

# Influenza Weekly Surveillance Bulletin

## Northern Ireland, Weeks 15 and 16 (8<sup>th</sup> – 21<sup>st</sup> April 2019)

### Summary

The surveillance data indicates that influenza in community and hospital settings across Northern Ireland continues to decrease. Primary Care influenza rates remain well below the baseline Moving Epidemic Method (MEM) threshold<sup>1</sup> for Northern Ireland and have returned to baseline levels.

#### Northern Ireland Primary Care Consultation Rates

- GP consultation rates for flu and flu-like illness (flu/FLI) during weeks 15 and 16 were 4.4 and 3.6 per 100,000 population, respectively.
- OOH GP flu/FLI consultation rate for week 15 was 3.2 per 100,000. There was no data available for week 16.

#### Microbiological Surveillance (Flu and RSV)

- During week 15 and 16 there were 469 specimens submitted for virological testing, of which 31 tested positive for influenza (7% positivity).
- There were 29 detections of Flu A(H3), one Flu A(H1N1)pdm09, and one Flu B.
- There were eight positive RSV detections in week 15 and 16 (2% positivity).

#### Secondary Care (Hospital both non-ICU and ICU)

- In week 15 and 16 there were 23 detections of Flu A(H3), one Flu A(H1N1)pdm09 and one Flu B.
- There were no new cases reported in ICU with laboratory confirmed influenza and no deaths reported.
- To date, there have been a total of 67 admissions to ICU with confirmed influenza reported to PHA and seven deaths reported in ICU patients who had laboratory confirmed influenza.

#### Respiratory Outbreaks across Northern Ireland

- During weeks 15 and 16 there was two respiratory outbreak reported to PHA, one in a care home setting and one in a hospital setting.
- To date, there have been 14 respiratory outbreaks reported, 10 in care homes (six Flu A(untyped), one Flu B and three RSV) and four in a hospital setting (Flu A(untyped)).

#### Mortality

- The proportion of deaths related to respiratory keywords increased from week 14 to week 15 (25% to 28%). There was no data available for week 16.

#### Influenza Vaccine Uptake

	2018/19 (to Mar 31 <sup>st</sup> )	2017/18 (to Mar 31 <sup>st</sup> )
>65 years	70.0%	71.8%
<65 years at risk	52.4%	56.0%
Pregnant women	44.3%	47.1%
2 to 4 year olds	47.6%	50.6%
Primary School	75.9%	76.5%
Trust Frontline	35.4%	33.4%
Trust Frontline (excluding social workers and social care workers)	39.5%	-

## 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 2018/19 season commenced on 1<sup>st</sup> October 2018.

Surveillance systems used to monitor influenza activity include:

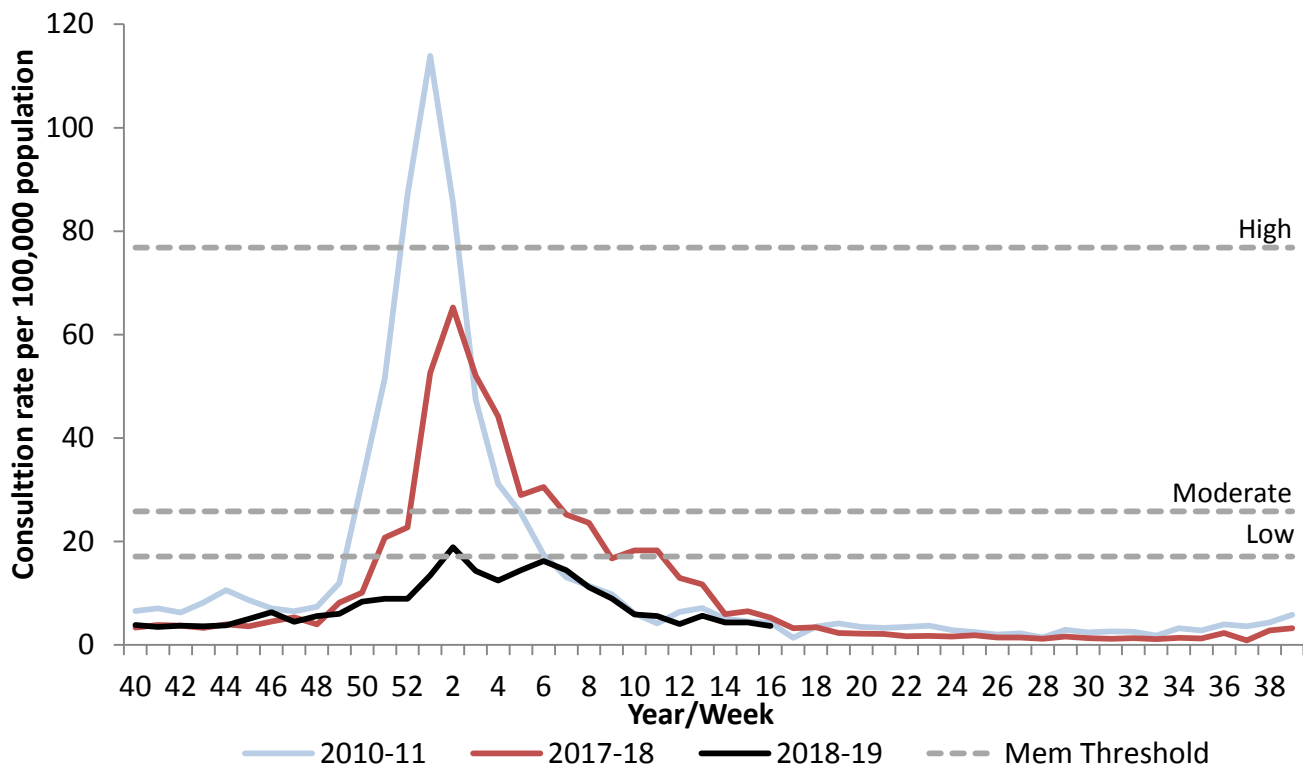
- Northern Ireland GP surveillance representing 98% of Northern Ireland population;
- Sentinel flu-swabber GP practices representing 11.2% of the NI population, contributing to the measurement of circulating influenza in the community
- GP Out-of-Hours surveillance system representing the entire population;
- Virological reports from the Regional Virus Laboratory (RVL);
- Individual virology reports from local laboratories (as outlined);
- Influenza outbreak report notification to PHA Duty Room;
- Critical Care Network for Northern Ireland reports on patients in ICU/HDU with confirmed influenza;
- Mortality data from Northern Ireland Statistics and Research Agency (NISRA);
- Excess mortality estimations are calculated using the EuroMOMO (Mortality Monitoring in Europe) model based on raw death data supplied by NISRA

***NB: Please note the change in the collection of Flu/FLI consultation data since 2017-18. Data is collected from 325 GP practices, representing 98% of the Northern Ireland (NI) population. This represents a change from pre 2017-18 season when data was collected from 37 sentinel GP practices (representing 11.7% of the NI population).***

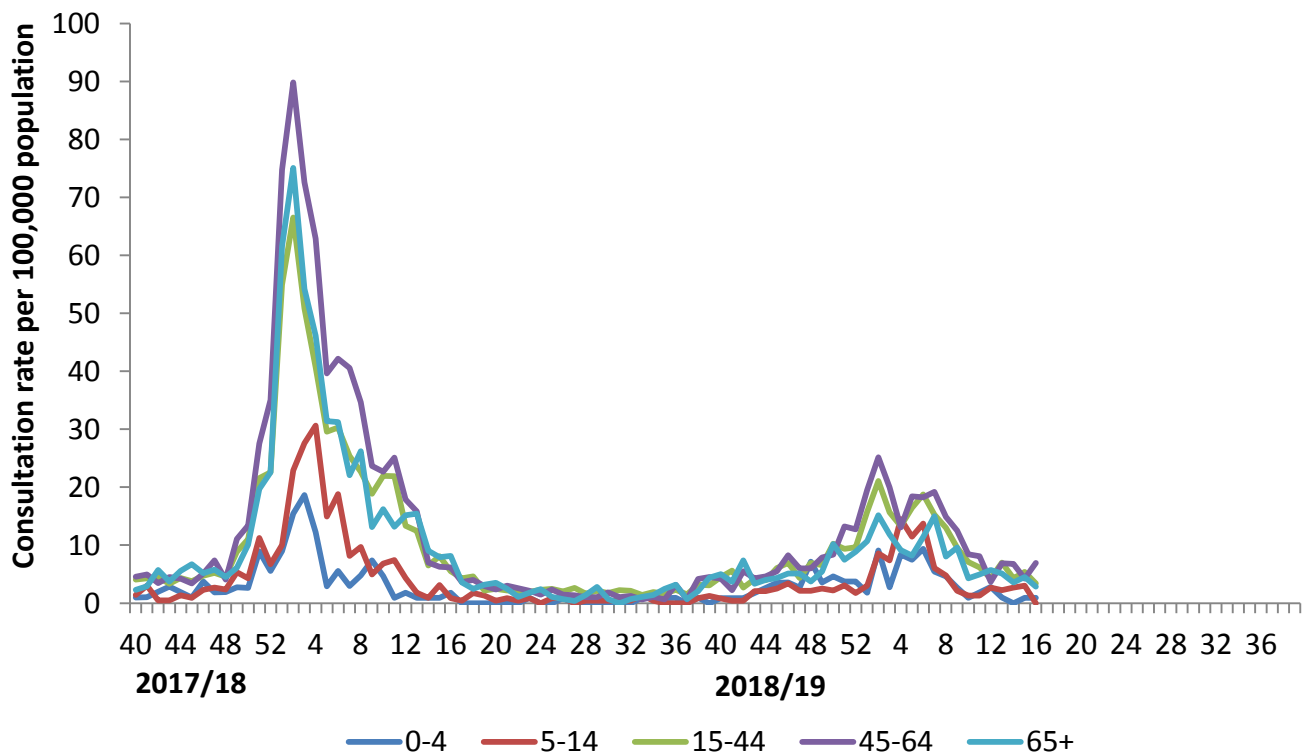
***As a result, Flu/FLI consultation rates and the MEM threshold from 2017-18 onwards will be generally lower than in previous years. Please take this into account when interpreting the figures.***

# Northern Ireland GP Consultation Data

**Figure 1. Northern Ireland GP consultation rates for flu/FLI 2017/18 - 2018/19**



**Figure 2. Northern Ireland GP age-specific consultation rates for flu/FLI from week 40, 2017**



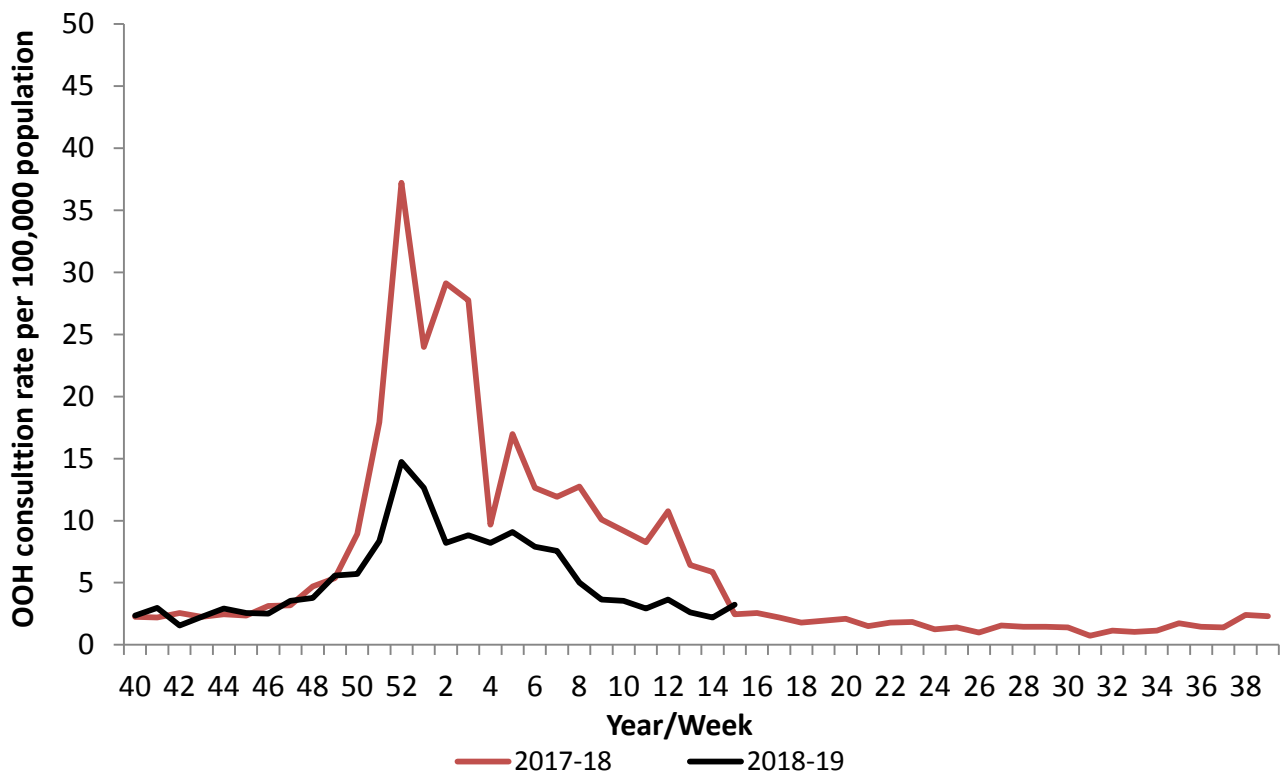
## Comment

The NI consultation rates for flu and flu-like illness (flu/FLI) for weeks 15 and 16, 2019 were 4.4 and 3.6 per 100,000 respectively. Activity remains well below the baseline MEM threshold for Northern Ireland (<17.1 per 100,000) and have now returned to baseline levels (Figure 1). The rate is lower in weeks 15 and 16 than in the same week in 2017/18 (6.5 compared to 4.4 per 100,000 in week 15 and 5.3 compared to 3.6 per 100,000 in week 16) (Figure 1).

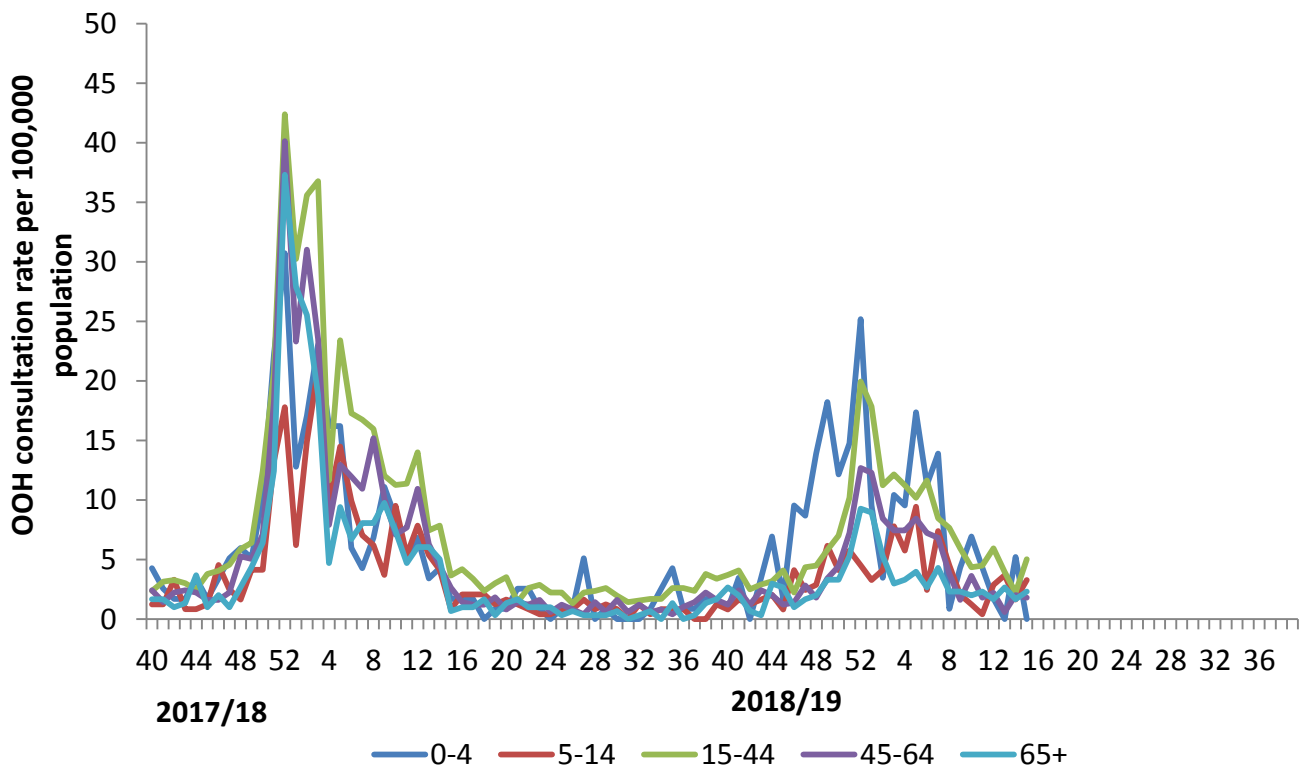
Consultation rates decreased from week 15 to week 16 in those aged 5-14 years (3.0 to 0.0 per 100,000), 15-44 years (5.4 to 3.4 per 100,000) and 65 years and over (4.5 to 2.8 per 100,000). The rate increased in those aged 45-64 years (4.2 to 6.9 per 100,000) but remained stable in those aged 0-4 years (0.9 per 100,000). The consultation rate was highest in those aged 15-44 in week 15 (5.4 per 100,000) and highest in those aged 45-64 years in week 16 (6.9 per 100,000). Rates were lowest in those aged 0-4 years in week 15 (0.9 per 100,000) and in those aged 15-44 years (0.0 per 100,000) in week 16 (Figure 2).

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

**Figure 3. OOH call rate for flu/FLI, 2016/17 – 2018/19**



**Figure 4. OOH call rates of flu/FLI by age-group from week 40, 2017**



## Comment

The OOH flu/FLI consultation rate increased from 2.2 per 100,000 in week 14, 2019 to 3.2 per 100,000 in week 15 (Figure 3). The rate in week 15 was higher than in the same week in 2017/18 (3.2 compared to 2.5 per 100,000). The proportion of calls related to flu/FLI in OOH centres increased from week 14 to week 15 (0.4% to 0.6% respectively).

Consultation rates from week 14 to week 15 decreased in those aged 0-4 years (5.2 to 0.0 per 100,000) and 45-64 years (2.0 to 1.8 per 100,000), but increased in those aged 5-14 years (1.6 to 3.3 per 100,000), 15-44 years (2.2 to 5.0 per 100,000) and 65 years and over (1.7 to 2.3 per 100,000) (Figure 4). There was no data available for week 16.

Figure 5. Northern Ireland GP consultation rates for flu/FLI and number of influenza positive detections 2013/14 – 2018/19

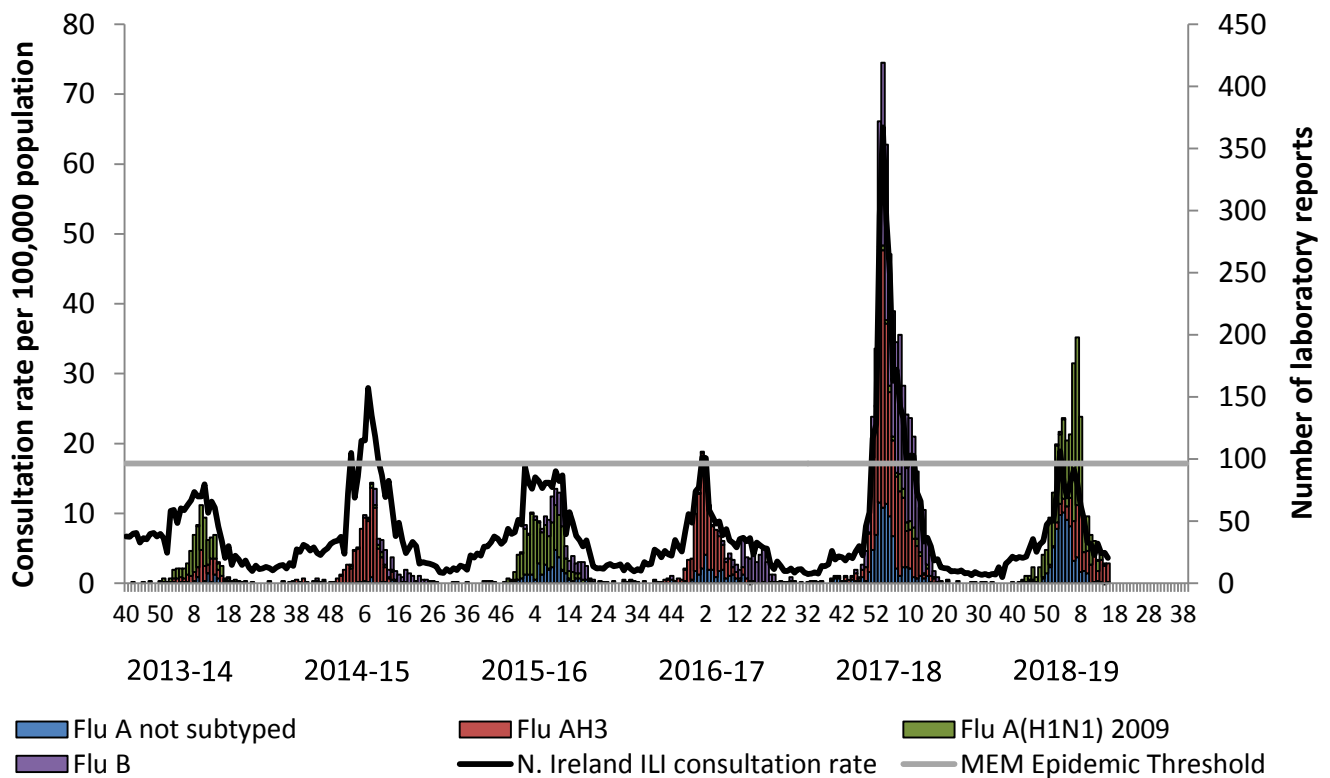
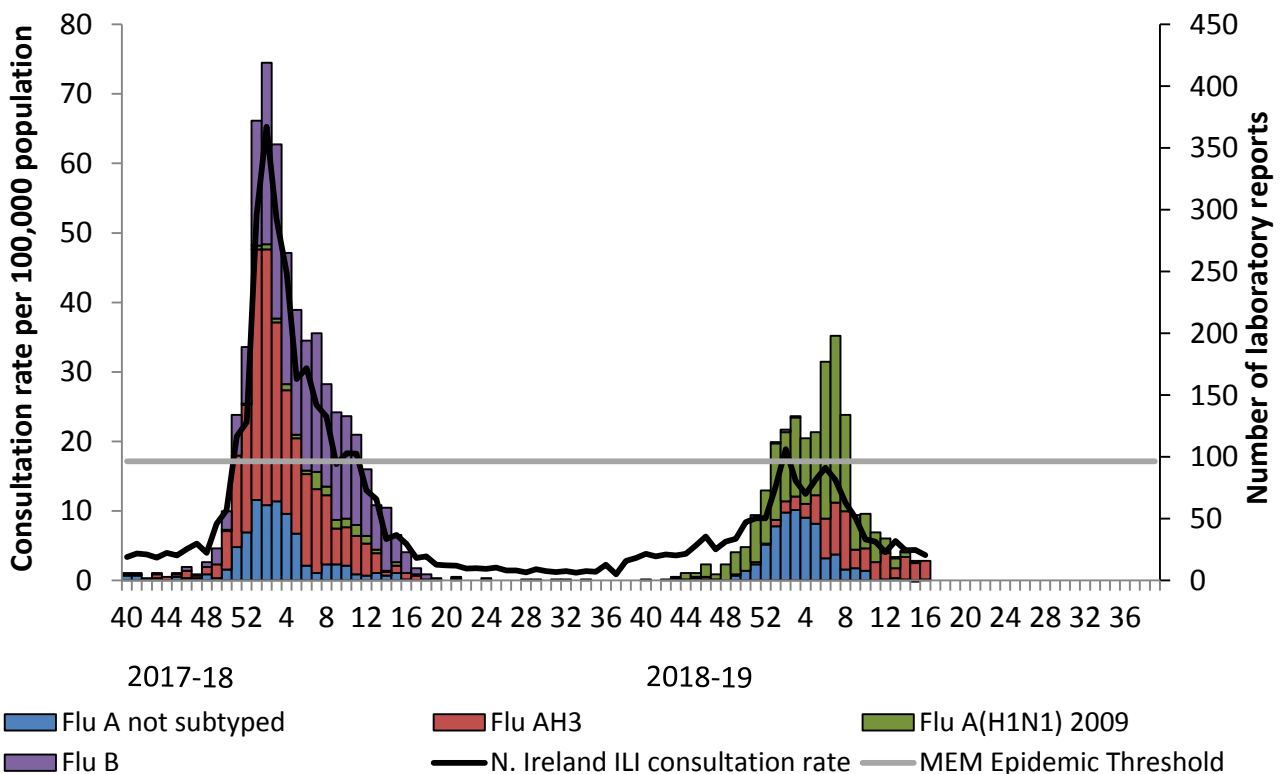


Figure 6. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2017



**Table 1. Virus activity in Northern Ireland by source, Weeks 15-16, 2018-19**

Source	Specimens tested	Flu AH3	Flu A(H1N1) 2009)	A (Untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	10	5	0	0	0	0	5	50%
Non-sentinel	459	24	1	0	1	8	26	6%
<b>Total</b>	<b>469</b>	<b>29</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>8</b>	<b>31</b>	<b>7%</b>

**Table 2. Cumulative virus activity from all sources by age group, Week 40 - 16, 2018-19**

Age Group	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
<b>0-4</b>	14	148	26	0	188	362
<b>5-14</b>	20	42	15	0	77	16
<b>15-64</b>	152	531	231	5	919	126
<b>65+</b>	126	164	112	3	405	181
<b>Unknown</b>	0	0	0	0	0	0
<b>All ages</b>	<b>312</b>	<b>885</b>	<b>384</b>	<b>8</b>	<b>1589</b>	<b>685</b>

**Table 3. Cumulative virus activity by age group and source, Week 40 - Week 16, 2018-19**

Age Group	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
<b>0-4</b>	0	3	0	0	3	0	14	145	26	0	185	362
<b>5-14</b>	1	4	0	0	5	0	19	38	15	0	72	16
<b>15-64</b>	16	44	11	0	71	10	136	487	220	5	848	116
<b>65+</b>	6	3	2	1	12	1	120	161	110	2	393	180
<b>Unknown</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>All ages</b>	<b>23</b>	<b>54</b>	<b>13</b>	<b>1</b>	<b>91</b>	<b>11</b>	<b>289</b>	<b>831</b>	<b>371</b>	<b>7</b>	<b>1498</b>	<b>674</b>

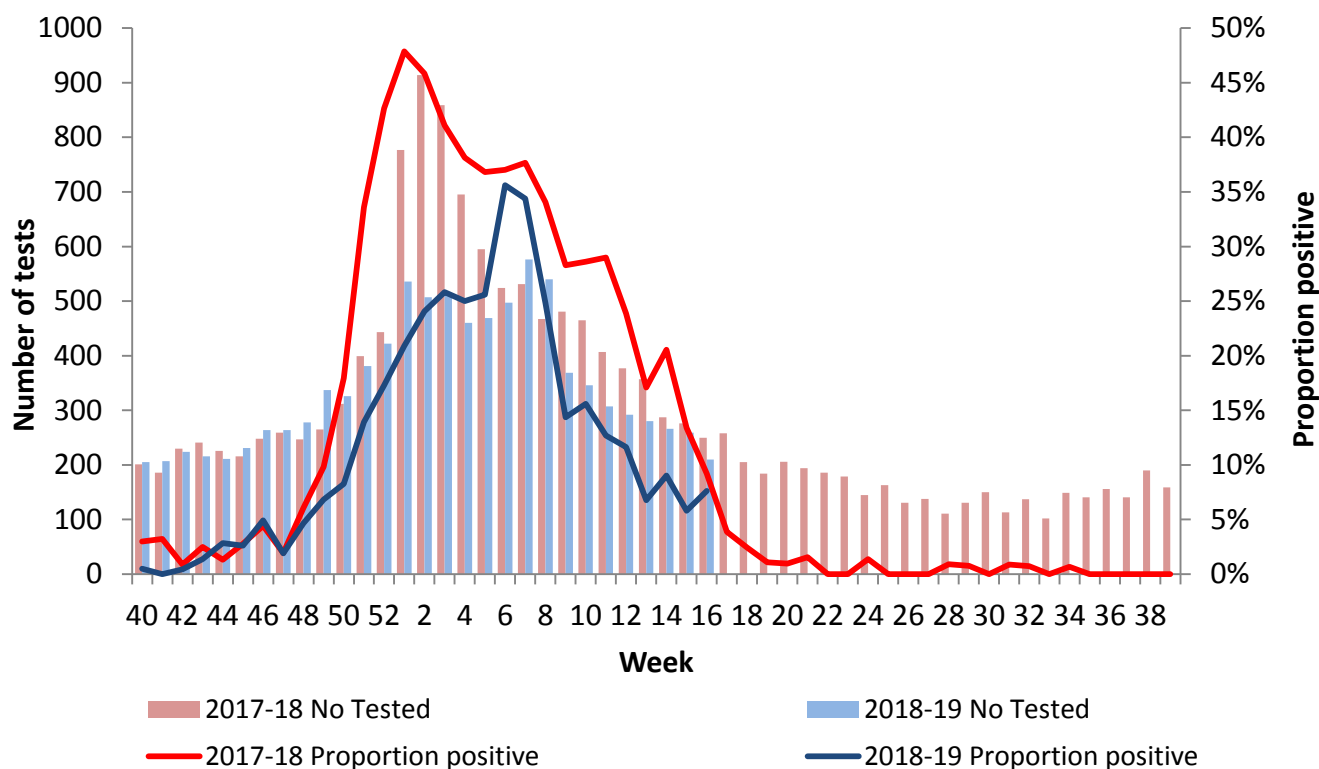
### Note

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.

Many Flu A positives this season have not been typed using the normal H1 typing assay but are proving to be Flu A(H1)2009 on nucleic acid sequencing of selected positive samples. This has been a phenomenon seen throughout the UK this season and relates to virus mutations that affect the H1 typing assay. A new PHE typing assay for H1 will be in use from week 6, 2019 and the numbers of Flu A(untyped) should decline in subsequent reports.



**Figure 7. Number of samples tested for influenza and proportion positive, 2017/18 and 2018/19, all sources**



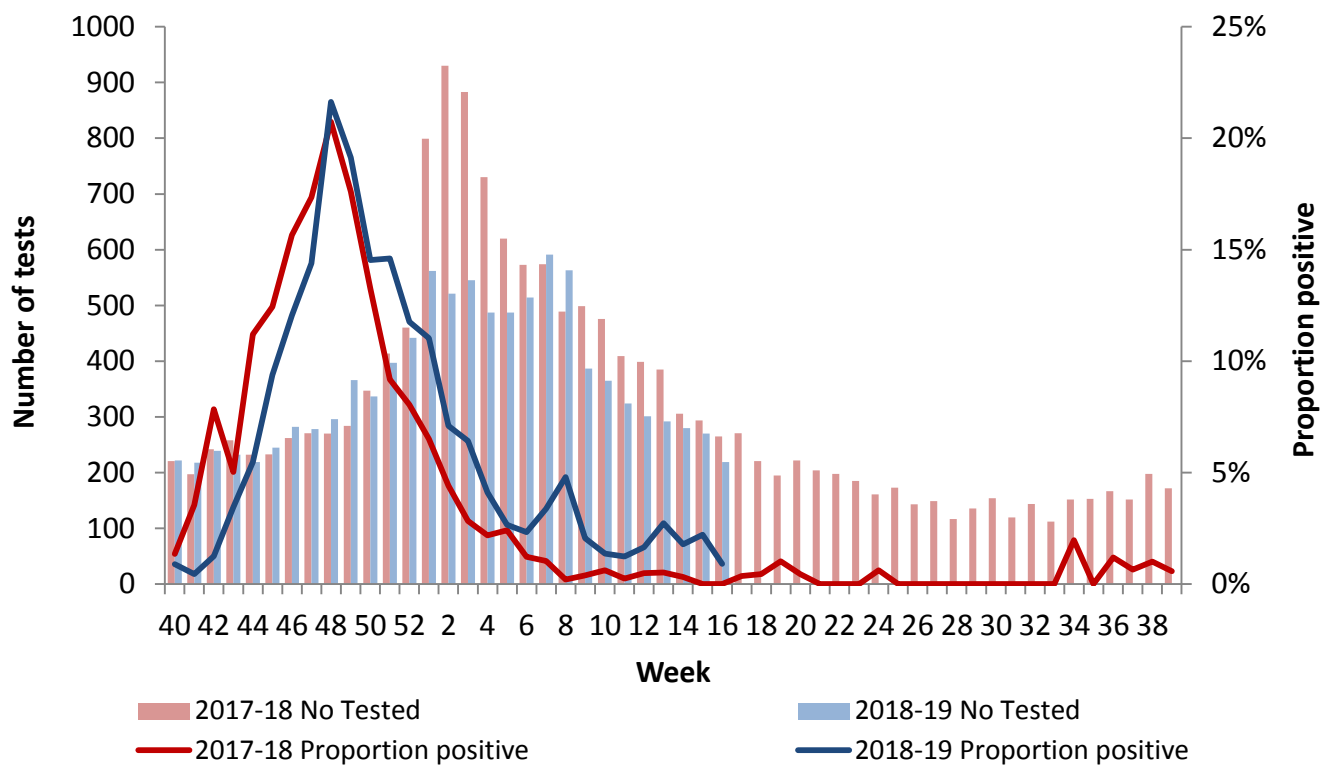
**Comment**

Additional virology testing has been undertaken at a local laboratory since week 2, 2018 and at another since week 2, 2019. This bulletin includes this data along with the data from the Regional Virology Laboratory. Other local laboratories may begin undertaking influenza testing and this data will be included in later bulletins if applicable.

During weeks 15 and 16, 2019 there were 469 specimens submitted for virological testing. There were 31 detections of influenza in total (7% positivity); 29 Flu A(H3), one Flu A(H1N1)pdm09 and one Flu B. Flu A(H3) is now the dominant virus circulating. There were 10 samples submitted through the GP based sentinel scheme across Northern Ireland. There were five detections of influenza in total (50% positivity); all Flu A(H3) (Tables 1, 2 & 3; Figures 5, 6 & 7).

## Respiratory Syncytial Virus (RSV)

Figure 8. Number of samples tested for RSV and proportion positive, 2017/18 and 2018/19, all sources

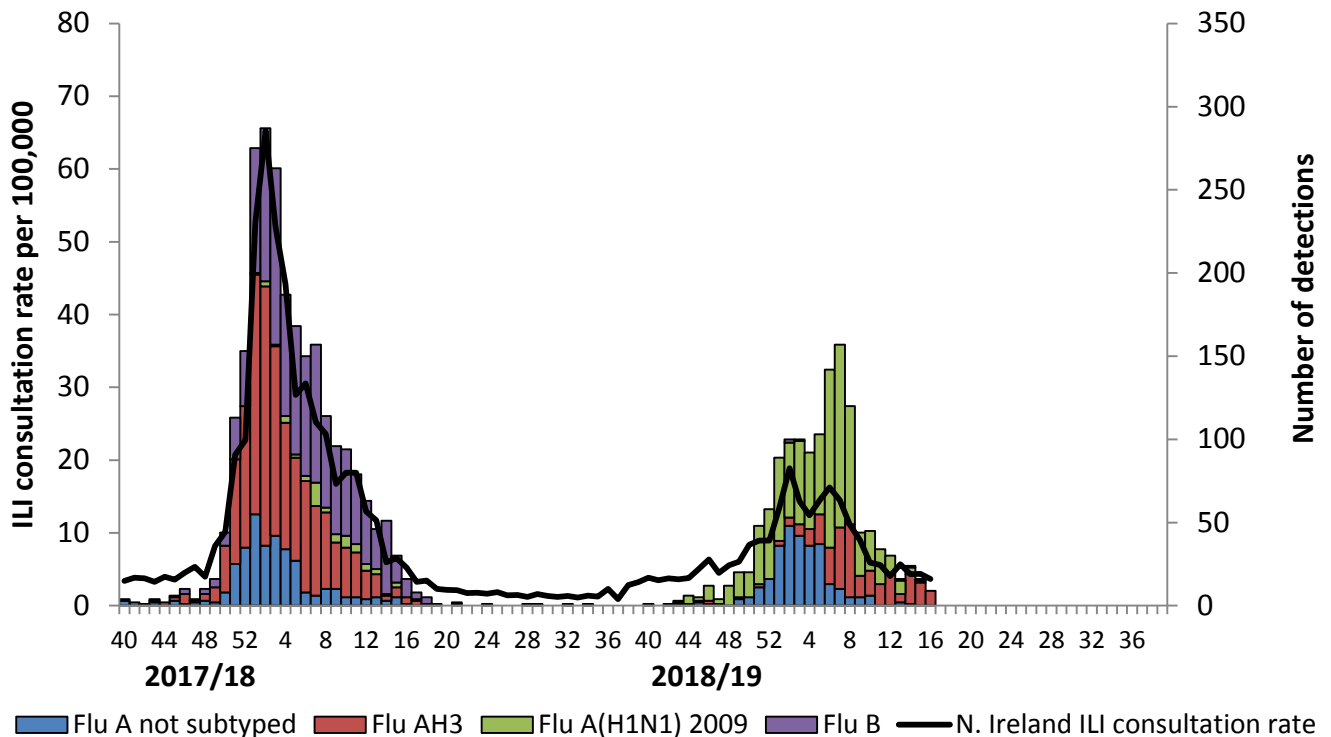


### Comment

During weeks 15 and 16, 2019 there were eight positive detections of RSV (2% positivity). To date there have been a total of 685 detections of RSV of which the majority (53%) were in those aged 0-4 years (Figure 8 and Tables 2 & 3).

## Hospital Surveillance (Non-ICU/HDU)

Figure 9. Confirmed influenza cases in hospital by week of specimen, with Northern Ireland ILI consultation rate, 2017/18 - 2018/19

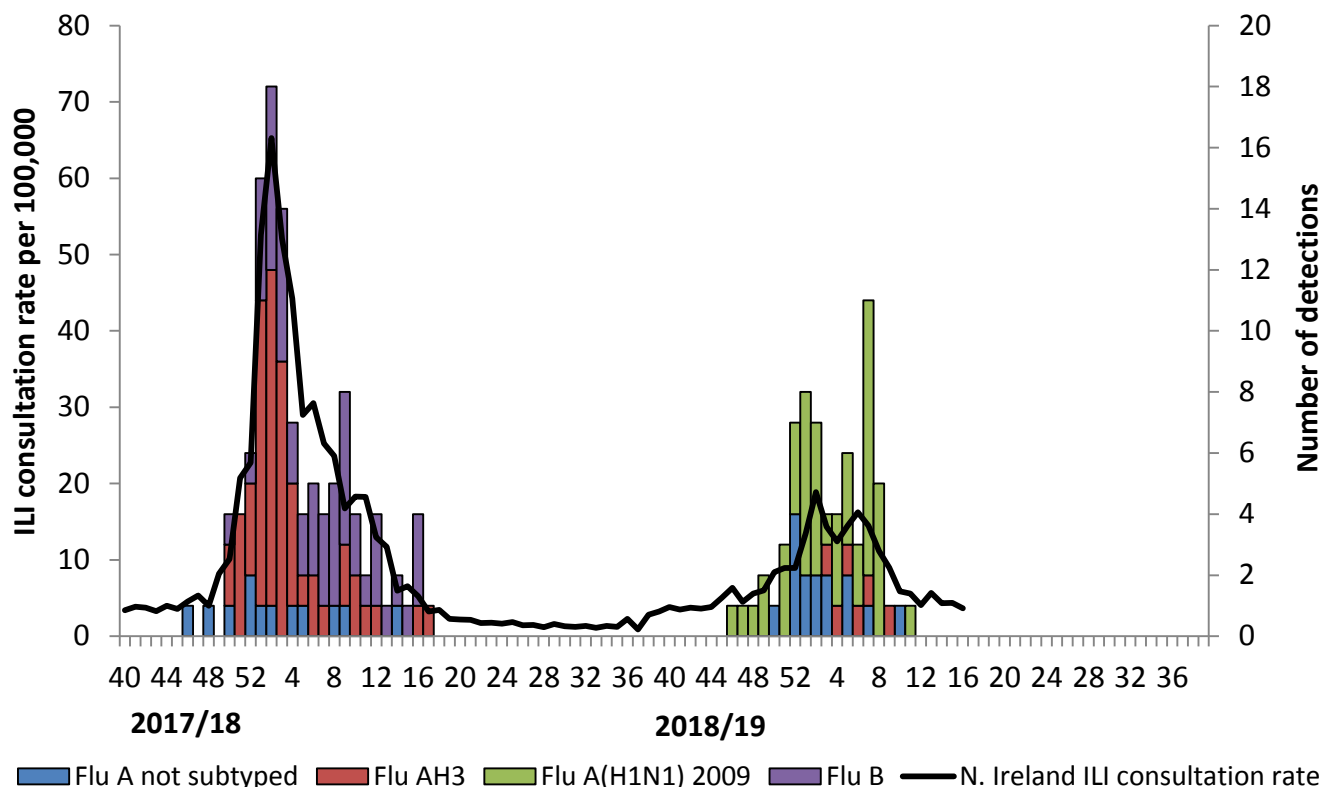


### Comment

During weeks 15 and 16, 2019 there were 25 detections of influenza from specimens taken in hospital settings across Northern Ireland. There were 23 Flu A(H3), one Flu A(H1N1)pdm09, and one Flu B. It should be kept in mind that it is possible that not all positive specimens (for weeks 15 and 16) will have been reported at this point.

## ICU/HDU Surveillance

**Figure 10. Confirmed ICU/HDU influenza cases by week of specimen, with Northern Ireland ILI consultation rate, 2017/18 - 2018/19**



### Comment

Data are collected on laboratory confirmed influenza patients and deaths in critical care (level 2 and level 3). In weeks 15 and 16, 2019 there were no new admissions to ICU with confirmed influenza reported to the PHA. So far this season there has been 67 admissions to ICU with confirmed influenza reported to PHA. There were no deaths reported in weeks 15 and 16. So far this season there have been seven deaths reported in ICU patients who had laboratory confirmed influenza. In comparison, up to week 16, 2018 there were 118 admissions to ICU with confirmed influenza reported to PHA, with 21 deaths reported in ICU patients who had laboratory confirmed influenza.

Of the 67 admissions to ICU, 43% (n=29) were female. The ages range from <1 year to 78 years, with a median age of 53 years and a mean age of 48 years. 43% (n=29) were classed as being in a vaccine risk group, of which 38% (n=11) were vaccinated this season. Six of the seven deaths were classed as being in a vaccine risk group, with four having been vaccinated this season. The deaths occurred in patients aged 18 years and over.

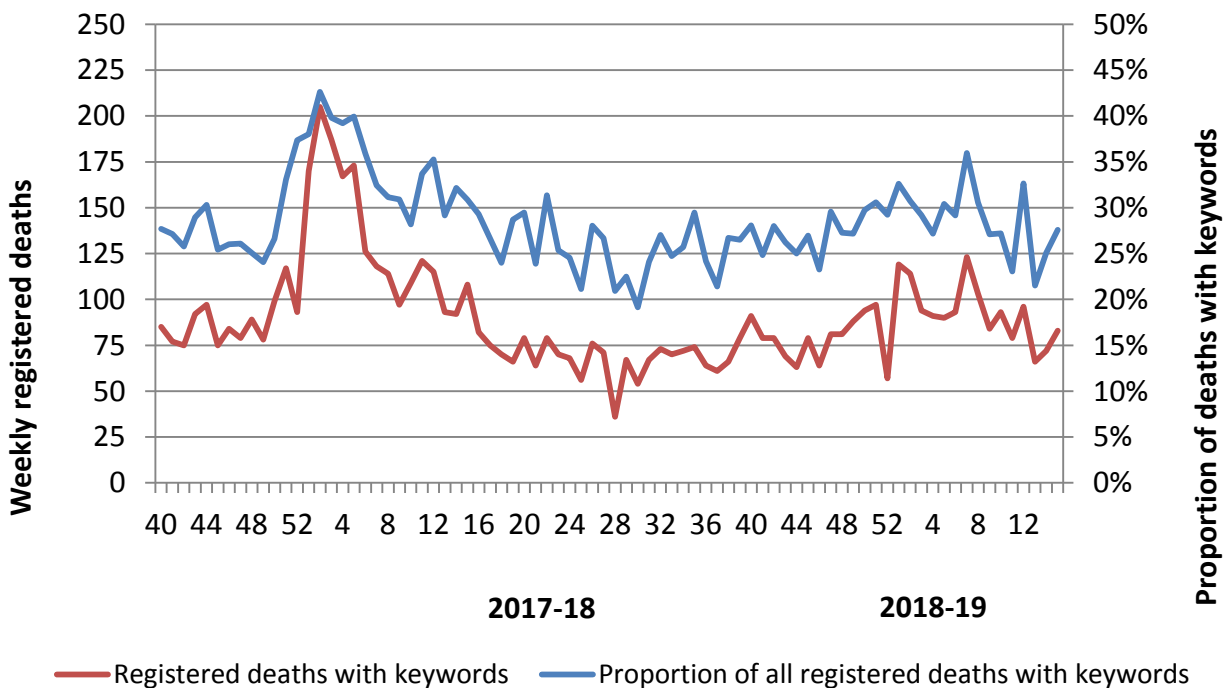
## Outbreak Surveillance

During weeks 15 and 16, 2019 there were two respiratory outbreaks reported to the PHA, one in a care home setting and one in a hospital. To date, there have been 14 respiratory outbreaks reported, 10 in care homes (six Flu A(untyped), one Flu B and three RSV) and four in a hospital setting (Flu A(untyped)).

## Mortality Data

Weekly mortality data is provided from Northern Ireland Statistics and Research Agency (NISRA). 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 11. Weekly registered deaths from week 40, 2017**



## Comment

The proportion of deaths related to respiratory keywords increased from week 14 to week 15, 2019 (25% to 28%). In week 15, there were 301 registered deaths of which 83 related to specific respiratory infections. The proportion of deaths attributed to specific respiratory infections is lower at this point in the season as the same period in 2017/18 (31%). There was no data available for week 16.

## EuroMOMO

EuroMOMO data was not available for week 16, 2019. There has been two weeks in the season where there has been excess all-cause mortality (week 6 and week 11, 2019). This excess mortality was seen in the elderly (>65 years of age).

Please note this data is provisional due to the time delay in registration; numbers may vary from week to week.

Information on mortality from all causes is provided for management purpose from Public Health England. Excess mortality is defined as a statistically significant increase in the number of deaths reported over the expected number for a given point in time. This calculation allows for a weekly variation in the number of deaths registered and takes account of deaths registered retrospectively. Information is used to provide an early warning to the health service of any seasonal increases in mortality to allow further investigation of excess detections.

There is no single cause of 'additional' deaths in the winter months but they are often attributed in part to cold weather (e.g. directly from falls, fractures, road traffic accidents), through worsening of chronic medical conditions e.g. heart and respiratory complaints and through respiratory infections including influenza.

For more information on EuroMOMO and interactive maps of reporting across the season please see <http://www.euromomo.eu/index.html>.

## Influenza Vaccine Uptake

	2018/19 (to Mar 31 <sup>st</sup> )	2017/18 (to Mar 31 <sup>st</sup> )
>65 years	70.0%	71.8%
<65 years at risk	52.4%	56.0%
Pregnant women	44.3%	47.1%
2 to 4 year olds	47.6%	50.6%
Primary School	75.9%	76.5%
Trust Frontline	35.4%	33.4%
Trust Frontline (excluding social workers and social care workers)	39.5%	-

## International Summary

### Week 15/2019 (8–14 April 2019)

- Of 41 countries reporting on geographic spread, 5 reported widespread activity. Specimens collected from individuals presenting with ILI or ARI to sentinel primary health care sites yielded an influenza virus positivity rate of 20%, a further decrease for the fifth week in a row.
- Of 41 countries reporting on influenza activity, 40 reported baseline or low intensity levels and 1 reported medium intensity.
- Influenza type A viruses dominated with more A(H3N2) than A(H1N1)pdm09 viruses being detected among sentinel and non-sentinel source specimens. Very few influenza B viruses were detected.
- Of the subset of specimens from patients with severe acute respiratory infection (SARI) collected in week 15/2019 that were tested for influenza viruses, 16% were positive and all viruses were type A.
- Pooled data from 23 Member States and areas reporting to the [EuroMOMO](#) project indicated that the all-cause excess mortality observed in previous weeks has returned to normal levels.

### 2018/19 season overview

- Influenza activity in the European Region, based on sentinel sampling, exceeded a positivity rate of 10% in week 49/2018, exceeded 50% between weeks 3/2019 and 7/2019, and peaked in week 5/2019.
- Both influenza A virus subtypes have circulated, with co-circulation in some countries while others reported dominance of either A(H1N1)pdm09 or A(H3N2) viruses.
- Among hospitalized influenza virus-infected patients admitted to ICU wards, 99% were infected with type A viruses, and of those subtyped, 67% were A(H1N1)pdm09. Among influenza virus-infected patients admitted to other wards, 99% were infected with type A viruses, with 56% of those subtyped being A(H1N1)pdm09.
- Of the patient specimens from SARI surveillance that tested positive for influenza, 99% were infected with influenza type A viruses, with 79% of those subtyped being A(H1N1)pdm09.

- A recent summary of regional activity from October 2018 to February 2019 was published in Eurosurveillance and can be found [here](#).
- Current influenza vaccines tend to work better against influenza A(H1N1)pdm09 and influenza B viruses than against influenza A(H3N2) viruses. For more detail, see the [Vaccine effectiveness](#) section.
- WHO has published [recommendations](#) for the composition of influenza vaccines to be used in the 2019–2020 northern hemisphere season. The recommendation was that type B lineage viruses remain unchanged, while the A(H1N1)pdm09 and A(H3N2) viruses were updated.
- Circulating viruses in the European Region remained susceptible to neuraminidase inhibitors supporting use of antiviral treatment according to national guidelines.

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

## **Worldwide (WHO)**

15 April 2019 - based on data up to 31 March 2019

In the temperate zone of the northern hemisphere influenza activity decreased overall.

- In North America, influenza activity appeared to decrease with influenza A(H3N2) the dominant virus, followed by influenza A(H1N1)pdm09.
- In Europe, influenza activity decreased across the continent. Both influenza A viruses co-circulated; influenza A(H3N2) was the most frequently identified subtype.
- In North Africa, influenza detections were low across reporting countries.
- In Western Asia, influenza activity appeared to decrease overall, with exception of Saudi Arabia where activity remained elevated.
- In East Asia, although decreased influenza activity continued to be reported. Influenza B was the most frequently detected virus followed by influenza A(H3N2).
- In Southern Asia, influenza activity continued to decrease with influenza A(H1N1)pdm09 virus predominating.
- In the Caribbean, Central American countries, and the tropical countries of South America, influenza and RSV activity were low in general.



- In the temperate zones of the southern hemisphere, influenza activity remained at inter-seasonal levels, with the exception of some parts of Australia where influenza activity was above inter-seasonal levels.
- Worldwide, seasonal influenza A viruses accounted for the majority of detections.

National Influenza Centres (NICs) and other national influenza laboratories from 125 countries, areas or territories reported data to FluNet for the time period from 18 March 2019 to 31 March 2019 (data as of 2019-04-12 03:15:47 UTC). The WHO GISRS laboratories tested more than 139623 specimens during that time period. 30960 were positive for influenza viruses, of which 25464 (82.2%) were typed as influenza A and 5496 (17.8%) as influenza B. Of the sub-typed influenza A viruses, 4189 (40.6%) were influenza A(H1N1)pdm09 and 6139 (59.4%) were influenza A(H3N2). Of the characterized B viruses, 154 (3.8%) belonged to the B-Yamagata lineage and 3919 (96.2%) to the B-Victoria lineage.

- [Link to vaccine recommendation](#)
- [Link to vaccine recommendation](#)

[http://www.who.int/influenza/vaccines/virus/recommendations/2019\\_south/en/](http://www.who.int/influenza/vaccines/virus/recommendations/2019_south/en/)

[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 and Public Health England. Their work is greatly appreciated and their support vital in the production of this bulletin.

The author also acknowledges the Northern Ireland Statistics and Research Agency (NISRA) and the General Register Office Northern Ireland (GRONI) for the supply of data used in this publication. NISRA and GRONI do not accept responsibility for any alteration or manipulation of data once it has been provided.

## Further information

Further information on influenza is available at the following websites:

<http://www.publichealth.hscni.net>

<https://www.nidirect.gov.uk/articles/flu-vaccination>

<https://www.gov.uk/government/organisations/public-health-england>

<http://www.who.int>

<http://ecdc.europa.eu>

<http://www.flunewseurope.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:**

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>

Republic of Ireland:

<http://www.hpsc.ie/hpsc/A-Z/Respiratory/Influenza/SeasonalInfluenza/Surveillance/InfluenzaSurveillanceReports/>

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