suitable roommates.
- Importantly, ensure that residents sharing a room are physically separated (more than (>)1 metre apart) from each other. Draw the privacy curtain between beds to minimise the risk of droplet transmission.²

Note: Clinical ILI may be caused by influenza A virus or influenza B virus. Only laboratory tests distinguish between these causes. Separation of ill residents is important unless it is clear their infection is caused by the same viral pathogen.

5.4.2 Staff

Once resident isolation measures are in place, to further reduce the risk of transmission, it is preferable to allocate specific (vaccinated) RCF staff to the care of residents isolated in rooms. These staff members should not move between their section and other areas of the facility, or care for other residents. Staff members should self-monitor for signs and symptoms of respiratory illness and self-exclude from work if unwell.

When ILI is apparent in an RCF, influenza can be spread within the facility by unvaccinated staff, who should work only if well and wearing a mask, or taking antiviral prophylaxis. Preferentially, only staff vaccinated against influenza should care for residents with confirmed influenza or suspected ILI.

Unvaccinated staff who have been working in an outbreak-affected area should not be moved to other parts of the RCF, as they may be incubating influenza.

5.4.3 Droplet precaution sign

Place droplet precaution signs (refer to [Appendix 3](#)) outside ill residents' rooms to remind staff and visitors about the requirement for transmission-based infection control work practices.

5.5 Resident movement during an outbreak

There is some evidence for the benefits of restricting internal movement of residents and visitors during an outbreak.²⁶ RCF outbreak response plans should consider restricting resident mingling in communal living/dining areas, and prepare a guide for restrictions based on the RCF layout and usual practices. To minimize the direct interaction of residents within the facility during an outbreak, it is important for RCFs to also consider suspending group social activities for residents.

5.5.1 New admissions

Admissions of new residents into the facility should be restricted. Depending upon the extent of the outbreak and the physical layout of the building, the restriction on admissions might be applied to one floor, one wing or the entire facility. The

rationale for restriction on admissions is related to both the risk of infection for the newly admitted resident and potential to prolong the outbreak by adding new, potentially susceptible residents.

Though normally not recommended, if important for resident well-being, admissions may be reconsidered once outbreak controls are having effect. To clarify the extent to which restrictions may be relaxed, consult with your PHU.

5.5.2 Re-admission of residents who have had influenza

The re-admission of residents who had influenza and were transferred to hospital or another facility, requires the provision of appropriate accommodation, care and infection control.

5.5.3 Re-admission of residents without influenza

The re-admission of residents who have not had suspected or confirmed influenza in the outbreak (i.e. who are not known cases) is generally not recommended during an outbreak. If required, admissions may be considered once the outbreak is under control. To clarify relaxation of admission restrictions, consult your public health unit.

Factors to consider if re-admission of non-cases is being sought, include:

- The availability of appropriate accommodation for the returning resident.
- Vaccination status of the person for re-admission.
- The ability to protect the readmitted resident from infection.
- Infection control measures currently in place.
- Provision of antiviral prophylactic medications.
- Availability of adequate staff at the RCF to care for the re-admitted resident.

5.5.4 Non-infected residents

In some circumstances, it may be feasible to transfer residents who definitely do not have ILI to other settings for care (e.g. family care). In these circumstances, the family should be aware that the resident may have been exposed to influenza and is at risk of developing disease. **NB:** *In residential Aged Care settings, security of tenure provisions of the Aged Care Act 1997 will need to be considered.*

5.6 Transfers

If transfer to hospital is required, notify the ambulance service and receiving hospital of the outbreak and the suspected or confirmed diagnosis. A template for resident transfer advice is available at [Appendix 4](#).

5.7 Visitor restriction and signage

During an outbreak, preferably, minimize the movement of visitors into and within the facility. If recommended by the outbreak management team, RCFs should:

- Suspend group social activities that involve visitors such as musicians.
- Postpone visits from non-essential external providers, if possible.

- Inform regular visitors and families of residents and of the outbreak of influenza and request they only undertake essential visits; discourage unnecessary visitors.
- Ask those who do visit an ill resident, to:
 - Visit only one person.
 - Enter and leave directly without spending time in communal areas.
 - Use an alcohol based hand rub or wash their hands before and after visiting.
 - If giving direct care, use PPE as directed by RCF staff.
- Initiate passive screening for respiratory symptoms using “Attention Visitors” signage (refer to [Appendix 3](#)), and reminding visitors:
 - Not to visit if unwell.
 - To limit visiting to one resident.
 - To follow signs for the use of PPE, as indicated.
 - To practice hand hygiene and respiratory hygiene/cough etiquette.
- Post “Attention Visitors” signs at the entrance(s) and other strategic locations in the facility (refer to [Appendix 3](#)).
- Initiate active screening (incoming visitors report to the desk) as required.

5.8 Education and training

The RCF should provide ongoing education to staff, residents and volunteers, and opportunistic education to regular visitors (e.g. residents’ families) about outbreak prevention, infection control and related policies. Topics for staff (some apply to residents) include:

- Personal hygiene, particularly hand hygiene, sneeze and cough etiquette.
- Appropriate use of PPE such as gloves, gowns, eye protection and masks, including how to don and doff PPE correctly.
- Persons experiencing symptoms of influenza (do not work or visit an RCF).
- Handling and disposal of sharps and clinical waste.
- Processing of reusable equipment.
- Environmental cleaning.
- Laundering of linen.
- Food handling and cleaning of used food utensils.

Note: This information is based on resources developed by the National Health and Medical Research Council: *Australian Guidelines for the Prevention and Control of Infection in Healthcare*. 2010. Available at: (www.nhmrc.gov.au/_files_nhmrc/publications/attachments/cd33_infection_control_healthcare_140616), AND

The Infection prevention and control in residential and community aged care pocket book. 2014. Available at:

(www.nhmrc.gov.au/_files_nhmrc/publications/attachments/d1034_infection_control_residential_aged_care_140115).

Section 6: Outbreak management

Effective outbreak management has four phases:

1. **Preparation:** ensure a comprehensive outbreak management plan is in place and roles and responsibilities are clear, assigned and understood.
2. **Response:** activate the RCF's outbreak management plan.
3. **Monitor** outbreak progress: assess and modify outbreak control activities.
4. **Conclusion:** declare the outbreak over, review events and lessons learned for future outbreaks. Update outbreak management plan.

6.1 Preparing for influenza outbreaks

Seasonal influenza typically peaks over winter and early spring, although sporadic cases occur year-round. Outbreaks of influenza are not uncommon in RCFs.

To protect the health of staff and residents and to ensure the RCF is well prepared to manage an outbreak of influenza, it is important to consider the following actions:

- Plan for a possible outbreak:
 - a. Develop easily accessible internal policies and procedures on infection control and an **outbreak management plan**. A copy of these guidelines and the Influenza-Info Kit produced by the [Department of Social Services](#) should be used as references.²⁷
 - b. Include a medical practitioner (or equivalent) in the development of the outbreak management plan; this is essential for consideration of use of antiviral medications.
 - c. Acquire adequate stocks of materials such as personal protective equipment (PPE) and cleaning materials (refer to [Appendices 1](#) and [2](#)). Consider having an outbreak kit / box specifically for use in an outbreak.
 - d. Ensure RCF staff know the symptoms and signs of influenza, and are trained in infection control procedures for use of PPE ([Appendix 1](#)).
 - e. Policies supporting use of antiviral drugs for prophylaxis should reflect the reduced effectiveness of antivirals with either delays in implementation or low levels of compliance, and a response option for poor compliance.
 - f. If there is an intention to use influenza antivirals for prophylaxis in the management of outbreaks, RCFs may develop processes with attending GPs for antiviral prescriptions/ standing orders prior to the influenza season (see 6.2.9), as to be effective antiviral medication must be used in a widespread fashion at the same time.
 - g. For residents with renal failure, GP assessment of the renal function is needed before or soon after prophylaxis commences ([Appendix 16](#)).
Note. Legislation relating to the use of standing drug orders may differ between jurisdictions.
- Develop a systematic method for detecting and recording residents in the facility who develop symptoms of ILI, such as fever or cough. An ILI detection system may include increased frequency of temperature observation during winter and methods to alert the responsible clinician of symptomatic residents.
- Maintain a functional system for the timely detection of potential influenza outbreaks (3 residents/staff with ILI within 3 days) in the RCF. This may be a daily

summary of all ILI records. Ensure daily hand-over time for ILI monitoring and outbreak detection for those assigned to this important task.

- Early in the year, plan to ensure *at least 95%* of staff and residents are vaccinated (refer to [Section 3: Vaccination](#)). Encourage staff, family members and regular visitors such as hairdressers etc., volunteers, allied health and support workers to be vaccinated. This helps keep them healthy and reduces the likelihood of influenza being brought into the facility.
- Keep vaccination records for staff and residents up-to-date, and ensure they are easily accessible when needed for an outbreak response.

Preparation and training in outbreak management and infection control for RCFs is relevant to outbreaks caused by any pathogen. A checklist of outbreak preparedness actions for RCFs can be found in [Appendix 9](#).

6.2 RCF response to an outbreak of ILI

Actions in response to an outbreak: NB – some are simultaneous:

6.2.1 Notify – ALL staff, residents, PHU, GPs, visitors (and others).

6.2.2 Implement infection control measures.

6.2.3 Arrange testing of residents with ILI.

6.2.4 Collate information onto a line list.

6.2.5 Confirm and declare an influenza outbreak.

6.2.6 Form an outbreak management team.

6.2.7 Continue infection control during the outbreak.

6.2.8 Vaccinate during an outbreak, as needed.

6.2.9 Use antiviral medication during an outbreak, as advised.

Outbreak preparedness & management checklists are in [Appendices 9, 10, 11](#).

6.2.1 Notifications

It is important to notify the local public health authority early!

PHU can assist with advice on investigation and management of potential outbreaks.

Contact details for regional public health authorities are available in [Appendix 15](#)

The RCF response to an outbreak will depend on the nature of the institution and the setting of the outbreak. Larger institutions with dedicated infection control practitioners (ICP) may require little assistance, whilst others may look to PHU for advice.

The public health unit (PHU) will require some essential information from RCFs including:

- The name, contact number and email address of a designated person or position at the RCF who will be the point of contact for the PHU. These include details for after hours and weekends, and the name and contact number of the primary ICP or delegate at the RCF.

- The number of residents in the RCF, as well as the number with ILI, their symptoms, date of onset of symptoms, whether reviewed by a GP or medical officer, likely diagnosis, and investigations requested.
- The total number of staff, and number of staff who are ill with ILI.
- The name of the testing laboratory and results of any tests completed or pending.
- The initial infection control measures that have been implemented.
- A floorplan, clearly showing the layout of different areas in the RCF.
- Current influenza vaccination rates and numbers for both residents and staff, i.e. those currently vaccinated.

To assess an outbreak, the RCF (and PHU) needs to determine the population at risk. This requires:

- The total number of residents in the RCF, and the total number of staff employed at the facility, including casual workers, and non-resident-care staff.
- If the outbreak is restricted to one area/unit, the number of residents and staff associated with that area/unit.

Refer to [Appendix 14](#) for a generic PHU initial notification form.

Note. PHU: If requested, the PHU can provide advice regarding infection control, and assist the RCF to consider when to declare an outbreak. Refer to [Section 4](#) for definitions of ILI, influenza and an outbreak of influenza.

The PHU can supply the RCF with additional information on testing for influenza, including advice on collecting and storing specimens, and laboratory submission of samples (see Section 6.2.3). PHU personnel may discuss results already reported, as well as request a line list of those with ILI (refer to Section 6.2.4 and [Appendix 13](#)).

It will be important for the **RCF** to promptly **notify** the following of the outbreak:

- All staff (*everyone* employed in the RCF) and residents.
- Visiting medical officers/GPs of residents, and arrange clinical review for ILI.
- The laboratory where specimens will be sent for testing, if needed.

To increase awareness and encourage cooperation:

- Warn visitors of the influenza risk including - scheduled allied health and service providers, and regular visitors such as family and friends.
- Place appropriate signage at the facility entrance and other strategic points.
- If transfer to hospital is required for any resident, notify the ambulance service and receiving hospital of the suspected/confirmed outbreak in the RCF, and clinical diagnosis status of the resident (well, ILI, or confirmed influenza).

6.2.2 Implement preliminary infection control measures

The initial outbreak response actions in an RCF are to investigate and confirm whether the outbreak is due to influenza, and concurrently initiate appropriate management of the outbreak (regardless of the respiratory pathogen involved).

Ideally, standard precautions are in routine use. However, as soon as an influenza outbreak is suspected, transmission-based control measures (such as isolation, droplet precautions and respiratory hygiene) should be implemented as well. Refer to [Section 5](#) for detailed advice on PPE and Infection Control, and [Appendix 7](#) for an initial response flow chart.

6.2.3 Testing of residents with ILI

Testing some residents with ILI for influenza is essential to establish a diagnosis. In an outbreak, several people meeting the ILI case definition should be tested (usually 4 to 6, but up to 10). Nose or throat swabs are collected for an influenza NAT/PCR test.

Once three or more cases of *ILI occur within 3 days, and at least one has a positive laboratory test for influenza*, the outbreak is confirmed. Further cases of ILI are assumed to be due to influenza and should be treated as such. No clinical or public health benefit is derived from continuing to test those with ILI in a confirmed RCF influenza outbreak, unless requested by the treating clinician or the PHU.

6.2.4 Collate information onto a line list

A line list is a simple and useful record of both staff and residents who meet the ILI case definition, or are confirmed influenza cases. The line list provides important information for the RCF outbreak control team about the number of affected residents, their symptoms and vaccination status, and can be used to summarise information each day. Additionally, the PHU may use a copy of the line list to track progress and inform advice provided to the RCF on management of the outbreak.

An outbreak line list is cumulative; that is, it retains past information and is updated daily. It should include individual information such as:

- Demographic details of cases (name, age/date of birth, sex, RCF area, etc.).
- Symptoms – onset date, type, and duration.
- Results of any laboratory tests.
- Both vaccination and clinical status, including antiviral treatment.
- Outcome of infection (recovered, hospitalised, died).

Note. PHU: The local PHU may have a preferred line list format which they supply to an affected RCF. Example templates for line lists for [residents](#) and [staff](#) are available in [Appendix 13](#).

For large RCFs, ensure each area/unit is included in the line list or keep a separate line listing for each area affected by the outbreak. A separate line listing should be completed for staff with ILI.

When completing a line list, it is important to understand that it is a *cumulative* document. All previous cases listed remain on the list, and each day new cases are added to the bottom of the list. An RCF will need to update the information recorded for previous cases, for example, with new test results, hospitalisation and deaths.

The use of a line-list continues throughout the outbreak response, but is particularly important in the initial phase to allow proper characterisation of the outbreak.

Note. PHU: From the line-list, as appropriate:

- Develop an epidemic curve, tracking the magnitude of the outbreak.
- Review symptoms and duration of illness; these indicate 'what to look for'.
- Follow up and review all laboratory tests results.
- Summarise information such as characteristics of cases, attack rate, severity of illness (morbidity), and deaths (mortality).
- Track the vaccination status of those who are ill with confirmed influenza.

6.2.5 Confirm and declare an influenza outbreak

Outbreaks can be caused by various infectious respiratory pathogens. If one or more respiratory samples from ILI cases in a suspected outbreak returns a positive laboratory result for influenza, then an influenza outbreak is confirmed.

Confirming influenza as the pathogen is an important step that will guide decisions regarding control measures such as vaccination, and use of antiviral medications.

6.2.6 Forming an outbreak management team

When a team is formed, it is important to meet regularly, usually daily at the height of the outbreak, to monitor the outbreak, initiate changes to response measures and to discuss outbreak management roles and responsibilities.

Even a relatively small respiratory outbreak in an RCF is disruptive because of the risks of complications in vulnerable residents and transmission to staff, with resulting absenteeism. Early recognition of suspected outbreaks and swift management actions are essential for effective response to control spread.

Ideally, a full outbreak management team (OMT) should be formed by the RCF to coordinate the response. The OMT directs and oversees the management of all aspects of an outbreak, meeting at least daily during the peak of the outbreak. It considers the progress of the response, undertakes ongoing monitoring, deals with unexpected issues, and initiates changes, as required.

Several functions are critical within the OMT, and some roles may be performed by the same person. *In reality, a small number of people often perform multiple roles and undertake many tasks.* For further details, refer to [Appendices 9 - 12](#).

The outbreak management team should initially meet daily to:

- Direct and oversee the management of the outbreak.
- Monitor the outbreak progress and initiate changes in response, as required.
- Liaise with GPs and PHU, as arranged.
- The Outbreak Management Team may include the following people:

Chairperson (Facility Director, Manager, or Nursing Manager)

The chairperson is responsible for co-ordinating outbreak control meetings, setting meeting times, agenda and delegating tasks.

Secretary

The secretary organises OMT meetings, notifies committee members of any changes, and records and distributes minutes of meetings.

Outbreak Coordinator (Nurse / Infection Control Practitioner or delegate)

The coordinator ensures that all infection control decisions of the OMT are carried out, and coordinates activities required to contain and investigate the outbreak. This role is often given to an Infection Control Practitioner (ICP) or delegate.

Media spokesperson/s (Facility Director, or Manager, or delegate)

Significant media interest in outbreaks in RCFs is common, especially if there are adverse outcomes. A media spokesperson from the OMT should be designated as the only individual with responsibility to provide information to the media. This media spokesperson is usually a representative from the RCF, but occasionally, can be from the PHU, if involved. In rare situations, there may be joint spokespeople, one from each organisation.

Visiting General Practitioners

Some GPs may be available to participate in the OMT and their role should be identified during the planning process. It is valuable to identify a clinical lead amongst those GPs who attend a facility. In the management of an outbreak, the role of this person is important in facilitating assessment and management of ill residents, and in working with the RCF and PHU to implement control strategies.

Public health authority staff

An understanding of what assistance can be provided by the public health authority and role/responsibility clarification should be confirmed at the initial OMT meeting, although it is usually *not necessary for PHU staff to be part of the OMT*.

Refer to [Appendix 9](#) for an outbreak Plan checklist, [Appendix 10](#) for details of OMT tasks and [Appendix 11](#) for an OMT task checklist.

6.2.7 Infection control during an outbreak

During an influenza outbreak it is essential that infection control measures are put in place expeditiously to minimise the spread of disease in the facility. These procedures are detailed in [Section 5](#). A checklist of infection control procedures to be considered in an outbreak can be found at [Appendix 12](#).

6.2.8 Vaccination during an outbreak

During influenza outbreaks, the influenza vaccination records of all residents and staff should be reviewed as a priority.

Influenza vaccination clinics may be arranged for unvaccinated residents and staff, and recommended for unvaccinated visitors. Alternatively, the RCF may recommend directing the person to consult their primary health provider for vaccination; remembering it takes around two weeks to develop a protective immune response following vaccination.

6.2.9 Antiviral medication during an outbreak

Residents' GPs are responsible for prescribing antiviral medications.

Antiviral use for case management - treatment

- Early initiation of antiviral **treatment** (within 48 hours of symptom onset) in adults with confirmed influenza reduces the risk of secondary complications requiring antibiotic therapy, and hospitalisation.²⁸ Provision of medication after this time to cases will decrease shedding time and reduce transmission but not effect the course of illness.
- To facilitate early case treatment in the context of an identified influenza outbreak, treatment on syndromic grounds may be warranted,²⁹ particularly for individuals with underlying chronic conditions that place them at increased risk of a severe clinical course with influenza, and for whom observational studies suggest the greatest clinical benefit.³⁰

Antiviral use for prophylaxis

The widespread use of antivirals in institutions that house residents at high risk of severe disease and death from influenza is supported by observational cohort studies and one randomised controlled trial. During an outbreak, other facility residents will have been, or may become, exposed to infectious residents. The provision of antivirals works as early treatment for those incubating disease and reduces shedding in those infected. Data are available to support the premise that this treatment/shedding reduction process prevents continued spread in the facility. (Appendix 16)

Antiviral **prophylaxis** should only be used in addition to other outbreak control measures. The decision to administer antivirals as prophylaxis should be made by the OMT in collaboration with local public health authorities and residents' GPs, depending on local arrangements.

If recommended, to optimise the chances of reducing transmission and bring the outbreak under control, antiviral prophylaxis should be given to ALL *asymptomatic* residents (regardless of vaccination status) and ALL *unvaccinated* staff.

Prompt administration of medication and estimated levels of compliance should be considered in the decision to use antivirals for prophylaxis. Hence, outbreak plans should incorporate the expediency of acquiring and administering medication (for residents), an acceptable compliance level and a response option for poor compliance.

If antivirals are used for influenza prophylaxis in an RCF:

- Ideally, antivirals should be commenced by all targeted residents and staff **within 24 hours**, AND
- Medication safety issues, including renal function/renal insufficiency, must be appropriately considered during the prescribing phase.
- RCF staff need to be aware of the most **common side effects**, e.g. for oseltamivir, nausea and vomiting.

Further information is available in the appendices including:

[Appendix 16](#). Table 16.1 Antiviral prophylaxis in RCF decision tool;

[Appendix 17](#). Letter regarding antivirals for treating doctors;

[Appendix 18](#). Antiviral dosage recommendations;

[Appendix 19](#). Patient information on Tamiflu (oseltamivir).

6.3 Monitoring the outbreak

An RCF member of the OMT, or delegate, should update the line listing with new information daily, by midday (or another agreed time), or more frequently if major changes occur, and communicate this to the PHU each day (as arranged, by email (preferred), fax or telephone). Updates to information should occur through daily meetings of the OMT.

Note. PHU: Updated information should be reviewed by the PHU for evidence of ongoing transmission and effectiveness of control measures and prophylaxis. The PHU should discuss this with the RCF OMT and advise of any indicated changes for current outbreak control measures.

Ongoing resident surveillance should include the following:

- Monitoring residents for ILI symptoms.
- Addition of all new cases to the resident line list.
- Updating the status of ill residents: hospitalised, recovered, deceased.
- Recording the use of antiviral prophylactic medication and any adverse reactions to or cessation of any prescribed antiviral medication.

Ongoing staff surveillance should include all the following:

- Addition of all new staff cases to the staff line list.
- Identification of staff who have recovered, and confirmation with the PHU of their return to work date.

The OMT should review all control measures and consider seeking further advice from PHU if:

- The outbreak comprises more than 10 cases.
- The rate of new cases is not decreasing.
- Three (3) or more residents are hospitalised related to influenza, OR
- An influenza-related death has occurred: telephone to notify the PHU of this.

Specialised advice is available from the following sources:

- A local state, territory or regional PHU.
- Infection control practitioners may be available for advice in local hospitals, state and territory health departments, or as private consultants.
- Geriatricians or Infectious Disease physicians may be approached for specialist management of complex infections.

6.4 Concluding the outbreak

6.4.1 Declaring the outbreak over

The OMT, with approval from the local public health authority, has responsibility for declaring the outbreak is over.

The time from the onset of symptoms of the last case until the outbreak is declared over can vary, and depends on whether the last case was a resident or staff member. Generally, an influenza outbreak can be declared over if no new cases occur within 8 days following the onset of symptoms in the last *resident* case (8 days is the sum of the usual infectious period [5 days] plus maximum incubation period [3days]).

A decision to declare the outbreak over should be made by the OMT, in consultation with the PHU.

The OMT may take decisions about ongoing RCF surveillance after declaring the outbreak over, considering the following needs:

- To maintain general infection control measures.
- To monitor the status of ill residents, communicating with the public health authority if their status changes.
- To notify any late, influenza-related deaths to the PHU.
- To alert the PHU to any new cases, signalling either re-introduction of infection or previously undetected ongoing transmission.
- To advise relevant state/territory/national agencies of the outbreak, including the Commonwealth Department of Health and Ageing state/territory office for outbreaks in Aged Care facilities, if applicable.

6.4.2 Communication

Once the outbreak has been declared over, the OMT should notify all individuals and agencies involved in the investigation of the declaration.

The Outbreak Management Team is responsible for notifying the following people:

- All staff and residents.
- Visiting GPs of residents.
- Visiting service providers, families of residents and other regular visitors.
- The ambulance service and any relevant receiving hospitals or other RCFs.

6.4.3 Organising a debrief after the outbreak

Following a declaration that an outbreak is over, it is important for all parties to reflect on what worked well during the outbreak and which policies, practices or procedures need to be modified to improve responses for future outbreaks.

Although a debrief may seem unnecessary for outbreaks of short duration involving a small number of cases, the OMT in collaboration with the local PHU should consider a debrief for any outbreak with many cases, a prolonged outbreak, or one with unusual features in relation to outbreak management. Outbreak investigation is

a core function of PHUs, and after respiratory outbreaks in RCFs, a debrief whether formal or informal, is recommended in partnership with the RCF outbreak management team.

Audits are commonly used in clinical medical and nursing practice as part of continuous quality improvement, and may be an appropriate method by which to conduct a debrief. Australian public health practitioners and researchers have proposed a guide for an outbreak audit process, with a framework for deciding which outbreak investigations to audit, an approach for conducting a successful audit, and a template for trigger questions. This tool enables agencies such as RCFs to assess their outbreak response against best practice.³¹

If a formal debrief or an audit is undertaken, the OMT should arrange a meeting between key RCF staff, PHU staff, and other relevant agencies, to review the course and management of the outbreak. The purpose of this meeting is to identify what worked well, and what could be improved for future outbreaks. For preference, this meeting should occur within two weeks of the outbreak being declared over.

A debrief provides the opportunity to identify strengths and weaknesses in outbreak response and investigation processes, and provide information to help improve the management of similar outbreaks in the future. It should involve all members of the OMT and any others who participated in the response to the outbreak.

Preparation, training and experience for RCF personnel in outbreak management, response, and infection control for influenza is directly applicable to outbreaks in RCFs caused by any respiratory pathogen; much applies to gastrointestinal illness.

Appendices

Appendix 1 Standard precautions

1.0 Standard precautions for the prevention of spread of Influenza in RCFs

- Influenza is caused by influenza viruses that can spread by droplet and contact routes.
- Infection control activities employing standard precautions help prevent influenza transmission.
- Appropriate hygiene precautions are used at all times and in all situations.

Standard precautions include the following:

- Hand hygiene before and after every episode of patient contact as detailed in the Hand Hygiene Australia (HHA) 5 moments ([Appendix 1.1](#)).
- Respiratory hygiene and cough etiquette ([Appendix 1.2](#)).
- The use of personal protective equipment ([Appendix 1.3](#)).
- Routine environmental cleaning ([Appendix 2](#)).
- Waste management.
- Appropriate handling of linen ([Appendix 2](#)).

1.1 Hand hygiene:

A most important key to prevention and further spread of infection is good hand hygiene. Hand hygiene means rubbing hands with an alcohol based hand rub OR washing them with liquid soap and water and drying with a single-use towel.

Hand hygiene will NOT be effective if any of the following are present:

- Skin with cracks, cuts or dermatitis – cover all cuts or abrasions.
- Hand and arm jewellery.
- Nails longer than 3-4mm,
 - with chipped or worn nail polish, or
 - artificial nails, or
 - nail enhancements.

Hand hygiene must be performed in all situations described in the table below ([Table A1.1](#)), regardless of whether gloves are used. NB: staff must perform hand hygiene before applying gloves and after removing gloves as the removal process can cause contamination resulting in further infections.

[to section 5.1 Inf. Control](#)

1.1 Hand hygiene:

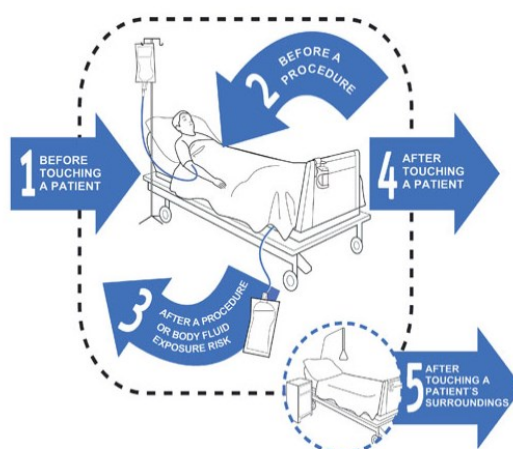
Table A1.1 the 5 moments of hand hygiene.

Hand Hygiene Australia (HHA).

Adapted from the World Health Organization's '5 moments of hand hygiene'.

1	BEFORE RESIDENT CONTACT	WHEN? WHY?	Clean your hands before touching a resident. <i>To protect the resident against harmful organisms carried on your hands.</i>
2	BEFORE ASEPTIC TASK	WHEN? WHY?	Clean your hands immediately before any aseptic task and before donning gloves. <i>To protect the resident against harmful organisms, including the residents own organisms, entering his or her body.</i>
3	AFTER BODY FLUID EXPOSURE	WHEN? WHY?	Clean your hands immediately after an exposure risk to body fluids and after glove removal. <i>To protect yourself and the care environment from harmful organisms.</i>
4	AFTER RESIDENT CONTACT	WHEN? WHY?	Clean your hands after touching a resident and his or her immediate surroundings, when leaving. <i>To protect yourself and the care environment from harmful organisms.</i>
5	AFTER CONTACT WITH RESIDENT SURROUNDINGS	WHEN? WHY?	Clean your hands after touching any object or furniture in the resident's immediate surroundings, when leaving – even without touching the resident. <i>To protect yourself and the care environment from harmful organisms.</i>

Figure A1.1 The 5 moments of hand hygiene (Hand Hygiene Australia)



Based on the 'My 5 moments for Hand Hygiene', URL: <http://www.who.int/gpsc/5may/background/5moments/en/index.html> © World Health Organization 2009. All rights reserved.

1.1.1 Handwashing


Figure A1.1.1 WHO 'How to handwash?' poster

[Hand Hygiene Australia](http://www.hha.org.au/AboutHandHygiene.aspx) (<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



Wet hands with water;



Apply enough soap to cover all hand surfaces;



Rub hands palm to palm;



Right palm over left dorsum with interlaced fingers and vice versa;



Palm to palm with fingers interlaced;



Backs of fingers to opposing palms with fingers interlocked;



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



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



Rinse hands with water;



Dry hands thoroughly with a single use towel;



Use towel to turn off faucet;



Your hands are now safe.



World Health Organization

Patient Safety

A World Alliance for Safer Health Care

SAVE LIVES

Clean Your Hands


1.1.2 Handwashing

Figure A1.1.2 WHO 'How to handrub?' poster

[Hand Hygiene Australia](http://www.hha.org.au/abouthandhygiene.aspx) (<http://www.hha.org.au/abouthandhygiene.aspx>)

How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

 Duration of the entire procedure: 20-30 seconds



[to section 5.1 Inf. Control](#)

1.2 Respiratory hygiene information

Respiratory hygiene and cough etiquette is one element of standard precautions. Covering sneezes and coughs can minimise or prevent infected persons from dispersing respiratory secretions into the air.

Large droplets are believed to be the primary mode of transmission for influenza viruses and these occur when infected individuals cough or sneeze. The droplets do not remain suspended in the air and generally travel short distances (up to 1 metre).

Hands should be washed with soap and water or alcohol hand rub after coughing, sneezing, using tissues, or after contact with respiratory secretions or objects contaminated by these secretions. It is important to keep contaminated hands away from the mucous membranes of the eyes and nose.

Respiratory hygiene education should be extended to staff and residents and supported with appropriate reminders such as posters.

Some residents may need assistance with containment of respiratory secretions. Those who are immobile will need a receptacle (e.g. plastic bag) readily at hand for the immediate disposal of used tissues and should be offered hand hygiene facilities such as alcohol hand rub at the bedside.

1.3 Personal protective equipment (PPE)

PPE is an important element of standard precautions. Explain to residents that PPE is used for everybody's safety!

PPE for resident care staff during an influenza outbreak includes the following:

- Gown,
- Gloves,
- Single-use surgical facemask with or without face shield,
- Eye protection (if there is potential for mucous membranes to come into contact with body fluids, for example a coughing person).

Gloves are single-use items. Many gloves are made of latex. If you or the resident you are caring for, have a sensitivity or allergy to latex, inform your manager and ensure you always use an alternative glove type.

It is important to follow the *appropriate sequence* and procedure for putting on (donning) and removing (doffing) PPE. These are outlined in the diagrams in the following tables (Table A1.3.1 and Table A1.3.2).

Another *important* sequence is the removal of PPE before leaving the resident-care area, i.e. at the door, and to place the PPE in an appropriate waste receptacle.

The use of PPE alone is not enough— YOU MUST perform hand hygiene before putting on and after removing the protective items.

[to section 5.1 Inf. Control](#)

Figure A1.3 Respiratory hygiene poster

Cough Etiquette



- 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.

[to section 5.1 Inf. Control](#)

1.3.1 Personal Protection Equipment: Instructions for putting on (donning) PPE

Table A1.3.1 Instructions for donning PPE.

Source: Australian guidelines prevention and control infection healthcare 2010

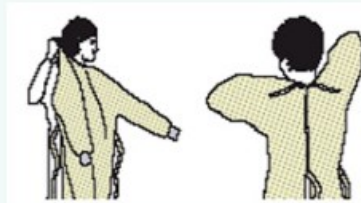
Adapted from <http://www.cdc.gov/hicpac/2007IP/2007isolationPrecautions.html>

Note. Perform hand hygiene before donning ppe.

SEQUENCE FOR PUTTING ON PPE

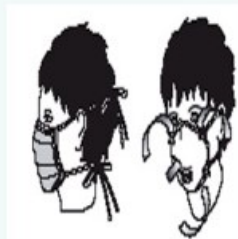
GOWN

- › 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



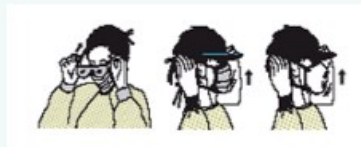
MASK

- › Secure ties or elastic bands at middle of head and neck



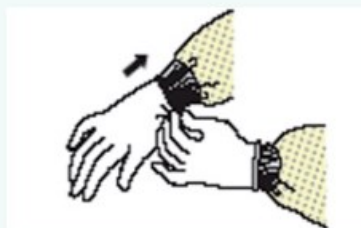
PROTECTIVE EYEWEAR OR FACE SHIELD

- › Place over face and eyes and adjust to fit



GLOVES

- › Extend to cover wrist of isolation gown







1.3.2 Personal Protection Equipment: Instructions for removing (doffing) PPE

Table A1.3.2 Instructions for doffing PPE.

Source: Australian guidelines prevention and control infection healthcare 2010

Adapted from <http://www.cdc.gov/hicpac/2007IP/2007isolationPrecautions.html>

SEQUENCE FOR REMOVING PPE	REMOVE PPE AT DOORWAY OR IN ANTEROOM
<p>GLOVES</p> <ul style="list-style-type: none">> Outside of gloves is contaminated!> Grasp outside of glove with opposite gloved hand; peel off> Hold removed glove in gloved hand> Slide fingers of ungloved hand under remaining glove at wrist> Peel glove off over first glove> Discard gloves in waste container	
<p>PERFORM HAND HYGIENE</p>	
<p>PROTECTIVE EYEWEAR OR FACE SHIELD</p> <ul style="list-style-type: none">> 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	
<p>GOWN</p> <ul style="list-style-type: none">> 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	
<p>MASK*</p> <ul style="list-style-type: none">> 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 2 Environmental cleaning

1. Cleaning frequencies to Section 5.2

The suggested minimum cleaning frequencies for many items are specified in the **Minimum Cleaning Frequency** table in the *Australian Guidelines for the Prevention and Control of Infection in Healthcare* (p.159, B 5.1).²

As a guide, the risk profiles of most RCFs during an influenza outbreak would be similar to general hospital wards.

2. Environmental cleaning

Influenza virus is inactivated by chlorine or by 70% alcohol, so cleaning of environmental surfaces with a neutral detergent followed by is recommended during an outbreak.

According to the Australian-guidelines-prevention-and-control-infection-healthcare-2010 -

“In acute-care areas where the presence of infectious agents requiring transmission-based precautions is suspected or known, surfaces should be physically cleaned with a detergent solution. A TGA-registered hospital-grade disinfectant should then be used (e.g. 2-step clean or 2-in-1 clean) as outlined in [Section B1.4.2](#)). In office-based practice and non-acute-care areas (e.g. long-term care facilities), the risk of contamination, mode of transmission and risk to others should be used to determine whether disinfectants are required.”

Step 1: Cleaning

- Use warm water with a neutral detergent. Refer to the product material Safety Data Sheet and product labels for additional information.
- Rinse and dry.

Note: Some *chlorine/detergent* products with 1000 ppm sodium hypochlorite can be used as a one-step cleaning/disinfection process.

Step 2: Disinfect

- A general recommendation is to use either a neutral detergent followed by 1000ppm sodium hypochlorite, or
- A one-step product with 1000ppm sodium hypochlorite (more practical).
- Disinfection is an additional step to cleaning and does not replace cleaning.
- Use either chlorine disinfectant or alternatively, alcohol.

Disinfect all horizontal surfaces plus/and including the following:

- | | |
|------------------|-------------------|
| – Bedside table | – Toilet flushers |
| – Over bed table | – Taps |
| – Chairs | – Handrails |
| – Commodes | – Basins |
| – Doorknobs | – Walking frames |

Note: Floors require cleaning with warm water and neutral detergent. Clothes and bed linen can be laundered as usual.

Step 3a: Chlorine solutions

- If using chlorine solution, leave on for 10 minutes then rinse off with hot or cold water and dry.

- **Preparing chlorine solutions at concentrations required for disinfection**
 - Chlorine solutions must be freshly made up and used within 24 hours, as chlorine deteriorates over time.
 - A general recommendation for the use of a sodium hypochlorite solution is a concentration of 1000ppm. At this strength, in a one-step product, it is not necessary to rinse off.
 - Follow the manufacturer's instructions for use of this product.

Important safety notes when using chlorine as disinfectant:

- Follow safety and handling instructions on all chlorine containers.
- It is safer to add chlorine to the water - do not add water to chlorine.
- Always use cold or warm (tepid) water to make up chlorine solutions.
- Use gloves when preparing and handling chlorine solutions.
- Use chlorine carefully as it may irritate the skin, nose and lungs and it bleaches fabrics.
- Do not dispense chlorine solutions from a spray bottle.
- Chlorine is corrosive to metals. Rinse off.
- Use in well ventilated areas.
- Do not mix with strong acids to avoid release of chlorine gas.

Step 3b: Alcohol disinfectant

- Use on surfaces not suitable for chlorine disinfectants.
- Do not dilute. Do not rinse off.
- Not particularly practical for large areas.
- Flammable, toxic, avoid inhalation, use in well ventilated area, keep away from heat sources, flames, electrical equipment and hot surfaces.

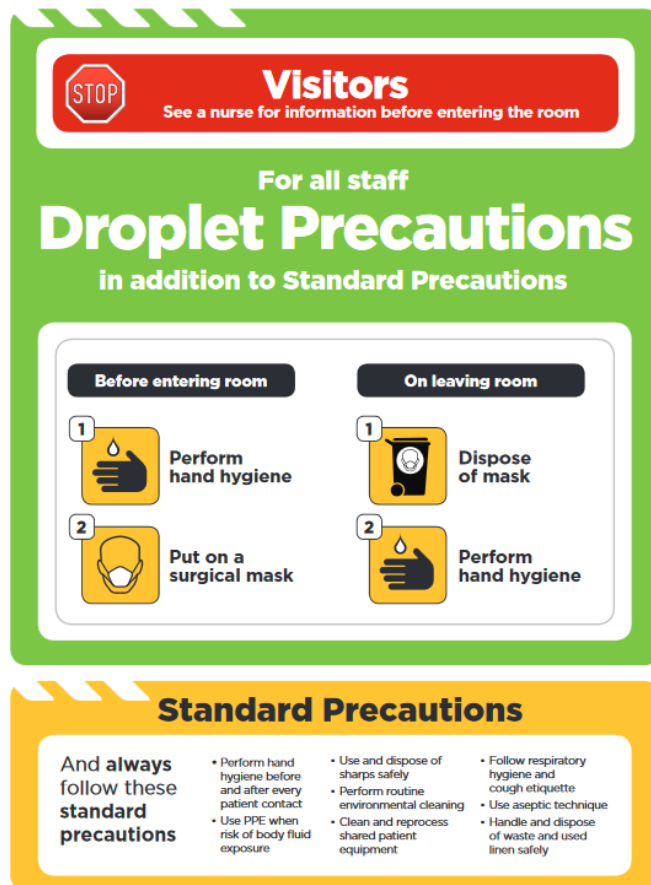
[to Section 5.2](#)

Appendix 3 Signage for use in an influenza outbreak

Although prepared for health-care facilities, many posters produced by the Australian Commission for Safety and Quality in Healthcare (ACSQH) are applicable to outbreak situations in RCFs.

In addition to the posters in Figures A3.2 & A3.3, please view the range of posters in the [National Infection Control Guidelines on the Australian Commission for Safety and Quality in Healthcare website](http://www.safetyandquality.gov.au/our-work/healthcare-associated-infection/national-infection-control-guidelines/) (<http://www.safetyandquality.gov.au/our-work/healthcare-associated-infection/national-infection-control-guidelines/>) under Tools and Resources to Implement the Guidelines: **Standardised Infection Control and Prevention Signs**. An example poster for droplet precautions using symbols is below; others use photographic images.

Figure A3.1 Infection Control Poster outlining Droplet Airborne and Contact Precautions. ACSQH. Note. This may be a good substitute for Fig. A3.3.



AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE

Appendix 3 (next pages)

Figure A3.2 Visitor sign, Figure A3.3 Droplet Sign for use in an influenza outbreak



Attention all visitors

A number of people have influenza-like illness in this facility at present. We are trying to prevent this illness from spreading.

Visitors are advised that there is a risk of acquiring influenza-like illness by visiting this facility at this time.

We ask you not to enter this facility if you currently have symptoms of an influenza-like illness (fever, sore throat, cough, muscle and joint pains, tiredness or exhaustion), or have recently been ill, or have been in contact with someone who is ill.

Please follow the recommended infection control precautions on the signs when visiting.

Thank you for your cooperation.



Droplet precautions

Put on a SINGLE-USE FACE MASK
before entering this room!

Please follow standard precautions at all times:

- **Wash** your **hands** thoroughly
- **Wear gloves** when touching body fluids or substances and contaminated items or surfaces
- **Wear a gown** or apron during care activities where your clothing may come into contact with body fluids or substances

Thank you for your cooperation.

Appendix 4 Resident transfer advice form

To: _____

Please be advised that _____
is being transferred from a facility where there is a:

Suspected influenza outbreak

Confirmed influenza outbreak

Please ensure that appropriate infection control precautions are taken upon receipt of this resident.

At the time of transfer, this resident was:

Confirmed with influenza

Suspected of influenza

Had no symptoms of influenza

This resident was vaccinated with the current influenza vaccine on __/__/____.

This resident has NOT been vaccinated with the current influenza vaccine due to:

Allergy

Immunosuppression/medication

No consent

Other

This Resident is taking the antiviral medication _____

Start date __/__/____ **Dose of medication** _____

Resident details:

Given name Surname _____ / / ____
Date of birth

Date:

Name of contact person:

Name of facility:

Phone number:

Appendix 5 Pre-season letter for residential care facilities

Dear Director

RE: Influenza outbreaks in residential care facilities

Winter is fast approaching and brings with it increased incidence of viral respiratory illnesses in the community. Influenza activity has been steadily increasing in [INSERT JURISDICTION] and the number of cases is likely to continue to rise as we move further into the influenza season. As you are aware, residential care facilities are particularly susceptible to outbreaks of influenza.

An influenza management plan for your facility helps to ensure you are prepared for an outbreak, should it occur. In preparation for the influenza season we recommend you review your existing plan or develop a management plan if you do not have one.

Influenza is a nationally notifiable disease. It is important that you inform us of outbreaks of suspected or confirmed influenza-like illnesses as soon as possible so that we can assist in outbreak management. Please notify [INSERT NAME PUBLIC HEALTH AUTHORITY] if you have three or more people (residents/staff) with influenza-like illness in a three-day time period.

Immunisation remains the single most effective action in preventing the spread of influenza and should be promoted for all staff and residents. Immunising staff will minimise the risk of illness in staff and absenteeism, and it will also reduce the risk of transmission of influenza virus to residents who can be considered high risk individuals. In the event of an outbreak, strengthening infection control practices and providing appropriate information for visitors will limit the spread of disease.

For advice on managing influenza outbreaks, please refer to the following documents available from the Commonwealth Department of Health website (www.health.gov.au):

1. [Influ-Info Influenza Kit for Aged Care](https://agedcare.health.gov.au/publications-articles/resources-learning-training/influ-info-influenza-kit-for-aged-care):

(<https://agedcare.health.gov.au/publications-articles/resources-learning-training/influ-info-influenza-kit-for-aged-care>).

2. [A Practical Guide to assist in the Prevention and Management of Influenza Outbreaks in Residential Care Facilities in Australia 2016](http://health.gov.au/internet/main/publishing.nsf/Content/cdna-flu-guidelines.htm).

(<http://health.gov.au/internet/main/publishing.nsf/Content/cdna-flu-guidelines.htm>).

If you require advice about specific aspects of outbreak management for your facility, please contact << PUBLIC HEALTH AUTHORITY>>.

Yours sincerely

Appendix 6 Testing for influenza fact sheet

[to Section 4.3](#)

Why test for influenza viruses during flu season?

- It is important to identify the pathogen causing illness to determine whether there is an outbreak of influenza in a facility, as many respiratory illnesses have similar signs.
- Confirmation of influenza helps clinicians make appropriate clinical decisions about treatment of those who are sick, and reduces inappropriate use of antimicrobials.
- Knowing the infectious agent helps your public health authority advise and assist you in managing the outbreak, control the spread of the illness, and prevent further cases.
- Specialised testing provides important information on the types of influenza viruses circulating in the community, and contributes to assessing how effective current vaccines are and in developing new vaccines.

When should you test and who should be tested?

- When an outbreak of influenza-like illness (ILI) occurs, that is, if three or more residents or staff develop symptoms of ILI during the same 3-day time period.

If a resident has symptoms of an influenza-like illness (ILI) including:

- Sudden onset

AND at least one of the following

- Cough, or other respiratory symptoms such as stuffy or runny nose,
- Sore throat,
- Shortness of breath,

AND at least one of the following

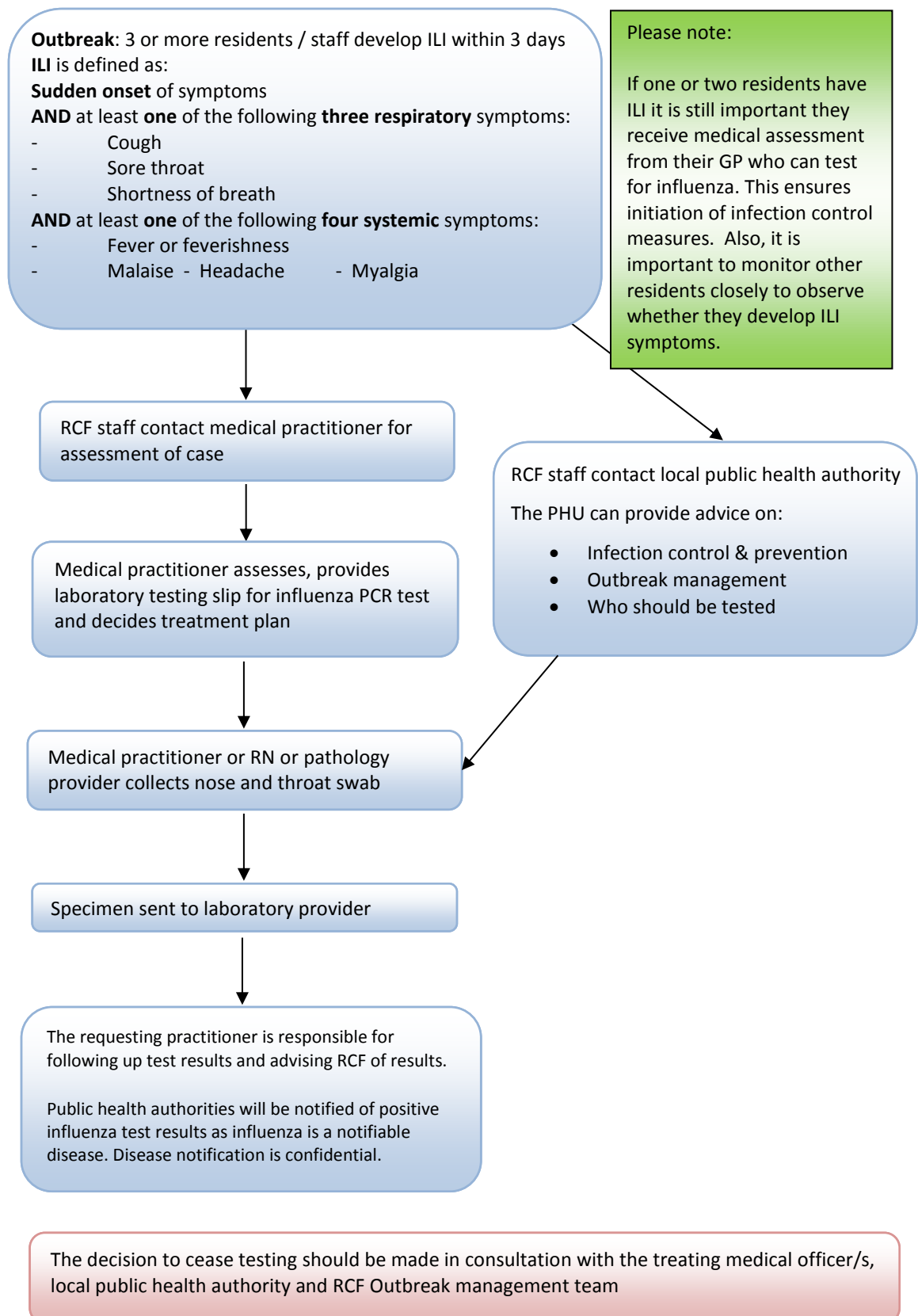
- Fever,
- General malaise /Fatigue,
- Muscle soreness,
- Headache.
- The resident's GP can assess the ILI and request a test for influenza and other pathogens.
- Testing should be performed as soon as possible after the onset of ILI symptoms.
- During an outbreak, several people with ILI should be tested (usually 4-6 people with ILI, up to a maximum of 10).
- Subsequent testing of other people with ILI is at the discretion of the treating clinician or on advice of the public health authority.

What test is preferred to diagnose flu?

- The preferred test is a reverse transcription Nucleic Acid Amplification Test (NAAT or NAT). This is also known as a Polymerase Chain Reaction (PCR) test.
- This test is preferred because:
 - It is the most sensitive (best able to correctly identify patients who have influenza).
 - It is the most specific (best able to correctly identify people who don't have influenza).
 - It is relatively rapid.
 - It enables us to differentiate the influenza virus subtypes (Flu A and Flu B), by a second test on the same specimen.

Appendix 7 Flow chart for initial outbreak response

What to do when a suspected outbreak of influenza-like illness (ILI) is identified (3 or more residents / staff develop ILI in the same 3 days)



Appendix 8 Swab collection procedure

1. Before performing swab

Obtain required materials:

- Personal protective equipment (PPE) for the health care worker taking the swab, including gown, gloves, eye protection (goggles or face shield), and surgical mask.
- One dry, sterile, flocked swab.
- One viral culture swab with viral culture medium.

IMPORTANT NOTES:

- Contact your laboratory provider for current local advice about swabs.
- Swabs should only be collected from residents or staff with acute symptoms (onset within the preceding 3 days (72 hours)).
- Do not use bacterial swabs for specimen collection. If in doubt, check!

2. Performing the swabs

Preparation:

1. Perform hand hygiene.
2. Don PPE in the order of gown, surgical mask, eye protection, and gloves.
3. Explain the procedure to the patient and obtain consent.
4. Place patient standing or sitting with head tilted at 70°, supported against a wall.

Deep nasal swab procedure: (refer to figure 1)

1. Stand at the side of the patient's head and place your non-dominant hand on the patient's forehead with your thumb at the tip of the nose.
2. With the other hand, insert the flocked end of a dry, sterile swab horizontally into the patient's nostril, approx. 2-3 cm (gently pushing the swab directly back rather than up).
3. Place lateral pressure on the swab to collect cells from the midline nasal septum.
4. Rotate the swab twice (2 x 360 degree turns) against the turbinate in the nostril to ensure the swab contains epithelial cells (not mucus) from the nostril.
5. Withdraw the swab from the nostril. Place the swab back in its labelled tube or bottle.

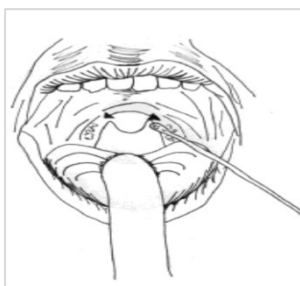
Figure 1



Throat swab procedure: (refer to figure 2)

1. Stand at the side of the patient's head and ensure their head is resting against a wall or supporting surface.
2. Place your non-dominant hand on the patient's forehead.
3. Ask the patient to open his/her mouth widely and say "aaah".
4. Use a wooden spatula to press the tongue downward to the floor of the mouth. This will avoid contamination of the swab with saliva.
5. Using the viral culture swab, insert the swab into the mouth, avoiding any saliva.
6. Place lateral pressure on the swab to collect cells from the tonsillar fossa at the side of the pharynx.
7. Rotate the swab twice (2 x 360 degree turns) against the tonsillar fossa to ensure the swab contains epithelial cells (not mucus).
8. Remove the swab, and place directly into its labelled tube or bottle.

Figure 2



IMPORTANT NOTES

- Choose an area for the procedure where the patient can rest their head against a wall or on a high-backed chair with room for you to stand beside (not in front of) the patient.
- Ensure the area is well lit, with hand washing and infectious waste disposal facilities.
- Remember to **WASH AND DRY HANDS** before and after the procedure!
- Gloves, respiratory protection and eye protection **MUST** be worn when collecting nose and throat swabs.
- Masks should **NOT** be touched during wear and should **NOT** be worn around the neck at any time. When removed, handle the mask by the ties of the mask only.

3. After performing the swab


Labelling and storage of specimen:


1. Label the tube or bottle containing the swabs with the patient's full name, date of birth, specimen type and date of collection. The accompanying request form should include the RCF facility name.
2. Remove PPE safely (remove gloves, perform hand hygiene, remove goggles or face shield, gown and mask and perform hand hygiene again).
3. Specimens should be **sent on the day of collection**, or at worst, the following day. Refrigerate the specimen until it is sent to the laboratory (do NOT freeze the specimen). Specimens should be packaged in a small insulated bag/box (with ice bricks) for transport to the pathology laboratory.

IMPORTANT NOTE: Dispose of gloves, gowns and masks in an infectious waste bag.

Appendix 9 Outbreak preparedness checklist - before an outbreak occurs

Table A9.1 Outbreak planning guide

#	<i>Planning actions</i>	
1.	Do you have an influenza/respiratory infection outbreak plan? *Make sure it covers all the areas identified below	
2.	Have you updated the RCF influenza/respiratory infection outbreak plan this year?	
3.	Have the relevant health care providers/organisations in the community (e.g. associated GPs, local public health authority, acute care hospitals) been involved in the planning process?	
4.	Does the plan contain an agreement between your RCF and associated GPs and medical services to provide medical care during weekends and public holidays during outbreaks?	
5.	Are all RCF staff aware of the plan and their roles and responsibilities?	
<i>Vaccination actions</i>		
6.	Does your RCF achieve a high (>90%) rate of annual vaccination of both staff and residents?	
7.	Does your RCF have an up-to-date (at mid-April) consolidated line listing of all residents' influenza and pneumococcal vaccination status?	
8.	Does your RCF have an up-to-date (at mid-April) consolidated line listing of all staff members' influenza vaccination status?	
<i>Outbreak recognition actions</i>		
9.	Does your RCF routinely <i>assess</i> residents for influenza-like illness from April to October?	
10.	Does your RCF <i>encourage</i> staff to report influenza-like illness symptoms from April to October?	
11.	Does a process exist to notify the facility manager, and outbreak coordinator (infection control practitioner) and public health unit as soon as practicable and within 24 hours of when an outbreak is suspected?	
<i>Antiviral actions</i>		
12.	Have you consulted with visiting GPs to develop the antiviral component of the plan? Have non-compliance options been considered?	
13.	Are mechanisms for prescribing antivirals for treatment and prophylaxis in a timely manner identified?	
14.	Have prescriptions / standing orders (if applicable) for use of antiviral medications in an influenza outbreak been considered, and prepared in consultation with visiting GPs?	
<i>Staffing actions</i>		
15.	Do you have a staffing contingency plan in case 20% to 30% of staff fall ill and are excluded for 5 to 6 days?	
16.	Have you developed a plan for cohorting staff in an outbreak (well unvaccinated staff only working in areas with no resident cases)?	
17.	Have you developed plans to support staff during an outbreak, such as through provision of antiviral treatment or prophylaxis?	

#	Planning actions	
Communication actions		
18	Do you have a contact list for the local public health authority and other partners?	
19	Do you have a plan for communicating with staff, residents, volunteers and family members during an outbreak?	
20	Have key personnel been designated to manage the needs of the media e.g. by preparing draft media releases?	
Resident management actions		
21	Have you identified residents who could be cared for in other settings if necessary (e.g. family care, transfers to hospitals or other residential care facilities)?	
22	Have you considered the need for restriction of movement, and, access to group/communal living areas, as well as external transfers?	
Visitor actions		
23	Do you have a contact list for regular visitors including residents' families, allied health, and service providers such as hairdressers?	
24	Do you have a plan to discourage visitors with ILI from entering the facility during an outbreak, as well as general discouragement of well visitors to reduce risk (e.g. security, signage, restricted access)?	
25	Have RCF personnel been designated to control and respond to issues that arise due to visitors?	
Training		
26	Does your outbreak plan include appropriate training for staff?	
27	Do you provide outbreak education material at staff orientation to raise staff awareness?	
Cleaning		
28	Does the plan identify who is responsible for overseeing increased frequency of cleaning, liaison with contractors or hiring extra cleaners as necessary?	
29	Does the plan include arrangements for increased frequency of emptying bins?	

Appendix 10 Outbreak Management Team tasks during an influenza outbreak

Outbreak Management Team Tasks during an influenza outbreak

Ideally, an RCF Outbreak Management Team (OMT) would comprise a chair, (facility director, nursing/medical director), secretary, outbreak coordinator (registered nurse), media spokesperson (facility director / manager), visiting general practitioner/s, and possibly PHU representative/s (one with infection control expertise).

In reality, a small number of people often perform multiple tasks

Important tasks to be undertaken by, or appropriately delegated from, the RCF OMT can be categorised into administrative, PHU liaison, infection control, vaccination, antiviral prophylaxis and communication areas.

Administration:

1. Decide on and organise ongoing OMT meetings and location.
2. Arrange and undertake a debrief at the conclusion of the outbreak.

Public health authority liaison by RCF:

1. Update the line list daily and communicate this to the local PHU.
2. Notify the PHU immediately by phone of hospitalisations or deaths in residents or staff.
3. Liaise daily with the PHU to discuss results of testing, and for advice on infection control measures, as needed.
4. Ensure that telephone contact numbers for the local PHU (including out-of-hours) are available to facility staff.

Infection control within RCF:

1. Ensure RCF staff have adequate training and equipment for infection control measures.
2. Manage resident movement within the RCF, including isolation and cohorting, restrict group activities for residents, and defer transfers out, and new admissions into, the RCF.
3. Review the vaccination status of staff and residents and recommend/offer vaccination to those who are unimmunised.
4. Confirm the implementation of the RCF exclusion policy for staff who refuse vaccination or antiviral medications.
5. Review and implement contingency plans for staffing.

Communication:

1. Prepare and implement a communication plan, including a draft media release.
2. Confirm the wording and placement of signs.
3. Update staff regularly on outbreak management and control measures and progress.
4. Communicate, as needed, with RCF GPs on individual resident results (where testing was requested by the PHU) and the outbreak in general.
5. Review and confirm information for local hospitals and community health workers who are required to receive information about the outbreak.
6. Prepare internal communications for resident, family and staff groups.

7. Review and confirm any additional persons/institutions that require notification of the outbreak.
8. Determine whether education sessions are required for staff and confirm who will arrange and conduct them.

In a confirmed influenza outbreak, the RCF OMT may have additional roles in the following areas.

Vaccination:


1. In consultation and with advice from appropriate local medical practitioners, determine if influenza vaccination clinics are required for unvaccinated residents or unvaccinated staff and if needed, how they will be arranged. PHUs may be able to assist in some circumstances.


Antiviral medication for treatment or prophylaxis:


1. In consultation with and advice from their GPs, arrange antiviral medications for treatment of ill residents and staff, as appropriate.
2. When recommended by a local PHU, consult with GPs of residents and arrange antiviral prophylaxis, as prescribed by GPs, for (preferably) all asymptomatic residents and unvaccinated staff.

Appendix 11 RCF Outbreak Management

Table A11.1 RCF Outbreak Management task checklist

<i>Outbreak management plan area</i>	<i>Task</i>	
Do we have an outbreak? “3 or more residents/staff ill with Influenza-like illness within 3 days”	If yes: Activate your Influenza Management Plan by following the steps listed below:	
	Inform most senior Facility management staff on duty.	
Notifications Inform staff, residents, public health authorities, doctors of ill residents, and visitors	Access Influenza outbreak stores.	
	Inform all staff of a potential outbreak and advise of increased hygiene measures.	
	Inform residents of a possible outbreak of ILI; provide information, including symptoms and hygiene measures.	
	Notify your local public health authority (PHU). Email (preferred) or fax a list of current unwell residents/staff to your local PHU (update daily). Ensure onset-of-illness dates are recorded for each ill resident. Notify PHU by phone within 24 hours of deaths or hospitalisations (and record these on the line list).	
	Advise resident’s GPs of the possible outbreak. → Unwell residents should be reviewed by their GPs.	
Infection control Implement additional infection control measures	Inform visitors by notices in RCF; provide information on influenza, discourage non-essential visits.	
	Isolate/cohort ill residents in one area; separate infected from uninfected residents, where possible.	
	Restrict infected (ill) residents to their room. → Ensure signage is posted outside ill residents rooms.	
	Ensure adequate supplies → Ensure supplies of liquid soap, paper towels & alcohol-based gel or hand rub. → Ensure adequate supplies of personal protective equipment (PPE) – masks, gloves, gowns.	

Outbreak management plan area	Task	
Infection Control cont. Implement additional infection control measures	Implement enhanced infection and prevention controls → Increase hygiene measures for all staff – standard hygiene plus additional measures. → Instruct cleaning staff regarding extra cleaning. Restrict visitors: → Place signs on RCF entrance door to restrict visitors to a minimum. → Ensure those with weakened immune systems are discouraged from visiting the facility, where practicable. [Particularly young children & people with compromised immune systems, e.g. people with HIV, major illness and those taking immunosuppressant drugs]. → Restrict the movement of visitors within the facility. → Ensure visitors practice hand hygiene. → Exclude visitors with influenza-like illness for at least 5 days after last symptom.	
Confirm the cause of the outbreak i.e. arrange collection of appropriate laboratory samples	Through residents' GPs, arrange nose and throat swabs for respiratory PCR testing from four to six cases with acute symptoms (ideally within 48 hours of onset of symptoms). Liaise with your local public health authority about sending the swabs to the laboratory, if needed. Record on the line list residents who have swabs taken, update with results when available and email to your local public health authority.	
Manage staff	Only vaccinated staff should care for residents with respiratory illness, where possible. Exclude infected staff from work for 5 days from onset of illness, or 24 hrs after resolution of fever. Unvaccinated staff should be excluded from work unless they are asymptomatic and wearing a mask, or asymptomatic and taking appropriate antiviral prophylaxis. <i>(Unvaccinated staff are recommended to only work if asymptomatic; AND taking prophylaxis OR using PPE.)</i>	
Vaccination	Offer influenza vaccinations for all well, unvaccinated staff and residents, if appropriate.	

<i>Outbreak management plan area</i>	<i>Task</i>	
Manage resident movement	Suspend transfers out of the facility, if possible. → If transfer is necessary, send with a notice to facility.	
	Do not accept new residents unless no alternative is available.	
Antiviral medication	If influenza is confirmed , take advice from their GP re prescription of antiviral treatment for ill residents. Antiviral prophylaxis may also be recommended for residents and unvaccinated staff. Discuss with PHU.	
End of outbreak	Outbreak declared over - if no new cases of ILI occur in the 8 days from the onset of symptoms of the last infected <i>resident</i> . This is a great time to revise and update your Influenza Outbreak Management Plan!	

Appendix 12 Infection control checklist for outbreaks in RCFs

NB. This checklist is designed for review of infection control procedures by the RCF outbreak coordinator and to prompt other actions to optimise infection control.

Name of facility:

Date: __/__/____

Contact Details/Contact person:

Table A12.1 Infection control check list

to [6.2.7 Infection control in outbreak](#)

Y/N	Questions / Prompt	Comments
Facility Information:		
	Total number of residents at the facility (separate into units/wings, if applicable).	
	Total number of staff at the facility.	
	Date of onset of first illness.	
	Number/locations of ill residents.	
	Number/work location of ill staff.	
	Dementia unit: <ul style="list-style-type: none"> <input type="checkbox"/> Is there a dementia unit in the facility? <input type="checkbox"/> Does the outbreak involve dementia patients? <input type="checkbox"/> Can the unit be isolated? 	
	Restriction of non-essential visitors: <ul style="list-style-type: none"> <input type="checkbox"/> For example, visiting craft teachers, hairdressers. 	
	Restrict transfer of residents to other facilities: <ul style="list-style-type: none"> <input type="checkbox"/> Advice: The facility should to notify hospital and ambulance service of the outbreak, if residents require hospitalisation <input type="checkbox"/> Preferably, do not be admit people for respite care until the outbreak is over (or discuss with client, family re risk). 	
	Restrict movement of residents: <ul style="list-style-type: none"> <input type="checkbox"/> Suspend communal resident group activities <input type="checkbox"/> If possible, minimise movement of residents within facility. 	
	Notification <ul style="list-style-type: none"> <input type="checkbox"/> Notify State or Territory Public Health Unit re outbreak, hospital transfers, deaths, additional cases. 	
	Signage <ul style="list-style-type: none"> <input type="checkbox"/> Advice: Consider warning signage <ul style="list-style-type: none"> <input type="radio"/> At entry into the facility <input type="radio"/> At entry into ill residents' room <input type="radio"/> Hand hygiene signs Resources <ul style="list-style-type: none"> <input type="checkbox"/> Fact Sheets for visitors/families. 	

Y/N	Questions / Prompt	Comments
Staff:		
	Stress the importance of hand hygiene	
	Advice re exclusion of ill staff: <ul style="list-style-type: none"> <input type="checkbox"/> Extends until 5 days after the onset of acute illness or until 24 hrs after fever symptoms have completely resolved (whichever is shorter). 	
	Restrict movement of staff: <ul style="list-style-type: none"> <input type="checkbox"/> Staff working in the affected unit should not work in other areas of the facility during the outbreak <input type="checkbox"/> If possible, designated vaccinated staff should care for ill residents <input type="checkbox"/> Staff should not work at other facilities during the outbreak. 	
	Agency Staff <ul style="list-style-type: none"> <input type="checkbox"/> Are agency staff employed at the facility? <input type="checkbox"/> Are agency staff also employed at other facilities? <input type="checkbox"/> Recommend that agency staff employed at the affected facility not work at other facilities during the outbreak. 	
	Isolate / Cohort ill residents: <ul style="list-style-type: none"> <input type="checkbox"/> Do ill residents have single rooms with ensembles? <input type="checkbox"/> If no ensuite, can ill residents share a bathroom with other ill residents? <input type="checkbox"/> Advice: Ill residents should be isolated in their rooms until 5 days after the onset of acute illness or until symptoms have completely resolved (whichever is shorter). 	
Hand washing facilities:		
	<ul style="list-style-type: none"> <input type="checkbox"/> Stress importance of hand washing <input type="checkbox"/> Are liquid soap and paper towels available? <input type="checkbox"/> Where are they located? <input type="checkbox"/> Advice: Use of alcohol hand rub <ul style="list-style-type: none"> <input type="checkbox"/> Staff <input type="checkbox"/> <i>Residents</i> – e.g. in dining room; at bedside if practising respiratory hygiene and cognitively able to use handrub <input type="checkbox"/> <i>Visitors</i> – on entry and departure from the facility. 	
Personal Protective Equipment (PPE):		
	<ul style="list-style-type: none"> <input type="checkbox"/> Should be readily accessible; location outside ill residents' rooms <input type="checkbox"/> Dispose of used PPE into yellow infectious waste bags <input type="checkbox"/> Gloves, long sleeve gowns, masks - to be worn by: <ul style="list-style-type: none"> <input type="checkbox"/> Staff or visitors caring for ill residents <input type="checkbox"/> Staff cleaning ill resident's rooms/bathrooms. 	

Y/N	Questions / Prompt	Comments
Cleaning		
	<ul style="list-style-type: none"> ❑ Are cleaners wearing appropriate PPE? ❑ Are they cleaning with correct detergent and water? ❑ Increase frequency of wiping frequently-touched surfaces with detergent and water, e.g. hand rails, door handles, counter tops ❑ Are cleaners moving FROM clean --> TO 'dirty' areas ❑ Segregate equipment used for cleaning ill resident's rooms from other cleaning equipment. 	
Laundry:		
	<ul style="list-style-type: none"> ❑ Is the laundry cleaned on site? ❑ Are laundry staff wearing appropriate PPE? ❑ Are there hand washing facilities in the laundry? ❑ Washing of resident's personal items requires an appropriate detergent and hot water. ❑ <i>NB1.</i> Contaminated linen does not need to be held or transported separately from other laundry. 	
Infectious waste:		
	<ul style="list-style-type: none"> ❑ Where is it stored? 	

Appendix 13 Example line lists for Influenza Outbreaks

Table A13.1 Staff Illness report – example line list

Staff Illness Report and Tracking Form (example)

Update daily and email or FAX each weekday to your local public health authority

FACILITY NAME:									<i>STAFF ILLNESS</i>				DATE Public Health Notified:					
TELEPHONE: AFTER HOURS CONTACT:																		
EMAIL:									FAX:									
FORM COMPLETED BY:																		
FACILITY AREA(S):				DATE:					DATE OUTBREAK DECLARED:					DATE OUTBREAK DECLARED OVER:				
Name of Staff Member (Surname, Initial)	Sex	Date of birth	Cough, New or Worse Y/N	Fever Temp	Sore Throat	Joint Pain or Muscle Ache	Extreme Fatigue	Runny Nose	Other Symptom Specify Sx or NONE for no Other Sx	Date Onset of first Symptom	Date Swab Test Taken	Result Flu A, B RSV etc.	Date of Last Flu Vaccine	Date Antiviral Started	Date of Recovery	Date Last worked at RC	Date Returned to work at Facility	Work at other RCF?
				Y/N	Y/N	Y/N	Y/N	Y/N		DD/MM	DD/MM		MM/YY	DD/MM	DD/MM	DD/MM	DD/MM	DD/MM

RESIDENT illness report and Tracking Form (example) Update daily and email or FAX each weekday to your local public health authority

Table A13.2 Resident Illness report – example line list

FACILITY NAME:				RESIDENT illness				DATE PUBLIC HEALTH NOTIFIED:									
TIME PUBLIC HEALTH NOTIFIED:																	
TELEPHONE: AFTER HOURS CONTACT:																	
FAX:																	
EMAIL:																	
FORM COMPLETED BY:																	
FACILITY AREA(S):				DATE:				DATE OUTBREAK DECLARED:				DATE OUTBREAK DECLARED OVER:					
Name of Resident (Surname, Initial)	Sex	Date of birth	New or Worse Cough Y/N	Fever Y/N	Sore Throat Y/N	Joint Pain or Muscle Ache Y/N	Extreme Fatigue Y/N	Runny Nose Y/N	Other Symptom Specify or put NONE for no other Sx	Date First Onset of Symptom DD/MM/YY	Date Swab Test Taken DD/MM/YY	Result Flu A, B RSV etc.	Date of Last Flu Vaccine MM/YY	Date Antiviral Started DD/MM	Date of Recovery DD/MM	Date of Resident Hospital Admission DD/MM	Resident Date of Death DD/MM

Appendix 14 Example of initial RCF report to a PHU of an influenza outbreak

Note: this is an example of basic information required. *Many PHUs have their own forms.*

Date/time: _____ Public Health Officer: _____

Contact details:

Person notifying outbreak: _____ Position: _____

Telephone number: _____ Email: _____

Name of facility: _____

Address: _____

Facility Manager / Director: _____

Telephone number: _____ Fax number: _____

Email address: _____

Description of facility: _____

Total number of residents: _____ Total number of staff: _____

Age range of residents: _____

Number of units / wings / areas in facility: _____

Floorplan provided: _____ Yes / No

Residents

Name of Unit	Resident No.	Long term	Short, respite	High care	Dementia/locked	Other

RCF Staff

Staff type	No. staff employed by RCF	No. agency staff	No. Casual staff	No. Regular volunteers
Management				
Administration				
Cleaner				
Kitchen				
Carer / Nurse				
Care assistant				
Agency/Agencies				
Other (specify)				

Appendix 15 Contact details for regional public health authorities

Table 15.1 Contact details for jurisdictional public health authorities

State/Territory	Public health unit contact details
ACT	02 6205 2155 CDC Emergency pager (24hrs) (02) 9962 4155 Contact details for the public health offices (http://www.health.act.gov.au/public-information/public-health/communicable-diseases)
NSW	1300 066 055 Contact details for the public health offices in NSW Local Health Districts: (http://www.health.nsw.gov.au/Infectious/Pages/plus.aspx)
NT	08 8922 8044 Monday-to Friday daytime; After hours, 08 8922 8888, ask for CDC doctor-on-call
QLD	13 HEALTH Contact details for public health offices in Queensland (https://www.health.qld.gov.au/system-governance/contact-us/contact/public-health-units/default.asp)
SA	1300 232 272
TAS	1800 671 738 (from within Tasmania), 03 6166 0712 (from mainland states) After hours, follow the prompt “to report an infectious disease”
VIC	1300 651 160
WA	Office hours: Contact details for the public health units in WA: (http://www.healthywa.wa.gov.au/Articles/A_E/Contact-details-for-population-public-health-units) After hours 08 9328 0553

Appendix 16 Antiviral medications & antiviral prophylaxis decision tool

Antiviral medications have a potential role in the management of influenza outbreaks in RCFs, but only as an adjunct to all other control measures such as restriction on movement, infection control precautions, and high vaccination rates.

Recommendations for use of antivirals in outbreak management

The use of antiviral medications for prophylaxis of residents and staff requires forward planning, consultation with, and participation of, visiting GPs. Although the final decision to use antivirals as prophylaxis in an outbreak will be made by the OMT often in consultation with the local public health unit, the residents' GPs are ultimately responsible for prescribing antivirals for individuals. Note: Antiviral medications are generally costly and may not be readily available, especially in bulk quantities, from community pharmacies.

If used, antiviral prophylaxis should be continued for 10 days or until the outbreak is declared over (as determined by the OMT), whichever is longer.

As prophylaxis, antivirals are recommended for ALL asymptomatic residents (regardless of vaccination status) and ALL unvaccinated staff. Incomplete coverage reduces the effectiveness of this intervention, although it is recognised that *complete coverage is difficult* to achieve. **Importantly**, antivirals should be organised within 24 hours for asymptomatic residents (and unvaccinated staff), this should be organised by telephone and confirmed in writing, if desired (i.e. mailing residents' GPs is too slow).

The following considerations may assist the RCF OMT team and the PHU in deciding when to implement oseltamivir prophylaxis in an RCF. No indications are absolute – each outbreak situation is unique, and some factors may carry more or less weight in any particular event. The use of prophylaxis assumes implementation of other measures such as confirmation of the outbreak cause, optimal infection control practise and high vaccination rates in residents.

From the perspective of staff management, prophylaxis has implications for reducing the extent and length of staff illness and absenteeism. Those with shorter illnesses return to work sooner; even an anticipated one-day reduction in illness duration helps decrease issues associated with short staffing. These include rostering regular vaccinated staff on extra shifts and obtaining agency staff prepared to work in an RCF with an outbreak.

The most common side effects associated with oseltamivir are mild to moderate nausea and vomiting, diarrhoea and stomach pain.

Evidence for effectiveness of antiviral use for prophylaxis in RCF

The results of studies on reduced duration of viral shedding when infected persons take oseltamivir vary; and neither temporal nor causal relationships between changes in influenza viral shedding and clinical outcomes have been well established. This is, in part, due to variation in study design.

When antivirals are started soon after developing symptoms, it is more likely that symptoms will be of shorter duration, and viral shedding will decrease rapidly. In the 2009 influenza pandemic, patients shed A(H1N1)pdm09 virus for significantly longer if oseltamivir was delayed for more than 48 hours after onset of symptoms.³² Another 2009 pandemic review of viral shedding showed that oseltamivir treatment commenced during the first three days of illness shortened the duration of viral shedding.³³ However, other observational studies do not concur.³⁴

In a systematic review, the efficacy of oseltamivir for post-exposure prophylaxis (i.e. preventing influenza illness among household and close contacts of a case with laboratory-confirmed influenza) was found to be 81% (95% CI 55–92), with an absolute risk reduction of 7.0% (95% CI 4.8–8.0).³⁵ This is consistent with data from a 2014 Cochrane review, which found prophylaxis reduced the development of symptomatic influenza.³⁶

Two Cochrane reviews of antiviral use for post-exposure prophylaxis found it 58% effective in households, and 68-89% effective in contacts of index cases in preventing secondary infections.^{37, 38} A recent report found good evidence that antivirals reduce the duration of symptoms by more than 12 hours.³⁹

Rationale for antiviral use for prophylaxis

The routine use of antiviral drugs for both treatment and chemoprophylaxis in institutions that house residents at higher risk for influenza complications is recommended by a number of expert bodies:

- In Canada, the Association of Medical Microbiology and Infectious Diseases guidelines list the approach as a strong recommendation (Grade C evidence, observational studies), which should be followed unless a clear and compelling reason for an alternative approach is present.⁴⁰
- In the United States of America, the US CDC and Infectious Disease Society of America guidelines advise the use of antivirals as early as possible, to reduce the spread of virus (level A-11 evidence, good evidence based on non-randomized trial (non-RCT)).⁴¹
- In the United Kingdom, the Academy of Medical Sciences report concluded from meta-analysis of observational studies that deaths in hospitalised patients reduced when neuraminidase inhibitor antivirals were used, supporting the use of antivirals to treat influenza in patients who require hospitalisation.³⁹

Key cohort studies support the approach. In Canada, use of mass prophylaxis with neuraminidase inhibitors was associated with prompt termination of all eight evaluable outbreaks in an influenza season⁴², while a study of eight outbreaks in Michigan over two seasons found that in five outbreaks no further cases were seen after implementation of prophylaxis, and only a small number of cases were observed in the other three outbreaks. In contrast, new cases continued for as long as one month before initiation of prophylaxis.⁴³

While these recommendations are based on observational studies, two randomised controlled trials (RCTs) have directly assessed antiviral prophylaxis in RCFs in an

outbreak setting. A Dutch study found no impact from post exposure prophylaxis and an Australian study provided some support for prophylaxis in both reducing attack rates and the duration of outbreaks.^{44, 45} However, the latter study was underpowered and more studies are required to confirm the findings and guide practice in RCFs.

[To Section 6.3](#) Outbreak Mgt

Table A16 Antiviral prophylaxis in residential care facilities decision tool

Considerations for Prophylaxis		Weaker	Stronger
Current epidemiology in your state or territory	Outbreak:	Few	Multiple
	Hospitalisation:	Few	Frequent
	Deaths:	None	Several
Outbreak characteristics	Attack Rate:	Low	High
	Epi curve:	Flat	Steep
	Morbidity:	Low	High
Outbreak progress	Last case onset:	> 48 hours ago	< 48 hours ago
	Epidemic peak:	> 5 days ago	< 5 days ago
	First case:	> 10 days ago	< 10 days ago
Facility characteristics	Staff vaccination coverage:	Good	Poor
	Room setup:	Single	Shared
	Mixing of residents:	Minimal	Shared communal areas
Clinical resources	Number of GPs:	Large	Small
	GP engagement:	Low	Supportive
	RCF care staff:	Unfamiliar with dosing & precautions	Supportive
Oseltamivir supply	Time to obtain:	> 24 hours	< 24 hours

[To Section 6.3](#) *Outbreak Mgt*

Appendix 17 Letter - use of antivirals for influenza outbreak

Letter for treating doctors regarding use of antivirals for influenza outbreak control, or telephone script guide.

Dear Doctor,

Influenza cases at [INSERT NAME]

I am writing to inform you of [**ONE/SEVERAL**] case/s of influenza at [**INSERT NAME**].

[Delete for confirmed outbreak] It is important to test for influenza in any residents who present with features of an Influenza-like illness (ILI) including:

- Sudden onset of symptoms
- AND at least one of the following four systemic symptoms:
 - Fever or feverishness - Headache
 - Malaise - Myalgia
- AND at least one of the following three respiratory symptoms:
 - Cough - Sore throat - Shortness of breath

The preferred specimen to test for influenza is a deep nasal or throat swab. The appropriate test for influenza is a NAT/PCR test for influenza and other respiratory pathogens. Serological tests are not recommended to diagnose influenza.

Oseltamivir treatment for persons with ILI or confirmed influenza

Antiviral medication should be considered for any symptomatic resident with proven or suspected influenza, to reduce duration of symptoms and severity of illness. Antiviral treatment should be personalised according to the dosage recommendations. Potential adverse reactions and contraindications are described in the product information. The most common side effects are mild to moderate nausea and vomiting, diarrhoea and stomach pain.

- The usual **treatment dose** of oseltamivir for adults >40kg with normal renal function: **75mg twice a day for 5 days**.
- Treatment with oseltamivir should be commenced *within 48 hours of onset* of symptoms.
- Residents with documented impaired renal function should have their dosage of oseltamivir adjusted.

Oseltamivir for prophylaxis of asymptomatic persons exposed to influenza

The [**INSERT NAME Public Health Agency**] **IS/IS NOT** [**DELETE ONE**] recommending immediate *antiviral prophylaxis* for ALL asymptomatic residents (regardless of vaccination status) and ALL unvaccinated staff in this facility.

- The usual **prophylactic dose** of oseltamivir for adults >40kg with normal renal function is **75mg once a day for 10 days**.
- Prophylactic treatment with oseltamivir should be commenced as soon as possible, preferably within 24 hours of potential exposure.
- Those with documented impaired renal function should have their dosage of oseltamivir adjusted.

Immunisation is the single most effective action in preventing the spread of influenza and is recommended for all staff and residents to protect them from influenza and to reduce the risk of transmitting the infection to others.

For more information or advice, please contact **[INSERT NAME AND PHONE]**.

Yours sincerely,

[Signature Block]

Appendix 18 Antiviral dosages

Table A18.1 Dosage summary for neuraminidase inhibitors (NAI) (from Therapeutic Guidelines: Antibiotic Version 15, 2014(44))

Two neuraminidase inhibitors are recommended for use as prophylaxis against influenza outbreaks in RCFs – **oseltamivir** (Tamiflu) an oral preparation, and **zanamivir** (Relenza) an inhalant.

Recommended dosage (adults & adolescents 13 years and older)	Oseltamivir (Tamiflu)¹	Zanamivir (Relenza)
Dosage form	Administered as an oral capsule of 75 mg, or as an oral suspension of 12 mg/ml.	Administered via oral inhaler using diskhaler device (5 mg/blister). (Patients on bronchodilators should administer their bronchodilator before administration of zanamivir).
Prophylaxis	Adult ≥ 40 kg: 75 mg. Child 1 year or older and less than 15 kg: 30 mg; for 15 to 23 kg: 45 mg; and 23 to 40 kg: 60 mg. Dosage is orally, daily for 10 days.	Adult and child 5 years or older 10 mg. Dosage is by inhalation, using the device provided, daily for 10 days.
Treatment	Adult ≥ 40 kg: 75 mg. Child 1 year or older and less than 15 kg: 30 mg; for 15 to 23 kg: 45 mg; and 23 to 40 kg: 60 mg. Dosage orally, 12-hourly for 5 days (can be taken longer depending upon clinical progress of patient and expert advice).	Adult and child 5 years or older 10 mg. Dosage is by inhalation using the device provided, 12-hourly for 5 days, and possibly longer depending upon the clinical progress of patient.

1 Oseltamivir is not recommended for use in children younger than 1 year (due to central nervous system accumulation in animal studies) unless the potential benefits of treatment are considered to outweigh the potential harms—seek expert advice.

Table A18.2 Adjusting oseltamivir dosage in the setting of renal failure (from *Therapeutic Guidelines: Antibiotic Version 15, 2014*)

Renal function ^{2,3}	Dosing regimen for oseltamivir
Dosage adjustment based on Glomerular Filtration Rate	
GFR more than 60 mL/min	normal
GFR 31 to 60 mL/min	30 mg 12-hourly (<i>treatment</i>) or 30 mg 24-hourly (<i>prophylaxis</i>)
GFR 10 to 30 mL/min	30 mg 24-hourly (<i>treatment</i>) or 30 mg 48-hourly (<i>prophylaxis</i>)
GFR less than 10 mL/min	no data; if essential, as for GFR 10 to 30 mL/min
Doses for dialysis	
Haemodialysis	30 mg at the onset of symptoms, then 30 mg after each dialysis session (<i>treatment</i>) or , 30 mg before dialysis, then 30 mg after alternate dialysis sessions (<i>prophylaxis</i>)
Continuous Ambulatory Peritoneal dialysis (CAPD)	30 mg at the onset of symptoms, then repeat dose after 5 days (<i>treatment</i>) or , 30 mg before dialysis, then 30 mg every 7 days (<i>prophylaxis</i>)
Continuous Renal Replacement Therapy (CRRT)	normal

2 Normal' indicates that the standard dosage regimen for the specific indication should be used.

3 For multiple daily doses, percentage dosage adjustments are calculated using the intermittent dose rather than the total daily dose (e.g. if standard dosing for drug X is 500 mg 6-hourly then: 50% at normal dosing interval = 250 mg 6-hourly; 100% 12-hourly = 500 mg 12-hourly).

Appendix 19 Patient information on Tamiflu® (oseltamivir)

What is Tamiflu®?

Tamiflu® (oseltamivir) is an antiviral medication used for the treatment and prevention of influenza.

Tamiflu® attacks the influenza virus and stops it from spreading inside your body.

Who should take Tamiflu®?

People who have influenza may be prescribed Tamiflu® by their GP to reduce the severity or duration of their illness and to reduce their ability to pass the infection on to others. It may also reduce their risk of developing complications from influenza, such as bronchitis, pneumonia and sinusitis.

Sometimes Tamiflu® may be prescribed for people following close contact with a person infected with influenza, to prevent them from developing influenza.

To be effective, Tamiflu® should be commenced as soon as possible within 48 hours of first symptoms or first contact with an infected person. Tamiflu® may not be effective if given after this time.

Tamiflu® has no effect on the common cold or other respiratory infections – as it only works against influenza viruses.

Tamiflu® is only available with a doctor's prescription.

Who should not take Tamiflu®?

Tamiflu® is generally not recommended for those who are pregnant, breastfeeding, or for children less than one year-old.

If you have been prescribed Tamiflu® it is important to let your doctor know if you have any other health concerns, especially kidney disease. It is also important to tell your doctor if you are on any other medications. This may affect whether you can take Tamiflu®, or how you take it.

Do not take Tamiflu® if you are allergic to oseltamivir phosphate or any of the ingredients in Tamiflu®.

How is Tamiflu® taken?

Tamiflu® is available as a capsule or liquid suspension. The dosage varies depending on whether it is being used for prevention or treatment of influenza. Your doctor will prescribe the right dose for you. You should take Tamiflu® exactly as your doctor prescribes.

Tamiflu® should be taken at the same time each day. If you forget a dose, take it as soon as possible. If it is almost time for the next dose, then skip the missed dose and take the next dose when it is due. Do not take a double dose.

It does not matter whether you take Tamiflu® with food, but this may help if Tamiflu® upsets your stomach.

Are there side effects from taking Tamiflu®?

Tamiflu® helps most people with influenza but may cause unwanted side effects in some people.

The most common side effects are mild to moderate nausea and vomiting, diarrhoea and stomach pain. Taking the medication with food may help to reduce or prevent these side effects.

Let your doctor know if you are concerned about any side effects.

Should I still have the influenza vaccination?

Tamiflu® does not take the place of the yearly influenza vaccination. You should discuss having the influenza vaccine with your doctor.

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