

Summary

The **fluTAS report** is a monthly report during the influenza season produced by the Communicable Diseases Prevention Unit to inform healthcare organisations and the public about the current level of influenza activity within Tasmania. Multiple data sources are used to obtain measures of influenza activity in the community.

This is the final report and annual summary of **influenza** activity within Tasmanian during 2014. Available data indicated that the 2014 influenza season:

- occurred from late June to October, with a peak in activity during August
- was predominantly due to Influenza A virus (88% of infections), with the A(H1N1)pdm09 subtype being the most commonly detected
- in comparison to recent years could be characterised as a season of moderate activity.

Influenza Notifications

Tasmanian laboratories are required to notify the Director of Public Health of evidence of influenza infection in specimens collected from patients. These specimens are usually nose or throat swabs, less often a blood sample. The best test for influenza involves a test to detect influenza virus RNA present on a nose or throat swab.

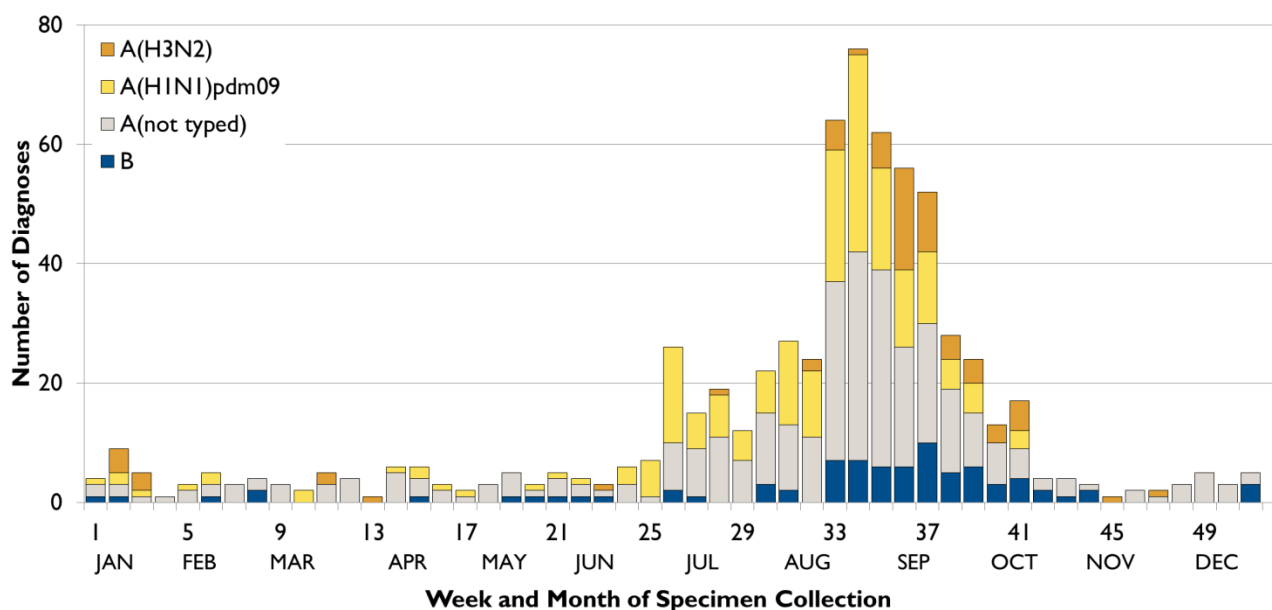
A total of 671 notifications of laboratory-confirmed influenza were notified to the DHHS during 2014. Notifications increased during late June, peaked during August (week 34), and subsequently returned to inter-seasonal levels in early October (see Figure 1). Notifications during weeks 26 to 41 accounted for 71% of the total.

Compared to recent influenza seasons, the timing, duration and peak of the 2014 season were unremarkable. For comparison, the 2013 influenza season commenced and concluded later in the year and weekly notifications peaked at a level lower than during 2014. There were twice as many notifications during the 2014 inter-seasonal period from January and late June when compared to the mean number of notifications during the equivalent period of past years. This phenomenon was noted elsewhere in Australia.

Influenza Typing

Laboratory testing determined that most influenza notifications (590 notifications or 88%) during 2014 were due to infections with the **Influenza A virus**. The remaining 81 notifications were infections with **Influenza B virus**. Neither exceeded the numbers expected based on the seasonal influenza activity of recent years.

Figure 1: Laboratory-diagnosed influenza by subtype and week of specimen collection, 2014



The majority (86%) of influenza notifications related to the laboratory detection of influenza virus in nose and throat swabs collected from patients. Unlike influenza antibodies that are tested for in blood samples, virus detected in swabs can allow for further laboratory testing to identify the virus subtype involved. Over half of the Influenza A notifications relating to nose and throat swabs had subtype information. The subtype A(H1N1)pdm09 was the most commonly identified (74%), followed by the A(H3N2) subtype. Both subtypes circulate each year in Australia as the most commonly reported 'seasonal' Influenza A subtypes. The 2014 Annual Influenza Vaccine addressed these subtypes. Only 1 isolate of Influenza B virus was subtyped: it was reported as being B/Massachusetts: the 'Massachusetts' strain of the Yamagata lineage.

While the overall peak in weekly notifications during 2014 for all influenza occurred during August (week #34), there was a difference in the timing of peaks in notification numbers for the different types and subtypes. As the main subtype reported influenza A(H1N1)pdm09 notifications peaked on week #34 (August). Notifications of influenza A(H3N2) and influenza B peaked slightly later during early September 2014 (week #37).

Table 1: Influenza, Tasmania 2007-2014

	2007	2008	2009	2010	2011	2012	2013	2014
INFLUENZA A								
A(H1N1)pdm09	na	na	984	47	74	2	95	202
A(H3N2)	1	5	65	11	26	352	11	71
Others	1	0	0	0	0	0	0	0
Subtype unknown	387	203	245	37	89	654	100	317
Total Influenza A	389	208	1,294	95	189	1,008	206	590
INFLUENZA B								
Total Influenza B	26	176	1	12	174	85	90	81
ALL INFLUENZA								
Total Influenza	415	384	1,295	107	363	1,093	296	671
Major Influenza A subtype	unknown	unknown	A(H1N1) pdm09	A(H1N1) pdm09	A(H1N1) pdm09	A(H3N2)	A(H1N1) pdm09	A(H1N1) pdm09

Regional Trends

Influenza activity was widespread in Tasmania during 2014. Adjusting for population differences, the rate of Influenza A notification in residents from the South of Tasmania was approximately double the rates for residents in the North and North-West: 153 notifications per 100,000 persons compared with 80 and 75 per 100,000 respectively. A similar trend in Influenza A notification rates has been observed in previous years.

For Influenza B the highest rate of notification was in residents from the North of Tasmania, followed by the South and the North-West: 29 notifications per 100,000 compared with 12 and 8 per 100,000 respectively. Influenza B rates can vary considerably due to relatively low numbers of notification. Overall regional differences in influenza testing may contribute to notification rates in both Influenza A and B not necessarily reflecting the true levels of influenza within each region. Factors likely to cause differences in notification rates include variations in the level of healthcare-seeking behaviour and the testing practices of individual doctors.

Table 2: Laboratory-diagnosed Influenza by Region of Tasmania, 2014 (Influenza A and Influenza B combined)

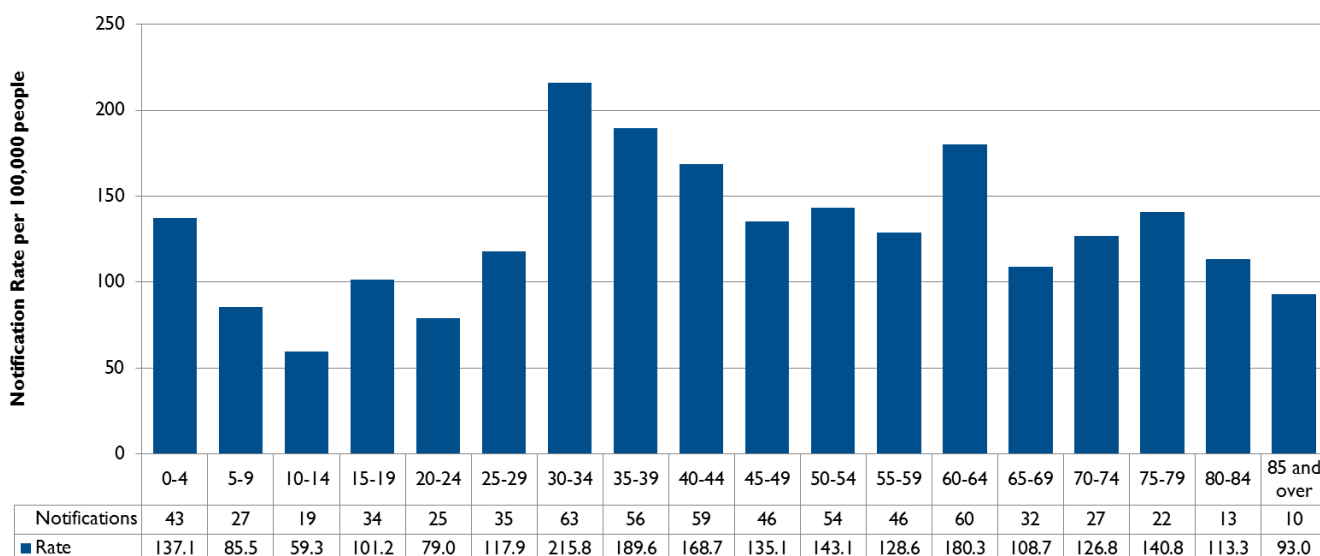
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
North	2	5	6	6	5	7	16	58	38	9	4	1	157
North-West	3	3	3	1	3	6	19	31	20	3	0	2	94
South	16	7	6	10	10	33	45	148	107	23	5	10	420

Age and Gender

Influenza Notifications during 2014 followed the trend of previous years with a slightly greater rate of notification in females compared to males. This was apparent for both Influenza A and Influenza B: 125 female versus 105 male notifications per 100,000 persons for Influenza A and 19 female versus 12 male notifications per 100,000 for Influenza B. In 2014 the highest notification rates of influenza A were in young to middle-aged adults with a peak in the 30-34 year age group. Rates declined smoothly with increasing age with the exception of a peak in the 60-64 year age group. Elevated rates were observed for children under 5 years compared with older children. An elevated rate in adults aged 85 years and older was not apparent.

A trend in age-specific notification rates for Influenza B during 2014 could not be discerned from the low notification numbers divided across age groups.

Figure 2: Rates of influenza notification by age, 2014 (Influenza A and Influenza B combined)



Influenza Notification counts and rates (per 100,000) by 5-year age group

Laboratory Testing

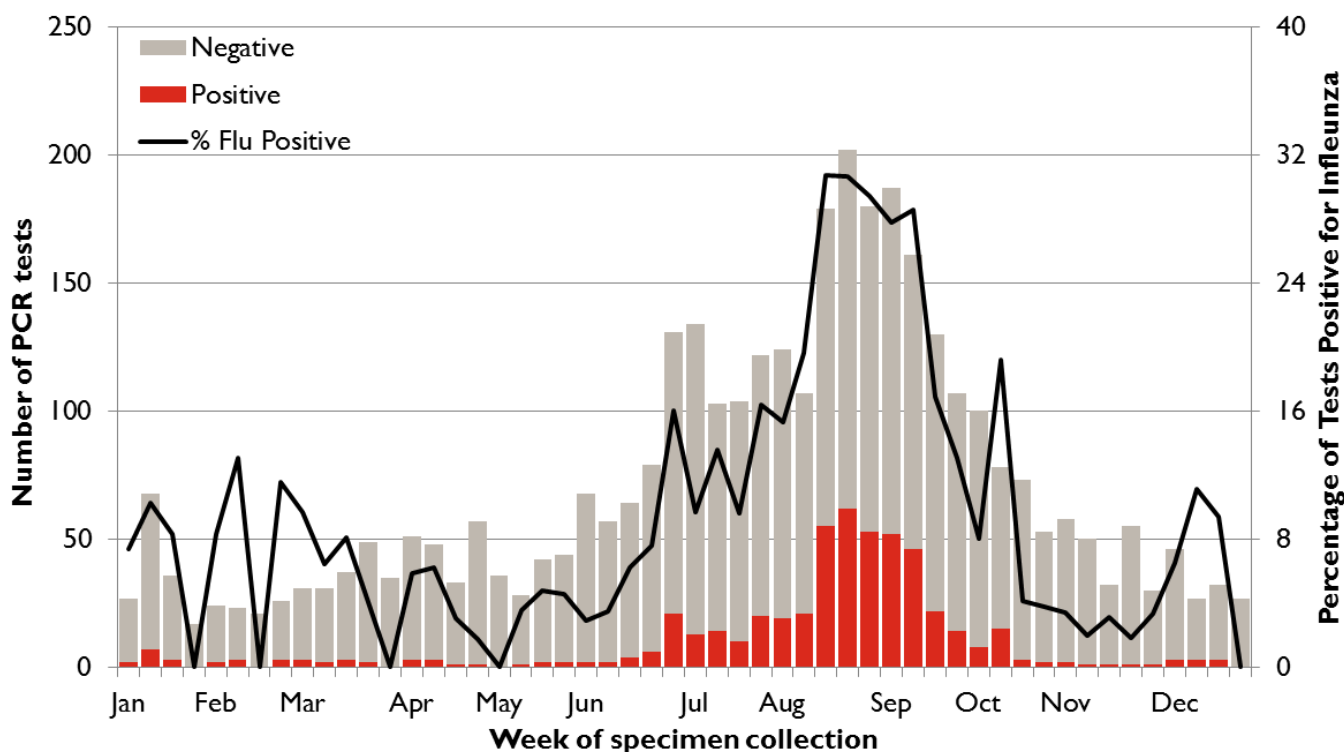
A wide range of pathogens (mostly viruses) commonly cause winter coughs, colds and influenza-like illnesses. Some people with these symptoms will visit their doctor. The decision whether to test someone for influenza rests with their treating doctor, and depends on their symptoms.

Laboratory Testing Effort

The best test for influenza is a PCR test, which detects influenza virus RNA in a nose or throat swab. The number of these tests being performed by the majority of Tasmanian laboratories is a useful indicator of the level of respiratory illness in the community.

There was more influenza PCR testing conducted during 2014 than 2013: 3 664 tests compared with 3 036 tests. The overall proportion of tests positive for influenza was larger during 2014 than 2013: 14% compared with 8%. The peak proportion of weekly tests positive for influenza during 2014 coincided with the peak amount of weekly testing and these were both during a period from mid-August to mid-September. Up to 200 tests per week were being conducted with approximately 30% positive for influenza (see Figure 2). This peak period matched the overall peak period of influenza notifications.

Figure 2: Influenza tests via PCR by week during 2014.

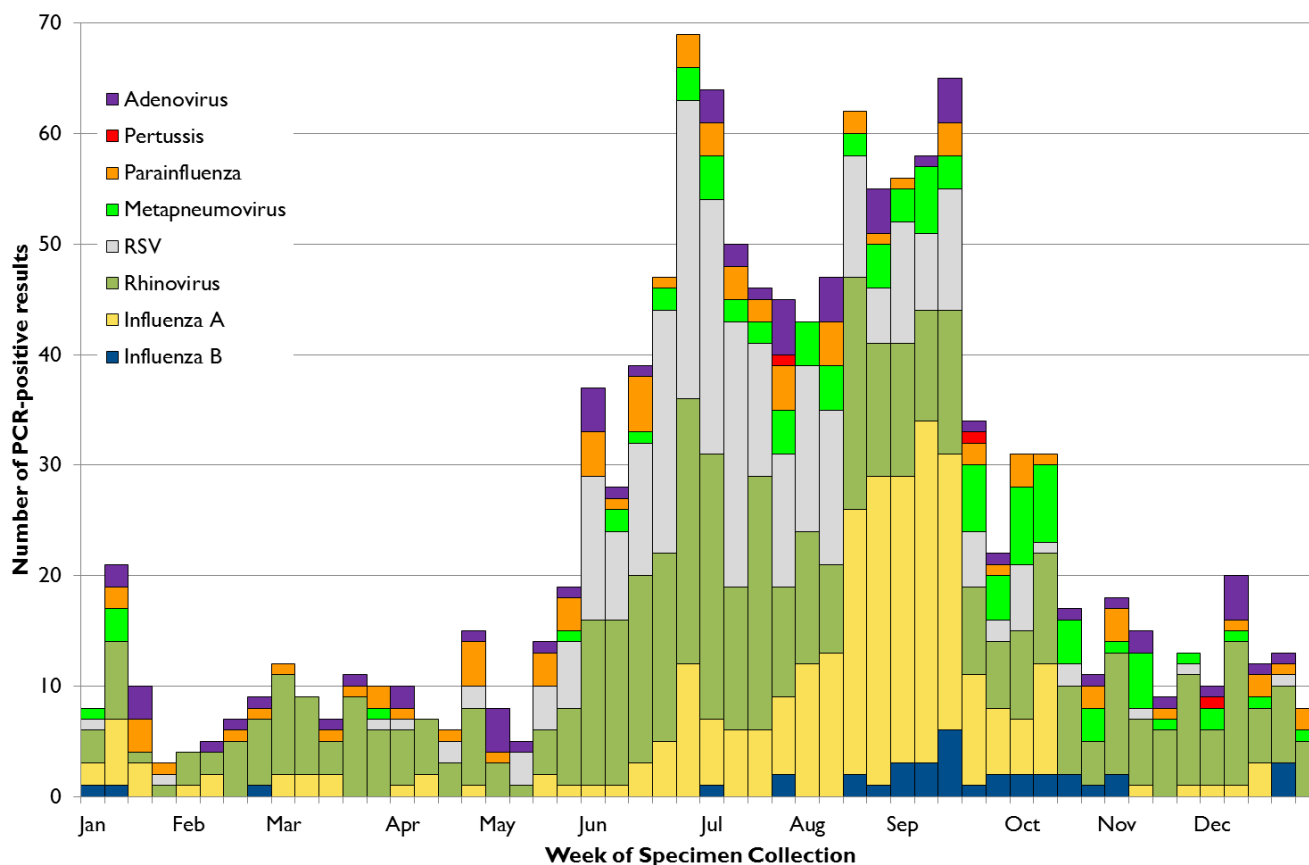


Other Respiratory Pathogens

The Royal Hobart Hospital (RHH) performs PCR tests on nose and throat swabs that detect influenza and multiple non-influenza respiratory pathogens which cause illness. These specimens have mostly been collected state-wide from Emergency Department and hospitalised patients. The monitoring of non-influenza respiratory pathogen activity can assist the interpretation of testing activity and Syndromic Surveillance trends.

Testing conducted by the RHH indicated a rise in positive detections of Rhinovirus and Respiratory Syncytial Virus (RSV) at the end of May, with a peak in detections from late June to early July. Detections of RSV declined as detections of Influenza A Virus peaked in early September (see Figure 3). Metapneumovirus was an occasional cause of respiratory illness during the latter part of the influenza season.

Figure 3: Respiratory pathogen detections, 2014



Influenza-Like Illnesses (Syndromic Surveillance)

Influenza-like illness (ILI) is much more common than laboratory diagnosed influenza. For much of the year, common colds and other respiratory illnesses make up most of the ILI occurring in the community. However, during the annual influenza season, the proportion of the population experiencing symptoms of ILI who have influenza usually increases. It is therefore useful to monitor the proportion of people reporting ILI, regardless of the cause.

FluTracking

FluTracking is a weekly online survey that asks participants to report whether they have had fever and cough in the preceding week. It is a joint initiative of Newcastle University, Hunter New England Population Health and the Hunter Medical Research Institute. *FluTracking* information is available at www.flutracking.net.

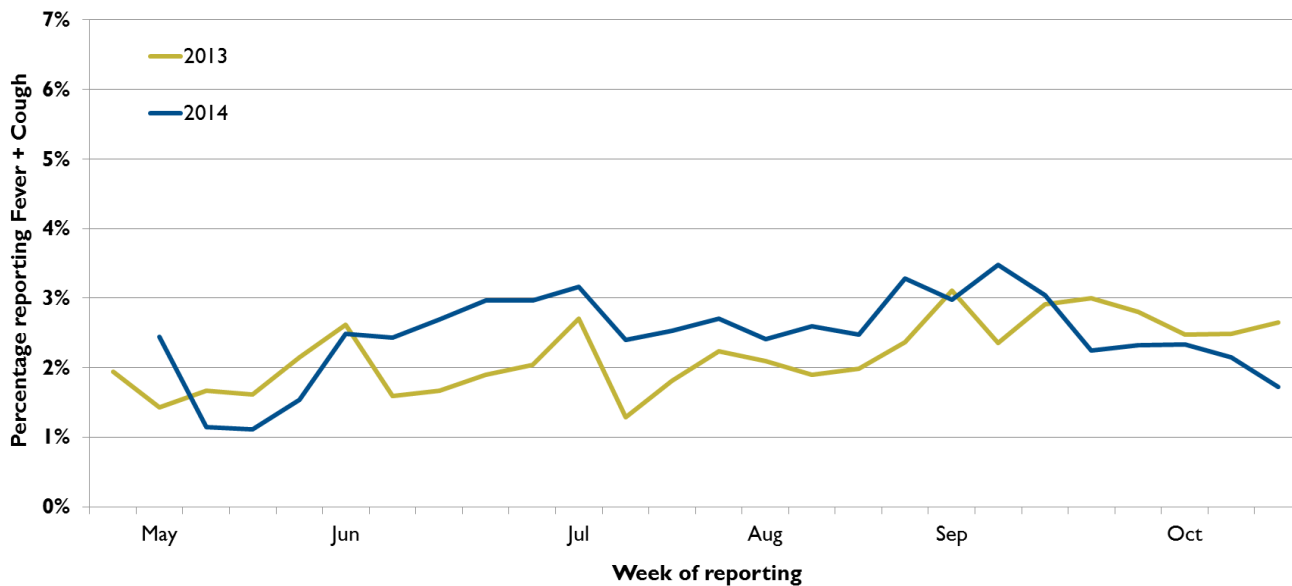
The 2014 *FluTracking* survey was conducted for the period 28 April to 19 October. An average of 1 750 Tasmanians participated weekly and over 2,300 completed at least one survey during 2014. Two-thirds of participants lived in the south of the State.

During previous *FluTracking* surveys the inter-seasonal periods have been associated with a 'baseline' level of 3% of Tasmanian participants reporting fever plus cough during any given reporting week. Proportions above 3% have corresponded in time with the active period of an influenza season, as indicated by increased influenza notifications.

For most of the 2014 survey fewer than 3% of Tasmanian participants reported *fever plus cough* (see Figure 4). This level was however exceeded by at most one-half of a percent: once during late June and later a period from August to early September (weeks 33 to 36). The proportion of participants reporting *fever plus cough* with *absenteeism* from normal duties also peaked during these time. The latter period coincided with the period of 2014 during which weekly numbers of influenza notifications were the greatest.

For 14 out of the 25 reporting weeks (56%), unvaccinated participants reported ILI (*fever plus cough*) more frequently than vaccinated participants.

Figure 4: Weekly percentage of Tasmanian FluTracking participants reporting fever and cough



General Practice surveillance

ASPREN is a network of registered sentinel GPs throughout the state who report fortnightly on the number and proportion of presentations of patients with fever, cough and fatigue. ASPREN is a joint initiative of the Royal Australian College of General Practitioners and University of Adelaide. Further information is available at www.dmac.adelaide.edu.au/aspren.

Data from participating Tasmanian General Practices up to 19 October 2014 indicated a peak in influenza-like illness (ILI) presentations during August, consistent with other indicators of increased influenza activity at the time.

Other Measures of Influenza Activity

FluCAN

The Influenza Complications Alert Network (FluCAN) reports on influenza related hospitalisations and complications in sentinel hospitals in each state including Tasmania. By 31 October 2014 the national overview of FluCAN reported that admissions had returned to a low level. A peak in admissions at participating hospitals occurred during August and September 2014. Nationally there were 2 035 admissions recorded since 3 April 2014 and of those, 213 (11%) were to an Intensive Care Unit (ICU).

Interstate activity

The Australian Influenza Surveillance Report is compiled from a number of data sources, including laboratory-confirmed notifications to NNDSS, sentinel influenza-like illness reporting from general practitioners and emergency departments, workplace absenteeism, and laboratory testing. The final national report for 2014 is available at <http://www.health.gov.au/internet/main/publishing.nsf/content/cda-surveil-ozflu-flucurr.htm>.

Annual Influenza Vaccine

The contents of the annual influenza vaccine are reviewed late each year, aiming to produce vaccines for the following year that provide protection from influenza strains likely to be common during winter. Advice on the formulation of annual influenza vaccines is provided by the Australian Influenza Vaccine Committee (AIVC): <http://www.tga.gov.au/committee/australian-influenza-vaccine-committee-aivc>. The formulation of the 2014 vaccine and recommended formulation for the 2015 vaccine are both described at <http://www.tga.gov.au/aivc-recommendations-composition-influenza-vaccine-australia>.

Annual vaccination is recommended in the National Immunisation Program and is free* for Tasmanians at risk of severe influenza, including:

- anyone aged 65 and over
- Indigenous people who are aged 15 years or over
- pregnant women
- any person six months of age and over with a chronic condition predisposing to severe influenza illness that requires regular medical follow-up or hospitalisation such as: cardiac disease, respiratory disease including severe asthmatics, kidney disease, diabetes, impaired immunity, neuromuscular disease.

* The cost of the vaccine is covered for these groups; there may be a consultation fee for the medical provider to administer the vaccine.

Acknowledgements

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- Royal Hobart Hospital Pathology
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- FluTracking (Newcastle University, Hunter-New England Population Health and the Hunter Medical Research Institute)
- Australian Sentinel Practices Research Network (ASPREN)
- World Health Organisation (WHO)
- Australian Government Department of Health
- Australian Bureau of Statistics (ABS)



The **fluTAS Report** is a monthly flu season update produced by the DHHS Public and Environmental Health Service to inform healthcare organisations and the public about the current level of flu activity in Tasmania.

Alongside routine surveillance of diseases in Tasmania, the report combines multiple data sources to obtain a measure of flu activity in the community, which can be used by our health system to prepare and respond.

To provide feedback on the fluTAS Report, email the [Communicable Disease Prevention Unit](#) or call the Public Health Hotline on 1800 671 738.