

Guidance on the Diagnosis and Management of Pandemic Influenza H1N1



No. 5

19 April 2010

This document updates the previous guidance on the diagnosis and management of pandemic influenza in 2010, including the use of antiviral medications (“antivirals”).

It includes guidance on:

- clinical management of patients – treatment and testing
- management of contacts
- referral to hospital / specialist care
- eligibility, access and supply of antivirals from the national reserve stockpile (Appendix 1)

For the 2010 influenza season, those **eligible to receive antivirals from the national reserve stockpile** are:

- people with influenza illness who are clinically assessed as requiring antivirals, on prescription by an authorised prescriber (or in accordance with standing orders issued by an authorised prescriber)
- people with influenza illness who are admitted to hospital
- some people who are contacts of people with influenza illness, based on clinical judgement
- for public health purposes, as approved by the Medical Officer of Health, including control of outbreaks in high-risk settings.

Prompt assessment and consideration of antiviral treatment is especially important for people at greater risk of severe outcomes from pandemic influenza (including pregnant women and people with underlying medical conditions), people with more severe influenza illness, and people whose condition begins to deteriorate.

The main changes in this version 5 are:

- national reserve antivirals can be accessed by all patients who are clinically assessed as requiring antivirals for treatment
- national reserve antivirals can be accessed by patients with a prescription, from a pharmacy without the need for separate local DHB authorisation processes
- access to national reserve antivirals is clarified and standardised nationally (see Appendix 1)
- information on management of contacts is simplified into one section
- access to national reserve antivirals for post-exposure prophylaxis remains limited. Authorisation by an infectious disease specialist or public health physician is no longer required, but consultation is recommended
- overseas travel is no longer deemed a significant factor in diagnosis or treatment
- case definitions for notification remain largely **unchanged** (antibody terminology slightly amended).

Clinical management of patients

Treatment of influenza and influenza-like-illness

- Influenza-like illness (ILI) is defined as (i) history of fever, chills and sweating or clinically documented fever $\geq 38^{\circ}\text{C}$, plus (ii) cough or sore throat.
- Most people with influenza will be able to care for themselves at home but should be given appropriate health advice and encouraged to seek medical advice and possible treatment, particularly if they are at high risk, their condition worsens, or they are otherwise concerned. To prevent spread they should stay at home until their flu symptoms have resolved.* Cough and sneeze etiquette and hand hygiene are paramount. Cases receiving antiviral medication and aged over five years should stay home for at least 72 hours after commencing treatment (and for five days if aged five years and under).
- Antiviral treatment should be based on clinical judgement. It should especially be considered:
 - early for patients with influenza who are at higher risk of severe outcomes, including pregnant women or recently pregnant women (see later), people with underlying medical conditions, very young children (under 5), and people with morbid obesity; or
 - for patients with more severe influenza or whose condition begins to deteriorate.
- Where clinically indicated, antiviral treatment should start immediately, rather than waiting for the results of testing if this has been done.
- In adult cases in the community, antiviral treatment should begin within 48 hours of the onset of symptoms, or after discussion with an infectious disease, respiratory or general physician. For hospitalised cases this policy may be varied on a case-by-case basis.
- For children aged five years or less, treatment can be initiated up to five days from the onset of symptoms.
- Tamiflu is the first line antiviral treatment. The first dose should be given with food to reduce the incidence of nausea and vomiting. The standard **adult** (treatment) dose is 1 x 75 mg capsule twice daily for five days.
- Relenza should be used only where Tamiflu cannot be taken or cannot be tolerated, or the case or contact has renal impairment. The standard **adult** (treatment) course is 2 x 5mg blisters (two inhalations) twice a day for five days.
- Indications for the use of Relenza instead of Tamiflu include:
 - an inability to take or tolerate Tamiflu, eg, due to vomiting or diarrhoea
 - renal failure.
- Please see medicine data sheets:
<http://www.medsafe.govt.nz/profs/Datasheet/t/Tamiflucapsusp.htm>
<http://www.medsafe.govt.nz/profs/Datasheet/r/relenzarotadisk.htm>
- For **paediatric** doses consult the relevant medicine data sheet and see the Ministry of Health website for instructions on how to prepare a paediatric formulation.
- For 2010, all people with influenza illness who are prescribed antivirals by an authorised prescriber are eligible for national reserve antivirals (**see Appendix 1 for eligibility and access**).
- Clinical assessment and patient access for national reserve antivirals is expected to follow normal prescribing processes as for other medicines.
- In the community, assessment should include whatever established and proven processes are already in place, such as face to face or telephone assessments by a medical practitioner or registered nurse.

* Obvious post-viral cough is an exception to this.

- Patients assessed and/or treated with antivirals should be given clear instructions on what symptoms to watch for and when to seek further medical advice. For example difficulty breathing, drowsiness or confusion, unable to drink, or extreme fatigue.
- Assessing patients with influenza symptoms should be done with appropriate infection control precautions.
- Special care needs to be taken to protect other people who are at increased risk of complications from nosocomial infection by careful use of cohort nursing and care pathways that keep potentially infected patients and staff physically separated from vulnerable individuals.

Prescribing antiviral medicine outside of these clinical guidelines

- If an authorised prescriber wishes to prescribe antiviral medication outside these guidelines, it will not be able to be provided from the national reserve supply, but instead from commercial supplies at the pharmacy. The prescriber should clearly mark the prescription with the phrase “*not for national reserve supply*”.

Diagnostic testing

- Diagnostic testing is not required for every patient. It should be performed as clinically indicated, and where it may help guide treatment.
- However, all patients admitted to hospital with ILI should be tested for influenza
- A nasopharyngeal viral swab should be taken from patients as indicated for guiding clinical management. If the health worker is not confident in their ability to take a nasopharyngeal sample, then a nasal sample can be substituted.
- Swabs should only be taken from those with influenza-like symptoms, and within 72 hours of symptom onset.
- There is no point in taking a swab in adult cases after a treatment course of antiviral medication has been commenced.
- In child cases, because they excrete a higher viral load, consideration can be given to taking a swab up to 48 hours after commencing antiviral treatment.
- For contacts on once-daily prophylaxis with antiviral medication who develop symptoms, swabs if indicated, should be taken within 48 hours of commencing antiviral medication.
- If subsequently PCR negative for influenza A – advise the individual to finish their five-day Tamiflu (or Relenza) course and, if they are being cared for in the community, to stay at home until they have had 72 hours of treatment with Tamiflu or Relenza – five days treatment for children aged five years or less. If the suspected case is asymptomatic at the time that their reported PCR result is negative, then they can go about their usual business. Even though the Influenza A PCR is negative the individual should be advised to stay at home beyond 72 hours if significant symptoms persist and until they are well.
- Health workers should prioritise taking samples according to this guidance and any further guidance from local Public Health Units or virology service, in light of local laboratory capacity.

Testing for public health purposes

- In addition to the clinical management of cases, the Ministry of Health also recommends testing if there is a **public health or infection control** rationale, and as authorised by the local Medical Officer of Health, such as:
 - for people with ILI who live or work in high risk institutions – primarily closed institutions with younger age groups, eg, prisons, boarding schools, residential care facilities
 - for the purpose of cluster identification and control, or infection control, especially high risk settings, including health care settings and essential services.

- It is likely to be sufficient to test a small sample of cases of ILI in the identification of clusters. The extent of testing is at the discretion of the local Public Health Unit.
- For purposes of ongoing surveillance, testing by Public Health Units in addition to sentinel surveillance is not normally required but could be considered in discussion with the Ministry of Health.
- The two national influenza sentinel surveillance systems that involve enrolled general practices (and one includes virology testing), have separate guidelines.

Management of contacts (post-exposure prophylaxis and public health)

- The Ministry of Health does **not** recommend the routine use of antivirals for post-exposure prophylaxis of contacts.
- Antiviral post-exposure prophylaxis should be considered for people who are at higher risk of severe illness from influenza and are close contacts (eg family members) of people with influenza or influenza symptoms. Also see the section below on 'pregnancy' for guidance on post exposure prophylaxis for pregnant women
- There may be other situations where post-exposure prophylaxis for close contacts is indicated on a case by case basis. For example:
 - where a health or essential worker has had close exposure to a case and there has been a significant failure of PPE or other significant lapse in infection control procedures
 - for people who live or work in high risk institutions – primarily closed institutions with younger age groups, eg, prisons, boarding schools, residential care facilities
 - for cluster control especially in high risk settings, including health care settings and essential services as authorised by the local Medical Officer of Health.
- The Ministry recommends consultation with a relevant specialist (such as infectious disease, general medicine, clinical microbiology, obstetrics, or public health medicine) before prescribing post-exposure prophylaxis.
- A post-exposure prophylaxis course can be commenced any time up to seven days from last potential exposure.
- Standard **adult prophylaxis** courses are:
 - Tamiflu 1 x 75 mg capsule daily for 10 days; or
 - Relenza 2 x 5 mg, two inhalations twice a day for 10 days.
- For **paediatric** doses consult the relevant medicine data sheet.

Pregnancy and post-partum

- At present, insufficient data are available on pregnant women taking Tamiflu to enable an evaluation of the potential for oseltamivir phosphate to cause fetal malformations or fetal toxicity. Any pregnant women who are recommended treatment should be informed of this. The safe use of Relenza in pregnancy has not been established.
- For influenza and influenza-like illness, treatment with antiviral medications and close monitoring is recommended for pregnant women or women who are up to two weeks postpartum (including following pregnancy loss) and can be taken during any trimester of pregnancy. The duration of antiviral treatment is five days.
- Tamiflu post-exposure prophylaxis should be considered for all pregnant close contacts of people with influenza or influenza symptoms, and in consultation with an infectious disease, respiratory or general physician or obstetrician. When considering post-exposure prophylaxis for

pregnant women, influenza immunisation status (at least 2 weeks previous) should be taken into account as a likely protective factor against illness.

People who are not cases or contacts

Pre-exposure prophylaxis

- The Ministry of Health does **not** recommend the routine use of antivirals for pre-exposure prophylaxis. National reserve antivirals are not available for pre-exposure prophylaxis.

Asymptomatic people travelling overseas

- Advice for New Zealanders travelling overseas can be found at www.safetravel.govt.nz. This includes making adequate preparations prior to travel, consulting their doctor if needed, having the seasonal influenza vaccination, and taking basic protective measures such as regular hand hygiene. New Zealanders with flu-like symptoms are advised to consider delaying their overseas travel.
- Consultation could include prescribing medications as appropriate and plans for ongoing medical conditions, and whether to prescribe antivirals to carry for those people most at risk.
- If an authorised prescriber wishes to prescribe antiviral medication for this or other purposes for people who are not cases or close contacts, national reserve antivirals are not available for this purpose, and the prescription should be clearly marked with the phrase “*not for national reserve supply*”.

Referral to hospital / specialist care

- People with moderately-severe and severe illness should be referred to hospital.
- Clinicians should be familiar with a severity assessment tool, which can be useful in deciding who to refer or admit to hospital. This should not replace clinical judgment but rather support or confirm it. Examples such as SIRS and CRB65 are provided in Appendix 4.
- For children, similar checklists and tools are available (also see Appendix 4), particularly in helping to identify children who may be developing a significant complication, eg, infants with atypical bronchiolitis may need careful monitoring and early use of antivirals
- Assessment of infants under 6 months is difficult and a low threshold for seeking expert support should be maintained.
- Also refer to H1N1 paediatric guidelines at <http://www.moh.govt.nz/influenza-a-h1n1> (health professionals section)

Notification to Public Health Services

- Pandemic Influenza H1N1 2009 is a notifiable disease.
- It is important for treating medical practitioners, laboratories and public health units to ensure that confirmed cases are notified. This serves two purposes-enabling response to cases and clusters in high risk settings, and for ongoing surveillance.
- See Appendix 2 for case definitions for notification of Pandemic Influenza H1N1 2009

Appendix 1: Policy on Eligibility, Access and Supply of National Reserve Antivirals as of 19 April 2010

Objective of policy revision

The Ministry intends to minimise barriers to timely access to national reserve antivirals for patients with influenza-like illness, given the likelihood of a resurgence of pandemic influenza H1N1 in the autumn or winter of 2010.

This is expected to lead to easier and earlier patient access to national reserve stocks of antivirals, with the aim of improving clinical outcomes for patients with pandemic influenza, and in particular to lower the risk of severe outcomes.

This policy applies to national reserve supplies only, and does not affect commercial or privately held supplies.

Eligibility in 2010

For the 2010 influenza season, those eligible to receive antivirals from the national reserve stockpile are:

- people with influenza illness who are clinically assessed as requiring antivirals, on prescription by a authorised prescriber (or in accordance with standing orders issued by an authorised prescriber)
- people with influenza illness who are admitted to hospital
- some people who are close contacts of people with influenza illness, based on clinical judgement (ie **limited** post-exposure prophylaxis)
- for public health purposes, as approved by the Medical Officer of Health, including control of outbreaks in high-risk settings.

National reserve antivirals will **not** be provided for pre-exposure prophylaxis.

See main text of this clinical guidance document for details.

Assessment and patient access

Assessment and patient access for national reserve antivirals is expected to follow normal prescribing processes as for other medicines.

In the community, assessment should include whatever established and proven processes are already in place, such as face to face or telephone assessments by a medical practitioner or registered nurse.

Supply of national reserve antivirals to the patient can be:

- via a prescription from an authorised prescriber (or in accordance with standing orders issued by an authorised prescriber), dispensed by a registered retail or hospital pharmacy; or
- from a supply that a local DHB has provided to a practice – see antiviral distribution section below.

For patients attending hospital emergency departments, if the patient requires antivirals but is not admitted to hospital, there is the option of either providing national reserve antiviral supplies directly to the patient, or providing a prescription, depending on which is most appropriate and suitable.

On provision of suitable identification, national reserve antivirals may be picked up by a patient representative, such as a family member, friend, neighbour, or community volunteer.

Oseltamivir (Tamiflu) is recommended as the antiviral medicine of choice.

Zanamivir (Relenza) may be prescribed if Tamiflu is unsuitable for, or not tolerated by, the patient.

Pharmacy prescribing

National reserve antiviral stocks cannot be accessed via Pharmacist prescribing at this time. This may however be an option for future consideration during 2010 depending on levels of influenza activity, use of health services and use of antivirals.

Patient charges

The antiviral medicines from the national reserve supply will be fully subsidised. However patients may have to pay a consultation fee for a GP or primary care consultation.

Recording of provision

Provision of national reserve medicine to patients with influenza-like illness must be recorded in Patient Management Systems (PMS), pharmacy recording, and or other databases as is normally done for any other medicine.

Antiviral distribution from bulk stores and DHBs

The Ministry will distribute national reserve antivirals to DHBs as per previously agreed and published policy. All distribution to retail pharmacies within DHB districts will be the responsibility of the DHB. The Ministry's expectation is that essentially all retail pharmacies will receive stocks of national reserve antivirals.

DHBs may supply any or all of their local medical practices directly on a case-by-case basis, as appropriate to the situation (eg, where pharmacy access is difficult).

Initial volumes of medicines and distribution dates to DHBs will be advised separately.

Other prescription of antiviral medication

If an authorised prescriber wishes to prescribe antiviral medication for people outside of these guidelines, they should clearly mark the prescription with the phrase "*not for national reserve supply*".

Appendix 2: Case Definitions for Notification of Pandemic Influenza H1N1 2009 as of 19 April 2010

Case definitions

The purpose of the case definitions below is to assist with:

- public health or infection control responses
- national and international reporting.

Ongoing surveillance will also pick up probable and confirmed cases, but has a greater emphasis on specific systems for influenza-like illness and hospitalisations for picking up resurgence and monitoring progression.

Confirmed case

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

- real-time RT-PCR
- viral culture
- four-fold rise in pandemic influenza A (H1N1) virus specific antibodies.

Probable case

A probable case of pandemic influenza A (H1N1) virus infection is defined as a person with an influenza like illness* who has a strong epidemiological link to a confirmed case or defined cluster.

Close contact

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

* Influenza-like illness: (i) history of fever, chills, and sweating or clinically documented fever $\geq 38^{\circ}\text{C}$, plus (ii) cough or sore throat.

Appendix 3: Definition of Pandemic Influenza H1N1 2009 – Associated Death*

The following definition was effective from Friday 10 July 2009.

A **pandemic influenza A (H1N1) 2009 – associated death** is defined, as:

A person with confirmed pandemic A influenza (H1N1) 2009 infection determined from ante-mortem or post-mortem specimens, and who died from a clinically compatible illness or complications attributable to that infection. There should be no period of complete recovery between illness and death, and no alternative agreed upon cause of death.

* Definitions are subject to regular review.

Appendix 4: Examples of Severity Assessment Tools

Systemic inflammatory response syndrome (SIRS)

- The systemic inflammatory response syndrome (SIRS) may indicate significant physiologic disruption, including sepsis. SIRS can be diagnosed when two or more of the following criteria are fulfilled:
 - temperature ≥ 38 degrees Celsius
 - heart rate > 90
 - respiratory rate > 20 .
 (White cell count is a fourth SIRS criterion, but is not included for this purpose.)
- The following table gives guidance for secondary care referral.

Initial influenza illness assessment (> 18 years)

Primary assessment results	Requiring secondary assessment
Temperature	$< 35^{\circ}\text{C}$ or $> 39^{\circ}\text{C}$ ^(a)
Pulse	New arrhythmia (irregular pulse) > 100 beats/minute (if > 16 years)
Blood pressure	< 100 systolic Dizziness on standing
Respiratory rate	> 24 /minute (tachypnoea)
Skin colour (lips, hands)	Cyanosis
Chest signs or symptoms	Any abnormality on auscultation or chest pain ^(b)
Mental status	New confusion ^(c)
Function	New inability to function independently ^(c) Persistent vomiting (2–3 times/24 hours) ^(d)
Oxygen saturation	$< 90\%$ on air

a High fever (39°C) in adults or in adolescents needs further assessment.

b Chest pain should always be investigated because it may be a sign of pneumonia (chest pain on inspiration), or may be a sign of cardiac failure. It may also appear as retrosternal pain (tracheal/bronchial pain) or as a pleuritic pain. When positive, it is an indication for secondary evaluation.

c Deterioration in level of consciousness or inability to function independently compared with previous functional status should be further investigated, particularly in elderly patients.

d Vomiting (2–3 times/24 hours), particularly in elderly patients, requires further assessment.

CRB65 (use for patients aged 14 years and over)

CRB65 Scores

Confusion

Respiratory rate ≥ 30

Systolic BP ≤ 90 or diastolic BP ≤ 60

Age ≥ 65

If 2 or more of these features are present then 30 day mortality is increased and admission is recommended.

UK Department of Health Triage Assessment Tool for Children

“Swine flu paediatric community assessment tool”; or

“Swine flu paediatric hospital pathways”

http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_100941

Modified version below

Criteria label	Consider admission if child presents with any of the following
A	Severe respiratory distress Chest wall indrawing, sternal recession, grunting, or noisy breathing when calm.
B	Sustained increase in respiratory rate Measured over at least 30 seconds on more than one occasion. ≥50 breaths per minute if under 1 year, or ≥40 breaths per minute if ≥1 year.
C	Oxygen saturation ≤92% on pulse oximetry, breathing air or on oxygen NB absence of cyanosis is a poor discriminator for severe illness. Pallor may be a sign of hypoxia.
D	Respiratory exhaustion or apnoeic episode Apnoea defined as a ≥20 second pause in breathing.
E	Evidence of severe clinical dehydration or clinical shock Sternal capillary refill time >2 seconds, reduced skin turgor, sunken eyes or fontanelle.
F	Altered conscious level Strikingly agitated or irritable, seizures, or floppy infant.
G	Causing other clinical concern to their own GP or clinical team or underlying condition e.g. a rapidly progressive or an unusually prolonged illness, underlying medical condition

For children under 6 months of age

Assessment of infants under 6 months is difficult and a low threshold for seeking expert support should be maintained. When this is not available the Baby Check Tool at <http://nicutools.org/default.htm> can be helpful.