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Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 11 (14 March 2016 – 20 March 2016)

Summary

In Northern Ireland, as of week 11 2016, the 2015/16 influenza season has seen recent increasing community influenza activity, with moderate GP consultation rates and numbers of Care Home outbreaks remaining low. However, numbers of ICU admissions remain higher than the same period last year. 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 11, 2016:

- GP consultation rates for combined flu and flu-like illness (flu/FLI) increased to 33.5 per 100,000 population, are higher than the same period in 2014/15 but lower than in 2013/14 and remain below the 2015/16 pre-epidemic threshold[1]
- OOH consultation rate for flu/FLI increased to 13.2 per 100,000 population, also increasing among most age groups.
- RSV activity has increased but remains lower than the same period during last season
- One confirmed influenza outbreak was reported to the PHA
- The proportion of positive influenza detections decreased to 24%, with influenza A (H1N1) pdm09 the dominant circulating strain
- Seven admissions to ICU were reported with confirmed influenza
- Three deaths were reported in ICU patients 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

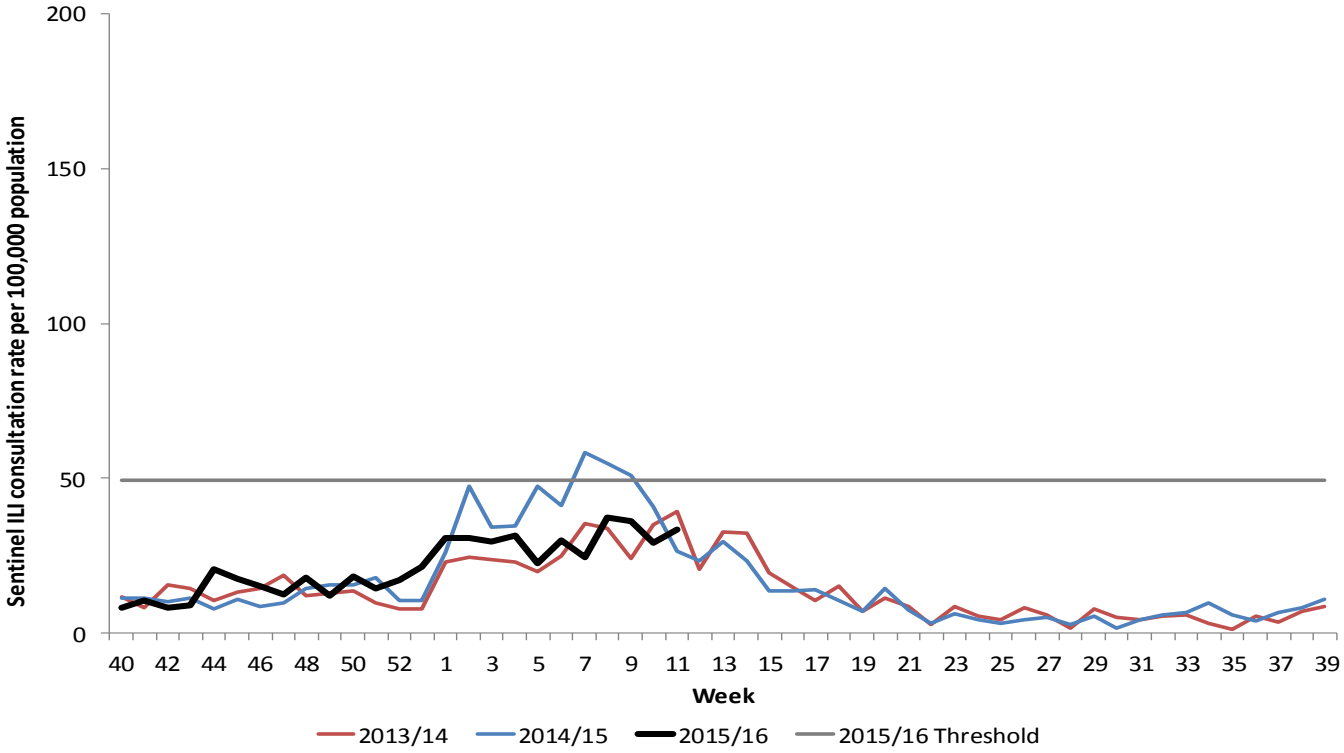


Figure 2. Sentinel GP combined consultation rates for flu/FLI and number of influenza positive detections 2010/11 – 2015/16

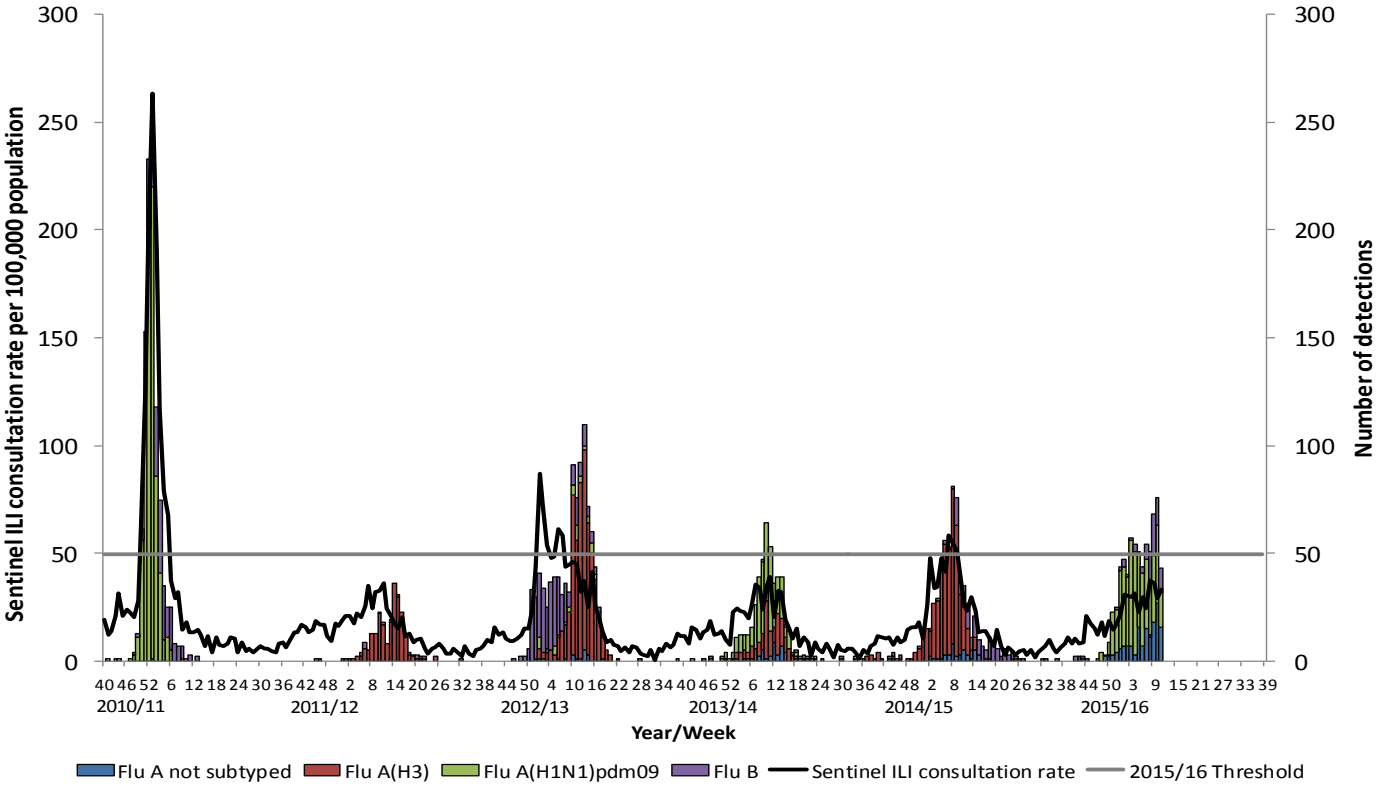
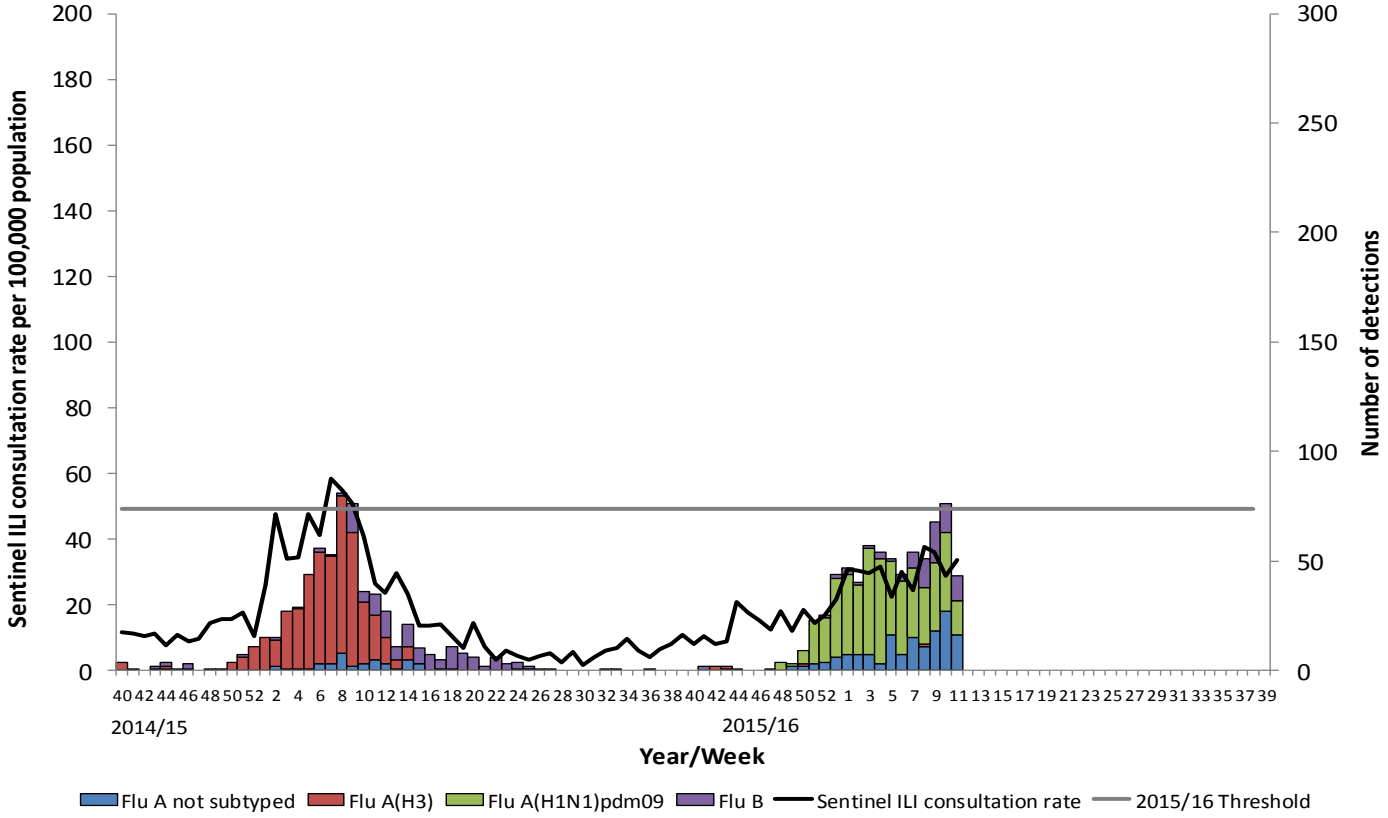


Figure 3. Sentinel GP consultation rates for flu/FLI and number of virology 'flu detections from week 40, 2014

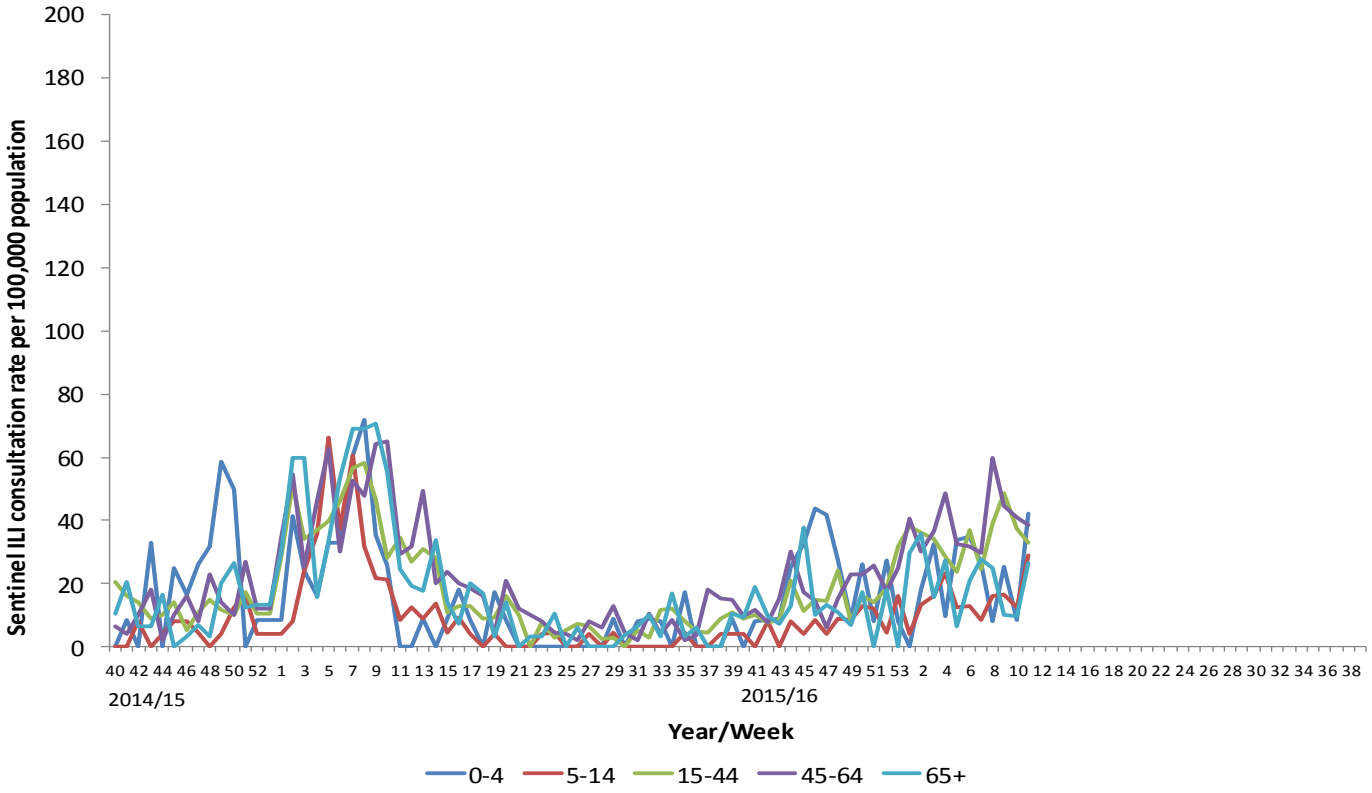


Comment

GP consultation rates have increased in week 11, 2016 to 33.5 per 100,000 population compared with 29.0 per 100,000 in week 10. The GP consultation rate is higher than 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 11 2016, GP consultation rates increased among most age groups in comparison with the previous week. GP consultation rates have increased among those aged 0-4, 5-14 years and 65 years and over, while rates among those aged 15-44 and 45-64 years decreased in comparison with the previous week. Age-specific consultation rates are also higher in some age groups than noted during the same period in 2014/15 but lower than in 2013/14.

The highest consultation rate in week 11 was noted in those aged 0-4 years at 42.3 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

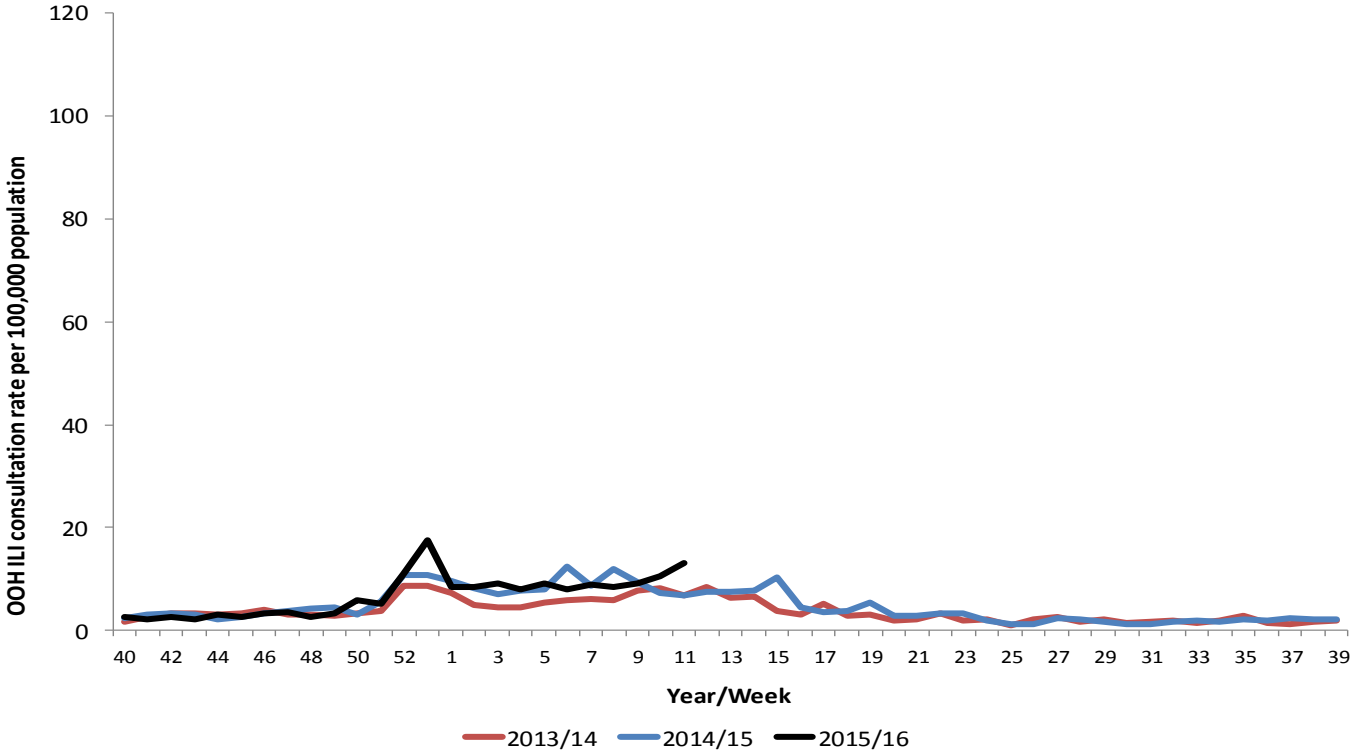
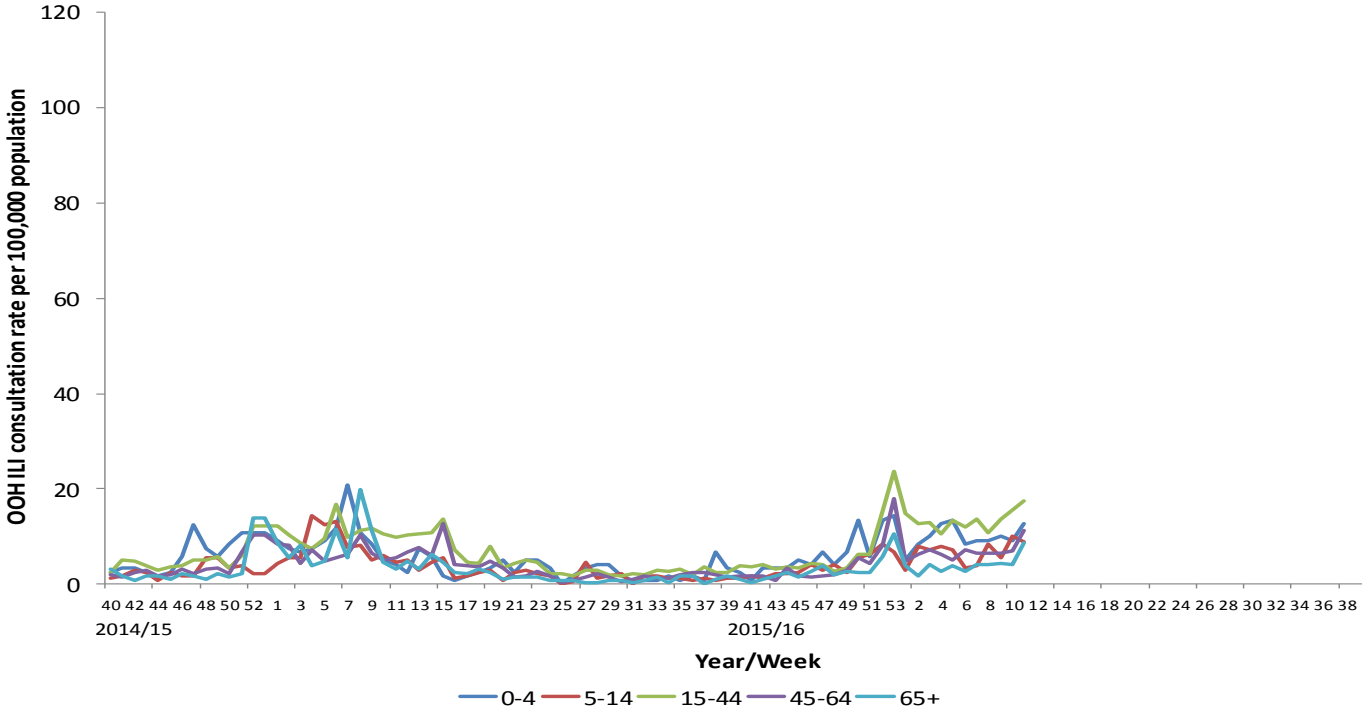


Figure 6. OOH Call rates of flu/FLI by age-group from week 40, 2014



Comment

During week 11, 2016 the OOH GP consultation rate increased to 13.2 per 100,000 population compared with 10.5 in week 10. The OOH GP consultation rate is higher than the same period in both 2014/15 and 2013/14 (Figure 5).

The proportion of calls related to flu in week 11 represents 1.7% of total calls to the OOH service.

During week 11, OOH flu/FLI rates have increased in all age groups with the exception of the 5-14 years age group, among whom OOH flu/FLI rates have decreased. The highest OOH flu/FLI rate was noted in those aged 15-44 years at 17.6 per 100,000 population (Figure 6). Age-specific rates are also higher than noted during the same period in both 2014/15 and 2013/14.

Virology Data

Table 1. Virus activity in Northern Ireland, Week 11, 2015/16

Source	Specimens Tested	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	5	0	2	1	0	1	3	60%
Non-sentinel	237	0	17	22	15	3	54	23%
Total	242	0	19	23	15	4	57	24%

Table 2. Cumulative virus activity in Northern Ireland, Week 40 - 11, 2015/16

	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
0-4	0	67	12	8	87	420
5-14	0	21	2	11	34	17
15-64	1	285	95	54	435	73
65+	4	93	51	11	159	73
Unknown	0	0	0	0	0	0
All ages	5	466	160	84	715	583

Table 3. Cumulative virus activity, Week 40 - Week 11, 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	67	12	8	87	419
5-14	0	4	0	1	5	1	0	17	2	10	29	16
15-64	0	47	6	11	64	10	1	238	89	43	371	63
65+	0	2	2	0	4	1	4	91	49	11	155	72
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
All ages	0	53	8	12	73	13	5	413	152	72	642	570

Note

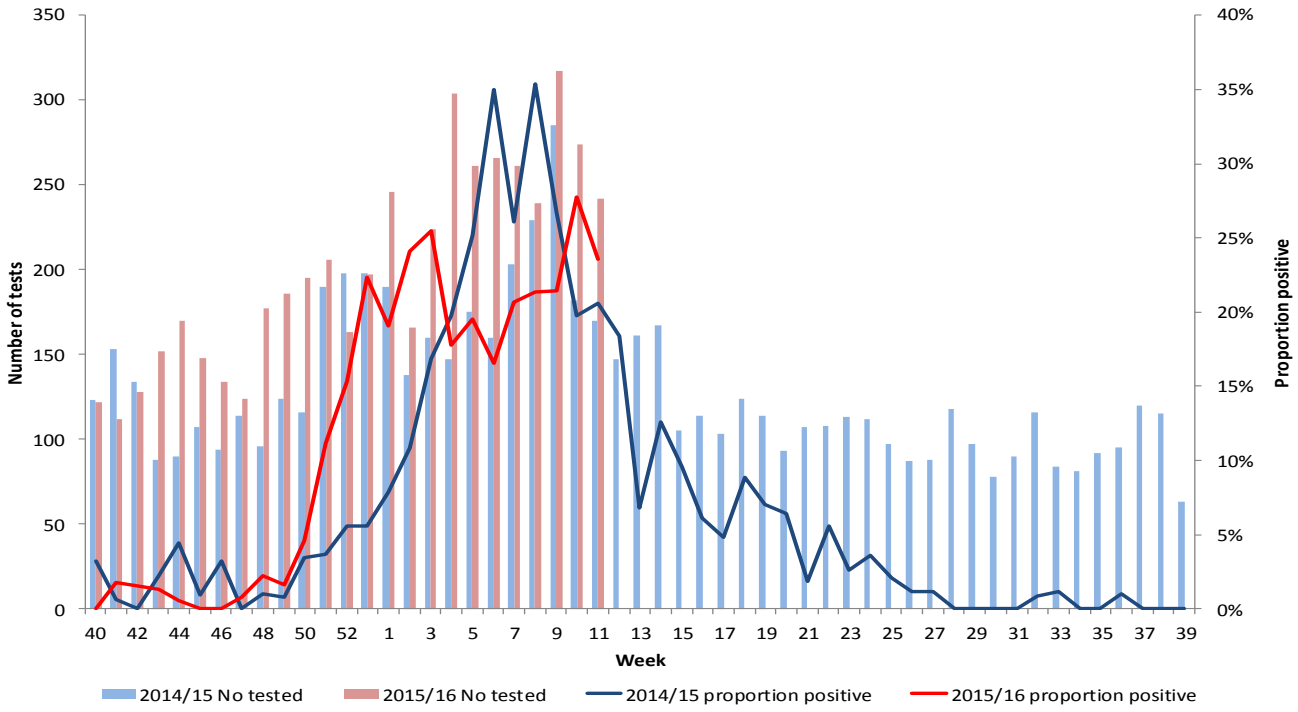
All virology data is provisional. The virology figures for previous weeks included in this or future bulletins are updated with data from laboratory returns received after the production of the last bulletin. The current bulletin reflects the most up-to-date information available. Sentinel and non-sentinel 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 11, 242 specimens were submitted for virological testing. There were 57 detections of influenza (positivity rate of 24%) - 19 were typed as influenza A(H1N1)pdm09, 23 as influenza A (typing awaited) and 15 as influenza B. The positivity rate for influenza has decreased from 28% in week 10 (Figure 7).

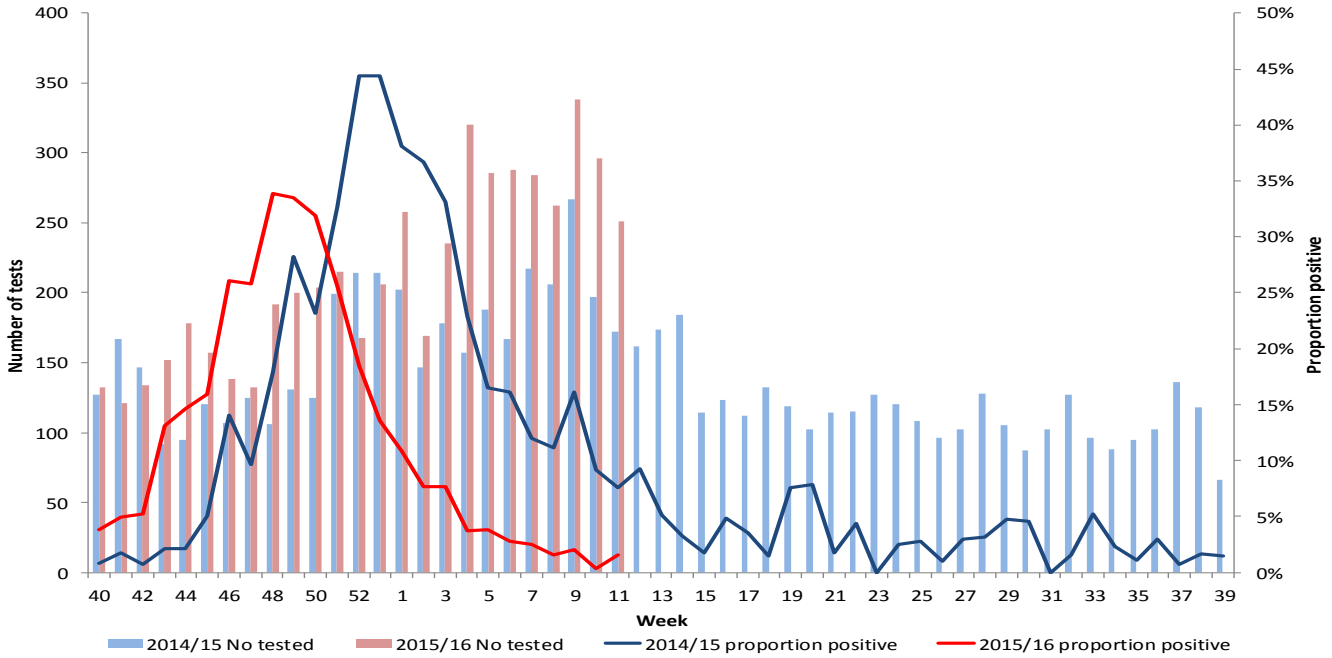
Overall this season, there have been 715 detections of influenza reported, more than in the same period in 2013/14 (n=307) and 2014/15 (n=506) (Tables 1, 2, and 3).

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 11, there were 4 RSV positive detections. Positivity rates have slightly increased to 2% from less than 1% in week 10. RSV positivity rates during this period are the lowest recorded since 2012/13. Overall this season there have been 583 detections of RSV, of which the majority (72%) were in those aged 0-4 years (Figure 8 and table 2).

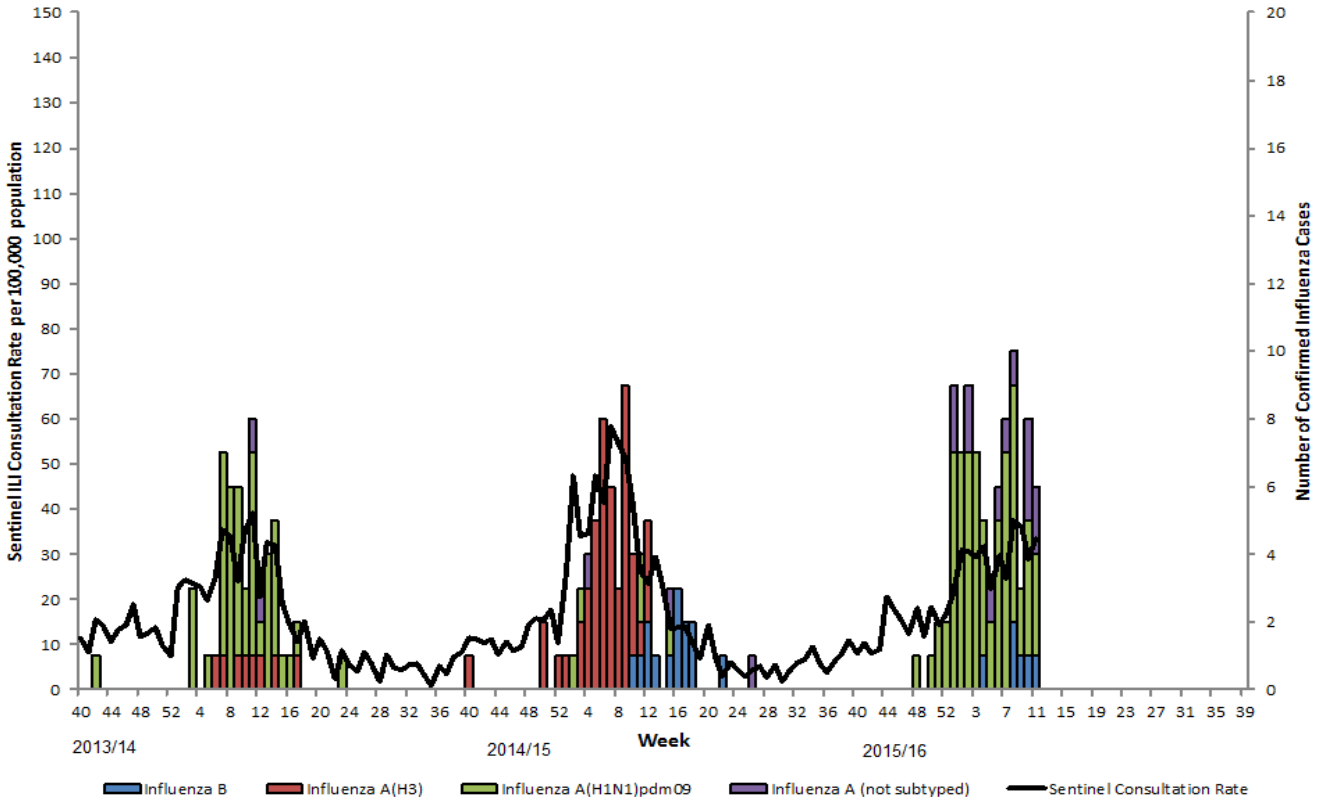
Influenza Vaccine Uptake

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 11, there were seven admissions to ICU confirmed with influenza reported to the PHA – four with influenza A (H1N1)pdm09, two with influenza A untyped (typing awaited) and one with influenza B.

Overall, there have been 87 admissions to ICU with confirmed influenza reported this season, of which 68 have been confirmed as influenza A (H1N1)pdm09, 13 as influenza A untyped (typing awaited) and 6 as influenza B (Figure 9).

Up to week 11, 2016, 53 of the 87 ICU patients with confirmed influenza had co-morbidities. Provisional data show that 48 of the 87 (55%) cases met the criteria for influenza vaccination and only 14 had received the vaccination (29%) (Table 4).

There were three deaths in ICU patients with laboratory confirmed influenza reported since the last bulletin. To date, there have been 12 deaths in ICU patients with laboratory confirmed influenza, all of whom had underlying comorbidities.

Table 4. Flu Confirmed ICU Cases in Northern Ireland, Week 40 - 11, 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	12	4	0	9	0	1	2
5-14	2	2	0	2	0	0	0
15-44	23	9	1	21	0	1	1
45-64	37	20	5	26	0	10	1
65+	13	13	8	10	0	1	2
All	87	48	14	68	0	13	6

*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.

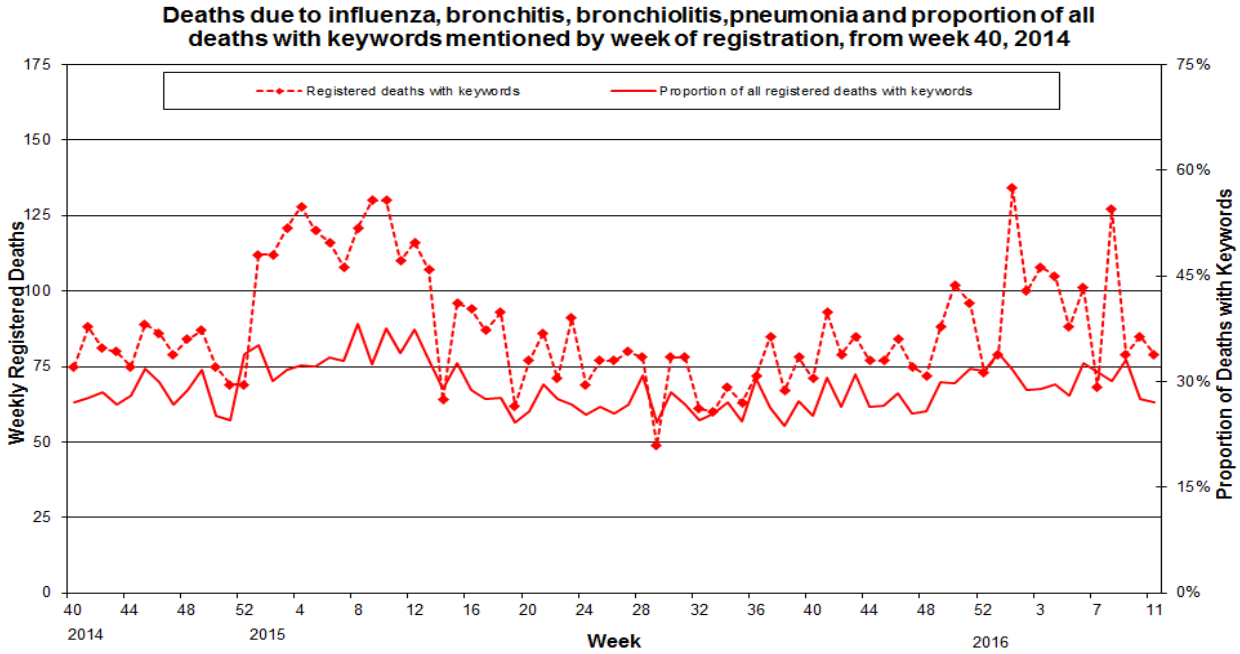
Outbreak Surveillance

During week 11, 2016 there was one report of a confirmed influenza A (untyped- typing awaited) outbreak to the PHA. There have been a total of six confirmed influenza outbreaks reported to the PHA this season to date; four influenza A(H1N1)pdm09 and two 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 11, the proportion of registered deaths from specific respiratory infections decreased to 27% from 28% in week 10 (Figure 9).

In week 11 there were 292 registered deaths, of which 79 related to specific respiratory infections (27%). The proportion of deaths attributed to specific respiratory infections is lower at this point in the season than in both 2014/15 and 2013/14.

EuroMOMO

No significant excess all-cause mortality was reported for week 11 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 10, 2016:

- Influenza activity may have peaked in some parts of the Region, as only one country reported high-intensity influenza activity and the majority of the countries (93%) reported decreasing or stable trends.
- The proportion of sentinel specimens testing positive for influenza virus showed a slight increase, to 48%, which is similar to the last four weeks.
- Influenza B virus constituted 62% of detections in sentinel samples collected this week, which is higher than the previous week (55%), indicating a shift towards influenza B circulation.
- The number of cases of severe disease was lower than in previous weeks, but varied between countries. Most severe cases were associated with A(H1N1)pdm09 infection and were in people aged 15–64 years.

Season:

- This season influenza A(H1N1)pdm09 viruses have predominated in most countries in the Region, although in the last few weeks there has been a shift to influenza B circulation.
- In several European countries there were more reports of severe cases, predominantly associated with A(H1N1)pdm09 at the start of the season, than in the previous season. The number of cases has been decreasing in the last weeks.
- 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 is similar to the 2012-2013 winter season and slightly lower than the 2014-2015 winter season. Mortality among elderly people is within the expected levels for this season.
- Most of the viruses antigenically and/or genetically characterized so far have been similar to those recommended for inclusion in the trivalent or quadrivalent vaccines for this season in the northern hemisphere. There are no indications among the majority of

currently circulating seasonal influenza viruses of reduced susceptibility to neuraminidase inhibitors oseltamivir or zanamivir.

- Recommendations on the seasonal influenza vaccine composition 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 the trivalent vaccine.
- 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 21st March 2016:

Globally, high levels of influenza activity continued to be reported. In some countries in northern Europe influenza B virus detections were increasing. In North America, influenza activity continued to increase and ARI and pneumonia activity were above thresholds in Mexico. In Northern Temperate Asia, influenza activity was ongoing with increasing levels of influenza B virus.

- In northern and south west Europe, influenza detections continued to remain high with increasing activity of influenza B virus. In Eastern Europe, influenza activity and SARI activity seemed to have peaked. (how about central and western Europe?)
- In North America, Mexico reported above expected levels of ARI and pneumonia activity during this period. Increasing influenza activity predominantly due to influenza A(H1N1)pdm09 virus continued to be reported in Canada and U.S.A.
- In Northern Temperate Asia, influenza activity was ongoing with influenza B activity predominating.
- In Western Asia, influenza activity continued to decrease. Oman reported ongoing low levels of influenza A(H1N1)pdm09 and influenza B activity.
- In South East Asia, ongoing influenza activity was reported during this period with predominantly influenza B detections.
- In tropical countries of the Americas, Central America and the Caribbean, influenza and other respiratory virus activity were overall at low levels. In Jamaica however, SARI activity remained high with influenza A(H1N1)pdm09 predominating while high RSV activity was reported in Ecuador.
- In the temperate countries of the Southern Hemisphere influenza virus activity remained low.
- National Influenza Centres (NICs) and other national influenza laboratories from 96 countries, areas or territories reported data to FluNet for the time period from 22 February 2016 to 06 March 2016 (data as of 2016-03-18 04:15:14 UTC).The WHO GISRS laboratories tested more than 159429 specimens during that time period. 47202 were positive for influenza viruses, of which 35026 (74.2%) were typed as influenza A and 12176 (25.8%) as influenza B. Of the sub-typed influenza A viruses, 15851 (87.3%) were influenza A(H1N1)pdm09 and 2300 (12.7%) were influenza A(H3N2). Of the characterized B viruses, 588 (25.2%) belonged to the B-Yamagata lineage and 1747 (74.8%) 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.