



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, 2018**

*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

Laboratory testing data are provided fortnightly from PathWest (WA), VIDRL (VIC), Pathology West ICPMR (NSW), SA Pathology (SA) and Tasmanian public hospital laboratory PCR testing results. For Tasmania, the PCR results represent testing at a major public hospital laboratory, which also accepts referred specimens from all departments of emergency medicine and hospital inpatients from across the state, and a private pathology company. For South Australia, laboratory surveillance data includes results from specimens collected through general practice syndromic surveillance at a national level.

### 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 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 healthcare seeking behaviour in communities. For further information refer to the [FluTracking website](http://www.flutracking.net) ([www.flutracking.net](http://www.flutracking.net)).

The National Health Call Centre Network (NHCCN) provides a nationally consistent approach for telephone based health advice to the community through registered nurses and is supported by electronic decision support algorithms. Data collected through the NHCCN is provided to the Department to enable monitoring of the number and proportion of calls relating to predefined patient guidelines. These guidelines have been grouped to create an influenza-like illness syndrome to enable monitoring of community disease activity. These data currently do not include Queensland or Victoria. For further information refer to the [HealthDirect website](http://www.healthdirect.org.au) ([www.healthdirect.org.au](http://www.healthdirect.org.au)).

### 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) (including the Sentinel Practitioners Network of Western Australia, SPN(WA) which was incorporated into ASPREN in 2016) and the Victorian Sentinel Practice Influenza Network (VicSPIN). The national case definition for ILI is presentation with fever, cough and fatigue.

ASPREN currently has sentinel GPs who report ILI presentation rates in all states and territories throughout the year. Practitioners from Victoria are under-represented in ASPREN as Victoria administers a jurisdictionally-focused system, VicSPIN. Aggregated data from VicSPIN is collated with ASPREN data as it is available week to week. While ASPREN operates year-round, VicSPIN operates during the period from week 18 to week 44. 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 2018 may be different from that of previous years.

For the 2018 calendar year, ASPREN sentinel GPs will swab patients presenting with ILI according to the following protocol, whilst not exceeding a cap of 2800 swab tests:

- swabbing all consenting patients with ILI aged 65 years and older; and
- a systematic sample of the first three ILI patients aged less than 65 years during the influenza season, and the first ILI patient aged less than 65 years in the off-season.

This is compared to a 37% swab testing rate of all ILI patients presenting to ASPREN sentinel GPs in 2017. 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*.

Further information on ASPREN is available at the [ASPREN website](http://www.dmac.adelaide.edu.au/aspren) ([www.dmac.adelaide.edu.au/aspren](http://www.dmac.adelaide.edu.au/aspren)) 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 and Royal Darwin Hospital\*#;
- Queensland – the Mater Hospital, Princess Alexandra Hospital, Cairns Base Hospital and Lady Cilento Children’s Hospital\*#;
- South Australia – Royal Adelaide Hospital and Women and Children’s Hospital Adelaide\*#;
- Tasmania – Royal Hobart Hospital;
- Victoria – Geelong University Hospital, Royal Melbourne Hospital, Monash Medical Centre, Alfred Hospital and Monash Children’s Hospital\*#;
- Western Australia – Royal Perth Hospital and Princess Margaret Hospital\*.

\*=Paediatric hospital site

# = Additional sentinel sites in 2018. In order to maintain consistency with previous years data, these data will not be included in the routine fortnightly reports.

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.

### Paediatric Severe Complications of Influenza

The Australian Paediatric Surveillance Unit (APSU) is an active surveillance mechanism for prospective, national identification and study of children less than 15 years of age newly diagnosed with uncommon conditions. ‘Complications arising from infection with influenza’ was added to the APSU data collection in 2007. APSU reports cases of children hospitalised with severe complications of influenza to the Department on a weekly basis between July and September each year.

Data are collected through report cards distributed monthly to approximately 1,500 paediatricians and other child health clinicians nationally. These report cards list conditions currently being studied through the APSU, and clinicians are asked to report newly diagnosed cases and to provide details on demographics, diagnosis, treatments and short-term outcomes.

## 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.