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Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 13 (27 March 2017 – 02 April 2017)

Summary

At this point in the 2016/17 influenza season, influenza continues to circulate across the region, with increases in the number of influenza laboratory detections, primarily influenza B, in week 13 (week commencing 27th March 2017).

Weekly Influenza GP Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) have decreased in week 13, 2017 to 10.0 per 100,000 population. Rates remain below the 2016/17 pre-epidemic threshold[1]
- OOH GP consultation rates for flu/FLI increased to 3.5 per 100,000 population in week 13, 2017

Microbiological Surveillance

- The proportion of positive influenza detections from both sentinel and non-sentinel sources was 15% in week 13

Respiratory Syncytial Virus (RSV) Activity

- RSV activity has increased from week 12 with levels higher than the same period last season

Influenza Confirmed Intensive Care Unit (ICU) Cases and Deaths

- Three new cases were reported in ICU with laboratory confirmed influenza in week 13, there have been a total of 43 cases this season
- One death was reported in week 13 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

- One confirmed influenza outbreak was reported to the PHA. There have been a total of 12 confirmed influenza outbreaks this season

EuroMOMO

- No excess all-cause mortality was reported through the EuroMOMO algorithm for week 13, 2017

Influenza Vaccine Uptake in Northern Ireland

- To 31st 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

[1] 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 3rd 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

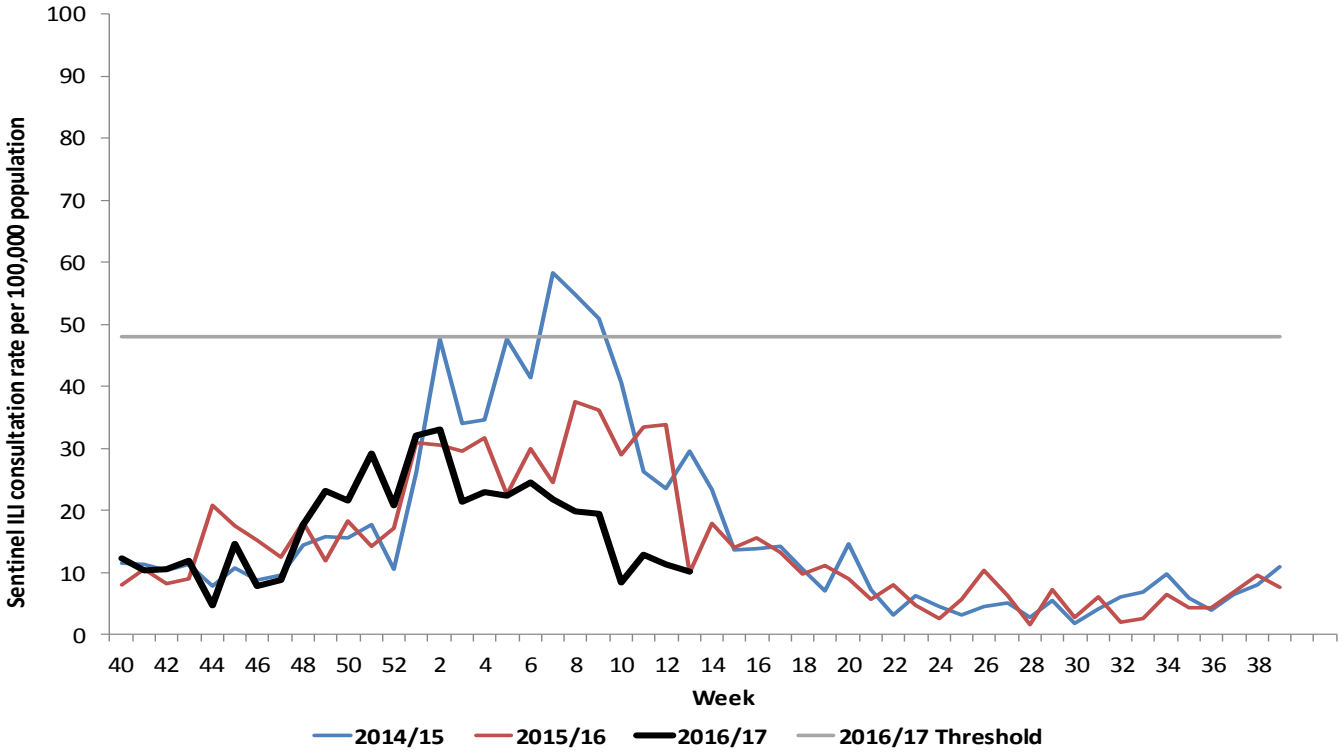


Figure 2. Sentinel GP combined consultation rates for flu/FLI and number of influenza positive detections 2011/12 – 2016/17

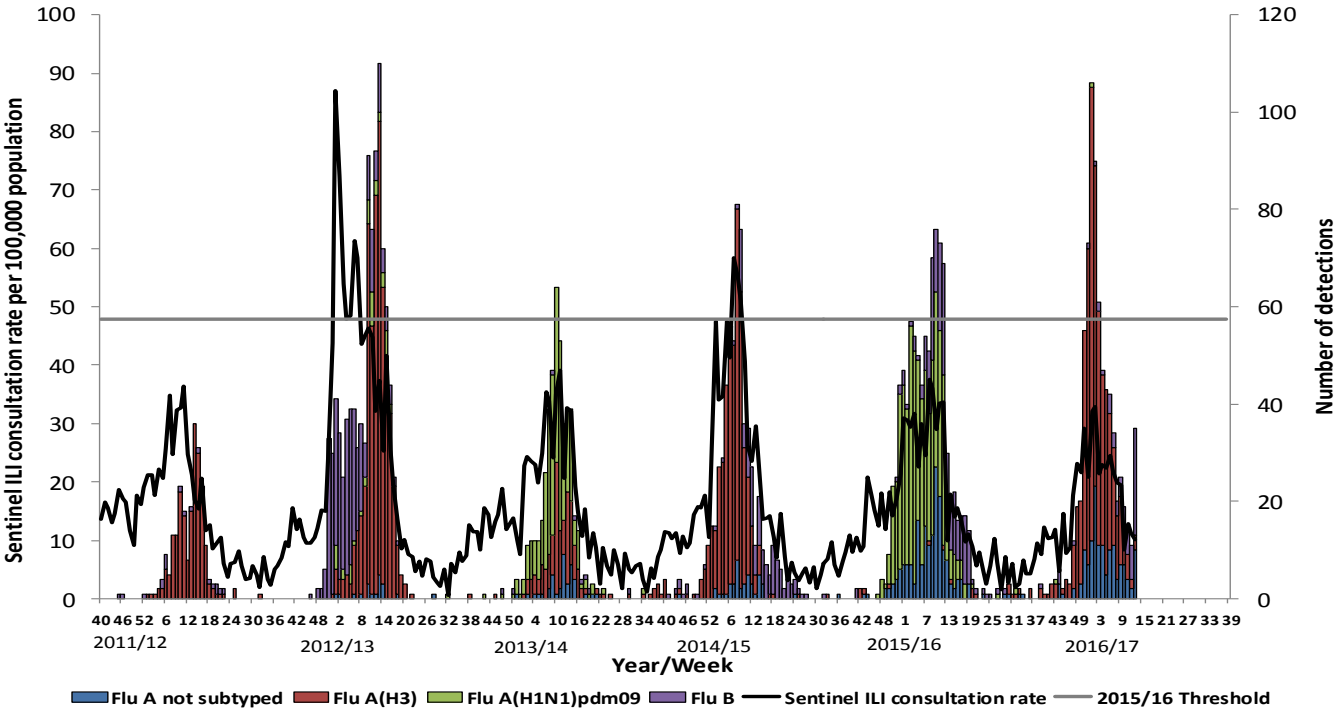
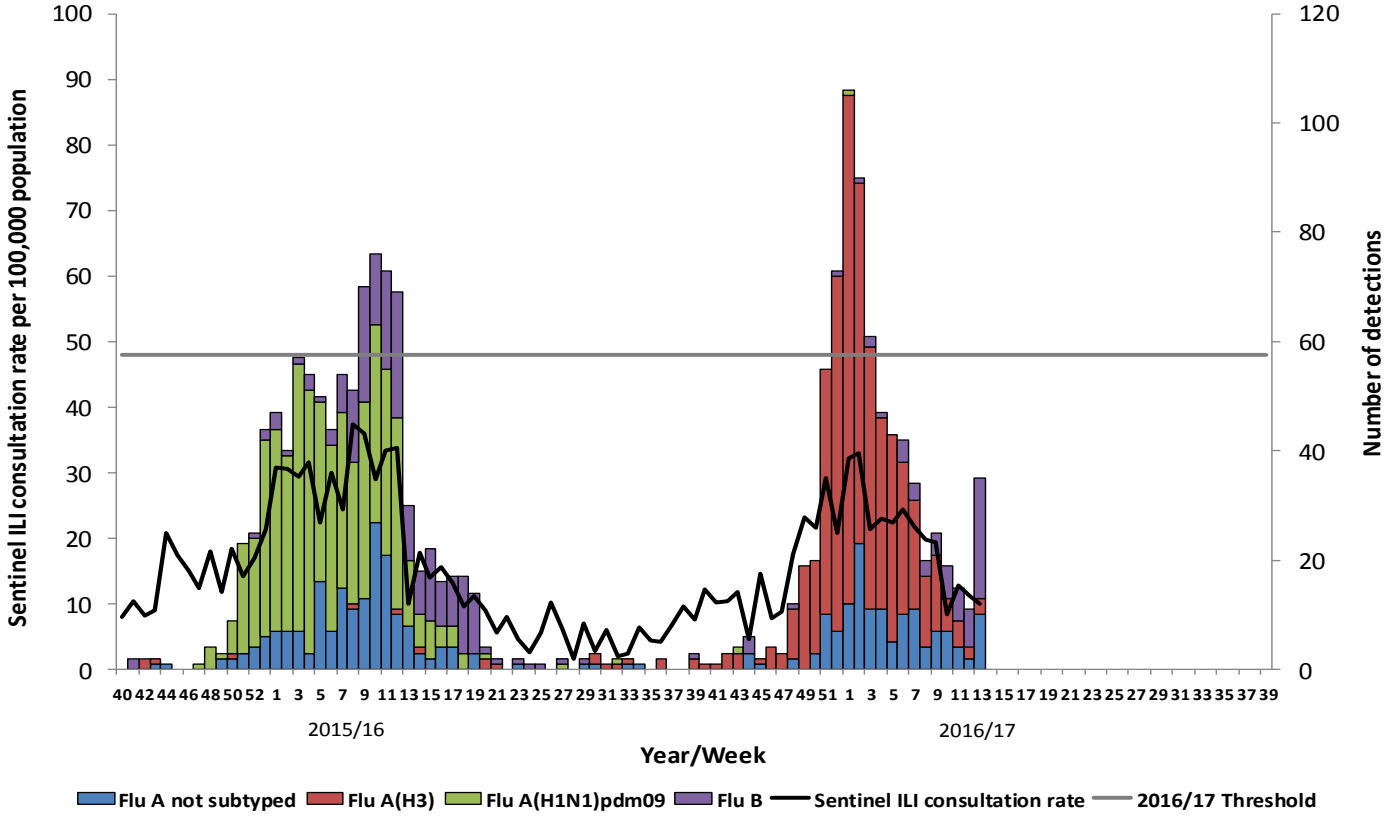


Figure 3. Sentinel GP consultation rates for flu/FLI and number of virology 'flu detections from week 40, 2015



Comment

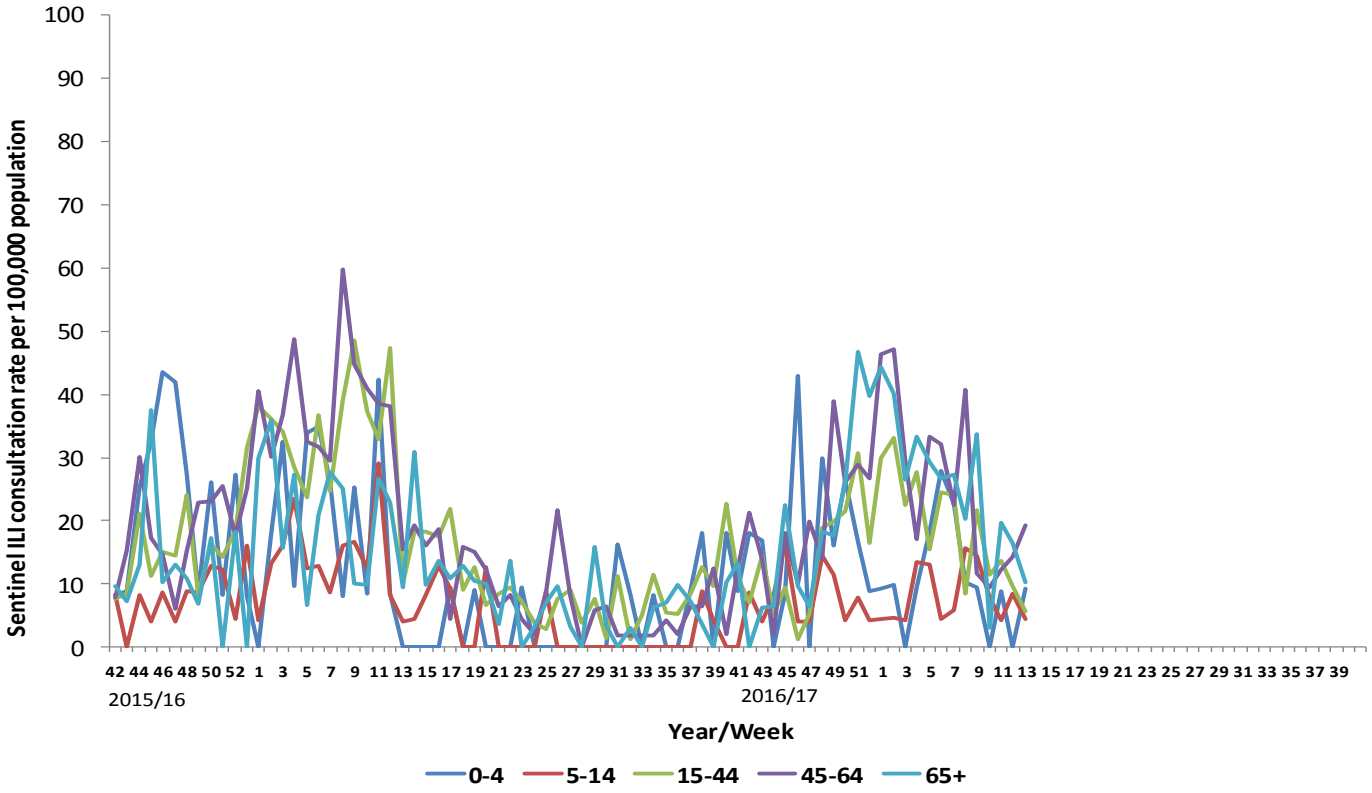
GP consultation rates have decreased in week 13, 2017 to 10.0 per 100,000 population from 11.2 per 100,000 population in week 12. The GP consultation rate in week 13 is similar to the same period in 2015/16 (10.0 per 100,000 population) but lower than in 2014/15 (29.5 per 100,000 population).

Rates remain below the pre-epidemic Northern Ireland 2016/17 threshold of 47.9 per 100,000.

There has been an increase in the number of influenza laboratory detections in week 13, with the majority of these being influenza B (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 0-4and 45-64 years age groups in week 13, with a decrease noted among all other age groups.

In week 13, 2017 the highest age-specific rate was noted among those aged 45-64 years (19.2 per 100,000 population), with the lowest rate represented by those aged 5-14 years (4.4 per 100,000 population).

Age-specific consultation rates are higher among some age groups in week 13 than the same time period in 2015/16 but lower among almost all age groups than in 2014/15 (Figure 4).

Out-of-Hours (OOH) Centres Call Data

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

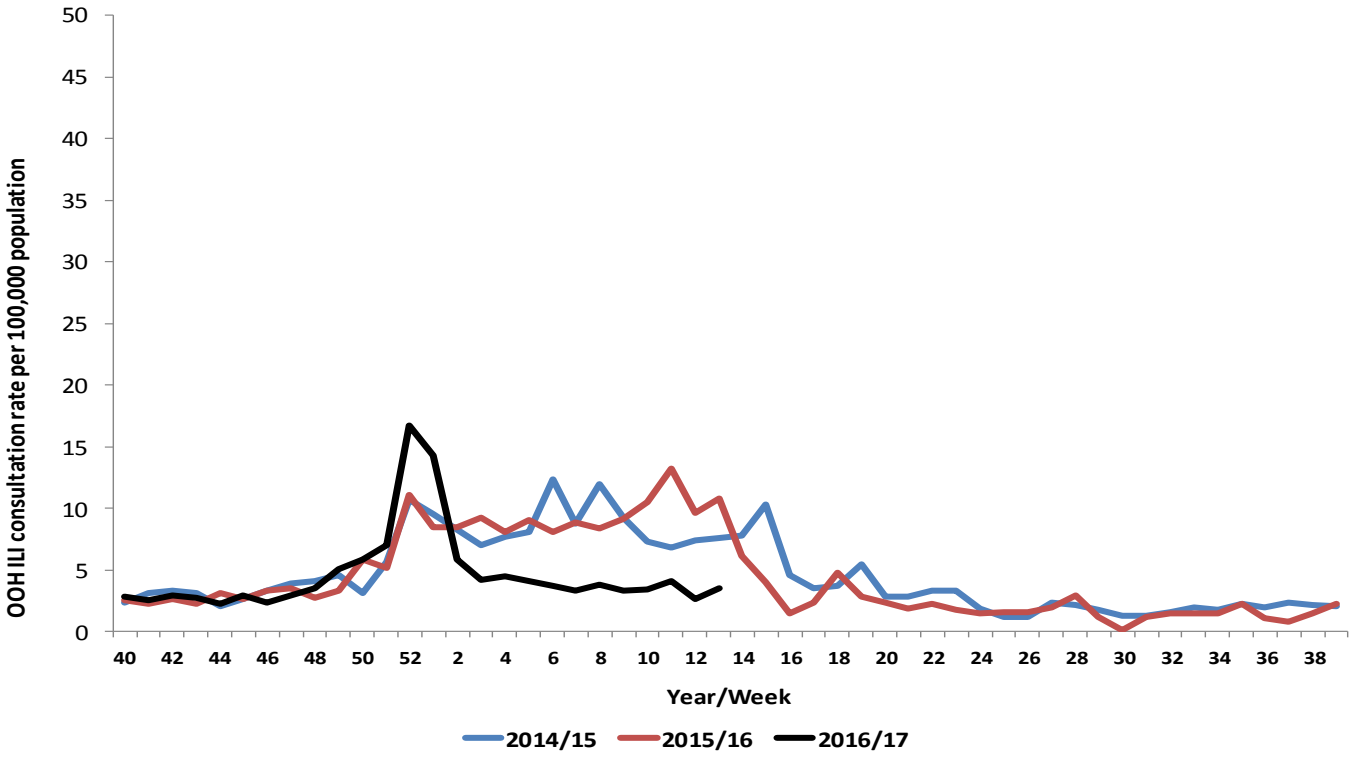
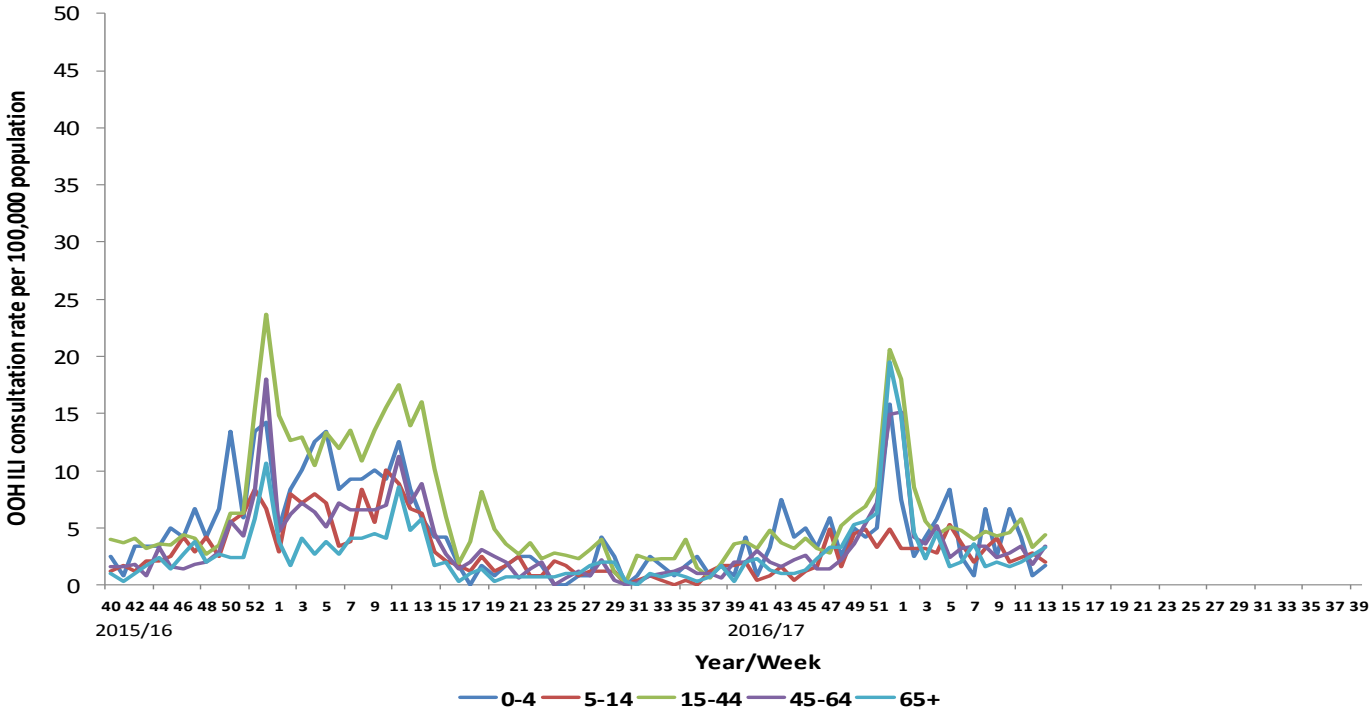


Figure 6. OOH Call rates of flu/FLI by age-group from week 40, 2015



Comment

During week 13, 2017 the OOH GP consultation rate increased to 3.5 per 100,000 population from 2.6 per 100,000 population in week 12. The OOH GP consultation rate in week 13 is lower than the same period in both 2015/16 (10.8 per 100,000 population) and 2014/15 (7.6 per 100,000 population) (Figure 5).

The proportion of calls related to flu has remained stable and still represents less than 1% of total calls to the OOH service in week 13, 2017.

During week 13, OOH flu/FLI rates have slightly increased among the 15-44 and 45-64 years age groups, while rates remained relatively stable among all other age groups. The highest age-specific OOH flu/FLI rate in week 13 was again noted among the 15-44 years age group (4.4 per 100,000 population) while those aged 0-4 years represented the lowest rate (1.7 per 100,000 population) (Figure 6).

Age-specific rates in week 13 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 13, 2016/17								
Source	Specimens Tested	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	1	0	0	0	0	0	0	0%
Non-sentinel	234	3	0	10	22	7	35	15%
Total	235	3	0	10	22	7	35	15%

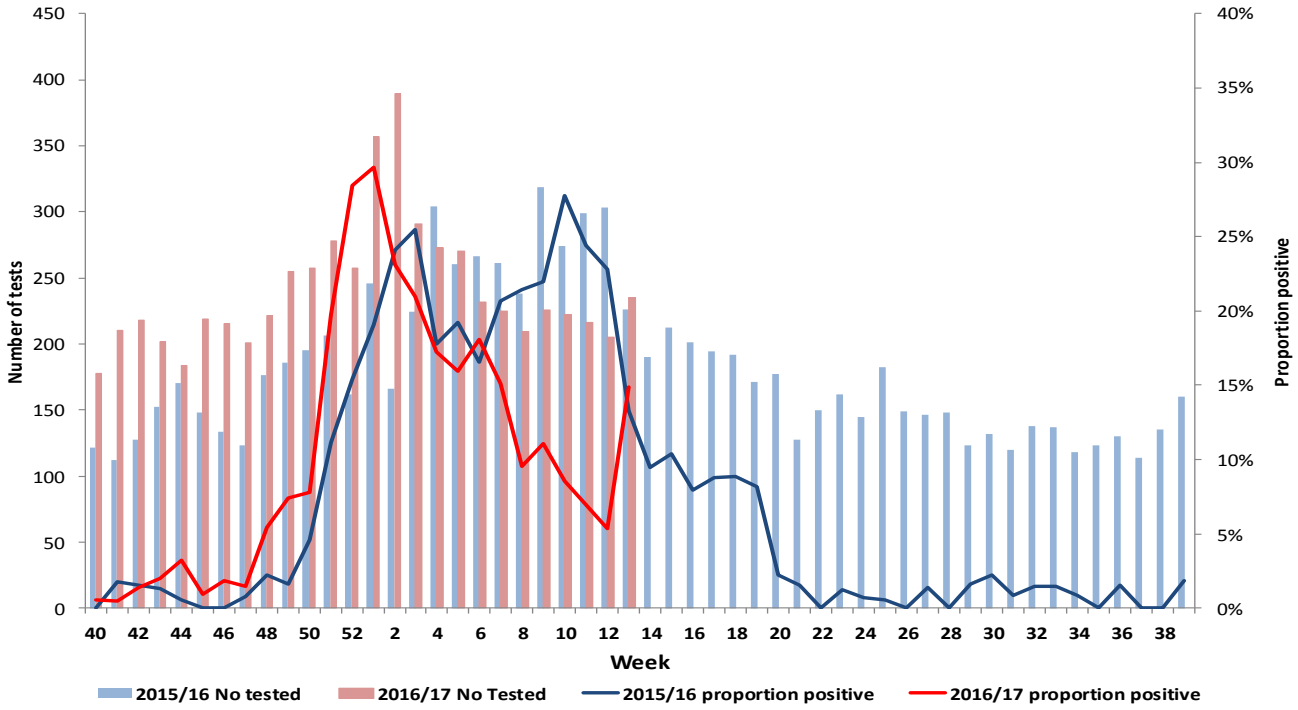
Table 2. Cumulative virus activity from all sources by age group, Week 40 - 13, 2016/17						
	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
0-4	19	0	7	2	28	455
5-14	12	0	3	2	17	16
15-64	235	1	57	26	319	99
65+	276	1	76	34	387	139
Unknown	0	0	0	0	0	0
All ages	542	2	143	64	751	709

Table 3. Cumulative virus activity by age group and source, Week 40 - Week 13, 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	19	0	7	2	28	454
5-14	4	0	0	0	4	0	8	0	3	2	13	16
15-64	29	1	5	4	39	8	206	0	52	22	280	91
65+	5	1	2	1	9	3	271	0	74	33	378	136
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
All ages	38	2	7	5	52	12	504	0	136	59	699	697

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

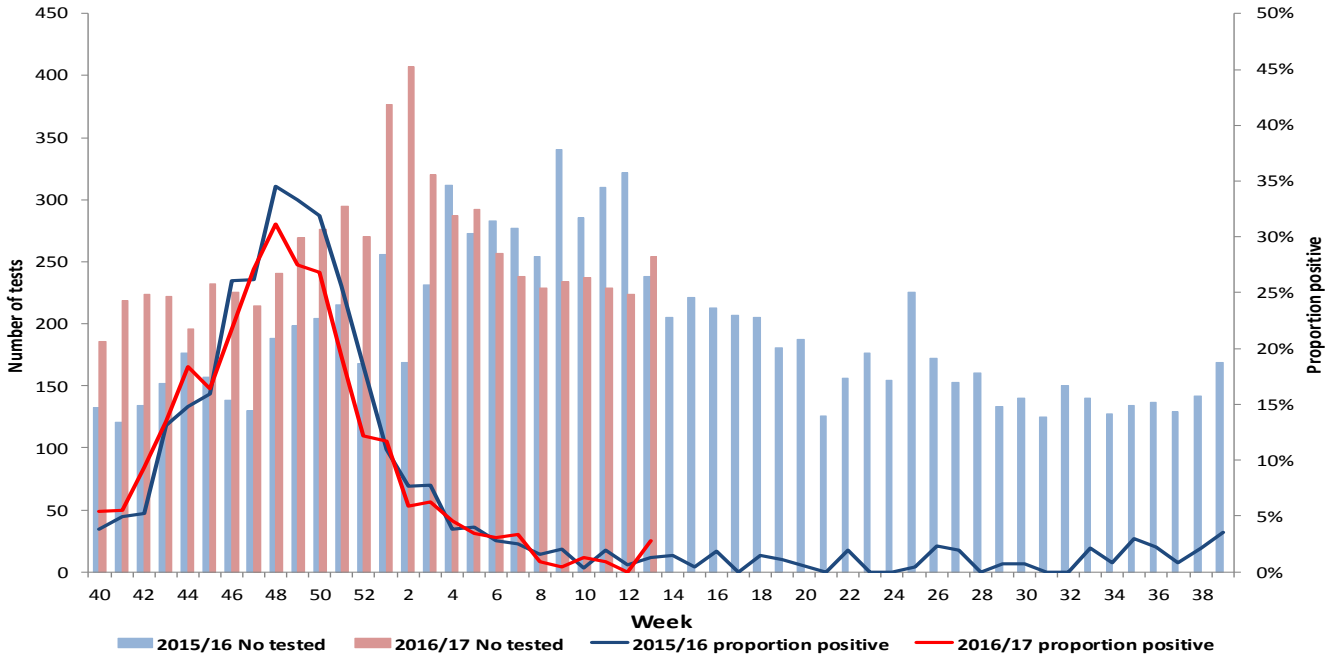
During week 13, 2017 there were 235 specimens submitted for virological testing. There were 35 detections of influenza in total (positivity rate of 15%) (Figure 7). There was 22 detections of influenza B, 3 detections of influenza A(H3) and 10 detections of influenza A (typing awaited). There were no detections of influenza A(H1N1)pdm09.

There were no samples positive for influenza submitted through the GP based sentinel scheme across Northern Ireland.

This season to date there have been a total of 751 detections of influenza, of which 542 have been typed as influenza A(H3). There have been 64 detections of influenza B, 143 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

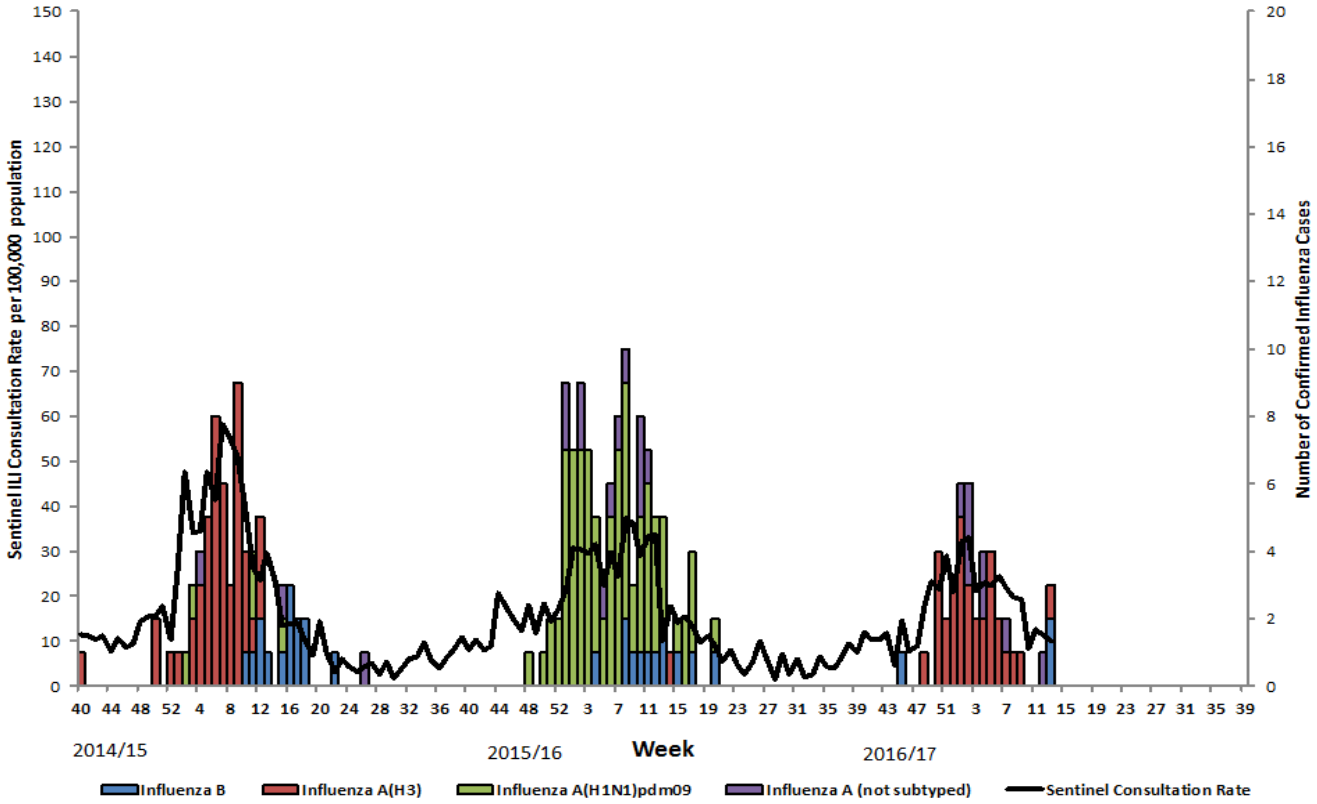


Comment

During week 13, 2017 there were 7 positive detections of RSV, giving a positivity rate of 3%, higher than the same period in 2015/16 (1%). To date there have been a total of 709 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 13, three confirmed cases of influenza in ICU were reported to the PHA. There was also one death reported in ICU patients with laboratory confirmed influenza.

There have been 43 confirmed cases of influenza in ICU reported this season to date, of which 32 have been typed as influenza A (H3), eight as influenza A (typing awaited) and three influenza B. There have been eight deaths reported in confirmed cases of influenza in ICU this season to date.

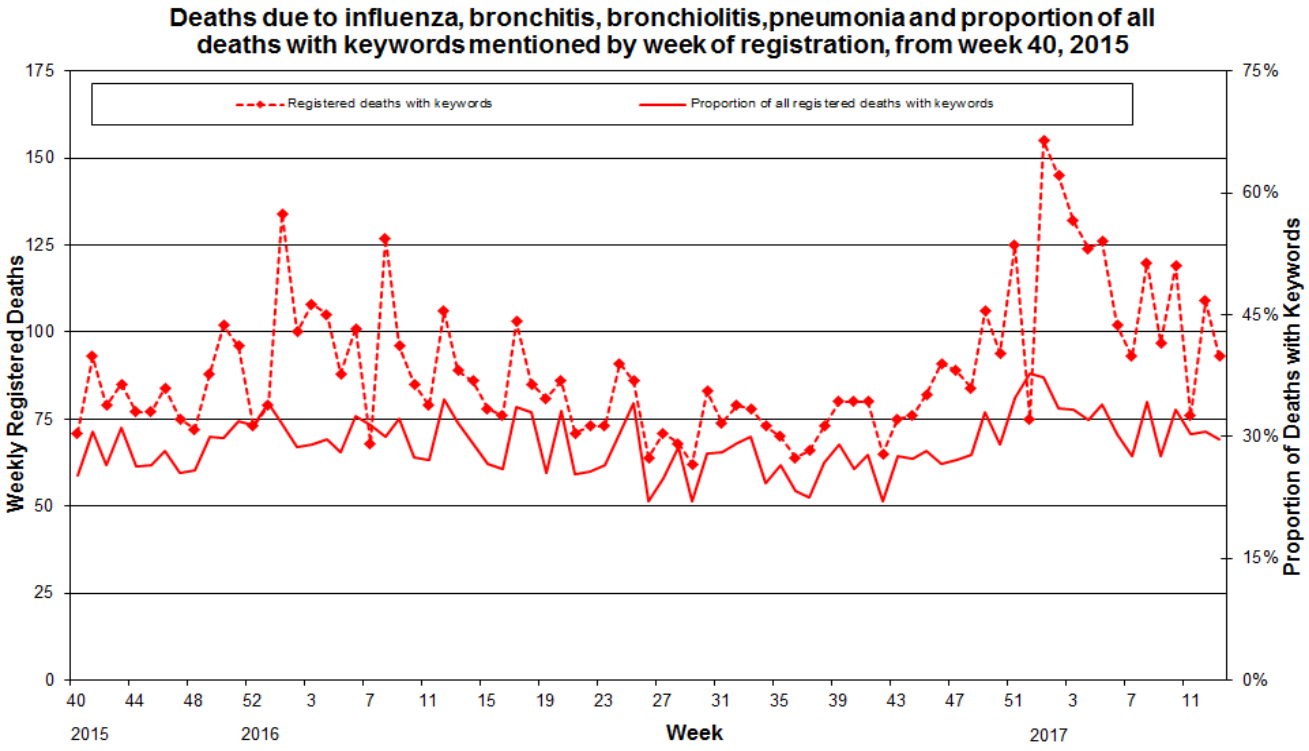
Outbreak Surveillance

During week 13, 2017 there was one confirmed influenza outbreak reported to the PHA, typed as influenza B. There have been a total of 12 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 one 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 13, 2017 the proportion of deaths related to respiratory keywords has decreased to 30% from 31% in week 12. In week 13 there were 314 registered deaths, of which 93 related to specific respiratory infections (Figure 10).

The proportion of deaths attributed to specific respiratory infections is lower at this point in the season than during the same period in 2015/16 (32%) and 2014/15 (33%).

EuroMOMO

EuroMOMO data has now become available.

No significant excess all-cause mortality was reported for week 13 in Northern Ireland. During the 2016-17 influenza season, excess all-cause mortality has been reported in seven weeks (weeks 50, 51, 1, 2, 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 31st 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 31st 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 12, 2017

- Influenza activity across the region continued to decrease with the great majority of countries reporting low intensity.
- The number of influenza virus detections further decreased, but the proportion of influenza virus detections (18%) among sentinel surveillance specimens remained at the same level as the previous week.
- This was the second week during the season that the proportion of type B viruses exceeded the proportion of type A viruses in sentinel detections, as is commonly seen in the second half of an influenza season. 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 that the overall influenza virus-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 94% 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 65 years or older. 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 genetic subclade (3C.2a1), which are in the main antigenically similar to the clade 3C.2a vaccine virus, as mentioned in the WHO recommendations for vaccine composition for the northern hemisphere 2017–18.
- Vaccine effectiveness estimates for all age groups against A(H3N2) illness from Canada (42%), the US (43%) and Europe (38%) are consistent for persons aged 65 years or older.
- 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 virus-infection should be considered for vaccinated and non-vaccinated patients 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 confirmed the conclusions of the ECDC risk assessment on seasonal influenza, updated on 25 January 2017, specifically relating to increased severe outcomes in the elderly due to the prevalence of A(H3N2) viruses, that has put some health care systems under pressure.

http://www.flunewseurope.org/

Worldwide (WHO) and CDC

As at 3rd March 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.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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