Synopsis

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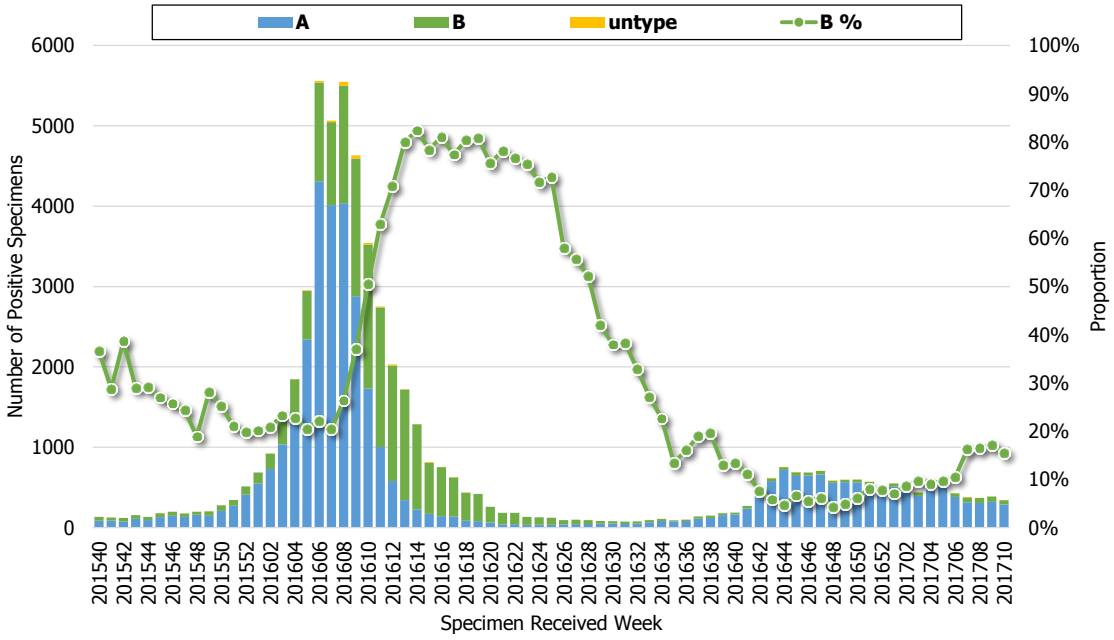
- The number of specimens positive for influenza virus was low in the past few weeks. The majority of the circulating influenza virus type was H3N2, 86% of H3N2 matched to the 2016-17 influenza vaccine strain in the past 4 weeks. No antiviral-resistance viruses were found in the circulating influenza viruses.
- The number of reported cases with severe complicated influenza was lower in the past two weeks. There were 8 new confirmed severe complicated influenza cases during week 10. Since July 1, 2016, 358 severe complicated influenza cases have been reported; 51 of them reported death. Influenza A (H3N2) remained the dominant virus among severe cases (84%).
- The number of deaths attributed to pneumonia and influenza (P&I) was decreasing in the past two weeks.
- Spring is approaching, so it is possible that the influenza activity will gradually decrease in few weeks.

Viral Surveillance

Types and Trend

According to LARS[1], the number of the influenza positive specimens during week 10 was slightly lower than the previous week, and the major influenza type among positive specimens was influenza A.

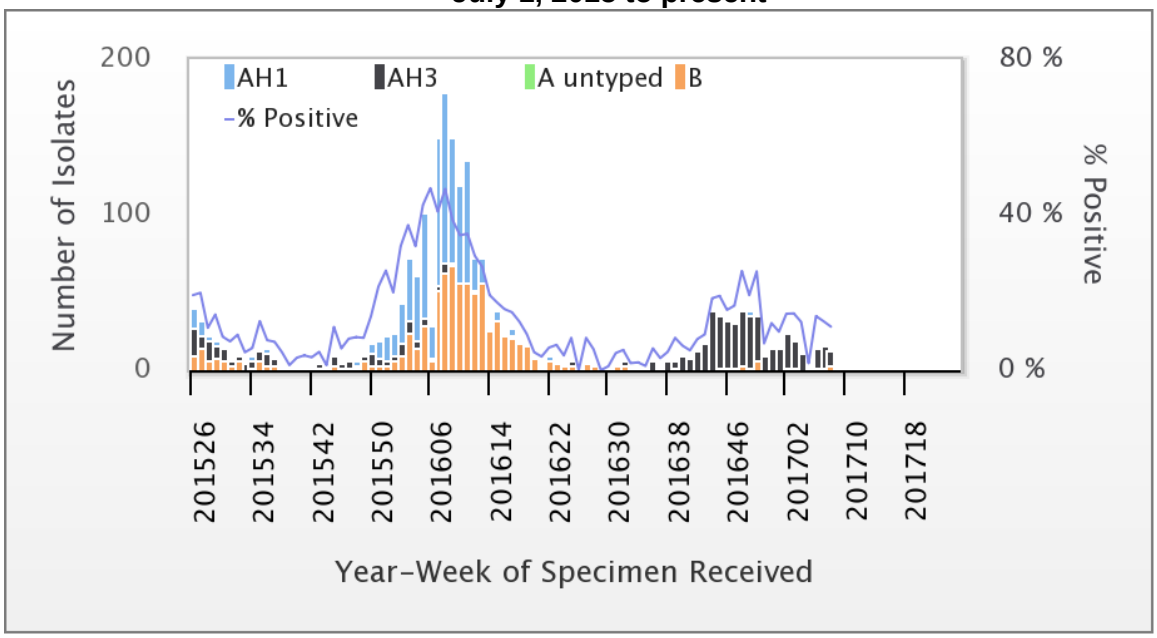
Trend of Influenza Positive Specimens according to LARS



[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 11.2%. Among these, 66.7% were H3N2 during week 8, 2017. 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

In the past 4 weeks, among those influenza positive specimens that were antigenically characterized, all (100%) of the influenza A (H1N1) virus isolates match the A (H1N1) component of the 2016-17 influenza vaccine (A/California/7/2009), and 86% of the H3N2 virus isolates match the A (H3N2) component of the 2016-17 influenza vaccine (A/Hong Kong/4801/2014). In addition, all influenza B virus isolates match 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, 2016 to present. All of recent circulating influenza viruses were susceptible to Oseltamivir.

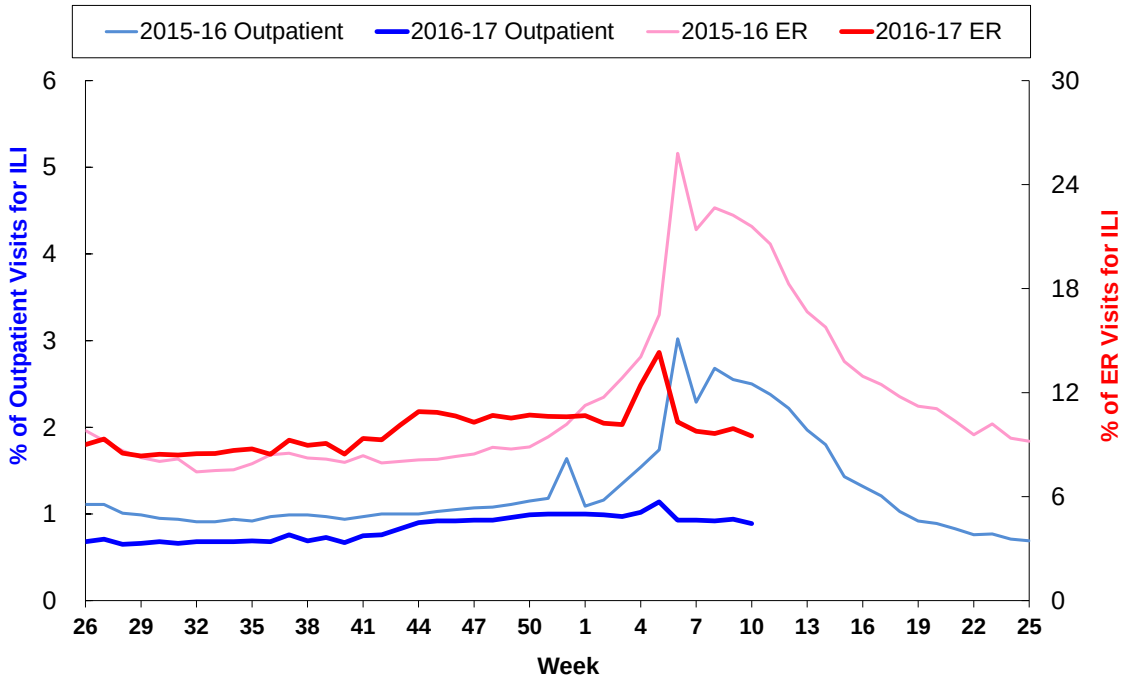
	Isolates tested (n)	Resistance Viruses, n (%)
		Oseltamivir
Influenza A (H1N1)	5	0
Influenza A (H3N2)	121	0
Influenza B	13	0

[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

During week 10, the proportion of ER visits for ILI was 9.50%, which was lower than the previous week (9.93%). The proportion of outpatient visits for ILI was 0.89%, which was lower than the previous week (0.94%).

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



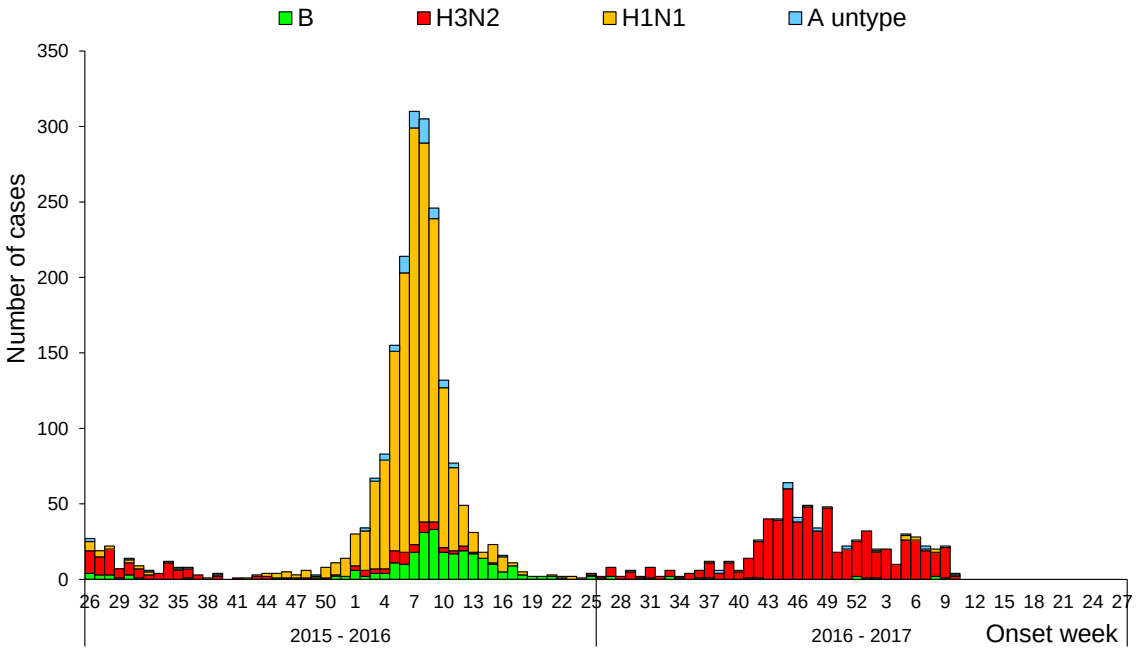
* Since 2016, the analysis of the ILI data from National Health Insurance Database is based on the ICD-10 diagnosis codes.

Severe Complicated Influenza Report

The number of reported severe complicated influenza cases was similar in the past few weeks. There were 8 new confirmed severe complicated influenza cases (4 H3N2, 1 H1N1, 1 influenza A (unknown subtype) and 2 influenza B) and 4 new reported deaths due to severe complicated influenza in week 10.

During this influenza season (July 1, 2016 to present), 358 severe complicated influenza cases have been confirmed (83.5% H3N2, 4.5% H1N1, 6.1% influenza A (unknown subtype), 5.3% influenza B virus, and 0.6% co-infected with H3N2 and influenza B virus), 86% of them did not receive influenza vaccine. The highest incidence and severe case numbers were among adults aged 65 years and above. The total number of 51 deaths due to severe complicated influenza were reported (38 H3N2, 4 H1N1, 5 influenza A (unknown subtype), 3 influenza B virus, and 1 co-infection with H3N2 and influenza B). Among these deaths, 78% did not receive influenza vaccine.

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

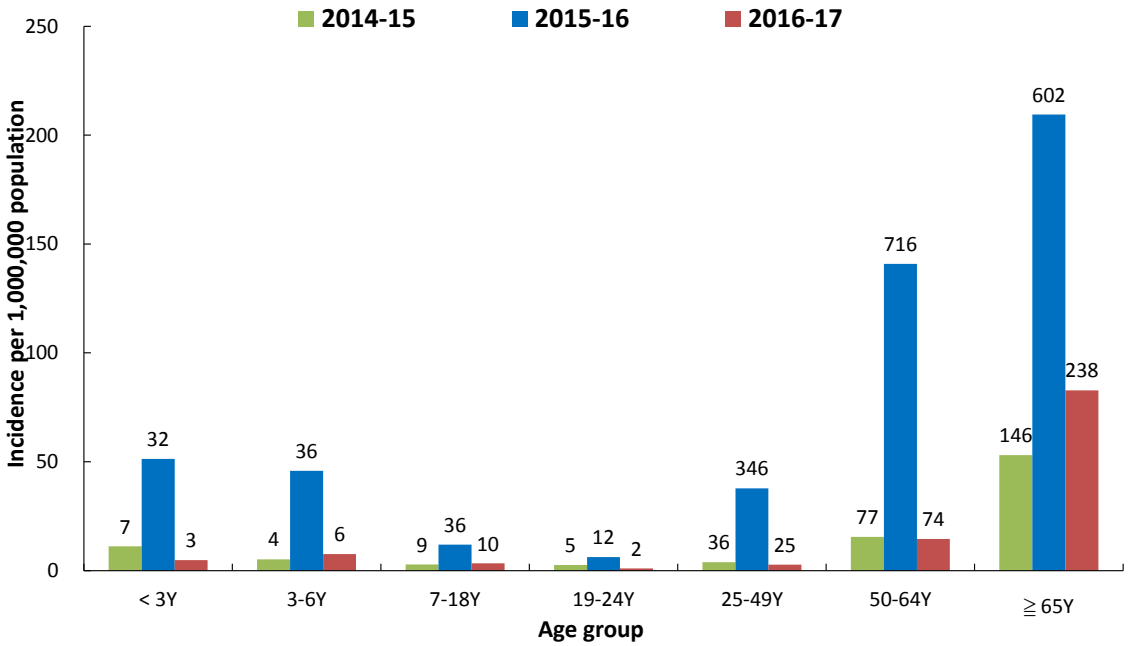


* A person who has ILI symptoms become severely ill (includes pulmonary complication, neurologic complication, myocarditis, invasive bacterial infection, or pericarditis) that requires intensive care or results in death within 14 days and with influenza virus infection confirmed by the laboratory is 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	3	0	4.8	0.0
3-6 y	6	1	7.6	1.3
7-18 y	10	1	3.3	0.3
19-24 y	2	0	1.0	0.0
25-49 y	25	4	2.7	0.4
50-64 y	74	7	14.6	1.4
65 +	238	38	82.8	13.2
Total	358	51	15.3	2.2

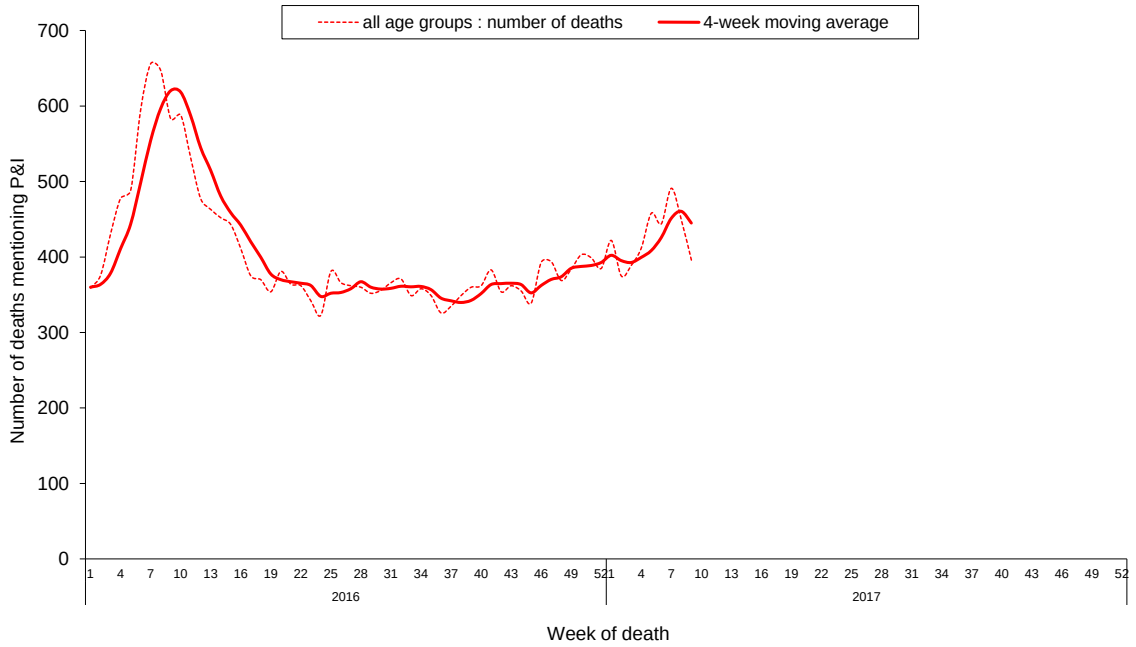
Number of confirmed severe complicated influenza reports by age groups
July 1, 2016 to present



*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 pneumonia and influenza (P&I) in the past two weeks was decreasing. 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.