Surveillance

Pandemic Influenza sub plan

2015
## Glossary

### Acronyms:

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AHMPPI</td>
<td>Australian Health Management Plan for Pandemic Influenza (2014)</td>
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<tr>
<td>ASPREN</td>
<td>Australian Sentinel Practices Research Network</td>
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<td>CDCB</td>
<td>Communicable Disease Control Branch</td>
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<td>CDNA</td>
<td>Communicable Diseases Network Australia</td>
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<td>FluCAN</td>
<td>The Influenza Complications Alert Network</td>
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<td>GP</td>
<td>General practitioner</td>
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<td>HASSED</td>
<td>Hospital Administration Software Solutions Emergency Department</td>
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<td>ICMS</td>
<td>Infection Control Management System</td>
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<td>ILI</td>
<td>Influenza-like illness</td>
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<td>NICs</td>
<td>National Influenza Centres</td>
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<td>NIDS</td>
<td>Notifiable Infectious Disease Surveillance database</td>
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<td>NISC</td>
<td>National Influenza Surveillance Committee</td>
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<td>NNDSS</td>
<td>National Notifiable Disease Surveillance System</td>
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<td>PHLN</td>
<td>Public Health Laboratory Network</td>
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<td>PIESS</td>
<td>Pandemic Influenza Enhanced Surveillance System</td>
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<td>PIRSA</td>
<td>Primary Industries and Regions SA</td>
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<td>SA</td>
<td>South Australia</td>
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<td>WHO</td>
<td>World Health Organization</td>
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<tr>
<td>WHO CC</td>
<td>WHO Collaborating Centre for Reference and Research on Influenza</td>
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Introduction

This Surveillance sub plan for Pandemic Influenza (this plan) provides an outline of surveillance activities to be implemented in the event of an influenza pandemic. The Communicable Disease Control Branch (CDCB) will use this plan, in conjunction with existing surveillance protocols, to guide influenza and influenza-like illness (ILI) surveillance across South Australia (SA).

This plan will evolve over time to reflect changes in existing surveillance systems and may be modified during the course of a pandemic as information about the disease emerges.

Reason for surveillance

Disease surveillance is conducted to collect useful, consistent and high-quality data to enable informed decision making. The purpose of pandemic influenza surveillance is to:

> detect cases and monitor the epidemiology, severity, strain of virus, and evidence for antiviral resistance in SA
> enable contact tracing and timely interventions to reduce disease, including isolation, early treatment and vaccination programmes
> guide policy to limit further transmission of pandemic influenza.

Surveillance systems

Within this plan – Attachment G of Australian Health Management Plan for Pandemic Influenza (AHMPPI) – advocates utilising existing systems wherever possible in the response to a pandemic, rather than initiating pandemic specific systems.

As each surveillance method has strengths and limitations, the CDCB integrates a number of surveillance methods to obtain a timely and accurate picture of influenza activity. Current surveillance systems operating in SA are described in more detail below.

Surveillance by notifiable disease reporting

Under the South Australian Public Health Act 2011 (the Act), medical practitioners and diagnostic laboratories are required to notify SA Health of cases (including deaths) suspected of having or diagnosed with influenza. Suspected or confirmed pandemic influenza should be notified urgently by telephone to the CDCB 24 hours/7 days a week on 1300 232 272.

Medical practitioners are required to report notifiable conditions to the CDCB on the basis of reasonable clinical suspicion. As part of routine notification, doctors are required to report characteristics including case demographics, onset of disease, symptoms, hospitalisation, indigenous status, and influenza vaccination status.

Laboratories are required to notify a positive laboratory result. Results will include patient demographics, laboratory test undertaken and test result.

Data collected by CDCB from medical practitioners and pathology laboratories are entered into the CDCB’s Notifiable Infectious Disease Surveillance database (NIDS). Notification data are stored electronically and are automatically reported to the National Notifiable Disease Surveillance System (NNDSS) on a daily basis.

Surveillance of community influenza-like illness

Community level ILI surveillance systems provide an indication of the proportion of infections in the community and the proportion of infections that are mild and may not require medical intervention. Examples of these include:
> Flu tracking - a national self-reporting online surveillance system where participants respond to a brief weekly email survey regarding their status of ILI symptoms during the influenza season. Reports are provided to CDCB, and are available at www.flutracking.net
> Reviewing international epidemiology (e.g. World Health Organization (WHO) and published literature) as an indicator for future local disease.
> Rumour surveillance - a term used to describe a collection of unofficial systems including:
  - Google™ influenza trends (using search terms as an indicator of flu activity)
  - public enquiry calls trends measured through an online call register managed by CDCB.

**General practise level surveillance**

General practice level surveillance systems can provide an indication of the proportion of infections in the community that result in medical review. This system may include a proportion of patients who have not undergone laboratory testing and/or tested negative. One example includes:

> Australian Sentinel Practices Research Network (ASPREN) - information on sentinel general practitioner (GP) presentations of ILI. Laboratory testing is also conducted on a subset of patients with ILI. Regular reports are provided to CDCB and are also available at www.aspren.com.au

**Hospital surveillance**

Hospital emergency department presentation and admission surveillance systems can provide an indication of the proportion of infections in the community that are more severe. Examples of these include:

> Hospital Administration Software Solutions Emergency Department (HASSED) module - information on ILI presentations to emergency departments from selected hospitals. Participating hospitals may change over time.
> Infection Control Management System (ICMS) – information on confirmed influenza diagnoses of inpatients at major metropolitan and country hospitals.
> The Influenza Complications Alert Network (FluCAN) – a national sentinel surveillance system which collects enhanced data on hospitalised cases on confirmed influenza, including severe cases. FluCAN operates during the influenza season each year. As of 2015, FluCAN collects data from one tertiary South Australian hospital. Reports are provided weekly to CDCB during the influenza season and a summary is published in the Australian Influenza Surveillance Report and Activity Updates available at www.health.gov.au/flureport. Further information about FluCAN is available at www.monashhealth.org.

**Mortality surveillance**

Mortality surveillance systems provide an indication of the proportion of infections that result in death. Examples of these include:

> Medical notification data - reporting of deaths related to influenza are captured passively from notifying medical officers. Deaths are underreported through this mechanism, as medical practitioners do not report all deaths, and the outcome of cases are not usually available at the time of notification or routinely followed up.
> Death register - a register of deaths is sent monthly through to CDCB from the Births, Deaths and Marriages Registration Office. This register contains further information on deaths due to notifiable conditions including influenza. The notification dataset (NIDS) is updated with this information. There is a significant delay between date of death, and access to this information (may be several months).
Response procedure

The AHMPPI defines the stages of a pandemic, which are used to define the surveillance response procedure in SA. These stages are summarised in the Table 1 below, and expanded below. Please refer to the Surveillance Plan for Pandemic Influenza (Attachment G of AHMPPI) for more detail.

Table 1: Stages of a pandemic as defined by the AHMPPI

<table>
<thead>
<tr>
<th>AHMPPI 2014 Stages</th>
<th>AHMPPI 2014 Sub-stages</th>
<th>Characteristics of the disease that inform key activities</th>
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<tbody>
<tr>
<td>Preparedness</td>
<td>Preparedness</td>
<td>No novel strain detected (or emerging strain under initial investigation)</td>
</tr>
<tr>
<td>Response</td>
<td>Standby</td>
<td>Sustained community person-to-person transmission overseas</td>
</tr>
<tr>
<td></td>
<td>Initial Action</td>
<td>Cases detected in Australia</td>
</tr>
<tr>
<td></td>
<td>Targeted Action</td>
<td>Initial: When information about the disease is scarce</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Targeted: When enough is known about the disease to tailor measures to specific needs</td>
</tr>
<tr>
<td></td>
<td>Stand Down</td>
<td>Virus no longer presents a major public health threat</td>
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Case definition

It is recognised that the case definitions will change depending on the epidemiological characteristics of the new influenza virus, and the stage of the pandemic. The identification of a novel virus in Australia or overseas during the Preparedness stage should trigger the preparation of the initial case definition (confirmed, probable and suspect categories to be considered).

The case definition will be based on virology of the novel virus (for a confirmed case) and the epidemiology as per information available from WHO and affected countries. Laboratory testing will be developed through WHO Collaborating Centre for Reference and Research on Influenza (WHO CC), the National Influenza Centres (NICs) and the Public Health Laboratory Network (PHLN).

Demographic information used to inform the case definition will be from the countries, or regions, with community transmission of the novel virus. Other case information that may inform the definitions include indicators of transmissibility and risk to contacts, age, clinical signs and symptoms, co-morbidities and risk factors. The case definition may be subject to the availability of strain specific testing by local pathology laboratories.

Refer to the Australian national notifiable diseases and case definitions, developed by Communicable Diseases Network Australia (CDNA) (www.health.gov.au/casedefinitions). CDNA is responsible for developing and disseminating any national changes in the case definition of the pandemic influenza.
Communication

The management of an influenza pandemic will require effective and timely communication. SA Health website and media releases will provide the South Australian community with accurate information on the status of the disease and an opportunity to engage on strategies to manage the impact of the disease.

Internal

Consultation on the status of the pandemic (e.g. case numbers, hospitalisations and fatalities) will occur within the South Australian State government agencies. CDCB will provide information to the Minister, Chief Public Health Officer, and other interested parties on a regular basis. The timing of information dissemination will depend on the stage of pandemic. Regular reporting will occur via email and through pandemic management meetings. Urgent information will be telephoned to the relevant stakeholders by the Director of the CDCB.

State and Territory Jurisdictions

Communication between state and territories occurs through the CDNA and National Influenza Surveillance Committee (NISC). This will continue throughout the pandemic, however, the frequency of communications may vary.

Commonwealth

Data are transferred daily to the Commonwealth through NNDSS via an automated data transfer system. Enhanced data will be sent manually until the system is modified to support such data.

South Australian Health Service

The health service will be informed of the epidemiology, testing recommendations, and case definitions through public health alerts released by the CDCB and SA Health website.

Member of the public

To prevent public speculation and misinformation, the South Australian population will be informed regularly, and as early as possible, via SA Health website and media releases.

Notification

During early Response - initial action stage, all suspected and confirmed cases must be immediately reported to the CDCB by telephone. This requirement may change in subsequent stages depending on the characteristics of the pandemic, resources and capacity. CDCB will use public health alerts to notify medical professionals (including those reporting cases) of any changes. Under the Act, confirmed cases and suspected cases of pandemic influenza must be notified by:

> medical practitioners
> pathology services
> a person of a class prescribed by regulation.

Short-term enhanced data collection on cases and contacts will be required to provide information on the emerging epidemiology, indicators of public health impact and virology of the virus. This is known as the First Few 100 study, and forms part of a national effort to answer questions about the transmissibility of the pandemic virus, the severity of infections and the groups most at risk of severe disease. The NISC is currently drafting a protocol for the Pandemic Influenza Enhanced Surveillance System (PIESS) that will be used to collect these enhanced data.
During the Response – *targeted action* stage, individual case reporting may not warrant urgent notification, but still requires notification in any event, within 3 days of suspecting or confirming diagnosis. The requirement for enhanced data collection may be reduced.

**Preparedness**

*Preparedness* is an ongoing state, which can be considered to cycle between two situations: *monitor* and *investigate*.

**Trigger:** During *Preparedness – monitor*, syndromic and virological surveillance trends show a usual seasonal pattern. This shifts to *Preparedness – investigate* when a novel virus is identified in Australia or overseas.

**Surveillance aims**

- *Preparedness – monitor*: Build, maintain and exercise surveillance systems and capacities capable of detecting and monitoring human influenza infections.

**Surveillance activities**

- Prepare to detect cases in Australia by assessing and adapting sentinel, syndromic and case notification systems.
- Inform health services and public of the characteristics of the illness and action required should a case be suspected.
- Liaise with Primary Industries and Regions SA (PIRSA) Biosecurity SA regarding potential animal reservoirs and animal surveillance.

**Response - Standby**

**Trigger:** Sustained community human-to-human transmission detected overseas, or a warning of a potential influenza pandemic received from WHO, or an indication from jurisdictions or CDNA of a severe overwhelming influenza season.

**Surveillance aim**

- Detect initial cases in Australia.

**Surveillance activities**

- Assist in the development a case definition.
- Detect cases in South Australia through the notifiable disease reporting system. Stay alert regarding the characteristics of the illness.
- Analyse epidemiology and virology, with consideration from WHO and other recently published data for characteristics of the disease and severity.
- Report findings to inform public and health services.

**Response – Initial Action**

**Trigger:** Detection of cases in Australia, or declaration by WHO of an influenza pandemic, or if a novel virus has emerged in Australia with evidence of sustained community transmission.

**Surveillance aim**

- Understand epidemiology within the Australian context to inform targeted action.
Surveillance activities

> Identify and describe the epidemiology of the disease in Australia through enhanced surveillance of confirmed cases and their contacts.

> Stay alert to information on the antigenic characterisation and resistance of circulating influenza viruses through WHO CC. Laboratory testing of all suspected and probable cases will continue to be recommended throughout this phase.

> Interventions for containing the spread of the virus or for reducing the population health impact may be implemented by decision-makers during this stage.

Response – Targeted Action

Trigger: Sufficient data collected to describe the pandemic. Community transmission is likely widespread across Australia.

Surveillance aim

> Monitor the course of the pandemic and assess actions.

Surveillance activities

> Continue core data collection through existing surveillance systems, aiming to detect any changes in epidemiology, severity and virus characteristics.

> Laboratory testing will be targeted towards more clinically severe probable cases and those with risk factors. Laboratory confirmation may no longer be recommended in those with less severe diseases to reduce health system (including laboratory) utilisation.

> Consider undertaking limited enhanced data collection, with reliance on sentinel and automated forms of surveillance to provide a less extensive but more complete dataset (as resources become overwhelmed). For example undertaking a systematic survey of case notifications. The decision to cease enhanced data collection will be a national recommendation, and will be based on the stability of trends in epidemiological and population health impact measures.

> Review academic studies using the enhanced dataset to assist in informing decisions related to interventions including appropriate end points.

Response – Stand down

Trigger: Virus no longer presents a major public health threat.

Surveillance aim

> Monitor for reappearance.

> Evaluate actions.

Surveillance activities

> Monitor for change in virus activity or a potential new wave. Cease any remaining enhanced data collection, return to regular surveillance.

> Review data and update plans with lessons learnt.