Synopsis

Influenza activity persistently increased and was above the national baseline.

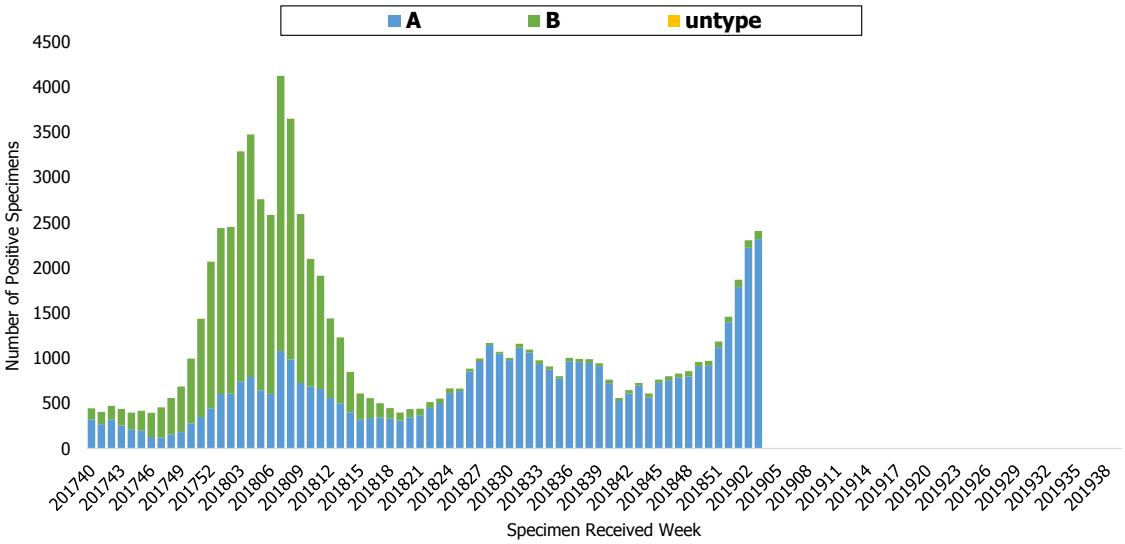
- Influenza A was the predominant virus type, and A/H1N1 and A/H3N2 were co-circulating in community. However, the proportion of A/H1N1 isolates was increasing.
- Both proportions and numbers of outpatient and ER visits for ILI increased during the past few weeks.
- New confirmed severe complicated influenza cases were rising rapidly. There have been 294 severe complicated influenza cases, including 21 deaths, since October 1, 2018. A/H1N1 (143 cases) and H3N2 (133 cases) were the major virus types from these cases.

Laboratory Surveillance

Types and Trend

According to LARS[1], the number of influenza positive specimens increased, and the proportion of positive specimens for influenza A virus was 96.2%.

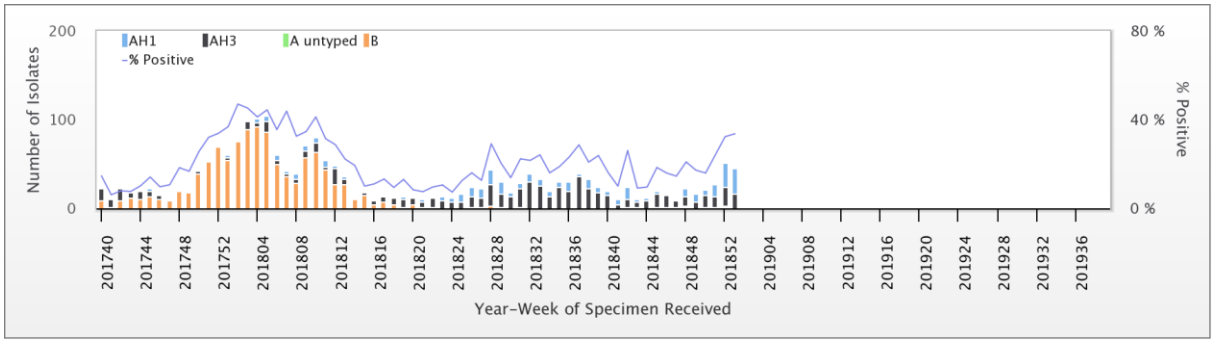
Trend of influenza positive specimens according to LARS



[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 surveillance[2], the proportion of influenza positive specimens was 33.6%. Among these, 100% were influenza A, including 65.2% influenza A/H1N1 virus and 34.8% A/H3N2 during week 1, 2019. Influenza A was the predominant virus type, and A/H1N1 and A/H3N2 were co-circulating in community. 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 January 5, 2019



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 92% 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, 60% were B/Victoria lineage, and 83% of those isolates matched the B component of the 2018-19 influenza vaccine B/Colorado/06/2017 (tetravalent); 40% 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.

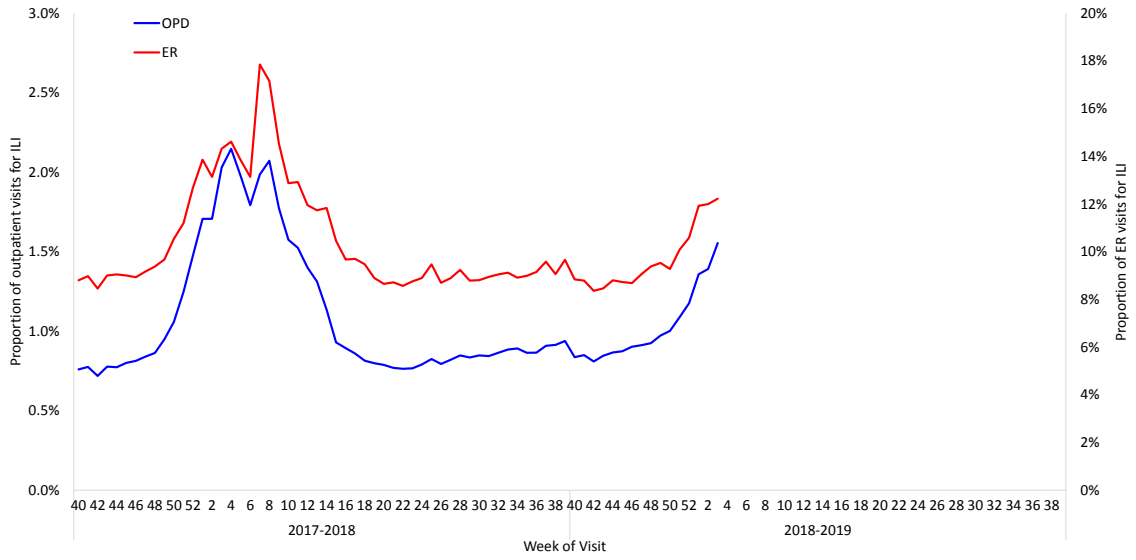
	Isolates tested (n)	Resistance Viruses, n (%)
		Oseltamivir
Influenza A (H1N1)	98	0
Influenza A (H3N2)	153	0
Influenza B	8	0

[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.

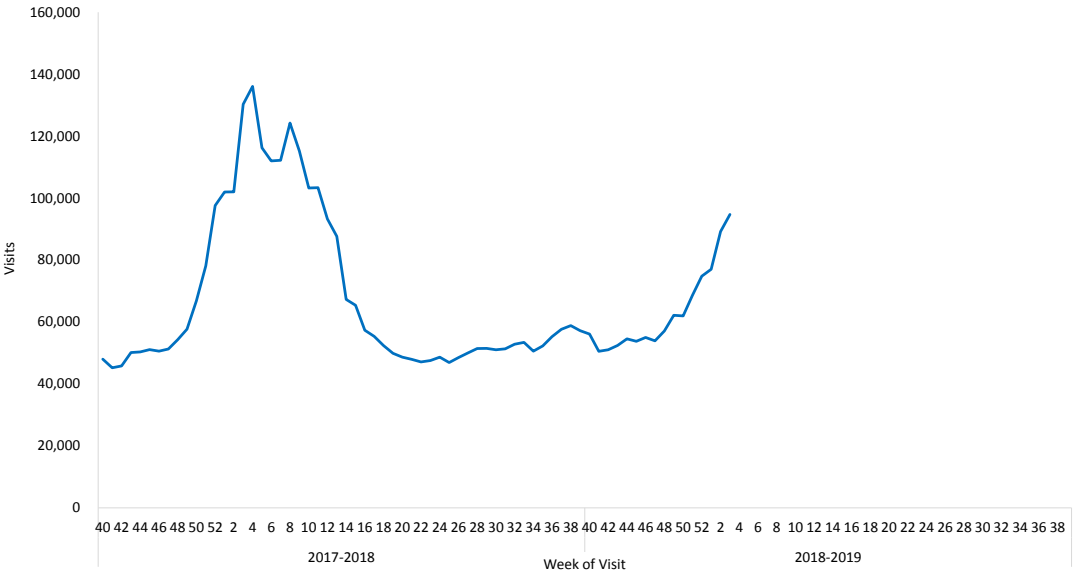
Influenza-like Illness (ILI) Surveillance

During week 3, the proportions of ILI visits were 1.55% and 12.23% in the outpatient and ER visits, respectively. The proportion of ER visits was above the national baseline of 11.5%. The number of visits for ILI in outpatient and ER combined was 94,716, which was 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

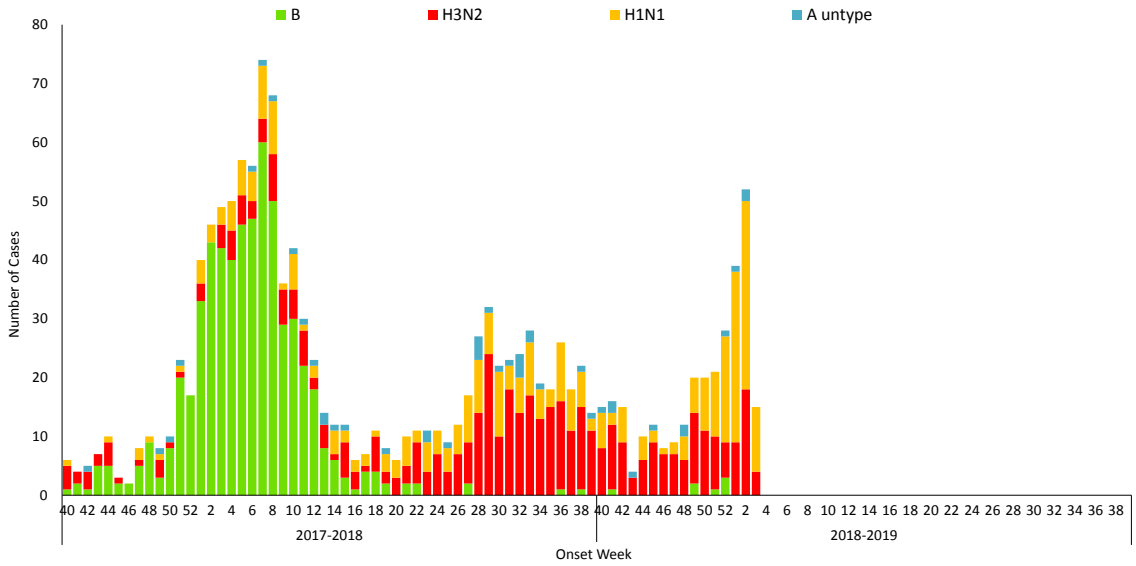


* Since 2016, the analysis of the ILI data from National Health Insurance Database is based on the ICD-10 diagnosis codes.

Severe Complicated Influenza Case

In week 3, there were 57 new influenza cases with severe complications [38 H1N1, 17 H3N2 and 2 influenza A(unknown subtype)] and 3 new fatal cases infected with H1N1. Since October 1, 2018, a total of 294 severe complicated influenza cases have been confirmed [143 H1N1, 133 H3N2, 11 influenza A(unknown subtype) and 7 influenza B], including 21 fatal cases (11 H3N2 and 10 H1N1). Most of these cases were adults aged 65 and older.

Number of severe complicated influenza confirmed cases by week of onset



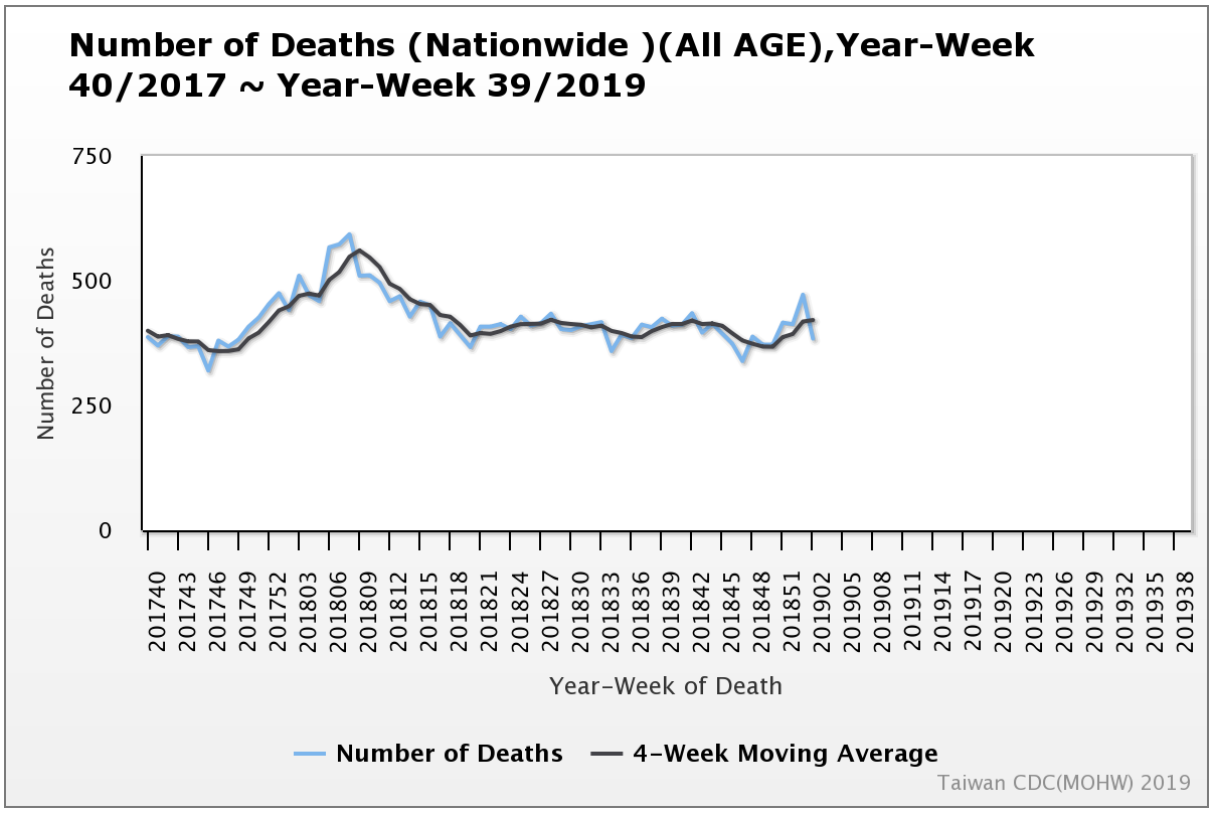
* A person who has ILI symptoms become severely ill (includes pulmonary complication, neurologic complication, myocarditis, invasive bacterial infection, or pericarditis) that requires intensive care or results in death within 14 days and with influenza virus infection confirmed by the laboratory is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

Number and incidence of severe complicated influenza confirmed cases and deaths by age groups
October 1, 2018 to January 21, 2019

Age Group	Cases	Deaths	Cumulative incidence per ten thousand population	Cumulative mortality per ten thousand population
< 3 y	13	1	2.2	0.2
3-6 y	3	0	0.3	0
7-18 y	10	1	0.4	0.04
19-24 y	2	0	0.1	0
25-49 y	34	2	0.4	0.02
50-64 y	72	1	1.4	0.02
65 +	160	16	4.8	0.5
Total	294	21	1.2	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 2 was lower 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.