

# Influenza Weekly Surveillance Bulletin

## Northern Ireland, Week 12 (18<sup>th</sup> – 24<sup>th</sup> March 2019)

### Summary

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

#### Northern Ireland Primary Care Consultation Rates

- GP consultation rate for flu and flu-like illness (flu/FLI) during week 12, 2019 was 4.1 per 100,000 population, a decrease from week 11 (5.6 per 100,000).
- OOH GP flu/FLI consultation rate rose between week 12 and week 11 (2.9 to 3.7 per 100,000 population).

#### Microbiological Surveillance (Flu and RSV)

- During week 12 there were 277 specimens submitted for virological testing, of which 30 tested positive for influenza (11% positivity).
- There were nine detections of Flu A(H1N1)pdm09, 18 Flu A(H3) and three (Flu A (untyped)).
- Flu A(H3) appears to be the dominant virus now, followed by influenza A(H1N1)pdm09.
- There were five positive RSV detections in week 12 (2% positivity).

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

- In week 12 there were nine detections of Flu A(H1N1)pdm09, 18 Flu A(H3) and two Flu A (untyped).
- 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 week 12 there was one respiratory outbreak reported in a care home (Flu A (untyped)).
- To date, there have been 12 respiratory outbreaks reported, nine in care homes (five Flu A(untyped), one Flu B and three RSV) and three in a hospital setting (Flu A(untyped)).

#### Mortality

- The proportion of deaths related to respiratory keywords (bronchiolitis, bronchitis, influenza and pneumonia) rose in week 12 (33%) compared to week 11 (23%).

#### Influenza Vaccine Uptake

	2018/19 (to Jan 31 <sup>st</sup> )	2017/18 (to Jan 31 <sup>st</sup> )
>65 years	68.7%	70.4%
<65 years at risk	50.7%	53.5%
Pregnant women	47.0%	47.9%
2 to 4 year olds	47.2%	49.1%
Primary School	75.7%	76.2%
Trust Frontline	34.8%	32.8%
Trust Frontline (excluding social workers and social care workers)	38.5%	-

## 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:

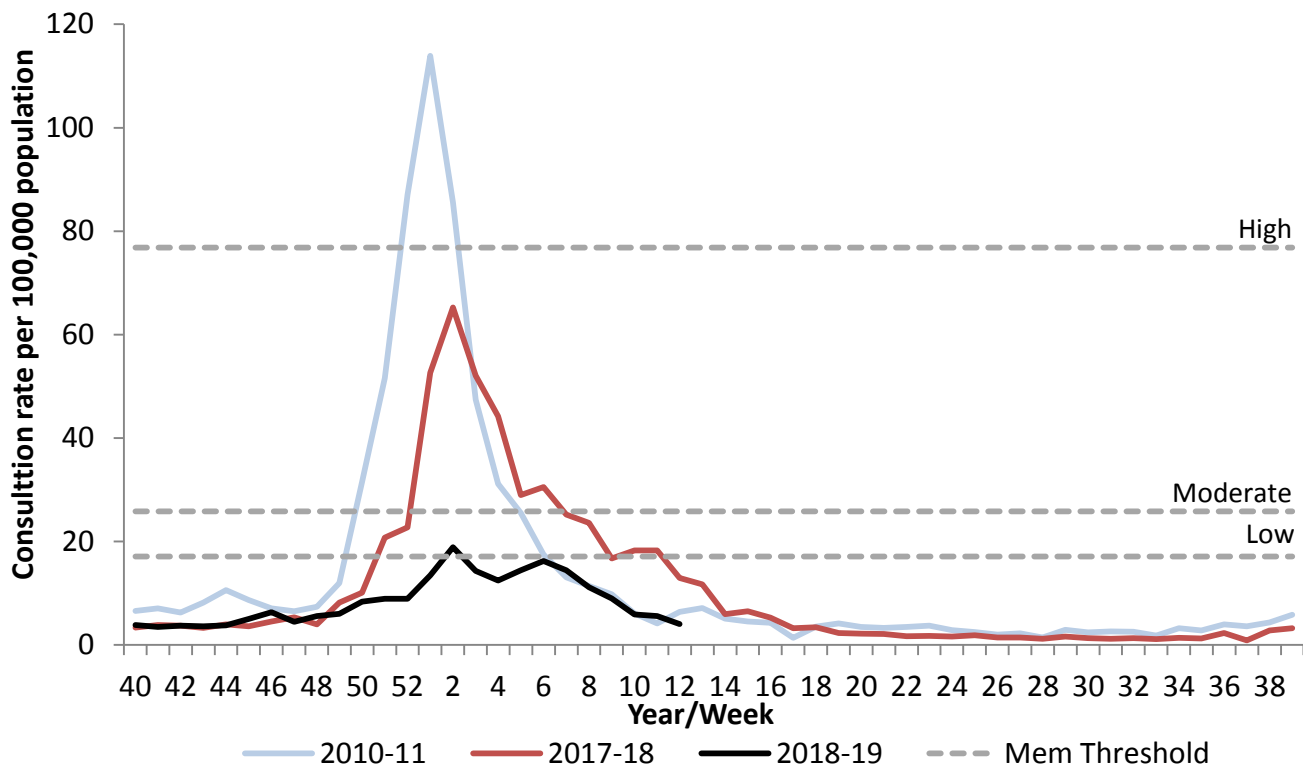
- Northern Ireland GP surveillance representing 98% of Northern Ireland population;
- Sentinel flu-swabber GP practices representing 11.2% of the NI population, contributing to the measurement of circulating influenza in the community
- GP Out-of-Hours surveillance system representing the entire population;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

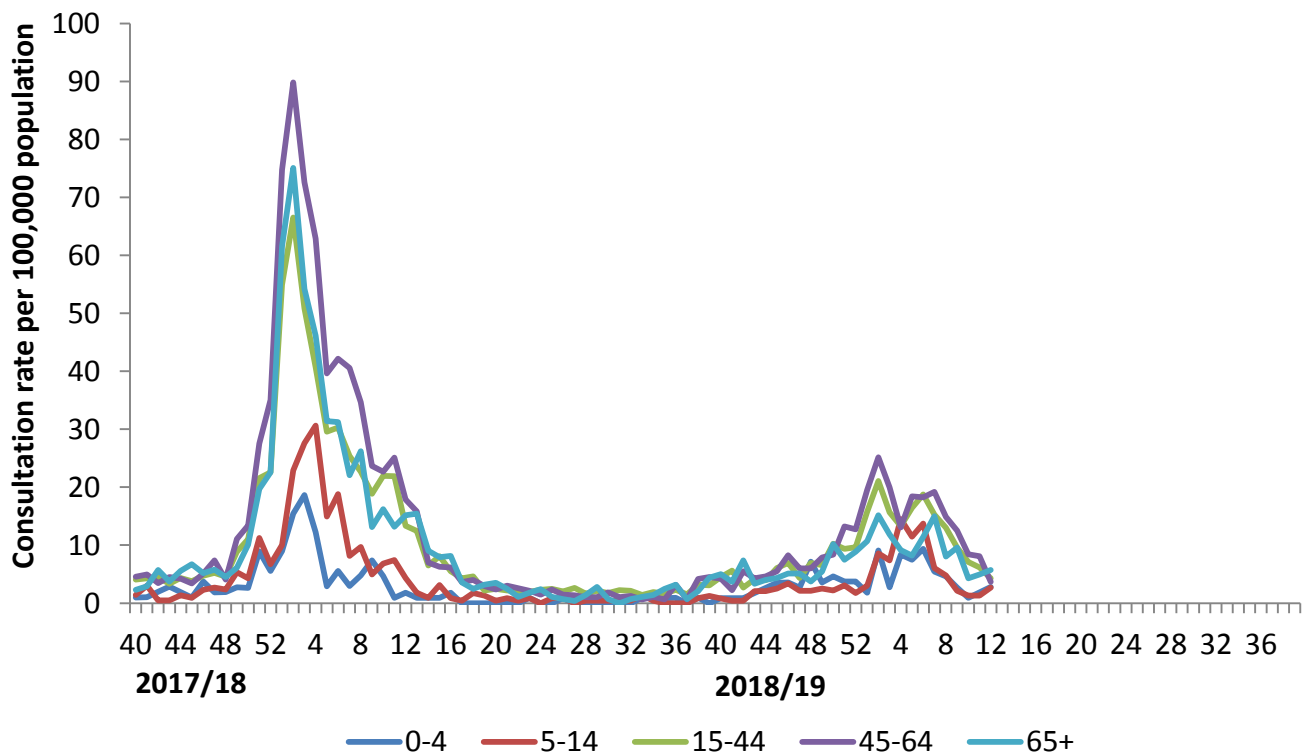
***As a result, Flu/FLI consultation rates and the MEM threshold from 2017-18 onwards will be generally lower than in previous years. Please take this into account when interpreting the figures.***

# 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 GP consultation rate for flu and flu-like illness (flu/FLI) during week 12, 2019 has returned to baseline levels at 4.1 per 100,000 population. This is a decrease from week 11 (5.6 per 100,000) and is much lower than the same week in 2017/18 (4.1 compared to 13.0 per 100,000) (Figure 1).

The consultation rates decreased in week 12 compared to week 11 in those aged 15-44 years (6.2 to 4.3 per 100,000) and in those aged 45-64 years (8.1 to 3.7 per 100,000). Rates increased in those aged 0-4 years (1.8 to 2.8 per 100,000), 5-14 years (1.3 to 2.7 per 100,000) and 65 years and over (4.9 to 5.7 per 100,000). The consultation rate was highest in those aged 65 years and over (5.7 per 100,000) and lowest in those aged 5-14 years (2.7 per 100,000) (Figure 2).

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

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

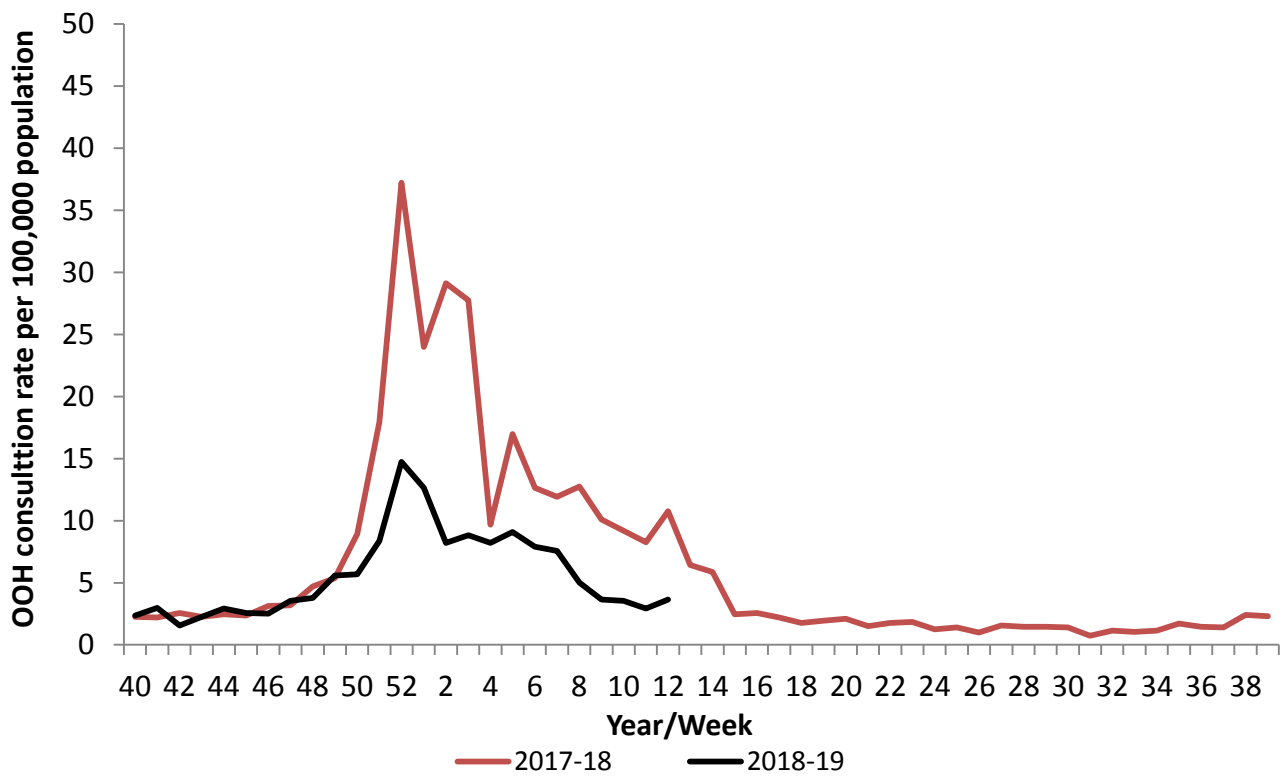
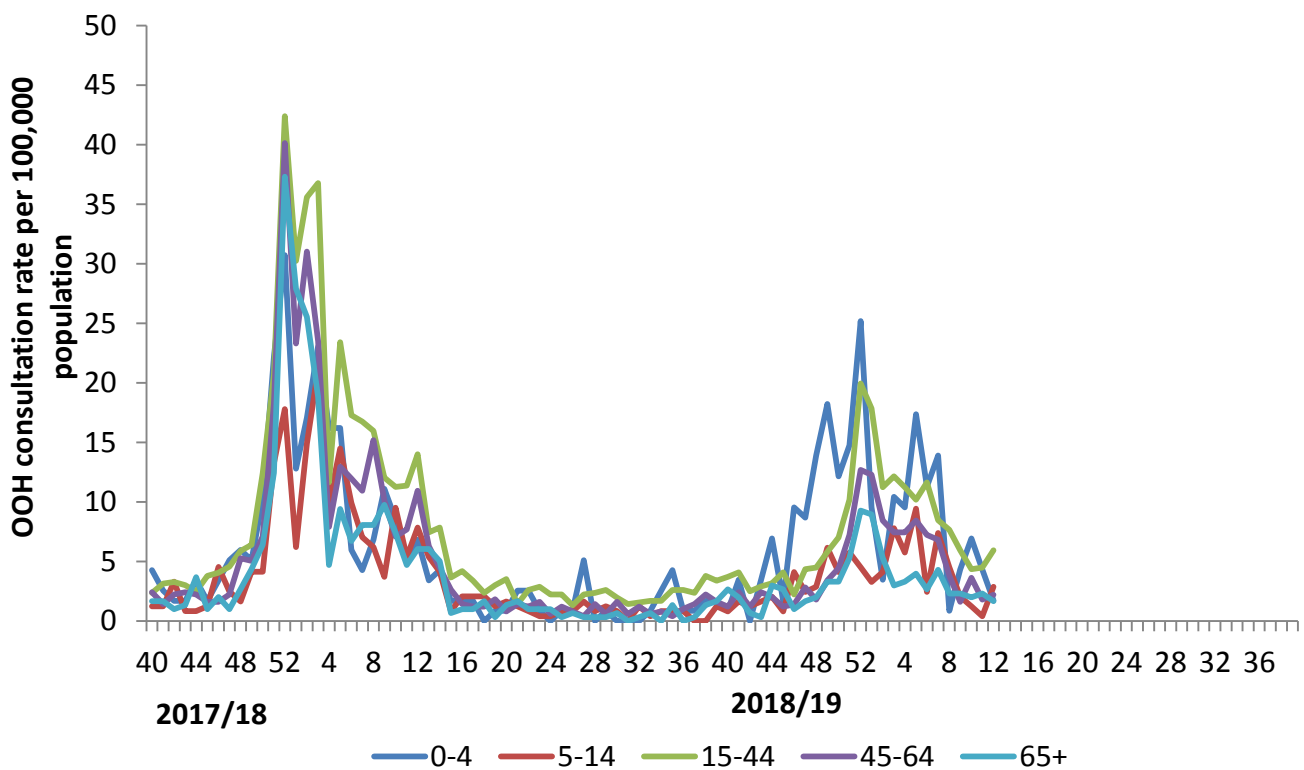


Figure 4. OOH call rates of flu/FLI by age-group from week 40, 2017



## Comment

The OOH flu/FLI consultation rate during week 12, 2019 was 3.7 per 100,000 population, which is higher than week 11 (2.9 per 100,000) (Figure 3). The rate in week 12 is lower than the same week in 2017/18 (3.7 compared to 10.8 per 100,000). The proportion of calls related to flu/FLI in OOH centres remained stable in week 12 at 0.5% (0.5% in week 11).

Consultation rates decreased in week 12 in those aged 0-4 years (4.3 to 1.7 per 100,000) and 65 years and over (2.3 to 1.7 per 100,000), but increased in those aged 5-14 years (0.4 to 2.9 per 100,000), 15-44 years (4.5 to 5.9 per 100,000) and 45-64 years (1.8 to 2.2 per 100,000) (Figure 4).

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

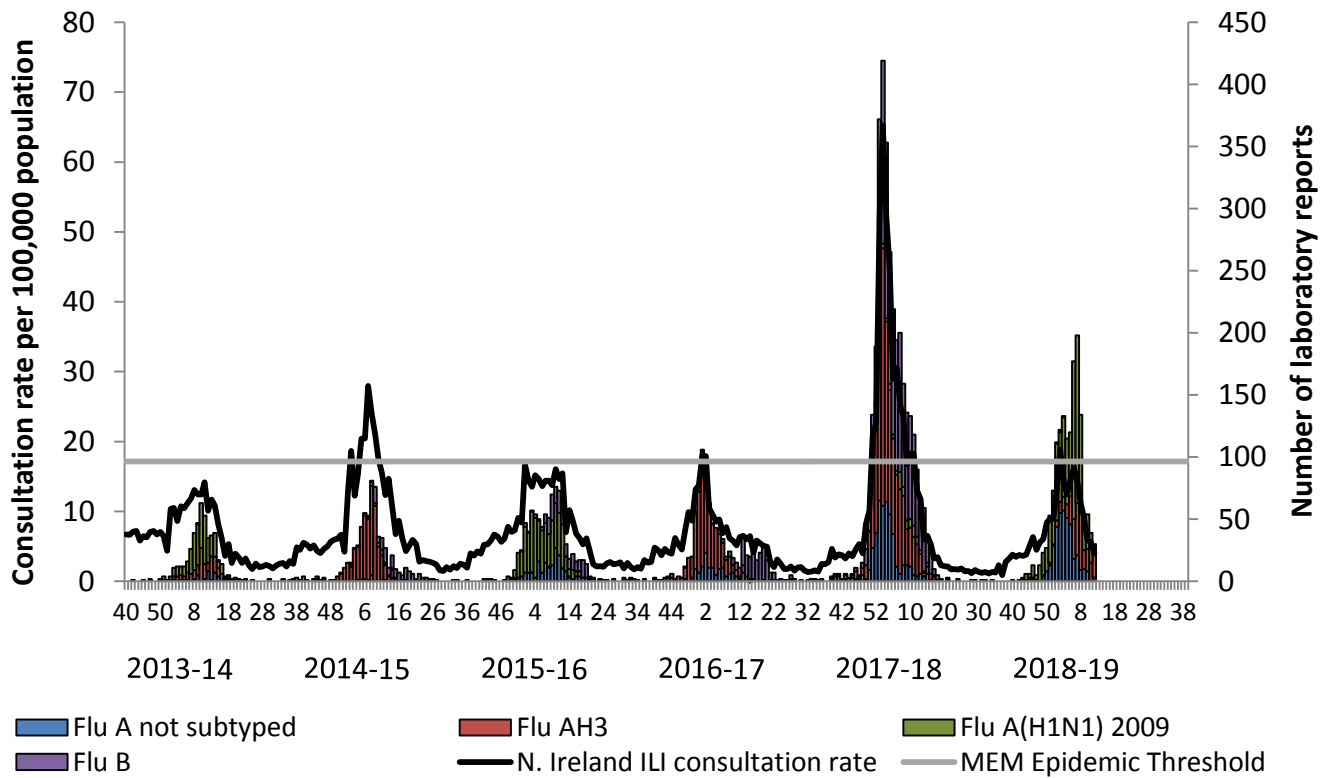
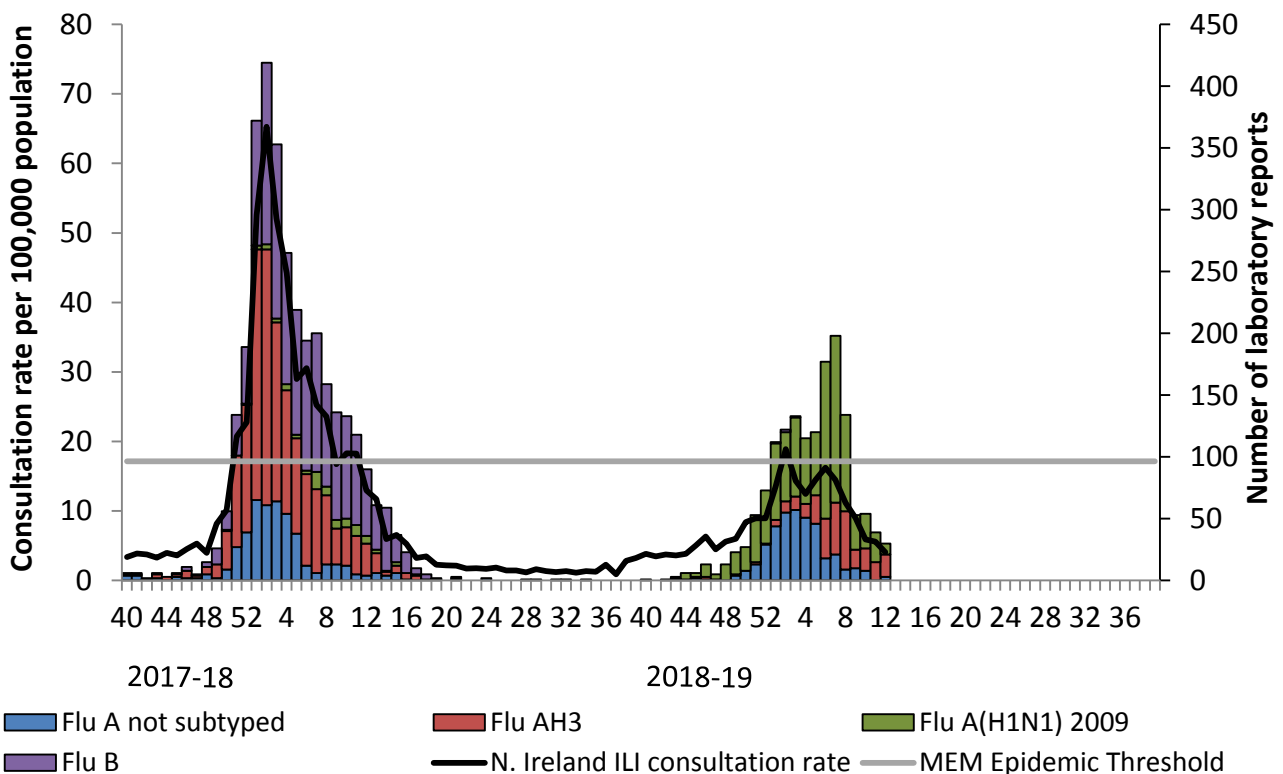


Figure 6. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2017



**Table 1. Virus activity in Northern Ireland by source, Week 12, 2018-19**

Source	Specimens tested	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	4	0	0	0	0	0	0	0%
Non-sentinel	273	18	9	3	0	5	30	11%
<b>Total</b>	<b>277</b>	<b>18</b>	<b>9</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>30</b>	<b>11%</b>

**Table 2. Cumulative virus activity from all sources by age group, Week 40 - 12, 2018-19**

Age Group	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
0-4	9	147	26	0	182	351
5-14	14	42	15	0	71	15
15-64	126	521	231	3	881	122
65+	105	159	111	2	377	176
Unknown	0	0	0	0	0	0
<b>All ages</b>	<b>254</b>	<b>869</b>	<b>383</b>	<b>5</b>	<b>1511</b>	<b>664</b>

**Table 3. Cumulative virus activity by age group and source, Week 40 - Week 12, 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	3	0	0	3	0	9	144	26	0	179	351
5-14	1	4	0	0	5	0	13	38	15	0	66	15
15-64	12	43	11	0	66	10	114	478	220	3	815	112
65+	2	3	2	1	8	1	103	156	109	1	369	175
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>All ages</b>	<b>15</b>	<b>53</b>	<b>13</b>	<b>1</b>	<b>82</b>	<b>11</b>	<b>239</b>	<b>816</b>	<b>370</b>	<b>4</b>	<b>1429</b>	<b>653</b>

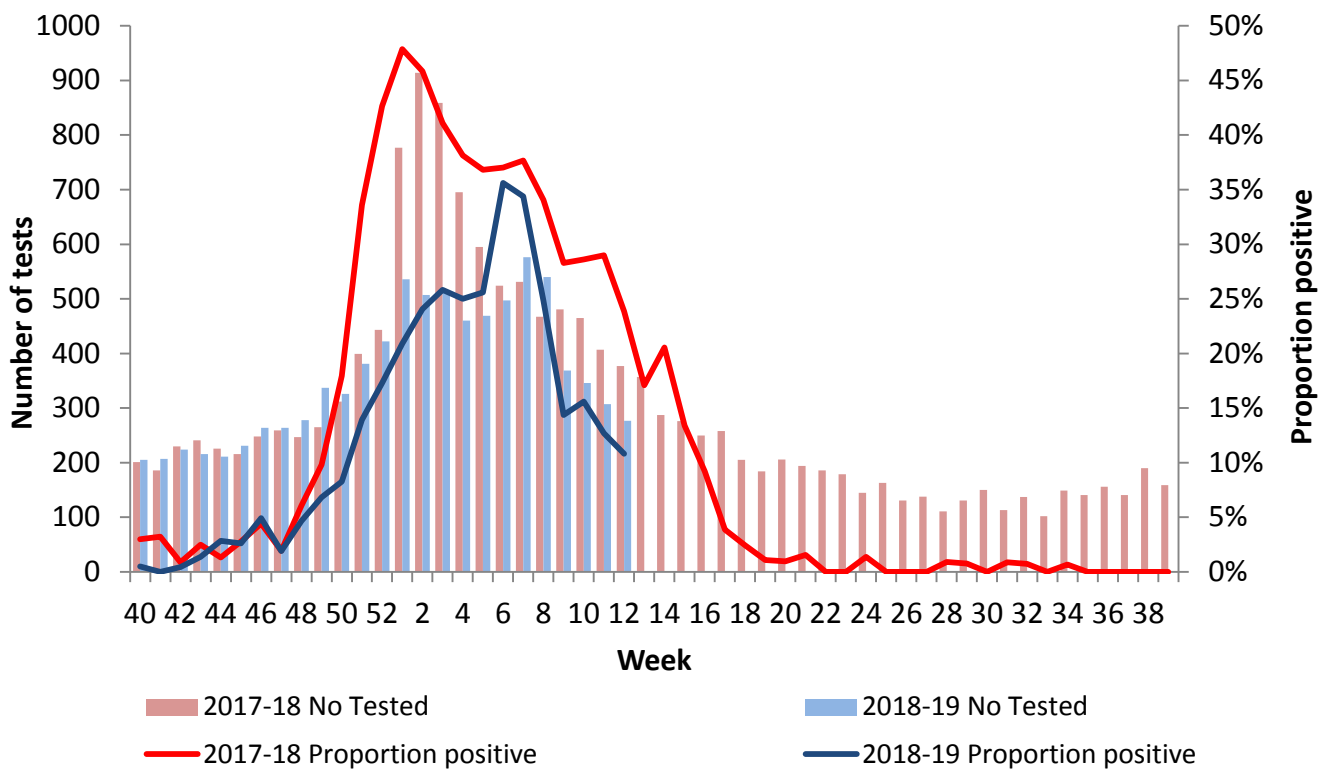
**Note**

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**



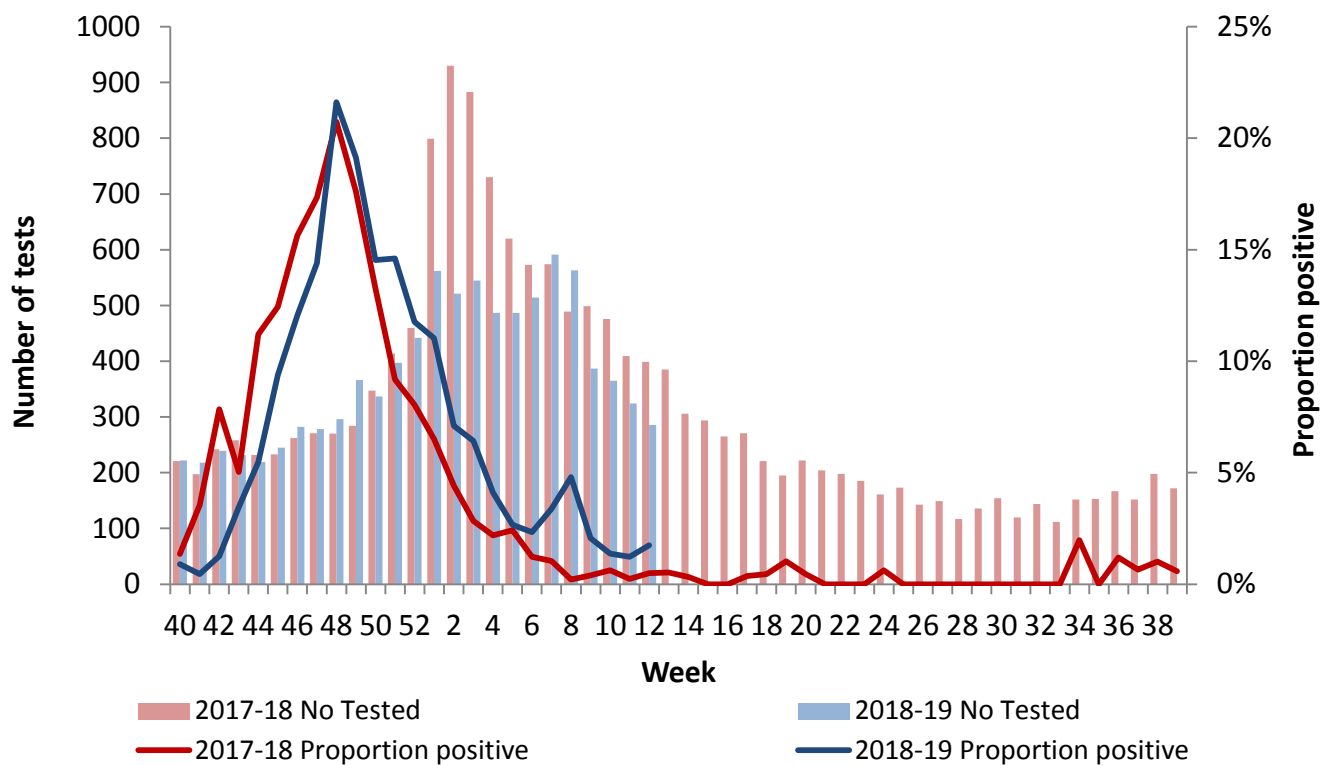
**Comment**

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.

In week 12, 2019 there were 277 specimens submitted for virological testing. There were 30 detections of influenza in total (11% positivity); 18 Flu A(H3), nine Flu A(H1N1)pdm09 and three Flu A(untyped). Flu A(H3) appears to be the dominant virus now, followed by influenza A(H1N1)pdm09. There were four samples submitted through the GP based sentinel scheme in week 12 across Northern Ireland with 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

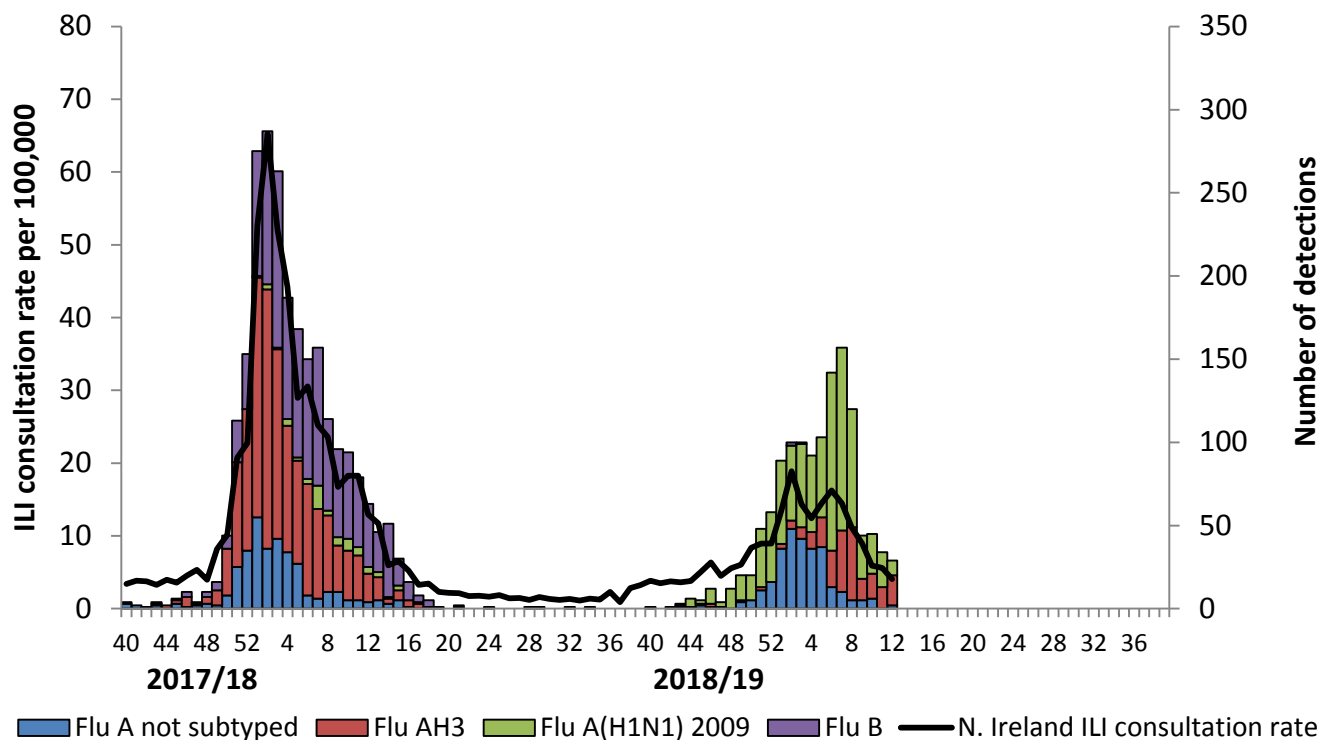


### Comment

In week 12, 2019 there were five positive detections of RSV (2% positivity). To date there have been a total of 664 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**

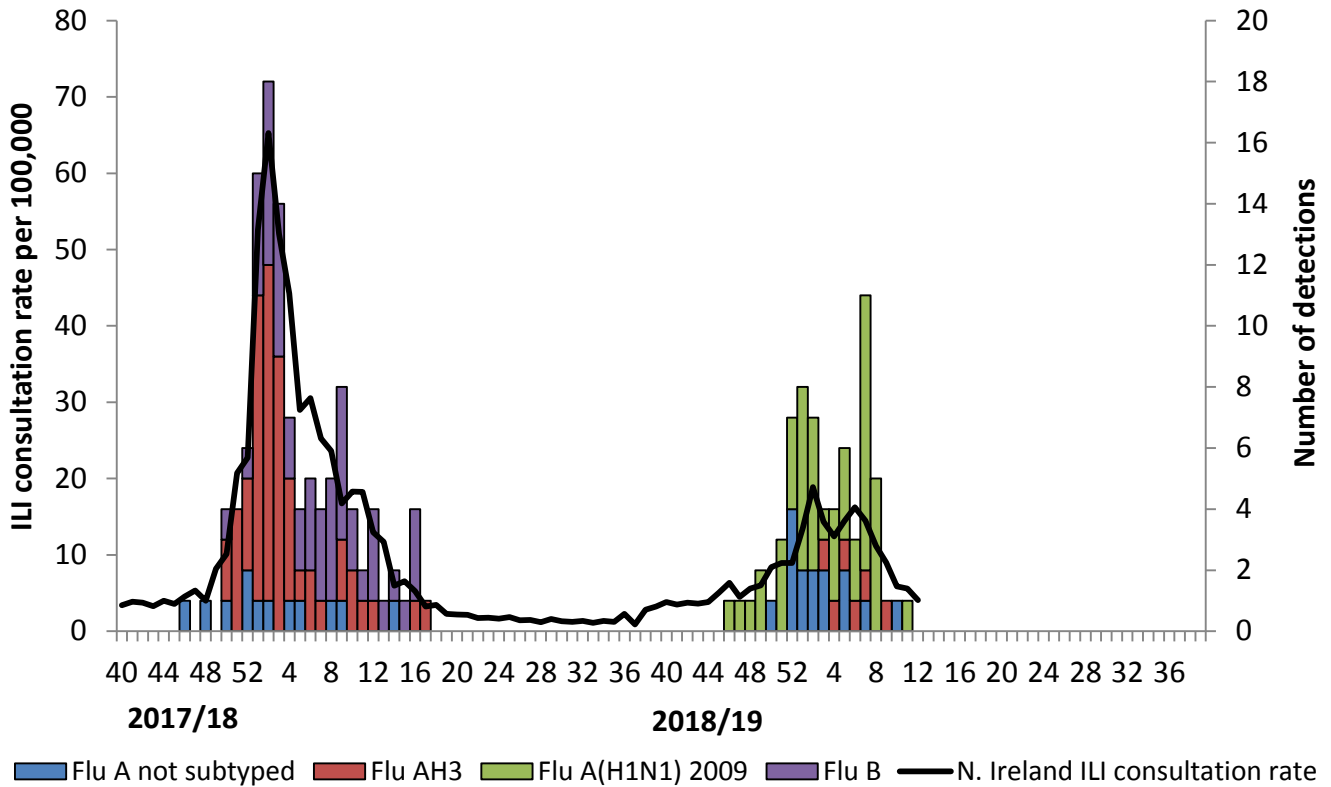


### Comment

In week 12, 2019 there were 29 detections of influenza from specimens taken in hospital settings across Northern Ireland. There were 18 Flu A(H3), nine Flu A(H1N1)pdm09 and two Flu A(untyped). Flu A(H3) appears to be the dominant virus now, followed by influenza A(H1N1)pdm09. It should be kept in mind that it is possible that not all positive specimens (for week 12) 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 12, 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 week 12. So far this season there have been seven deaths reported in ICU patients who had laboratory confirmed influenza. In comparison, up to week 12, 2018 there were 110 admissions to ICU with confirmed influenza reported to PHA, with 20 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.

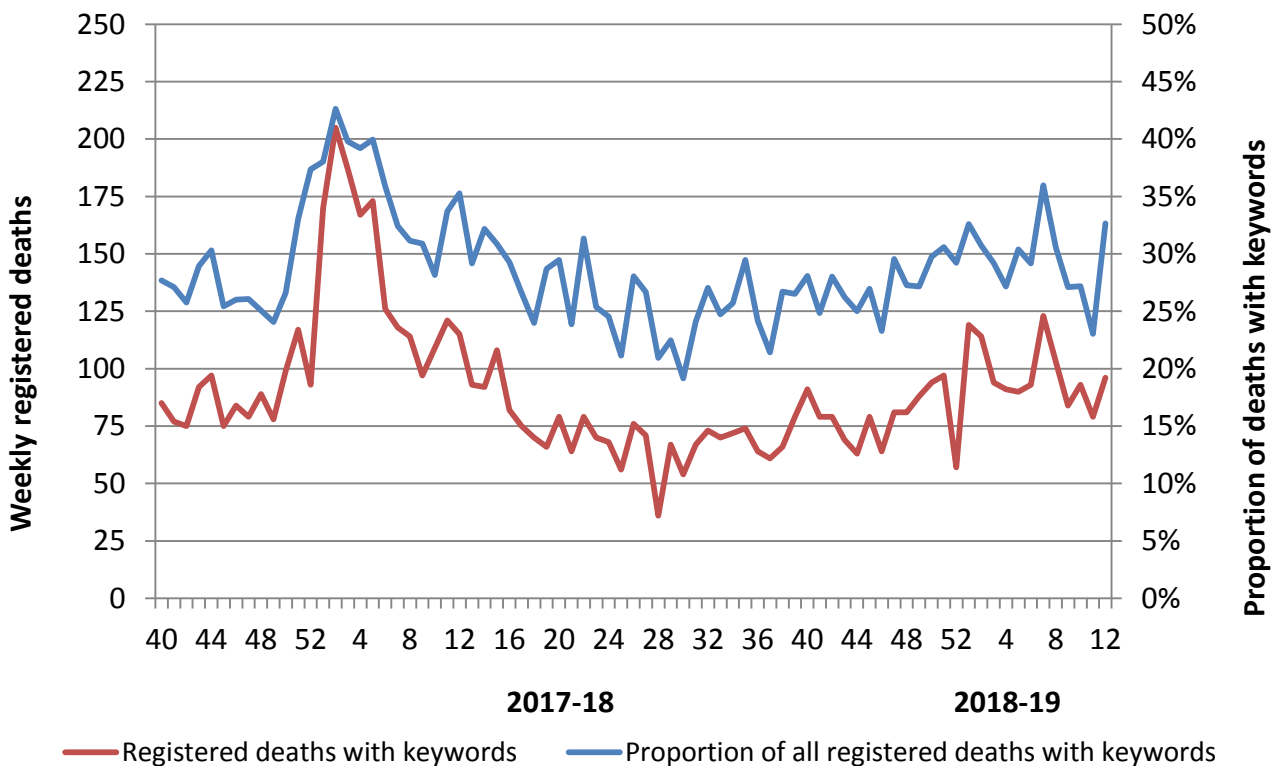
## Outbreak Surveillance

During week 12, 2019 there was one respiratory outbreak reported to the PHA from a care home (Flu A(untyped)). To date, there have been 12 respiratory outbreaks reported, nine in care homes (five Flu A(untyped), one Flu B and three RSV) and three 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 in week 12, 2019 (33%) compared to week 11 (23%). There were 294 registered deaths of which 96 related to specific respiratory infections. The proportion of deaths attributed to specific respiratory infections is slightly lower at this point in the season as the same period in 2017/18 (35%).

## EuroMOMO

There was no excess all-cause mortality reported in Northern Ireland in week 12, 2019. There has been one week in the season where there has been excess all-cause mortality (week 6, 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 Jan 31 <sup>st</sup> )	2017/18 (to Jan 31 <sup>st</sup> )
>65 years	68.7%	70.4%
<65 years at risk	50.7%	53.5%
Pregnant women	47.0%	47.9%
2 to 4 year olds	47.2%	49.1%
Primary School	75.7%	76.2%
Trust Frontline	34.8%	32.8%
Trust Frontline (excluding social workers and social care workers)	38.5%	-

## International Summary

### Week 11/2019 (11-17 March 2019)

- Influenza activity was widespread in one-third of the countries of the European Region. Widespread activity was located in northern, southern, and western areas of the European Region. Specimens collected from individuals presenting with ILI or ARI to sentinel primary health care sites yielded an influenza virus positivity rate of 34%, a decrease compared to 43% during the previous week.
- Influenza type A virus detections dominated with slightly more A(H1N1)pdm09 than A(H3N2) viruses. Very few influenza B viruses were detected.
- Of the specimens from patients with severe acute respiratory infection (SARI) collected in week 11/2019 that were tested for influenza viruses, 31% were positive and almost all were type A.
- Pooled data from 24 Member States and areas reporting to the [EuroMOMO](#) project indicated that the excess mortality observed in previous weeks continued to decline. Excess mortality was seen in persons aged 65 years and in persons 15-64 years.

### 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 are circulating widely, with co-circulation in some countries while others report dominance of either A(H1N1)pdm09 or A(H3N2) viruses.
- Among hospitalized influenza virus-infected patients admitted to ICU wards, 41% of influenza A viruses were subtyped; of these 71% were A(H1N1)pdm09 viruses. Among influenza virus-infected patients admitted to other wards, 37% of influenza A viruses were subtyped and 61% were A(H1N1)pdm09 viruses.
- Over 90% of influenza A viruses detected from SARI surveillance since week 40/2018 were subtyped and 80% were A(H1N1)pdm09 viruses.
- Current influenza vaccines tend to work better against influenza A(H1N1)pdm09 and influenza B viruses than against influenza A(H3N2) viruses. Preliminary vaccine effectiveness estimates continue to support the use of vaccines. Early data suggest the vaccines are effective, but estimates vary depending on the population studied and the

proportions of circulating influenza A virus subtypes. See data from a [European study \(six countries\)](#), [Canada](#), [Finland](#), [Hong Kong](#), [Sweden](#), and the [United States](#).

- A recent summary of regional activity from October 2018 to February 2019 was published in Eurosurveillance and can be found [here](#).
- WHO has published the [recommendations](#) for the composition of influenza vaccines to be used in the 2019–2020 northern hemisphere season. The recommendation was that type B lineages remain unchanged, and the A(H1N1)pdm09 and A(H3N2) strains were updated.
- Circulating viruses remain susceptible to neuraminidase inhibitors supporting use of antiviral treatment according to national guidelines.

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

## **Worldwide (WHO)**

18 March 2019 - based on data up to 3 March 2019

### **Summary**

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

- In North America, influenza activity continued but in recent weeks influenza A(H3N2) was the dominant virus, followed by influenza A(H1N1)pdm09.
- In Europe, influenza activity decreased across the continent, with two thirds of countries still above baseline for influenza-like illness activity. Influenza A viruses co-circulated.
- In North Africa, influenza activity was still reported in some countries.
- In Western Asia, influenza activity appeared to decrease overall, with exception of some countries where activity remained elevated.
- In East Asia, influenza activity appeared to decrease overall, with influenza A(H1N1)pdm09 virus predominating.
- In Southern Asia, influenza activity remained elevated overall with influenza A viruses 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 remained 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 114 countries, areas or territories reported data to FluNet for the time period from 18 February 2019 to 03 March 2019 (data as of 2019-03-15 07:02:52 UTC). The WHO GISRS laboratories tested more than 205150 specimens during that time period. 59350 were positive for influenza viruses, of which 57635 (97.1%) were typed as influenza A and 1715 (2.9%) as influenza B. Of the sub-typed influenza A viruses, 14751 (59.5%) were influenza A(H1N1)pdm09 and 10037 (40.5%) were influenza A(H3N2). Of the characterized B viruses, 147 (19%) belonged to the B-Yamagata lineage and 625 (81%) to the B-Victoria lineage. The WHO Consultation and Information Meeting on the Composition of Influenza Virus Vaccines for use in the 2019-2020 Northern Hemisphere Influenza Season was held on 18-21 February 2019 in Beijing, China. It was recommended that egg based quadrivalent vaccines contain the following: an A/Brisbane/02/2018 (H1N1)pdm09 - like virus; an A(H3N2) virus to be announced on 21 March 2019\*; a B/Colorado/06/2017- like virus (B/Victoria/2/87 lineage); and a B/Phuket/3073/2013 - like virus (B/Yamagata/16/88 lineage). It was also recommended that the influenza B virus component of trivalent vaccines for use in the 2019-2020 northern hemisphere influenza season be a B/Colorado/06/2017-like virus of the B/Victoria/2/87-lineage.

\* In light of recent changes in the proportions of genetically and antigenically diverse A(H3N2) viruses, the recommendation for the A(H3N2) component has been postponed.

The vaccine recommendation for the 2019-2020 Northern Hemisphere Influenza Season can be consulted at this link below:

- [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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