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Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 12 (21 March 2016 – 27 March 2016)

Summary

In Northern Ireland, as of week 12 2016, the 2015/16 influenza season has seen stable community influenza activity, with moderate GP consultation rates and numbers of Care Home outbreaks remaining low. ICU admissions in week 12 are at a similar level as seen in week 12 in 2014/15 and 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 12, 2016:

- GP consultation rates for combined flu and flu-like illness (flu/FLI) remained stable at 33.7 per 100,000 population, are higher than the same period in both 2014/15 and 2013/14 and remain below the 2015/16 pre-epidemic threshold[1]
- OOH consultation rate for flu/FLI decreased to 9.6 per 100,000 population, decreasing among all age groups
- RSV activity has decreased and remains lower than the same period during last season
- No confirmed influenza outbreaks were reported to the PHA
- The proportion of positive influenza detections decreased to 23%, with influenza A and B the co-dominant circulating strains
- Five admissions to ICU were reported with confirmed influenza
- One death was 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

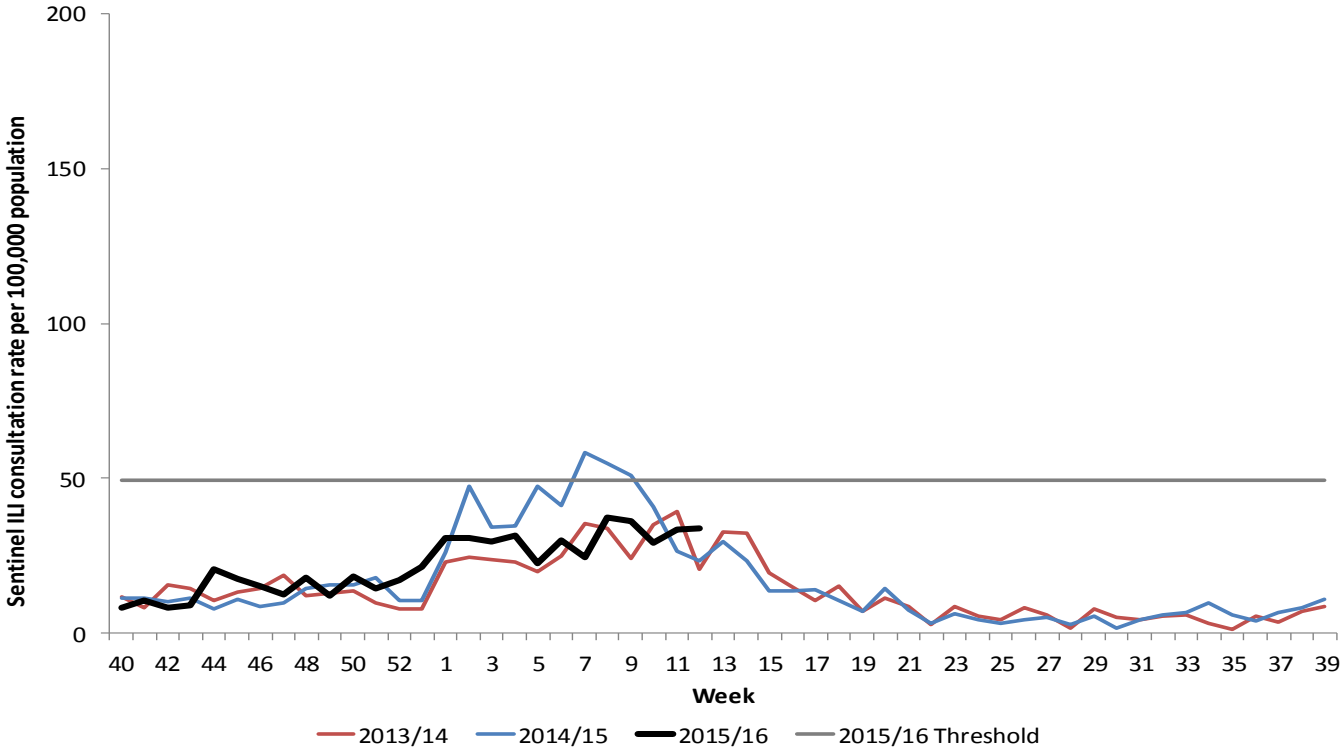


Figure 2. Sentinel GP combined consultation rates for flu/FLI and number of influenza positive detections 2010/11 – 2015/16

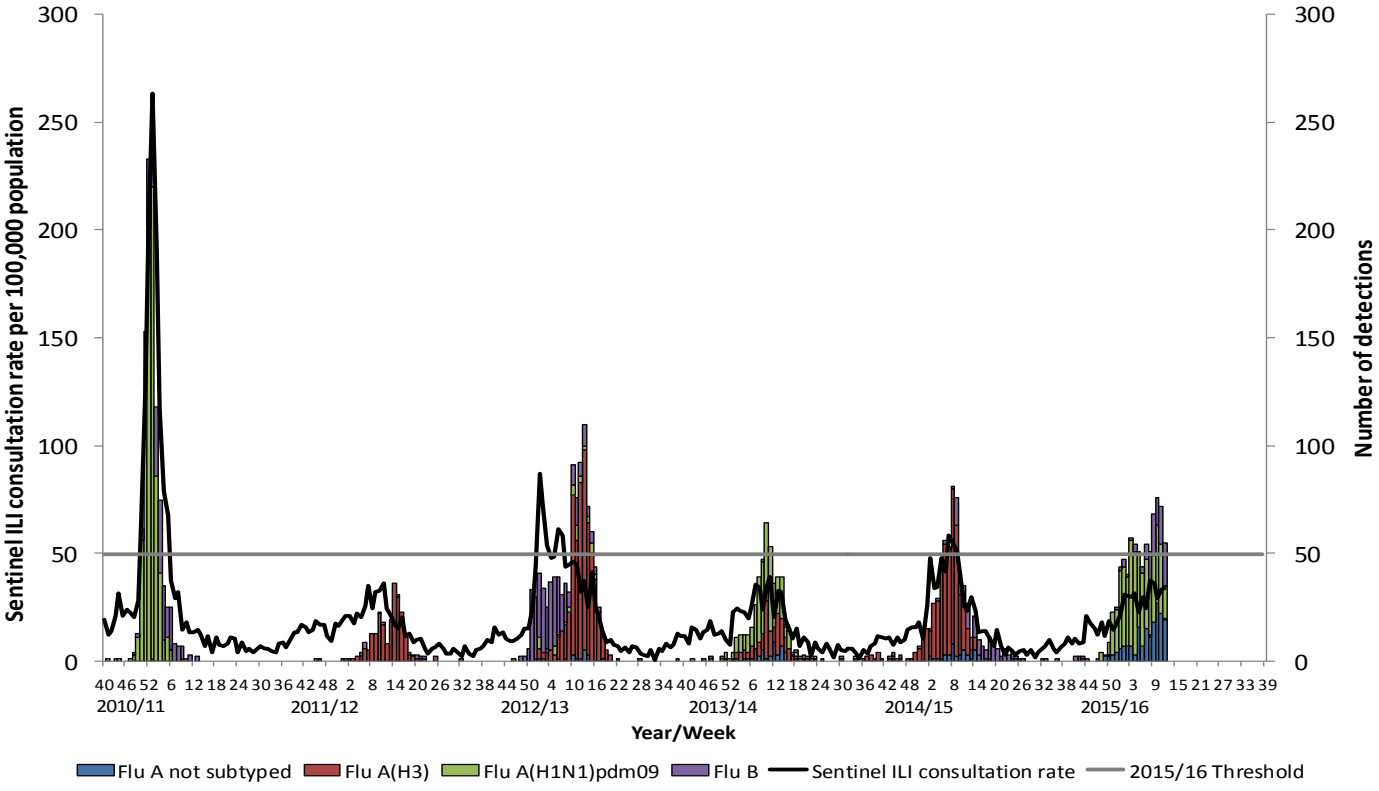
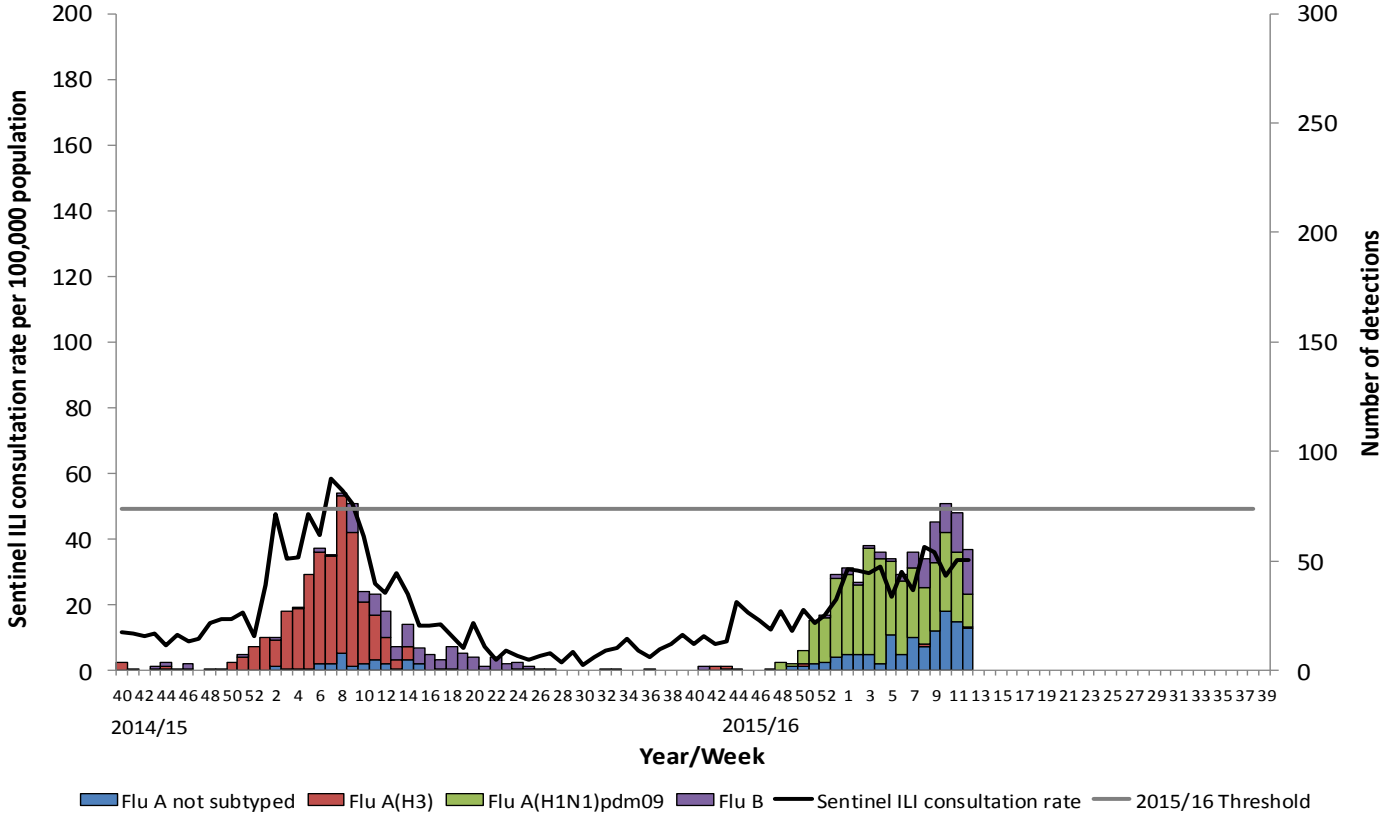


Figure 3. Sentinel GP consultation rates for flu/FLI and number of virology 'flu detections from week 40, 2014

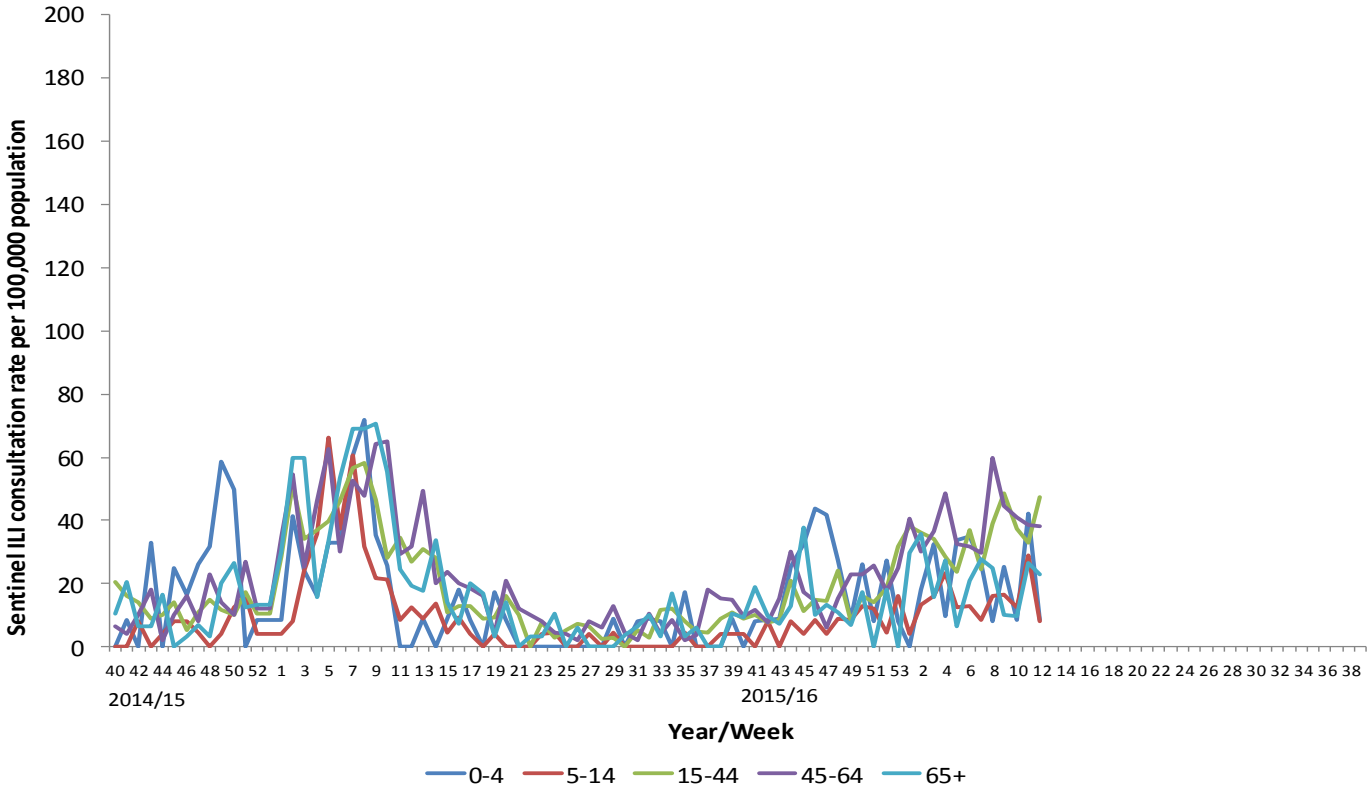


Comment

GP consultation rates have remained relatively stable in week 12, 2016 at 33.7 per 100,000 population from 33.5 per 100,000 in week 11. The GP consultation rate is the higher than the same period in both 2013/14 and 2014/15.

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 12 2016, GP consultation rates decreased among most age groups in comparison with the previous week. GP consultation rates have increased only among those aged 15-44 years, while rates among those aged 0-4, 5-14 and 65 years and over have decreased in comparison with the previous week. Rates among those aged 45-64 years have remained stable. Age-specific consultation rates are higher in most age groups than noted during the same period in 2014/15.

The highest consultation rate in week 12 was noted in those aged 15-44 years at 47.3 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

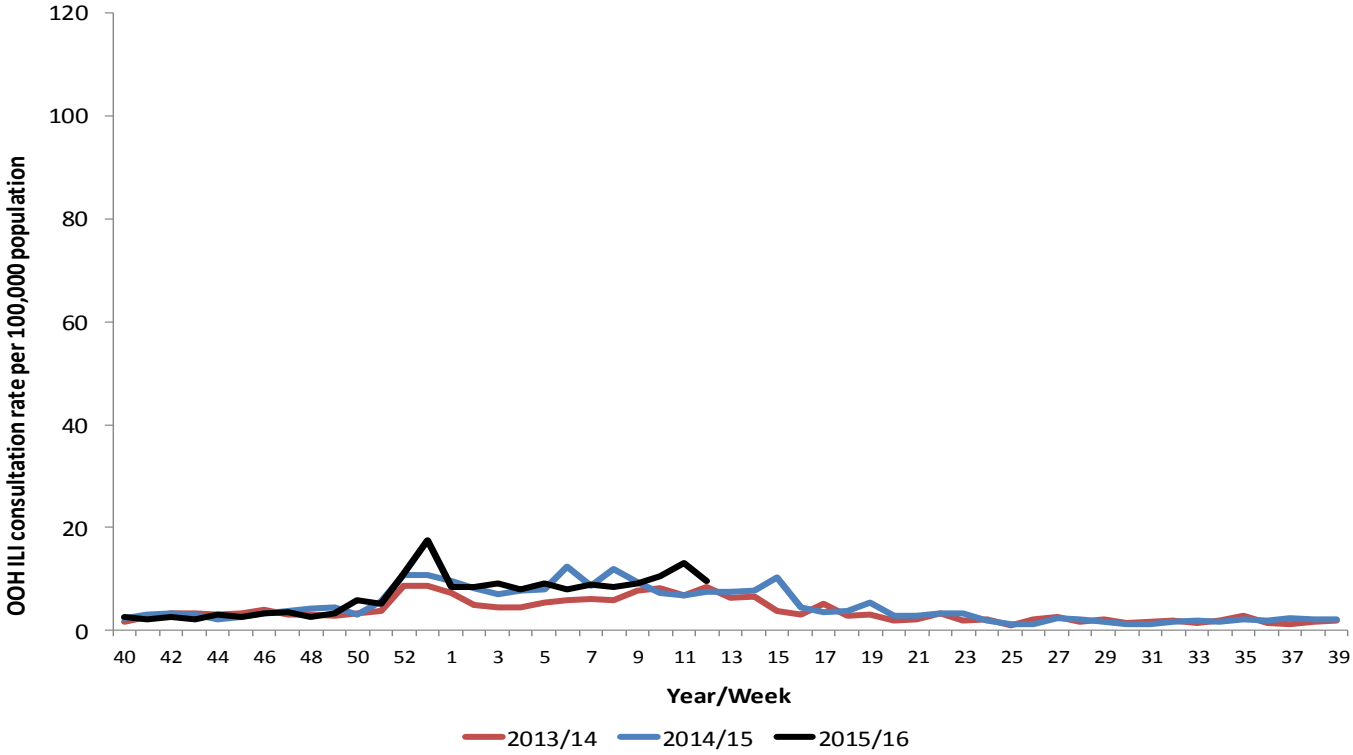
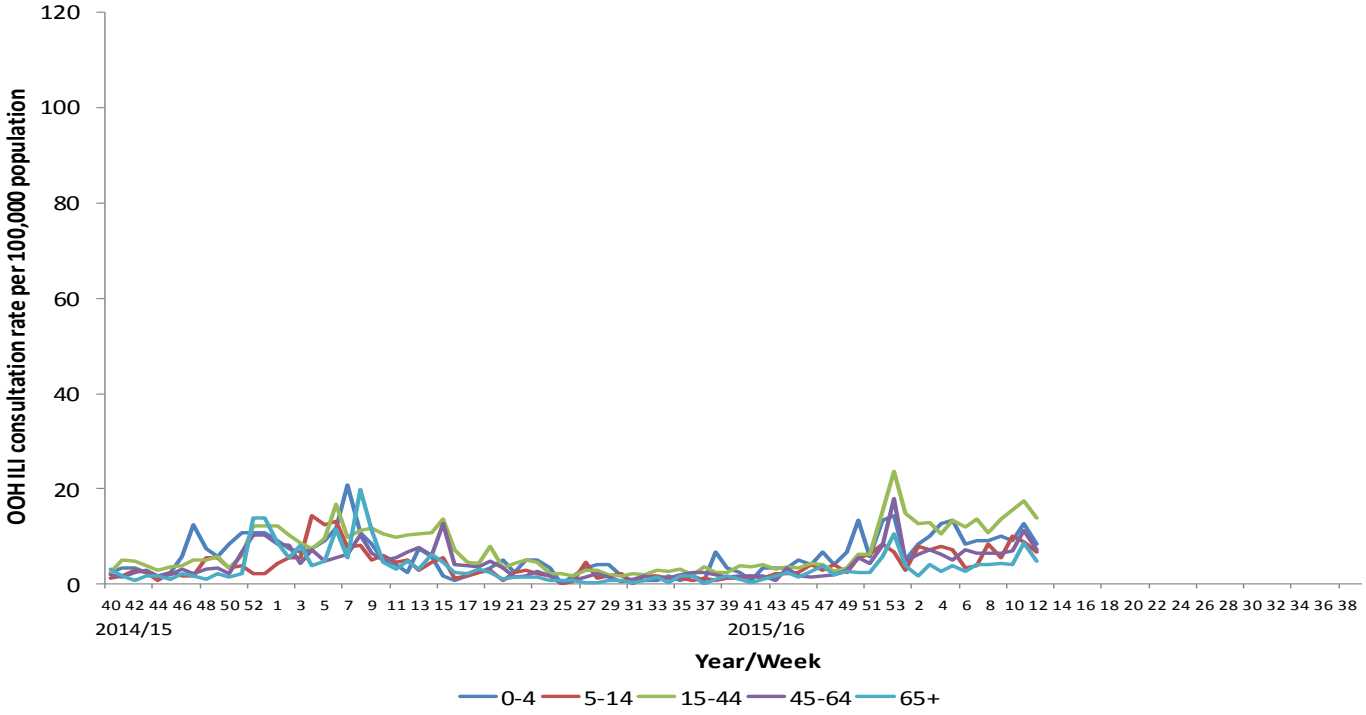


Figure 6. OOH Call rates of flu/FLI by age-group from week 40, 2014



Comment

During week 12, 2016 the OOH GP consultation rate decreased to 9.6 per 100,000 population compared with 13.2 in week 11. The OOH GP consultation rate remained higher than the same period in both 2014/15 and 2013/14 (Figure 5).

The proportion of calls related to flu in week 12 represents 1.4% of total calls to the OOH service.

During week 12, OOH flu/FLI rates have decreased in all age groups in comparison with the previous week. The highest OOH flu/FLI rate was noted in those aged 15-44 years at 14.0 per 100,000 population (Figure 6). Age-specific rates remain higher than noted during the same period in both 2014/15 and 2013/14.

Virology Data

Table 1. Virus activity in Northern Ireland, Week 12, 2015/16

Source	Specimens Tested	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	12	0	2	2	4	0	8	67%
Non-sentinel	228	1	13	17	16	2	47	21%
Total	240	1	15	19	20	2	55	23%

Table 2. Cumulative virus activity in Northern Ireland, Week 40 - 12, 2015/16

	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
0-4	0	72	13	11	96	422
5-14	0	22	2	11	35	17
15-64	2	300	109	69	480	74
65+	4	100	54	16	174	74
Unknown	0	0	0	0	0	0
All ages	6	494	178	107	785	587

Table 3. Cumulative virus activity, Week 40 - Week 12, 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	72	13	11	96	421
5-14	0	4	0	1	5	1	0	18	2	10	30	16
15-64	0	51	9	15	75	10	2	249	100	54	405	64
65+	0	2	2	0	4	1	4	98	52	16	170	73
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
All ages	0	57	11	16	84	13	6	437	167	91	701	574

Note

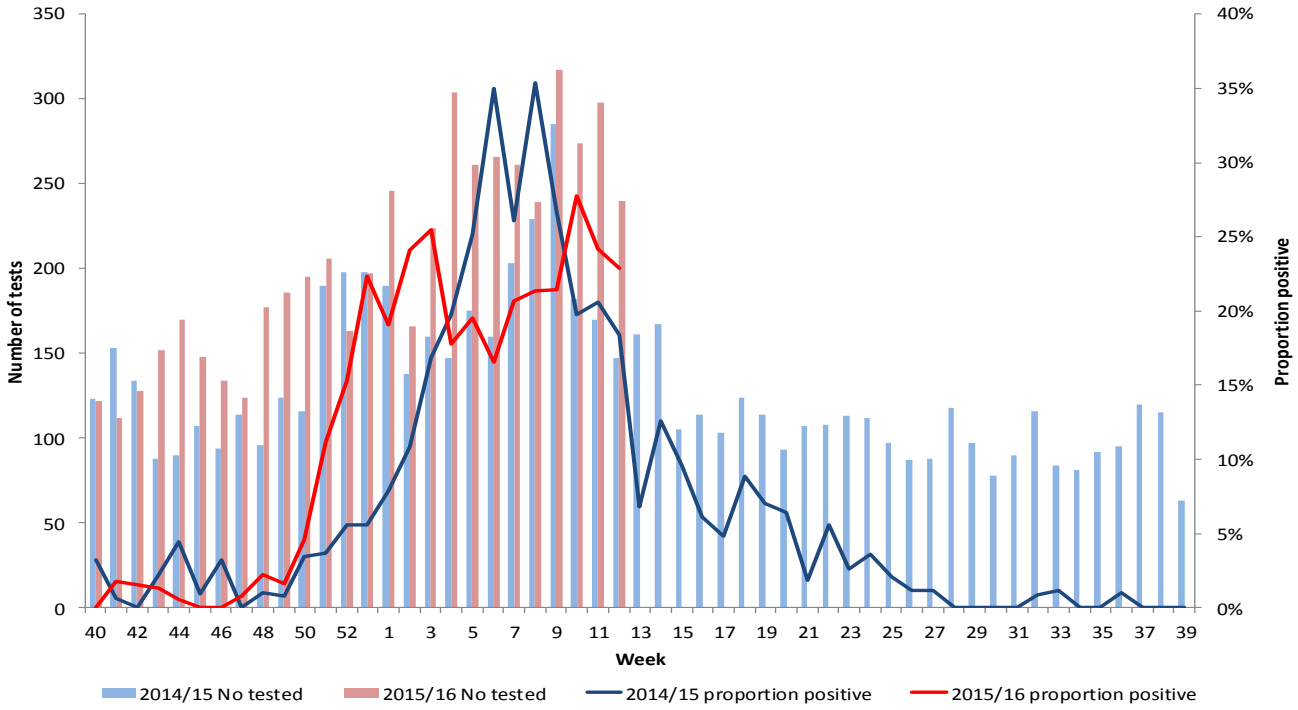
All virology data is provisional. The virology figures for previous weeks included in this or future bulletins are updated with data from laboratory returns received after the production of the last bulletin. The current bulletin reflects the most up-to-date information available. Sentinel and non-sentinel 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 12, 240 specimens were submitted for virological testing. There were 55 detections of influenza (positivity rate of 23%) - 15 were typed as influenza A(H1N1)pdm09, 19 as influenza A (typing awaited), 20 as influenza B, and 1 as influenza A(H3). The positivity rate for influenza has decreased from 24% in week 11 (Figure 7).

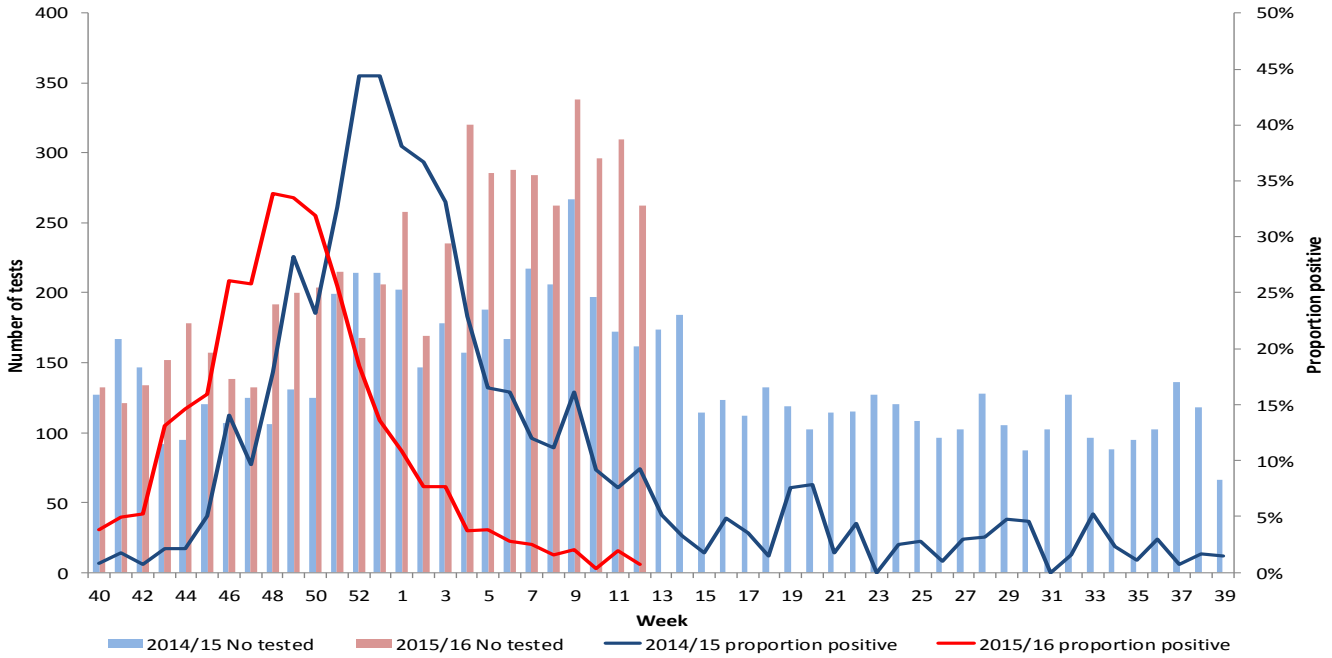
Overall this season, there have been 785 detections of influenza reported, more than in the same period in 2013/14 (n=343) and 2014/15 (n=533) (Tables 1, 2, and 3).

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 12, there were 2 RSV positive detections. Positivity rates have decreased to 1% from less than 2% in week 11. RSV positivity rates during this period are the lowest recorded since 2012/13. Overall this season there have been 587 detections of RSV, of which the majority (72%) were in those aged 0-4 years (Figure 8 and table 2).

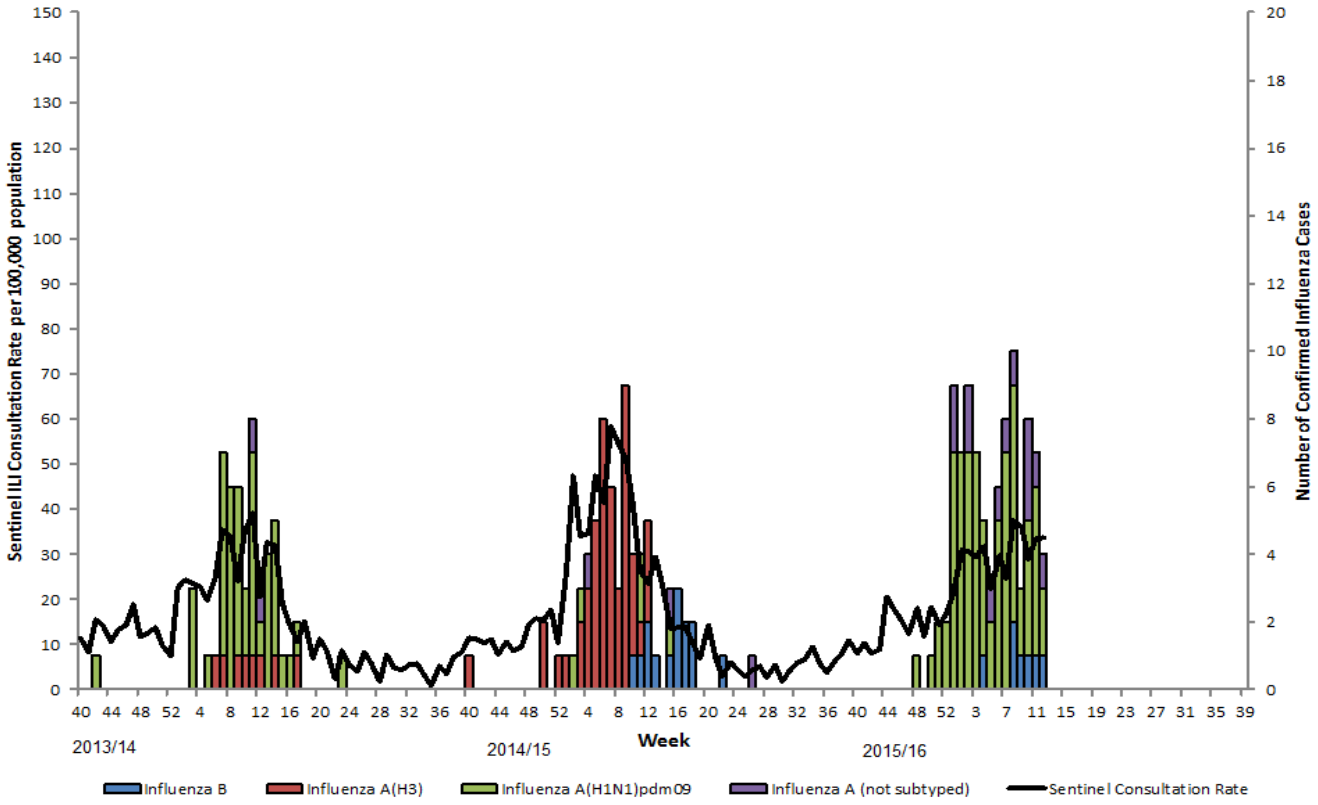
Influenza Vaccine Uptake

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 12, there were five admissions to ICU confirmed with influenza reported to the PHA – three with influenza A (H1N1)pdm09, one with influenza A untyped (typing awaited) and one with influenza B.

Overall, there have been 92 admissions to ICU with confirmed influenza reported this season, of which 72 have been confirmed as influenza A (H1N1)pdm09, 13 as influenza A untyped (typing awaited) and 7 as influenza B (Figure 9).

Up to week 12, 2016, 57 of the 92 ICU patients with confirmed influenza had co-morbidities. Provisional data show that 52 of the 92 (57%) cases met the criteria for influenza vaccination and only 14 had received the vaccination (27%) (Table 4).

There was one death in an ICU patient with laboratory confirmed influenza reported since the last bulletin. To date, there have been 13 deaths in ICU patients with laboratory confirmed influenza.

Table 4. Flu Confirmed ICU Cases in Northern Ireland, Week 40 - 12, 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	14	5	0	11	0	1	2
5-14	2	2	0	2	0	0	0
15-44	24	10	1	21	0	2	1
45-64	37	20	5	27	0	9	1
65+	15	15	8	11	0	1	3
All	92	52	14	72	0	13	7

*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.

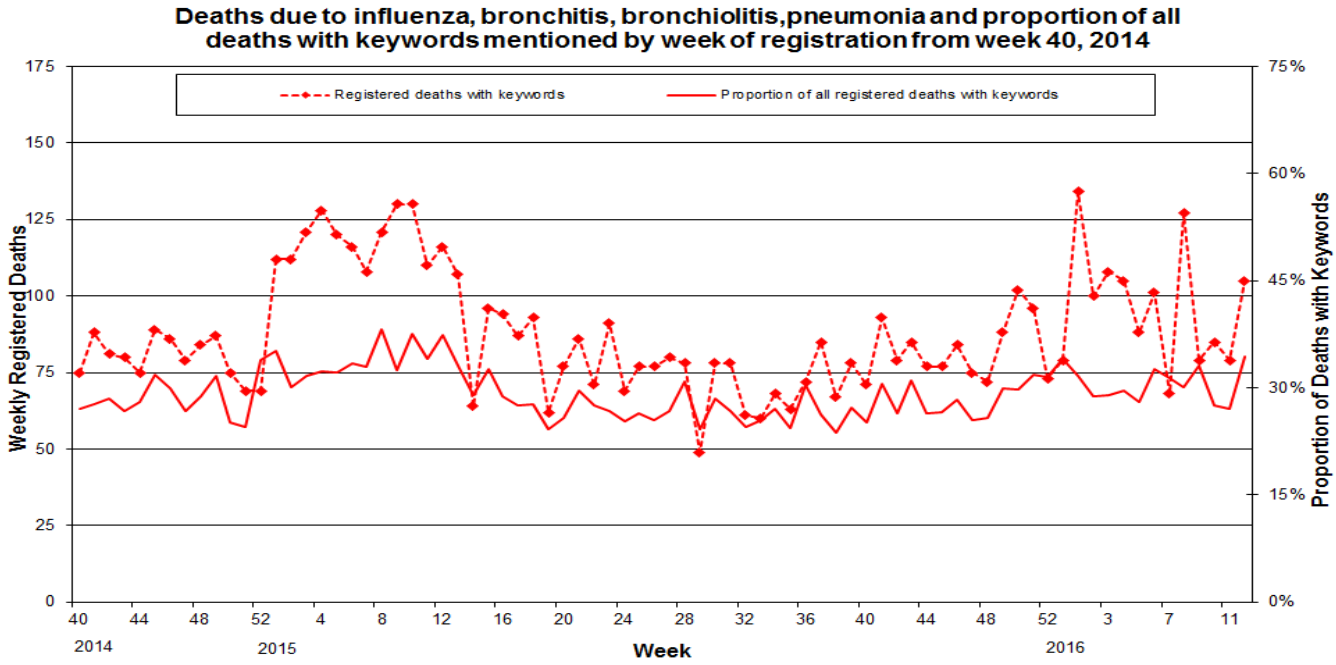
Outbreak Surveillance

During week 12, 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; 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 12, the proportion of registered deaths from specific respiratory infections increased to 34% from 27% in week 11 (Figure 9).

In week 12 there were 306 registered deaths, of which 105 related to specific respiratory infections (34%). 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 12 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 11, 2016:

- Influenza was still widespread in countries in the western part of the Region, but the majority of countries (82%) reported decreasing or stable trends.
- While the proportion of sentinel specimens testing positive for influenza virus remained high, at 49% in week 11/2016, the total number of sentinel influenza virus detections has been decreasing since week 8/2016.
- There is a shift towards influenza virus type B circulation; this is most prominent in sentinel sources, where 66% of detections were influenza virus type B. The proportion of influenza virus type B detections in hospitalized cases ranged between 20% and 45%, indicating that influenza virus type A was most often detected in severe cases.
- 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.
- Influenza activity, based on laboratory-confirmed mild and severe cases in sentinel and non-sentinel sources, peaked at weeks 5–7/2016. The countries first affected were generally located in the eastern part of the Region. Among the countries in the eastern part of the Region reporting cases of severe acute respiratory infection (SARI), the number peaked several weeks earlier (in weeks 2 and 3 in Armenia and Ukraine, respectively).
- 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:

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