

## Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 16 (17 April 2017 – 23 April 2017)

### Summary

At this point in the 2016/17 influenza season, influenza continues to circulate across the region, with the number of lab detections slightly increasing in comparison to the previous week. In-hours Flu/FLI consultations have decreased while OOH consultations have increased, which may be due to the holiday period. Influenza B remains the predominant strain in week 16 (week commencing 17th April 2017).

### Weekly Influenza GP Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) have decreased in week 16, 2017 to 5.6 per 100,000 population. Rates remain below the 2016/17 pre-epidemic threshold<sup>1</sup>
- OOH GP consultation rates for flu/FLI increased to 7.4 per 100,000 population in week 16, 2017

### Microbiological Surveillance

- The proportion of positive influenza detections from both sentinel and non-sentinel sources was 13% in week 16

### Respiratory Syncytial Virus (RSV) Activity

- RSV activity has decreased from week 15 with levels lower 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 16, there have been a total of 45 cases this season
- No deaths were reported in week 16 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 16, 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

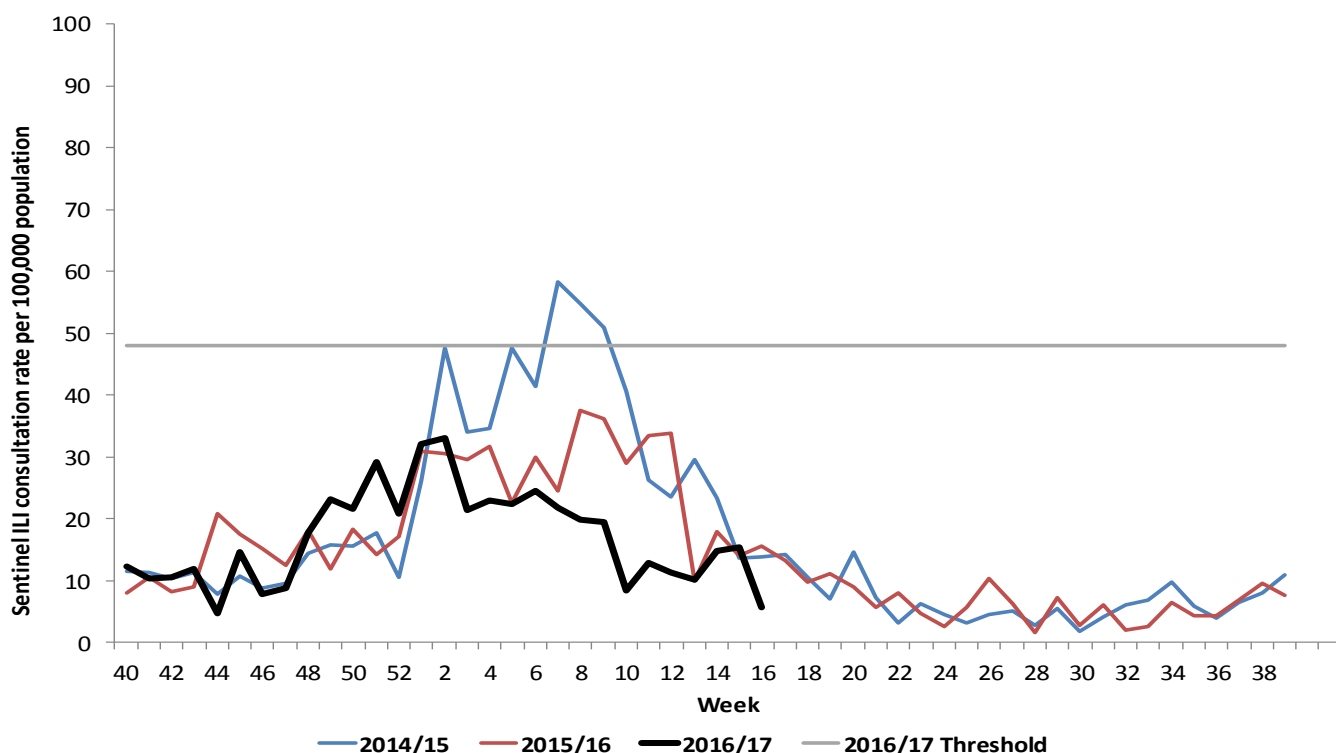
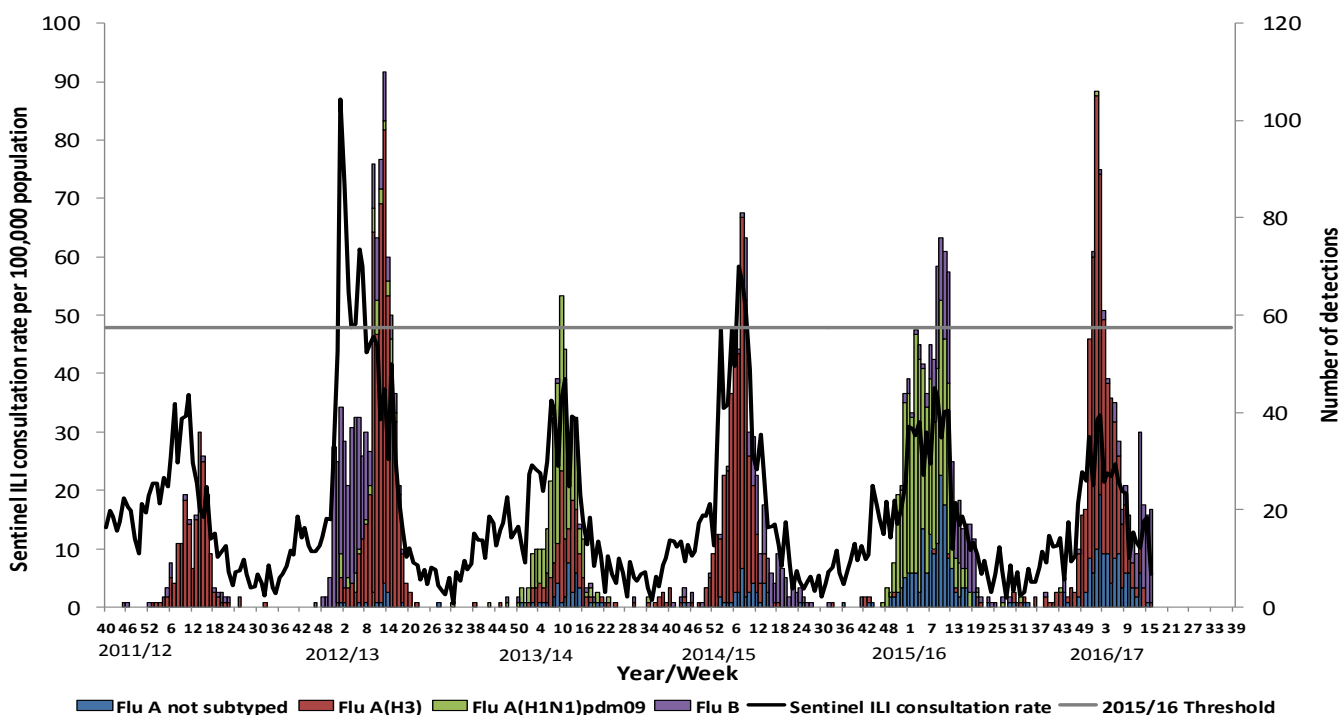
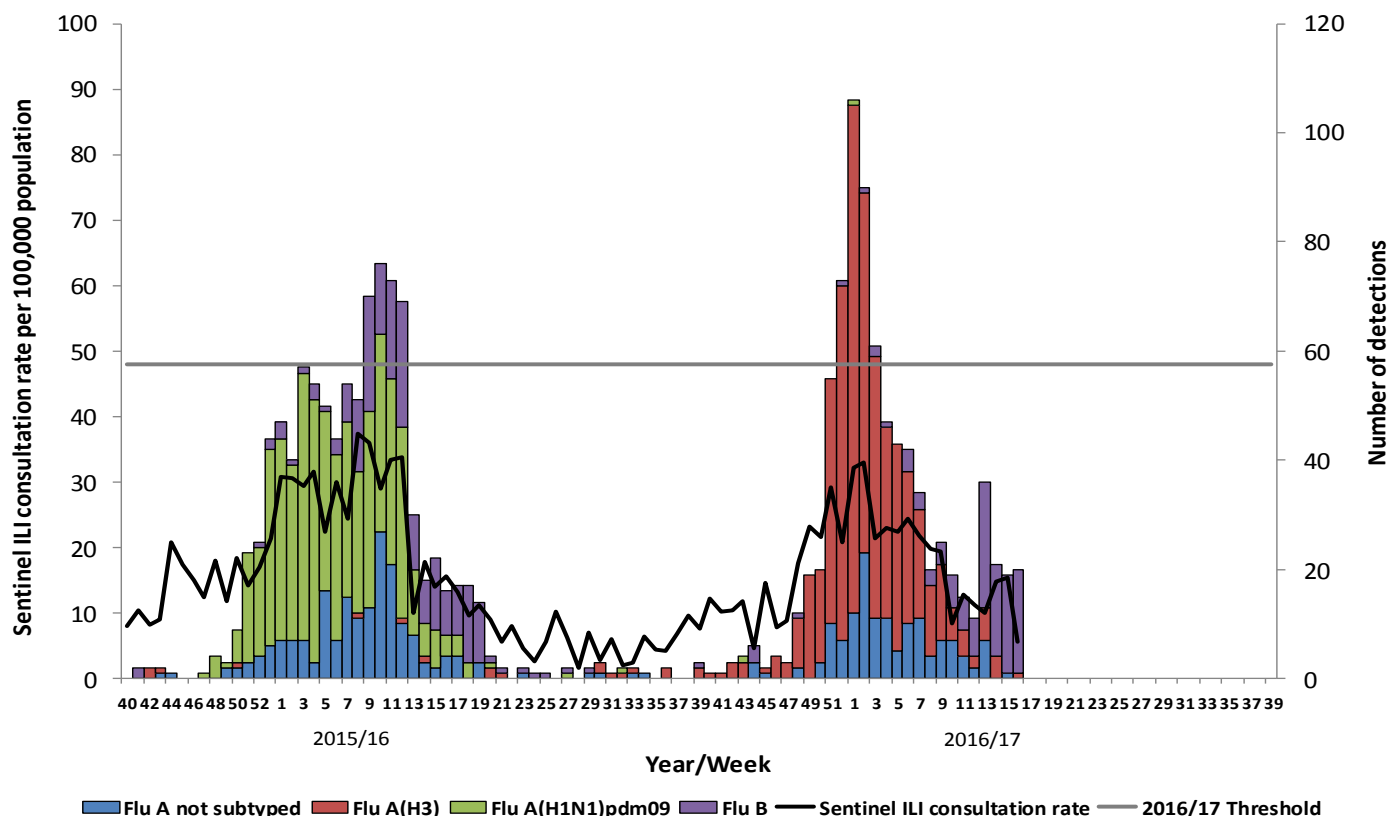


Figure 2. Sentinel GP combined consultation rates for flu/FLI and number of influenza positive detections 2011/12 – 2016/17



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



## Comment

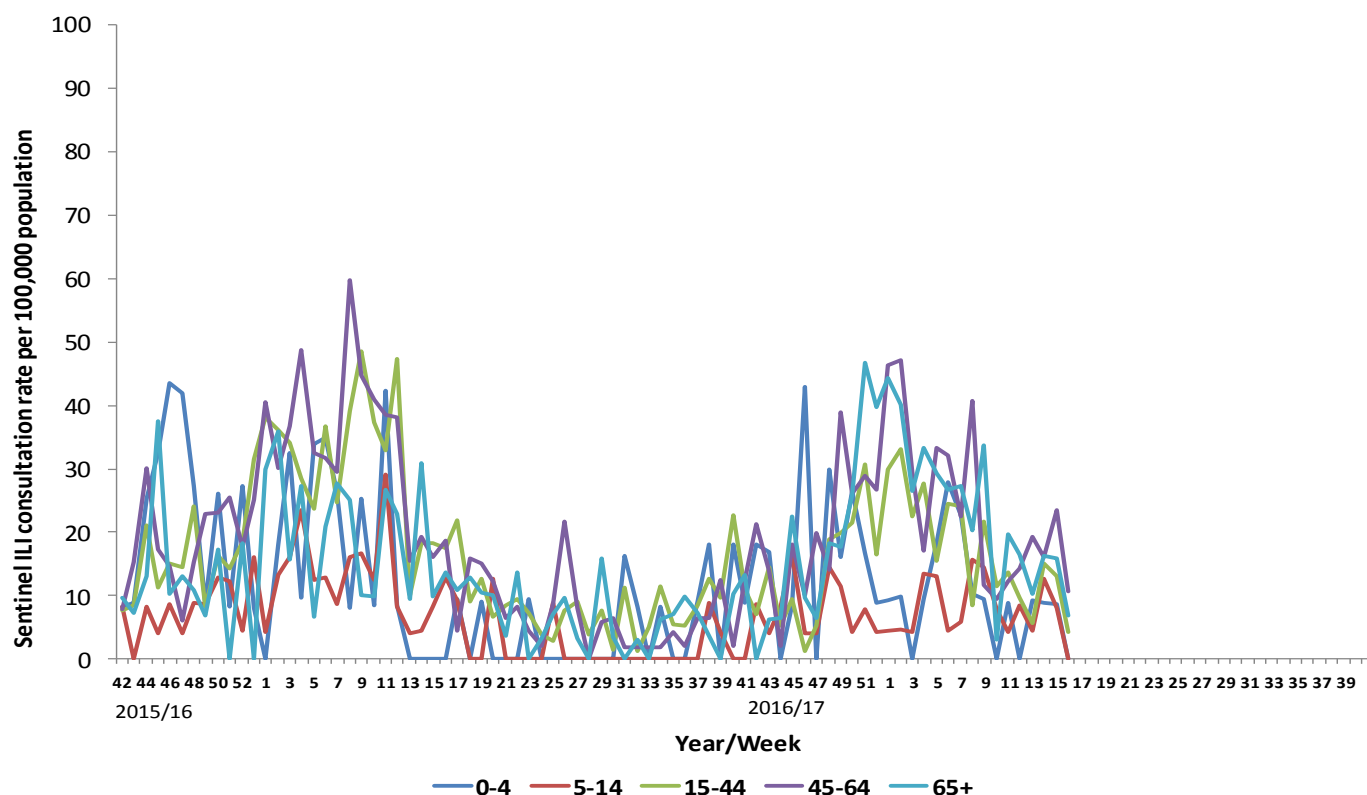
GP consultation rates have decreased in week 16, 2017 to 5.6 per 100,000 population from 15.4 per 100,000 population in week 15. This may be partly due to GP closures during the holiday period. The GP consultation rate in week 16 is lower than the same period in both 2015/16 (15.6 per 100,000 population) and 2014/15 (13.8 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 slight increase in the number of positive influenza laboratory detections in week 16, while 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

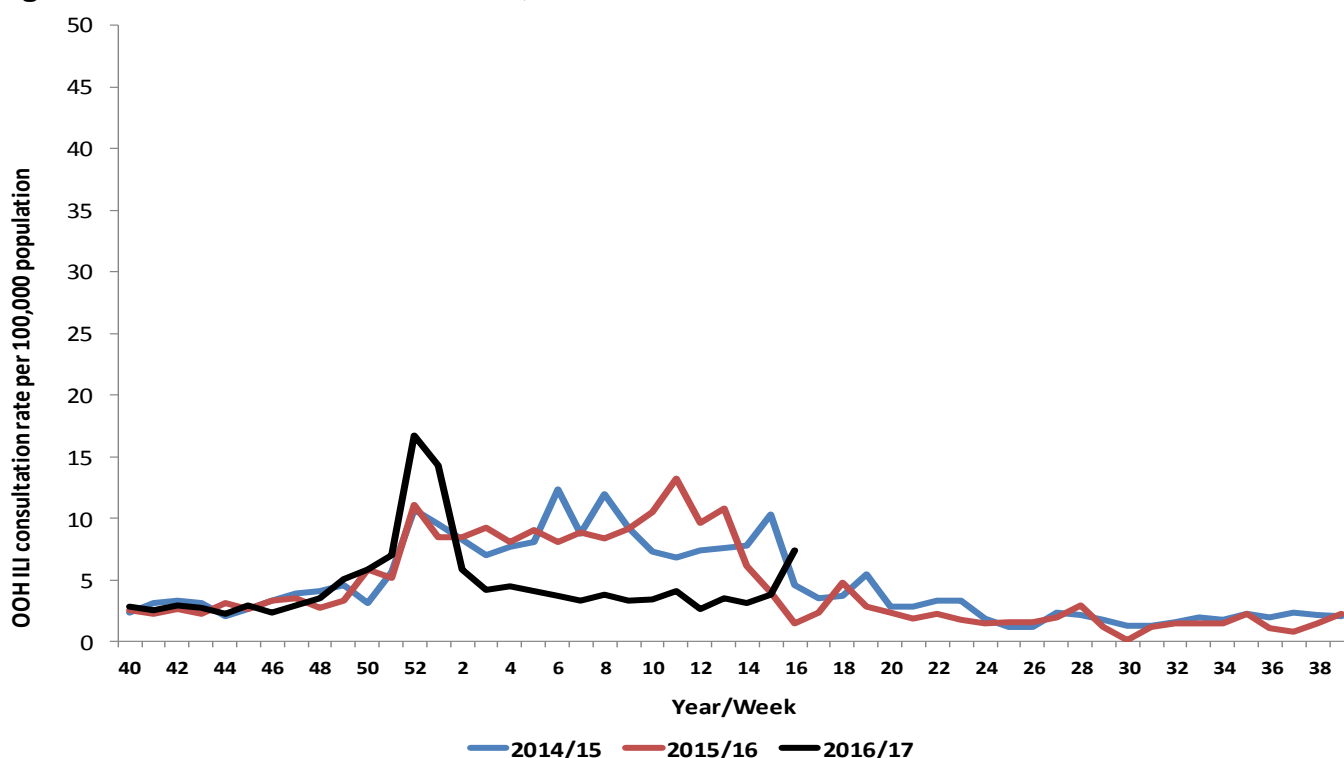
Sentinel GP flu/FLI consultations have decreased among all age groups in week 16.

In week 16, 2017 the highest age-specific rate was noted among those aged 45-64 years (10.7 per 100,000 population), with the lowest rate jointly represented by those aged 0-4 and 5-14 years (zero consultations).

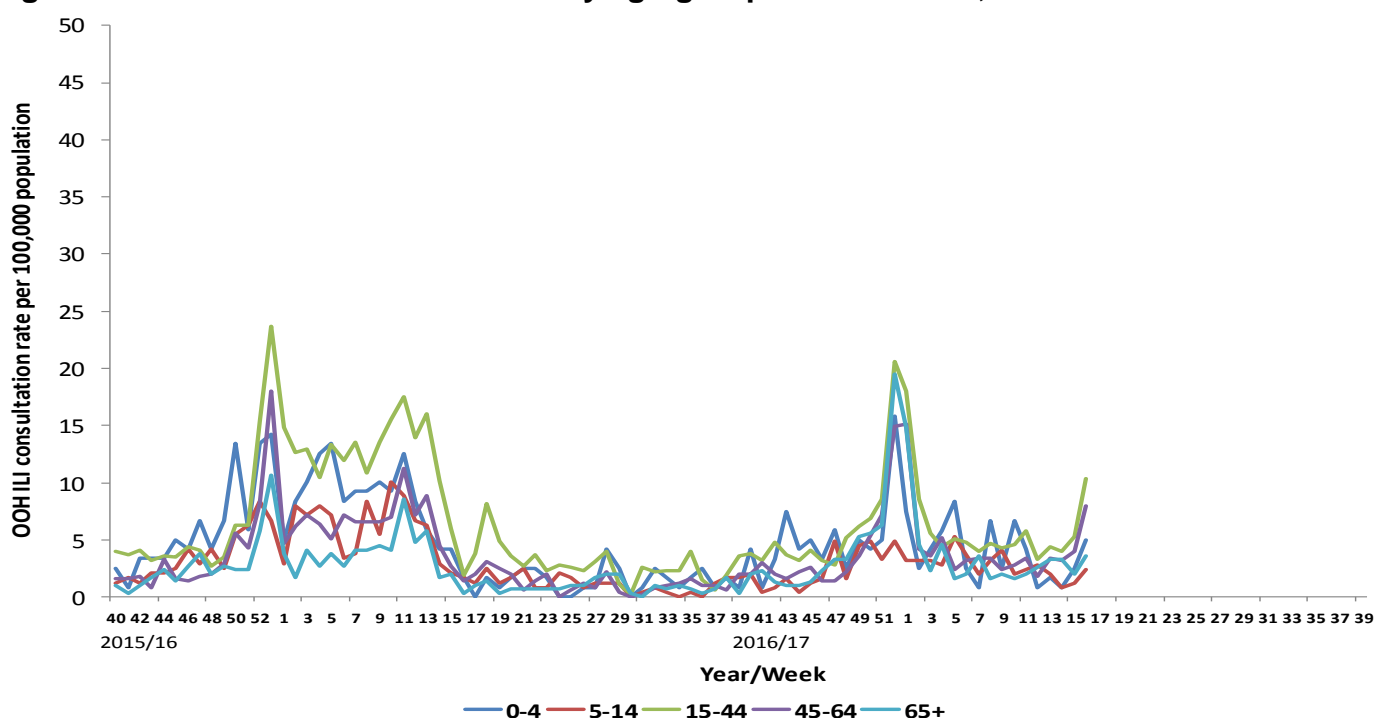
Age-specific consultation rates in week 16 are lower among almost all age groups than the same time period in both 2015/16 and 2014/15 (Figure 4).

## 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 16, 2017 the OOH GP consultation rate increased to 7.4 per 100,000 population from 3.8 per 100,000 population in week 15. This may be partly due to GP closures during the holiday period. The OOH GP consultation rate in week 16 is higher than the same period in both 2015/16 (1.5 per 100,000 population) and 2014/15 (4.6 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 16, 2017.

During week 16, OOH flu/FLI rates have increased among all age groups. The highest age-specific OOH flu/FLI rate in week 16 was again noted among the 15-44 years age group (10.4 per 100,000 population) while those aged 5-14 years represented the lowest rate (2.4 per 100,000 population) (Figure 6).

Age-specific rates in week 16 are higher 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 16, 2016/17

Source	Specimens Tested	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	3	0	0	0	2	0	2	67%
Non-sentinel	150	1	0	0	17	0	18	12%
<b>Total</b>	<b>153</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>20</b>	<b>13%</b>

Table 2. Cumulative virus activity from all sources by age group, Week 40 - 16, 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	237	1	56	52	346	99
65+	281	1	76	63	421	142
Unknown	0	0	0	0	0	0
<b>All ages</b>	<b>550</b>	<b>2</b>	<b>141</b>	<b>119</b>	<b>812</b>	<b>713</b>

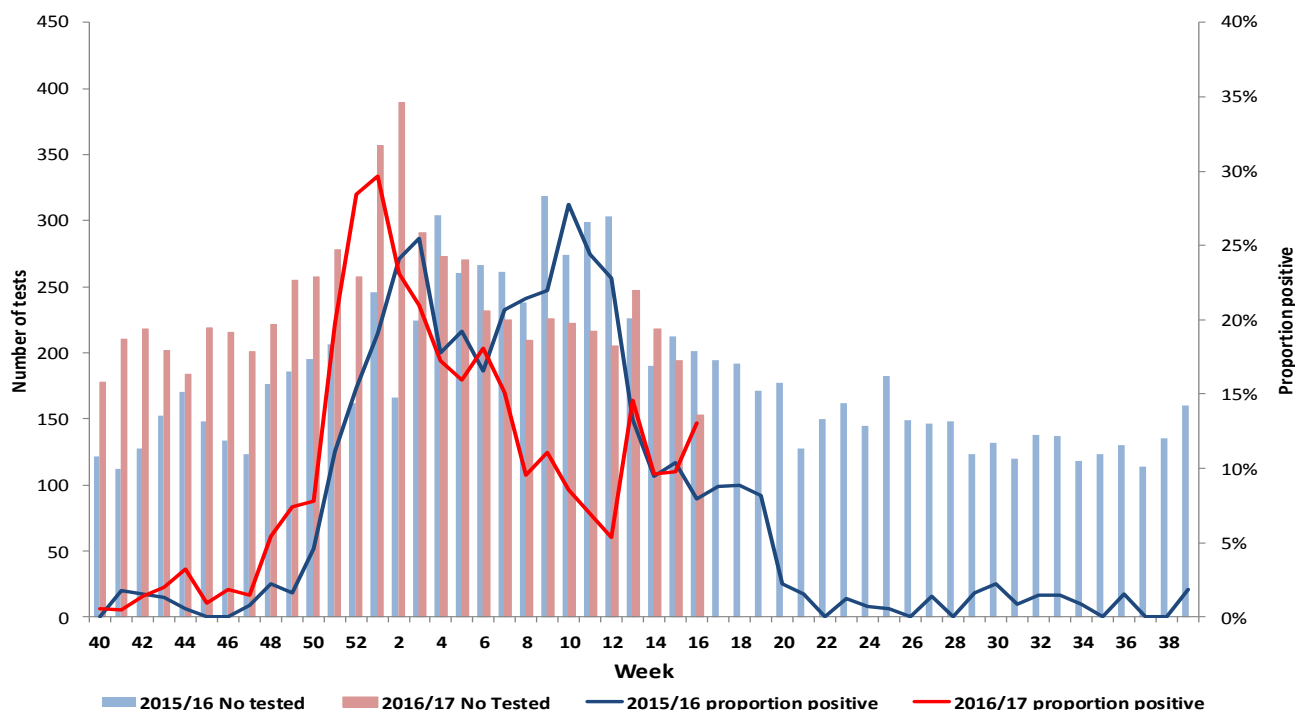
Table 3. Cumulative virus activity by age group and source, Week 40 - Week 16, 2016/17

	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	12	47	8	208	0	51	40	299	91
65+	5	1	2	5	13	3	276	0	74	58	408	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>17</b>	<b>64</b>	<b>12</b>	<b>512</b>	<b>0</b>	<b>134</b>	<b>102</b>	<b>748</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

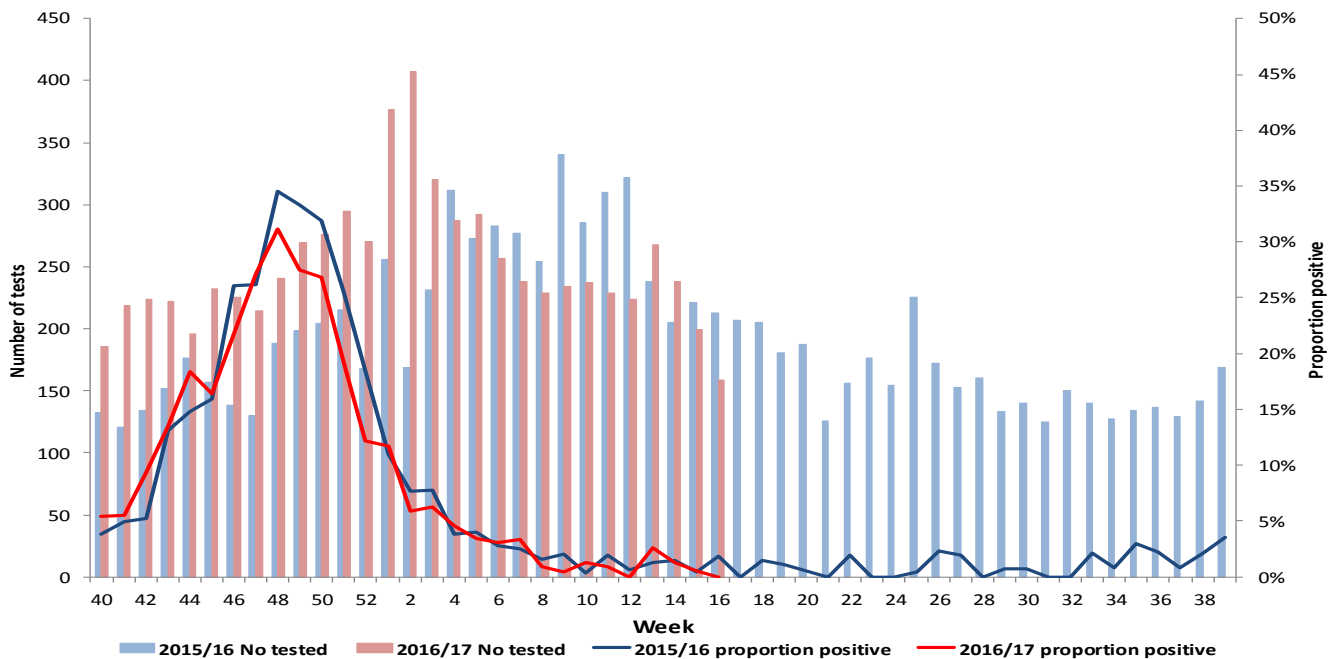
During week 16, 2017 there were 153 specimens submitted for virological testing. There were 20 detections of influenza in total (positivity rate of 13%) (Figure 7). There were 19 detections of influenza B and 1 detection of influenza A(H3). There were no detections of influenza A(H1N1)pdm09 or influenza A (typing awaited).

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

This season to date there have been a total of 812 detections of influenza, of which 550 have been typed as influenza A(H3). There have been 119 detections of influenza B, 141 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**

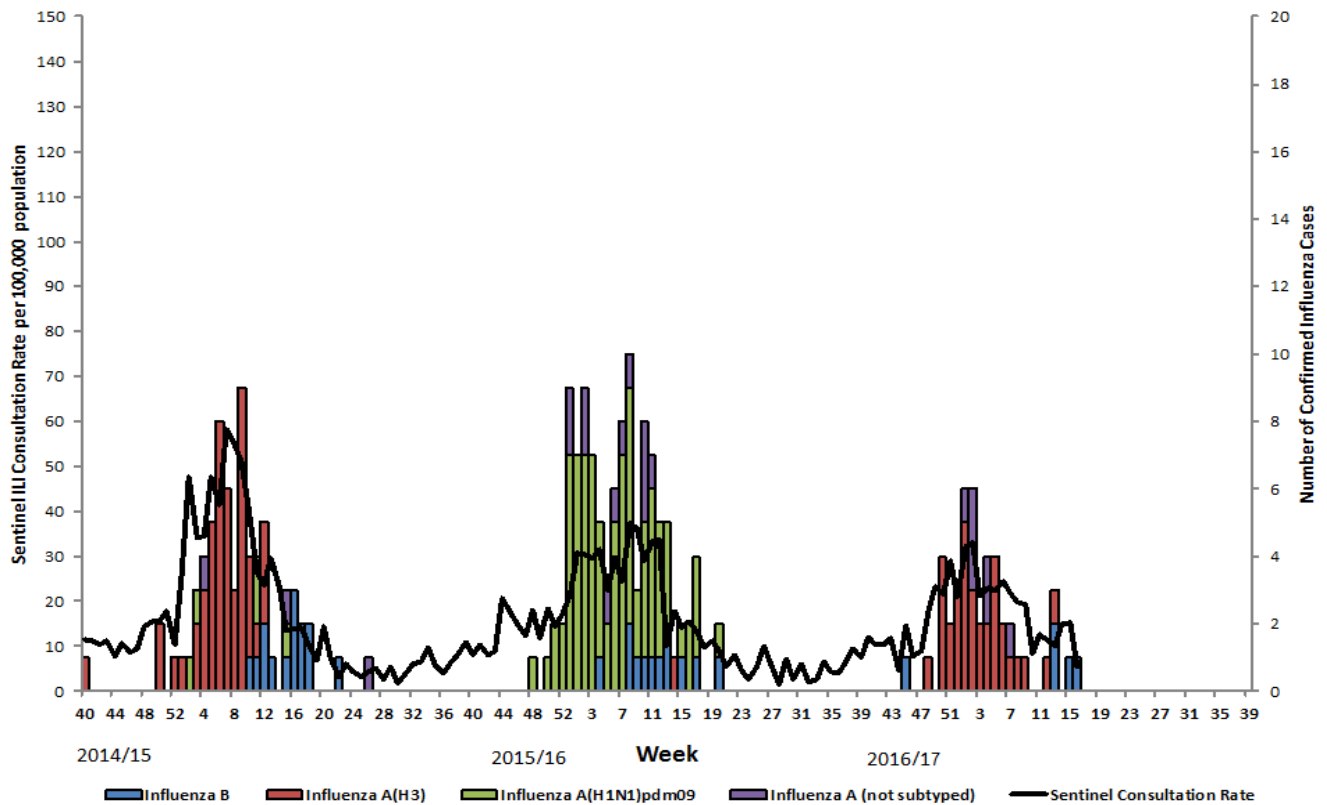


### Comment

During week 16, 2017 there were no positive detections of RSV giving a positivity rate lower than the same period in 2015/16 (2%). 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 16, 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 45 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 five influenza B. There have been eight deaths reported in confirmed cases of influenza in ICU this season to date.

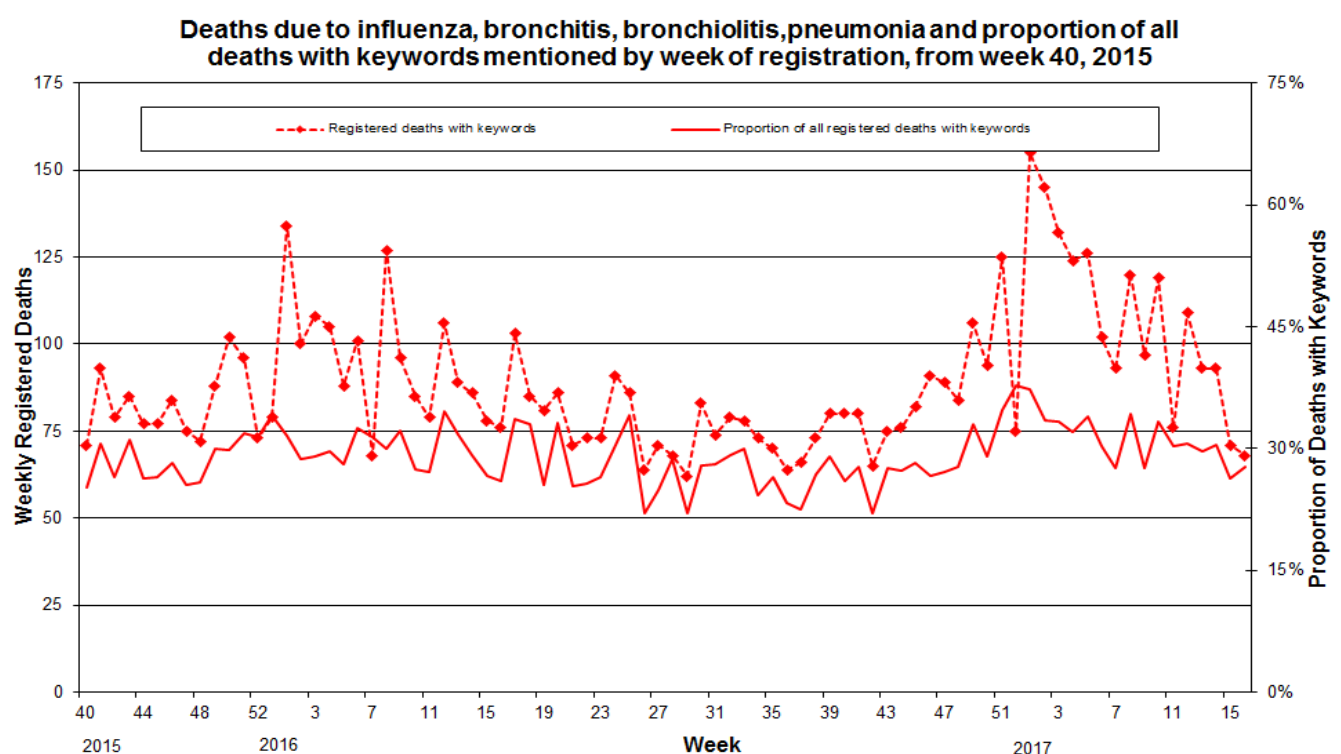
## Outbreak Surveillance

During week 16, 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 16, 2017 the proportion of deaths related to respiratory keywords has increased to 28% from 26% in week 15. In week 16 there were 245 registered deaths, of which 68 related to specific respiratory infections (Figure 10).

The proportion of deaths attributed to specific respiratory infections is similar at this point in the season than during the same period in both 2015/16 (28%) and 2014/15 (29%).

## EuroMOMO

No significant excess all-cause mortality was reported for week 16 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 15, 2017

- Influenza activity across the region decreased further with 41 of 43 countries reporting low influenza activity.
- The proportion of sentinel specimens testing positive for influenza virus was 14%, lower compared to the previous week (17%).
- The proportion of type B viruses exceeded the proportion of type A viruses in sentinel detections, similar to recent previous weeks. However, the overall number of type B virus detections remained low.

#### Season Overview:

- After an earlier than usual start to the influenza season (week 46/2016), the influenza season is considered to be over in the majority of countries in the Region, with influenza activity at inter-seasonal levels in 41 countries.
- 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 have predominated, although absolute numbers of type B detections have remained low.
- Confirmed cases of influenza virus type A infection reported from hospitals have predominantly been in adults aged 65 years or older.

- Significant excess all-cause mortality 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).
- Two-thirds of the A(H3N2) viruses genetically characterized belong to subclade (3C.2a1), but remain 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%).
- 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 some health care systems under pressure

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

## Worldwide (WHO) and CDC

### As at 17<sup>th</sup> April 2017:

Influenza activity in the temperate zone of the northern hemisphere continued to decrease. Worldwide, influenza A(H3N2) and B viruses were predominant, with an increased proportion of influenza B viruses detected in recent weeks.

- In North America, influenza activity decreased slightly in Canada and the United States of America; influenza A(H3N2) viruses predominated with slight increases in influenza B virus detections. In Mexico, influenza activity decreased with all seasonal influenza subtypes detected.
- In Europe, influenza activity continued to decrease to low levels, with detections of predominantly influenza B viruses in Northern and Eastern Europe. Influenza-like illness (ILI) and severe acute respiratory infection (SARI) indicators were generally low or below baseline.
- In Central Asia, ILI and SARI activities decreased but an update on influenza virus detections was not available.
- In East Asia, influenza activity continued to be reported with all seasonal influenza subtypes detected.
- In Western Asia, influenza activity continued to decrease with influenza B viruses predominant.
- In Southern Asia, influenza activity continued to be reported although it appeared to be decreasing. In Bhutan, ILI levels and influenza activity increased in recent weeks, with influenza A(H3N2) and B viruses circulating.
- In South East Asia, influenza activity remained low.
- In Northern Africa, low influenza activity was reported in Tunisia, with influenza A(H3N2) and B viruses predominant.
- In East and West Africa, low influenza activity was reported in recent weeks, with influenza A(H1N1)pdm09, A(H3N2) and B viruses co-circulating.
- In the Caribbean and Central America countries, respiratory virus activity remained low.
- In tropical South America, influenza and other respiratory virus activities remained low. Respiratory syncytial virus (RSV) activity remained elevated in Colombia.

- In the temperate zone of the Southern Hemisphere, influenza activity was at inter-seasonal levels. In Chile, ILI activity increased to seasonal threshold in recent weeks, consistent with past seasonal trends.
- National Influenza Centres (NICs) and other national influenza laboratories from 103 countries, areas or territories reported data to FluNet for the time period from 20 March 2017 to 02 April 2017 (data as of 2017-04-14 05:41:03 UTC). The WHO GISRS laboratories tested more than 118962 specimens during that time period. 19667 were positive for influenza viruses, of which 9791 (49.8%) were typed as influenza A and 9876 (50.2%) as influenza B. Of the sub-typed influenza A viruses, 924 (26.2%) were influenza A(H1N1)pdm09 and 2609 (73.8%) were influenza A(H3N2). Of the characterized B viruses, 784 (65%) belonged to the B-Yamagata lineage and 423 (35%) 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/seasonallInfluenza.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:

**Chris Nugent**  
**Surveillance Officer**  
**Public Health Agency**  
**028 9536 3407**

**Dr Naomh Gallagher**  
**Senior Epidemiological Scientist**  
**Public Health Agency**  
**028 9536 3498**

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

**This report was compiled by Chris Nugent, Cathriona Kearns, Dr Naomh Gallagher and Dr Muhammad Sartaj.**