Synopsis

During week 46 (November 13 - 19, 2016), influenza activity remained similar to last week.

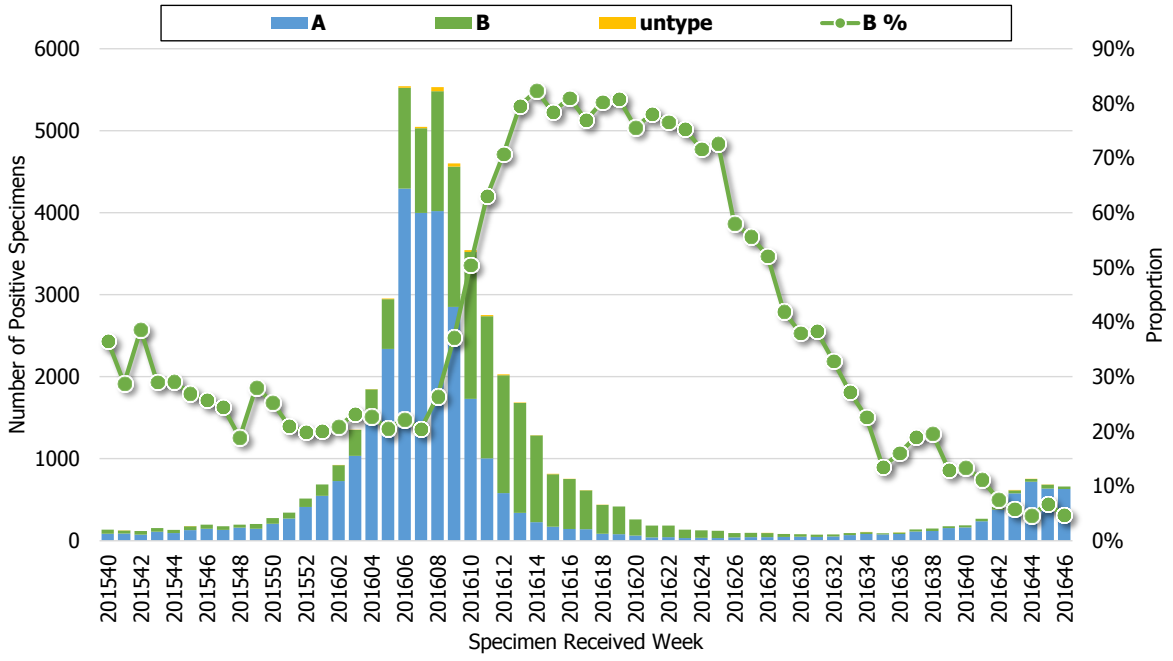
- Both proportions of outpatient and ER visits for influenza-like illness (ILI) during week 46 remained similar to last week.
- The proportion of specimens testing positive for influenza virus has been increasing during week 44. The majority of the circulating influenza virus type was H3N2, 95% of H3N2 matched to the 2016-17 influenza vaccine. No antiviral-resistance viruses were found in the circulating influenza viruses.
- The number of reported cases with severe complicated influenza remained similar to previous week. There were 22 new confirmed severe complicated influenza cases and 2 deaths due to severe complicated influenza. During July 1 to November 19, 2016, 139 severe complicated influenza cases were reported; 14 of them reported death. The majority (81%) of severe cases infected with influenza A (H3N2) virus.
- During week 45 (ending on November 12, 2016), the number of deaths attributed to pneumonia and influenza (P&I) was low.
- According to the weather forecast, temperatures across Taiwan will cool down in the next week. It is possible that influenza activity will increase slightly.

Viral Surveillance

Types and Trend

According to LARS[1], the number of the influenza positive specimens during week 46 were similar to week 45, and the major influenza type among positive specimens was influenza A.

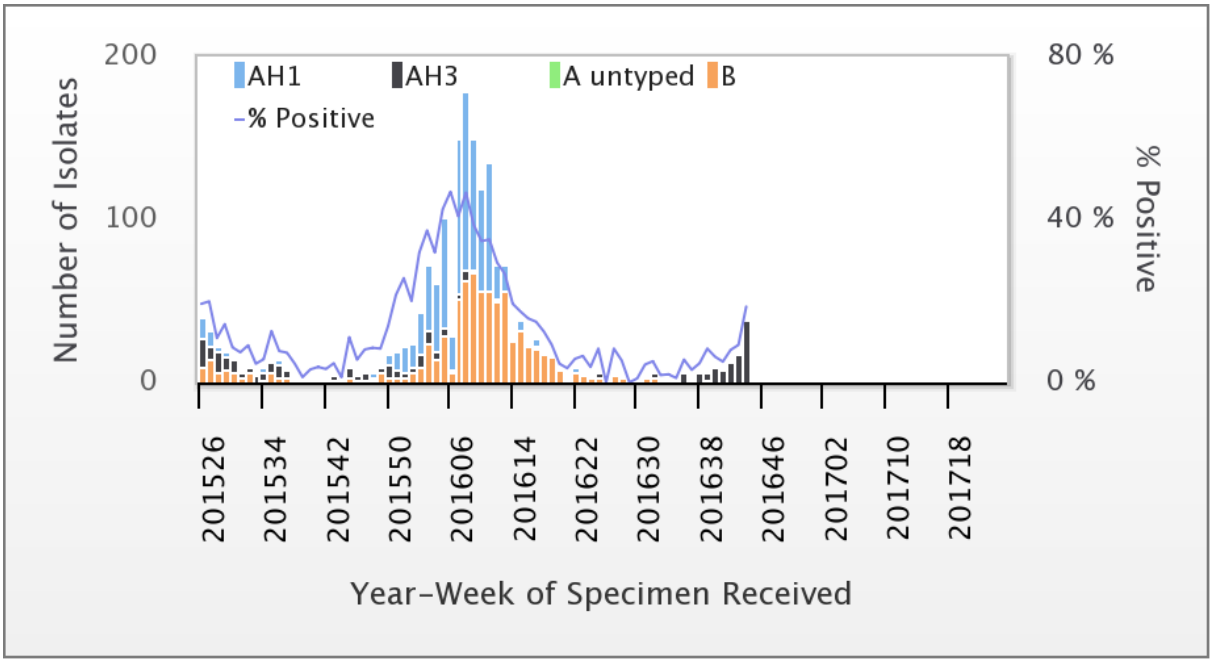
Trend of Influenza Positive Specimens according to LARS



[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 Laboratories[2], the proportion of specimens testing positive for influenza virus was 18.6%, and all positive tests were H3N2 during week 44. 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 95% 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 November 18, 2016 . All of recent circulating influenza viruses were susceptible to Oseltamivir.

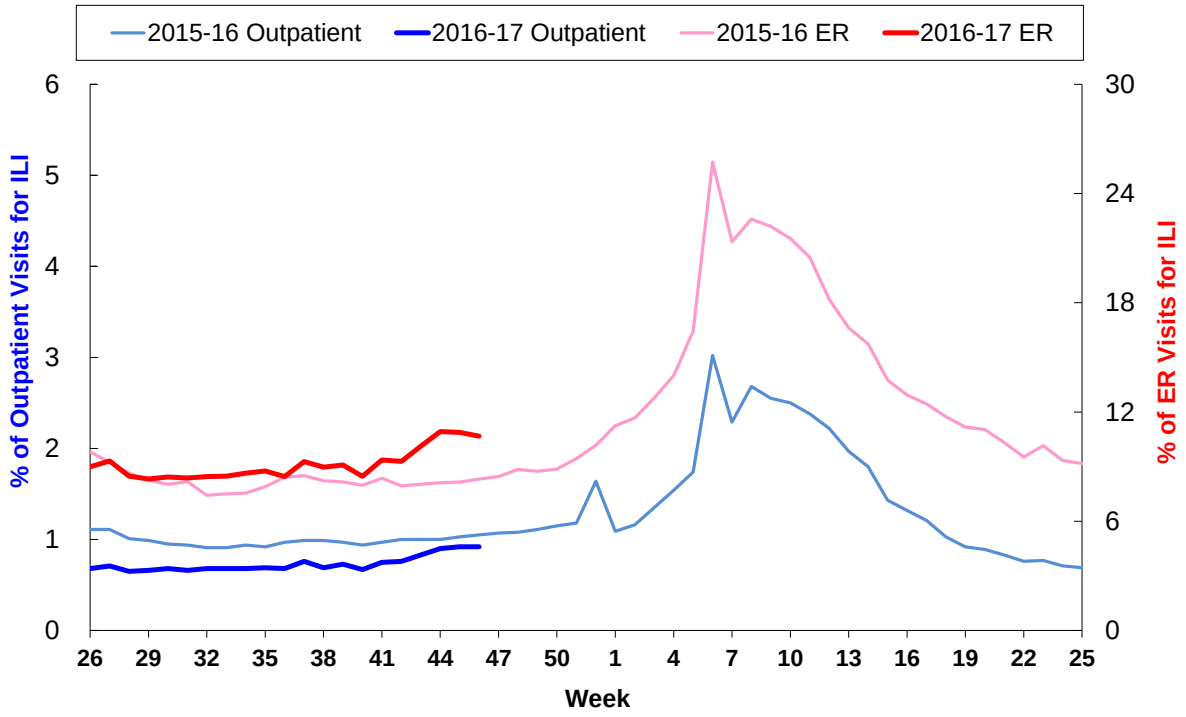
	Isolates tested (n)	Resistance Viruses, n (%)
		Oseltamivir
Influenza A (H1N1)	0	0
Influenza A (H3N2)	22	0
Influenza B	1	0

[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 0.92%, and the number of visit was around 47,000. The proportion of ER visits for ILI was 10.67%, and the number of visit was around 12,900. Both proportions and numbers of outpatient and ER visits for ILI during week 46 were similar to week 45.

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



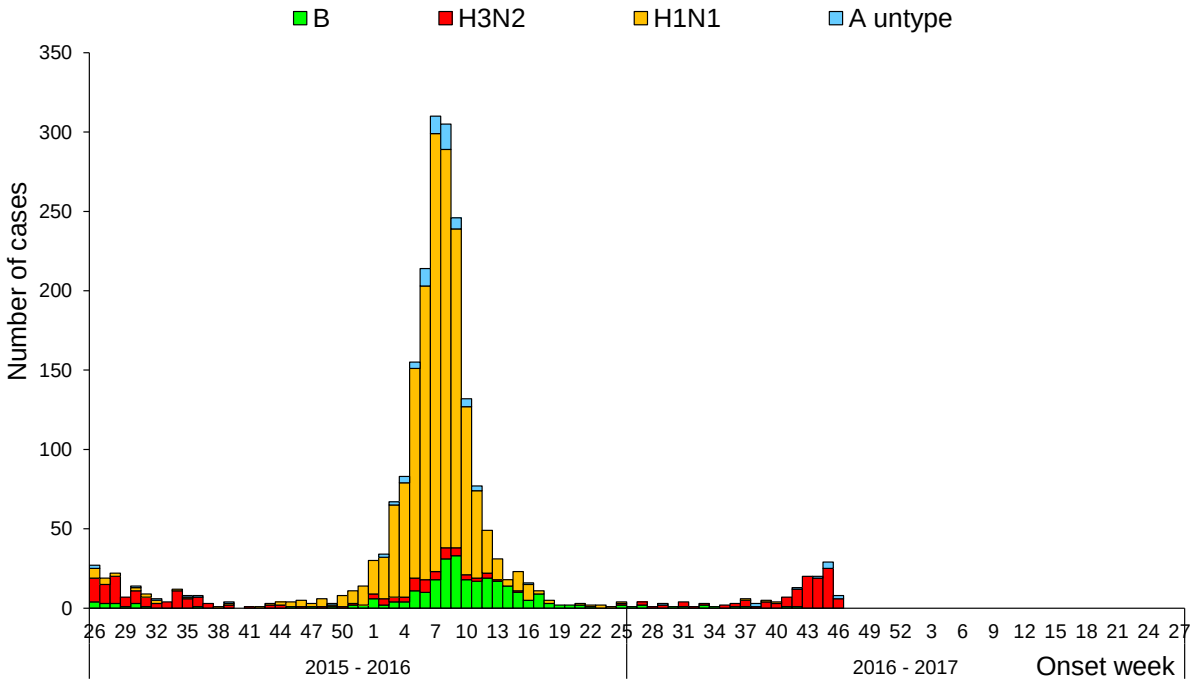
* Since 2016, the analysis of the ILI data from National Health Insurance Database is based on the ICD-10 diagnosis codes.

Severe Complicated Influenza Report

The number of reported severe complicated influenza cases during week 46 remained similar to week 45. There were 22 new confirmed severe complicated influenza cases, including 19 H3N2 cases, and 3 influenza A (unknown subtype) cases. There were two new death reports due to severe complicated influenza with H3N2 infection.

During this influenza season (July 1 to November 19, 2016), 139 severe complicated influenza cases has been confirmed, and 94% of the cases did not receive influenza vaccine. Among these 139 cases, 81% infected with H3N2, 2% with H1N1, 8% with influenza A (unknown subtype), and 9% with influenza B virus. The highest incidence and severe case numbers were among adults aged 65 years and above. The total number of 14 deaths due to severe complicated influenza were reported, including ten H3N2 infection, one H1N1 infection, and three influenza B virus infection. Among these, 86% did not receive influenza vaccine. Both numbers of confirmed cases and deaths were lower than the previous flu seasons (2015-2016).

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

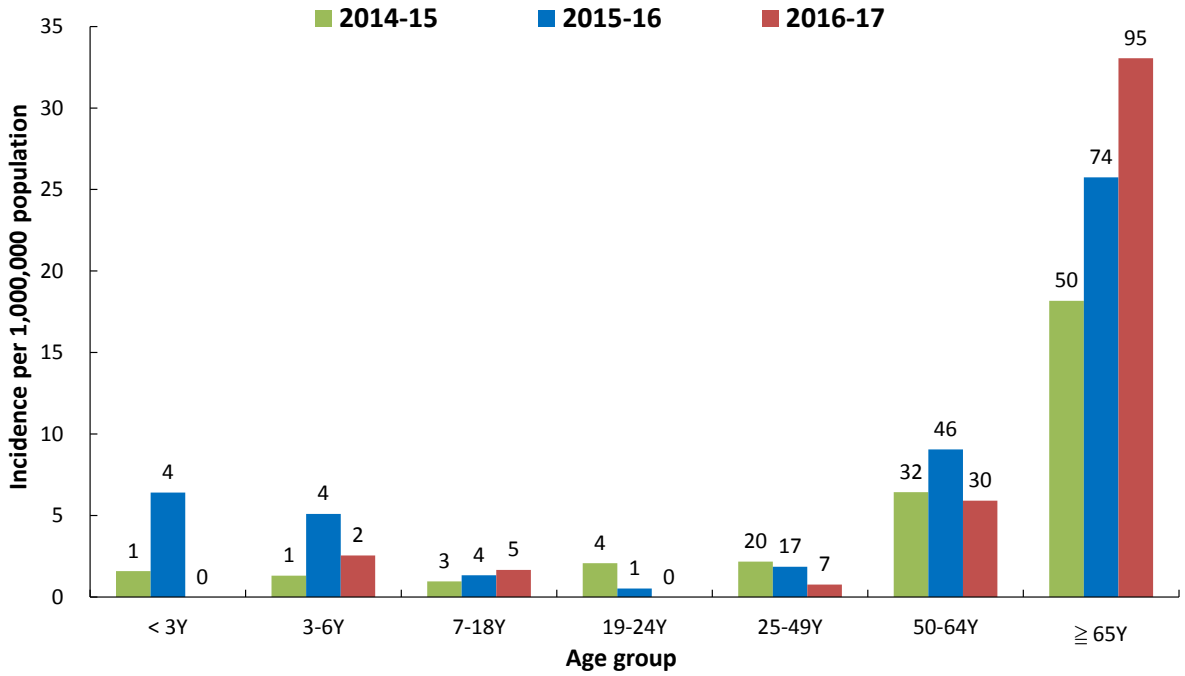


* A person who has ILI symptoms become severely ill (includes pulmonary complication, neurologic complication, myocarditis, invasive bacterial infection, or pericarditis) that requires intensive care or results in death within 14 days and with influenza virus infection confirmed by the laboratory is 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	5	1	1.7	0.3
19-24 y	0	0	0.0	0.0
25-49 y	7	2	0.8	0.2
50-64 y	30	4	5.9	0.8
65 +	95	6	33.1	2.1
Total	139	14	5.9	0.6

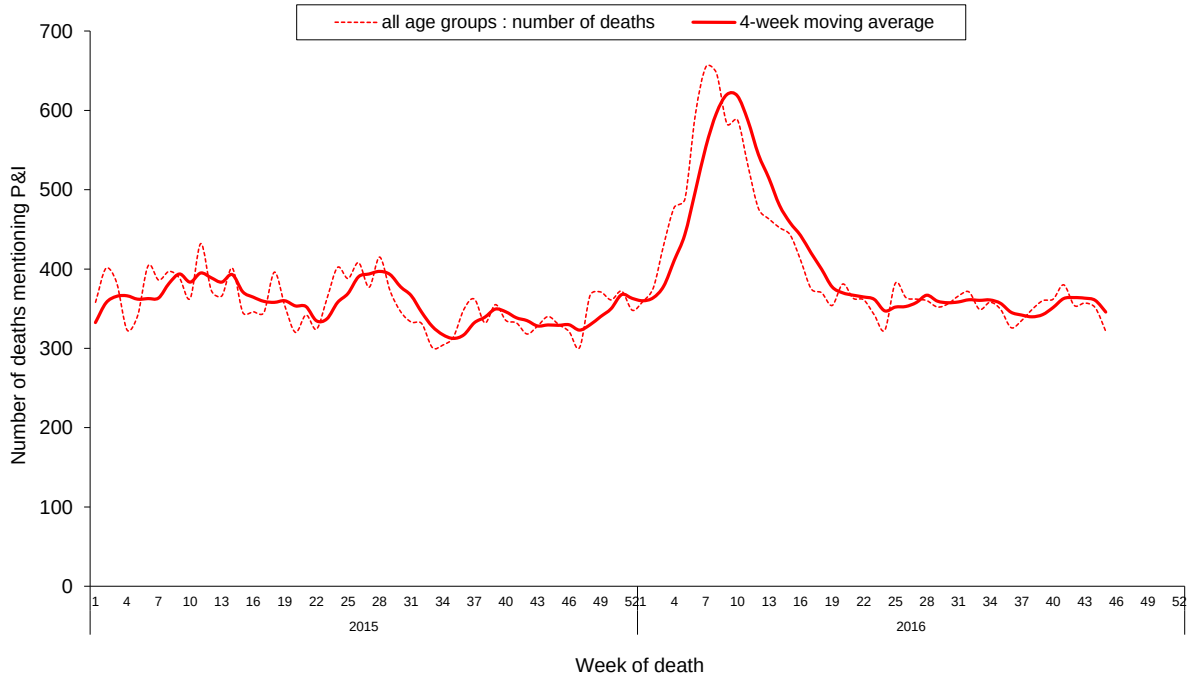
Number of confirmed severe complicated influenza reports by age groups
July 1, 2016 to present



*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 was low. 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.