www.publichealth.hscni.net

Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 15 (11 April 2016 – 17 April 2016)

Summary

In Northern Ireland, as of week 15 2016, the 2015/16 influenza season has seen low community influenza activity, low GP consultation rates, and six Care Home influenza outbreaks. ICU admissions in week 15 remain higher than seen in week 15 in 2014/15 but lower than 2013/14; however the total number of ICU admissions this season to date is higher than in the previous two seasons. This year the predominant circulating influenza strain is influenza A (H1N1) pdm09. This strain first occurred in 2009, is of swine origin, and is sometimes referred to as 'swine flu'. It is now one of the annual circulating seasonal viruses and is contained in the 2015/16 vaccine.

In week 15, 2016:

- GP consultation rates for combined flu and flu-like illness (flu/FLI) decreased to 14.8 per 100,000 population, are similar to 2014/15, and remain below the 2015/16 pre-epidemic threshold[1]
- OOH consultation rate for flu/FLI decreased to 4.0 per 100,000 population, also decreasing among most age groups
- RSV activity has remained stable and is similar to the same period during last season
- No confirmed influenza outbreaks were reported to the PHA
- The proportion of positive influenza detections increased to 11%
- Two admissions to ICU were reported with laboratory confirmed influenza
- No deaths were reported in an ICU patient with laboratory confirmed influenza
- No significant excess mortality was reported through the EuroMOMO algorithm

Introduction

Influenza activity in Northern Ireland is monitored throughout the year using a number of surveillance systems. The influenza season typically runs from week 40 to week 20. Week 40 2015 commenced on 28th September 2015.

Surveillance systems include:

- GP sentinel surveillance representing 11.7% of Northern Ireland population;
- GP Out-of-Hours surveillance system representing the entire population;
- Virological reports from the Regional Virus Laboratory (RVL);
- Influenza outbreak report notification to PHA Duty Room;
- Critical Care Network for Northern Ireland reports on critical care patients with confirmed influenza;
- Mortality data from Northern Ireland Statistics and Research Agency (NISRA);
- Excess mortality estimations are also provided by Public Health England using the EuroMOMO (Mortality Monitoring in Europe) model based on raw death data supplied by NISRA;

[1] The pre-epidemic threshold for Northern Ireland is 49.4 per 100,000 population this year (2015/16)

Sentinel GP Consultation Data

Figure 1. Sentinel GP consultation rates for flu/FLI 2013/14 - 2015/16

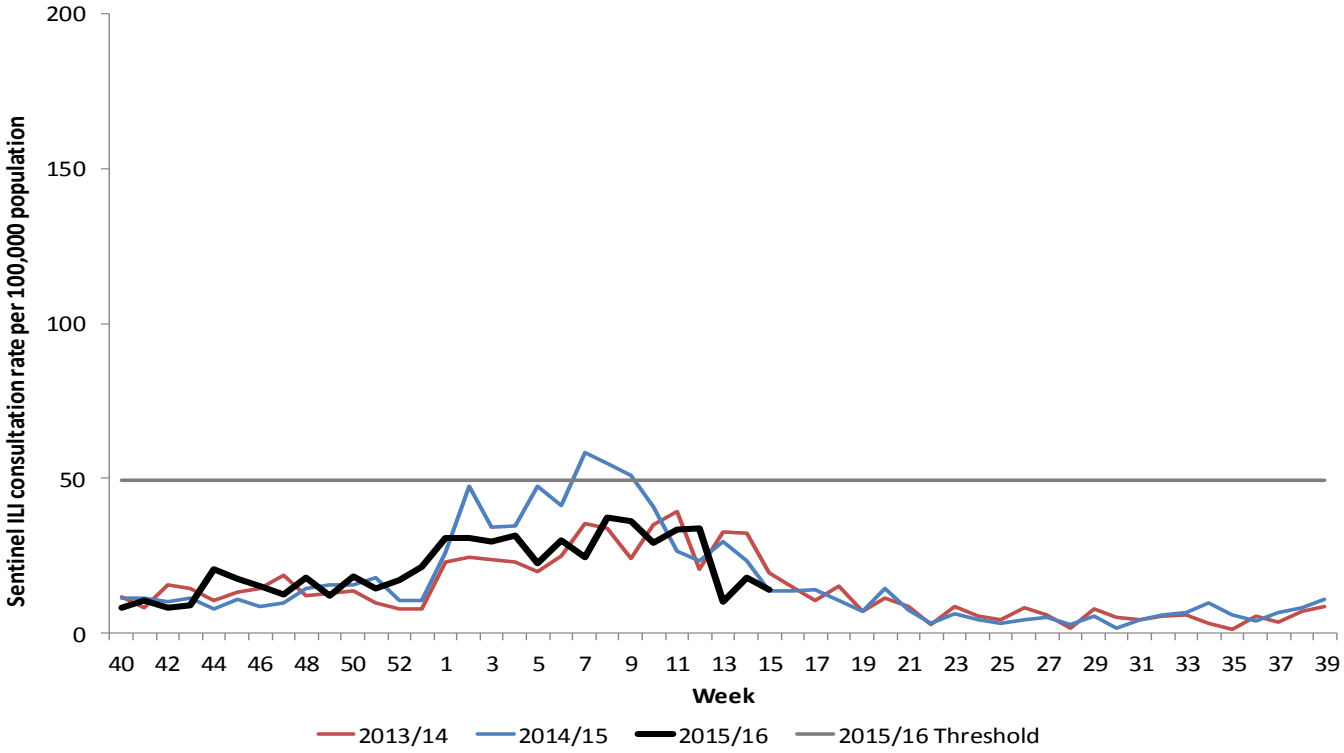


Figure 2. Sentinel GP combined consultation rates for flu/FLI and number of influenza positive detections 2010/11 – 2015/16

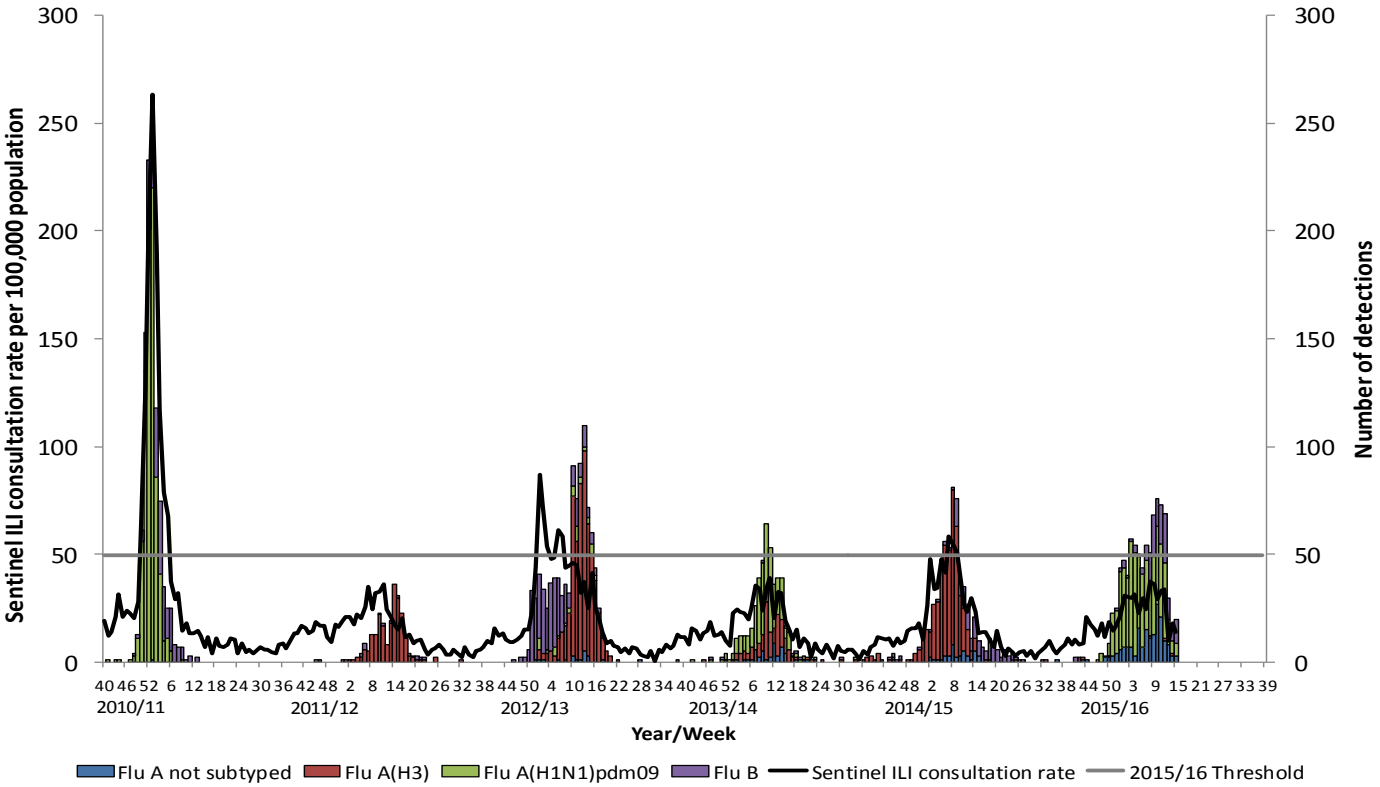
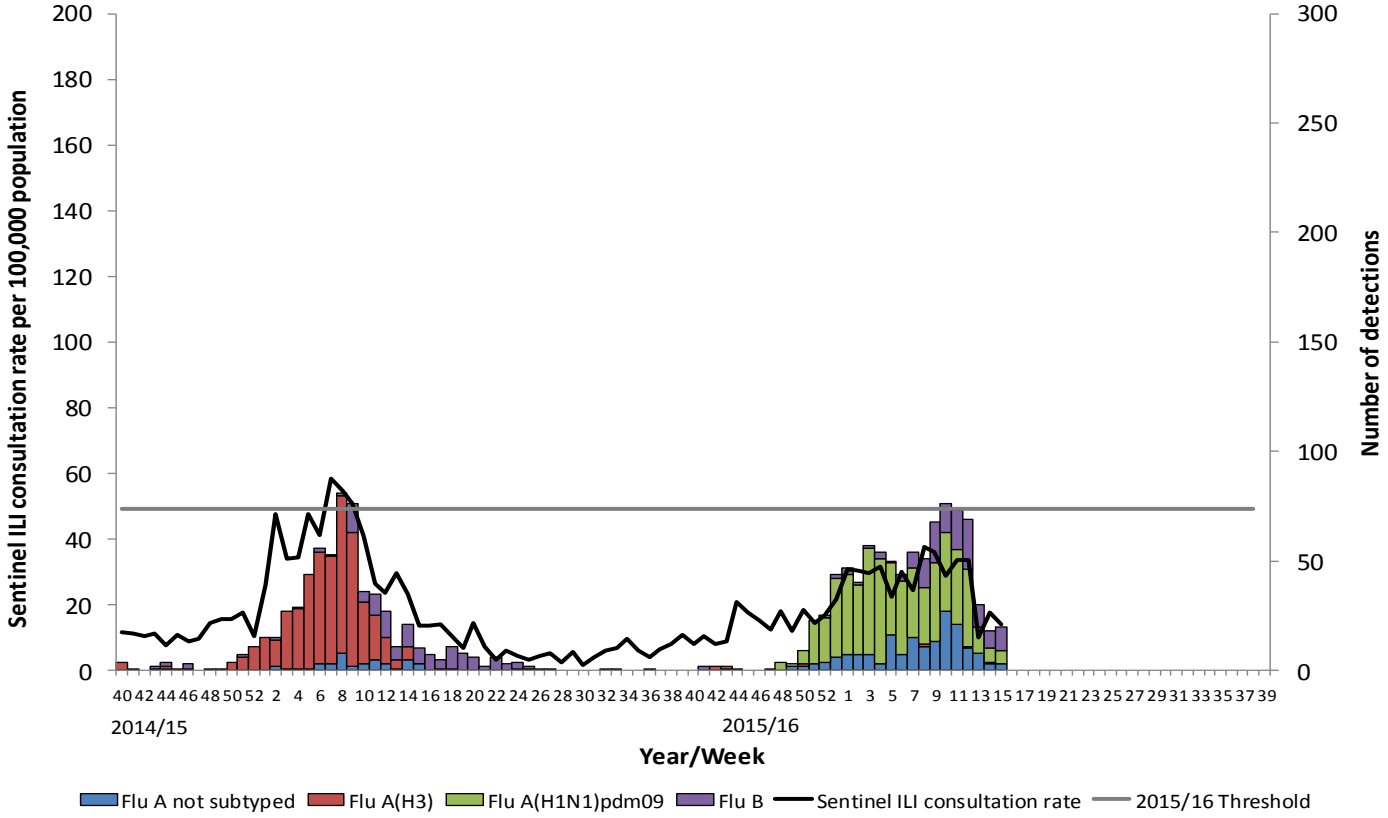


Figure 3. Sentinel GP consultation rates for flu/FLI and number of virology 'flu detections from week 40, 2014

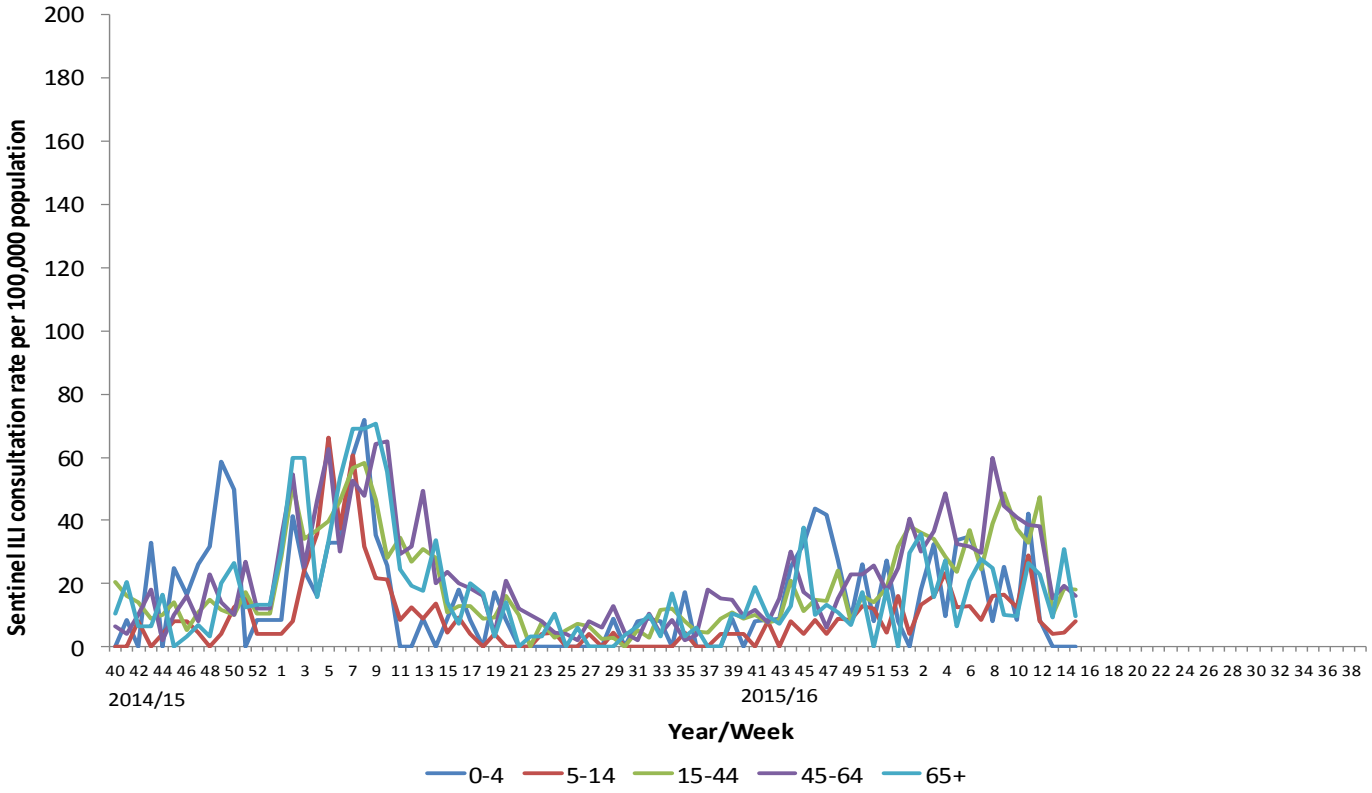


Comment

GP consultation rates have decreased in week 15, 2016 to 14.0 per 100,000 population from 17.8 per 100,000 in week 14. The GP consultation rates are similar to the same period in 2014/15 but lower than in 2013/14.

Rates remain below the pre-epidemic Northern Ireland 2015/16 threshold of 49.4 per 100,000 (Figures 1, 2 and 3).

Figure 4. Sentinel GP age-specific consultation rates for flu/FLI from week 40, 2014



Comment

During week 15 2016, age-specific GP consultations increased among those aged 5-14 years, while rates among those aged 45-64 years and 65 years and over have decreased in comparison with the previous week. Rates among those aged 0-4 and 15-44 years remained stable. Age-specific consultation rates are generally lower than noted at the same period in both 2014/15 and 2013/14.

The highest consultation rate in week 15 was noted in those aged 15-44 years at 18.3 per 100,000 population (Figure 4).

Out-of-Hours (OOH) Centres Call Data

Figure 5. OOH call rate for flu/FLI, 2013/14 – 2015/16

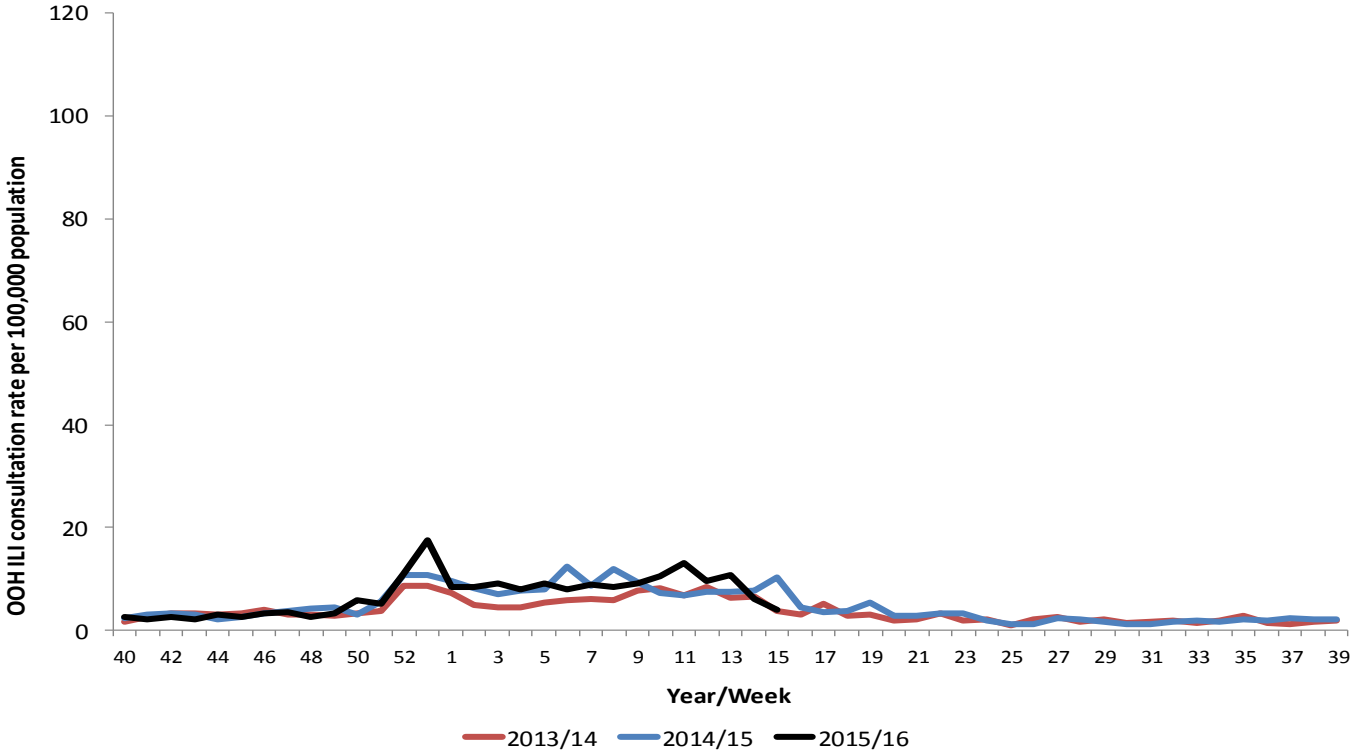
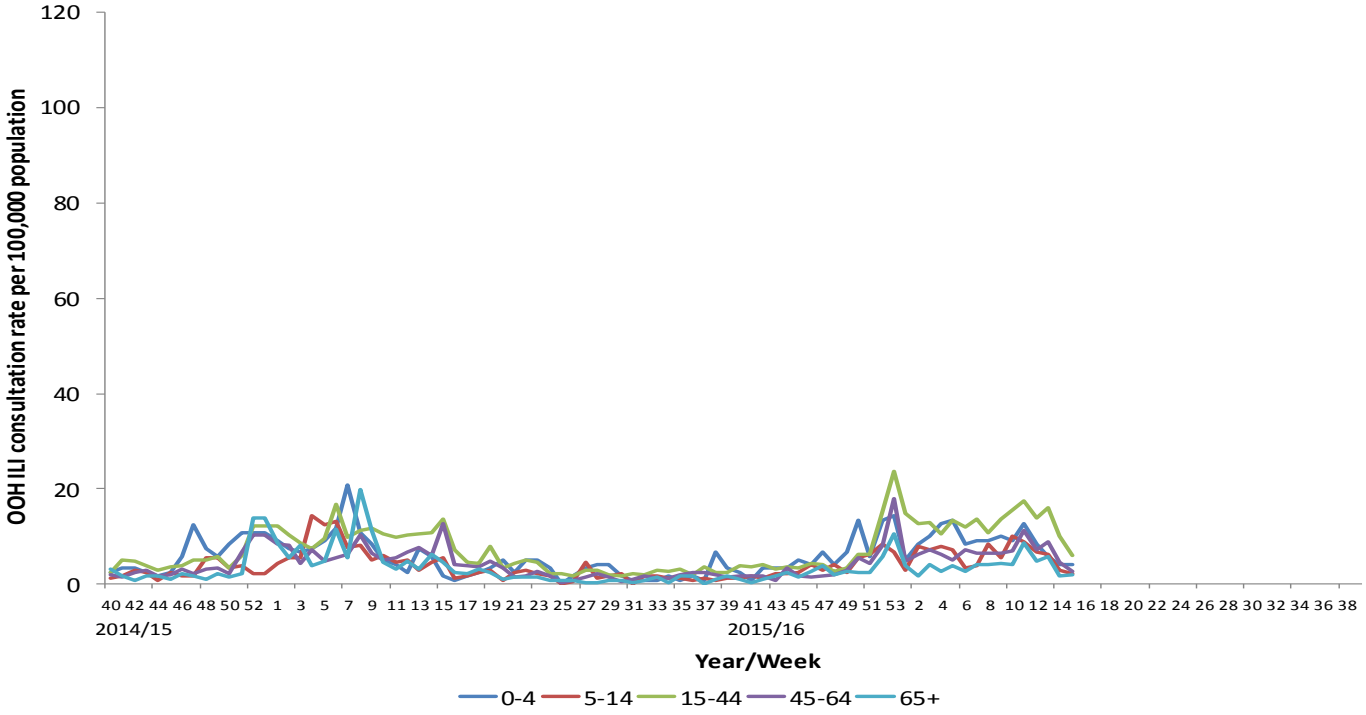


Figure 6. OOH Call rates of flu/FLI by age-group from week 40, 2014



Comment

During week 15, 2016 the OOH GP consultation rate decreased to 4.0 per 100,000 population compared with 6.2 in week 14. The OOH GP consultation rate is lower than the same period in 2014/15 but similar to 2013/14 (Figure 5). The proportion of calls related to flu in week 15 represents less than 1% of total calls to the OOH service.

During week 15, OOH flu/FLI rates have decreased among most groups in comparison with the previous week. Rates among those aged 5-14, 15-44 and 45-64 have decreased, while an increase was noted among those aged 65 years and over. OOH flu/FLI rates have remained stable among those aged 0-4 years. The highest OOH flu/FLI rate was again noted in those aged 15-44 years at 6.0 per 100,000 population (Figure 6). Age-specific rates are generally lower than noted during the same period in 2014/15 but similar to 2013/14.

Virology Data

Table 1. Virus activity in Northern Ireland, Week 15, 2015/16

Source	Specimens Tested	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	1	0	0	0	0	0	0	0%
Non-sentinel	189	0	6	3	11	2	20	11%
Total	190	0	6	3	11	2	20	11%

Table 2. Cumulative virus activity in Northern Ireland, Week 40 - 15, 2015/16

	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
0-4	0	76	12	16	104	426
5-14	0	23	3	11	37	17
15-64	2	331	109	83	525	77
65+	5	114	53	29	201	75
Unknown	0	0	0	0	0	0
All ages	7	544	177	139	867	595

Table 3. Cumulative virus activity, Week 40 - Week 15, 2015/16

	Sentinel						Non-sentinel					
	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
0-4	0	0	0	0	0	1	0	76	12	16	104	425
5-14	0	4	0	1	5	1	0	19	3	10	32	16
15-64	0	55	7	17	79	10	2	276	102	66	446	67
65+	0	2	2	1	5	1	5	112	51	28	196	74
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
All ages	0	61	9	19	89	13	7	483	168	120	778	582

Note

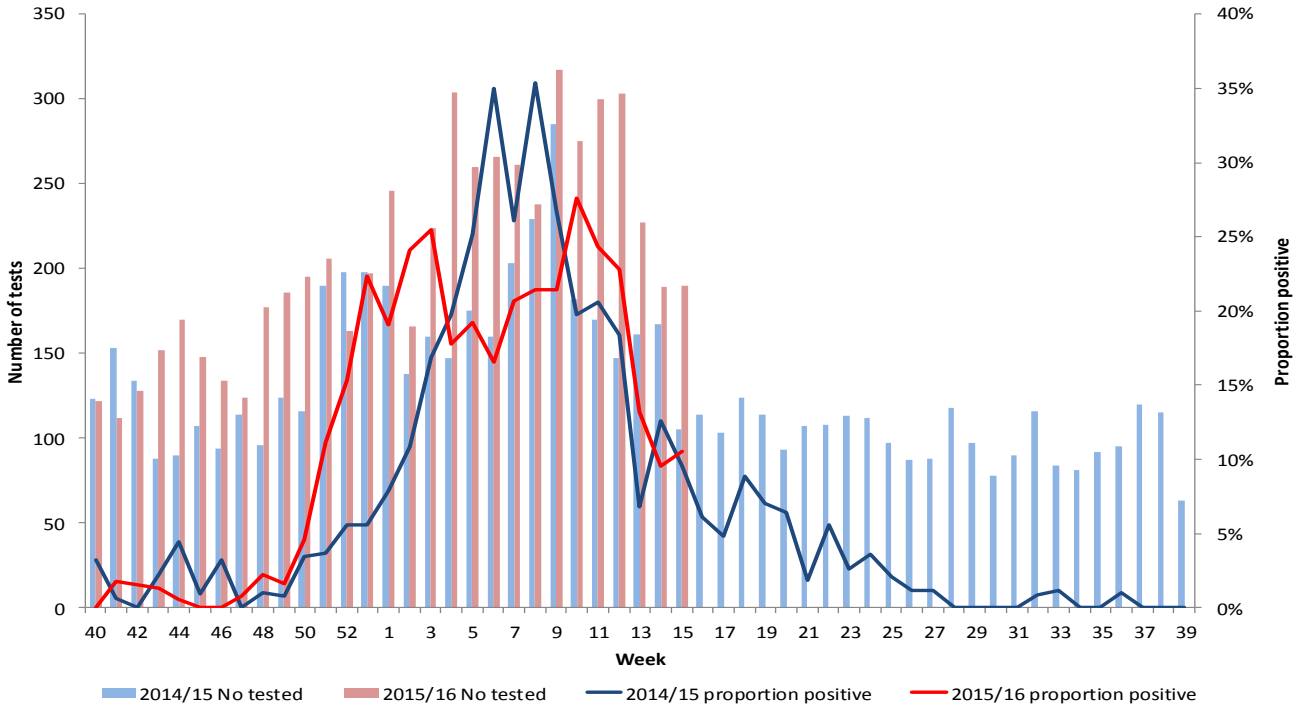
All virology data is provisional. The virology figures for previous weeks included in this or future bulletins are updated with data from laboratory returns received after the production of the last bulletin. The current bulletin reflects the most up-to-date information available. Sentinel and non-sentinel samples are tested for influenza and for RSV. Cumulative reports of influenza A (untyped) may vary from week to week as these may be subsequently typed in later reports.

Comment

During week 15, 190 specimens were submitted for virological testing. There were 20 detections of influenza (positivity rate of 11%) - 11 were typed as influenza B, 6 as influenza A(H1N1)pdm09 and 3 as influenza A (typing awaited). The positivity rate for influenza has increased from 10% in week 14 (Figure 7).

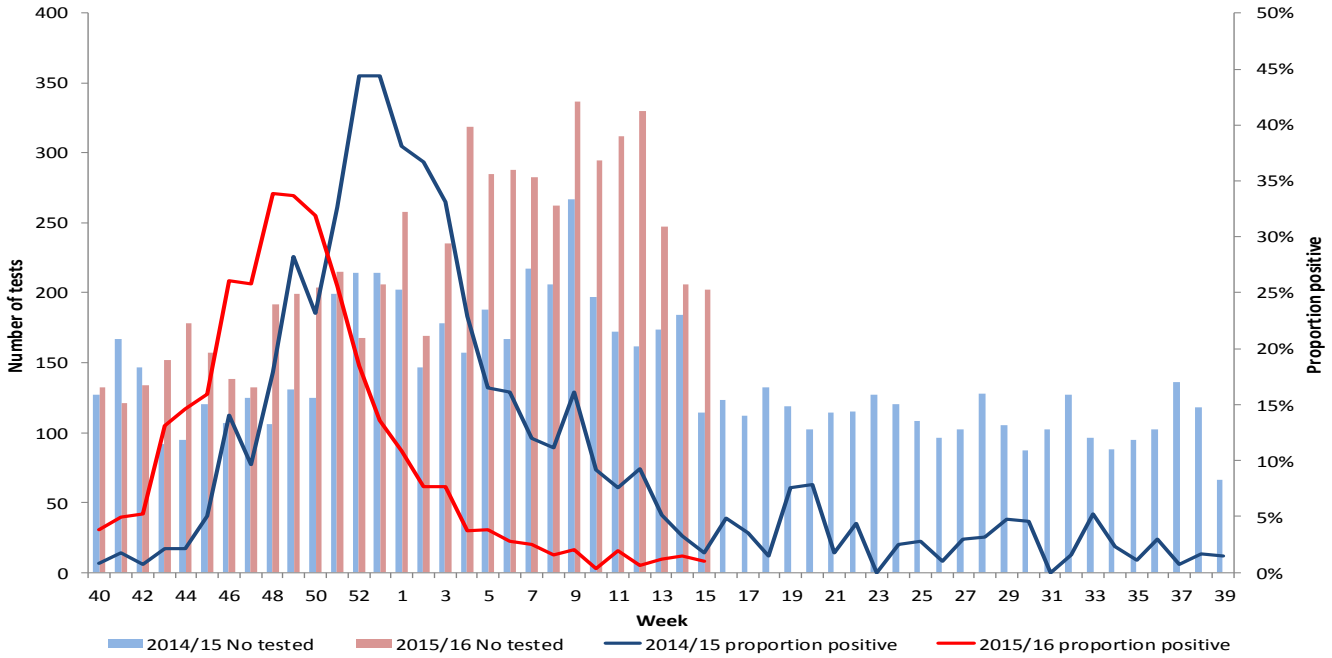
Overall this season, there have been 867 detections of influenza reported, more than in the same period in 2013/14 (n=438) and 2014/15 (n=575) (Tables 1, 2, and 3).

Figure 7. Number of samples tested for influenza and proportion positive, 2014/15 and 2015/16, all sources



Respiratory Syncytial Virus

Figure 8. Number of samples tested for RSV and proportion positive, 2014/15 and 2015/16, all sources



Comment

During week 15, there were 2 positive detections of RSV. Positivity rates have remained stable at 1% from week 14. RSV positivity rates during this period are similar to the same period in 2014/15 but lower than in 2013/14. Overall this season there have been 595 detections of RSV, of which the majority (72%) were in those aged 0-4 years (Figure 8 and Table 2).

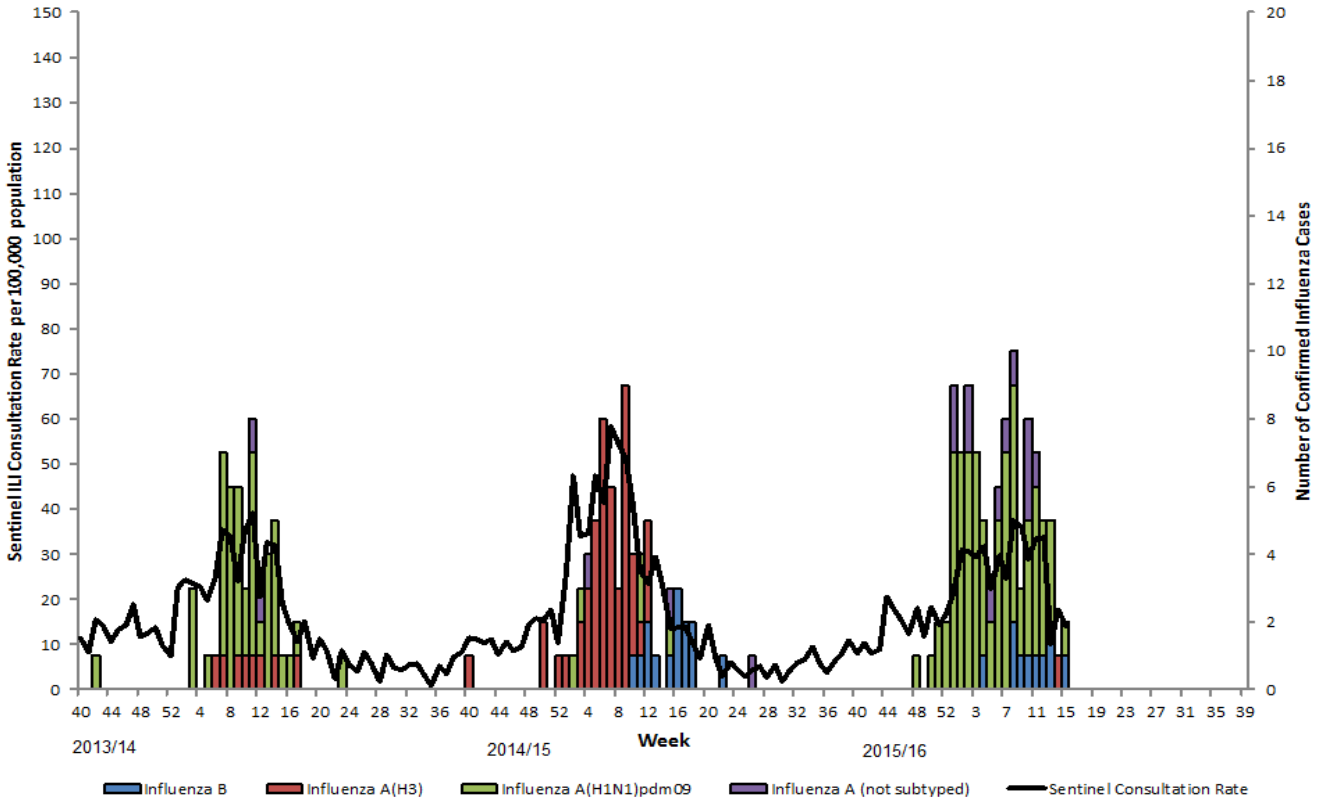
Influenza Vaccine Uptake

The most recent provisional data suggest that vaccine uptake for those aged 65 years and over is 68.9%, lower than the same period in 2014/15; while 53.2% of those under 65 and in an at risk group received the vaccine, lower than in 2014/15 when 69.0% received the vaccine.

Similar to last season, all children aged between 2 and 4 years and all primary school children in 2014/15 have been offered the seasonal influenza vaccine. The most recent provisional data suggest that vaccine uptake among 2-4 year old children is 46.4%, lower than in 2014/15 during the same period. Uptake among children in primary school is 76.5%, slightly lower than in 2014/15.

ICU/HDU Surveillance

Figure 9. Confirmed ICU influenza cases by week of specimen, with sentinel ILI consultation rate, 2013/14 - 2015/16



Comment

Data are collected on laboratory confirmed influenza patients and deaths in critical care (level 2 and level 3).

During week 15, there were two admissions to ICU confirmed with influenza reported to the PHA, one with influenza B and one with influenza A (H1N1)pdm09.

Overall, there have been 101 admissions to ICU with confirmed influenza reported this season, of which 78 have been confirmed as influenza A (H1N1)pdm09, 1 as influenza A(H3), 12 as influenza A untyped (typing awaited) and 10 as influenza B (Figure 9).

Up to week 15 2016, 63 of the 101 ICU patients with confirmed influenza had co-morbidities. Provisional data show that 60 of the 101 (59%) cases met the criteria for influenza vaccination and only 23 had received the vaccination (38%) (Table 4).

There were no deaths in ICU patients with laboratory confirmed influenza reported since the last bulletin. To date, there have been 14 deaths in ICU patients with laboratory confirmed influenza.

Table 4. Flu Confirmed ICU Cases in Northern Ireland, Week 40 - 15, 2015/16							
Age Group	No of patients	Flu vaccine eligibility group*	Vaccinated	Flu A(H1N1)pdm09	Flu A(H3)	Flu A(untyped)	Flu B
0 - 4	15	6	1	12	0	1	2
5-14	2	2	0	2	0	0	0
15-44	26	12	4	23	0	1	2
45-64	39	21	6	29	0	9	1
65+	19	19	12	12	1	1	5
All	101	60	23	78	1	12	10

*Includes all children aged 2-4 and those in primary school, people aged under 65 in an at risk group, and all those aged 65 years and over.

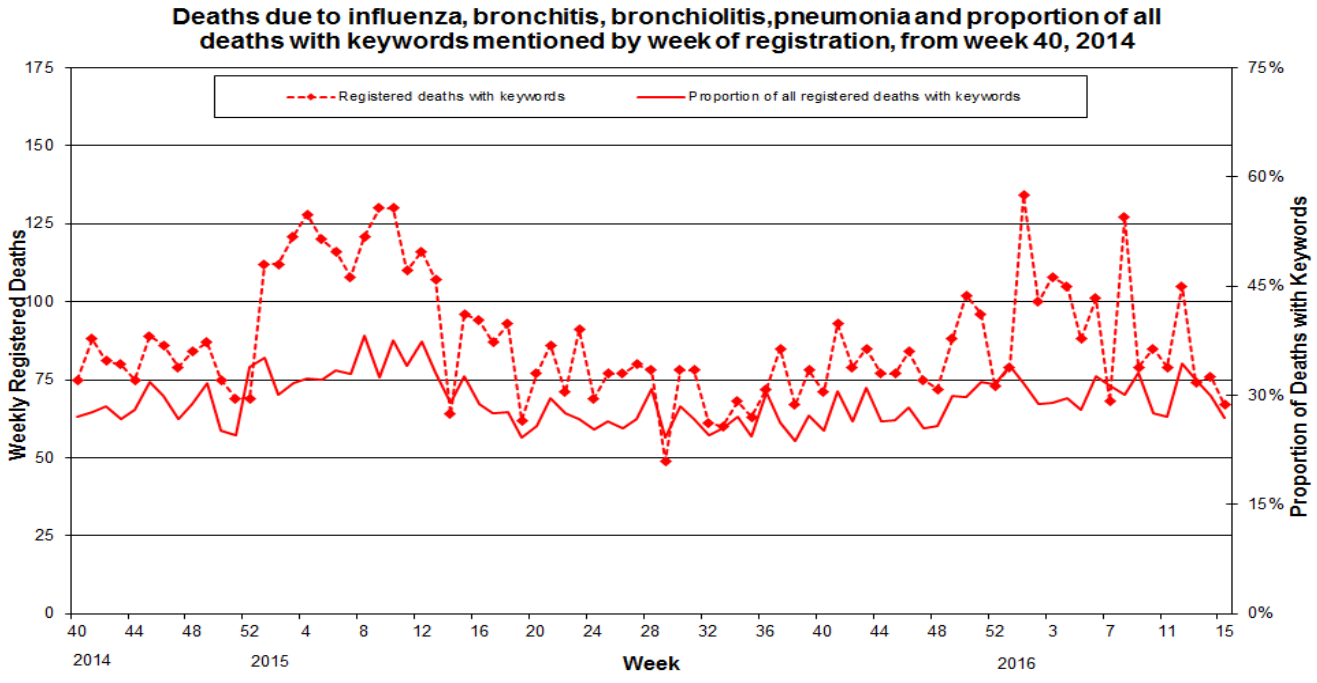
Outbreak Surveillance

During week 15, 2016 there were no reports of confirmed influenza outbreaks to the PHA. There have been a total of six confirmed influenza outbreaks reported to the PHA this season to date; five influenza A(H1N1)pdm09 and one influenza A (untyped).

Mortality Data

Weekly mortality data is provided from Northern Ireland Statistics and Research Agency. The data relates to the number of deaths from selected respiratory infections (some of which may be attributable to influenza, and other respiratory infections or complications thereof) registered each week in Northern Ireland. This is not necessarily the same as the number of deaths occurring in that period. Searches of the medical certificates of the cause of death are performed using a number of keywords that could be associated with influenza (bronchiolitis, bronchitis, influenza and pneumonia). Death registrations containing these keywords are presented as a proportion of all registered deaths.

Figure 9. Weekly registered deaths



Comment

During week 15, the proportion of registered deaths from specific respiratory infections decreased to 27% from 30% in week 14 (Figure 9).

In week 15 there were 249 registered deaths, of which 67 related to specific respiratory infections (27%). The proportion of deaths attributed to specific respiratory infections is lower at this point in the season to both 2014/15 and 2013/14.

EuroMOMO

No significant excess all-cause mortality was reported for week 15 in Northern Ireland. To date, excess all-cause mortality had been reported in three weeks of the current influenza season (weeks 49, 52 and 53).

Please note this data is provisional due to the time delay in registration; numbers may vary from week to week.

International Summary

Europe

Week 14, 2016:

- Influenza activity continued to decrease in the WHO European Region. Most countries (86%) reported decreasing trends, with associated lower numbers of specimens being collected and fewer testing positive for influenza (34%) than in the previous week (43%).
- As is often seen late in the northern hemisphere's influenza season, a shift towards circulation of type B influenza virus has occurred. The proportion increased from those for previous weeks: type B accounted for 72% of influenza virus detections in sentinel sources and 36–39% among hospitalized severe cases.
- Fewer cases of severe disease were reported than in previous weeks, although numbers varied between countries. Cases occurred mainly in people under the age of 65, and the great majority of those testing positive for influenza virus were infected by A(H1N1)pdm09.

Season:

- This season influenza A(H1N1)pdm09 viruses have predominated in most countries in the Region, although type B has dominated since week 9/2016 in the samples from primary care surveillance.
- Influenza activity, based on laboratory-confirmed mild and severe cases in sentinel and non-sentinel sources, peaked in weeks 5–7/2016. The countries first affected were in general located in the eastern part of the Region.
- Data from the 17 countries or regions reporting to the European monitoring of excess mortality for public health action project (EuroMOMO) suggest a pattern of excess all-cause mortality among those aged 15–64 years since the end of 2015. This may be associated with influenza as well as other factors. The level of excess all-cause mortality is similar to the pattern of the 2012–2013 winter season and slightly lower than that of the 2014–2015 winter season.
- Most of the viruses genetically characterized so far have been similar to those recommended for inclusion in the trivalent or quadrivalent vaccines for the 2015–2016

influenza season in the northern hemisphere, and show no indications of reduced susceptibility to the neuraminidase inhibitors oseltamivir and zanamivir.
- Recommendations on the composition of the seasonal influenza vaccines for the 2016–2017 season in the northern hemisphere call for replacement of the A(H3N2) component with a more recent virus and inclusion of a B/Victoria-lineage virus in trivalent vaccines.
- Risk assessments for the season are available from the European Centre for Disease Prevention and Control (ECDC) and the WHO Regional Office for Europe websites.

Additional information on influenza in the world is available from WHO's global updates.

http://www.flunewseurope.org/

Worldwide (WHO) and CDC

As at 18th April 2016:

In the Northern Hemisphere influenza activity was decreasing, while still elevated in some areas, due in part to an increase of influenza B activity. In the Southern Hemisphere influenza activity was reported to be slightly increasing..

- In North America, decreasing but sustained influenza activity was reported with influenza A(H1N1)pdm09 virus predominating.
- In Europe in general a decreasing trend of influenza activity was observed. In Northern Europe, overall influenza activity decreased but remained at moderate levels. A shift towards circulation of influenza B virus was detected in parts of Europe.
- Northern Temperate Asia continued to report ongoing and elevated levels of influenza activity with increasing proportions of influenza B virus.
- In Central America and the Caribbean, low influenza activity was reported in most countries except in Jamaica where elevated severe acute respiratory infection (SARI) activity associated with influenza A(H1N1)pdm09 virus infection was reported.
- In tropical South America, low but increasing circulation of influenza A(H1N1)pdm09 virus was reported. In Brazil, influenza activity was above expected levels for this time of year with influenza A(H1N1)pdm09 virus predominating. Colombia reported high circulation of respiratory syncytial virus (RSV).
- In Temperate South America, influenza activity slightly increased but remained at low level. An increase in influenza-like illness (ILI) and SARI rates were reported in Argentina, Chile and Paraguay.
- In Oceania and South Africa influenza virus activity remained low.
- National Influenza Centres (NICs) and other national influenza laboratories from 92 countries, areas or territories reported data to FluNet for the time period from 21 March 2016 to 03 April 2016 (data as of 2016-04-15 03:54:50 UTC).The WHO GISRS laboratories tested more than 101187 specimens during that time period. 24302 were positive for influenza viruses, of which 13251 (54.5%) were typed as influenza A and 11051 (45.5%) as influenza B. Of the sub-typed influenza A viruses, 4895 (85.8%) were influenza A(H1N1)pdm09 and 811 (14.2%) were influenza A(H3N2). Of the characterized B viruses, 473 (19.6%) belonged to the B-Yamagata lineage and 1936 (80.4%) to the B-Victoria lineage.

http://www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/index.html

http://www.cdc.gov/flu/weekly/

Acknowledgments

We would like to extend our thanks to all those who assist us in the surveillance of influenza in particular the sentinel GPs, Out-of-Hours Centres, Regional Virus Laboratory, Critical Care Network for Northern Ireland, Public Health England and NISRA. Their work is greatly appreciated and their support vital in the production of this bulletin.

Further information

Further information on influenza is available at the following websites:

http://www.fluawareni.info Now on Facebook (Flu Aware NI)

https://www.gov.uk/government/organisations/public-health-england

http://www.publichealth.hscni.net

http://www.who.int http://ecdc.europa.eu

http://euroflu.org

Flusurvey, an online flu surveillance system run by the PHE and London School of Hygiene and Tropical Medicine was launched in 2013/14 and continues in 2015/16. For further information and please see the Flusurvey website.

Detailed influenza weekly reports can be found at the following websites:

Northern Ireland:
http://www.publichealth.hscni.net/directorate-public-health/health-protection/seasonal-influenza

England, Scotland and Wales:
https://www.gov.uk/government/collections/seasonal-influenza-guidance-data-and-analysis#epidemiology

Republic of Ireland:
http://www.hpsc.ie/hpsc/A-Z/Respiratory/Influenza/SeasonalInfluenza/Surveillance/InfluenzaSurveillanceReports/

For further information on the Enhanced Surveillance of Influenza in Northern Ireland scheme or to be added to the circulation list for this bulletin please contact:

Chris Nugent
Surveillance Officer
Public Health Agency
028 9536 3407

Dr Naomh Gallagher
Senior Epidemiological Scientist
Public Health Agency
028 9536 3498

Email: flusurveillance@hscni.net

This report was compiled by Chris Nugent, Dr Naomh Gallagher and Dr Jillian Johnston.