

## Influenza Weekly Surveillance Bulletin

Northern Ireland, Weeks 19 - 20 (8<sup>th</sup> May 2017 – 21<sup>st</sup> May 2017)

*Please note that this is the last bulletin of the 2016-17 influenza season; the PHA would like to extend their thanks to all who have collaborated and contributed throughout the influenza season.*

### Summary

At this point in the 2016/17 influenza season, influenza continues to circulate across the region, with the number of lab detections remaining stable from the previous two-week period. In-hours Flu/FLI consultations have fluctuated while OOH consultations decreased. Influenza B remains the predominant strain in week 20 (week commencing 15<sup>th</sup> May 2017).

### Weekly Influenza GP Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) have fluctuated over the two-week period, decreasing to 6.8 per 100,000 population in week 19 then increasing to 10.5 per 100,000 population in week 20, 2017. Rates remain below the 2016/17 pre-epidemic threshold<sup>1</sup>
- OOH GP consultation rates for flu/FLI decreased to 3.0 per 100,000 population in week 19 and remained relatively stable at 2.9 per 100,000 population in week 20, 2017

### Microbiological Surveillance

- The proportion of positive influenza detections from both sentinel and non-sentinel sources was 12% in weeks 19-20

### Respiratory Syncytial Virus (RSV) Activity

- RSV activity has remained stable in weeks 19 and 20 with levels similar to the same period last season

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

- Two new cases were reported in ICU with laboratory confirmed influenza in weeks 19 - 20, there have been a total of 50 cases this season
- Three deaths were reported in weeks 19-20 among ICU patients with laboratory confirmed influenza; there have been a total of 11 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 15 confirmed influenza outbreaks this season

### EuroMOMO

- No excess all-cause mortality was reported through the EuroMOMO algorithm for weeks 19-20, 2017

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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)

## Influenza Vaccine Uptake in Northern Ireland

- To 31<sup>st</sup> March 2017; uptake was 71.9% among those aged 65 years and over, 57.1% among those under 65 in an at risk group, 52.6% among 2-4 year olds and 78.3% among primary school children

## 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

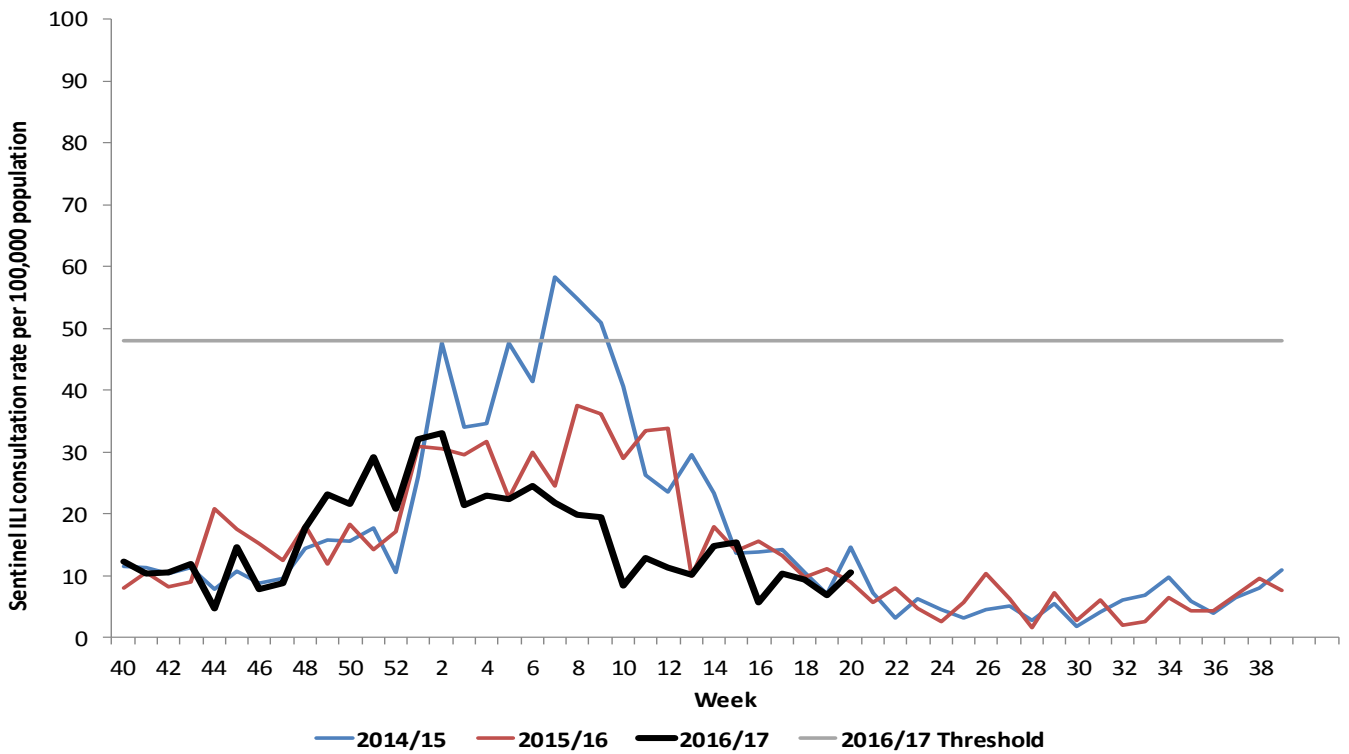
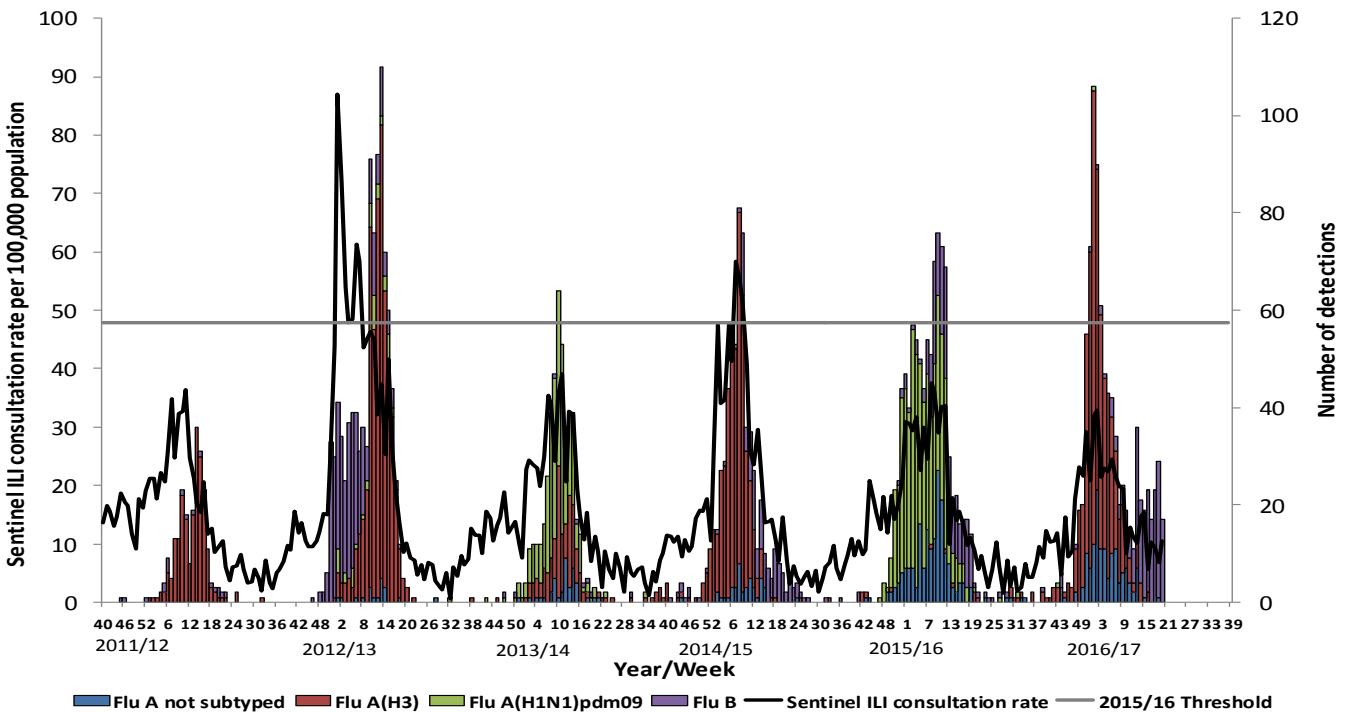
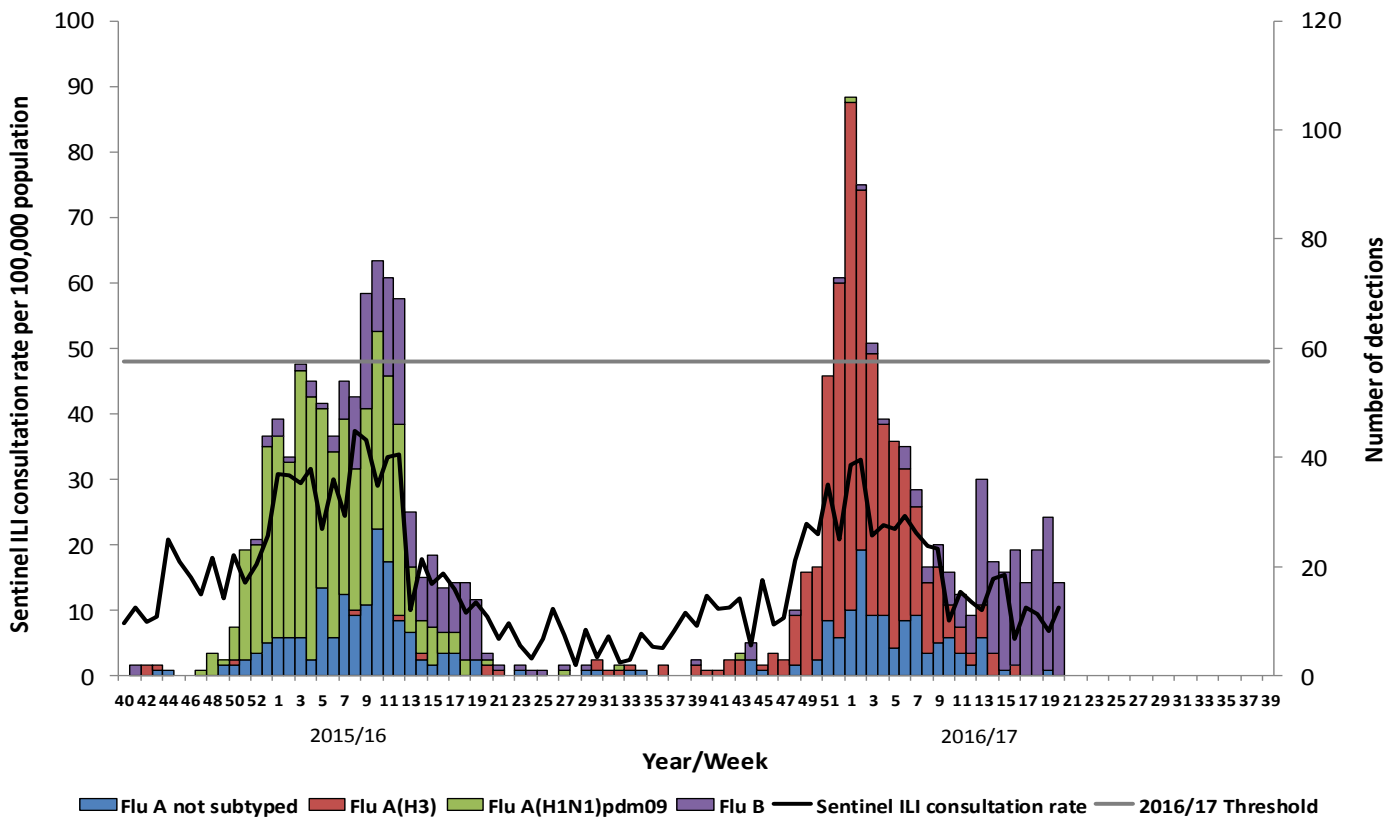


Figure 2. Sentinel GP combined consultation rates for flu/FLI and number of influenza positive detections 2011/12 – 2016/17



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



### Comment

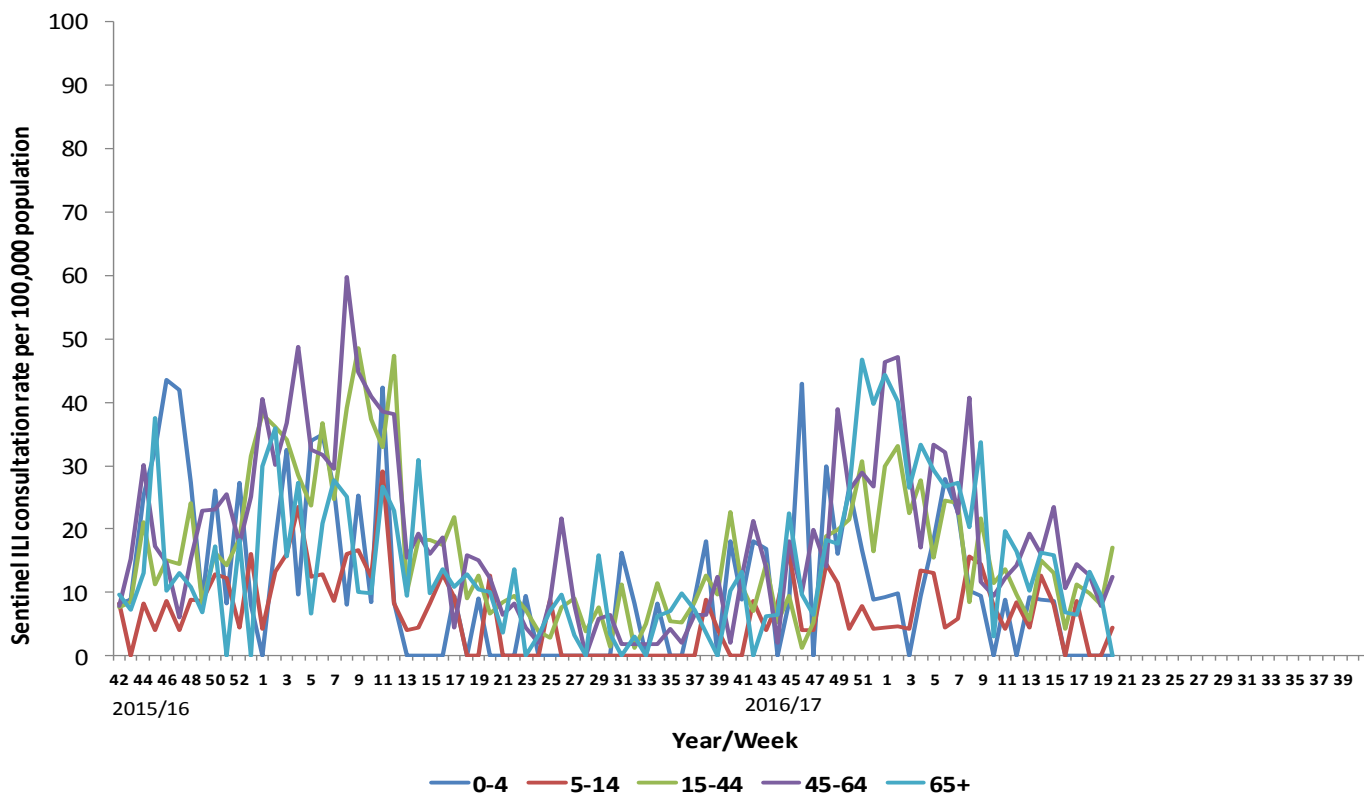
GP consultation rates have fluctuated across weeks 19 and 20, 2017. In week 19, rates decreased to 6.8 per 100,000 population from 9.4 per 100,000 population in week 18, then increased to 10.5 per 100,000 population in week 20. The GP consultation rate in week 20 is slightly higher than the same period in 2015/16 (9.0 per 100,000 population) but lower than in 2014/15 (14.5 per 100,000 population).

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

The number of positive influenza laboratory detections in weeks 19 and 20 has remained relatively stable from weeks 17 and 18, 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 fluctuated among most age groups across weeks 19 and 20, 2017.

In weeks 19 and 20, 2017 the highest age-specific rates were noted among those aged 65 years and over (9.4 per 100,000 population in week 19) and 15-44 years (17.1 per 100,000 population in week 20). The lowest rate in both weeks was represented by those aged 0-4 years (zero consultations in both weeks).

Age-specific consultation rates in week 20 are similar to or lower than almost all age groups during 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

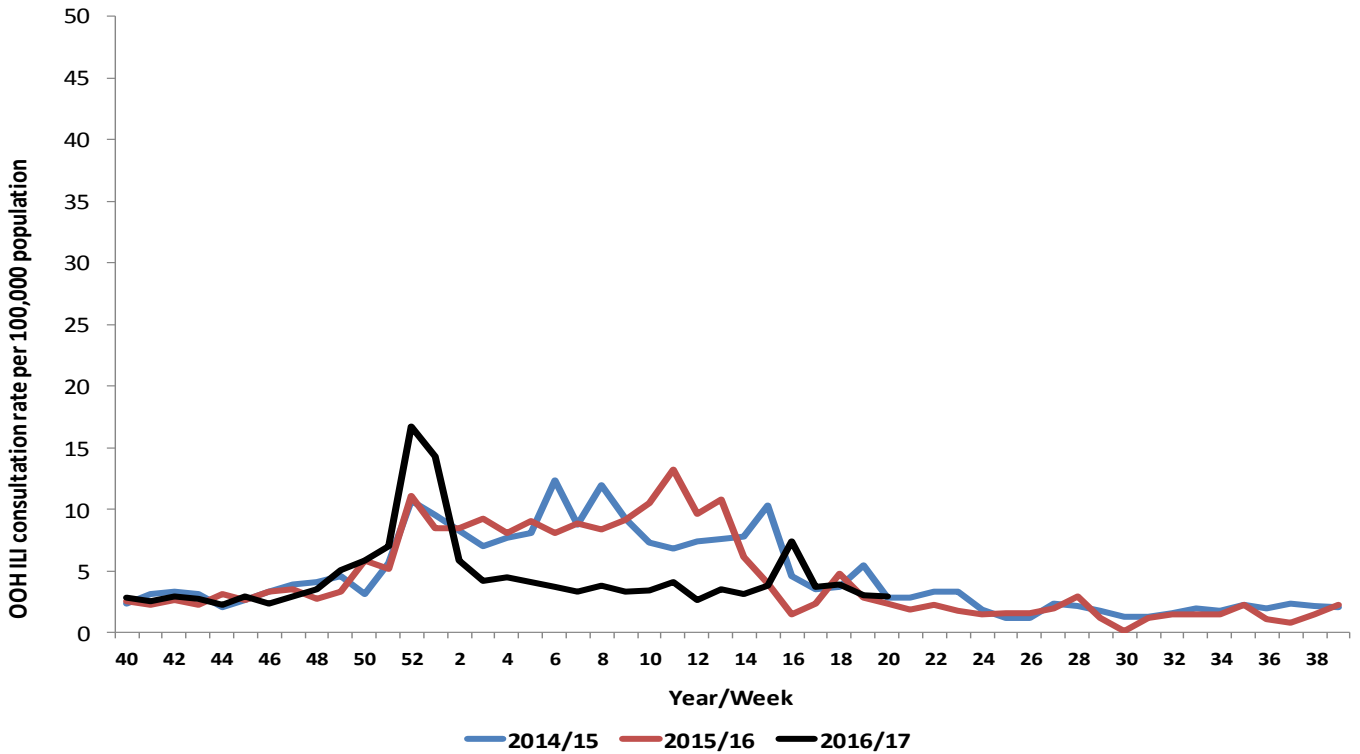
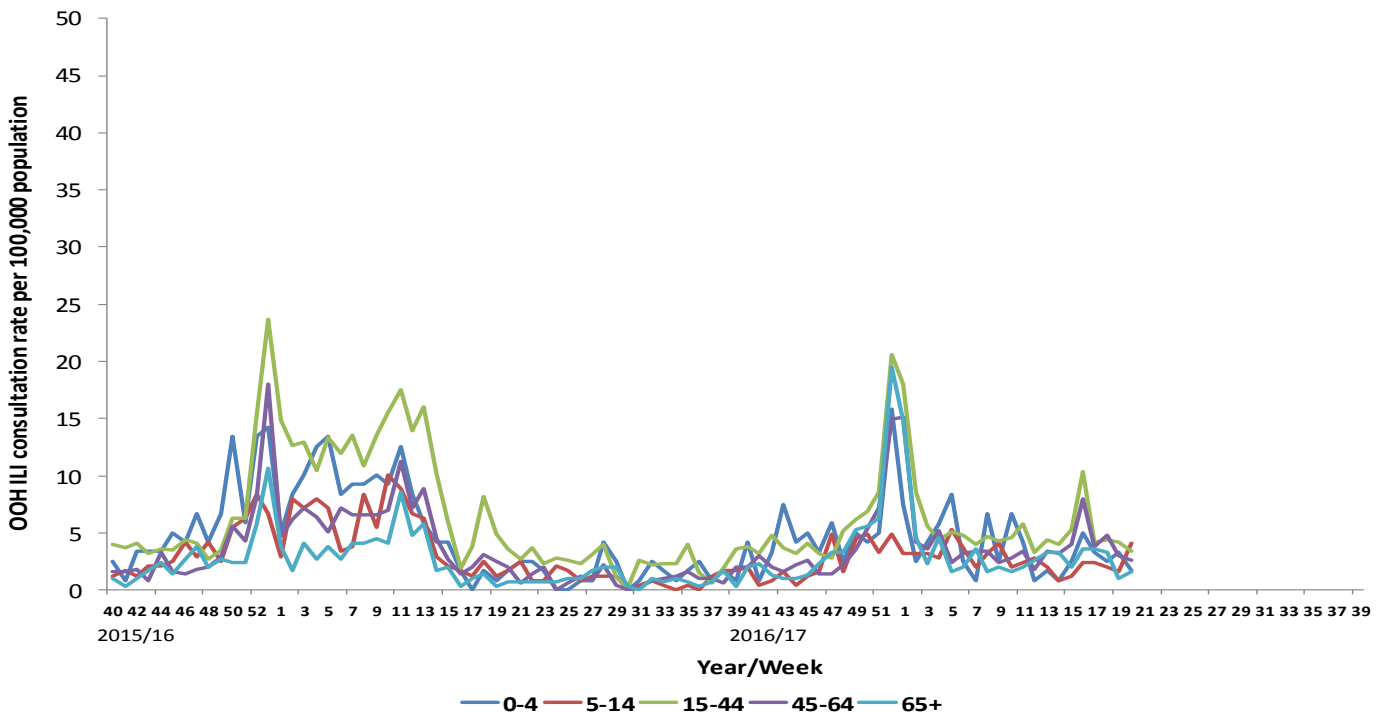


Figure 6. OOH Call rates of flu/FLI by age-group from week 40, 2015



### Comment

During week 19, 2017 the OOH GP consultation rate decreased to 3.0 per 100,000 population from 3.9 per 100,000 population in week 18, and remained relatively stable at 2.9 per 100,000

population in week 20. The OOH GP consultation rate in week 20 is slightly higher than the same period in 2015/16 (2.4 per 100,000 population) but similar to 2014/15 (2.8 per 100,000 population) (Figure 5).

The proportion of calls related to flu remained relatively stable across the two-week period and still represents less than 1% of total calls to the OOH service in both weeks 19 and 20, 2017.

During weeks 19 and 20, OOH flu/FLI rates have decreased among the 15-44 and 45-64 years age groups, with slight fluctuations noted among all other age groups. The highest age-specific OOH flu/FLI rate in week 20 was noted among the 5-14 years age group (4.1 per 100,000 population) while those aged 0-4 and 65 years and over jointly represented the lowest rate (1.7 per 100,000 population) (Figure 6).

Age-specific rates in week 20 are slightly higher among most age groups than those noted during the same period in 2015/16 and higher than some age groups in 2014/15.

## Virology Data

**Table 1. Virus activity in Northern Ireland by source, Week 19 - 20, 2016/17**

Source	Specimens Tested	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	5	0	0	0	2	0	2	40%
Non-sentinel	382	0	0	1	43	1	44	12%
<b>Total</b>	<b>387</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>45</b>	<b>1</b>	<b>46</b>	<b>12%</b>

**Table 2. Cumulative virus activity from all sources by age group, Week 40 - 20, 2016/17**

	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
0-4	20	0	6	8	34	457
5-14	12	0	3	4	19	16
15-64	237	1	56	91	385	100
65+	282	1	76	103	462	142
Unknown	0	0	0	0	0	0
<b>All ages</b>	<b>551</b>	<b>2</b>	<b>141</b>	<b>206</b>	<b>900</b>	<b>715</b>

**Table 3. Cumulative virus activity by age group and source, Week 40 - Week 20, 2016/17**

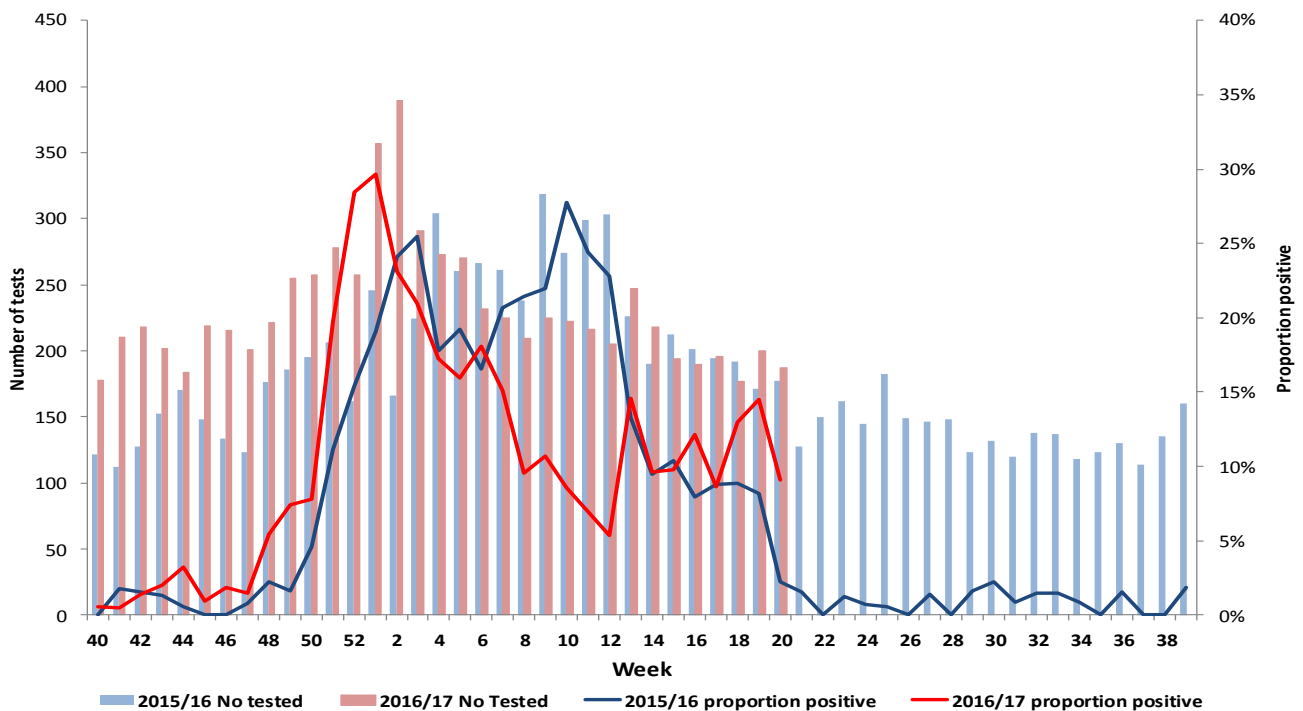
	Sentinel						Non-sentinel					
	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
0-4	0	0	0	0	0	1	20	0	6	8	34	456
5-14	4	0	0	0	4	0	8	0	3	4	15	16
15-64	29	1	5	17	52	8	208	0	51	74	333	92
65+	5	1	2	5	13	3	277	0	74	98	449	139
Unknown	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>22</b>	<b>69</b>	<b>12</b>	<b>513</b>	<b>0</b>	<b>134</b>	<b>184</b>	<b>831</b>	<b>703</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**

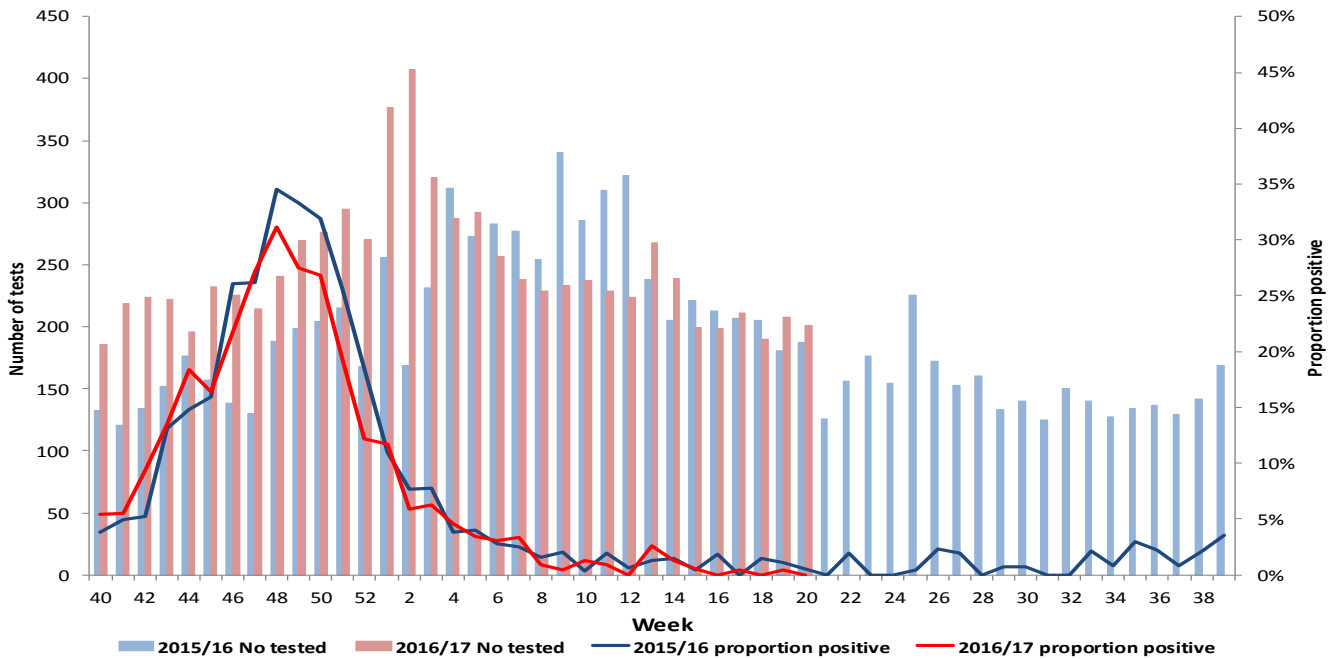
During weeks 19 and 20, 2017 there were 387 specimens submitted for virological testing. There were 46 detections of influenza in total (positivity rate of 12%), of which 45 were typed as influenza B (Figure 7) and one as influenza A (typing awaited). There were no detections of influenza A(H3) or influenza A(H1N1)pdm09.

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 900 detections of influenza, of which 551 have been typed as influenza A(H3). There have been 206 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**

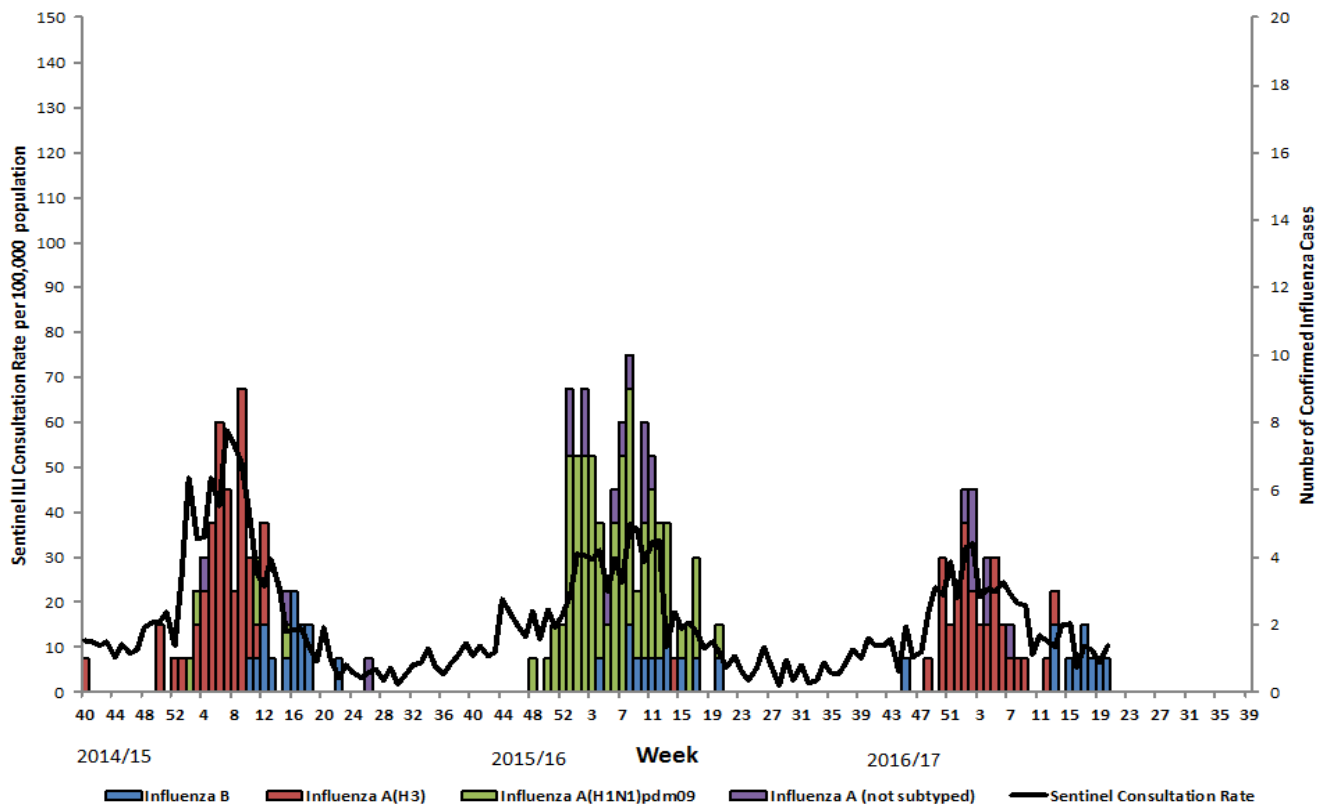


## Comment

During weeks 19 and 20, 2017 there was one positive detection of RSV giving a positivity rate of less than 1%, similar to the same period in 2015/16 (less than 1%). To date there have been a total of 715 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 weeks 19 and 20, two confirmed cases of influenza in ICU were reported to the PHA. There were three deaths reported in ICU patients with laboratory confirmed influenza.

There have been 50 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 10 influenza B. There have been 11 deaths reported in confirmed cases of influenza in ICU this season to date.

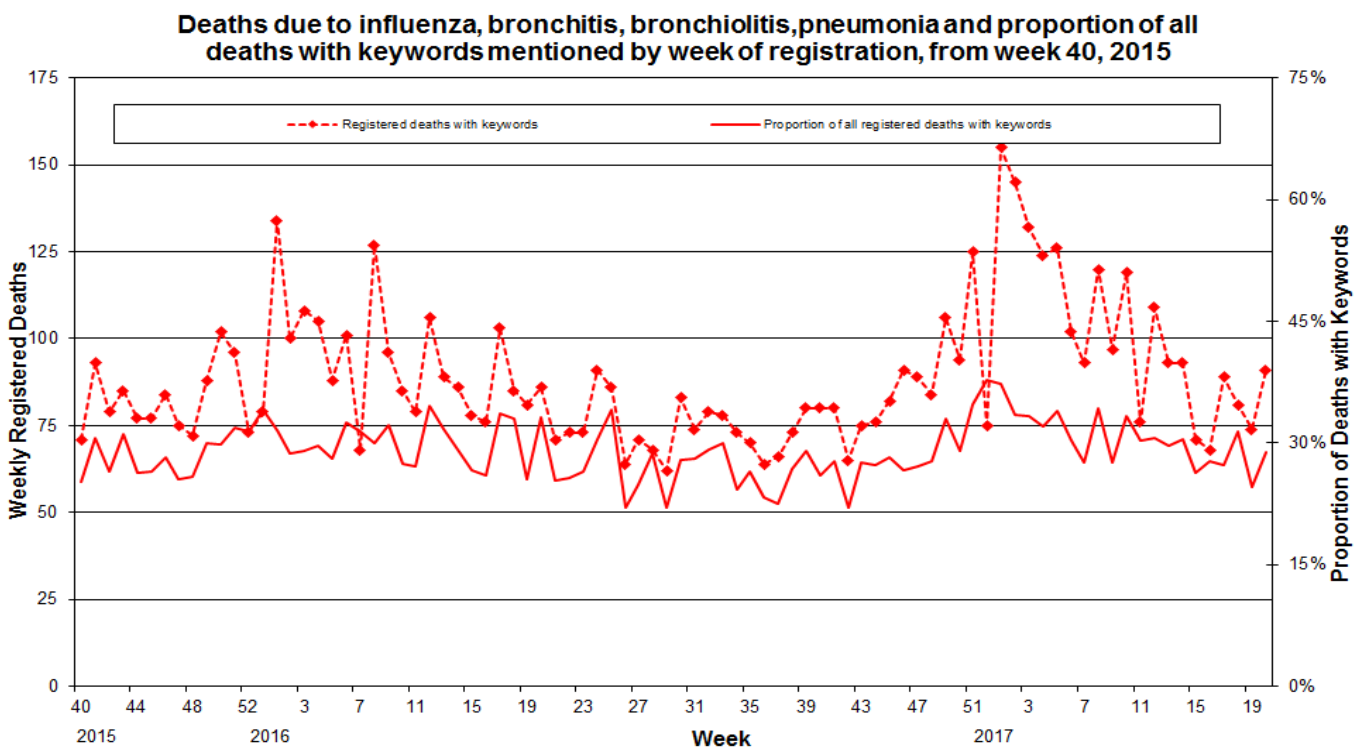
### Outbreak Surveillance

During weeks 19 and 20, 2017 there were no confirmed influenza outbreaks reported to the PHA. There have been a total of 15 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 four 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 19, 2017 the proportion of deaths related to respiratory keywords decreased to 25% from 31% in week 18, and then increased to 29% in week 20. In week 20 there were 315 registered deaths, of which 91 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 (33%) but higher than in 2014/15 (26%).

## EuroMOMO

No significant excess all-cause mortality was reported for weeks 19 and 20 in Northern Ireland. During the 2016-17 influenza season, excess all-cause mortality has been reported in seven weeks (weeks 50, 51, 1, 2, 3, 5 and 7).

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> March 2017, provisional data suggested that vaccine uptake for those aged 65 years and over was 71.9%, lower than the same period in the 2015/16 (74.4%); while 57.1% of those under 65 and in an at risk group had received the vaccine, lower than in 2015/16 when 59.9% 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> March 2017, provisional data suggested that vaccine uptake among 2-4 year old children was 52.6%, higher than in 2015/16 when 50.5% had received the vaccine during the same period. Provisional data suggests uptake among children in primary school was 78.3%, also higher than in 2015/16 when 76.8% had received the vaccine during the same period.

## International Summary

### Europe

#### Week 19, 2017

- Influenza activity has returned to out-of-season levels in most countries. All of 35 reporting countries have reported low intensity of influenza.
- The proportion of sentinel specimens testing positive for influenza viruses was 6%, and lower than in the previous week (12%). Influenza viruses were detected in 7 countries only and numbers were low.
- All sentinel detections were type B viruses and their numbers continued to decline since week 15/2017.

#### Season Overview:

- After an earlier than usual (week 46/2016), influenza activity peaked between weeks 52/2016 and 4/2017. Since week 12/2017, most countries have reported decreased influenza activity with the proportion of sentinel detections returning to the epidemic threshold value (10%) in week 17.
- From week 40/2016 through week 10/2017, influenza A viruses predominated, accounting for 90% of all sentinel detections. Of those subtyped, 99% were A(H3N2). Since week 11/2017, influenza B viruses have predominated, although absolute numbers of type B detections have remained low and been decreasing since week 15/2017.
- Confirmed cases of influenza type A virus 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 20 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 this season, one A(H3N2) virus has shown reduced susceptibility to oseltamivir and another A(H3N2) virus has shown reduced susceptibility to zanamivir.
- The developments during the season have been consistent with the conclusions of the ECDC [risk assessment](#) on seasonal influenza, [updated](#) on 25 January 2017, which suggested increased severe outcomes in the elderly due to the high prevalence of A(H3N2) viruses, resulting in pressure on some health care systems.

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

## Worldwide (WHO) and CDC

### As at 15<sup>th</sup> May 2017:

Influenza activity in the temperate zone of the northern hemisphere continued to decrease. In the temperate zone of the southern hemisphere, influenza activity reached seasonal thresholds in some countries, but remained low in general. Worldwide, influenza B viruses were predominant.

- In the temperate zone of the Southern Hemisphere, influenza activity slightly increased in recent weeks. In Chile, ILI activity continued to increase and passed the seasonal threshold.
- In tropical South America, influenza activity remained low in most of the region, except in Bolivia (Plurinational State of) where influenza activity increased in recent weeks with influenza A(H3N2) viruses predominating. Other respiratory virus activities remained low in general, except in Colombia where elevated activity of respiratory syncytial virus (RSV) continued to be reported.
- In the Caribbean and Central America countries, respiratory virus activity remained low.
- In East Asia, influenza activity continued to be reported with all seasonal influenza types/subtypes detected.
- In Southern Asia, influenza activity decreased in recent weeks.
- In Western Asia, low influenza activity was reported with influenza B viruses predominant.
- In South East Asia, influenza activity remained low.
- In East and West Africa, low influenza activity was reported in recent weeks, with all seasonal influenza types/subtypes detected.
- In Northern Africa, influenza activity remained low.
- In Europe, influenza activity continued to decrease to low levels overall. In Northern and Eastern Europe, influenza activity continued to decrease with influenza B viruses predominant. In South West Europe little to no influenza activity was reported.
- In Central Asia, respiratory illness indicators were at low levels in general and very few influenza virus detections were reported during this period.
- In North America, overall influenza activity continued to decrease. Increased proportions of influenza B viruses were reported in Canada and in the United States of America in recent weeks. In Mexico, low levels of all seasonal influenza types/subtypes continued to be detected.

- National Influenza Centres (NICs) and other national influenza laboratories from 103 countries, areas or territories reported data to FluNet for the time period from 17 April 2017 to 30 April 2017 (data as of 2017-05-12 06:57:21 UTC). The WHO GISRS laboratories tested more than 79447 specimens during that time period. 7736 were positive for influenza viruses, of which 2683 (34.7%) were typed as influenza A and 5053 (65.3%) as influenza B. Of the sub-typed influenza A viruses, 642 (45.1%) were influenza A(H1N1)pdm09 and 782 (54.9%) were influenza A(H3N2). Of the characterized B viruses, 396 (51.8%) belonged to the B-Yamagata lineage and 369 (48.2%) 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/seasonalInfluenza.aspx>

Wales

<http://www.wales.nhs.uk/sites3/page.cfm?orgid=457&pid=34338>

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