



Synopsis

During week 52 (December 25 – 31, 2016), influenza activity remained similar to last week.

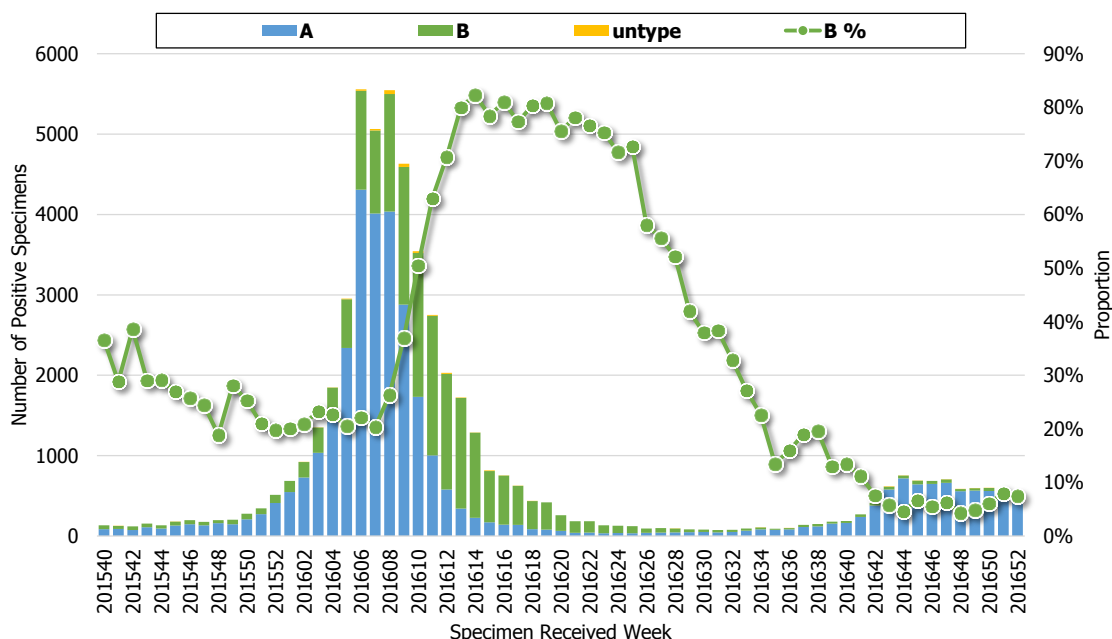
- The proportions of outpatient and ER visits for influenza-like illness (ILI) in the recent weeks remain similar.
- The majority of the circulating influenza virus type was H3N2, 98% of H3N2 matched to the 2016-17 influenza vaccine strain. No antiviral-resistance viruses were found in the circulating influenza viruses.
- The number of reported cases with severe complicated influenza was higher than the previous week, and the number of influenza-associated hospitalization cases was similar compared to the previous week. There were 14 new confirmed severe complicated influenza cases and 3 deaths due to severe complicated influenza. Since July 1, 2016 to present, 244 severe complicated influenza cases were reported; 31 of them reported death. Influenza A (H3N2) remained the dominant virus in severe cases (86%).
- The number of deaths attributed to pneumonia and influenza (P&I) increased slightly in recent weeks.
- According to the next week weather forecast, it will be large temperature differences during the same day. It is possible that influenza activity will increase slightly.

Viral Surveillance

Types and Trend

According to LARS¹, the number of the influenza positive specimens during week 52 was similar to week 51, and the major influenza type among positive specimens was influenza A.

Trend of Influenza Positive Specimens according to LARS

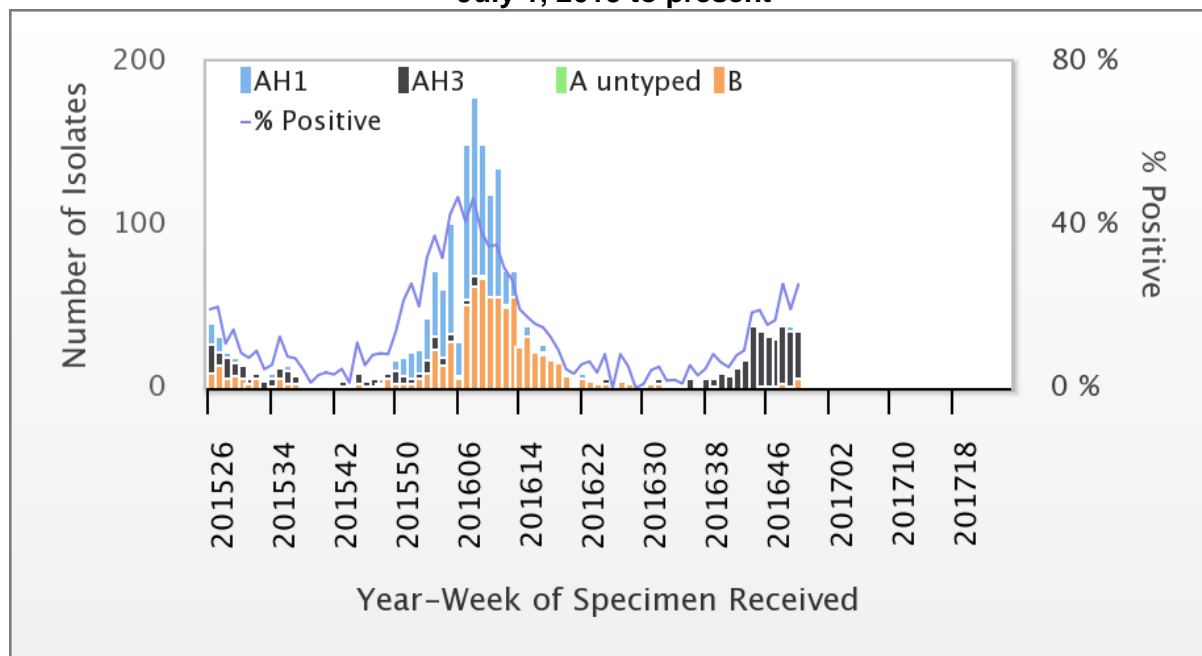


¹ In order to present the trend of influenza virus in real-time, the automated laboratory reporting system (LARS) has been established by Taiwan CDC since 2014. There are 29 hospitals, including 17 medical centers, have been participating in LARS. All data from positive specimens are uploading onto LARS automatically on a daily basis.



According to the Taiwan CDC Contracted Diagnostic Virology Laboratories², the proportion of specimens testing positive for influenza virus was 25.4% and 81% of positive tests were H3N2 during week 50. Weekly virus data are available on website: <http://nidss.cdc.gov.tw/> .

Influenza Positive Tests according to Contracted Diagnostic Virology Laboratories July 1, 2015 to present



Antigenicity

During 2016-17 flu season, among those influenza positive specimens that were antigenically characterized, all (100%) of the influenza A (H1N1) virus isolates match with the A (H1N1) component of the 2016-17 influenza vaccine (A/California/7/2009), and 98% of the H3N2 virus isolates match with the A (H3N2) component of the 2016-17 influenza vaccine (A/Hong Kong/4801/2014). In addition, all influenza B virus isolates match with the B component of the 2016-17 influenza vaccine (B/Brisbane/60/2008).

Antiviral Resistance

The table below summarized the results of antiviral resistance to neuraminidase inhibitor (Oseltamivir) from October 1 to December 30, 2016. All of recent circulating influenza viruses were susceptible to Oseltamivir.

	Isolates tested (n)	Resistance Viruses, n (%)
		Oseltamivir
Influenza A (H1N1)	1	0
Influenza A (H3N2)	62	0
Influenza B	5	0

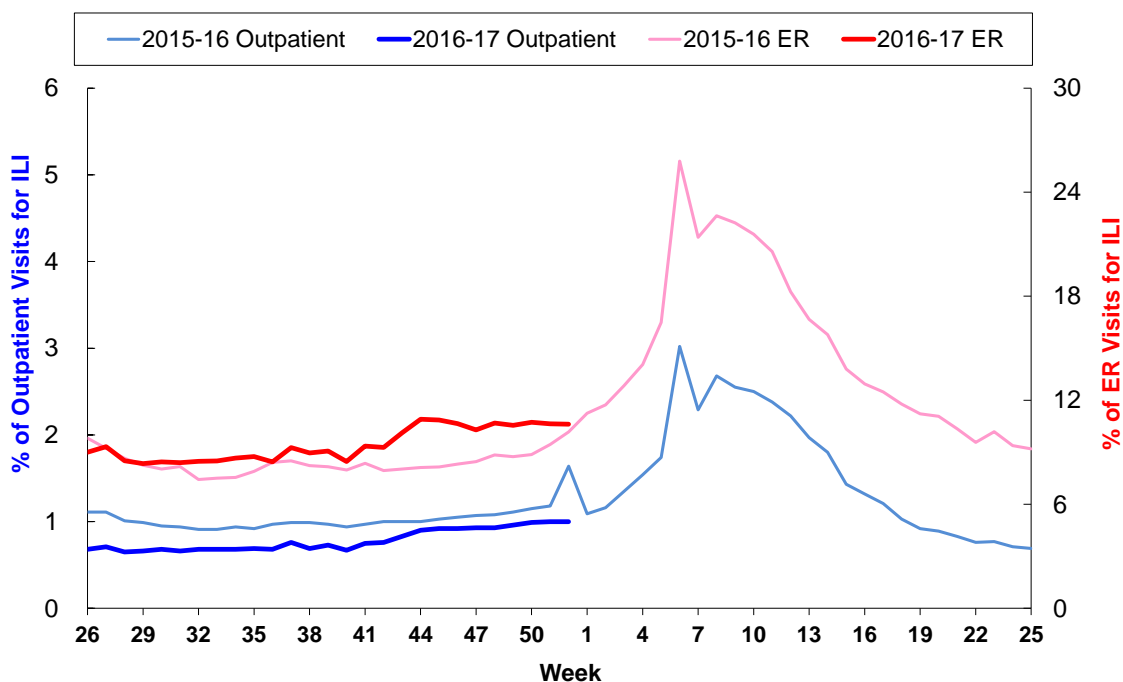
² The Contracted Diagnostic Virology Laboratories, including 8 laboratories of medical centers, have been established by Taiwan CDC since March, 1999 to observe the subtype, antigenicity and drug resistance of the influenza viruses circulating in the community,



Influenza-like Illness (ILI) Surveillance

The proportion of outpatient visits for ILI was 1.00%, which remained the same to the previous week (1.00%), and the number of outpatient visit was around 50,600. The proportion of ER visits for ILI was 10.62%, which was similar to the previous week (10.66%), and the number of ER visit was around 12,000.

**Proportions of outpatient department and ER visits for ILI
July 1, 2015 to present**



* Since 2016, the analysis of the ILI data from National Health Insurance Database is based on the ICD-10 diagnosis codes.

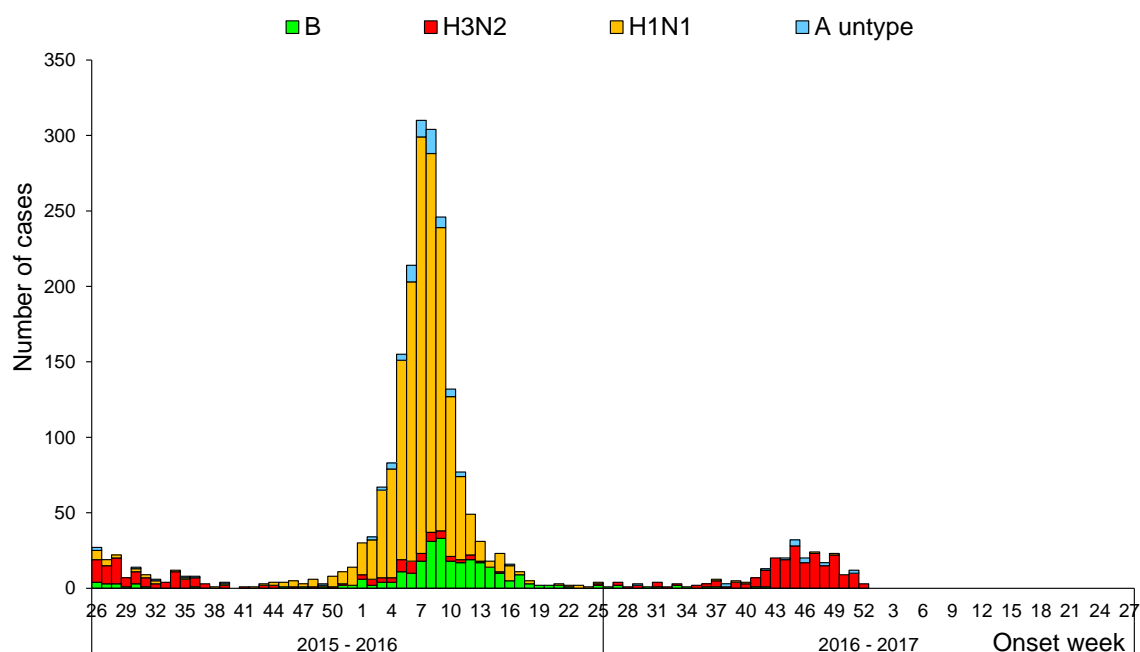
Severe Complicated Influenza Report

The number of reported severe complicated influenza cases was higher than the previous week, and the number of influenza-associated hospitalization cases during week 52 were similar to week 51. There were 14 new confirmed severe complicated influenza cases with H3N2 infection. There were three new deaths reports due to severe complicated influenza (2 H3N2 and 1 influenza A (unknown subtype)).

During this influenza season (July 1, 2016 to present), 244 severe complicated influenza cases has been confirmed, and 89% of the cases did not receive influenza vaccine. Among these 244 cases (86% H3N2, 2% H1N1, 6% influenza A (unknown subtype), 5% influenza B virus, and 1% co-infected with H3N2 and influenza B virus). The highest incidence and severe case numbers were among adults aged 65 years and above. The total number of 31 deaths due to severe complicated influenza were reported (22 H3N2, 1 H1N1, 4 influenza A (unkown subtype), 3 influenza B virus, and 1 co-infection with H3N2 and influenza B). Among these, 74% did not receive influenza vaccine.



Number of severe complicated influenza reports by week of onset July 1, 2015 to present



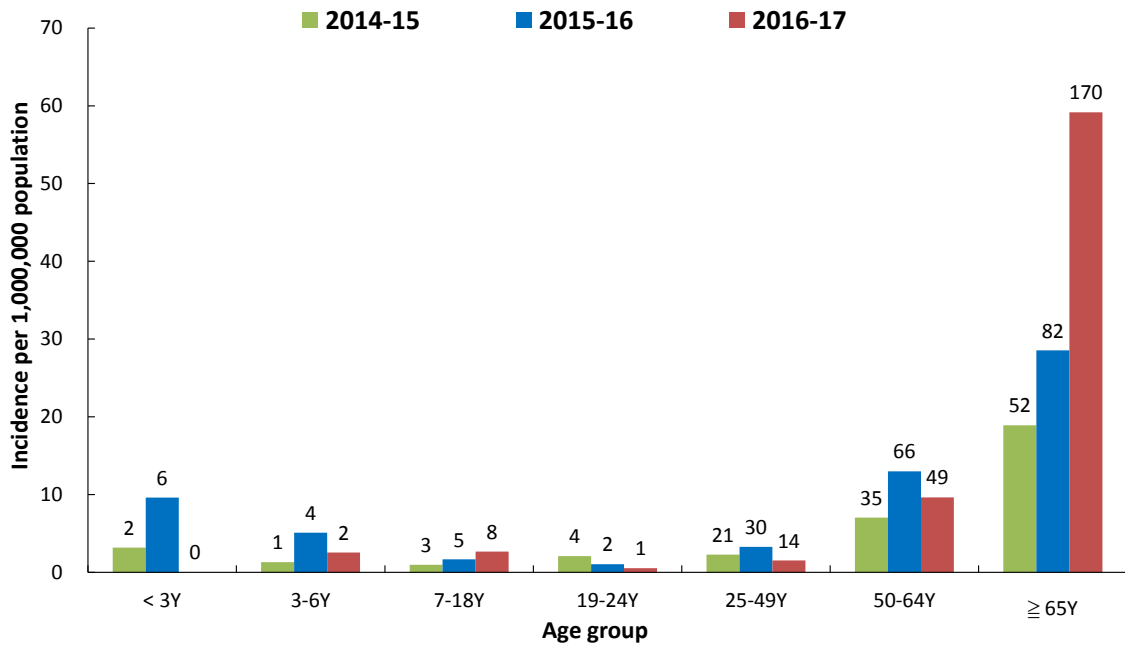
* A person who has ILI symptoms become severely ill (includes pulmonary complication, neurologic complication, myocarditis, invasive bacterial infection, or pericarditis) that requires intensive care or results in death within 14 days and with influenza virus infection confirmed by the laboratory is defined as a confirmed severe complicated influenza case.

Number and incidence of confirmed severe complicated influenza cases and deaths by age groups July 1, 2016 to present

Age Group	Cases	Deaths	Cumulative incidence per million population	Cumulative mortality per million population
< 3 y	0	0	0.0	0.0
3-6 y	2	1	2.5	1.3
7-18 y	8	1	2.7	0.3
19-24 y	1	0	0.5	0.0
25-49 y	14	3	1.5	0.3
50-64 y	49	5	9.6	1.0
65 +	170	21	59.2	7.3
Total	244	31	10.4	1.3



Number of confirmed severe complicated influenza reports by age groups July 1, 2016 to present

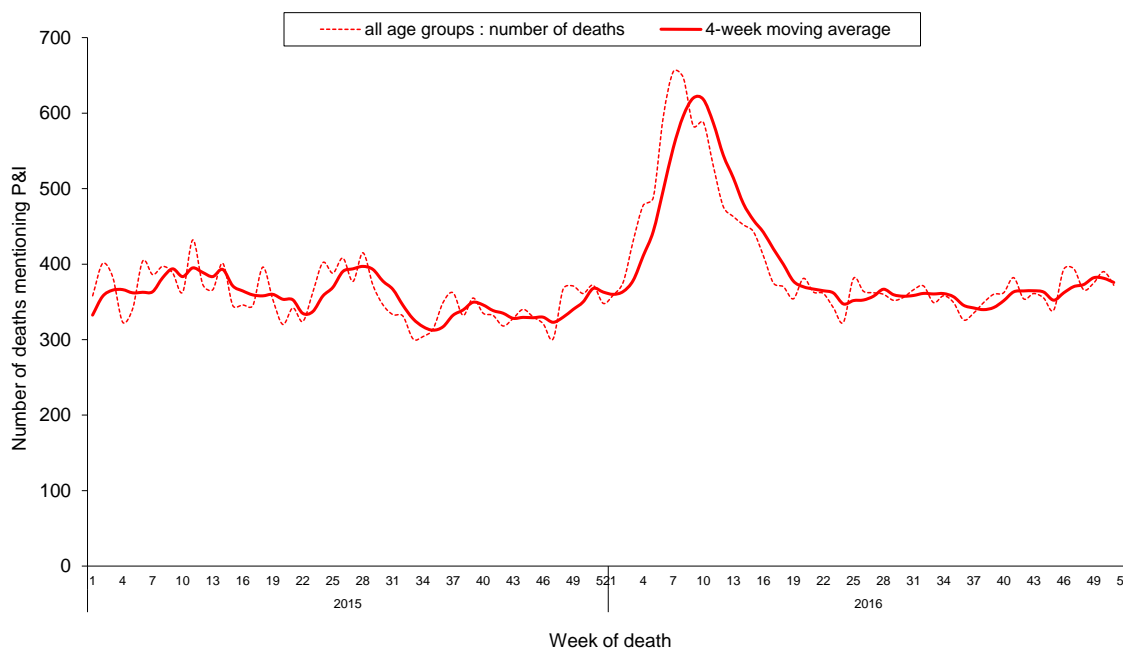


*The number shows above each bar represents the number of confirmed sever complicated influenza cases.



Pneumonia and Influenza (P&I) Mortality Surveillance

Based on the Internet System for Death Reporting (ISDR) surveillance data, the number of deaths attributed to P&I increased slightly in recent weeks. The proportion of deaths attributed to P&I for adults aged 65 years and above was the highest among the three age groups (0–49, 50–64, and 65+).



* Medical institutions are required to report any mortality case to the Ministry of Health and Welfare (MOHW) within 7 days after a death certificate is issued through the Internet System for Death Reporting (ISDR). Either the immediate cause of death or the underlying cause of death was used to identify P&I death cases. Only those with keyword texts containing 'pneumonia', 'influenza' or 'common cold' were counted as a P&I death.

