



Synopsis

Influenza activity increased significantly but was below the national baseline.

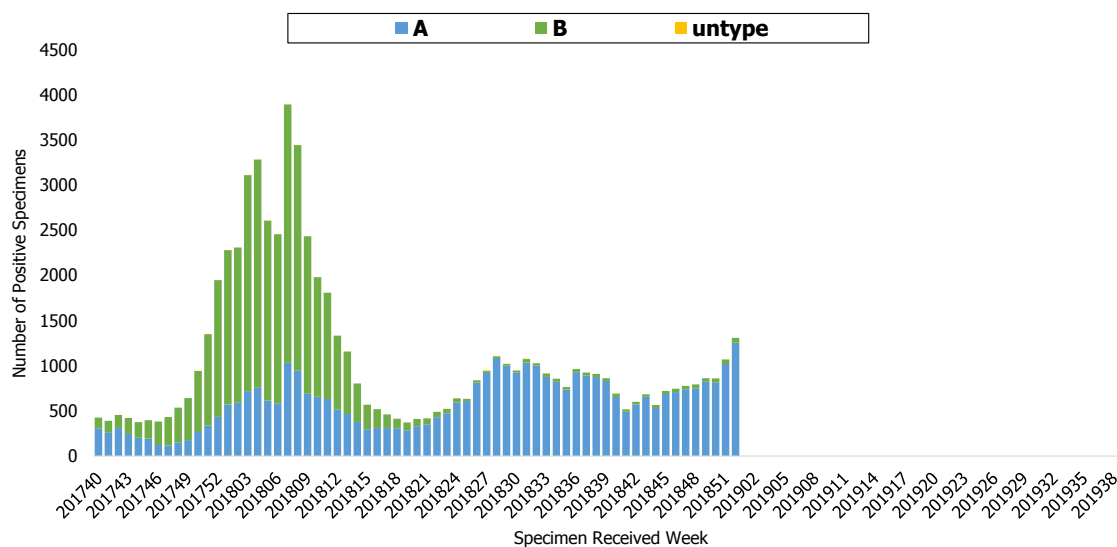
- A/H3N2 (53%) and A/H1N1 (38%) were co-circulating in community.
- Both proportions and numbers of outpatient and ER visits for ILI increased during the past few weeks.
- There have been 164 severe complicated influenza cases, including 13 deaths, since October 1, 2018. A/H3N2 was the major virus type from these cases.

Laboratory Surveillance

Types and Trend

According to LARS¹, the number of influenza positive specimens increased, and the proportion of positive specimens for influenza A virus was 95.9%.

Trend of influenza positive specimens according to LARS

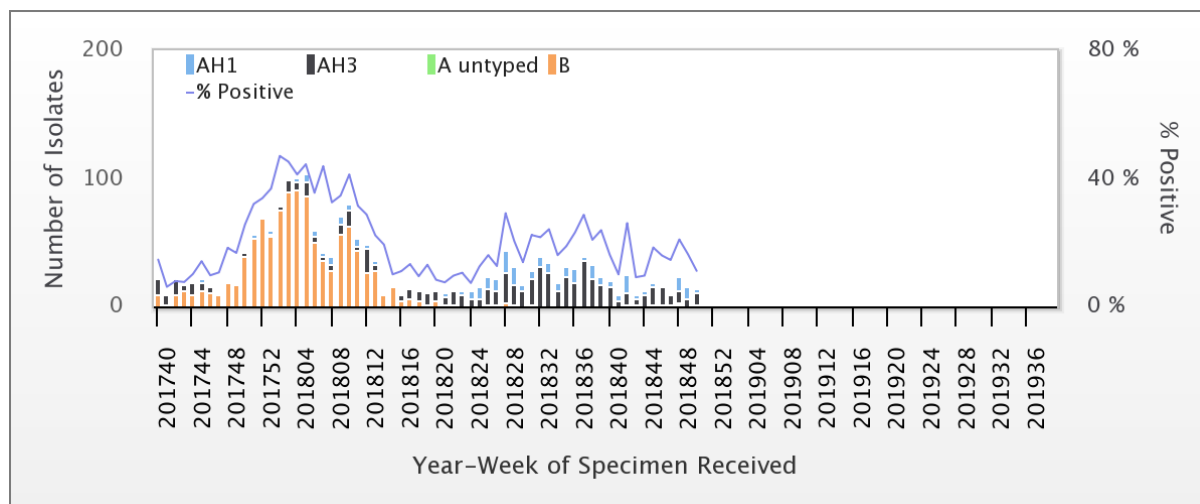


¹ In order to present the trend of influenza virus in real-time, the Laboratory Automated Reporting System (LARS) has been established by Taiwan CDC since 2014. The data presented here collected from 57 participating hospitals. All positive specimens data uploads to LARS automatically.



According to the laboratory surveillance², the proportion of influenza positive specimens was 11.1%. Among these, 71.4% were influenza A/H3N2 virus and 21.4% were A/H1N1 during week 50, 2018. Weekly virus data are available at: <http://nidss.cdc.gov.tw/>.

Influenza isolates and positive rate according to Contracted Virology Laboratories October 1, 2017 to December 15, 2018



Antigenicity

In the past four weeks, among those influenza isolates that were antigenically characterized, all of the influenza A (H1N1) virus isolates matched the A (H1N1) component of the 2018-19 influenza vaccine (A/Michigan/45/2015), and 88% of the H3N2 virus isolates matched the A (H3N2) component of the 2018-19 influenza vaccine (A/Singapore/INFIMH-16-0019/2016). Among influenza B isolates, 50% were B/Victoria lineage, and 100% of those isolates matched the B component of the 2018-19 influenza vaccine B/Colorado/06/2017 (tetraivalent); 50% were B/Yamagata lineage, and 100% of those isolates matched the B component of the 2018-19 influenza vaccine B/Phuket/3073/2013 (quadrivalent).

Antiviral Resistance

The table below summarized antiviral resistance to neuraminidase inhibitor (Oseltamivir) from October 1, 2018. All of the influenza isolates were susceptible to Oseltamivir.

	Isolates tested (n)	Resistance Viruses, n (%)
		Oseltamivir
Influenza A (H1N1)	79	0
Influenza A (H3N2)	135	0
Influenza B	6	0

² In terms of the surveillance systems in Taiwan, please see: Jian, S. W., Chen, C. M., Lee, C. Y., & Liu, D. P. (2017). Real-Time Surveillance of Infectious Diseases: Taiwan's Experience. *Health security*, 15(2), 144-153.



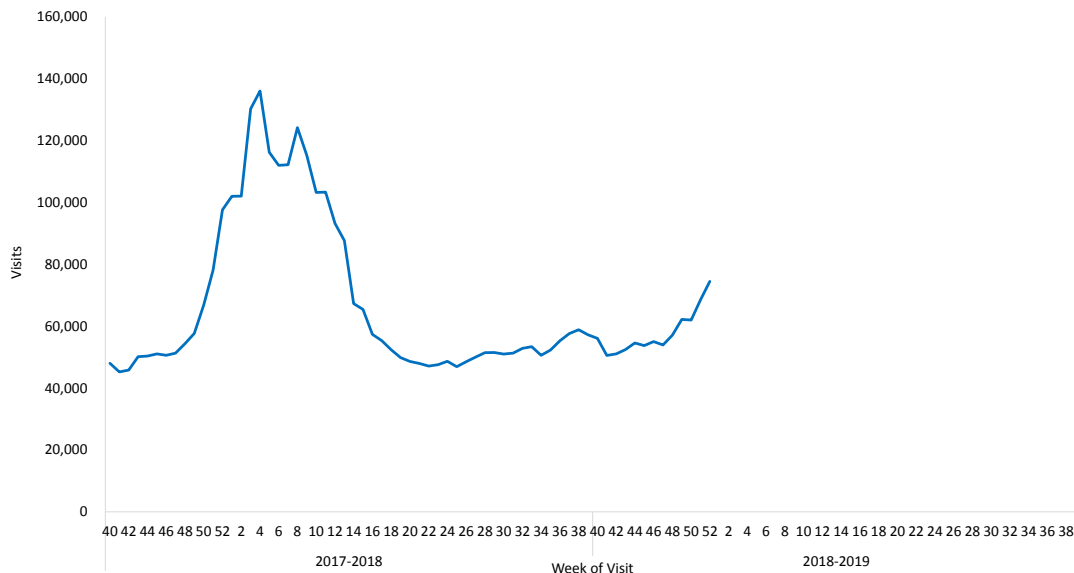
Influenza-like Illness (ILI) Surveillance

During week 52, the proportions of ILI visits were 1.17% and 10.58% in the outpatient and ER visits, respectively. The proportion of ER visits was below the national baseline of 11.5%. The number of visits for ILI in outpatient and ER combined was 74,470, which was significantly higher than the previous week. In general, the ILI activity increased during the past few weeks.

Proportions of outpatient and ER visits for ILI



Total number of outpatient and ER visits for ILI



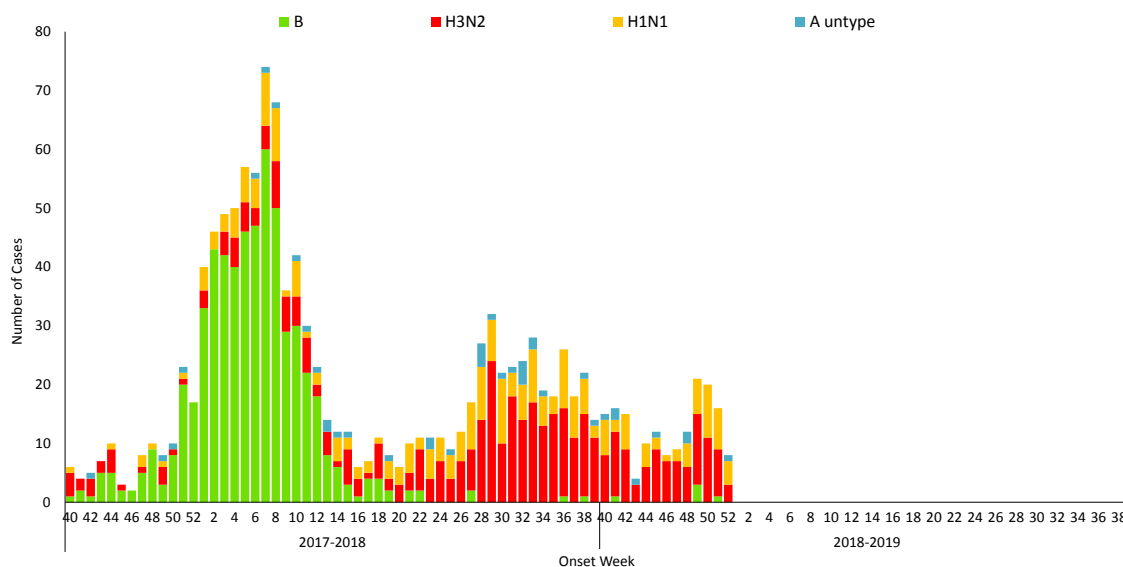
* Since 2016, the analysis of the ILI data from National Health Insurance Database is based on the ICD-10 diagnosis codes.



Severe Complicated Influenza Case

In week 52, there were 20 new influenza cases with severe complications [9 H1N1, 8 H3N2, 2 influenza B and 1 influenza A (unknown subtype)] and 2 new fatal cases infected with H3N2. Since October 1, 2018, a total of 164 severe complicated influenza cases have been confirmed, including 13 fatal cases (8 H3N2 and 5 H1N1). The majority of virus isolates were H3N2 (about 60%). Most of these cases were adults aged 65 and older.

Number of severe complicated influenza confirmed cases by week of onset



* 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.

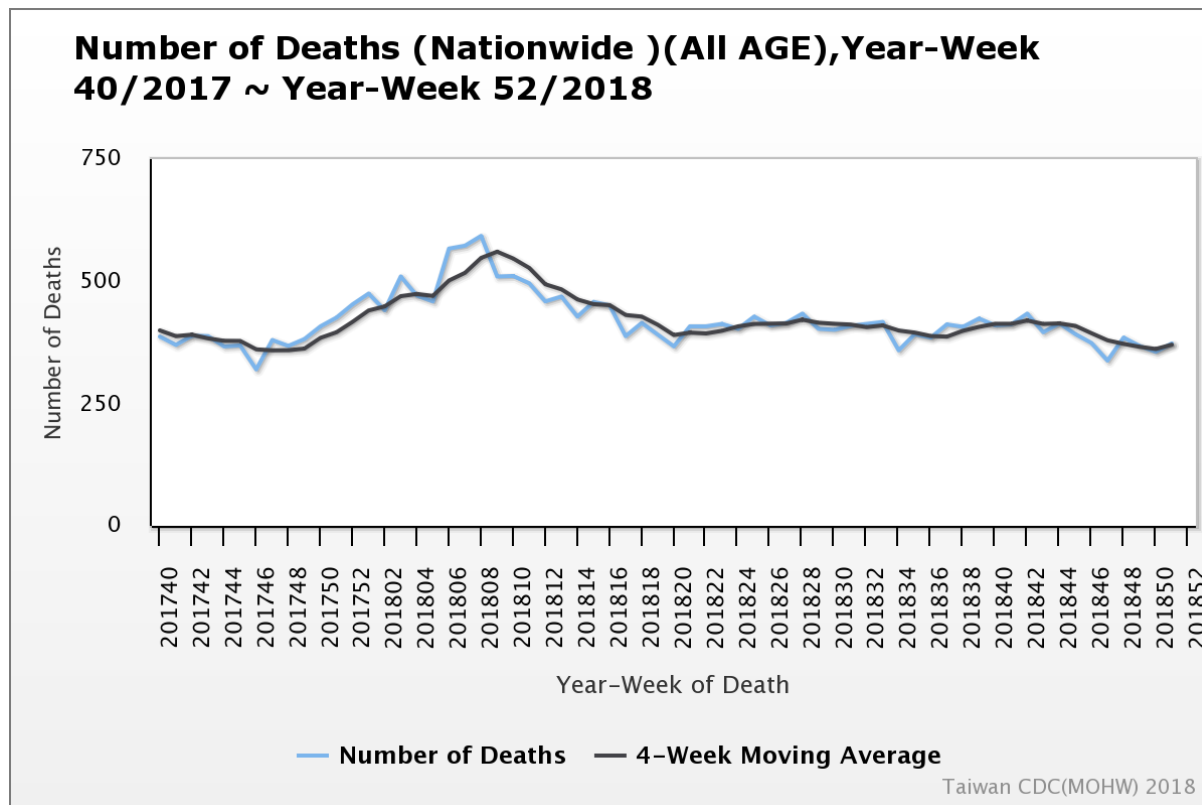
Number and incidence of severe complicated influenza confirmed cases and deaths by age groups
October 1 to December 31, 2018

Age Group	Cases	Deaths	Cumulative incidence per ten thousand population	Cumulative mortality per ten thousand population
< 3 y	6	1	1.0	0
3-6 y	3	0	0.3	0
7-18 y	8	1	0.3	0.04
19-24 y	2	0	0.1	0
25-49 y	18	0	0.2	0
50-64 y	28	1	0.5	0
65 +	99	10	3.0	0.3
Total	164	13	0.7	0.1



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) during week 51 was slightly higher than the previous week. The proportion of deaths attributed to P&I for adults aged 65 and older was the highest among the three age groups (0–49, 50–64, and 65+). Weekly P&I data are available at: <http://nidss.cdc.gov.tw/>.



* 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.

