



Summary

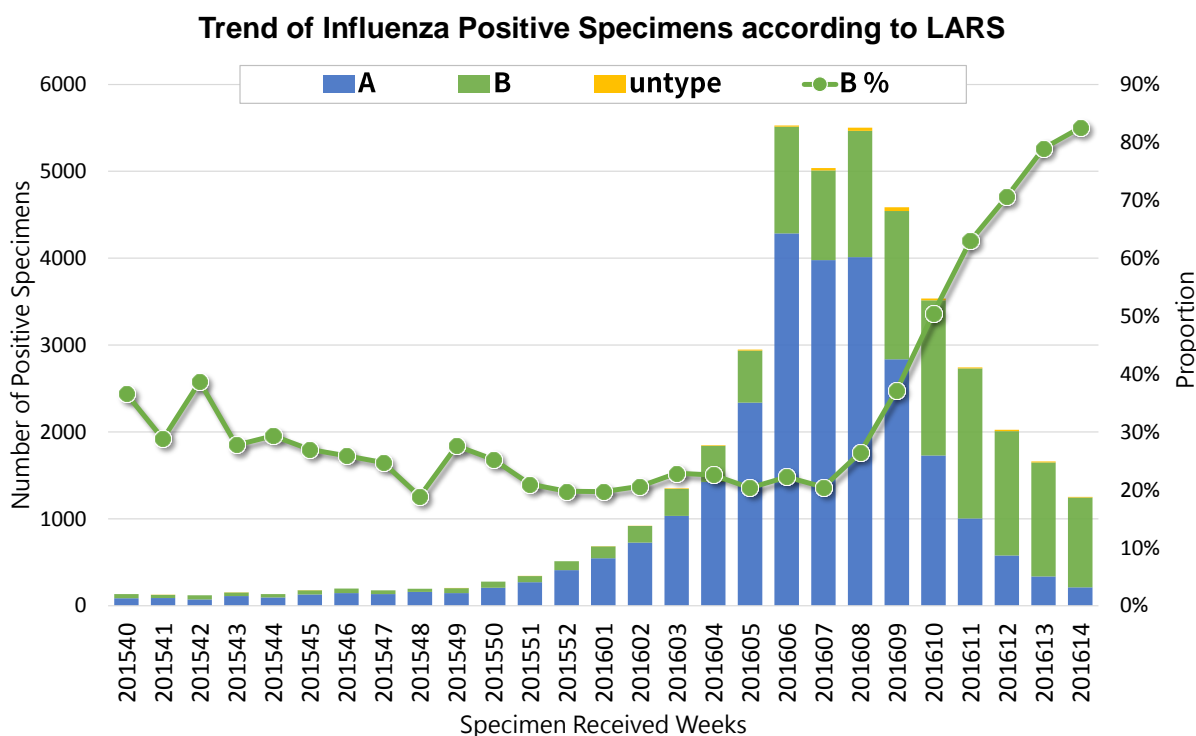
The influenza activity has slowed down in Taiwan. The peak of epidemic season will soon be over. Both numbers of visits to outpatient services and emergency rooms for influenza-like illness and severe complicated influenza cases reported has also continued to decrease. During Week 14, the proportion of influenza B viruses among the circulating strains in the community is around 82%. During the past 4 weeks, the antigenicity match between the seasonal influenza vaccine and the circulating influenza virus strains were 99% in influenza A (H1N1) virus, 100% in influenza A (H3N2) virus, but 35% in influenza B virus. Thus far, none of the viruses tested has shown drug resistance.

- During this season, the predominant subtype circulating in the community is influenza A (H1N1) virus, but recently the major type is influenza B, which proportion is 82% during Week 14.
- During Week 14, a decrease of 20% in the number of ILI visits to outpatient services and emergency rooms (ER) as compared to the previous week was observed.
- There were 25 new cases of severe complicated influenza during Week 14. Since the beginning of this influenza season on July 1, 2015, there have been 1,932 severe cases, and the incidence among the 50-64 age group was obviously higher than the same period in the last 3 years. Most severe cases were infected with influenza A (H1N1) virus, but the proportion of influenza B cases has been on the rise recently.

Viral Surveillance

Types and Trend

According to LARS¹, after reaching a peak during Weeks 6 to 8, the number of specimens tested positive for influenza virus has continuously decreased, especially those tested positive for influenza A (H1N1) virus. Among the influenza positive specimens, the proportion of type B has gradually increased, which was 82% during Week 14.



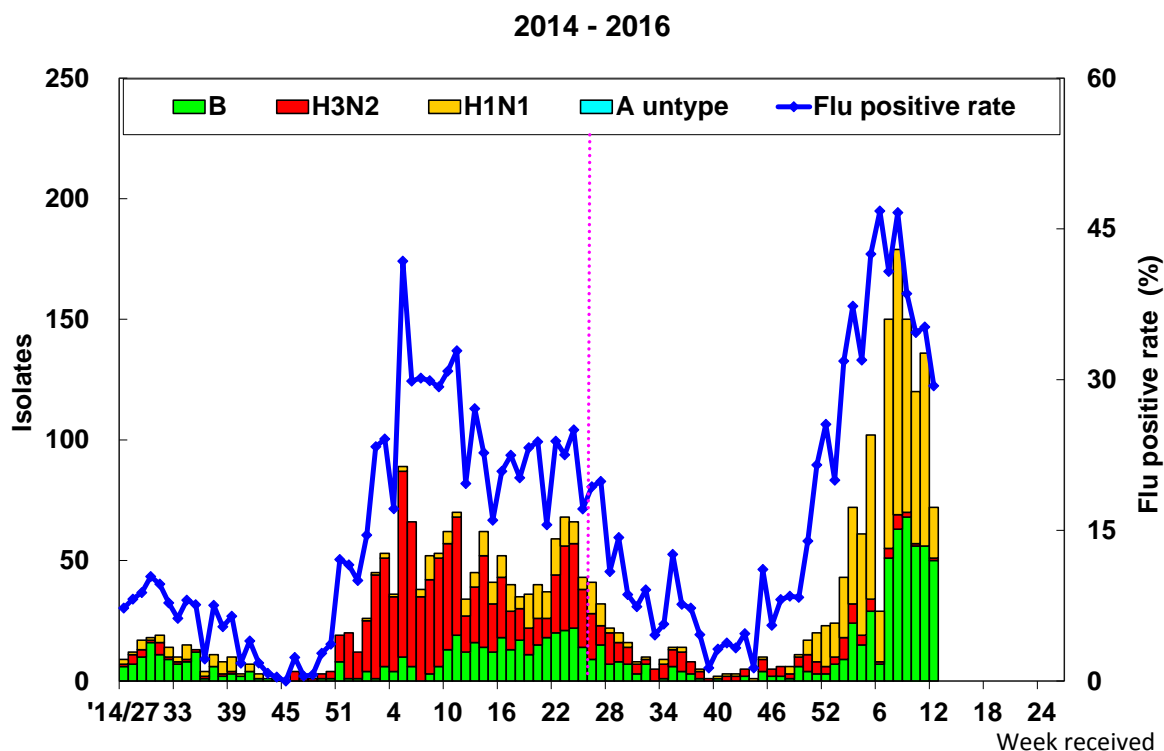
¹ To present the trend of influenza virus in real-time, the automated laboratory reporting system (LARS) has been established by Taiwan CDC since 2014. Twenty nine hospitals, including 17 medical centers, have been



participating in LARS, which daily upload all information of positive specimens automatically.

According to the Taiwan CDC Contracted Diagnostic Virology Laboratories², the rate of specimens testing positive for influenza virus was 29.4% during Week 12. Of the viruses that were typed by laboratories for the week, 69.4% were influenza B virus and 29.2% were H1N1. Recently, the number of B/Victoria lineage was slightly higher than B/Yamagata.

Influenza Positive Tests according to Contracted Diagnostic Virology Laboratories



Antigenicity

During the past 4 weeks, among those influenza positive specimens that were antigenically characterized, 99% of the influenza A (H1N1) virus isolates match the A (H1N1) component of the 2015-16 influenza vaccine (A/California/7/2009), and 100% of the influenza A (H3N2) virus isolates match the A (H3N2) component of the 2015-16 influenza vaccine (A/Switzerland/9715293/2013). Additionally, 35% of the influenza B isolates match the B component of the 2015-16 influenza vaccine (B/Phuket/3073/2013-like).

Antiviral Resistance

Since October 1, 2015, the results of antiviral resistance to neuraminidase inhibitor (Oseltamivir) are summarized in the table below. All of recently circulating influenza viruses are susceptible to oseltamivir.

| | Isolates tested (n) | Resistance Viruses, n (%) |
|--------------------|---------------------|---------------------------|
| | | Oseltamivir |
| Influenza A (H1N1) | 73 | 0 |
| Influenza A (H3N2) | 38 | 0 |
| Influenza B | 45 | 0 |

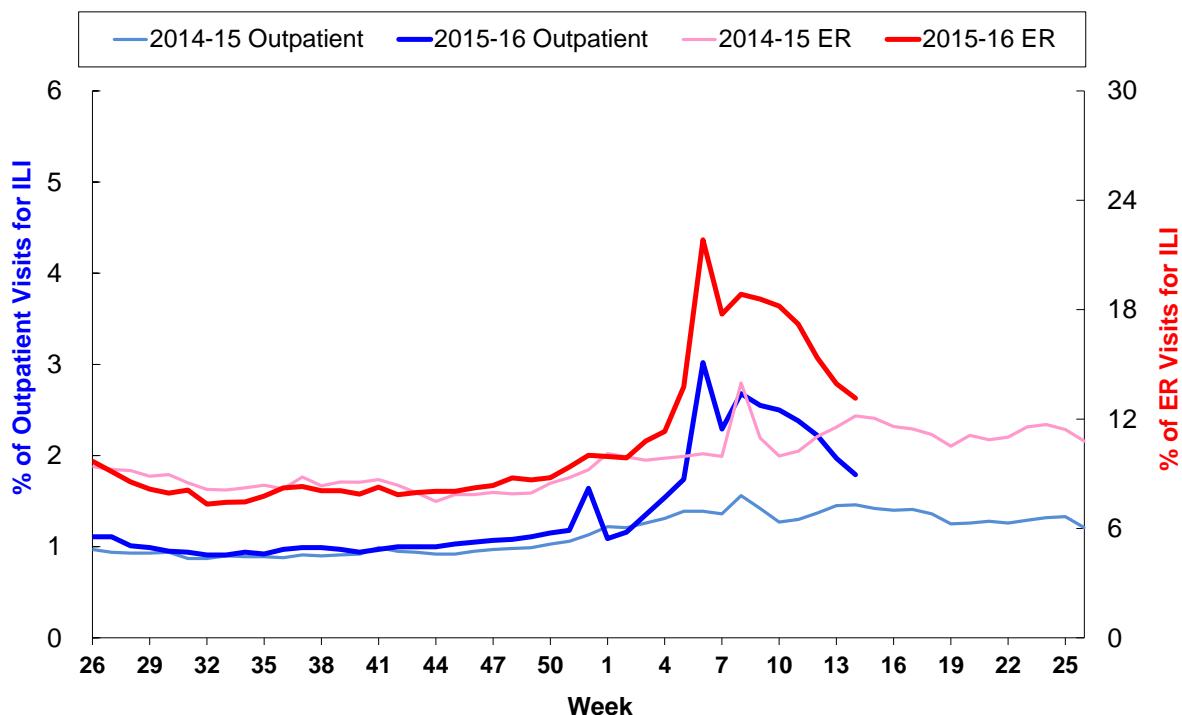
²To observe the subtype, antigenicity and drug resistance of the influenza viruses circulating in the community, the Contracted Diagnostic Virology Laboratories, including 8 laboratories of medical centers, has been established by Taiwan CDC since March, 1999.



Influenza-like Illness Surveillance

According to the National Health Insurance Database, both the consultation rates and numbers of visits to outpatient services and ER for ILI have been gradually decreasing. Yet, they are still higher than the numbers reported during the same period last year. During Week 14, the number of outpatient visits for ILI were around 84,000, the number of ER visits for ILI were around 19,000, and a decrease of 20% in both ILI visits as compared to the previous week was observed.

**Proportions of outpatient department and ER visits for ILI
July 1, 2014 to present**



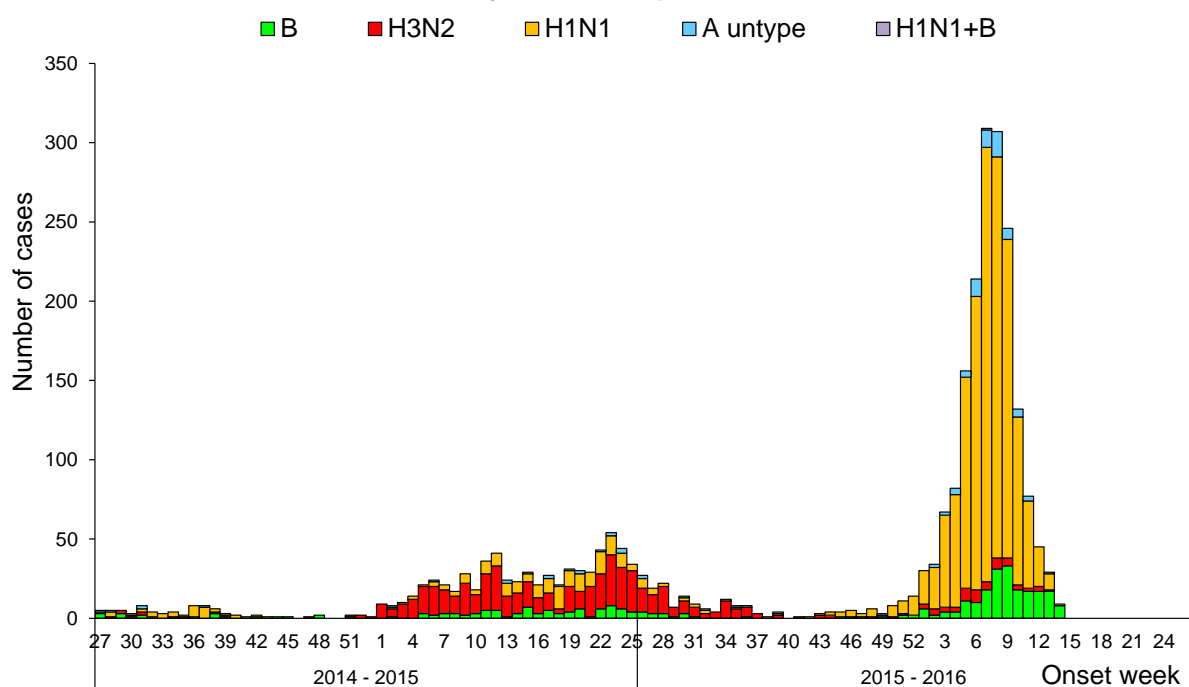
* Since 2016, the analysis of the ILI data from National Health Insurance Database is based on the ICD-10 diagnosis codes.

Reports of Severe Complicated Influenza

During Week 14, there have been 25 severe complicated influenza cases, 68% of which were infected with influenza B virus. Since the beginning of this influenza season on July 1, 2015, a total of 1,932 severe complicated influenza cases, 95.4% did not receive the 2015-16 flu vaccine, 76.9% of severe cases were infected with H1N1, and 11.2% were infected with type B. 95.1% of the 163 reported deaths that were found to be associated with severe complicated influenza infection did not receive the seasonal influenza vaccine. 69.9% of the reported deaths were infected with H1N1, and 15.3% were infected with H3N2. During this influenza season, the majority of complicated influenza cases were adults aged 50-64 years. The highest incidence was observed among adults aged ≥ 65 years. In addition, the incidences among all age groups were the highest compared to the same period in the last 3 years, especially in the 50-64 age group.



Number of severe complicated influenza reports by week of onset July 1, 2014 to present



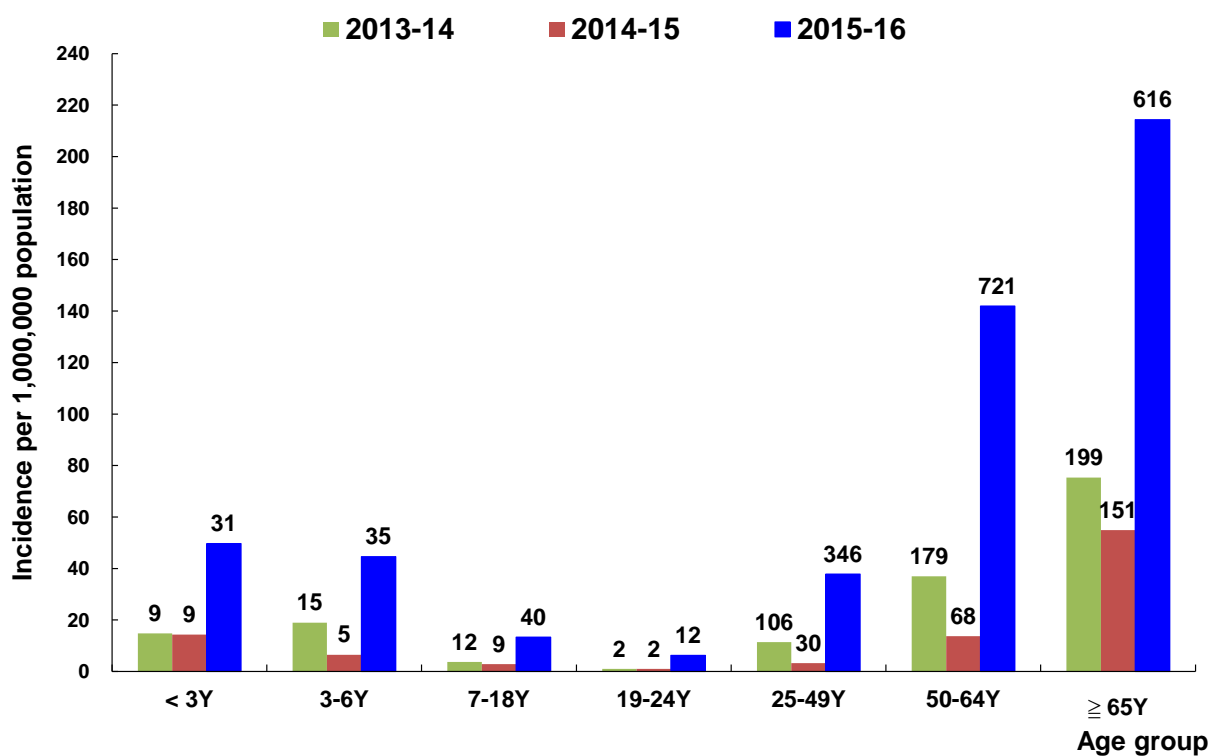
*A confirmed severe complicated influenza case is defined as influenza virus infection with complication (pulmonary complication, neurologic complication, myocarditis, invasive bacterial infection, or pericarditis) that requires intensive care or results in death within 14 days after the onset of influenza-like illness.

Rate of severe complicated influenza cases and deaths by age groups July 1, 2015 to present

| Age Group | Cases | Deaths | Cumulative incidence per million population | Cumulative mortality per million population |
|-----------|-------|--------|---|---|
| < 3 y | 34 | 3 | 54.5 | 4.8 |
| 3-6 y | 38 | 3 | 48.4 | 3.8 |
| 7-18 y | 42 | 2 | 14.0 | 0.7 |
| 19-24 y | 13 | 0 | 6.7 | 0.0 |
| 25-49 y | 360 | 29 | 39.3 | 3.2 |
| 50-64 y | 761 | 65 | 149.8 | 12.8 |
| 65 + | 684 | 61 | 238.0 | 21.2 |
| Total | 1932 | 163 | 82.3 | 6.9 |



Incidence of severe complicated influenza reports by age groups Oct 1, 2015 to present

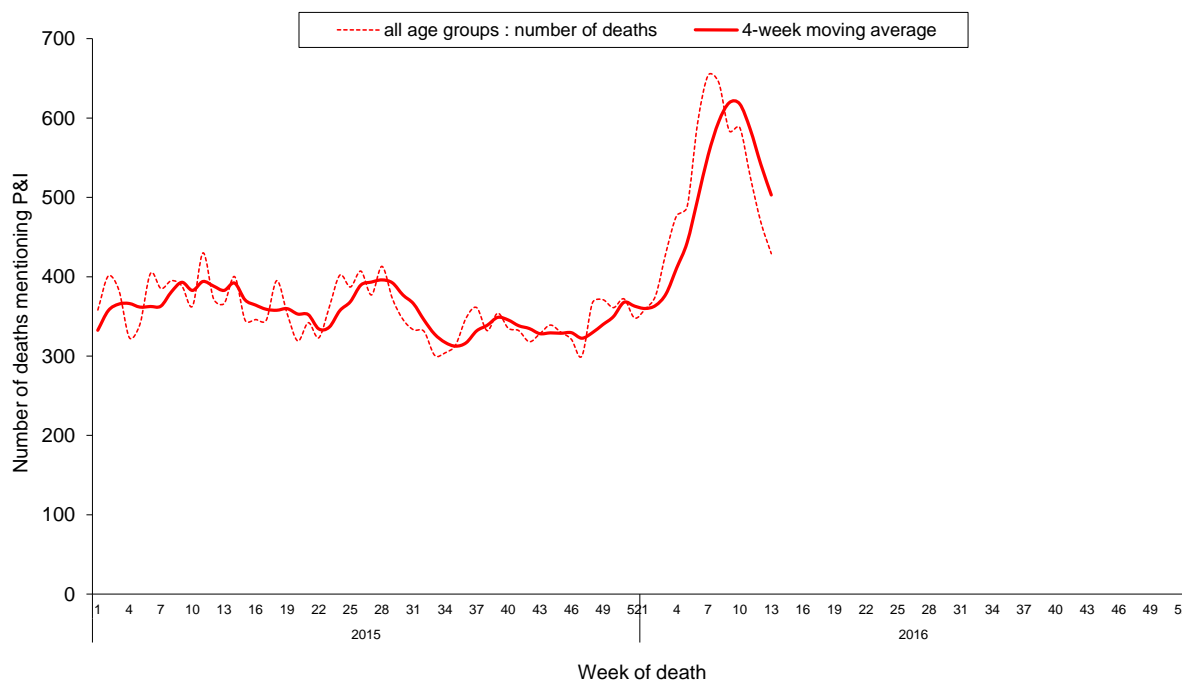


*Numbers represent number of complicated influenza reports for that specific age stratum.



Pneumonia and Influenza (P&I) Mortality Surveillance

The overall trend of P&I has persistently declined. Among the three age groups (0–49, 50–64, and 65+), the number of deaths related to P&I for adults aged 65 years and above was the highest.



* 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.

