Auckland Regional Public Health Service
Rātonga Hauora ā Iwi o Tamaki Makaurau

Influenza advice for residential care facilities and institutions.

Updated October 2018

Contents

This document will be updated regularly. The most up-to-date version will be available on the ARPHS website(http://www.arphs.govt.nz).

1. Summary and key points

Flu is an infectious respiratory illness caused by influenza viruses that infect the nose, throat, and sometimes the lungs. At times influenza can lead to serious complications and even death.

The three key action points to preventing and managing influenza:

1. Vaccinate - if you are eligible then get a free flu vaccine each year.

2. Take preventive measures to prevent spread

3. Have a plan so you know what to do if someone gets sick

There are several types of influenza strains and these all have the same symptoms and signs and spread from person to person in the same way.

Influenza occurs more commonly in winter months and can cause mild to severe illness. Most people who develop influenza will recover at home without needing medical treatment. However, some people are at higher risk of developing complications if they get influenza including children under 5 years of age, pregnant women, people who are very overweight or have chronic health problems and the elderly. Influenza spreads easily from person to person. Residential institutions, ECECs and schools are at higher risk of influenza spread and outbreaks than the rest of the community. This document provides advice for these institutions on influenza prevention and planning for management of cases or outbreaks of influenza.

The key points for residential institutions are:

1. Prevent infection
   - Take steps that will help prevent cases or an outbreak of influenza in your institution.
     - Have routine pneumococcal immunisation on admission to living in the facility
     - Have a strong organized staff influenza immunization policy and yearly campaign
     - Have standing orders early autumn for every resident to have influenza immunisation

2. Prevent spread through good infection control procedures are essential for these institutions.
   - Have routine disinfection of common areas, and frequently touched surfaces or objects
   - Encourage a culture of good hand washing
   - Disseminate information that visitors with a flu-like illness should not visit the facility.

3. Plan ahead
   - Plan in advance for what to do if you have cases or an outbreak of influenza in your institution.
   - If influenza cases occur, prompt action is necessary to prevent infection spread.
     - Residents should be isolated from other people and receive priority medical assessment
     - If a staff member develops a flu-like illness while at work, they should go home immediately. If they meet the criteria for flu like illness (See below) they should stay away from work for 5 days.
     - Contact ARPHS if there are increasing numbers of cases, or if the institution is unable to maintain effective infection control.
     - Consider having preset orders for anti-viral prophylaxis in the face of an influenza outbreak in the facility

2. About influenza

Influenza (the flu) is a very infectious respiratory illness caused byinfluenza viruses. Influenza can occur at any time of the year but is much more common in the winter months.

Further information is available on the influenza pages of the Ministry of Health website here, and on the ARPHS website here

What was the 2018 flu season like?

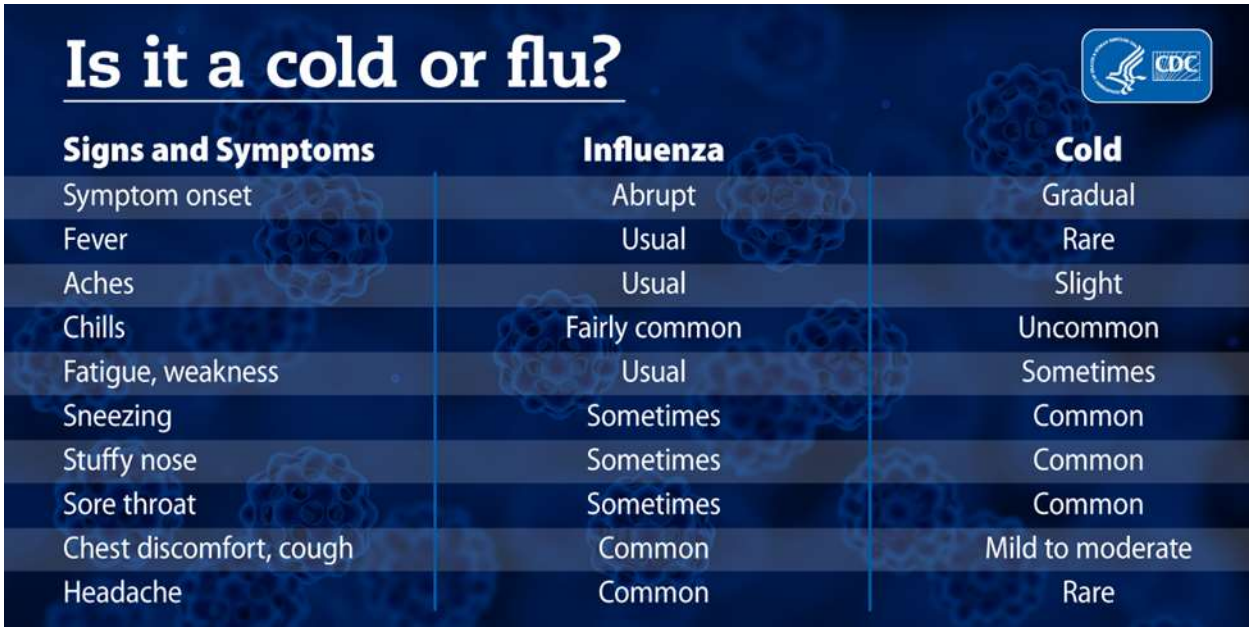
Flu activity has been low for the 2018 flu season. Influenza activity peaked later than normal in September along with hospital activity peaking in before tailing off in early October.

The influenza vaccine appears to have been well matched to the influenza strains that have circulated this year

What are the symptoms and signs of influenza or influenza like illness ?

Flu is different from a cold. Flu usually comes on suddenly. People who have flu often feel some or all of these symptoms:

- fever ≥38°C (Note: not all elderly cases mount a fever response to influenza)
- sore throat
- cough
- headache
- muscle aches
- chills
- runny or stuffy nose
- extreme tiredness
- nausea, vomiting and diarrhoea can occur (more common in children).



Source: CDC

How does influenza spread?

All types of influenza are spread in the same way, from person to person.

Tiny droplets made when people with flu cough, sneeze or talk are released into the air and can land in the mouths or noses of people who are nearby. These droplets do not remain in the air long and generally only affect people within two metres. Less often, a person might get flu by touching a surface or object that has flu virus on it and then touching their own mouth, nose or possibly their eyes.

How long are people with influenza infectious for ?

As a rule healthy children and adults may be able to infect others beginning a day before symptoms develop and up to 5 to 7 days after becoming sick, however they are most likely to pass it on to others in the first 3-4 days after their illness begins.

Some people, especially young children and people with weakened immune systems, might be able to infect others with flu viruses for an even longer time.

Onset of Symptoms

The time from when a person is exposed and infected with flu to when symptoms begin is about 2 days, but can range from about 1 to 4 days.

How severe is the illness?

Most people who develop influenza will have mild to moderate symptoms and will recover at home without needing medical treatment.

Some people are at higher risk of developing serious complications if they get influenza.

They include:

- Young children under 5 years of age, especially Maori and Pacific children
- Older people over 65 years of age
- Pregnant women or women who have recently been pregnant
- People who are very overweight
- People with any pre-exiting diabetes , heart, lung, cancer, kidney or liver disease.
- People who have other conditions or medications that weaken the immune system (e .g. autoimmune disease, HIV, transplant recipients)

What are the complications?

Complications of flu can include lung infections (pneumonia), ear infections, sinus infections and worsening of other conditions they might have such as heart problems, asthma, chronic bronchitis or diabetes.

What are the danger signs?

If any of the following danger signs occur then it's important to seek medical help even if its after-hours. Call Healthline, your GP or your closest Accident and Medical centre

In children

- Fast breathing or trouble breathing
- Bluish skin color
- Not drinking enough fluids
- Not waking up or not interacting
- Being so irritable that the child does not want to be held

- Flu-like symptoms improve but then return with fever and worse cough
- Fever with a rash

In adults

- Difficulty breathing or shortness of breath
- Pain or pressure in the chest or abdomen
- Sudden dizziness
- Confusion
- Severe or persistent vomiting
- Flu-like symptoms that improve but then return with fever and worse cough

In addition to the signs above, get medical help right away for any infant who has any of these signs:

- Unable to take feeds
- Has difficulty breathing
- Significantly fewer wet nappies (a sign of dehydration)

Treating influenza

Most people get better with rest, fluids and simple medications to control fever and other symptoms without having to see a doctor. There are influenza antiviral drugs that are occasionally prescribed by a doctor in certain situations or by public health units to control outbreaks. These medications are most effective if given early on in the illness.

3. Influenza in institutions

This advice is primarily for closed residential institutions (including prisons, boarding schools, residential care facilities, refugee institutions and other residential facilities). It is not primarily intended for health care facilities such as hospitals.

For advice in early childhood education centres (ECECs) and schools) please see document “Influenza Advice for Non- residential care (e. g. Schools and ECECs)

Why are these institutions at higher risk?

There are a number of reasons why residential institutions are at higher risk from the spread of influenza viruses:

- They contain large numbers of people in close proximity and who share common areas for extended periods of time, leading to more opportunities for the spread of infection.
- Due to their residential nature, these institutions are not able to ask people to recover elsewhere or at home, so unwell people need to be isolated within the institution (largely to their rooms).
- Some residential institutions look after people who are less able to look after themselves and carry out effective infection control measures.
- Some residential institutions also serve people who are more susceptible and at higher risk of flu complications.

Preventing Seasonal influenza in your institution

Implementation of an influenza strategy is not without its issues. There is no specific national policy on this so by the time an influenza outbreak hits the facility in winter it’s too difficult to organize and implement in a timely way. Currently it is not a mandatory expectation but residential care facilities should still be working towards effective policies that include

1. <u>Prevent infection</u>
   - Have a staff and resident immunisation policy by having:

- Routine pneumococcal immunisation on admission for those > 65 years prior to living in the facility
- Standing orders early autumn for every resident to have influenza immunisation
- Strong organized staff influenza immunization policy and yearly campaign
- Work exclusion/alternative policy for unimmunised staff

2. Prevent spread through good infection control procedures are essential for these institutions.
   - Have a good routine disinfection programme for common areas, and frequently touched surfaces or objects
   - Encourage a culture of good hand washing
   - Disseminate information that visitors with a flu-like illness should not visit the facility.

3. Plan ahead
   - Plan in advance for what to do if you have cases or an outbreak of influenza in your institution.
     - Unwell residents should be isolated from other people and receive priority medical assessment
     - Early and rapid resident influenza testing at first signs of and ILI during influenza season (April to September)
     - Have a work exclusion policy for sick workers. If a staff member develops a flu-like illness while at work, they should go home immediately. If they meet the criteria above for influenza they should stay away from work for five days.
     - Contact ARPHS if there are increasing numbers of cases, or if the institution is unable to maintain effective infection control.
     - Consider having preset orders for anti-viral prophylaxis in the face of an influenza outbreak in the facility(all or just those unimmunised)

Planning measures

Outlined below are the key matters to be included in your forward planning

Influenza Plan

Have an influenza plan, and ensure that you have an active business continuity plan to deal with illness in residents, visitors and staff.

Important issues to consider in your planning include:

- Know what you are going to do if you have a resident with influenza
- Know what you will do if you have more than one resident with influenza
- How difficult will it be possible to identify unwell residents?
- How difficult will it be possible to isolate unwell residents?
- Will residents in your institution to be able to comply with isolation and infection control measures?
- How high is the risk that the virus will spread within your institution?
- Are you going to use personal protective equipment (PPE)?
  - Ensure that you have access to stocks of PPE if necessary.
  - Ensure that education and training is provided to staff to ensure the equipment is used and disposed of correctly. If PPE is not used or disposed of correctly, it may increase (rather than decrease) a person's risk of transmission.
  - Is antiviral treatment going to be an option and if so how
- Is complete closure of the institution realistically possible?

Measures for residents

- Routine pneumococcal immunisation on admission for those > 65 years prior to living in the facility
- Implement standing orders early autumn for every resident to have influenza immunisation
- Encourage increased attention to cough/sneeze etiquette, hand hygiene and other hygiene measures.
- Encourage all residents to clean hands before eating, and before and after communal activities.
- Advise residents to report flu-like symptoms at once. Residents reporting flu-like symptoms should be isolated and receive priority GP assessment.
- During an outbreak antiviral treatment (Tamiflu) may be recommended for some residents on clinical grounds by the GP based on illness severity and/or whether case is in high risk group.
- Antiviral drugs (e.g. Tamiflu) may also be recommended by ARPHS as an outbreak control measure. In this situation viral nasopharyngeal swabs would be required on the first few patients and forwarded promptly to LabPlus for "Influenza testing". The requestor must state clearly that it is "Urgent" and is a "Residential/institutional request" .(See Appendix 1)
- Some institutions do have supplies of antiviral drugs

Measures for staff

- Have a strong organized staff influenza immunization policy and yearly campaign
- Consider work exclusion/alternative policy for unimmunised staff during the influenza season.
- Encourage increased attention to cough/sneeze etiquette, hand hygiene and other routine infection control measures. Encourage staff to clean hands before eating, and before and after communal activities.
- Have a work exclusion policy for sick workers. If a staff member develops a flu-like illness while at work, they should go home immediately. Sick staff should not come to work.
- Should staff who develop a flu-like illness consult their GP they should inform them that they work in a residential care facility. If early in the flu season the GP may wish to discuss with ARPHS and arrange for a nasopharyngeal swab to test for influenza virus. (See Appendix 1)

Measures for visitors

- Ensure sick visitors stay away.
- During the influenza season , visitors should be reminded / asked about symptoms on arrival and should use hand gel before entry. Clear information and posters will assist with this.
- Disseminate information that visitors with a flu-like illness should not visit the facility.

Cleaning measures

- The risk of infection can be reduced by increasing cleaning of areas with frequent hand contact. Clean all areas and items that are more likely to have frequent hand contact (like doorknobs, taps, handrails) routinely (e.g. daily, before/after meals, as needed) and also immediately when visibly soiled. Use the cleaning agents that are usually used in these areas. Disinfection of environmental surfaces beyond routine cleaning is not required.

Other measures to consider

- Influenza can spread in inadequately ventilated internal spaces. Ensure windows can be opened and air-conditioning systems are properly designed and maintained. It is advisable that air handling systems do not re-circulate air and are vented to the outside wherever possible.

- If there is an outbreak of seasonal influenza, it is advisable to limit movement within the facility.

For example, this may involve cancelling social and recreational activities, or considering temporarily closing the dining room and serving meals in residents' rooms, if applicable.

- If you have cases of seasonal influenza in your institution and you are transferring a patient, please inform the receiving institution or hospital and transporter prior to arranging transfer.

Case log for residents and staff

Once an influenza case occurs, a case log should be kept of all residents and staff who have flu-like symptoms. This will help you to keep track of whether case numbers are increasing or decreasing and whether the spread of infection is under control, and if you seek advice, will enable ARPHS to advise you appropriately.

The case log should include the following information for each person with flu- like symptoms (e.g. as columns in a table or spreadsheet):

- Name
- Age
- Gender
- Whether person is a staff member or resident
- Date symptoms started
- Date symptoms stopped
- List of symptoms (e.g. fever, cough, sore throat, etc)
- Whether the case received a flu vaccination.
- Whether swab was done (and date)
- Whether antivirals (Tamiflu, Relenza) were taken (and dates).

Institutions that have difficulty with implementing these measures

For a small number of institutions, it may be difficult to effectively implement measures such as exclusion or isolation. For example, a provider of care for children with behavioral difficulties in a small-scale, home-style institution may find it difficult to effectively isolate cases. Continue to follow the above infection control measures that can practically be followed, such as cleaning, staff and visitor policies. In such cases, ARPHS may be able to provide advice on the best approach. In certain circumstances, on a case by case basis, post-exposure prophylaxis with antivirals (such as Tamiflu) may be indicated for close contacts.

What to do if cases or outbreaks occur

When a case or several cases of influenza occur, the aim is to minimise exposure of other residents, staff and visitors to infectious cases, while ensuring that the needs of the case are also met.

Key actions

- Survey residents and staff to identify whether any others have a flu-like illness.
- Residents with a flu-like illness should be isolated and medically assessed by a GP especially early in the flu season .
- Staff members with a flu-like illness should be sent home immediately and consult their GP as required. If early in the flu season a swab should be taken (See Appendix 1)
- Visitors with a flu-like illness should be asked to leave immediately. For special circumstances where visits are high priority (e.g. a resident is terminally ill), sick visitors should wear a surgical mask, and ensure hand hygiene and cough/sneeze etiquette.
- Institutions should work with their usual primary care services for advice regarding treatment and care of ill individuals.

- Note that seasonal influenza is not a notifiable disease but residential institutions may wish to contact ARPHS for advice if they are experiencing increasing numbers of cases, or are otherwise unable to maintain effective infection control. The manager of the institution is likely to be the best person to communicate with ARPHS.
    - Contact details are at the beginning of this document and on the ARPHS website.
    - Normal business hours are the best time to contact ARPHS.
    - ARPHS is likely to provide advice and answer questions to assist your management of the situation. We will want to know about your institution (type, number of residents and staff, high risk residents) and the outbreak (cases and onset dates, numbers, measures already in place).
- Refer to your institution's usual processes regarding communication with residents, relatives and other agencies.

5. Extra measures during a pandemic

During an influenza pandemic the Ministry of Health would provide key advisories , however the basic measures outlined below are likely to be included.

Exclusion would usually be used in a pandemic situation. Exclusion means that residents are more strictly isolated in their rooms until they are no longer infectious.

Cases should be excluded until essentially well, that is not sneezing and coughing, as this is how the virus spreads. This is usually around 5 days after the onset. Antiviral treatment may be recommended for high risk people by their GP.

All sick staff should be excluded, except in some situations where this is difficult (e.g. staff live on-site). If sick staff are unable to be excluded, they should be isolated from other people for five days after the onset of influenza like symptoms. .

People who are excluded should be given information about reducing spread of the virus within the household. More information is available on the Ministry of Health website at http://www.moh.govt.nz.

Is exclusion or isolation possible?

For residential institutions, excluding or isolating residents may be more difficult. This may include situations where:

- The residential institution is "Home"
- There are legal requirements for residents to remain within the institution (e.g. prisons).
- Residents need special care that is available within the institution. Residents do not have another home to go to (e.g. some residents at a refugee centre).
- A resident's home is very distant, so that transport to their home is difficult and could involve exposing other people (e.g. during air travel).

Exclusion may be particularly important where:

- proper, effective isolation is unlikely to be achievable
- staff are unlikely to be able to protect themselves adequately from isolated residents because social distancing is not possible and PPE supplies and/or training are not available.

Balancing these considerations may be difficult. ARPHS may be able to provide advice in such difficult situations.

What does isolation mean?

- Place person with a flu-like illness in isolation – preferably a single room with a dedicated ensuite or toilet.
- Arrange medical assessment. This may include swab taking for the first few cases, and antiviral treatment if clinically indicated.(See Appendix 1)
- Signage, stating the patient is in isolation, should be posted on the door of their room or wherever the isolation zone begins.
- Movement of patients out of isolation rooms should be restricted to essential purposes.
- If possible, airflow should be vented to the exterior of the building from the room(s) such as by opening exterior windows. Influenza can spread in inadequately ventilated internal spaces.
- Non-essential staff should be prevented from entering isolation rooms.
- If possible, cases should wear surgical masks during any contact with staff and visitors.
- Staff who have contact with residents in isolation should follow the personal protective measures shown in Appendix 2. The level of personal protective measures required depends on the extent to which contact can be avoided, in particular whether staff can remain at least 1 metre from residents.
- No staff or visitors should enter the isolation room unless familiar with isolation procedures. The importance of hand hygiene after removing personal protective equipment such as masks and gloves (if using) should be highlighted to staff and visitors.
- Group together ('cohort') residents who are known or suspected to have seasonal influenza or pandemic influenza. If there are a number of cases, consider cohorting them in the same room(s) or areas/wings.
- Also 'cohort' staff who look after cases during an outbreak. This means having the same staff member(s) care for all cases, thereby minimising the number of staff who are exposed to cases.

Antivirals, swab testing and contact management

Where an outbreak is recognized early, it may be useful to consider the following measures:

- Test the first few cases for influenza
    - Take a nasopharyngeal swab (red top viral swab, or viral swab into viral transport medium) . See Appendix 1
- Treatment of cases with antivirals (for those at high risk of complications and/or to reduce infectiousness).
- Early post-exposure prophylaxis with antivirals for close contacts and/or quarantine of particularly high risk contacts has been shown to be of some benefit in preventing spread(be it marginal).

ARPHS is able to provide advice in such situations, especially during a pandemic.

Personal protective measures and equipment

Personal protective measures and equipment can help to reduce the spread of infection. The type of personal protective measures and equipment that should be used varies depending on the situation.

All people are routinely advised to help stop the spread of flu and other germs by:

- Covering coughs and sneezes.
- Avoiding contact with sick people and reducing time spent in crowded settings.
- Regularly washing their hands and drying them thoroughly. These are form of personal protective measures.

Additional personal protective measures are usually necessary during a pandemic, when staff are in contact with residents who have the pandemic strain of influenza. The level of personal protective measures required depends on the extent to which contact can be avoided, in particular whether staff can remain at least 1 metre from residents. Personal protective equipment (PPE) will not be required in all situations. Appendix 2 contains a summary table of personal protective measures required in different situations.

Education and training on the use of PPE is necessary to ensure the equipment is used and disposed of correctly. PPE that is not used and disposed of correctly may increase (instead of decrease) the risk of influenza transmission. Visitors need to be supervised by staff when putting on and taking off PPE.

Visitors

Visits to symptomatic cases should be minimised. Visitors must comply with all isolation procedures and should be supervised when putting on and removing PPE to ensure it is properly used and to ensure hand hygiene is thorough.

Cleaning

Clean all areas and items that are more likely to have frequent hand contact (like doorknobs, taps, handrails) routinely (e.g. daily, before/after meals, as needed) and also immediately when visibly soiled. Use the cleaning agents that are usually used in these areas. Disinfection of environmental surfaces beyond routine cleaning is not required.

Surfaces can be cleaned using standard disinfectants such as bleach. Allow an interval of at least 30 minutes after wiping surfaces with bleach solution before resuming use of that space.

Other measures to consider during a pandemic

Please apply other measures as a above;

- Ventilation of internal spaces
- Consider limitation of movement within the facility
- Communication when transporting an unwell resident
- Keep a case log for residents and staff
- What to do if there is difficulty with implementing these measures.

Closure of residential institutions

Residential institutions could either be closed to new residents, or closed completely. Closure would usually only be considered in a pandemic situation, rather than for seasonal influenza.

Closure to new residents may be considered if there are influenza cases within the institution, and new residents are at high risk of developing complications from influenza (e.g. have chronic medical conditions).

Closure of an institution may be considered if there are ongoing cases among residents and/or staff despite full implementation of outbreak control measures.

However, closing an institution is a last resort. Any decision to close should be made in discussion

between the management of the institution, ARPHS, DHB and Ministry of Health .

Other considerations:

- For some residential institutions it may be very difficult to close, while for others it may be less difficult.
- In some situations, part of an institution may be able to close while other parts remain open.
- High staff illness rates may also affect any decision to close an institution if replacement staff cannot be found. Business continuity planning should address this possibility in advance.
- National guidance and policy should be considered in any decision to close an institution.
- Other events may affect closure decisions e.g. school holidays, planned gatherings, etc.
- Any decision to close an institution should be communicated to all relevant agencies and persons using the usual communication channels. Be aware that this may generate media interest.

6. Further information

Where can I get more information?

The following websites and documents contain useful information on seasonal influenza, pandemic influenza and infection control:

- Influenza and pandemic influenza pages of the Ministry of Health website: http://www.moh.govt.nz.
- Influenza page of the ARPHS website, which contains relevant links to the Ministry of Health website, as well as the ARPHS fact sheet about influenza:

  http://www.arphs.govt.nz/health-information/communicable-disease/influenza
- Influenza pages of the Centers for Disease Control and Prevention (CDC) website (USA): http://www.cdc.gov/flu/.
- Some institutions, such as those working in aged care, are already familiar with the ARPHS guidelines for managing norovirus outbreaks. Many of the principles for managing outbreaks of influenza and pandemic influenza are similar, including the need for isolation and other infection control measures. However, there are also some important differences, including how the virus spreads and the cleaning measures that are required. The ARPHS Guidelines for the Management of Norovirus Outbreaks in Hospitals and Elderly Care Institutions are available at: Guidelines for management of Norovirus Outbreaks in Hospitals and Elderly care Institutions

ARPHS contact details

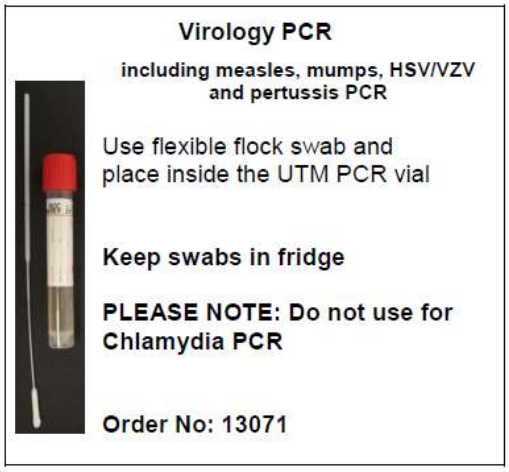
You can contact ARPHS on 09 623 4600. Please restrict after hours calls to urgent matters.

Appendix 1: Nasopharyngeal swab collection

Information to patients from whom nasopharyngeal swabs are taken:
We suggest that you explain the following to the patients who fit the case definition:

- that you would like to take a nasopharyngeal or throat swab
- the advantage of taking the swab is that it may help confirm the diagnosis of flu for them as an individual and for others who may have come into contact with them
- that they may refuse having a swab taken
- that they will be informed of the results

Make sure you use the correct swab. See Picture for Labtests supplied swab



Instructions on taking nasopharyngeal swab (NPS)

1. Label specimen collection vial with patient name, NHI number (if known), date of birth, and date of collection.
2. Insert swab into one nostril, parallel to the palate, rotate gently and advance until resistance is felt (one eye often waters when swab is in correct position).
3. Press swab tip on the mucosal surface of the mid-inferior portion of the inferior turbinate (see diagram), leave in place for a few seconds, then slowly withdraw with a rotating motion.
4. Place tip of swab back into swab collection vial containing viral transport medium (VTM) and carefully cut the shaft of the swab.
5. Close the lid tightly.

On the lab request form request "Iinfluenza testing"
Please state clearly that it is a "Residential/institutional request"
Request a "Copy to ARPHS "

Appendix 2: Personal protective measures and equipment

Table 1: Personal protection measures for workers who need to be in the workplace due to the nature of their role and associated risklevel

		Hand hygiene	Social distance	Cough and sneeze etiquette	Adequate ventilation	Masks[3]	Gloves	Gown or apron	Eye protection
Lower/ medium	People who can maintain more than 1 metre contact distance from people with potential influenza or can implement protective barriers (eg, receptionists, telephone triage personnel, pharmacy staff, orderlies, cleaners, and dieticians).								
Medium	People who, due to the nature of their job, may be unable to maintain more than 1 metre contact distance from people with potential influenza (eg, police, prison staff, ambulance staff and health care workers).					Surgical	If direct contact likely		
Medium/ higher	People who, due to the nature of their job, cannot maintain at least 1 metre contact distance from people with potential influenza (eg, primary care personnel, emergency department staff).					Surgical			
Higher	People who, due to the nature of their job, cannot maintain at least 1 metre contact distance from people with potential influenza AND have a high likelihood of potential contact with aerosolised respiratory secretions from invasive procedures – ventilation, sectioning etc (eg, ICU staff, recovery room staff, people providing hands-on hospital care to people in droplet isolation).					N95/P2			

Note: **Basic principles**: Hand hygiene, social distancing, safe cough/sneeze etiquette, and good ventilation constitute the basic principles for the prevention of influenza spread. The additional measures (ie, the wearing of masks, gloves, gowns/aprons, and eye protection) should be subject to prudent workplace hazard or risk assessment. **Masks**: A range of masks are available to provide respiratory protection to workers in medium- to high-risk situations. These vary in the degree of protection offered, but essentially there are two options:

- surgical masks, designed primarily to contain droplet spread from the wearer, but offering a degree of protection from external infection
- P2 or N95 particulate masks, which provide a higher degree of filtration of respiratory protection, when appropriately worn and handled.

The appropriate level of protection should be chosen for the degree of risk of infection remaining after all other control measures have been taken. In laboratory conditions, the relative effectiveness of these different measures is easily measured. However, in actual workplace settings, this is harder to measure, because of all the various factors that come into play, such as the degree of exposure to infection, how well the mask fits, hand contact with the mask and the wearer's face and so on. These factors can greatly limit the effectiveness of even face masks that would otherwise offer a high degree of protection.

[3] Information provided on the choice of masks and other protection measures is for guidance to assist employers and staff in specific workplace practices, based on current advice from CDC and WHO. Final decisions with regard to individual workplace risk rests with the employer. This document will be updated to reflect further technical information as it becomes available.

Source: Ministry of Health. Personal protection measures grid 2010