

## Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 8 (20 February 2017 – 26 February 2017)

### Summary

At this point in the 2016/17 influenza season, influenza continued to circulate across the region with decreases noted in a number of indicators in week 8 (week commencing 20<sup>th</sup> February 2017).

#### Weekly Influenza GP Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) have decreased in week 8, 2017 to 19.8\* per 100,000 population. Rates remain below the 2016/17 pre-epidemic threshold<sup>1</sup>
- OOH GP consultation rates for flu/FLI remained relatively stable at 3.8 per 100,000 population in week 8, 2017

#### Microbiological Surveillance

- The proportion of positive influenza detections from both sentinel and non-sentinel sources was 9% in week 8

#### Respiratory Syncytial Virus (RSV) Activity

- RSV activity has decreased since week 7 with levels slightly lower than the same period last season

#### Influenza Confirmed Intensive Care Unit (ICU) Cases and Deaths

- One case was reported in ICU with laboratory confirmed influenza in week 8, giving a total of 38 cases this season
- No deaths were reported in week 8 among ICU patients with laboratory confirmed influenza; there have been a total of seven deaths in ICU patients with laboratory confirmed influenza this season

#### Influenza Outbreaks across Northern Ireland

- No confirmed influenza outbreaks were reported to the PHA. There have been a total of 11 confirmed influenza outbreaks this season

#### Influenza Vaccine Uptake in Northern Ireland

- To 31<sup>st</sup> January 2017; uptake was 71.7% among those aged 65 years and over, 55.9% among those under 65 in an at risk group, 52.0% among 2-4 year olds and 78.2% among primary school children

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\* Please note that due to a technical issue the GP consultation rate for weeks 7 and 8 is provisional

<sup>1</sup> The pre-epidemic threshold for Northern Ireland is 47.9 per 100,000 population this year (2016/17)

## 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 2016/17 season commenced on 3<sup>rd</sup> October 2016.

Surveillance systems used to monitor influenza activity include:

- GP sentinel surveillance representing 11.7% of Northern Ireland population;
- 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 critical care patients with confirmed influenza;
- Mortality data from Northern Ireland Statistics and Research Agency (NISRA);
- Excess mortality estimations are also provided by Public Health England using the EuroMOMO (Mortality Monitoring in Europe) model based on raw death data supplied by NISRA

***NB: Please note changes in the y axes on figures 1 – 6 from last season's bulletin when interpreting the charts contained in this season's bulletin.***

## Sentinel GP Consultation Data

Figure 1. Sentinel GP consultation rates for flu/FLI 2014/15 - 2016/17

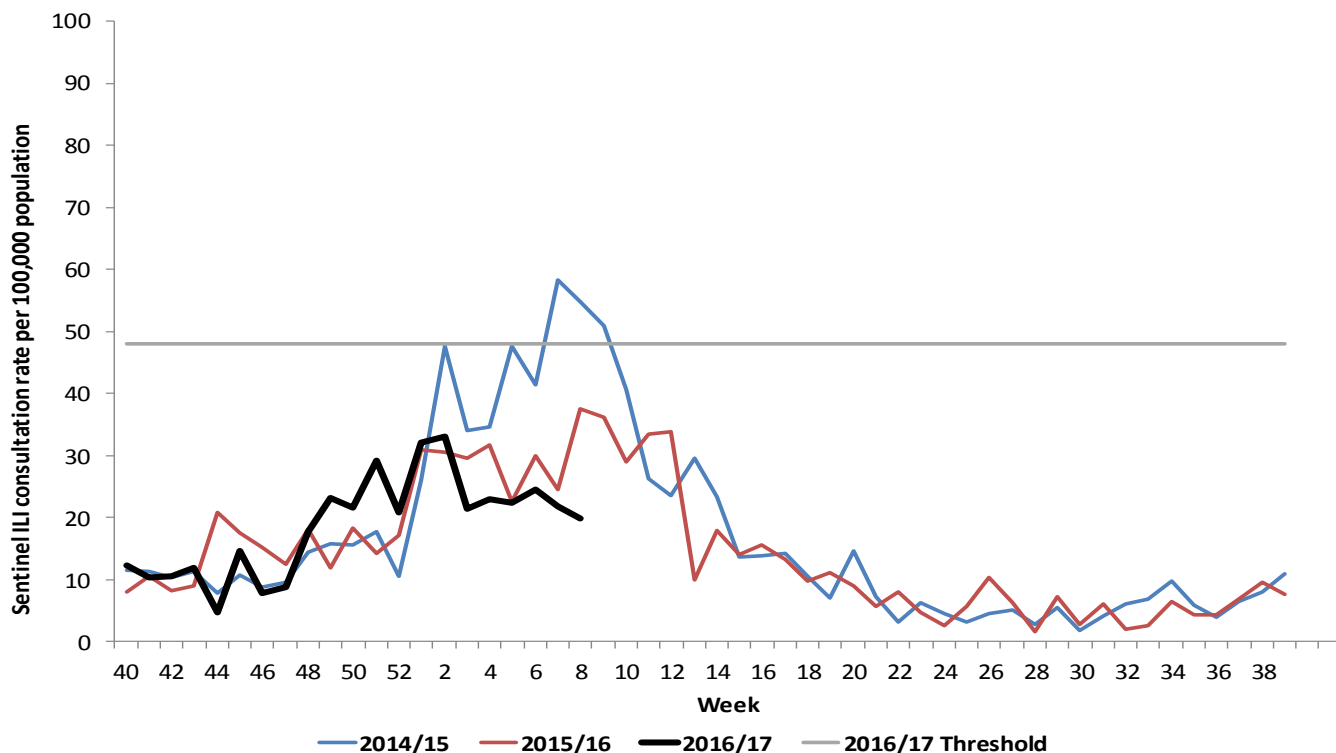


Figure 2. Sentinel GP combined consultation rates for flu/FLI and number of influenza positive detections 2011/12 – 2016/17

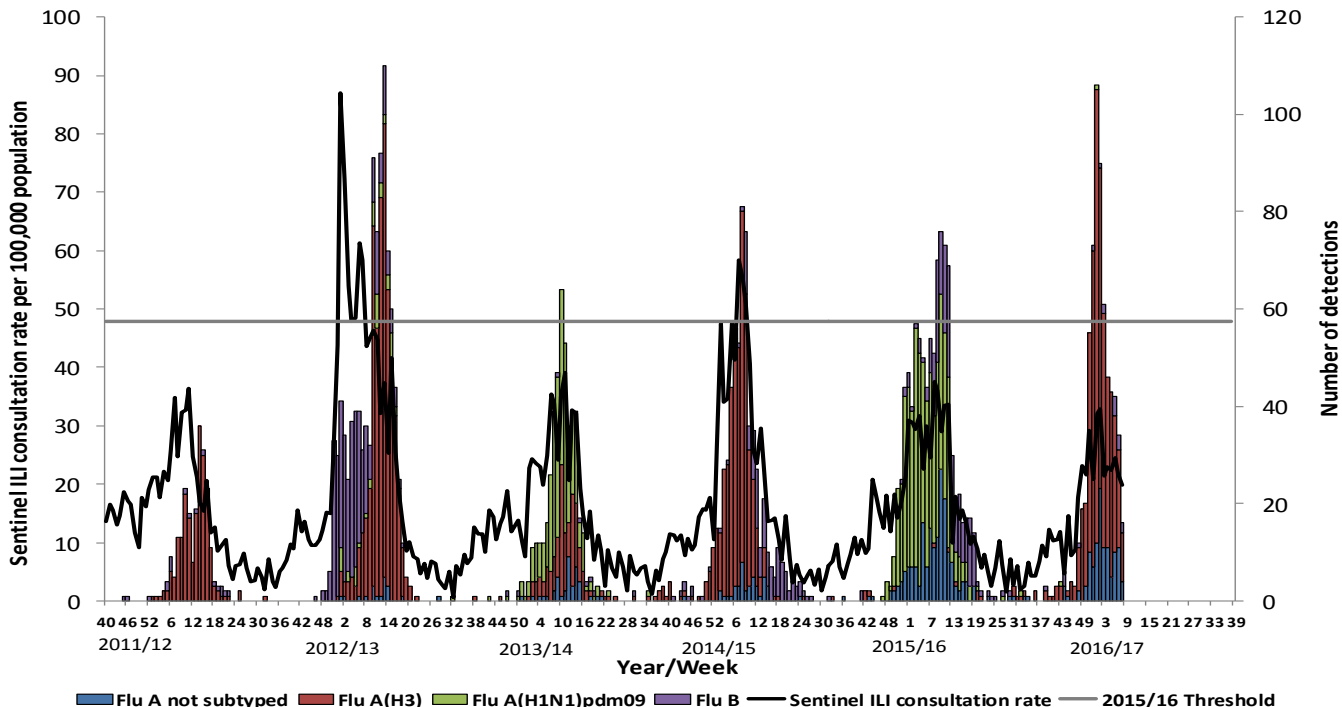
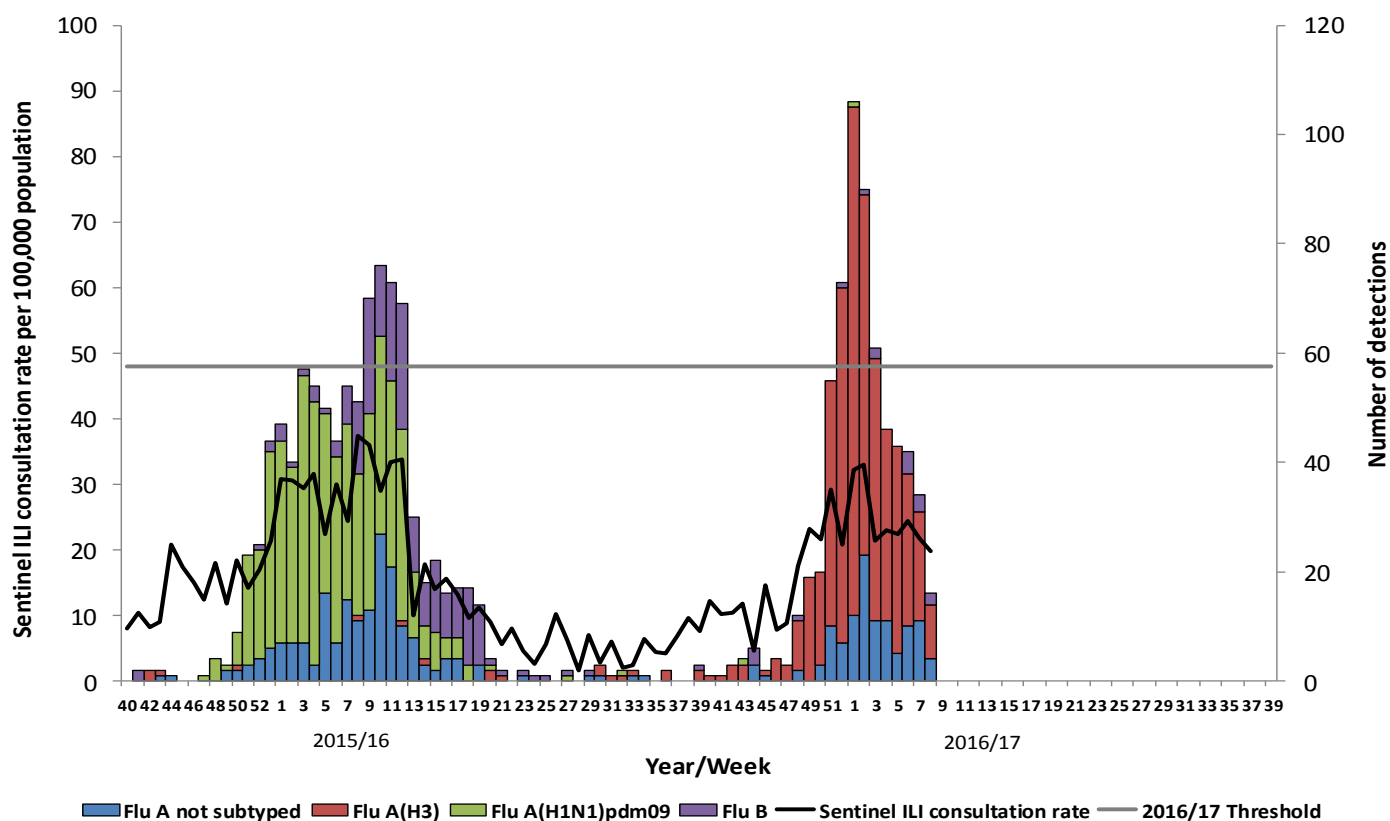


Figure 3. Sentinel GP consultation rates for flu/FLI and number of virology 'flu detections from week 40, 2015

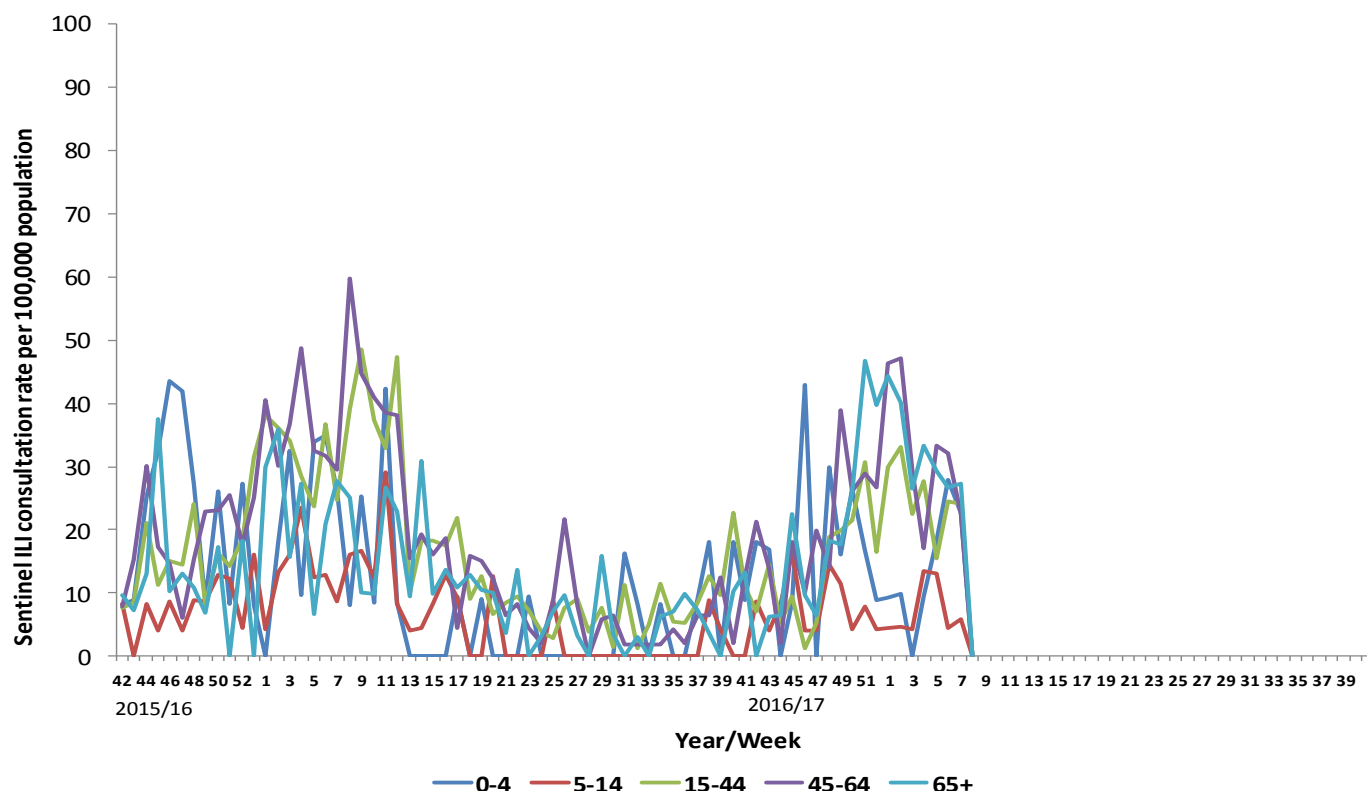


## Comment

GP consultation rates have decreased in week 8, 2017 to 19.8\* per 100,000 population from 21.8 per 100,000 population in week 7. The GP consultation rate in week 8 is lower than the same period in both 2015/16 (37.5 per 100,000 population) and 2014/15 (54.8 per 100,000 population). Rates remain below the pre-epidemic Northern Ireland 2016/17 threshold of 47.9 per 100,000 (Figures 1, 2 and 3).

\* Please note that due to a technical issue the GP consultation rate for weeks 7 and 8 is provisional

**Figure 4. Sentinel GP age-specific consultation rates for flu/FLI from week 40, 2015**



### Comment

Sentinel GP flu/FLI consultations have increased among the 5-14 and 45-64 years groups in week 8 but decreased in all other age groups.

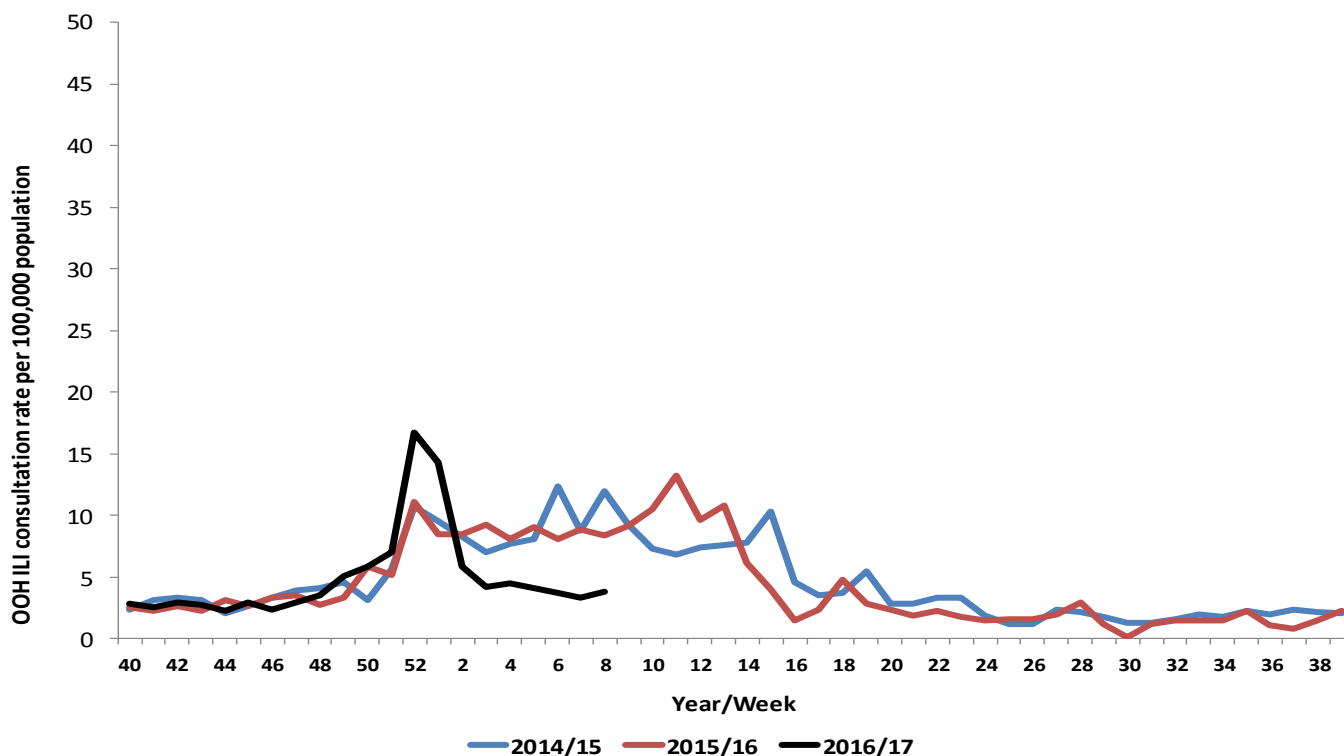
In week 8, 2017 the highest age-specific rate was noted among those aged 45-64 years (40.7 per 100,000 population), with the lowest rate represented by those aged 15-44 years (8.5 per 100,000 population).

Age-specific consultation rates are lower among almost all age groups in week 8 than the same time period in 2015/16 and lower in all age groups than in 2014/15 (Figure 4).

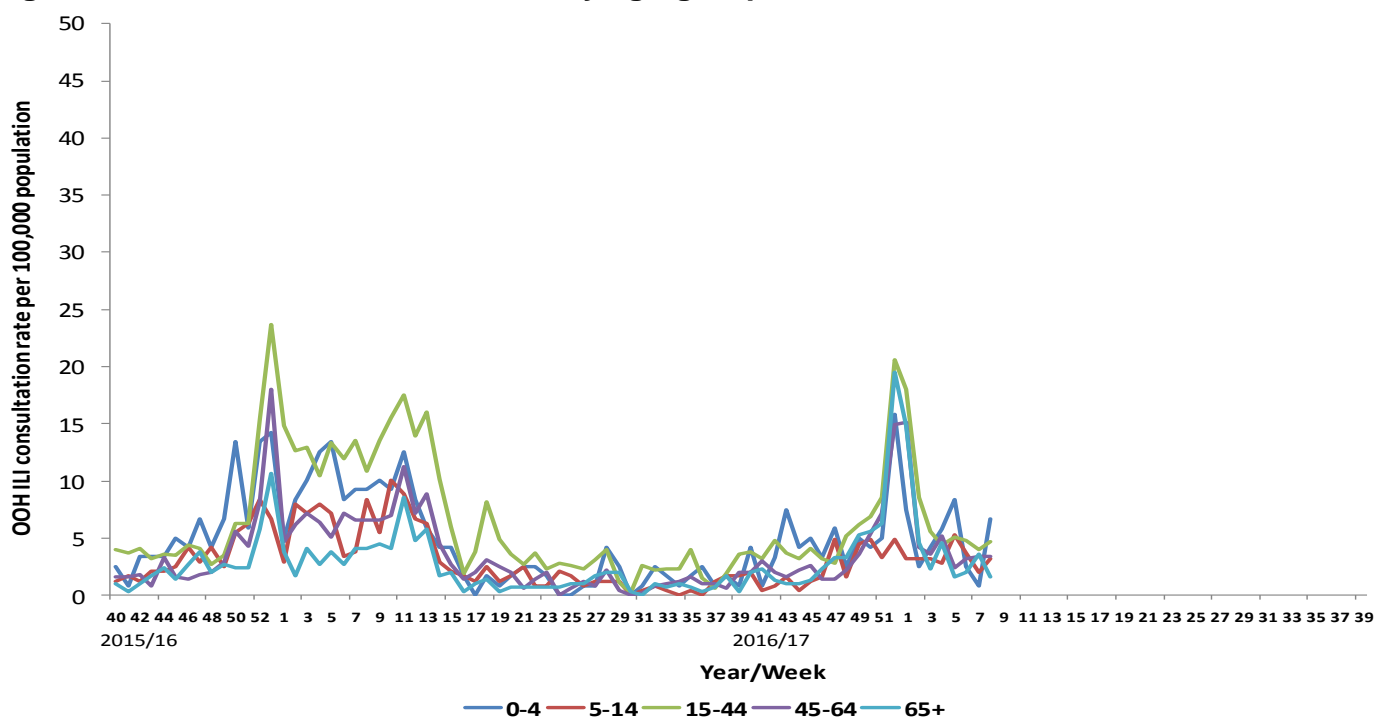
*Please note that due to a technical issue the GP consultation rate for weeks 7 and 8 is provisional.*

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

**Figure 5. OOH call rate for flu/FLI, 2014/15 – 2016/17**



**Figure 6. OOH Call rates of flu/FLI by age-group from week 40, 2015**



## Comment

During week 8, 2017 the OOH GP consultation rate remained relatively stable at 3.8 per 100,000 population from 3.4 per 100,000 population in week 7. The OOH GP consultation rate in week 8 is lower than the same period in both 2015/16 (8.4 per 100,000 population) and 2014/15 (12.0 per 100,000 population) (Figure 5).

The proportion of calls related to flu has also remained relatively stable and still represents less than 1% of total calls to the OOH service in week 8, 2017.

During week 8, OOH flu/FLI rates have increased among the youngest age groups, with rates decreasing slightly among those aged 65 years and over but remaining stable among those aged 15-44 years and 45-64 years. The highest age-specific OOH flu/FLI rate in week 8 was noted among the 0-4 years age group (6.7 per 100,000 population) while those aged 65 years and over represented the lowest rate (1.7 per 100,000 population) (Figure 6).

Age-specific rates in week 8 are lower among all age groups than those noted during the same period in both 2015/16 and 2014/15.

Table 1. Virus activity in Northern Ireland by source, Week 8, 2016/17

| Source       | Specimens Tested | Flu AH3   | Flu A(H1N1) 2009 | A (untyped) | Flu B    | RSV      | Total influenza Positive | % Influenza Positive |
|--------------|------------------|-----------|------------------|-------------|----------|----------|--------------------------|----------------------|
| Sentinel     | 4                | 2         | 0                | 0           | 0        | 0        | 2                        | 50%                  |
| Non-sentinel | 175              | 8         | 0                | 4           | 2        | 2        | 14                       | 8%                   |
| <b>Total</b> | <b>179</b>       | <b>10</b> | <b>0</b>         | <b>4</b>    | <b>2</b> | <b>2</b> | <b>16</b>                | <b>9%</b>            |

Table 2. Cumulative virus activity from all sources by age group, Week 40 - 8, 2016/17

|                 | Flu AH3    | Flu A(H1N1) 2009 | A (untyped) | Flu B     | Total Influenza | RSV        |
|-----------------|------------|------------------|-------------|-----------|-----------------|------------|
| 0-4             | 16         | 0                | 5           | 2         | 23              | 447        |
| 5-14            | 10         | 0                | 2           | 1         | 13              | 16         |
| 15-64           | 220        | 1                | 46          | 9         | 276             | 96         |
| 65+             | 263        | 1                | 60          | 5         | 329             | 137        |
| Unknown         | 0          | 0                | 0           | 0         | 0               | 0          |
| <b>All ages</b> | <b>509</b> | <b>2</b>         | <b>113</b>  | <b>17</b> | <b>641</b>      | <b>696</b> |

Table 3. Cumulative virus activity by age group and source, Week 40 - Week 8, 2016/17

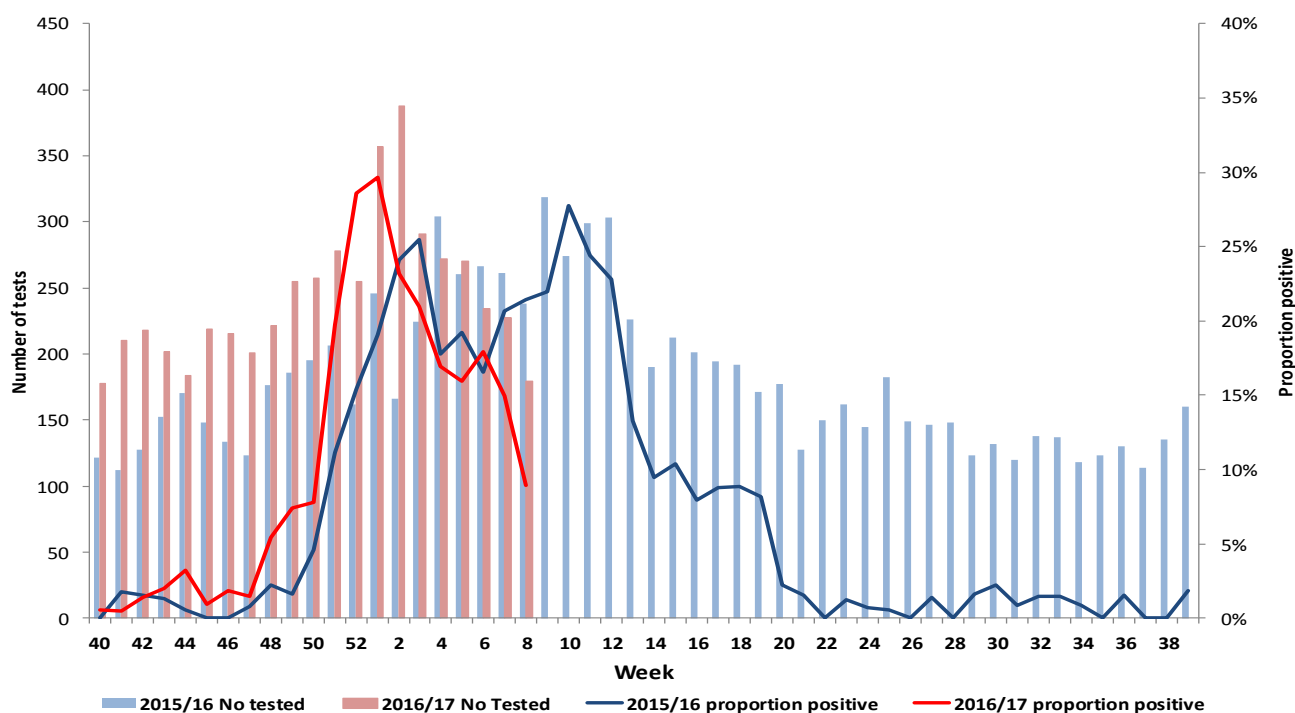
|                 | Sentinel  |                  |             |          |                 |           | Non-sentinel |                  |             |           |                 |            |
|-----------------|-----------|------------------|-------------|----------|-----------------|-----------|--------------|------------------|-------------|-----------|-----------------|------------|
|                 | 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             | 0         | 0                | 0           | 0        | 0               | 1         | 16           | 0                | 5           | 2         | 23              | 446        |
| 5-14            | 4         | 0                | 0           | 0        | 4               | 0         | 6            | 0                | 2           | 1         | 9               | 16         |
| 15-64           | 26        | 1                | 4           | 2        | 33              | 8         | 194          | 0                | 42          | 7         | 243             | 88         |
| 65+             | 5         | 1                | 1           | 0        | 7               | 3         | 258          | 0                | 59          | 5         | 322             | 134        |
| Unknown         | 0         | 0                | 0           | 0        | 0               | 0         | 0            | 0                | 0           | 0         | 0               | 0          |
| <b>All ages</b> | <b>35</b> | <b>2</b>         | <b>5</b>    | <b>2</b> | <b>44</b>       | <b>12</b> | <b>474</b>   | <b>0</b>         | <b>108</b>  | <b>15</b> | <b>597</b>      | <b>684</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, 2015/16 and 2016/17, all sources**



### Comment

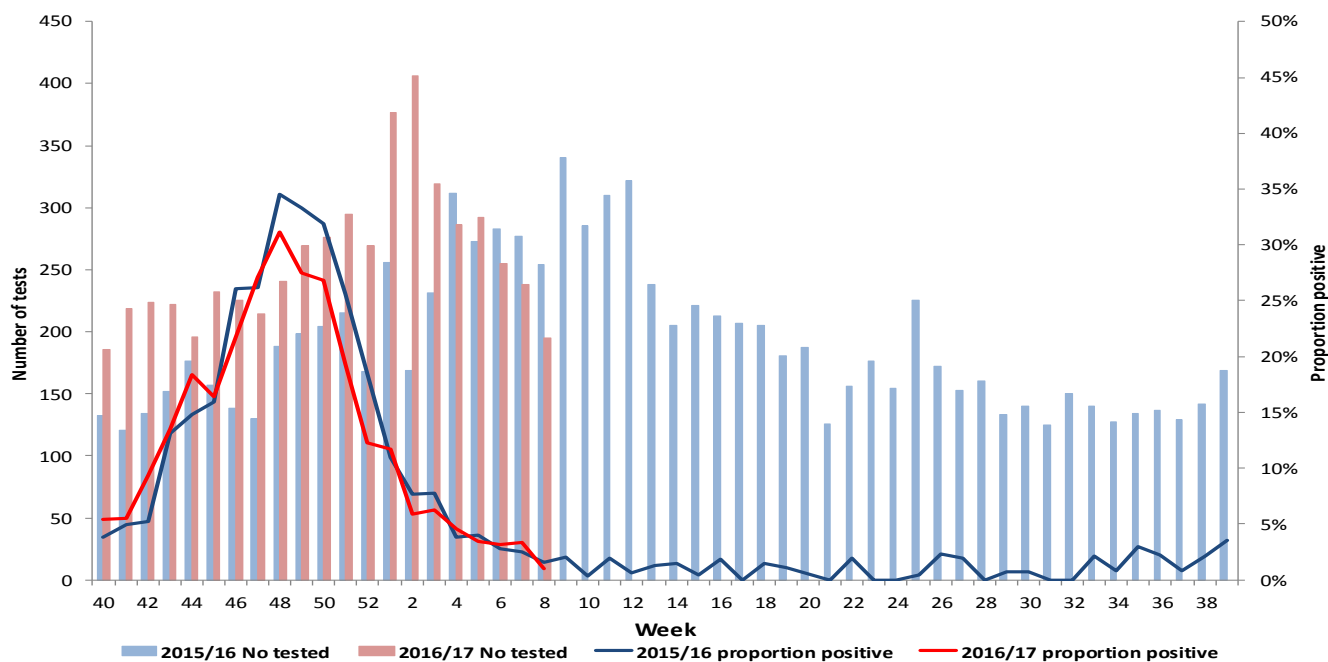
During week 8, 2017 there were 179 specimens submitted for virological testing. There were 16 detections of influenza in total (positivity rate of 9%) (Figure 7). There were 10 detections of influenza A(H3), 4 detections of influenza A (typing awaited) and 2 detections of influenza B. There were no detections of influenza A(H1N1)pdm09.

There were two samples positive for influenza submitted through the GP based sentinel scheme across Northern Ireland, both typed as influenza A(H3).

This season to date there have been a total of 641 detections of influenza, of which 509 have been typed as influenza A(H3). There have been 17 detections of influenza B, 113 of influenza A (typing awaited), and 2 detections of influenza A(H1N1)pdm09 (Tables 1, 2, and 3).

## Respiratory Syncytial Virus

**Figure 8. Number of samples tested for RSV and proportion positive, 2015/16 and 2016/17, all sources**

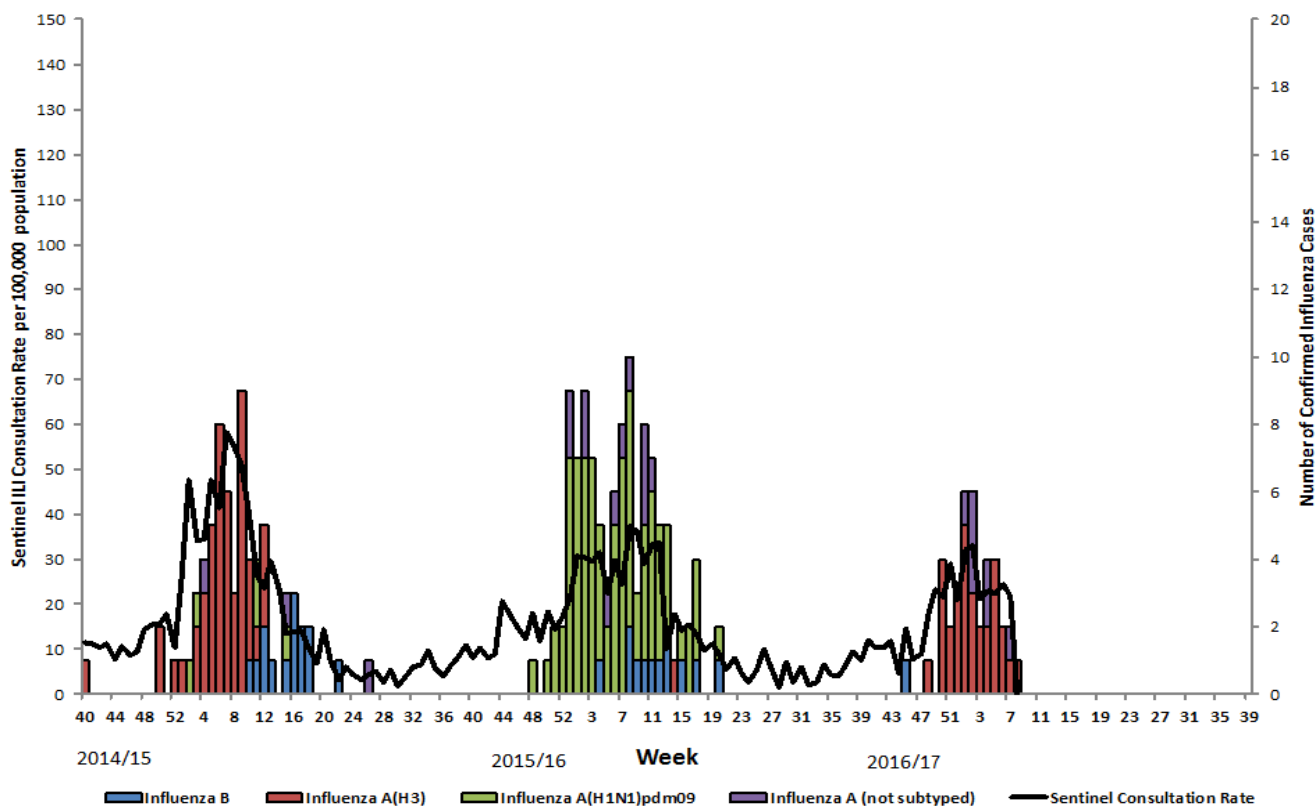


### Comment

During week 8, 2017 there were 2 positive detections of RSV, giving a positivity rate of 1%; similar to the same period in 2015/16 (2%). To date there have been a total of 696 detections of RSV of which the majority (64%) were in those aged 0-4 years (Figure 8 and Table 2).

## ICU/HDU Surveillance

**Figure 9. Confirmed ICU influenza cases by week of specimen, with sentinel ILI consultation rate, 2014/15 - 2016/17**



## Comment

Data are collected on laboratory confirmed influenza patients and deaths in critical care (level 2 and level 3).

During week 8, one confirmed case of influenza in ICU was reported to the PHA, typed as influenza A(H3). There were no deaths reported in ICU patients with laboratory confirmed influenza.

There have been 38 confirmed cases of influenza in ICU reported this season to date, of which 30 have been typed as influenza A (H3), seven as influenza A (typing awaited) and one influenza B. There have been seven deaths reported in confirmed cases of influenza in ICU this season to date.

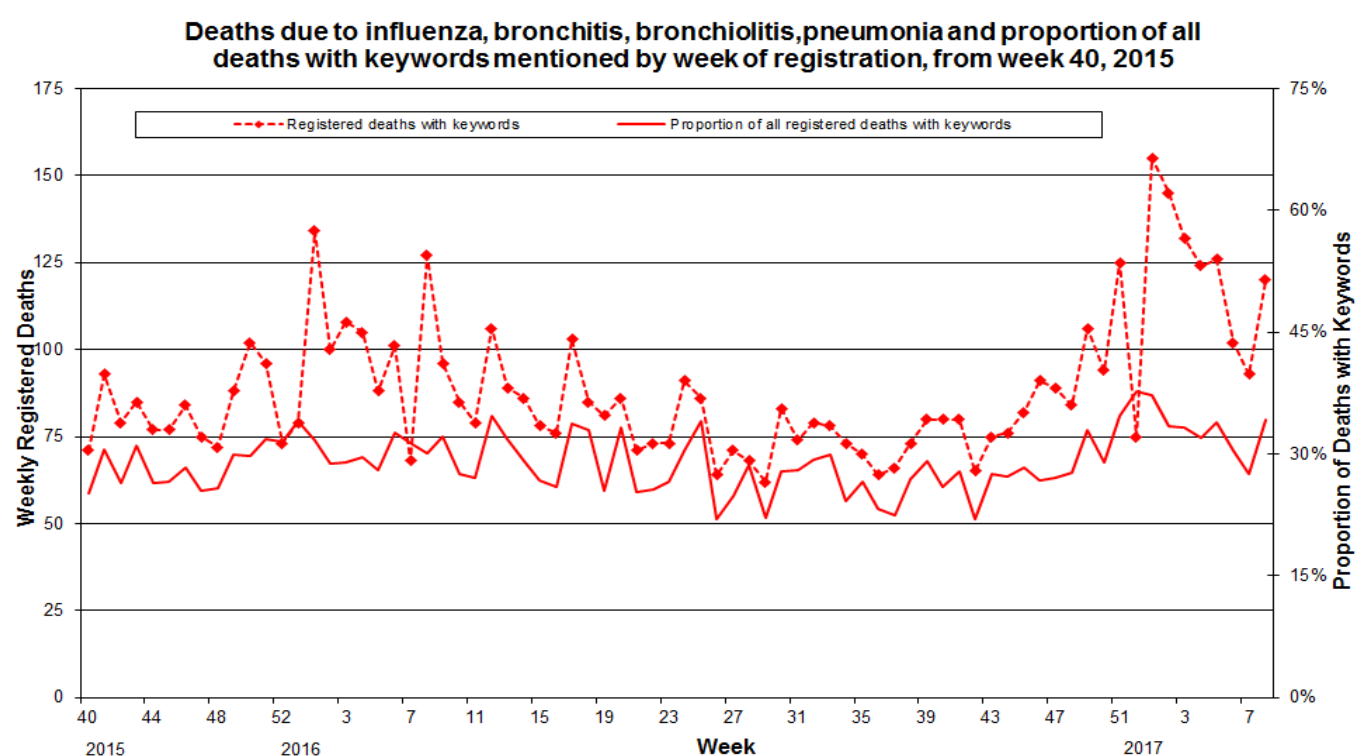
## Outbreak Surveillance

During week 8, 2017 there were no confirmed influenza outbreaks reported to the PHA. There have been a total of 11 confirmed influenza outbreaks reported this season to date, of which eight have been confirmed as influenza A(H3) and three as influenza A (typing awaited).

## Mortality Data

Weekly mortality data is provided from Northern Ireland Statistics and Research Agency. 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 10. Weekly registered deaths**



## Comment

During week 8, 2017 the proportion of deaths related to respiratory keywords has increased to 34% from 28% in week 7. In week 8 there were 351 registered deaths, of which 120 related to specific respiratory infections (Figure 10).

The proportion of deaths attributed to specific respiratory infections is higher at this point in the season than during the same period in 2015/16 (30%) but lower than in 2014/15 (38%).

## EuroMOMO

EuroMOMO data will be available later in the season.

### Influenza Vaccine Uptake

To 31<sup>st</sup> January 2017, provisional data suggested that vaccine uptake for those aged 65 years and over was 71.7%, higher than the same period in the 2015/16 (66.5%); while 55.9% of those under 65 and in an at risk group had received the vaccine, higher than in 2015/16 when 53.2% had received the vaccine in this group during the same period.

Similar to last season, all children aged between 2 and 4 years and all primary school children in 2016/17 have been offered the seasonal influenza vaccine. To 31<sup>st</sup> January 2017, provisional data suggested that vaccine uptake among 2-4 year old children was 52.0%, higher than in 2015/16 when 45.9% had received the vaccine during the same period. Provisional data suggests uptake among children in primary school was 78.2%, also higher than in 2015/16 when 76.5% had received the vaccine during the same period.

### International Summary

#### Europe

##### Week 7, 2017

- Influenza activity remained elevated, but lower than last week, across the region.
- The proportion of influenza virus detections among sentinel surveillance specimens decreased to 36% from 44% in the previous week.
- The great majority of detected and subtyped influenza viruses were A(H3N2) and while the proportion of type B viruses increased, as commonly seen in the second half of an influenza season, their numbers remained low.
- The number of hospitalized laboratory-confirmed influenza cases reported, primarily in people aged 65 years or older, continued to decrease.

##### Season Overview:

- Influenza activity started early this season in week 46/2016, which is the earliest week that the overall influenza-positivity rate in sentinel specimens reached 10% since the emergence of A(H1N1)pdm09 viruses in 2009/10.
- Since week 40/2016, influenza A viruses have predominated, accounting for 96% of all sentinel detections; the great majority (99%) of subtyped influenza A viruses from sentinel sites being A(H3N2).
- Confirmed cases of influenza virus type A infection reported from hospitals have predominantly been in adults aged over 65 years. Excess all-cause mortality has been observed substantially in people aged 15–64 years and markedly in people aged 65 years or older in the majority of the 19 reporting countries. This is commonly seen when the predominant viruses circulating are A(H3N2).
- Two-thirds of the A(H3N2) viruses genetically characterized belong to a recently emerged genetic subclade (3C.2a1). However, those that have been antigenically characterized are largely similar to the clade 3C.2a vaccine virus.

- Recent vaccine effectiveness estimates, for all age groups against A(H3N2) illness, from [Canada](#) (42%), from the [US](#) (43%) and from [Europe](#) (38%) are consistent with estimates from [Stockholm](#) county (28%) and [Finland](#) (32%) early in the season.
- Given typically suboptimal vaccination coverage and the partial effectiveness of influenza vaccines, rapid use of neuraminidase inhibitors (NAIs) for laboratory-confirmed or probable cases of influenza infection should be considered for vaccinated and non-vaccinated patients at risk of developing complications.
- No reduced susceptibility to oseltamivir or zanamivir has been observed for any of the viruses tested so far this season.
- The progression of the season thus far has confirmed the conclusions of the ECDC [risk assessment](#) on seasonal influenza [updated](#) on 25 January 2017, namely expected severe outcomes in the elderly related to the prevalence of A(H3N2) viruses, putting some health care systems under pressure.

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

## **Worldwide (WHO) and CDC**

### **As at 20<sup>th</sup> February 2017:**

Influenza activity in the temperate zone of the northern hemisphere continued to be elevated. Many countries especially in East Asia and Europe appeared to have already peaked and were reporting decreasing trends. Worldwide, influenza A(H3N2) virus was predominant. The majority of influenza viruses characterized so far were similar antigenically to the reference viruses contained in vaccines for use in the 2016-2017 northern hemisphere influenza season. Nearly all tested viruses collected recently for antiviral sensitivity were susceptible to the neuraminidase inhibitor antiviral medications.

- In North America, influenza activity with A(H3N2) virus predominating increased in the United States of America and Mexico, whereas in Canada influenza activity continued to decrease.
- In Europe, influenza activity remained elevated with influenza A (H3N2) virus being the most prominent subtype. Most of the countries reported stable or decreasing trends compared with previous weeks. Persons aged over 65 years were most frequently associated with severe disease from influenza infection.
- In East Asia, influenza activity appeared to be decreasing with influenza A(H3N2) virus predominant.
- In Western Asia, influenza activity was decreasing with influenza A(H3N2) predominant in the region. Low levels of influenza B viruses were also detected.
- In Southern Asia, influenza activity sharply increased in India and Sri Lanka, with mainly influenza A(H1N1)pdm09 reported followed by influenza B and A(H3N2).
- In South East Asia, influenza activity remained low.
- In Northern Africa, influenza activity seemed to have peaked; influenza A(H3N2) and influenza B virus detections were reported.
- In West Africa, influenza B continued to be detected in Ghana.
- In the Caribbean countries and Central America, influenza and other respiratory virus activity remained low in general, except in Puerto Rico where influenza activity remained above the seasonal threshold with influenza A(H3N2) predominating.
- In tropical South America, influenza and other respiratory virus activity remained low, although RSV activity remained elevated in Colombia.
- In the temperate zone of the Southern Hemisphere, influenza activity was at inter-seasonal levels.

- National Influenza Centres (NICs) and other national influenza laboratories from 83 countries, areas or territories reported data to FluNet for the time period from 23 January 2017 to 05 February 2017 (data as of 2017-02-17 11:53:23 UTC). The WHO GISRS laboratories tested more than 154949 specimens during that time period. 40292 were positive for influenza viruses, of which 36922 (91.6%) were typed as influenza A and 3370 (8.4%) as influenza B. Of the sub-typed influenza A viruses, 418 (2.9%) were influenza A(H1N1)pdm09 and 14024 (97.1%) were influenza A(H3N2). Of the characterized B viruses, 332 (62.8%) belonged to the B-Yamagata lineage and 197 (37.2%) 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, Public Health England and NISRA. Their work is greatly appreciated and their support vital in the production of this bulletin.

## 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://euroflu.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>

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