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Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 11 (13 March 2017 – 19 March 2017)

Summary

At this point in the 2016/17 influenza season, influenza continues to circulate at low levels across the region with slight fluctuation in community indicators in week 11 (week commencing 13th March 2017).

Weekly Influenza GP Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) have increased in week 11, 2017 to 12.8 per 100,000 population. Rates remain below the 2016/17 pre-epidemic threshold[1]
- OOH GP consultation rates for flu/FLI increased to 4.1 per 100,000 population in week 11, 2017

Microbiological Surveillance

- The proportion of positive influenza detections from both sentinel and non-sentinel sources was 8% in week 11

Respiratory Syncytial Virus (RSV) Activity

- RSV activity has remained stable since week 10 with levels lower than the same period last season

Influenza Confirmed Intensive Care Unit (ICU) Cases and Deaths

- No new cases were reported in ICU with laboratory confirmed influenza in week 11, the total number of cases this season remains at 39
- No deaths were reported in week 11 among ICU patients with laboratory confirmed influenza; there have been a total of seven 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 11 confirmed influenza outbreaks this season

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

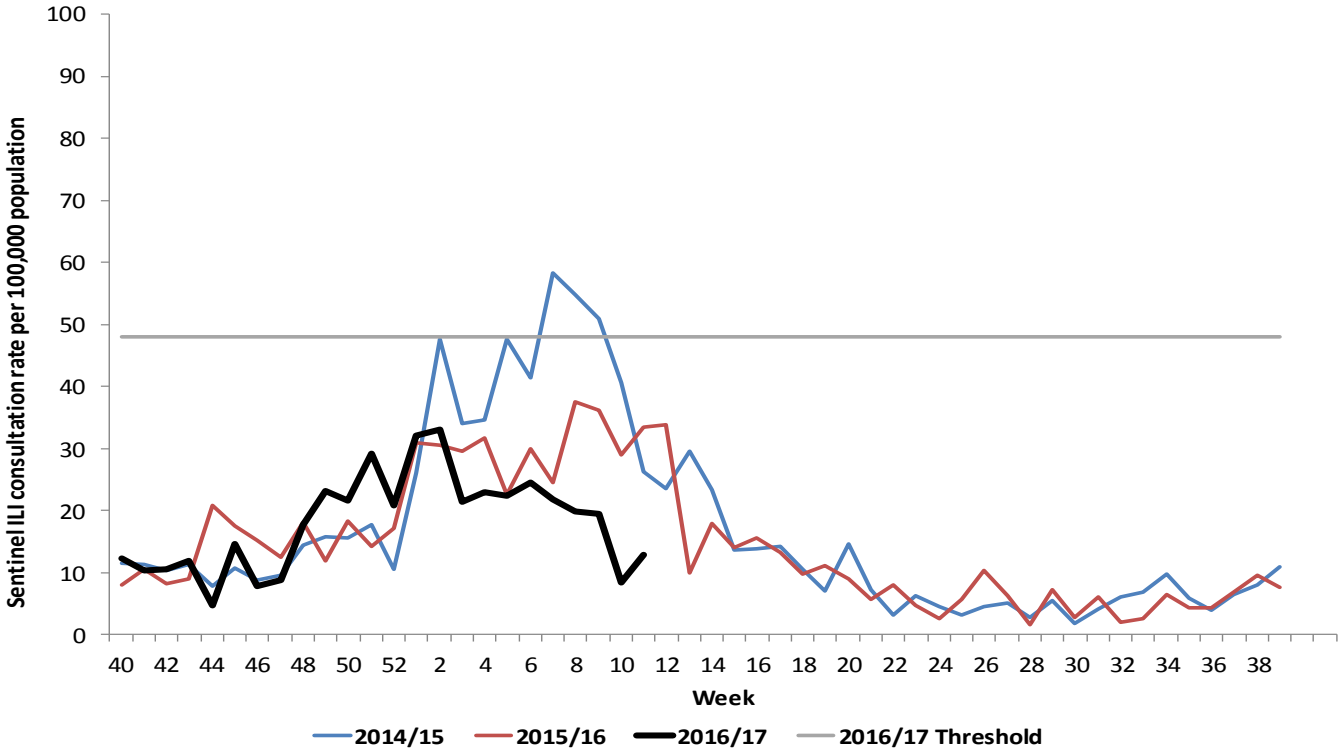


Figure 2. Sentinel GP combined consultation rates for flu/FLI and number of influenza positive detections 2011/12 – 2016/17

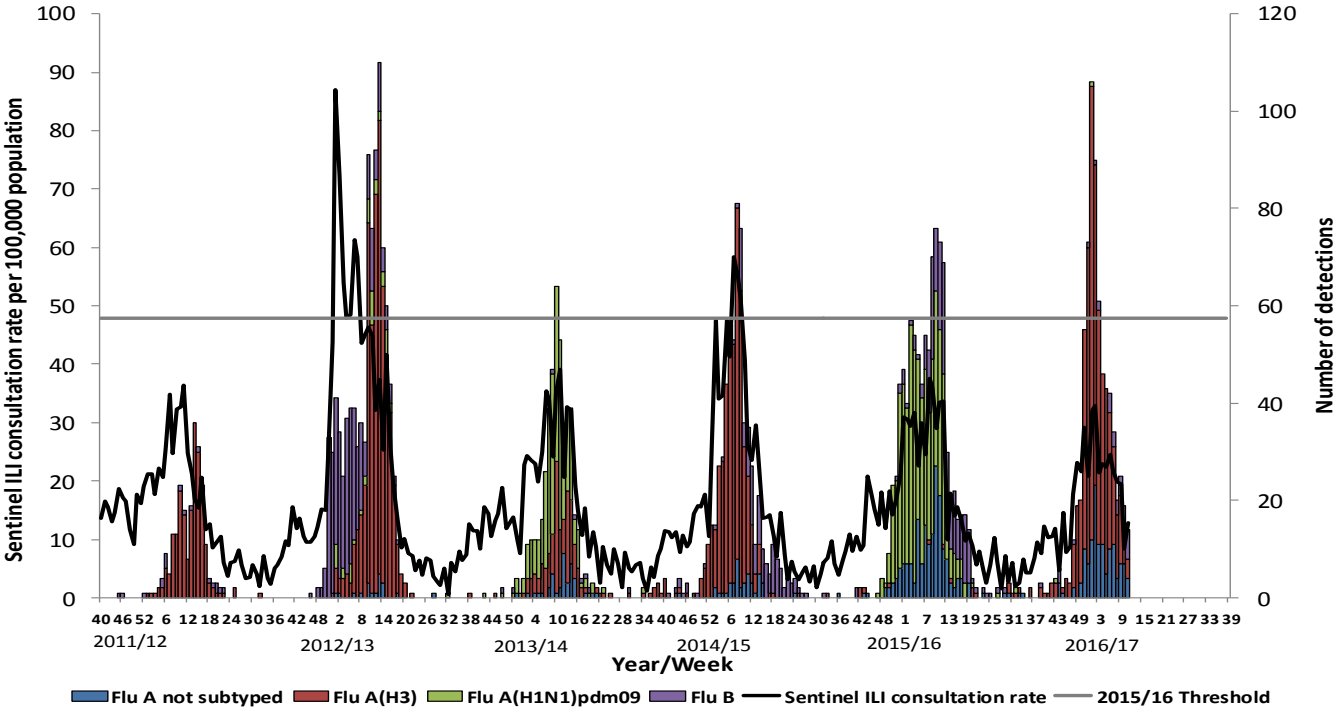
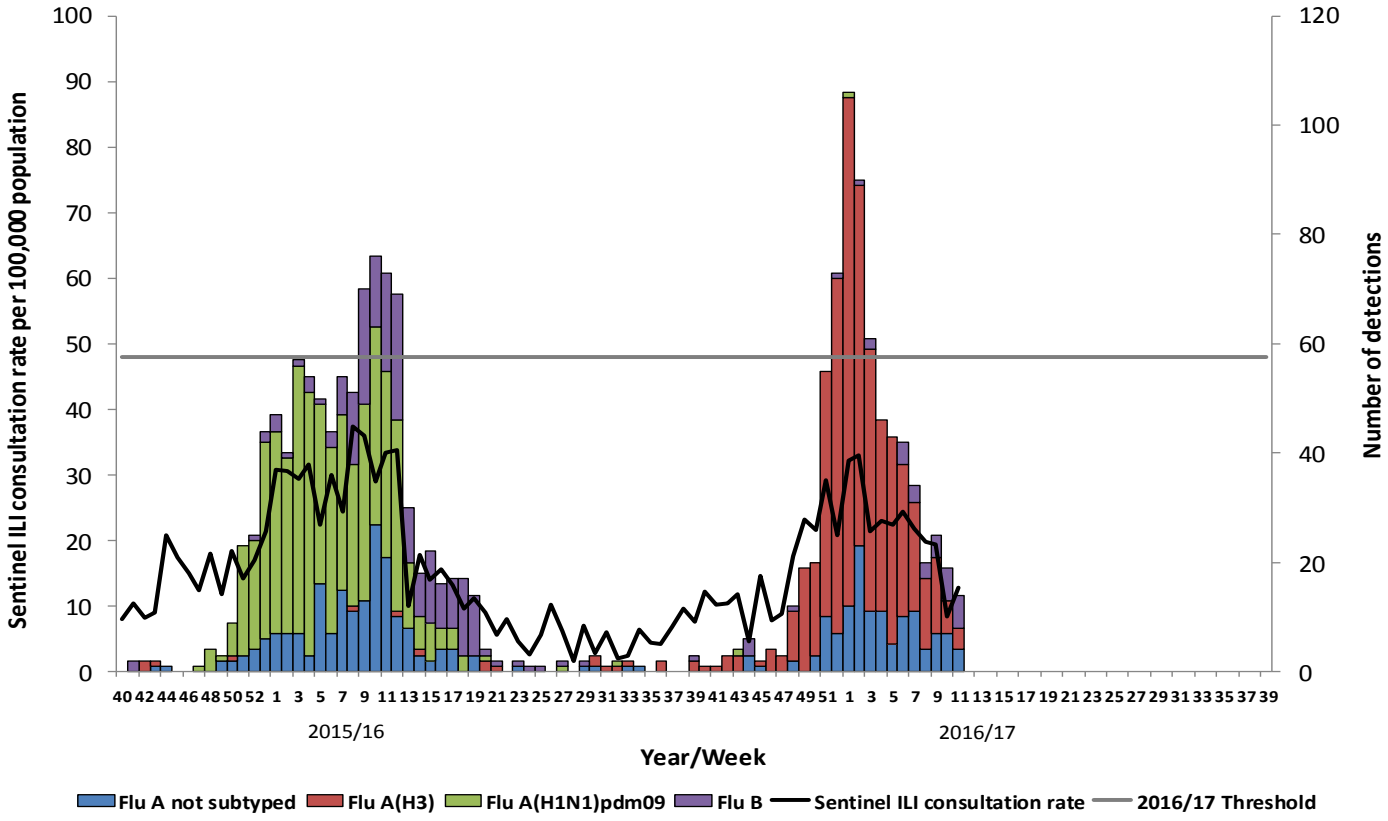


Figure 3. Sentinel GP consultation rates for flu/FLI and number of virology 'flu detections from week 40, 2015

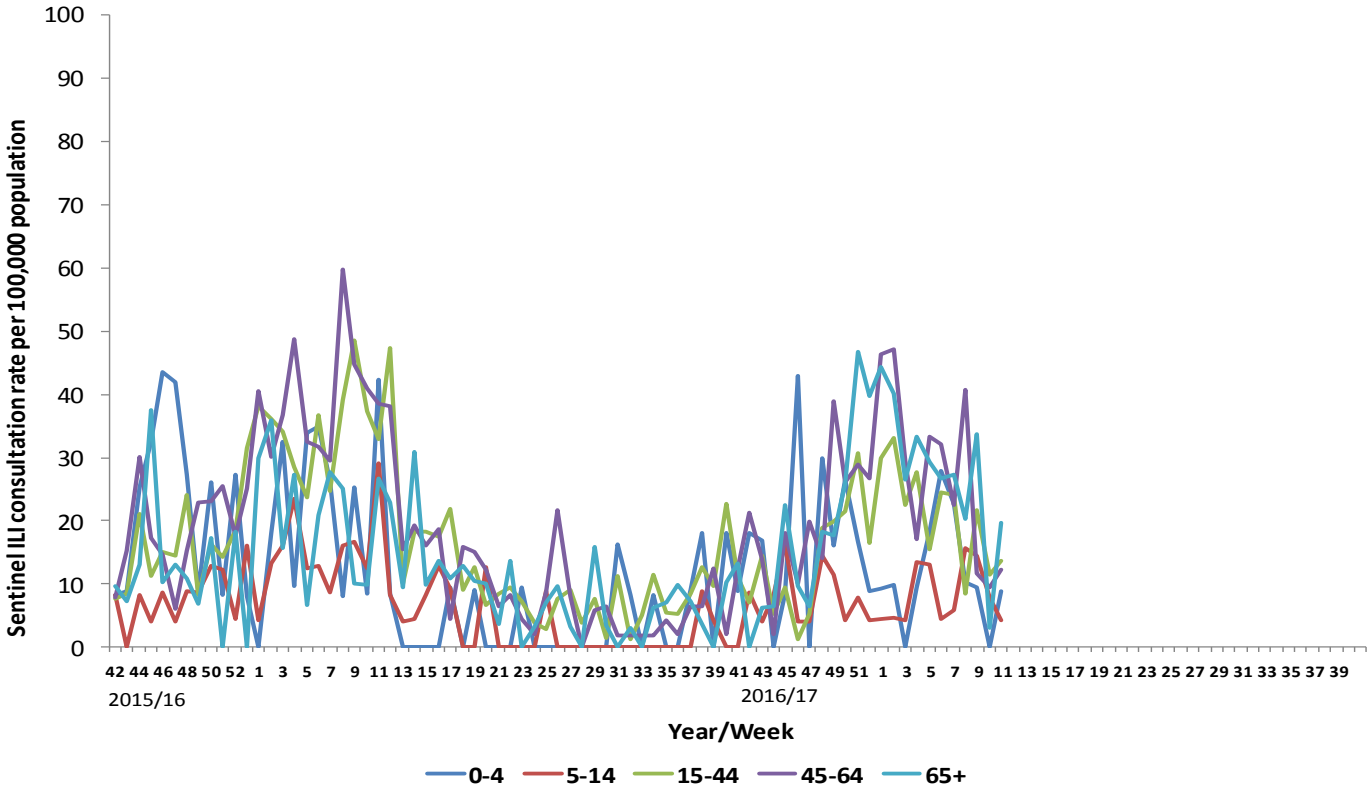


Comment

GP consultation rates have increased in week 11, 2017 to 12.8 per 100,000 population from 8.4 per 100,000 population in week 10. The GP consultation rate in week 11 is lower than the same period in both 2015/16 (33.5 per 100,000 population) and 2014/15 (26.3 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 almost all groups in week 11, with a decrease noted among only the 5-14 years age group.

In week 11, 2017 the highest age-specific rate was noted among those aged 65 years and over (19.7 per 100,000 population), with the lowest rate represented by those aged 5-14 years (4.2 per 100,000 population).

Age-specific consultation rates are lower among almost all age groups in week 11 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

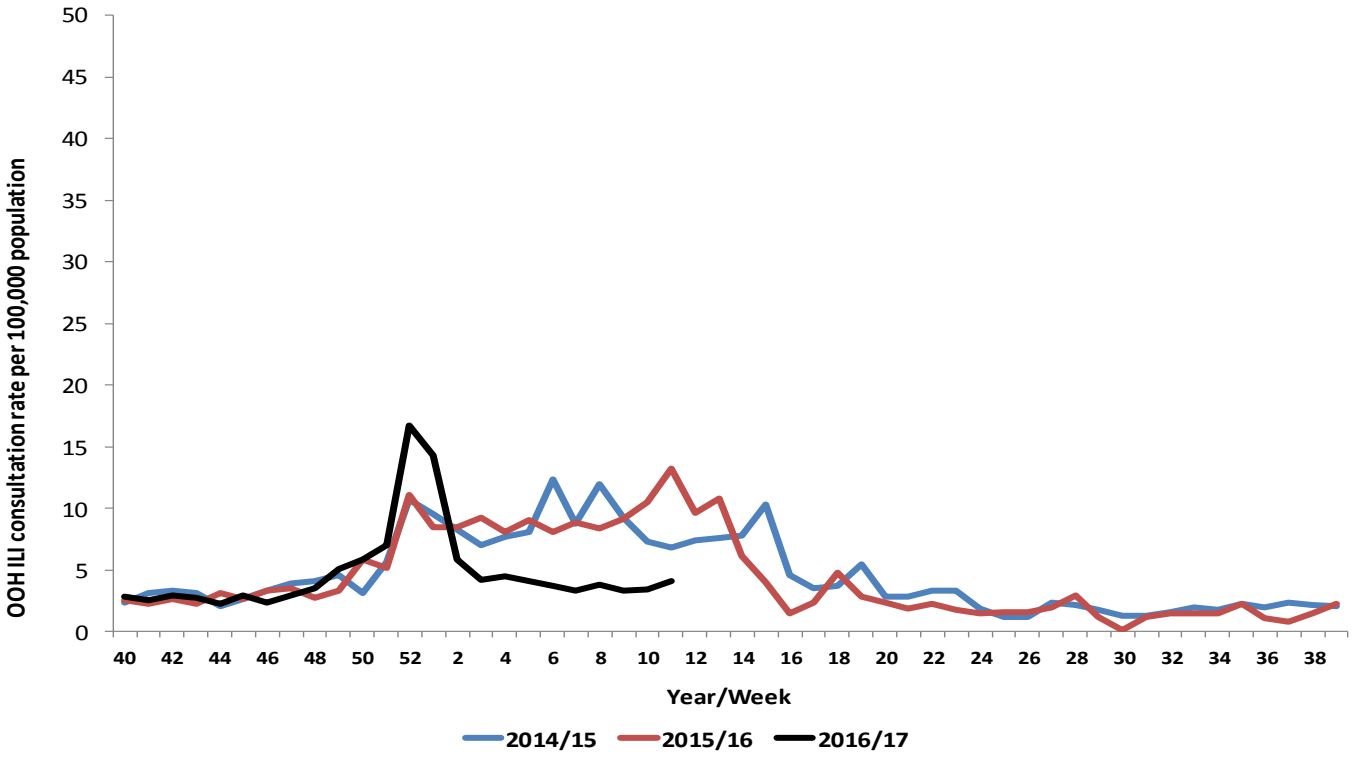
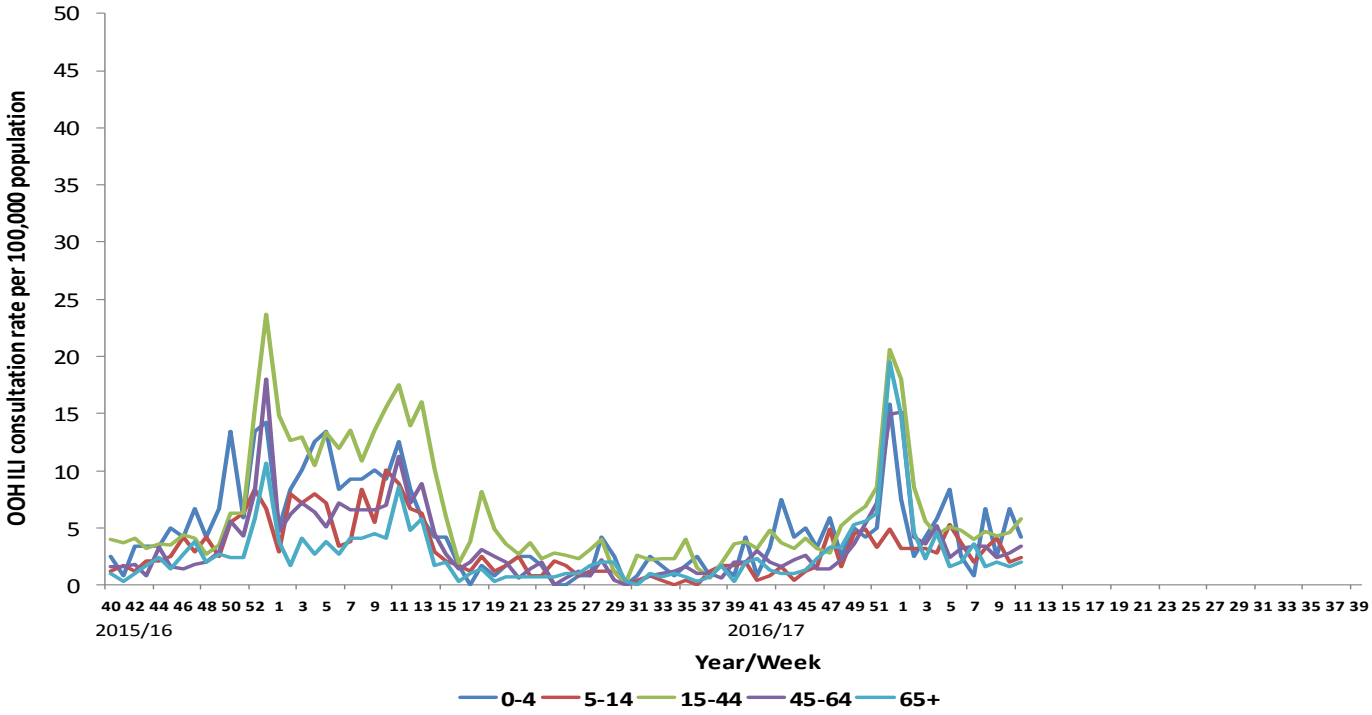


Figure 6. OOH Call rates of flu/FLI by age-group from week 40, 2015



Comment

During week 11, 2017 the OOH GP consultation rate increased to 4.1 per 100,000 population from 3.5 per 100,000 population in week 10. The OOH GP consultation rate in week 11 is lower than the same period in both 2015/16 (13.2 per 100,000 population) and 2014/15 (6.8 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 11, 2017.

During week 11, OOH flu/FLI rates have decreased among the 0-4 years age group, while rates increased slightly among those aged 15-44 years. Rates among all other age groups remained relatively stable. The highest age-specific OOH flu/FLI rate in week 11 was noted among the 15-44 years age group (5.8 per 100,000 population) while those aged 65 years and over represented the lowest rate (2.0 per 100,000 population) (Figure 6).

Age-specific rates in week 11 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 11, 2016/17								
Source	Specimens Tested	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	6	1	0	0	1	0	2	33%
Non-sentinel	179	3	0	4	5	1	12	7%
Total	185	4	0	4	6	1	14	8%

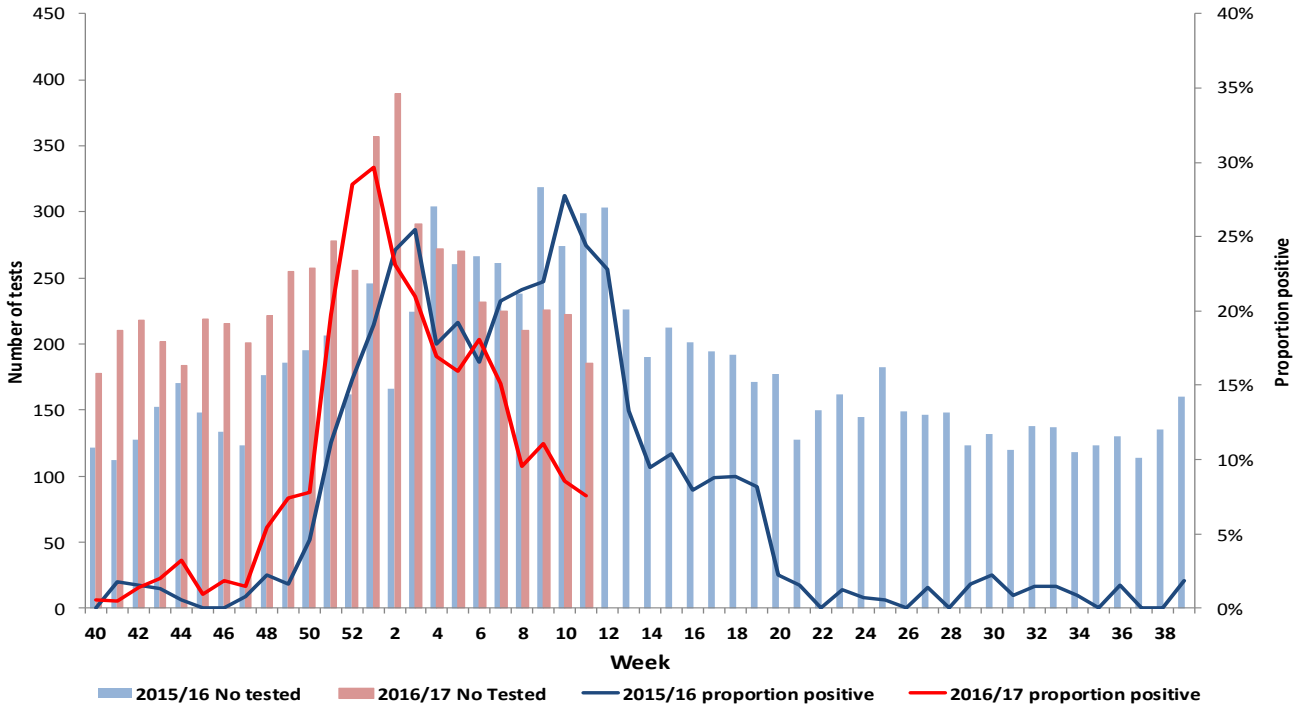
Table 2. Cumulative virus activity from all sources by age group, Week 40 - 11, 2016/17						
	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
0-4	17	0	6	2	25	449
5-14	12	0	3	1	16	16
15-64	233	1	54	16	304	98
65+	274	1	68	15	358	138
Unknown	0	0	0	0	0	0
All ages	536	2	131	34	703	701

Table 3. Cumulative virus activity by age group and source, Week 40 - Week 11, 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	17	0	6	2	25	448
5-14	4	0	0	0	4	0	8	0	3	1	12	16
15-64	29	1	5	3	38	8	204	0	49	13	266	90
65+	5	1	1	1	8	3	269	0	67	14	350	135
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
All ages	38	2	6	4	50	12	498	0	125	30	653	689

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

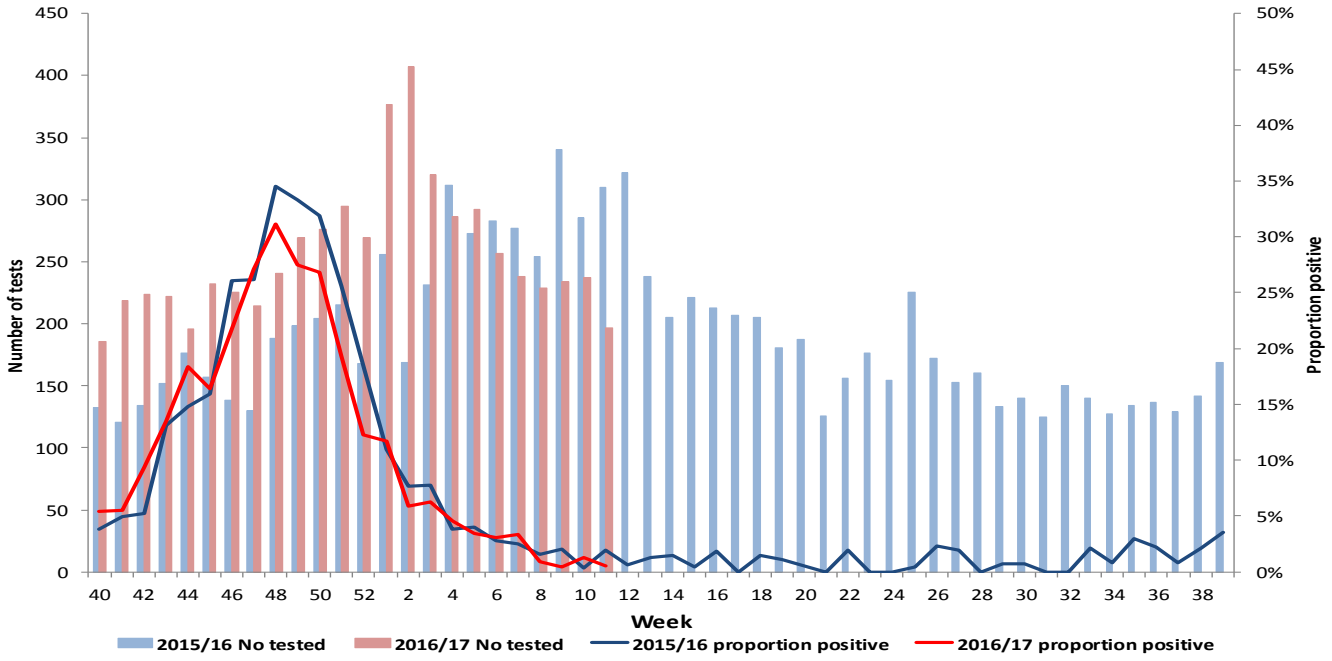
During week 11, 2017 there were 185 specimens submitted for virological testing. There were 14 detections of influenza in total (positivity rate of 8%) (Figure 7). There were 4 detections of influenza A(H3), 4 detections of influenza A (typing awaited) and 6 detections of influenza B. There were no detections of influenza A(H1N1)pdm09.

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

This season to date there have been a total of 703 detections of influenza, of which 536 have been typed as influenza A(H3). There have been 34 detections of influenza B, 131 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

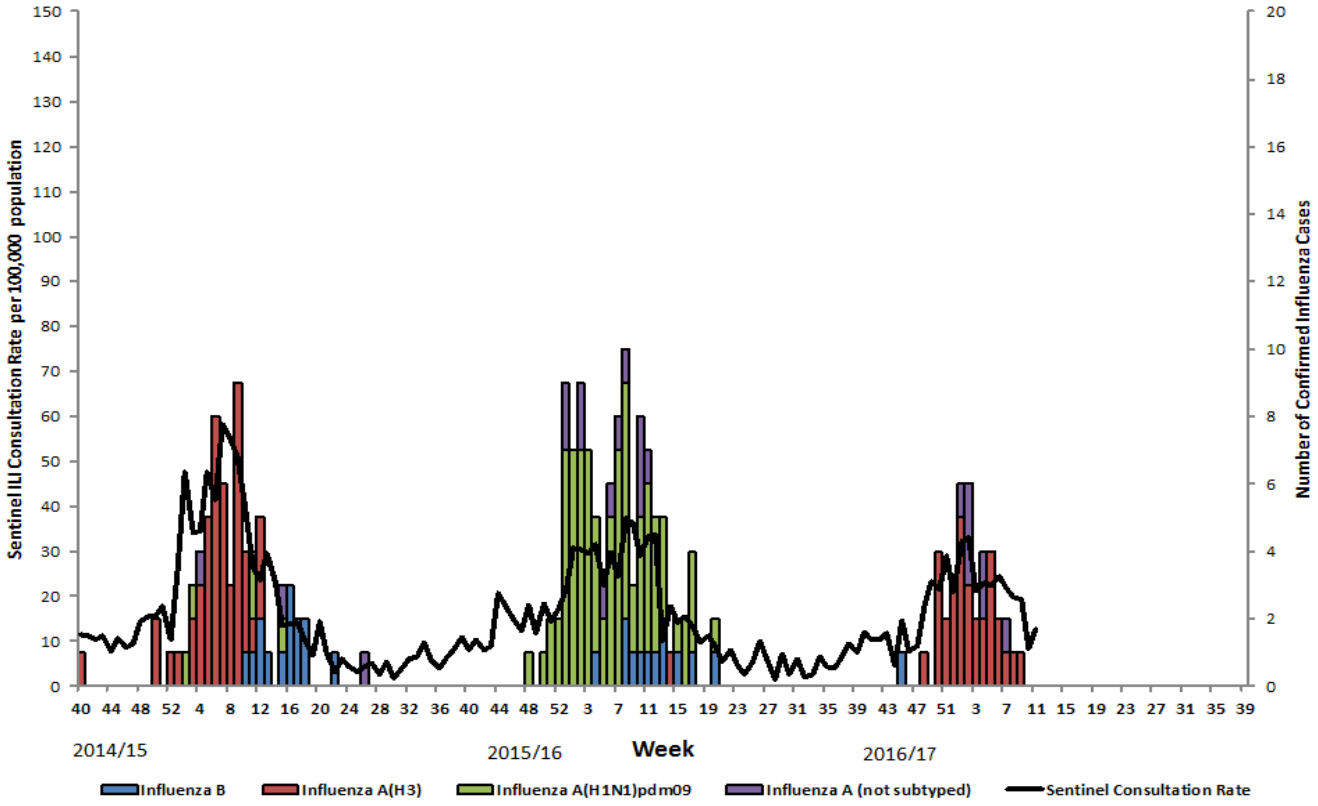


Comment

During week 11, 2017 there was one positive detection of RSV, giving a positivity rate of less than 1%; lower than the same period in 2015/16 (2%). To date there have been a total of 701 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 11, no confirmed cases of influenza in ICU were reported to the PHA. There were also no deaths reported in ICU patients with laboratory confirmed influenza.

There have been 39 confirmed cases of influenza in ICU reported this season to date, of which 31 have been typed as influenza A (H3), seven as influenza A (typing awaited) and one influenza B. There have been seven deaths reported in confirmed cases of influenza in ICU this season to date.

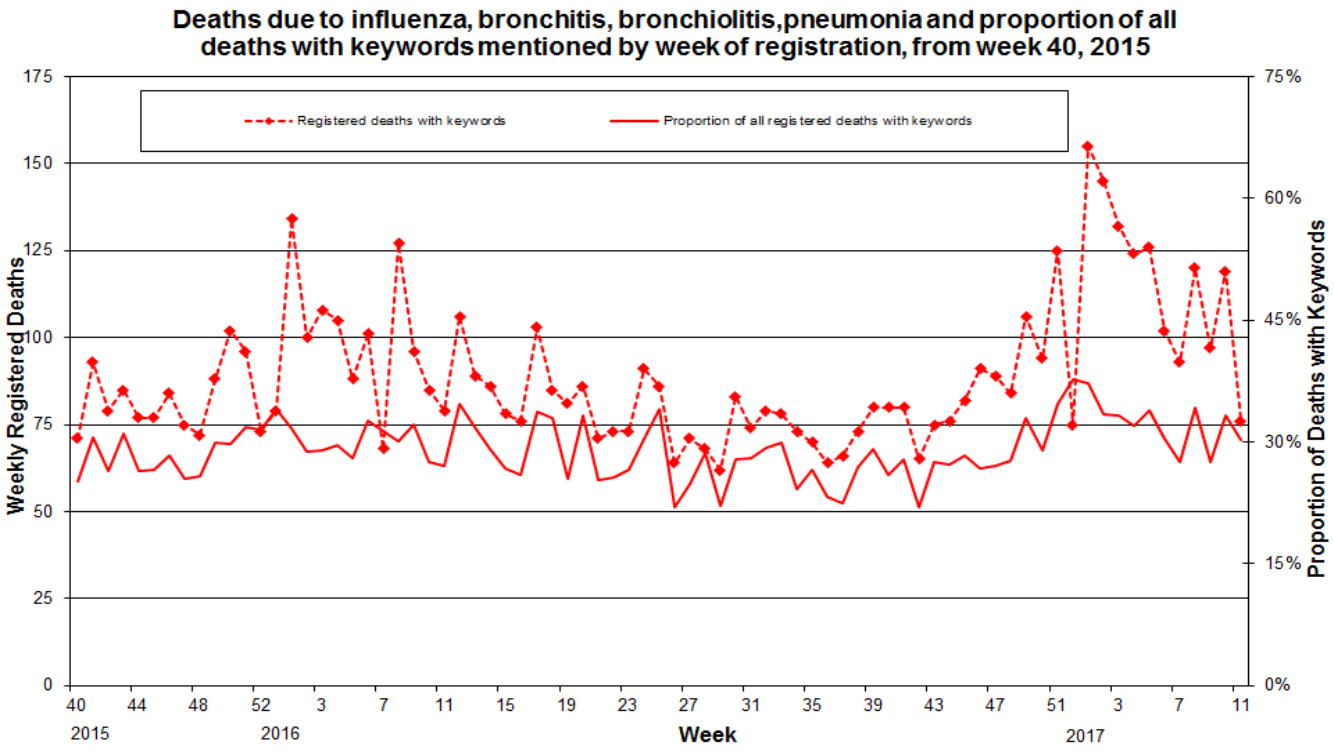
Outbreak Surveillance

During week 11, 2017 there were no confirmed influenza outbreaks reported to the PHA. There have been a total of 11 confirmed influenza outbreaks reported this season to date, of which eight have been confirmed as influenza A(H3) and three as influenza A (typing awaited).

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 11, 2017 the proportion of deaths related to respiratory keywords has decreased to 30% from 33% in week 10. In week 11 there were 251 registered deaths, of which 76 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 2015/16 (27%) but lower than in 2014/15 (34%).

EuroMOMO

EuroMOMO data will be available later in the season.

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 10, 2017

- Influenza activity across the region continued to decrease with the great majority of countries reporting low intensity.
- The proportion of influenza virus detections among sentinel surveillance specimens decreased to 21% from 27% in the previous week.
- The great majority of detected and subtyped influenza viruses were A(H3N2) and while the proportion of type B viruses increased, as commonly seen in the second half of an influenza season, their numbers remained low.
- The number of reported hospitalized laboratory-confirmed influenza cases from ICU and other wards, primarily in people aged 65 years or older, as well as severe acute respiratory infections continued to decrease.

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 antigenically in general similar to the clade 3C.2a vaccine virus as mentioned in the WHO recommendations for vaccine composition for the northern hemisphere 2017–18.
- Recent vaccine effectiveness estimates for all age groups against A(H3N2) illness from Canada (42%), the US (43%) and Europe (38%) are consistent with estimates from Stockholm county (28%) and Finland (32%) earlier in the season.
- 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 progression of the season has confirmed the conclusions of the ECDC risk assessment on seasonal influenza updated on 25 January 2017, namely expected severe outcomes in the elderly related to the prevalence of A(H3N2) viruses, putting some health care systems under pressure.

http://www.flunewseurope.org/

Worldwide (WHO) and CDC

As at 20th March 2017:

Influenza activity in the temperate zone of the northern hemisphere appeared to decrease. Influenza activity in many countries especially in East Asia and Europe already peaked. Worldwide, influenza A(H3N2) virus was predominant. In South Asia influenza activity with mainly H1N1 has been increasing. The majority of influenza viruses characterized so far were similar antigenically to the reference viruses contained in vaccines for use in the 2016-2017 northern hemisphere influenza season. Nearly all tested viruses collected recently for antiviral sensitivity were susceptible to the neuraminidase inhibitor antiviral medications.

- In North America, overall influenza and other respiratory virus activity decreased in Canada and United States of America. Influenza activity slightly increased in Mexico with influenza A(H1N1)pdm09 virus predominating.
- In Europe, influenza activity appeared to decrease with influenza A (H3N2) and influenza B viruses predominant in the region. Detections of influenza B virus increased in the recent weeks. Persons aged over 65 years continued to be reported as most frequently associated with severe disease from influenza infection.
- In East Asia, influenza activity continued to decrease with influenza A(H3N2) virus predominant.
- In Western Asia, influenza activity continued to decrease with influenza A(H3N2) and B viruses co-circulating in the region.
- In Southern Asia, influenza activity continued to increase in India, the 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 Tunisia, with influenza A(H3N2) and influenza B virus co-circulating.
- In West Africa, influenza activity continued to be reported in Ghana and Mali, with influenza B being the main virus detected. In Eastern Africa, influenza activity was reported in Ethiopia and Mauritius with influenza A(H3N2) virus predominant.
- 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 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 94 countries, areas or territories reported data to FluNet for the time period from 20 February 2017 to 05 March 2017 (data as of 2017-03-17 09:50:51 UTC).The WHO GISRS laboratories tested more than 156226 specimens during that time period. 34376 were positive for influenza viruses, of which 26581 (77.3%) were typed as influenza A and 7795 (22.7%) as influenza B. Of the sub-typed influenza A viruses, 651 (8.1%) were influenza A(H1N1)pdm09 and 7392 (91.9%) were influenza A(H3N2). Of the characterized B viruses, 614 (71.4%) belonged to the B-Yamagata lineage and 246 (28.6%) to the B-Victoria lineage.
- The vaccine recommendation for the 2017-2018 northern hemisphere influenza season was made and can be consulted at this link below: http://www.who.int/influenza/vaccines/virus/recommendations/2017_18_north/en/

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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