

## Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 1 (2 January 2017 – 8 January 2017)

### Summary

At this point in the 2016/17 influenza season, activity has increased in week 1 (week commencing 9<sup>th</sup> January 2017):

#### Weekly Influenza GP Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) have increased in week 1, 2017 to 32.1 per 100,000 population. Rates remain below the 2016/17 pre-epidemic threshold<sup>1</sup>
- OOH GP consultation rates for flu/FLI decreased to 14.3 per 100,000 population in week 1, 2017

#### Microbiological Surveillance

- The proportion of positive influenza detections from both sentinel and non-sentinel sources has increased to 29% in week 1

#### Respiratory Syncytial Virus (RSV) Activity

- RSV activity has slightly decreased since week 52 with levels similar to the same period last season

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

- Seven cases were reported in ICU with laboratory confirmed influenza in week 1, giving a total of 17 cases this season
- No deaths were reported in week 1 among ICU patients with laboratory confirmed influenza

#### Influenza Outbreaks across Northern Ireland

- Two confirmed influenza outbreaks were reported to the PHA, giving a total of seven confirmed influenza outbreaks this season

#### Influenza Vaccine Uptake in Northern Ireland

- To 30th November 2016; uptake was 68% among those aged 65 years and over, 50.8% among those under 65 in an at risk group, 48.9% among 2-4 year olds and 77.62% among primary school children

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<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

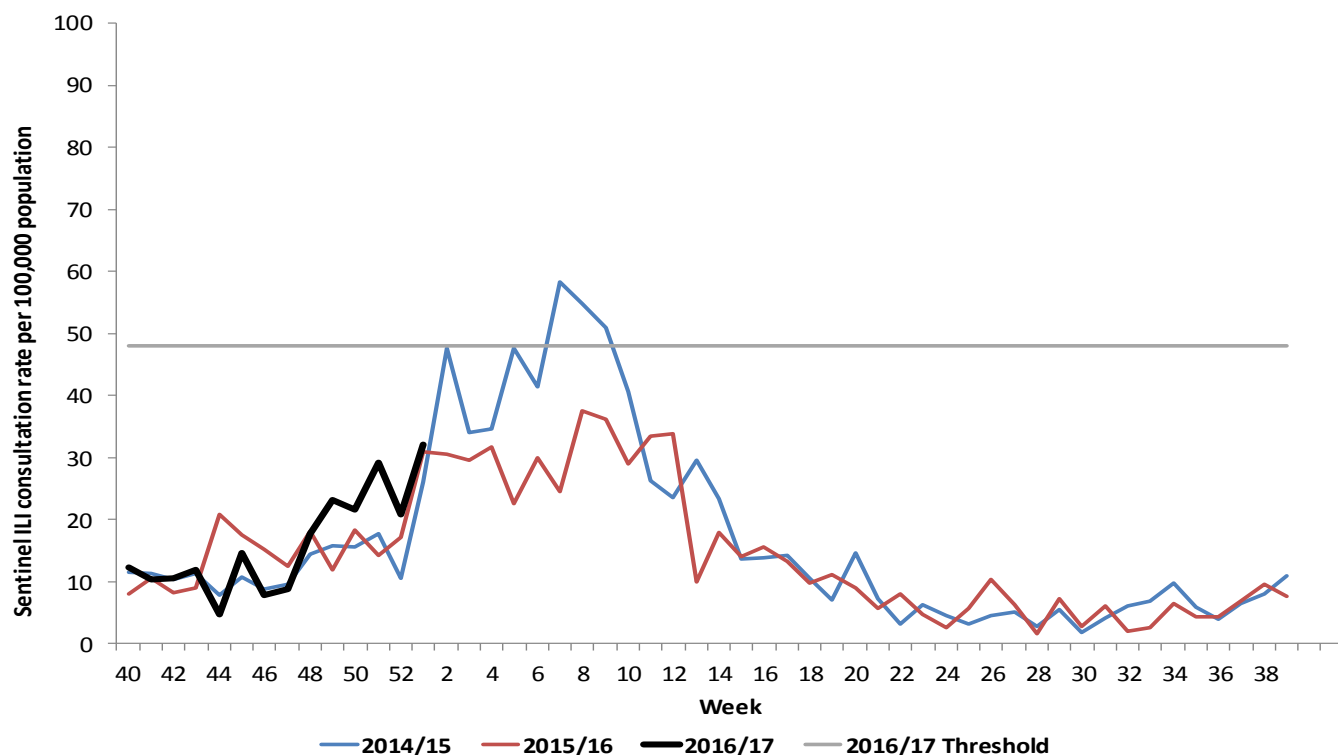
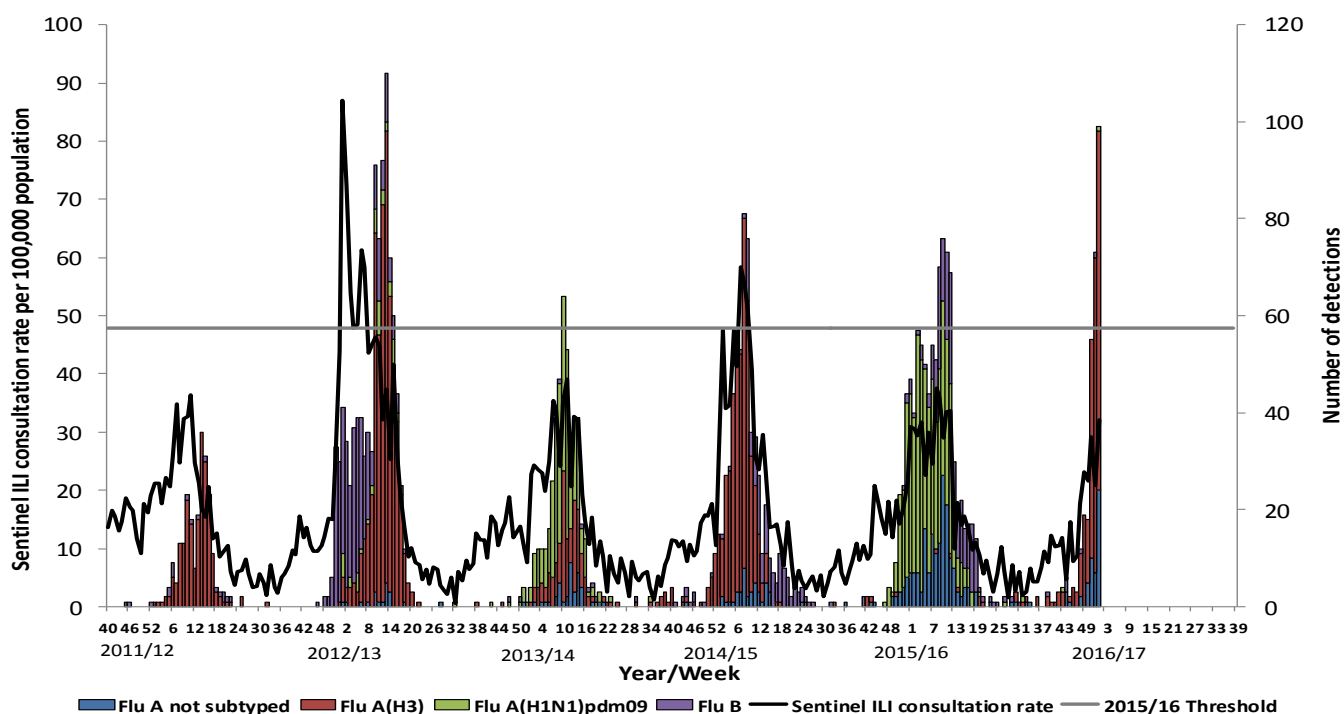
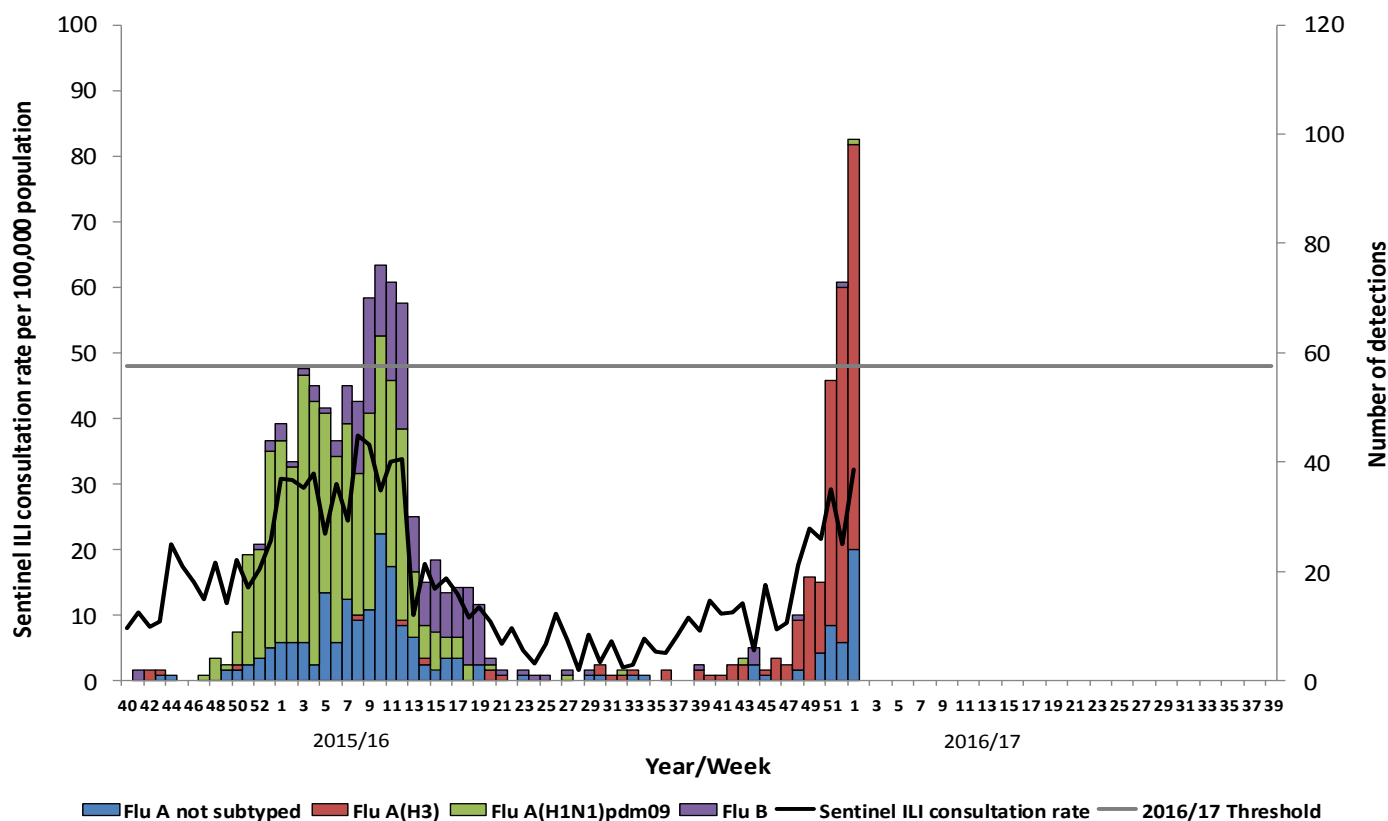


Figure 2. Sentinel GP combined consultation rates for flu/FLI and number of influenza positive detections 2011/12 – 2016/17



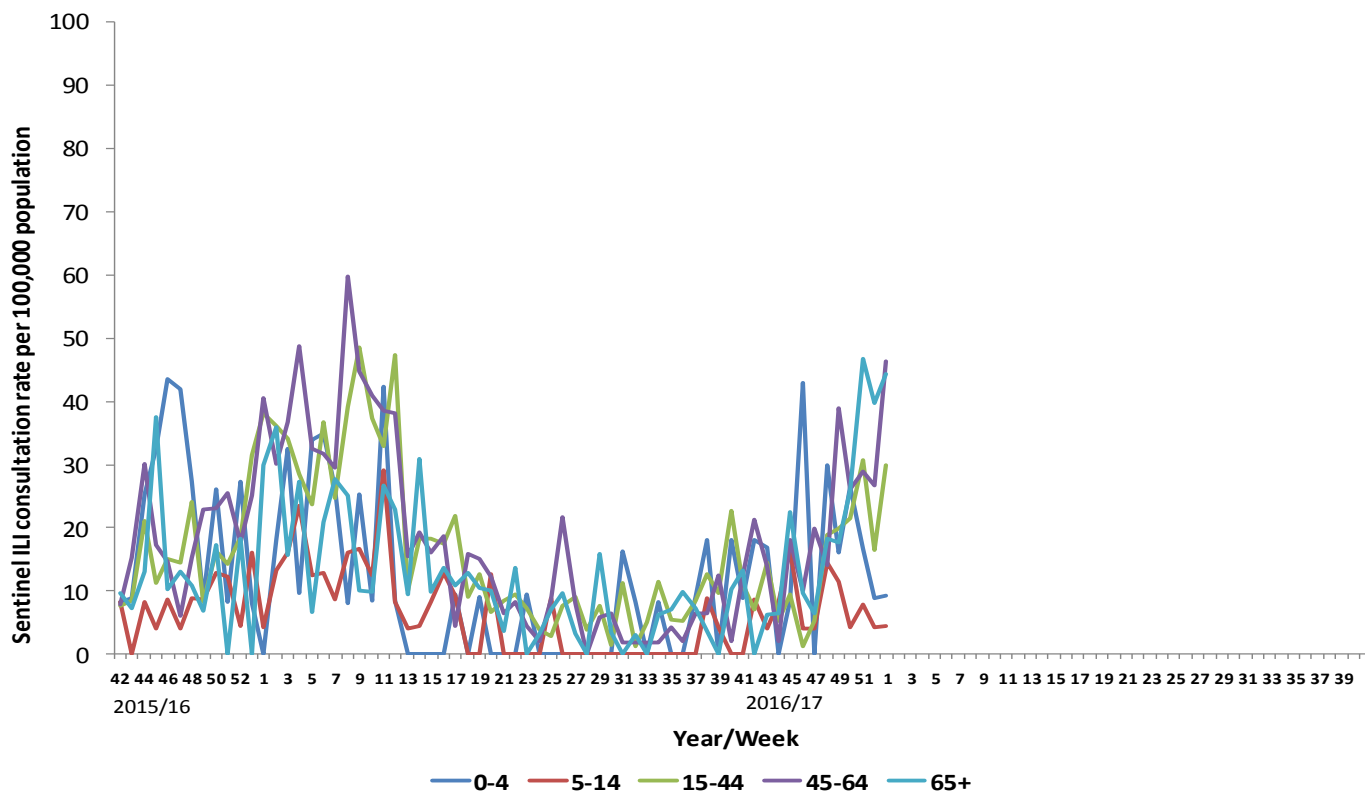
**Figure 3. Sentinel GP consultation rates for flu/FLI and number of virology 'flu detections from week 40, 2015**



## Comment

GP consultation rates have increased in week 1, 2017 to 32.1 per 100,000 population from 20.9 per 100,000 population in week 52. The GP consultation rate in week 1 is higher than the same period in both 2015/16 (30.9 per 100,000 population) and 2014/15 (26.1 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).

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



### Comment

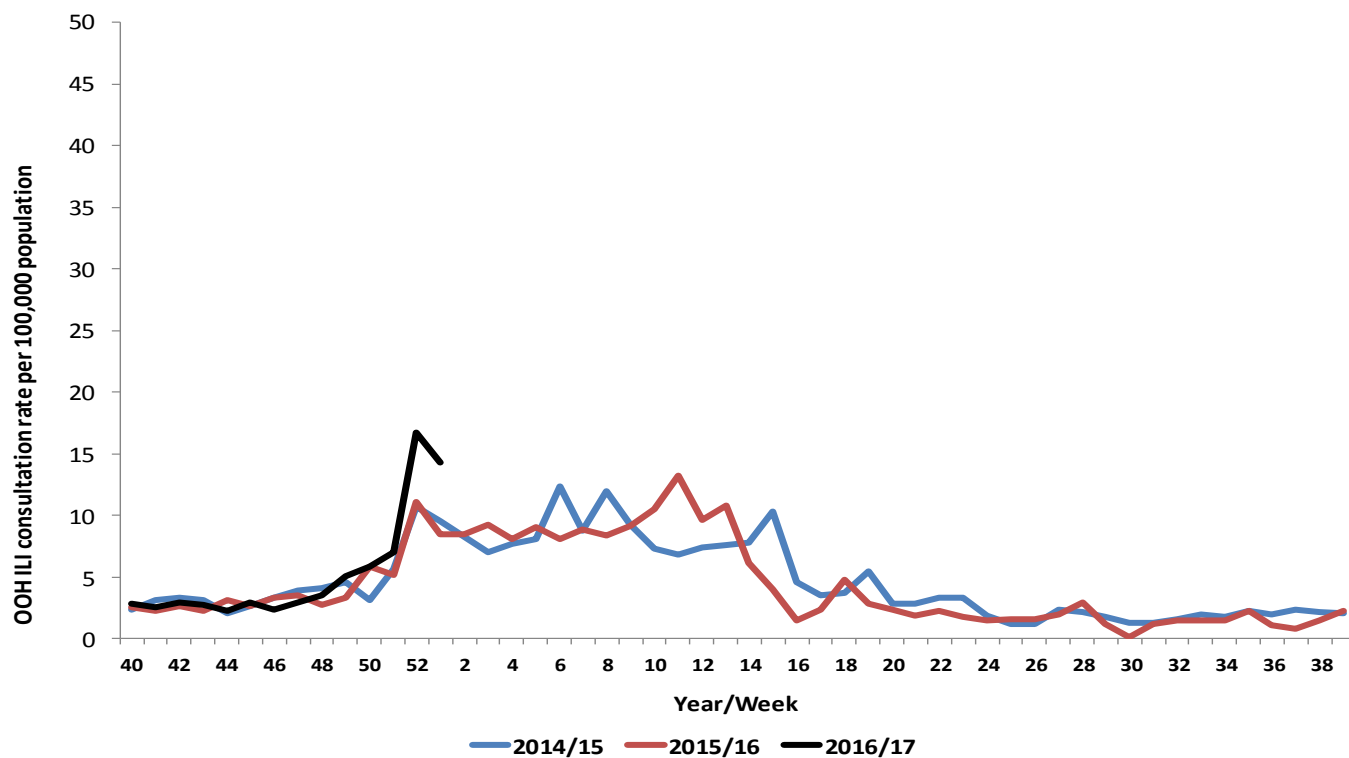
Sentinel GP flu/FLI consultations have increased among the older age groups in week 1, while rates among the youngest age groups have remained stable.

In week 1, 2017 the highest age-specific rate was noted among those aged 45-64 years (46.2 per 100,000 population), while the lowest rate was again represented by those aged 5-14 years (4.4 per 100,000 population).

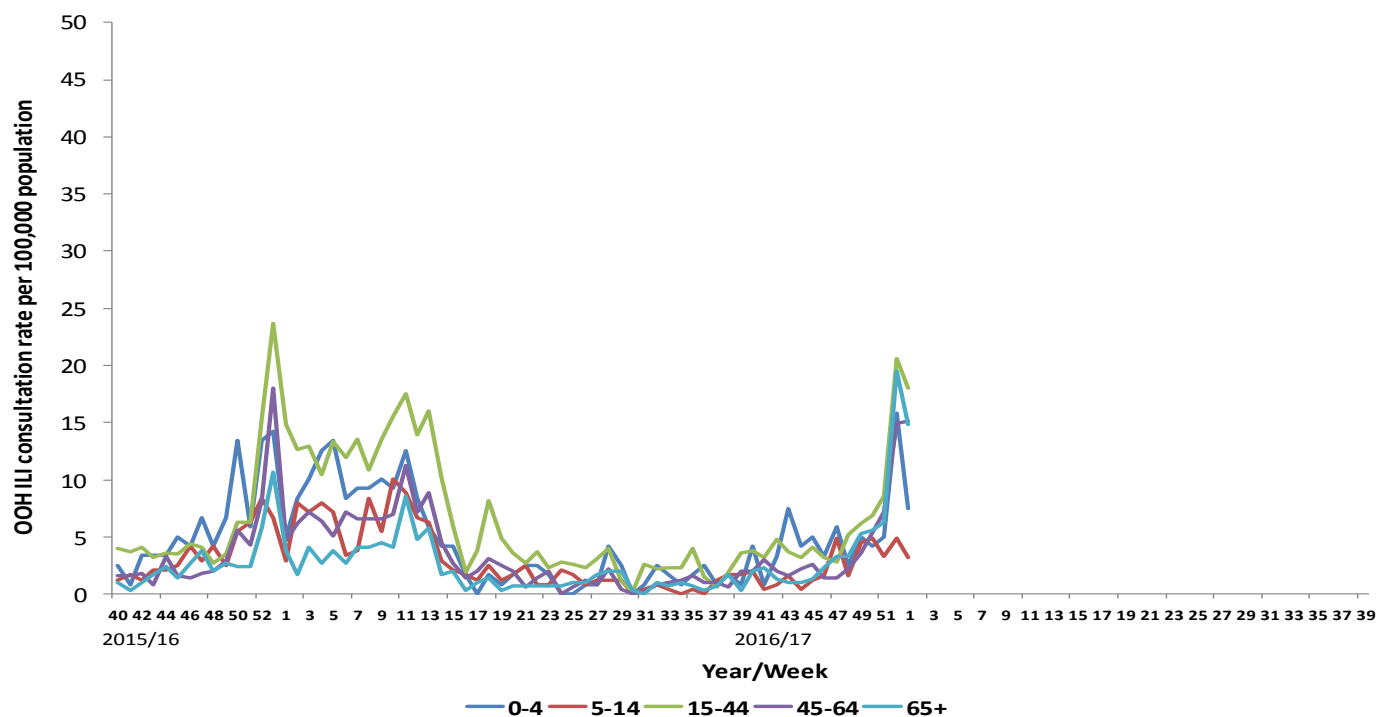
Age-specific consultation rates are higher in almost all age groups in week 1 than the same time period in 2015/16 (Figure 4).

## 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 1, 2017 the OOH GP consultation rate decreased to 14.3 per 100,000 population from 16.7 per 100,000 population in week 52. The OOH GP consultation rate in week 1 is higher than the same period in both 2015/16 (8.5 per 100,000 population) and 2014/15 (9.5 per 100,000 population) (Figure 5).

The proportion of calls related to flu has increased and represents 1.8% of total calls to the OOH service in week 1, 2017.

During week 1, OOH flu/FLI rates have decreased among almost all age groups, with rates remaining stable among those aged 45-64 years. The highest age-specific OOH flu/FLI rate in week 1 was noted among the 15-44 years age group (18.0 per 100,000 population) while those aged 5-14 years represented the lowest rate in week 1 (3.3 per 100,000 population) (Figure 6).

Age-specific rates in week 1 are higher among all age groups than those noted during the same period in 2015/16, but slightly lower than the youngest age groups in 2014/15.

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

| Source       | Specimens Tested | Flu AH3 | Flu A(H1N1) 2009 | A (untyped) | Flu B | RSV | Total influenza Positive | % Influenza Positive |
|--------------|------------------|---------|------------------|-------------|-------|-----|--------------------------|----------------------|
| Sentinel     | 10               | 4       | 1                | 0           | 0     | 0   | 5                        | 50%                  |
| Non-sentinel | 332              | 70      | 0                | 24          | 0     | 41  | 94                       | 28%                  |
| Total        | 342              | 74      | 1                | 24          | 0     | 41  | 99                       | 29%                  |

Table 2. Cumulative virus activity from all sources by age group, Week 40 - 1, 2016/17

|          | Flu AH3 | Flu A(H1N1) 2009 | A (untyped) | Flu B | Total Influenza | RSV |
|----------|---------|------------------|-------------|-------|-----------------|-----|
| 0-4      | 10      | 0                | 2           | 1     | 13              | 402 |
| 5-14     | 4       | 0                | 0           | 1     | 5               | 17  |
| 15-64    | 110     | 1                | 25          | 3     | 139             | 78  |
| 65+      | 117     | 1                | 25          | 0     | 143             | 99  |
| Unknown  | 0       | 0                | 0           | 0     | 0               | 0   |
| All ages | 241     | 2                | 52          | 5     | 300             | 596 |

Table 3. Cumulative virus activity by age group and source, Week 40 - Week 1, 2016/17

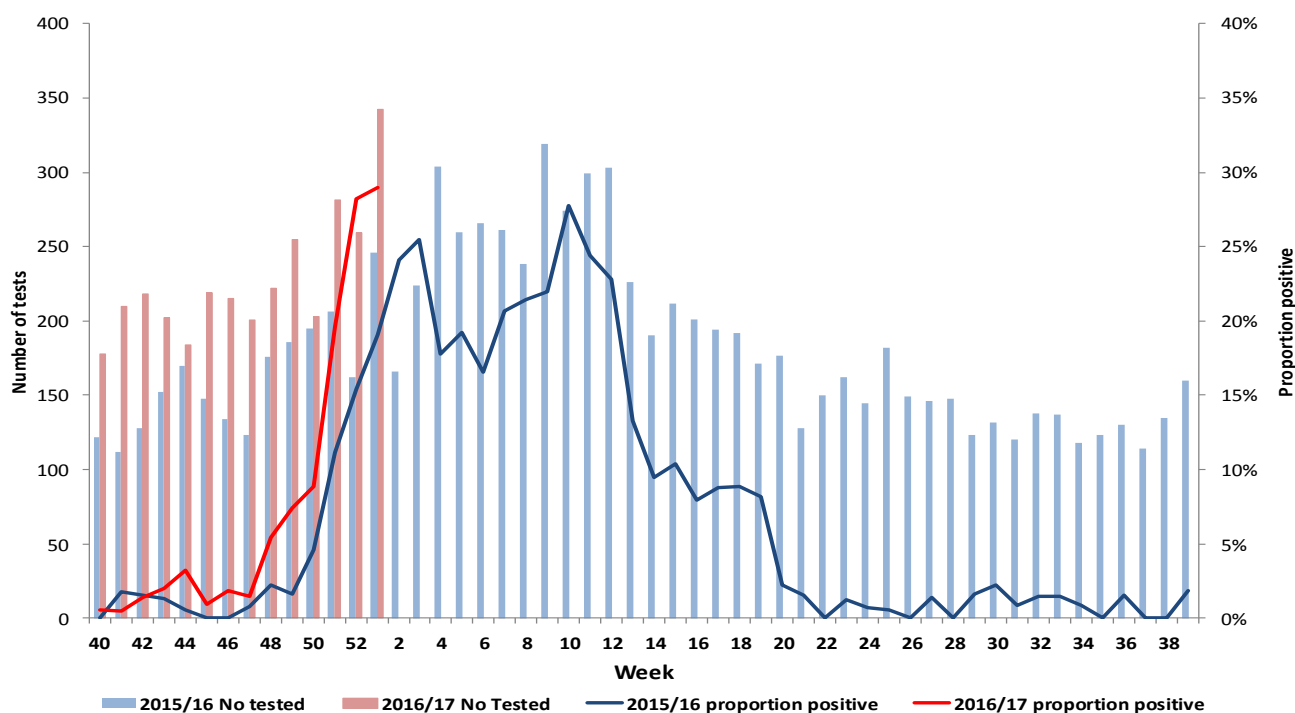
|          | Sentinel |                  |             |       |                 |     | Non-sentinel |                  |             |       |                 |     |
|----------|----------|------------------|-------------|-------|-----------------|-----|--------------|------------------|-------------|-------|-----------------|-----|
|          | 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   | 10           | 0                | 2           | 1     | 13              | 401 |
| 5-14     | 2        | 0                | 0           | 0     | 2               | 0   | 2            | 0                | 0           | 1     | 3               | 17  |
| 15-64    | 14       | 1                | 0           | 0     | 15              | 7   | 96           | 0                | 25          | 3     | 124             | 71  |
| 65+      | 3        | 1                | 1           | 0     | 5               | 2   | 114          | 0                | 24          | 0     | 138             | 97  |
| Unknown  | 0        | 0                | 0           | 0     | 0               | 0   | 0            | 0                | 0           | 0     | 0               | 0   |
| All ages | 19       | 2                | 1           | 0     | 22              | 10  | 222          | 0                | 51          | 5     | 278             | 586 |

### 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

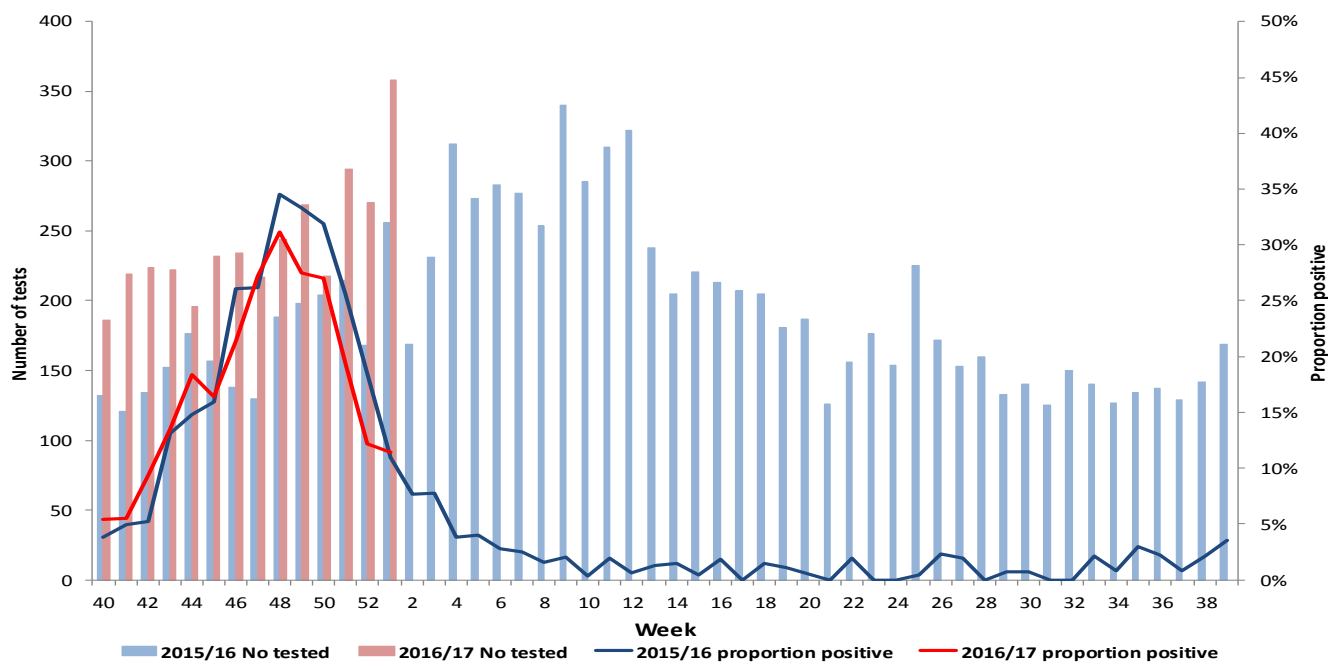
During week 1, 2017 there were 342 specimens submitted for virological testing. There were 99 detections of influenza in total (positivity rate of 29%) (Figure 7). There were 74 detections of influenza A(H3), 1 detection of influenza A(H1N1)pdm09 and 24 detections of influenza A (typing awaited). There were no detections of influenza B.

There were five samples positive for influenza submitted through the GP based sentinel scheme across Northern Ireland, of which four were typed as influenza A(H3) and one as influenza A(H1N1)pdm09.

This season to date there have been a total of 300 detections of influenza, of which 241 have been typed as influenza A(H3). There have been 5 detections of influenza B, 52 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**

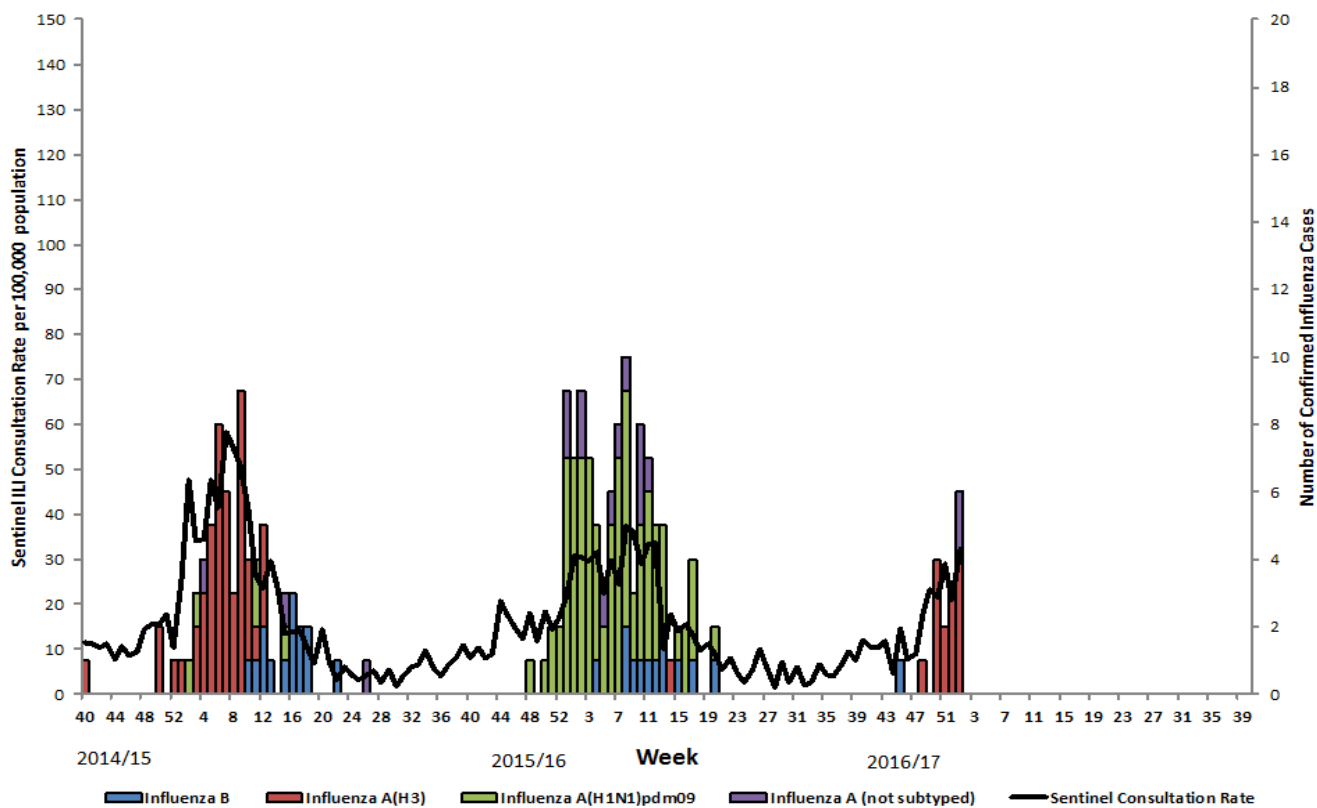


### Comment

During week 1, 2016 there were 41 positive detections of RSV, giving a positivity rate of 11%; similar to the same period in 2015/16 (11%). To date there have been a total of 596 detections of RSV of which the majority (67%) 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 1, seven confirmed cases of influenza in ICU were reported to the PHA, of which five were typed as influenza A(H3) and two as influenza A (typing awaited). There were no deaths reported in ICU patients with laboratory confirmed influenza.

There have been 17 confirmed cases of influenza in ICU reported this season to date, of which 14 have been typed as influenza A (H3), two as influenza A (typing awaited) and one influenza B. There has been one death reported in a confirmed case of influenza in ICU this season to date.

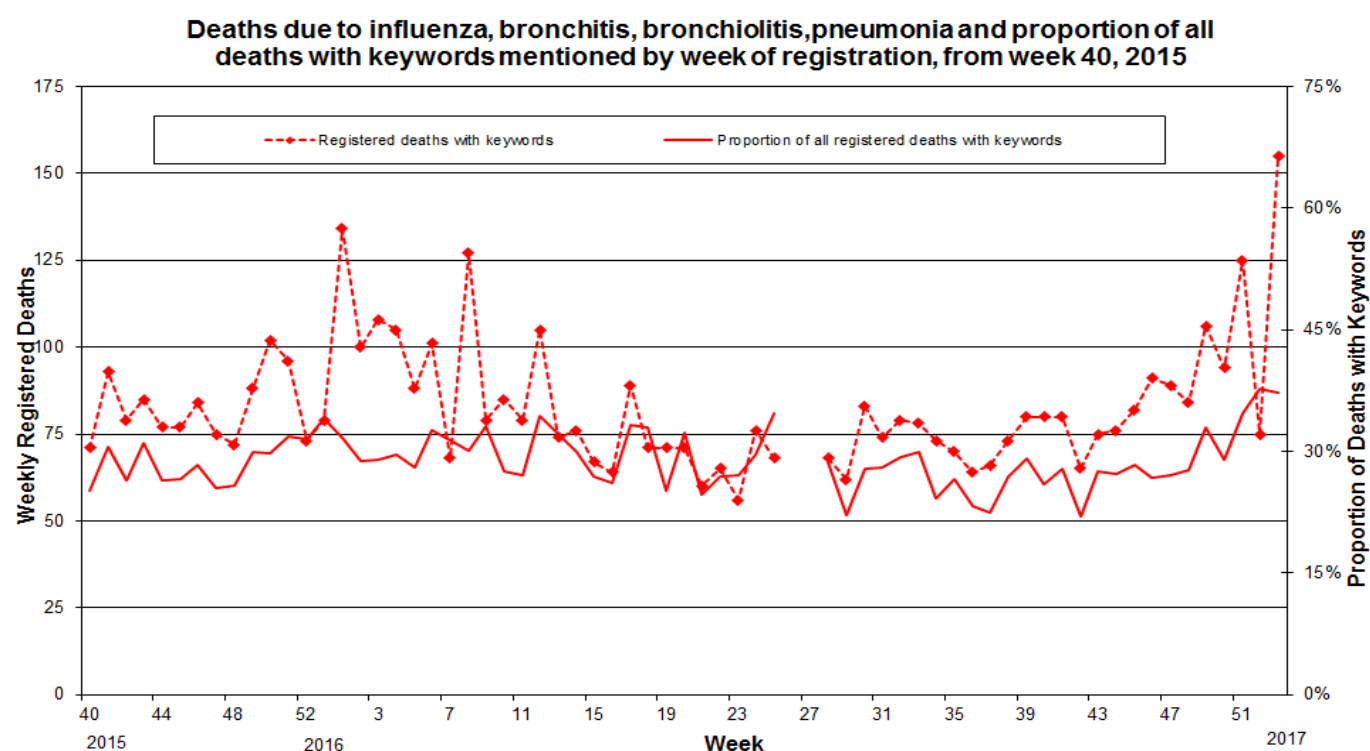
## Outbreak Surveillance

During week 1, 2017 there were two confirmed influenza outbreaks reported to the PHA, both typed as influenza A(H3). There have been a total of seven confirmed influenza outbreaks reported this season to date, all of which have been confirmed as influenza A(H3).

## 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**



\*Please note data are currently unavailable for weeks 26 – 27, 2016

## Comment

During week 1 the proportion of deaths related to respiratory keywords has decreased to 37% from 38% in week 52. In week 1, 2017 there were 416 registered deaths, of which 155 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 both 2015/16 (32%) and 2014/15 (35%).

## EuroMOMO

EuroMOMO data will be available later in the season.

## Influenza Vaccine Uptake

To 30th November 2016, provisional data suggested that vaccine uptake for those aged 65 years and over was 68%, higher than the same period in the 2015/16 (63%); while 50.8% of those under 65 and in an at risk group had received the vaccine, higher than in 2015/16 when 48.8% 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 30th November 2016, provisional data suggested that vaccine uptake among 2-4 year old children was 48.9%, higher than in 2015/16 when 43.1% had received the vaccine during the same period. Provisional data suggests uptake among children in primary school was 77.62%, also higher than in 2015/16 when 76.27% had received the vaccine during the same period.

## International Summary

### Europe

#### Week 52, 2016

- Influenza activity continued to increase across the region with high or very high intensity in 7 out of 43 reporting countries.
- The proportion of virus detections among sentinel surveillance specimens slightly increased to 50% from 47% the previous week.
- The great majority of influenza viruses detected were type A and, of those subtyped, the majority were A(H3N2).
- Influenza cases from hospital settings also increased with older adults (aged over 65) predominantly diagnosed with an influenza A virus infection.

#### Season Overview:

- Influenza activity started early this season compared to previous seasons.
- Week 46/2016 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; during the last 6 seasons this occurred between weeks 48 and 51.
- Since week 40/2016, influenza A viruses have predominated accounting for 95% of all sentinel detections; the great majority (99%) of subtyped influenza A viruses from sentinel sites have been A(H3N2). This is in contrast to the same period during the 2015/16 season in which influenza A(H1N1)pdm09 viruses predominated, but similar to the 2014/15 influenza season when influenza A(H3N2) was predominant.
- In an influenza season in which influenza A(H3N2) predominates, elderly populations can be expected to be most severely affected.
- Currently circulating A(H3N2) viruses are antigenically similar to the vaccine strain. While more than half of the A(H3N2) viruses characterised belong to a new genetic subclade (3C.2a1), these viruses are antigenically similar to the vaccine strain (clade 3C.2a).

- Early monitoring of vaccine effectiveness in Finland and Sweden suggests suboptimal performance of the current vaccine against the circulating A(H3N2) strains, with a 30% vaccine effectiveness in persons of 65 years and older for laboratory-confirmed influenza A. Given the partial effectiveness of influenza vaccines, rapid use of neuraminidase inhibitors for laboratory-confirmed or probable cases of influenza should be considered for vaccinated and non-vaccinated at-risk patients.
- A risk assessment on seasonal influenza in EU/EEA countries was published by ECDC on 24 December 2016. The above summary is in line with the findings of the risk assessment.

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

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

### **As at 9<sup>th</sup> January 2017:**

Influenza activity in the temperate zone of the northern hemisphere continued to increase, with many countries especially in Europe and East Asia passing their seasonal threshold early in comparison with previous years. Worldwide, influenza A(H3N2) virus was predominant. The majority of influenza viruses characterized so far is similar antigenically to the reference viruses representing vaccine components for 2016-2017 influenza season. The majority of recently circulating viruses tested for antiviral sensitivity is susceptible to the neuraminidase inhibitor antiviral medications.

- In North America influenza activity continued to increase with influenza A(H3N2) virus predominating. Influenza-like illness (ILI) levels just surpassed the seasonal thresholds in the United States. In the United States, respiratory syncytial virus (RSV) activity increased.
- In Europe, influenza activity was increasing, with influenza A (H3N2) virus being the most prominent subtype. Persons aged over 65 years were most frequently associated with severe disease.
- In East Asia, influenza activity continued to increase with influenza A(H3N2) viruses predominant.
- In Western Asia, influenza activity increased slightly.
- In Southern Asia influenza activity increased mainly due to influenza A(H3N2) . Increased activity was reported in recent weeks by the Islamic Republic of Iran and Sri Lanka.
- In South East Asia, influenza activity continued to decrease, with influenza A(H3N2) virus and influenza B predominating in the region.
- In Northern Africa, continued increased influenza detections were reported in Morocco and Tunisia with influenza A(H3N2) virus dominating.
- In West Africa, influenza continued to be detected in Ghana with B viruses dominating.
- In the Caribbean countries and Central America, influenza and other respiratory virus activity remained low in general.
- In tropical South America, influenza and other respiratory viruses activity remained low.
- In the temperate zone of the Southern Hemisphere, influenza activity is at inter-seasonal levels.
- National Influenza Centres (NICs) and other national influenza laboratories from 74 countries, areas or territories reported data to FluNet for the time period 12 December 2016 to 25 December 2016 (data as of 2017-01-06 04:12:46 UTC). The WHO GISRS laboratories tested more than 124657 specimens during that time period. Of these 25263 were positive for influenza viruses, of which 24223 (95.9%) were typed as influenza A and 1040 (4.1%) as influenza B. Of the sub-typed influenza A viruses, 159 (1.3%) were influenza A(H1N1)pdm09 and 11927 (98.7%) were influenza A(H3N2). Of the

characterized B viruses, 67 (34.9%) belonged to the B-Yamagata lineage and 125 (65.1%) 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, 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/collections/seasonal-influenza-guidance-data-and-analysis#epidemiology>

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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