

# Influenza Weekly Surveillance Bulletin

## Northern Ireland, Weeks 19 and 20 (6<sup>th</sup> May – 19<sup>th</sup> May 2019)

**Please note that this is the last bulletin of the 2018-19 influenza season. The PHA would like to extend their thanks to all who have collaborated and contributed throughout the influenza season.**

### Summary

The surveillance data indicates that influenza in community and hospital settings across Northern Ireland is at pre-season levels. Primary Care influenza rates remain well below the baseline Moving Epidemic Method (MEM) threshold<sup>1</sup> for Northern Ireland and are at baseline levels.

#### Northern Ireland Primary Care Consultation Rates

- GP consultation rates for flu and flu-like illness (flu/FLI) during weeks 19 and 20 were 2.2 and 2.3 per 100,000 population, respectively.
- OOH GP flu/FLI consultation rates for weeks 19 and 20 were 2.4 and 1.9 per 100,000 population, respectively.

#### Microbiological Surveillance (Flu and RSV)

- During weeks 19 and 20 there were 342 specimens submitted for virological testing, of which 14 tested positive for influenza (4% positivity).
- There were eight detections of Flu A(H3), five Flu A(untyped) and one Flu B.
- There was one positive RSV detection in week 19 and 20 (1% positivity).

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

- In weeks 19 and 20 there were eight detections of Flu A(H3) and five Flu A(untyped).
- There were no new cases reported in ICU with laboratory confirmed influenza and no deaths reported.
- 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 19 and 20 there were no respiratory outbreaks reported to PHA. To date, there have been 15 respiratory outbreaks reported, 11 in care homes (seven 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 19 to week 20 (27% to 23%).

#### Influenza Vaccine Uptake (end of season)

	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%	-

<sup>1</sup> The baseline MEM threshold for Northern Ireland is 17.1 per 100,000 population this year (2018/19). Low activity is 17.1 to <25.8, moderate activity 25.8 to <76.8, high activity 76.8 to <124.4 and very high activity is >124.4.

## 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:

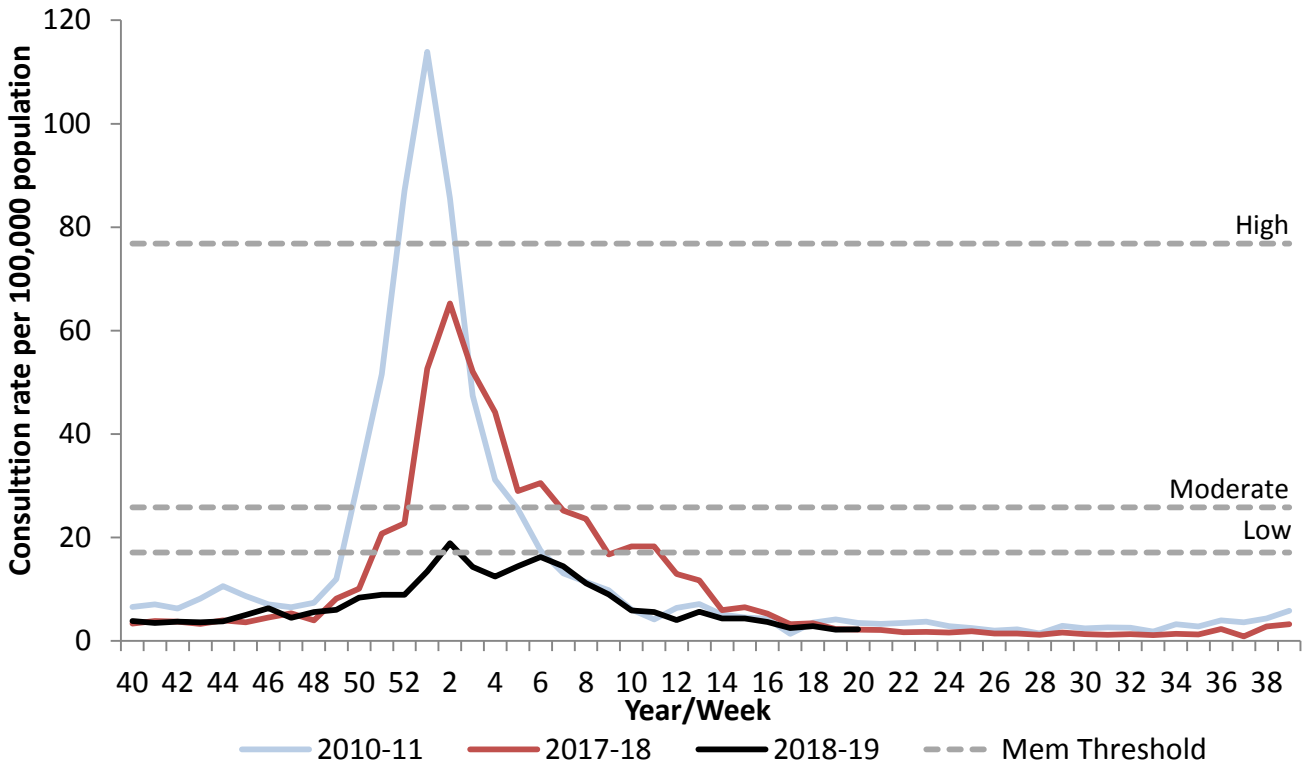
- Northern Ireland GP surveillance representing 98% of Northern Ireland population;
- Sentinel flu-swabber GP practices representing 11.2% of the NI population, contributing to the measurement of circulating influenza in the community
- GP Out-of-Hours surveillance system representing the entire population;
- 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).***

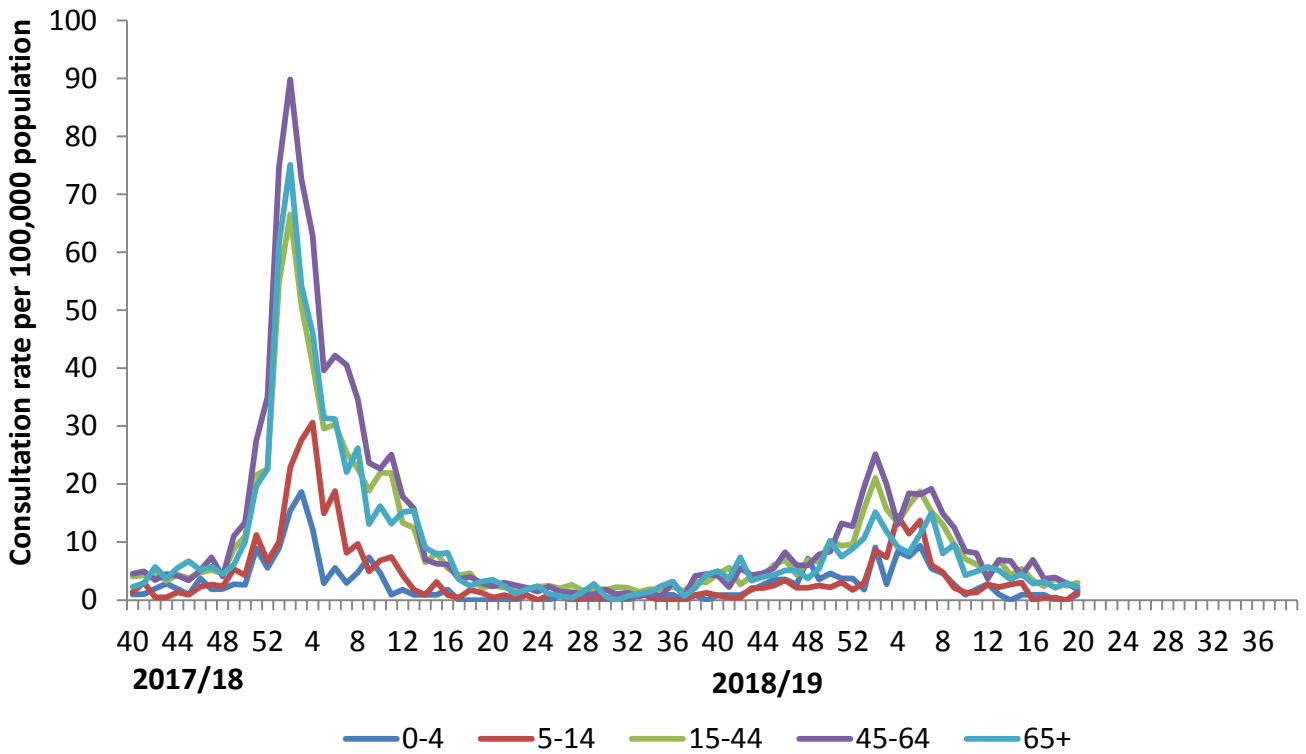
***As a result, Flu/FLI consultation rates and the MEM threshold from 2017-18 onwards will be generally lower than in previous years. Please take this into account when interpreting the figures.***

# 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**



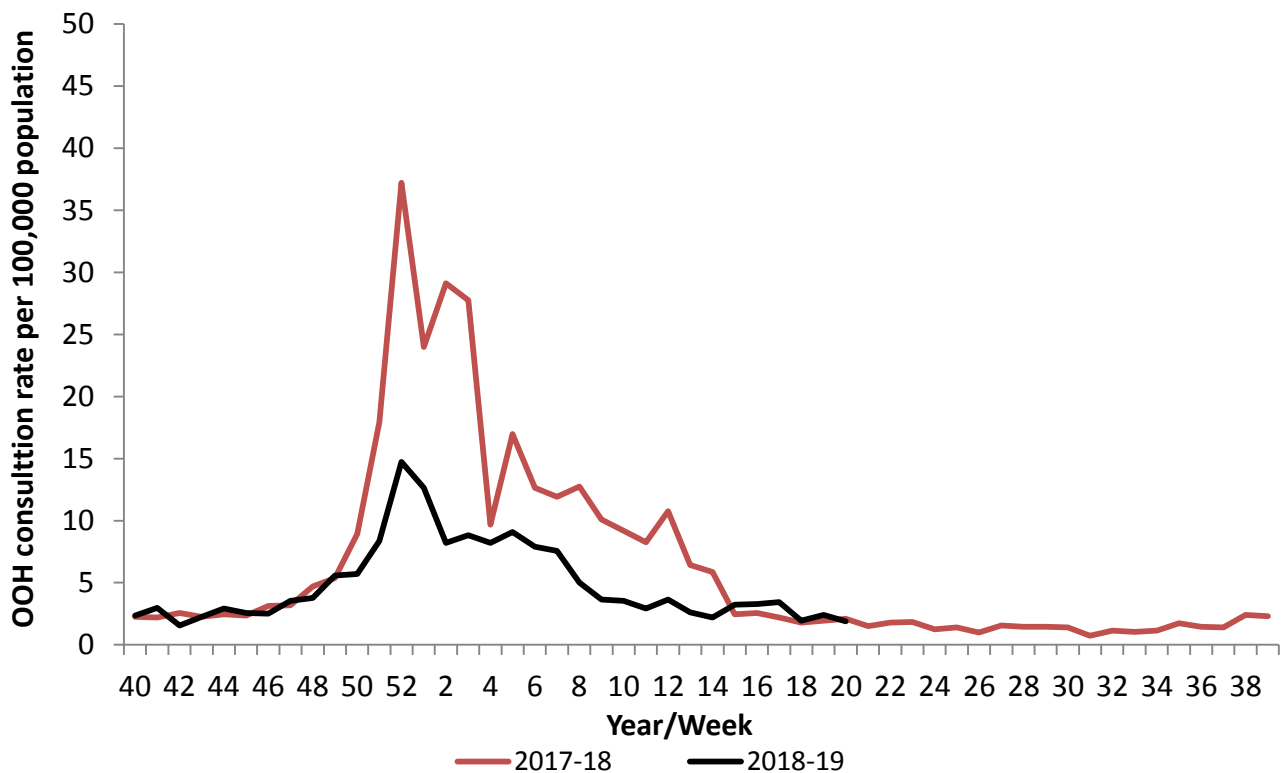
## Comment

The NI consultation rates for flu and flu-like illness (flu/FLI) for weeks 19 and 20, 2019 were 2.2 and 2.3 per 100,000 respectively. Activity remains well below the baseline MEM threshold for Northern Ireland (<17.1 per 100,000) and are at baseline levels (Figure 1). The rates in week 19 and 20 are similar to the same weeks in 2017/18 (2.3 and 2.2 per 100,000, respectively).

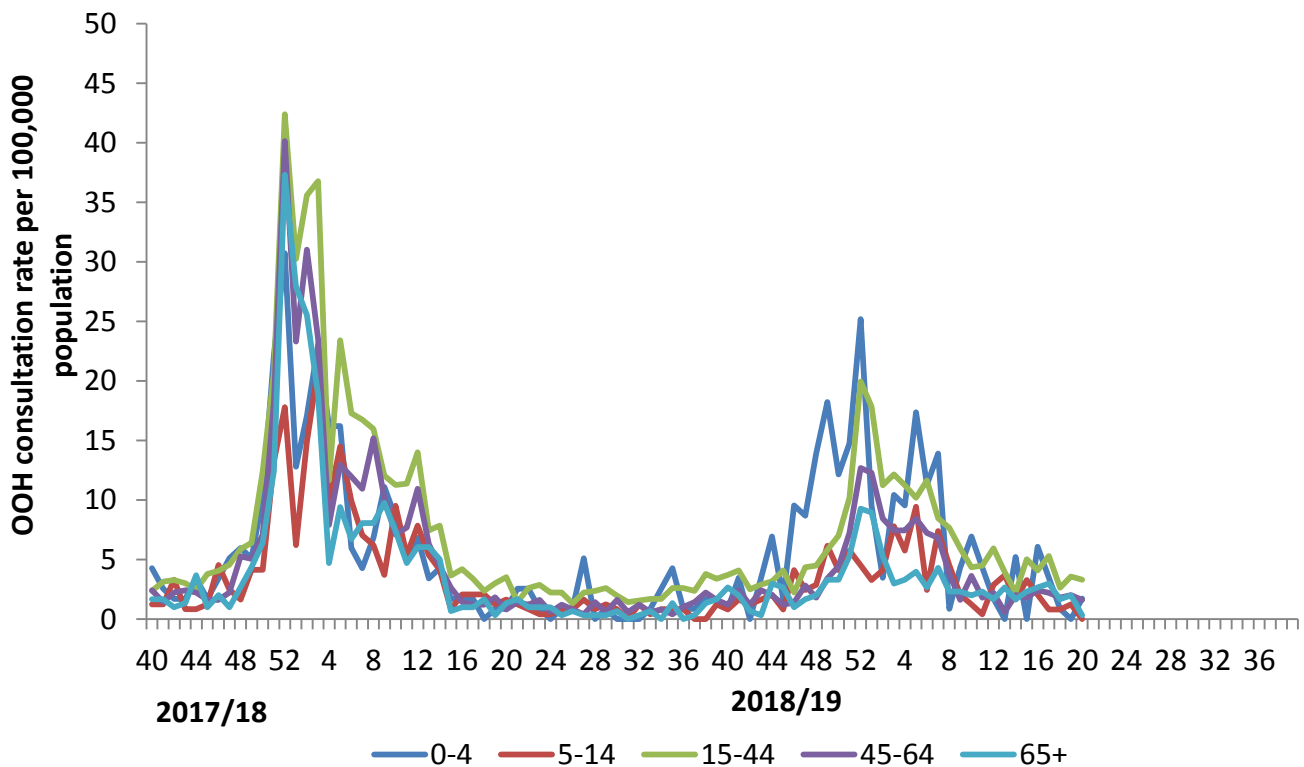
Consultation rates remained similar between weeks 19 and 20 across all age groups. In week 19 rates were highest in those aged 45-64 years and 65 years and over (both 2.9 per 100,000). In week 20 rates were highest in those aged 15-44 years (3.0 per 100,000) (Figure 2).

## 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 decreased from 2.4 per 100,000 in week 19, 2019 to 1.9 per 100,000 in week 20 (Figure 3). The proportion of calls related to flu/FLI in OOH centres remained stable between weeks 19 and 20 (0.4%).

Consultation rates increased in those aged 0-4 years (0.0 to 1.7 per 100,000) from week 19 to week 20 but decreased in all other age groups (Figure 4).

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

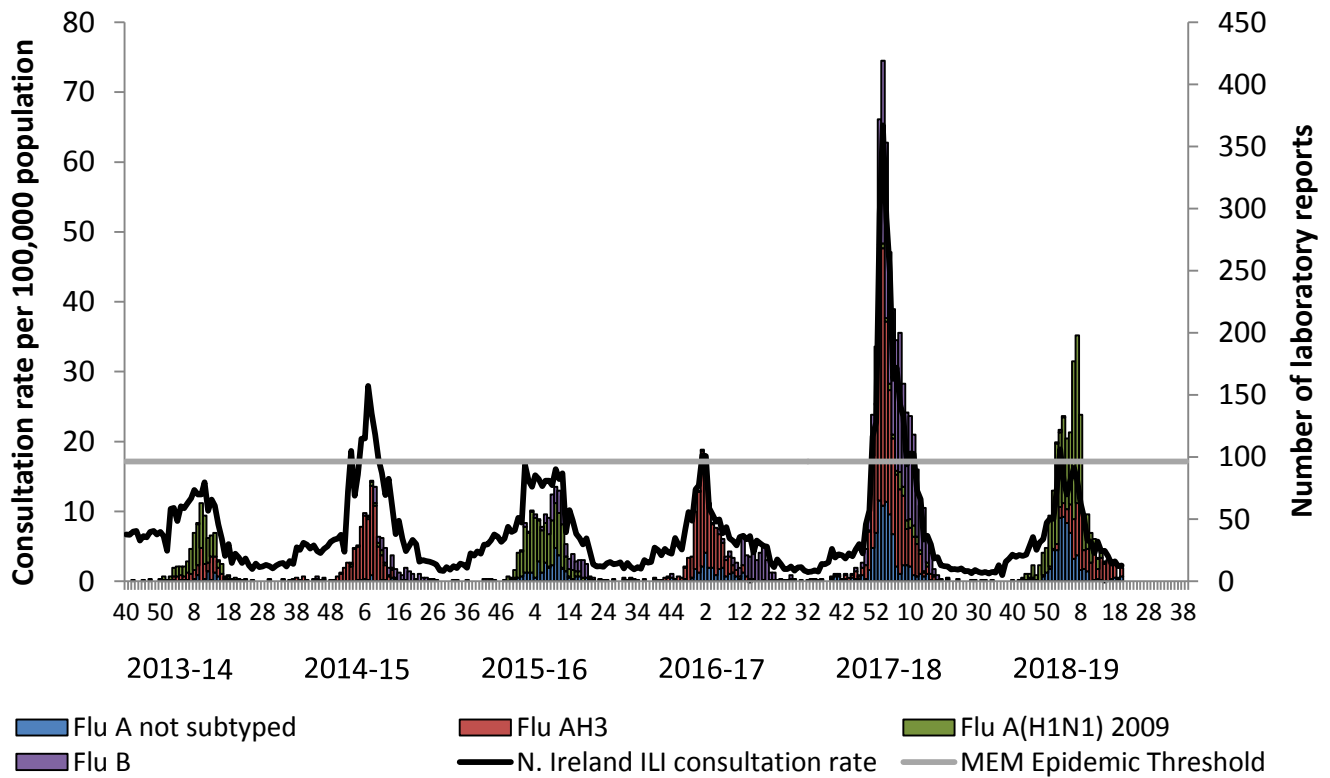
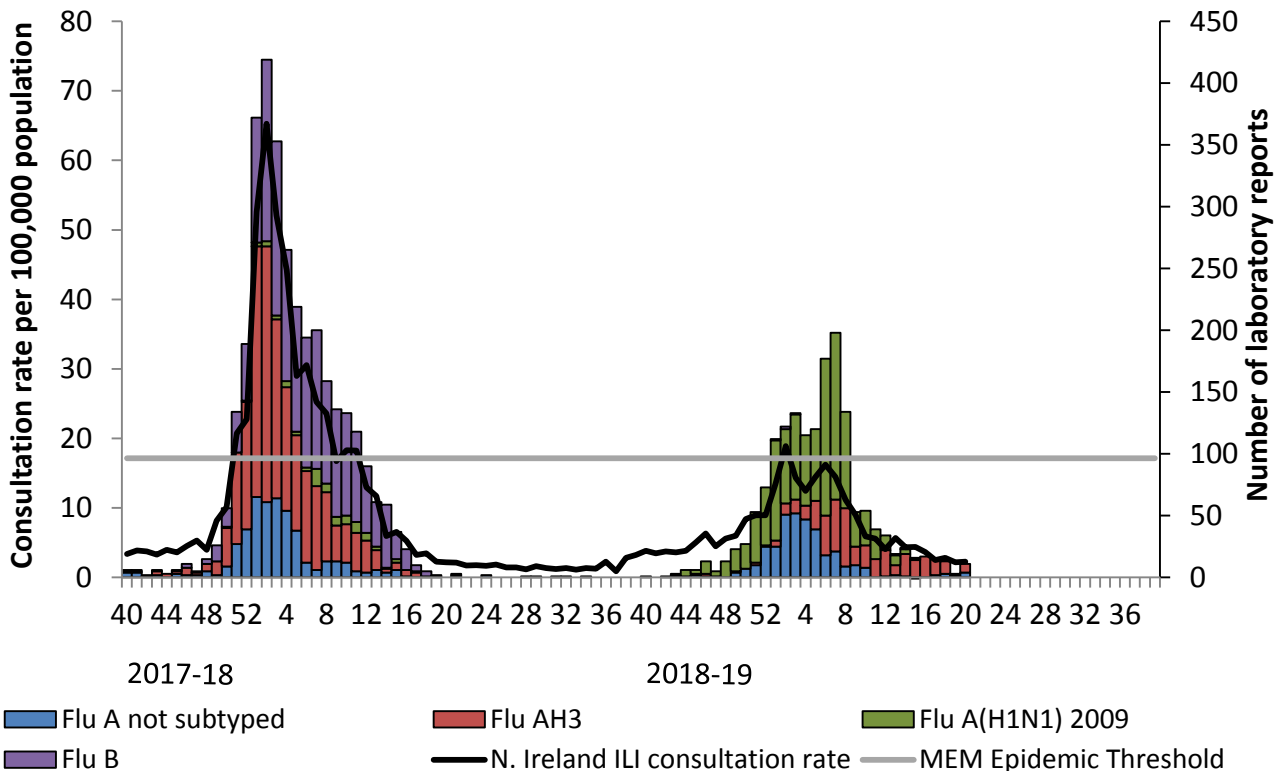


Figure 6. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2017



**Table 1. Virus activity in Northern Ireland by source, Weeks 19-20, 2018-19**

Source	Specimens tested	Flu AH3	Flu A(H1N1) 2009)	A (Untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	3	0	0	0	0	0	0	0%
Non-sentinel	339	8	0	5	1	1	14	4%
<b>Total</b>	<b>342</b>	<b>8</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>14</b>	<b>4%</b>

**Table 2. Cumulative virus activity from all sources by age group, Week 40 - 20, 2018-19**

Age Group	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
<b>0-4</b>	16	154	20	0	190	366
<b>5-14</b>	22	44	13	0	79	16
<b>15-64</b>	168	559	204	6	937	126
<b>65+</b>	139	175	109	3	426	181
<b>Unknown</b>	0	0	0	0	0	0
<b>All ages</b>	<b>345</b>	<b>932</b>	<b>346</b>	<b>9</b>	<b>1632</b>	<b>689</b>

**Table 3. Cumulative virus activity by age group and source, Week 40 - Week 20, 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	16	151	20	0	187	366
<b>5-14</b>	1	4	0	0	5	0	21	40	13	0	74	16
<b>15-64</b>	16	45	10	0	71	10	152	514	194	6	866	116
<b>65+</b>	6	3	2	1	12	1	133	172	107	2	414	180
<b>Unknown</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>All ages</b>	<b>23</b>	<b>55</b>	<b>12</b>	<b>1</b>	<b>91</b>	<b>11</b>	<b>322</b>	<b>877</b>	<b>334</b>	<b>8</b>	<b>1541</b>	<b>678</b>

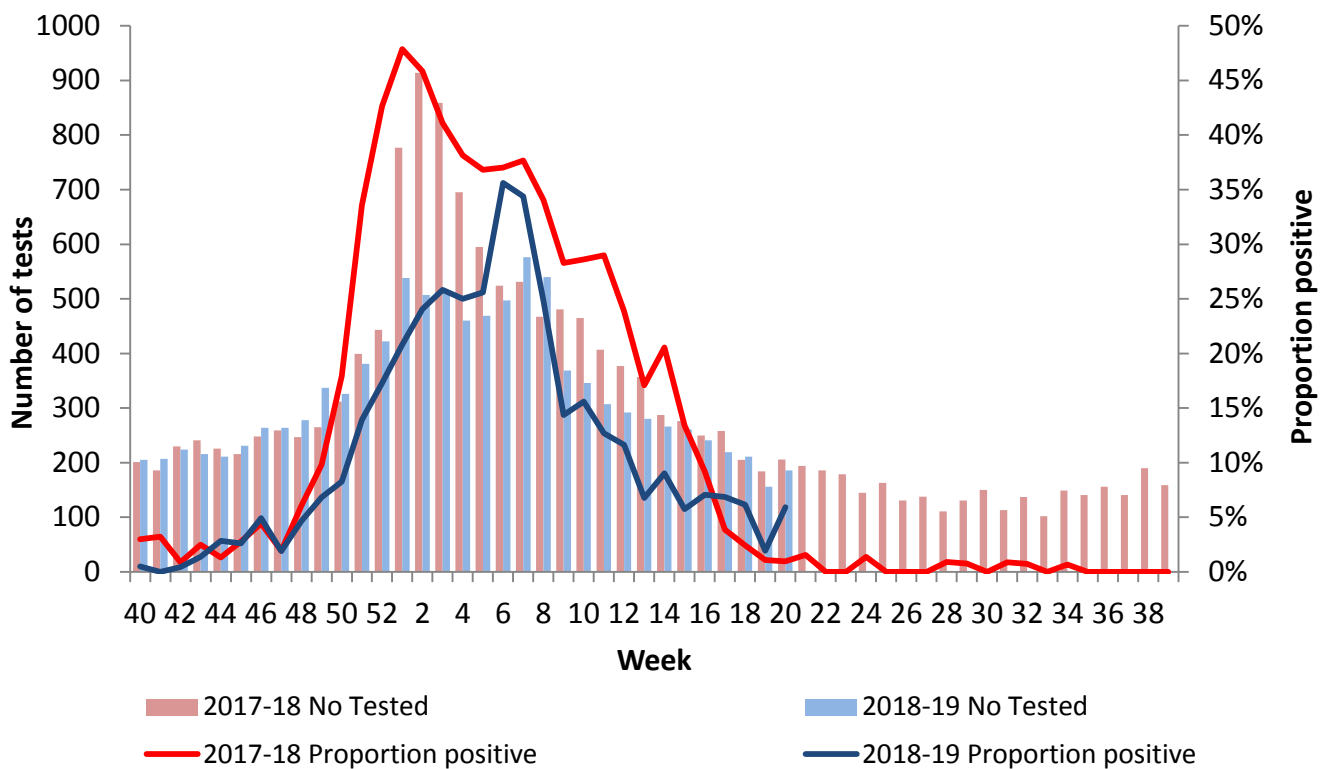
**Note**

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**



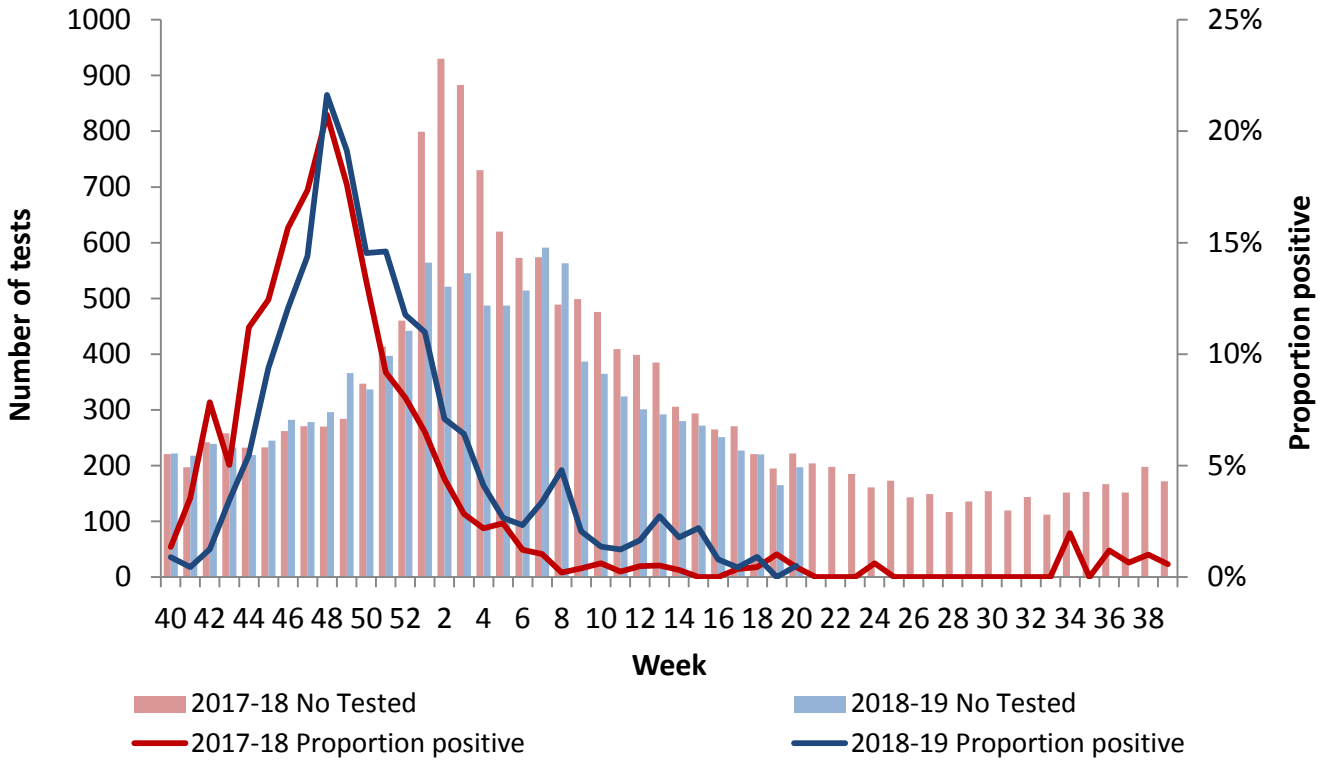
**Comment**

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 19 and 20, 2019 there were 342 specimens submitted for virological testing. There were 14 detections of influenza in total (4% positivity); eight Flu A(H3), five Flu A(untyped) and one Flu B. There were three samples submitted through the GP based sentinel scheme across Northern Ireland but there were no positive detections of influenza (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**

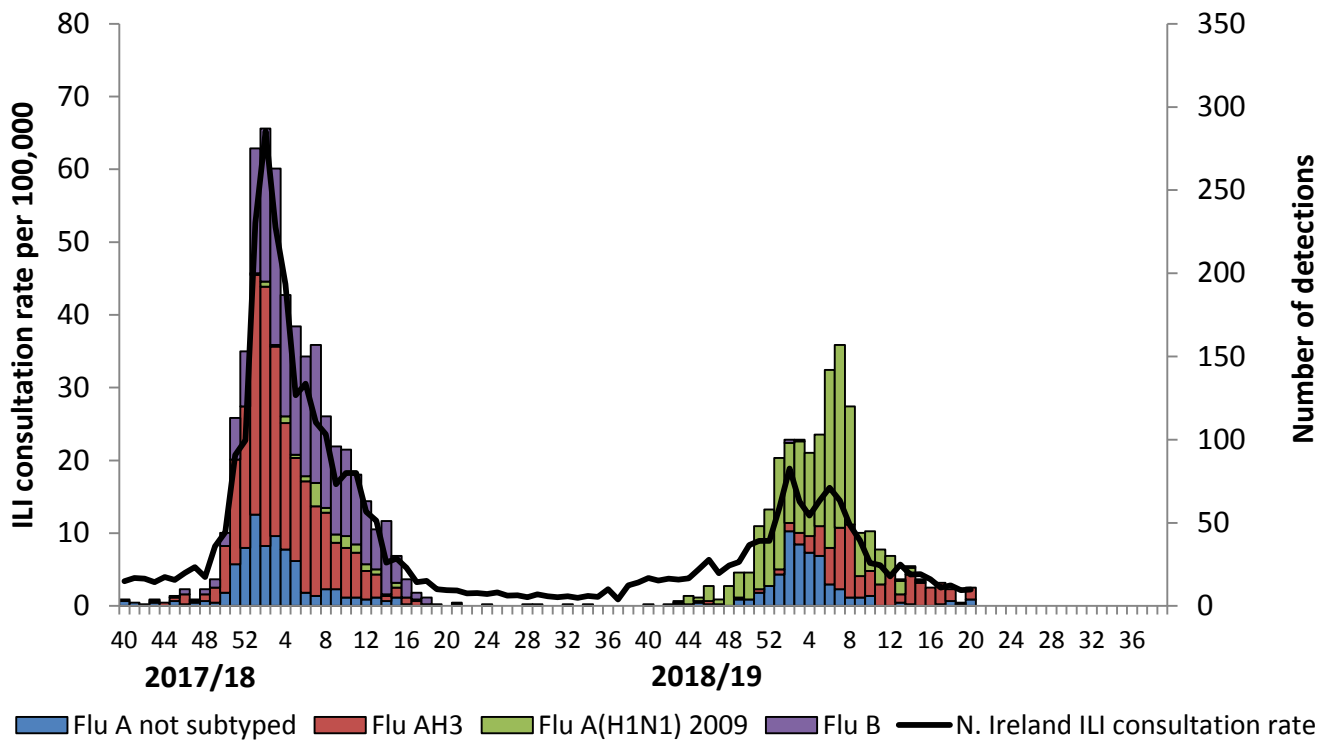


## Comment

During weeks 19 and 20, 2019 there was one positive detection of RSV (1% positivity). To date there have been a total of 689 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**

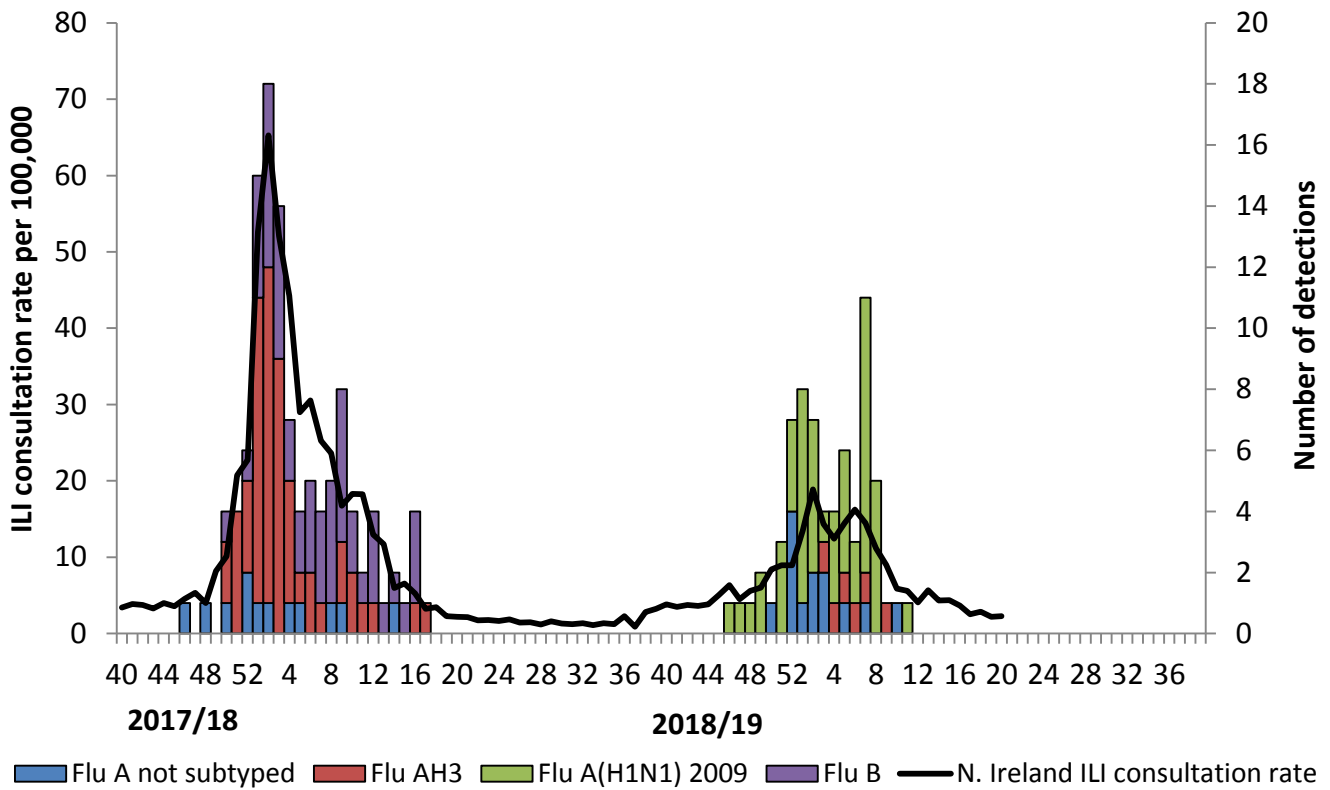


### Comment

During weeks 19 and 20, 2019 there were 13 detections of influenza from specimens taken in hospital settings across Northern Ireland. There were eight Flu A(H3) and five Flu A(untyped). It should be kept in mind that it is possible that not all positive specimens (for weeks 19 and 20) 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 19 and 20, 2019 there were no new admissions to ICU with confirmed influenza reported to the PHA. 67 admissions to ICU with confirmed influenza were reported to PHA this season. There were no deaths reported in weeks 19 and 20. There have been seven deaths reported in ICU patients who had laboratory confirmed influenza this season. In comparison, up to week 20, 2018 there were 119 admissions to ICU with confirmed influenza reported to PHA, with 22 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.

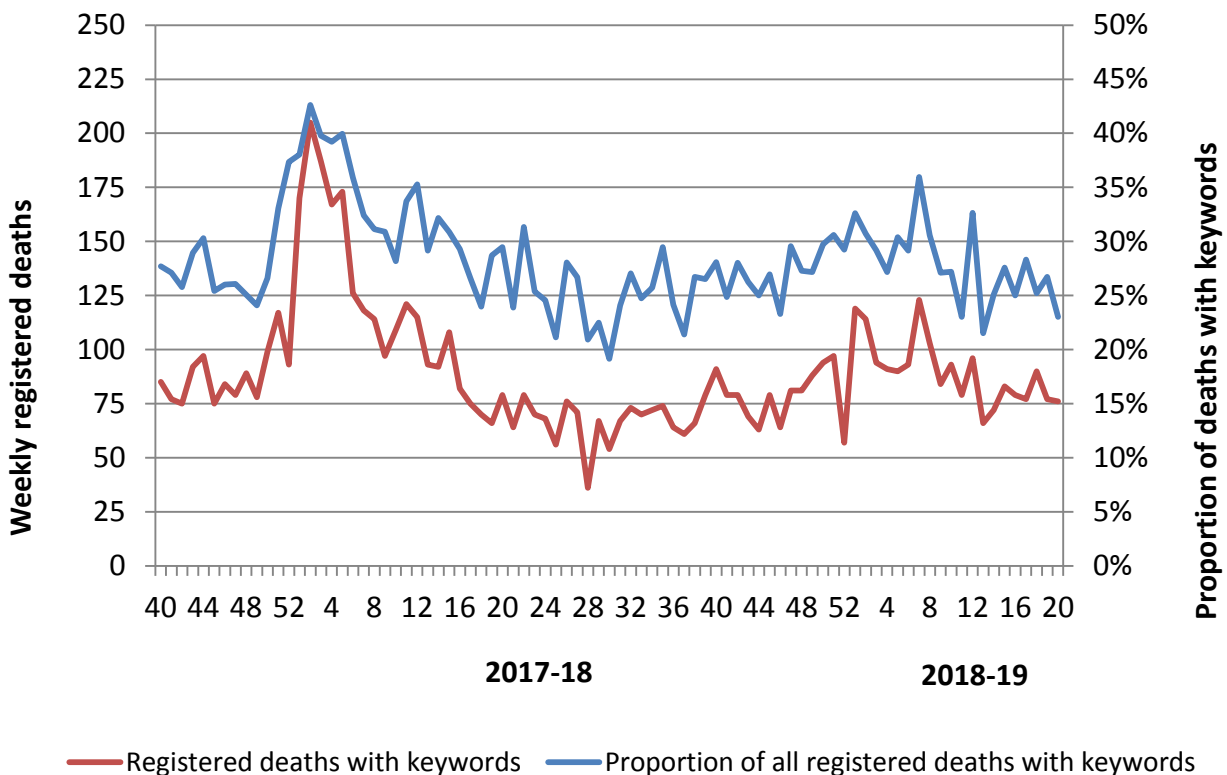
## Outbreak Surveillance

During weeks 19 and 20, 2019 there were no respiratory outbreaks reported to the PHA. To date, there have been 15 respiratory outbreaks reported, 11 in a care home setting (seven 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 decreased from week 19 to week 20, 2019 (27% to 23%). In week 20, there were 330 registered deaths of which 76 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 (23%).

## EuroMOMO

There was no excess all-cause mortality reported in Northern Ireland in week 19 or week 20, 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

The 2018-19 flu vaccination programme is now officially over. Figures in the table below outline end of season uptake for eligible groups.

	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 19/2019 (06–12 May 2019)

- For week 19/2019, all countries reporting ILI or ARI thresholds reported activity at or below baseline levels, indicating a return to interseason levels.
- Few countries reported influenza detections. Of 79 sentinel specimens tested, only 8 were influenza virus positive.
- For week 19/2019, only one of the 54 specimens from patients with severe acute respiratory infection (SARI) tested positive for an influenza virus.
- Pooled data from 24 Member States and areas reporting to the [EuroMOMO](#) project indicated that that all-cause mortality was at expected levels.

### 2018/19 season overview

- Influenza activity in the European Region, based on sentinel sampling, reached 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, with 66% of those subtyped being A(H1N1)pdm09. Among influenza virus-infected patients admitted to other wards, 99% were infected with type A viruses, with 55% of those subtyped being A(H1N1)pdm09.
- Of the patient specimens from SARI surveillance that tested positive for an influenza virus, 99% were type A viruses, with 79% of those subtyped being A(H1N1)pdm09.
- A 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 located under Virus Characteristics.
- WHO has published [recommendations](#) for the composition of influenza vaccines to be used in the 2019–2020 northern hemisphere season. The recommendation states that both type B lineage viruses should remain unchanged, while the A(H1N1)pdm09 and A(H3N2) viruses should be updated.
- The vast majority of circulating viruses in the European Region were susceptible to neuraminidase inhibitors supporting use of antiviral treatment according to national guidelines.

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

## Worldwide (WHO)

13 May 2019 - based on data up to 28 April 2019

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

- In North America and Europe, influenza activity was low overall.
- In North Africa, influenza detections were low across reporting countries.
- In Western Asia, influenza activity decreased overall, with exception of Saudi Arabia where activity remained elevated.
- In East Asia, although decreasing influenza activity was reported in some countries.
- In Southern Asia, influenza activity was low overall.
- In the Caribbean, Central American countries, and the tropical countries of South America, influenza and RSV activity were low in general.
- In West and Middle Africa, influenza activity was low across reporting countries. Influenza activity continued to be reported from Eastern Africa although in decreasing trend with predominantly influenza A(H1N1)pdm09 followed by A(H3N2) detections.
- In the temperate zones of the southern hemisphere, influenza detections increased in southern Australia and South Africa. The influenza activity in South America remained at inter-seasonal levels.
- Worldwide, seasonal influenza A viruses accounted for the majority of detections.

National Influenza Centres (NICs) and other national influenza laboratories from 120 countries, areas or territories reported data to FluNet for the time period from 15 April 2019 to 28 April 2019 (data as of 2019-05-10 04:05:29 UTC). The WHO GISRS laboratories tested more than 78989 specimens during that time period. 11262 were positive for influenza viruses, of which 6777 (60.2%) were typed as influenza A and 4485 (39.8%) as influenza B. Of the sub-typed influenza A viruses, 1111 (32.3%) were influenza A(H1N1)pdm09 and 2330 (67.7%) were influenza A(H3N2). Of the characterized B viruses, 89 (2.6%) belonged to the B-Yamagata lineage and 3285 (97.4%) 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/>

For further information on the Enhanced Surveillance of Influenza in Northern Ireland scheme or to be added to the circulation list for this bulletin please contact:

**Dr Mark O'Doherty**  
**Senior Epidemiological Scientist**  
**Public Health Agency**

**Ms Emma Walker**  
**Surveillance Information Officer**  
**Public Health Agency**

**Ms Emma Dickson**  
**Epidemiological Scientist**  
**Public Health Agency**

**Dr Jillian Johnston**  
**Public Health Consultant**  
**Public Health Agency**

Email: [flusurveillance@hscni.net](mailto:flusurveillance@hscni.net)

This report was compiled by Ms Emma Walker, Ms Emma Dickson, Dr Mark O'Doherty and Dr Jillian Johnston.