

# Influenza Weekly Surveillance Bulletin

## Northern Ireland, Week 5 (28<sup>th</sup> January – 3<sup>rd</sup> February 2019)

### Summary

The surveillance data indicates that influenza continues to circulate in community and hospital settings across Northern Ireland. Primary Care influenza rates remain below the baseline Moving Epidemic Method (MEM) threshold<sup>1</sup> for Northern Ireland and are below normal seasonal activity.

#### Northern Ireland Primary Care Consultation Rates

- GP consultation rates for flu and flu-like illness (flu/FLI) during week 5, 2019 was 14.5 per 100,000 population, an increase from week 4 (12.4 per 100,000). Rates remain below the baseline Moving Epidemic Method (MEM) threshold for flu activity<sup>1</sup>.
- OOH GP flu/FLI consultation rate increased between week 4 and week 5 (8.2 to 9.1 per 100,000 population, respectively).

#### Microbiological Surveillance (Flu and RSV)

- During week 5 there were 454 specimens submitted for virological testing, of which 114 tested positive for influenza (25% positivity).
- There were 39 detections of Flu A(H1N1)pdm09, 20 Flu A(H3) and 55 Flu A(untyped).
- There were 13 positive RSV detections in week 5 (3% positivity).

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

- In week 5 there were 37 detections of Flu A(H1N1)pdm09, 46 Flu A(untyped) and 16 Flu A(H3).
- There were six cases reported in ICU with laboratory confirmed influenza (two Flu A(H1N1)pdm09, one Flu A(H3) and three Flu A(untyped)).
- To date, there have been 45 admissions to ICU with confirmed influenza reported to PHA and four deaths reported in ICU patients who had laboratory confirmed influenza.

#### Respiratory Outbreaks across Northern Ireland

- During week 5, 2019 there was one respiratory outbreak in a hospital setting reported to the PHA (Flu A(untyped)). To date, there have been seven respiratory outbreaks reported, six in care homes (one Flu A(untyped), two Flu B and three RSV) and one in a hospital setting.

#### Mortality

- The proportion of deaths related to respiratory keywords (bronchiolitis, bronchitis, influenza and pneumonia) increased in week 5 compared to week 4 (30% to 27%).

#### Influenza Vaccine Uptake

	2018/19 (to Dec 31 <sup>st</sup> )	2017/18 (to Dec 31 <sup>st</sup> )
>65 years	64.1%	68.5%
<65 years at risk	47.9%	50.4%
Pregnant women	46.5%	45.6%
2 to 4 year olds	45.7%	46.8%
Primary School	75.5%	75.8%
Trust Frontline	34.3%	31.7%
Trust Frontline (excluding social workers and social care workers)	38.1%	-

<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:

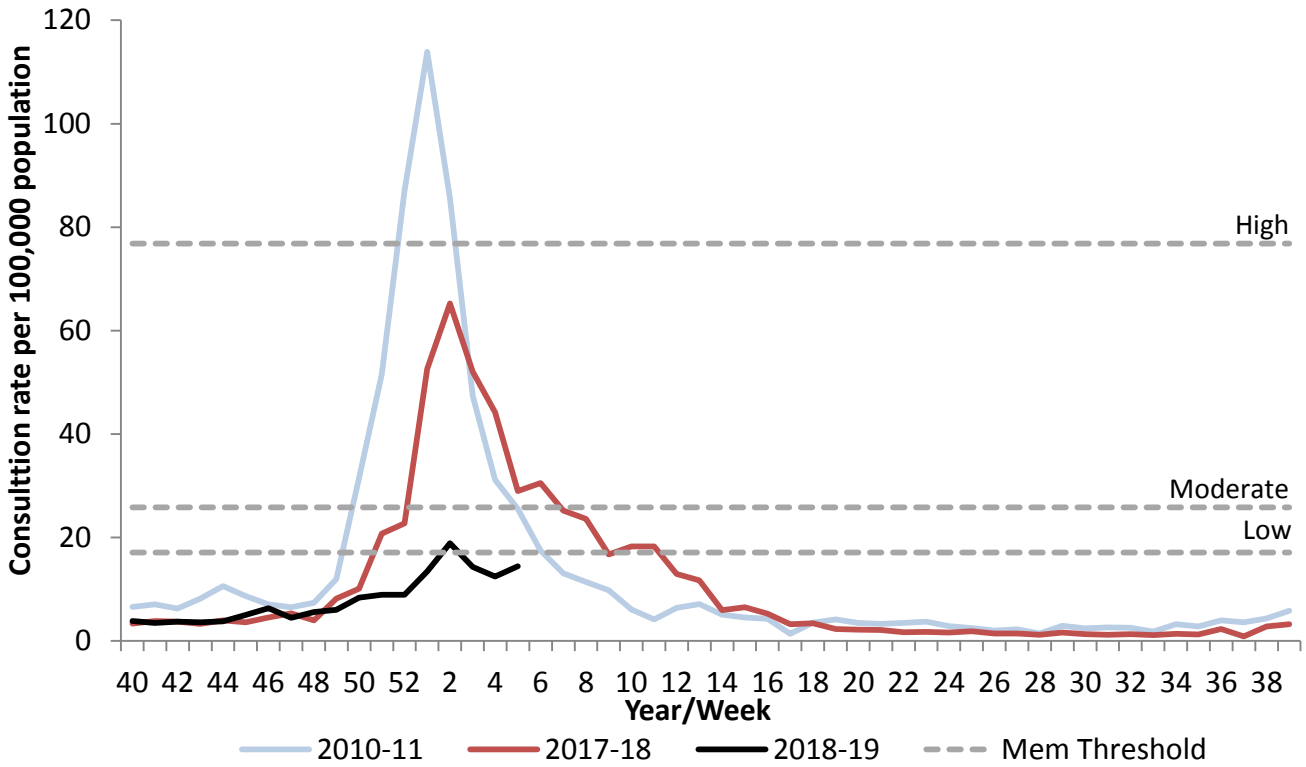
- Northern Ireland GP surveillance representing 98% of Northern Ireland population;
- Sentinel flu-swabber GP practices representing 11.2% of the NI population, contributing to the measurement of circulating influenza in the community
- GP Out-of-Hours surveillance system representing the entire population;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

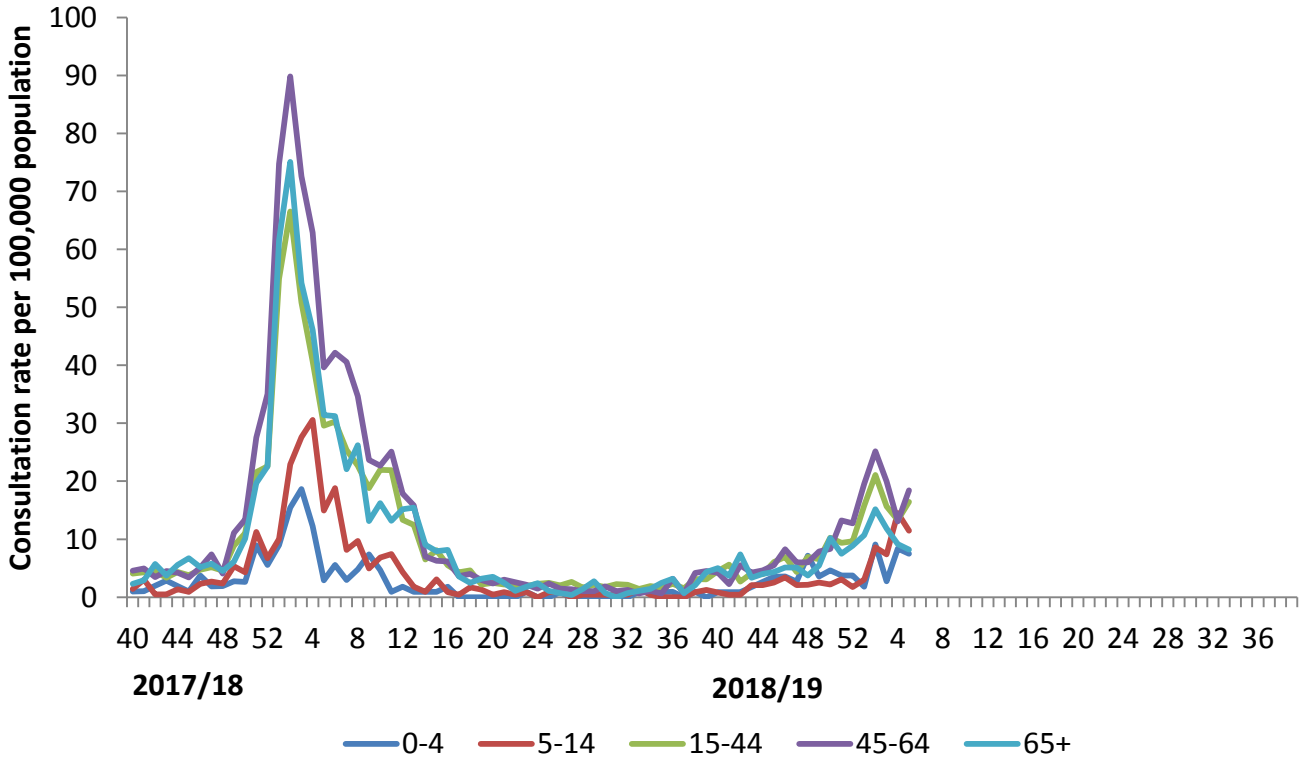
***As a result, Flu/FLI consultation rates and the MEM threshold from 2017-18 onwards will be generally lower than in previous years. Please take this into account when interpreting the figures.***

# 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**



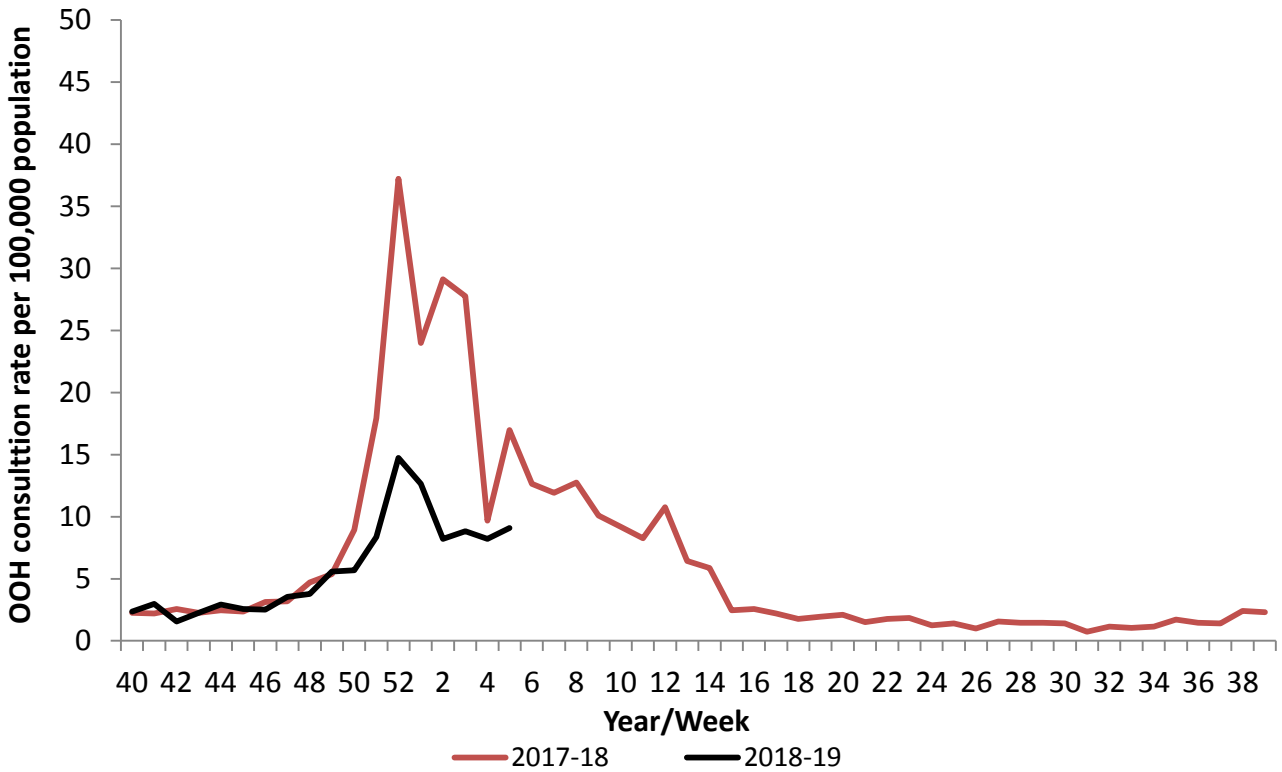
## Comment

The NI GP consultation rates for flu and flu-like illness (flu/FLI) during week 5, 2019 was 14.5 per 100,000 population, an increase from week 4, 2019 (12.4 per 100,000). Activity remains below the baseline MEM threshold for Northern Ireland (<17.1 per 100,000) (Figure 1).

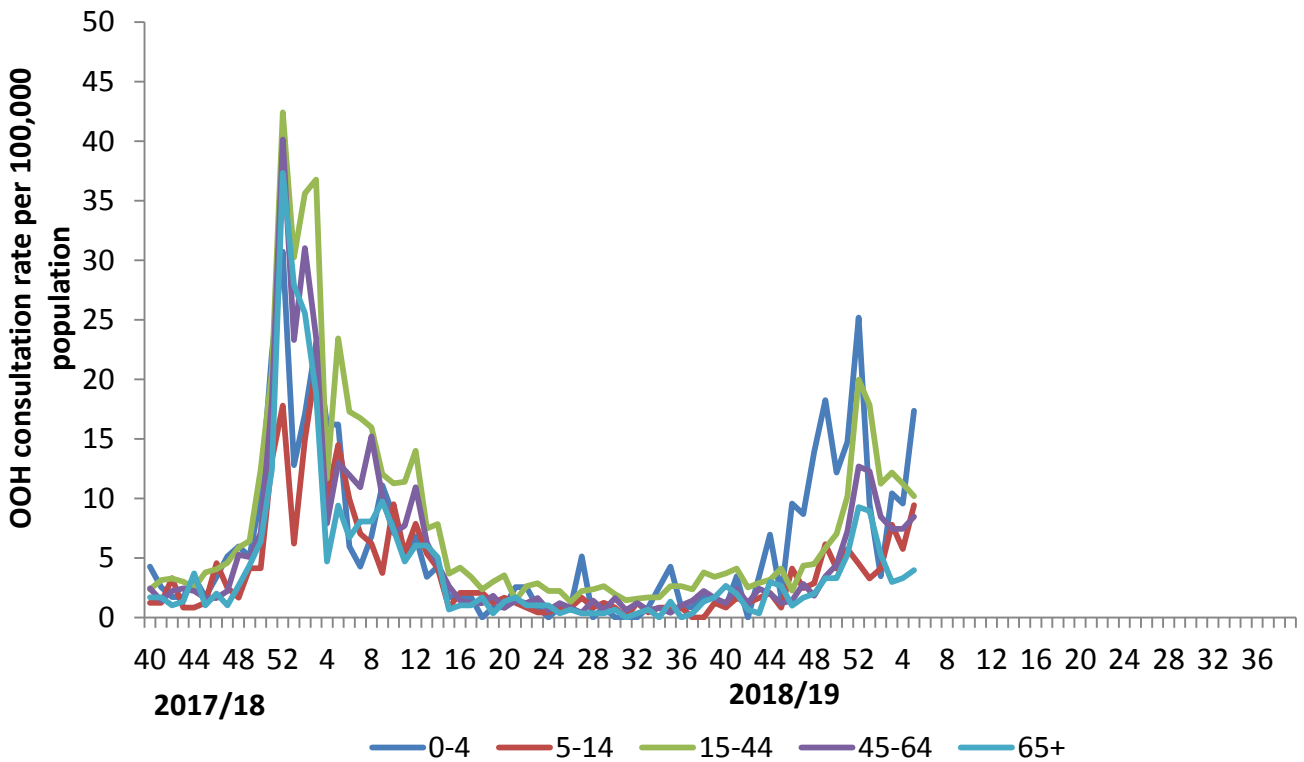
The consultation rates decreased in week 5 compared to week 4 in the younger age groups from 8.4 to 7.5 per 100,000 in those aged 0-4 years and 14.5 to 11.5 per 100,000 in those aged 5-14 years. The rate also decreased in those aged 65 years and over (9.1 to 8.2 per 100,000). The rates increased in those aged 15-44 years (13.3 to 16.4 per 100,000) and those aged 45-64 (13.1 to 18.4 per 100,000). The flu/FLI consultation rate was highest in those aged 45-64 years (18.4 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**



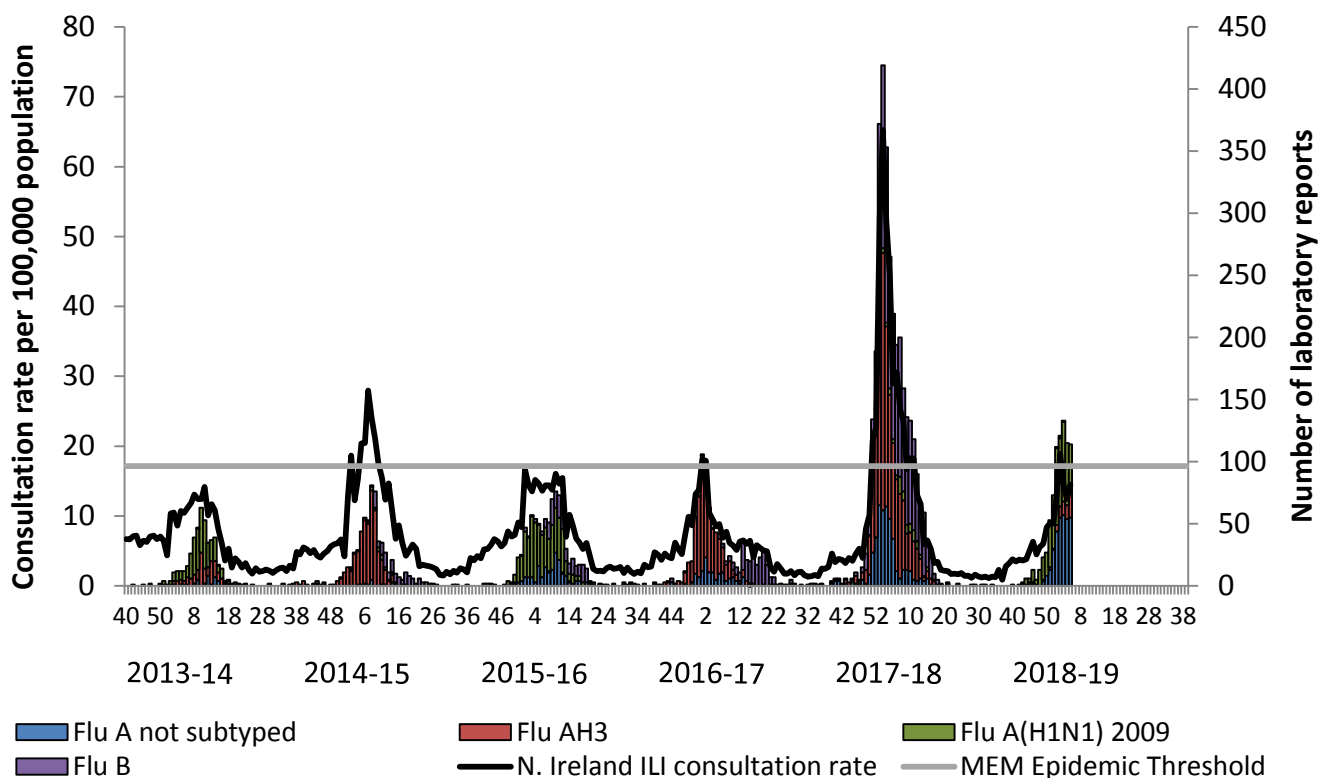
## Comment

The OOH flu/FLI consultation rate during week 5, 2019 was 9.1 per 100,000 population, an increase from week 4 (8.2 per 100,000) (Figure 3). However, the rate in week 5 is substantially lower than the same week in 2017/18 (9.1 compared to 17.0 per 100,000). The proportion of calls related to flu/FLI in OOH centres increased marginally from 1.5% in week 4 to 1.6% in week 5.

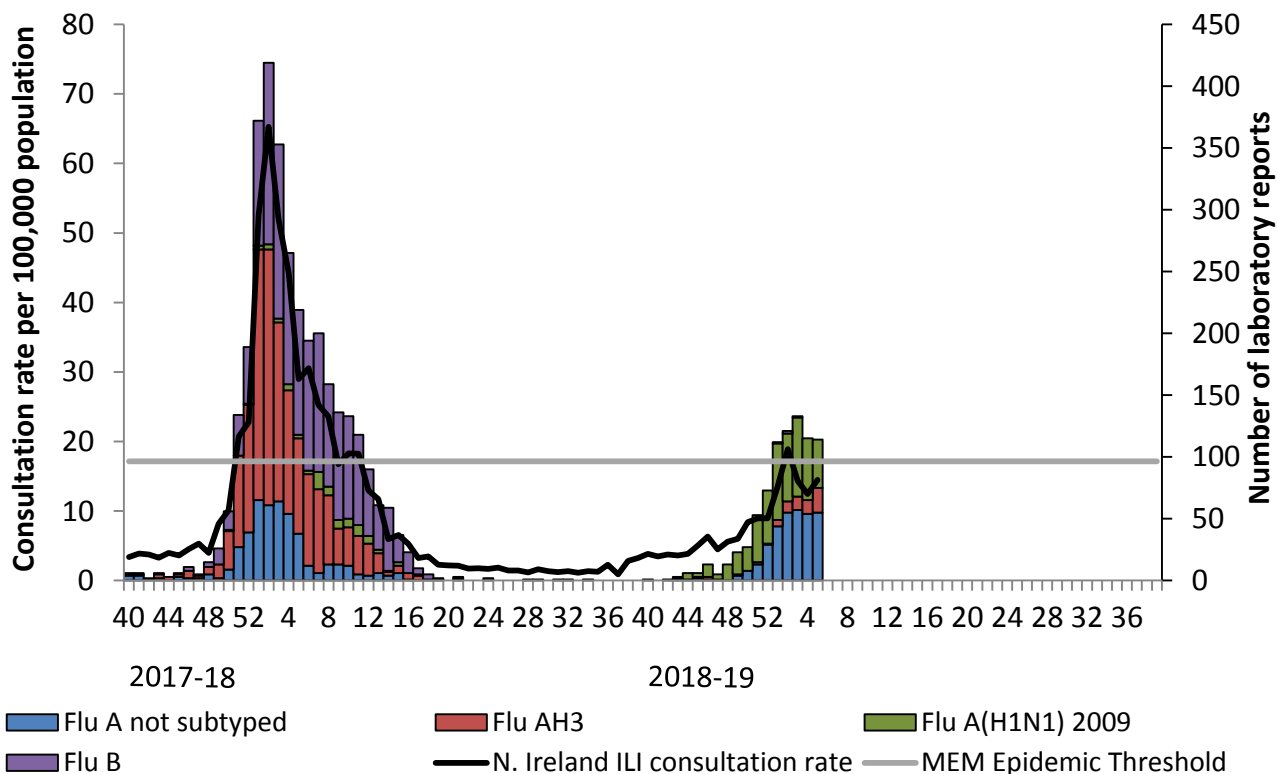
Consultation rates increased in all age groups in week 5 compared to week 4 with the exception of those aged 15-44 years which decreased from 11.2 to 10.2 per 100,000. The most notable rise and the highest consultation rate was in those aged 0-4 years, increasing from 9.6 per 100,000 in week 4 to 17.4 in week 5 (Figure 4).

## Virology Data

**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, Week 5, 2018-19**

Source	Specimens tested	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	14	3	2	1	0	0	6	43%
Non-sentinel	440	17	37	54	0	13	108	25%
<b>Total</b>	<b>454</b>	<b>20</b>	<b>39</b>	<b>55</b>	<b>0</b>	<b>13</b>	<b>114</b>	<b>25%</b>

**Table 2. Cumulative virus activity from all sources by age group, Week 40 - 5, 2018-19**

Age Group	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
0-4	2	66	21	0	89	318
5-14	5	20	9	0	34	12
15-64	33	270	199	3	505	106
65+	24	68	97	2	191	146
Unknown	0	0	0	0	0	0
<b>All ages</b>	<b>64</b>	<b>424</b>	<b>326</b>	<b>5</b>	<b>819</b>	<b>582</b>

**Table 3. Cumulative virus activity by age group and source, Week 40 - Week 5, 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
0-4	0	0	0	0	0	0	2	66	21	0	89	318
5-14	1	2	0	0	3	0	4	18	9	0	31	12
15-64	5	19	11	0	35	10	28	251	188	3	470	96
65+	1	1	1	1	4	0	23	67	96	1	187	146
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>All ages</b>	<b>7</b>	<b>22</b>	<b>12</b>	<b>1</b>	<b>42</b>	<b>10</b>	<b>57</b>	<b>402</b>	<b>314</b>	<b>4</b>	<b>777</b>	<b>572</b>

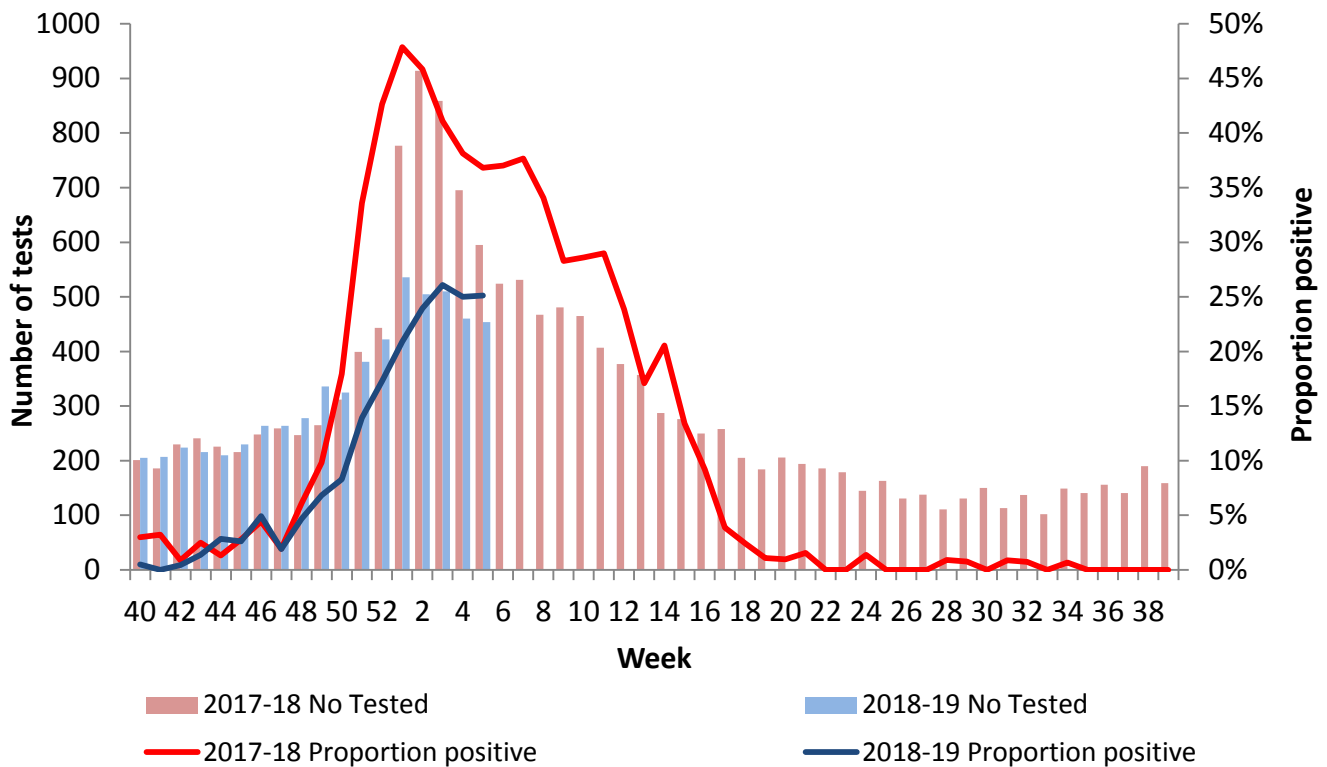
**Note**

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 typing 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 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**

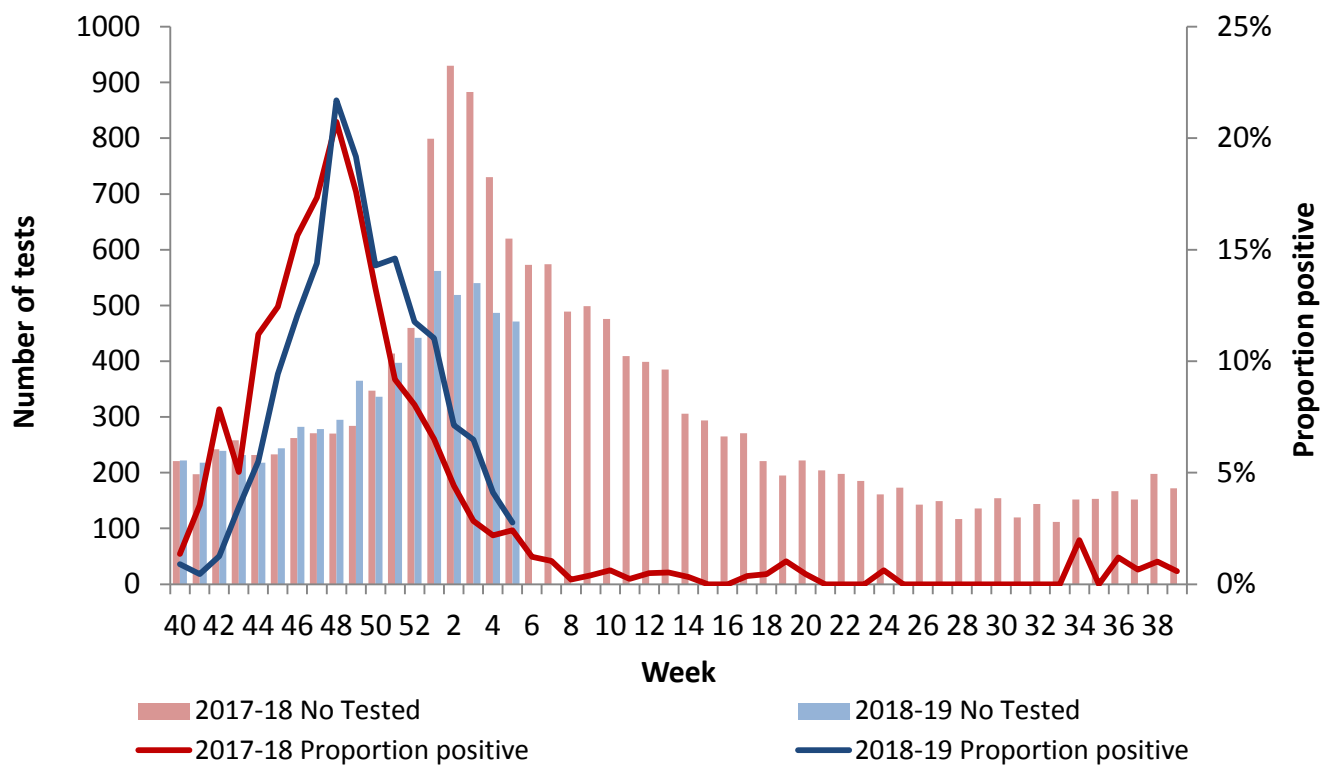
Additional virology testing has been undertaken at a local laboratory since week 2, 2018 and at another since week 2, 2019. This bulletin includes this data along with the data from the Regional Virology Laboratory. Other local laboratories may begin undertaking influenza testing and this data will be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

In week 5, 2019 there were 454 specimens submitted for virological testing. There were 114 detections of influenza in total (25% positivity); 20 Flu A(H3), 39 Flu A(H1N1)pdm09 and 55 Flu A(untyped).

There were 14 samples submitted through the GP based sentinel scheme in week 5 across Northern Ireland. There were 6 positive results (43% positivity); three Flu A(H3), two Flu A(H1N1)pdm09 and one Flu A(untyped) (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

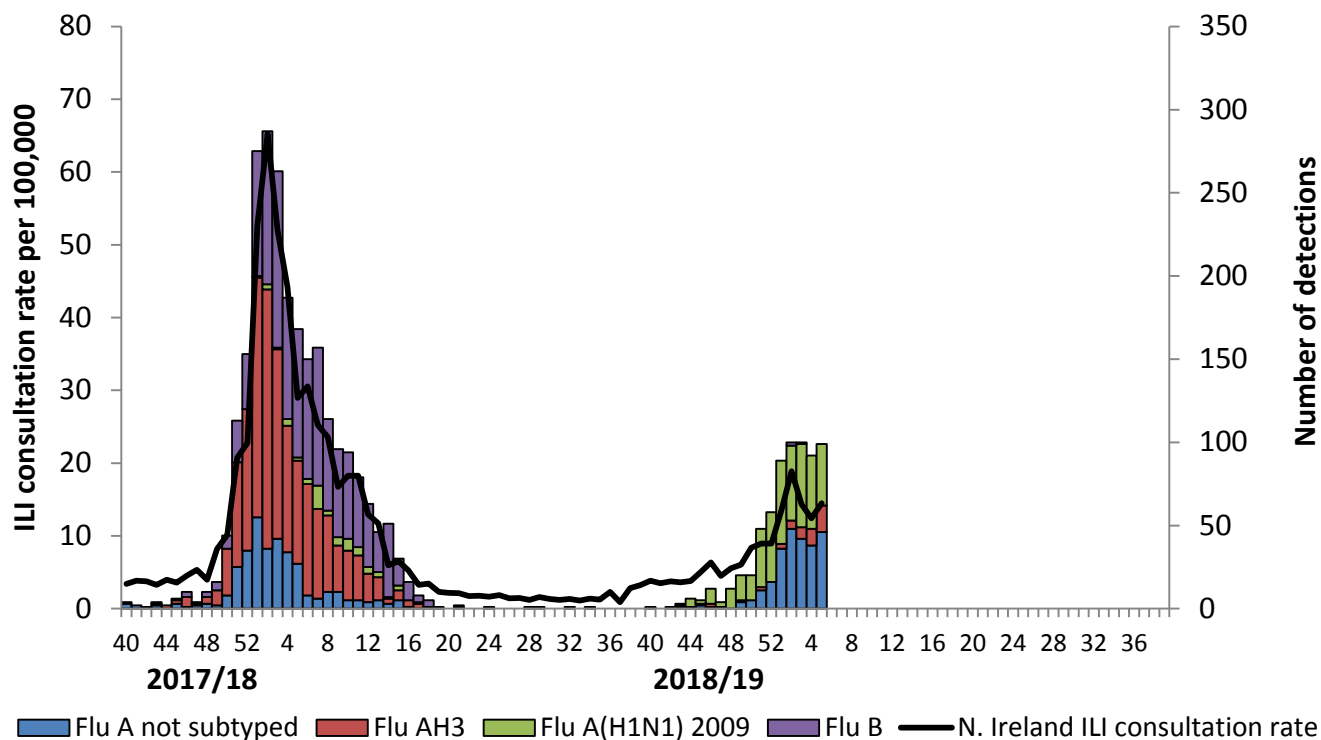


### Comment

In week 5, 2019 there were 13 positive detections of RSV (3% positivity). To date there have been a total of 582 detections of RSV of which the majority (55%) 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

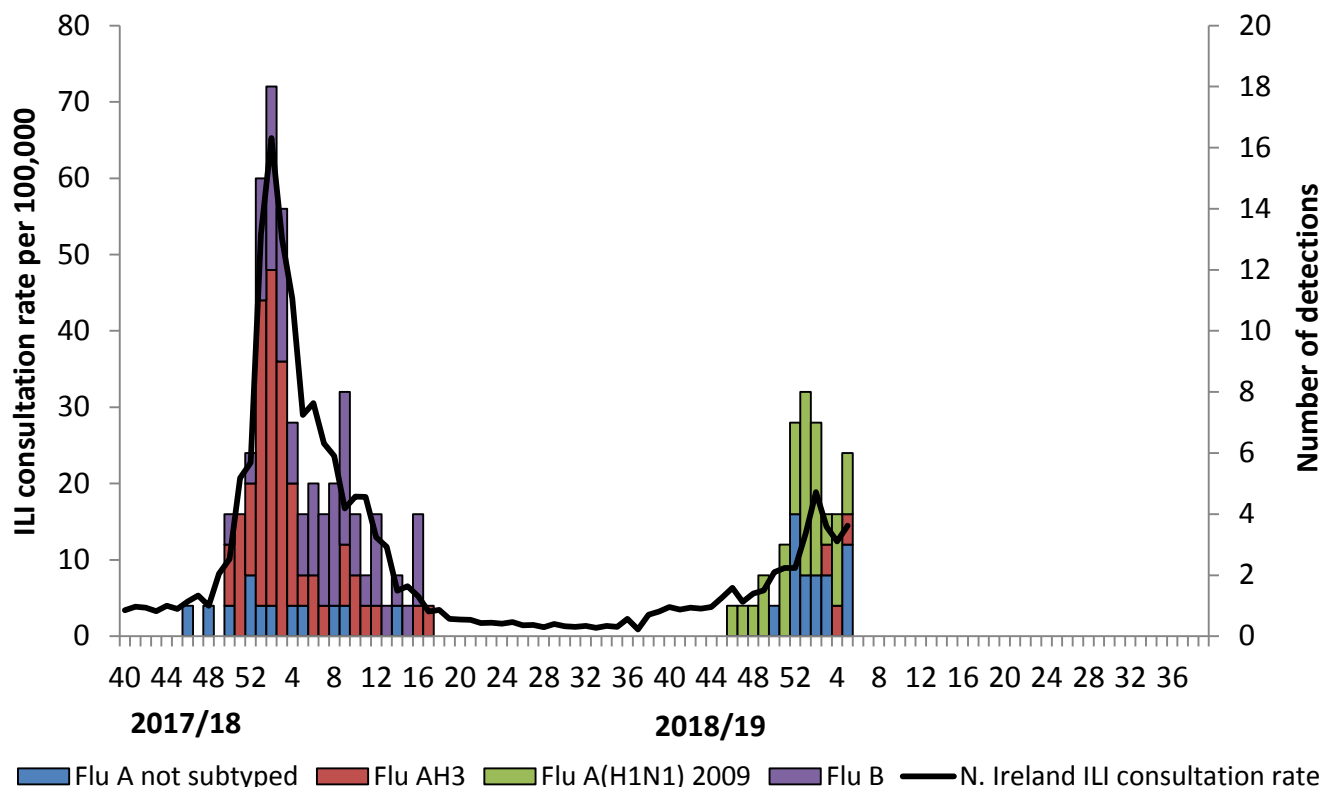


### Comment

In week 5, 2019 there were 99 detections of influenza from specimens taken in hospital settings across Northern Ireland. There were 16 Flu A(H3), 37 Flu A(H1N1)pdm09 and 46 Flu A(untyped). It should be kept in mind that it is possible that not all positive specimens (for week 5) 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 week 5, 2019 there were six new admissions to ICU with confirmed influenza reported to the PHA; two Flu A(H1N1)pdm09, one Flu A(H3) and three Flu A(untyped). So far this season there has been 45 admissions to ICU with confirmed influenza reported to PHA. There were no deaths reported in week 5. So far this season there have been four deaths reported in ICU patients who had laboratory confirmed influenza. In comparison, up to week 5 of the 2017/18 season there were 75 admissions to ICU with confirmed influenza reported to PHA, with 15 deaths reported in ICU patients who had laboratory confirmed influenza.

Of the 45 admissions to ICU, 38% (n=17) were female. The ages ranged from <1 year to 78 years, with a median age of 53 years and a mean age of 48 years. 44% (n=20) were classed as being in a vaccine risk group, of which 35% (n=7) were vaccinated this season. All four deaths were classed as being in a vaccine risk group, with two having been vaccinated this season. The deaths occurred in patients aged 45 years and over.

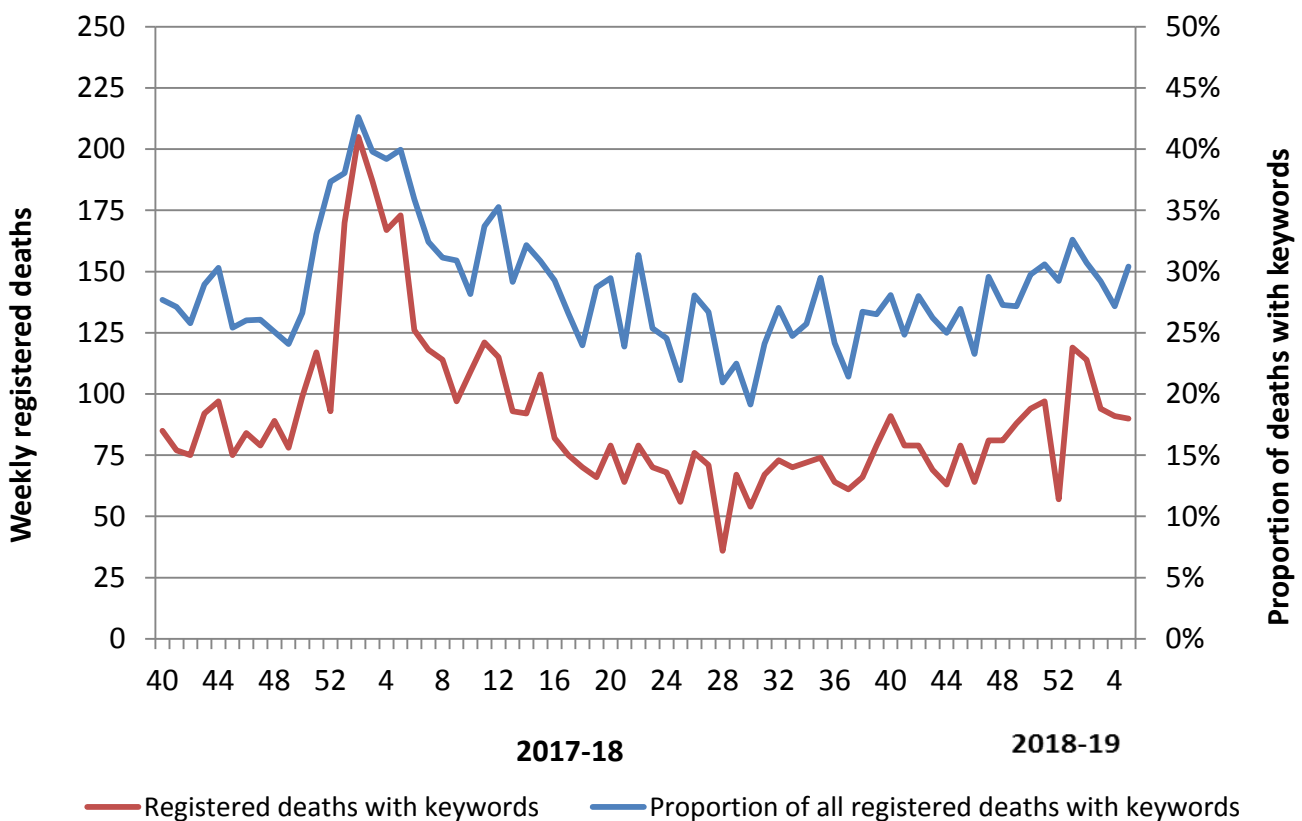
## Outbreak Surveillance

During week 5, 2019 there was one respiratory outbreak in a hospital setting reported to the PHA (Flu A(untyped)). To date, there have been seven respiratory outbreaks reported, six in care homes (one Flu A(untyped), two Flu B and three RSV) and one in a hospital setting.

## 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 slightly from 27% in week 4, 2019 to 30% in week 5. There were 296 registered deaths of which 90 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 (40%).

## EuroMOMO

EuroMOMO data was not available for week 5, 2019. Up to week 4 there has been excess all-cause mortality for one week in this season to date (week 1).

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

	<b>2018/19 (to Dec 31<sup>st</sup>)</b>	<b>2017/18 (to Dec 31<sup>st</sup>)</b>
>65 years	64.1%	68.5%
<65 years at risk	47.9%	50.4%
Pregnant women	46.5%	45.6%
2 to 4 year olds	45.7%	46.8%
Primary School	75.5%	75.8%
Trust Frontline	34.3%	31.7%
Trust Frontline (excluding social workers and social care workers)	38.1%	-

## International Summary

### Europe

#### Week 4/2019 (21-27 January 2019)

- Influenza activity continued to increase in the European Region. Samples collected from individuals presenting with ILI or ARI to sentinel primary health care sites yielded an influenza positivity rate of 51.3%.
- Influenza type A virus detections dominated with A(H1N1)pdm09 viruses and A(H3N2) viruses co-circulating. Very few influenza B viruses were detected.
- Pooled data from 23 Member States and areas reporting to the [EuroMOMO](#) project indicated excess mortality in adults and elderly populations overall. However, this result was driven by data from only a few countries.

#### 2018/19 season overview

- Influenza activity in the European region, based on sentinel sampling, exceeded a positivity rate of 10% in week 49/2018 and has increased continuously into week 4/2019. Both subtypes of influenza A viruses are circulating widely, with either A(H1N1)pdm09 or A(H3N2) dominating in some countries, and co-circulation of the two viruses in other countries. Countries should continue to promote vaccination. In addition, countries are encouraged to use antivirals in accordance with national guidelines.
- In general, current influenza vaccines tend to work better against influenza A(H1N1)pdm09 and influenza B viruses than against influenza A(H3N2) viruses. [Preliminary results](#) from Canada where the predominate circulating viruses are influenza A(H1N1)pdm09 viruses, indicate good vaccine effectiveness. These results are supported by recent preliminary vaccine effectiveness [results](#) from Hong Kong, where the vaccine was very effective at preventing A(H1N1)pdm09 related hospitalizations in children.

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

### Worldwide (WHO)

04 February 2019 - based on data up to 20 January 2019

### Summary

In the temperate zone of the northern hemisphere influenza activity continued to increase.

- In North America, influenza activity appeared to decrease slightly with influenza A(H1N1)pdm09 predominating.
- In Europe, influenza activity continued to increase, with both A viruses circulating.
- In North Africa, influenza A(H1N1)pdm09 detections sharply increased in Morocco.
- In Western Asia, influenza activity continued to increase in some countries and appeared to decrease across countries of the Arabian Peninsula.
- In East Asia, influenza activity continued to increase, with influenza A(H1N1)pdm09 virus predominating.
- In Southern Asia, influenza detections remained elevated overall. Influenza activity continued to increase in Iran (Islamic Republic of) with influenza A(H3N2) the predominant circulating virus.
- In the temperate zones of the southern hemisphere, influenza activity 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 110 countries, areas or territories reported data to FluNet for the time period from 07 January 2019 to 20 January 2019 (data as of 2019-02-01 04:30:14 UTC). The WHO GISRS laboratories tested more than 232136 specimens during that time period. 59457 were positive for influenza viruses, of which 58436 (98.3%) were typed as influenza A and 1021 (1.7%) as influenza B. Of the sub-typed influenza A viruses, 24559 (77.7%) were influenza A(H1N1)pdm09 and 7058 (22.3%) were influenza A(H3N2). Of the characterized B viruses, 85 (34.6%) belonged to the B-Yamagata lineage and 161 (65.4%) to the B-Victoria lineage.

[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:

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