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Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 14 (2nd April – 8th April 2018)

Summary

In week 14, the surveillance data indicates influenza activity continues to decrease. Rates remain below the baseline Moving Epidemic Method (MEM) threshold for Northern Ireland and are below normal seasonal activity[1]. Influenza A continues to decline and influenza B is the predominant circulating strain.

Northern Ireland Primary Care Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) decreased from 11.7 per 100,000 population in week 13 to 6.0 per 100,000 population in week 14.
- OOH GP consultation rates for flu/FLI decreased in week 14, 2018 from 6.4 per 100,000 population in week 13 to 5.9 per 100,000.

Microbiological Surveillance (Flu and RSV)

- The proportion of all positive influenza specimens increased from 16% in week 13, 2018 to 21% in week 14.
- One positive detection of RSV was reported.

Secondary Care (Hospital both non-ICU and ICU)

- The number of detections of influenza from hospital wards reported to PHA increased from a total of 51 detections in week 13, 2018 to 55 in week 14.
- There were two new admissions to ICU with confirmed influenza reported in week 14, 2018 giving a total of 113 cases this season to date.
- There were no deaths reported in ICU patients who had laboratory confirmed influenza in week 14. There were 19 deaths in ICU this season in which a diagnosis of influenza was confirmed.

Influenza Outbreaks across Northern Ireland

- There was no influenza outbreaks reported to the PHA in week 14, 2018.

Mortality

- The proportion of deaths related to respiratory keywords (bronchiolitis, bronchitis, influenza and pneumonia) increased from 29% in week 13, 2018 to 32% in week 14.

[1] The baseline MEM threshold for Northern Ireland is 22.58 per 100,000 population this year (2017/18). Low activity is 22.6 to <26.6, moderate activity 26.6 to <85.1, high activity 85.1 to <142.4 and very high activity is >142.4.

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);
- Individual virology reports from local laboratories (as outlined);
- 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

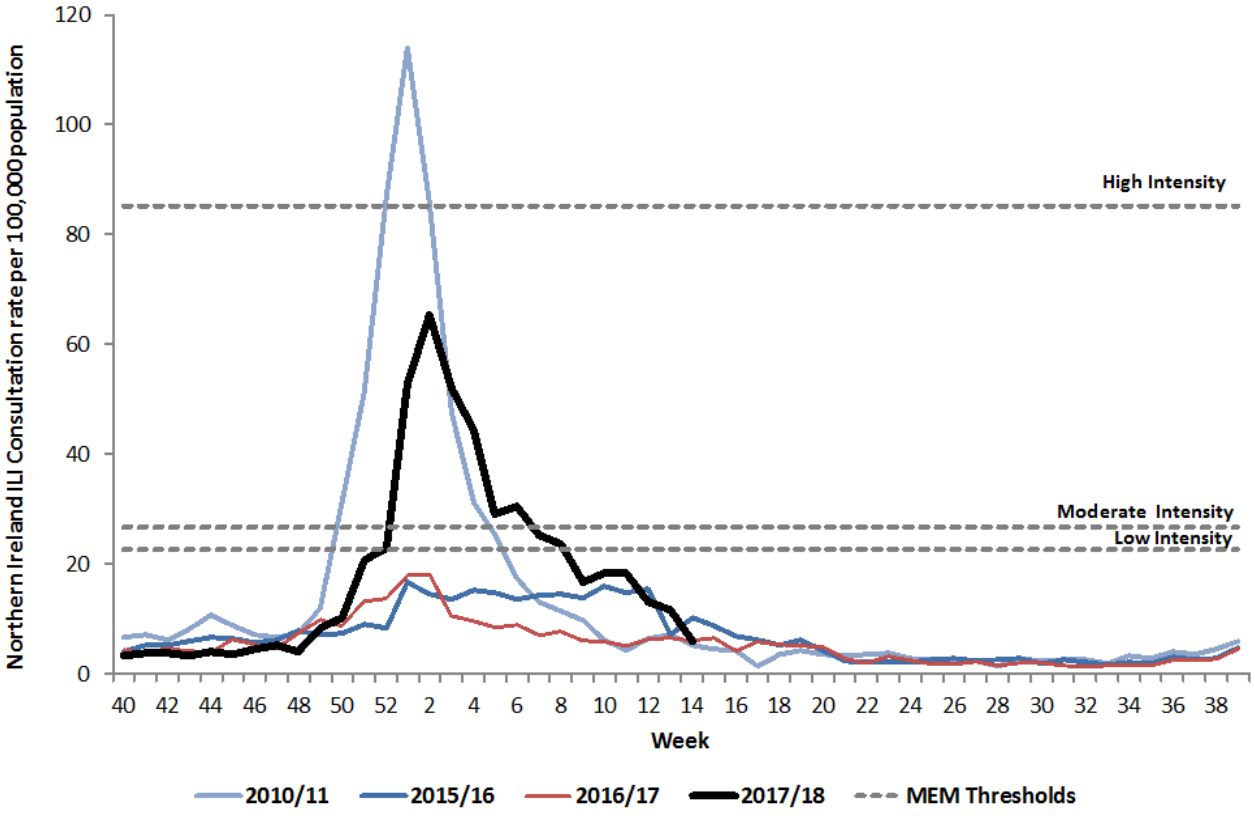


Figure 2. Northern Ireland GP consultation rates for flu/FLI and number of influenza positive detections 2012/13 – 2017/18

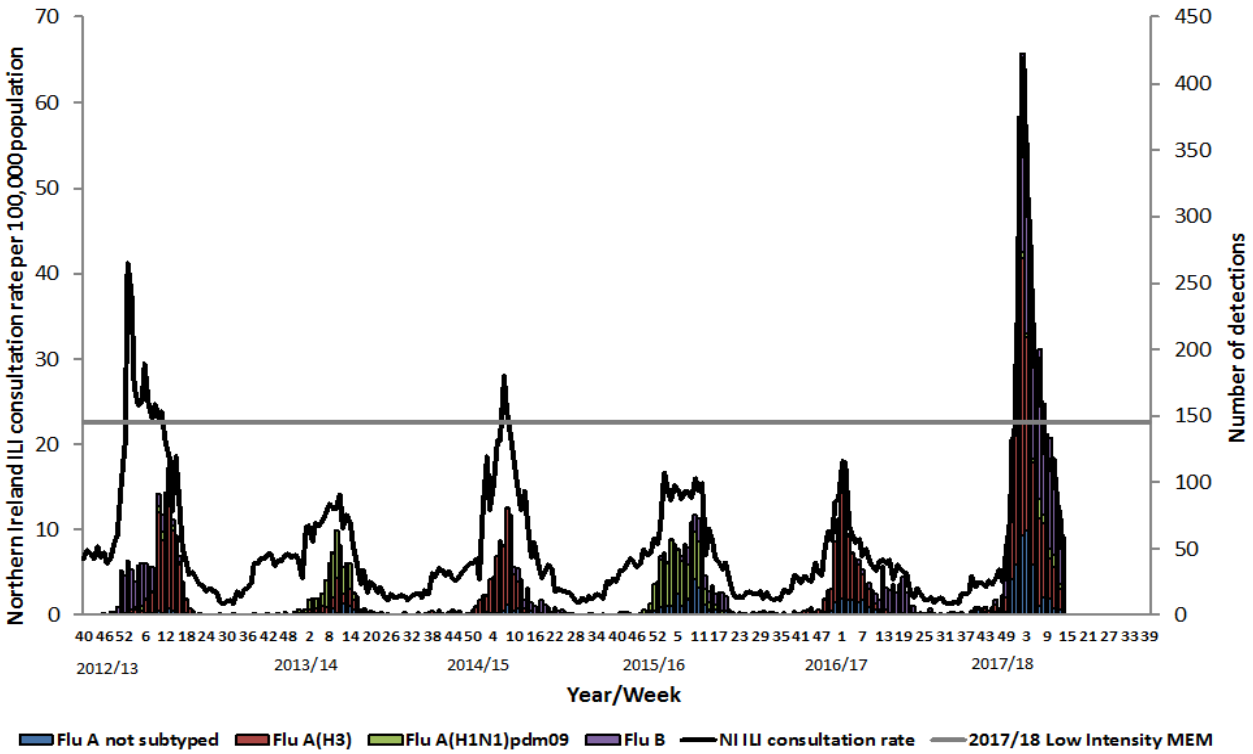
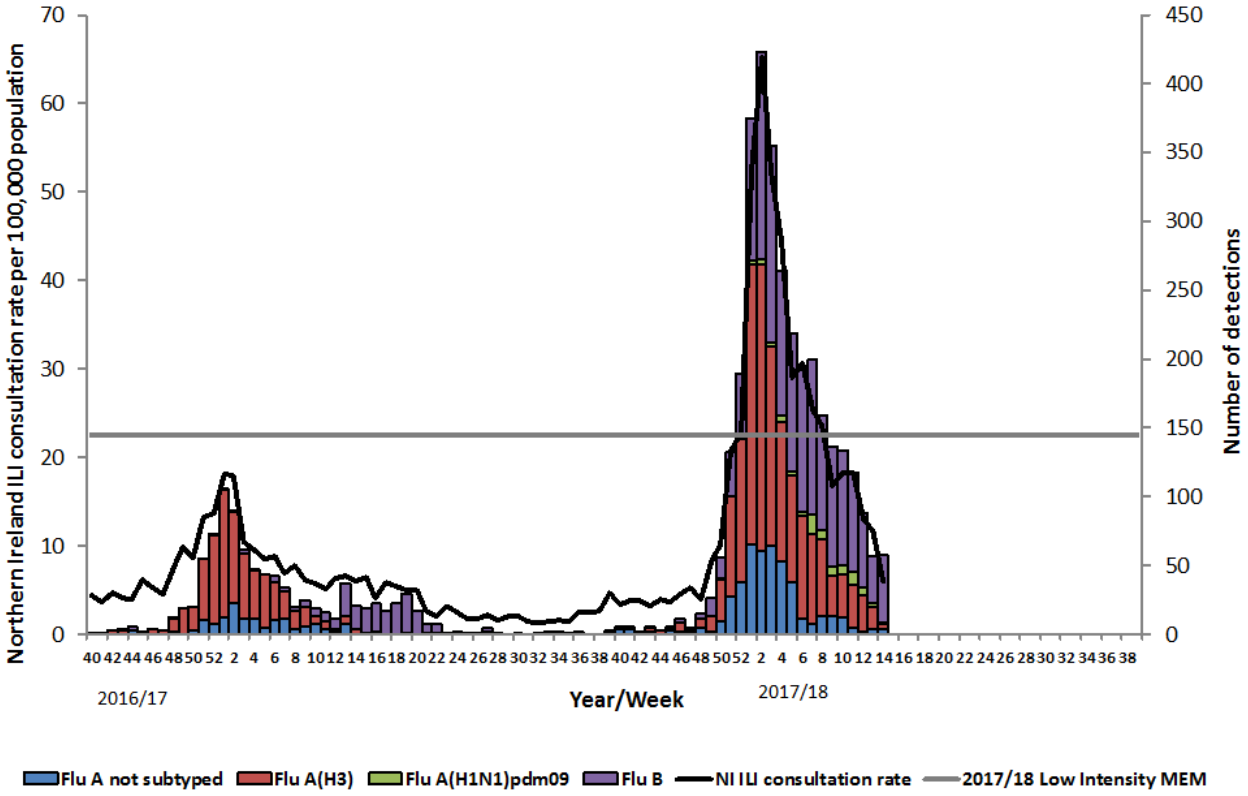


Figure 3. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2016



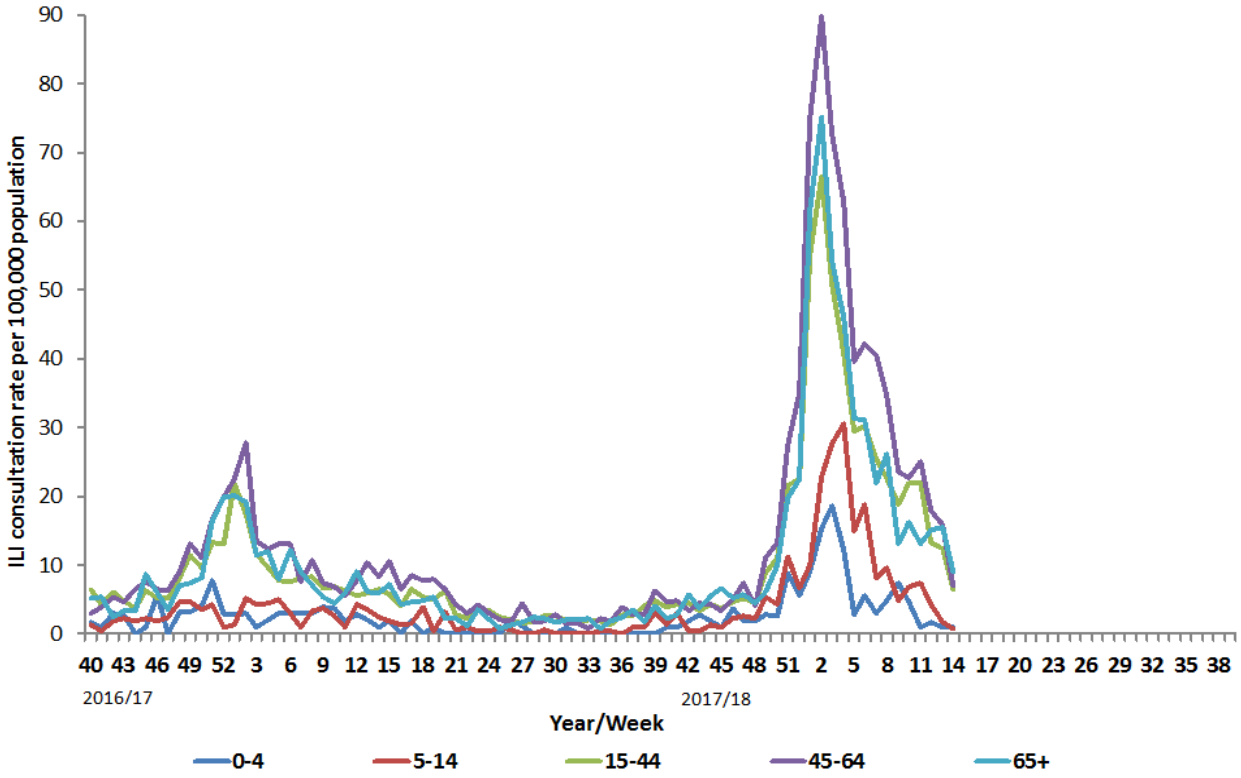
Comment

NI GP consultation rates decreased from 11.7 per 100,000 population in week 13, 2018 to 6.0 per 100,000 in week 14. These rates remain below the baseline MEM threshold for Northern Ireland (22.6 per 100,000) and are below normal seasonal activity. The NI GP consultation rate in week 14 is equivalent to the same period last year (Figure 1).

The number of positive influenza laboratory detections increased slightly from 57 in week 13, 2018 to 58 in week 14. At this point in the season there have been a total of 1313 detections of influenza A(H3), 1401 of influenza B, 450 of influenza A (typing awaited), and 77 detections of influenza A(H1N1) 2009 (Figures 1, 2 and 3).

Further information about laboratory detections of influenza is detailed on page 8.

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



Comment

NI GP age-specific consultation rates have decreased for all age groups, though remained the same for the 0-4 age group at 0.9 per 100,000. 5-14 years (1.8 to 0.9 per 100,000), 15-44 years (12.5 to 6.5), 45-64 years (15.8 to 7.0 per 100,000) and aged 65 years and over (15.2 to 9.0 per 100,000) (Figure 4).

Out-of-Hours (OOH) Centres Call Data

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

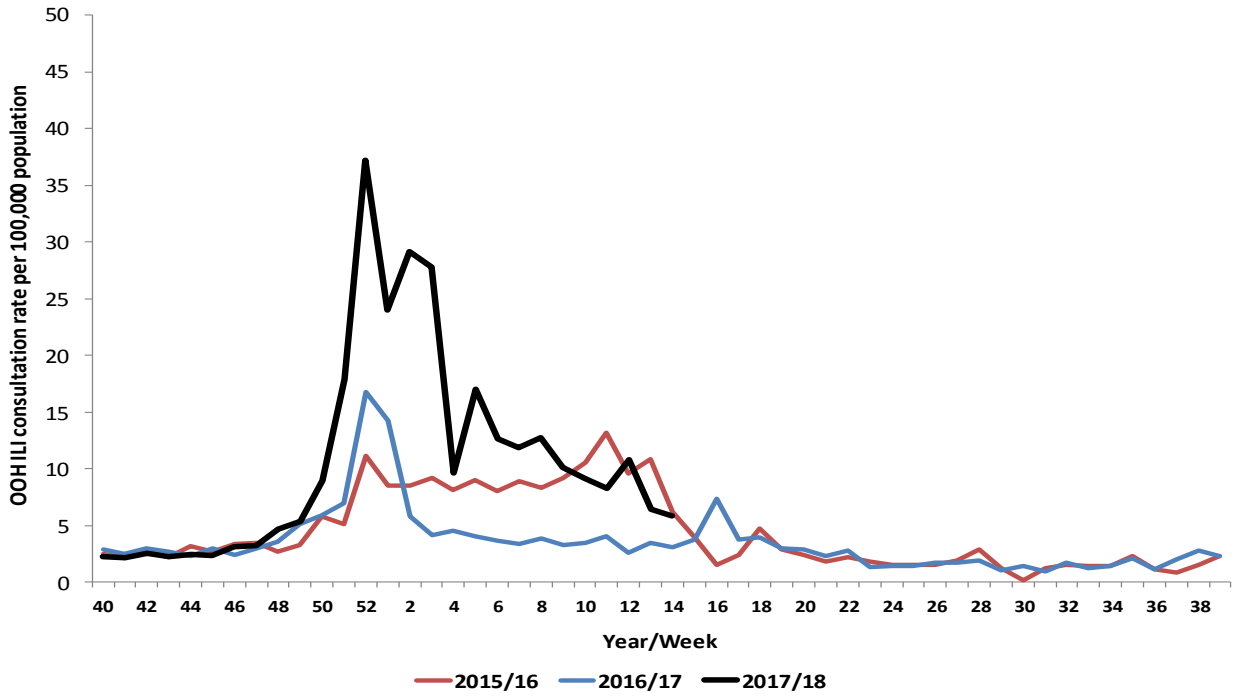
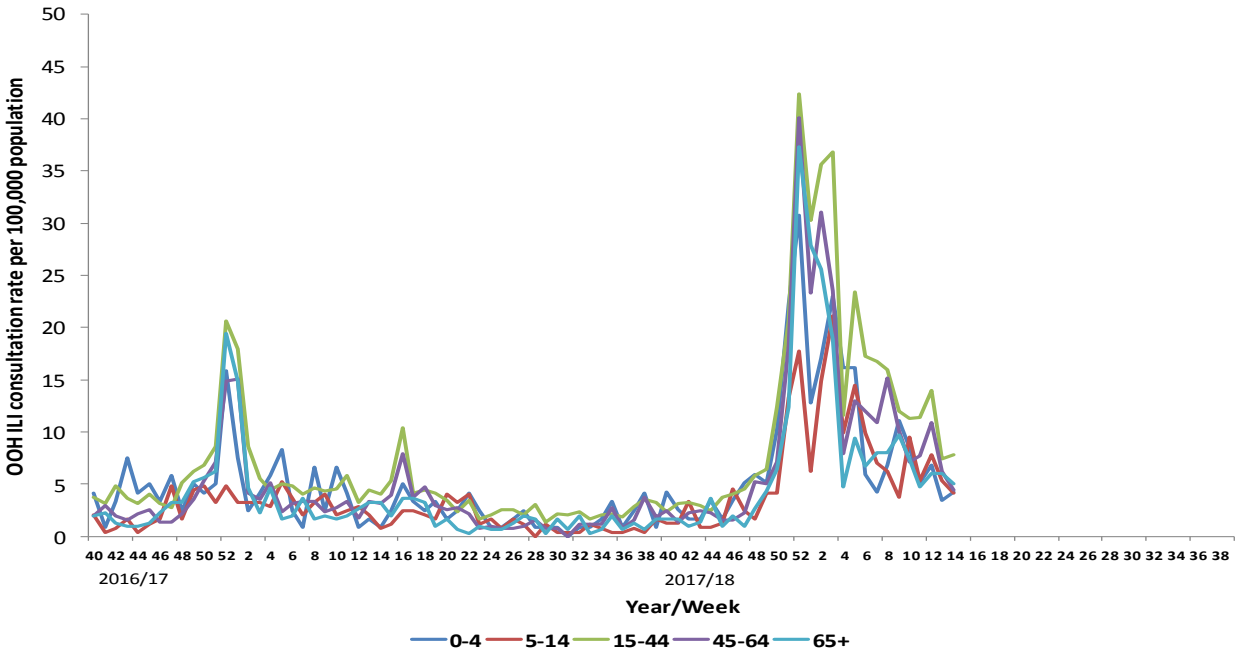


Figure 6. OOH call rates of flu/FLI by age-group from week 40, 2016



Comment

OOH GP consultation rates decreased in week 14, 2018 from 6.4 per 100,000 population in week 13 to 5.9 per 100,000 in week 14. Rates remain higher than those in the same period in 2016/17 (3.1 per 100,000) (Figure 5).

The proportion of calls related to flu in OOH centres remained the same in week 14, 2018 at 1.0%.

OOH flu/FLI rates increased slightly for 0-4 years (3.4 to 4.3 per 100,000) and 15-44 years (7.5 to 7.9 per 100,000). There was a decrease for age groups 5-14 years (5.4 to 4.1 per 100,000), 45-34 years (6.3 to 4.5 per 100,000) and for 65 years and older (6.1 to 5.0 per 100,000).

Virology Data

Table 1. Virus activity in Northern Ireland by source, Week 14, 2017/18								
Source	**Specimens Tested**	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	**Total influenza Positive**	**% Influenza Positive**
Sentinel	4	0	0	0	2	0	2	50%
Non-sentinel	274	3	1	4	48	1	56	20%
Total	**278**	**3**	**1**	**4**	**50**	**1**	**58**	21%

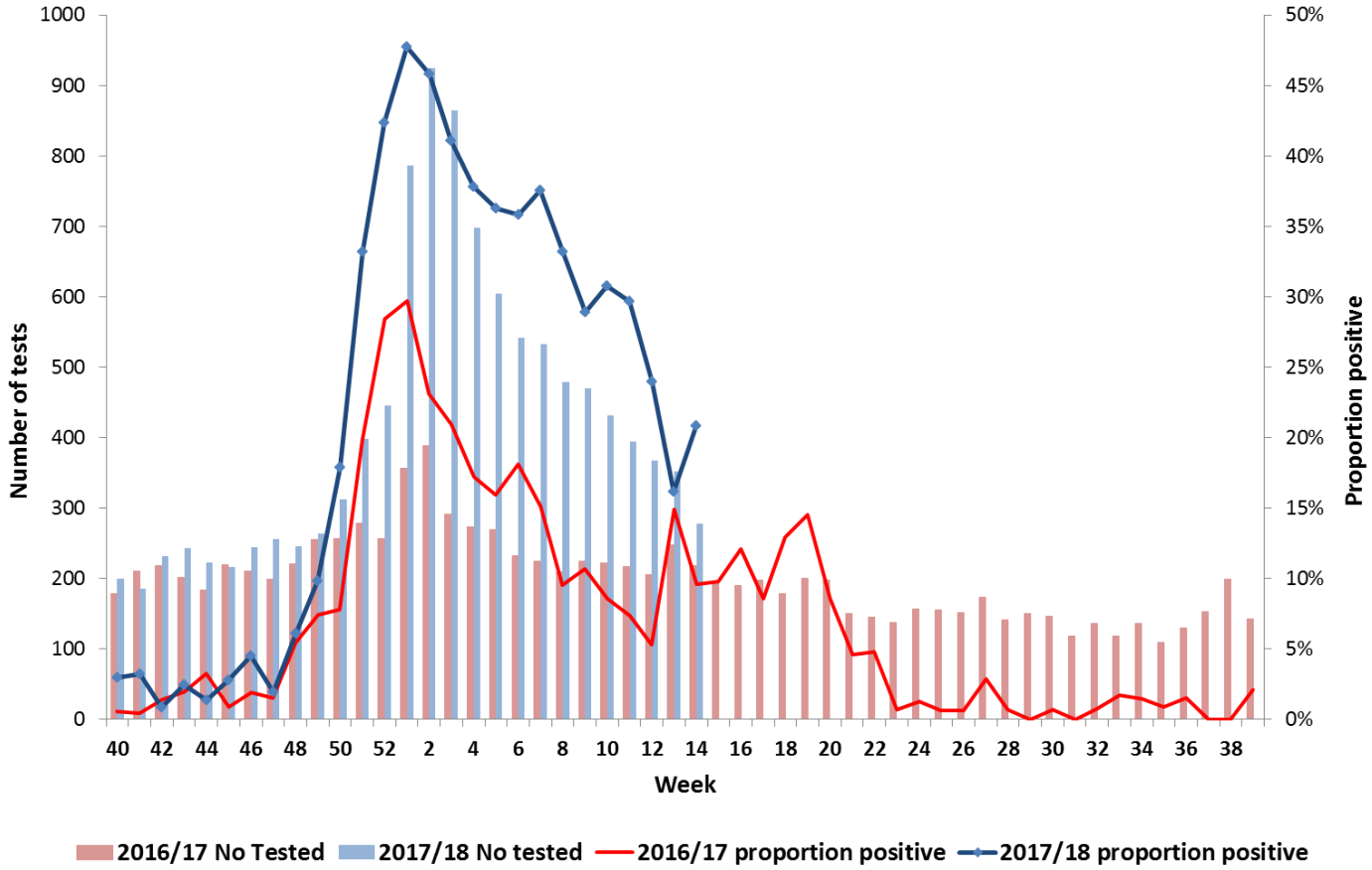
Table 2. Cumulative virus activity from all sources by age group, Week 40 - 14, 2017/18						
	Flu AH3	**Flu A(H1N1) 2009**	**A (untyped)**	**Flu B**	**Total Influenza**	**RSV**
0-4	**44**	**8**	**26**	**41**	**119**	**336**
5-14	**33**	**1**	**11**	**46**	**91**	**13**
15-64	**475**	**40**	**185**	**683**	**1383**	**92**
65+	**760**	**28**	**228**	**629**	**1645**	**139**
Unknown	**1**	**0**	**0**	**2**	**3**	**1**
All ages	**1313**	**77**	**450**	**1401**	**3241**	**581**

Table 3. Cumulative virus activity by age group and source, Week 40 - Week 14, 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	**1**	**0**	**0**	**1**	**2**	**0**	**43**	**8**	**26**	**40**	**117**	**336**
5-14	**5**	**0**	**0**	**10**	**15**	**1**	**28**	**1**	**11**	**36**	**76**	**12**
15-64	**74**	**10**	**14**	**119**	**217**	**9**	**401**	**30**	**171**	**564**	**1166**	**83**
65+	**26**	**3**	**3**	**21**	**53**	**1**	**734**	**25**	**225**	**608**	**1592**	**138**
Unknown	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**3**	**1**
All ages	**106**	**13**	**17**	**151**	**287**	**11**	**1207**	**64**	**433**	**1250**	**2954**	**570**

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

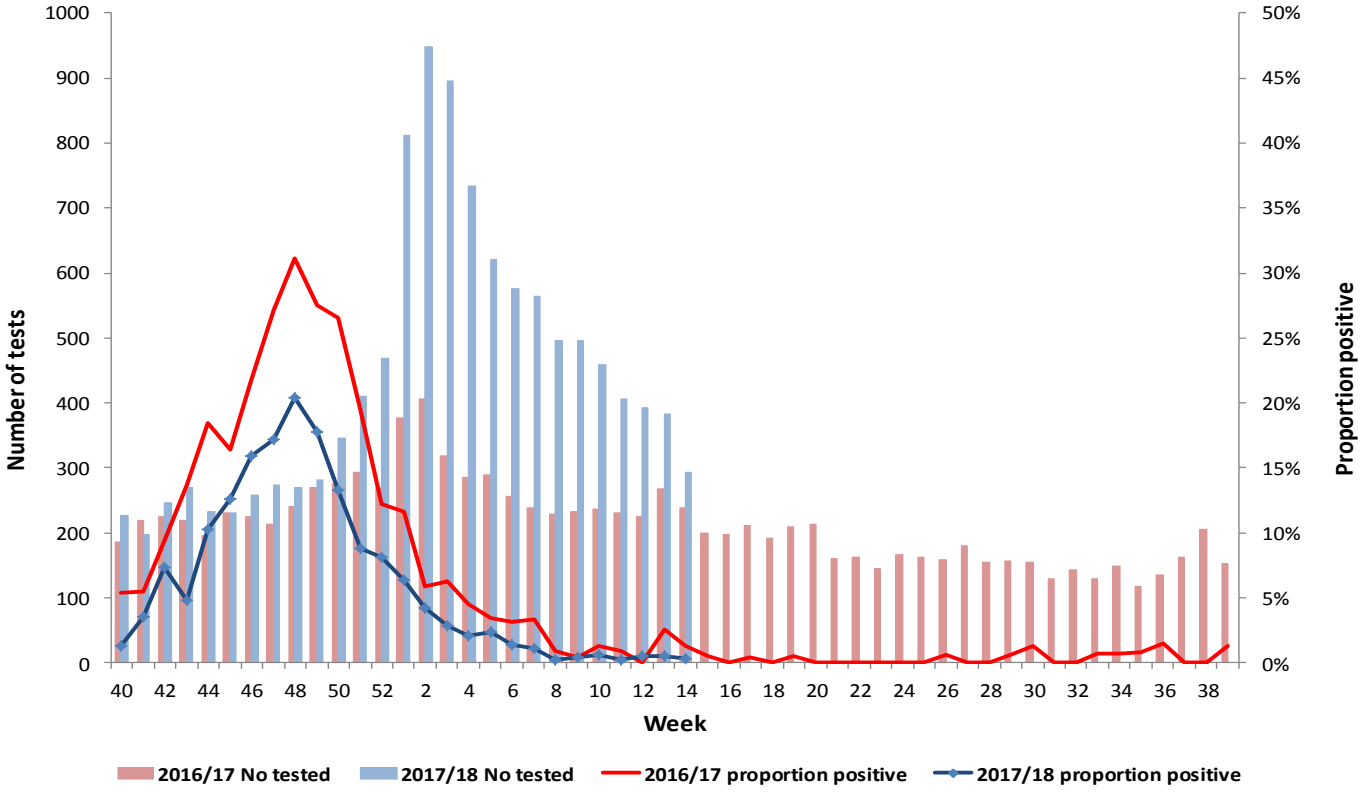
Additional virology testing has been undertaken at one local laboratory since week 2, 2018. This bulletin now includes this data along with the data from the Regional Virology Laboratory. Other local laboratories may begin undertaking influenza testing and this data will be included in later bulletins if applicable.

During week 14, 2018 there were 278 specimens submitted for virological testing. There were 58 detections of influenza in total (positivity rate of 21%), of which three were influenza A(H3), 50 influenza B, four influenza A (typing awaited) and there was one detection of influenza A(H1N1)pdm09 (Figure 7 and Table 1).

There were four samples submitted through the GP based sentinel scheme across Northern Ireland during this period, of which two were positive for influenza B (positivity rate of 50%) (Tables 1, 2, 3; Figures 2 and 3).

Respiratory Syncytial Virus (RSV)

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

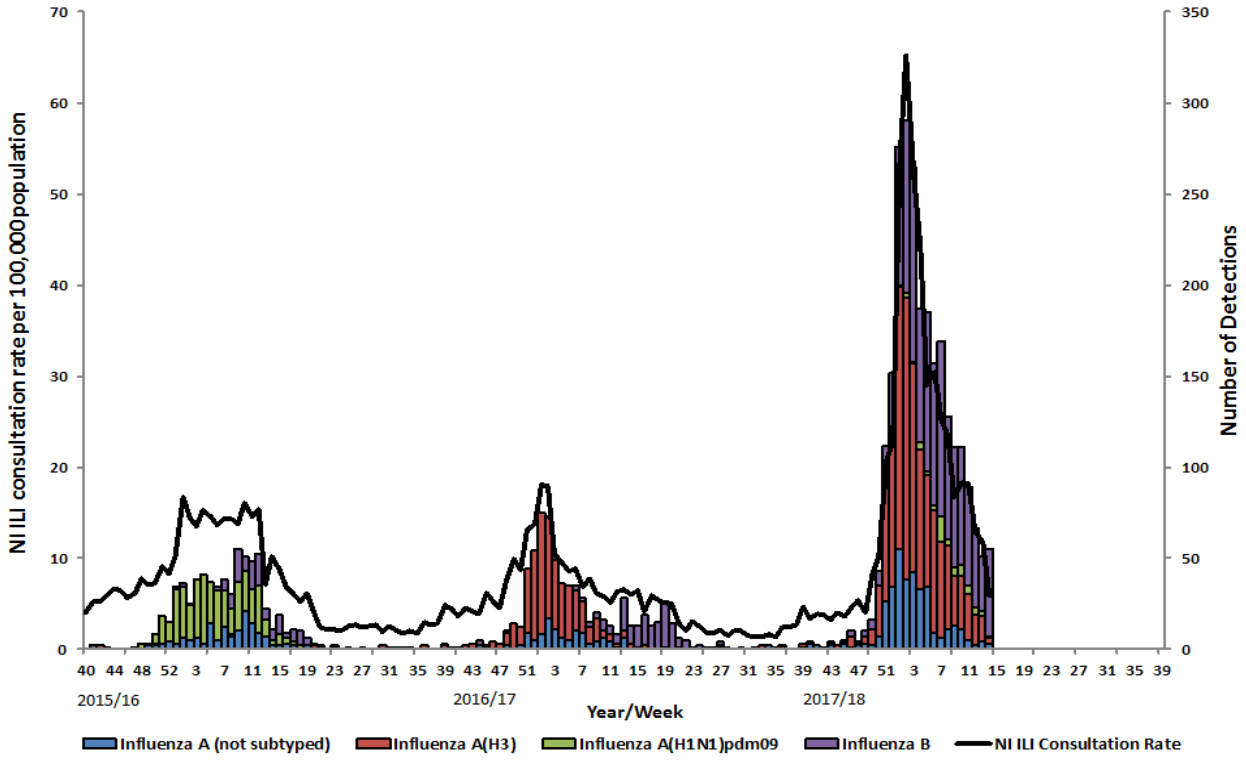


Comment

There was one positive detection of RSV reported in week 14, 2018. To date there have been a total of 581 detections of RSV of which the majority (58%) 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



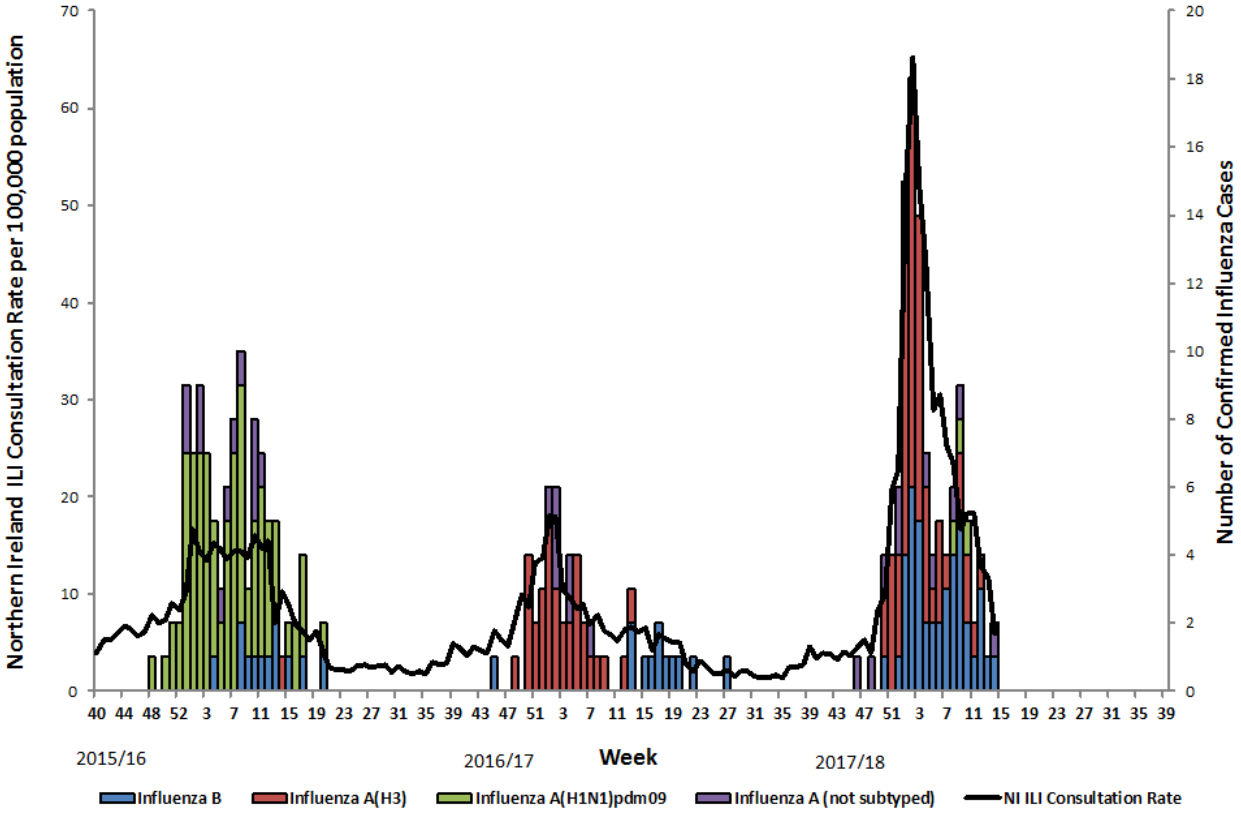
Comment

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 week 14, 2018 there were a total of 55 detections of influenza from specimens taken in hospital settings across Northern Ireland. Of these there were three detections of influenza A(H3), 48 of influenza B, three of influenza A (typing awaited) and one detection of influenza A(H1N1)2009. This represents a small increase from week 13 (51 positive reports).

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 week 14, 2018, there were two new admissions to ICU with confirmed influenza reported to the PHA. There were no deaths reported in ICU patients who had laboratory confirmed influenza in week 14. There were 19 deaths in ICU this season in which a diagnosis of influenza was confirmed. There have been 113 confirmed cases of influenza in ICU reported this season to date, of which 53 have been typed as influenza A(H3), 43 influenza B, three influenza A(H1N1)2009, 13 influenza A (typing awaited) and one confirmed case of both influenza A and B (not shown in figure 10).

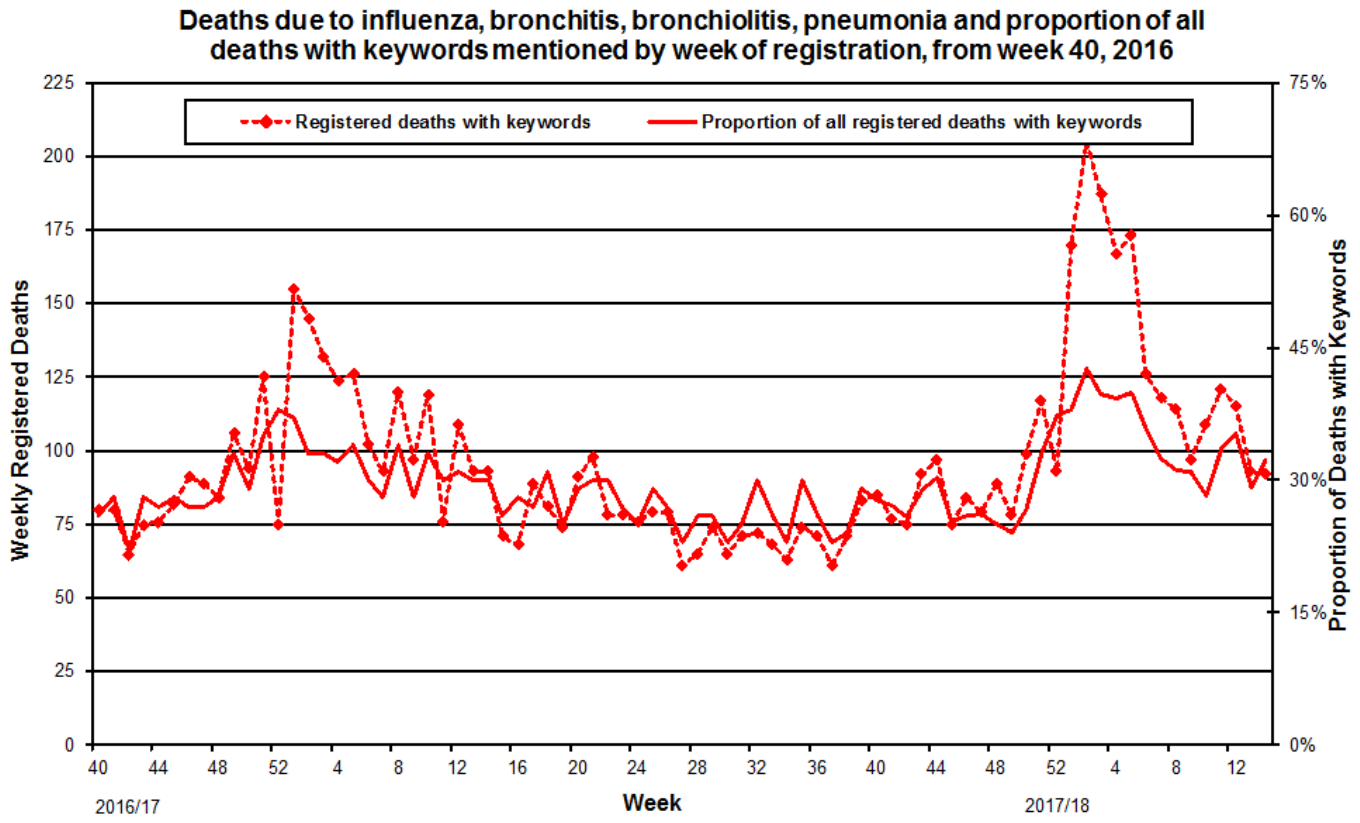
Outbreak Surveillance

During week 14, 2018 there was no influenza outbreaks reported. The total confirmed influenza outbreaks to date are 39.

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

The proportion of deaths related to respiratory keywords increased from 29% in week 13, 2018 to 32% in week 14. In week 14 there were 286 registered deaths, of which 92 related to specific respiratory infections (Figure 11). The proportion of deaths attributed to specific respiratory infections is slightly higher at this point in the season to the same period in 2016/17 (30%).

EuroMOMO

Information on mortality from all causes is provided for management purpose from Public Health England. Excess mortality is defined as a statistically significant increase in the number of deaths reported over the expected number for a given point in time. This calculation allows for a weekly variation in the number of deaths registered and takes account of deaths registered retrospectively. Information is used to provide an early warning to the health service of any seasonal increases in mortality to allow further investigation of excess detections.

There is no single cause of 'additional' deaths in the winter months but they are often attributed in part to cold weather (e.g. directly from falls, fractures, road traffic accidents), through worsening of chronic medical conditions e.g. heart and respiratory complaints and through respiratory infections including influenza.

For more information on EuroMOMO and interactive maps of reporting across the season please see http://www.euromomo.eu/index.html.

There was no excess all-cause mortality reported in Northern Ireland in week 14, 2018. There has been a total of nine weeks in the season where there has been excess all-cause mortality (weeks 49, 51-5, and 7). This excess mortality was seen in the elderly (>65 years of age).

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

Influenza Vaccine Uptake

	2017/18 (to Jan 31st)	2016/17 (to Jan 31st)
>65 years	70.4%	71.7%
<65 years at risk	53.5%	55.9%
Pregnant women	47.9%	50.3%
2 to 4 year olds	49.1%	52.0%
Primary School	76.2%	78.2%
Trust Frontline	33.0%	28.6%

*vaccine uptake data is provisional

International Summary

Europe

Week 13/2018 (26-31 March 2018)

- Influenza viruses continued to circulate in the Region, while all countries reported low or medium intensity of activity of respiratory infections.
- Influenza continued to circulate widely in the Region with 35% of the individuals sampled from primary healthcare settings testing positive for influenza viruses.

- Both influenza virus types A and B were co-circulating with the majority being type B viruses and the B/Yamagata lineage continuing to dominate.
- Similar proportions of influenza type A and B viruses were reported in patients admitted to ICU, with the majority of severe cases reported this season being due to influenza type B and occurring in persons above the age of 15 years.

2017/18 season overview

- Influenza has been circulating widely in the Region since week 52/2017, based on positivity rates among sentinel specimens, which is longer than in previous seasons and may contribute to the severity of the season.
- For the region overall, the majority of influenza viruses detected were type B, representing a high level of circulation of influenza B viruses compared to recent seasons. B/Yamagata lineage viruses have greatly outnumbered those of the B/Victoria lineage. Click here for more information
- Different patterns of dominant type and A subtypes were observed between the countries of the Region, which may be due to differences in relative weights of information being derived from sentinel, non-sentinel and severe influenza case sources of information. Influenza A viruses are dominant in several eastern European countries (e.g. the Russian Federation, Kazakhstan). See the maps below for more information
- Of the type A virus detections from sentinel sources, the majority of which were subtyped, A(H1N1)pdm09 viruses have outnumbered A(H3N2) viruses. In non-sentinel sources, more A(H3N2) viruses than A(H1N1)pdm09 viruses were reported. Click here for more information
- While low in number, 56% of characterized A(H3N2) viruses belong to clade 3C.2a and 49% of B/Victoria lineage viruses belong to a subclade of clade 1A viruses that are antigenically distinct from the current trivalent vaccine component. Click here for more information
- The majority of severe cases reported this season are due to influenza type B and have occurred in persons above the age of 15 years. Click here for more information
- Mortality from all causes based on pooled data from 18 EU countries and regions that reported to EuroMOMO (http://www.euromomo.eu/) remained elevated in some countries, while it was declining in others. Click here for more information
- Interim results from 5 European studies indicate that influenza vaccine effectiveness was estimated to be similar to that in recent years. Click here for more information
- A seasonal reassortant A(H1N2) influenza virus consisting of HA and NS genes of human seasonal A(H1N1)pdm09 influenza virus and M, NA, NP, PA, PB1 and PB2 genes of human seasonal A(H3N2) influenza virus was detected in the Netherlands in March. WHO assesses the risk posed by this virus to be comparable to the risk posed by the currently circulating seasonal influenza viruses, as all the genes of this reassortant virus originate from circulating seasonal viruses. Click here for more information

http://www.flunewseurope.org/

Worldwide (WHO)

As at 2 April 2018 (based on data up to 18 March 2018)

- Influenza activity appeared to decrease in most of the countries in the temperate zone of the northern hemisphere, with exception of Eastern Europe where activity continued to increase. In the temperate zone of the southern hemisphere, inluenza activity remained at inter-seasonal levels. Worldwide, influenza A and influenza B accounted for a similar proportion of influenza detections.
- National Influenza Centres (NICs) and other national influenza laboratories from 107 countries, areas or territories reported data to FluNet for the time period from 05 March 2018 to 18 March 2018 (data as of 2018-03- 30 04:46:41 UTC).The WHO GISRS laboratories tested more than 206175 specimens during that time period. 50579 were positive for influenza viruses, of which 23651 (46.8%) were typed as influenza A and 26928 (53.2%) as influenza B. Of the sub-typed influenza A viruses, 6313 (64%) were influenza A(H1N1)pdm09 and 3552 (36%) were influenza A(H3N2). Of the characterized B viruses, 3184 (91%) belonged to the B-Yamagata lineage and 316 (9%) 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, 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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