

Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 12 (19th March – 25th March 2018)

Summary

In week 12, 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 activity¹. Influenza B is the predominant strain circulating.

Northern Ireland Primary Care Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) decreased from 18.3 per 100,000 population in week 11, 2018 to 13.0 per 100,000 population in week 12.
- OOH GP consultation rates for flu/FLI increased slightly in week 12, 2018 from 8.3 per 100,000 population in week 11 to 10.8 per 100,000. This increase may be the result of a bank holiday which occurred during week 12 when in-hour GP practices would have been closed.

Microbiological Surveillance (Flu and RSV)

- The proportion of all positive influenza specimens decreased from 31% in week 11, 2018 to 24% in week 12.
- 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 decreased from a total of 84 detections in week 11, 2018 to 63 in week 12.
- There were four new admissions to ICU with confirmed influenza in week 12 giving a total of 110 cases this season to date.
- There were no deaths reported in ICU patients who had laboratory confirmed influenza in week 12. 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 12, 2018.

Mortality

- The proportion of deaths related to respiratory keywords (bronchiolitis, bronchitis, influenza and pneumonia) increased slightly from 34% in week 11, 2018 to 35% in week 12.

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

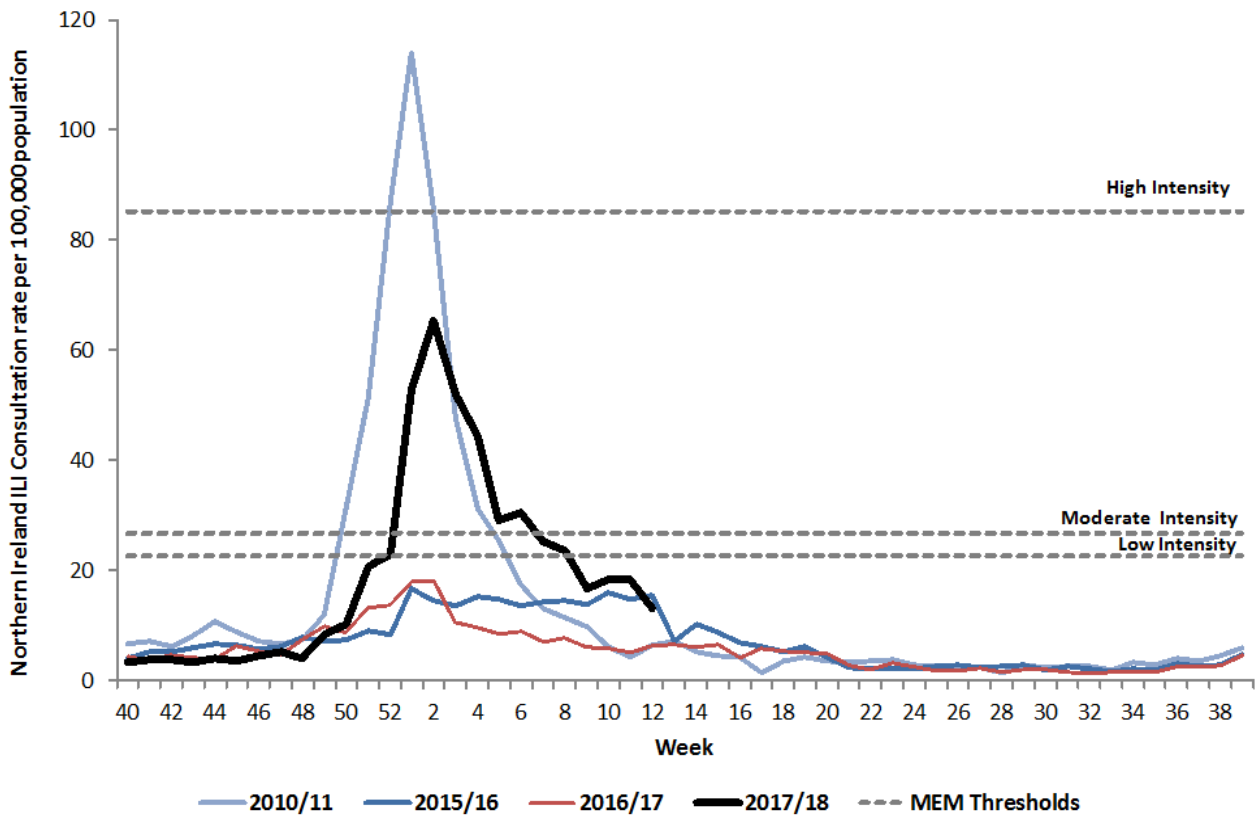


Figure 2. Northern Ireland GP consultation rates for flu/FLI and number of influenza positive detections 2012/13 – 2017/18

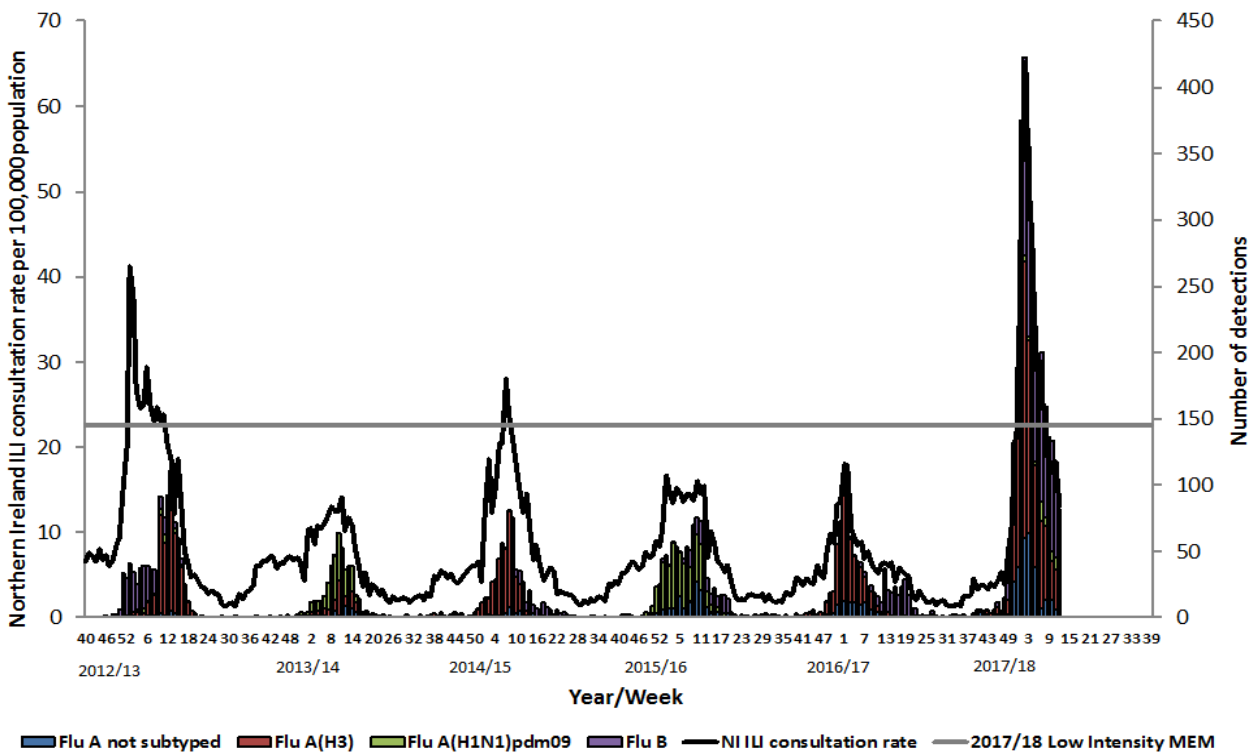
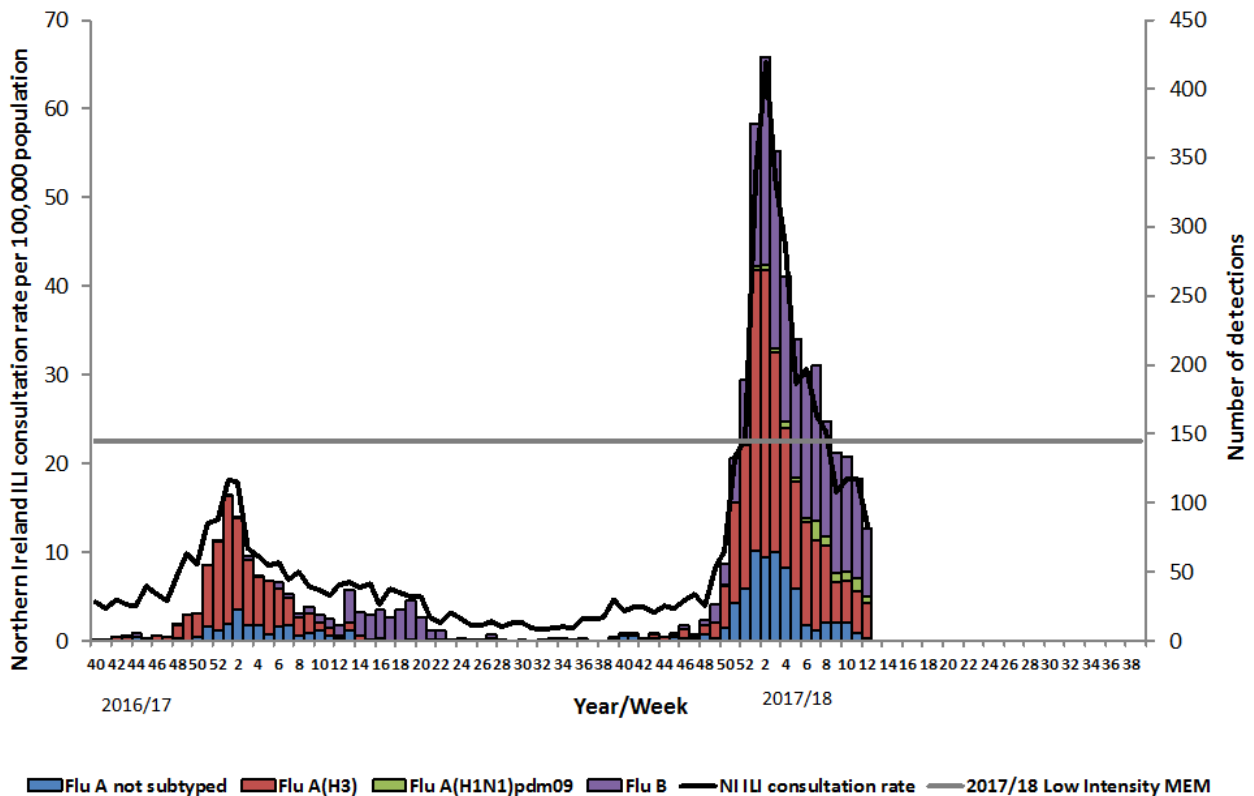


Figure 3. Northern Ireland GP consultation rates for flu/ILI and number of virology 'flu' detections from week 40, 2016



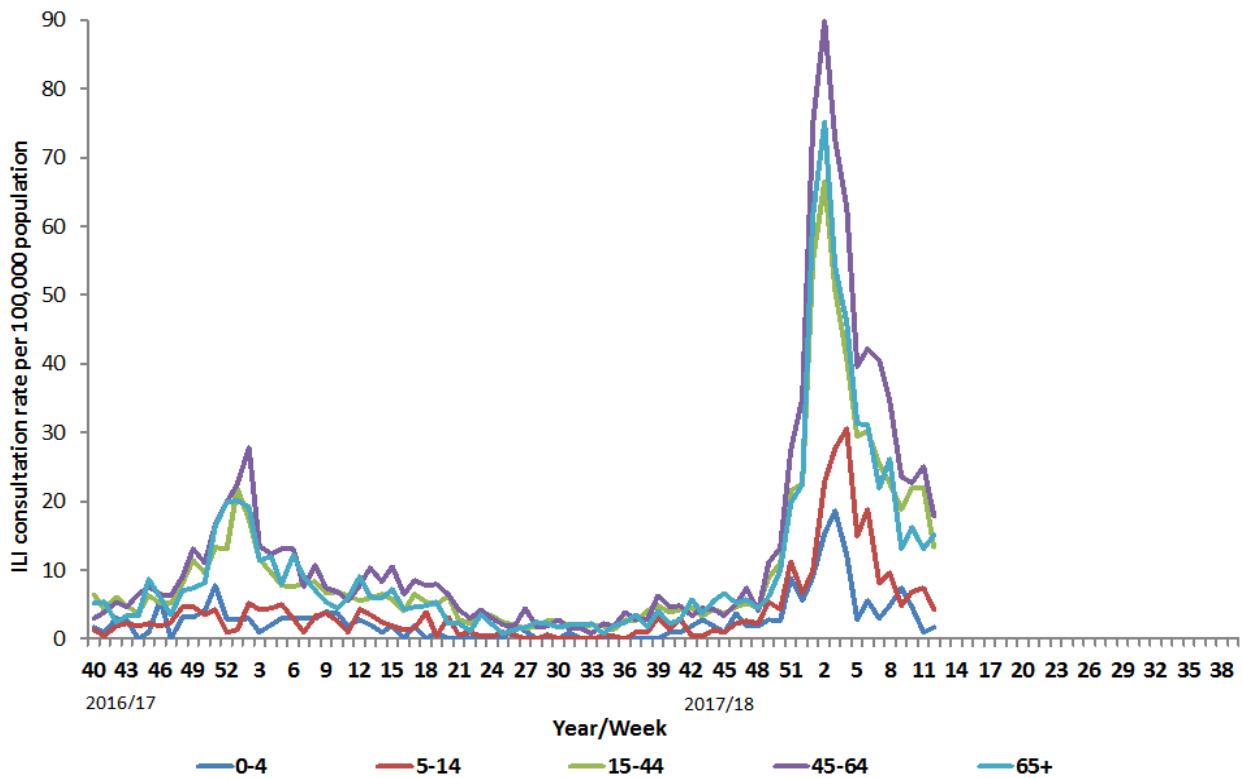
Comment

NI GP consultation rates decreased from 18.3 per 100,000 population in week 11, 2018 to 13.0 per 100,000 population in week 12. These rates remain below the baseline MEM threshold for Northern Ireland (22.6 per 100,000 population) and are below normal seasonal activity. The NI GP consultation rate in week 12 remains higher than for the same period last year. (Figure 1).

The number of positive influenza laboratory detections decreased from 117 in week 11, 2018 to 85 in week 12. At this point in the season there have been a total of 1291 detections of influenza A(H3), 1314 of influenza B, 446 of influenza A (typing awaited), and 72 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 increased in week 12, 2018 in those aged 0-4 years (0.9 to 1.8 per 100,000) and 65 years and older (13.2 to 15.2 per 100,000). Rates decreased in those aged 5-14 years (7.5 to 4.4 per 100,000), 15-44 years (21.9 to 13.4) and 45-64 years (25.1 to 17.9 per 100,000) (Figure 4).

Out-of-Hours (OOH) Centres Call Data

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

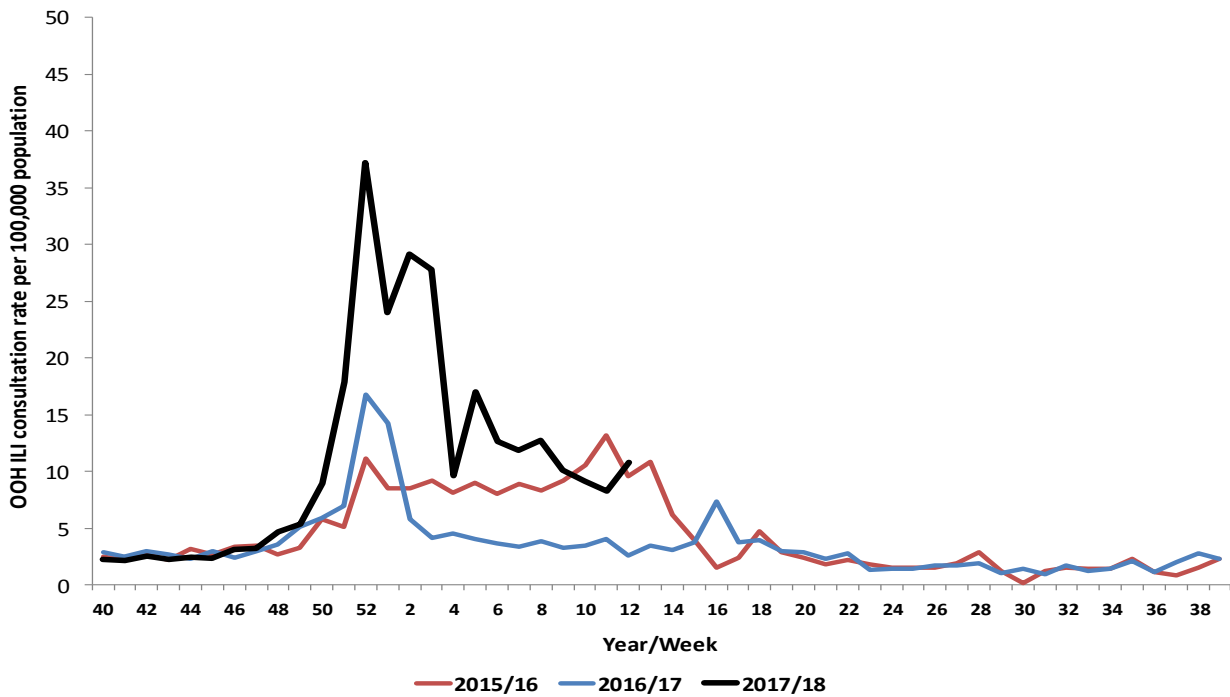
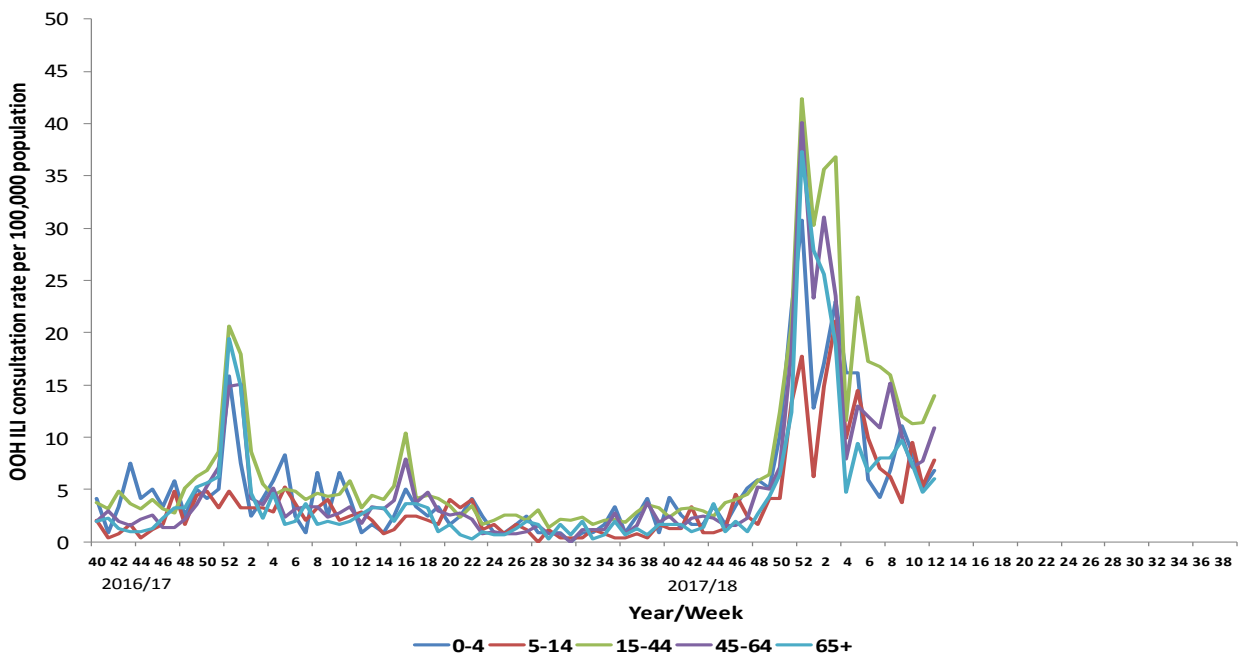


Figure 6. OOH call rates of flu/FLI by age-group from week 40, 2016



Comment

OOH GP consultation rates increased in week 12, 2018 from 8.3 per 100,000 population in week 11 to 10.8 per 100,000. This increase may be the result of a bank holiday which occurred during week 12 when in-hour GP practices would have been closed. Rates remain higher than those in the same period in 2016/17 (2.6 per 100,000) (Figure 5).

The proportion of calls related to flu in OOH centres increased slightly from 1.3% in week 11, 2018 to 1.4% in week 12.

OOH flu/FLI rates increased for all age groups in week 12, 2018; 0-4 years (5.1 to 6.8 per 100,000), 5-14 years (5.4 to 7.9 per 100,000), 15-44 years (11.4 to 14.0 per 100,000), 45-64 years (7.7 to 10.0 per 100,000) and 65 years and older (4.7 to 6.1 per 100,000).

Virology Data

Table 1. Virus activity in Northern Ireland by source, Week 12, 2017/18

Source	Specimens Tested	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	12	2	0	0	3	0	5	42%
Non-sentinel	342	23	5	4	48	1	80	23%
Total	354	25	5	4	51	1	85	24%

Table 2. Cumulative virus activity from all sources by age group, Week 40 - 12, 2017/18

	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
0-4	44	8	26	39	117	333
5-14	33	1	10	46	90	13
15-64	460	37	183	647	1327	92
65+	753	26	227	580	1586	138
Unknown	1	0	0	2	3	1
All ages	1291	72	446	1314	3123	577

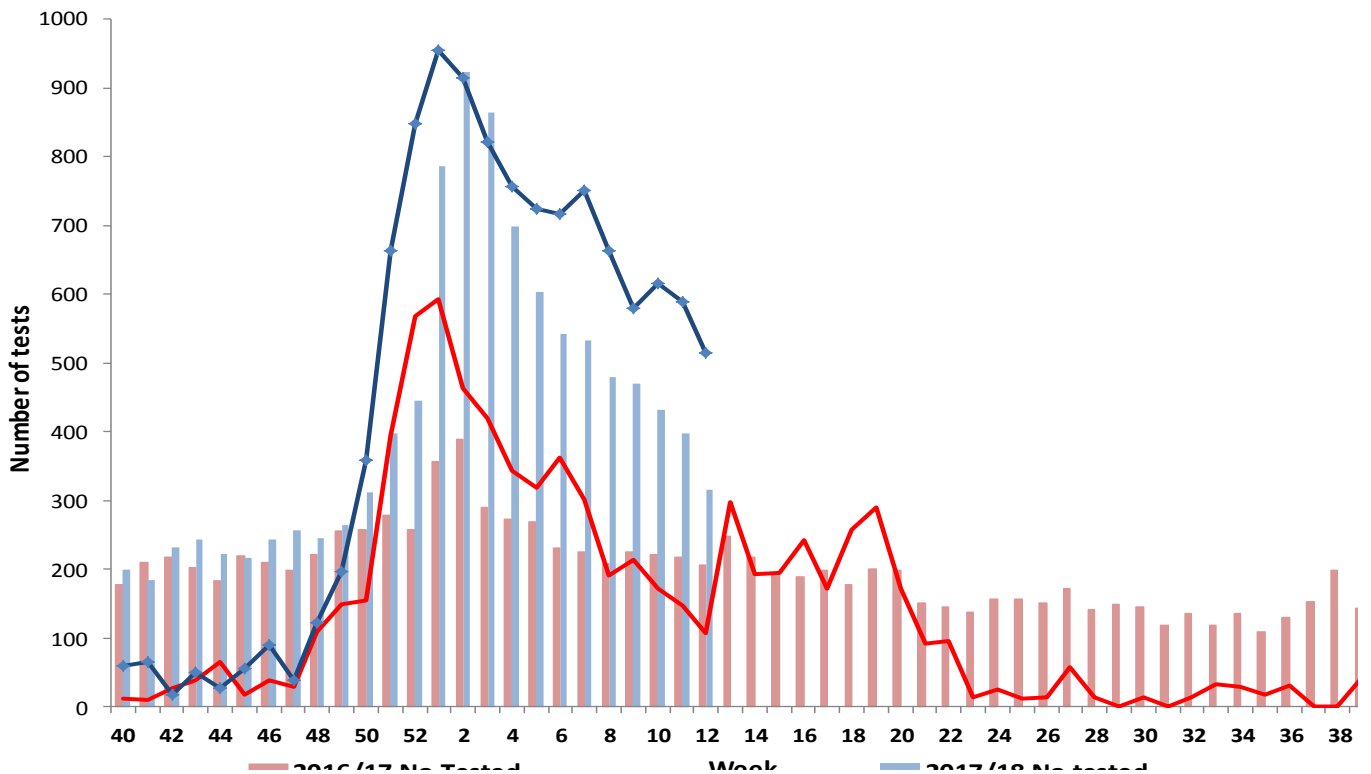
Table 3. Cumulative virus activity by age group and source, Week 40 - Week 12, 2017/18

	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	38	115	333
5-14	5	0	0	10	15	1	28	1	10	36	75	12
15-64	73	9	14	115	211	9	387	28	169	532	1116	83
65+	26	3	3	21	53	1	727	23	224	559	1533	137
Unknown	0	0	0	0	0	0	1	0	0	2	3	1
All ages	105	12	17	147	281	11	1186	60	429	1167	2842	566

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

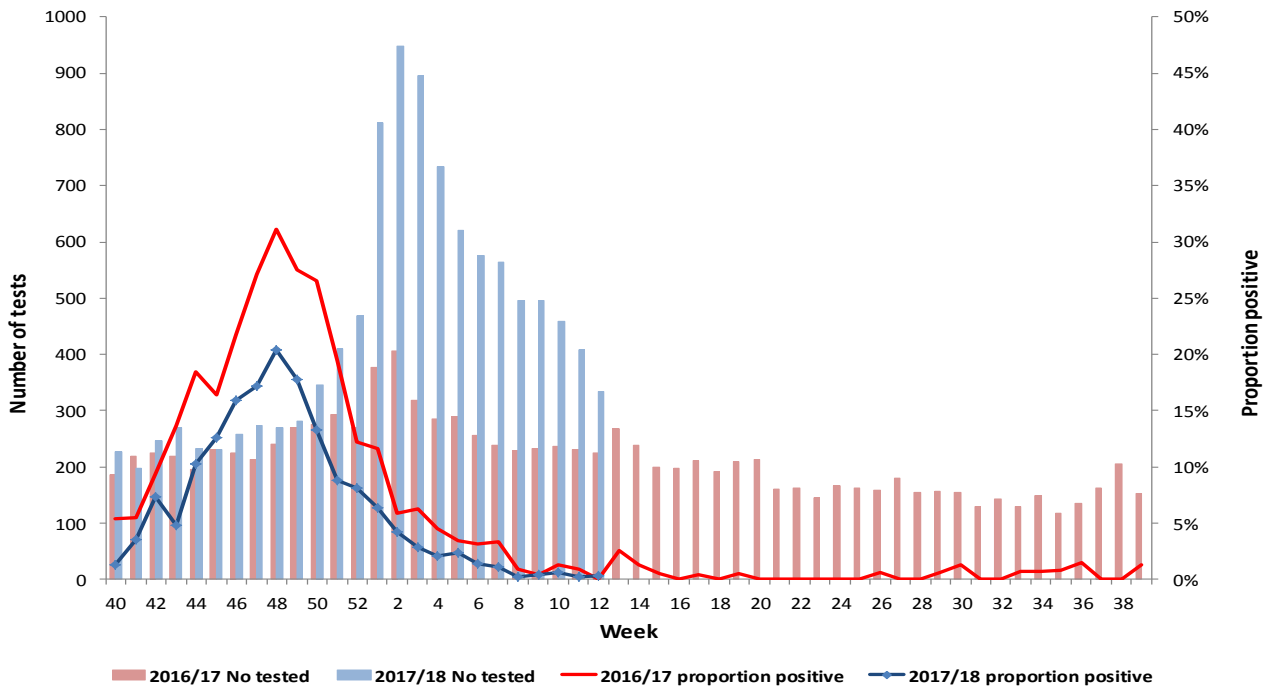
Additional virology testing has been undertaken at one local laboratory since week 2, 2018. This bulletin now includes this data along with the data from the Regional Virology Laboratory. Other local laboratories may begin undertaking influenza testing and this data will be included in later bulletins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

During week 12, 2018 there were 354 specimens submitted for virological testing. There were 85 detections of influenza in total (positivity rate of 24%), of which 25 were influenza A(H3), 51 influenza B, four influenza A (typing awaited) and there were five detections of influenza A(H1N1)pdm09 (Figure 7 and Table 1).

There were 12 samples submitted through the GP based sentinel scheme across Northern Ireland during this period, of which five (positivity rate of 42%) were positive for influenza. Of the five positive, two were reported as influenza A(H3) and three as influenza B (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

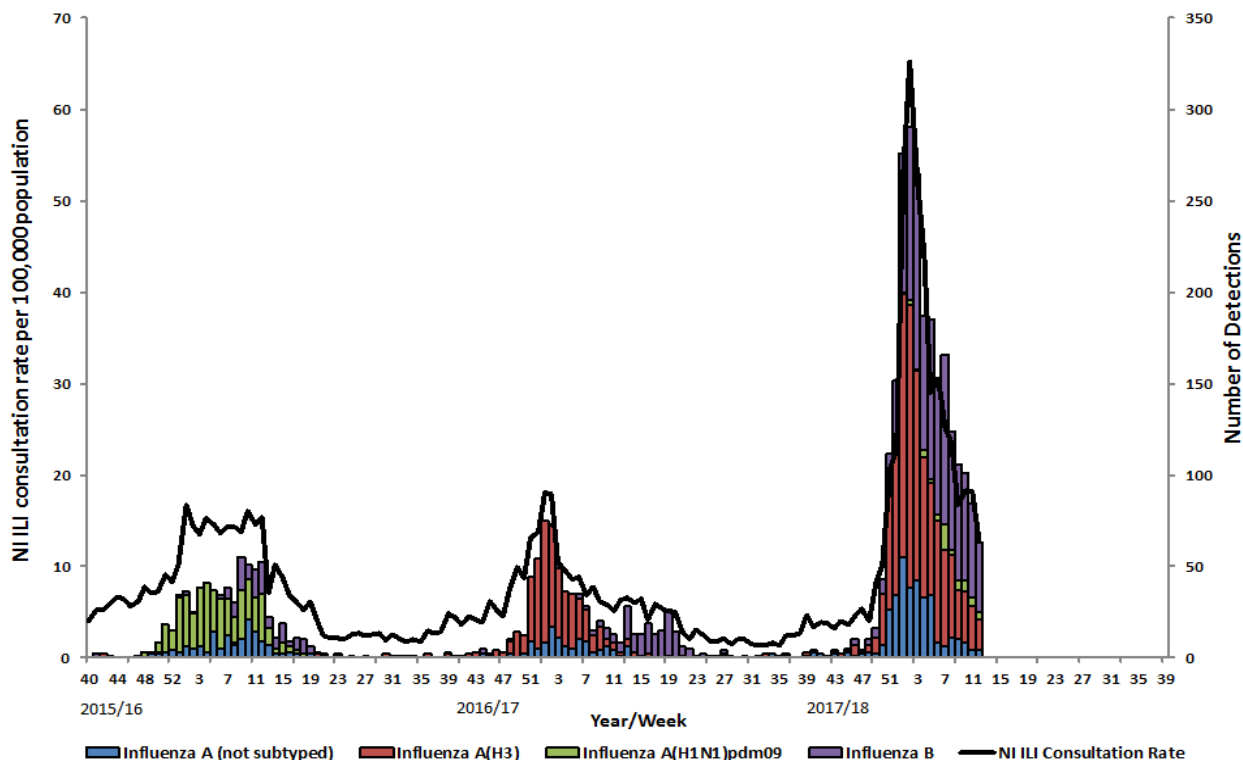


Comment

One positive detection of RSV was reported in week 12, 2018. To date there have been a total of 577 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



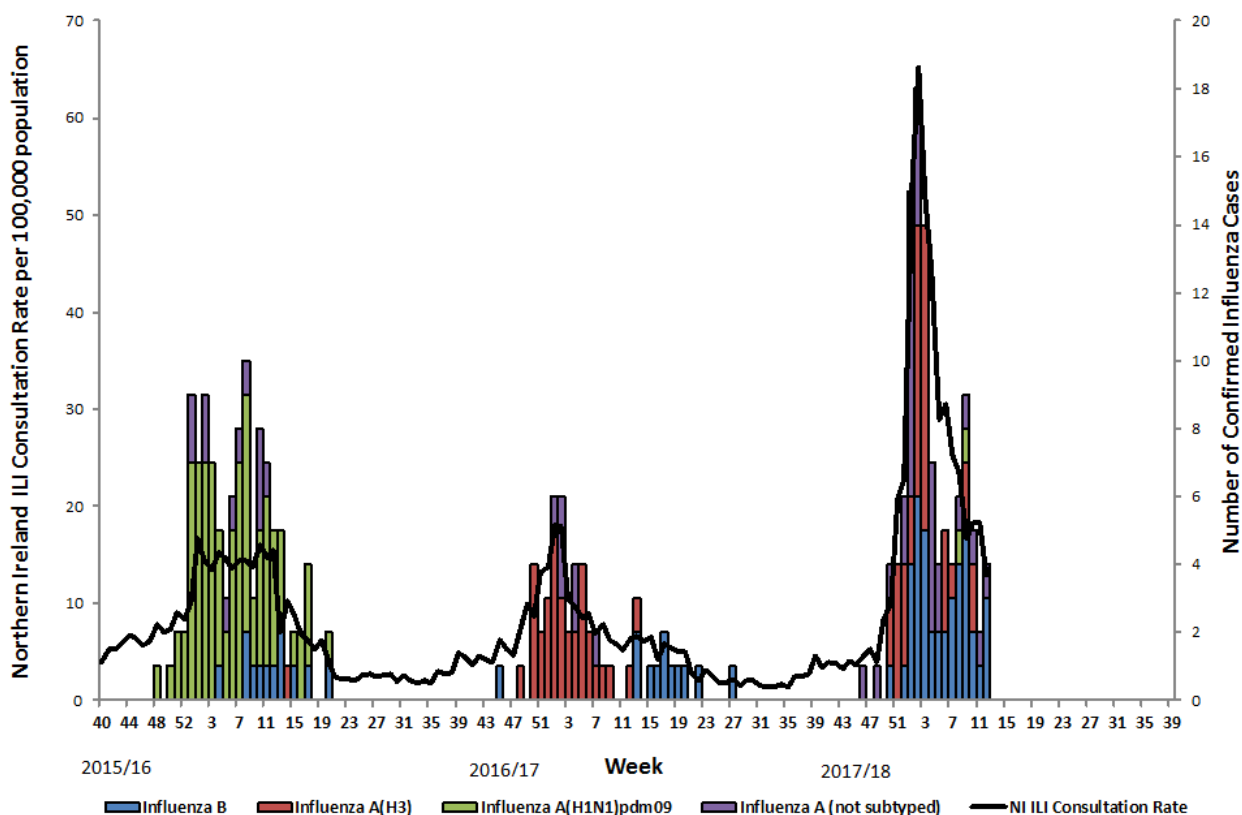
Comment

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 12, 2018 there were a total of 63 detections of influenza from specimens taken in hospital settings across Northern Ireland. Of these there were 17 detections of influenza A(H3), 38 of influenza B, four of influenza A (typing awaited) and four detections of influenza A(H1N1)2009. This represents a decrease from week 11 (84 positive reports); however, it should be kept in mind that not all positive specimens for week 12 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 week 12, 2018, there were four 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 12. There were 19 deaths in ICU this season in which a diagnosis of influenza was confirmed. There have been 110 confirmed cases of influenza in ICU reported this season to date, of which 36 have been typed as influenza A(H3), 41 influenza B, two influenza A(H1N1)2009, 30 influenza A (typing awaited) and one confirmed case of both influenza A and B (not shown in figure 10).

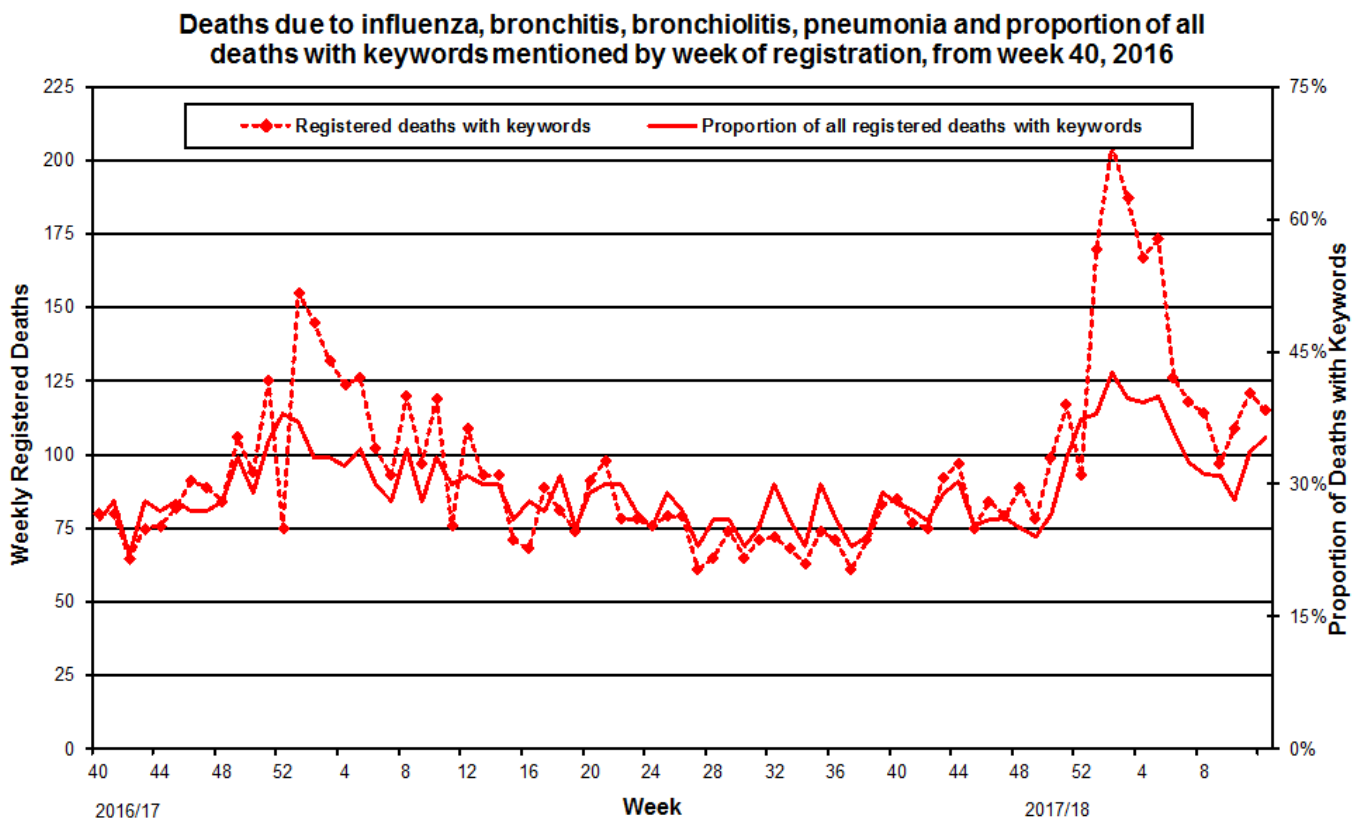
Outbreak Surveillance

During week 12, 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

During week 12, 2018 the proportion of deaths related to respiratory keywords increased slightly from 34% to 35%. In week 12 there were 326 registered deaths, of which 115 related to specific respiratory infections (Figure 11). The proportion of deaths attributed to specific respiratory infections is higher at this point in the season to the same period in 2016/17 (31%).

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 12, 2018. There has been a total of eight weeks in the season where there has been excess all-cause mortality (weeks 51-5, and week 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 31 st)	2016/17 (to Jan 31 st)
>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 11/2018 (12-18 March 2018)

- Influenza viruses continue to circulate widely in the Region with some eastern European countries that have only recently reported increased activity, experiencing a late start to the season with increased circulation of influenza type A viruses.

- Similar to the previous week, 44% of the individuals sampled from primary healthcare settings tested positive for influenza viruses, despite the peak rate for the Region occurring in week 05/2018.
- Both influenza virus types A and B were co-circulating with the majority being type B viruses and B/Yamagata continuing to be the dominant lineage.
- 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.
- 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. As the reassortant virus genome contains a mixture of genes from currently circulating seasonal influenza viruses, no increase in virulence is expected. Having similar HA with circulating strains, the current vaccine is expected to offer protection against this reassortant. The neuraminidase showed no evidence for reduced sensitivity to neuraminidase inhibitors. There is no evidence for extensive spread of this A(H1N2) influenza virus.

2017/18 season overview

- 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. Russian Federation, Kazakstan). 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 A(H3N2) viruses belong to clade 3C.2a and 48% of B/Victoria 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 occur in persons above the age of 15 years. [Click here for more information](#)
- Mortality from all causes based on pooled data from 19 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.

<http://www.flunewseurope.org/>

Worldwide (WHO)

As at 19 March 2018 (based on data up to 4 March 2018)

- Influenza activity remained high but appeared to have peaked in some countries in the temperate zone of the northern hemisphere. In the temperate zone of the southern hemisphere 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 111 countries, areas or territories reported data to FluNet for the time period from 19 February 2018 to 04 March 2018 (data as of 2018-03-16 03:54:19 UTC). The WHO GISRS laboratories tested more than 24 8161 specimens during that time period. 72 543 were positive for influenza viruses, of which 32 650 (45%) were typed as influenza A and 39 893 (55%) as influenza B. Of the sub-typed influenza A viruses, 7350 (60.4%) were influenza A(H1N1)pdm09 and 4817 (39.6%) were influenza A(H3N2). Of the characterized B viruses, 4820 (94.7%) belonged to the B-Yamagata lineage and 269 (5.3%) 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:

<http://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

Dr Cathriona Kearns
Epidemiological Scientist
Public Health Agency

Dr Muhammad Sartaj
Public Health Consultant
Public Health Agency

Email: flusurveillance@hscni.net

This report was compiled by Dr Cathriona Kearns, Mr Paul Cabrey, Dr Mark O'Doherty and Dr Muhammad Sartaj.