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# Influenza Weekly Surveillance Bulletin

## Northern Ireland, Weeks 48-49 (26th November- 9th December 2018)

## Summary

The surveillance data indicates that influenza activity is low across Northern Ireland. Influenza rates remain well below the baseline Moving Epidemic Method (MEM) threshold for Northern Ireland and are below normal seasonal activity[1].

**Northern Ireland Primary Care Consultation Rates**

- GP consultation rates for combined flu and flu-like illness (flu/FLI) were 5.6 per 100,000 population in week 48 and 6.0 per 100,000 in week 49. Rates remain below the baseline Moving Epidemic Method (MEM) threshold for flu activity[1].
- OOH GP consultation rates for flu/FLI increased from week 48 to week 49 from 3.8 to 5.6 per 100,000 population.

**Microbiological Surveillance (Flu and RSV)**

- During weeks 48 and 49 there were 591 specimens submitted for virological testing, of which 27 tested positive for influenza (5% positivity).
- In week 48 there were 12 detections of Flu A(H1N1) and one Flu A(untyped). In week 49 there were nine detections of Flu A(H1N1), one Flu A(H3) and four Flu A(untyped).
- Positive RSV detections were 64 in week 48 (22% positivity) and 68 in week 49 (19% positivity).

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

- In week 48 there 11 detections of Flu A(H1N1). In week 49 there were seven detections of Flu A(H1N1), one Flu A(H3) and three Flu A(untyped).
- There were three cases reported in ICU with laboratory confirmed influenza in weeks 48 and 49 and one death in ICU with confirmed influenza was reported in week 48.
- So far this season there has been five admissions to ICU with confirmed influenza reported to PHA.

**Influenza Outbreaks across Northern Ireland**

- There were no confirmed influenza outbreaks reported to the PHA in weeks 48 and 49.

**Mortality**

- The proportion of deaths related to respiratory keywords (bronchiolitis, bronchitis, influenza and pneumonia) remained stable between weeks 48 and 49 (both 27%).

**Influenza Vaccine Uptake**

| | 2018/19 (to Oct 31st) | 2017/18 (to Oct 31st) |
|---|---|---|
| >65 years | 28.3% | 55.0% |
| <65 years at risk | 29.6% | 37.5% |
| Pregnant women | 35.2% | 31.9% |
| 2 to 4 year olds | 32.9% | 37.2% |
| Primary School | 75.5% | 76.3% |
| Trust Frontline | 28.0% | 28.0% |

Influenza vaccine uptake to 30th November will be published in next week's bulletin.

[1] 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 1st 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**

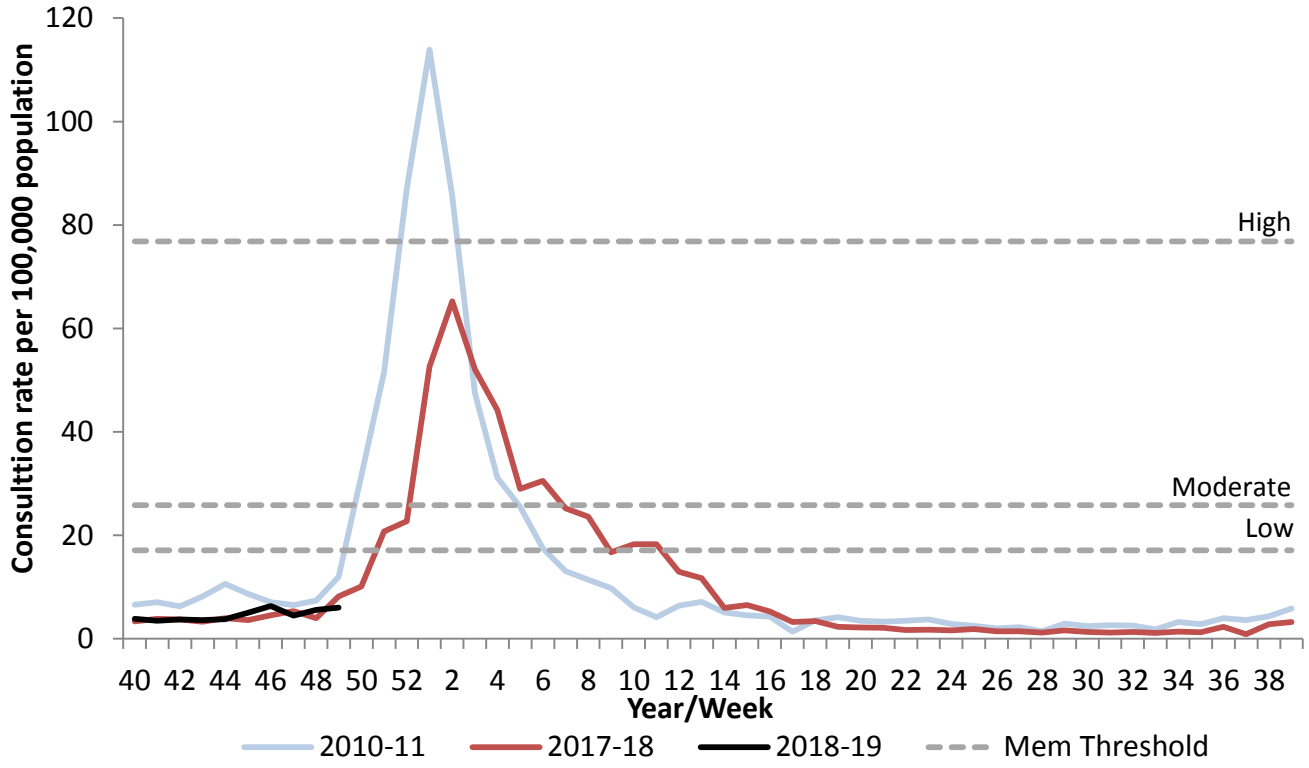
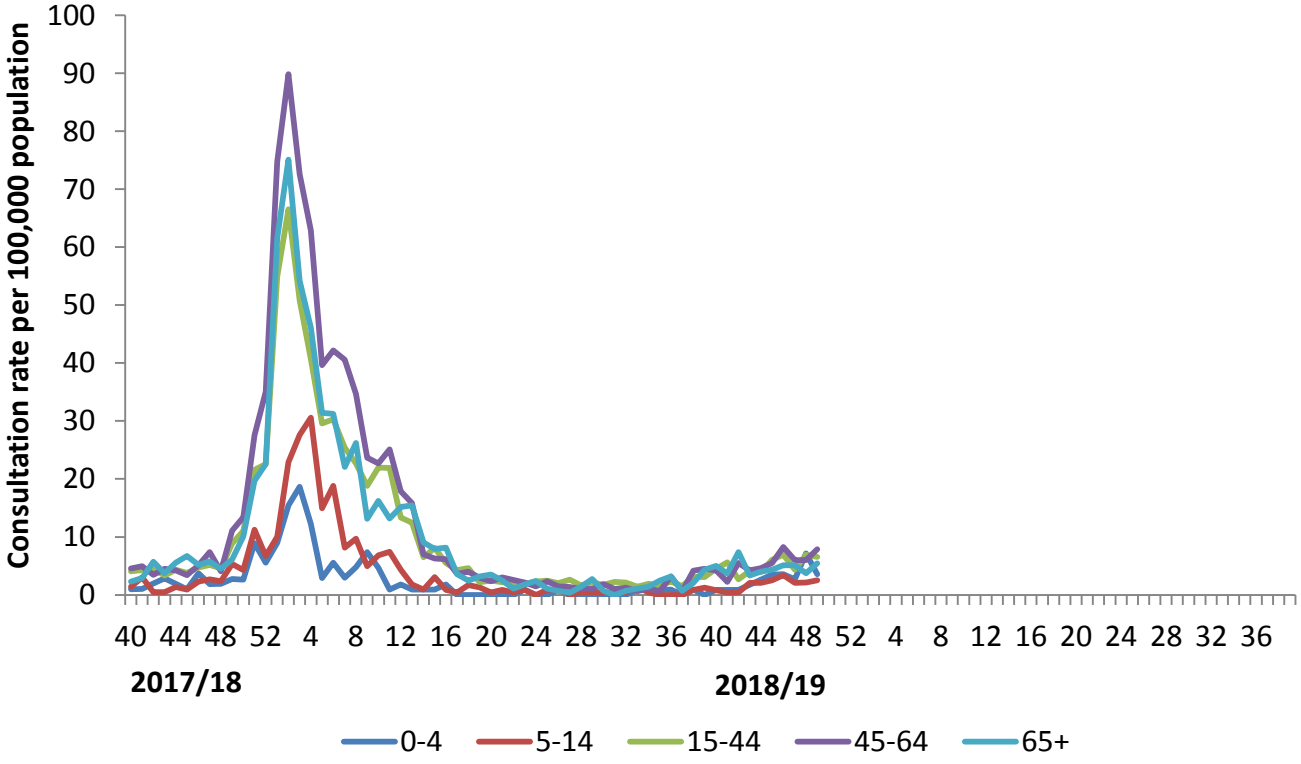



**Figure 2. Northern Ireland GP age-specific consultation rates for flu/FLI from week 40, 2017**



## Comment

The NI GP consultation rates for flu and flu-like illness (flu/FLI) during weeks 48 and 49 were 5.6 and 6.0 per 100,000 population, respectively. Activity remains well below the baseline MEM threshold for Northern Ireland (<17.1 per 100,000) (Figure 1).

The flu/FLI consultation rate was highest in those aged 0-4 years in week 48 (7.1 per 100,000) and in those aged 45-64 years in week 49 (7.9 per 100,000) (Figure 2). The consultation rates increased in week 49 compared to week 48 in those aged 5-14 years (2.1 to 2.5 per 100,000), 45-64 years (6.0 to 7.9 per 100,000) and 65 years and over (3.8 to 5.4 per 100,000), but decreased in those aged 0-4 years (7.1 to 3.6 per 100,000) and 15-44 years (6.9 to 6.5 per 100,000).

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

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

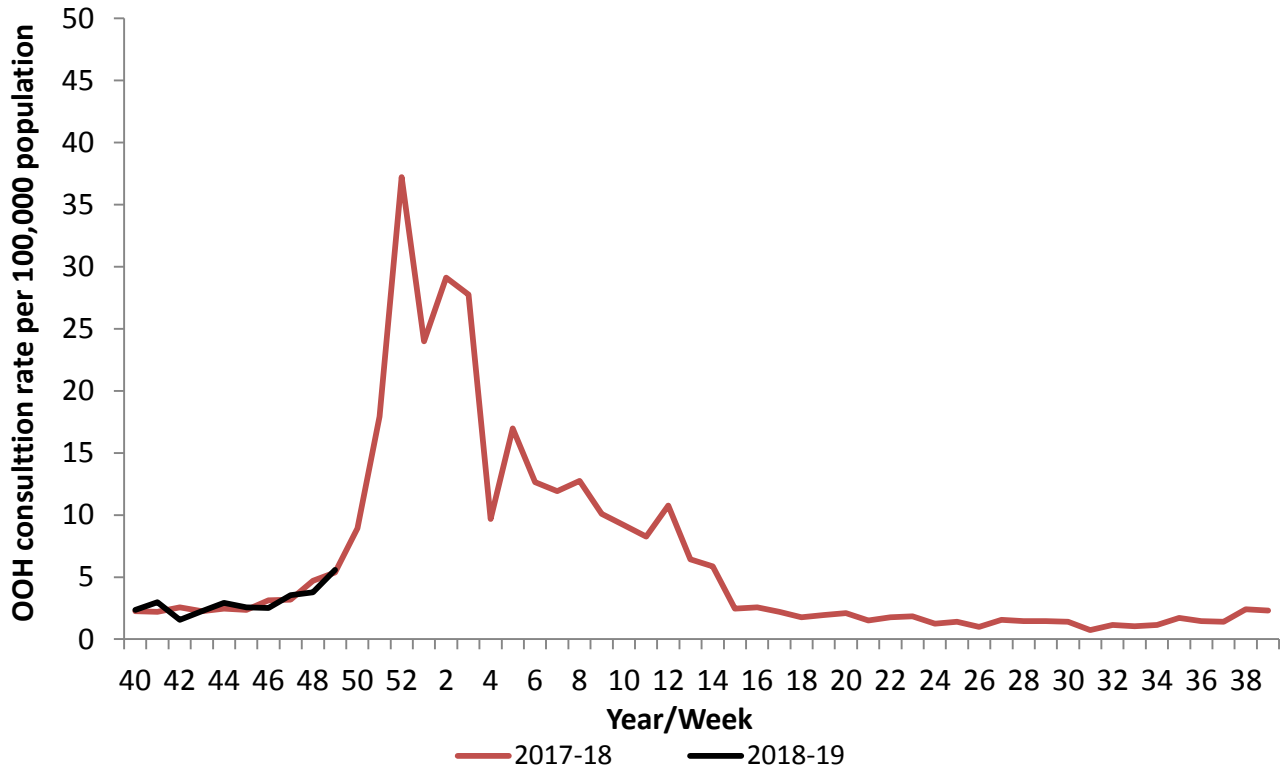
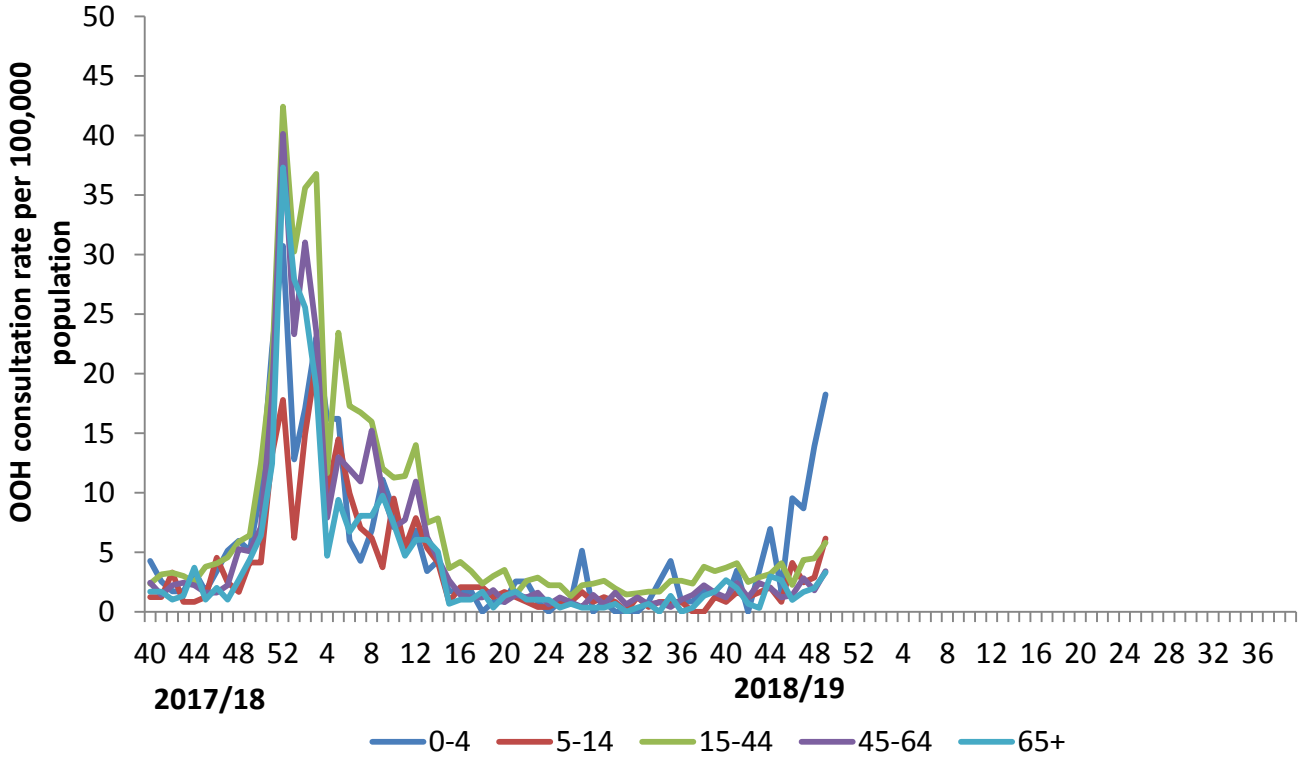



**Figure 4. OOH call rates of flu/FLI by age-group from week 40, 2017**



## Comment

The OOH flu/FLI consultation rate during weeks 48 and 49 were 3.8 and 5.6 per 100,000 population, respectively (Figure 3). The rate in week 48 is lower than the same week in 2017/18 (3.8 compared to 4.7 per 100,000); whereas the rate in week 49 is similar to the same week in 2017/18 (5.6 compared to 5.4 per 100,000).

The proportion of calls related to flu/FLI in OOH centres increased slightly from 0.6% in week 48 to 1% in week 49.

The OOH flu/FLI consultation rate was highest in those aged 0-4 years in week 48 (13.9 per 100,000), and also in week 49 (18.2 per 100,000) (Figure 4). All consultation rates increased in week 49 compared to week 48 in all age groups.

## Virology Data

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

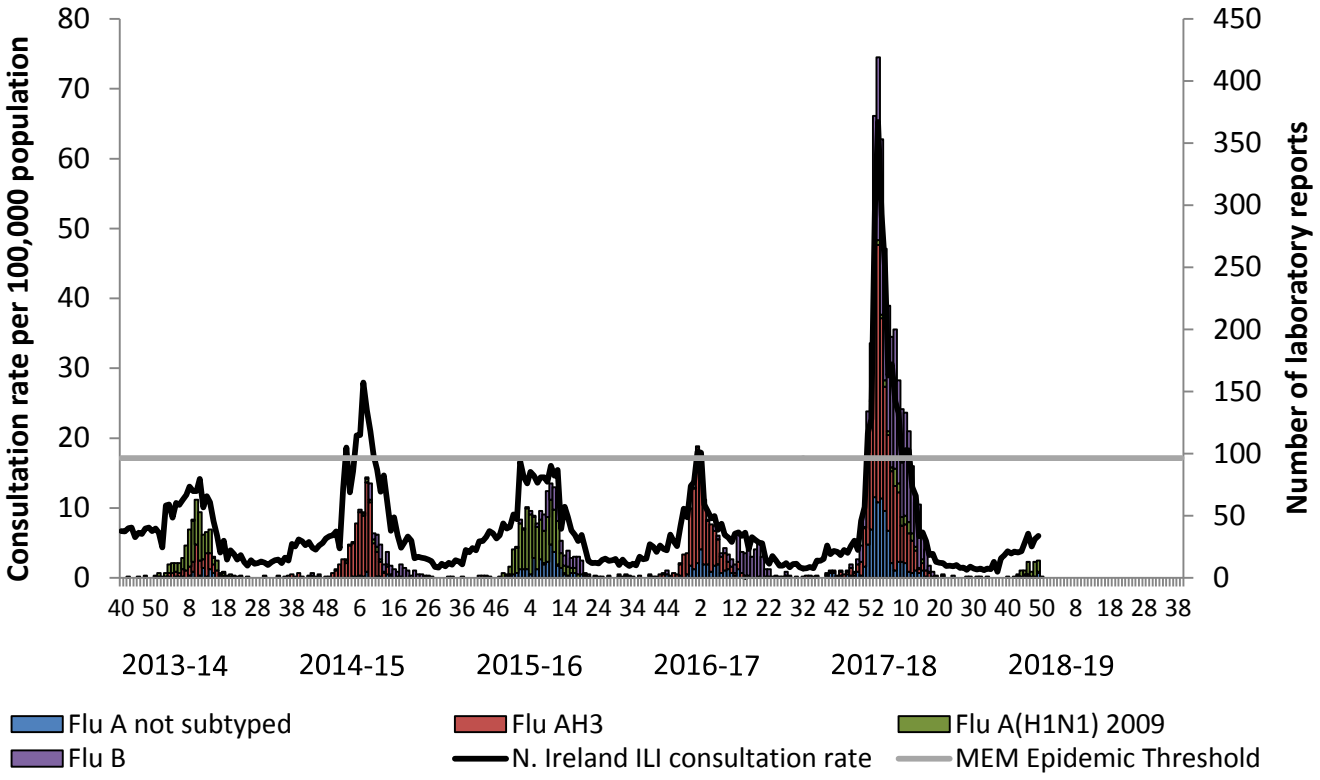
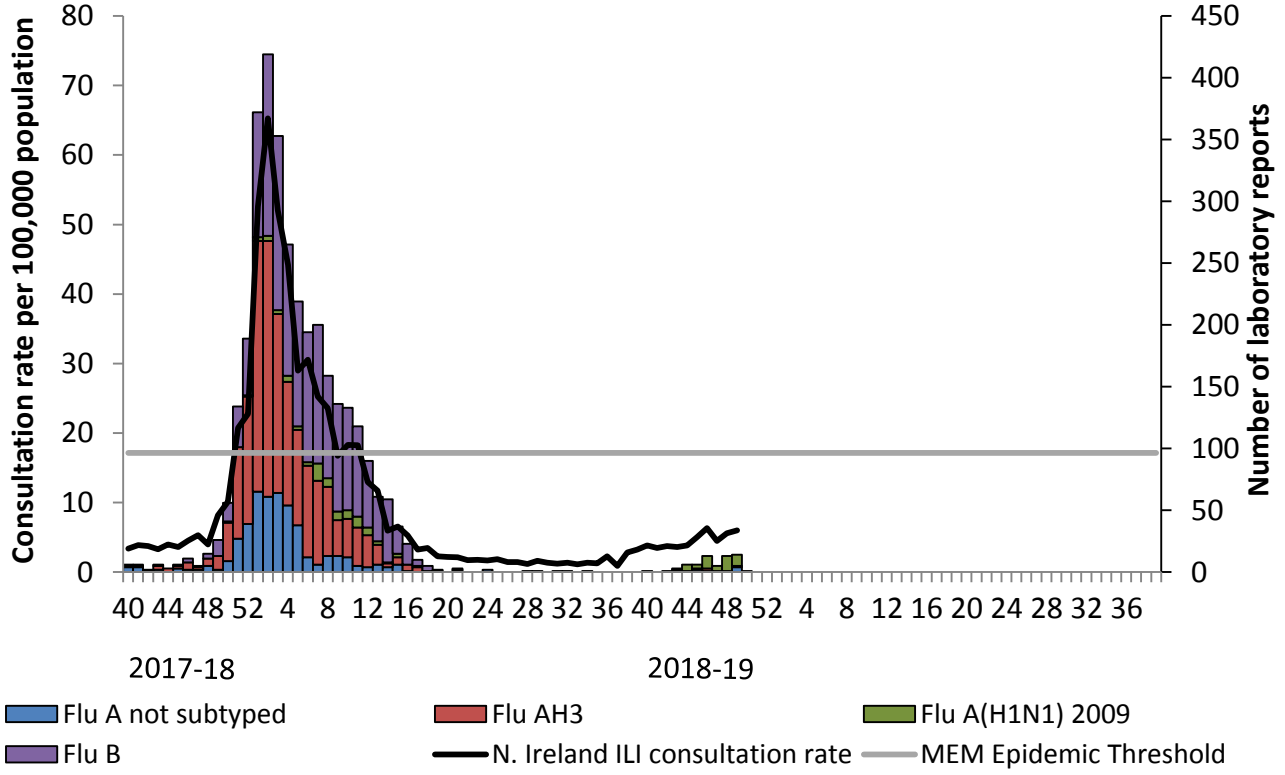



**Figure 6. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2017**



| Table 1. Virus activity in Northern Ireland by source, Weeks 48-49, 2018-19 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Source | Specimens tested | Flu AH3 | Flu A(H1N1) 2009) | A (Untyped) | Flu B | RSV | Total influenza Positive | % Influenza Positive |
| Sentinel | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0% |
| Non-sentinel | 585 | 1 | 21 | 5 | 0 | 131 | 27 | 5% |
| Total | 591 | 1 | 21 | 5 | 0 | 132 | 27 | 5% |

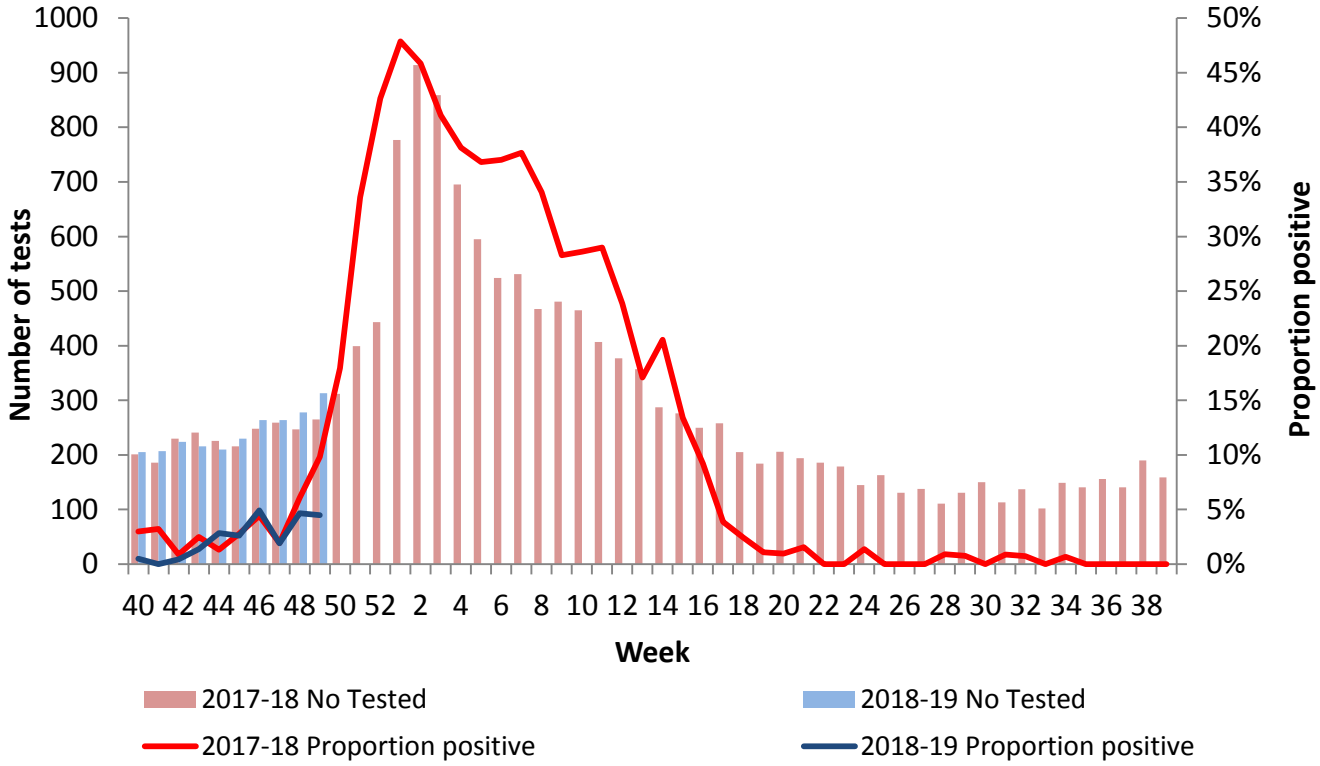
| Table 2. Cumulative virus activity from all sources by age group, Week 40 - 49, 2018-19 | | | | | | |
|---|---|---|---|---|---|---|
| Age Group | Flu AH3 | Flu A(H1N1) 2009 | A (Untyped) | Flu B | Total Influenza | RSV |
| 0-4 | 0 | 10 | 2 | 0 | 12 | 174 |
| 5-14 | 0 | 2 | 0 | 0 | 2 | 4 |
| 15-64 | 2 | 25 | 4 | 1 | 32 | 40 |
| 65+ | 3 | 7 | 6 | 0 | 16 | 37 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 0 |
| All ages | 5 | 44 | 12 | 1 | 62 | 255 |

| Table 3. Cumulative virus activity by age group and source, Week 40 - Week 49, 2018-19 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sentinel | | | | | | Non-sentinel | | | | | |
| Age Group | 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 | 0 | 10 | 2 | 0 | 12 | 174 |
| 5-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 4 |
| 15-64 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 25 | 4 | 1 | 32 | 38 |
| 65+ | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 6 | 0 | 16 | 37 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| All ages | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 44 | 12 | 1 | 62 | 253 |

**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

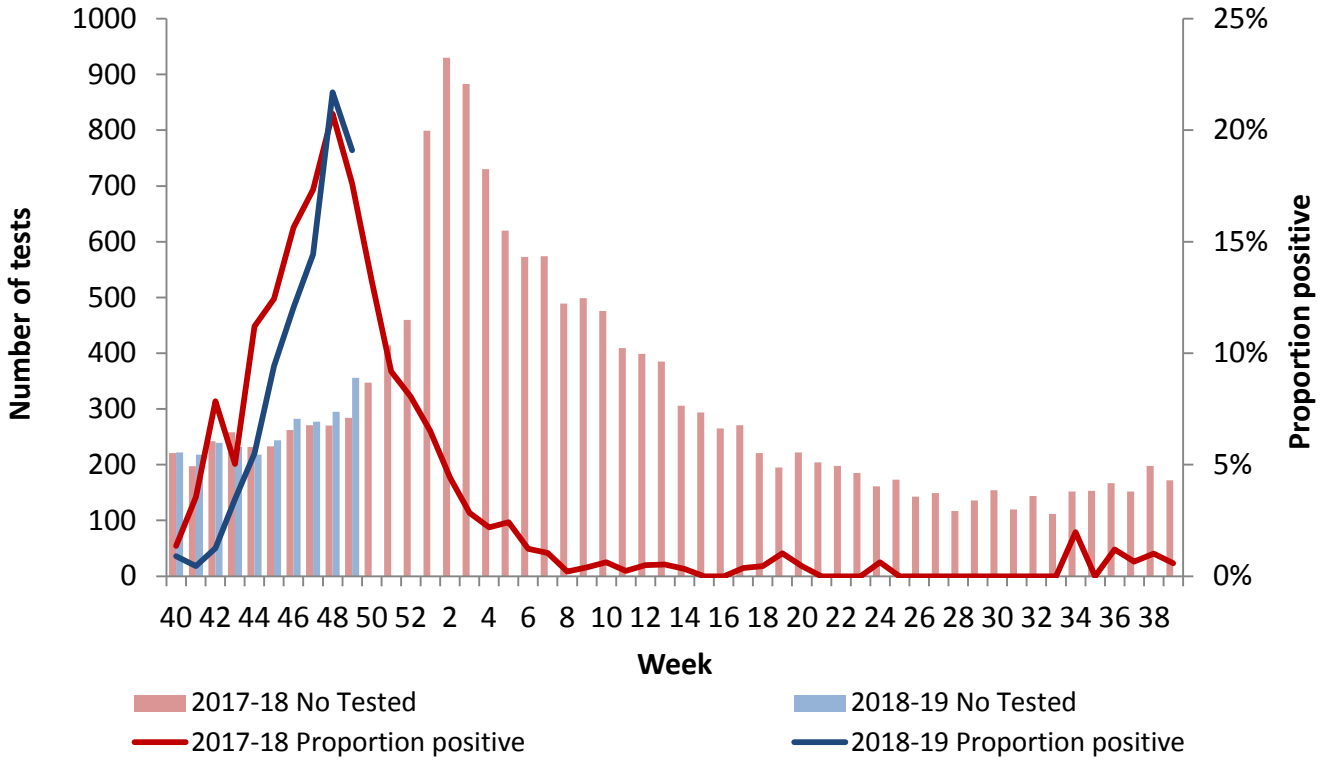
Additional virology testing has been undertaken at one local laboratory since week 2, 2018. This bulletin includes this data along with the data from the Regional Virology Laboratory. Other local laboratories may begin undertaking influenza testing and this data will be included in later bulletins if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

During weeks 48 and 49 there were 591 specimens submitted for virological testing. There were 27 detections of influenza in total (5% positivity); 21 Flu A(H1N1), one Flu A(H3) and five Flu A(untyped).

There were six samples submitted through the GP based sentinel scheme in weeks 48 and 49 across Northern Ireland, none were positive for influenza (Tables 1, 2 & 3; Figures 5, 6 & 7). One sample tested positive for RSV.

## Respiratory Syncytial Virus (RSV)

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

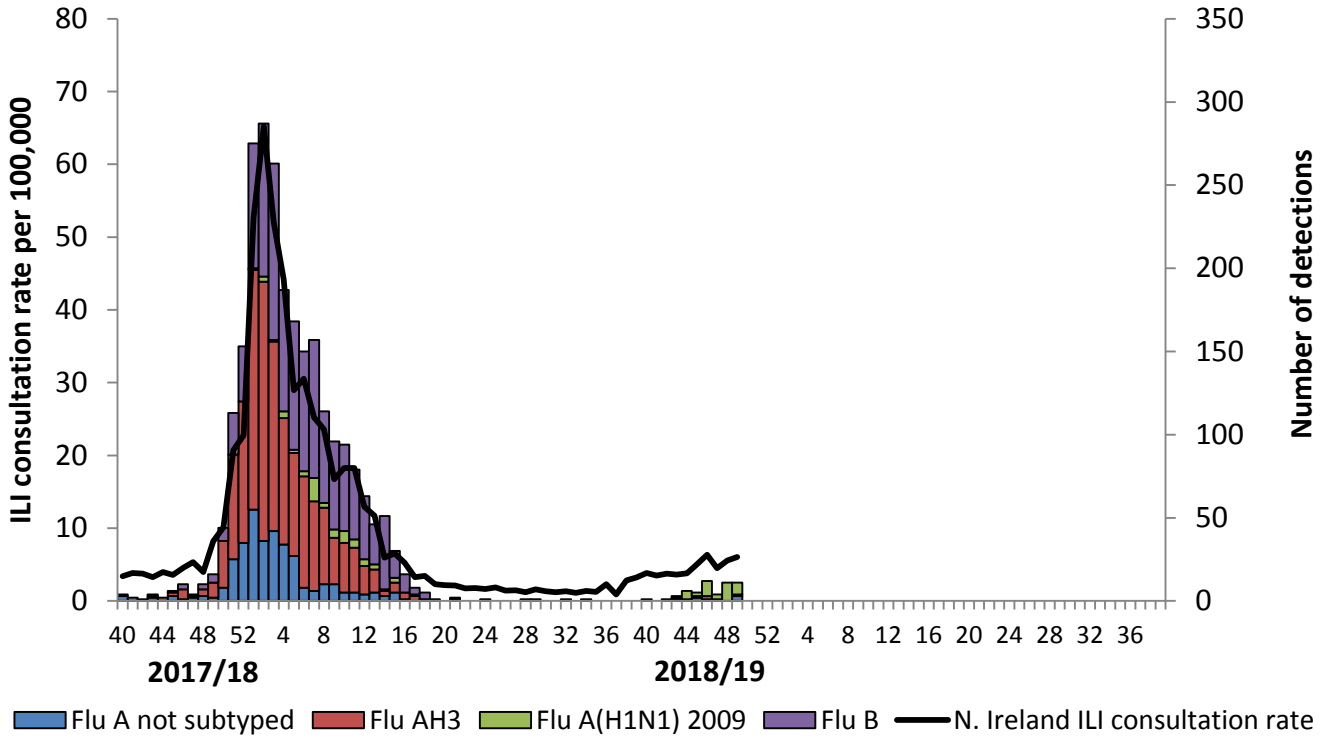



### Comment

During weeks 48 and 49 there were 132 positive detections of RSV. To date there have been a total of 255 detections of RSV of which the majority (68%) 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**

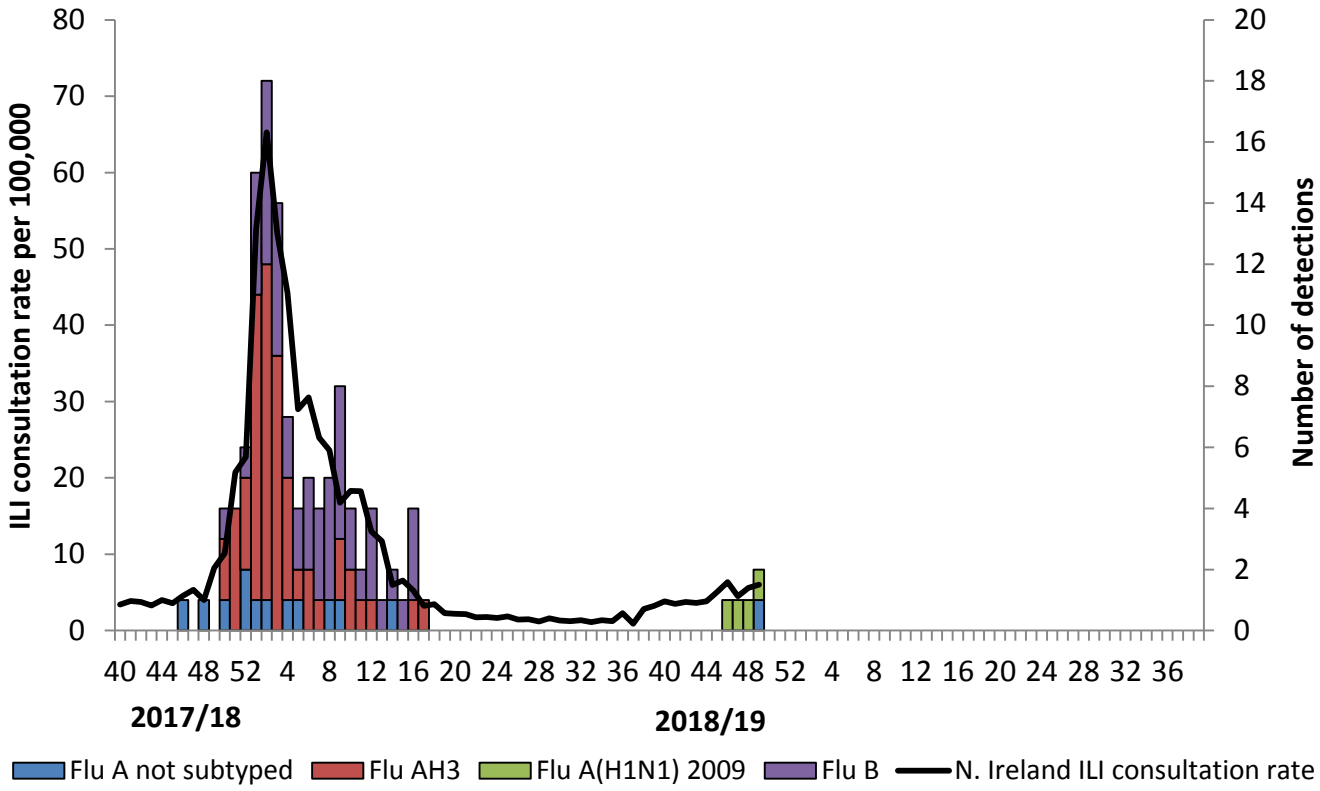



### Comment

During weeks 48 and 49 there were 22 detections of influenza from specimens taken in hospital settings across Northern Ireland. In week 48 there were 11 Flu A(H1N1). During week 49 there were seven Flu A(H1N1), one Flu A(H3) and three Flu A(untyped). It should be kept in mind that it is possible that not all positive specimens (for weeks 48 and 49) 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). During weeks 48 and 49, there were three new admissions to ICU with confirmed influenza reported to the PHA. Two have been typed as Flu A(H1N1) and one as Flu A(untyped). So far this season there has been five 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 48. This is the second death reported in ICU this season with confirmed influenza.

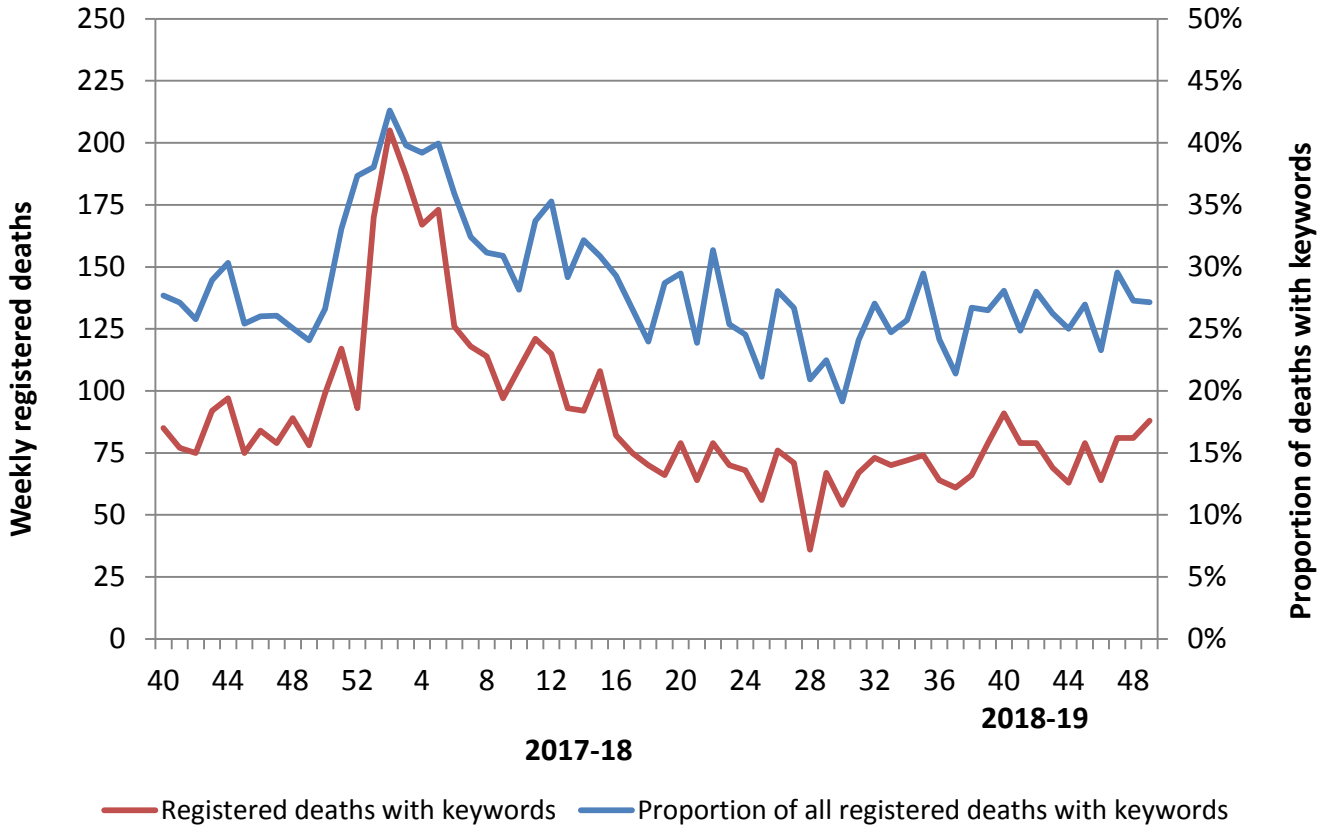
## Outbreak Surveillance

During weeks 48 and 49 there were no confirmed influenza outbreaks reported to the PHA.

## 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 remained stable between weeks 48 and 49 (both 27%). In week 48 there were 297 registered deaths of which 81 related to specific respiratory infections. In week 49 there were 324 registered deaths, of which 88 related to specific respiratory infections (Figure 11). The proportion of deaths attributed to specific respiratory infections is slightly higher at this point in the season as the same period in 2017/18 (24% at week 49).

## 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.

There was no excess all-cause mortality reported in Northern Ireland in weeks 48 and 49.

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

## Influenza Vaccine Uptake

| | **2018/19 (to Oct 31st)** | **2017/18 (to Oct 31st)** |
|---|---|---|
| >65 years | 28.3% | 55.0% |
| <65 years at risk | 29.6% | 37.5% |
| Pregnant women | 35.2% | 31.9% |
| 2 to 4 year olds | 32.9% | 37.2% |
| Primary School | 75.5% | 76.3% |
| Trust Frontline | 28.0% | 28.0% |

The end of season report Influenza Surveillance Report for Northern Ireland 2017/18 is now available to download:
Link to report: http://www.publichealth.hscni.net/directorate-public-health/health-protection/seasonal-influenza

## International Summary

### Europe

### Weeks 48/2018 (26 November- 2 December 2018)

- Influenza activity was low throughout the European Region.
- Influenza viruses were detected sporadically in specimens from persons with respiratory illness presenting to medical care.
- The majority of influenza virus detections were influenza A in sentinel, non-sentinel and hospitalised cases.
- For week 48/2018, data from the 22 Member States and areas reporting to the EuroMOMO project indicated all-cause mortality to be at expected levels for this time of year.

### 2018/19 season overview

- As of week 48/2018, influenza activity has been low in the European Region here.

http://www.flunewseurope.org/

### Worldwide (WHO)

### As at 10th December 2018 (based on update to 25th November):

## Summary

In the temperate zone of the northern hemisphere influenza activity continued to increase although overall influenza activity remained low. Increased influenza detections were reported in some countries of Southern and South-East Asia. In the temperate zones of the southern hemisphere, influenza activity returned to 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 12 November 2018 to 25 November 2018 (data as of 2018-12-07 03:38:18 UTC). The WHO Global Influenza Surveillance and Response System (GISRS) laboratories tested more than 118399 specimens during that time period. 6596 were positive for influenza viruses, of which 5995 (90.9%) were typed as influenza A and 601 (9.1%) as influenza B. Of the sub-typed influenza A viruses, 3019 (85.5%) were influenza A(H1N1)pdm09 and 511 (14.5%) were influenza A(H3N2). Of the characterized B viruses, 39 (38.6%) belonged to the B-Yamagata lineage and 62 (61.4%) to the B-Victoria lineage.

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

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.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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