

Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 9 (25th February – 3rd March 2019)

Summary

The surveillance data indicates that influenza continues to circulate in community and hospital settings across Northern Ireland. Primary Care influenza rates remain below the baseline Moving Epidemic Method (MEM) threshold¹ for Northern Ireland and are below normal seasonal activity.

Northern Ireland Primary Care Consultation Rates

- GP consultation rate for flu and flu-like illness (flu/FLI) during week 9, 2019 was 9.0 per 100,000 population, a decrease from week 8 (11.1 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 8 and week 9 (5.0 to 3.7 per 100,000 population, respectively).

Microbiological Surveillance (Flu and RSV)

- During week 9 there were 355 specimens submitted for virological testing, of which 50 tested positive for influenza (14% positivity).
- There were 21 detections of Flu A(H1N1)pdm09, 13 Flu A(H3) and 16 Flu A(untyped).
- There were 7 positive RSV detections in week 9 (2% positivity).

Secondary Care (Hospital both non-ICU and ICU)

- In week 9 there were 19 detections of Flu A(H1N1)pdm09, 11 Flu A(H3) and 11 Flu A(untyped).
- There were no new cases reported in ICU with laboratory confirmed influenza but two deaths reported.
- To date, there have been 64 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 9, 2019 there were no respiratory outbreaks reported.
- To date, there have been 11 respiratory outbreaks reported, eight in care homes (four 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) decreased in week 9 compared to week 8 (31% to 27%).

Influenza Vaccine Uptake

	2018/19 (to Jan 31 st)	2017/18 (to Jan 31 st)
>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%	-

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

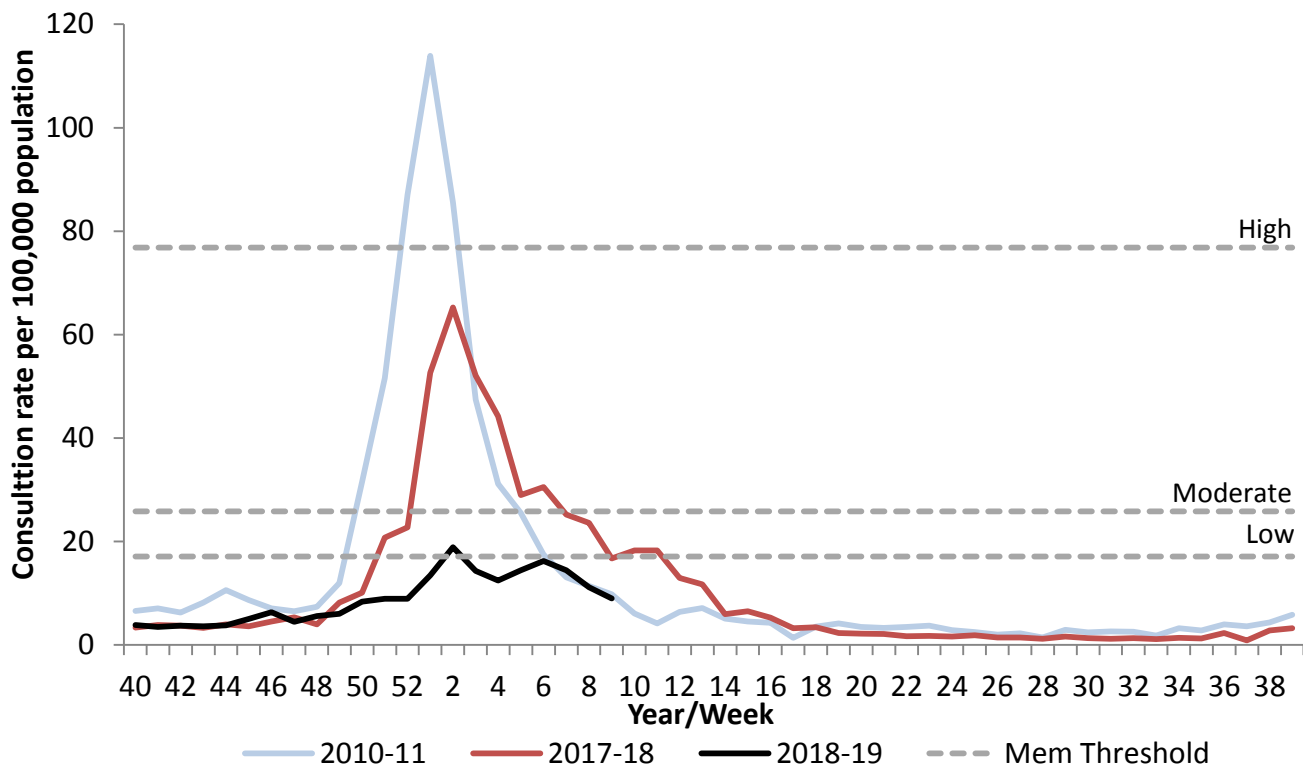
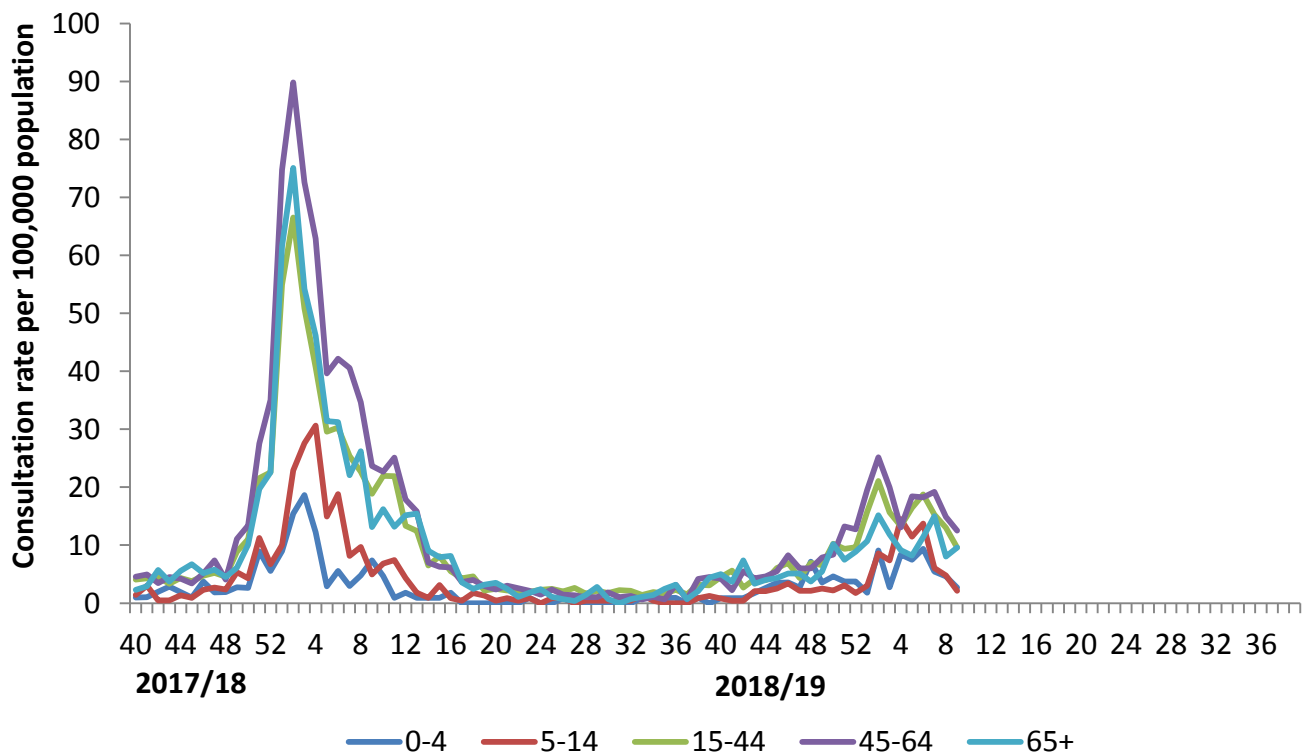


Figure 2. Northern Ireland GP age-specific consultation rates for flu/FLI from week 40, 2017



Comment

The NI GP consultation rate for flu and flu-like illness (flu/FLI) during week 9, 2019 was 9.0 per 100,000 population, a decrease from week 8 (11.1 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 9 compared to week 8 in all age groups with the exception those aged 65 and over which saw a slight increase (8.1 compared to 9.6 per 100,000). The consultation rate was highest in week 9 in those aged 45-64 years (12.5 per 100,000) (Figure 2).

Out-of-Hours (OOH) Centres Call Data

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

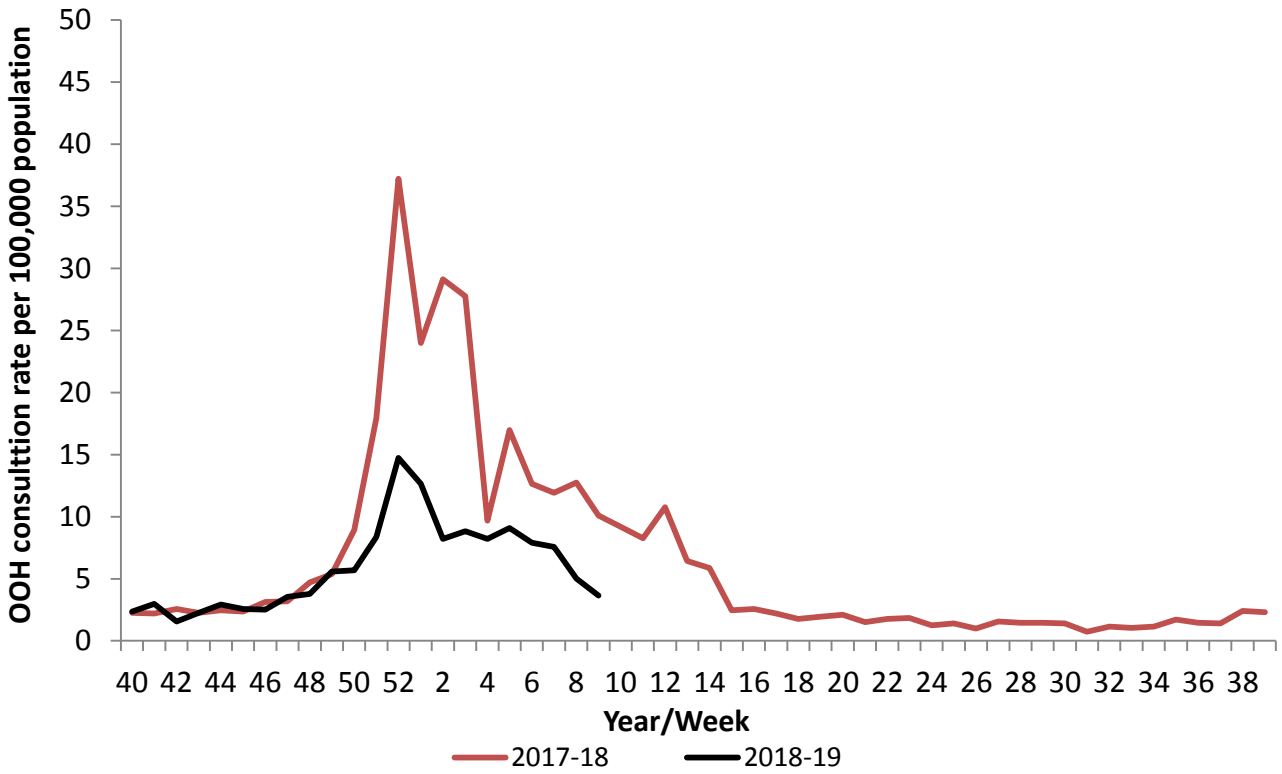
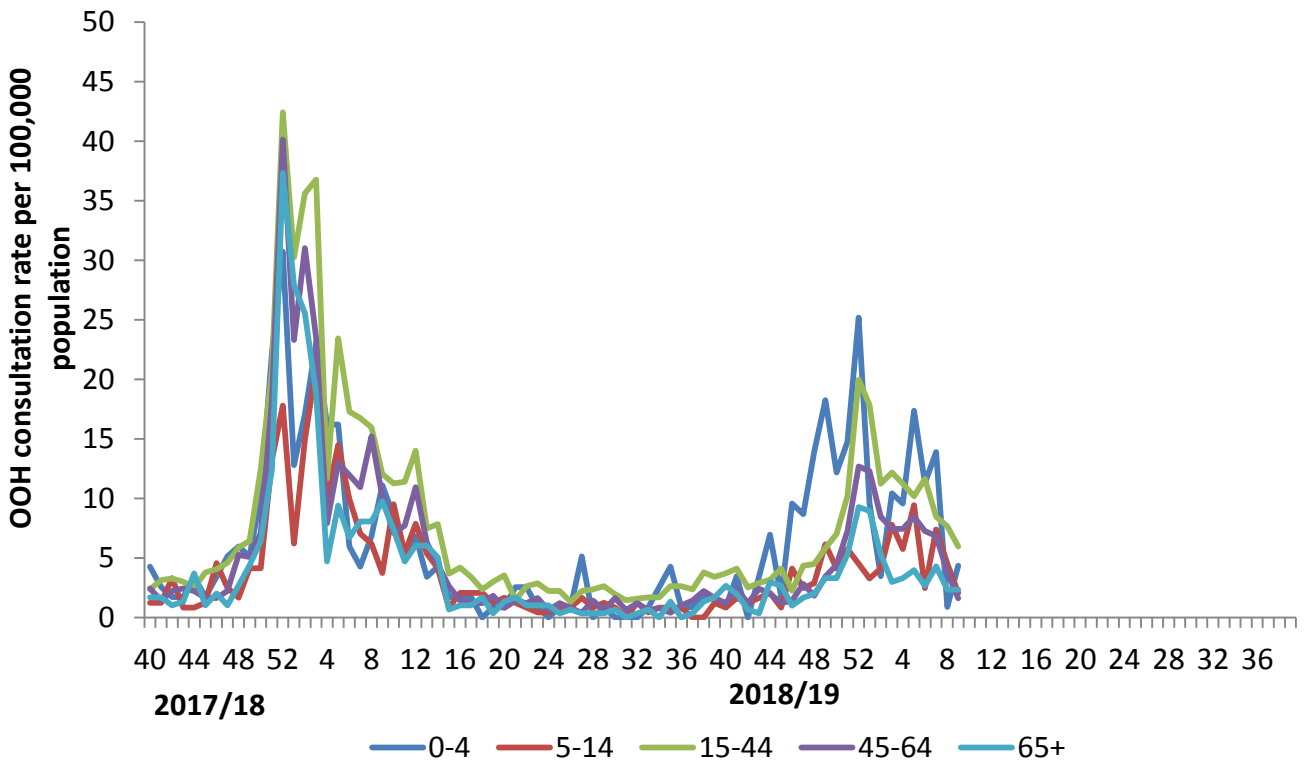


Figure 4. OOH call rates of flu/FLI by age-group from week 40, 2017



Comment

The OOH flu/FLI consultation rate during week 9, 2019 was 3.7 per 100,000 population, a decrease from week 8 (5.0 per 100,000) (Figure 3). The rate in week 9 is lower than the same week in 2017/18 (3.7 compared to 10.1 per 100,000). The proportion of calls related to flu/FLI in OOH centres was 0.7% in week 9 (0.9% in week 8).

Consultation rates decreased in week 9 in those aged 5-14 years (4.5 to 2.1 per 100,000), 15-44 years (7.7 to 5.9 per 100,000) and 45-64 years (3.8 to 1.6 per 100,000). The rate increased in those aged 0-4 years (0.9 to 4.3 per 100,000) but remained stable in those aged 65 and over (2.3 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

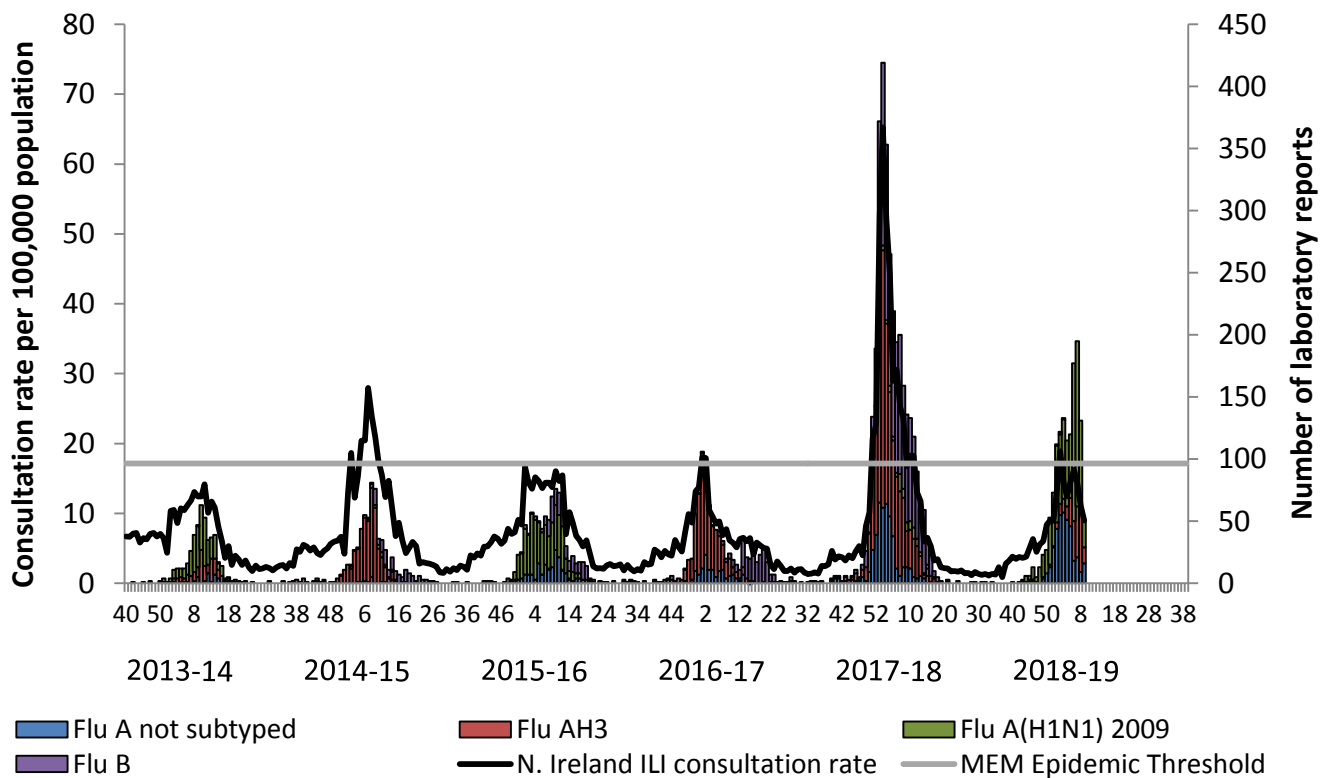


Figure 6. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2017

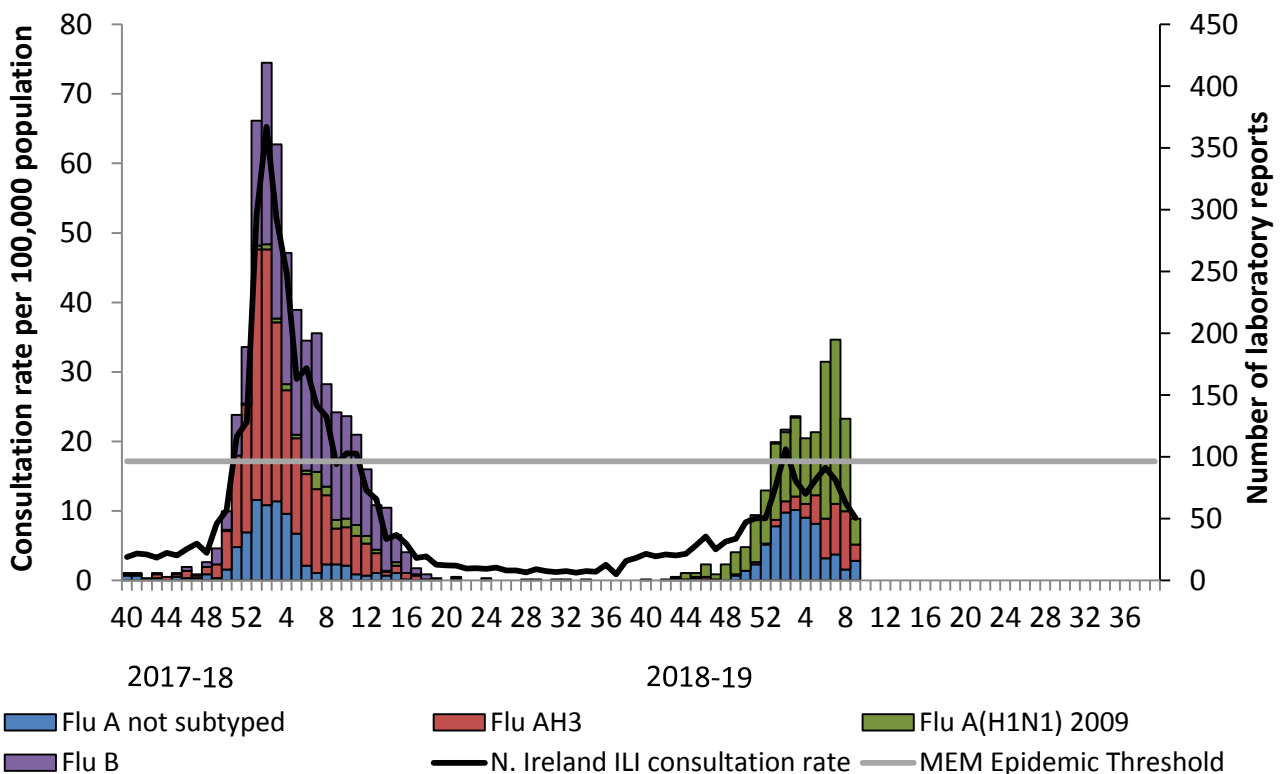


Table 1. Virus activity in Northern Ireland by source, Week 9, 2018-19

Source	Specimens tested	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	13	1	0	1	0	0	2	15%
Non-sentinel	342	12	21	15	0	7	48	14%
Total	355	13	21	16	0	7	50	14%

Table 2. Cumulative virus activity from all sources by age group, Week 40 - 9, 2018-19

Age Group	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
0-4	8	141	24	0	173	341
5-14	14	40	13	0	67	15
15-64	98	477	232	3	810	119
65+	80	138	109	2	329	174
Unknown	0	0	0	0	0	0
All ages	200	796	378	5	1379	649

Table 3. Cumulative virus activity by age group and source, Week 40 - Week 9, 2018-19

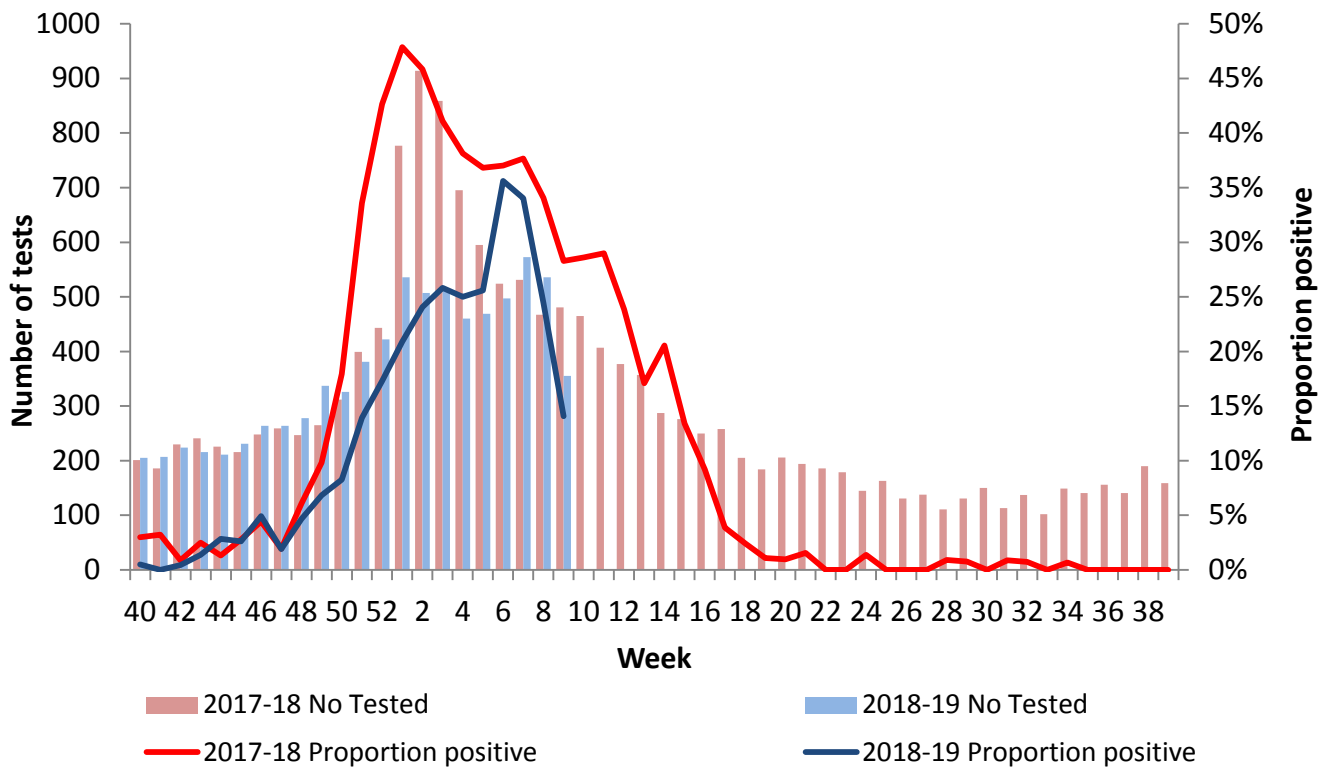
Age Group	Sentinel						Non-sentinel					
	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
0-4	0	2	0	0	2	0	8	139	24	0	171	341
5-14	1	4	0	0	5	0	13	36	13	0	62	15
15-64	11	41	11	0	63	10	87	436	221	3	747	109
65+	2	3	2	1	8	1	78	135	107	1	321	173
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
All ages	14	50	13	1	78	11	186	746	365	4	1301	638

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

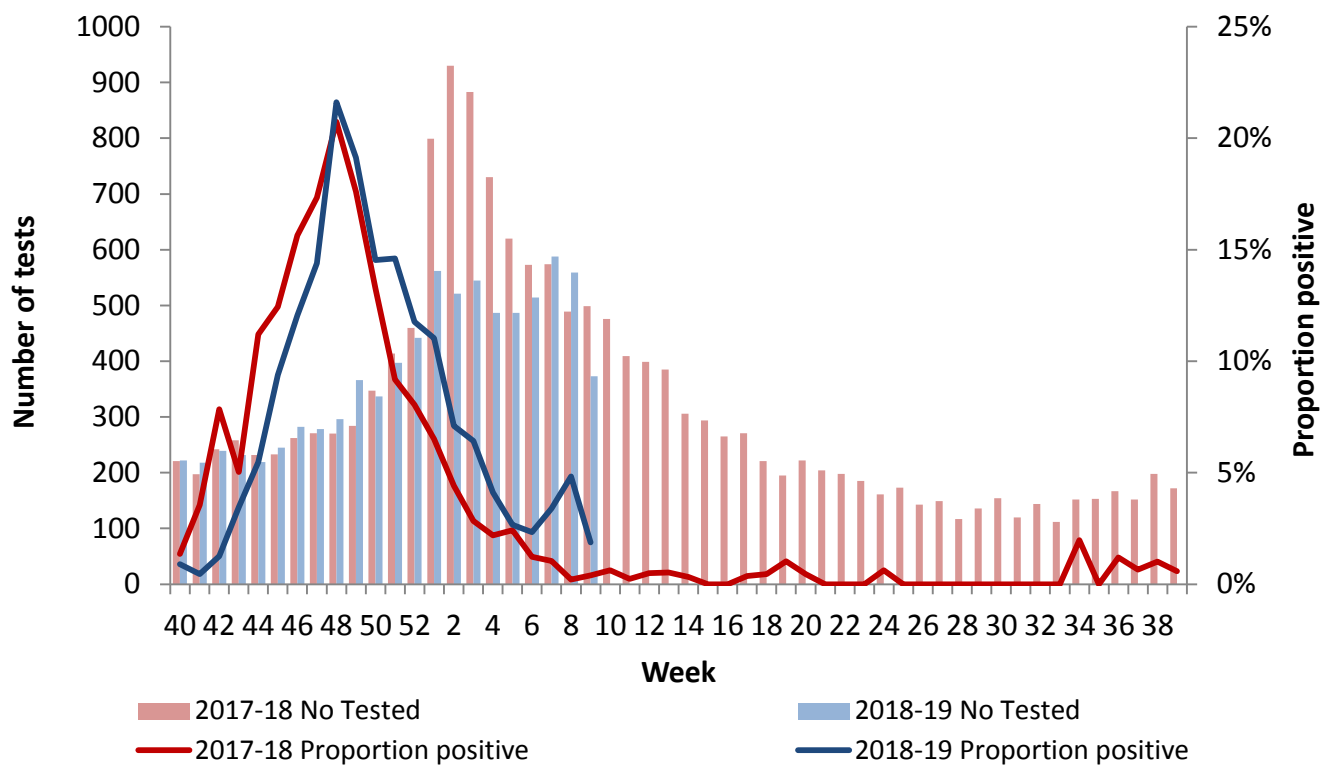
Additional virology testing has been undertaken at a local laboratory since week 2, 2018 and at another since week 2, 2019. This bulletin includes this data along with the data from the Regional Virology Laboratory. Other local laboratories may begin undertaking influenza testing and this data will be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

In week 9, 2019 there were 355 specimens submitted for virological testing. There were 50 detections of influenza in total (14% positivity); 13 Flu A(H3), 21 Flu A(H1N1)pdm09 and 16 Flu A(untyped).

There were 13 samples submitted through the GP based sentinel scheme in week 9 across Northern Ireland. There was one detection of Flu A(H3) and one of Flu A(untyped) in total (15% positivity) (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

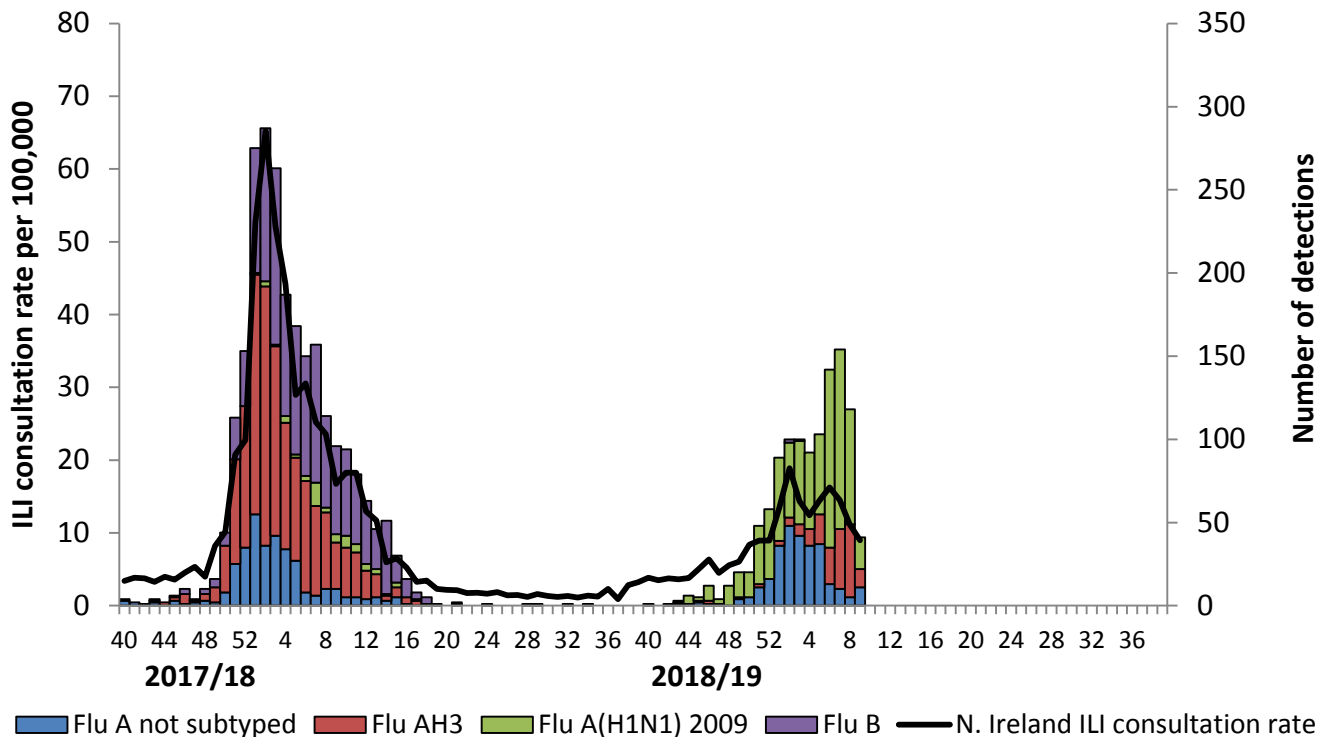


Comment

In week 9, 2019 there were 7 positive detections of RSV (2% positivity). To date there have been a total of 649 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

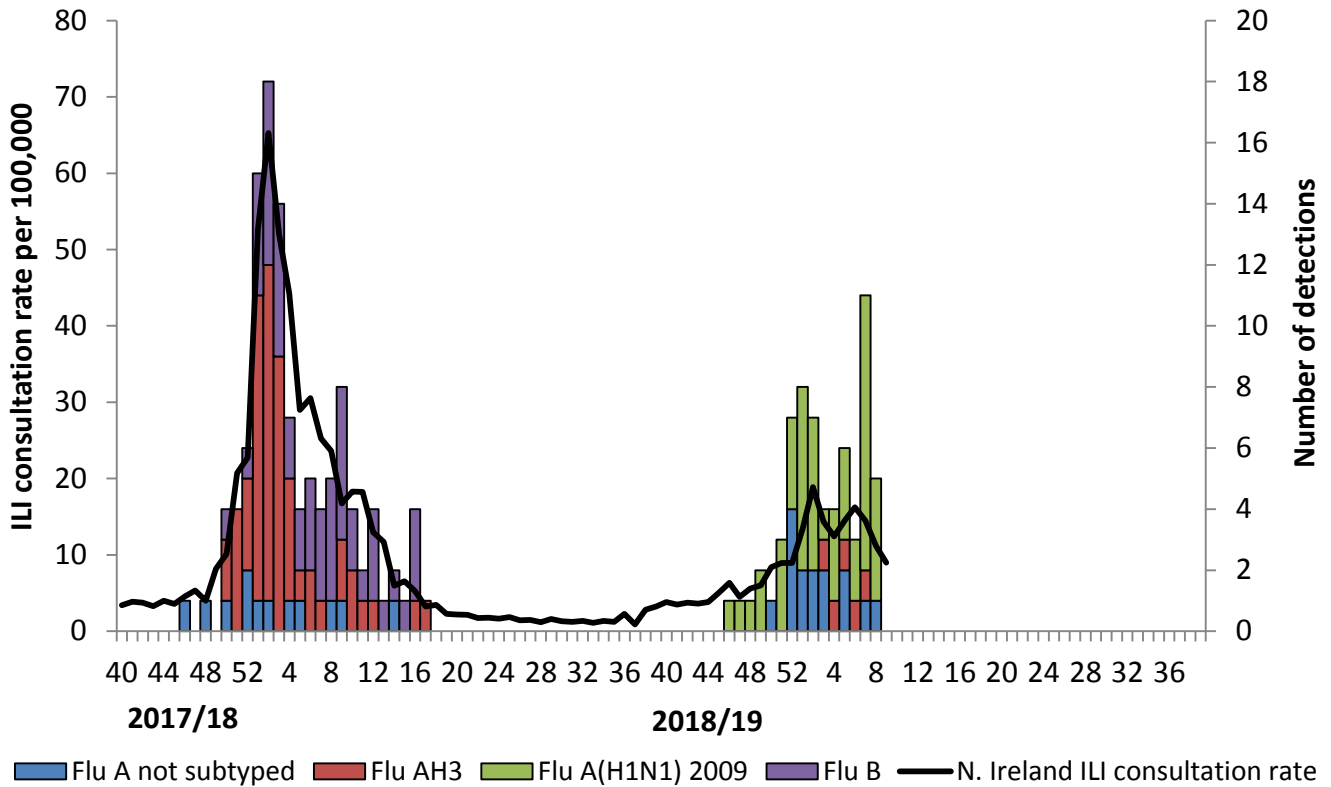


Comment

In week 9, 2019 there were 41 detections of influenza from specimens taken in hospital settings across Northern Ireland. There were 11 Flu A(H3), 19 Flu A(H1N1)pdm09 and 11 Flu A(untyped). It should be kept in mind that it is possible that not all positive specimens (for week 9) 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 9, 2019 there were no new admissions to ICU with confirmed influenza reported to the PHA. So far this season there has been 64 admissions to ICU with confirmed influenza reported to PHA. There were two deaths reported in week 9. So far this season there have been seven deaths reported in ICU patients who had laboratory confirmed influenza. In comparison, up to week 9 of the 2017/18 season there were 99 admissions to ICU with confirmed influenza reported to PHA, with 18 deaths reported in ICU patients who had laboratory confirmed influenza.

Of the 64 admissions to ICU, 44% (n=28) 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. 44% (n=28) were classed as being in a vaccine risk group, of which 39% (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.

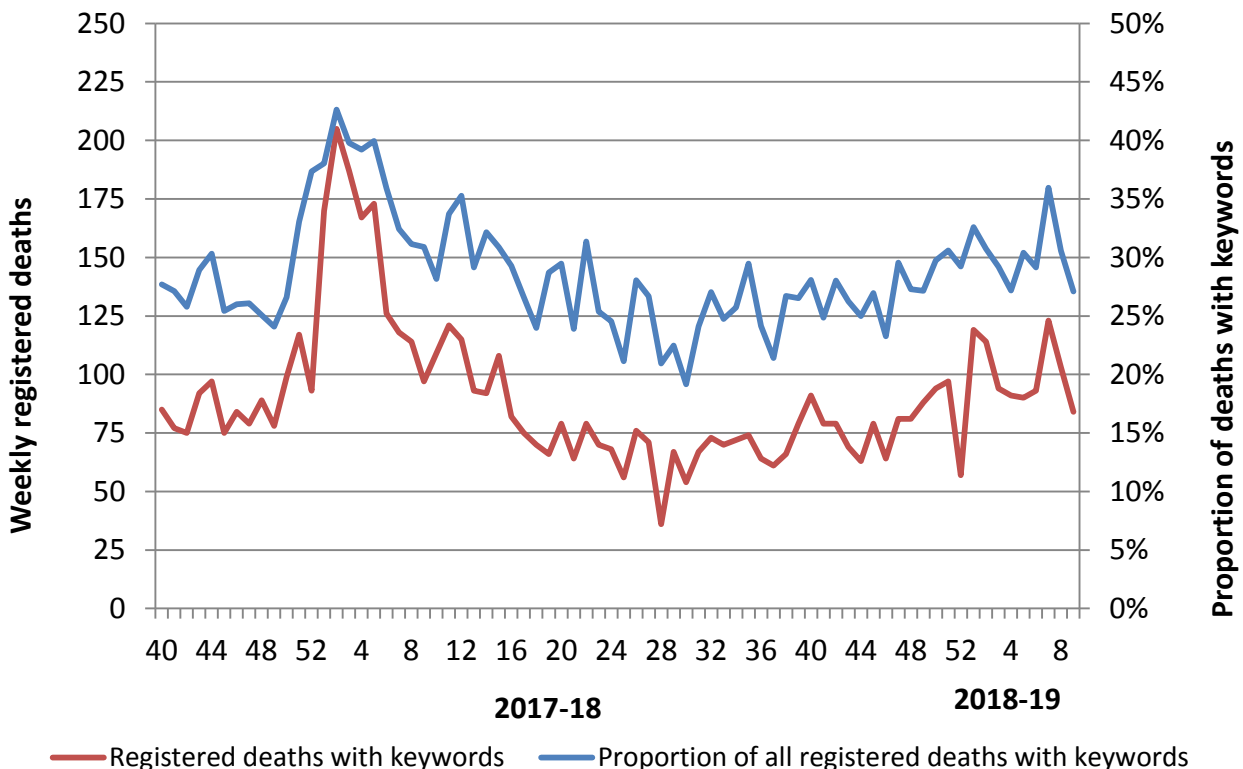
Outbreak Surveillance

During week 9, 2019 there no respiratory outbreaks reported to the PHA. To date, there have been 11 respiratory outbreaks reported, eight in care homes (four 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 decreased from 31% in week 8, 2019 to 27% in week 9. There were 310 registered deaths of which 84 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 (31%).

EuroMOMO

There was an excess all-cause mortality reported in Northern Ireland in week 9, 2019. Including this week, there has been a total of four weeks in the season where there has been excess all-cause mortality (weeks 1, 6 and 8-9, 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 st)	2017/18 (to Jan 31 st)
>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 8/2019 (18–24 February 2019)

- Influenza activity is widespread in 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 49%.
- Influenza type A virus detections dominated with slightly more A(H1N1)pdm09 than A(H3N2) viruses. Very few influenza B viruses were detected.
- 41% of specimens from patients with severe acute respiratory infection (SARI) in week 8/2019 were positive for influenza virus, and almost all were type A.
- Pooled data from 21 Member States and areas reporting to the [EuroMOMO](#) project indicated excess mortality among persons aged 15–64 years and 65 years and older.

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, 37% of influenza A viruses were subtyped; of these 68% were A(H1N1)pdm09 viruses. Among influenza virus-infected patients admitted to other wards, 32% of influenza A viruses were subtyped and 68% were A(H1N1)pdm09 viruses.
- Over 90% of influenza A viruses detected from SARI surveillance since week 40/2018 were subtyped and 81% were A(H1N1)pdm09 viruses.
- 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 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 [six European studies](#), [Canada](#), [Finland](#), [Hong Kong](#), [Sweden](#), and the [United States](#).

- On 21 February 2019, [WHO published the recommendations](#) for the influenza vaccine composition to be used in the 2019–2020 northern hemisphere season. The recommendation for B strains remained unchanged, for A(H1N1)pdm09 it was updated, and for A(H3N2) it was postponed to 21 March 2019.
- Circulating viruses remain susceptible to neuraminidase inhibitors supporting early initiation of treatment and prophylactic use according to national guidelines.

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

Worldwide (WHO)

04 March 2019 - based on data up to 17 February 2019

Summary

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

- In North America, influenza activity continued to increase in the United States of America, with influenza A(H1N1)pdm09 as the dominant subtype, followed by influenza A(H3N2).
- In Europe, influenza activity remained elevated across the continent and was reported as widespread in most of the countries. Influenza A viruses co-circulated.
- In North Africa, influenza activity remained elevated.
- In Western Asia, influenza activity peaked in some countries and increased in other, with all seasonal influenza subtypes co-circulating.
- 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 115 countries, areas or territories reported data to FluNet for the time period from 04 February 2019 to 17 February 2019 (data as of 2019-03-01 05:22:16 UTC). The WHO GISRS laboratories tested more than 220347 specimens during that time period. 74302 were positive for influenza viruses, of which 73225 (98.6%) were typed as influenza A and 1077 (1.4%) as influenza B. Of the sub-typed influenza A viruses, 19600 (65.2%) were influenza A(H1N1)pdm09 and 10447 (34.8%) were influenza A(H3N2). Of the characterized B viruses, 82 (26.2%) belonged to the B-Yamagata lineage and 231 (73.8%) 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/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/index.html

<http://www.cdc.gov/flu/weekly/>

Acknowledgments

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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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