

## Influenza Weekly Surveillance Bulletin

### Northern Ireland, Week 1 (1<sup>st</sup> January – 7<sup>th</sup> January 2018)

#### Summary

GP consultation rates increased while OOH consultation rates decreased in week 1, (week commencing 1<sup>st</sup> January 2018). Detections of influenza virus increased slightly, with both influenza types AH3 and B strains of the virus predominating. Note that the public holidays during this period may have had an impact on both the consultation rates and the virology data reported.

#### Northern Ireland Primary Care Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) increased from 22.7 per 100,000 population in week 52, to 52.6 per 100,000 population in week 1. Rates are now above the Moving Epidemic Method (MEM) threshold for moderate level flu activity<sup>1</sup>.
- OOH GP consultation rates for flu/FLI decreased from 37.2 per 100,000 population in week 52 to 24.0 per 100,000 population in week 1, 2018.

#### Microbiological Surveillance (Flu and RSV)

- The proportion of positive influenza detections from both sentinel and non-sentinel sources increased from 42% in week 52 to 48% in week 1.
- RSV continued to decline from 8% of specimens positive for RSV in week 52 to 6% in week 1, 2018.

#### 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 143 detections in week 52, to 176 in week 1, 2018.
- There were 15 cases reported in ICU with laboratory confirmed influenza in week 1 giving a total of 31 cases this season to date.
- One death was reported in week 1 among ICU patients bringing the total deaths in ICU with confirmed Influenza to four.

#### Influenza Outbreaks across Northern Ireland

- There were ten confirmed influenza outbreaks in care homes reported to the PHA in week 1 and an additional nine suspected influenza outbreaks. The total confirmed Influenza outbreaks to date are 14.

#### Mortality

- The last update on no excess all-cause mortality reported through the EuroMOMO algorithm was up to week 50, 2017 and at that time there was no excess all-cause mortality recorded for Northern Ireland. We have had no further updates.

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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);
- 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.***

## Northern Ireland GP Consultation Data

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

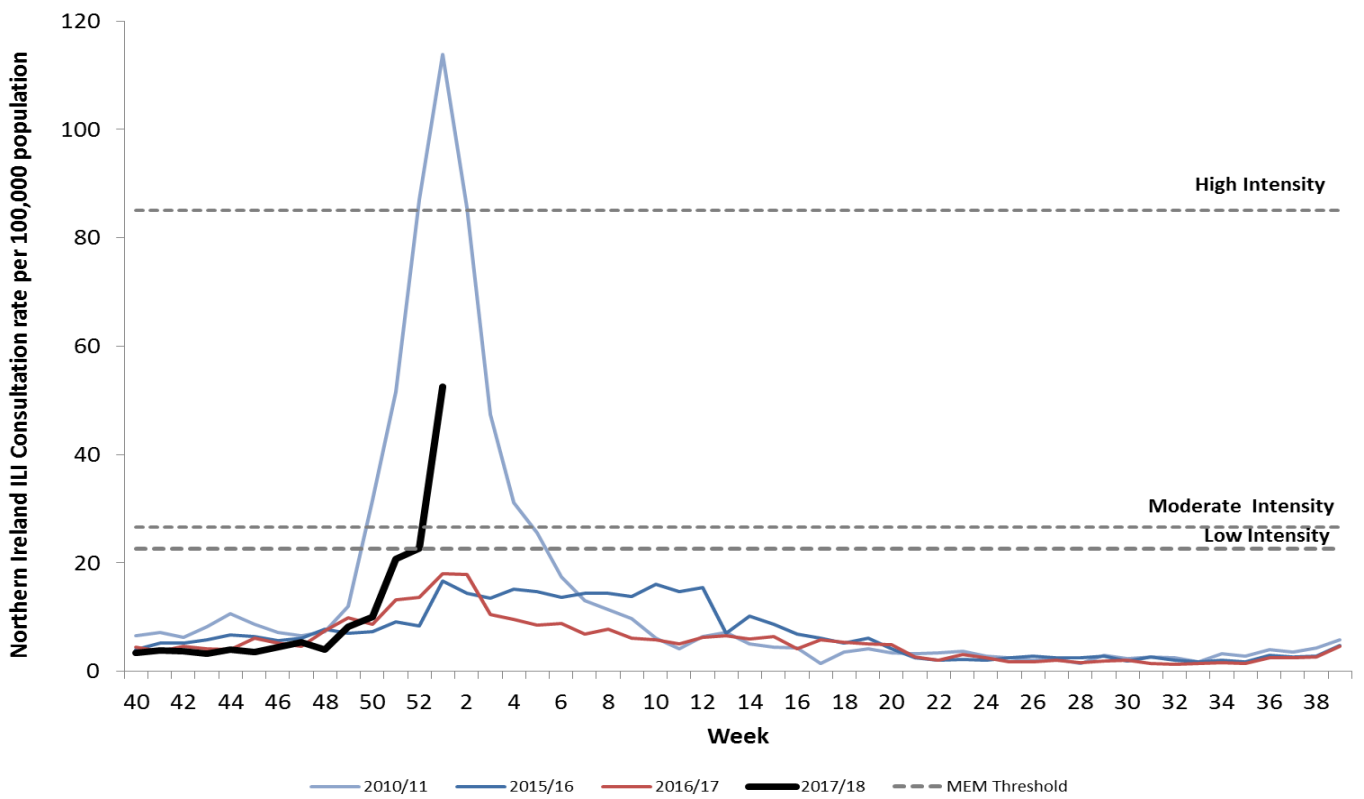
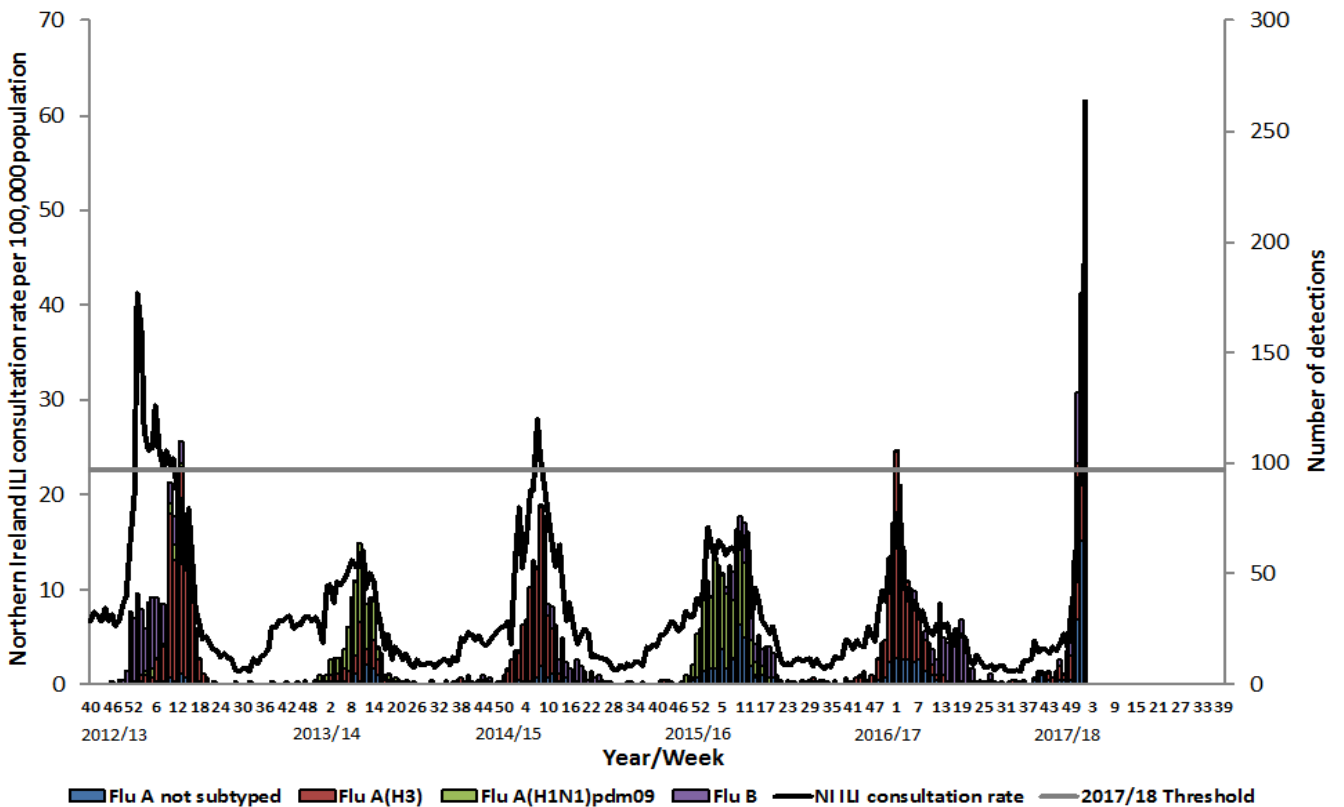
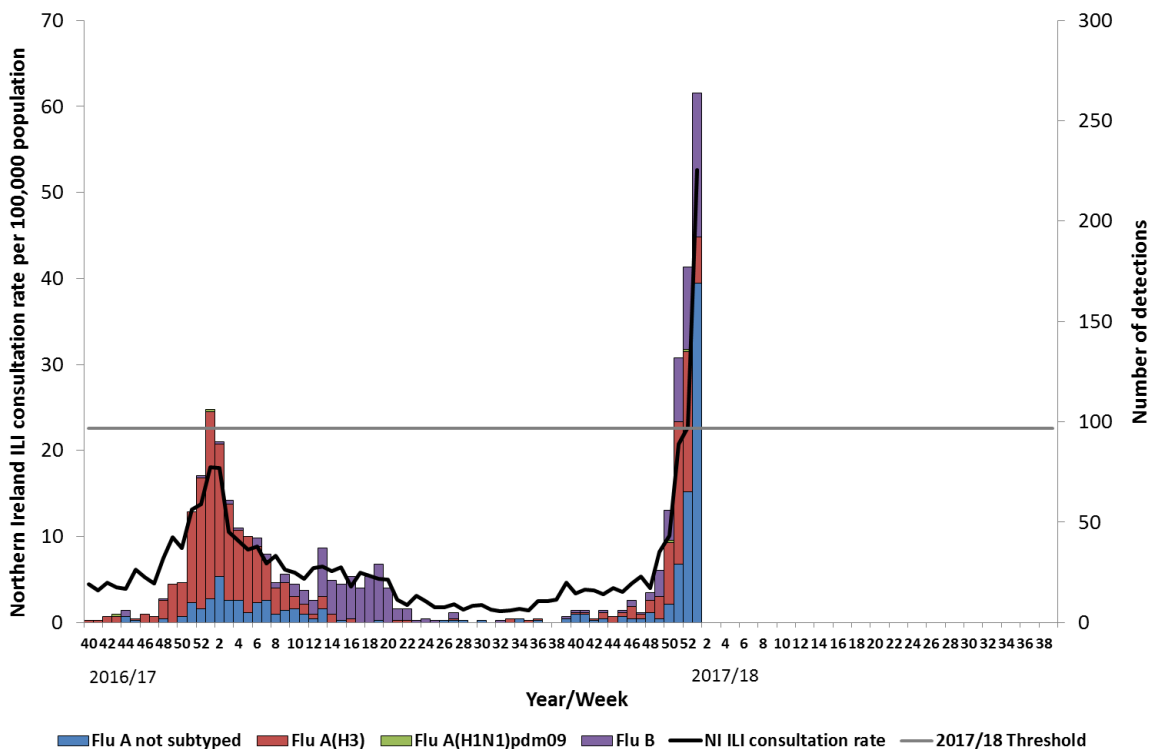


Figure 2. Northern Ireland GP consultation rates for flu/FLI and number of influenza positive detections 2012/13 – 2017/18



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



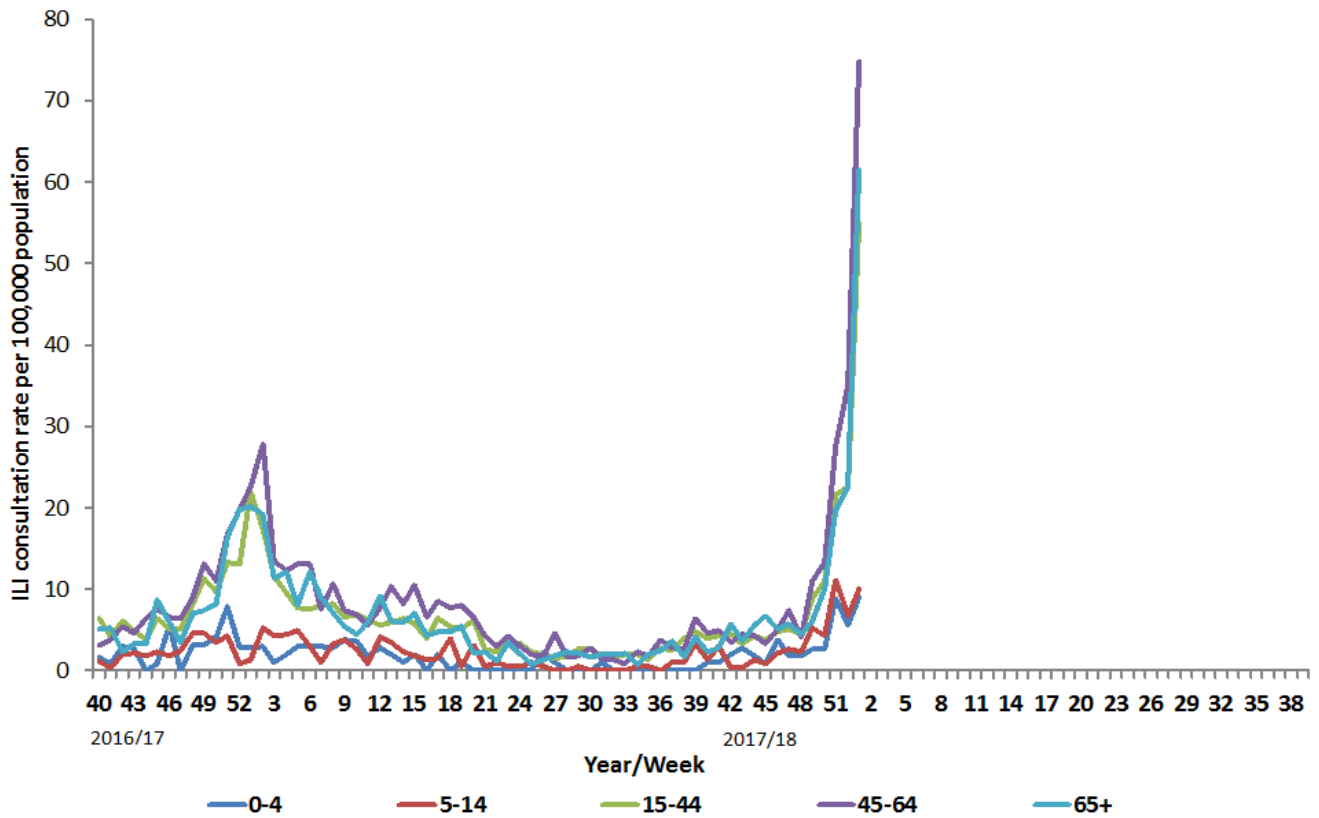
### Comment

NI GP consultation rates increased from 22.7 per 100,000 population in week 52, 2017 to 52.6 per 100,000 population in week 1, 2018, exceeding the MEM threshold of 22.58 per 100,000 population and activity is now considered at moderate levels. The NI GP consultation rate in week 1, 2018 is higher than rates for similar periods in the last number of years but remains well below the peak rate of 113.9 per 100,000 in 2010/11 when the A(H1N1) strain was circulating (Figure 1).

The number of positive influenza laboratory detections increased from 177 in week 52, 2017 to 264 in week 1, 2018. At this point in the season there have been a total of 231 detections of influenza A(H3), 185 of influenza B, 297 of influenza A (typing awaited), and 2 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**

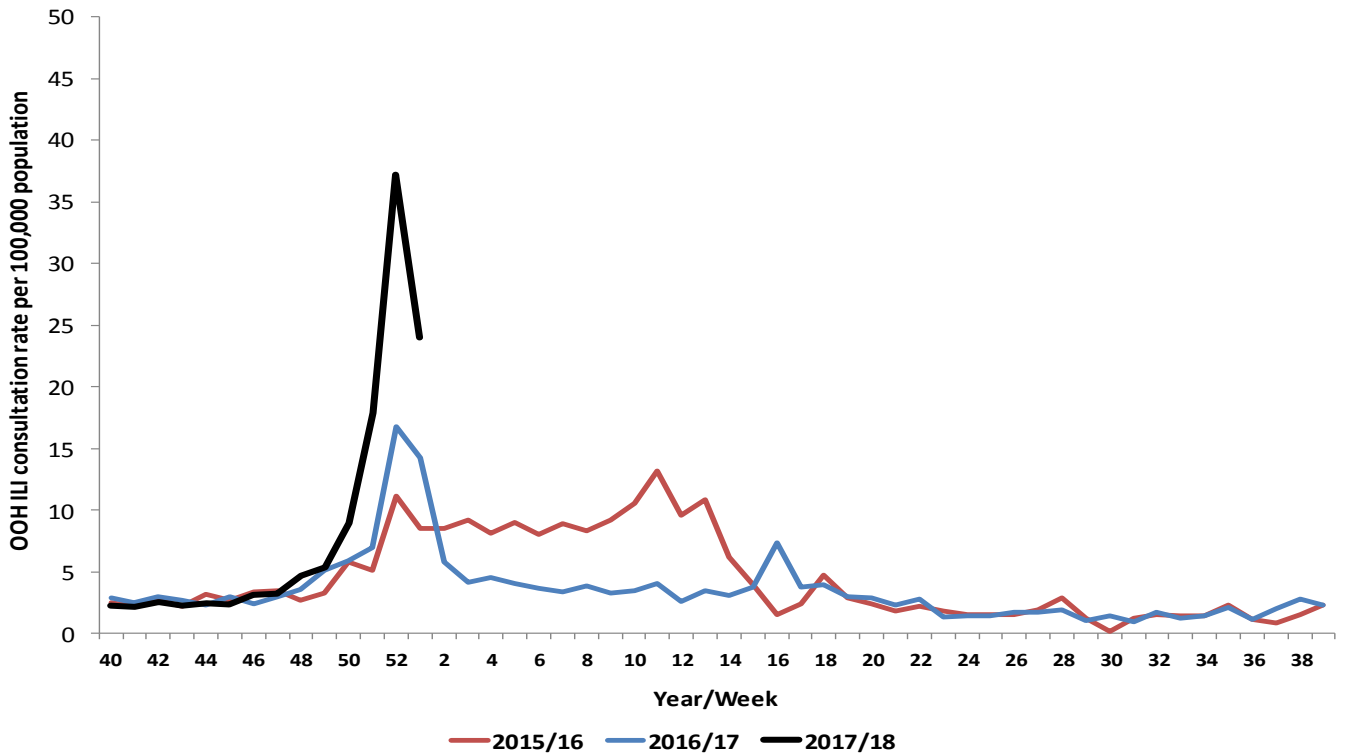


**Comment**

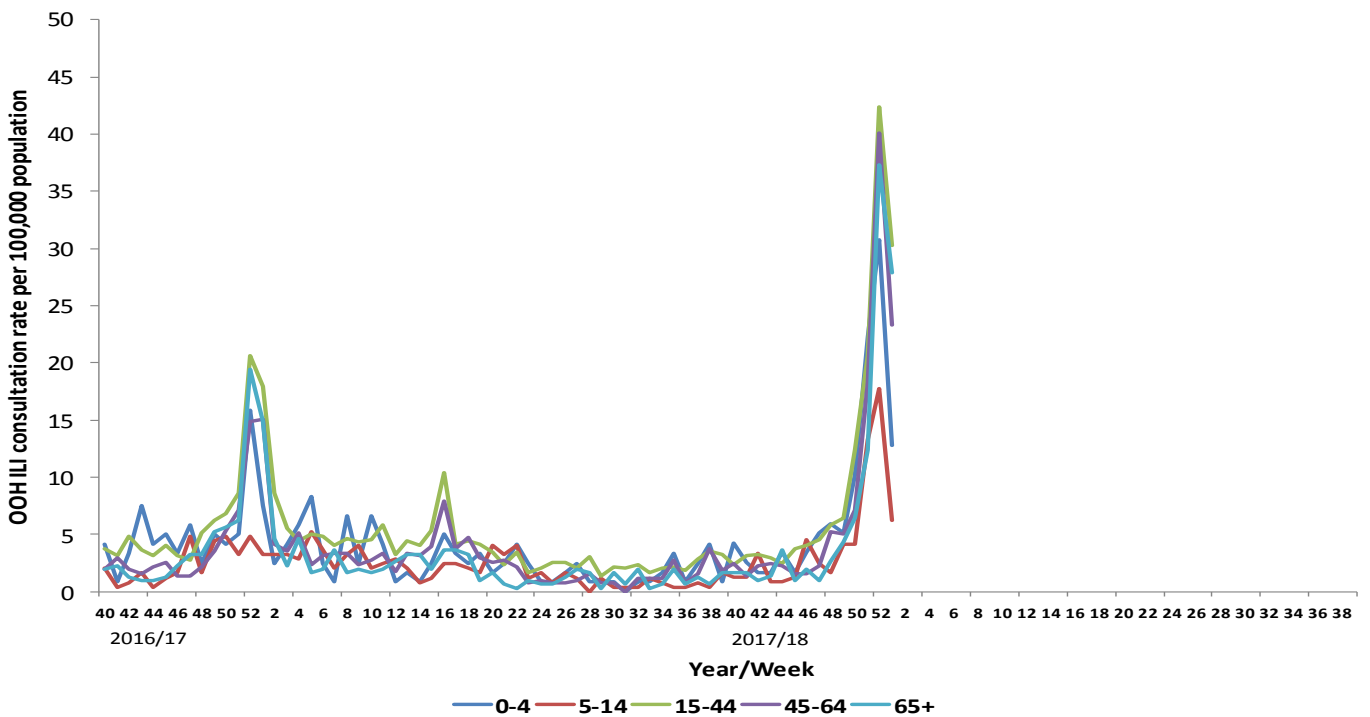
Age-specific consultation rates have increased in all groups in week 1 with those aged 45-64 years continuing to increase, rates in this group are now at 74.7 per 100,000 population. The second highest rate was in those aged over 65 years at 61.5 per 100,000, with rates also high in those aged 15-44 years at 54.9 per 100,000. The lowest age-specific rate continues to be in the 0-4 year age group (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 1 from 37.2 per 100,000 in week 52 to 24.0 per 100,000 population. However, rates are significantly higher than those in the same period in 2016/17 (14.3 per 100,000 population) (Figure 5).

The proportion of calls related to flu in OOH centres also increased from 3.4% in week 52, 2017 to 5.2% in week 1, 2018.

OOH flu/FLI rates decreased amongst all age groups in week 1. Similar to the previous report the highest age-specific OOH flu/FLI rate in week 1 was in the 15-44 years age group (30.1 per 100,000 population). The lowest rate in week 1 was in the 5-14 year olds (6.2 per 100,000 population) (Figure 6).

## Virology Data

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

Source	Specimens Tested	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	29	1	0	11	9	0	21	72%
Non-sentinel	525	22	0	158	63	35	243	46%
<b>Total</b>	<b>554</b>	<b>23</b>	<b>0</b>	<b>169</b>	<b>72</b>	<b>35</b>	<b>264</b>	<b>48%</b>

**Table 2. Cumulative virus activity from all sources by age group, Week 40 - 1, 2017/18**

	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
<b>0-4</b>	<b>6</b>	<b>0</b>	<b>15</b>	<b>6</b>	<b>27</b>	<b>278</b>
<b>5-14</b>	<b>8</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>16</b>	<b>9</b>
<b>15-64</b>	<b>80</b>	<b>2</b>	<b>109</b>	<b>102</b>	<b>293</b>	<b>54</b>
<b>65+</b>	<b>136</b>	<b>0</b>	<b>169</b>	<b>73</b>	<b>378</b>	<b>97</b>
<b>Unknown</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>
<b>All ages</b>	<b>231</b>	<b>2</b>	<b>297</b>	<b>185</b>	<b>715</b>	<b>439</b>

**Table 3. Cumulative virus activity by age group and source, Week 40 - Week 1, 2017/18**

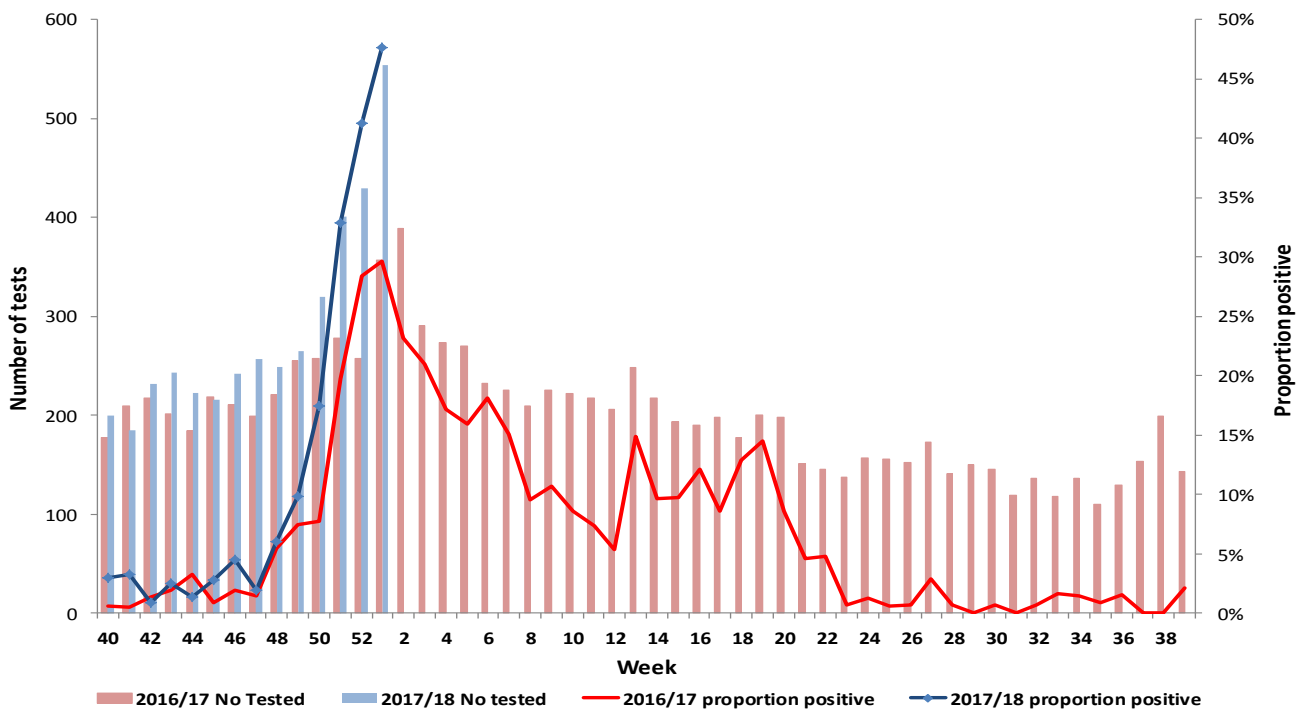
	Sentinel						Non-sentinel					
	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
<b>0-4</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>14</b>	<b>6</b>	<b>26</b>	<b>278</b>
<b>5-14</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>6</b>	<b>0</b>	<b>4</b>	<b>3</b>	<b>13</b>	<b>8</b>
<b>15-64</b>	<b>11</b>	<b>2</b>	<b>17</b>	<b>28</b>	<b>58</b>	<b>5</b>	<b>69</b>	<b>0</b>	<b>92</b>	<b>74</b>	<b>235</b>	<b>49</b>
<b>65+</b>	<b>5</b>	<b>0</b>	<b>4</b>	<b>3</b>	<b>12</b>	<b>0</b>	<b>131</b>	<b>0</b>	<b>165</b>	<b>70</b>	<b>366</b>	<b>97</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>0</b>	<b>1</b>	<b>1</b>
<b>All ages</b>	<b>18</b>	<b>2</b>	<b>22</b>	<b>32</b>	<b>74</b>	<b>6</b>	<b>213</b>	<b>0</b>	<b>275</b>	<b>153</b>	<b>641</b>	<b>433</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**



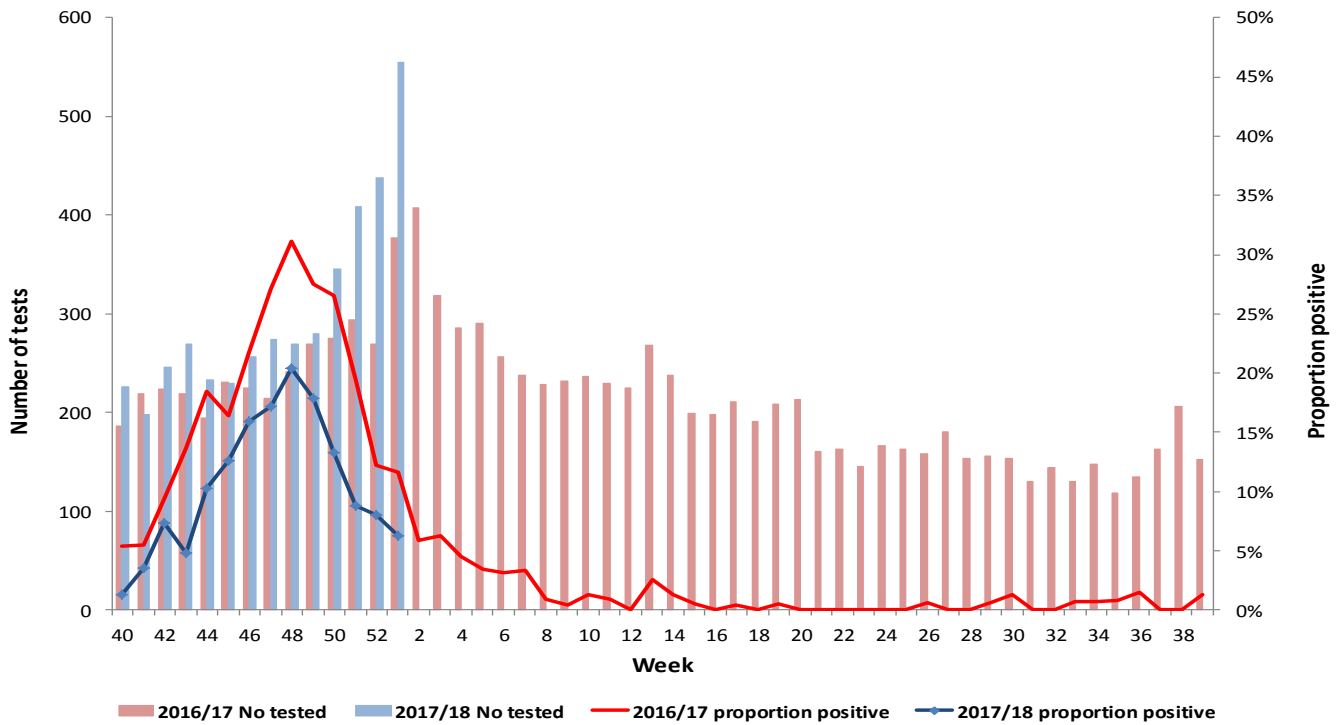
**Comment**

During week 1, 2018 there were 554 specimens submitted for virological testing. There were 264 detections of influenza in total (positivity rate of 48%), of which 23 were influenza A(H3), 169 influenza A (typing awaited) and 72 influenza B, (Figure 7).

There were 29 samples submitted through the GP based sentinel scheme across Northern Ireland during this period, of which 21 (72%) were positive for influenza. Of the 21 positive, eleven were reported as influenza A (typing awaited), one as influenza A(H3) and nine as influenza B (Tables 1, 2, 3; Figures 2 and 3).

## Respiratory Syncytial Virus

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

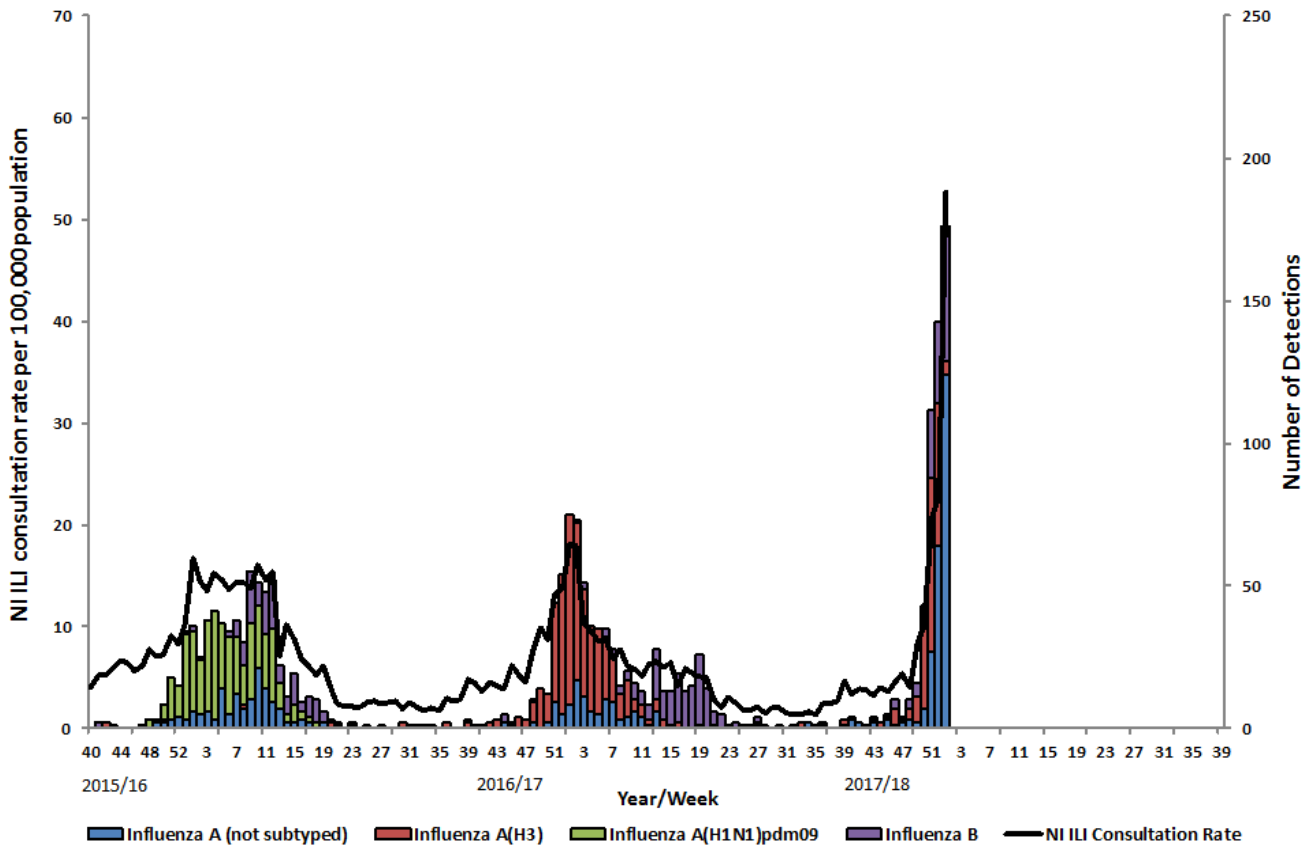


### Comment

During week 1, 2018 there were 35 positive detections of RSV giving a positivity rate of 6%, lower than the same period in 2016/17 (12%). To date there have been a total of 439 detections of RSV of which the majority (65%) 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**



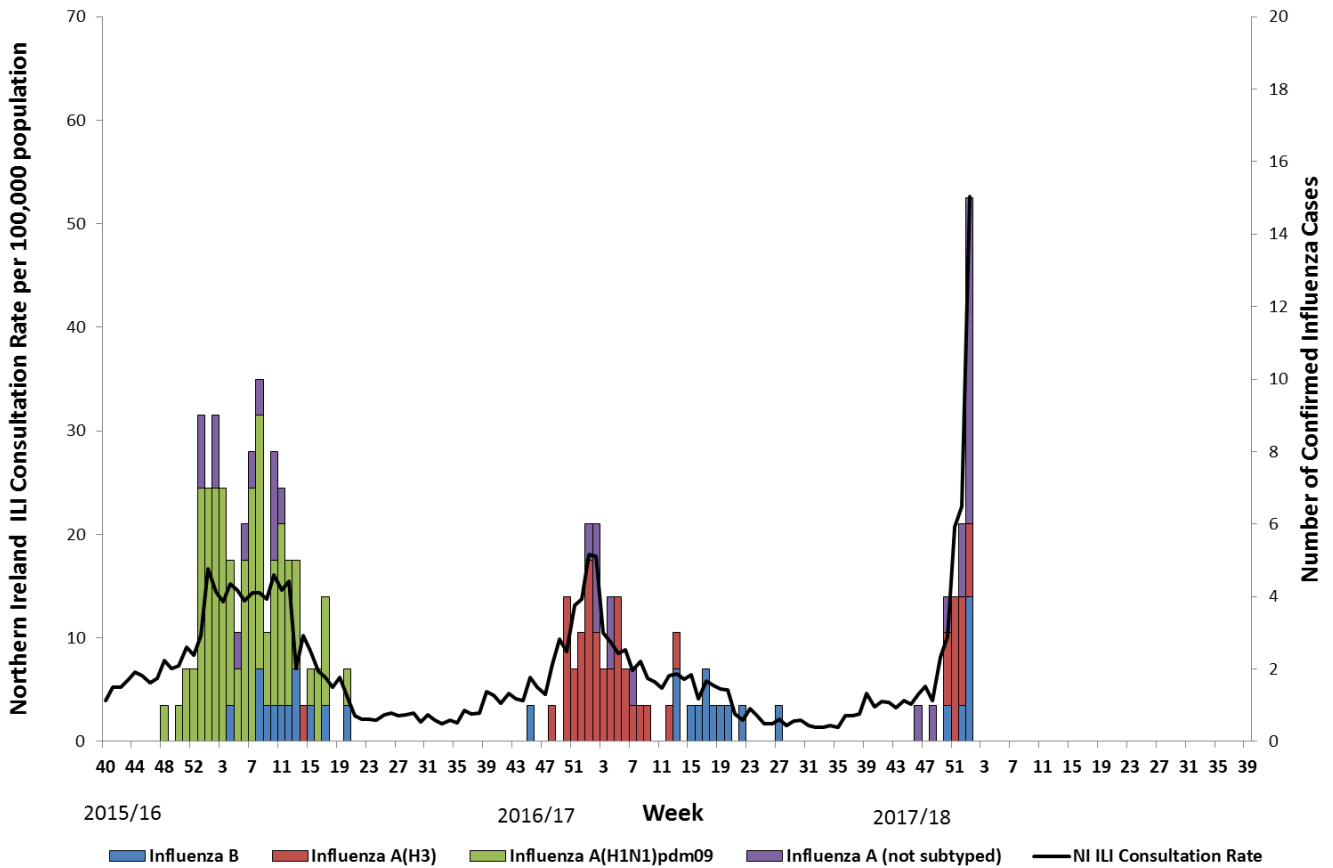
## Comment

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 1, 2018 there were a total of 176 detections of influenza from specimens taken in hospital settings across Northern Ireland. Of these there were 5 detections of influenza A(H3), 124 of influenza A (typing awaited) and 47 of influenza B. This represents an increase from week 52 (143 positive reports); however, it should be borne in mind that not all positive specimens for week 1 may have been reported as 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 1, there were 15 confirmed cases of influenza in ICU reported to the PHA. There was also one death reported in ICU patients with laboratory confirmed influenza, bringing the total reported deaths in ICU this season with confirmed influenza to four. There have been 31 confirmed case of influenza in ICU reported this season to date, of which 11 have been typed as influenza A(H3), 6 influenza B and 14 influenza A (typing awaited).

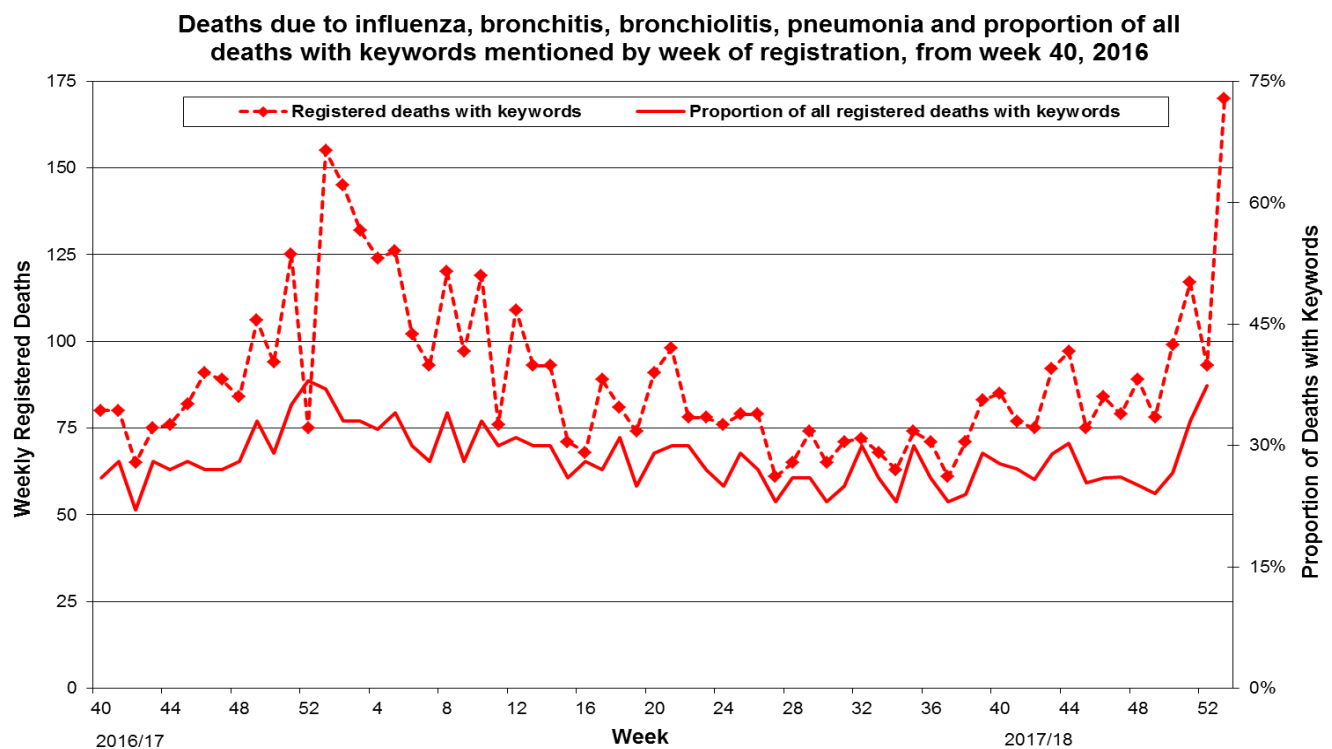
## Outbreak Surveillance

During week 1, 2018 there were 10 confirmed influenza outbreaks in care homes and a further 9 influenza outbreaks reported to the PHA that's meet the clinical definition of influenza but not yet confirmed.

## 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 numbers of registered deaths with respiratory keywords increased this week. During week 1, 2018 the proportion of deaths related to respiratory keywords increased slightly from 37% in week 52 to 38% in week 1. In week 1 there were 447 registered deaths, of which 170 related to specific respiratory infections (Figure 11).

## EuroMOMO

There is no update available on excess all-cause mortality this week. There was no excess all-cause mortality reported in Northern Ireland up to week 50.

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

## Influenza Vaccine Uptake

To 30th November 2017, provisional data suggested that vaccine uptake for those aged 65 years and over was 66.8%, slightly lower than the same period in the 2016/17 (68%); while 48.2% of those under 65 and in an at risk group received the vaccine, compared with 50.8% in this group in 2016/17.

Similar to last season, all children aged between 2 and 4 years and all primary school children in 2017/18 have been offered the seasonal influenza vaccine. To 30th November 2017, provisional data suggested that vaccine uptake among 2-4 year old children was 44.9%, slightly lower than in 2016/17 when 48.9% had received the vaccine during the same period. Provisional data on uptake among children in primary school by end of November 2017 was 75.3% compared with 77.6% in 2016/17.

## International Summary

### Europe

#### Week 52

- Influenza activity was increasing in countries in northern, southern and western Europe.
- Both influenza type A and B viruses were co-circulating and mixed patterns of circulation were observed across the Region.
- Of the individuals sampled, on presenting with ILI or ARI to sentinel primary healthcare sites, 44% tested positive for influenza viruses, an increase from 38% in the previous week.

#### 2017/18 season overview

- An early risk assessment based on data from EU/EEA countries was published by ECDC on 20 December 2017. First detections indicated circulation of A(H3N2) and B/Yamagata viruses in the highest proportions. As the A(H3N2) subtype dominated last season, a high proportion of the population should be protected.
- From sentinel sources, a higher proportion of type B viruses compared to type A viruses has been detected. Of the type A detections, A(H1N1)pdm09 viruses have outnumbered A(H3N2) 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.
- While low in number, 59% of the genetically characterized A(H3N2) viruses belonged to clade 3C.2a, the vaccine virus clade as described in the WHO recommendations for

vaccine composition for the northern hemisphere 2017–18, and 40% to clade 3C.2a1, with viruses in both clades being antigenically similar.

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

## **Worldwide (WHO)**

### **As at 8<sup>th</sup> January 2018 (based on update to 24<sup>th</sup> December):**

Influenza activity continued to increase 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(H3N2) and B viruses accounted for the majority of influenza detections although influenza A(H1N1)pdm09 viruses were predominant in some countries.

- In North America, overall influenza activity continued to increase in the region, with detections of predominantly influenza A(H3N2) viruses.
- In Europe, influenza activity increased above baseline levels in most countries in Northern and Southwestern Europe with sharp increases in respiratory illness indicators in some countries. Activity remained low in countries in Eastern Europe. Influenza B virus detections remained frequent and the subtype of the influenza A viruses detected varied depending on the country and the surveillance system (outpatient or inpatient systems).
- In Western Asia, increasing influenza activity was reported in Israel and Jordan with predominantly influenza B and A(H1N1)pdm09 virus detections, respectively.
- In Central Asia, low to no influenza activity was reported.
- In East Asia, influenza activity continued to increase in recent weeks. In both Northern and Southern China, ILI and influenza activity continued to increase, with influenza B Yamagata-lineage viruses predominantly detected followed by influenza A(H3N2) viruses. Increasing detections of influenza B and A(H3N2) viruses were reported in the Republic of Korea.
- In South East Asia, low levels of influenza activity were reported.
- In Southern Asia, increased influenza activity was reported in Iran with detection of all seasonal subtypes.
- In Northern Africa, influenza activity was predominantly due to influenza A(H1N1)pdm09 virus detections. Activity increased in Egypt and Morocco; and Tunisia reported sharp increases in activity.
- In Western Africa, influenza activity continued at lower levels compared to previous weeks. Detections of predominantly influenza A(H1N1)pdm09 viruses were reported from Burkina Faso, Côte d'Ivoire, Ghana and Togo. In Middle Africa, Cameroon reported activity with influenza A and B viruses and the Democratic Republic of Congo reported detections of influenza A(H1N1)pdm09 viruses. In Eastern Africa, sporadic influenza detections were reported in Madagascar, Mozambique, and the United Republic of Tanzania.
- In the Caribbean and Central American countries, low to no influenza activity was reported.
- In the tropical countries of South America, low to no influenza activity was reported.

- In the temperate zone of the Southern Hemisphere, influenza activity decreased overall to inter-seasonal levels.
- National Influenza Centres (NICs) and other national influenza laboratories from 105 countries, areas or territories reported data to FluNet for the time period from 11 December 2017 to 24 December 2017 (data as of 2018-01-07 15:48:27 UTC). The WHO GISRS laboratories tested more than 179990 specimens during that time period. 40431 were positive for influenza viruses, of which 26351 (65.2%) were typed as influenza A and 14080 (34.8%) as influenza B. Of the sub-typed influenza A viruses, 3357 (30.7%) were influenza A(H1N1)pdm09 and 7582 (69.3%) were influenza A(H3N2). Of the characterized B viruses, 5620 (86.3%) belonged to the B-Yamagata lineage and 891 (13.7%) to the B-Victoria lineage.

[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:

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