



The Department of Health acknowledges the providers of the many sources of data used in this report and greatly appreciates their contribution.

**Data Considerations for the Australian Influenza Surveillance Report, 2016**

*The information in this report is reliant on the surveillance sources available to the Department of Health. As access to sources vary throughout the season, this report will draw on available information.*

This report aims to increase awareness of influenza activity in Australia by providing an analysis of the various surveillance data sources throughout Australia. While every care has been taken in preparing this report, the Commonwealth does not accept liability for any injury or loss or damage arising from the use of, or reliance upon, the content of the report. Delays in the reporting of data may cause data to change retrospectively. For further details about information contained in this report please contact the [Influenza Surveillance Team \(flu@health.gov.au\)](mailto:flu@health.gov.au).

**1. Geographic Spread of Influenza Activity**

**Current activity**

Activity level	Laboratory notifications		Influenza outbreaks
Sporadic	Small numbers of lab confirmed influenza detections, not above expected background level <sup>+</sup> .	AND	No outbreaks.
Localised	Lab confirmed influenza detections above background level <sup>++</sup> in less than 50% of the influenza surveillance region <sup>*</sup> .	OR	Single outbreak only.
Regional	Significant <sup>+++</sup> numbers of lab confirmed influenza detections above background level in less than 50% of the influenza surveillance region <sup>*</sup> .	OR	>1 outbreaks occurring in less than 50% of the influenza surveillance region <sup>**</sup> .
Widespread	Significant <sup>+++</sup> numbers of lab confirmed influenza detections above background level in equal to or greater than 50% of the influenza surveillance region <sup>*</sup> .	OR	>1 outbreaks occurring in equal to or greater than 50% of the influenza surveillance region <sup>**</sup> .

+ Expected background level - defined by jurisdictional epidemiologists; represents the expected low level influenza activity that occurs outside of jurisdictional seasonal activity and is the baseline against which comparisons of change can be based.

++ Above background level - above the expected background level<sup>+</sup> threshold as defined by jurisdictional epidemiologists.

\* Influenza surveillance region within the jurisdiction/area as defined by jurisdictional epidemiologists.

\*\* Areas to be subdivisions of the NT (2 regions), WA (3 regions) and QLD (3 regions) that reflect significant climatic differences within those jurisdictions that result in differences in the timing of seasonal flu activity on a regular basis.

+++ Significant numbers - a second threshold to be determined by the jurisdictional epidemiologists to indicate the level is significantly above the expected background level<sup>+</sup>.

**Change in activity level**

The change in influenza activity level is based on a comparison of the activity level identified in the current reporting period with the previous period.

**Syndromic Surveillance Activity**

Syndromic surveillance systems*
Evidence of increase in ILI via syndromic surveillance systems
Evidence of unchanged activity in ILI via syndromic surveillance systems
Evidence of a decrease in ILI via syndromic surveillance systems

\* Syndromic surveillance systems include GP ILI sentinel surveillance, ED ILI surveillance and Flutracking. The activity indicated by ILI based syndromic surveillance systems may be due to a variety of respiratory viruses. Therefore the report

should indicate if other evidence suggests that the increase is suspected to be influenza activity or due to another respiratory pathogen. Syndromic surveillance is reported on a jurisdiction wide basis only.

## 2. Laboratory Confirmed Influenza Activity

### Sentinel Laboratory Surveillance data

Laboratory testing data are provided fortnightly directly from PathWest (WA), VIDRL (VIC), Pathology West ICPMR (NSW), and Tasmanian public hospital laboratory PCR testing results. For Tasmania, the PCR results represent testing at a major Tasmanian public hospital laboratory, which also accepts referred specimens from all departments of emergency medicine and hospital inpatients from across the state.

### Notifications of Influenza to Health Departments

Laboratory confirmed influenza (all types) is notifiable under public health legislation in all jurisdictions in Australia. Confirmed cases of influenza are notified through the National Notifiable Diseases Surveillance System (NNDSS) by all jurisdictions. The national case definition is available from the [Department of Health's website](http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-surveil-nndss-casedefs-cd_flu.htm) ([www.health.gov.au/internet/main/publishing.nsf/Content/cda-surveil-nndss-casedefs-cd\\_flu.htm](http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-surveil-nndss-casedefs-cd_flu.htm)). Analyses of Australian notifications are based on the diagnosis date, which is the earliest of the onset date, specimen date or notification date.

In interpreting these data it is important to note that changes in notifications over time may not solely reflect changes in disease prevalence or incidence. Changes in testing policies; screening programs including the preferential testing of high risk populations; the use of less invasive and more sensitive diagnostic tests; and periodic awareness campaigns, may influence the number of notifications that occur annually.

## 3. Influenza-like Illness Activity

### Community Level Surveillance

FluTracking is a project of the University of Newcastle, the Hunter New England Area Health Service and the Hunter Medical Research Institute. FluTracking is an online health surveillance system to detect epidemics of influenza. It involves participants from around Australia completing a simple online weekly survey, which collects data on the rate of ILI-related symptoms and health seeking behaviour in communities. For further information refer to the [FluTracking website](http://www.flutracking.net) ([www.flutracking.net](http://www.flutracking.net)).

### Sentinel General Practice Surveillance

Sentinel ILI surveillance in Australian general practices since 2010 has consisted of two main general practitioner schemes, the Australian Sentinel Practices Research Network (ASPREN) (incorporating the Sentinel Practitioners Network of Western Australia, SPN(WA)) and the Victorian Sentinel Practice Influenza Network (VicSPIN). Between 2008 and 2009 a Northern Territory surveillance scheme also operated, however this scheme has since been incorporated in to the ASPREN scheme. The national case definition for ILI is presentation with fever, cough and fatigue.

The ASPREN currently has sentinel GPs who report ILI presentation rates in ACT, NSW, NT, QLD, SA, TAS and WA. The VicSPIN scheme operates in metropolitan and rural general practice sentinel sites throughout Victoria. As jurisdictions joined ASPREN at different times and the number of GPs reporting has changed over time, the representativeness of sentinel general practice ILI surveillance data in 2016 may be different from that of previous years.

ASPREN ILI surveillance data are provided to the Department on a weekly basis throughout the year, whereas data from the VIDRL coordinated sentinel GP ILI surveillance program is provided between May and October each year.

Approximately 20% of all ILI patients presenting to ASPREN sentinel GPs are swabbed for laboratory testing. Samples are tested for a range of respiratory viruses including influenza A, influenza B, rhinovirus, respiratory syncytial virus, parainfluenza, adenovirus, human metapneumovirus, *Mycoplasma pneumonia* and *Bordetella pertussis*. Please note the results of ASPREN ILI laboratory respiratory viral tests now include SPNWA results. ILI patients presenting to SPNWA sentinel GPs are swabbed for laboratory testing at the discretion of the GP.

Further information on ASPREN is available at the [ASPREN website](http://www.dmac.adelaide.edu.au/aspreen) ([www.dmac.adelaide.edu.au/aspreen](http://www.dmac.adelaide.edu.au/aspreen)) and information regarding the VIDRL coordinated sentinel GP ILI surveillance program is available at from the [VIDRL website](http://www.victorianflusurveillance.com.au) ([www.victorianflusurveillance.com.au](http://www.victorianflusurveillance.com.au)).

## 4. Hospitalisations

### Sentinel Hospital Surveillance

The Influenza Complications Alert Network (FluCAN) sentinel hospital system monitors influenza hospitalisations at the following sites:

- Australian Capital Territory – the Canberra Hospital and Calvary Hospital;
- New South Wales – John Hunter Hospital, Westmead Hospital and Children's Hospital at Westmead\*;
- Northern Territory – Alice Springs Hospital;
- Queensland – the Mater Hospital, Princess Alexandra Hospital and Cairns Base Hospital;
- South Australia – Royal Adelaide Hospital;

- Tasmania – Royal Hobart Hospital;
- Victoria – Geelong University Hospital, Royal Melbourne Hospital, Monash Medical Centre and Alfred Hospital;
- Western Australia – Royal Perth Hospital and Princess Margaret Hospital\*.

\*=Paediatric hospital site

Influenza counts are based on active surveillance at each site for admissions with PCR-confirmed influenza in adults. Some adjustments may be made in previous periods as test results become available. ICU status is as determined at the time of admission and does not include patients subsequently transferred to ICU. Dates listed as date of admission except for patients where date of test is more than 7 days after admission. Admissions listed as influenza A includes untyped and seasonal strains and may include H1N1/09 strains if not typed.

## Paediatric Severe Complications of Influenza

## 5. Deaths Associated with Influenza and Pneumonia

### Nationally Notified Influenza Associated Deaths

Nationally reported influenza associated deaths are notified by jurisdictions to the NNDSS, which is maintained by the Department of Health. Notifications of influenza associated deaths are likely to underestimate the true number of influenza associated deaths occurring in the community.

### New South Wales Influenza and Pneumonia Death Registrations

The number of deaths mentioning “Pneumonia or influenza” is reported as a rate per 100,000 NSW populations. Using the NSW population provides a more stable and reliable denominator than deaths from all causes. This is because pneumonia and influenza are known to contribute to increases in deaths from non-respiratory illnesses, such as deaths due to ischaemic heart disease. As the number of these deaths will increase with rises in influenza activity, the actual effect of influenza on mortality rates will be obscured if all-cause mortality is used as the denominator. This limitation is avoided by using the NSW population, which is relatively constant throughout the year, as the denominator.

Deaths referred to a coroner during the reporting period may not be available for analysis. Deaths in younger people may be more likely to require a coronial inquest. Therefore influenza-related deaths in younger people may be under-represented in these data.

The interval between death and death data availability is usually at least 7 days, and so these data are several weeks behind reports from emergency departments and laboratories. In addition, previous weekly rates may also change due to longer delays in reporting some deaths.

## 6. Virological Surveillance

Data on Australian influenza viruses are provided weekly to the Department from the WHO Collaborating Centre for Reference & Research on Influenza based in Melbourne, Australia.