

# Influenza Weekly Surveillance Bulletin

## Northern Ireland, Week 4 (21st January – 27<sup>th</sup> January 2019)

### Summary

The surveillance data indicates that influenza is circulating 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 4, 2019 was 12.4 per 100,000 population, a decrease from week 3 (14.4 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 decreased between week 3 and week 4 (8.8 to 8.2 per 100,000 population, respectively).

#### Microbiological Surveillance (Flu and RSV)

- During week 4 there were 446 specimens submitted for virological testing, of which 108 tested positive for influenza (24% positivity).
- There were 37 detections of Flu A(H1N1)pdm09, 63 Flu A(untyped) and eight Flu A(H3).
- There were 19 positive RSV detections in week 4 (4% positivity).

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

- In week 4 there were 34 detections of Flu A(H1N1)pdm09, 46 Flu A(untyped) and seven Flu A(H3).
- There were four cases reported in ICU with laboratory confirmed influenza (three Flu A(H1N1)pdm09 and one Flu A(untyped)).
- To date, there have been 39 admissions to ICU with confirmed influenza reported to PHA and four deaths reported in ICU patients who had laboratory confirmed influenza.

#### Influenza Outbreaks across Northern Ireland

- During week 4 there were no outbreaks reported to the PHA. There have been six respiratory outbreaks reported to date.

#### Mortality

- The proportion of deaths related to respiratory keywords (bronchiolitis, bronchitis, influenza and pneumonia) decreased in week 4 compared to week 3 (29% 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:

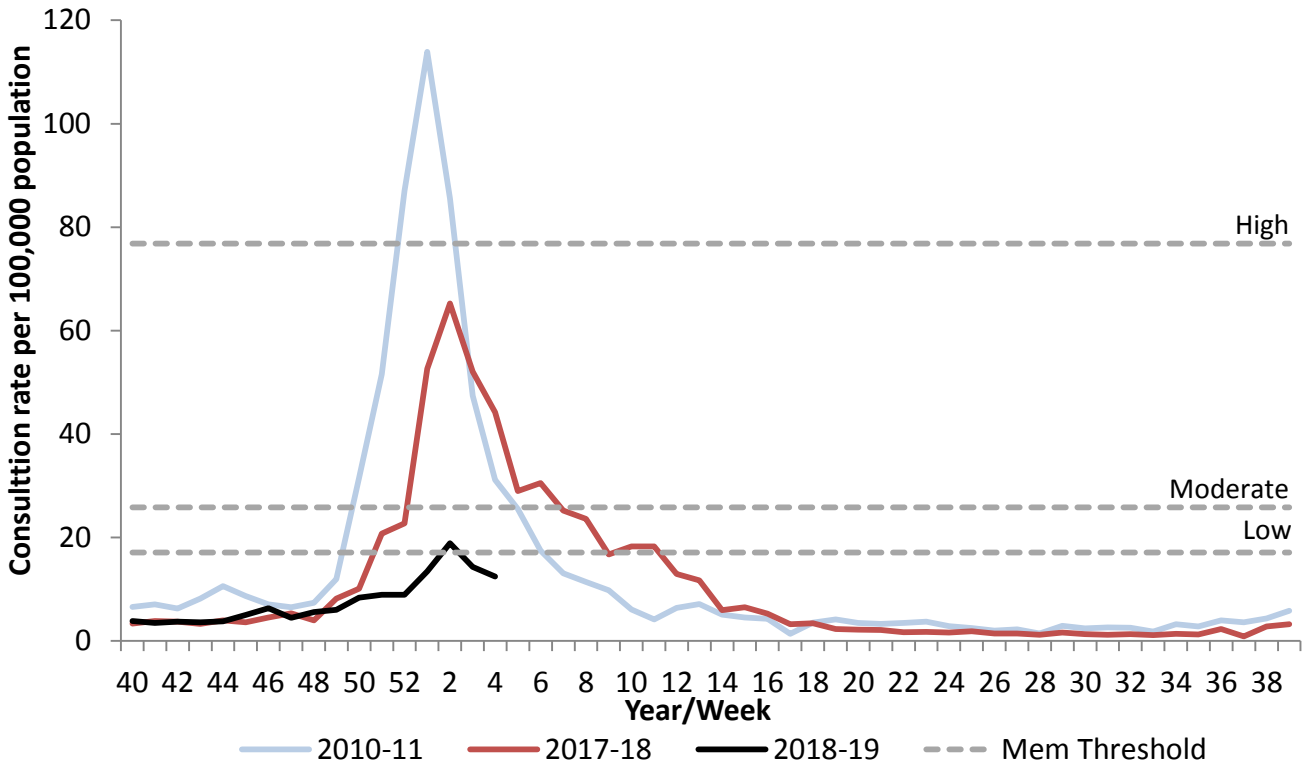
- Northern Ireland GP surveillance representing 98% of Northern Ireland population;
- Sentinel flu-swabber GP practices representing 11.2% of the NI population, contributing to the measurement of circulating influenza in the community
- GP Out-of-Hours surveillance system representing the entire population;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

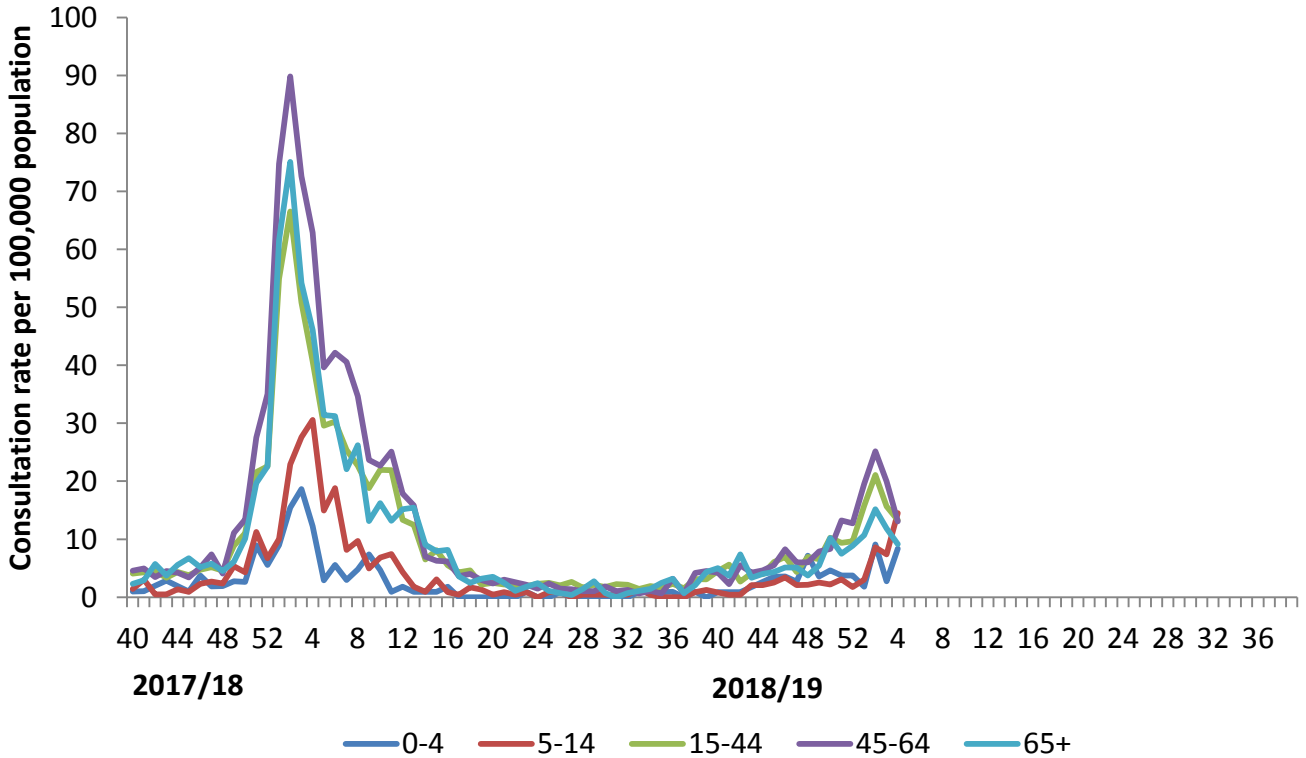
***As a result, Flu/FLI consultation rates and the MEM threshold from 2017-18 onwards will be generally lower than in previous years. Please take this into account when interpreting the figures.***

# 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**



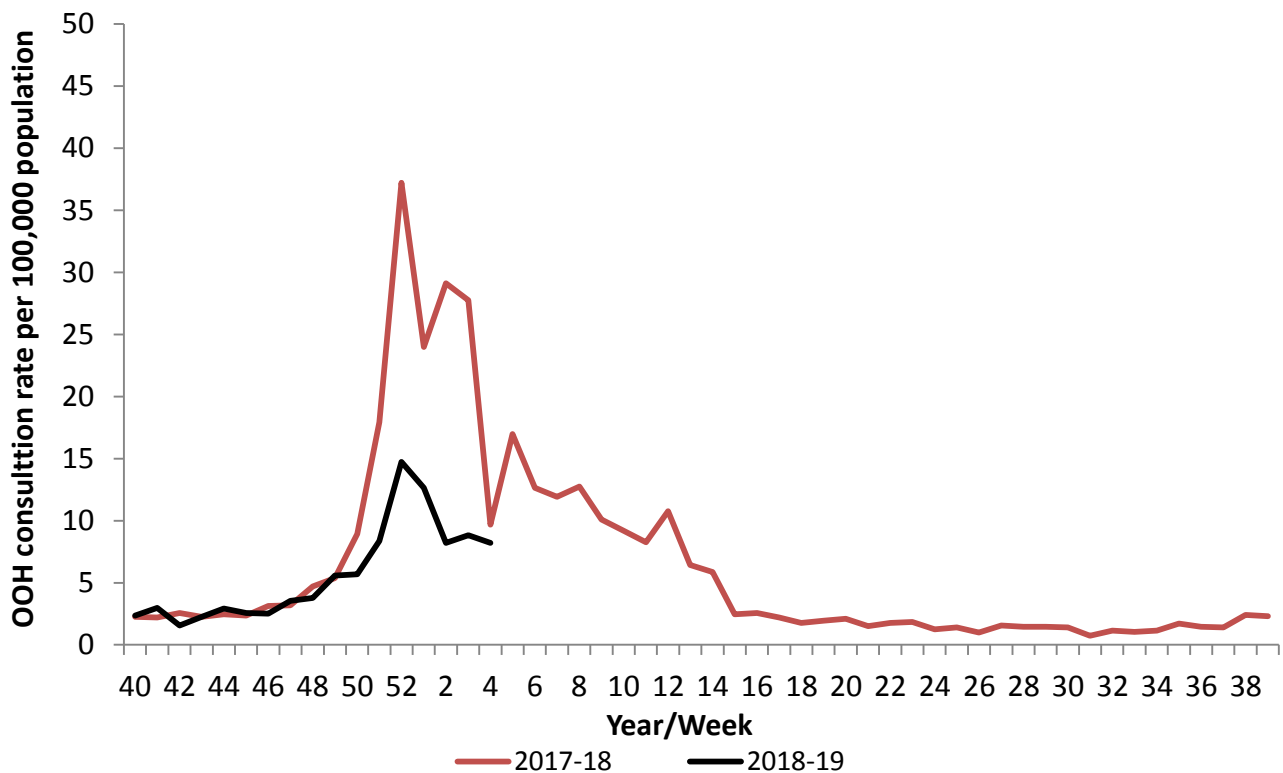
## Comment

The NI GP consultation rates for flu and flu-like illness (flu/FLI) during week 4, 2019 was 12.4 per 100,000 population, a decrease from week 3, 2019 (14.4 per 100,000). Activity remains below the baseline MEM threshold for Northern Ireland (<17.1 per 100,000) (Figure 1).

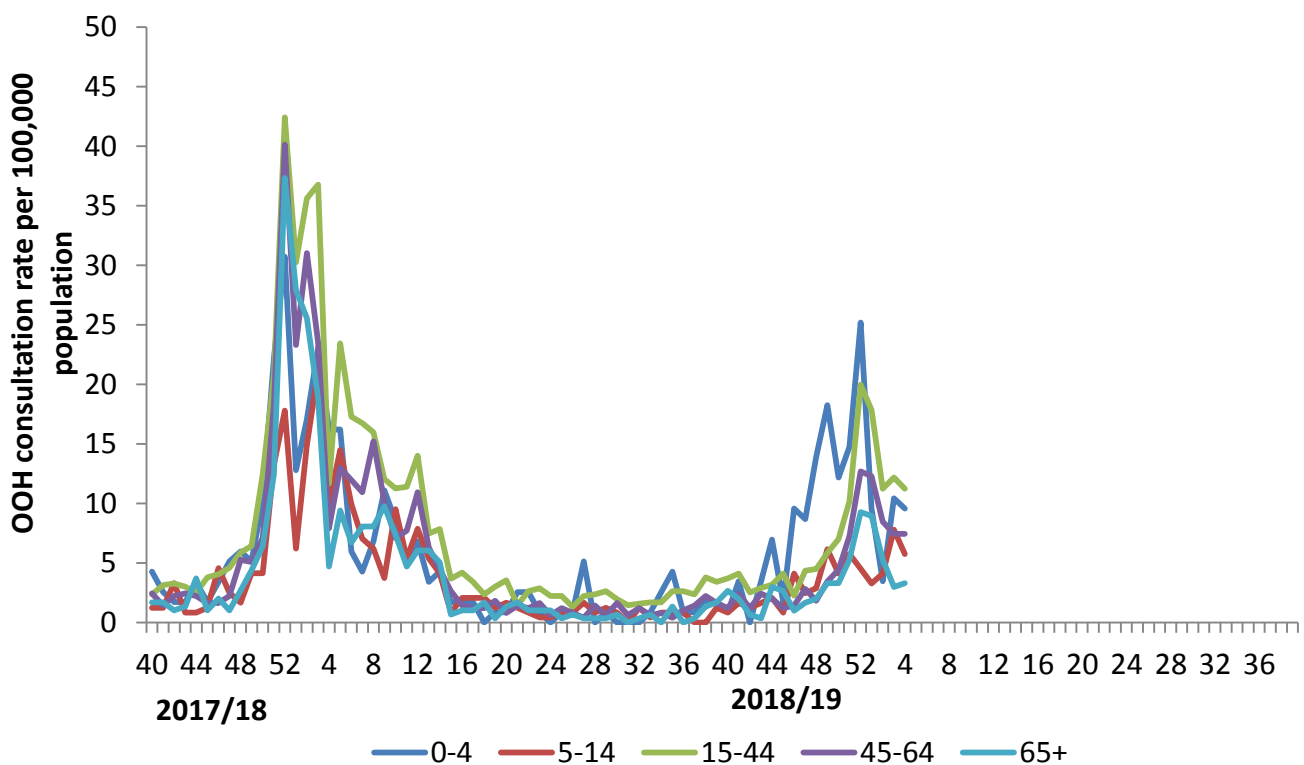
The consultation rates decreased in week 4 compared to week 3 in all age groups, with the exception of those in the younger age groups (aged 0-4 years and 5-14 years) in which rates increased. The flu/FLI consultation rate was highest in those aged 5-14 years (14.5 per 100,000) (Figure 2).

## 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 4, 2019 was 8.2 per 100,000 population, (Figure 3). The rate in week 4 is slightly lower than the same week in 2017/18 (8.2 compared to 9.7 per 100,000). The proportion of calls related to flu/FLI in OOH centres decreased slightly from 1.6% in week 3 to 1.5% in week 4.

Consultation rates decreased in the younger age groups (0-4 years, 5-14 years and 15-44 years) whilst increasing slightly in those aged 65 years and over (3.0 to 3.3 per 100,000) in week 4 compared to week 3. The rate remained stable in the 45-64 year age group. The OOH flu/FLI consultation rate was highest in those aged 15-44 years in week 4 (11.2 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

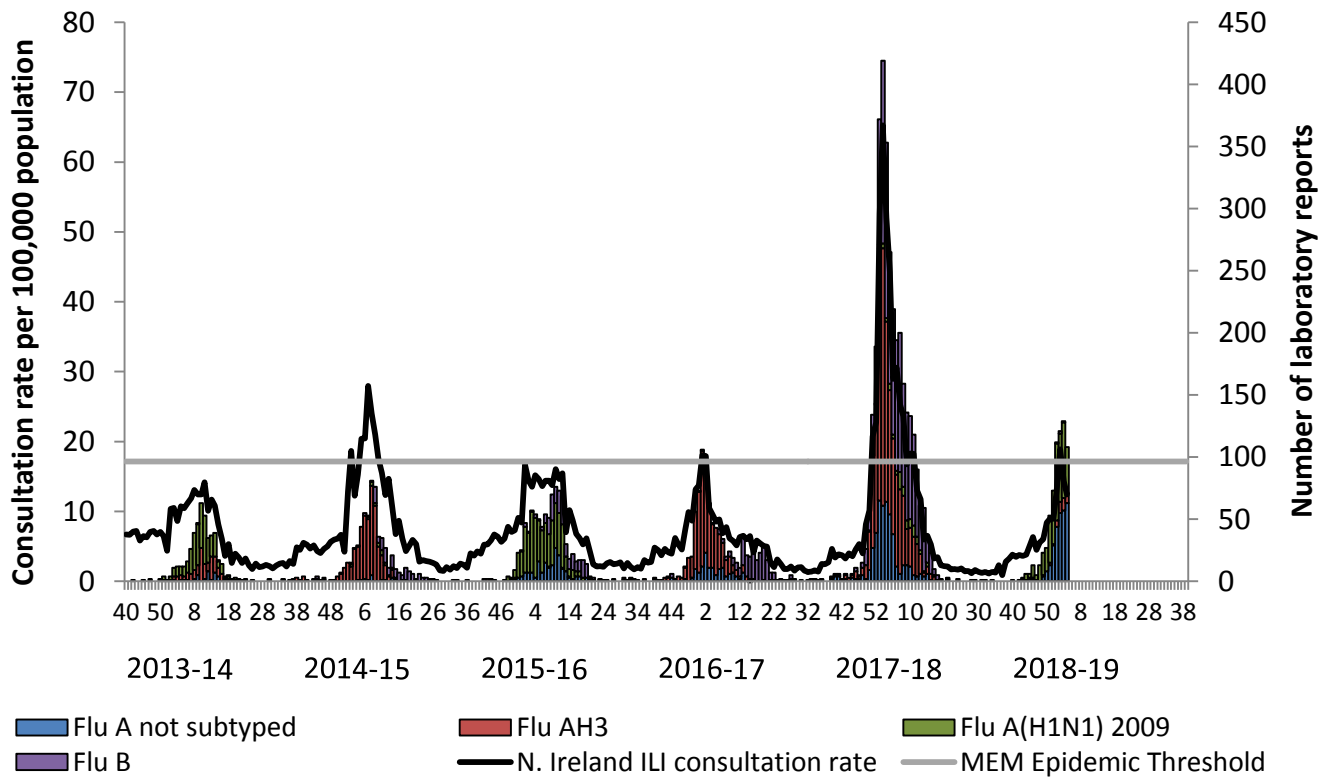
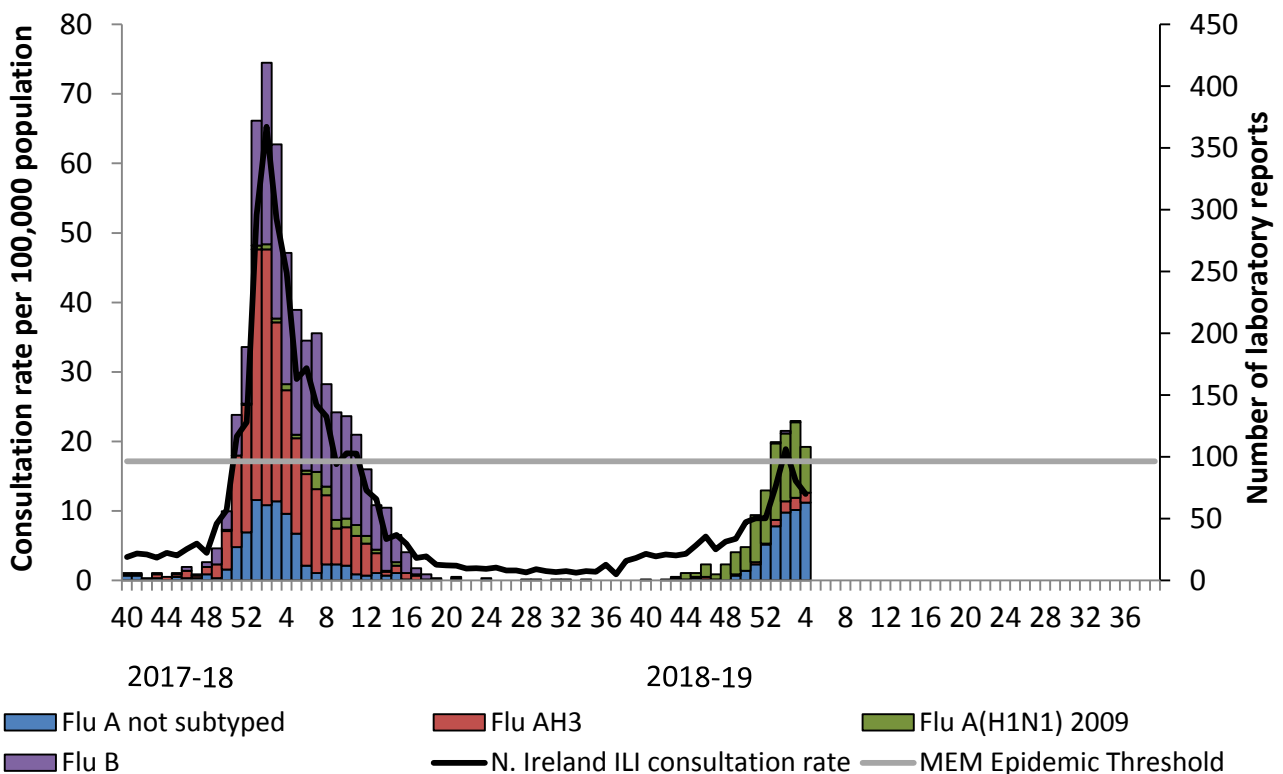


Figure 6. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2017



**Table 1. Virus activity in Northern Ireland by source, Week 4, 2018-19**

Source	Specimens tested	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	12	1	0	3	0	0	4	33%
Non-sentinel	434	7	37	60	0	19	104	24%
<b>Total</b>	<b>446</b>	<b>8</b>	<b>37</b>	<b>63</b>	<b>0</b>	<b>19</b>	<b>108</b>	<b>24%</b>

**Table 2. Cumulative virus activity from all sources by age group, Week 40 - 4, 2018-19**

Age Group	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
0-4	1	59	14	0	74	311
5-14	3	18	8	0	29	12
15-64	22	233	175	3	433	103
65+	14	59	83	2	158	142
Unknown	0	0	0	0	0	0
<b>All ages</b>	<b>40</b>	<b>369</b>	<b>280</b>	<b>5</b>	<b>694</b>	<b>568</b>

**Table 3. Cumulative virus activity by age group and source, Week 40 - Week 4, 2018-19**

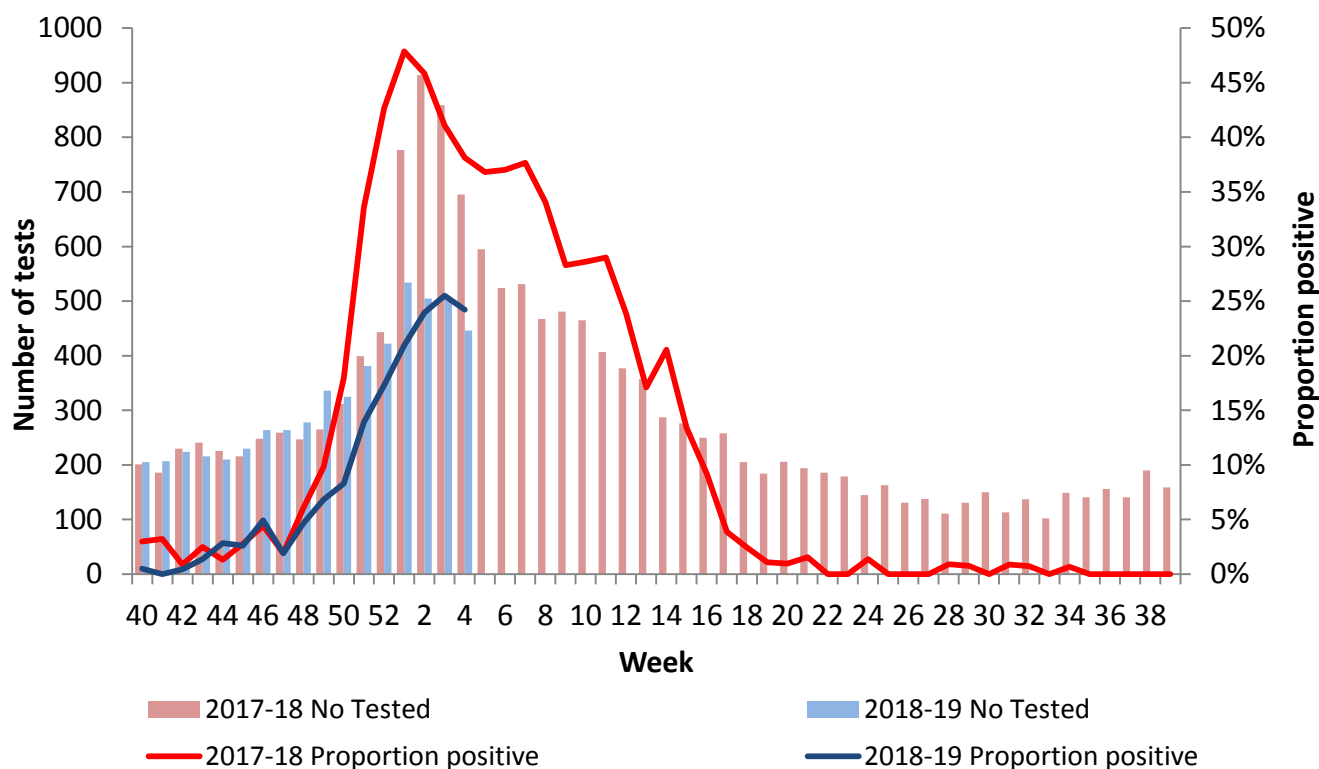
Age Group	Sentinel						Non-sentinel					
	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
0-4	0	0	0	0	0	0	1	59	14	0	74	311
5-14	0	2	0	0	2	0	3	16	8	0	27	12
15-64	4	15	11	0	30	10	18	218	164	3	403	93
65+	0	1	1	1	3	0	14	58	82	1	155	142
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>All ages</b>	<b>4</b>	<b>18</b>	<b>12</b>	<b>1</b>	<b>35</b>	<b>10</b>	<b>36</b>	<b>351</b>	<b>268</b>	<b>4</b>	<b>659</b>	<b>558</b>

**Note**

All virology data are provisional. The virology figures for previous weeks included in this or future bulletins are updated with data from laboratory returns received after the production of the last bulletin. The current bulletin reflects the most up-to-date information available. Sentinel and non-sentinel samples are tested for influenza and for RSV. Cumulative reports of influenza A (untyped) may vary from week to week as these may be subsequently typed in later reports.



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



**Comment**

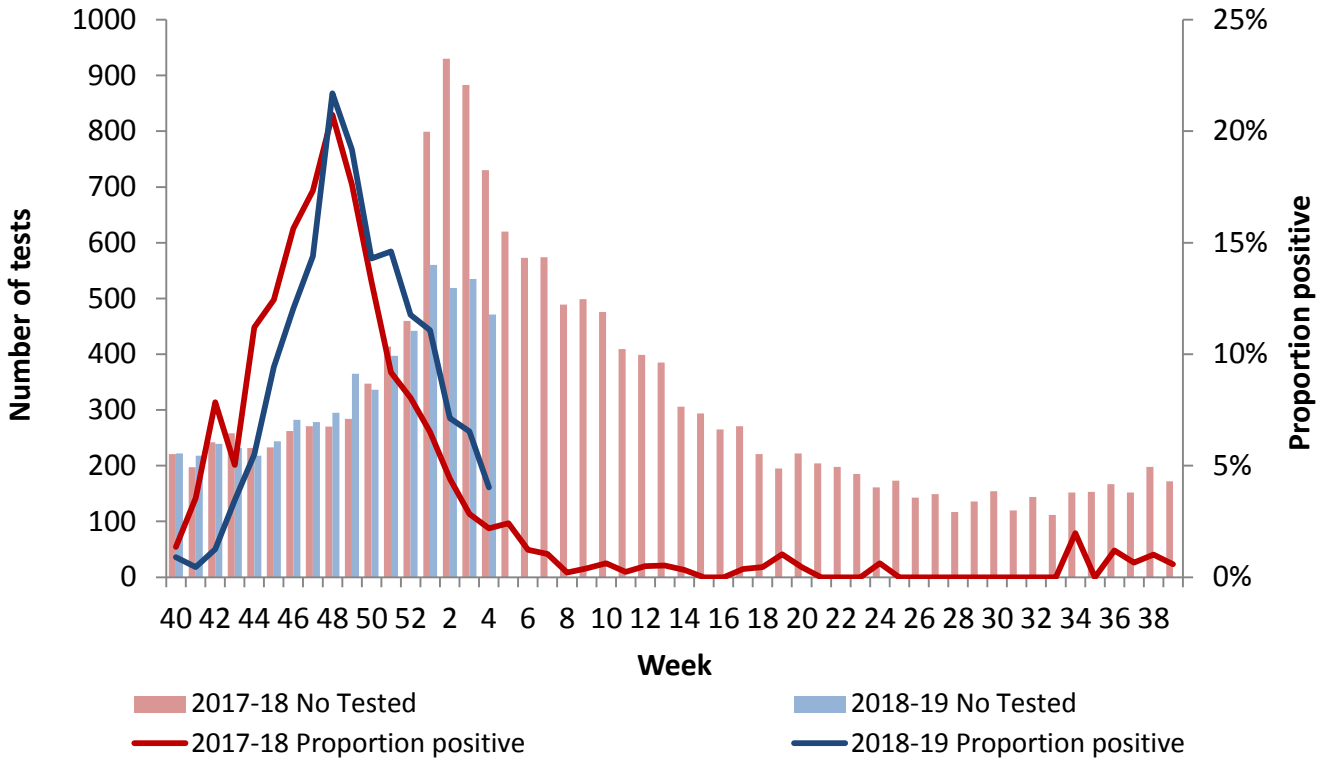
Additional virology testing has been undertaken at a local laboratory since week 2, 2018 and at another since week 2, 2019. This bulletin includes this data along with the data from the Regional Virology Laboratory. Other local laboratories may begin undertaking influenza testing and this data will be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

In week 4, 2019 there were 446 specimens submitted for virological testing. There were 108 detections of influenza in total (24% positivity); eight Flu A(H3), 37 Flu A(H1N1)pdm09 and 63 Flu A(untyped).

There were 12 samples submitted through the GP based sentinel scheme in week 4 across Northern Ireland. There were four positive results (33% positivity); one Flu A(H3) and three 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**

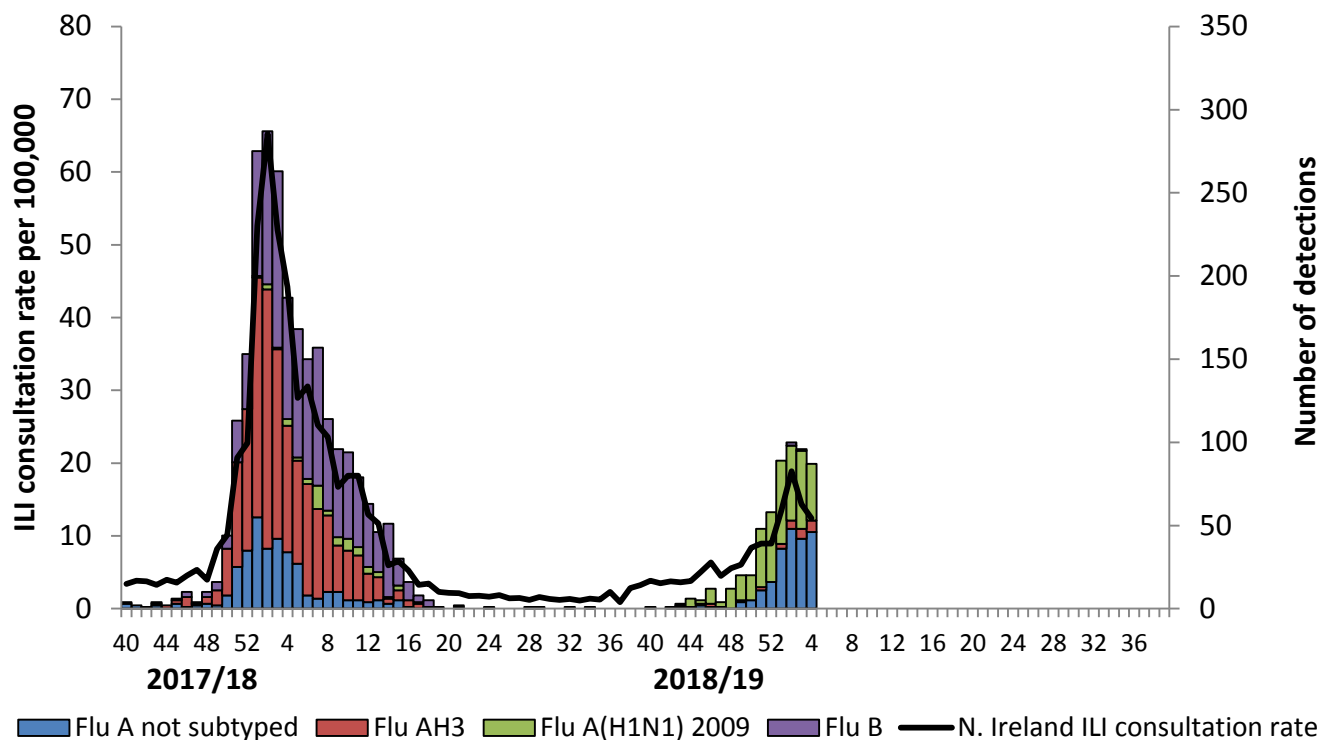


## Comment

In week 4, 2019 there were 19 positive detections of RSV (4% positivity). To date there have been a total of 568 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**

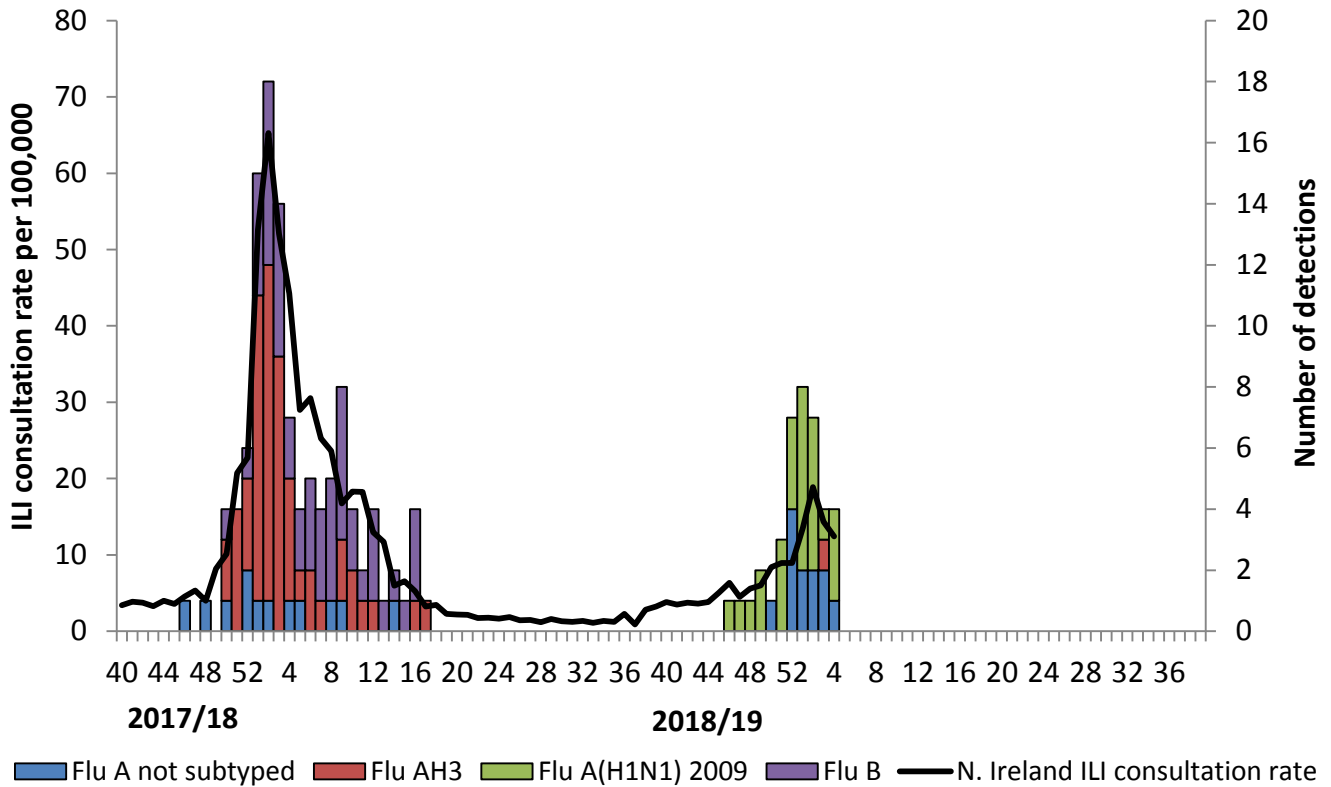


### Comment

In week 4, 2019 there were 87 detections of influenza from specimens taken in hospital settings across Northern Ireland. There were 46 Flu A(untyped), seven Flu A(H3) and 34 Flu A(H1N1)pdm09. It should be kept in mind that it is possible that not all positive specimens (for week 4) 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 4, 2019 there were four new admissions to ICU with confirmed influenza reported to the PHA; three Flu A(H1N1)pdm09 and one Flu A(untyped). So far this season there has been 39 admissions to ICU with confirmed influenza reported to PHA. There was one death reported in an ICU patient who had laboratory confirmed influenza in week 4. So far this season there have been four deaths reported in ICU patients who had laboratory confirmed influenza.

Of the 39 admissions to ICU, 36% (n=14) were female. The ages ranged from <1 year to 78 years, with a median age of 53 years and a mean age of 49 years. 46% (n=18) were classed as being in a vaccine risk group, of which 39% (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.

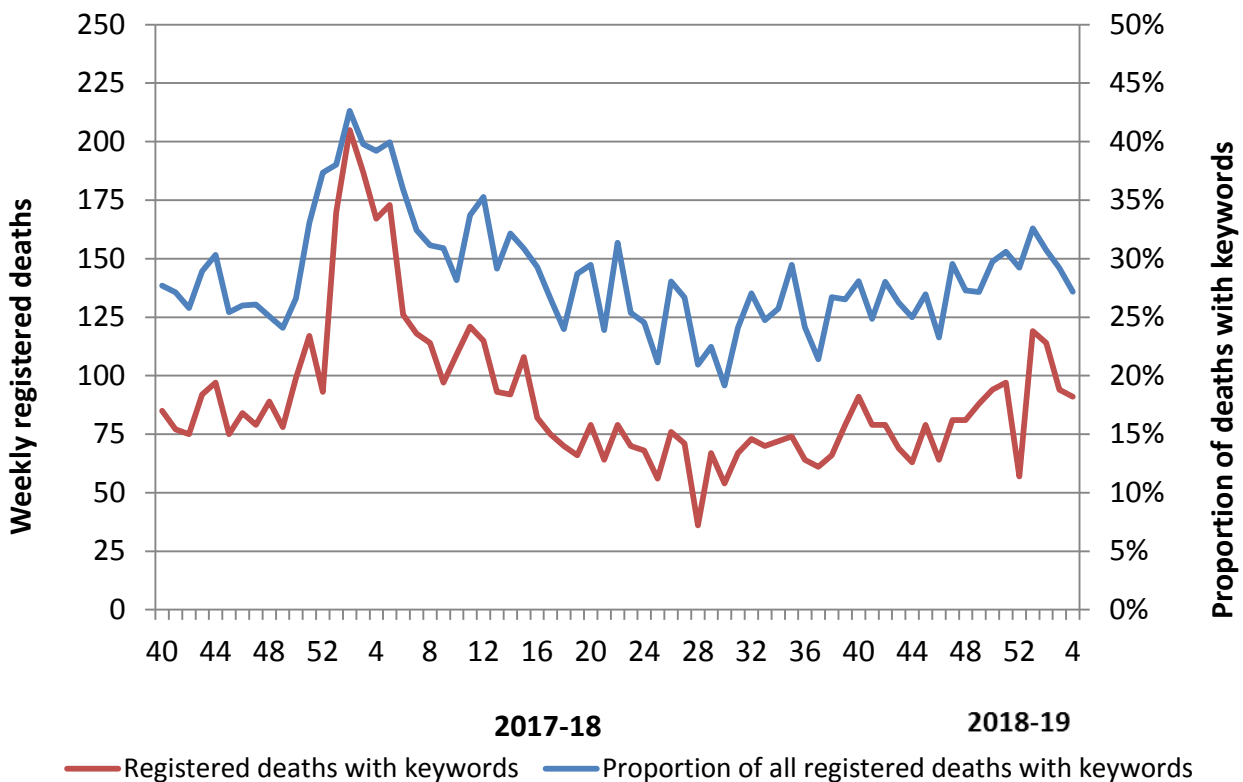
## Outbreak Surveillance

During week 4, 2019 there were no respiratory outbreaks reported to the PHA. To date, there have been six respiratory outbreaks reported (one Flu A, two Flu B and three RSV).

## 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 slightly from 29% in week 3, 2019 to 27% in week 4. There were 335 registered deaths of which 91 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 (39%).

## EuroMOMO

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>.

Up to week 4, 2019 there was no excess all-cause mortality reported in Northern Ireland.

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

## 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 3/2019 (14-20 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 48.8%.
- Influenza type A virus detections dominated with A(H1N1)pdm09 viruses being more prevalent than A(H3N2). Very few influenza B viruses were detected.
- Data from the 23 Member States and areas reporting to the [EuroMOMO](#) project indicated that generally all-cause mortality was at expected levels for this time of year, but a few countries observed some excess mortality in elderly populations.
- In Sweden, a seasonal reassortant A(H1N2) influenza virus was detected in a specimen collected at the end of December from an adult. Preliminary whole genome sequence analysis suggests that the virus is a seasonal reassortant containing HA and NS, NP, PA, PB1 and PB2 genes of human seasonal A(H1N1)pdm09 influenza virus and NA genes of human seasonal A(H3N2) influenza virus. No increase in virulence is expected compared to seasonal influenza strains. Further analysis is being conducted by the WHO Collaborating Center on influenza. More information can be found [here](#).

#### 2018/19 season overview

- Influenza activity in Europe is increasing, with both subtypes of influenza A viruses circulating widely. Countries should continue to encourage 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.

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

## Worldwide (WHO)

21 January 2019 - based on data up to 06 January 2019

### Summary

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

- In North America influenza activity remained elevated overall with influenza A(H1N1)pdm09 predominating.
- In Europe, influenza activity continued to increase, with both A viruses circulating.
- In North Africa, influenza A(H3N2) detections continued to be reported in Egypt.
- 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 most frequently detected.
- 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 returned to inter-seasonal levels with exception of some parts in Australia.
- Worldwide, seasonal influenza A viruses accounted for the majority of detections.

National Influenza Centres (NICs) and other national influenza laboratories from 104 countries, areas or territories reported data to FluNet for the time period from 24 December 2018 to 06 January 2019 (data as of 2019-01-18 04:01:21 UTC). The WHO GISRS laboratories tested more than 191778 specimens during that time period. 39161 were positive for influenza viruses, of which 38493 (98.3%) were typed as influenza A and 668 (1.7%) as influenza B. Of the sub-typed influenza A viruses, 13313 (79.4%) were influenza A(H1N1)pdm09 and 3446 (20.6%) were influenza A(H3N2). Of the characterized B viruses, 45 (38.1%) belonged to the B-Yamagata lineage and 73 (61.9%) 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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