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Influenza Weekly Surveillance Bulletin

Northern Ireland, Weeks 48 - 49 (28 November 2016 – 04 December 2016)

Summary

At this point in the 2016/17 influenza season, activity has increased in weeks 48 (week commencing 28th November 2016) and 49 (week commencing 5th December 2016):

Weekly Influenza GP Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) have increased over the two week period to 17.7 in week 48, and further to 23.2 per 100,000 population in week 49. Rates remain below the 2016/17 pre-epidemic threshold[1]
- OOH GP consultation rates for flu/FLI increased to 3.5 in week 48, and then to 5.1 per 100,000 population in week 49

Microbiological Surveillance

- The proportion of positive influenza detections from both sentinel and non-sentinel sources was 5% in week 48 and increased to 7% in week 49

Respiratory Syncytial Virus (RSV) Activity

- RSV activity has fluctuated over the two-week period with levels remaining slightly lower than the same period last season

Influenza Confirmed Intensive Care Unit (ICU) Cases and Deaths

- One case in ICU with laboratory confirmed influenza was reported
- No deaths were reported in ICU patients with laboratory confirmed influenza

Influenza Outbreaks across Northern Ireland

- One confirmed influenza outbreak was reported to the PHA

Influenza Vaccine Uptake in Northern Ireland

- To 31st October 2016; uptake was 50.6% among those aged 65 years and over, 35.1% among those under 65 in an at risk group, 34.3% among 2-4 year olds and 75.4% among primary school children

[1] The pre-epidemic threshold for Northern Ireland is 47.9 per 100,000 population this year (2016/17)

Introduction

Influenza is an acute viral infection of the respiratory tract (nose, mouth, throat, bronchial tubes and lungs). There are three types of flu virus: A, B and C, with A and B responsible for most clinical illness. Influenza activity in Northern Ireland is monitored throughout the year to inform public health action and to prevent spread of the infection. The influenza season typically runs from week 40 to week 20. Week 40 for the 2016/17 season commenced on 3rd October 2016.

Surveillance systems used to monitor influenza activity 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

NB: Please note changes in the y axes on figures 1 – 6 from last season's bulletin when interpreting the charts contained in this season's bulletin.

Sentinel GP Consultation Data

Figure 1. Sentinel GP consultation rates for flu/FLI 2014/15 - 2016/17

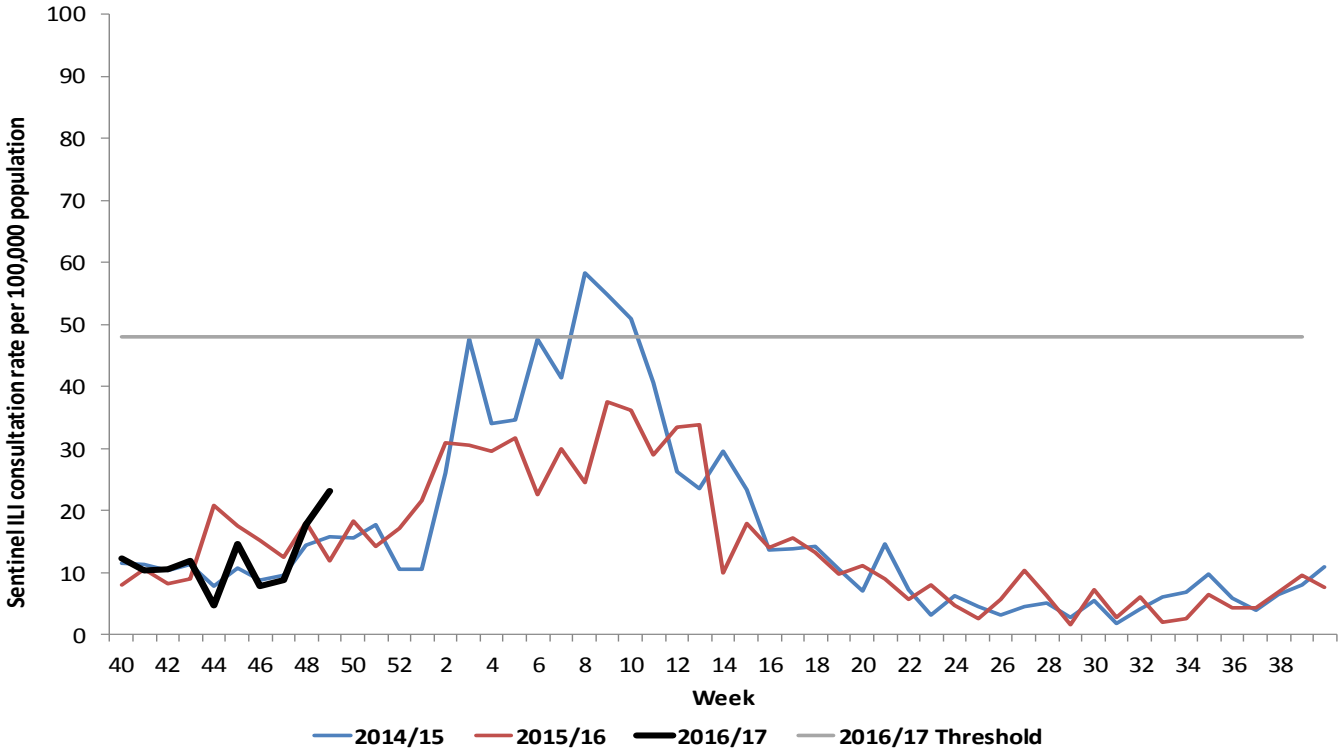


Figure 2. Sentinel GP combined consultation rates for flu/FLI and number of influenza positive detections 2011/12 – 2016/17

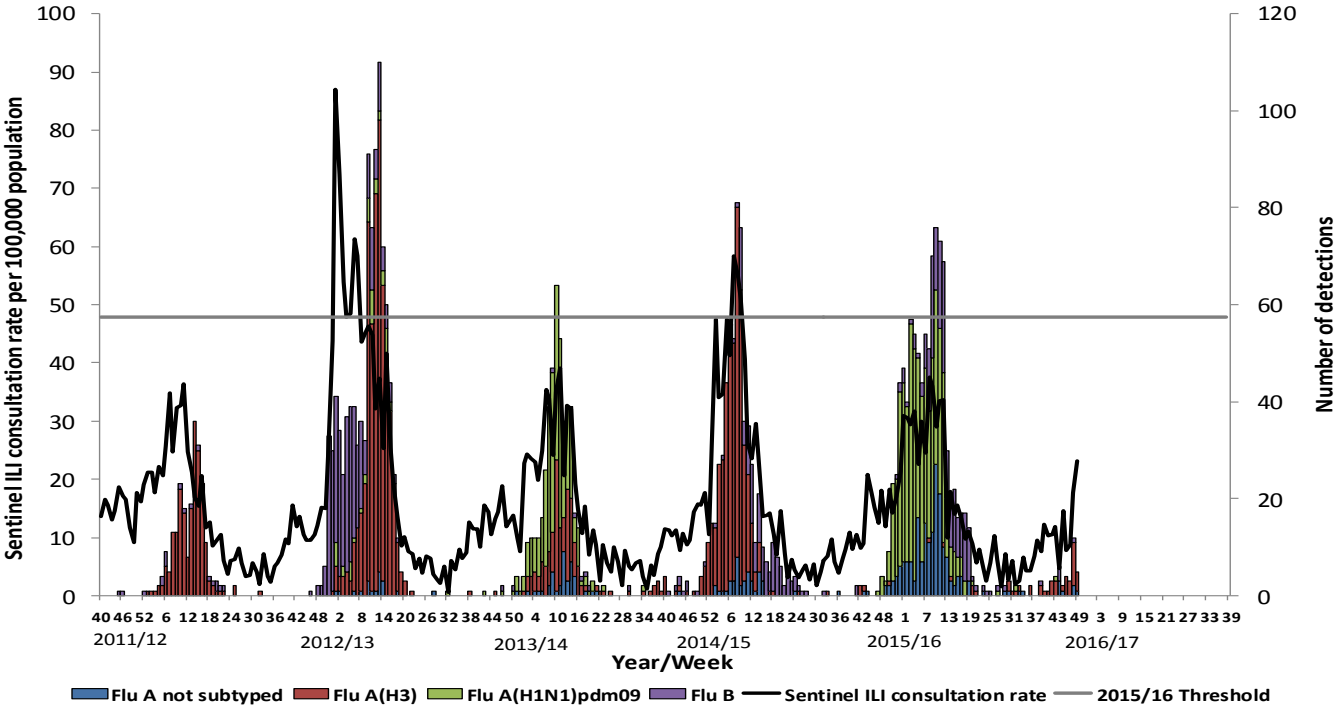
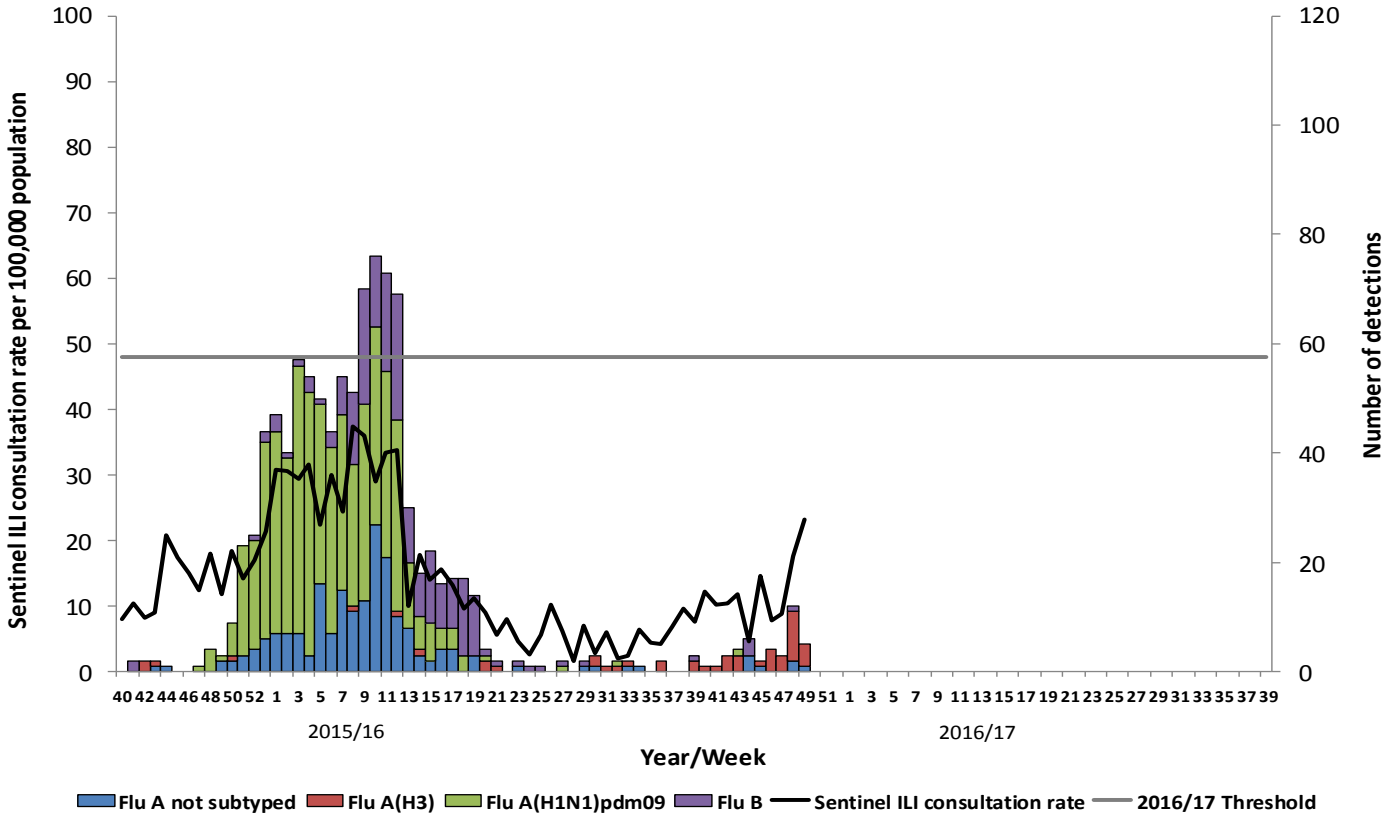


Figure 3. Sentinel GP consultation rates for flu/FLI and number of virology 'flu detections from week 40, 2015

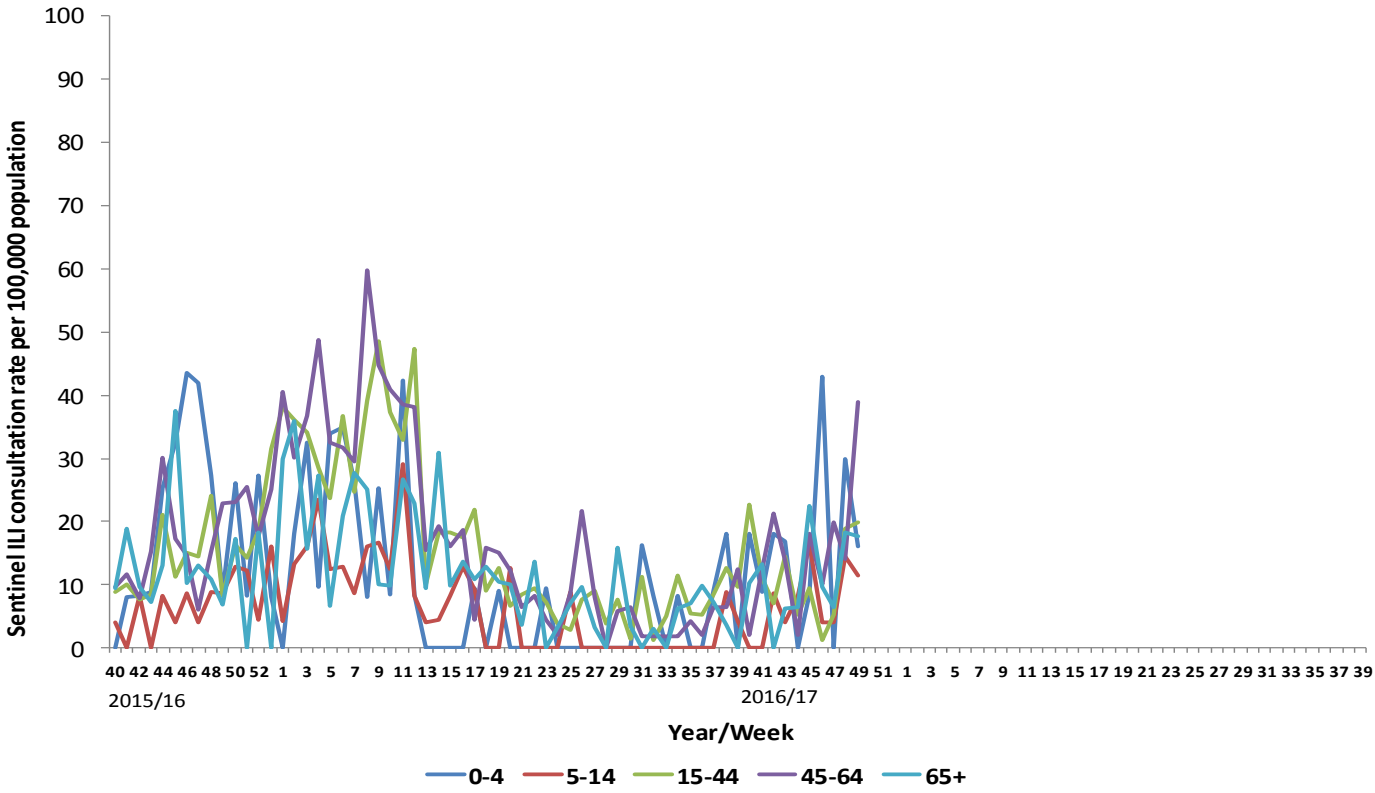


Comment

GP consultation rates have increased across the two week period from 8.8 per 100,000 population in week 47 to 17.7 in week 48, then increasing to 23.2 per 100,000 population in week 49. The GP consultation rates are higher than the same period in both 2015/16 (18.0 in week 48 and 11.9 in week 49) and 2014/15 (14.3 in week 48 and 15.7 in week 49).

Rates remain below the pre-epidemic Northern Ireland 2016/17 threshold of 47.9 per 100,000 (Figures 1, 2 and 3).

Figure 4. Sentinel GP age-specific consultation rates for flu/FLI from week 40, 2015



Comment

Sentinel GP flu/FLI consultations have fluctuated among most age groups across weeks 48 and 49, 2016 with a steady increase noted among only the 15-44 years age group.

In weeks 48 and 49 the highest age-specific rates were noted among those aged 0-4 years (30.0 per 100,000 population in week 48) and 45-64 years (39.0 per 100,000 population in week 49) respectively, while the lowest rates across the period were represented by those aged 45-64 years (14.1 per 100,000 population in week 48) and 5-14 years (11.5 consultations in week 49).

Age-specific consultation rates are higher in almost all age groups in both weeks 48 and 49 than the same time period in 2015/16 (Figure 4).

Out-of-Hours (OOH) Centres Call Data

Figure 5. OOH call rate for flu/FLI, 2014/15 – 2016/17

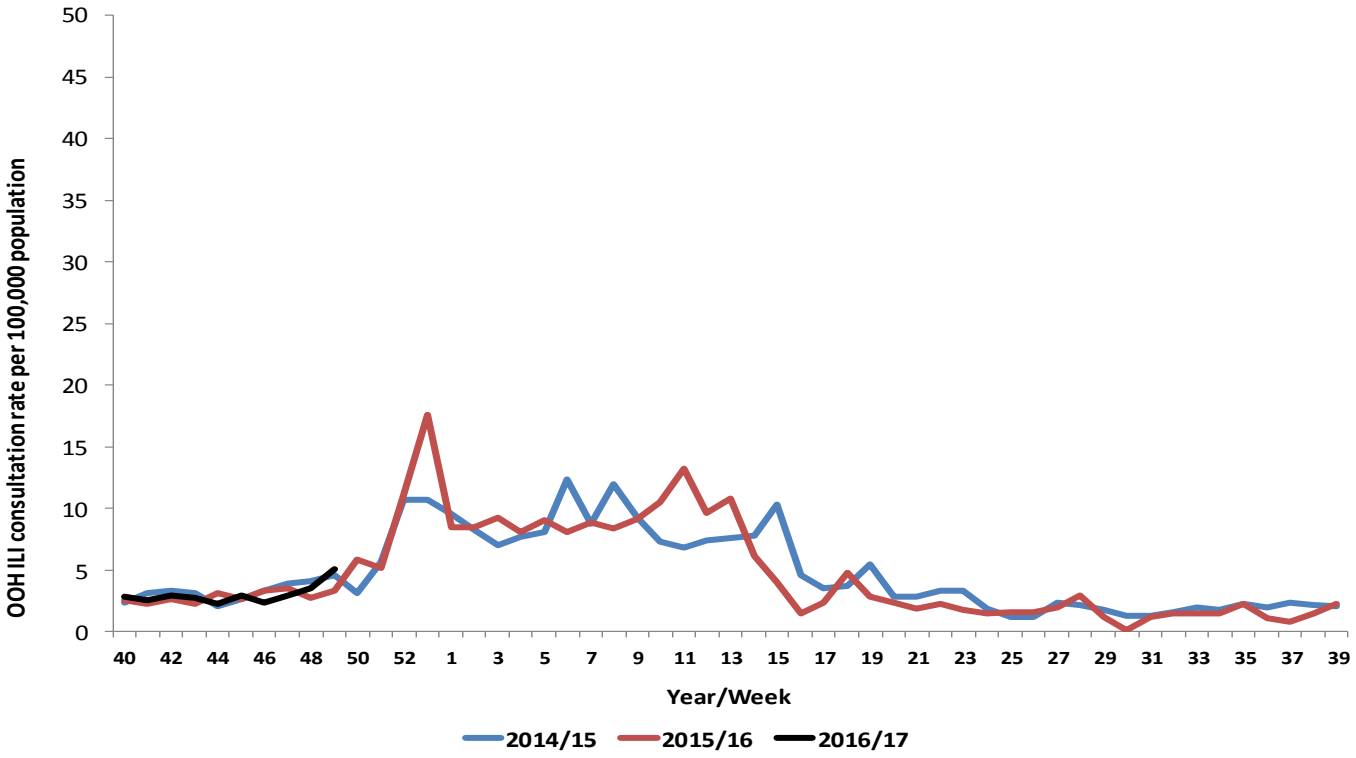
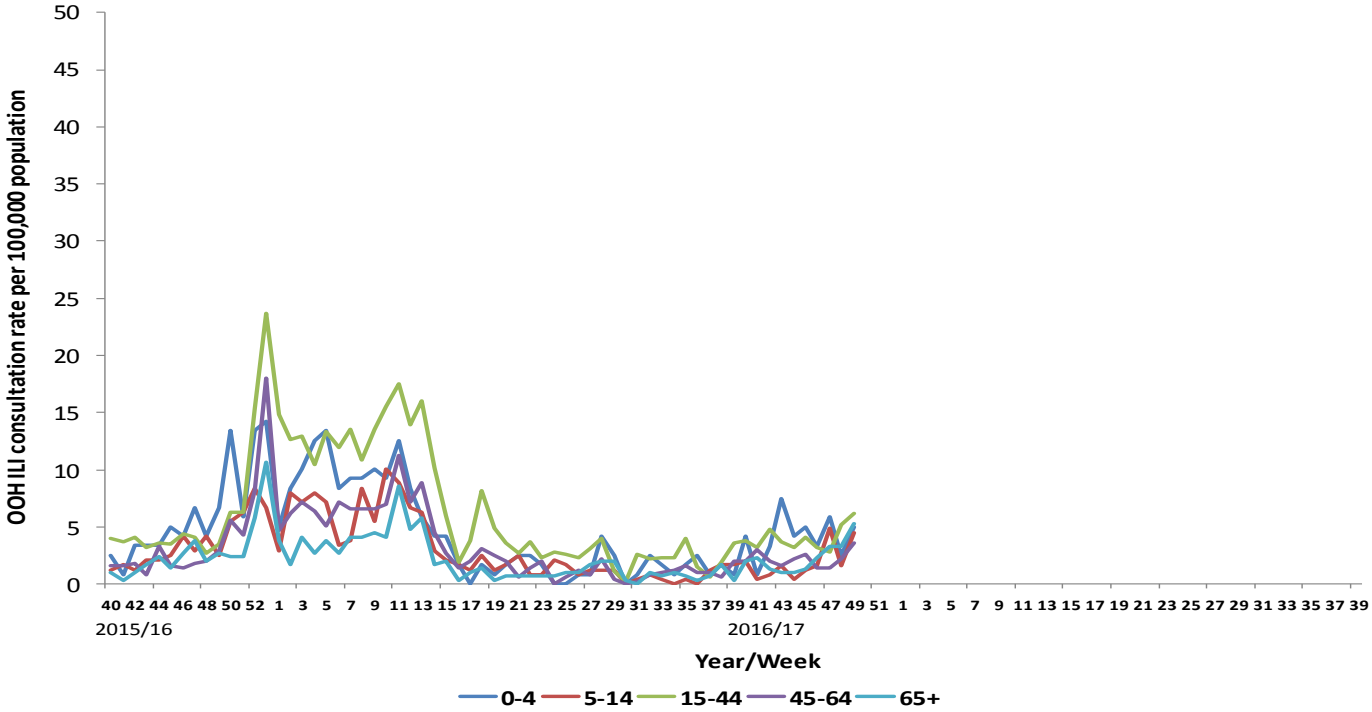


Figure 6. OOH Call rates of flu/FLI by age-group from week 40, 2015



Comment

During weeks 48 and 49, 2016 the OOH GP consultation rate increased to 3.5 per 100,000 population in week 48 (from 3.0 in week 47), and further to 5.1 per 100,000 population in week 49. The OOH GP consultation rate in week 49 is higher than the same period in both 2015/16 (3.3 per 100,000 population) and 2014/15 (0.8 per 100,000 population) (Figure 5). The proportion of calls related to flu represents less than 1% of total calls to the OOH service.

During weeks 48 and 49, OOH flu/FLI rates have steadily increased among those aged 15-44, 45-64 and 65 years and over, but fluctuated amongst the youngest age groups. The highest age-specific OOH flu/FLI rates in weeks 48 and 49 were seen among those aged 15-44 years (5.2 per 100,000 population in week 48 and 6.2 per 100,000 in week 49). Those aged 5-14 years represented the lowest rate in week 48 (1.6 per 100,000 population), while those aged 45-64 years represented the lowest rate in week 49 (3.6 per 100,000 population) (Figure 6).

Age-specific rates in week 49 are slightly higher among most age groups than those noted during the same period in 2015/16 but similar to those in 2014/15.

Virology Data

Table 1. Virus activity in Northern Ireland by source, Week 48 - 49, 2016/17								
Source	Specimens Tested	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	11	4	0	0	0	3	4	36%
Non-sentinel	457	20	0	5	1	140	26	6%
Total	468	24	0	5	1	143	30	6%

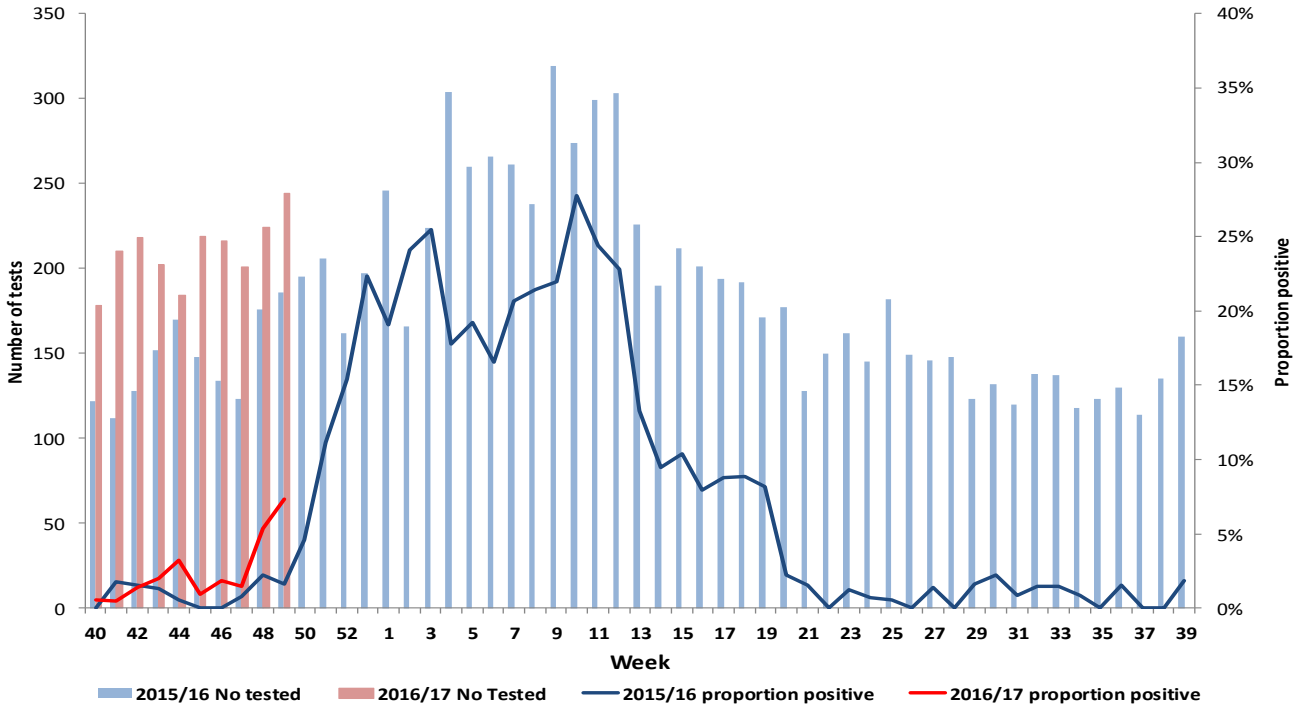
Table 2. Cumulative virus activity from all sources by age group, Week 40 - 49, 2016/17						
	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
0-4	1	0	2	1	4	303
5-14	1	0	0	1	2	13
15-64	20	1	4	2	27	42
65+	18	0	3	0	21	41
Unknown	0	0	0	0	0	0
All ages	40	1	9	4	54	399

Table 3. Cumulative virus activity by age group and source, Week 40 - Week 49, 2016/17												
	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	0	1	0	2	1	4	303
5-14	1	0	0	0	1	0	0	0	0	1	1	13
15-64	2	1	0	0	3	5	18	0	4	2	24	37
65+	1	0	1	0	2	0	17	0	2	0	19	41
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
All ages	4	1	1	0	6	5	36	0	8	4	48	394

Note

All virology data are 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.

Figure 7. Number of samples tested for influenza and proportion positive, 2015/16 and 2016/17, all sources



Comment

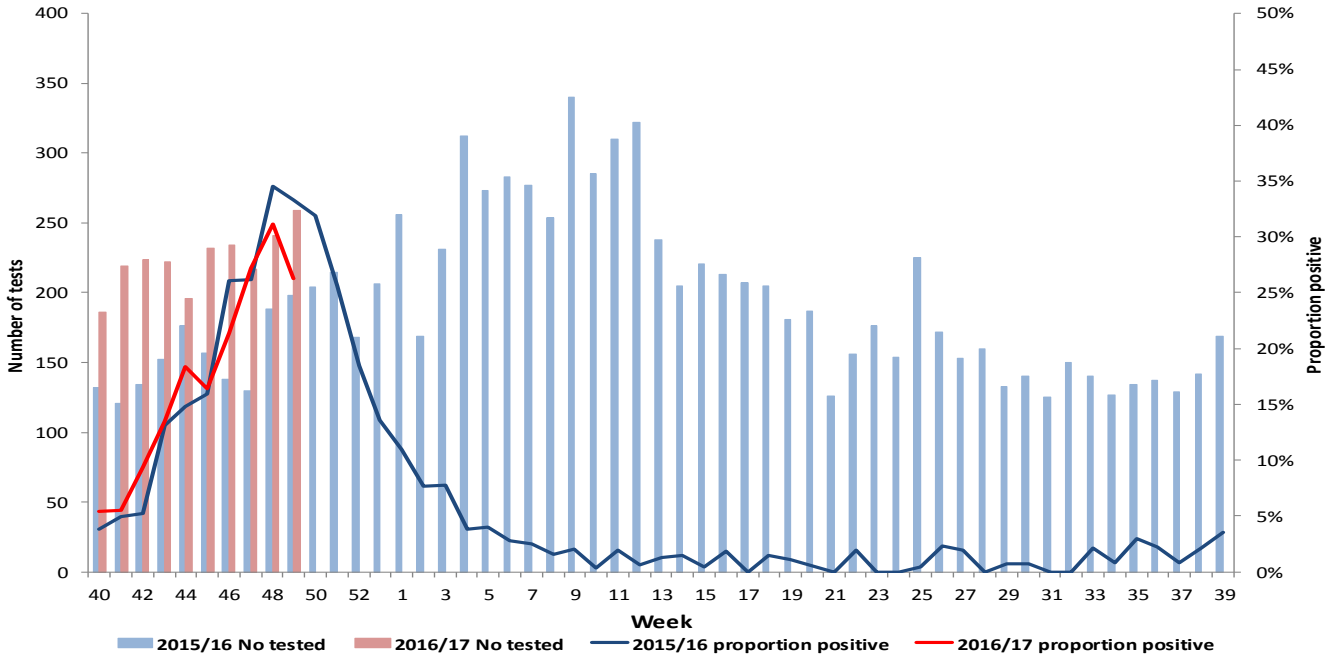
During weeks 48 and 49, 2016 there were 468 specimens submitted for virological testing. There were 30 detections of influenza in total (positivity rate of 6%) (Figure 7). There were 24 detections of influenza A(H3), 1 detection of influenza B and 5 detections of influenza A (typing awaited). There were no detections of influenza A(H1N1)pdm09.

There were 4 samples positive for influenza submitted through the GP based sentinel scheme across Northern Ireland.

This season to date there have been a total of 54 detections of influenza, of which 40 have been typed as influenza A(H3). There have been 4 detections of influenza B and 9 of influenza A (typing awaited), and no detections of influenza A(H1N1)pdm09 (Tables 1, 2, and 3).

Respiratory Syncytial Virus

Figure 8. Number of samples tested for RSV and proportion positive, 2015/16 and 2016/17, all sources

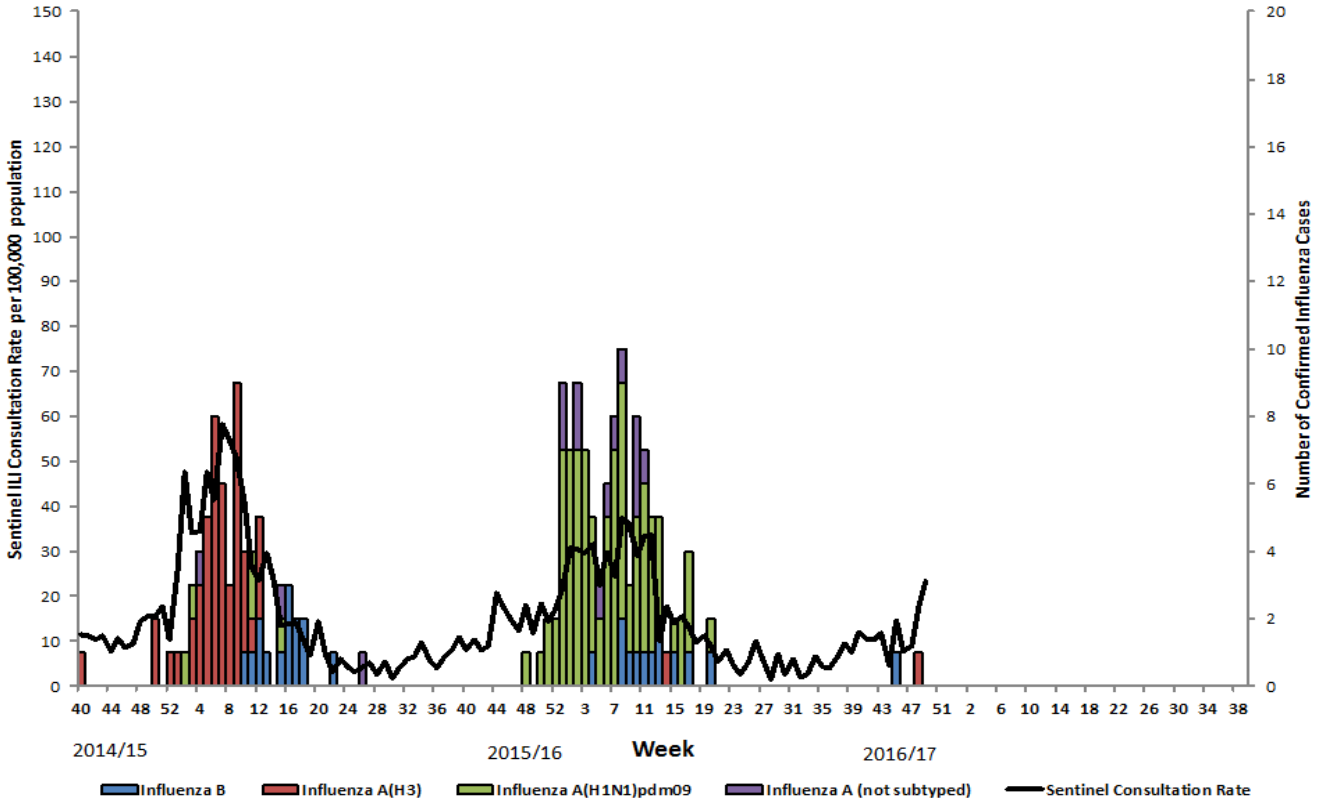


Comment

During weeks 48 and 49, there were 143 positive detections of RSV. Positivity rates for both weeks combined were 23%; slightly lower than the same period in 2015/16 (29%). To date there have been a total of 399 detections of RSV of which the majority (76%) were in those aged 0-4 years (Figure 8 and Table 2).

ICU/HDU Surveillance

Figure 9. Confirmed ICU influenza cases by week of specimen, with sentinel ILI consultation rate, 2014/15 - 2016/17



Comment

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

During weeks 48 and 49, one confirmed case of influenza in ICU was reported to the PHA, typed as influenza A(H3). There were no deaths reported in ICU patients with laboratory confirmed influenza. There have been two confirmed cases of influenza in ICU reported this season to date, of which one was typed as influenza A (H3) and one as influenza B.

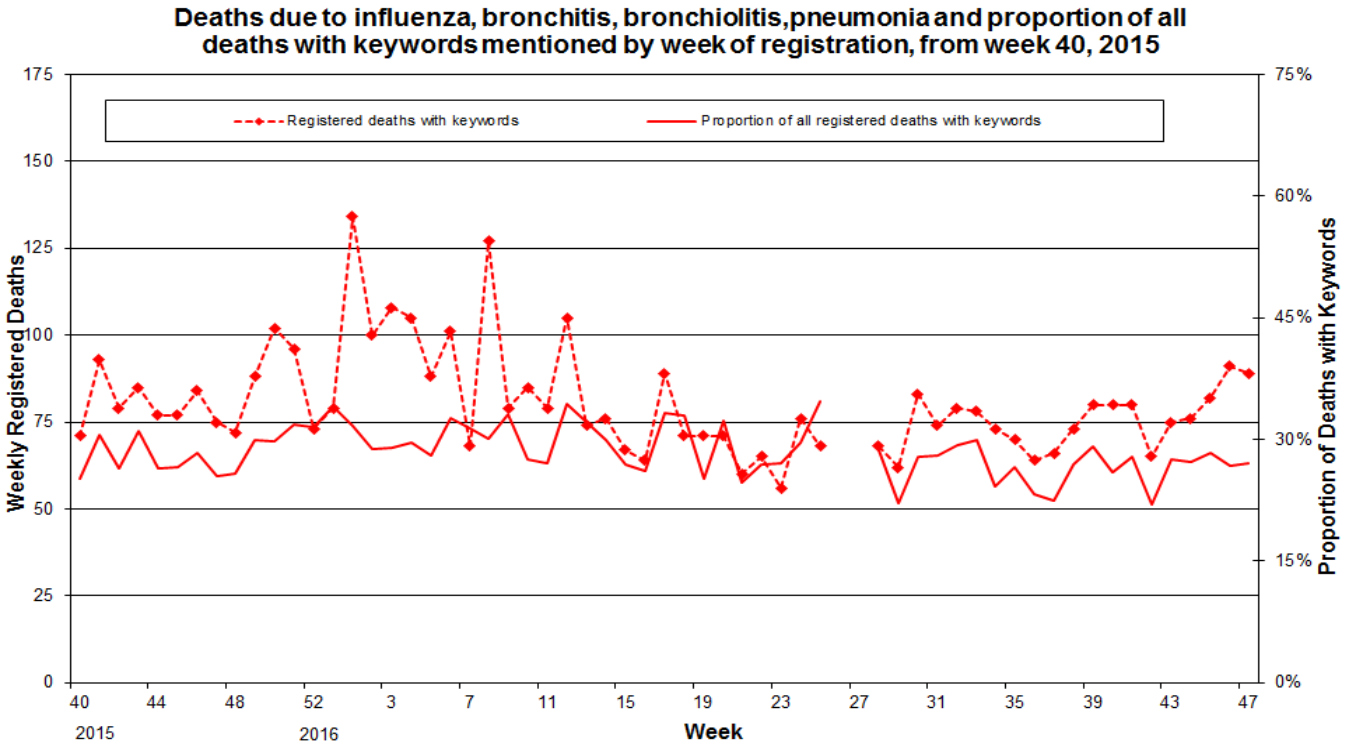
Outbreak Surveillance

During weeks 48 and 49 there was one confirmed influenza (AH3) outbreak reported to the PHA. This is the first confirmed influenza outbreak reported this season to date.

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 10. Weekly registered deaths



***Please note data are currently unavailable for weeks 26 – 27, 2016**

Comment

Due to technical difficulties, data for weeks 48 and 49, 2016/17 are currently unavailable but will be included in future bulletins.

During week 47 the proportion of deaths related to respiratory keywords had remained stable at 27% (329 registered deaths, of which 89 related to specific respiratory infections) (Figure 10).

The proportion of deaths attributed to specific respiratory infections was slightly higher at that point in the season than the same period in 2015/16 but lower than in 2014/15.

EuroMOMO

EuroMOMO data will be available later in the season.

Influenza Vaccine Uptake

To 31st October 2016, provisional data suggested that vaccine uptake for those aged 65 years and over was 50.6%, lower than the same period in the 2015 (55.7%); while 35.1% of those under 65 and in an at risk group had received the vaccine, lower than in 2015 when 40.5% had received the vaccine during the same period.

Similar to last season, all children aged between 2 and 4 years and all primary school children in 2016/17 have been offered the seasonal influenza vaccine. To 31st October 2016, provisional data suggested that vaccine uptake among 2-4 year old children was 34.3%, lower than in 2015 when 36.0% had received the vaccine during the same period. Provisional data suggests uptake among children in primary school was 75.4%, also lower than in 2015 when 77.4% had received the vaccine during the same period.

International Summary

Europe

Week 48, 2016

- Influenza activity remained low, but has started to increase in some countries.
- The proportion of virus detections among sentinel surveillance specimens increased to 19% and indicates increasing regional activity.
- The majority of influenza viruses detected for this week were subtype A(H3N2).
- Laboratory-confirmed influenza cases from hospital settings are increasing in some countries.

Season Overview:

- In week 46/2016, influenza virus detections increased to 10% among sentinel surveillance specimens. This is the earliest week in a season that the positivity rate has reached 10% since the emergence of A(H1N1)pdm09 viruses in the 2009-2010 influenza season; during the last six seasons this occurred between weeks 48 and 51.
- Since week 40/2016, influenza A viruses have predominated; the great majority (98%) of subtyped influenza A viruses from sentinel sites have been H3N2.

http://www.flunewseurope.org/

Worldwide (WHO) and CDC

As at 12th December 2016:

Influenza activity in the temperate zone of the northern hemisphere increased slightly.

- In North America influenza activity slightly increased with influenza A(H3N2) virus predominating. Influenza-like illness (ILI) levels remained below seasonal thresholds. In the United States, respiratory syncytial virus (RSV) activity continued to be reported.
- In Europe, influenza activity was low but has started to rise, particularly in Northern European countries. Influenza A viruses were predominating with the most frequent subtype being A(H3N2). The season has started earlier than usual with a positivity rate ≥10% for influenza among sentinel surveillance samples.
- In East Asia, influenza activity increased slightly with influenza A(H3N2) remaining the dominant virus circulating.
- In Western Asia influenza detections remained low.
- In Northern Africa, influenza detections increased in Morocco with influenza A(H3N2) viruses dominating.
- In the Caribbean countries, influenza and other respiratory virus activity remained low. In Central America, there was a slight decrease in influenza and other respiratory viruses activity. RSV continued to circulate in Costa Rica.
- In tropical South America, influenza and other respiratory viruses activity remained low with exception of Colombia where RSV activity continued to be reported.
- In Southern Asia, there was a slight increase in influenza detections in both Iran and Sri Lanka with influenza A(H3N2) as the most frequently detected virus in this region.
- In South East Asia, influenza activity continued to be reported at low levels, with influenza A(H3N2) virus predominant in the region. A slight increase in influenza A(H1N1)pdm09 detections was reported in Vietnam.
- In West Africa, influenza detections increased in Ghana with B viruses dominating.
- In Southern Africa, influenza activity continued at inter-seasonal levels.
- In temperate South America, influenza and RSV activity continued to decrease throughout the sub-region.
- In Oceania, influenza virus activity was reported at inter-seasonal levels.
- National Influenza Centres (NICs) and other national influenza laboratories from 80 countries, areas or territories reported data to FluNet for the time period from 14 November 2016 to 27 November 2016 (data as of 2016-12-09 03:37:55 UTC).The WHO GISRS laboratories tested more than 93152 specimens during that time period. 6209 were positive for influenza viruses, of which 5630 (90.7%) were typed as influenza A and 579 (9.3%) as influenza B. Of the sub-typed influenza A viruses, 112 (2.9%) were influenza A(H1N1)pdm09 and 3787 (97.1%) were influenza A(H3N2). Of the characterized B viruses, 46 (36.2%) belonged to the B-Yamagata lineage and 81 (63.8%) 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

Internet-based surveillance of influenza in the general population is undertaken through the FluSurvey. A project run jointly by PHE and the London School of Hygiene and Tropical Medicine. If you would like to become a participant of the FluSurvey project please do so by visiting the Flusurvey website for more information.

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

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

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

Scotland
http://www.hps.scot.nhs.uk/resp/seasonalInfluenza.aspx

Wales
http://www.wales.nhs.uk/sites3/page.cfm?orgid=457&pid=34338

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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