

## Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 10 (5<sup>th</sup> March – 11<sup>th</sup> March 2018)

### Summary

In week 10, the surveillance data indicates influenza continues to decrease. Rates are below the baseline Moving Epidemic Method (MEM) threshold for Northern Ireland and are below normal seasonal activity<sup>1</sup>. 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) increased from 16.7 per 100,000 population in week 9, 2018 to 18.3 per 100,000 in week 10.
- OOH GP consultation rates for flu/FLI decreased in week 10, 2018 from 10.1 per 100,000 population in week 9 to 9.2 per 100,000.

#### Microbiological Surveillance (Flu and RSV)

- The proportion of all positive influenza specimens increased slightly from 29% in week 9, 2018 to 31% in week 10.
- Two positive detections of RSV were detected. The positivity rate decreased from the same period in 2016/17 (1%).

#### 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 106 detections in week 9, 2018 to 88 in week 10.
- There were five new admissions to ICU with confirmed influenza in week 10 giving a total of 104 cases this season to date.
- No deaths were reported in ICU patients who had laboratory confirmed influenza in week 10. The total reported deaths that occurred in ICU this season with confirmed influenza to date remains at 18

#### Influenza Outbreaks across Northern Ireland

- There were two confirmed influenza outbreaks in care homes reported to the PHA in week 10, 2018.

#### Mortality

- The proportion of deaths related to respiratory keywords (bronchiolitis, bronchitis, influenza and pneumonia) decreased from 31% to 28% in week 10, 2018.

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<sup>1</sup> 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 2<sup>nd</sup> 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

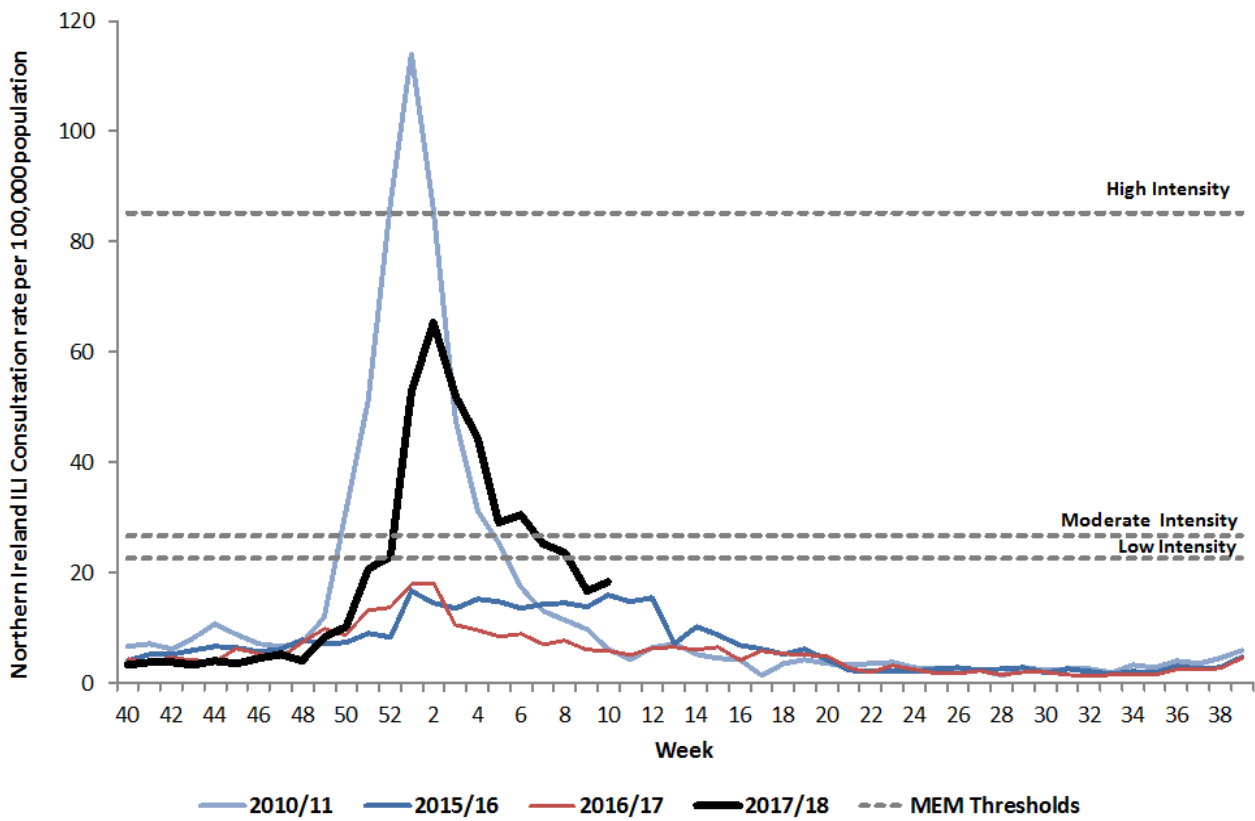
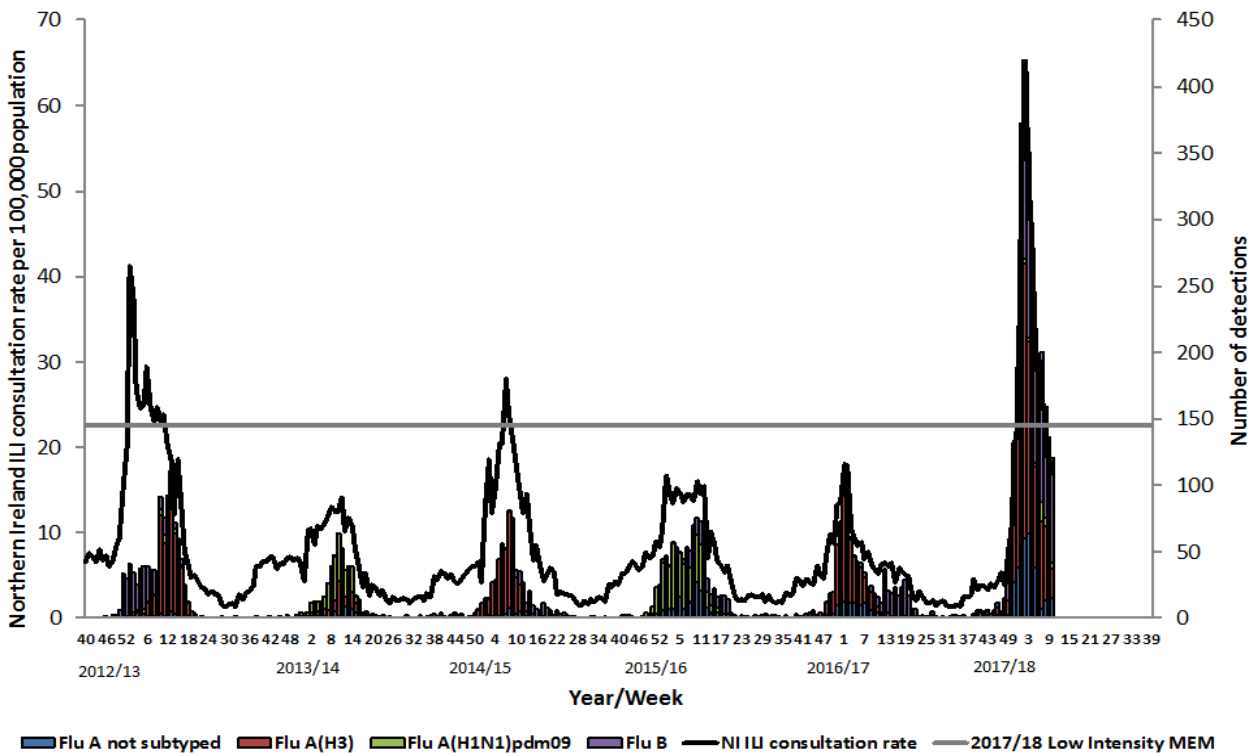
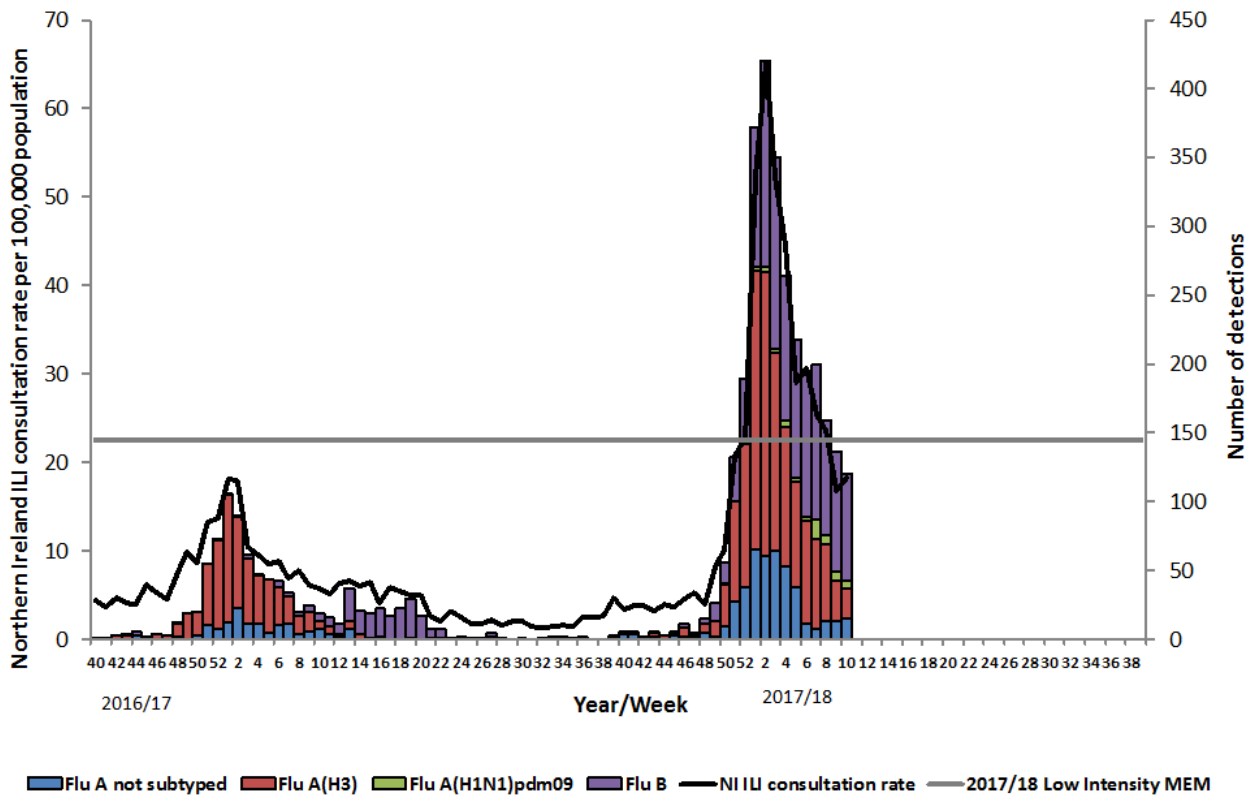


Figure 2. Northern Ireland GP consultation rates for flu/FLI and number of influenza positive detections 2012/13 – 2017/18



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



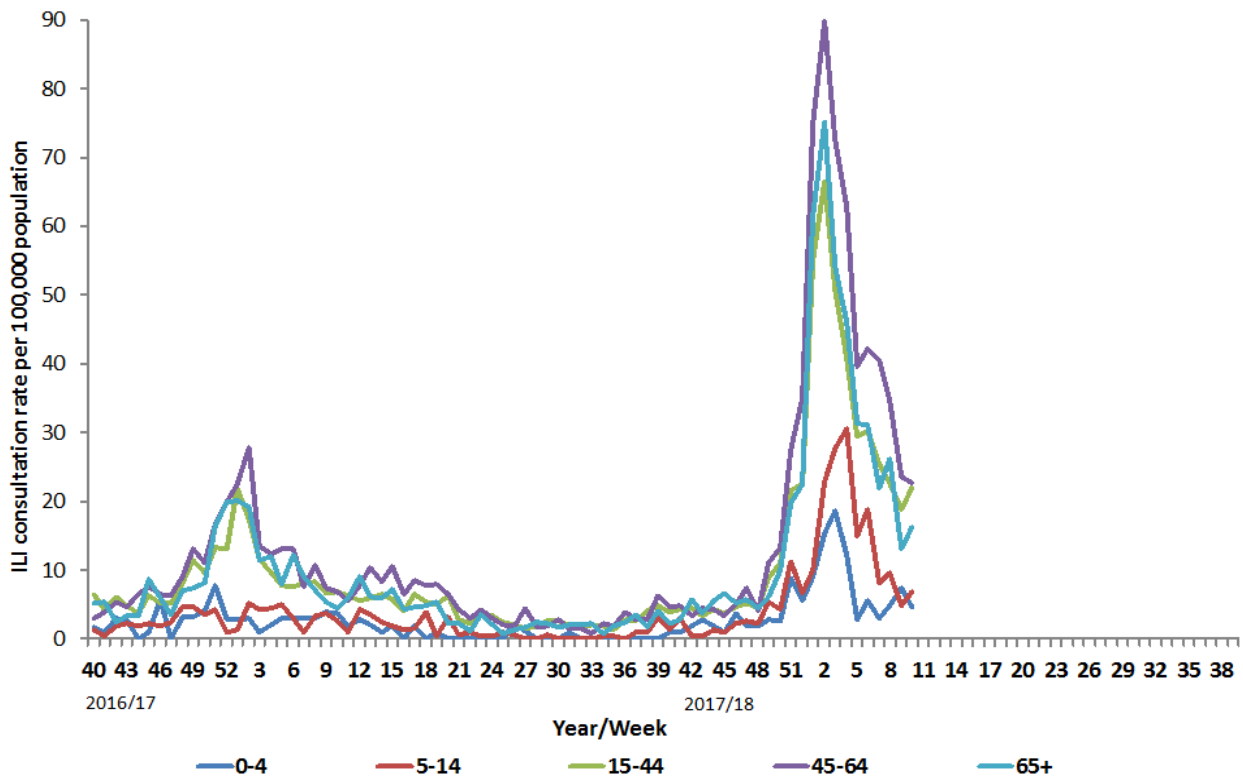
**Comment**

NI GP consultation rates increased from 16.7 per 100,000 population in week 9, 2018 to 18.3 per 100,000 in week 10. 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 10 remains higher than rates for similar periods in the last number of years (Figure 1).

The number of positive influenza laboratory detections decreased from 136 in week 9, 2018 to 120 in week 10. At this point in the season there have been a total of 1223 detections of influenza A(H3), 1179 of influenza B, 438 of influenza A (typing awaited), and 56 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 in week 10, 2008 in those aged 0-4 (7.4 to 4.7 per 100,000) and 45-64 years (23.7 to 22.7 per 100,000). Rates increased in week 10 in those aged 5-14 (4.9 to 6.8 per 100,000), 15-22 years (18.8 to 22.0 per 100,000) and 65 years and older (13.1 to 16.2 per 100,000) (Figure 4).

## Out-of-Hours (OOH) Centres Call Data

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

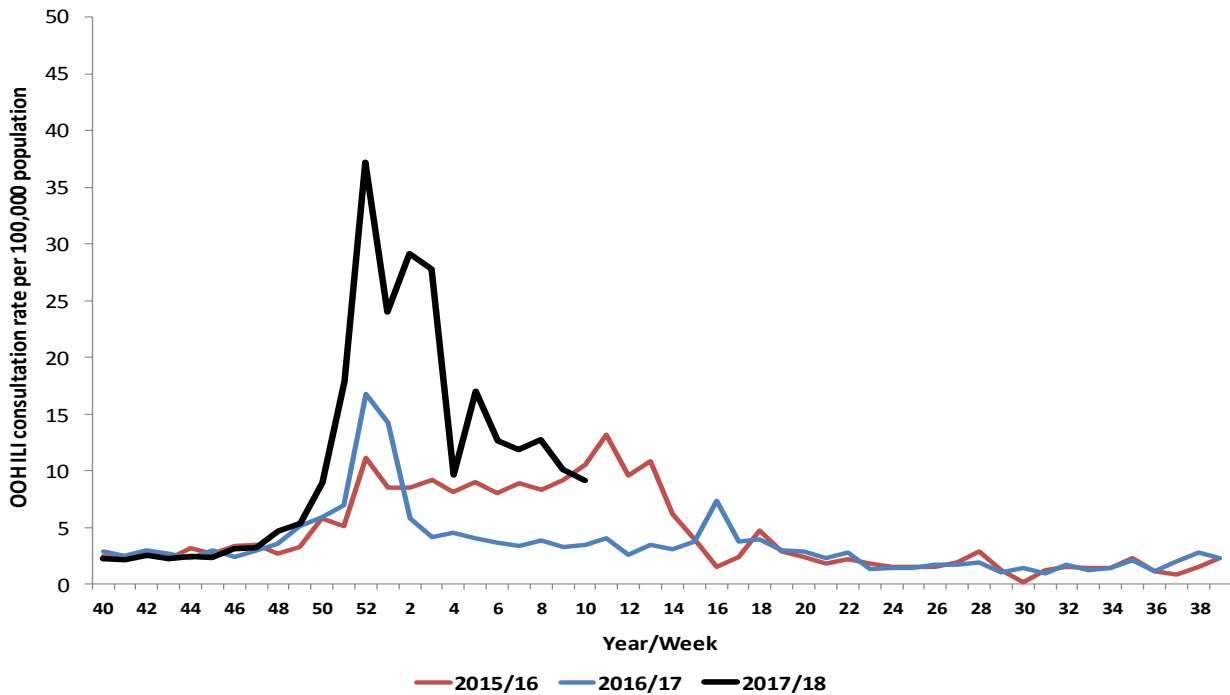
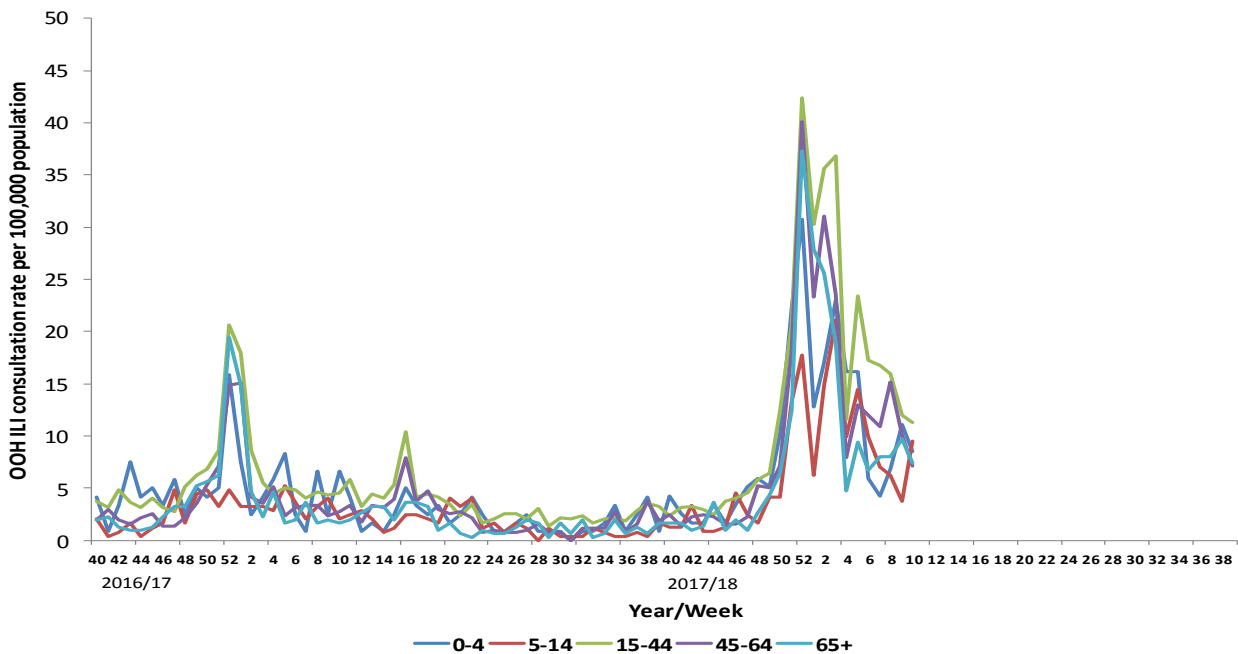


Figure 6. OOH call rates of flu/FLI by age-group from week 40, 2016



### Comment

OOH GP consultation rates decreased in week 10, 2018 from 10.1 per 100,000 population in week 9 to 9.2 per 100,000. Rates remain higher than those in the same period in 2016/17 (3.5 per 100,000) (Figure 5).

The proportion of calls related to flu in OOH centres decreased slightly from 1.8% in week 9, 2018 to 1.6% in week 10.

OOH flu/FLI rates decreased for all age groups in week 10, 2018, except for those aged 5-14 years which increased from 3.7 to 9.5 per 100,000. Rates decreased in those aged 0-4 years (11.1 to 8.5 per 100,000), 15-44 years (12.0 to 11.3 per 100,000), 45-64 years (10.1 to 7.1 per 100,000) and in those aged 65 years and older (9.8 to 7.4 per 100,000).

The highest age-specific OOH flu/FLI rate in week 8 was in those aged 15-44 years (11.3 per 100,000). The lowest rate was in those aged 45-64 years (7.1 per 100,000) (Figure 6).

## Virology Data

**Table 1. Virus activity in Northern Ireland by source, Week 10, 2017/18**

Source	Specimens Tested	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	14	0	0	1	8	0	9	64%
Non-sentinel	368	22	5	14	70	2	111	30%
<b>Total</b>	<b>382</b>	<b>22</b>	<b>5</b>	<b>15</b>	<b>78</b>	<b>2</b>	<b>120</b>	<b>31%</b>

**Table 2. Cumulative virus activity from all sources by age group, Week 40 - 10, 2017/18**

	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
<b>0-4</b>	<b>43</b>	<b>5</b>	<b>27</b>	<b>37</b>	<b>112</b>	<b>332</b>
<b>5-14</b>	<b>32</b>	<b>0</b>	<b>10</b>	<b>40</b>	<b>82</b>	<b>12</b>
<b>15-64</b>	<b>439</b>	<b>29</b>	<b>180</b>	<b>576</b>	<b>1224</b>	<b>91</b>
<b>65+</b>	<b>708</b>	<b>22</b>	<b>221</b>	<b>524</b>	<b>1475</b>	<b>137</b>
<b>Unknown</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>1</b>
<b>All ages</b>	<b>1223</b>	<b>56</b>	<b>438</b>	<b>1179</b>	<b>2896</b>	<b>573</b>

**Table 3. Cumulative virus activity by age group and source, Week 40 - Week 10, 2017/18**

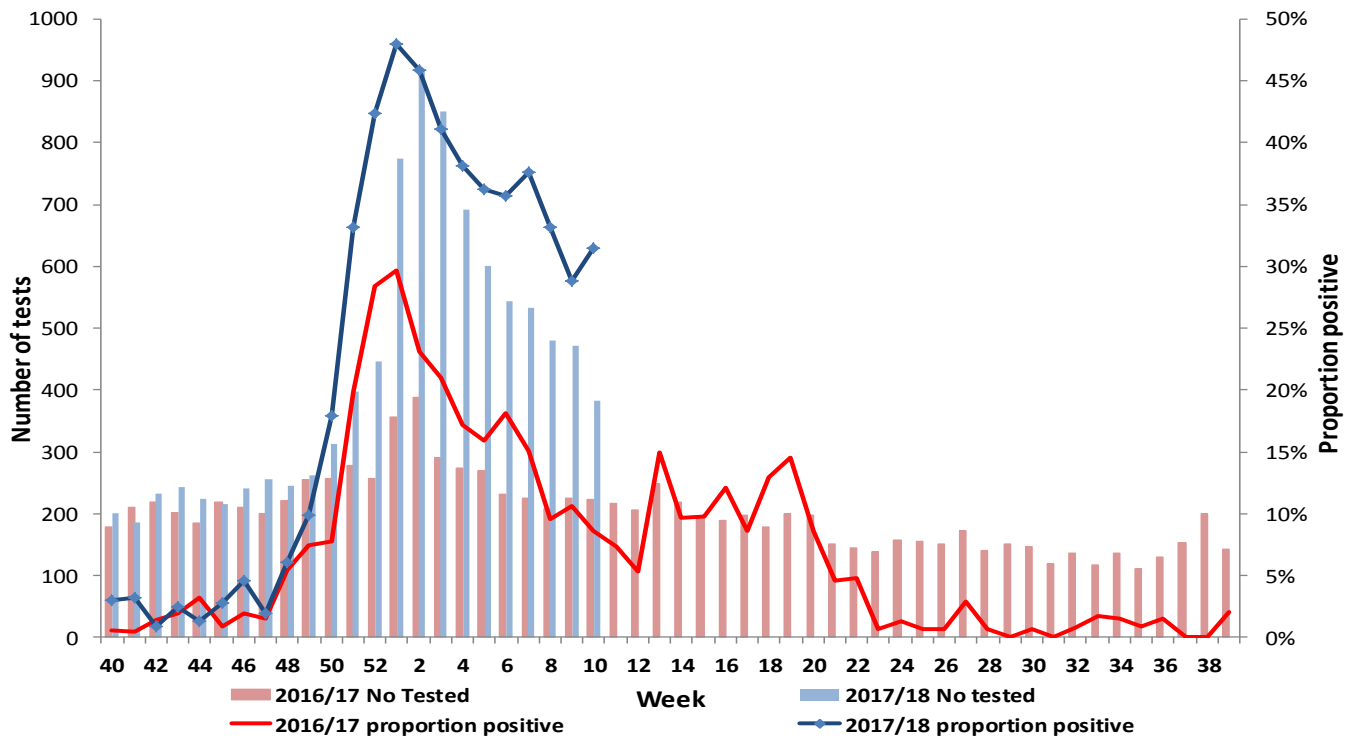
	Sentinel						Non-sentinel					
	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
<b>0-4</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>42</b>	<b>5</b>	<b>27</b>	<b>36</b>	<b>110</b>	<b>332</b>
<b>5-14</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>14</b>	<b>1</b>	<b>27</b>	<b>0</b>	<b>10</b>	<b>31</b>	<b>68</b>	<b>11</b>
<b>15-64</b>	<b>71</b>	<b>9</b>	<b>14</b>	<b>106</b>	<b>200</b>	<b>9</b>	<b>368</b>	<b>20</b>	<b>166</b>	<b>470</b>	<b>1024</b>	<b>82</b>
<b>65+</b>	<b>25</b>	<b>2</b>	<b>3</b>	<b>20</b>	<b>50</b>	<b>1</b>	<b>683</b>	<b>20</b>	<b>218</b>	<b>504</b>	<b>1425</b>	<b>136</b>
<b>Unknown</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>1</b>
<b>All ages</b>	<b>102</b>	<b>11</b>	<b>17</b>	<b>136</b>	<b>266</b>	<b>11</b>	<b>1121</b>	<b>45</b>	<b>421</b>	<b>1043</b>	<b>2630</b>	<b>562</b>

### 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**

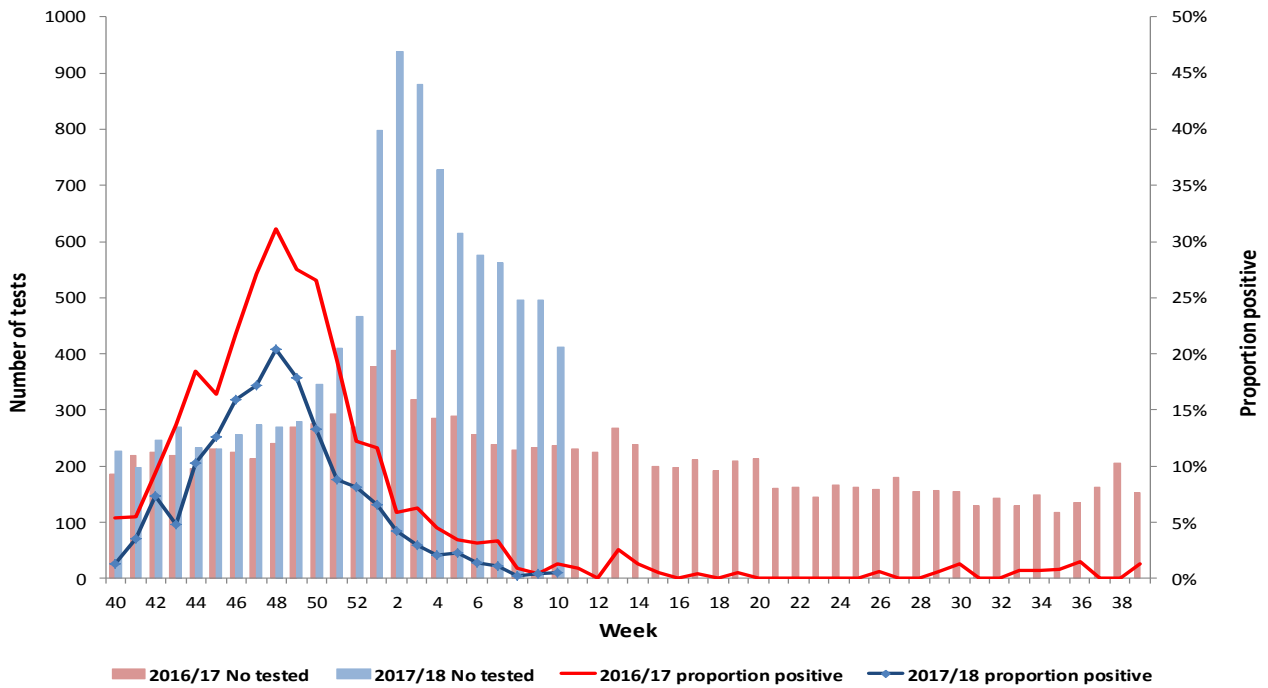
Additional virology testing has been undertaken at one local laboratory since week 2, 2018. This bulletin now includes this data along with the data from the Regional Virology Laboratory. Other local laboratories may begin undertaking influenza testing and this data will be included in later bulletins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

During week 10, 2018 there were 382 specimens submitted for virological testing. There were 120 detections of influenza in total (positivity rate of 31%), of which 22 were influenza A(H3), 78 influenza B, 15 influenza A (typing awaited) and there were five detections of influenza A(H1N1)pdm09 (Figure 7 and Table 1).

There were 14 samples submitted through the GP based sentinel scheme across Northern Ireland during this period, of which nine (positivity rate of 64%) were positive for influenza. Of the nine positive, eight were reported as influenza B and one as influenza A (typing awaited) (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

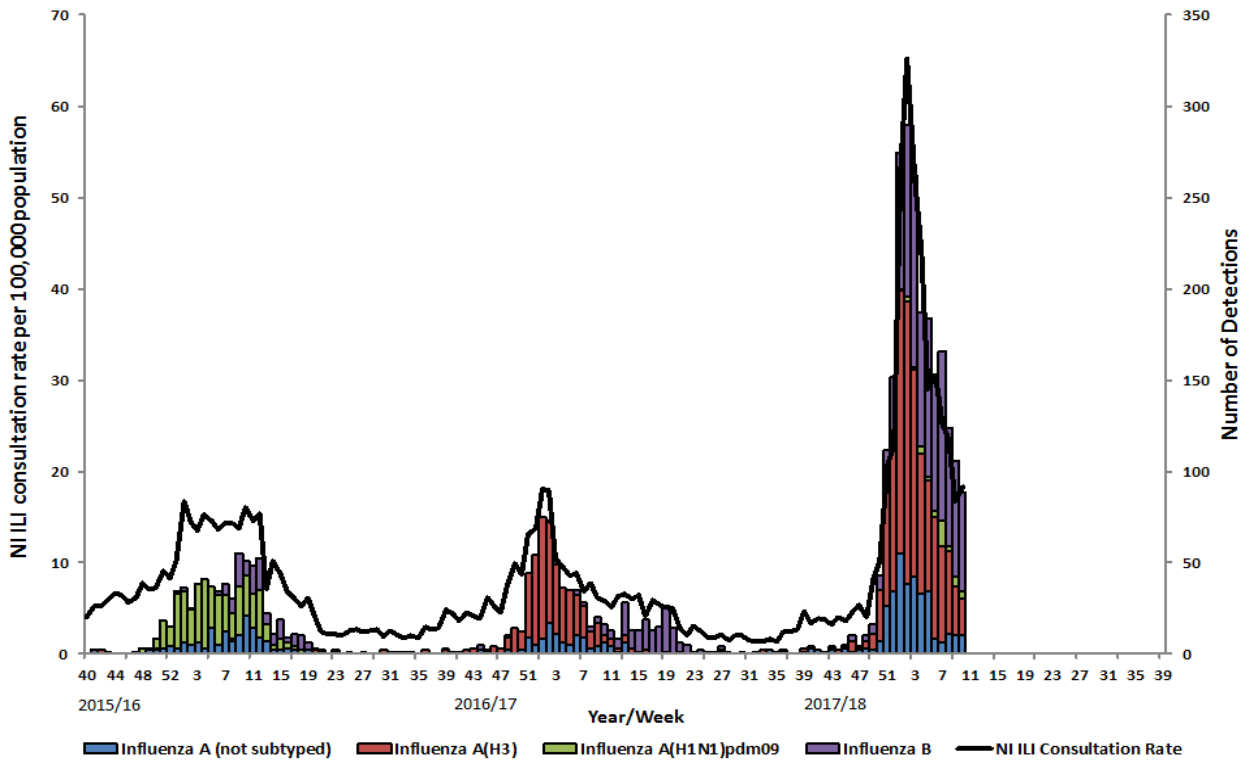


### Comment

Two positive detections of RSV were reported in week 10, 2018. To date there have been a total of 573 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



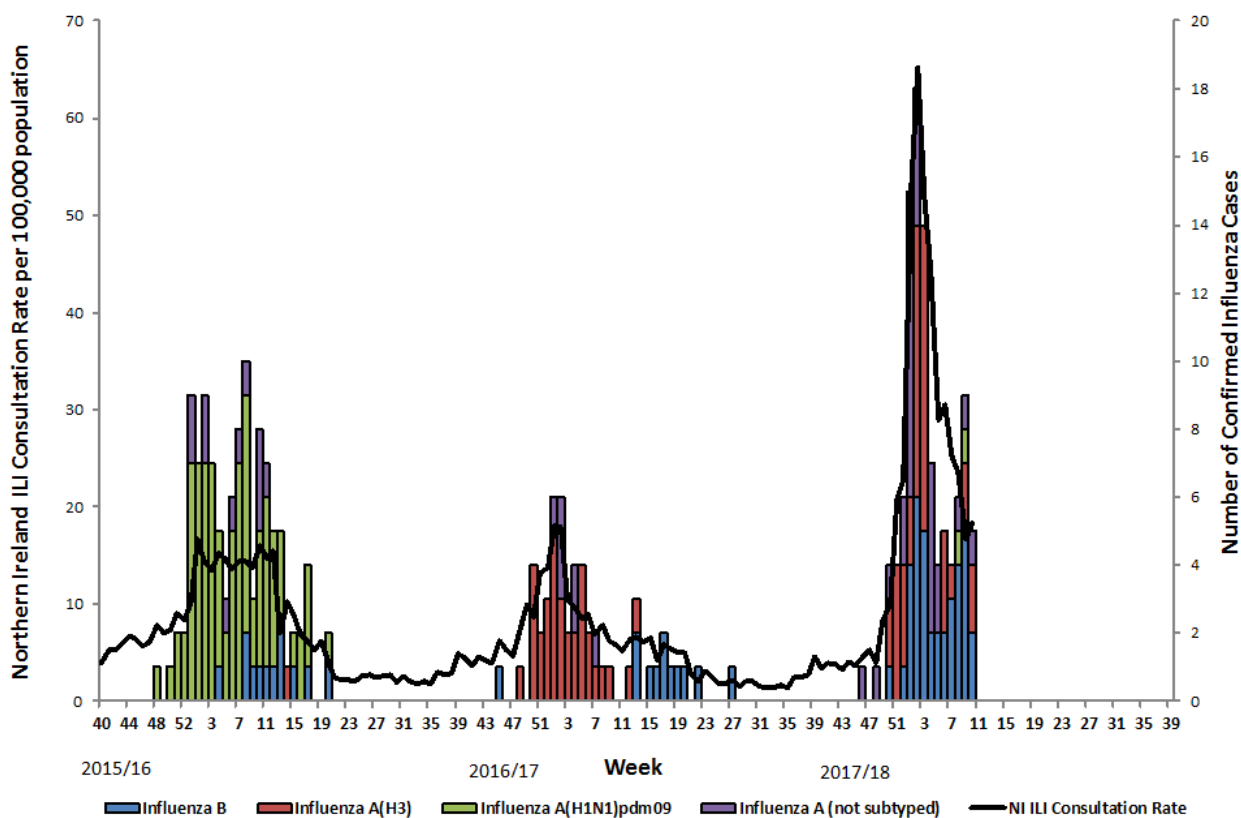
### Comment

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 10, 2018 there were a total of 88 detections of influenza from specimens taken in hospital settings across Northern Ireland. Of these there were 20 detections of influenza A(H3), 54 of influenza B, 10 of influenza A (typing awaited) and four detections of influenza A(H1N1)2009. This represents a decrease from week 9 (106 positive reports); however, it should be kept in mind that not all positive specimens for week 10 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 10, 2018, five new admissions to ICU with confirmed influenza were reported to the PHA. There were no deaths reported in ICU patients who had a diagnosis of influenza confirmed in week 10. There were 18 deaths in ICU this season in which a diagnosis of influenza was confirmed. There have been 104 confirmed cases of influenza in ICU reported this season to date, of which 36 have been typed as influenza A(H3), 37 influenza B, two influenza A(H1N1)2009, 28 influenza A (typing awaited) and one confirmed case of both influenza A and B (not shown in figure 10).

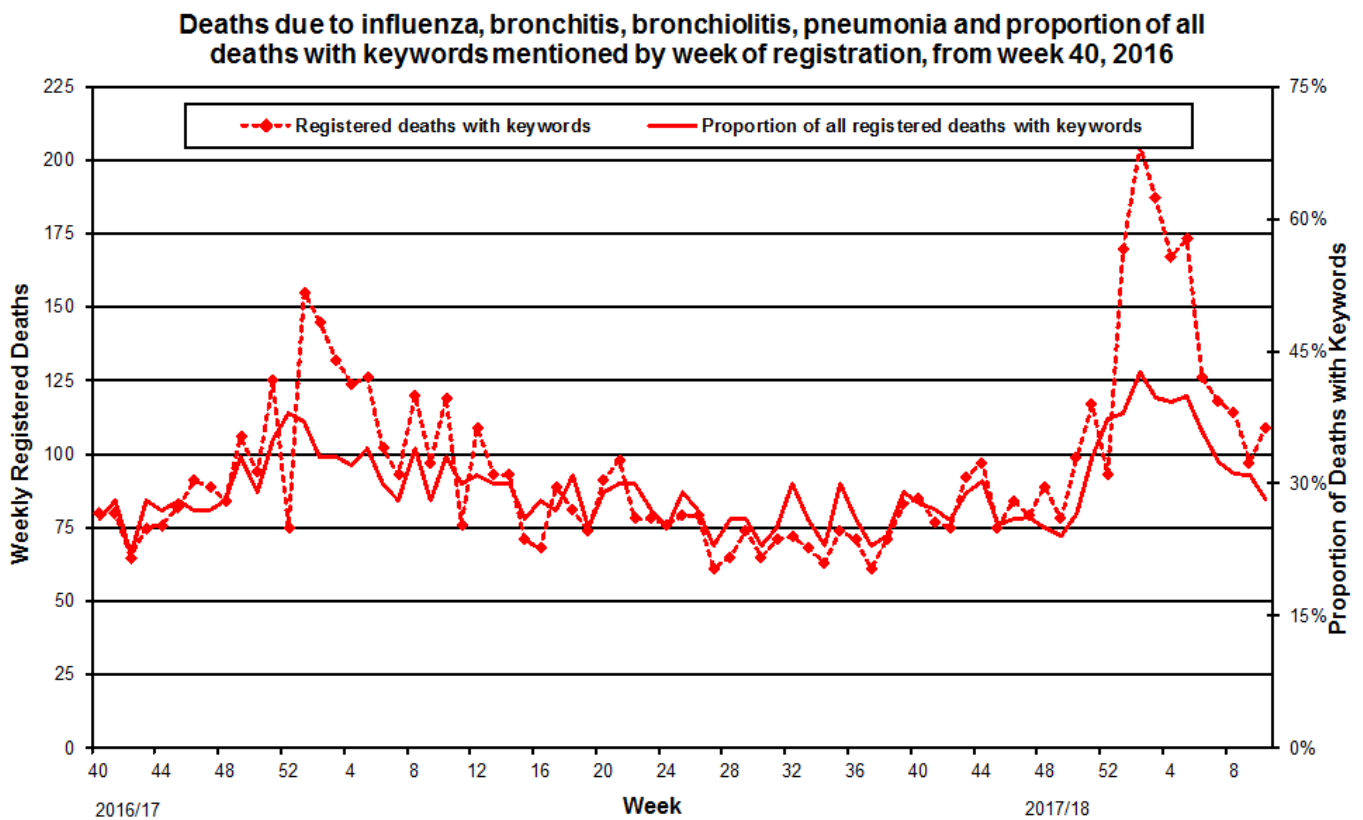
## Outbreak Surveillance

During week 10, 2018 there were two confirmed influenza outbreaks in care homes. The total confirmed Influenza outbreaks to date are 38.

## 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 10, 2018 the proportion of deaths related to respiratory keywords decreased from 31% to 28%. In week 10 there were 387 registered deaths, of which 109 related to specific respiratory infections (Figure 11). The proportion of deaths attributed to specific respiratory infections is lower at this point in the season to the same period in 2016/17 (33%).

## 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 update to the EuroMOMO figures for week 9 or 10, 2018.

There was an excess all-cause mortality reported in Northern Ireland in week 8, 2018. Including that week, there has been a total of ten weeks in the season where there has been excess all-cause mortality (weeks 51-8). 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 <sup>st</sup> )	2016/17 (to Jan 31 <sup>st</sup> )
>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 9/2018 (26 February-4 March 2018)

- Influenza continues to circulate widely in the region and some eastern European countries are experiencing a slow start. Countries experiencing a cold spell may experience a more severe season.

- Overall, 49% of individuals sampled from primary healthcare settings tested positive for influenza virus, a slight decrease compared to the previous week (50%).
- Both influenza virus types A and B were co-circulating with a higher proportion of type B viruses. Differences in proportions of circulating influenza virus types and A subtypes were observed between countries.
- The majority of severe cases admitted to non-ICU hospital wards were adults infected by influenza type B viruses. Half of the severe cases admitted to ICU were adults infected by influenza type A viruses.
- Based on data provided by 17 EU countries to EuroMOMO, excess mortality from all causes has been raised significantly over past months in the south-western part of the European region, notably in the elderly. However, mortality seems to be declining.

## 2017/18 season overview

- For the region overall, a higher proportion of type B compared to type A viruses has been detected in sentinel and non-sentinel sources, representing a high level of circulation of influenza B viruses compared with recent seasons. 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 were reported than A(H1N1)pdm09 viruses.
- The majority of severe cases reported this season are due to influenza B and occur in persons above the age of 15 years. For laboratory-confirmed influenza cases in ICU, comparable numbers were infected by influenza type A and B viruses, and the elderly were at increased risk of ICU admission. In laboratory-confirmed influenza cases reported from wards other than ICU, type B viruses were detected approximately twice as frequently as type A viruses.
- For type B viruses from both sentinel and non-sentinel sources, B/Yamagata lineage viruses have greatly outnumbered those of the B/Victoria lineage. The current trivalent seasonal influenza vaccine does not include a virus from the B/Yamagata lineage.
- 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.
- While low in number, 60% of the genetically characterized A(H3N2) viruses belong to clade 3C.2a, the clade of the vaccine virus described in the [WHO recommendations for vaccine composition for the northern hemisphere 2017–2018](#), and 37% to subclade 3C.2a1, with mammalian cell-cultured viruses in both clades being antigenically similar.
- Although few B/Victoria lineage viruses have been detected, their characterization has shown an increasing percentage (currently 47%) of viruses belonging to a subclade of clade 1A viruses, represented by B/Norway/2409/2017. These viruses have a two amino acid deletion in haemagglutinin ( $\Delta$ 162-163) and are antigenically different from the current trivalent vaccine component, a B/Brisbane/60/2008-like virus.
- Interim results from 5 [European studies](#) indicate that, in all age groups, influenza vaccine effectiveness was 25 to 52% against any influenza, 55 to 68% against influenza A(H1N1)pdm09, 7 to 42% against influenza A(H3N2) and 36 to 54% against influenza B, which is consistent with previous estimates from [Canada](#), [Finland](#), [Germany](#), [Spain](#), [Stockholm County](#) and the [United States of America](#).

- Additional information on global influenza activity is available from [WHO's biweekly global updates](#).
- From 19–21 February 2018, WHO-HQ held the Vaccine Composition Meeting during which recommendations were made for the composition of the 2018–2019 northern hemisphere vaccine. The full report is available [here](#).

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

## Worldwide (WHO)

### As at 5 March 2018 (based on update to 18 February 2018)

Influenza activity remained high in the temperate zone of the northern hemisphere while in the temperate zone of the southern hemisphere activity was at inter-seasonal levels. Worldwide, influenza A and influenza B accounted for a similar proportion of influenza detections.

Influenza activity remained high in the temperate zone of the northern hemisphere while in the temperate zone of the southern hemisphere activity was at inter-seasonal levels. Worldwide, influenza A and influenza B accounted for a similar proportion of influenza detections.(see also the fact sheet given below).

National Influenza Centres (NICs) and other national influenza laboratories from 99 countries, areas or territories reported data to FluNet for the time period from 05 February 2018 to 18 February 2018 (data as of 2018-03-02 03:41:07 UTC). The WHO GISRS laboratories tested 281243 specimens during that time period of which 90570 (32.2%) were positive for influenza viruses, of which 44502 (49.1%) were typed as influenza A and 46068 (50.9%) as influenza B. Of the sub-typed influenza A viruses, 7773 (58.2%) were influenza A(H1N1)pdm09 and 5574 (41.8%) were influenza A(H3N2). Of the characterized B viruses, 5835 (94.4%) belonged to the B-Yamagata lineage and 346 (5.6%) to the B-Victoria lineage.

The vaccine recommendation for the 2018-2019 Northern Hemisphere Influenza Season was made and can be consulted at this link below:

- [Link to vaccine recommendation](#)

[http://www.who.int/influenza/surveillance\\_monitoring/updates/latest\\_update\\_GIP\\_surveillance/en/index.html](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**

**Dr Cathriona Kearns**  
**Epidemiological Scientist**  
**Public Health Agency**

**Dr Muhammad Sartaj**  
**Public Health Consultant**  
**Public Health Agency**

**Email:** [flusurveillance@hscni.net](mailto:flusurveillance@hscni.net)

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