Influenza Monthly Epidemiology Report, NSW

March 2013

This report describes the surveillance for influenza and other respiratory pathogens, undertaken by NSW Health to date. This includes data from a range of surveillance systems.

For weekly communicable disease surveillance updates refer to the Communicable Disease Weekly Report at http://www.health.nsw.gov.au/publichealth/infectious/index.asp.

1. Summary

In March 2013:

- The rate of influenza-like illness (ILI) presentations to selected emergency departments was low and slightly below the normal range expected for March
- Laboratory data indicated overall influenza activity was low, but there was some evidence of co-circulation of influenza A(H1N1)2009, influenza A(H3N2), and influenza B. The number of influenza cases is higher than expected for this time of year.
- Rhinovirus was the most common respiratory virus identified by sentinel laboratories.

2. Emergency Department (ED) presentations

Data from 59 NSW emergency departments are included. Comparisons are made with data for the preceding six years. Recent counts are subject to change.

Source: NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) managed by the Centre for Epidemiology and Evidence, NSW Ministry of Health.

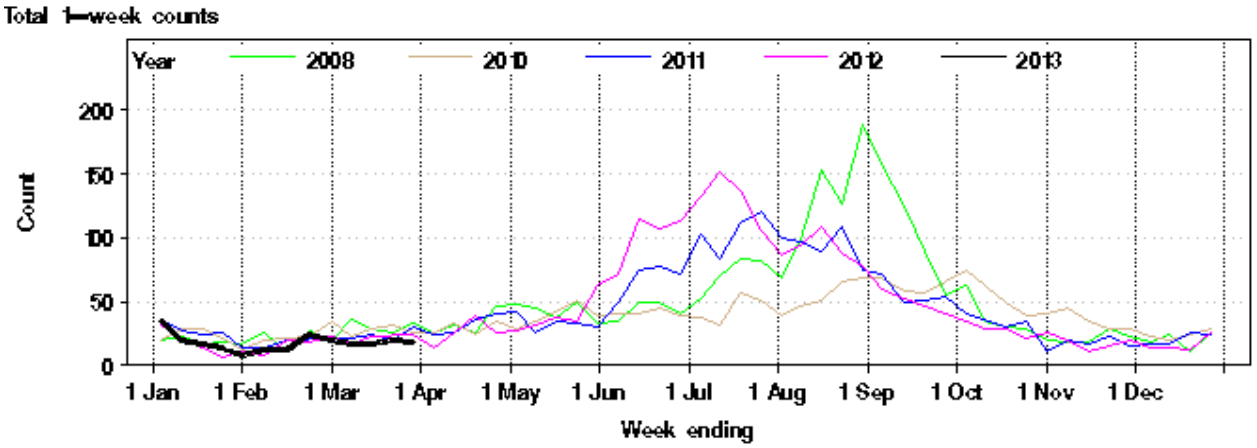
Presentations for influenza-like illness

- In March 2013 there were 74 presentations with influenza-like illness (rate 0.4 per 1,000 presentations) (Figure 1). The rate of Influenza-like illness presentations to EDs in March was similar to the previous month (February – 77 presentations, rate 0.5 per 1,000 presentations), but lower than the count of 87 (rate 0.6 per 1,000 presentations) for the month of March in 2012, and below the historical average for March.

- Admissions from ED to critical care units for influenza-like illness and pneumonia were within the usual range for this time of year (Figure 2).

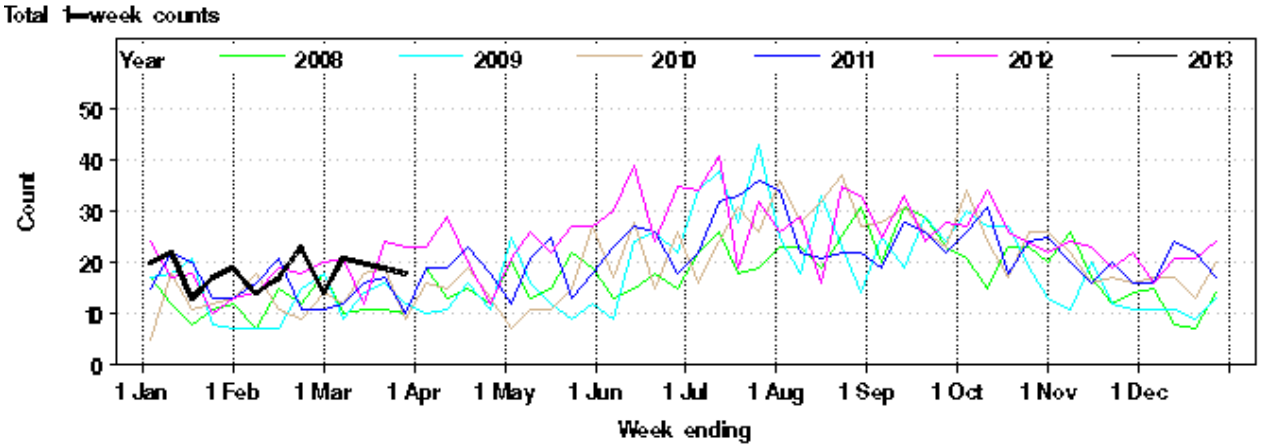
- ED presentations for bronchiolitis were slightly above the usual range for this time of year (Figure 3).

Figure 1: Total weekly counts of Emergency Department visits for influenza-like illness, from January – March 2013 (black line), compared with each of the 5 previous years (coloured lines), for 59 NSW hospitals.*



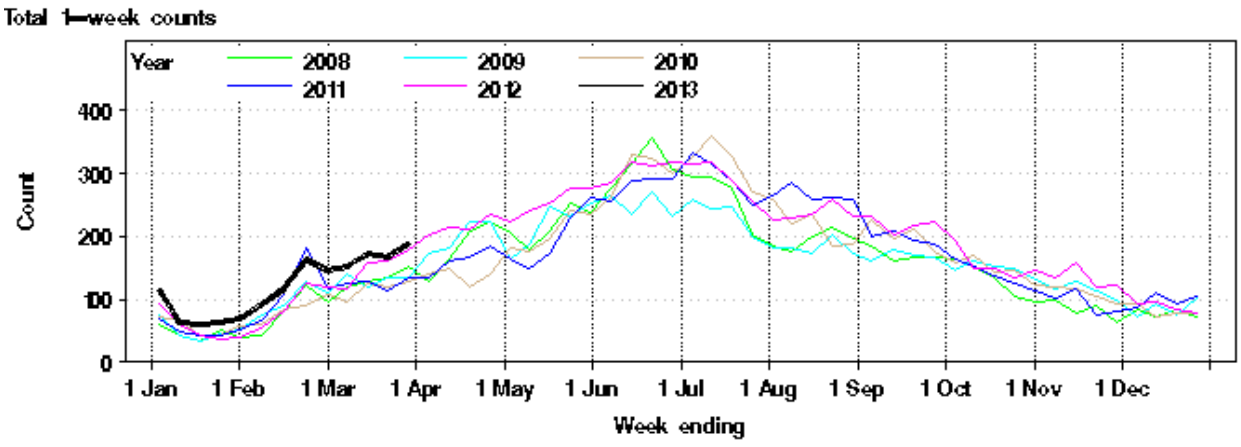
*** Note: Excludes 2009 data to enable comparison of 2013 data with data from previous non-pandemic years**

Figure 2: Total weekly counts of Emergency Department visits for pneumonia and influenza-like illness, which were subsequently admitted to a critical care ward, from January – March 2013 (black line), compared with each of the 5 previous years (coloured lines), for 59 NSW hospitals.*



*** Note: As for Figure 1, although includes 2009**

Figure 3: Total weekly counts of Emergency Department visits for bronchiolitis, from January – March 2013 (black line), compared with each of the 5 previous years (coloured lines), for 59 NSW hospitals.*



*** Note: As for Figure 1, although includes 2009**

3. Laboratory testing summary for influenza

In March 2013:

- 2,472 tests for respiratory viruses were performed at sentinel NSW laboratories (Table 1).
- 47 specimens tested positive for influenza A – 12 of these tested positive for A(pH1N1), and 9 tested positive for influenza A(H3N2). The remainder tested negative to influenza A(pH1N1) and are assumed to be A(H3N2) (Table 1, Figure 4).
- 21 cases of influenza B were reported (Table 1, Figure 4).
- the total number of positive influenza tests in March was lower than the previous month but higher than that for the same month in 2012.

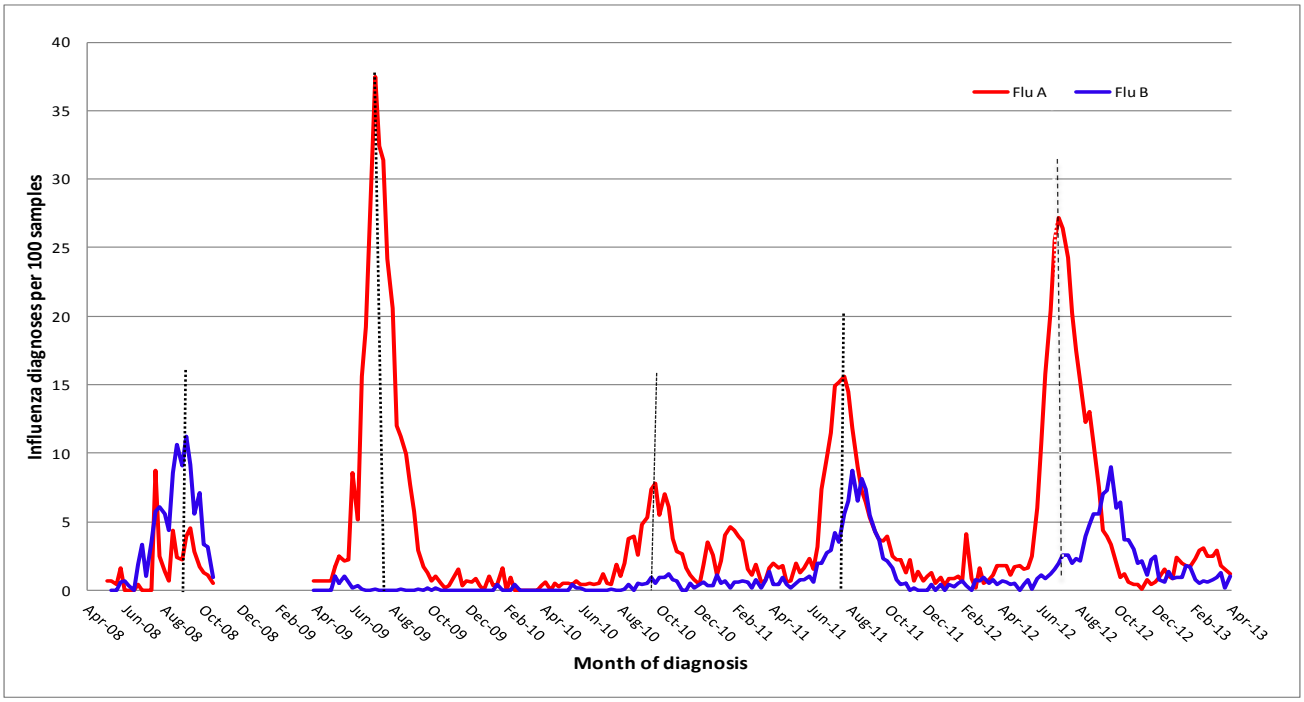
Laboratory testing indicates that although influenza has occurred at low levels, the number of confirmed influenza cases (both A and B) is higher than for the same period since 2010 (when data collection over the summer months began). Influenza A(pH1N1) continues to circulate at higher than expected levels. Rhinoviruses were the respiratory viruses most commonly identified by laboratories, with respiratory syncytial virus (RSV) increasing as expected for this time of year.

Table 1: Summary of testing for respiratory viruses and influenza at NSW public hospital laboratories, 1 January to 29 March 2013.

Month ending	Total Tests	Influenza A		A(H3N2)		A(pH1N1)		Influenza B		Adeno.	Parainf. 1, 2 & 3	RSV	Rhino.	Entero.	HMPV***
		Total	(%)	Total	(% Flu A)**	Total	(% Flu A) **	Total	(%)						
01/02/2013*	2141	44	(2.1%)	13	(29.5%)	14	(31.8%)	26	(1.2%)	68	87	81	328	37	59
01/03/2013	2199	60	(2.7%)	17	(28.3%)	20	(33.3%)	15	(0.7%)	55	41	119	452	29	31
29/03/2013	2472	47	(1.9%)	9	(19.1%)	12	(25.5%)	21	(0.8%)	82	59	333	488	53	33
Week ending															
08/03/2013	652	19	(2.9%)	3	(15.8%)	5	(26.3%)	6	(0.9%)	18	13	56	135	13	7
15/03/2013	595	11	(1.8%)	3	(27.3%)	5	(45.5%)	8	(1.3%)	25	12	89	122	15	11
22/03/2013	649	10	(1.5%)	1	(10.0%)	1	(10.0%)	1	(0.2%)	21	21	81	120	11	6
29/03/2013	576	7	(1.2%)	2	(28.6%)	1	(14.3%)	6	(1.0%)	18	13	107	111	14	9

* Five week period ** Subset of influenza A cases *** HMPV = Human metapneumovirus

Figure 4: Percent of laboratory tests positive for influenza A and influenza B, 1 January 2008 – 29 March 2013, New South Wales.



Source: Data is provided by laboratories on a weekly basis. Includes point of care tests as of 10 August 2012. Influenza laboratory diagnoses using virology are reported by South Eastern Area Laboratory Services (SEALS), Institute of Clinical Pathology and Medical Research (ICPMR), The Children's Hospital at Westmead (CHW), Sydney South West Area Services (SSWPS), Pacific Laboratory Medicine Services (PaLMS), Royal Prince Alfred Hospital (RPAH), Hunter Area Pathology Service (HAPS), St Vincent's (SydPath) , Nepean, Douglas Hanley Moir (DHM), VDRLab .

Deaths with pneumonia or influenza reported on the death certificate

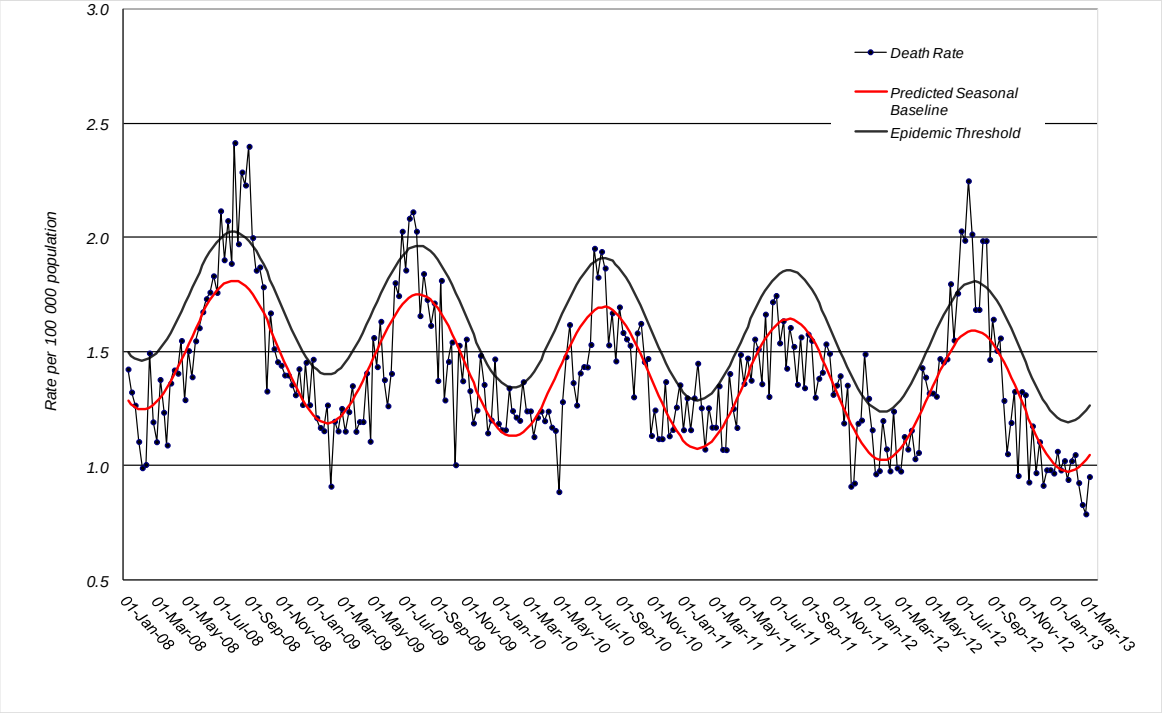
Deaths registration data is routinely reviewed for deaths attributed to pneumonia or influenza. While pneumonia has many causes, a well-known indicator of seasonal and pandemic influenza activity is an increase in the number of death certificates that mention pneumonia or influenza as a cause of death.

The predicted seasonal baseline estimates the predicted rate of influenza or pneumonia deaths in the absence of influenza epidemics. If deaths exceed the epidemic threshold, then it may be an indication that influenza is beginning to circulate widely.

For the week ending 15 March:

- There were 0.95 pneumonia or influenza deaths per 100,000 NSW population, which is below the epidemic threshold of 1.26 per 100,000 population (Figure 4).*
- Between 1 January and 15 March 2013, out of 9299 deaths there was one death certificate mentioning influenza, and 773 mentioning pneumonia.

Figure 5: Rate of deaths classified as influenza and pneumonia (by NSW Registered Death Certificates) per 100,000 NSW population, 2008-2013



Source: NSW Registry of Births, Deaths and Marriages.

*** Notes on interpreting death data:**

(1) The number of deaths mentioning “Pneumonia or influenza” is reported as a rate per 100,000 NSW population. Using the NSW population provides a more stable and reliable denominator than deaths from all causes. This is because pneumonia and influenza are known to contribute to increases in deaths from non-respiratory illnesses, such as deaths due to ischaemic heart disease. As the number of these deaths will increase with rises in influenza activity, the actual effect of influenza on mortality rates will be obscured if all-cause mortality is used as the denominator. This limitation is avoided by using the NSW population, which is relatively constant throughout the year, as the denominator.

(2) Deaths referred to a coroner during the reporting period may not be available for analysis. Deaths in younger people may be more likely to require a coronial inquest. Therefore influenza-related deaths in younger people may be under-represented in these data.

(3) The interval between death and death data availability is usually at least 7 days, and so these data are one week behind reports from emergency departments and laboratories. In addition, previous weekly rates may also change due to longer delays in reporting some deaths.

5. National and International Influenza Surveillance Links

For the latest information on national influenza activity please see the Australian Influenza Surveillance Reports at the following website:
http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-ozflu-2011.htm

For the latest information on international influenza activity please see the World Health Organization Influenza Updates at the following website:
http://www.who.int/csr/disease/influenza/en/index.html

For the information on current strains covered in this year's influenza vaccine see WHO Collaborating Centre for Reference and Research on Influenza at the following website:
http://www.influenzacentre.org/centre_vaccines.htm

6. International Reports of Note

Novel Coronavirus Infections

As of 26 March 2013, the Robert Koch Institute in Germany informed WHO of a new confirmed case of infection with the novel coronavirus (nCoV).

The patient was a 73-year-old male from United Arab Emirates, who was transferred from a hospital in Abu Dhabi to Munich by air ambulance on 19 March 2013. He died on 26 March 2013.

To date, WHO has been informed of a global total of 17 confirmed cases of human infection with nCoV, including 11 deaths.

To date, evidence of person-to-person transmission has been limited. Although this case is suggestive of person-to-person transmission, on the basis of current evidence, the risk of sustained person-to-person transmission appears to be very low.

See the WHO Coronavirus site for further information, including recommendations for surveillance, laboratory testing and infection control.

NSW Health has also posted Novel Coronavirus Information for Clinicians and Laboratories.

H7N9 avian influenza human infections in China

The World Health Organization (WHO) has reported a number of human infections with avian influenza A (H7N9) viruses in three provinces in China. The first cases were announced by WHO on 1 April 2013. The WHO is providing regular updates on the WHO website.

This is the first time avian influenza A (H7N9) viruses have been detected in humans. The infections so far have resulted in severe respiratory illness and, in some cases, death. According to WHO, there has been no person-to-person transmission identified to date, and the cases do not have a known epidemiological link to one another. An investigation by Chinese health officials is ongoing to determine the source of infection and detect any additional cases.

NSW Health is following this situation closely and coordinating with national and state disease control partners to make a knowledgeable public health risk assessment and provide appropriate advice, particularly to clinicians. Laboratory specialists are reviewing posted genetic information on the new H7N9 viruses to assess whether existing influenza diagnostic tests need to be enhanced or new ones developed. All of these actions are routine preparedness measures taken whenever a new novel influenza virus is detected in humans. As this an evolving situation, NSW Health will provide updated information and as it becomes available.

Any suspected cases identified in NSW should be reported to your local public health unit on 1300 066 055. Further information about avian influenza viruses and how they spread is available at the Avian Influenza ("Bird Flu") factsheet.