



**Australian Government**  

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**Department of Health and Ageing**

## **PROTECT PHASE**

**Annex to the**

**Australian Health Management Plan for  
Pandemic Influenza**

**Version 3**

**21 September 2009**

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## CERTIFICATE OF AMENDMENT

The Office of Health Protection (OHP) within the Department of health and Ageing (DoHA) is responsible for reviewing this document. Amendments to this copy of the PROTECT annex are noted in the columns below

<b>Details</b>	<b>Issue Date</b>	<b>Version number</b>
First edition	Endorsed 17 June 2009	1.0
Updated to incorporate new policy decisions and clarification around policy advice	Endorsed 3 July 2009	2.0
Updated to incorporate new policy decisions and vaccination program	Endorsed 21 September	3.0

## Introduction

The World Health Organization (WHO) raised its global pandemic alert level to Phase 6 on June 11 2009. Designation of this phase indicates that a global pandemic is underway and that it is no longer possible to contain the virus in a particular geographical area.

The WHO recognises that globally there is good reason to believe that the pandemic, at least in its early stages, will be of moderate severity but that, as we know from experience, the severity of the pandemic can vary from one country to another. Pandemic (H1N1) 2009 needs to be watched closely for any changes that indicate it may be becoming more severe.

At this stage pandemic (H1N1) 2009 is causing a wide spectrum of illness around the world. While some deaths have occurred, and some people have needed treatment in hospital, most people have had a mild illness and recovered after a few days at home. The illness can be serious in vulnerable people and has occasionally been unexpectedly severe in otherwise young and healthy people.

Consequently the WHO encourages individual countries to undertake 'course adjustment' according to their local circumstances. That is, to tailor their pandemic response measures to their local circumstances.

## What we know about Pandemic (H1N1) 2009

Since the WHO announced outbreaks of a novel influenza strain –pandemic (H1N1) 2009 on the 24 April 2009, much has been learnt about this virus. From the progress of this virus we now know that:

- the pattern of the novel H1N1 is significantly different from that seen during epidemics of seasonal influenza, when most deaths occur in frail elderly people. This virus preferentially infects younger people. In Australia and overseas the majority of cases have occurred in people under the age of 25 years.<sup>1,2</sup>
- in countries overseas, around 2% of cases have developed severe illness, often with very rapid progression to life-threatening pneumonia.<sup>3</sup>
- certain groups may be more vulnerable to severe outcomes of influenza. Many, though not all, severe cases have occurred in people with underlying chronic conditions. Pregnant women are also at increased risk of complications. Vulnerable groups identified for the PROTECT phase are outlined in detail in Part 2.1, Table 1.

Infection with pandemic (H1N1) 2009 is not as severe as originally envisaged when the Australian Health Management Plan for Pandemic Influenza was written in 2008.

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<sup>1</sup> Statement to the press by WHO Director-General Dr Margaret Chan, World now at the start of 2009 influenza pandemic, 11 June 2009-  
[http://www.who.int/mediacentre/news/statements/2009/h1n1\\_pandemic\\_phase6\\_20090611/en/index.html](http://www.who.int/mediacentre/news/statements/2009/h1n1_pandemic_phase6_20090611/en/index.html)

<sup>2</sup> Australian Government Influenza Surveillance 2009 Reports. Accessible on-line at  
<http://www.healthemergency.gov.au/internet/healthemergency/publishing.nsf/Content/ozflu2009.htm>

<sup>3</sup> Statement to the press by WHO Director-General Dr Margaret Chan, World now at the start of 2009 influenza pandemic, 11 June 2009-  
[http://www.who.int/mediacentre/news/statements/2009/h1n1\\_pandemic\\_phase6\\_20090611/en/index.html](http://www.who.int/mediacentre/news/statements/2009/h1n1_pandemic_phase6_20090611/en/index.html)

## PROTECT PHASE – ANNEX TO THE AHMPPI

On present evidence, the overwhelming majority of patients experience mild symptoms and make a rapid and full recovery. However, the illnesses can be severe in some. The progress of the infection both overseas and in Australia indicates that the infection can best be described as mild in most but severe in some and moderate overall.

In Australia, patterns of disease spread are also varied, with some areas experiencing widespread community transmission, but others with only a small number of cases.

Given the moderate severity, the public health response needs to be measured, reasonable and proportionate to the risk the virus poses to the community. In response, a new phase of PROTECT has been developed which sits within the framework outlined in the AHMPPI 2008. The PROTECT phase sits beside CONTAIN and SUSTAIN. It is a phase specifically about a disease that is mild in most but severe in some and enables some of the measures of contain and sustain to be continued where locally appropriate.

The AHMPPI 2008 describes a CONTROL phase which has a range of measures to respond to a severe pandemic but with a primary focus on vaccination. Given the moderate severity and specific disease pattern seen with pandemic (H1N1) 2009, a new vaccination program will be implemented in the PROTECT phase. This vaccination program will include some of the vaccination activities which would have been undertaken in the CONTROL phase but which supports the on-going PROTECT measures.

The PROTECT phase provides a clear response; with a greater focus on those we now know are most likely to have poor outcomes. This is consistent with the WHO announcement which places emphasis on countries tailoring their pandemic response measures to local needs.

### **The PROTECT Phase**

The PROTECT phase is a basket of measures which recognises the variability in disease patterns across Australia. The new phase will remain appropriate for Australia while the disease continues to be describable as mild in most.

The focus of the PROTECT phase is on identifying the people in whom disease may be severe and providing medical care and interventions to reduce likely suffering.

Given the variability of the spread of the disease in Australia, some jurisdictions within the PROTECT phase may continue community level activities to reduce the introduction and transmission of the disease.

Given the new focus of the PROTECT phase, certain measures employed at earlier stages of the national response will be adjusted to ensure they support the change. Border measures which had as their primary purpose the delay of entry of disease will now be geared to managing sick passengers who are identified at our international borders and providing information to well travellers about how best to protect themselves from becoming sick. Other measures previously employed, such as wide-scale community social distancing measures like cancellation of mass gatherings will also cease.

### **Key elements of the PROTECT phase:**

- Identifying the vulnerable, in whom pandemic (H1N1) 2009 may have severe outcomes, noting that for this disease the vulnerable groups may differ from those usually considered vulnerable for seasonal flu;
- A focus on early treatment of those identified as vulnerable and those with moderate or severe disease, especially those with respiratory difficulty.
- Voluntary home isolation for those who are sick. Antiviral therapy from the national or state medical stockpiles will not be provided to patients with mild disease unless they belong to a vulnerable group or high risk setting. Contacts will not be placed into quarantine.
- A re-focus of testing to identify pandemic (H1N1) 2009 in those with moderate to severe disease; people who may be more vulnerable to more severe outcomes and outbreaks in institutional settings. Testing will also be continued for surveillance purposes, at hospital and community level, and to monitor virus behaviour.
- A vaccination program focused on protecting certain groups at higher risk of exposure (for example, health care workers) and those vulnerable to more severe outcomes, including pregnant women, Aboriginal and Torres Strait Islander people and people with underlying medical conditions. While emphasis will be on targeting these priority groups, the opportunistic vaccination of friends, family, and carers of vulnerable people or anyone wishing to protect themselves from pandemic (H1N1) 2009 is also encouraged. Any individual wishing to be vaccinated should see their General Practitioner or healthcare provider.

### **School policy**

School policies continue to be important in the PROTECT phase. However, regional or widespread closure of schools is not considered a proportionate nor appropriate intervention for pandemic (H1N1) 2009 where disease is 'mild in most'.

In the PROTECT phase:

- Most importantly, children with an acute respiratory illness should not attend school.
- If a child becomes sick with an acute respiratory illness at school they should be sent home.
- Jurisdictions have the flexibility to close single schools or classrooms following identification of a case (confirmed through testing), if this is considered a useful measure to prevent an outbreak in the school. This measure is most relevant in jurisdictions without community transmission.<sup>4</sup>

### **Moving from the PROTECT phase**

There is an ongoing need to closely watch the pattern of pandemic (H1N1) 2009 influenza infection for any changes that indicate it may be becoming more severe.

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<sup>4</sup> Community transmission is defined as person-to-person transmission, outside household or health care settings, with no epidemiological link to a known clinical or confirmed case.

## PROTECT PHASE – ANNEX TO THE AHMPPI

The key indicator for the consideration of a phase change would be a change in the virulence of the H1N1 virus. A change in virulence would be seen through either a change in the severity of the disease or a change in the genetic sequence of the virus. Hence it is critical that representative, timely data are collected for these measures. Clinical data are particularly important for signalling a change in virulence of the virus.

A change in severity would be detected through surveillance systems including:

- Clinical surveillance - identification and monitoring of hospital admissions, ICU admissions and death and monitoring of clinical outcomes throughout the influenza season. It is important that robust national surveillance systems are in place to detect these changes.
- Laboratory surveillance - increased testing for influenza virus at sentinel sites in the community to identify levels of community transmission and the strain of circulating influenza viruses.
- Ongoing monitoring of the virus for the emergence of antiviral resistance, antigenic drift, gene sequence changes, or reassortment.

Any of these could herald a change to greater virulence. Changes in antigenic characteristics, or genetic sequence would be detected through normal sequencing activities carried out by the World Health Organization Collaborating Centre (WHO CC). While this system is in place and operates throughout any influenza season, it is critical that sufficient, regular and representative isolates are sent to the WHO CC for genetic characterisation as currently required of National Influenza Centres (NICs).

### **Vaccination in the PROTECT phase**

Under the AHMPPI (2008), vaccination with a pandemic influenza-specific vaccine marks the beginning of the next phase, CONTROL. However, the original AHMPPI was developed with a more severe disease in mind. Given the moderate nature of pandemic H1N1 09, and the desirability of continuing current measures under the PROTECT phase, an initially targeted vaccination program will be delivered. A change to the CONTROL phase will therefore not occur. Vaccinating in the PROTECT phase recognises that even though the disease is moderate overall, vaccination is an important aspect of protecting those most vulnerable to infection.

The underlying principles for targeting particular groups in Australia in the initial stages of the pandemic (H1N1) vaccination program are to:

- prevent ongoing severe disease, medical complications and deaths from pandemic H1N1 2009 influenza firstly in those at highest risk;
- protect health care workers, community and residential carers, most exposed to the pandemic virus and those vulnerable clients/patients in their care

Subsequent pandemic (H1N1) vaccination program activities will aim to:

- prevent the further spread of the current wave of pandemic (H1N1) 2009 influenza in the Australian community;
- protect the Australian community against possible future waves of a similar or more severe variant of the pandemic virus.

## PROTECT PHASE – ANNEX TO THE AHMPPI

Further information about vaccination in the PROTECT phase is available in the vaccination-specific appendices to this document (Appendices 3-9).

### **Alignment of the operational objectives to the known threat**

As outlined in the National Action Plan for Human Influenza Pandemic, the overarching aim of preparedness and response to a pandemic is to: protect Australia and reduce the impact of the pandemic on social and economic functioning.

The health sector's goal remains the same in the PROTECT phase and is to: minimise the impact of an influenza pandemic on health and the health sector.

To achieve this goal, the health sector will need to respond in four operational areas which are:

1. Collect, analyse and report information to guide health sector decision making.
2. Minimise transmission of the pandemic virus.
3. Reduce morbidity and mortality of the disease.
4. Work across government.

Communication is an integral part of each objective.

## **Part 1. Key Actions in the PROTECT phase**

### **1.1 Operational Objective 1: Collect, analyse and report information to guide health sector decision making**

#### Key actions

- Surveillance of affected areas will be crucial to inform decision making in regard to control activities. The main activities will include monitoring:
- Caseload – noting that there will be a shift away from the use of laboratory confirmation of all cases to the use of clinical case criteria, and that this is likely to result in an over estimate of the number of true pandemic (H1N1) 2009 cases as it will tend to include seasonal influenza cases and other causes of influenza-like illness.
- Severity – monitoring hospitalisations to search for cases of pandemic (H1N1) 2009, monitoring number of cases requiring admission to intensive care and number of deaths;
- Virological surveillance to determine areas of high prevalence and the proportion of H1N1 Influenza virus compared with other seasonal influenza viruses;
- Characteristics of a sample of viruses for determination of patterns of antiviral susceptibility and mutation;
- Disease impact on vulnerable groups;
- Health system capacity; and
- National Medical Stockpile (NMS) usage.

### **1.2 Operational Objective 2: Minimise Transmission of the pandemic virus**

#### Key actions

The following actions will be taken to reduce the spread of the pandemic virus and to minimise the number of people seriously affected by the disease.

- Promote individual protection measures through public education campaigns.
- Public messaging that will focus on actions individuals should take:
- Those who are sick with an acute respiratory illness should not attend mass gatherings, go to work, or ride on public transport
- Personal hygiene, cough and sneeze etiquette.

#### **Vaccination**

Now that a vaccine against the pandemic (H1N1) 2009 virus is available, Australian Governments will offer the vaccine as a priority for certain groups at higher risk of exposure (for example, health care workers) and those vulnerable to more severe outcomes, including pregnant women, Aboriginal and Torres Strait Islander people and people with underlying medical conditions.

## PROTECT PHASE – ANNEX TO THE AHMPPI

While there will be a particular emphasis on targeting people in these priority groups for vaccination, the opportunistic vaccination of friends, family, and carers of vulnerable people or anyone wishing to protect themselves from pandemic (H1N1) 2009 will also be encouraged.

Further information about vaccination in the PROTECT phase is available in the vaccination appendices to this document (Appendices 3-9).

### **1.3 Operational Objective 3: Reduce morbidity and mortality of the disease**

#### Key actions

The following actions will be taken to reduce morbidity and mortality of the disease, in particular protecting vulnerable members in our community and maintaining the health system.

#### **CASE DETECTION AND MANAGEMENT**

Identification of severe cases and people who are likely to suffer severe disease continues to be important. Efforts will be focused on:

- Identification of vulnerable individuals (as outlined in Part 2.1, Table 1) to allow early management to prevent severe outcomes;
- Close clinical assessment of all vulnerable cases and early commencement of influenza antiviral medication if clinically indicated;
- Encouraging voluntary home isolation of all cases during their infectious period;
- Education of vulnerable household members of cases to minimise contact with cases, to be alert to early signs of infection, and to promptly seek medical attention;
- Investigation and management of cases in 'closed' facilities or high-risk settings such as health care facilities, special schools, residential care facilities and indigenous communities.

#### **PROTECTING VULNERABLE MEMBERS OF OUR COMMUNITY**

As mentioned previously, some groups in the community are more at risk of adverse outcomes of disease than others (as outlined in Part 2.1, Table 1). Actions will include:

- Public education campaigns so that vulnerable individuals self identify and take action to protect themselves.
- Raising awareness amongst health professionals so they identify at risk individuals and detect influenza-like illness (ILI) early in vulnerable people.

Education campaigns could identify those scenarios which may pose a higher risk for infection for these people, such as:

- attending crowded and enclosed environments; and
- schools with cases of disease.

#### **ENSURE EARLY ACCESS TO TREATMENT FOR VULNERABLE PEOPLE**

It is important to provide antiviral medication within 48 hours of onset of influenza-like illness (ILI), for those identified as vulnerable when they have an illness that meets the

case definition. Beyond 48 hours, antiviral medication may still be indicated on clinical grounds.

Jurisdictions are developing locally appropriate mechanisms for the distribution of antivirals. This may involve distribution through general practice, hospitals, flu clinics or pharmacies.

### **ESTABLISH AND MAINTAIN INFLUENZA SERVICES**

If appropriate, influenza services may be established through individual designated medical practitioners, or through influenza specific services such as flu clinics (established in the community, or attached to hospitals). The use of designated influenza services allows for the efficient management of cases and effective use of PPE and antivirals to conserve stocks and target them to maximum effect.

Healthcare worker protection should be provided through provision of PPE.

### **ENSURING CRITICAL CARE RESOURCES ARE AVAILABLE BY REDUCING AVOIDABLE DEMAND**

Health services may need to be prioritised to maintain availability of life saving services, such as intensive care units and emergency departments. This will include measures such as postponing some elective surgery and other non-urgent procedures. This is to maintain patient access to care and resources, within acute care units and maintain patient flow through hospitals. This is similar to activities already undertaken by hospitals to manage acute peaks in demand for critical care resources.

## **1.4 Operational Objective 4: Working across government**

Key actions

The following actions will be taken to ensure a coordinated response across governments.

- Update assumptions, based on new scientific and medical evidence in Australia and overseas to remain informed about the emerging evidence.
- Provide health advice on issues that require whole of government decision making.
  - Assist whole of government decision making and ensuring that the most effective control methods can be used at the right time and in the right places.
- Provide health advice on the effectiveness of control measures and adapt responses appropriately to the level of risk and consequences:
  - Contribute best advice to other sectors on how they might protect people at potential risk of exposure to pandemic influenza.
  - Provide tools to guide other sectors in assessing occupation related infection risks and advice on the most appropriate ways in which any infection risks could be managed.

## **Part 2 Advice for the Health Sector**

### **Identification and management of patients at increased risk of moderate to severe Pandemic (H1N1) 2009 disease**

It is important for medical practitioners to identify patients who are at risk of severe pandemic (H1N1) 2009 disease, secondary complications, hospitalisation and possibly fatal outcomes.

Increasing evidence suggests that medical practitioners should have a high index of suspicion for severe pandemic (H1N1) 2009 infection in the vulnerable groups and a low threshold for treatment, especially for those with moderate or severe illnesses.

There should be close clinical assessment of all vulnerable patients and early commencement of influenza antiviral medication if clinically indicated, ideally within 48 hours of onset of illness.

If a decision is made to not treat a vulnerable patient with influenza antiviral medication then there should be additional emphasis on close monitoring of the patient.

When influenza antiviral treatment is commenced but the patient tests negative for influenza or an alternative diagnosis is confirmed, consideration should be given to ceasing the influenza antiviral treatment.

## 2.1 Who is considered vulnerable to severe outcomes

Evidence indicates that the following groups are at an increased risk of severe pandemic (H1N1) 2009 disease and also the secondary complications of influenza infection. While not every individual in these groups is necessarily more at risk, inclusion in the group is a signal to the treating medical practitioner for the need for investigation and clinical judgement. For example, Aboriginal and Torres Strait Islander people are included due to the potential for multiple underlying risk factors, some of which may be undiagnosed.

**Table 1: Groups particularly vulnerable to the severe outcomes**

Vulnerable Group	Evidence <sup>5 6 7 8</sup> , , ,
Chronic respiratory conditions including asthma and Chronic Obstructive Pulmonary Disease	Increased hospitalisation, ICU admissions (Evidence from Australia, USA, Mexico, Canada, South America, United Kingdom)
Pregnant women (particularly in second and third trimesters)	Increased hospitalisation, ICU admissions, spontaneous abortion, premature rupture of membranes, foetal and maternal death (Evidence from, Australia, USA, Mexico, South America, UK)
Persons with morbid obesity	Increased hospitalisation, ICU admissions (Evidence from Australia, USA, Mexico,)□
Aboriginal and Torres Strait Islander people of any age should be carefully monitored for underlying chronic conditions and household environments.	Increased hospitalisation, ICU admissions (Evidence from Australia and Canada)□
Persons with chronic illness predisposing to severe influenza such as:	Increased hospitalisation, ICU admissions (Evidence from Australia, USA, Mexico, Canada, South America, United Kingdom)
<ul style="list-style-type: none"> <li>• cardiac disease ( excluding simple hypertension)</li> <li>• diabetes mellitus,</li> <li>• chronic metabolic diseases,</li> <li>• chronic renal disease,</li> <li>• haemoglobinopathies,</li> <li>• immunosuppressed (including cancers, HIV/AIDS infection, drugs)</li> <li>• chronic neurological conditions</li> </ul>	

<sup>5</sup> Louie, J, Winter, K, et al. Hospitalized Patients with Novel Influenza A (H1N1) Virus Infection --- California, April--May, 2009: MMWR, May 22, 2009 / 58(19);536-541  
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5819a6.htm>

<sup>6</sup> WHO Weekly Epidemiological Record: 5 June 2009, No. 23, 2009, 84, 213–236  
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5819a6.htm>

<sup>7</sup> WHO Weekly Epidemiological Record: 22 May 2009, No. 21, 2009, 84, 185–196  
<http://www.who.int/wer/2009/wer8421.pdf>

<sup>8</sup> Australian Government Influenza Surveillance 2009 Reports. Accessible on-line at  
<http://www.healthemergency.gov.au/internet/healthemergency/publishing.nsf/Content/ozflu2009.htm>

A second group of patients require active monitoring by the treating clinician. This involves regular review of those suffering an acute respiratory illness to monitor for clinical deterioration.

Other groups which may be at higher risk than the general population and who require active monitoring include:

- Smokers
- People with obstructive sleep apnoea
- Children under the age of 5 years
- Pregnant women in the first trimester

Health care workers are considered to be a group of special interest, as pandemic (H1N1) 2009 disease in a health care worker in the healthcare setting can expose vulnerable patients to infection. Additionally reduction in health care worker numbers due to illness will adversely affect the care of vulnerable patients

## **2.2 Clinical advice**

### **Case definition for H1N1 09 in PROTECT phase**

A confirmed case of pandemic (H1N1) 2009 virus is defined as a person with confirmed H1N1 09 virus infection by one or more of the following tests:

- H1N1 viral sequencing
- H1N1 09 specific-PCR
- H1N1 09 virus culture

Clinical case criteria for pandemic (H1N1) 2009 have also been developed to guide clinical management and treatment decisions. These criteria are:

A person with an influenza-like illness (ILI) characterised by:

- Fever ( $\geq 38$  °C or a good history of fever) AND
- Cough or sore throat.

#### **Note well:**

1. Clinical reports of pandemic (H1N1) 2009 suggest many cases present with milder symptoms than is typical for an influenza-like illness, and symptoms may persist for a shorter duration.
2. If surveillance data indicate that there is pandemic (H1N1) 2009 in the local community (i.e. there is community transmission) then anyone with ILI is considered to have pandemic (H1N1) 2009.
3. In areas where there is no community transmission then the medical practitioner should undertake a pathology test to confirm pandemic (H1N1) 2009 infection.
4. Community transmission is defined as evidence of person-to-person transmission, outside household or health care settings, and with no known epidemiological link to a confirmed case.

## Antiviral policy

The new phase signals a move to identifying those people in whom disease is moderate/severe or may become severe and providing medical care and interventions to reduce likely suffering.

1. People who will be considered for antiviral treatment in the PROTECT phase are:

- People with moderate or severe clinical ILI (or if rapidly deteriorating) from pandemic (H1N1) 2009;
- Those with ILI who are identified as vulnerable. Vulnerable individuals with mild disease can receive antivirals following clinical assessment.

As in all cases clinical judgement should be applied to the decision to treat with antiviral medication.

2. Influenza antivirals may also be used for public health control activities, such as:

- Limited containment activities in areas unaffected by pandemic (H1N1) 2009;
- Outbreak control in 'closed' facilities or other high-risk settings with a high proportion of vulnerable people;

3. Influenza antivirals in specialised healthcare settings to protect the vulnerable

Details on the use of antivirals in specialised health care settings to protect the vulnerable is outlined in the CDNA Pandemic (H1N1) 2009 Infection 'Protect Phase': Guidelines for Australian Public Health Units.<sup>9</sup>

Antiviral medication needs to be provided as soon as possible, ideally within 48 hours of onset of illness. Beyond 48 hours, antiviral medication may still be indicated on clinical grounds.

All people who are unwell should isolate themselves and attempt to reduce spread of disease to others. Refer to Figure 1 for Decision tree for management of cases with ILI.

Importantly, because disease is mild in most, in PROTECT antivirals will NOT be routinely provided for:

- treatment (unless the person is vulnerable or has moderate or severe disease); nor
- prophylaxis of household members or other school, work or community contacts.

Close contacts who fall into vulnerable groups should be advised to present early to a health care provider if they develop acute respiratory illness to enable early treatment.

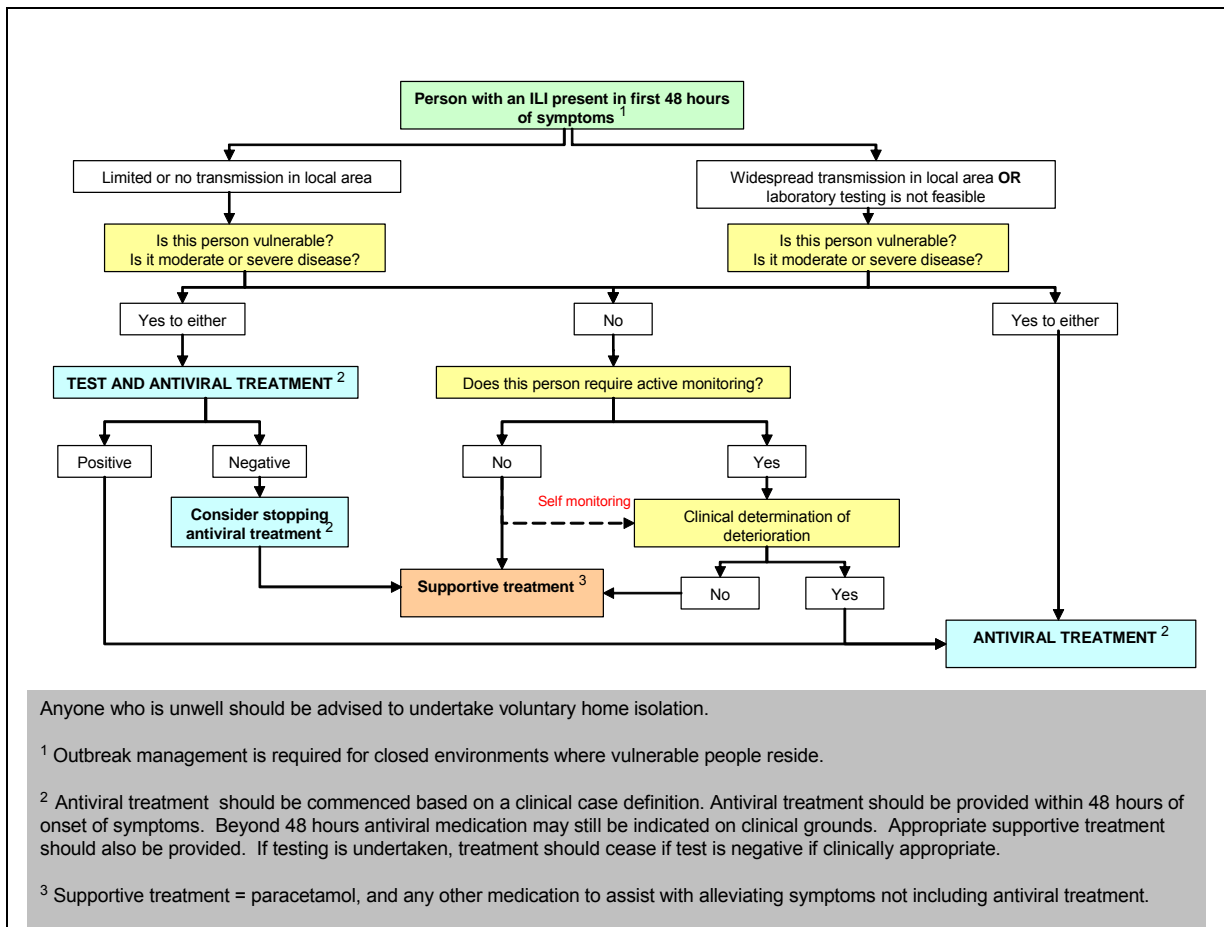
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<sup>9</sup> Protect Phase: Guidelines for Australian Public Health Units, Version 4.1 (CDNA).

Accessible online at:

[http://www.healthemergency.gov.au/internet/healthemergency/publishing.nsf/Content/477A0768B005A41DCA2575A800210183/\\$File/CDNA-H1N1-Protect-SoNG.pdf](http://www.healthemergency.gov.au/internet/healthemergency/publishing.nsf/Content/477A0768B005A41DCA2575A800210183/$File/CDNA-H1N1-Protect-SoNG.pdf)

**Figure 1: Decision tree for management of cases of Influenza-like illness (ILI)**



## Testing policy

Patients with mild clinical disease should not be tested as a routine. Testing should be prioritised for people with influenza like illness who are hospitalised or who die, and is not routinely required for others unless it guides clinical management.

Pathology testing for pandemic (H1N1) 2009 to assist with clinical management is indicated for those who meet the clinical case criteria (see above) AND are:

1. symptomatic patients with moderate to severe disease, OR;
2. symptomatic patients in a group vulnerable to severe outcomes (see list above)

Pathology testing for public health surveillance may be done for:

1. cases in areas where the disease is newly introduced, to allow control measures to be instituted if appropriate
2. representative samples of influenza-like illness (ILI) cases from existing sentinel surveillance systems
3. in outbreaks in 'closed' environments where individuals are at increased risk from severe influenza. The number of patients needing testing to determine the cause of an outbreak is generally low (this will depend on the clinical situation, but five or less samples should suffice).
4. Health care workers.

## **Vaccination policy**

Further information about vaccination in the PROTECT phase is available in the vaccination appendices to this document.

### **2.3 Infection control advice- healthcare settings**

The following measures apply to anyone with an influenza-like illness (ILI).

#### **Health Care Workers at Increased Risk of Complications from Pandemic (H1N1) 2009 Infections**

- Health care workers who are at increased risk of complications from pandemic (H1N1) 2009 and who are likely to be in direct contact with patients who have pandemic (H1N1) 2009 infections, should be considered for vaccination or redeployment to lower risk activities.
- If vaccination is not possible because of a contra-indication or is refused and if redeployment is not possible, health care workers who are at increased risk of complications from pandemic (H1N1) 2009 infection should maintain a distance of one metre from pandemic (H1N1) 2009 patients and not participate in procedures with these patients that may generate small particles or aerosols of respiratory secretions.

#### **Hand Hygiene**

- Health care workers and visitors must perform hand hygiene regularly, including when removing gloves.
- Patients with ILI should be encouraged to perform hand hygiene frequently.

#### **Personal Protective Equipment (PPE) – General Advice**

- Anyone with an ILI should wear a surgical mask when not in isolation in a single room and stay at least a metre distant from others.

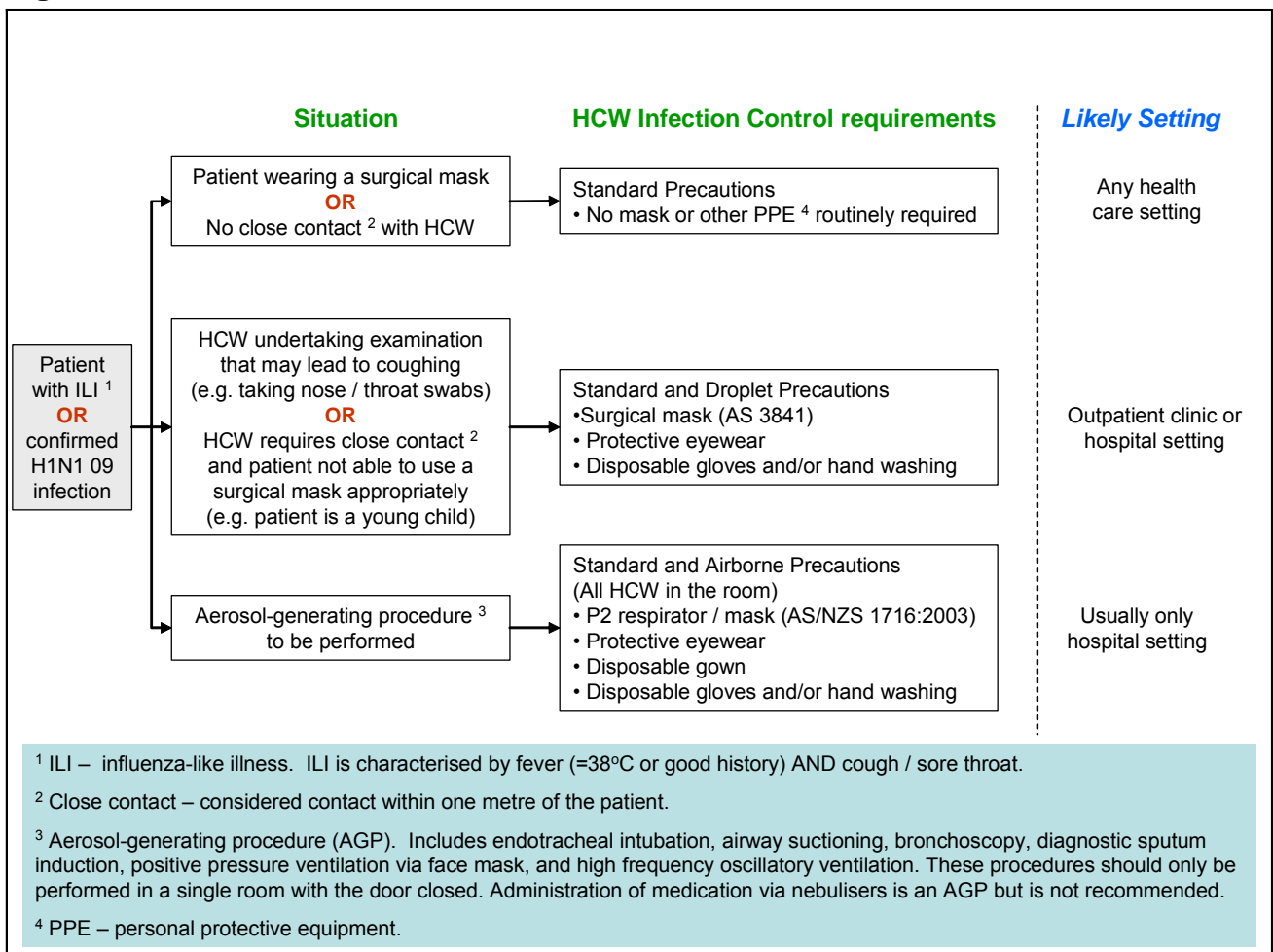
#### **Personal Protective Equipment (PPE) – Advice for use during Procedures (including Collection of Swabs for Influenza Diagnosis)**

- Health care workers should consider any guidance available from their State or Territory health department before making a decision to collect clinical swabs from a patient for influenza diagnosis, including pandemic (H1N1) 2009.
- Health care workers who can maintain 1 metre distance from an individual with an influenza like illness should practice standard infection control precautions but do not need to routinely wear a facemask or other PPE. This needs to be reviewed on a case-by-case basis. For example, widening the respiratory protection zone to 2 metres may be advisable for patients who are unable to wear a facemask and who are coughing forcefully.
- Health care workers should apply additional droplet transmission precautions if they are undertaking an examination of an individual with an influenza like illness that may lead to coughing (e.g. collecting nose and/or throat swabs), or where the HCW is within 1 metre of the patient and the patient is not able to use a surgical mask appropriately. This includes the use of a surgical mask, protective eyewear, along with disposable gloves and/or hand washing.

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- All persons in the same room when aerosol-generating procedures are undertaken on ILI patients should apply additional airborne transmission precautions. This includes the use of P2 respirators, protective eyewear, a disposable gown, along with disposable gloves and/or hand washing. Aerosol-generating procedures include endotracheal intubation, nebulised medication administration, airway suctioning, bronchoscopy, diagnostic sputum induction, positive pressure ventilation via face mask, and high frequency oscillatory ventilation. These procedures should only be performed in a single room with the door closed, separated from other patients and visitors.
- Administration of medication via nebulisers is not recommended. Use spacers where possible. When the use of nebulisers cannot be avoided the practice should be considered an aerosol-generating procedure and managed with additional airborne transmission precautions (see above).
- Health care workers in the vulnerable category should not administer to patients during aerosol generating procedures or collection of nose and throat swabs.

**Figure 2: Decision Tree for Infection Control Precautions for Healthcare Workers**



### In- Patient Isolation

- Single room accommodation should be used for pandemic (H1N1) 2009 inpatients and people with ILI presenting in clinical settings, wherever possible.

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- If single rooms for pandemic (H1N1) 2009 inpatients are not available, cohorting of pandemic (H1N1) 2009 patients should be practised wherever possible, maintaining at least 1 m spacing between patients at all times. Confirmed pandemic (H1N1) 2009 cases should not be cohorted with confirmed seasonal influenza cases.
- Vulnerable patients at risk of severe disease should not be co-located with patients with ILI.

### **Management of Visitors**

- Limit visitors for patients who are in isolation to those persons who are necessary for the patient's emotional wellbeing and care.

### **Duration of Precautions**

Persons with pandemic (H1N1) 2009 infection should be considered potentially contagious from one day before to 7 days following illness onset. Persons who continue to be ill longer than 7 days after illness onset should be considered potentially contagious until fever has resolved. Children, especially younger children, might be contagious for longer periods.

- Isolation precautions should be continued for 7 days from symptom onset or until the resolution of fever, whichever is longer.
- Isolation precautions may also be discontinued when patient has had 72 hours of influenza antiviral treatment provided they have no fever for 24 hours in the absence of antipyretics.

### **Cleaning Pandemic (H1N1) 2009 In-Patient Rooms**

- Daily and on discharge - clean with a neutral detergent. The room can be used immediately following cleaning
- Management of laundry and utensils should be performed in accordance with procedures followed for seasonal influenza.

### **Waste**

- Treat waste as general medical waste.
- Used tissues are disposed of in general waste.

### **Surveillance and management of healthcare personnel**

- Health care workers should be monitored for illness and those who develop influenza-like illness (ILI) should be instructed not to report to work, or if at work, should cease patient care activities and notify their supervisor and infection control personnel.
- It is also important to identify health care workers who may be considered vulnerable i.e. in whom pandemic (H1N1) 2009 may be severe (e.g. pregnant women) and manage as appropriate (see section Health Care Workers at Increased Risk of Complications from Pandemic (H1N1) 2009 Infections).

## Management of Ill Health Care Workers

Details on the use of antivirals in specialised health care settings to protect the vulnerable is outlined in the CDNA Pandemic (H1N1) 2009 Infection 'Protect Phase': Guidelines for Australian Public Health Units.<sup>10</sup>

## Vaccination for Health Care Workers

Further information about vaccination in the PROTECT phase is available in the vaccination appendices to this document (Appendices 3-9).

## Face Mask Information

- Surgical Masks

The term 'surgical mask' refers to a disposable fluid-repellent, paper filter mask that complies with the Australian standard for single-use masks for use in health care (AS 4381-2002). This may include masks labelled as surgical, dental, medical procedure, isolation, or laser masks.

It is important to ensure that surgical masks are worn and disposed of correctly. Make sure the mask is correctly fitted by ensuring that it covers your nose and mouth and that it is secured at the back of your head.

Avoid touching your face while wearing the mask. Replace the mask whenever it is moist. A mask that has been removed should not be reused.

Remove the mask by only touching the straps and put the used mask in a bin. Wash your hands well with soap and water straight away and dry with a paper towel.

- P2 Respirators

P2 respirators (P2 masks) are designed to provide high-level protection to the wearer's respiratory tract from small infectious particles. They are particulate filter, personal respiratory protection devices which, when tested against the Australian standard for Respiratory Protective Devices (AS/NZS 1716:2003), filter out at least 95% of particles of 0.3 micrometres diameter.

Testing is required so that P2 masks fit properly. Fit Checking for staff wearing a P2 mask is the appropriate minimum standard for health care workers each time they need to use a P2 mask for dealing with potentially infectious cases. Formal Fit Testing is recommended where available.

Fit Checking should be done in accordance with the mask manufacturer's instructions to ensure there is no air leakage around the mask. This is usually done after the mask is compressed over the nose and across the cheeks and face to create a firm seal. The wearer then gently inhales - the mask should draw in slightly towards the face and collapse – and then gently exhales - the mask should fill up with air. A fit check should be done each time a P2 mask is worn.

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<sup>10</sup> Protect Phase: Guidelines for Australian Public Health Units, Version 4.1 (CDNA). Accessible online at:

[http://www.healthemergency.gov.au/internet/healthemergency/publishing.nsf/Content/477A0768B005A41DCA2575A800210183/\\$File/CDNA-H1N1-Protect-SoNG.pdf](http://www.healthemergency.gov.au/internet/healthemergency/publishing.nsf/Content/477A0768B005A41DCA2575A800210183/$File/CDNA-H1N1-Protect-SoNG.pdf)

In some areas formal Fit Testing for health care workers is provided and required prior to wearing P2 masks in clinical settings. Health care workers should consult with their OH&S or infection control practitioners for specific guidance.

## **2.4 Surveillance requirements in PROTECT**

The objectives of surveillance in the PROTECT phase are to:

- continue case detection
- detect the end of the first wave or start of the second wave of the pandemic
- understand the epidemiology of the disease in order to test the planning assumptions and guide health sector decision making
- monitor and detect changes in the severity of the disease, virulence, antigenic characteristics and antiviral drug sensitivity of the virus
- monitor the disease in vulnerable groups.

In the PROTECT phase, all probable and confirmed cases should be reported nationally. All fields of the national reporting form should be completed.

Cases identified from clusters or outbreaks from 'closed environments' should be identified in an outbreak reference field in the national outbreak case report system NetEpi.

As case numbers increase and it is no longer feasible to complete all fields of the national form, all probable and confirmed cases should be entered into the national outbreak database, with the demographics only completed.

Since testing for pandemic (H1N1) 2009 will be carried out only on a specific subset of cases, a nationally consistent program of sentinel testing for surveillance is required, preferably through existing systems such as the sentinel GP surveillance system. This system would require some adaptations to incorporate pathology testing.

Laboratories and jurisdictions should continue their routine surveillance programs, and serious consideration should be given to having all such programs in all jurisdictions. These include:

- laboratory confirmed notifications of influenza to NNDSS
- sentinel GP surveillance systems for influenza-like illness (ILI) presentations (including number of tests and number positive where available)
- sentinel ED surveillance systems for ILI presentations
- sentinel ED surveillance systems for ILI admissions
- sentinel laboratory surveillance of total respiratory tests and proportion positive
- reporting of the number of respiratory tests conducted and the proportion positive for influenza form major public health laboratories

### **Morbidity and mortality surveillance**

Morbidity and mortality should be monitored to assess the level and changes in the severity of pandemic (H1N1) 2009. Jurisdictional data on hospitalisations, including

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admissions to ICU and requirements for ventilation, and deaths, should be reported nationally via the national outbreak database against cases while viable or summarised into a new form for severe cases.

Hospitalisations for influenza will also be collected through respiratory physicians' and infectious diseases physicians' networks.

Admissions to hospital and ICUs, for complications from influenza, in children aged 15 and under will continue to be collected weekly through the Australian Paediatrics Surveillance Unit.

### **Virological surveillance**

The proportions of Type A (H1), Type A (H3), Type B and Type A pandemic (H1N1) 2009 should be determined from a list of tests, positive for influenza, by Type, subtype and postcode, provided by the National Influenza Centres (NICs) directly to the NIR weekly.

Antigenic characterisation, genetic analysis and antiviral drug sensitivity testing to detect potential changes in the influenza virus will be conducted through the WHO CC and results sent to the NIR weekly.

## **Part 3: Advice for the public**

During the PROTECT phase the public will play an important role in assisting to minimise the spread and severity of the disease through such measures as the continuation of good hand and respiratory hygiene, staying at home if unwell and being aware and alert to the fact that this disease could have a more serious impact on vulnerable groups (as outlined in Part 2.1, Table 1).

### **3.1 Pandemic (H1N1) 2009**

Personal hygiene is crucial, as one of the main ways that influenza viruses spread from person to person is via respiratory droplets from coughs and sneezes. This can happen when droplets from an infected person's cough or sneeze are propelled through the air and land on the mouth or nose of people nearby. It can also be spread when a person touches respiratory droplets on another person or an object or surface, and then touches their mouth or nose.

### **3.2 What can I do to prevent catching pandemic (H1N1) 2009?**

You can prevent getting infected by avoiding close contact with people who show influenza-like symptoms (trying to maintain a distance of about 1 metre or more, if possible) and taking the following measures:

- Be vaccinated;
- Avoid touching your mouth and nose;
- Clean hands thoroughly with soap and water, or clean hands with an alcohol-based hand rub on a regular basis;
- Do not visit people who have the flu unless it is absolutely necessary;

When someone in the house has flu it is important that:

- they clean their hands regularly;
- the household environment is regularly cleaned with soap and water or detergents;
- the person with illness stays home and avoids contact with others; and
- the person with illness wears a surgical mask or other appropriate face coverings, if possible, when others are in the room, and stays at least 1 metre distant from others.

### **3.3 How do I know if I have pandemic (H1N1) 2009?**

The symptoms of pandemic (H1N1) 2009 infections are similar to the symptoms of human seasonal influenza infection and include fever and either cough or sore throat. In addition, illness may be accompanied by other symptoms including headache, tiredness, runny or stuffy nose, body aches, diarrhoea, and vomiting. Like seasonal flu, pandemic (H1N1) 2009 infection in humans can vary in severity from mild to severe.

### **3.4 What should I do if I think I have pandemic (H1N1) 2009?**

People who are otherwise healthy and have mild influenza symptoms are asked to undertake the following:

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- stay at home and keep away from work, school and crowded areas or public gatherings until symptoms have resolved. If medical attention is required people should consult a medical practitioner by telephone;
- avoid contact with other people where possible;
- cover nose and mouth when coughing and sneezing and, if using tissues, make sure you dispose of them carefully;
- clean hands regularly, and immediately after coughing or sneezing with soap and water or cleanse them with an alcohol-based hand rub;
- alleviate the symptoms - rest, drink plenty of fluids and use a pain reliever for aches. This is adequate for recovery in most cases. A non-aspirin pain reliever should be used by children under 18 years of age because of the risk of Reye's syndrome

### **3.5 When should someone seek medical care?**

A person should seek medical care if they experience shortness of breath or difficulty breathing, if concerned about symptoms, or they become worse. For parents with a young child who is ill, seek medical care immediately if a child has fast or strained/laboured breathing, continuing fever or convulsions (fits / seizures).

If you have any of the following, you should definitely seek medical help.

- shortness of breath
- difficulty breathing or chest pain
- you become confused
- inability to keep liquids down because of vomiting
- you become dehydrated (dizzy when standing, passing much less urine than normal)

### **3.6 What to do if I'm vulnerable or have a family member who is vulnerable**

If you suffer typical symptoms of influenza (fever, cough, muscle aches) and you are part of a vulnerable group (See Part 2.1 Table 1) then you should contact your doctor or the flu clinic so that you can be assessed. Your doctor may wish to perform pathology testing (a throat or nose swab) and prescribe antiviral medication. General measures to treat 'flu symptoms include rest, fluids and analgesics.

Antiviral medication is most effective if taken in the first 48 hours of flu symptoms so it is important if you are part of a vulnerable group to seek medical care early in your illness.

### **3.7 Attending public events**

Gatherings of lots of people such as at football matches, church services and concerts will not be discouraged during the protect phase. This is because the disease is mild in most people. However there are two important considerations for people attending gatherings of large numbers of people.

1. People who are unwell with the disease should always isolate themselves from others and protect their neighbours and the community by staying away from gatherings and trying to limit the spread of the illness.
2. People who are vulnerable to serious complications of influenza (see Part 2.1 Table 1) need to reconsider their attendance at such events as contact with large numbers of people can increase the risk that they come into contact with the infection.

### **3.8 What about using a facemask?**

If you are not sick you do not have to wear a facemask.

If you are sick, you should wear a facemask when seeking medical attention or when in close company of vulnerable people (see Part 2.1 Table 1).

A household member should wear a facemask if they need to come within one metre of an ill person who is not able to wear a mask, particularly if they are in a vulnerable group.

Wearing a facemask incorrectly or removing or disposing of it improperly can contaminate the wearer's hands, mouth or eyes with virus, possibly resulting in exposure of the wearer or others to the virus. Correct facemask use and removal includes the following steps:

- Prior to putting on a facemask, wash hands thoroughly with soap and water. Use an alcohol-based hand sanitiser if soap and water are not available.
- Avoid touching the outside of the front face piece of the facemask during and after use to help prevent contamination of hands with infectious material that may have collected there.
- Once worn, the facemask should be removed carefully using the elastic bands or ties at the back of the head (avoid touching the face piece) and appropriately discarded in the regular waste.
- After the facemask has been removed and discarded, wash hands thoroughly with soap and water. Use an alcohol-based hand rub if soap and water are not available.

It is important to remember that there are other important steps you can take to reduce the risk of becoming infected with influenza and, if you have an influenza infection, to reduce your risk of spreading the infection to others. These measures include good hand hygiene and good cough and sneeze etiquette, which are described below.

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#### **Hand hygiene**

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Hand hygiene is essential in the reduction of transmission of infectious agents. Hand hygiene includes washing hands with soap and water or cleaning hands with alcohol-based products (gels, rinses, foams) that can be used without water.

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If your hands are visibly dirty with respiratory secretions (phlegm, spit), you need to wash them with soap and warm water, scrubbing your wrists, palms, fingers and nails for 15-20 seconds, and then dry with a clean dry towel or paper towel.

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If there is no visible dirt, you could use an alcohol-based hand rub.

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In general, try to keep your hands away from your face.

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<b>Cough and sneeze etiquette</b>
If you cough or sneeze, you should
Cover your nose and mouth with a disposable tissue rather than your hands.
If there are no tissues available, cover your nose and mouth with your upper arm rather than your hands. Wash your upper arm (or sleeve) as soon as practical if you have sneezed or coughed into it.
Dispose of used tissues in the nearest bin.
Wash your hands afterwards or after touching used tissues.

### **For further information:**

- Visit the Health Emergency website: <http://www.healthemergency.gov.au>
- Call the Commonwealth Health Hotline for pandemic (H1N1) 2009: Ph: 180 2007.

## **3.9 Infection Control in the Workplace**

### **General Advice**

During the PROTECT phase, workplaces should focus on:

- Promoting good hand, respiratory hygiene etiquette and other infection control practices. Promotional material and advice to reduce the spread of influenza is available at the 'The Flu and You' website:  
<http://www.health.gov.au/internet/panflu/publishing.nsf/Content/fluandyou-broch-1>
- Ensuring that materials needed for hand and respiratory hygiene are readily available in the workplace (e.g. tissues and receptacles for their disposal, soap and hand washing facilities and/or alcohol-based hand sanitisers).
- Encouraging and supporting staff members with acute respiratory illnesses to stay at home until they are well (that is until their symptoms have completely resolved).
- Encouraging visitors/customers with acute respiratory illness to stay away from the workplace until they are well (that is until their symptoms have completely resolved).
- Encouraging individuals to assess whether they are in the vulnerable category of increased risk of complications of pandemic (H1N1) 2009.

### **Advice for Staff Members at Increased Risk of Complications from Pandemic (H1N1) 2009 \***

Part 2.1, Table 1 outlines the groups of people that are believed to be at increased risk of complications from pandemic (H1N1) 2009 infections.

Consideration should be given to deploying staff members who fall into one or more of these groups to areas where they are at less risk of exposure to those who may have the infection.

Specific advice for health care workers who are at increased risk of complications from pandemic (H1N1) 2009 is provided in Part 2.

### **3.10 Pandemic Vaccination**

Further information about pandemic vaccination for health care workers in the PROTECT phase is available in the vaccination appendices to this document (Appendices 3-9).

## Part 4: PROTECT Phase Assumptions for Healthcare Professionals

The following assumptions (from AHMPPI 2008) have been altered in light of new evidence on the pandemic (H1N1) 2009 virus:

- Assumption 2. Attack rate
- Assumption 8. Presenting symptoms
- Assumption 9. Health impact of pandemic influenza
- Assumption 16. Hospitalisation and ICU admission

The remaining assumptions are the same as outlined in AHMPPI 2008

The assumptions and the response implications outlined below are based on currently available evidence about pandemic (H1N1) 2009. These assumptions will be continually reviewed by the Chief Medical Officer’s Scientific Pandemic Advisory Group and revised in light of new and emerging evidence.

Assumption table 2 - Attack rate	
Current assumption(s)	2.1 A clinical attack rate of 20% is assumed (the proportion of people who have symptoms of the disease over a time period. The H1N1 virus appears to be more contagious than seasonal influenza (seasonal influenza attack rate 5-15%).
	2.2 The attack rate in children is higher than in adults.
	2.3 The attack rate is likely to be higher in closed settings such as schools and institutions.
Response implications	2.1 Interventions to reduce transmission such as isolation for people who are sick are important measures.
	2.2 It will be important to continue to monitor the differences in the rate of accumulation of cases in children compared with adults. Robust estimates of age specific attack rates may be useful in supporting decision making with regards to use of pandemic (H1N1) 2009 vaccine.
	2.3 It will be important to identify vulnerable individuals, those for whom pandemic (H1N1) 2009 may be severe to allow early detection and treatment with antivirals if they met the case definition. It will be important to collect data to assess attack rates in vulnerable population groups to allow tailoring of public health interventions.
Evidence base	2.1- 2.3 Based on data on pandemic (H1N1) 2009 from Australia and overseas (USA, Canada, UK). While this is the current assumed attack rate, virulence can change overtime as seen from past pandemics, through waves of national and international pandemics. This will need to be monitored.

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Assumption table 8 - Presenting symptoms	
Current assumption(s)	<p>There is a spectrum of illness from mild to very severe. The symptoms of pandemic (H1N1) 2009 infection in people are similar to the symptoms of human seasonal influenza infection and include fever, fatigue, lack of appetite, coughing, sore throat, joint pain, headache and rhinorrhea.</p> <p>Some people with pandemic (H1N1) 2009 infection have also reported vomiting and diarrhoea. Dehydration has also been a feature of some hospitalised patients in the USA.</p> <p>There have been a few documented cases without fever.</p>
Response implications	<p>It is important to understand the spectrum of presenting symptoms to allow modifications to case (surveillance and clinical) definitions to ensure the appropriate levels of sensitivity and specificity.</p> <p>It will be important to establish the frequency of atypical presentations as amendments, particularly to the clinical case definitions, may be required.</p>
Evidence base	<p>Based on extensive studies of seasonal influenza and previous pandemics indicate that influenza is predominately a respiratory disease.</p> <p>Also based on current data on pandemic (H1N1) 2009 from Australia and overseas (USA, Canada, and UK).</p>

Assumption table 9 - Health impact of pandemic influenza	
Current assumption(s)	<p>9.1 The current assumption is that the clinical case fatality rate would be similar to seasonal influenza at 0.14%. However, in contrast to seasonal influenza, deaths overseas from pandemic (H1N1) 2009 have been in younger people.</p> <p>9.2 There is a spectrum of illness from mild to severe.</p> <p>9.3 Vulnerable people (see Part 2.1, Table 1) are likely to experience higher complications than those without underlying health problems.</p>
Response implications	<p>9.1 – 9.3 Data on health service usage needs to be closely monitored, so that services are optimised as required.</p> <p>9.2 Certain specialist health services may be required to ensure that the specific needs of these groups can be best met.</p> <p>9.3 Planning for paediatric cases needs to be undertaken. Obstetric and neonatal services are also likely to be in high demand and planning should ensure that these services can be optimised.</p>

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Evidence base	9.1 – 9.2 Based on data on pandemic (H1N1) 2009 from Australia and overseas (USA, Canada and UK). 9.3 based on data from overseas. Pandemic (H1N1) 2009 data from Canada on Indigenous communities. Data on deaths in the USA (93% with underlying chronic illness, 40% of hospitalised cases in USA have been asthmatic). Hospitalisation rates in Canada (64% with co-morbidity).
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Assumption table 16 - Hospitalisation and ICU admission	
Current assumption(s)	The current assumption is that the hospitalisation rate will be between 1 and 2%. Hospitalisation will occur more frequently in the young and in vulnerable groups. The current assumption for ICU admissions is 10% of those hospitalised.
Response implications	16.1- 16.2 Despite a similar hospitalisation rate, the number of cases requiring hospitalisation will be higher than seasonal flu as the clinical attack rate is higher. Surge planning is required. Identification of severe cases and people who are likely to suffer severe disease will be important. It will be important to collect data on hospitalisation and ICU admissions to ensure that the health system can be optimised.
Evidence base	16.1 Hospitalisation rate and ICU admissions based on Australian data on pandemic (H1N1) 2009. Also based on USA data on age distribution for hospitalisation.