

Key Recommendations on Pandemic (H1N1) 2009 Influenza

from the NSW Health Emergency
Management Committee



Health

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SHPN: (CHA) 100265

ISBN: 978 1 74187 533 1

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September 2010

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Foreword

In 2009 Pandemic (H1N1) 2009 spread in NSW and across the world. When reports emerged of a new strain of influenza, all jurisdictions were on high alert, with many dedicated professionals working above and beyond to minimise the impact it may have had on Australia.

I express my sincere thanks to everyone across NSW Health for the support they provided in preparing for and responding to Pandemic (H1N1) 2009.

At the time, a dedicated team was established to provide information, develop protocols, follow up suspect cases and support health services, other agencies and the community.

I am proud to have had a dedicated and responsible team, who carried out their duties with such care and consideration.

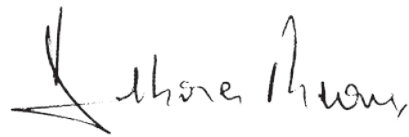
There was considerable media coverage and public scrutiny of NSW Health's actions and I thank everyone involved for ensuring that regular reports were provided to allow a reliable flow of information to the community.

I highly commend all of those involved in responding so promptly and for doing what was required in such a professional manner.

In addition, I thank the dedicated professionals across the system who aptly coped with the increase in demand during this time. On top of a normal flu season, the challenges posed by Pandemic (H1N1) 2009 were enormous. The NSW community is indeed fortunate to receive health services from our hardworking staff at the front line.

As always following major events, we embrace the opportunity to review our response and determine which aspects were particularly successful and what could be implemented to strengthen future responses. Recommendations developed after consultation with NSW Health services and other key stakeholders (eg general practice and partner agencies) are presented in this document.

The threat of future pandemics remains with us; it is vital that the experiences gained during Pandemic (H1N1) 2009 are not forgotten and are used to strengthen the health system's response to future infectious disease emergencies.



Professor Debora Picone AM
Director-General
June 2010

Background

For many years NSW Health has been preparing and planning its response to a range of potential infectious disease outbreaks. Since SARS in 2003, with the increased awareness of overseas bioterrorism incidents and the potential of an H5N1 (avian) influenza epidemic, significant investment has been made to promote whole-of-system readiness for infectious disease emergencies.

While the NSW Department of Health and Area Health Services have prepared State, Area and facility disaster and pandemic plans for some time, it is challenging preparing for an event known to have an impact that ranges from mild to severe, and where it is difficult to predict public and health care worker behaviours and system demands.

On 24 April 2009, reports of an unusual number of deaths, associated with a novel influenza in Mexico, were received in Australia. Within twenty-four hours NSW Health's operational response commenced with information on the 'influenza-like illness' circulated to Emergency Departments and General Practitioners (GPs). It quickly became apparent that the United States and Canada were also experiencing cases of influenza from the same novel virus, first described as H1N1 Swine Influenza and later as Pandemic (H1N1) 2009 (pH1N1).

The World Health Organization raised its pandemic alert to level 4 on April 28. On the same day, Australia moved to the DELAY pandemic phase under the Australian Health Management Plan for Pandemic Influenza (AHMPPI). Australia progressed to the CONTAIN phase on 22 May.

In the early stages NSW Health focused on the rapid identification of cases of influenza amongst returning travellers through border screening and assessment of returning travellers from affected areas at international airports. On 20 May NSW declared its first (Australia's second) confirmed case of Pandemic (H1N1) 2009 in a returned traveller.

What began primarily as a public health response gradually grew to encompass many areas of the NSW Health system, as well as significant resources of partner agencies supporting the response. By June 2009 the relative mildness of the disease in many people was apparent. While the virus was 'mild in most', many of the more severely affected patients required high level hospital care, including sophisticated medical retrieval and intensive care services.

On 17 June 2009 Australia moved to the PROTECT phase, a new phase developed by the Australian Health Protection Committee and incorporated into AHMPPI. This phase was developed as the severity of illness did not warrant the level of response as previously planned for in the various federal, state and local government level documents.

On 30 September the first doses of the pH1N1 vaccine were released. The vaccination program expanded with the release of a vaccine for those six months to less than ten years of age in December 2009. A summer vaccination campaign coinciding with the start of the 2010 school year followed to increase immunity to the pandemic strain.

The NSW Department of Health, Ambulance Service, Area Health Services, Justice Health and supporting agencies reacted swiftly and flexibly to the novel virus demonstrating an ability to respond under pressure to rapidly changing health events over a prolonged period. By incorporating lessons learned during the pandemic response, NSW Health's capacity and capability to respond to public health emergencies will be enhanced.

Key recommendations from the response to Pandemic (H1N1) 2009 Influenza

Implementation strategy

Implementation strategy for the key recommendations on Pandemic (H1N1) 2009 influenza

A strategy is developed to implement the key recommendations. This strategy will require significant commitment and resources from across NSW Health.

Recommendation 1

Appropriate resources are committed towards developing and acting upon an implementation strategy.

Governance – planning, preparedness and operational response

Whole of health planning and response

A pandemic response involves every part of the health sector. Public health, clinical services, media and communications, ambulance and retrieval services, workforce teams, health system support, mental health and others all play an important role. A mutual understanding of responsibilities improves the overall cohesiveness of the health system response to a pandemic. It is important that all areas maintain readiness for a pandemic response from the earliest warnings.

As occurred during the response to pH1N1, plans in place for the initial response to mass casualty and disaster events (eg NSW and Area HEALTHPLANS, AMBPLAN) will not be activated for most infectious disease outbreak scenarios. Instead the health system response needs will be managed from a communicable disease control and a health systems demand focus over an extended period. Experience from pH1N1 in 2009 provides the opportunity to improve understanding and communication of core central responsibilities during future events.

It is clear that Chief Executives will be expected to remain the decision makers within their Area Health

Services and be responsible for operational management during a pandemic. During these events the Department of Health may need to exert a greater level of direction to ensure consistency of response across the state while Chief Executives determine the best way to implement Department-identified measures.

Recommendation 2

Future pandemic plans should be amended to set out key responsibilities across Deputy Director-General portfolios and arrangements for increasing the level of logistical, policy and expert clinical advice to support these roles during a pandemic. These arrangements should be able to be activated and clearly communicated across the health system early during a major infectious disease event.

Review of pandemic plans

Many aspects of previously prepared pandemic plans were put in place during the 2009 pandemic response. It was also necessary to implement aspects of the response that had not been previously tested, as the pandemic was relatively 'mild' and most plans had been written for more severe scenarios. Plans prepared before the pandemic, including the NSW Human Influenza Pandemic Plan, will need to be updated to incorporate lessons from the response. The pH1N1 response provided an important opportunity both to develop new plans and test existing plans.

Recommendation 3

The NSW Health Interim Influenza Pandemic Action Plan and Area Health Service pandemic plans should be reviewed and recommendations identified here incorporated. NSW Health should contribute to the review of the whole of government NSW Human Influenza Pandemic Plan and, via the relevant committees, contribute to national pandemic planning as appropriate.

Formation of a health emergency clinical advisory group

Many expert advisory groups (including infectious disease, primary care, intensive care and obstetrics advisors) were consulted during the pH1N1 response for rapid policy content development and discussion of major operational

decisions. This system was effective and gave additional credibility to recommendations and guidelines relating to patient management, particularly during the CONTAIN and early in the PROTECT phases.

Recommendation 4

The broad role of clinical advisory groups providing advice to public health and medical services response personnel during a pandemic should be incorporated into pandemic plans.

The primary care reference group established for the pandemic response should be re-established for any public health infectious disease emergency

Where possible, existing groups (eg Critical Care Taskforce) should be consulted, prior to establishing any new clinical group.

Inter-agency relationships

Close contact between NSW Health, the Australian Government Department of Health and Ageing, the NSW Government Departments of Premier and Cabinet, Education and Training, Human Services, Police and Emergency Services and other agencies helped facilitate responses to situations where multi-disciplinary participation or expertise was required. Pre-existing working relationships, especially between pandemic planners and emergency responders, meant that informed and decisive action was possible in a relatively short timeframe.

Recommendation 5

NSW Health should continue to build and maintain relationships with key personnel in partner agencies integral to a pandemic planning and response.

Communications

Call centre role and function

A team from the Population Health Division within Department of Health, supplemented by clinical advisers, operated as the NSW Health pandemic call centre from the first days of the pandemic. The role of a call centre during a major health response, both in accepting incoming and in placing outgoing calls, is central to the overall operation and is often a critical link to members of the public.

The team managed direct calls from the public, as well as transfers from the Australian Government's Swine Influenza

Hotline and overflow from calls received by NSW public health units. A laboratory results line was also established, as an off-shoot of the call centre, to support clinicians and members of the public seeking test results. The information identified by the call centre team as being widely sought by the public was used to inform and focus outgoing media and public communication (for example, when a heavy call volume followed the disembarkation of the Pacific Dawn and Dawn Princess cruise ships, additional information clarifying the situation was placed on the pandemic website). As the numbers of calls increased, clinical calls were diverted to HealthDirect (a clinical advice line) for advice.

Recommendation 6

A comprehensive review, in consultation with Area Health Services, should be undertaken to determine the role and function of call centres in the response to health emergencies.

Communication with the community

The community received information about the pandemic primarily from media reporting and commentary, the NSW Health call centre, public service announcements, press conferences with consistent and credible NSW Health spokespeople and from the NSW Health pH1N1 website. The number and type of calls received by the call centre and hits to the website indicate that both media were widely accessed. Individual requests to the NSW Health 'drop box' from the public were also monitored and responded to where possible. When trends were seen in a type of request, information on the website was adjusted to provide a suitable response to a wider audience. The NSW Health website was seen as a useful source of information by the community, government agencies and clinicians.

The continually evolving situation (eg activation of the school exclusion policy until the start of the PROTECT phase) meant that public messages often needed revision to reflect the best available information. Unfortunately at times, this resulted in confusion amongst the public and health professionals. Messages, with an emphasis on clarity, simplicity and specificity should outline what the current situation is, what actions are being taken and why. Excessive information should be avoided and new forms of communication, along with traditional forms, should be considered.

Recommendation 7

Public communication must remain a focus of any future pandemic response. Public health, clinical service and health communication colleagues should work together to review, build on and improve public communication during public health emergencies, especially with those most vulnerable in the community.

Communication with primary care providers

During the pH1N1 response, the NSW Department of Health communicated widely with General Practitioners (GPs) and Aboriginal Medical Services (AMSs) via faxes, messages on the Healthlink (pathology report) system and a special section of NSW Health's pH1N1 website. There were also regular meetings with peak GP bodies in a primary care reference group to enable consultation on key decisions and documents. Public health units worked closely with Divisions of General Practice, AMSs and local practices and forwarded their feedback to the Public Health Emergency Operations Centre.

The NSW Health website provided a useful reference point for primary care organisations. National and state communications should be aligned with clear points of difference between jurisdictional responses communicated to primary care.

Recommendation 8

Consultation with general practice bodies on decisions that will impact general practice should remain a priority during the pandemic response.

Recommendation 9

Existing methods of communication with general practices prior to and during public health emergencies should continue with regular evaluation and implementation of suggested enhancements.

Communication with private hospitals

NSW Health Private Health Care Branch and the Area Health Services liaised with and provided information to private hospitals within their boundaries throughout the pandemic. Liaison with private hospitals by the Branch and Area Health Services on a range of issues including emergency planning and response is ongoing.

Recommendation 10

Area Health Services should continue to work with private hospitals when planning for future pandemic responses.

Communication within the NSW Health system

Effective communication within the health system is required to support a state-wide operation and to achieve consistency with the implementation of public health measures when information is changing rapidly. During the pH1N1 response, communication within the NSW Health system was conducted via an extensive network of regular teleconferences, face to face briefings, heavy email traffic, the NSW Health pH1N1 website, intranet, SMS text messages and fax broadcasts. Generally this system was effective, especially between the Department and senior Area Health Service personnel, although there were numerous enquiries from employees seeking information who were unaware of how to access this information within their own Area Health Service.

Recommendation 11

Clear pathways of communication during a pandemic between and within the NSW Department of Health and Area Health Services should be maintained so that all employees have confidence in where their information will come from and who they should approach if they need additional information (see also Recommendations 2 and 3).

Surveillance and monitoring/ reporting on the pandemic

Public health surveillance

Surveillance data during the pH1N1 pandemic was collected from laboratory notifications, a general practice sentinel surveillance system, hospital, paediatric unit and intensive care unit admission data, death certificate data, influenza clinic and emergency department presentation data and ambulance dispatch data. The data was analysed extensively and used routinely to guide informed decision-making. NSW Health epidemiological data was also available to the media and the public on the pH1N1 website; this supported increased transparency and significantly raised the public profile of the health response.

Recommendation 12

The NSW Department of Health should continue to invest in its surveillance systems and the Population Health Division should consider how best to incorporate information management and specialised surveillance collection and analysis into public health emergency responses.

Data requirements and modelling issues

Daily manually assembled situation reports of health system demand were resource intensive to create and relatively inadequate to manage a dynamic situation.

Recommendation 13

A review of automatically available data and the frequency with which this can be reported should be explored. Full utilisation of the NSW Health Bed Board should be activated in all Level C1 hospitals and above to minimise the impact of manual data collection so as to facilitate the reporting of operational capacity and demand impacts. Ongoing support for the Critical Care Resource System (CCRS) to ensure active Intensive Care Unit (ICU) and High Dependency Unit (HDU) capacity to facilitate inter hospital patient flows should be maintained.

Mitigation of transmission (disease control activities, infection control, social distancing)

Quarantine and isolation

A limited number of people were placed into isolation and quarantine during the early phases of the pH1N1 pandemic response. While some people were able to self-manage and arrange leave from work and assistance from family or friends, others were not. The ability to fully support people in home isolation or quarantine is beyond the resources of NSW Health. NSW Health developed a system with partner agencies to respond to these situations as they arose. A more formalised process should be established as part of future pandemic planning to support people in home quarantine.

Recommendation 14

A detailed review of the management, welfare support and communication with people in quarantine and isolation should be conducted with relevant partner agencies, to determine how best to provide support to those who need it.

Establishment of a Health Services Support Centre during the DELAY and CONTAIN phases assisted in dealing with the large number of requests for additional support from those in home isolation or quarantine received at the Public Health Emergency Operations Centre (PHEOC) from local public health units.

Recommendation 15

A review of Health Services Support Centre activities should be conducted to ensure appropriate allocation of responsibilities across Health and supporting agencies.

Cruise ships

In May 2010 an outbreak of influenza was identified amongst passengers and crew on the cruise ship Pacific Dawn. In response, NSW Health deployed a public health response team to the ship and commenced extensive communication and follow-up with passengers, the cruise line and the media. Although the ship and ill passengers had not been in countries known to be affected by pH1N1 before the outbreak, urgent testing showed that the outbreak was caused by two strains of influenza: seasonal H3N2 influenza and pH1N1.

Extensive follow-up of passengers and crew with pH1N1 did not find evidence of further transmission of this virus into the broader community.

Some passengers who were asked to remain in isolation or quarantine reported poor coordination between responding government agencies, that they incurred costs in having to take time off work, and delays in the receipt of information and of quarantine packs. While a follow-up study indicated that they were very compliant with the isolation or quarantine requests, some needed additional support. There is a need for better systems to support those people in the event of a pandemic.

Recommendation 16

Cruise ship reception plans should be reviewed, including arrangements for communication, accommodation, transport, basic personal needs and coordinating agency responses.

Airport operations

During the DELAY and CONTAIN phases, NSW Health coordinated influenza assessment clinics at Sydney's international airport at the request of the Australian Department of Health and Ageing. Previous plans envisaged situations where quarantine of an entire aircraft might be required. These plans were modified, taking into account the relatively mild nature of the virus.

Health staff at the airport assessment clinics assessed ill passengers, tested them for pH1N1 and provided treatment and public health advice; however significant time and resources were required to support this activity as Sydney's

international airport is not routinely equipped to support this type of activity. Because people can transmit influenza to others even before they have symptoms or if they have only very mild symptoms, the effectiveness of screening incoming passengers is generally acknowledged to be poor as a disease control activity. However it may raise awareness.

Recommendation 17

Due to the intensive resource requirements, the nature and need for airport-based influenza assessment clinics during a pandemic must be continually re-assessed.

Infection control

NSW Health developed numerous infection control resources to inform and protect staff and the public prior to and during the pandemic. These included posters on hand-washing and wearing of masks, distribution of alcohol-based cleanser within health facilities and transport vehicles and the provision of masks for staff and the public in Emergency Departments. Posters alerting visitors to not enter hospitals if they had symptoms of influenza were used to deter visitation of already sick people by those who were potentially infectious.

Recommendation 18

Infection control should be a key focus in every pandemic response and preparedness activities should continue for future pandemics. Guidelines should be clear, evidence based (where evidence exists) and practical. Infection control measures are important every flu season. Where appropriate, these resources should be highlighted each winter and incorporated into standard business practice.

Schools

Children have been proven to be amplifiers of infection with influenza within the community, particularly school children with their extensive social networks. Efforts were made to exclude children who had returned from pandemic-affected areas from school. This may have decreased the number of schools, and hence the number of people in the community, affected early in the course of the outbreak within NSW. The NSW Government Department of Education and Training, the NSW Catholic Education Commission and the NSW Association of Independent Schools all worked with NSW Health to provide clear messages to students and parents throughout the pandemic.

Schools in the United Kingdom and the United States all proved to have higher absenteeism as an early marker of community transmission of disease. School-based disease surveillance has not been a feature of prior NSW pandemic planning.

Recommendation 19

NSW Health should continue to build on its relationship with key education providers, as they were vital partners during the pH1N1 response.

Recommendation 20

The development of school-based surveillance systems to monitor for absenteeism as a marker of community transmission of disease should be considered so that it can be deployed in future large-scale infectious disease outbreaks.

Essential medical supplies – stockpile (logistics)

Two stockpiles were deployed during the pandemic response – the National Medical Stockpile, funded and owned by the Australian Government and the NSW Health State Medical Stockpile, funded and owned by NSW Health. Distribution costs for both within the state are funded by NSW Health.

The NSW Health stockpile of personal protective equipment and anti-influenza medications ensured the public health system was adequately supplied during the pandemic. The stockpile was accessed regularly throughout the response and provided a level of security of supply to NSW Health facilities. Additional goods were sourced to supplement those stockpiled as additional needs were recognised.

Recommendation 21

A review should be undertaken of the types and quantities of stockpiled goods used in the pandemic response to inform future stockpile purchases.

The National Medical Stockpile is released by the Australian Government to health care providers to be used according to national guidelines. The stockpile is only available when other suppliers are unable to meet the needs of health care providers and access to the stockpile may be limited.

Recommendation 22

NSW Health should continue to work with other health care providers to facilitate a better understanding of when and how stockpiled items are made available and to encourage business continuity planning that will allow these providers to protect themselves – both from common infectious diseases and during infectious disease emergencies.

Laboratory issues

Laboratories in NSW responded to the discovery of the novel influenza strain by establishing early on the operational ability to test for the disease – this was a major achievement. The extensive ordering of tests for the pandemic virus meant that laboratories soon became stretched. Staff surge capacity was, at times, difficult to identify. The sustained large volume of community testing in this ‘mild’ pandemic had an adverse impact on timely delivery of priority results. Rural areas and those dealing with cross border support (laboratory in another jurisdiction) faced additional challenges of transport and delays in receipt of results.

A single outbreak management and laboratory reporting system was used during the response. This was found effective for tracking specimens and results, and enhanced the public health response.

Recommendation 23

Laboratories should develop and regularly exercise plans to ensure surge capacity in the event of an infectious disease emergency.

Recommendation 24

When laboratories are upgrading their information management systems, consideration should be given to outbreak management reporting requirements, as well as the ability to communicate results to clinicians not normally served by that particular laboratory in a timely fashion.

Recommendation 25

In any large-scale infectious disease outbreak, NSW Health should develop and communicate testing protocols to the clinical and laboratory community. Targeted surveillance is preferable to widespread community testing. Widespread community testing should be discouraged in order to protect laboratory capacity.

Health care services (including ICU surge, patient transport, flu clinics)

Clinical surge - impact on pre-hospital, emergency departments, intensive care units and high dependency units

As part of health system-wide pandemic planning and preparedness, the NSW Intensive Care Taskforce prepared the Intensive Care Pandemic Planning Principles Position Paper in 2007. This paper was used as a basis for the development of NSW Guidelines for the Provision of Critical Care in Response to Influenza Pandemic. The Guideline was drafted in the early stages of the 2009 pandemic.

Recommendation 26

The Guidelines for the Provision of Critical Care in Response to Influenza Pandemic is endorsed as the strategy for the delivery of critical care services during an influenza pandemic.

Patient transport

The development of a new capacity – the aero-medical retrieval of patients requiring Extra-Corporeal Membrane Oxygenation (ECMO) – was accelerated in response to the increased demand for transportation of patients with severe respiratory failure. The available ECMO equipment was not designed for out of hospital use. Hence, it did not meet any aviation or road transport standards. This required urgent consultation with helicopter operators, Civil Aviation Safety Authority (CASA) engineers, ECMO specialists, retrieval specialists, vehicle engineers and the ECMO manufacturer to design, develop, construct and implement appropriate equipment and restraint systems to meet both requirement standards and clinical need.

Recommendation 27

Multiple transport and destination options should be developed for high volume ECMO needs to include all modes of transport and involving regional and Sydney tertiary hospitals.

Non-emergency transports

While largely managed effectively during this pandemic, it is important to ensure emergency ambulances are not relied upon to provide non-emergency transport during pandemics to ensure emergency needs can be met at short notice.

Recommendation 28

Emergency ambulances should not be relied upon to provide non-urgent patient transport during pandemics or other health emergencies.

Flu clinics

As a result of the SARS epidemic, a model of diversion of potentially infectious patients away from Emergency Departments and general practices was proposed. This model provided NSW Health with the ability to direct patients to centres where appropriate testing and treatment were available from the earliest stages of the pandemic response. When there was a surge of demand, flu clinics reduced the burden on some general practices and provided after-hours access to care – this is important as anti-influenza medications are most effective when administered shortly after symptom onset.

Unfortunately in a system already stretched, additional staffing for flu clinics was not readily available and staff were often drawn from already busy Emergency Departments.

Recommendation 29

The flu clinic model should be evaluated and refined to reflect successful practice. Where possible, staff should not be drawn from areas already experiencing high demand due to the pandemic response.

Primary care

According to existing pandemic plans, most General Practitioners (GPs) were expected to maintain their core business and encourage potentially infected patients to seek treatment at hospitals. This assumed:

- a) a burden of disease in the community that would put at risk GPs' ability to deliver routine care to non-pandemic patients and
- b) a severity of disease that would make it difficult for GPs to provide care safely (eg due to waiting room configuration).

As the pandemic progressed and more was understood about the epidemiology of pH1N1, it became obvious that extensive diversion was not required. Regular and multi-faceted communication with GPs enabled response flexibility and meant that processes were in place to provide updated information on the changes.

Recommendation 30

The response to infectious disease emergencies should include an ongoing risk assessment to enable normalisation of service delivery, as far as possible, at an appropriate time.

Aboriginal Medical Services

Aboriginal people in NSW were disproportionately impacted by pH1N1, with higher rates of hospitalisation, admission to critical care and death. The NSW Department of Health and Area Health Services worked with the Aboriginal Health and Medical Research Council and Aboriginal Medical Services to develop resources specifically relevant for Aboriginal people.

Recommendation 31

The NSW Department of Health and Area Health Services should continue to work with the Aboriginal Health and Medical Research Council and Aboriginal Medical Services to promote planning for the response to infectious disease emergencies such as an influenza pandemic.

Mental Health

Advice was prepared to assist health staff and public health providers to address mental health concerns experienced by people in isolation and quarantine. The Mental Health Helpline was activated with the Helpline provider asked to provide support, reassurance and advice and otherwise to follow their usual assessment and referral protocols.

Recommendation 32

Mental Health should continue their disaster preparedness planning and use of the Mental Health Helpline for support to the community in an emergency. The Mental Health Helpline should be considered in the call centre review (see Recommendation 6).

Workforce issues

Health personnel surge capacity

The number of health personnel required to respond to even a relatively 'mild' pandemic is significant. Redeploying health staff in rural areas, especially in the pre-hospital environment was particularly challenging. The desirable skill mixes and availability (ability to surge/join a temporary response team) should be reviewed with the objective of identifying staff able to be redeployed to areas of critical need and used in supporting roles where necessary.

The impact of staff sick leave should be assessed during the planning process with defined strategies developed to assess availability of replacement /casual/agency staff to cover short term vacancies.

The reporting of sick leave should be required during a pandemic to ensure tipping points can be identified early to activate plans for cover and/or redeployment from intra-hospital and inter-hospital.

Recommendation 33

Staff should be regularly and systematically identified for deployment as part of health emergency planning and response, including the reporting of sick leave.

Unwell health personnel

The impact of staff becoming unwell with influenza, especially in areas of critical need within the health system, required a rapid assessment process including readily available treatment. This support of health staff in Area Health Services helps minimise the personal impact of the pandemic while also meeting occupational health and safety requirements and greater flexibility in staff deployment.

Recommendation 34

Area Health Services should review their pandemic plans to ensure that staff health needs are adequately addressed.

Training

As a priority, Incident Control System training should be made available, where appropriate via flexible learning delivery methods, to all health staff likely to be involved in operational response decision-making roles at the Area level and across health functional areas.

Health staff induction and task job sheets should be considered for staff redeployed in disaster surge support roles including in flu clinics and at airports and schools. Further development of health emergency management training courses (including specific public health courses) would support both Area Health Services and the Department during future responses.

Recommendation 35

Review of current training and the development of new training packages should be considered for health staff deployed in all types of health emergencies.

Vaccination

NSW pandemic plans, written in preparation for a more severe pandemic, primarily considered the use of mass vaccination clinics as an effective method of distributing the vaccine to the population – this included the assumptions that as demand for vaccine would be high, it would need to be delivered in multi-dose vials to enhance production capacity and its supply would be scarce compared to demand. Decisions regarding the supply of the pandemic vaccine were made early in the pandemic. By August 2009 it became clear that a vaccine would likely be available only after the first wave of the pandemic had subsided and the rate of critical care admissions and deaths had decreased within NSW.

In consultation with primary care groups and Area Health Services, the focus of delivering vaccine was changed to that of a more routine service delivery model (through general practice) with supplementary services in areas with populations who have historically had difficulty accessing vaccine through general practice.

Recommendation 36

Planning for the delivery of vaccines needs to encompass both a mass vaccination scenario and that of a more routinely-delivered model of care.

Glossary and Definitions

AHMPPI	Australian Health Management Plan for Pandemic Influenza
AMS	Aboriginal Medical Service
CCRS	Critical Care Resource System
CONTAIN	Pandemic phase: once the novel virus has arrived in Australia and there are a small number of cases
DELAY	Pandemic phase: increased and sustained human infection with a novel virus overseas
ECMO	Extracorporeal Membrane Oxygenation
Epidemiology	The study of the distribution and determination of disease
GP	General Practitioner
HDU	High Dependency Unit
ICU	Intensive Care Unit
pH1N1	Pandemic (H1N1) 2009 – a novel influenza A virus
PHEOC (The Bunker)	Public Health Emergency Operations Centre
PROTECT	Pandemic phase: community transmission is established in Australia but is mild in most. Focus on those most vulnerable
SARS	Severe Acute Respiratory Syndrome
SUSTAIN	Pandemic phase: novel virus spreading rapidly in Australia

