

## Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 15 (10 April 2017 – 16 April 2017)

### Summary

At this point in the 2016/17 influenza season, influenza continues to circulate across the region, while the number of lab detections has slightly decreased in comparison to the previous week. Influenza B remains the predominant strain in week 15 (week commencing 10<sup>th</sup> April 2017).

### Weekly Influenza GP Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) have increased in week 15, 2017 to 15.4 per 100,000 population. Rates remain below the 2016/17 pre-epidemic threshold<sup>1</sup>
- OOH GP consultation rates for flu/FLI increased slightly to 3.8 per 100,000 population in week 15, 2017

### Microbiological Surveillance

- The proportion of positive influenza detections from both sentinel and non-sentinel sources was 11% in week 15

### Respiratory Syncytial Virus (RSV) Activity

- RSV activity has remained stable from week 14 with levels slightly higher than the same period last season

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

- One new case was reported in ICU with laboratory confirmed influenza in week 15, there have been a total of 44 cases this season
- No deaths were reported in week 15 among ICU patients with laboratory confirmed influenza; there have been a total of eight 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 13 confirmed influenza outbreaks this season

### EuroMOMO

- No excess all-cause mortality was reported through the EuroMOMO algorithm for week 15, 2017

### 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

<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

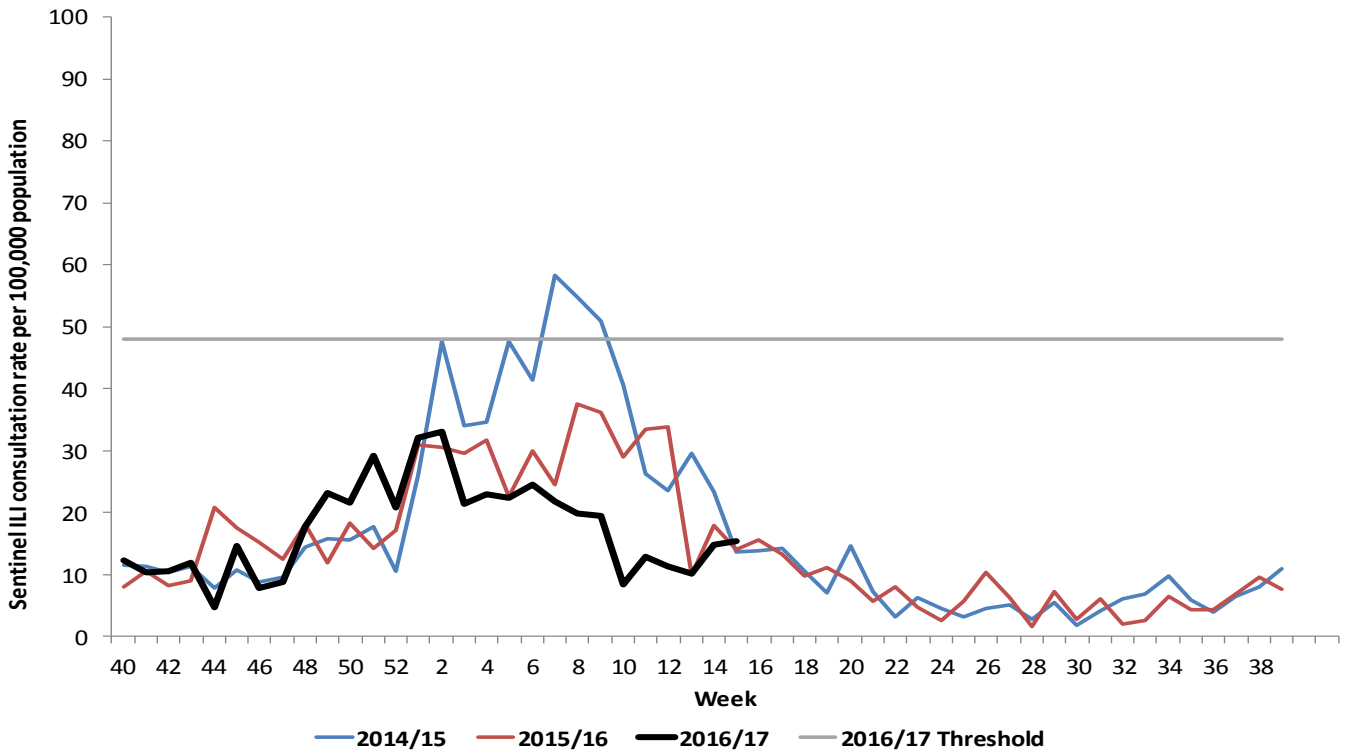
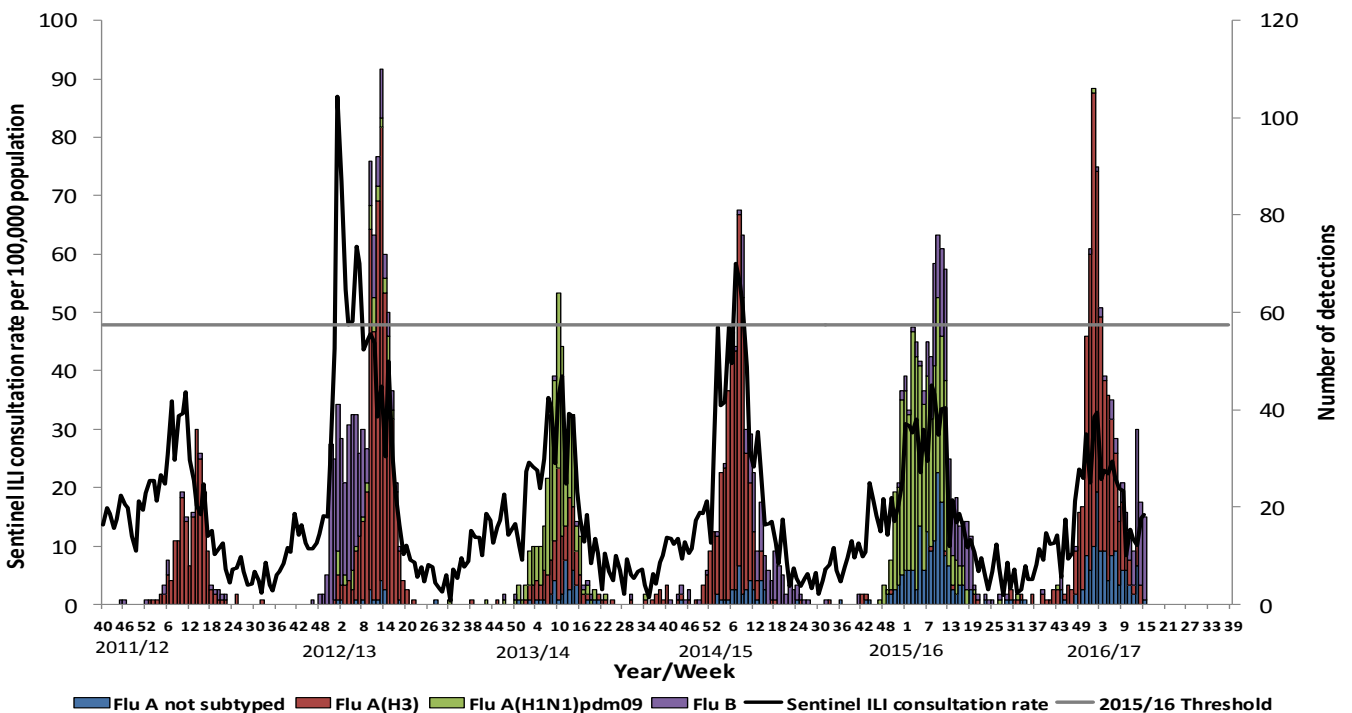
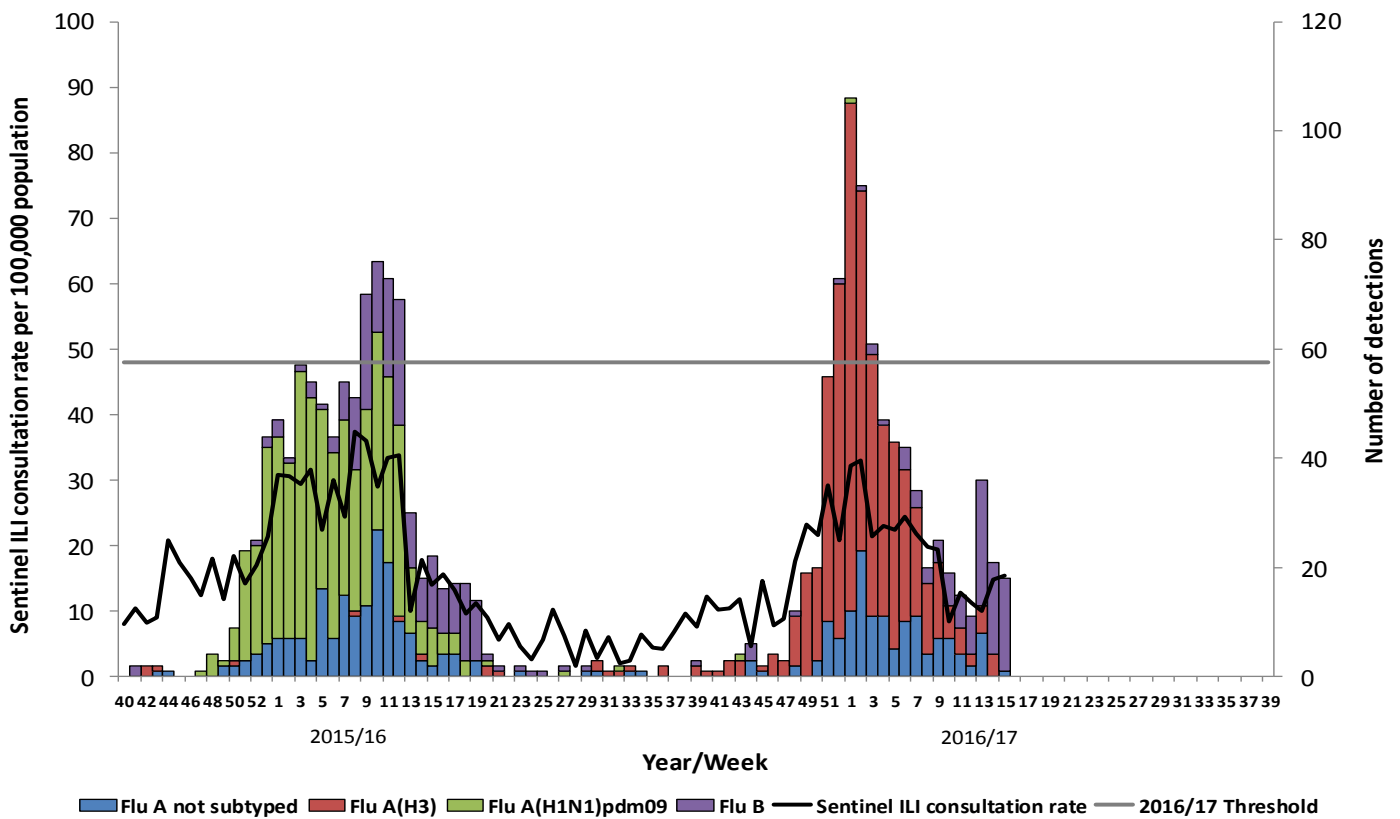


Figure 2. Sentinel GP combined consultation rates for flu/FLI and number of influenza positive detections 2011/12 – 2016/17



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



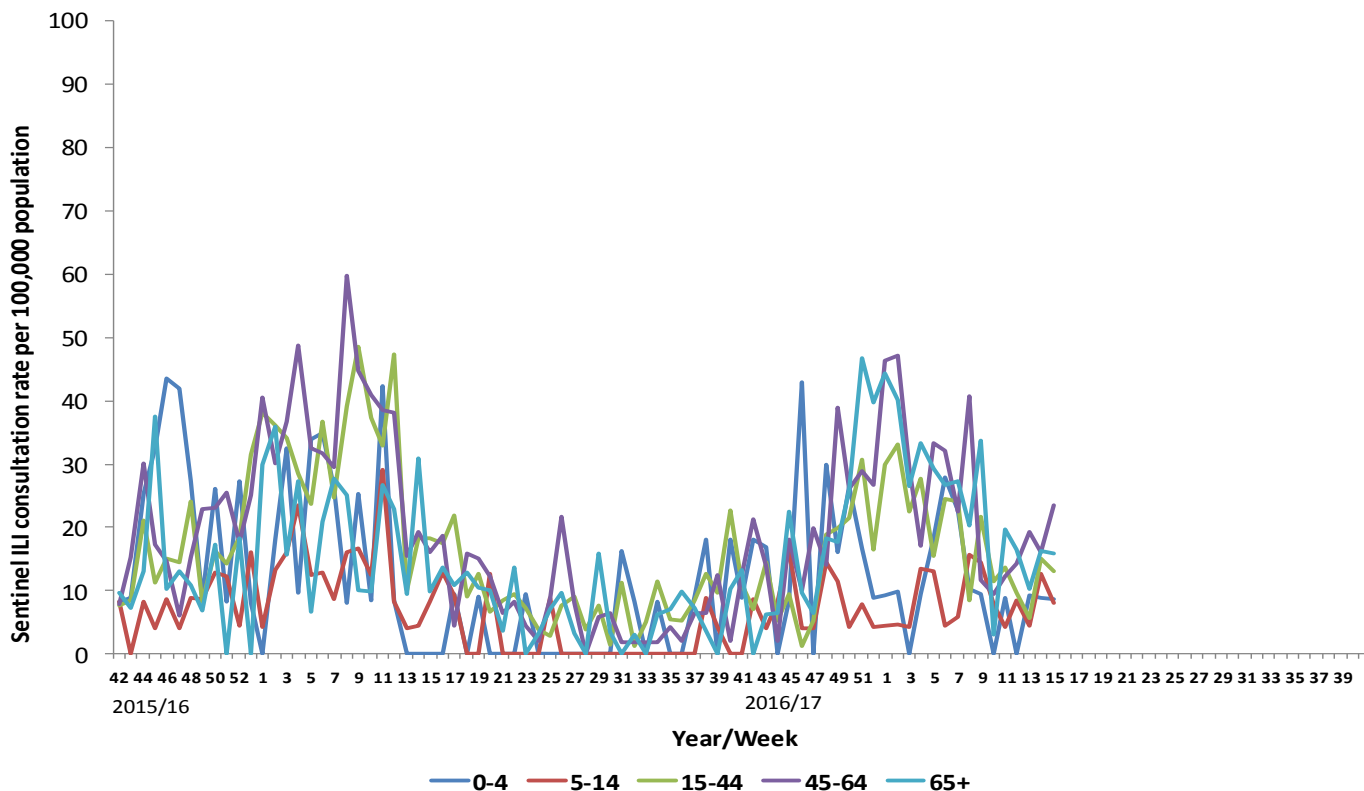
**Comment**

GP consultation rates have increased in week 15, 2017 to 15.4 per 100,000 population from 14.9 per 100,000 population in week 14. The GP consultation rate in week 15 is higher than the same period in both 2015/16 (14.0 per 100,000 population) and 2014/15 (13.7 per 100,000 population). Rates remain below the pre-epidemic Northern Ireland 2016/17 threshold of 47.9 per 100,000.

There has been a decrease in the number of influenza laboratory detections in week 15, while the proportion positive has slightly increased. Influenza B remains the predominant strain in recent weeks (Figures 1, 2 and 3).

Further information about laboratory detections of influenza is detailed on page 9.

**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 45-64 years age group in week 15, with a decrease noted among all other age groups.

In week 15, 2017 the highest age-specific rate was noted among those aged 45-64 years (23.5 per 100,000 population), with the lowest rate represented by those aged 5-14 years (8.1 per 100,000 population).

Age-specific consultation rates in week 15 are higher among most age groups than the same time period in both 2015/16 and 2014/15 (Figure 4).

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

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

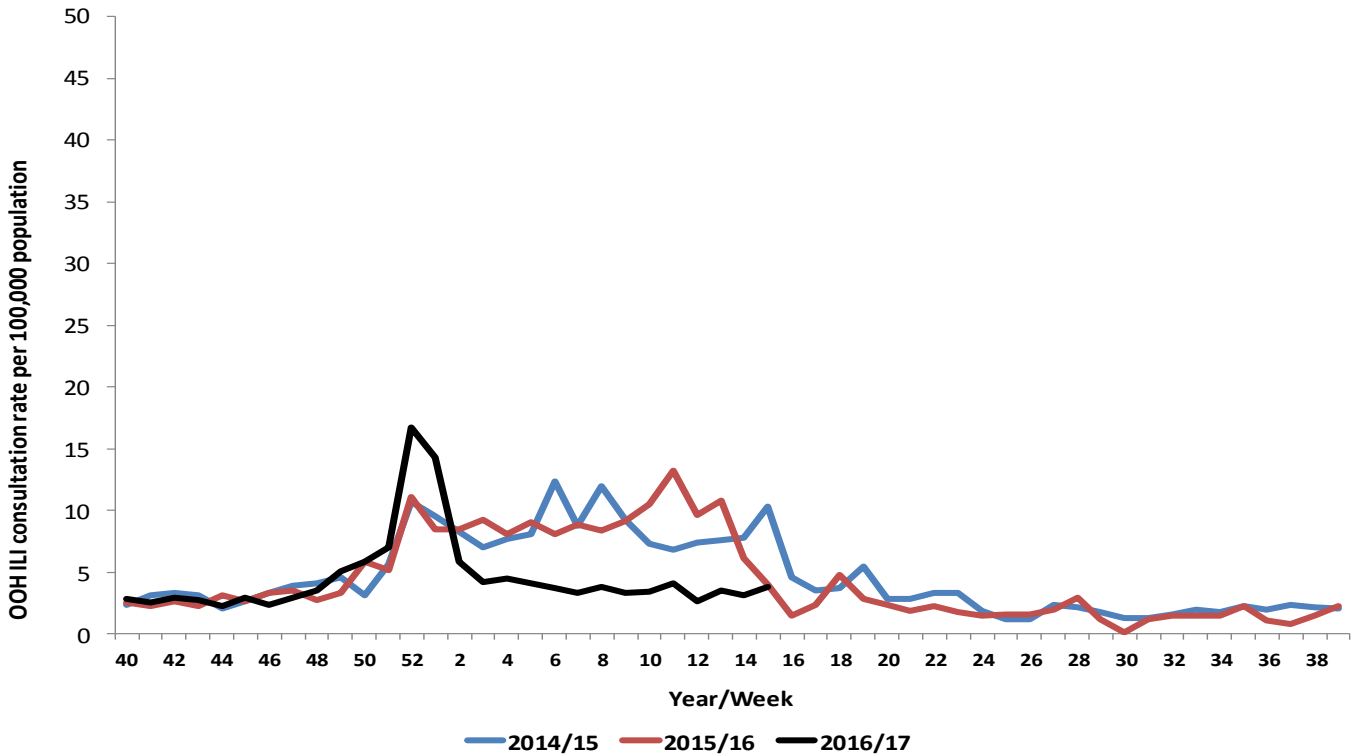
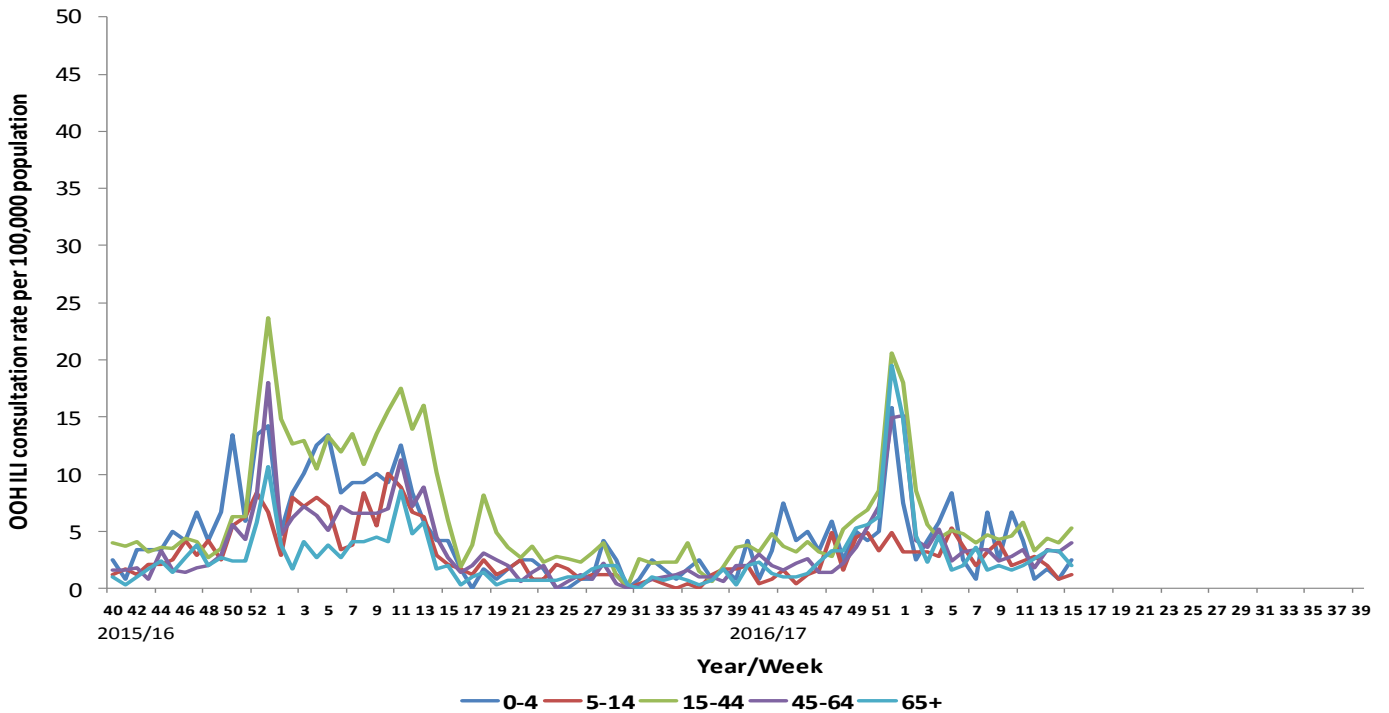


Figure 6. OOH Call rates of flu/FLI by age-group from week 40, 2015



### Comment

During week 15, 2017 the OOH GP consultation rate slightly increased to 3.8 per 100,000 population from 3.1 per 100,000 population in week 14. The OOH GP consultation rate in week 15 is similar to the same period in 2015/16 (4.0 per 100,000 population) but lower than in

2014/15 (10.3 per 100,000 population) (Figure 5). The proportion of calls related to flu has also increased but still represents less than 1% of total calls to the OOH service in week 15, 2017.

During week 15, OOH flu/FLI rates have slightly increased among the 0-4 and 45-44 years age groups while rates among those aged 65 years and over decreased. Rates among those aged 5-14 and 45-64 years have remained relatively stable. The highest age-specific OOH flu/FLI rate in week 15 was again noted among the 15-44 years age group (5.3 per 100,000 population) while those aged 5-14 years represented the lowest rate (1.2 per 100,000 population) (Figure 6).

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

## Virology Data

**Table 1. Virus activity in Northern Ireland by source, Week 15, 2016/17**

| Source       | Specimens Tested | Flu AH3  | Flu A(H1N1) 2009 | A (untyped) | Flu B     | RSV      | Total influenza Positive | % Influenza Positive |
|--------------|------------------|----------|------------------|-------------|-----------|----------|--------------------------|----------------------|
| Sentinel     | 6                | 0        | 0                | 0           | 3         | 0        | 3                        | 50%                  |
| Non-sentinel | 163              | 0        | 0                | 1           | 14        | 1        | 15                       | 9%                   |
| <b>Total</b> | <b>169</b>       | <b>0</b> | <b>0</b>         | <b>1</b>    | <b>17</b> | <b>1</b> | <b>18</b>                | <b>11%</b>           |

**Table 2. Cumulative virus activity from all sources by age group, Week 40 - 15, 2016/17**

|                 | Flu AH3    | Flu A(H1N1) 2009 | A (untyped) | Flu B     | Total Influenza | RSV        |
|-----------------|------------|------------------|-------------|-----------|-----------------|------------|
| 0-4             | 20         | 0                | 6           | 2         | 28              | 456        |
| 5-14            | 12         | 0                | 3           | 2         | 17              | 16         |
| 15-64           | 236        | 1                | 57          | 43        | 337             | 99         |
| 65+             | 280        | 1                | 76          | 52        | 409             | 142        |
| Unknown         | 0          | 0                | 0           | 0         | 0               | 0          |
| <b>All ages</b> | <b>548</b> | <b>2</b>         | <b>142</b>  | <b>99</b> | <b>791</b>      | <b>713</b> |

**Table 3. Cumulative virus activity by age group and source, Week 40 - Week 15, 2016/17**

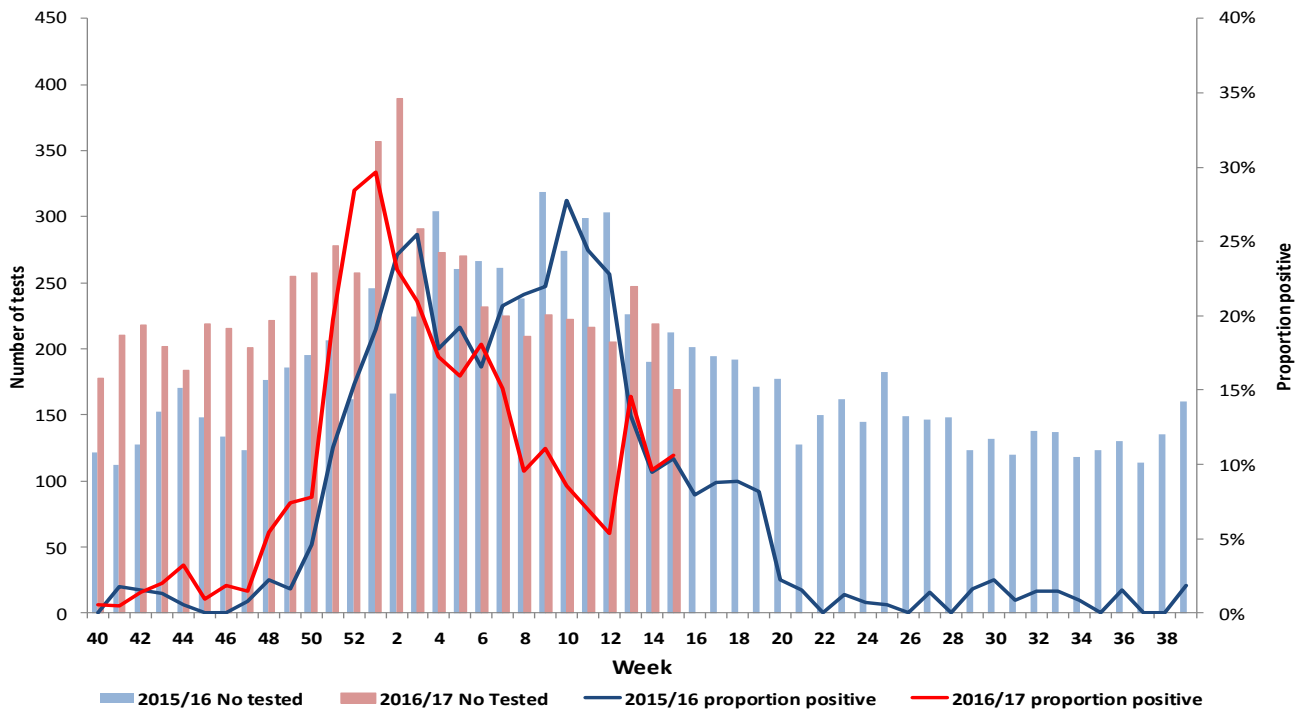
|                 | Sentinel  |                  |             |           |                 |           | Non-sentinel |                  |             |           |                 |            |
|-----------------|-----------|------------------|-------------|-----------|-----------------|-----------|--------------|------------------|-------------|-----------|-----------------|------------|
|                 | 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         | 20           | 0                | 6           | 2         | 28              | 455        |
| 5-14            | 4         | 0                | 0           | 0         | 4               | 0         | 8            | 0                | 3           | 2         | 13              | 16         |
| 15-64           | 29        | 1                | 5           | 10        | 45              | 8         | 207          | 0                | 52          | 33        | 292             | 91         |
| 65+             | 5         | 1                | 2           | 5         | 13              | 3         | 275          | 0                | 74          | 47        | 396             | 139        |
| Unknown         | 0         | 0                | 0           | 0         | 0               | 0         | 0            | 0                | 0           | 0         | 0               | 0          |
| <b>All ages</b> | <b>38</b> | <b>2</b>         | <b>7</b>    | <b>15</b> | <b>62</b>       | <b>12</b> | <b>510</b>   | <b>0</b>         | <b>135</b>  | <b>84</b> | <b>729</b>      | <b>701</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**

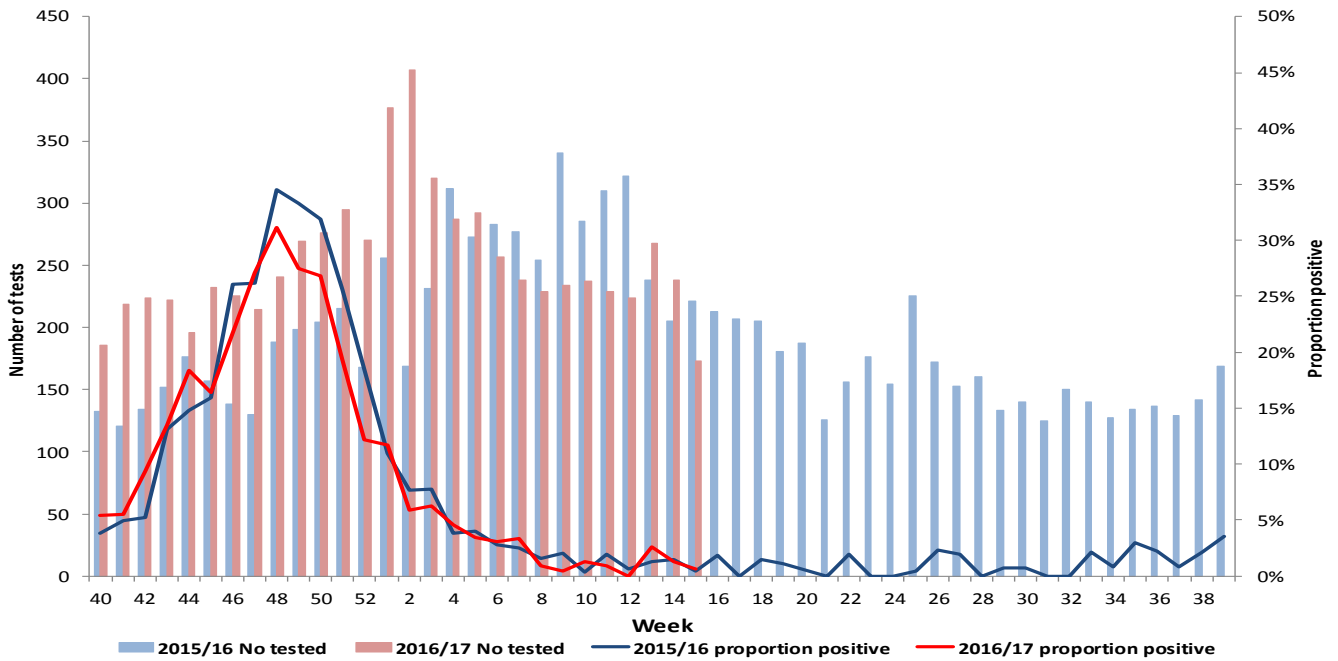
During week 15, 2017 there were 169 specimens submitted for virological testing. There were 18 detections of influenza in total (positivity rate of 11%) (Figure 7). There were 17 detections of influenza B and 1 detection of influenza A (typing awaited). There were no detections of influenza A(H1N1)pdm09 or influenza A(H3).

There were three samples positive for influenza submitted through the GP based sentinel scheme across Northern Ireland, all typed as influenza B.

This season to date there have been a total of 791 detections of influenza, of which 548 have been typed as influenza A(H3). There have been 99 detections of influenza B, 142 of influenza A (typing awaited), and 2 detections of influenza A(H1N1)pdm09 (Tables 1, 2, 3; Figures 2 and 3).

# Respiratory Syncytial Virus

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

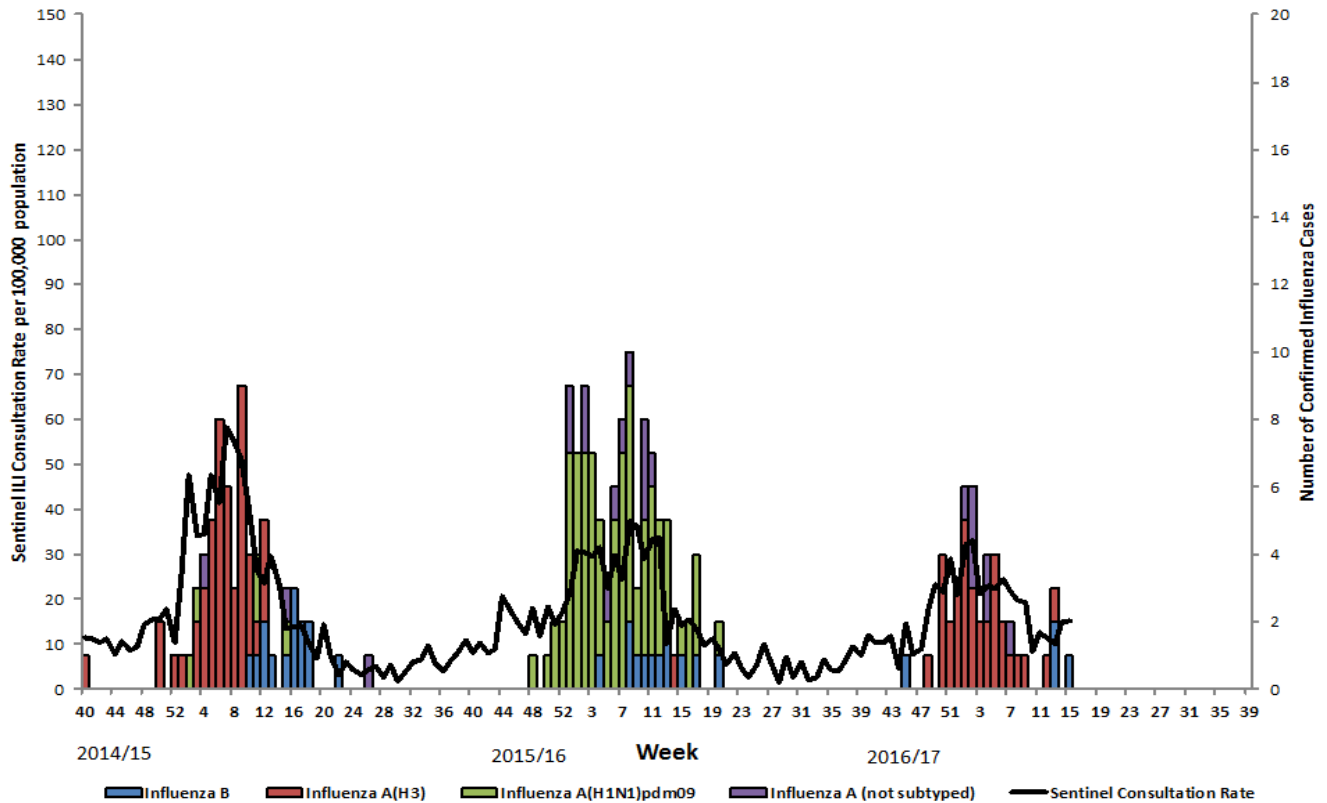


## Comment

During week 15, 2017 there was one positive detection of RSV, giving a positivity rate of 1%, higher than the same period in 2015/16 (0%). To date there have been a total of 713 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 15, one confirmed case of influenza in ICU was reported to the PHA. There were no deaths reported in ICU patients with laboratory confirmed influenza.

There have been 44 confirmed cases of influenza in ICU reported this season to date, of which 33 have been typed as influenza A (H3), seven as influenza A (typing awaited) and four influenza B. There have been eight deaths reported in confirmed cases of influenza in ICU this season to date.

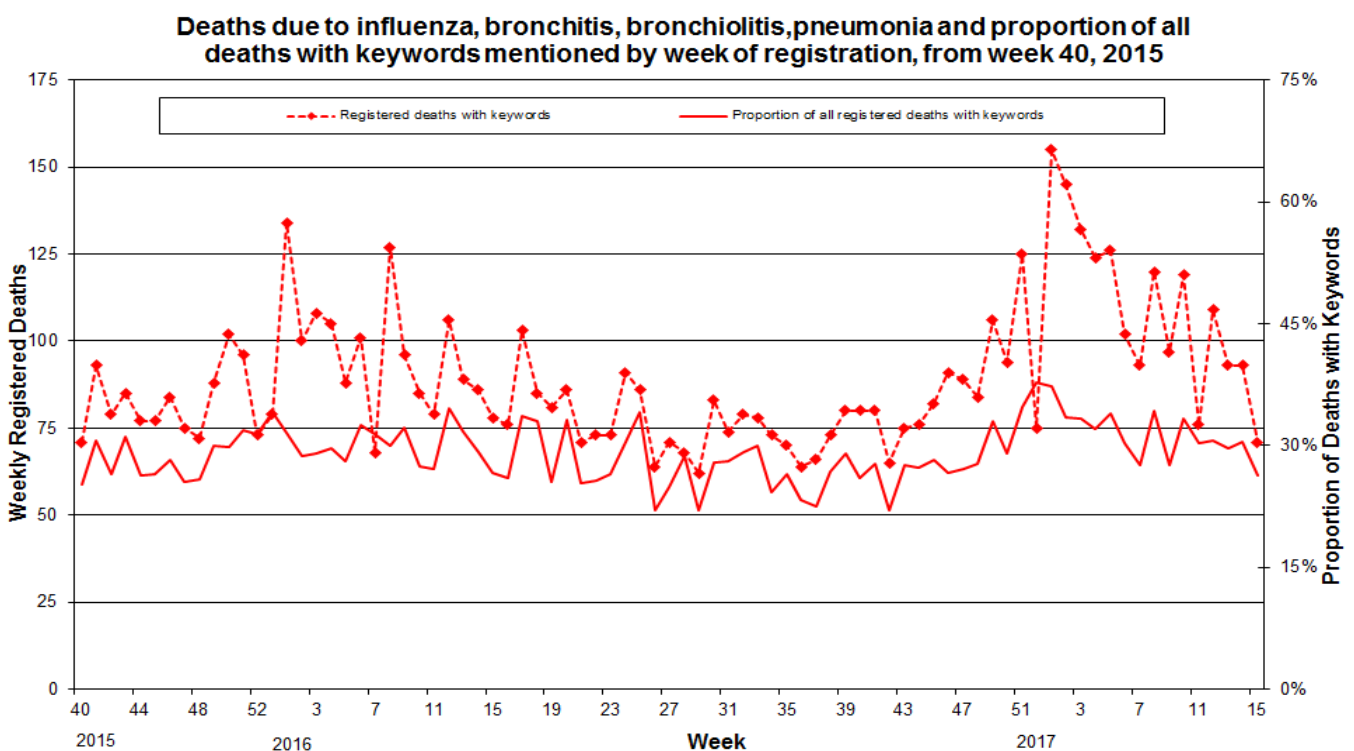
### Outbreak Surveillance

During week 15, 2017 there were no confirmed influenza outbreaks reported to the PHA. There have been a total of 13 confirmed influenza outbreaks reported this season to date, of which eight have been confirmed as influenza A(H3), three as influenza A (typing awaited) and two as influenza B.

## 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 15, 2017 the proportion of deaths related to respiratory keywords has decreased to 26% from 30% in week 14. In week 15 there were 270 registered deaths, of which 71 related to specific respiratory infections (Figure 10).

The proportion of deaths attributed to specific respiratory infections is slightly lower at this point in the season than during the same period in both 2015/16 (27%) and 2014/15 (33%).

## EuroMOMO

No significant excess all-cause mortality was reported for week 15 in Northern Ireland. During the 2016-17 influenza season, excess all-cause mortality has been reported in eight weeks (weeks 50, 51, 1, 2, 3, 5, 7 and 8).

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

## 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 14, 2017

- Influenza activity across the region continued to be at low level with 39 countries of 41 reporting low intensity of influenza activity. However, only 10 of 42 countries reported no geographic spread indicating that influenza viruses are still circulating.
- The proportion of influenza virus sentinel detections was 17%, similar to that of the previous week (16%).
- This was the fourth week during the season that the proportion of type B viruses exceeded the proportion of type A viruses in sentinel detections. However, the overall number of type B virus detections remained low.

#### Season Overview:

- Influenza activity started early this season, in week 46/2016, which is the earliest week of the overall influenza virus-positivity rate in sentinel specimens reaching 10% since the emergence of A(H1N1)pdm09 viruses in 2009/10.
- From week 40/2016 through week 10/2017, influenza A viruses have predominated, accounting for 90% of all sentinel detections; the great majority (99%) of subtyped influenza A viruses from sentinel sites was A(H3N2).
- Since week 11/2017 influenza B viruses predominate, although absolute numbers of detected viruses are low.
- Confirmed cases of influenza virus type A infection reported from hospitals have predominantly been in adults aged 65 years or older. Significant excess mortality from all causes has been observed in people aged 15–64 years and markedly so in people aged

65 years or older in the majority of the 19 reporting countries or regions. This is commonly seen when the predominant viruses circulating are A(H3N2).

- Significant excess mortality from all causes has been observed in people aged 15–64 years and markedly so in people aged 65 years or older in the majority of the 19 reporting countries or regions
- Two-thirds of the A(H3N2) viruses genetically characterized belong to subclade (3C.2a1), which is antigenically similar to the clade 3C.2a vaccine virus, as described in the [WHO recommendations for vaccine composition for the northern hemisphere 2017–18](#). See also the [WHO CC London February 2017 report](#).
- Vaccine effectiveness estimates for all age groups against A(H3N2) illness suggest moderate effectiveness in [Canada](#) (42%), the [US](#) (43%) and in [Europe](#) (38%).
- Given the suboptimal vaccination coverage and the moderate effectiveness of influenza vaccines, rapid use of neuraminidase inhibitors (NAIs) for laboratory-confirmed or probable cases of influenza virus-infection should be considered for vaccinated and non-vaccinated patients, especially if they are at risk of developing complications.
- Of the viruses tested so far, only one A(H3N2) virus (<1%) has shown reduced susceptibility to oseltamivir this season. The developments during the season have followed the conclusions of the ECDC [risk assessment on seasonal influenza, updated on 25 January 2017](#), suggesting increased severe outcomes in the elderly due to the prevalence of A(H3N2) viruses, which has put health care systems under pressure.

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

## Worldwide (WHO) and CDC

### As at 3<sup>rd</sup> April 2017:

Influenza activity in the temperate zone of the northern hemisphere continued to decrease. Worldwide, influenza A(H3N2) and influenza B viruses were predominant during this reporting period. In South Asia, influenza activity with mainly influenza A(H1N1) remained elevated.

- In North America, overall influenza activity continued to decrease in Canada and United States of America, with influenza A(H3N2) virus predominating. In Mexico, influenza activity decreased slightly, but remained high, with influenza A(H1N1)pdm09 virus predominating.
- In Europe, influenza activity continued to decrease to low levels in general, but especially in South Western Europe. In Northern Europe, some countries reported continued influenza activity, with influenza A (H3N2) and influenza B viruses. In some countries in Eastern Europe, influenza activity decreased but the proportion of influenza B virus detections increased in recent weeks.
- In East Asia, low influenza activity was reported with influenza A(H3N2) virus predominant in the region.
- In Western Asia, influenza activity continued to decrease with influenza B virus predominant in the region. In Armenia and Georgia, high levels of severe acute respiratory infection were reported in the recent weeks.
- In Southern Asia, influenza activity continued to be reported in India, Maldives and Sri Lanka, with mainly influenza A(H1N1)pdm09 virus reported followed by influenza B virus.
- In South East Asia, influenza activity remained low.
- In Northern Africa, low influenza activity was reported in Morocco and Tunisia, with influenza A(H3N2) and influenza B viruses circulating in the region.
- In East and West Africa, low influenza activity was reported in the recent weeks, with influenza A(H1N1)pdm09, influenza A(H3N2) and influenza B viruses co-circulating.

- In the Caribbean and Central America countries, influenza and other respiratory virus activity remained low in general.
- 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 98 countries, areas or territories reported data to FluNet for the time period from 06 March 2017 to 19 March 2017 (data as of 2017-03-31 08:43:43 UTC). The WHO GISRS laboratories tested more than 132 143 specimens during that time period. 23560 were positive for influenza viruses, of which 15 164 (64.4%) were typed as influenza A and 8396 (35.6%) as influenza B. Of the sub-typed influenza A viruses, 755 (15.1%) were influenza A(H1N1)pdm09 and 4247 (84.9%) were influenza A(H3N2). Of the characterized B viruses, 588 (77%) belonged to the B-Yamagata lineage and 176 (23%) 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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