

## Influenza Weekly Surveillance Bulletin

Northern Ireland, Weeks 51 - 52 (19 December 2016 – 01 January 2017)

### Summary

At this point in the 2016/17 influenza season, activity has increased in weeks 51 (week commencing 19<sup>th</sup> December 2016) and 52 (week commencing 26<sup>th</sup> December 2016):

### Weekly Influenza GP Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) have fluctuated over the two week period, increasing to 29.1 in week 51, then decreasing to 20.9 per 100,000 population in week 52. Rates remain below the 2016/17 pre-epidemic threshold<sup>1</sup>
- OOH GP consultation rates for flu/FLI increased to 7.0 in week 51, and further to 16.7 per 100,000 population in week 52

### Microbiological Surveillance

- The proportion of positive influenza detections from both sentinel and non-sentinel sources was 20% in week 51 and increased to 27% in week 52

### Respiratory Syncytial Virus (RSV) Activity

- RSV activity has decreased over the two-week period with levels remaining slightly lower than the same period last season

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

- Five cases in ICU with laboratory confirmed influenza were reported, giving a total of ten cases this season
- One death was reported in ICU patients with laboratory confirmed influenza

### Influenza Outbreaks across Northern Ireland

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

### Influenza Vaccine Uptake in Northern Ireland

- To 30<sup>th</sup> 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

<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

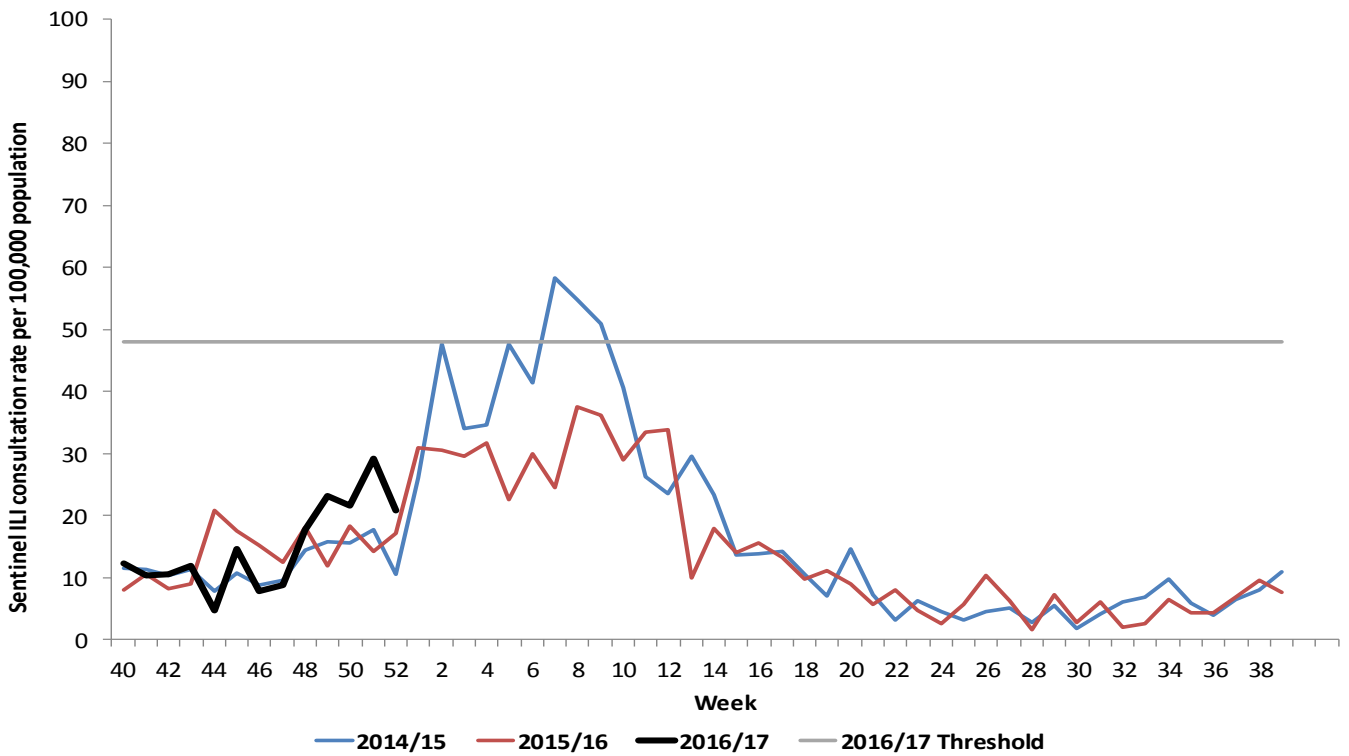
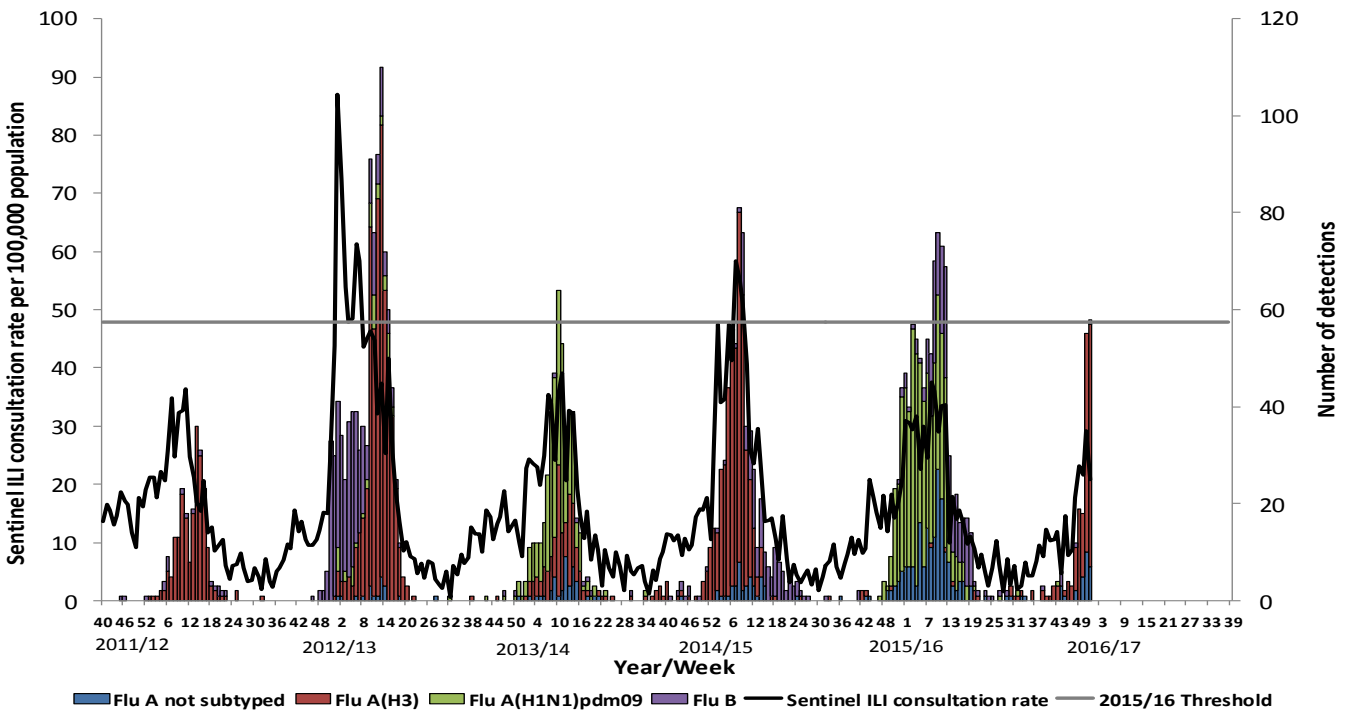
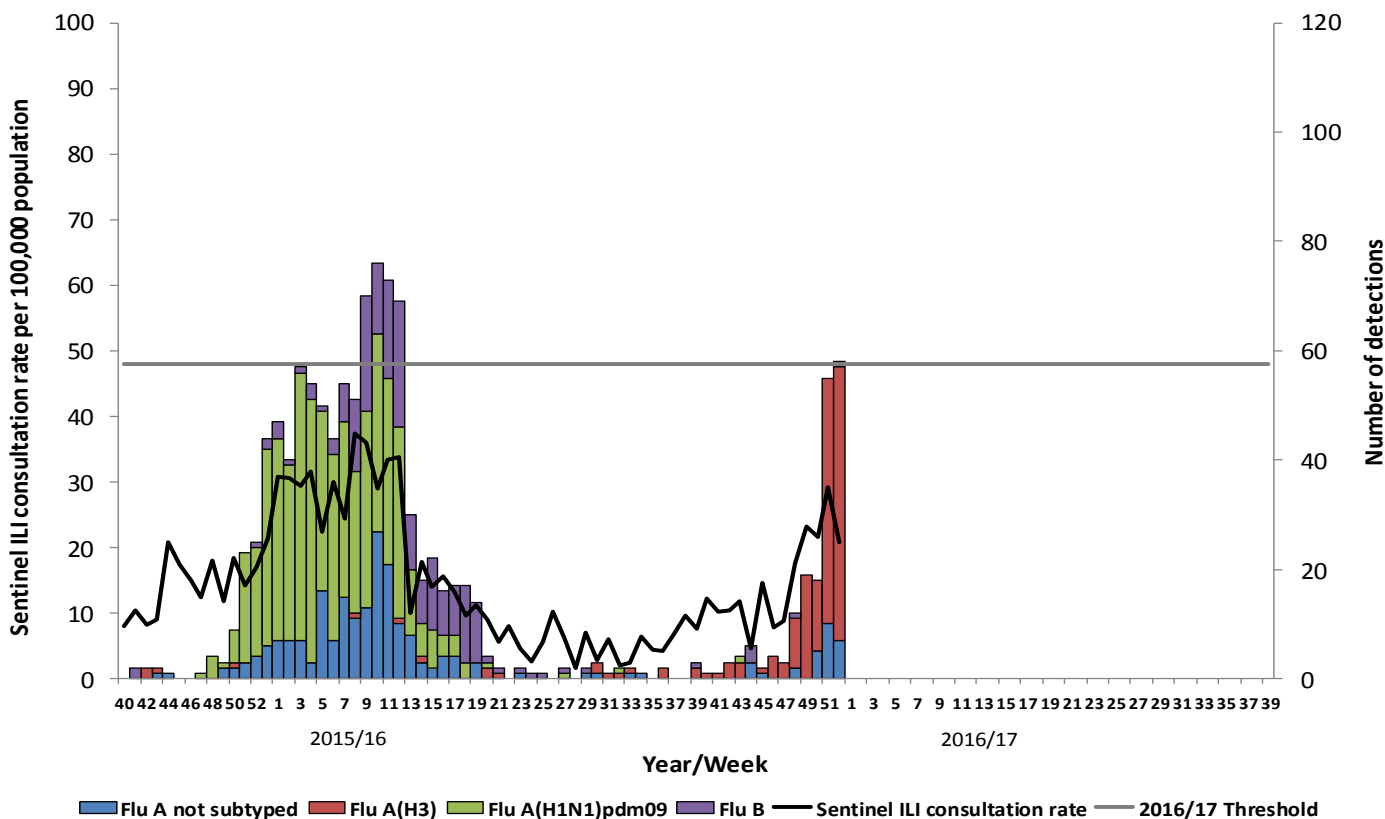


Figure 2. Sentinel GP combined consultation rates for flu/FLI and number of influenza positive detections 2011/12 – 2016/17



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

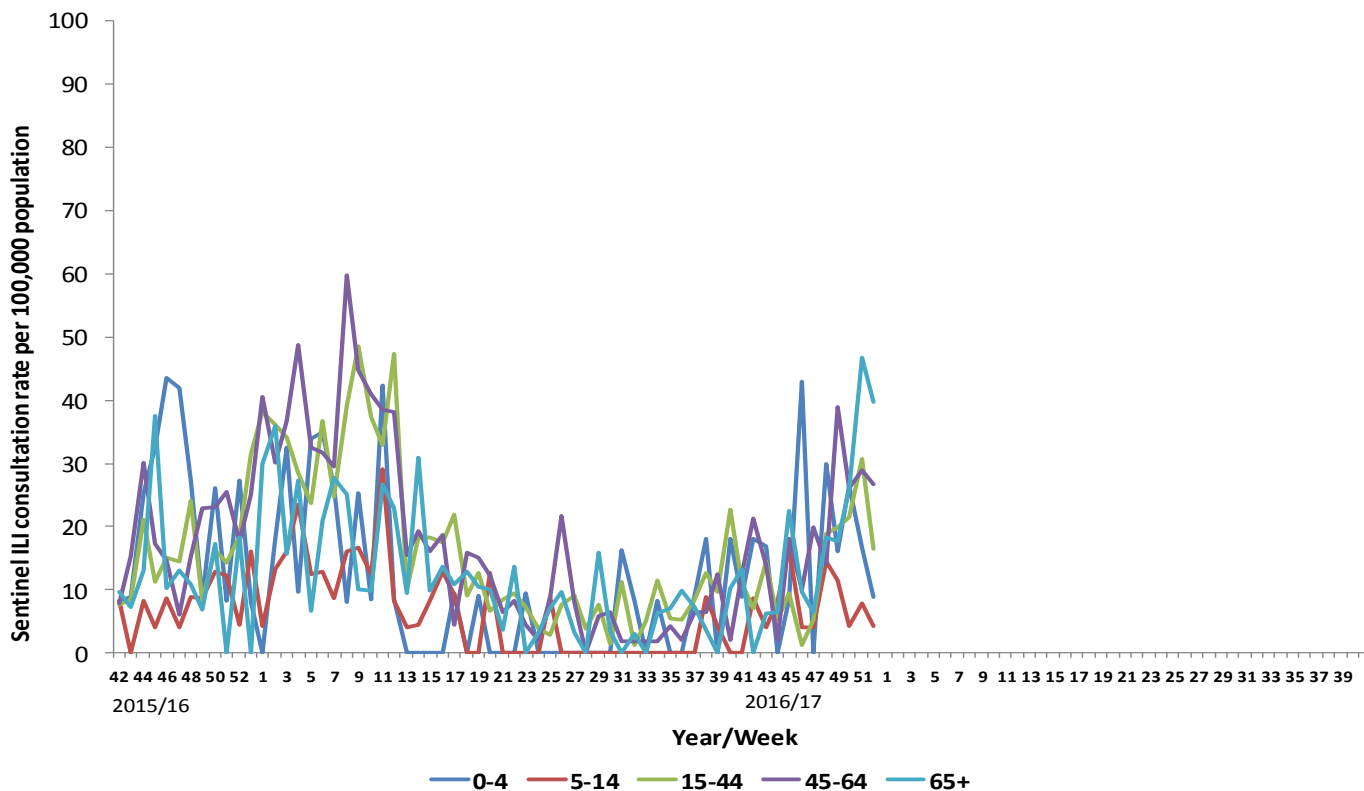


### Comment

GP consultation rates have fluctuated across the two week period from 21.5 per 100,000 population in week 50 to 29.1 in week 51, then decreasing to 20.9 per 100,000 population in week 52. The GP consultation rates are higher than the same period in both 2015/16 (14.3 in week 51 and 17.0 in week 52) and 2014/15 (17.8 in week 51 and 10.4 in week 52).

Rates remain well 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 fluctuated among most age groups across weeks 51 and 52, 2016 with a steady decrease noted among only the 0-4 years age group.

In weeks 51 and 52 the highest age-specific rates were noted among those aged 65 years and over (46.7 per 100,000 population in week 51 and 39.8 per 100,000 population in week 52) while the lowest rates across the period were represented by those aged 5-14 years (7.9 per 100,000 population in week 51 and 4.2 consultations in week 52).

Age-specific consultation rates are higher in almost all age groups in week 51 than the same time period in 2015/16 but lower in most during week 52 (Figure 4).

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

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

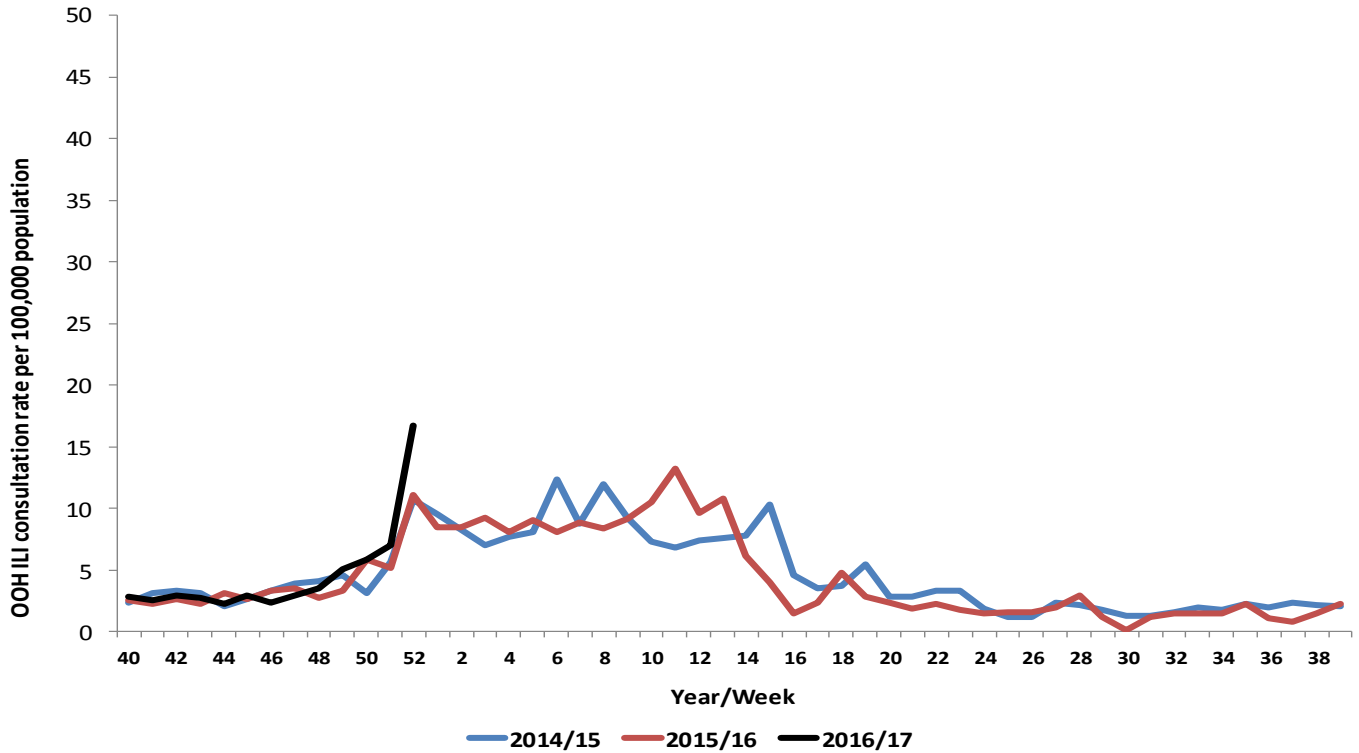
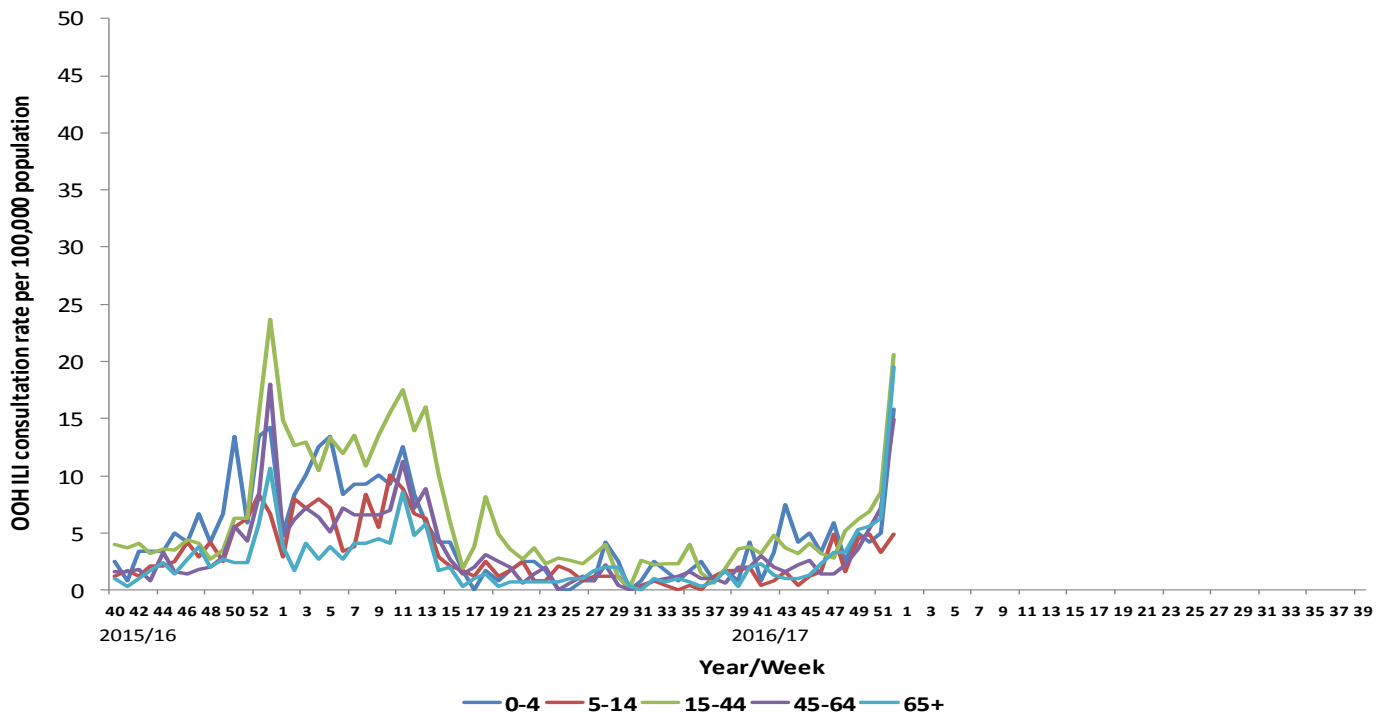


Figure 6. OOH Call rates of flu/FLI by age-group from week 40, 2015



### Comment

During weeks 51 and 52, 2016 the OOH GP consultation rate increased to 7.0 per 100,000 population in week 51 (from 5.9 in week 50), increasing further to 16.7 per 100,000 population in week 52. This represents the highest OOH flu/FLI rate reported this season to date but is likely due to GP practice closures during the holiday period. The OOH GP consultation rate in week 52 is higher than the same period in both 2015/16 (11.1 per 100,000 population) and 2014/15 (10.7

per 100,000 population) (Figure 5). The proportion of calls related to flu represent more than 1% of total calls to the OOH service for the first time this season at 1.2% in week 51 and 1.6% in week 52.

During weeks 51 and 52, OOH flu/FLI rates have increased among almost all age groups, with fluctuations noted among those aged 5-14 years. The highest age-specific OOH flu/FLI rates in weeks 51 and 52 were again noted among those aged 15-44 years (8.6 per 100,000 population in week 51 and 20.6 per 100,000 in week 52). Those aged 0-4 years represented the lowest rate in week 51 (4.2 per 100,000 population), while those aged 5-14 years represented the lowest rate in week 52 (3.3 per 100,000 population) (Figure 6).

## Virology Data

**Table 1. Virus activity in Northern Ireland by source, Week 51 - 52, 2016/17**

Source	Specimens Tested	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	18	6	0	0	0	2	6	33%
Non-sentinel	480	89	0	17	1	82	107	22%
<b>Total</b>	<b>498</b>	<b>95</b>	<b>0</b>	<b>17</b>	<b>1</b>	<b>84</b>	<b>113</b>	<b>23%</b>

**Table 2. Cumulative virus activity from all sources by age group, Week 40 - 52, 2016/17**

	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
0-4	6	0	1	1	8	380
5-14	2	0	0	1	3	15
15-64	74	1	15	3	93	69
65+	70	0	12	0	82	85
Unknown	0	0	0	0	0	0
<b>All ages</b>	<b>152</b>	<b>1</b>	<b>28</b>	<b>5</b>	<b>186</b>	<b>549</b>

**Table 3. Cumulative virus activity by age group and source, Week 40 - Week 52, 2016/17**

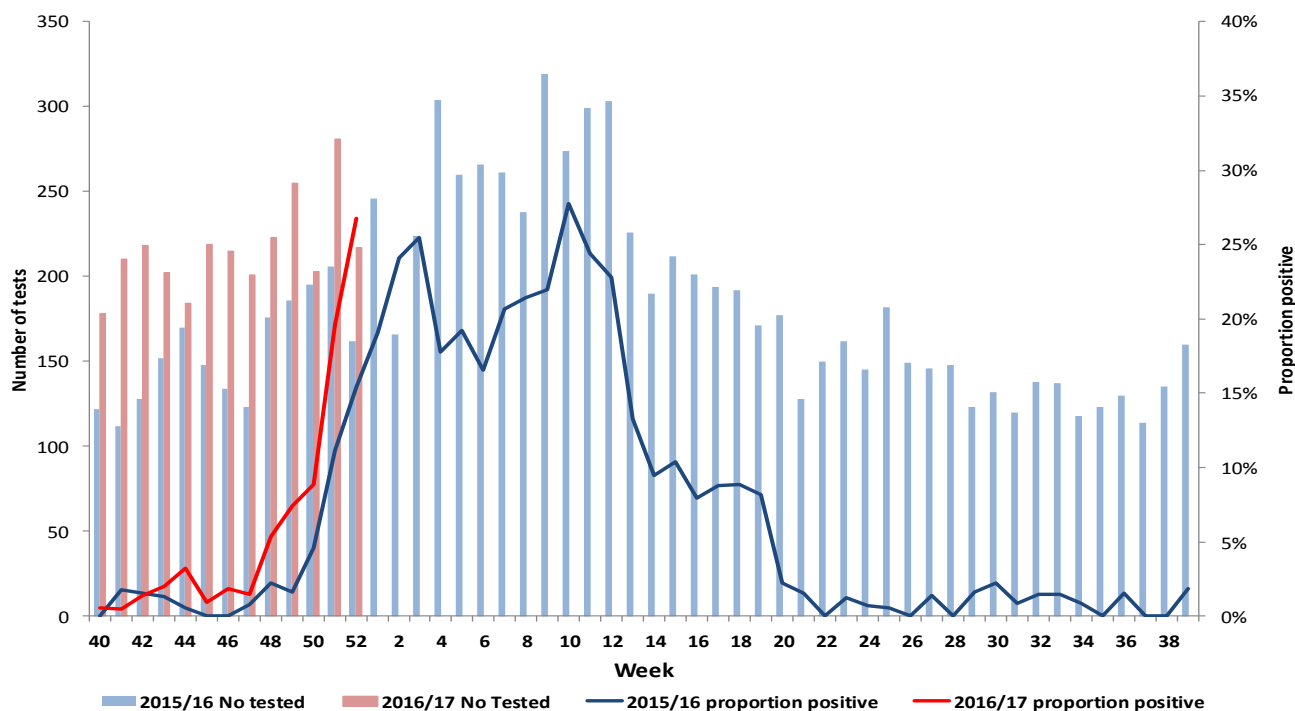
	Sentinel						Non-sentinel					
	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
0-4	0	0	0	0	0	1	6	0	1	1	8	379
5-14	1	0	0	0	1	0	1	0	0	1	2	15
15-64	11	1	0	0	12	7	63	0	15	3	81	62
65+	1	0	1	0	2	2	69	0	11	0	80	83
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>All ages</b>	<b>13</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>15</b>	<b>10</b>	<b>139</b>	<b>0</b>	<b>27</b>	<b>5</b>	<b>171</b>	<b>539</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**

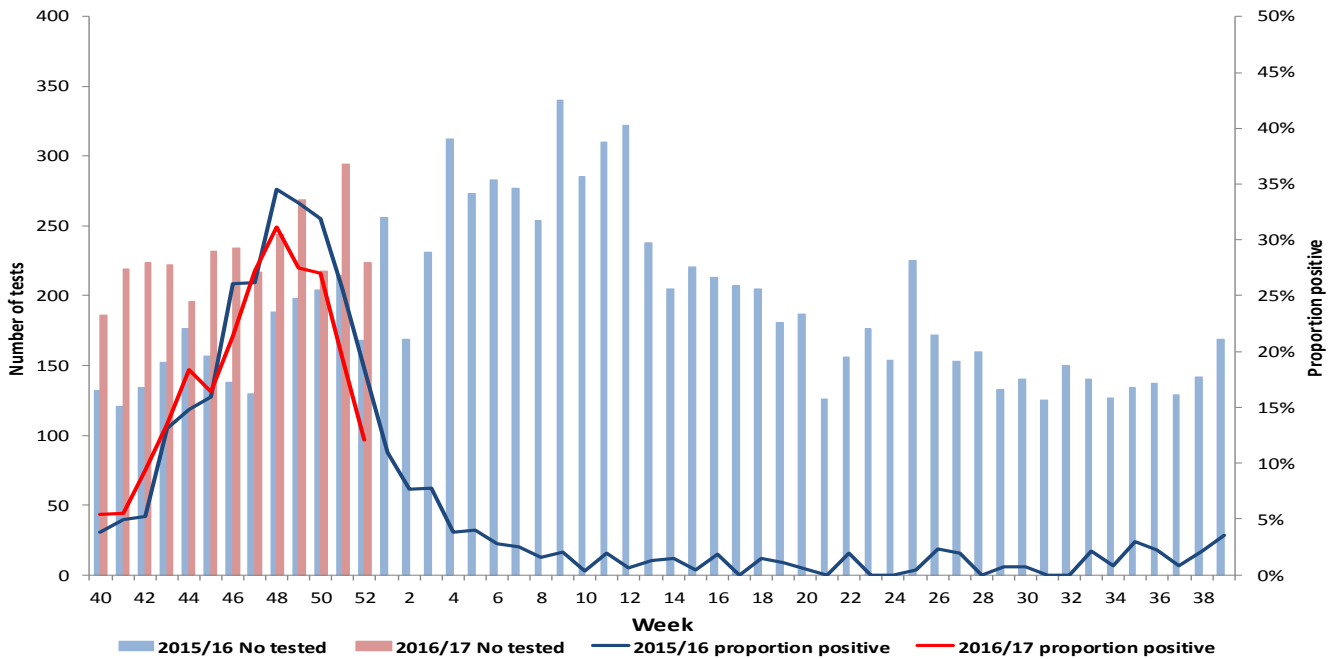
During weeks 51 and 52, 2016 there were 498 specimens submitted for virological testing. There were 113 detections of influenza in total (positivity rate of 23%) (Figure 7). There were 95 detections of influenza A(H3), 1 detection of influenza B and 17 detections of influenza A (typing awaited). There were no detections of influenza A(H1N1)pdm09.

There were 6 samples positive for influenza submitted through the GP based sentinel scheme across Northern Ireland.

This season to date there have been a total of 186 detections of influenza, of which 152 have been typed as influenza A(H3). There have been 5 detections of influenza B, 28 of influenza A (typing awaited) and 1 detection 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**

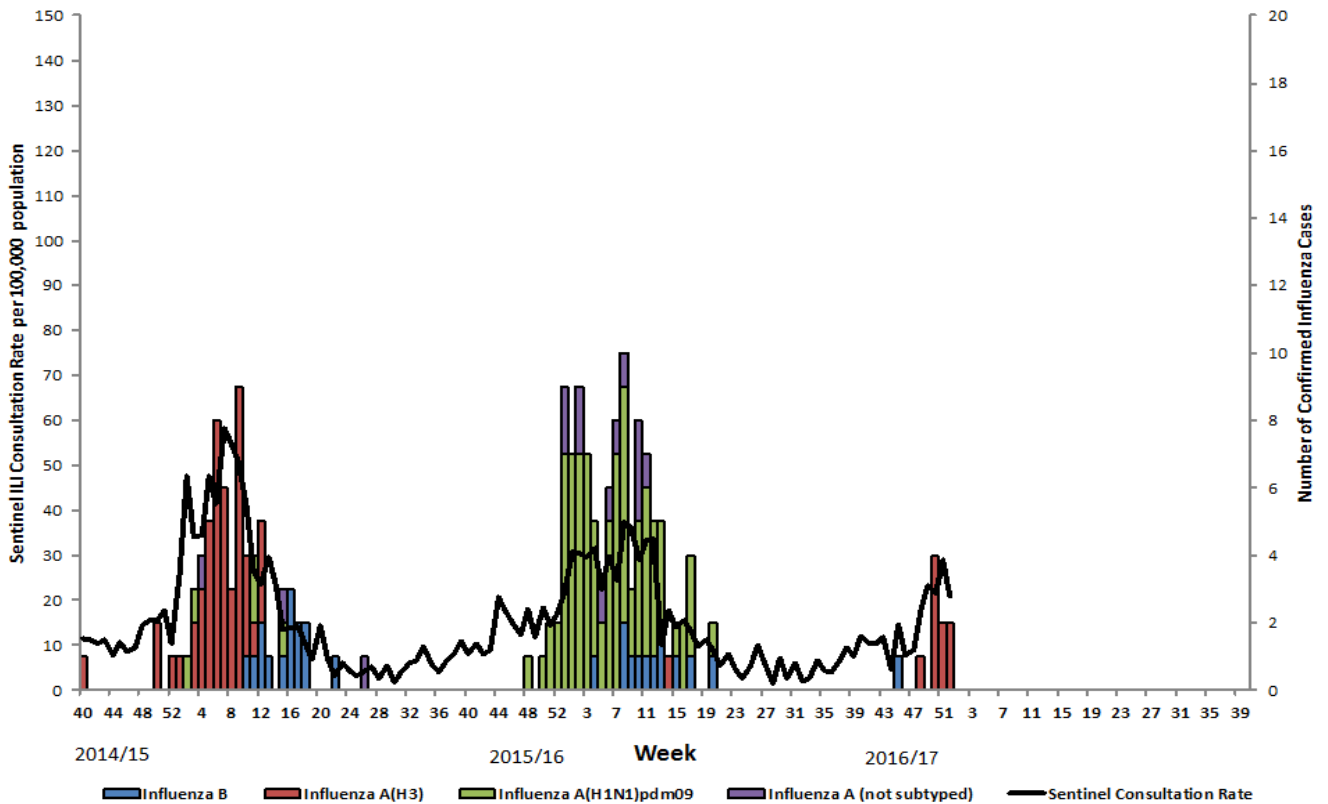


## Comment

During weeks 51 and 52, there were 84 positive detections of RSV. Positivity rates for both weeks combined were 16%; slightly lower than the same period in 2015/16 (22%). To date there have been a total of 549 detections of RSV of which the majority (69%) 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 weeks 51 and 52, five confirmed cases of influenza in ICU was reported to the PHA, typed as influenza A(H3). There was one death reported in ICU patients with laboratory confirmed influenza; this is the first death reported in ICU this season with confirmed influenza. There have been ten confirmed cases of influenza in ICU reported this season to date, of which nine have been typed as influenza A (H3) and one as influenza B.

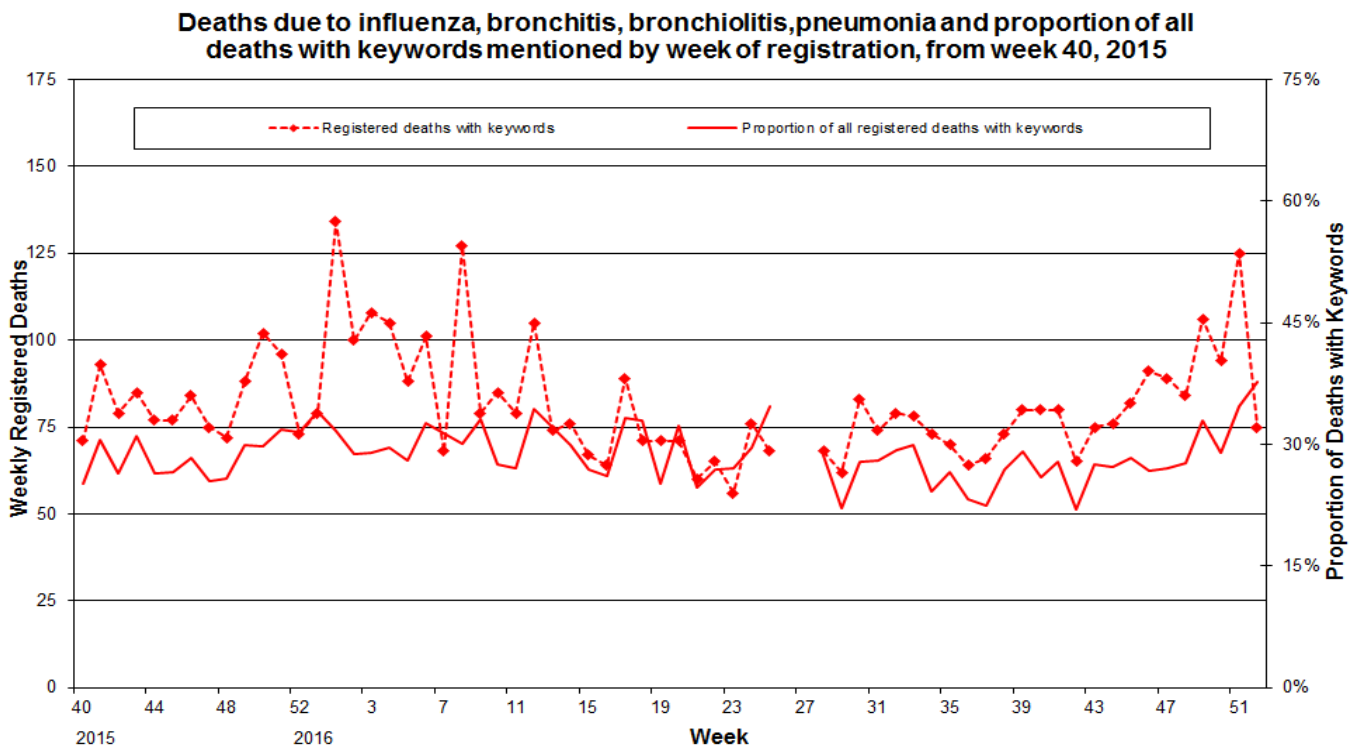
### Outbreak Surveillance

During weeks 51 and 52 there were four confirmed influenza (AH3) outbreaks reported to the PHA. There have been a total of five confirmed influenza outbreaks reported this season to date, all of which have been typed 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 51, the proportion of registered deaths from specific respiratory infections increased to 35% (360 registered deaths, of which 125 related to specific respiratory infections) from 29% the previous week. In week 52 the proportion increased further to 38% (199 registered deaths, of which 75 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 in both 2015/16 and 2014/15.

## EuroMOMO

EuroMOMO data will be available later in the season.

### Influenza Vaccine Uptake

To 30<sup>th</sup> 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 30<sup>th</sup> 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 51, 2016

- Influenza activity continues to increase across the region. Very high intensity was reported in one country (Finland).
- The proportion of virus detections among sentinel surveillance specimens increased to 47% from 38% last week.
- The great majority of influenza viruses detected this week were influenza A and of those subtyped, the majority were A(H3N2).
- Influenza cases from hospital settings increased in some countries, but comparison to last week was not possible as few countries reported data.
- A risk assessment on seasonal influenza in EU/EEA countries was published by ECDC on 24 December 2016 stating that influenza viruses, mainly A(H3N2), started circulating early. If A(H3N2) continues to predominate it is likely that people over 65 years will be the most severely affected age-group this season. More than half of the detected characterised A(H3N2) viruses belong to a new genetic clade, but all are antigenically similar to the vaccine strain ([Click here to read the full document](#)).

##### Season Overview:

- In overall sentinel specimen positivity reached 10% in week 46/2016, an indication of a slightly earlier start of the influenza season compared to previous seasons.
- Week 46/2016 is the earliest week that the overall positivity rate reached 10% in the last 7 years; during the previous six 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 previous season in which influenza A(H1N1)pdm09 predominated.
- In an influenza season in which influenza A(H3N2) predominates, elderly populations can be expected to be most severely affected

## Worldwide (WHO) and CDC

As at 26<sup>th</sup> December 2016:

Influenza activity in the temperate zone of the northern hemisphere increased slightly, with some countries passing their seasonal threshold, which is early for the season. Worldwide, influenza A(H3N2) virus was predominant.

- In North America influenza activity continued to increase with influenza A(H3N2) virus predominating. Influenza-like illness (ILI) levels remained below seasonal thresholds. In the United States, respiratory syncytial virus (RSV) activity continued to be reported.
- In Europe, influenza activity was low but has started to rise, with a positivity rate of 28% among sentinel surveillance samples. The highest numbers of influenza cases were detected in Norway and Sweden. In South West Europe, influenza activity was higher in Portugal and Spain.
- In East Asia, influenza activity continued to increase with influenza A(H3N2) remaining the dominant virus circulating.
- In Western Asia, influenza detections slightly increased.
- In Northern Africa, influenza detections were reported in Morocco with influenza A(H3N2) virus dominating.
- In the Caribbean countries, influenza and other respiratory virus activity remained low. In Central America, there was a slight decrease in influenza and other respiratory viruses activity in most of the countries. In Costa Rica, influenza activity increased with influenza A(H1N1)pdm09 and A(H3N2) viruses co-circulating and RSV activity continued to be reported.
- In tropical South America, influenza and other respiratory viruses activity remained low with exception of Colombia where both influenza and RSV activity continued to be reported.
- In Southern Asia, influenza detections slightly increased in both Iran and Sri Lanka with influenza A(H3N2) as the most frequently detected virus in this region.
- In South East Asia, influenza activity continued to be reported at low levels, with influenza A(H3N2) virus predominant in the region.
- In West Africa, influenza detections increased in Ghana with B viruses dominating.
- In Southern Africa, influenza activity continued at inter-seasonal levels.
- In temperate South America, influenza and RSV activity continued to decrease throughout the sub-region.
- In Oceania, influenza virus activity was reported at inter-seasonal levels.
- National Influenza Centres (NICs) and other national influenza laboratories from 91 countries, areas or territories reported data to FluNet for the time period from 28 November 2016 to 11 December 2016 (data as of 2016-12-22 14:50:28 UTC). The WHO GISRS laboratories tested more than 115769 specimens during that time period. 12979 were positive for influenza viruses, of which 12221 (94.2%) were typed as influenza A and 758 (5.8%) as influenza B. Of the sub-typed influenza A viruses, 118 (1.5%) were influenza A(H1N1)pdm09 and 7709 (98.5%) were influenza A(H3N2). Of the characterized B viruses, 74 (48.1%) belonged to the B-Yamagata lineage and 80 (51.9%) to the B-Victoria lineage

## 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> Now on Facebook (Flu Aware NI)

<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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