PROTECT PHASE

Annex to the

Australian Health Management Plan for Pandemic Influenza

17 JUNE 2009

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Introduction

The World Health Organization (WHO) raised its global pandemic alert level to Phase 6 on June 12 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. H1N1 Influenza 09 needs to be watched closely for any changes that indicate it may be becoming more severe.

At this stage H1N1 influenza 09 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 H1N1 Influenza 09

Since the World Health Organization announced outbreaks of a novel influenza strain – H1N1 Influenza 09 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[1].
- in countries overseas, around 2% of cases have developed severe illness, often with very rapid progression to life-threatening pneumonia[2].
- 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.

[1] 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 & Department of Health and Ageing Surveillance Report

2 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

Infection with H1N1 Influenza 09 is not as severe as originally envisaged when the Australian Health Management Plan for Pandemic Influenza was written in 2008. 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 with 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 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, or until a vaccination program commences.

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 H1N1 Influenza 09 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 H1N1 Influenza 09 in those with moderate to severe disease; people who may be more vulnerable to more severe outcomes and outbreaks in institutional settings. Testing would also be continued for surveillance purposes, at hospital and community level, and to monitor virus behaviour.

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 H1N1 09 influenza where disease is 'mild in most'.

In the PROTECT phase:

- Most importantly, children with acute respiratory illness (ARI) should not attend school.

- If a child becomes sick with ARI 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 was considered a useful measure to prevent an outbreak in the school. This measure is most relevant in jurisdictions without community transmission*.

* Community transmission is defined as person-to-person transmission, outside household or Health Care settings, with no epidemiological link to a probable or confirmed case.

Moving from the PROTECT phase

Given the coming influenza season may be more severe than previous years, especially for those in vulnerable groups, the disease needs to be watched closely for any changes that indicate it may be becoming more severe.

The key indicator for the consideration of a phase change would be a change in the virulence of the H1N1 virus. A change in phase would also occur when vaccine was administered as outlined in the CONTROL phase in the AHMPPI. 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 antigenetic 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).

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 – using a clinical case definition, noting that this will over estimate the number of cases as it will include other causes of acute respiratory illness (ARI) ;
- Severity – monitoring hospitalisations to search for cases of H1N1 influenza 09, 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 should not attend mass gatherings, go to work, or ride on public transport
  - Personal hygiene, cough and sneeze etiquette.

Vaccination
Once a vaccine against the H1N1 Influenza 09 virus is available, the Australian Government aims to vaccinate:

- vulnerable groups to prevent severe disease, PLUS

- A large enough proportion of the Australian population to slow transmission. Vaccination will be targeted to people likely to spread the virus to protect the wider population

In areas of Australia where there are few or no cases of disease, more active measures to slow transmission may be undertaken.

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:

- Identifying vulnerable individuals (as outlined in Part 2.1, Table 1) to allow early detection;

- Clinical assessment with early and intensive management of vulnerable cases. People in the vulnerable category should receive treatment with antiviral medication as soon as feasible;

- Isolation of all cases for the appropriate period; and

- Investigation and management of cases in institutional settings e.g. childcare, special schools and other settings (see APPENDIX).

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 acute respiratory illness (ARI) early in people who are at risk.

Education campaigns could identify what scenarios 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 acute respiratory illness (ARI), 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 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 H1N1 Influenza 09 disease

It is important for medical practitioners to identify patients who are at risk of severe H1N1 Influenza 09 disease, secondary complications, hospitalisation and possibly fatal outcomes.

Increasing evidence suggests that medical practitioners should have a high index of suspicion for severe H1N1 Influenza 09 infection in the vulnerable groups and a low threshold for treatment, especially for those with moderate or severe illnesses.

Following clinical assessment, patients falling into a vulnerable category (as outlined in Part 2.1, Table 1) presenting with an ARI should be managed with antivirals. Antiviral medication should be given within 48 hours of onset of illness. If testing is available and the person tests negative, antiviral therapy can be ceased.

2.1 Who is considered vulnerable to severe outcomes

Evidence from overseas indicates that the following groups are at an increased risk of severe H1N1 Influenza 09 disease and also the secondary complications of influenza infection.

Table 1: Groups particularly vulnerable to the severe outcomes

Vulnerable Group	Evidence[3,4,5]
Chronic respiratory conditions including asthma and Chronic Obstructive Pulmonary Disease	Increased hospitalisation, ICU admissions (Evidence from 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 USA, Mexico, South America, UK)
Persons with morbid obesity	Increased hospitalisation, ICU admissions (evidence from USA, Mexico,)
Indigenous people of any age	Increased hospitalisation, ICU admissions (evidence from Canada)
Persons with chronic illness predisposing to severe influenza such as: • cardiac disease (excluding simple hypertension) • diabetes mellitus, • chronic metabolic diseases, • chronic renal disease, • haemoglobinopathies, • immunosuppressed (including cancers, HIV/AIDS infection, drugs) • chronic neurological conditions	Increased hospitalisation, ICU admissions (Evidence from USA, Mexico, Canada, South America, United Kingdom)

[3] 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

[4] WHO Weekly Epidemiological Record: 5 JUNE 2009, No. 23, 2009, 84, 213–236 http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5819a6.htm

[5] WHO Weekly Epidemiological Record: 22 May 2009, No. 21, 2009, 84, 185–196 http://www.who.int/wer/2009/wer8421.pdf

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.

Groups requiring active monitoring include:

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

2.2 Clinical advice

Case definitions

During the PROTECT phase, the clinical definition for an acute respiratory illness (ARI) is fever (38 degrees C or well documented history) with cough and/or sore throat.

If the medical practitioner has assessed that there is H1N1 Influenza 09 in the local community (community transmission) then anyone with ARI is considered to have H1N1 Influenza 09.

In areas where there is no community transmission then the medical practitioner should undertake a laboratory test to confirm H1N1 Influenza 09 infection.

Treatment 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.

People who will be given antiviral therapy in the PROTECT phase are:

- People with moderate or severe clinical ARI (or if rapidly deteriorating) from H1N1 Influenza 09;

- Those with ARI who are identified as vulnerable. As in all cases clinical judgement will be applied to the decision to treat with antiviral medication.

Vulnerable individuals with mild disease can receive antivirals following clinical assessment.

In areas unaffected by H1N1 Influenza 09, antivirals may also be used for public health control activities.

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.

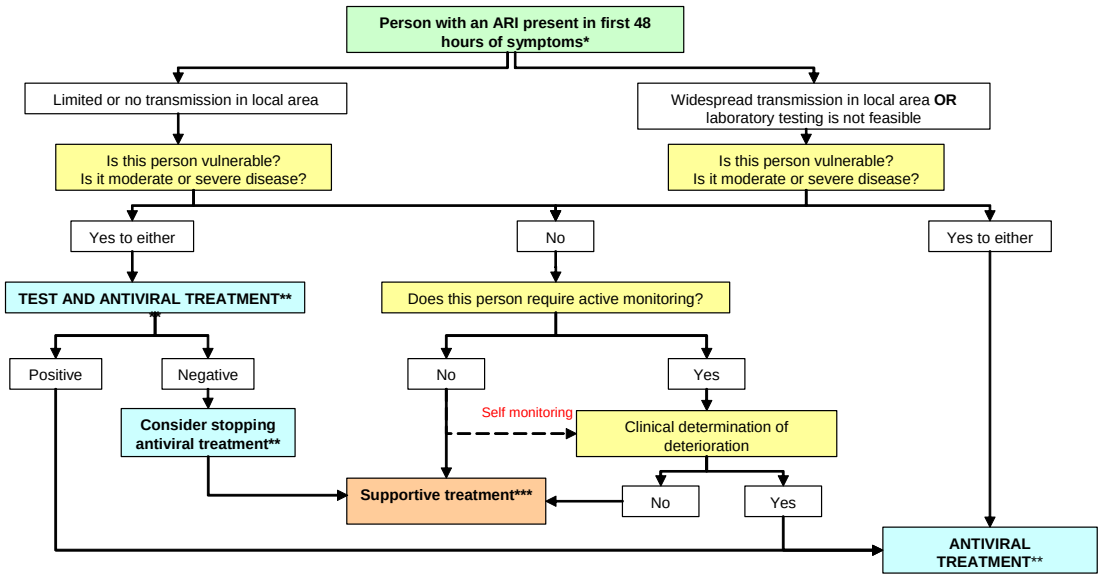
All people who are unwell should isolate themselves and attempt to reduce spread of disease to others. Refer to Figure 1 for Decision tree for management of cases with ARI.

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 contacts.

Close contacts who fall into vulnerable groups should be advised to present early if they develop ARI symptoms to enable early treatment.

Figure 1: Decision tree for management of cases of Acute Respiratory Illness (ARI)



Further details
Anyone who is unwell should be advised to undertake voluntary home isolation.
***Outbreak management is required for closed environments where vulnerable people reside.
****Antiviral treatment should be commenced based on a clinical case definition. Antiviral treatment should be provided within 48 hours of onset of symptoms. Beyond 48 hours antiviral medication may still be indicated on clinical grounds. Appropriate supportive treatment should also be provided. If testing is undertaken, treatment should cease if test is negative if clinically appropriate.
*****Supportive treatment = paracetamol, and any other medication to assist with alleviating symptoms not including antiviral treatment.

Testing policy

During the PROTECT phase of the response to H1N1 Influenza 09, laboratory testing of all potential cases will not be required or desirable. This is because:

(i) confirmation is no longer required to inform decisions about quarantine or use of antivirals;
(ii) the majority of cases, to date, are experiencing mild clinical illness; and
(iii) consumption of laboratory reagent stocks and pressure on laboratory human resources are not sustainable in the face of high levels of laboratory testing.

It is likely that high demand on laboratories for testing will continue as part of medical management of community wide disease during the PROTECT phase.

During the PROTECT phase of the pandemic influenza response, the national protocol for testing should include:

1. Laboratory testing for influenza that is limited to the following groups:

   Laboratory testing to assist with clinical management:-
   Those who meet the case definition and are:
   (i) Symptomatic with moderate or severe clinical disease.
   (ii) Symptomatic and vulnerable to severe disease.

   Laboratory testing for public health surveillance: -
   (iii) Cases in areas where the disease is newly introduced, to allow control measures to be instituted if appropriate.
   (iv) A representative sample of acute respiratory illness (ARI) cases from existing sentinel surveillance systems.
   (v) In outbreaks in 'closed' environments where individuals are at increased risk for 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).

2. Public Health Laboratory Network (PHLN) and other laboratories will continue to provide virus isolates and other clinical material to the WHO CC as previously arranged, and continue to subtype influenza strains where possible.

2.3 Infection control advice- healthcare settings

The following measures apply to anyone with an acute respiratory illness (ARI).

Health Care Workers at Increased Risk of Complications from H1N1 Influenza 09 Infections

- Health care workers who are at increased risk of complications from H1N1 Influenza 09 and who are likely to be in direct contact with patients who have H1N1 influenza 09 infections, should be considered for redeployment to lower risk activities.

- If redeployment is not possible, health care workers who are at increased risk of complications from H1N1 Influenza 09 infection should maintain a distance of one metre from H1N1 Influenza 09 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 ARI should be encouraged to perform hand hygiene frequently.

Personal Protective Equipment (PPE) – General Advice

- Anyone with an ARI 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 H1N1 influenza 09.
- Health care workers should routinely wear a surgical mask, protective eyewear and disposable gloves if they are undertaking an examination of an individual with ARI that may lead to coughing (e.g. collecting nose and/or throat swabs).
- All health care workers in the same room when aerosol-generating procedures are undertaken on ARI patients should use P2 respirators, protective eyewear, a disposable gown and disposable gloves. Aerosol-generating procedures include endotracheal intubation, nebulized 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.
- Administration of medication via nebulisers is not recommended. Use spacers where possible.
- Health care workers in the vulnerable category should not administer to patients during aerosol generating procedures or collection of nose and throat swabs.

In- Patient Isolation

- Single room accommodation should be used for H1N1 Influenza 09 inpatients and people with ARI presenting in clinical settings, wherever possible.
- If single rooms for H1N1 Influenza 09 inpatients are not available, cohorting of H1N1 Influenza 09 patients should be practised wherever possible.

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 H1N1 influenza 09 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 hrs in the absence of antipyretics.

Cleaning H1N1 Influenza 09 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 acute respiratory illness (ARI) 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 H1N1 Influenza 09 may be severe (e.g. pregnant women) and manage as appropriate (see section Health Care Workers at Increased Risk of Complications from H1N1 Influenza 09 Infections).

Management of Ill Health Care Workers

- Health care workers who develop ARI should be tested if capacity exists and excluded from work for 7 days or until fever has resolved, whichever is longer (unless on antivirals for 72 hours and fever resolved for 24 hours).

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.
  - 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:

1. continue case detection
2. detect the end of the first wave or start of the second wave of the pandemic
3. understand the epidemiology of the disease in order to test the planning assumptions and guide health sector decision making
4. monitor and detect changes in the severity of the disease, virulence, antigenic characteristics and antiviral drug sensitivity of the virus
5. 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 H1N1 influenza 09 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 laboratory 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 acute respiratory illness (ARI) presentations (including number of tests and number positive where available)
- sentinel ED surveillance systems for ARI presentations
- sentinel ED surveillance systems for ARI 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 H1N1 influenza 09. Jurisdictional data on hospitalisations, including 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 H1N1 Influenza 09 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 H1N1 influenza 09

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 H1N1 Influenza 09?

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:

- 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;
    - 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 H1N1 Influenza 09?

The symptoms of H1N1 Influenza 09 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, H1N1 Influenza 09 infection in humans can vary in severity from mild to severe.

3.4 What should I do if I think I have H1N1 influenza 09?

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

- **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 and young adults because of the risk of Reye's syndrome[6]

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 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.

[6] http://www.ninds.nih.gov/disorders/reyes_syndrome/reyes_syndrome.htm

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 mask?

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

If you are sick, wear a surgical mask when seeking medical attention or when in close company of vulnerable people (see Part 2.1 Table 1). A vulnerable household member should consider wearing a surgical mask if they need to come within one metre of an ill person who is not able to wear a mask.

Hand hygiene
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.

- 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.
- If there is no visible dirt, you could use an alcohol-based products with an emollient.
- In general, try to keep your hands away from your face.

Cough and sneeze etiquette
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.

Further information is available on the website healthemergency.gov.au or by calling the Commonwealth Health Hotline for H1N1 Influenza 09 on telephone number 1802007.

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 sanitizers).
- 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 (ARI) 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 H1N1 influenza 09.

Advice for Staff Members at Increased Risk of Complications from H1N1 Influenza 09 *

Part 2.1, Table 1 outlines the groups of people that are believed to be at increased risk of complications from H1N1 Influenza 09 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.

*Note – specific advice for health care workers who are at increased risk of complications from H1N1 influenza 09 is provided in Part 2.

Part 4: PROTECT phase assumptions for healthcare professionals

The following assumptions (from AHMPPI 2008) have been altered in light of new evidence on the H1N1 Influenza 09 virus:

2. Attack rate
8. Presenting symptoms
9. Health impact of pandemic influenza
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 H1N1 Influenza 09. 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 H1N1 Influenza 09 vaccine. 2.3 It will be important to identify vulnerable individuals, those for whom H1N1 Influenza 09 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 H1N1 Influenza 09 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.

Assumption table 8 - Presenting symptoms	
Current assumption(s)	There is a spectrum of illness from mild to very severe. The symptoms of H1N1 Influenza 09 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. Some people with H1N1 Influenza 09 infection have also reported vomiting and diarrhoea. Dehydration has also been a feature of some hospitalised patients in the USA. There have been a few documented cases without fever.
Response implications	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. It will be important to establish the frequency of atypical presentations as amendments, particularly to the clinical case definitions, may be required.
Evidence base	Based on extensive studies of seasonal influenza and previous pandemics indicate that influenza is predominately a respiratory disease. Also based on current data on H1N1 Influenza 09 from Australia and overseas (USA, Canada, and UK).

Assumption table 9 - Health impact of pandemic influenza	
Current assumption(s)	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 H1N1 Influenza 09 have been in younger people. 9.2 There is a spectrum of illness from mild to severe. 9.3 Vulnerable people (see Part 2.1, Table 1) are likely to experience higher complications than those without underlying health problems.
Response implications	9.1 – 9.3 Data on health service usage needs to be closely monitored, so that services are optimised as required. 9.2 Certain specialist health services may be required to ensure that the specific needs of these groups can be best met. 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 optimized.
Evidence base	9.1 – 9.2 Based on data on H1N1 Influenza 09 from Australia and overseas (USA, Canada and UK). 9.3 based on data from overseas. H1N1 influenza 09 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).

Assumption table 16 - Hospitalisation and ICU admission	
Current assumption(s)	16.1 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. 16.2 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 hospitalization 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 optimized.
Evidence base	16.1 Hospitalisation rate and ICU admissions based on Australian data on H1N1 Influenza 09. Also based on USA data on age distribution for hospitalisation.

Appendix- Protocols for special situations in PROTECT

This appendix should be read in conjunction with the PROTECT annex.

Special situations include education and childcare facilities; correctional settings and cruise ships.

Business owners and facility managers have a responsibility to provide a safe environment for staff and visitors In addition to good infection control and general hygiene in the workplace, employers can prevent transmission by:

- Encouraging people with Acute Respiratory Illness (ARI) (characterised by fever with cough and/or sore throat) to keep away from the workplace.
- Providing, tissues, no touch waste bins and facilities for people to wash their hands frequently.

Recognition of Cases and Outbreaks

H1N1 Influenza 09 is a mild disease in most cases but a severe disease in some people. Prompt action is needed if H1N1 influenza 09 is suspected. This includes being able to recognise an outbreak as early as possible so that immediate steps are taken to prevent the spread of illness.

The occurrence of three new cases of ARI in a;

- child care centre
- single class within a school or
- single dormitory within a boarding school
- in a single cell block or residence of a correctional facility
- on board a cruise ship or other passenger vessel

within a period of three days represents a likely outbreak of influenza. Any suspected outbreaks of influenza should be reported promptly to your local Public Health Unit.

The aim of the PROTECT phase is to treat the vulnerable who become ill, to treat those with moderate and severe disease and to reduce the spread of disease by isolating the ill. Those at risk of more severe outcomes are identified in Part 2.1, Table 1 of this document. You should be on the alert for acute respiratory illness (ARI) in those groups.

Transmission

H1N1 Influenza 09 is spread through three main ways:

- **Droplet transmission:** droplets may be spread by coughing, sneezing, or talking.
- **Direct contact transmission:** this occurs during skin-to-skin or oral contact.
- **Indirect contact transmission:** takes place when a person has contact with a contaminated object, such as bedding, furniture or utensils, which has previously been contaminated by an infectious person.

Prevention

Good hygiene and thorough frequent hand washing with soap and water or alcohol hand wash is recommended.

The H1N1 Influenza 09 virus can survive on hard surfaces for up to 48 hours after the surface was contaminated. Surface cleaning with a neutral detergent is therefore important to help prevent spread. To limit the spread of H1N1 Influenza 09 you should follow good hygiene practices. You should clean visibly soiled surfaces immediately and regularly clean frequently touched surfaces, such as handrails, desks, doorknobs, computer keyboards, toys etc.

Isolation

The only people who need to stop their normal activities are:

- People who have acute respiratory illness (ARI)
- People who have been confirmed as having H1N1 influenza 09.

When caring for an ill person you should refer to Part 3.9 Infection control in the workplace.

Identification of Close Contacts

Advice should be given to staff, visitor's parents and children that a case has been identified and that they should be vigilant for the emergence of acute respiratory illness (ARI) in others.

Staff at risk of complications if they become infected (because they are in the vulnerable group) should avoid ill people. Ill staff should stay away from the facility or workplace until their symptoms have completely resolved.

Educational Facility and Childcare Protocol

Closure of educational facilities, boarding schools and child care centres is, in general, not recommended. Teachers and child carers should be alert for any staff or children who exhibit symptoms and refer them to their health care provider in the first instance.

Children

Children who are ill with ARI should stay home and not return to the educational facility boarding school or childcare centre until fever is resolved for 24 hrs in the absence of antipyretics e.g. paracetamol.

Siblings of ill children can still attend the facility.

The ill child should be cared for at home or away from other students if remaining at a boarding school. Ill pupils at boarding schools should be cared for in single rooms and kept separated from other students until their fever resolves for 24hrs in the absence of antipyretics e.g. paracetamol.

Staff

Staff caring for students with ARI should limit contact with other staff and students until the ill student's symptoms have resolved.

Staff do not need to stay away from educational facilities, boarding schools and childcare centres unless they develop acute respiratory illness (ARI).

Parents
Do not need to stay away from educational facilities, boarding schools and childcare centres unless they develop acute respiratory illness (ARI).

Correctional Facility Protocol

Closure of correctional facilities is not recommended. Custodial officers should conduct daily health checks on all staff and inmates. All visitors should be checked for ARI before being permitted to enter the correctional facility.

Inmates
Inmates with ARI should be cared for in single rooms and kept separated from other inmates until their fever resolves for 24hrs in the absence of antipyretics e.g. paracetamol.

Staff
Staff who are supervising inmates with ARI should limit contact with other staff and inmates until the ill inmate's fever resolves for 24hrs in the absence of antipyretics e.g. paracetamol.

Staff do not need to stay away from correctional facilities unless they develop ARI

Visitors
Do not need to stay away from correctional facilities unless they have ARI

Cruise Ship or Other Passenger Vessel Protocol

Cessation of voyages is not recommended. Passengers and crew members who are ill with ARI prior to commencement of the voyage should not join the vessel until their symptoms have completely gone. In regard to this pre- embarkation screening for ARI is important.

During the voyage, crew should encourage staff and passengers to immediately report ARI. Passengers and local support staff in places visited should not board if their have ARI.

Passengers
Passengers who develop ARI during the voyage should be cared for in single rooms and kept separated from other passengers until their fever resolves for 24hrs in the absence of antipyretics e.g. paracetamol.

Staff

Staff who are caring for passengers with ARI should limit contact with other staff and passengers until the ill passenger's fever resolves for 24hrs in the absence of antipyretics i.e. paracetamol.

Staff who develop ARI during the voyage should be cared for in single rooms and kept separated from other passengers until their fever resolves for 24hrs in the absence of antipyretics i.e. paracetamol.

Passengers and staff who are vulnerable to serious complications of influenza (see Part 2.1 Table 1) need to reconsider their attendance on a cruise ship as contact with large numbers of people can increase the risk that they come into contact with the infection.