Summary

During week 31 (July 26–August 1, 2009), influenza activity increased in Taiwan.

- Of the 460 specimens tested during week 29–31, 63 (14%) were positive for influenza viruses; 88% (95% confidence interval 77%–95%) of all subtyped influenza A viruses were pandemic (H1N1) 2009 viruses.
- The number of laboratory-confirmed complicated influenza cases is increasing. There were 4 newly reported laboratory-confirmed complicated influenza cases (3 were due to pandemic [H1N1] 2009 virus infections). Cumulative number of laboratory-confirmed complicated influenza cases since June 1, 2009 was 8 (2 recovery and discharged, 2 hospitalized, 3 intensive care, and 1 death). Of these, 6 (75%) were due to pandemic (H1N1) 2009 virus infections.
- The number of deaths attributed to pneumonia and influenza was increasing but below the baseline level.
- The rate of outpatient visits for influenza-like illness is increasing.
- The rate of emergency room visits for influenza-like illness is increasing, but still below the epidemic threshold.
- Taiwan CDC estimates that nationwide there were 4,340 (95% confidence interval 3,395–5,660) new cases of pandemic (H1N1) 2009 influenza during week 31.
- During week 31, 11 pandemic (H1N1) 2009 clusters were reported; 6 (55%) occurred at schools. Cumulative number of pandemic (H1N1) 2009 clusters since July 1, 2009 was 14; 7 (50%) occurred at schools.

Virologic surveillance

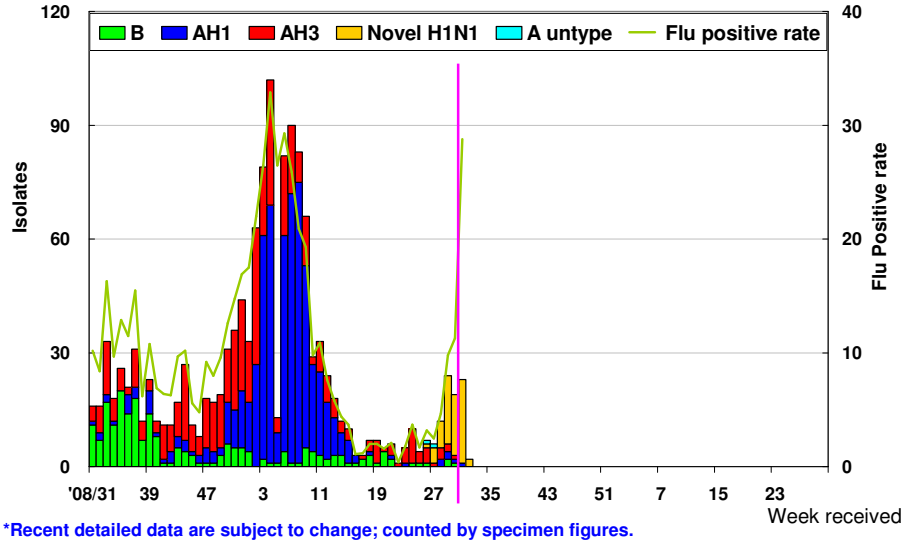
During week 29–31, seasonal influenza A (H1, H3) and B viruses have co-circulated at low levels with pandemic (H1N1) 2009 viruses. Eighty-eight percent (95% confidence interval 77%–95%) of all subtyped influenza A viruses being reported to Taiwan CDC through contracted laboratories during this period were pandemic (H1N1) 2009 viruses. The results of tests performed during the past 3 weeks are summarized in the table below.

	Data for weeks 29–31	Cumulative data since 6/1/2009
Number of specimens tested	460	1,965
Number of positive specimens (%)	63 (14)	107 (5)
Positive specimens by type/subtype		
Influenza A	60 (95)	101 (94)
A (pandemic [H1N1] 2009)	53 (88)	65 (64)
A (H3)	3 (5)	27 (27)
A (H1)	4 (7)	7 (7)
A (unable to subtype)	0 (0)	2 (2)
A (subtyping not performed)	0 (0)	0 (0)
Influenza B	3 (5)	6 (6)

Antigenic characterization: Taiwan CDC has antigenically characterized 17 seasonal human influenza viruses [3 influenza A (H1), 6 influenza A (H3), and 8 influenza B viruses] since June 1, 2009.

One (33%) of the influenza seasonal A (H1) viruses tested was related to the influenza A (H1N1) component of the 2008–09 influenza vaccine (A/Brisbane/59/2007). One (17%) of the influenza A (H3N2) viruses tested is related to the A (H3N2) vaccine component (A/Brisbane/10/2007). Five (63%) of the influenza B viruses tested belong to the B/Yamagata lineage and are related to the 2008–09 vaccine strain (B/Florida/04/2006). Two (25%) of the influenza B viruses tested belong to the B/Victoria lineage.

Influenza positive tests reported to Taiwan CDC by contracted laboratories, 2008–2009



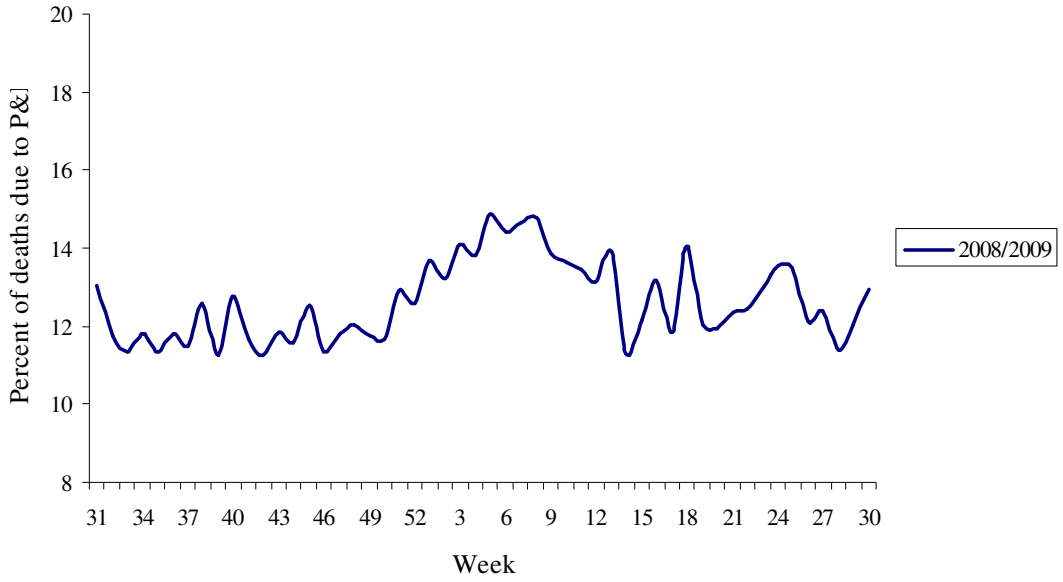
Antiviral resistance: Since June 1, 2009, 16 influenza A (H3N2) and 11 pandemic (H1N1) 2009 viruses have been tested for resistance to the neuraminidase inhibitors (oseltamivir and zanamivir) and adamantanes (amantadine and rimantadine). The results of antiviral resistance testing performed on these viruses are summarized in the table below.

	Isolates tested (n)	Resistance Viruses, n (%)		Isolates tested (n)	Resistant Viruses, n (%)
		Oseltamivir	Zanamivir		Adamantanes
A (pandemic [H1N1] 2009)	11	0 (0)	0 (0)	0	-
A (H3)	16	0 (0)	0 (0)	16	16 (100)

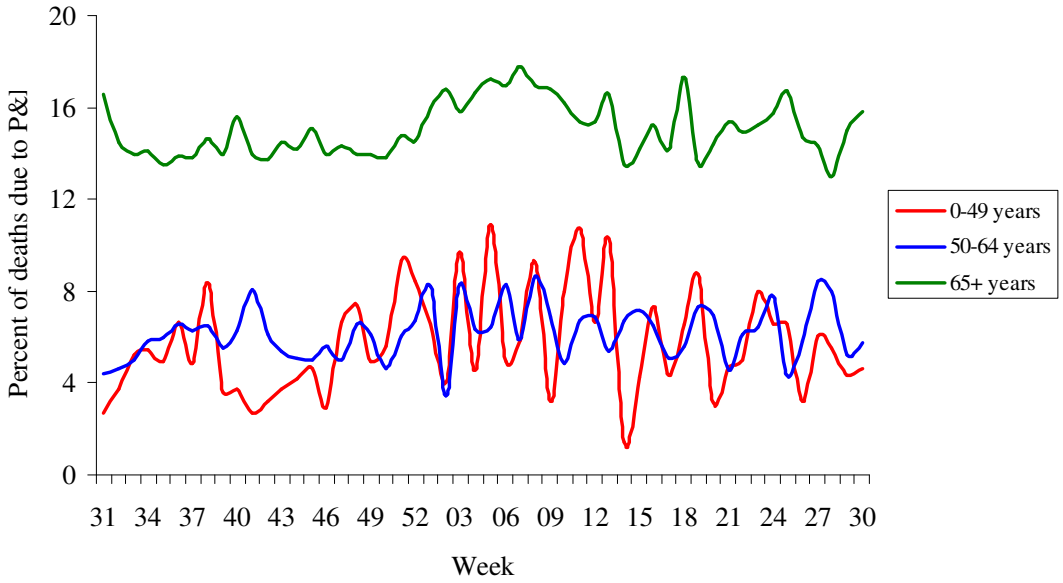
Pneumonia and influenza (P&I) mortality surveillance

During week 30, 201 (13%) of all deaths reported through the National Death Certificate System were due to P&I. Proportional death due to P&I was the highest for adult greater than 65 years of age. The number of deaths due to P&I during week 30 was below the baseline number (217 deaths).

National pneumonia and influenza mortality
Week ending 7/25/2009



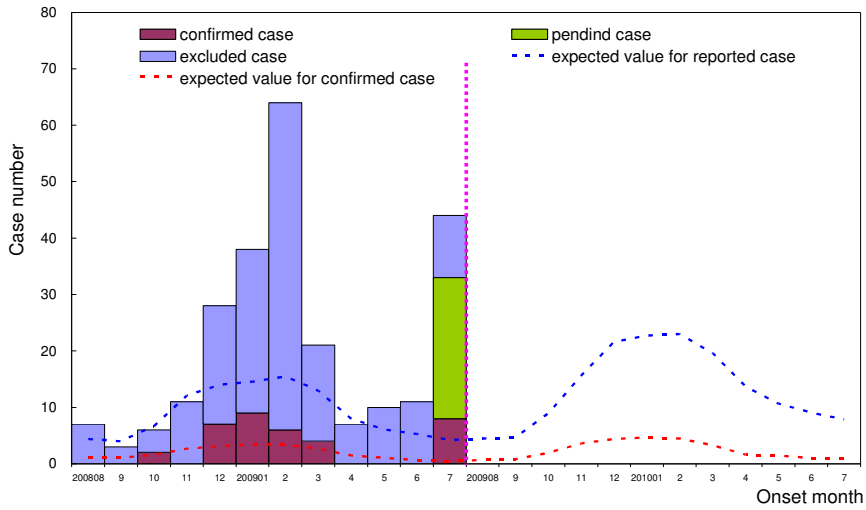
National pneumonia and influenza mortality by age group*
Week ending 7/25/2009



Reports of complicated influenza*

During week 31, 4 laboratory-confirmed complicated influenza cases were reported to Taiwan CDC; 3 (75%) were due to pandemic (H1N1) 2009 virus infections. Since June 1, 2009, Taiwan CDC has received 8 reports of laboratory-confirmed complicated influenza (2 recovery and discharged, 2 hospitalized, 3 intensive care, and 1 death). Of these, 6 (75%) were due to pandemic (H1N1) 2009 virus infections. The number of laboratory-confirmed complicated influenza cases is increasing.

Number of complicated influenza reports by month of onset
8/1/2008 to present



*Defined as influenza infection with pulmonary complication, neurologic complication, myocarditis, pericarditis, invasive bacterial infection, or those requiring intensive care or resulting deaths.

Outpatient and emergency room influenza-like illness surveillance

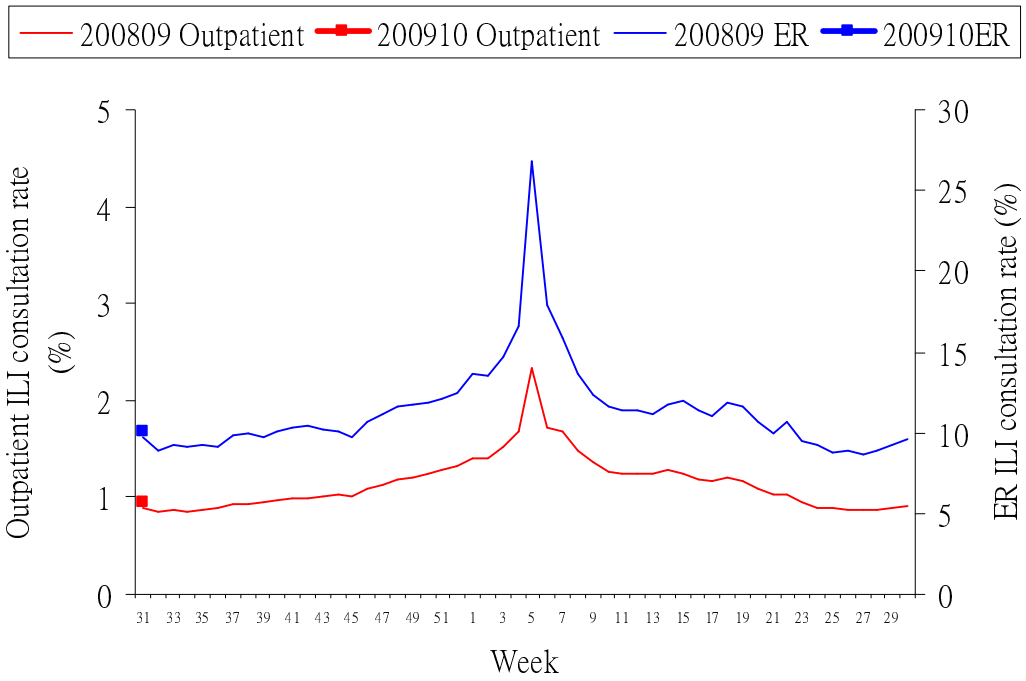
Nationwide during week 31, 0.95% of outpatient visits reported through the National Health Insurance Database were due to influenza-like illness (ILI). This rate has been increasing for the past 4 weeks..

Nationwide during week 31, 10.06% of emergency room patient visits reported through the Real-time Outbreak and Disease Surveillance System (RODS) were due to influenza-like illness (ILI). This rate has been increasing for the past 4 weeks but was still below the epidemic threshold.

Taiwan CDC estimates that nationwide there were 4,340 (95% confidence interval 3,395–5,660) new cases of pandemic (H1N1) 2009 influenza during week 31. This estimate is based on the average weekly outpatient ILI consultation visits, taking into consideration positivity rates for pandemic (H1N1) 2009 from virological surveillance, and assumptions related to the percentage of people attending the clinics.

Rate of outpatient and emergency room (ER) visits for influenza-like illness

8/1/2008 to present



Pandemic (H1N1) 2009 clusters

During week 31, 11 pandemic (H1N1) 2009 clusters were reported. Of these, 6 (55%) occurred at schools, 2 (18%) at workshops, 2 (18%) at military camps, and 1 (9%) at workplaces. Cumulative number of pandemic (H1N1) 2009 clusters since July 1, 2009 was 14. Of these, 7 (50%) occurred at schools, 4 (29%) at workshops, 2 (14%) at military camps, and 1 (7%) at workplaces.

Number of confirmed pandemic (H1N1) 2009 clusters

7/1/2009 to present