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Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 19 - 20 (7th May – 20th May 2018)

Please note that this is the last bulletin of the 2017-18 influenza season; the PHA would like to extend their thanks to all who have collaborated and contributed throughout the influenza season.

Summary

The surveillance data indicates that influenza activity has remained stable. Influenza rates remain below the baseline Moving Epidemic Method (MEM) threshold for Northern Ireland and are below normal seasonal activity[1].

Northern Ireland Primary Care Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) decreased from 3.5 per 100,000 population in week 18, to 2.3 per 100,000 in week 19 and 2.2 per 100,000 in week 20.
- OOH GP consultation rates for flu/FLI increased marginally from 1.8 per 100,000 population in week 18, to 1.9 per 100,000 in week 19 and 2.1 per 100,000 in week 20. However this rate is lower than at the same period last year, which was 2.9 per 100,000 (week 20, 2017).

Microbiological Surveillance (Flu and RSV)

- The proportion of all positive influenza specimens which was 2% in week 18, fell to 1% in week 19 and remained at 1% in week 20.
- There were two detections of RSV reported in week 19. There were no positive detections of RSV reported in week 20.

Secondary Care (Hospital both non-ICU and ICU)

- The number of detections of influenza from hospital wards reported to PHA decreased from five in week 18 to one in week 19. There were no influenza detections for non-ICU hospital wards in week 20.
- There were no new admissions to ICU with confirmed influenza reported in weeks 19 and 20, 2018, giving a total of 119 cases this season.
- There were no deaths reported in ICU during weeks 19 and 20, giving a total of 22 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 weeks 19 or 20, 2018. The total number of confirmed influenza outbreaks this season was 39.

Mortality

- The proportion of deaths related to respiratory keywords (bronchiolitis, bronchitis, influenza and pneumonia) increased from 24% in week 18 to 29% in week 19. This remained at 29% in week 20.

[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

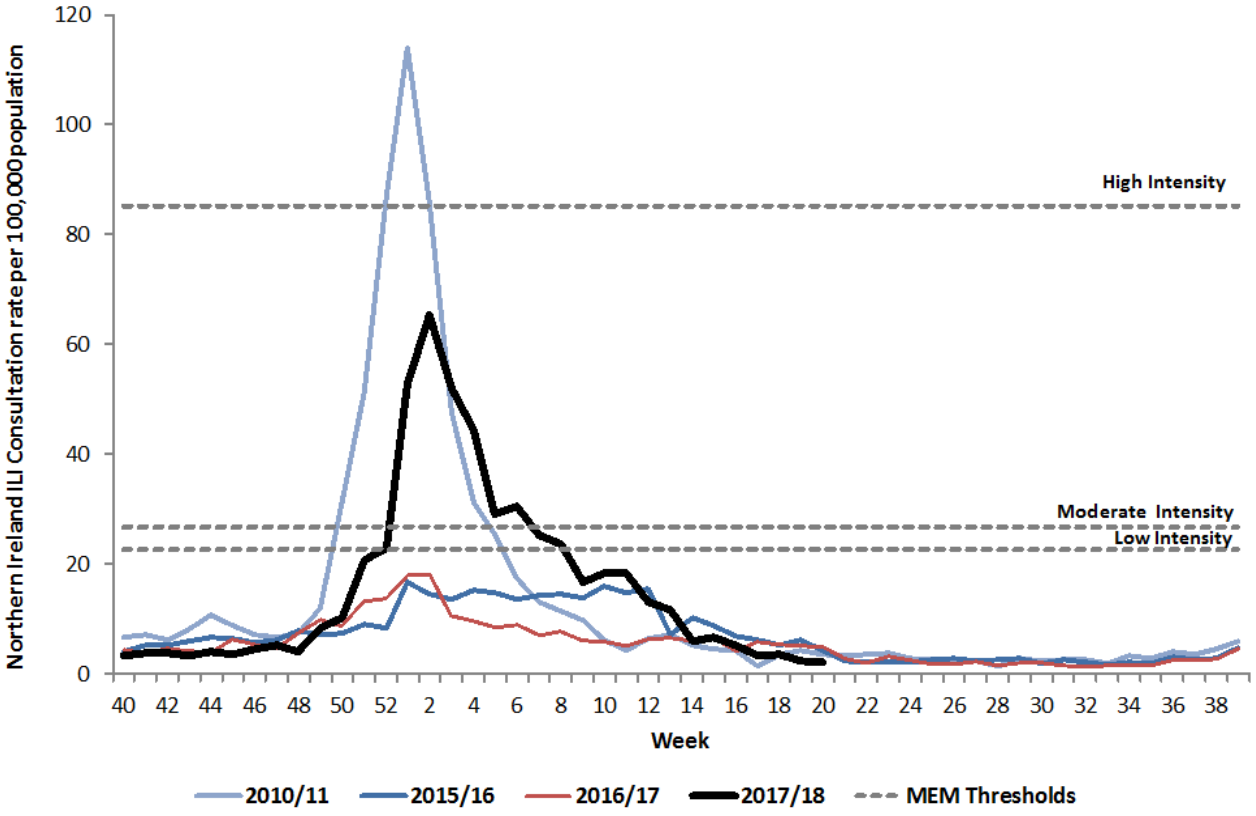


Figure 2. Northern Ireland GP consultation rates for flu/FLI and number of influenza positive detections 2012/13 – 2017/18

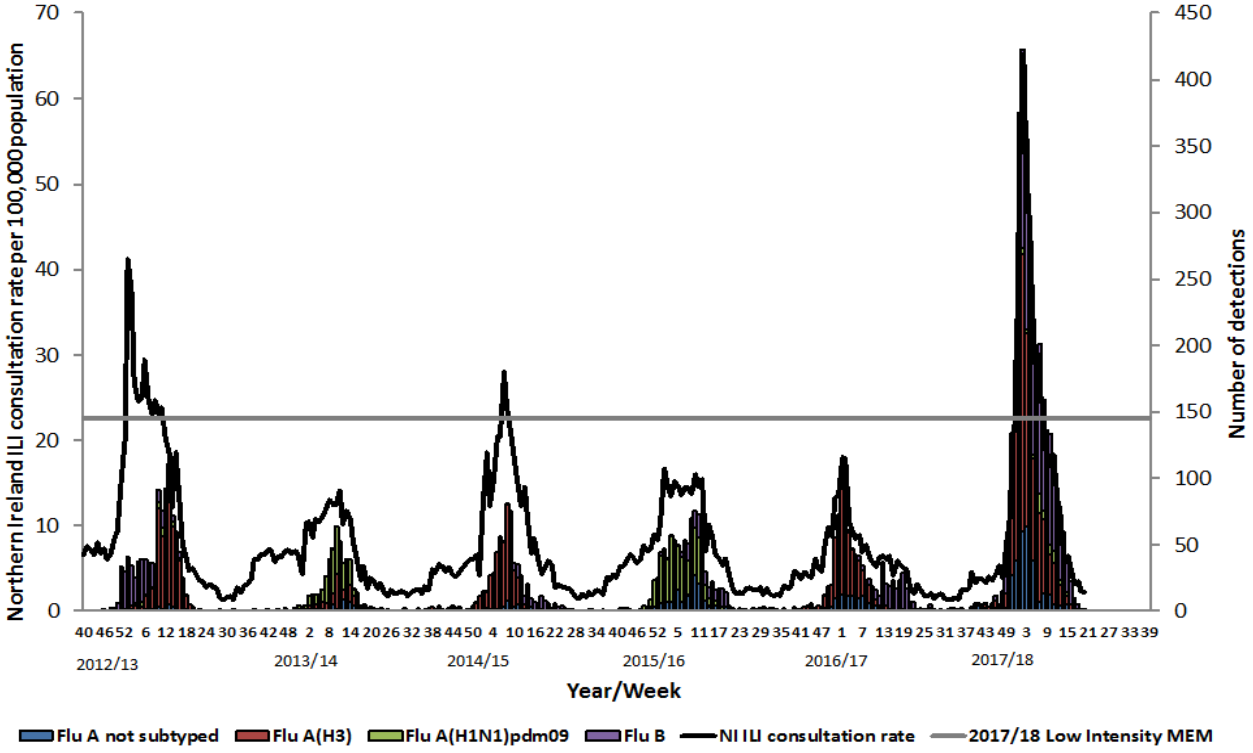
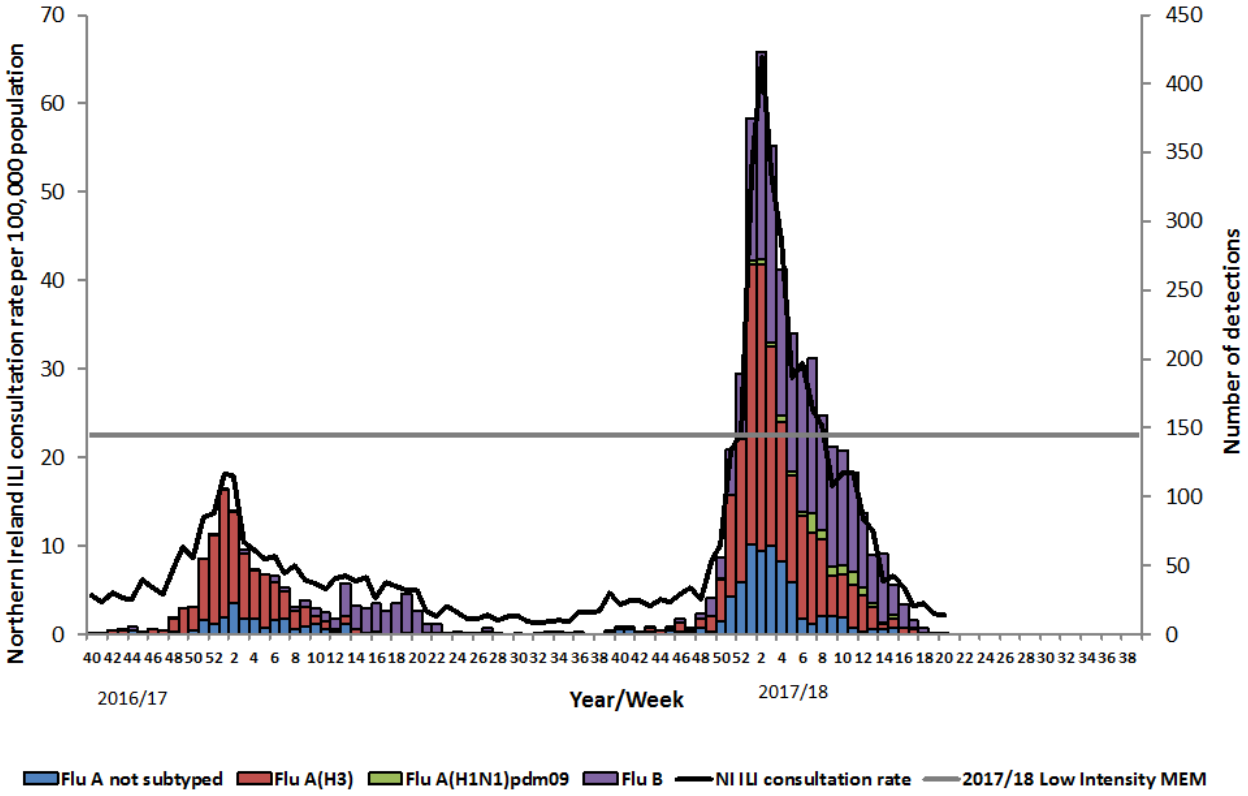


Figure 3. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2016



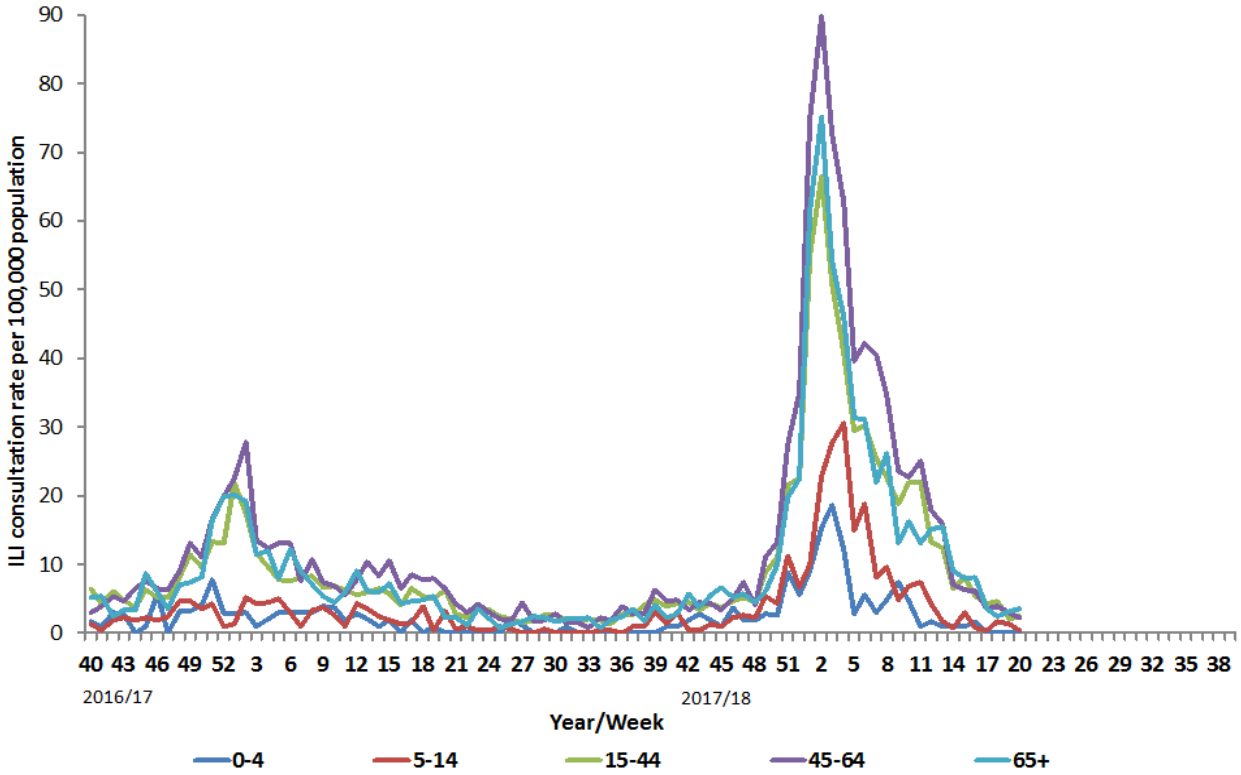
Comment

NI GP consultation rates decreased from 3.5 per 100,000 population in week 18, 2018, to 2.3 per 100,000 in week 19 and 2.2 per 100,000 in week 20. These rates remain well below the baseline MEM threshold for Northern Ireland (22.6 per 100,000) and are below normal seasonal activity (Figure 1).

In week 18 there were five positive influenza laboratory detections. In week 19 there was one positive influenza laboratory detection and one in week 20. In this season there have been a total of 1332 detections of influenza A(H3), 1454 of influenza B, 455 of influenza A (typing awaited), and 81 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 in week 20 show a steady decline for the age groups 5-14 years and 45-64 years for weeks 18 to 20. The rate per 100,000 for the age group 5-14 years fell from 1.7 in week 18, to 1.3 in week 19, and 0.4 in week 20. For the age group 45-64 years, the rate per 100,000 population fell from 4.0 in week 18, to 3.0 in week 19, and 2.3 in week 20.

In week 20 the NI GP age-specific consultation rate for the age group 15-44 years was 2.5 per 100,000 population. This was a small increase from week 19 (2.2 per 100,000), but less than week 18 (4.6 per 100,000).

The consultation rate for 65 years increased slightly from 2.4 per 100,000 in week 18, to 3.2 per 100,000 in week 19, and 3.5 per 100,000 in week 20. There were no instances of flu/FLI reported in weeks 19 or 20 for the age group 0-4 years.

Out-of-Hours (OOH) Centres Call Data

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

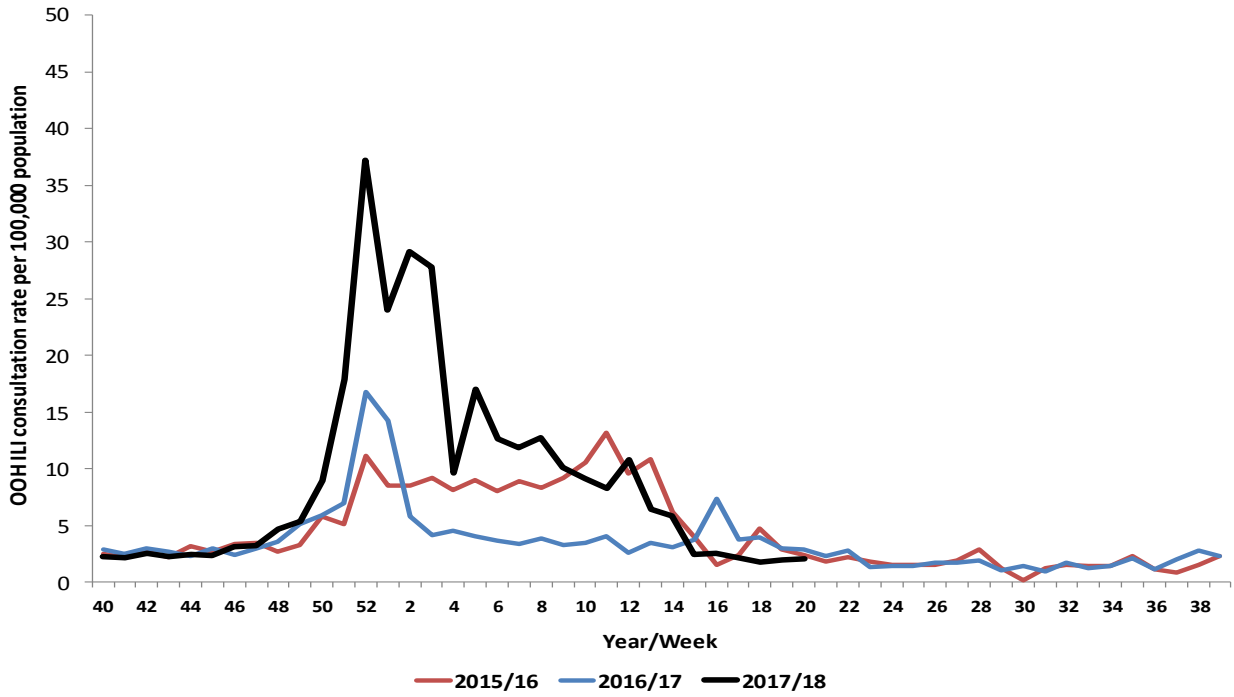
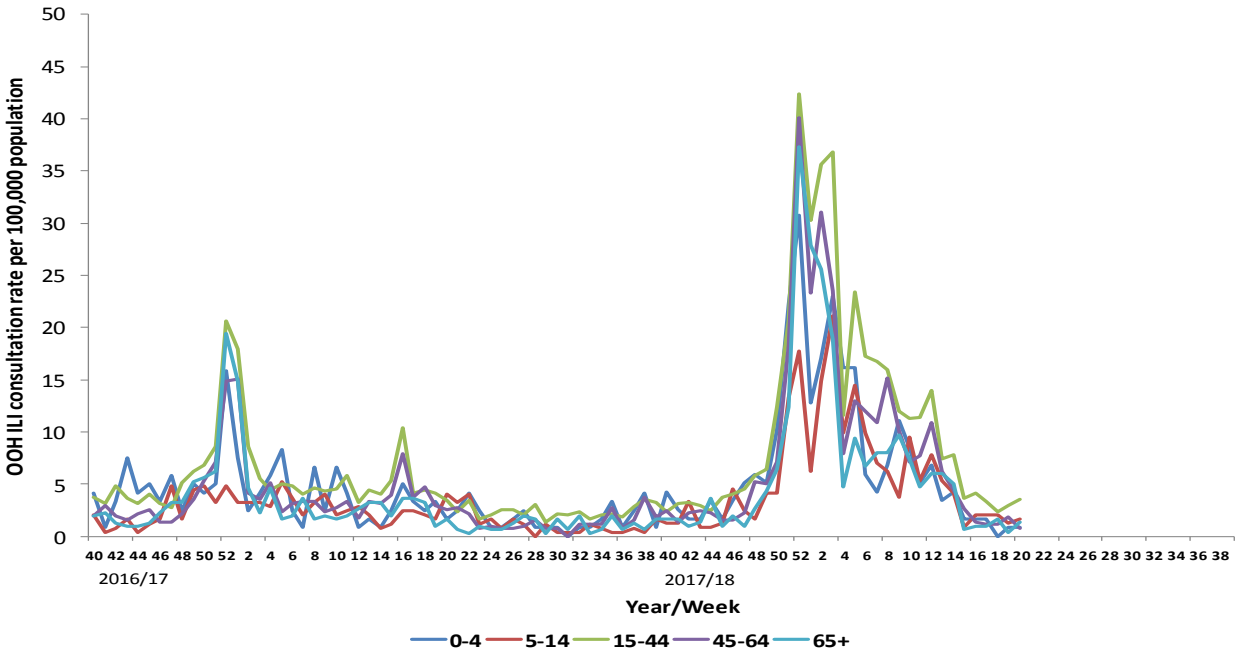


Figure 6. OOH call rates of flu/FLI by age-group from week 40, 2016



Comment

In week 19, 2018 there was a slight increase in the OOH GP consultation rate from 1.8 per 100,000 in week 18 to 1.9 per 100,000 in week 19. This rate further increased to 2.1 per 100,000 in week 20. Rates are lower than the same period in 2016/17 (2.9 per 100,000) (Figure 5).

In week 19 the proportion of calls related to flu in OOH centres remained the same as in week 18 at 0.3%. In week 20, this increased marginally to 0.4%.

In week 20, OOH flu/FLI rates increased for the age group 5-14 years (2.1 per 100,000 in week 18, 1.2 per 100,000 in week 19, and 1.7 per 100,000 in week 20). The OOH flu/FLI rates for the age group 15-44 also increased in week 20 (2.4 per 100,000 in week 18, 3.0 per 100,000 in week 19, and 3.5 per 100,000 in week 20). The rate for the age group 65 years and over was 1.3 per 100,000 in week 20, which was an increase from 0.3 per 100,000 in week 19. The OOH flu/FLI rates increased for the age group 0-4 years from zero in week 18 to 0.9 per 100,000 in week 19. This remained stable at week 20. The rate for the age group 45-64 years continued to increase in week 19 (1.2 per 100,000 in week 18 to 1.8 per 100,000 in week 19). However, in week 20 the rate had decreased to 0.8 per 100,000.

Virology Data

Table 1. Virus activity in Northern Ireland by source, Week 20, 2017/18								
Source	**Specimens Tested**	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	**Total influenza Positive**	**% Influenza Positive**
Sentinel	1	0	0	0	0	0	0	0%
Non-sentinel	141	0	0	0	1	0	1	1%
Total	**142**	**0**	**0**	**0**	**1**	**0**	**1**	1%

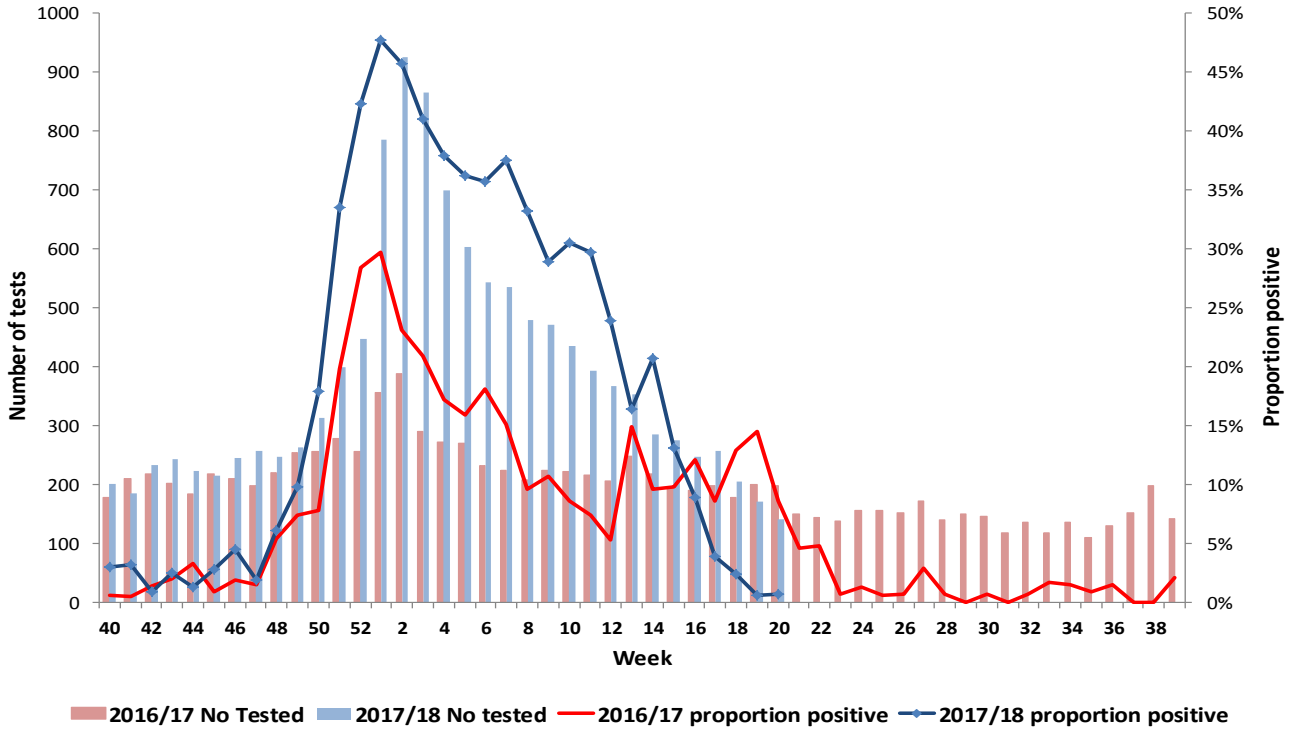
Table 2. Cumulative virus activity from all sources by age group, Week 40 - 20, 2017/18						
	Flu AH3	**Flu A(H1N1) 2009**	**A (untyped)**	**Flu B**	**Total Influenza**	**RSV**
0-4	**45**	**8**	**26**	**41**	**120**	**339**
5-14	**33**	**1**	**11**	**47**	**92**	**13**
15-64	**482**	**42**	**188**	**705**	**1417**	**93**
65+	**771**	**30**	**230**	**659**	**1690**	**140**
Unknown	**1**	**0**	**0**	**2**	**3**	**1**
All ages	**1332**	**81**	**455**	**1454**	**3322**	**586**

Table 3. Cumulative virus activity by age group and source, Week 40 - Week 20, 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**	**44**	**8**	**26**	**40**	**118**	**339**
5-14	**5**	**0**	**0**	**10**	**15**	**1**	**28**	**1**	**11**	**37**	**77**	**12**
15-64	**75**	**10**	**14**	**124**	**223**	**9**	**407**	**32**	**174**	**581**	**1194**	**84**
65+	**26**	**3**	**3**	**21**	**53**	**1**	**745**	**27**	**227**	**638**	**1637**	**139**
Unknown	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**3**	**1**
All ages	**107**	**13**	**17**	**156**	**293**	**11**	**1225**	**68**	**438**	**1298**	**3029**	**575**

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.

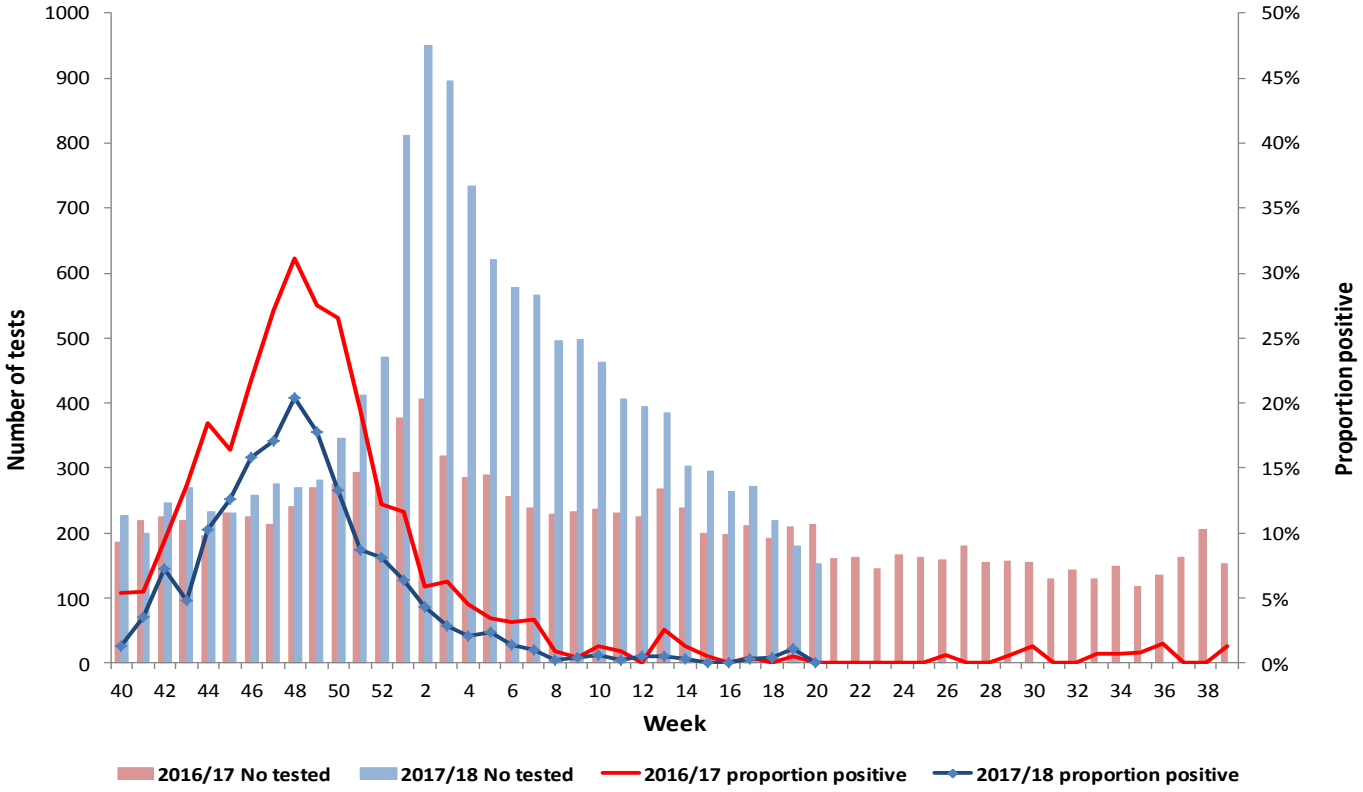
During week 19, 2018 there were 171 specimens submitted for virological testing. There was one positive detection of influenza A(H3).

During week 20, 2018 there were 142 specimens submitted for virological testing. There was one positive detection of Influenza B.

There were three samples submitted through the GP based sentinel scheme across Northern Ireland during weeks 19 and 20, but none tested positive for influenza.

Respiratory Syncytial Virus (RSV)

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



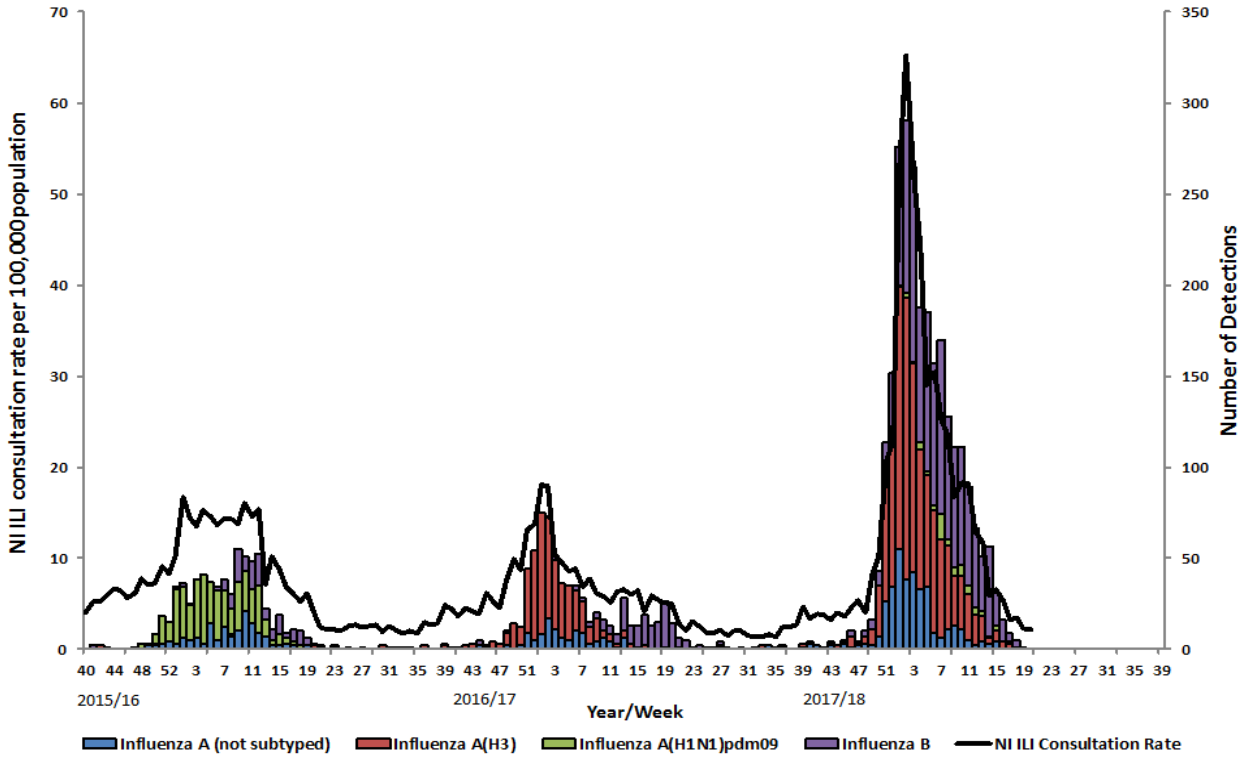
Comment

There was one positive detection of RSV reported in week 18, 2018. During week 19, there were two positive detections of RSV, giving a positivity rate of 1%. During week 20 there was zero positive detections of RSV.

This season there have been a total of 586 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



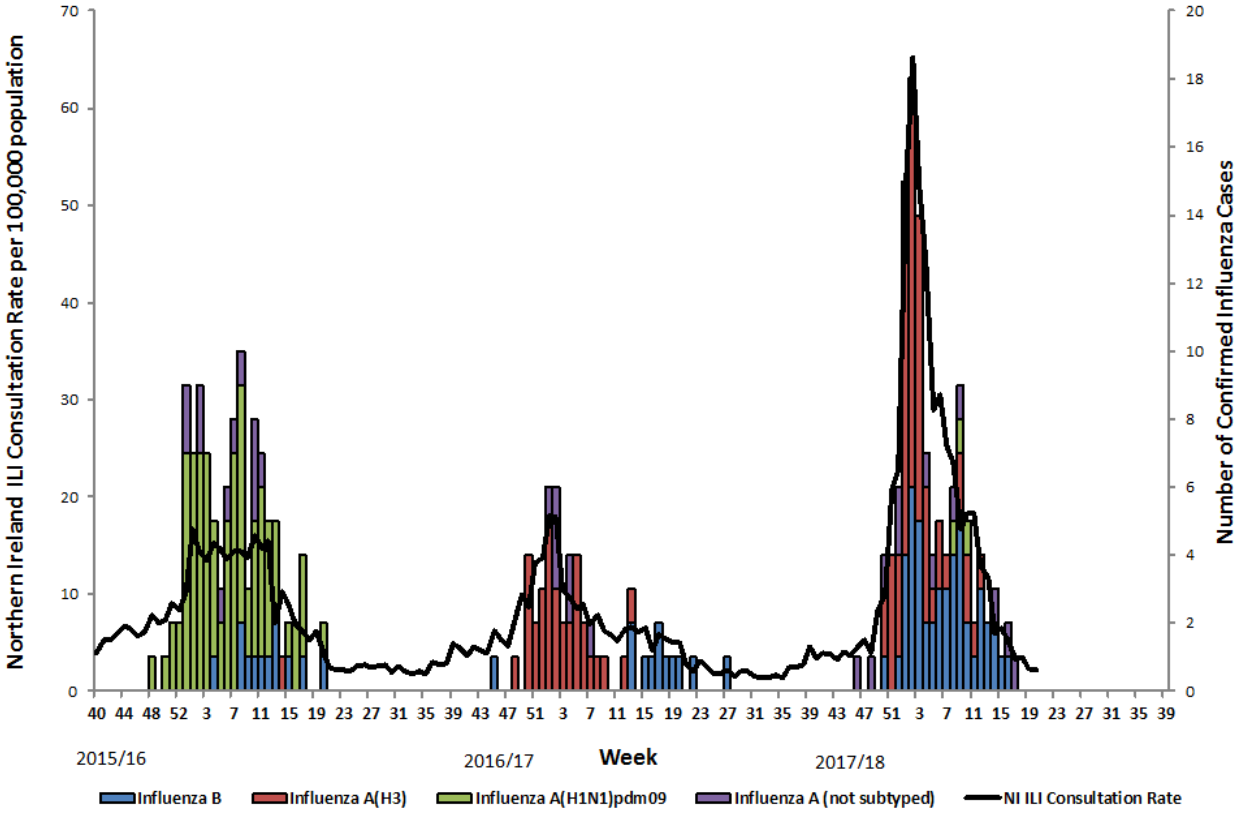
Comment

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 19, 2018 there was one detection of influenza A(H3) reported in hospital settings across Northern Ireland. This represents a decrease from week 18 (five positive reports). During week 20 there were no detections of influenza reported from hospital settings across Northern Ireland. It should be kept in mind that not all positive specimens for week 20 may have been reported at this point.

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 18 to 20 there were no new admissions or deaths in ICU with confirmed influenza reported to the PHA.

There were 22 deaths in ICU this season in which a diagnosis of influenza was confirmed. There have been 119 confirmed cases of influenza in ICU reported this season, of which 53 have been typed as influenza A(H3), 48 influenza B, three as influenza A(H1N1)2009, 14 as influenza A (typing awaited) and one confirmed case of both influenza A and B (not shown in figure 10).

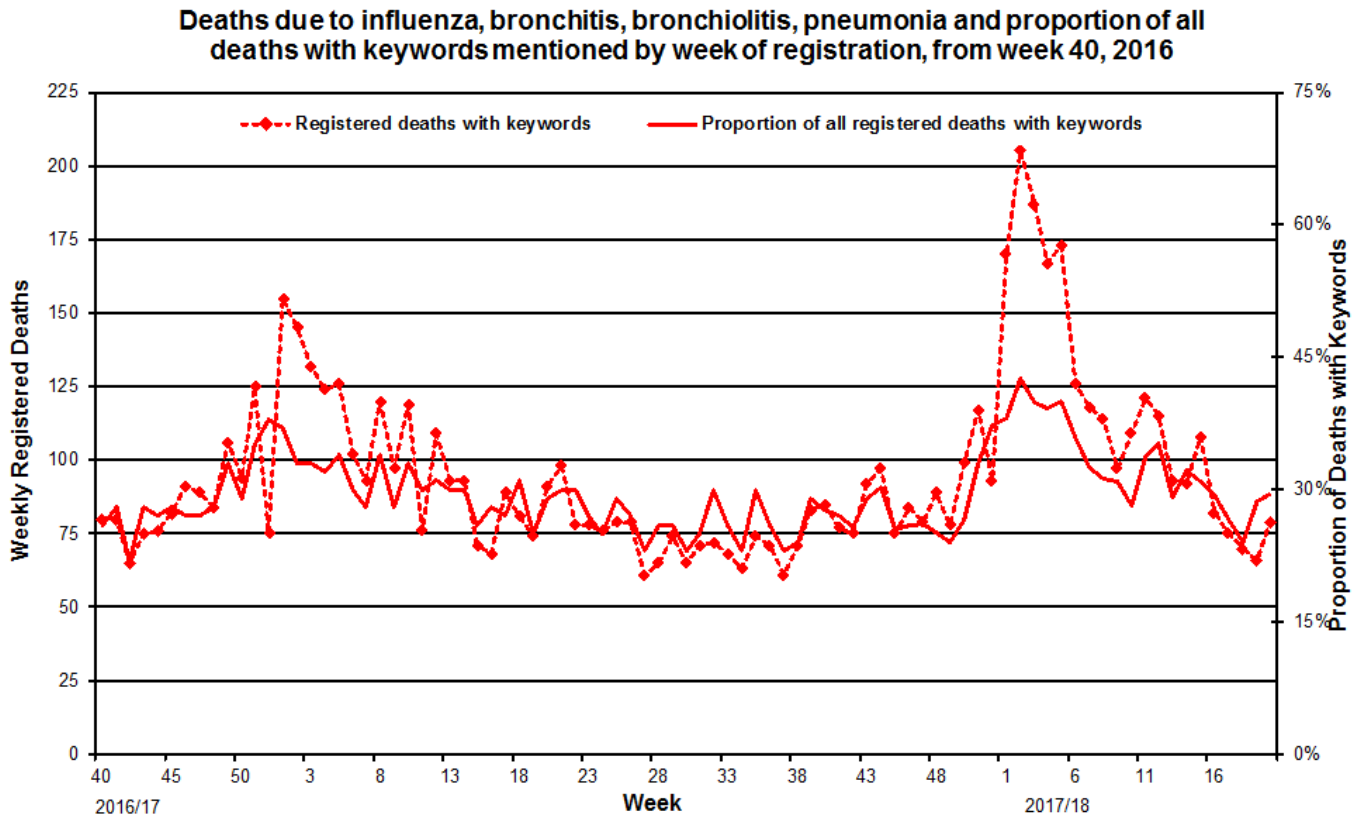
Outbreak Surveillance

During weeks 18 to 20, 2018 there were 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 24% in week 18, 2018, to 29% in week 19 and remained at 29% in week 20. In week 19 there were 230 registered deaths of which 66 related to specific respiratory infections. In week 20 there were 268 registered deaths, of which 79 related to specific respiratory infections (Figure 11). The proportion of deaths

attributed to specific respiratory infections is the same at this point in the season as the same period in 2016/17 (29%).

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 EuroMOMO data available for week 20 at the time of publication.

Up to week 18, 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 Mar 31st)	2016/17 (to Mar 31st)
>65 years	71.8%	71.9%
<65 years at risk	56.0%	57.1%
Pregnant women	56.7%	58.6%
2 to 4 year olds	50.6%	52.6%
Primary School	76.5%	78.3%
Trust Frontline	33.4%	29.0%

International Summary

Europe

Week 19/2018 (7 - 13 May 2018)

- Influenza activity had returned to inter-season levels in most of the countries in the Region.
- 10% of the individuals sampled from primary healthcare settings tested positive for influenza viruses (compared to 6% in the previous week).
-

2017/18 season overview

- Influenza viruses circulated at high levels in the Region between weeks 52/2017 and 12/2018 (based on increased proportions - 40% and above - of sentinel specimens testing positive for influenza viruses). This is longer than in recent seasons and may have contributed to the severity of this season.
- 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.
- Different patterns of dominant type and A subtypes were observed between the countries of the Region.
- While low in numbers, characterized A(H3N2) viruses fell mainly in clade 3C.2a (57%) and subclade 3C.2a1 (42%), while 43% of B/Victoria lineage viruses fell in a subclade of clade 1A viruses that are antigenically distinct from the current trivalent vaccine component.
- The majority of severe cases reported this season were due to influenza virus type B infection and have mostly occurred in persons older than 15 years.
- Mortality from all causes now appears be have returned to normal expected levels in all 20 participating countries and regions that report to EuroMOMO.
- Interim results from 5 European studies indicate 25 to 52% vaccine effectiveness against any influenza

http://www.flunewseurope.org/

Worldwide (WHO) Influenza

14 May 2018 - based on data up to 29 April 2018

Influenza activity returned to inter-seasonal levels in most of the countries in the temperate zone of the northern hemisphere except for some countries in Eastern Europe. Activity increased in some countries in tropical America. In the temperate zone of the southern hemisphere, influenza activity increased but remained below the seasonal thresholds. Worldwide, seasonal influenza subtypes A and B accounted for approximately the same 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 period from 16 April 2018 to 29 April 2018 (data as of 2018-05-11 03:42:35 UTC). The WHO GISRS laboratories tested more than 97697 specimens during that period of which 9993 were positive for influenza viruses. Among positive viruses, 5605 (56.1%) were typed as influenza A and 4388 (43.9%) as influenza B. Of the sub-typed influenza A viruses, 1503 (54.6%) were influenza A (H1N1)pdm09 and 1252 (45.4%) were influenza A (H3N2). Of the characterized B viruses, 428 (84.9%) belonged to the B-Yamagata lineage and 76 (15.1%) 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:

Dr Mark O'Doherty **Senior Epidemiological Scientist** **Public Health Agency**	**Miss Frances Redmond** **Surveillance Information Officer** **Public Health Agency**	**Dr Muhammad Sartaj** **Public Health Consultant** **Public Health Agency**

Email: flusurveillance@hscni.net

This report was compiled by Dr Mark O'Doherty, Paul Cabrey, Miss Frances Redmond and Dr Muhammad Sartaj.