

Influenza Weekly Surveillance Bulletin

Northern Ireland, Weeks 50 - 51 (11th December – 24th December 2017)

Summary

Influenza activity across Northern Ireland increased in weeks 50 and 51 (weeks commencing the 11th December 2017). Both in-hours and OOH consultations increased as did the detections of the influenza virus, with both influenza types AH3 and B strains of the virus predominating.

Northern Ireland Primary Care Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) steadily increased from 8.2 per 100,000 population in week 49 to 10.1 per 100,000 population in week 50 and 20.7 per 100,000 population in week 51, 2017. Rates are higher than the same period last year but still remain below the 2017/18 Northern Ireland pre-epidemic threshold¹
- OOH GP consultation rates for flu/FLI increased also over the two week period rising from 4.7 per 100,000 population in week 49 to 8.9 per 100,000 population in week 50 and 17.9 per 100,000 population in week 51, 2017.

Microbiological Surveillance (Flu and RSV)

- The proportion of positive influenza detections from both sentinel and non-sentinel sources increased from 9% in week 49 to 17% in week 50 and 29% in week 51.
- RSV continued to decline from 18% of specimens positive for RSV in week 49 to 13% in week 50 and 9% in week 51.

Secondary Care (Hospital both non-ICU and ICU)

- The number of detections of influenza from hospital wards reported to PHA increased significantly from a total of 25 detections in week 49, to 69 in week 50 and 43 in week 51, 2017
- There were eight cases reported in ICU with laboratory confirmed influenza in weeks 50 – 51 giving a total of ten cases this season to date.
- One death was reported in weeks 50 – 51 among ICU patients with laboratory confirmed influenza.

Influenza Outbreaks across Northern Ireland

- The first confirmed influenza outbreak in a care home was reported to the PHA in week 50.

Mortality

- There was no excess all-cause mortality reported through the EuroMOMO algorithm for week 50, 2017. Data was not available for week 51.

¹¹ The pre-epidemic threshold for Northern Ireland is 22.58 per 100,000 population this year (2017/18)

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 2017/18 season commenced on 2nd October 2017.

Surveillance systems used to monitor influenza activity include:

- Northern Ireland GP surveillance representing 98% of Northern Ireland population;
- Sentinel flu-swabber GP practices representing 11.2% of the NI population, contributing to the measurement of circulating influenza in the community
- 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 patients in ICU/HDU with confirmed influenza;
- Mortality data from Northern Ireland Statistics and Research Agency (NISRA);
- Excess mortality estimations are calculated using the EuroMOMO (Mortality Monitoring in Europe) model based on raw death data supplied by NISRA

NB: Please note the change in the collection of Flu/FLI consultation data in 2017-18. Data will now be collected from 325 GP practices, representing 98% of the Northern Ireland (NI) population. This represents a change from previous seasons when data was collected from 37 sentinel GP practices (representing 11.7% of the NI population).

As a result, Flu/FLI consultation rates and the MEM threshold in 2017-18 will be generally lower than in previous years. Please take this into account when interpreting the figures in this season's bulletin.

Northern Ireland GP Consultation Data

Figure 1. Northern Ireland GP consultation rates for flu/FLI 2015/16 - 2017/18

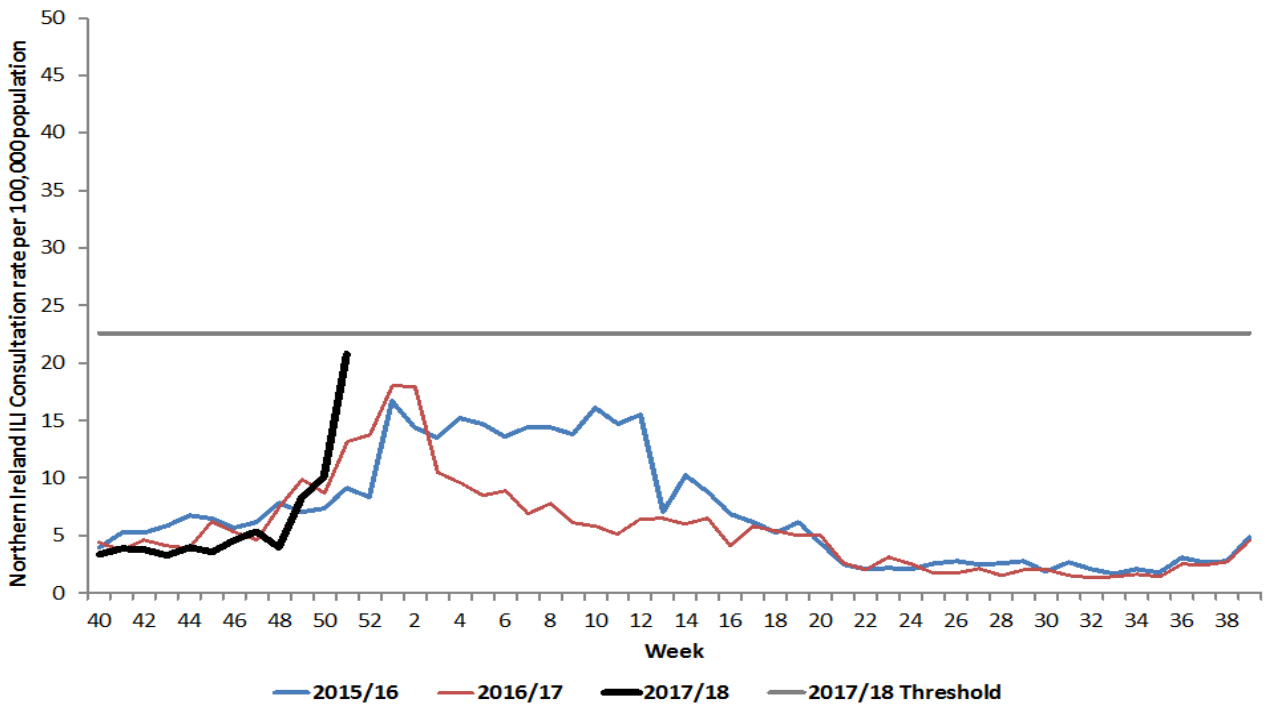


Figure 2. Northern Ireland GP consultation rates for flu/FLI and number of influenza positive detections 2012/13 – 2017/18

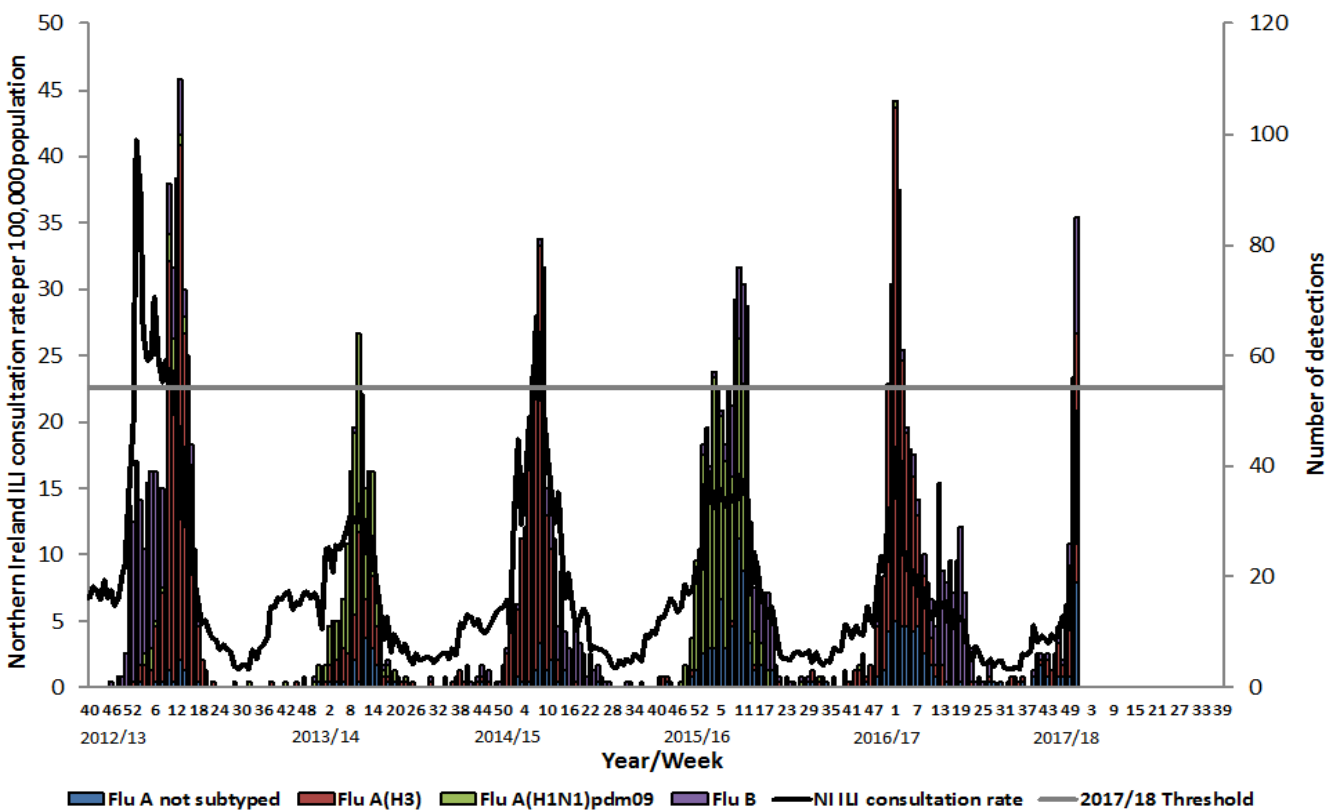
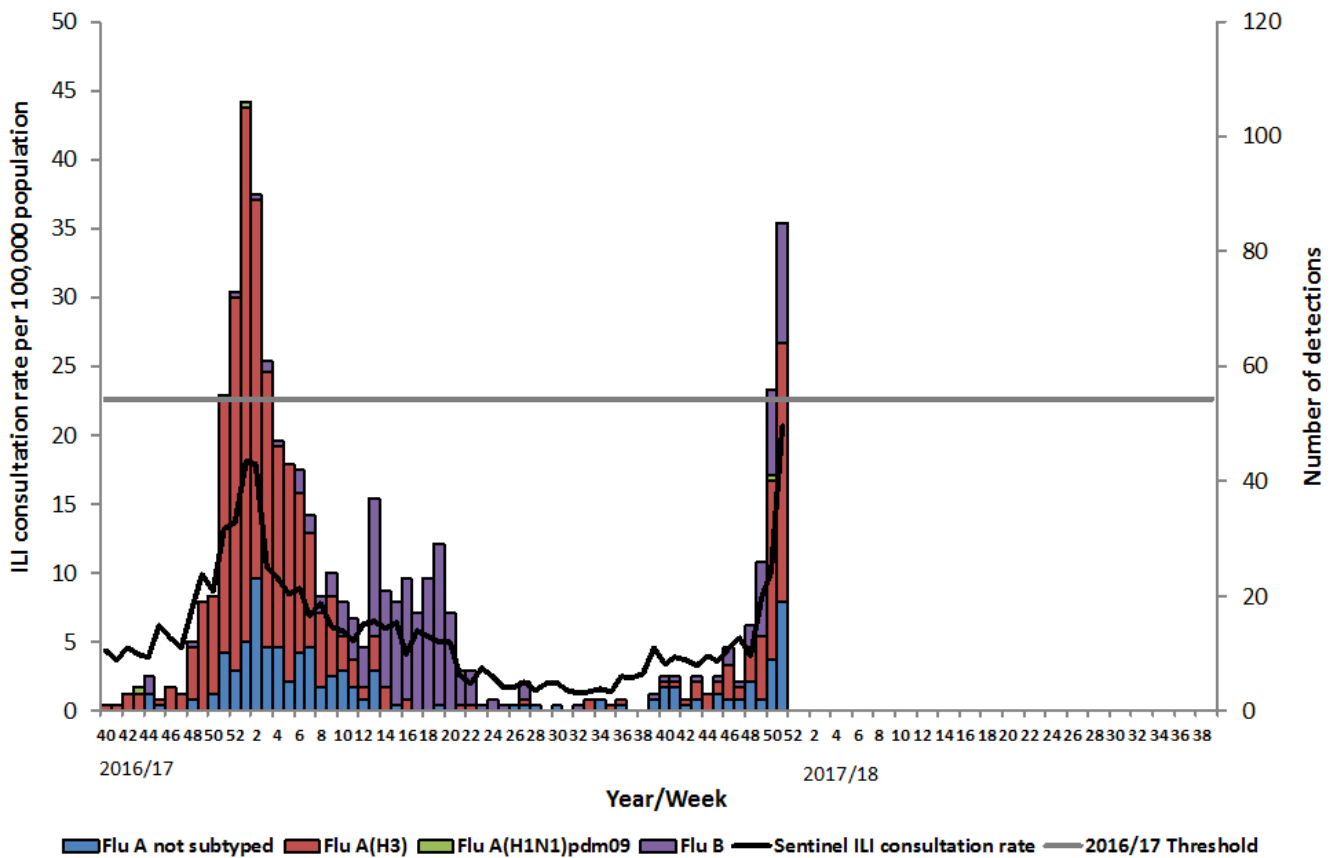


Figure 3. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2016



Comment

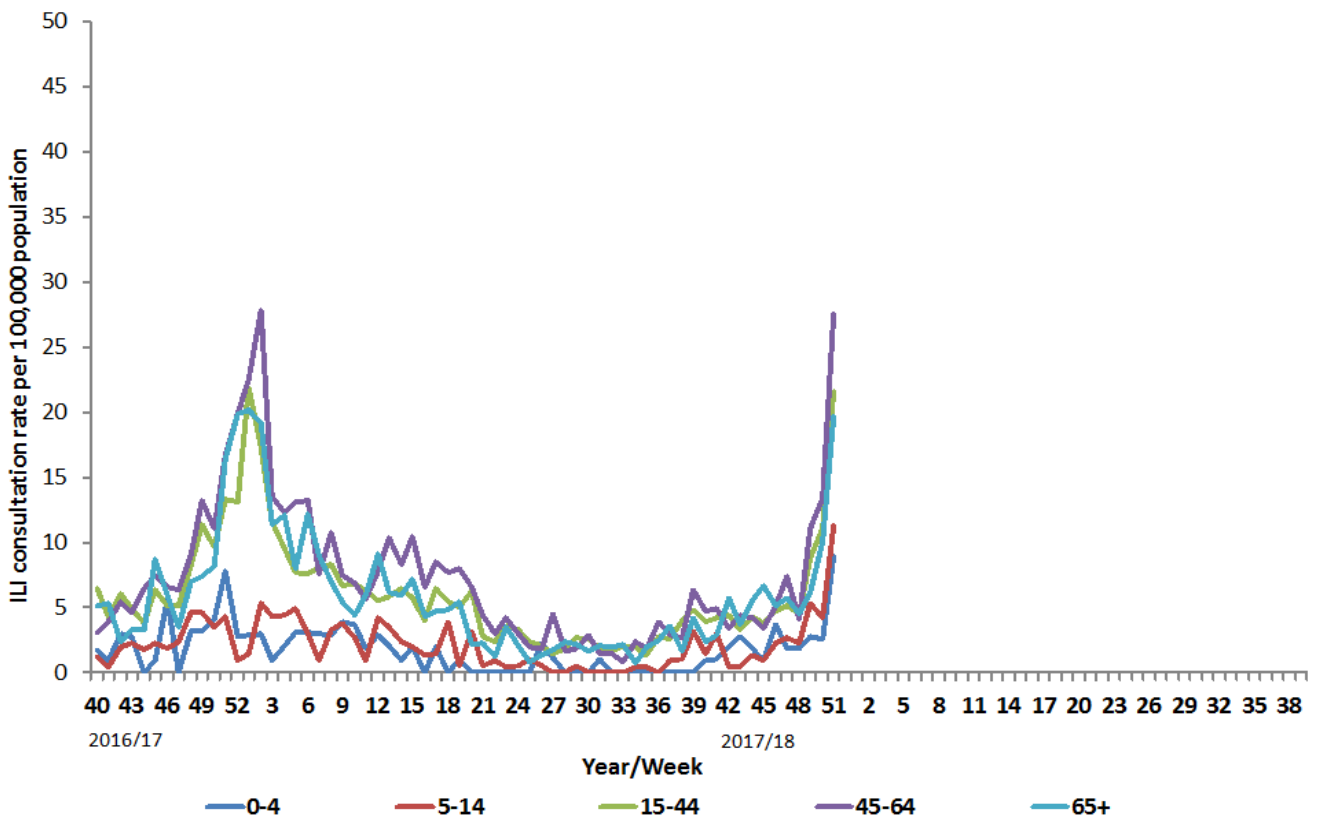
NI GP consultation rates increased steadily from 8.2 per 100,000 population in week 49 to 10.1 per 100,000 population in week 50 doubling to 20.7 per 100,000 population in week 51. The NI GP consultation rate in both weeks 50 and 51 are marginally higher than the same period in 2016/17 (8.7 and 13.2 and per 100,000 population, respectively).

Rates still remain below the pre-epidemic Northern Ireland 2017/18 threshold of 22.58 per 100,000 population.

The number of positive influenza laboratory detections increased from 26 in week 49 to 56 in week 50 and to 85 in week 51, 2017. At this point in the season there have been a total of 112 detections of influenza A(H3), 61 of influenza B, 53 of influenza A (typing awaited), and 1 detection of influenza A(H1N1) 2009 (Figures 1, 2 and 3).

Further information about laboratory detections of influenza is detailed on page 9.

Figure 4. Northern Ireland GP age-specific consultation rates for flu/FLI from week 40, 2016



Comment

There was an increase in all age-specific flu/FLI rates in weeks 50 and 51, 2017 with the highest rate in both weeks among those aged 45-64 years at 13.4 and 27.5 per 100,000 population, respectively. Similar to the previous report the lowest rates in both weeks were in children aged less than 4 years (Figure 4).

Out-of-Hours (OOH) Centres Call Data

Figure 5. OOH call rate for flu/FLI, 2015/16 – 2017/18

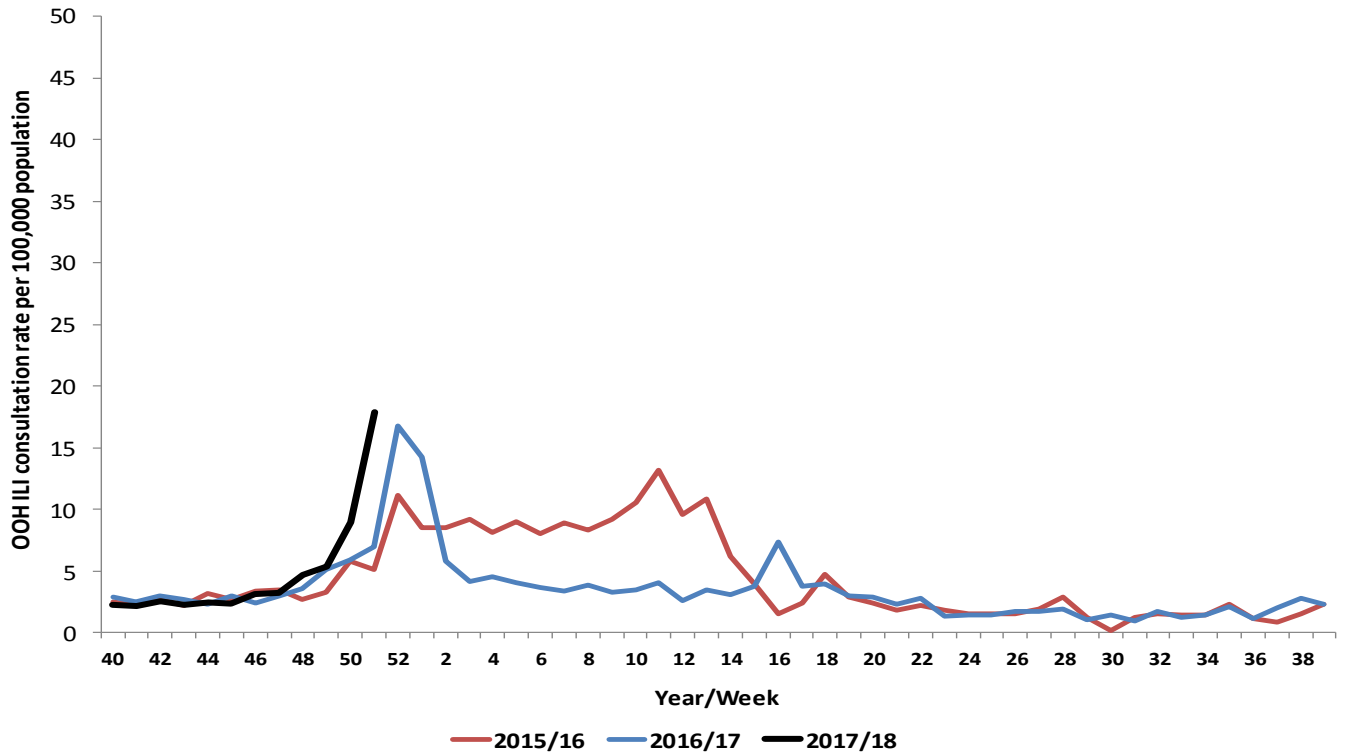
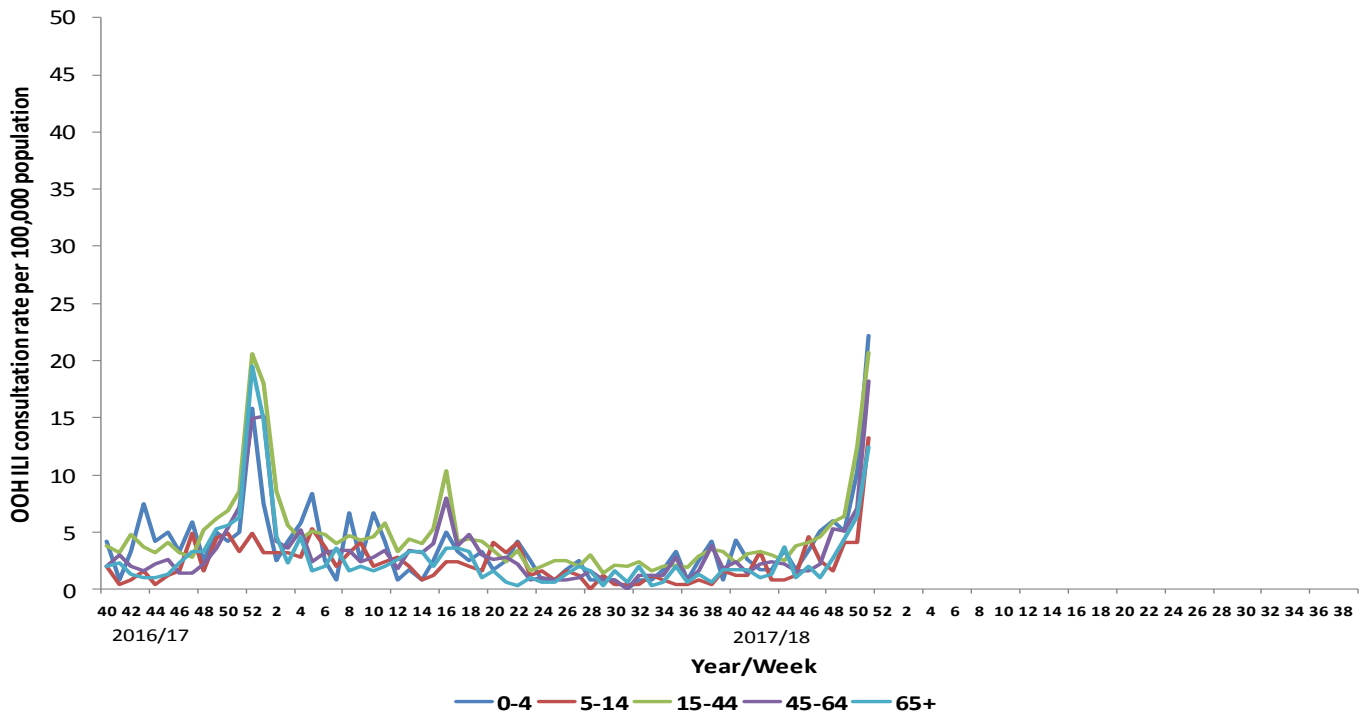


Figure 6. OOH call rates of flu/FLI by age-group from week 40, 2016



Comment

OOH GP consultation rates also increased from 4.7 per 100,000 population in week 49 to 8.9 and 17.9 per 100,000 in weeks 50 and 51, respectively. Rates are slightly higher than those in the same period in 2016/17 (7.0 and 16.7 per 100,000 population, respectively (Figure 5).

The proportion of calls related to flu in OOH centres also increased slightly across the two-week period from less than 1% in week 48 to 2.2% in week 51, 2017.

OOH flu/FLI rates increased amongst all the age groups during weeks 50 and 51. The highest age-specific OOH flu/FLI rates in week 50 was in the 15-44 years age group (12.4 per 100,000 population) and in the 0-4 year olds (22.2 per 100,000 population) in week 51. The lowest rates in week 50 was in the 5-14 year olds (4.1 per 100,000 population) while in week 51 the lowest rates were in those aged over 65 years at 12.4 per 100,000 population (Figure 6).

Virology Data

Table 1. Virus activity in Northern Ireland by source, Week 50 - 51, 2017/18

Source	Specimens Tested	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	25	5	1	0	10	0	16	64%
Non-sentinel	591	71	0	28	26	74	125	21%
Total	616	76	1	28	36	74	141	23%

Table 2. Cumulative virus activity from all sources by age group, Week 40 - 51, 2017/18

	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
0-4	3	0	4	3	10	238
5-14	5	0	0	2	7	9
15-64	45	1	20	38	104	44
65+	59	0	29	18	106	70
Unknown	0	0	0	0	0	0
All ages	112	1	53	61	227	361

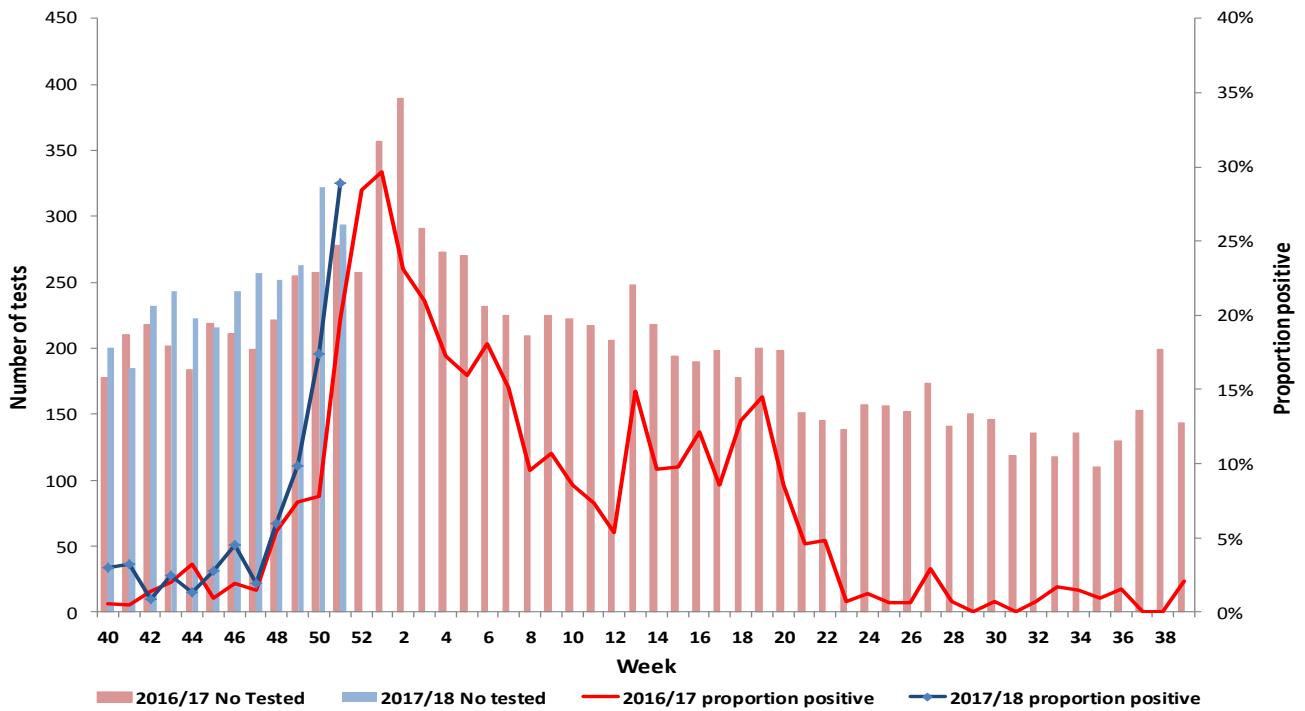
Table 3. Cumulative virus activity by age group and source, Week 40 - Week 51, 2017/18

	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	3	0	4	3	10	238
5-14	2	0	0	0	2	1	3	0	0	2	5	8
15-64	8	1	4	17	30	4	37	0	16	21	74	40
65+	2	0	0	1	3	0	57	0	29	17	103	70
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
All ages	12	1	4	18	35	5	100	0	49	43	192	356

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, 2016/17 and 2017/18, all sources



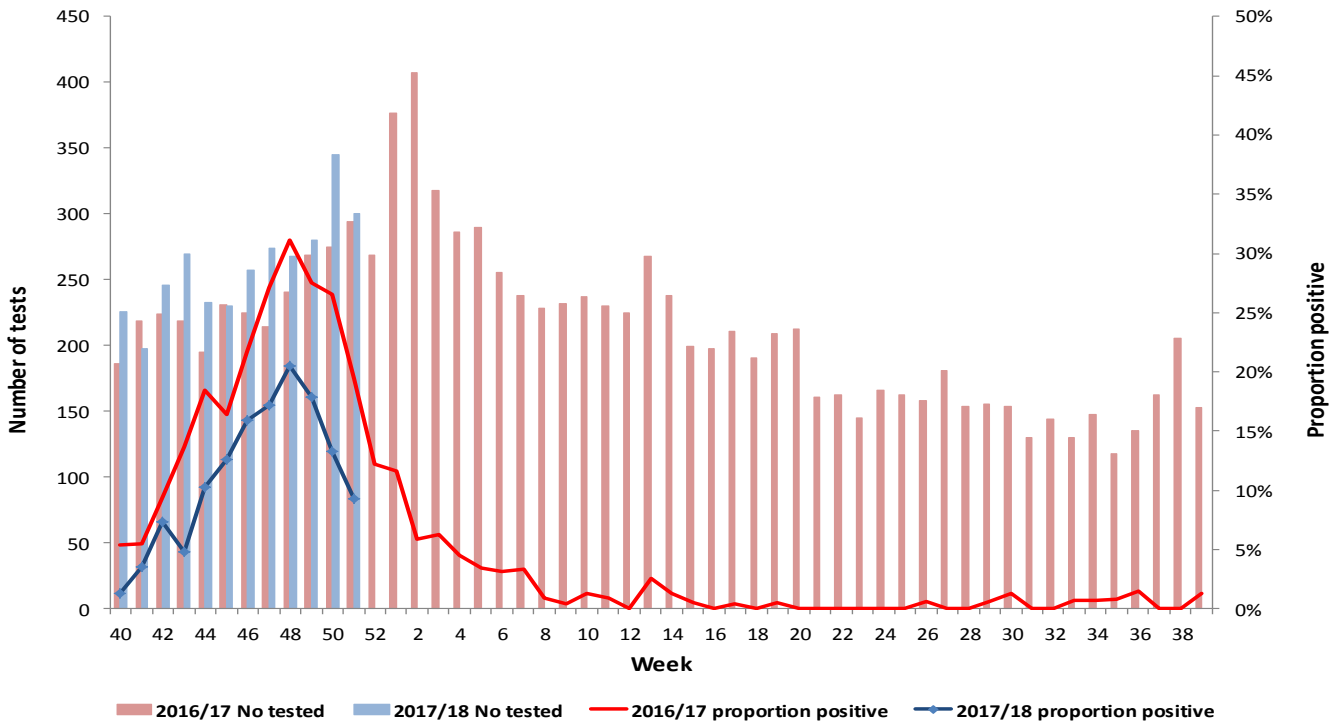
Comment

During weeks 50 and 51, 2017 there were 616 specimens submitted for virological testing. There were 141 detections of influenza in total (positivity rate of 23%), of which 76 were influenza A(H3), 36 influenza B, 28 influenza A (typing awaited) and there was one detection of influenza A(H1N1)pdm09 (Figure 7).

There were 25 samples submitted through the GP based sentinel scheme across Northern Ireland during this period, of which 16 (64%) were positive for influenza. Of the 16 positive, 10 were detected as influenza B, five as influenza A(H3) and one detection of influenza A(H1N1)pdm09 (Tables 1, 2, 3; Figures 2 and 3).

Respiratory Syncytial Virus

Figure 8. Number of samples tested for RSV and proportion positive, 2016/17 and 2017/18, all sources

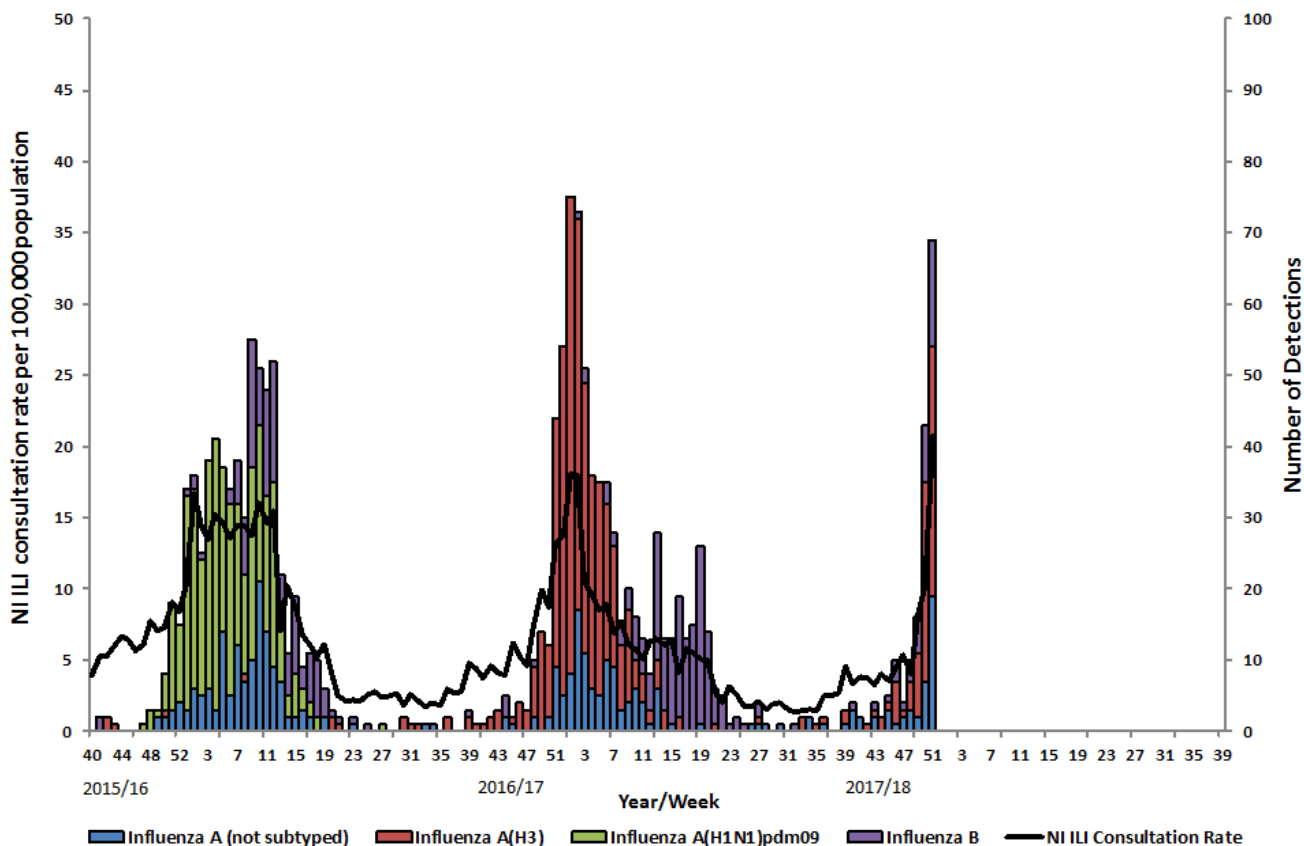


Comment

During weeks 50 and 51, 2017 there were 74 positive detections of RSV giving a positivity rate of 11%, lower than the same period in 2016/17 (22%). To date there have been a total of 361 detections of RSV of which the majority (66%) were in those aged 0-4 years (Figure 8 and Table 2).

Hospital Surveillance (Non-ICU/HDU)

Figure 9. Confirmed influenza cases in hospital by week of specimen, with Northern Ireland ILI consultation rate, 2015/16 - 2017/18



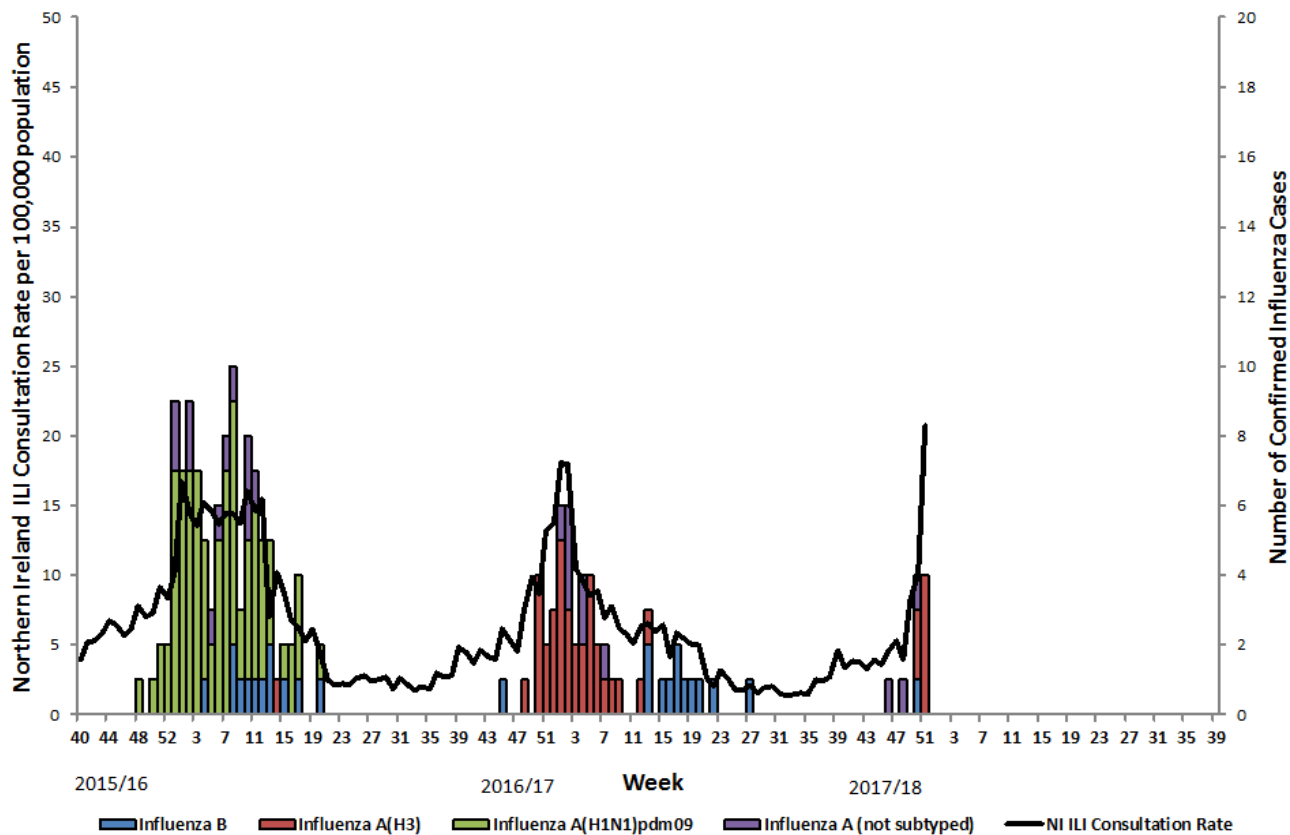
Comment

For the first time in 2017/18 the PHA will be reporting on detections of influenza from specimens taken in hospital wards across Northern Ireland, reported to PHA through the regional virology laboratory.

During weeks 50 and 51, 2017 there were a total of 112 detections of influenza from specimens taken in hospital settings across Northern Ireland. Of these there were 63 detections of influenza A(H3), 26 of influenza A (typing awaited) and 23 of influenza B.

ICU/HDU Surveillance

Figure 10. Confirmed ICU/HDU influenza cases by week of specimen, with Northern Ireland ILI consultation rate, 2015/16 - 2017/18



Comment

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

During weeks 50 and 51, eight confirmed cases of influenza in ICU were reported to the PHA. There was one death reported in ICU patients with laboratory confirmed influenza, this is the first death reported in ICU this season with confirmed influenza. There have been ten confirmed case of influenza in ICU reported this season to date, of which six have been typed as influenza A(H3), one influenza B and three influenza A (typing awaited).

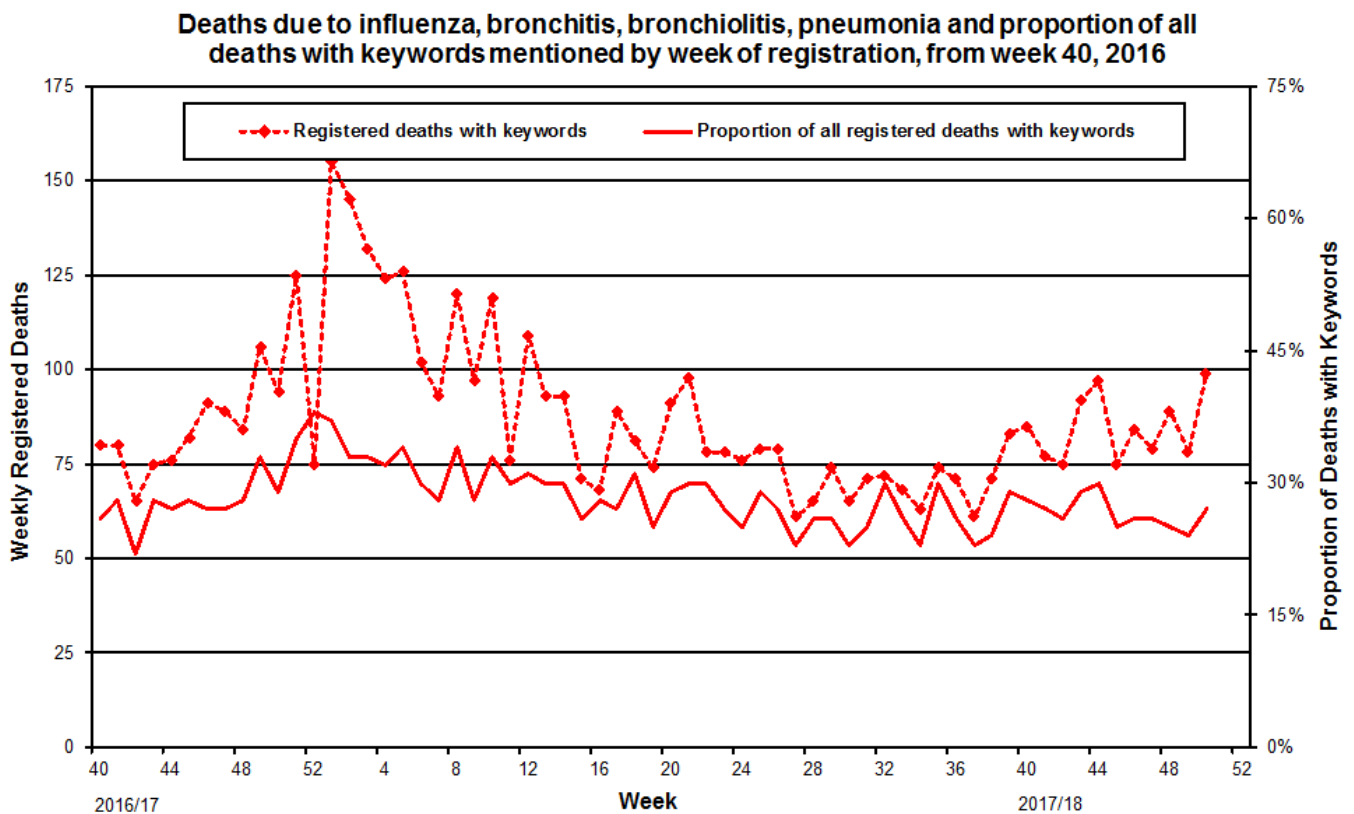
Outbreak Surveillance

During weeks 50 and 51, 2017 there was one confirmed influenza outbreak reported to the PHA.

Mortality Data

Weekly mortality data is provided from Northern Ireland Statistics and Research Agency (NISRA). 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 11. Weekly registered deaths



Comment

Death data is only available for week 50. During week 50, 2017 the proportion of deaths related to respiratory keywords increased slightly from 24% in week 49 to 27% in week 50. In week 50

there were 372 registered deaths, of which 99 related to specific respiratory infections (Figure 10).

The proportion of deaths attributed to specific respiratory infections is lower at this point in the season to the same period in 2016/17 (29%) and in 2015/16 (30%).

EuroMOMO

There was no excess all-cause mortality reported in Northern Ireland up to week 50.

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

Influenza Vaccine Uptake.

Vaccine uptake rates will be reported in the bulletin later in the season.

International Summary

Europe

Week 50, 2017

- Influenza activity was increasing in countries in Western Europe, Scandinavia and Turkey.
- Both influenza types A and B viruses were common and mixed patterns were observed across the Region.
- Of the individuals sampled, on presenting with ILI or ARI to sentinel primary healthcare sites, 26% tested positive for influenza viruses, significantly higher compared to previous weeks.
- Data from 19 countries or regions reporting to the EuroMOMO project indicated that all-cause excess mortality was within normal ranges for this time of year.

Additional information on global influenza activity is available from [WHO's biweekly global updates](#).

Season Overview:

- An early risk assessment based on data from EU/EEA countries was published by ECDC on 20 Dec 2017. First detections indicated circulation of A(H3N2) and B/Yamagata viruses in the highest proportions. As the A(H3N2) subtype dominated last season, a high proportion of the population should be protected.
- From sentinel sources, a slightly higher proportion of type B viruses compared to type A viruses has been detected. Approximately equal proportions of A(H1N1)pdm09 and A(H3N2) viruses have been detected.
- For type B viruses from both sentinel and non-sentinel sources, B/Yamagata lineage viruses have greatly outnumbered those of the B/Victoria lineage.
- While low in number, 61% of the genetically characterized A(H3N2) viruses belonged to clade 3C.2a, the vaccine virus clade as described in the WHO recommendations for vaccine composition for the northern hemisphere 2017–18, and 39% to clade 3C.2a1, the viruses of which are antigenically similar to those of clade 3C.2a.

Worldwide (WHO)

As at 25th December 2017:

Influenza activity continued to increase in the temperate zone of the northern hemisphere while in the temperate zone of the southern hemisphere activity decreased at inter-seasonal levels. In Central America and the Caribbean, influenza activity remained low. Worldwide, influenza A(H3N2) and B viruses accounted for the majority of influenza detections.

- In North America, overall influenza activity continued to increase in the region, with detections of predominantly influenza A(H3N2) viruses.
- In Europe, influenza activity continued to increase, but remained low in most of the countries, with detections of predominantly influenza B followed by influenza A(H3N2) viruses.
- In Western Asia, elevated levels of influenza activity were reported in recent weeks, with influenza A(H1N1)pdm09 predominantly detected.
- In Central Asia, low to no influenza activity was reported.
- In East Asia, influenza activity remained low in most of the countries with the exception of China where influenza like illness (ILI) and influenza percentage positive continued to increase, with influenza B Yamagata-lineage viruses predominantly detected.
- In South East Asia, low levels of influenza activity were reported.
- In Southern Asia, influenza activity remained low in general. Detections of influenza A(H1N1)pdm09 and A(H3N2) viruses were reported in India and of all seasonal subtypes in the Islamic Republic of Iran.
- In Northern Africa, low levels of influenza activity were reported. Detections of influenza A(H1N1)pdm09 virus increased slightly in Tunisia.
- In Western Africa, influenza virus detections were reported in Burkina Faso, Ghana, and Sierra Leone, with influenza A(H1N1) pdm09 virus predominating. In Middle Africa, sporadic detections of influenza A were reported in Cameroon. In Eastern Africa, influenza A(H3N2) and B detections were reported in Madagascar and Mozambique.
- In the Caribbean and Central American countries, respiratory illness indicators and influenza activity remained low in general but respiratory syncytial virus (RSV) activity remained high in several countries.
- In the tropical countries of South America, influenza and RSV activity remained at low levels overall.
- In the temperate zone of the Southern Hemisphere, influenza activity decreased overall to inter-seasonal levels.
- National Influenza Centres (NICs) and other national influenza laboratories from 106 countries, areas or territories reported data to FluNet for the time period from 27 November 2017 to 10 December 2017 (data as of 2017-12-22 01:31:51 UTC). The WHO GISRS laboratories tested more than 127006 specimens during that time period. 15344 were positive for influenza viruses, of which 9579 (62.4%) were typed as influenza A and 5765 (37.6%) as influenza B. Of the sub-typed influenza A viruses, 1596 (30.1%) were influenza A(H1N1)pdm09 and 3698 (69.9%) were influenza A(H3N2). Of the characterized B viruses, 2640 (85.2%) belonged to the B-Yamagata lineage and 460 (14.8%) to the B-Victoria lineage.

<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, Apollo Medical, Regional Virus Laboratory, Critical Care Network for Northern Ireland and Public Health England. Their work is greatly appreciated and their support vital in the production of this bulletin.

The author also acknowledges the Northern Ireland Statistics and Research Agency (NISRA) and the General Register Office Northern Ireland (GRONI) for the supply of data used in this publication. NISRA and GRONI do not accept responsibility for any alteration or manipulation of data once it has been provided.

Further information

Further information on influenza is available at the following websites:

<http://www.fluawareni.info>

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

<http://www.publichealth.hscni.net>

<http://www.who.int>

<http://ecdc.europa.eu>

<http://www.flunewseurope.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/statistics/weekly-national-flu-reports>

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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