

Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 1 (31st December 2018 – 6th January 2019)

Summary

The surveillance data indicates that influenza is now circulating across Northern Ireland. However, influenza rates remain below the baseline Moving Epidemic Method (MEM) threshold for Northern Ireland and are below normal seasonal activity¹.

Northern Ireland Primary Care Consultation Rates

- GP consultation rates for flu and flu-like illness (flu/FLI) during week 1, 2019 was 13.5 per 100,000 population, an increase from week 52, 2018 (9.0 per 100,000). Rates remain below the baseline Moving Epidemic Method (MEM) threshold for flu activity¹.
- OOH GP flu/FLI consultation rate decreased between week 52 and week 1 (14.7 to 12.6 per 100,000 population, respectively).

Microbiological Surveillance (Flu and RSV)

- During week 1 there were 524 specimens submitted for virological testing, of which 107 tested positive for influenza (20% positivity).
- There were 53 detections of Flu A(H1N1)pdm09, 49 Flu A(untyped) and four Flu A(H3). There was one detection of Flu B.
- There were 62 positive RSV detections in week 1 (11% positivity).

Secondary Care (Hospital both non-ICU and ICU)

- In week 1 there were 41 detections of Flu A(H1N1)pdm09, 41 Flu A(untyped) and two Flu A(H3).
- There were seven cases reported in ICU with laboratory confirmed influenza (four Flu A(H1N1)pdm09 and three Flu A(untyped)).
- To date, there has been 23 admissions to ICU with confirmed influenza reported to PHA and two deaths reported in ICU patients who had laboratory confirmed influenza.

Influenza Outbreaks across Northern Ireland

- During week 1 there was one outbreak of RSV reported in a Care Home to the PHA. To date, this is the first influenza outbreak reported.

Mortality

- The proportion of deaths related to respiratory keywords (bronchiolitis, bronchitis, influenza and pneumonia) increased in week 1 from week 52 (29% to 33%).

Influenza Vaccine Uptake

	2018/19 (to Nov 30 th)	2017/18 (to Nov 30 th)
>65 years	52.0%	66.8%
<65 years at risk	41.7%	48.2%
Pregnant women	43.5%	46.8%
2 to 4 year olds	41.8%	44.9%
Primary School	75.1%	75.3%
Trust Frontline	33.1%	29.5%
Trust Frontline (excluding social workers and social care workers)	37.2%	-

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

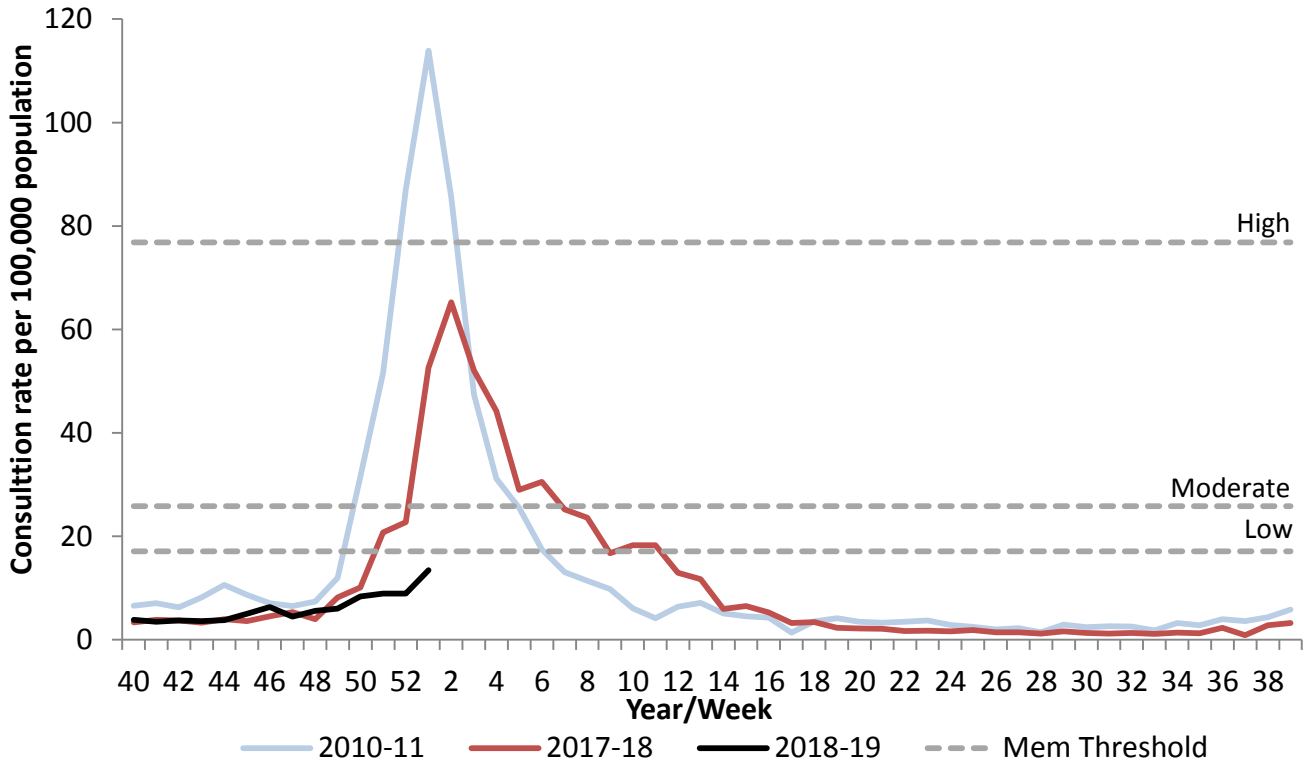
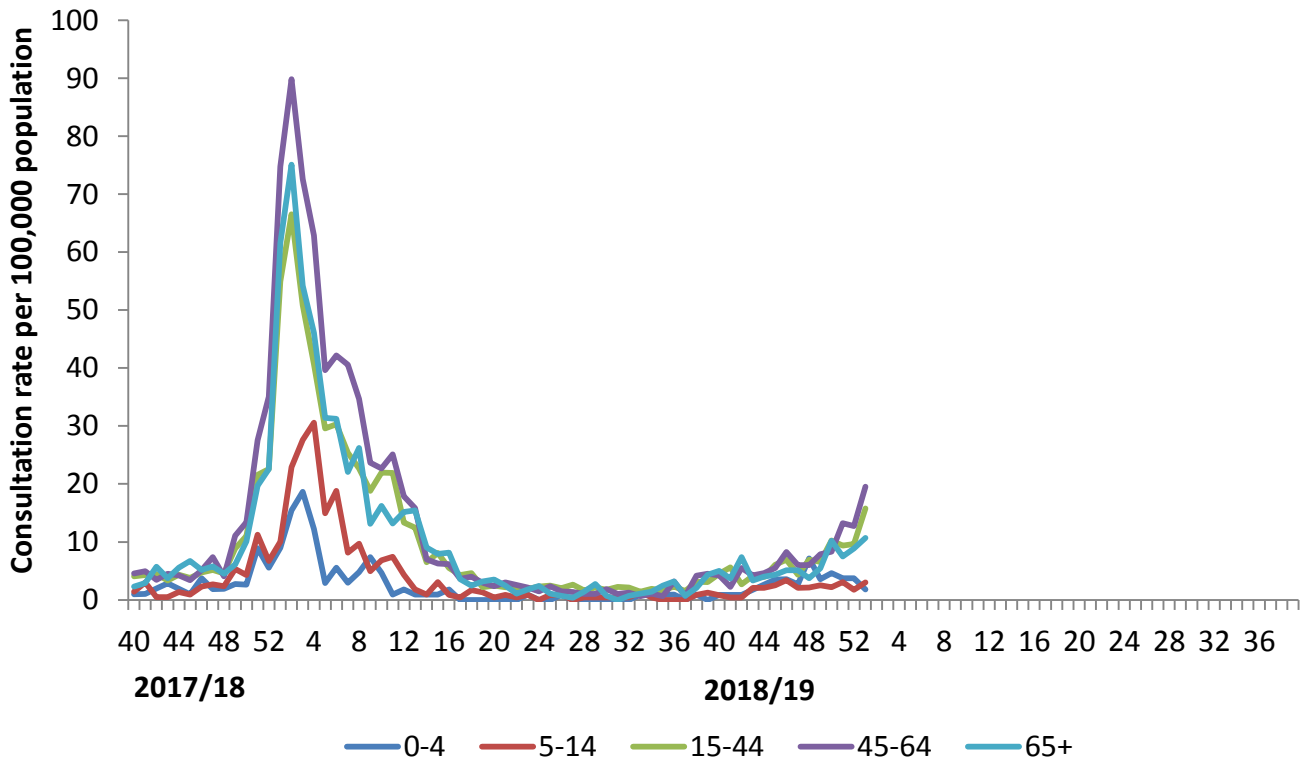


Figure 2. Northern Ireland GP age-specific consultation rates for flu/FLI from week 40, 2017



Comment

The NI GP consultation rates for flu and flu-like illness (flu/FLI) during week 1, 2019 was 13.5 per 100,000 population, an increase from week 52, 2018 (9.0 per 100,000). Activity remains 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 45-64 years (19.5 per 100,000) (Figure 2). The consultation rates decreased in week 1 compared to week 52 in those aged 0-4 years (3.7 to 1.8 per 100,000) but increased in all other age groups; 5-14 years (1.8 to 3.0 per 100,000), 15-44 years (9.6 to 15.8 per 100,000), 45-64 years (12.7 to 19.5 per 100,000) and 65 years and over (8.9 to 10.7 per 100,000).

Out-of-Hours (OOH) Centres Call Data

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

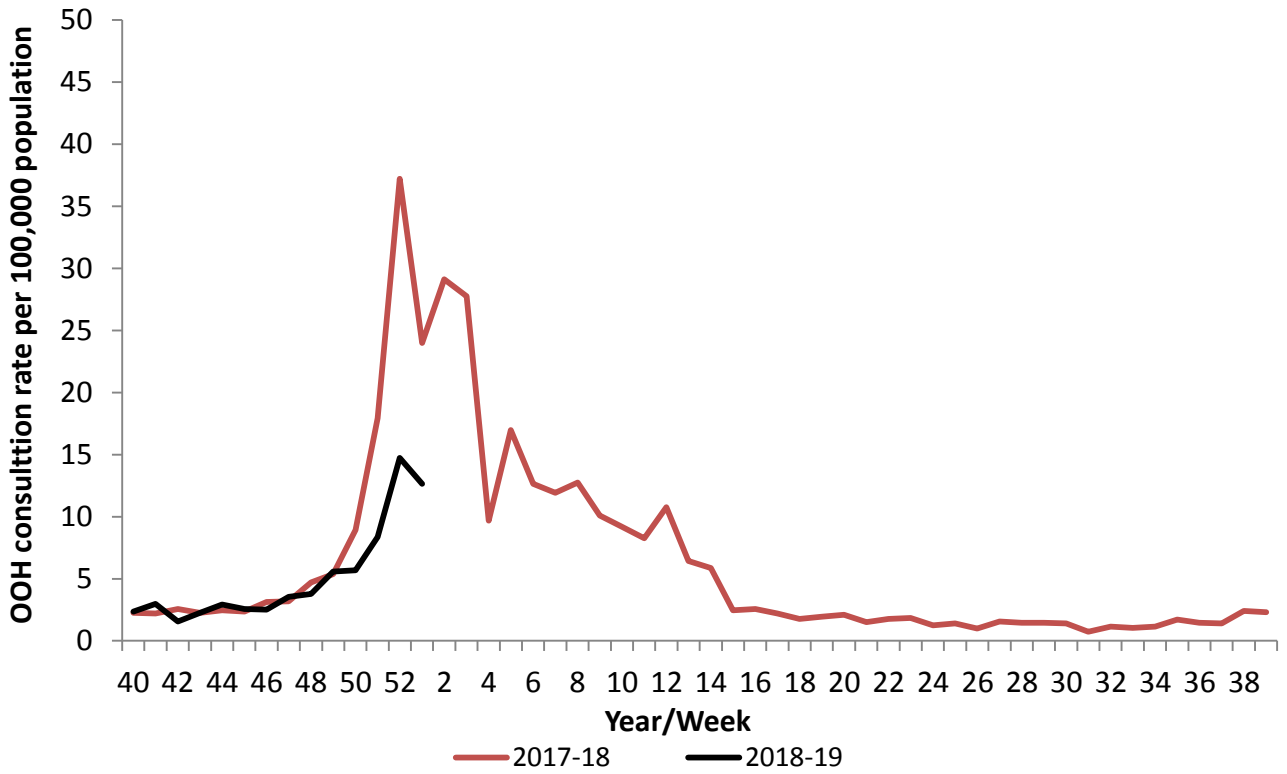
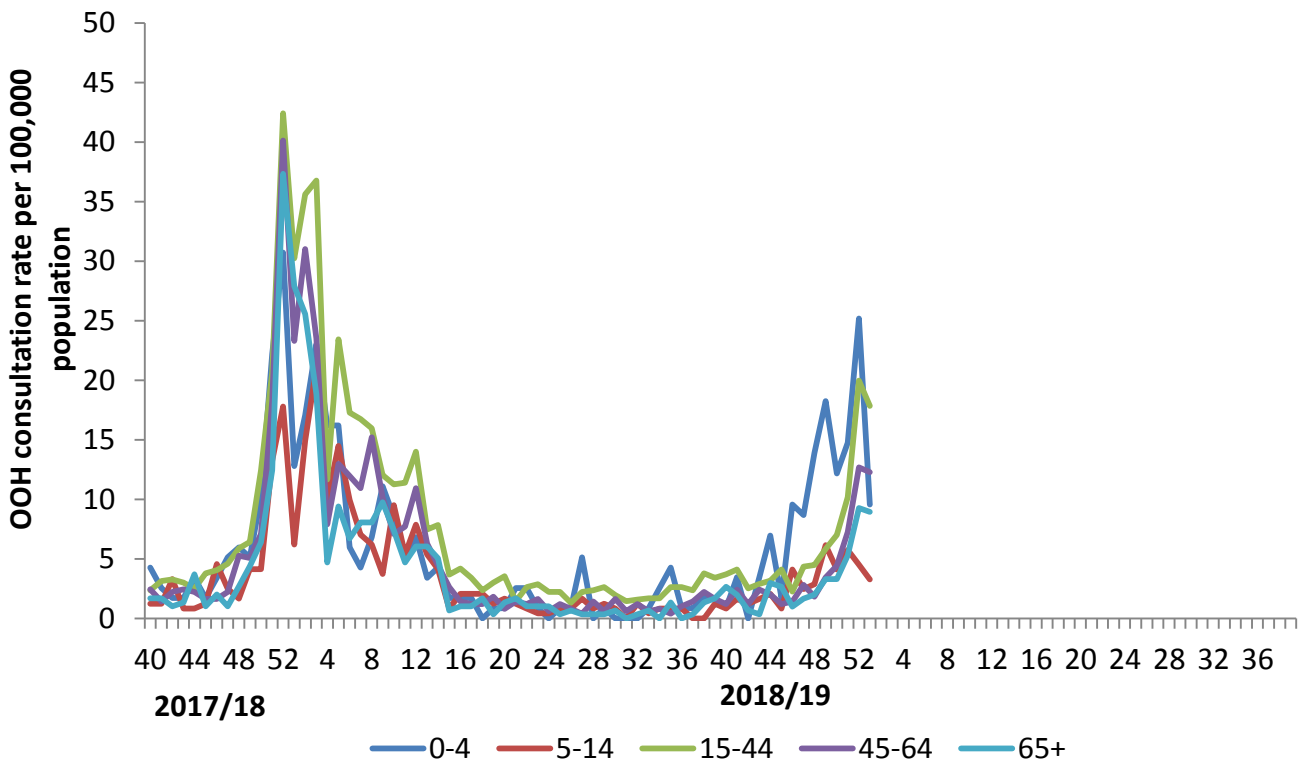


Figure 4. OOH call rates of flu/FLI by age-group from week 40, 2017



Comment

The OOH flu/FLI consultation rate during week 1, 2019 was 12.6 per 100,000 population, (Figure 3). The rate in week 1 is substantially lower than the same week in 2017/18 (12.6 compared to 24.0 per 100,000). The proportion of calls related to flu/FLI in OOH centres increased slightly from 1.6% in week 52, 2018 to 1.7% in week 1.

The OOH flu/FLI consultation rate was highest in those aged 15-44 years in week 1 (17.8 per 100,000), (Figure 4). However, consultation rates decreased compared to week 52 in all age groups. There was a considerable decrease in rates in those aged 0-4 years (25.2 to 9.6 per 100,000), with a slight decrease in the remaining age groups; 5-14 years (4.5 to 3.3 per 100,000), 15-44 years (20.0 to 17.8 per 100,000), 45-64 years (12.7 to 12.3 per 100,000) and 65 years and over (9.3 to 8.9 per 100,000).

Virology Data

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

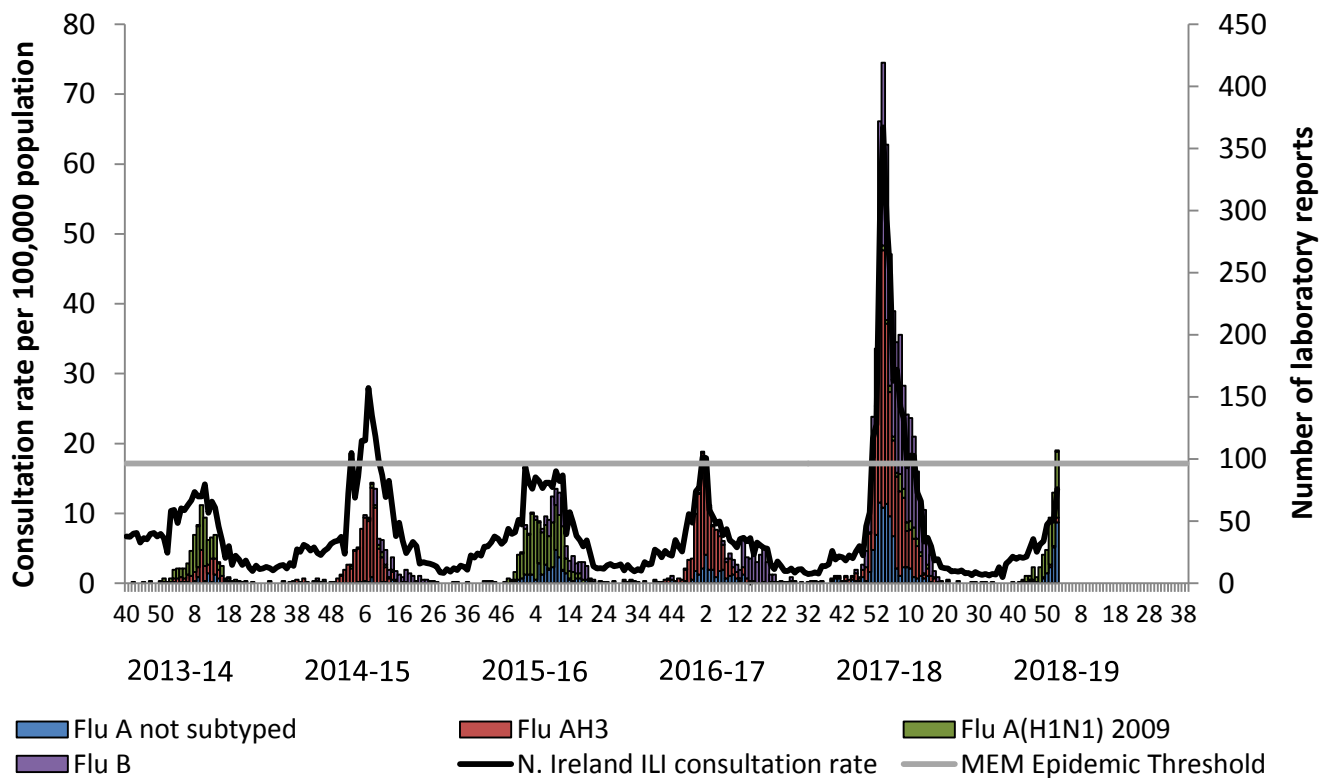


Figure 6. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2017

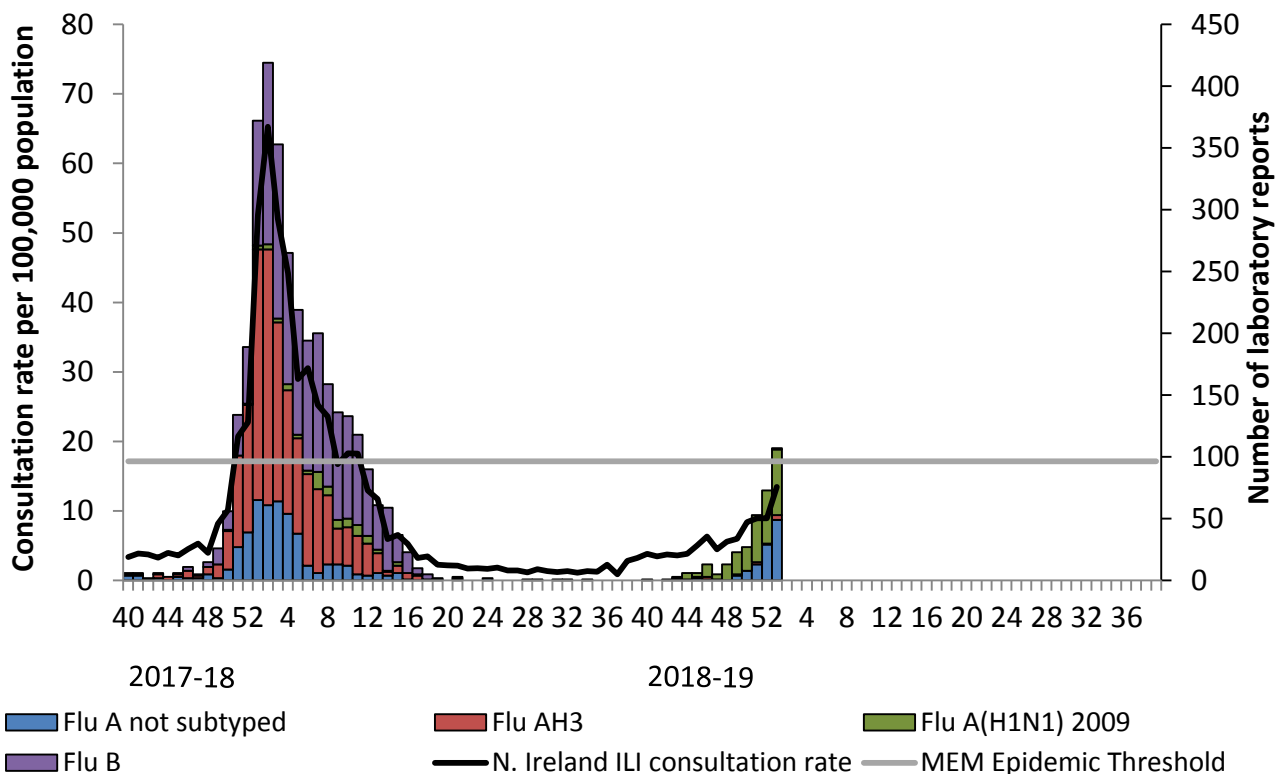


Table 1. Virus activity in Northern Ireland by source, Week 1, 2018-19

Source	Specimens tested	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	12	1	4	2	1	1	8	67%
Non-sentinel	512	3	49	47	0	61	99	19%
Total	524	4	53	49	1	62	107	20%

Table 2. Cumulative virus activity from all sources by age group, Week 40 - 1, 2018-19

Age Group	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
0-4	0	31	2	0	33	280
5-14	1	6	2	0	9	9
15-64	7	135	73	1	216	85
65+	4	35	33	1	73	103
Unknown	0	0	0	0	0	0
All ages	12	207	110	2	331	477

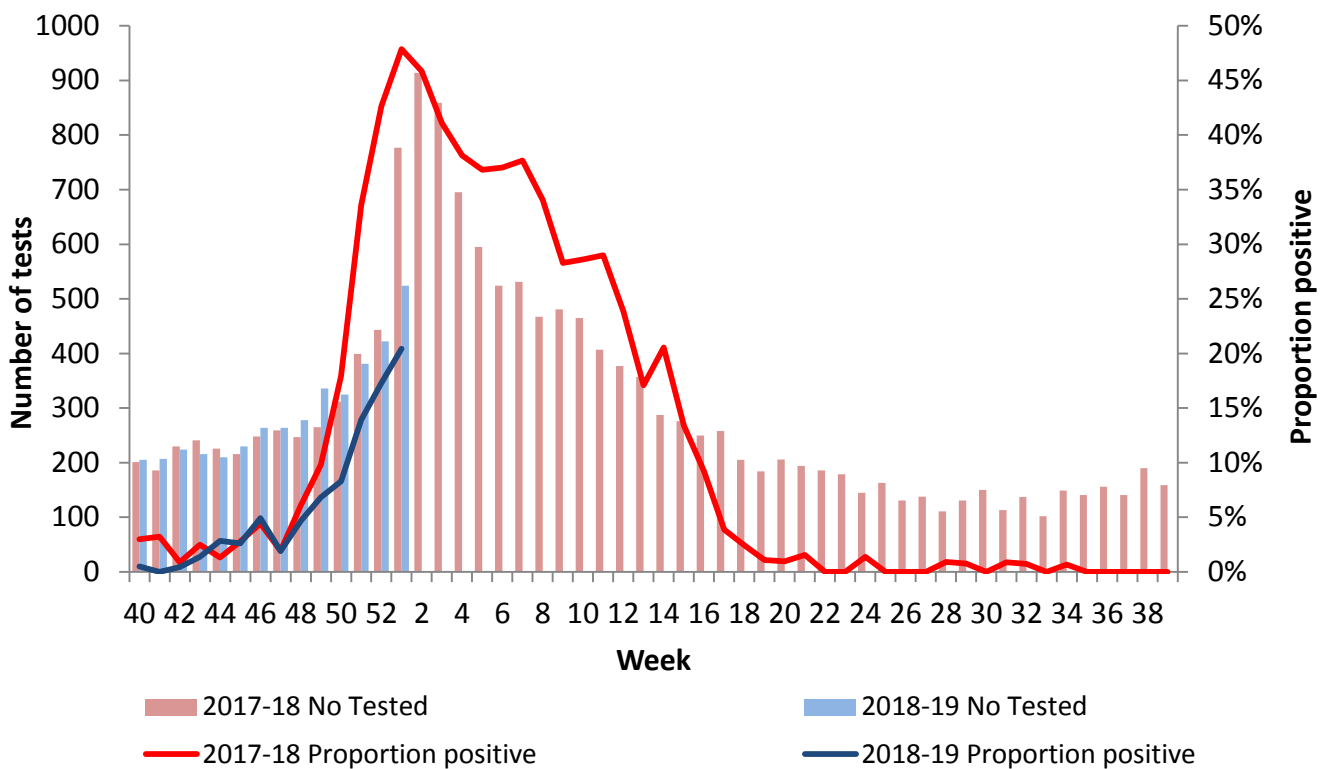
Table 3. Cumulative virus activity by age group and source, Week 40 - Week 1, 2018-19

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	0	31	2	0	33	280
5-14	0	1	0	0	1	0	1	5	2	0	8	9
15-64	2	6	3	0	11	5	5	129	70	1	205	80
65+	0	1	0	1	2	0	4	34	33	0	71	103
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
All ages	2	8	3	1	14	5	10	199	107	1	317	472

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

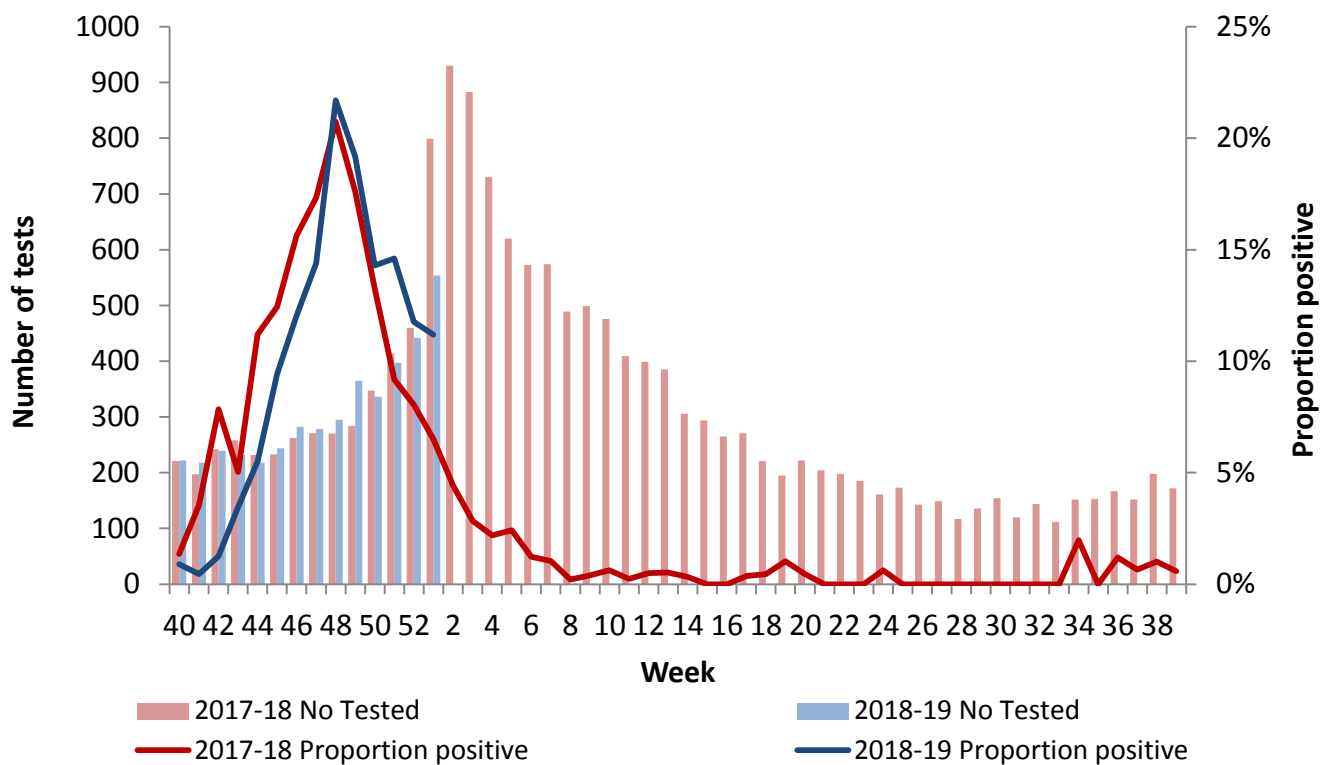
Additional virology testing has been undertaken at one local laboratory since week 2, 2018. This bulletin includes this data along with the data from the Regional Virology Laboratory. Other local laboratories may begin undertaking influenza testing and this data will be included in later bulletins if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

In week 1, 2019 there were 524 specimens submitted for virological testing. There were 107 detections of influenza in total (20% positivity); 53 Flu A(H1N1)pdm09, four Flu A(H3), 49 Flu A(untyped) and one detection of Flu B.

There were 12 samples submitted through the GP based sentinel scheme in week 1 across Northern Ireland. There were eight positive results, four Flu A(H1N1) pdm09, one Flu A(H3), two Flu A(untyped) and one Flu B (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

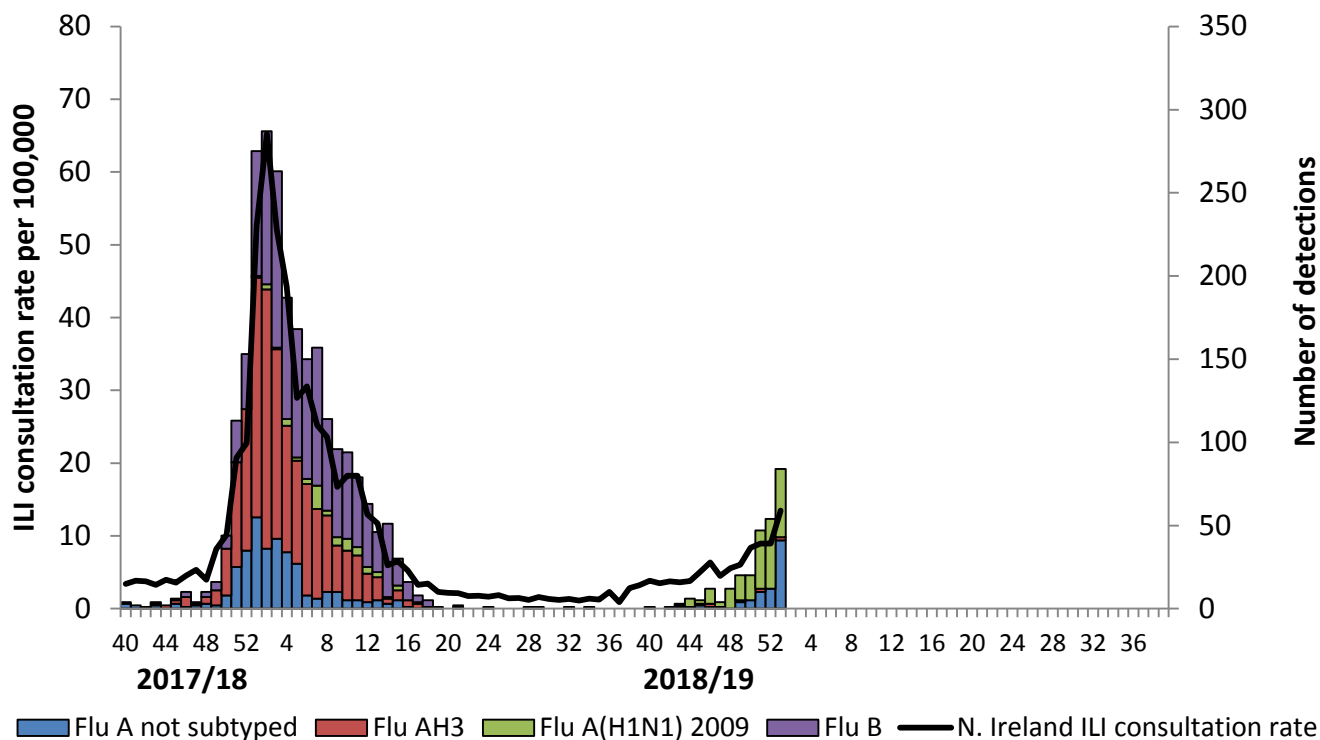


Comment

In week 1, 2019 there were 62 positive detections of RSV (11% positivity). To date there have been a total of 477 detections of RSV of which the majority (59%) 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

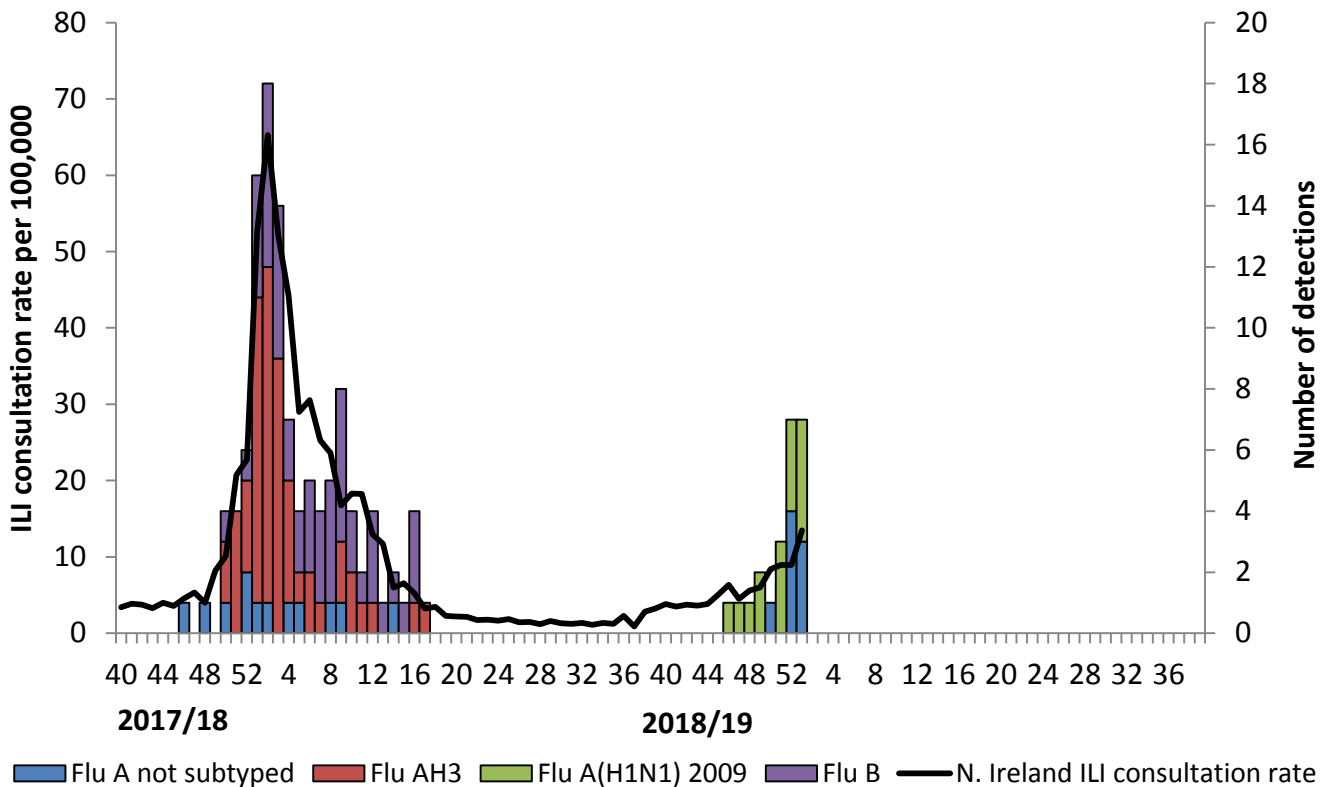


Comment

In week 1, 2019 there were 84 detections of influenza from specimens taken in hospital settings across Northern Ireland. There were 41 Flu A(H1N1)pdm09, 41 Flu A(untyped) and two Flu A(H3). It should be kept in mind that it is possible that not all positive specimens (for week 1) 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 1, 2019 there were seven new admissions to ICU with confirmed influenza reported to the PHA; four Flu A(H1N1)pdm09 and three Flu A(untyped). So far this season there has been 23 admissions to ICU with confirmed influenza reported to PHA. There were no deaths reported in an ICU patient who had laboratory confirmed influenza in week 1. So far this season there have been two deaths reported in ICU patients who had laboratory confirmed influenza.

Of the 23 admissions to ICU, 56% (n=13) were male and no females were pregnant. The ages ranged from <1 year to 76 years, with a median age of 56 years and a mean age of 50 years. 74% (n=17) had a co-morbidity, of which 59% (n=10) were classed as being in a vaccine risk group. Of these, 50% (n=5) were vaccinated this season. The two deaths both had co-morbidities and were both classed as being in a vaccine risk group, with one having been vaccinated this season. Both were aged 45-64 years.

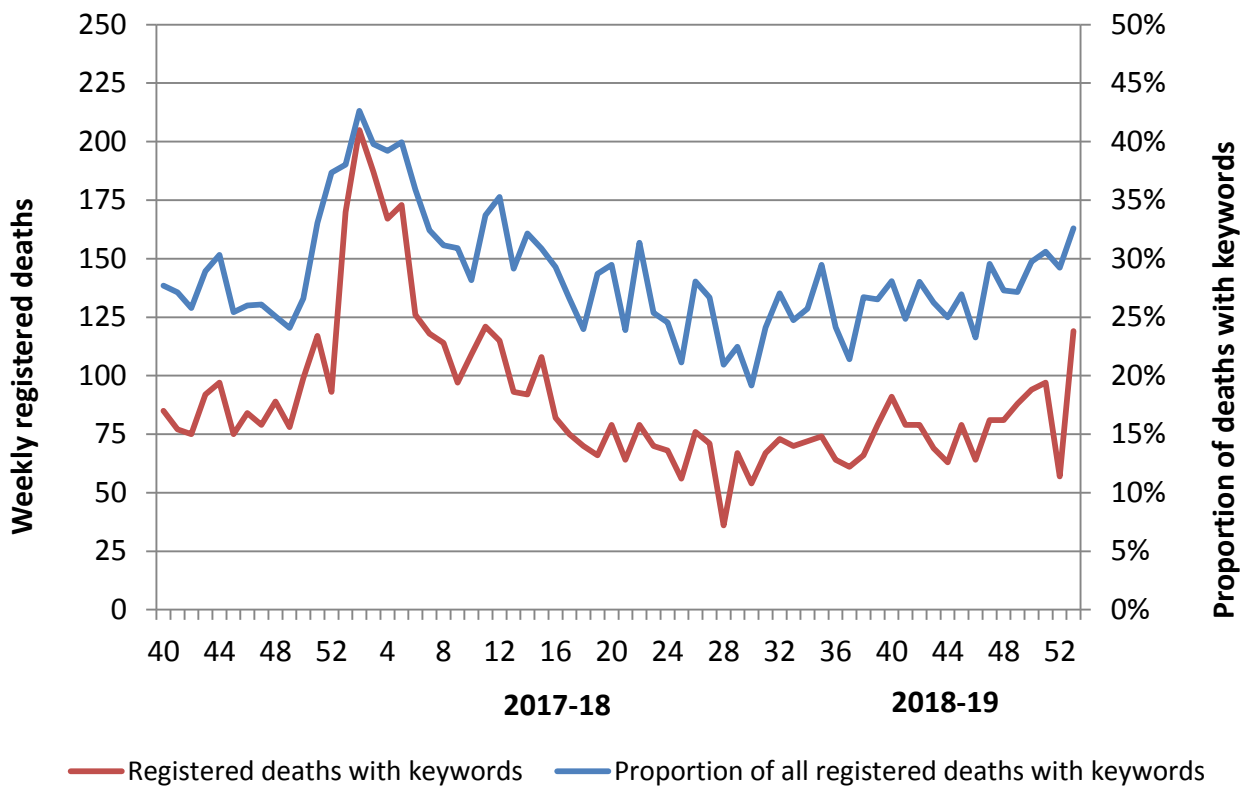
Outbreak Surveillance

During week 1, 2019 there was one outbreak of RSV reported in a Care Home to the PHA. To date, this is the first influenza outbreak reported.

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 from 29% in week 52, 2018 to 33% in week 1, 2019. There were 365 registered deaths of which 119 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 (38%).

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 1, 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

	2018/19 (to Nov 30 th)	2017/18 (to Nov 30 th)
>65 years	52.0%	66.8%
<65 years at risk	41.7%	48.2%
Pregnant women	43.5%	46.8%
2 to 4 year olds	41.8%	44.9%
Primary School	75.1%	75.3%
Trust Frontline	33.1%	29.5%
Trust Frontline (excluding social workers and social care workers)	37.2%	-

International Summary

Europe

Weeks 52/2018 (24–30 December 2018)

- Influenza activity continued to increase in the European Region. Of the individuals sampled after presenting with ILI or ARI to sentinel primary healthcare sites, 37% tested positive for influenza viruses.
- The majority of influenza virus detections were type A in both inpatients and outpatients.
- From sentinel samples, influenza A(H3N2) and A(H1N1)pdm09 viruses were detected in similar proportions.
- From non-sentinel samples, about two third of the A viruses were A(H1N1)pdm09.
- Most of the hospitalized laboratory confirmed influenza infections were associated with A(H1N1)pdm09 virus and were in persons aged 15-64 years.
- The predominant A(H1N1)pdm09 and A(H3N2) viruses that are circulating match the vaccine components, although fewer than 50 A(H3N2) viruses have been genetically characterized and only 13 have been antigenically characterized so far.
- Data from the 13 Member States and areas reporting to the [EuroMOMO](#) project indicated all-cause mortality was at expected levels for this time of year.

2018/19 season overview

- Influenza activity in Europe is increasing, with both A viruses circulating widely. Countries should continue to encourage vaccination.
- The northern hemisphere Vaccine Composition Meeting for 2019–2020 has been planned for 18–20 February 2019 in Beijing, China. For more information see [here](#).

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

Worldwide (WHO)

7th January 2019 - based on data up to 23rd December 2018

Information in this report is categorized by influenza transmission zones, which are geographical groups of countries, areas or territories with similar influenza transmission patterns. For more information on influenza transmission zones, see the link below:

Summary

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

- In North America influenza activity continued to increase overall with influenza A(H1N1)pdm09 predominating.
- In Europe, influenza activity increased, with both A viruses circulating.
- In North Africa, increased influenza A(H3N2) detections were reported from mainly Egypt.

- In Western Asia, some countries reached medium levels of influenza intensity. Elevated but decreasing influenza activity continued to be reported across countries of the Arabian Peninsula.
- In East Asia, influenza season appeared to have started, with predominantly influenza A(H1N1)pdm09 detected.
- In Southern Asia, influenza detections rose sharply in recent weeks mainly due to increased influenza A(H3N2) detections in Iran and continued influenza A(H1N1)pdm09 detections in India.
- 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 102 countries, areas or territories reported data to FluNet for the time period from 10 December 2018 to 23 December 2018 (data as of 2019-01-04 03:38:46 UTC). The WHO GISRS laboratories tested more than 97188 specimens during that time period. 12945 were positive for influenza viruses, of which 12148 (93.8%) were typed as influenza A and 797 (6.2%) as influenza B. Of the sub-typed influenza A viruses, 5823 (77%) were influenza A(H1N1)pdm09 and 1739 (23%) were influenza A(H3N2). Of the characterized B viruses, 40 (40.4%) belonged to the B-Yamagata lineage and 59 (59.6%) to the B-Victoria lineage.

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/>

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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