



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

KEY MESSAGES

- Influenza activity remains at low levels across Australia.
- Respiratory viruses other than influenza are more commonly causing influenza-like illness presentations to sentinel general practitioners, with rhinovirus detected most frequently.
- There is no indication of the potential severity of the 2016 season at this time.
- To date, the seasonal influenza vaccines appear to be a good match for circulating virus strains.

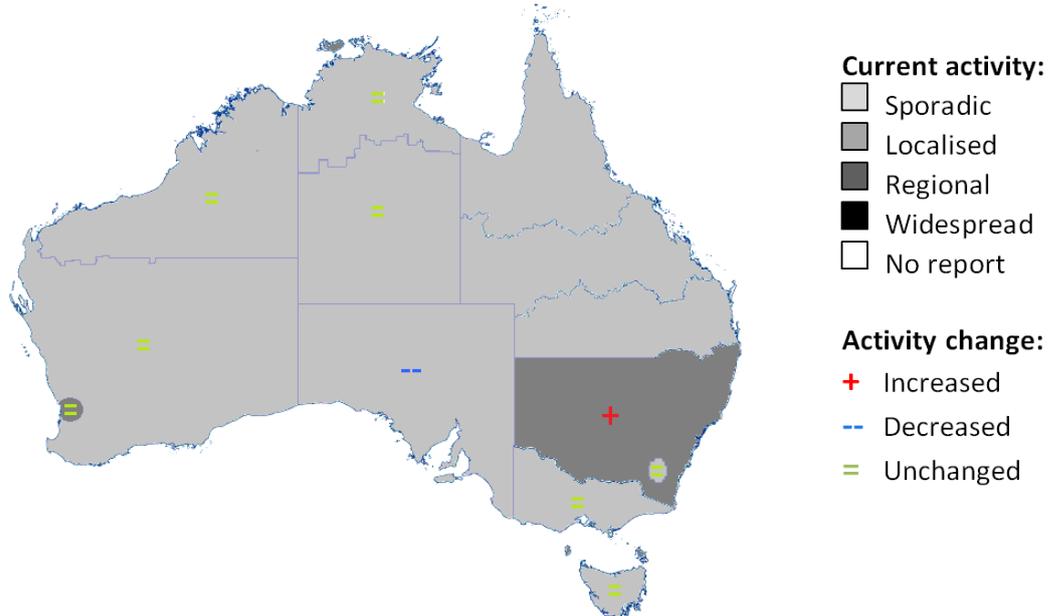
ANALYSIS

1. Geographic Spread of Influenza Activity in Australia

In the fortnight ending 3 June 2016 (week 22), influenza activity was reported by state and territory health departments as stable across all reporting regions, with the exception of New South Wales (NSW) reporting increased activity when compared to the previous fortnight and South Australia (SA) reporting decreasing activity (Figure 1).

The geographic spread of influenza activity was reported as sporadic in all regions in Australia, with the exception of New South Wales and Perth Metro, where activity was reported as localised.

Figure 1. Map of influenza activity by state and territory, Australia, 21 May to 3 June 2016.

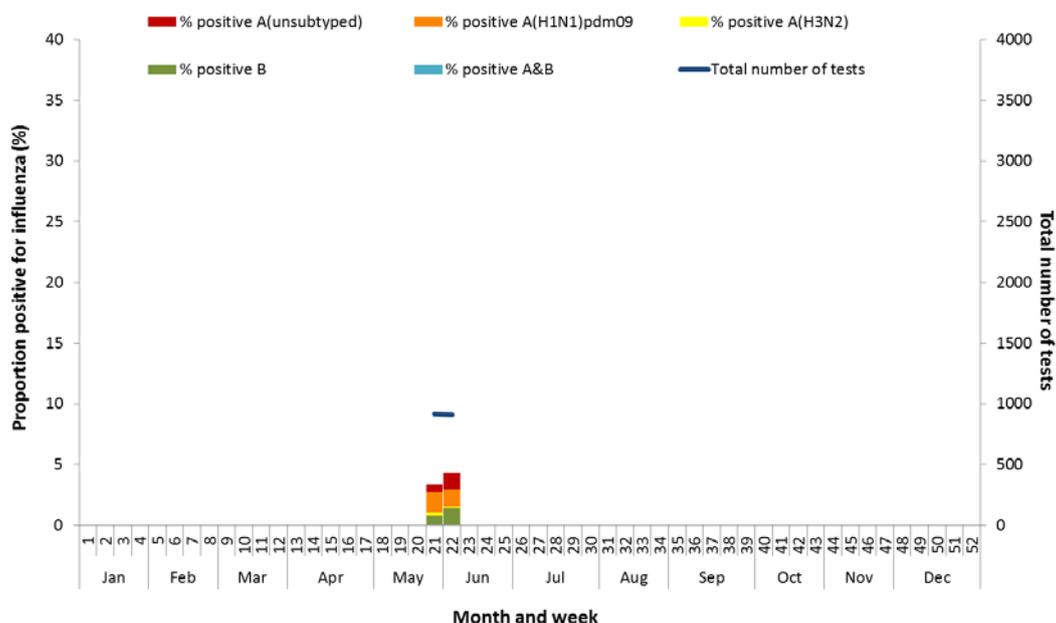


2. Laboratory Confirmed Influenza Activity

Sentinel Laboratory Surveillance

Influenza was circulating at low levels in weeks 21 and 22, with Rhinovirus and Respiratory syncytial virus (RSV) most commonly detected by sentinel laboratories. The percentage of tests positive for influenza across all sentinel laboratories was 4.3% in week 22, an increase from 3.4% in week 21 (Figure 2). The WA sentinel laboratory reported a higher percentage of tests positive for influenza (5.7%) than the national average in week 22, while the NSW sentinel Laboratory and Tasmanian public hospital laboratories reported a lower percentage (3.1% and 3.0%, respectively). Influenza A was the most common influenza virus detected across all sentinel laboratories in the reporting fortnight, with the proportion of influenza A(H1N1)pdm09 exceeding influenza A(H3N2), where further typing was undertaken.

Figure 2. Proportion of sentinel laboratory tests positive for influenza, 21 May to 3 June 2016, by subtype and fortnight.



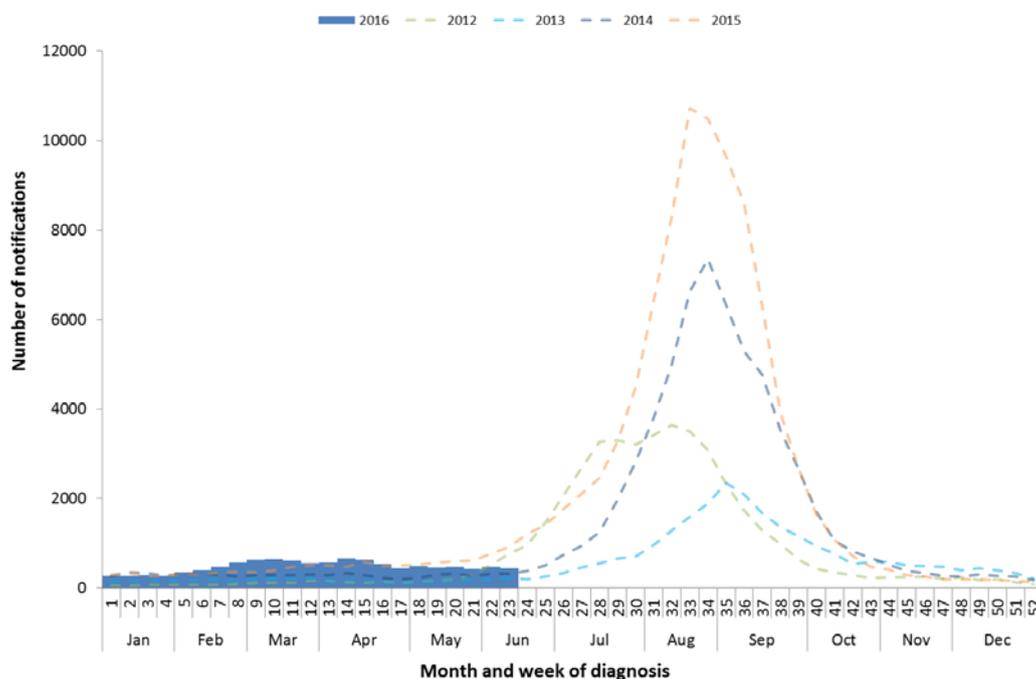
Participating sentinel laboratories: National Influenza Centres (WA, NSW) and Tasmanian laboratories (PCR testing)

Notifications of Influenza to Health Departments

The seasonal rise in notifications of laboratory confirmed influenza to the National Notifiable Diseases Surveillance System (NNDSS) for the start of the 2016 influenza season does not appear to have commenced (Figure 3). For the year to 10 June, a total of 10,947 notifications of laboratory confirmed influenza were reported to the NNDSS: 3,929 in Queensland (Qld); 3,447 in NSW; 1,394 in Victoria (VIC); 1,002 in Western Australia (WA); 834 in SA; 124 in the Northern Territory (NT); 115 in the Australian Capital Territory (ACT) and 102 in Tasmania (TAS). Notification trends in individual jurisdictions have largely declined in recent weeks (QLD, SA, VIC and WA) or remained relatively stable (ACT, NT and TAS) (Figure 4). In NSW, increases in notifications of influenza, along with other measures of influenza activity, indicate that the influenza season is likely to commence in this jurisdiction in the coming weeks.¹

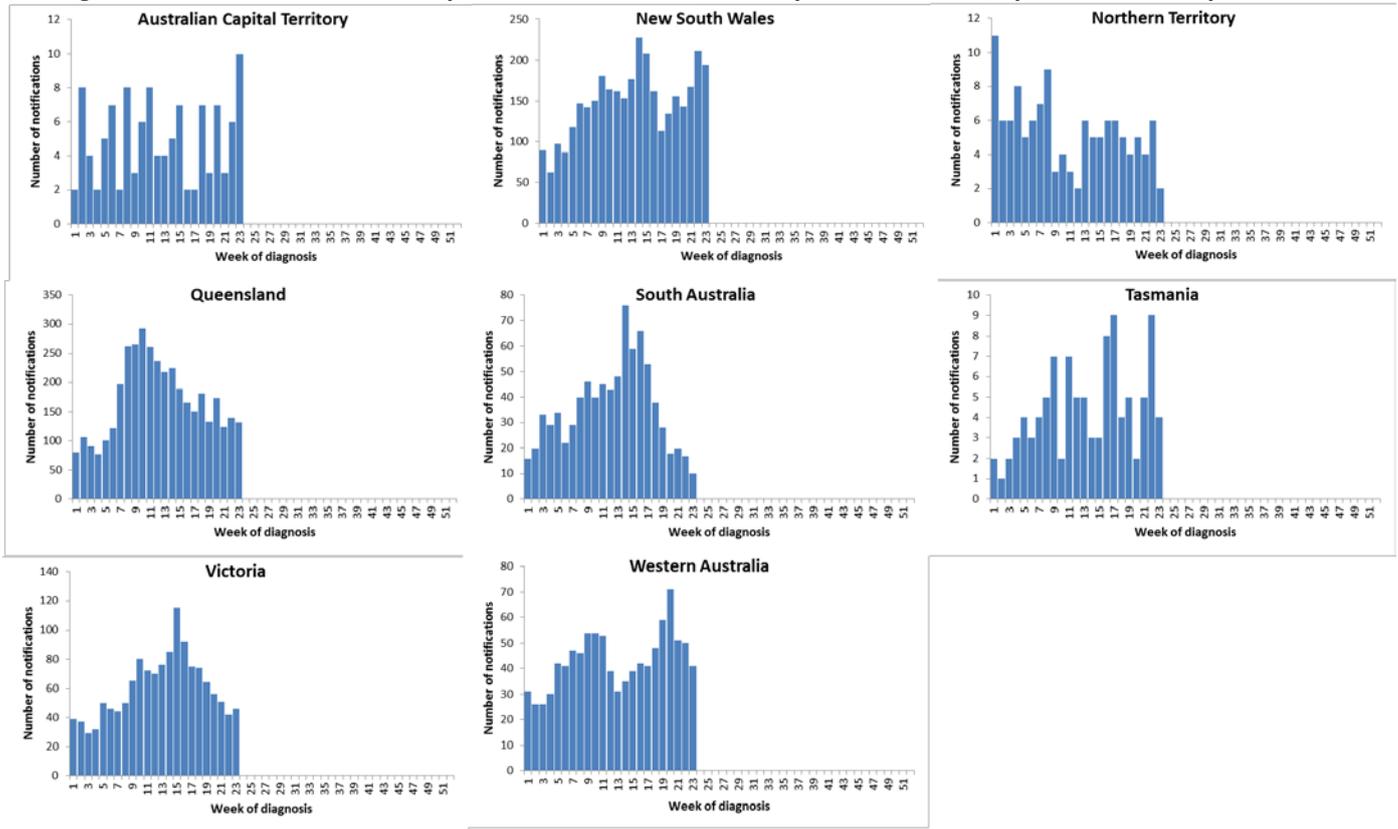
For the year to 10 June, 80% of notifications of laboratory confirmed influenza to the NNDSS were influenza A (55% A(unsubtyped), 19% influenza A(H1N1)pdm09 and 6% influenza A (H3N2), 19% were influenza B and less than 1% were influenza A&B co-infections or untyped (Figure 5). The proportions of influenza A to influenza B reported by jurisdictions has largely been consistent with that seen at the national level this year (Figure 6). SA and WA have both reported a slightly higher proportion of influenza B (28% and 27%, respectively)

Figure 3. Notifications of laboratory confirmed influenza, Australia, 1 January 2012 to 10 June 2016, by month and week of diagnosis.



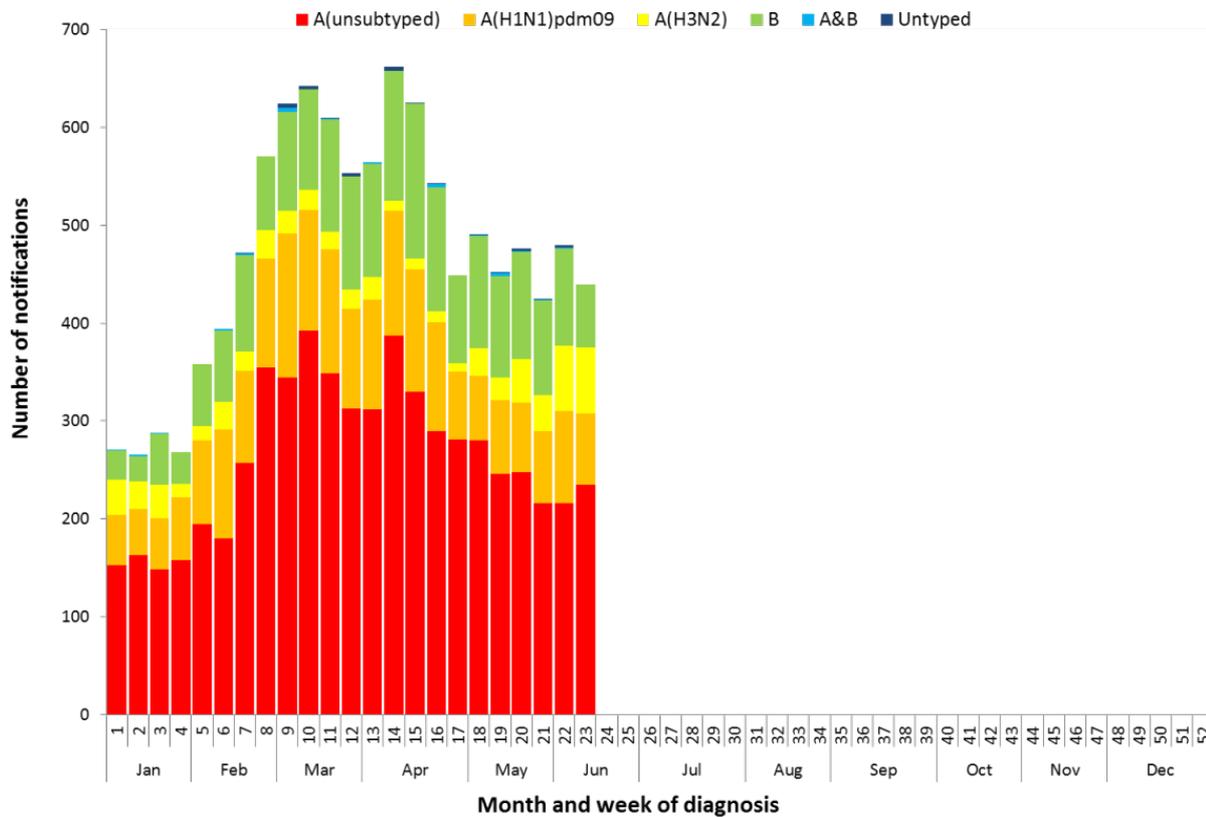
Source: NNDSS

Figure 4. Notifications of laboratory confirmed influenza, 2 January to 10 June 2016, by state or territory and week.



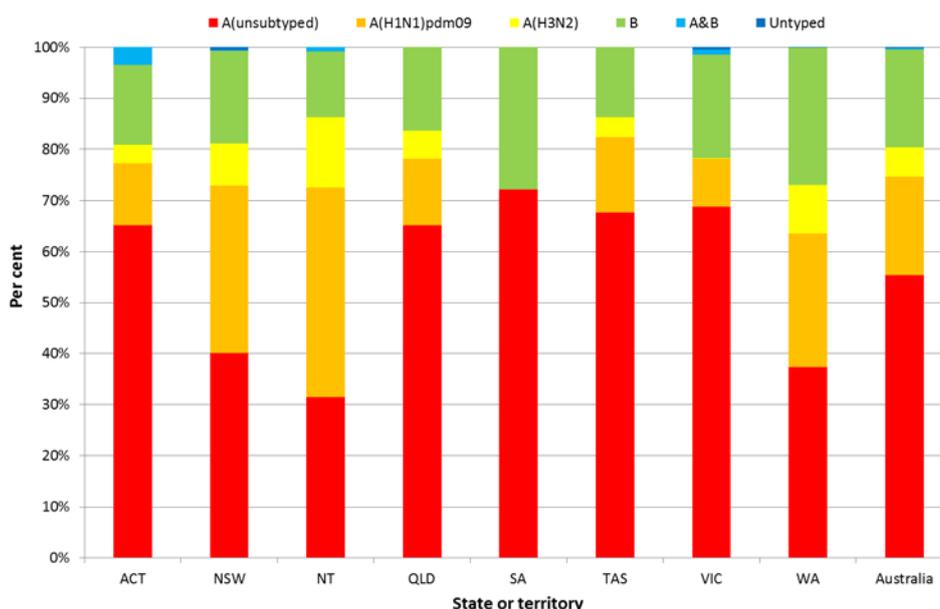
Source: NNDSS

Figure 5. Notifications of laboratory confirmed influenza, Australia, 2 January to 10 June 2016, by subtype and week.



Source: NNDSS

Figure 6. Per cent of laboratory confirmed influenza, Australia, 1 January to 10 June 2016, by subtype and state or territory.

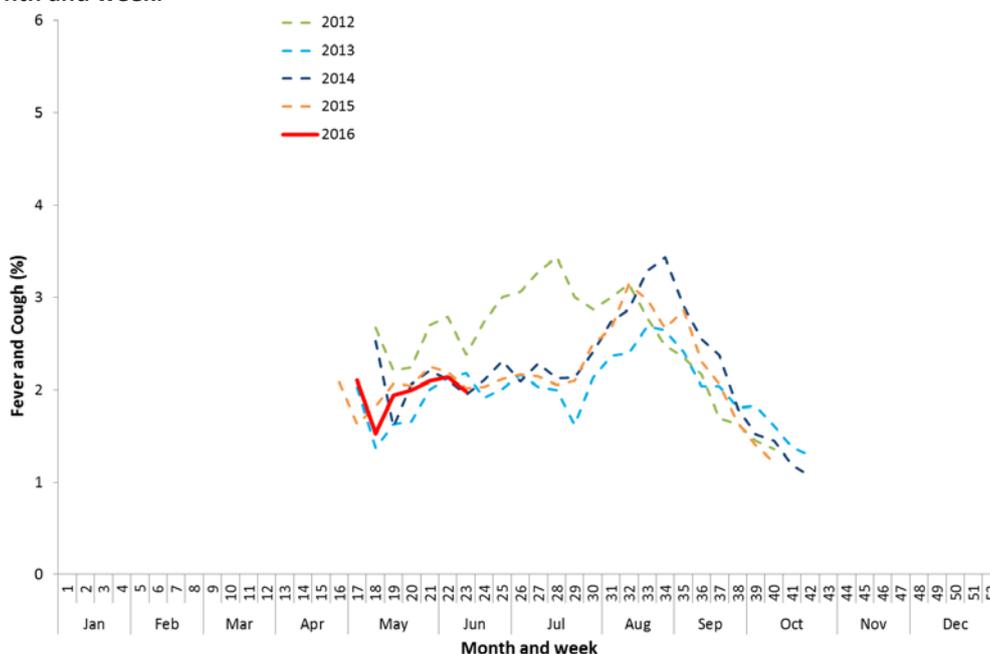


3. Influenza-like Illness Activity

Community Level Surveillance

FluTracking, a national online system for collecting data on ILI in the community, indicated that rates of ILI among participants so far this year have been on the lower range of recent seasons (Figure 7). The proportion of participants reporting fever and cough decreased slightly from week 22 (2.1%) to week 23 (2.0%). The proportion of participants reporting fever, cough and absence from normal duties also decreased over the fortnight, from 1.4% in week 22 to 1.1% in week 23. So far this year 59% of all participants and 79% of participants who identify as working face-to-face with patients reported receiving the seasonal influenza vaccine.²

Figure 7. Proportion of fever and cough among FluTracking participants, Australia, between May and October, 2012 to 2016, by month and week.

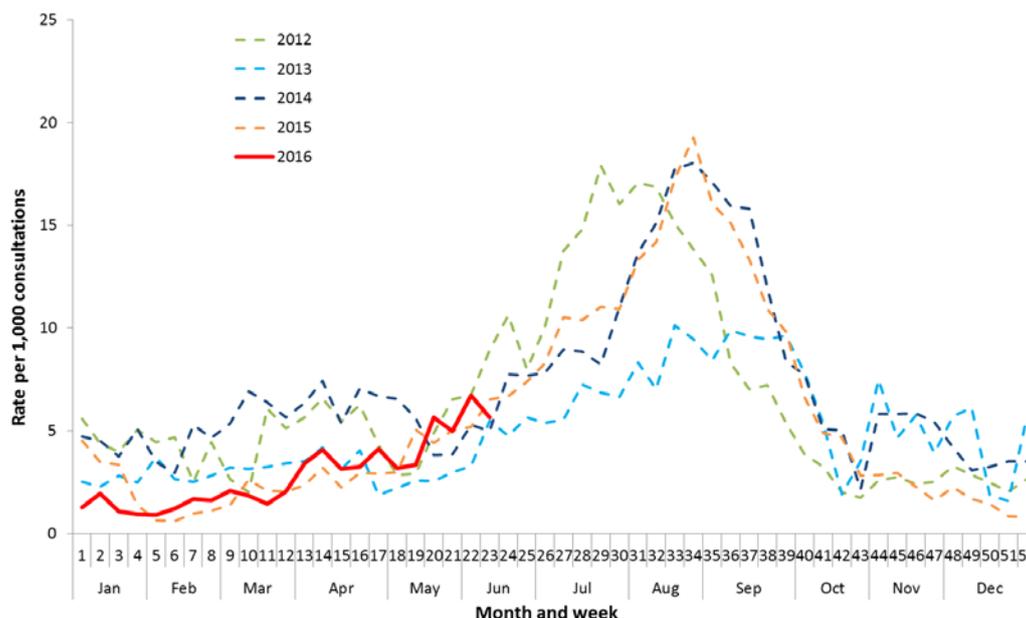


Source: FluTracking

Sentinel General Practice Surveillance

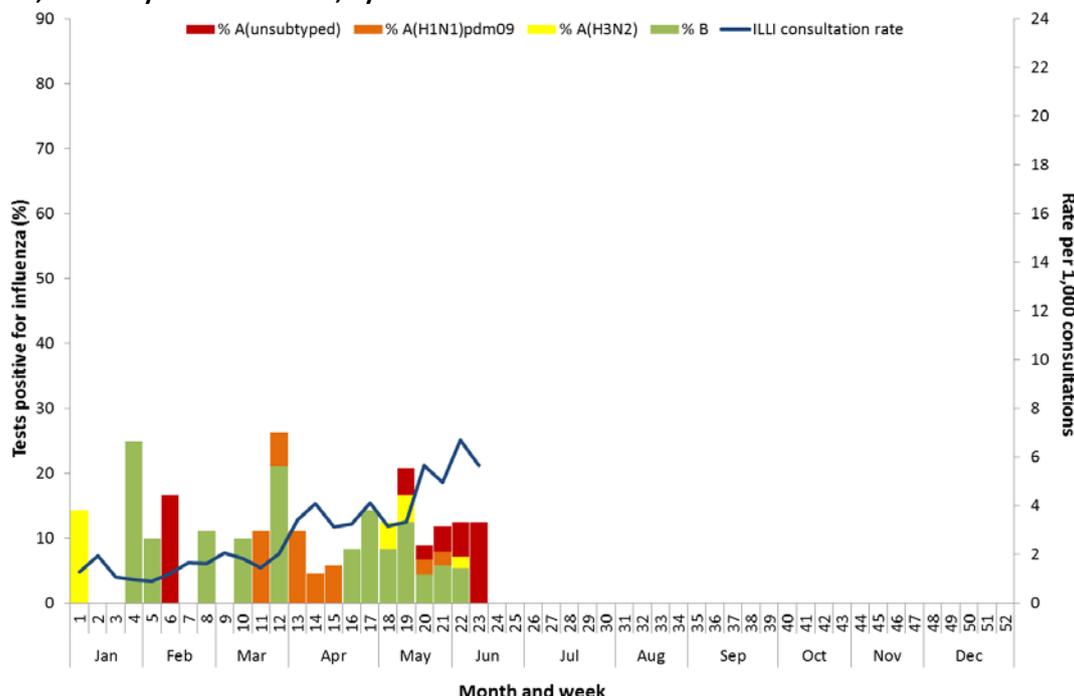
While the sentinel general practitioner ILI consultation rate increased this fortnight, it remains at low levels (Figure 8). In the fortnight including weeks 22 and 23 specimens were collected for 41% of ILI patients seen by an Australian Sentinel Practices Research Network (ASPREN) general practitioner. Of these patients, 13% were positive for influenza. Influenza A viruses were the predominant influenza subtype identified (Figure 9). Rhinovirus was the most common non-influenza virus detected this fortnight.

Figure 8. Unweighted rate of ILI reported from sentinel GP surveillance systems, Australia, 1 January 2012 to 12 June 2016, by month and week.



SOURCE: ASPREN, SPN(WA) and VicSPIN

Figure 9. Proportion of respiratory viral tests positive for influenza in ASPREN ILI patients and ASPREN ILI consultation rate, Australia, 4 January to 12 June 2016, by month and week.



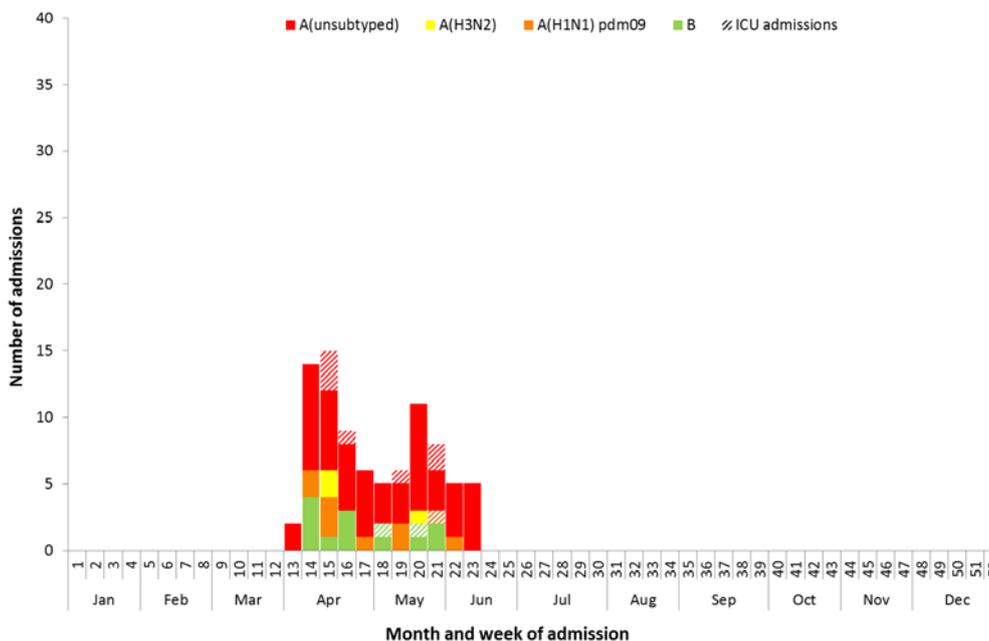
SOURCE: ASPREN and SPN(WA)

4. Hospitalisations

Sentinel Hospital Surveillance

Since seasonal surveillance commenced through the Influenza Complications Alert Network (FluCAN) sentinel hospital surveillance system on 1 April 2016, a total of 86 people have been admitted with confirmed influenza, of which 26 were children aged less than 15 years. Approximately 12% of influenza patients have been admitted directly to ICU and the majority of influenza admissions have been due to influenza A (85%) (Figure 10). Overall, 66% of patients were reported with significant risk factors.

Figure 10. Number of influenza hospitalisations at sentinel hospitals, 1 April to 10 June 2016, by month and week of and influenza subtype.



Source: FluCAN Sentinel Hospitals

Paediatric Severe Complications of Influenza

The Australian Paediatric Surveillance Unit (APSU) conducts seasonal surveillance between July and October annually of children aged 15 years and under who are hospitalised with severe complications of influenza. Between 1 July 2016 and 6 June 2016, there have been no hospitalisations associated with severe complications of influenza reported to APSU.

5. Deaths Associated with Influenza and Pneumonia

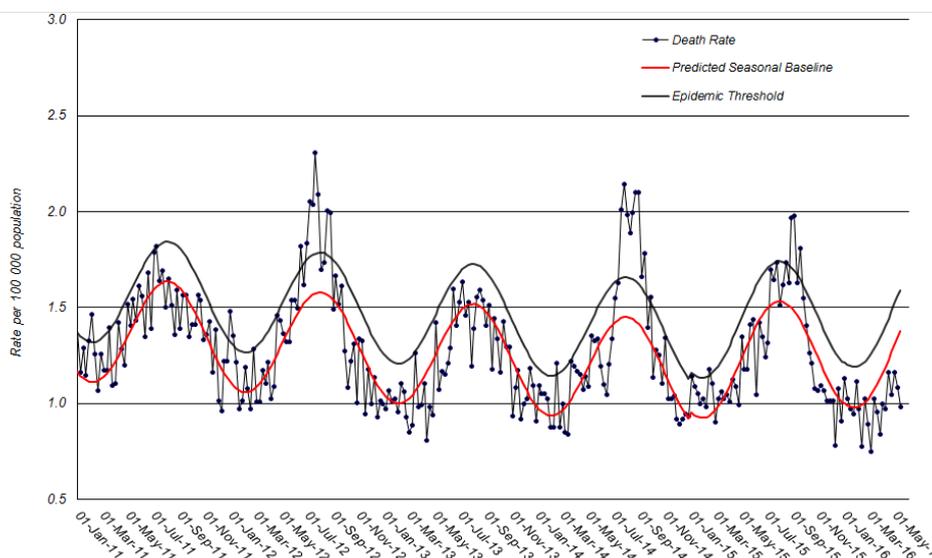
Nationally Notified Influenza Associated Deaths

So far in 2016, 9 influenza associated deaths have been notified to the NNDSS. The median age of deaths notified was 54 years (range 1 to 88 years). The number of influenza associated deaths reported to the NNDSS is reliant on the follow up of cases to determine the outcome of their infection and most likely does not represent the true mortality associated with this disease.

New South Wales Influenza and Pneumonia Death Registrations

Death registration data from NSW for 2016 up to the week ending 13 May 2016 show deaths attributed to pneumonia or influenza are low and below the epidemic threshold.³

Figure 11. Rate of deaths classified as influenza and pneumonia from the NSW Registered Death Certificates, 2011 to 13 May 2016.



6. Virological Surveillance

Australian Influenza Vaccines Composition 2016

The influenza virus strains included in the 2016 seasonal influenza vaccines in Australia are:

- A/California/7/2009, (H1N1)pdm09-like virus;
- A/Hong Kong/4801/2014, (H3N2)-like virus;
- B/Brisbane/60/2008-like virus, Victoria lineage;
- B/Phuket/3073/2013-like virus, Yamagata lineage (Quadrivalent influenza vaccine only).

Typing and Antigenic Characterisation

In 2016, up to 14 June the World Health Organization Collaborating Centre for Reference and Research on Influenza (WHO CC) characterised 279 influenza viruses (Table 1). When further characterised for similarity to the vaccine components, isolates appeared to be well matched. All the influenza A(H3N2) and influenza B isolates were characterised as similar to the vaccine components. A small number of influenza A(H1N1)pdm09 isolates (n=9) were characterised as low reactors.

Table 1. Australian influenza viruses typed by HI from the WHO Collaborating Centre, 1 January to 14 June 2016.

Type/Subtype	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	TOTAL
A(H1N1) pdm09	2	84	13	92	16	6	4	7	224
A(H3N2)	0	8	0	5	3	0	0	0	16
B/Victoria lineage	0	8	1	12	4	0	0	3	28
B/Yamagata lineage	0	3	0	8	0	0	0	0	11
Total	2	103	14	117	23	6	4	10	279

SOURCE: WHO CC

Note: Viruses tested by the WHO CC are not necessarily a random sample of all those in the community. State indicates the residential location for the individual tested, not the submitting laboratory. There may be up to a month delay on reporting of samples.

Antiviral Resistance

The WHO CC reported that from 1 January to 14 June 2016, of the 267 influenza viruses tested one has shown reduced sensitivity to neuraminidase inhibitor oseltamivir by enzyme inhibition assay while all have shown sensitivity to zanamivir.

7. International Surveillance

The World Health Organization reported that internationally influenza activity in the temperate zone of the northern hemisphere continued to decrease to inter-seasonal levels.⁴ In temperate countries in the southern hemisphere, influenza activity started to increase in South America and South Africa, but remained low overall in most of Oceania.

DATA CONSIDERATIONS

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.

Detailed notes on interpreting the data presented in this report are available at the Department of Health's [Australian Influenza Surveillance Report website](http://www.health.gov.au/flureport) (www.health.gov.au/flureport).

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](mailto:flu@health.gov.au) (flu@health.gov.au).

REFERENCES

- 1 NSW Health, NSW Health Influenza Surveillance Report, Week 23: 6 to 12 June 2016. Available from [NSW Influenza Surveillance Reports](http://www.health.nsw.gov.au/Infectious/Influenza/Pages/reports.aspx) (<http://www.health.nsw.gov.au/Infectious/Influenza/Pages/reports.aspx>) [Accessed 20 June 2016].
- 2 FluTracking, FluTracking Weekly Interim Report, Week ending 12 June 2016. Available from [FluTracking Reports](http://www.flutracking.net/Info/Reports) (<http://www.flutracking.net/Info/Reports>) [Accessed 20 June 2016].
- 3 NSW Health, NSW Health Influenza Surveillance Report, Week 22: 30 May to 5 June 2016. Available from [NSW Influenza Surveillance Reports](http://www.health.nsw.gov.au/Infectious/Influenza/Pages/reports.aspx) (<http://www.health.nsw.gov.au/Infectious/Influenza/Pages/reports.aspx>) [Accessed 20 June 2016].
- 4 WHO, Influenza Update No. 265, 29 May 2016. Available from the [WHO website](http://www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/) (http://www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/) [Accessed 20 June 2016].