

Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 7 (11th – 17th February 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 rates for flu and flu-like illness (flu/FLI) during week 7, 2019 were 14.5 per 100,000 population, a decrease from week 6 (16.2 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 7 and week 6 (7.9 to 7.6 per 100,000 population, respectively).

Microbiological Surveillance (Flu and RSV)

- During week 7 there were 547 specimens submitted for virological testing, of which 182 tested positive for influenza (33% positivity).
- There were 111 detections of Flu A(H1N1)pdm09, 33 Flu A(H3) and 38 Flu A(untyped).
- There were 20 positive RSV detections in week 7 (4% positivity).

Secondary Care (Hospital both non-ICU and ICU)

- In week 7 there were 91 detections of Flu A(H1N1)pdm09, 24 Flu A(untyped) and 28 Flu A(H3).
- There were 11 cases reported in ICU with laboratory confirmed influenza (eight Flu A(H1N1)pdm09), one Flu A(H3) and two Flu A(untyped).
- To date, there have been 59 admissions to ICU with confirmed influenza reported to PHA and five deaths reported in ICU patients who had laboratory confirmed influenza.

Respiratory Outbreaks across Northern Ireland

- During week 7, 2019 there were two respiratory outbreaks reported, one in a care home (RSV) and one in a hospital setting (Flu A(untyped)). To date, there have been 10 respiratory outbreaks reported, seven in care homes (three Flu A(untyped), one Flu B and three RSV) and three in a hospital setting.

Mortality

- The proportion of deaths related to respiratory keywords (bronchiolitis, bronchitis, influenza and pneumonia) increased in week 7 compared to week 6 (29% to 36%).

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

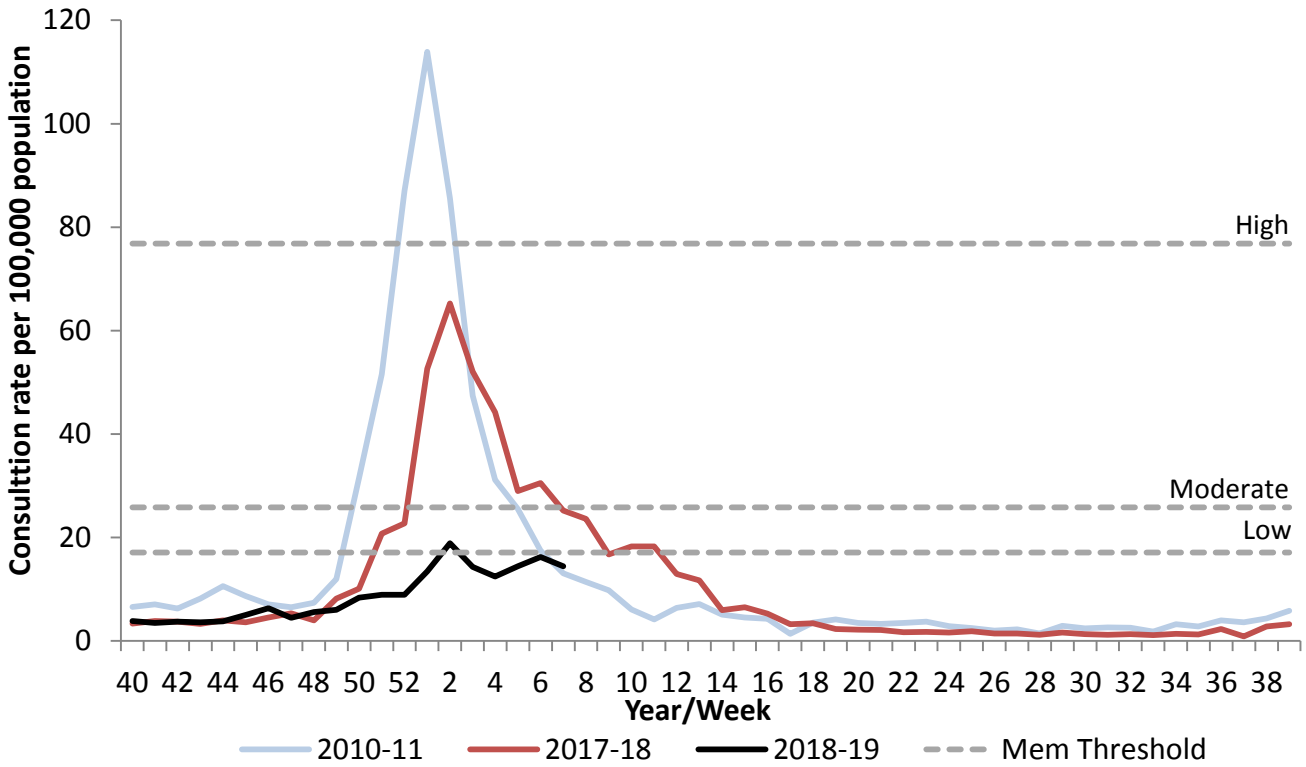
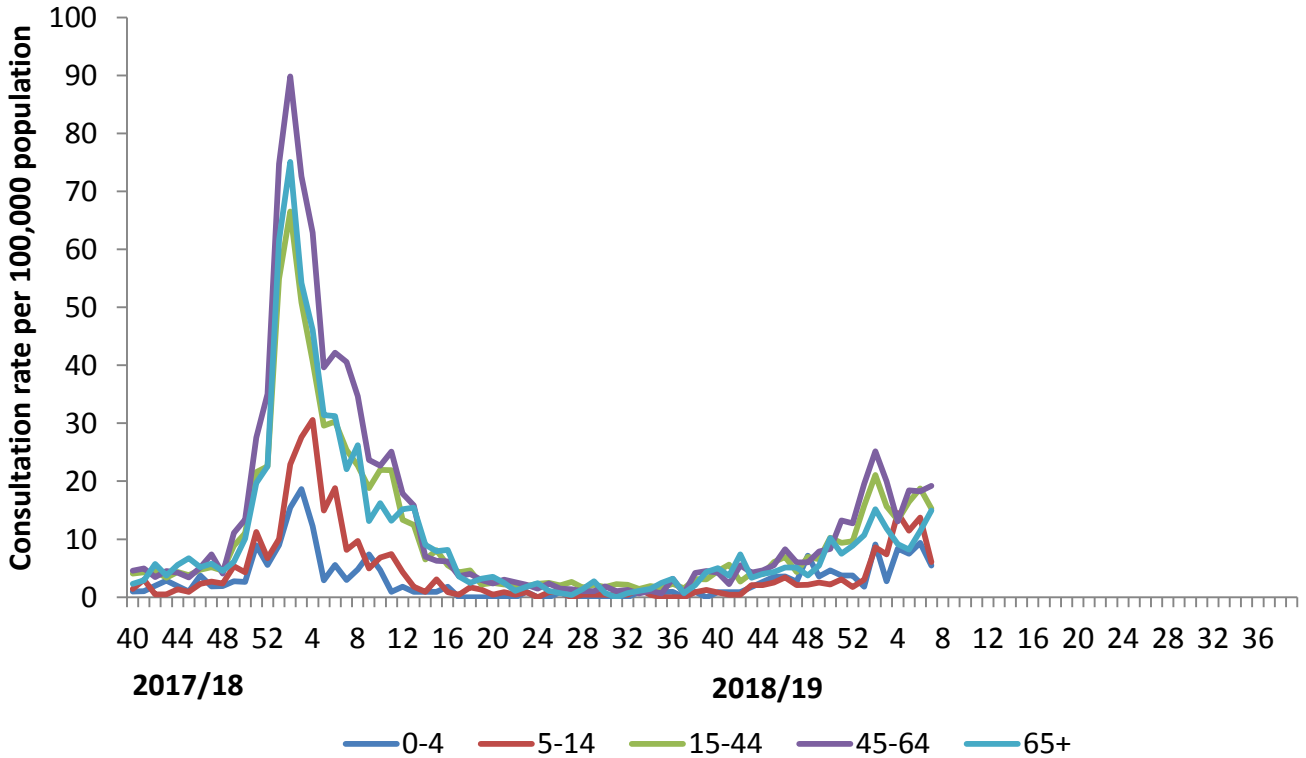


Figure 2. Northern Ireland GP age-specific consultation rates for flu/FLI from week 40, 2017



Comment

The NI GP consultation rate for flu and flu-like illness (flu/FLI) during week 7, 2019 was 14.5 per 100,000 population, a decrease from week 6, 2019 (16.2 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 7 compared to week 6 in those aged 0-4 years (9.4 to 5.5 per 100,000), 5-14 years (13.7 to 6.0 per 100,000) and 15-44 years (18.7 to 15.3 per 100,000). There were slight increases in rates in those aged 45-64 years (18.3 to 19.2 per 100,000) and 65 years and over (11.4 to 15.0 per 100,000) (Figure 2).

Out-of-Hours (OOH) Centres Call Data

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

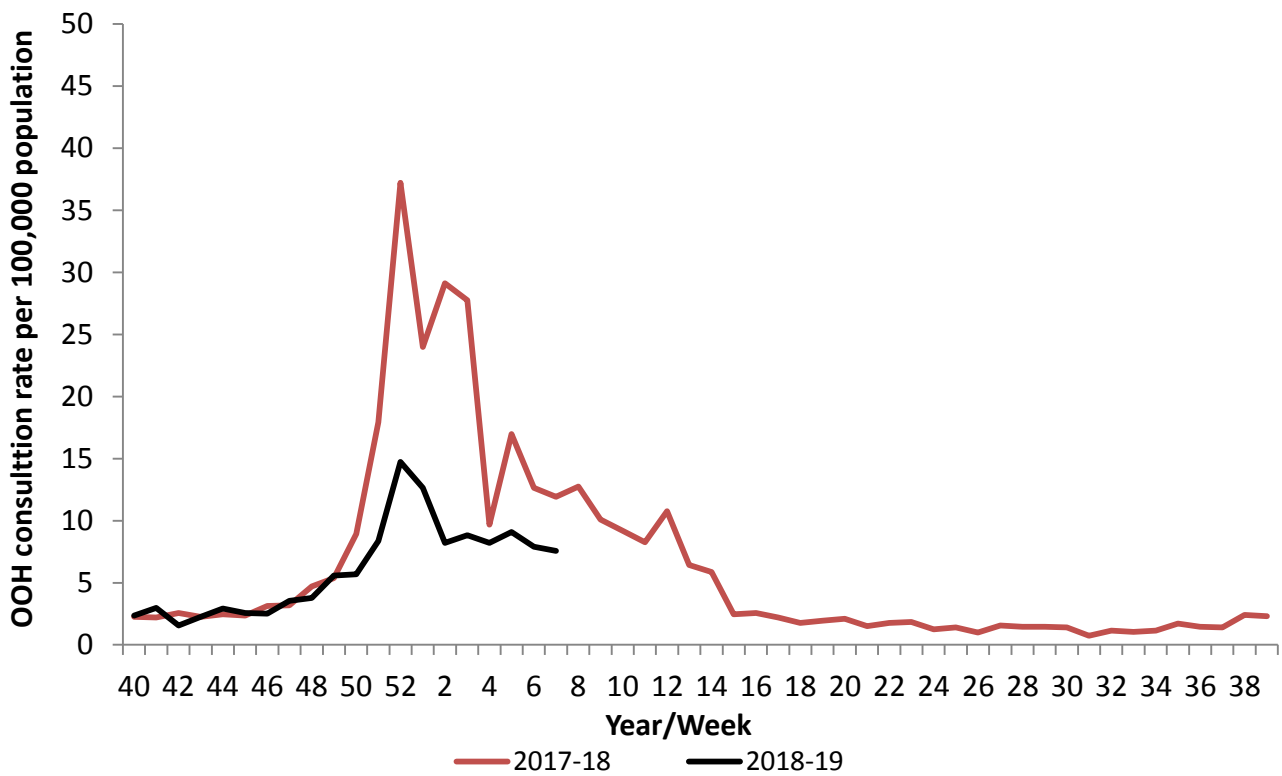
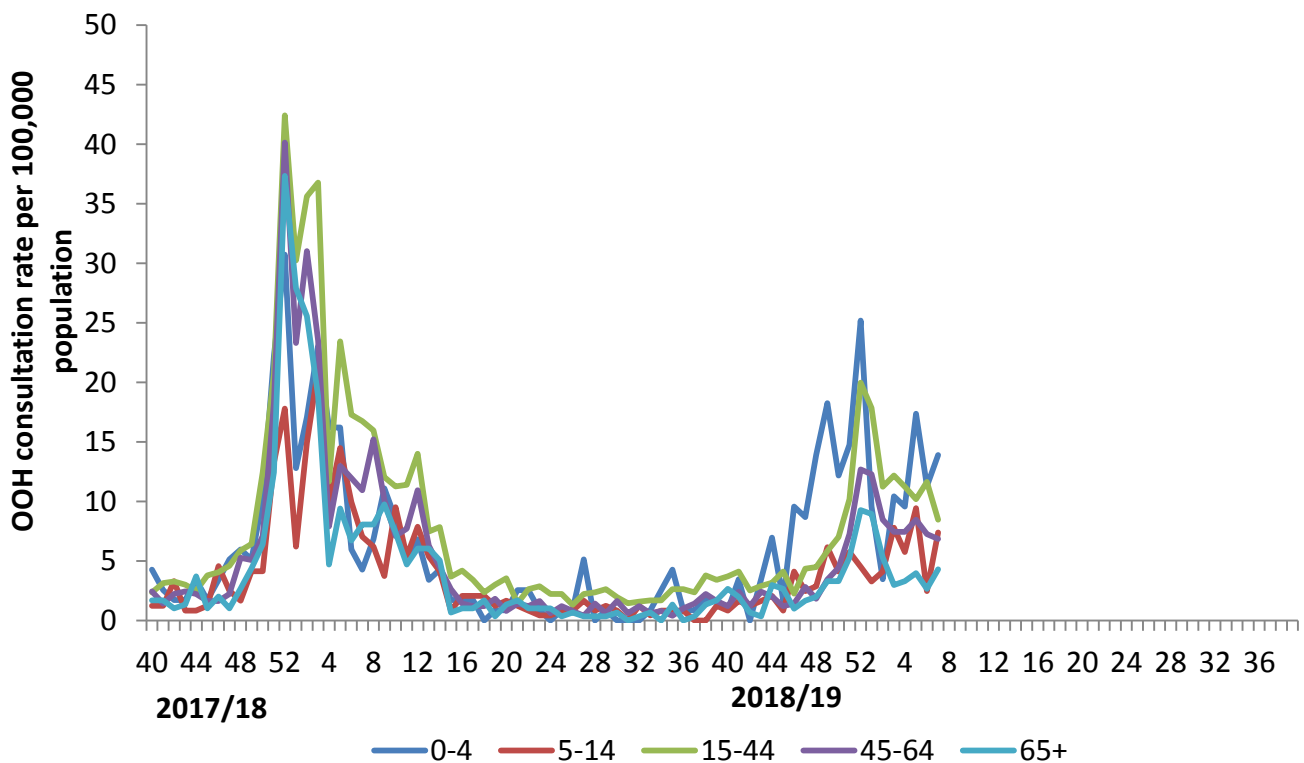


Figure 4. OOH call rates of flu/FLI by age-group from week 40, 2017



Comment

The OOH flu/FLI consultation rate during week 7, 2019 was 7.6 per 100,000 population, similar to week 6 (7.9 per 100,000) (Figure 3). The rate in week 7 is lower than the same week in 2017/18 (7.6 compared to 11.9 per 100,000). The proportion of calls related to flu/FLI in OOH centres was 1.4% in week 6 (1.3% in week 7).

Consultation rates increased in week 7 in those aged 0-4 years (11.3 to 13.9 per 100,000), 5-14 years (2.5 to 7.4 per 100,000) and 65 years and over (2.7 to 4.3 per 100,000) but decreased in those aged 15-44 (11.6 to 8.5 per 100,000) and 45-64 years (7.2 to 6.8 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

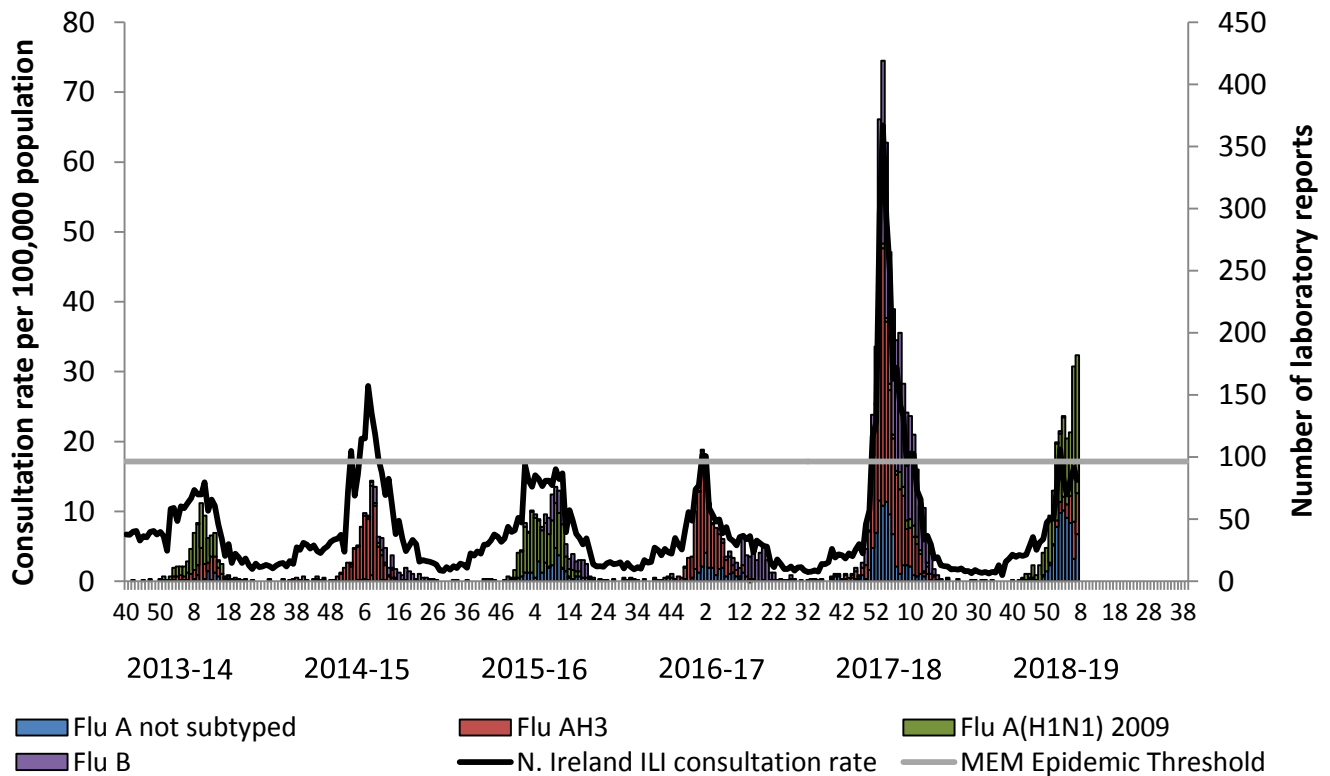


Figure 6. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2017

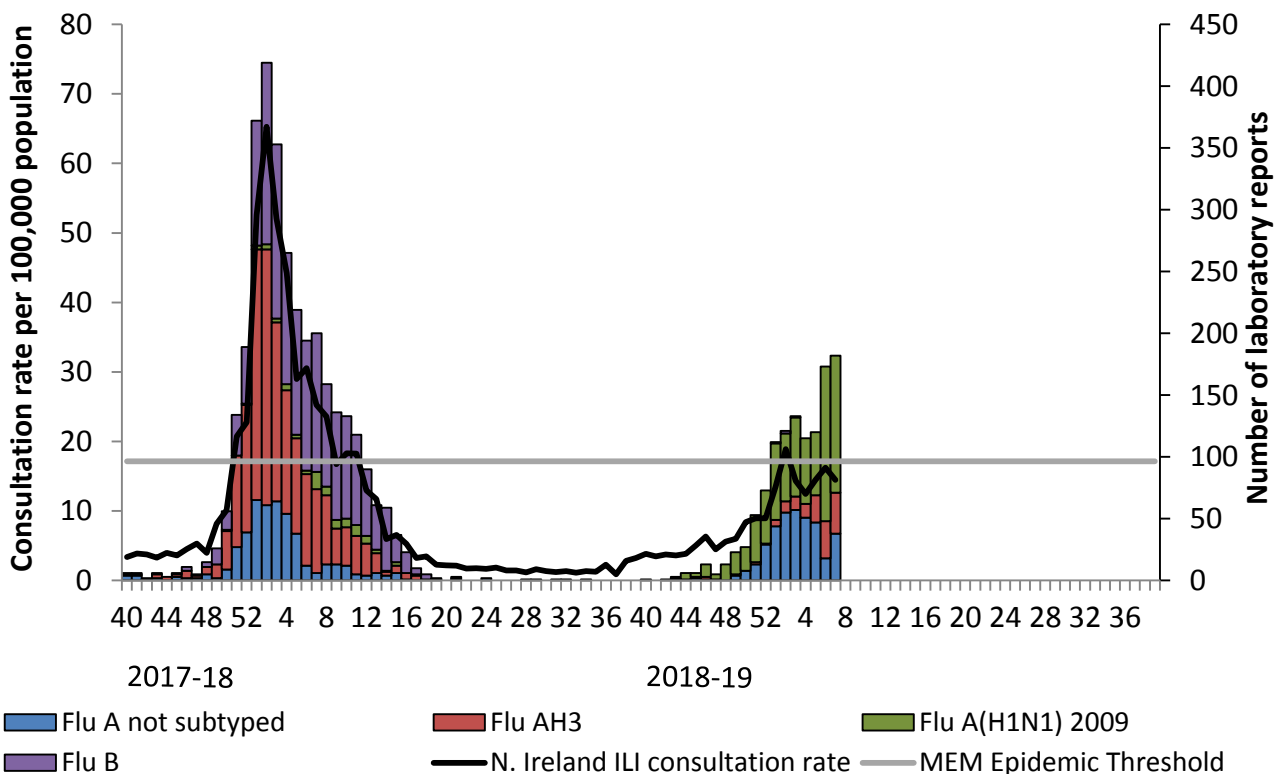


Table 1. Virus activity in Northern Ireland by source, Week 7, 2018-19

Source	Specimens tested	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	20	2	12	1	0	1	15	75%
Non-sentinel	527	31	99	37	0	19	167	32%
Total	547	33	111	38	0	20	182	33%

Table 2. Cumulative virus activity from all sources by age group, Week 40 - 7, 2018-19

Age Group	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
0-4	4	116	22	0	142	331
5-14	8	36	13	0	57	13
15-64	65	406	233	3	707	110
65+	52	117	103	2	274	161
Unknown	0	0	0	0	0	0
All ages	129	675	371	5	1180	615

Table 3. Cumulative virus activity by age group and source, Week 40 - Week 7, 2018-19

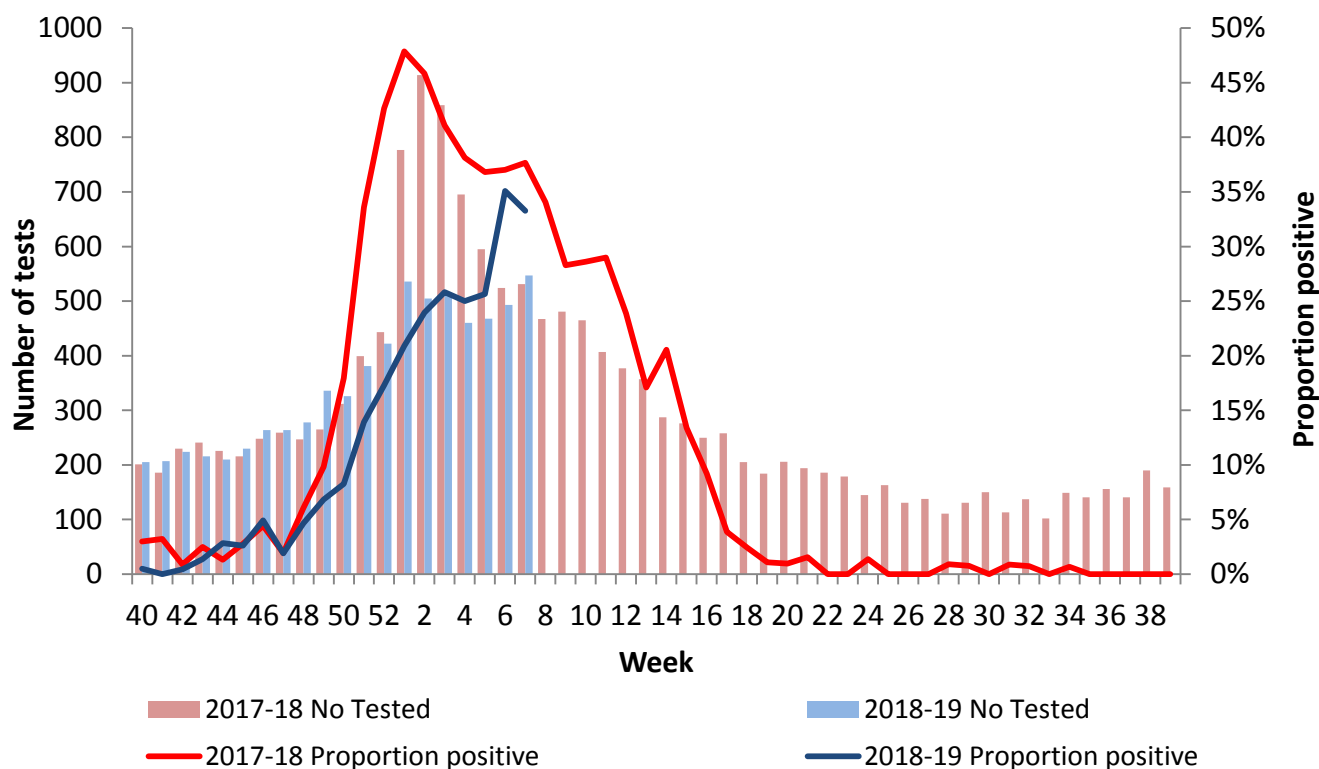
Age Group	Sentinel						Non-sentinel					
	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
0-4	0	2	0	0	2	0	4	114	22	0	140	331
5-14	1	4	0	0	5	0	7	32	13	0	52	13
15-64	10	33	12	0	55	10	55	373	221	3	652	100
65+	2	3	1	1	7	1	50	114	102	1	267	160
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
All ages	13	42	13	1	69	11	116	633	358	4	1111	604

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

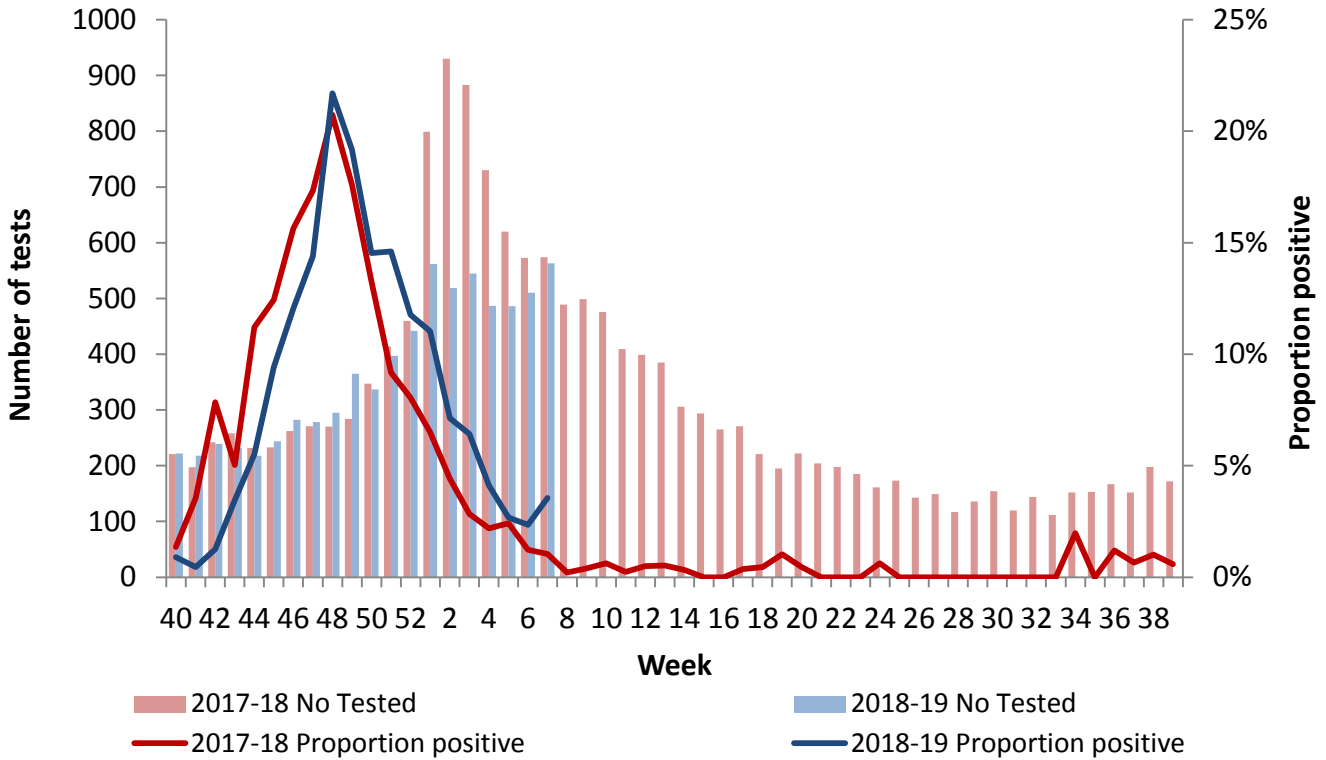
Additional virology testing has been undertaken at a local laboratory since week 2, 2018 and at another since week 2, 2019. This bulletin includes this data along with the data from the Regional Virology Laboratory. Other local laboratories may begin undertaking influenza testing and this data will be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

In week 7, 2019 there were 547 specimens submitted for virological testing. There were 182 detections of influenza in total (33% positivity); 33 Flu A(H3), 111 Flu A(H1N1)pdm09 and 38 Flu A(untyped).

There were 20 samples submitted through the GP based sentinel scheme in week 7 across Northern Ireland. There were 15 detections of influenza in total (75% positivity); two Flu A(H3), 12 Flu A(H1N1)pdm09 and one 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

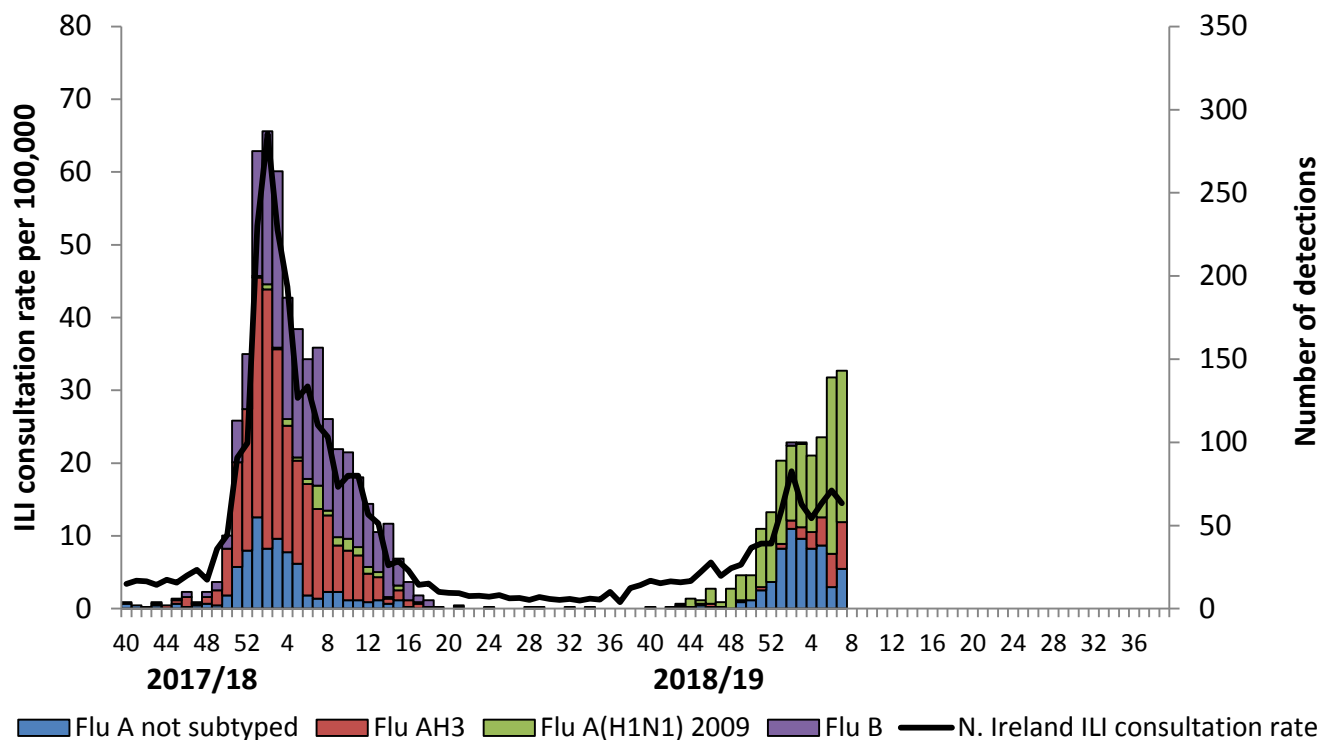


Comment

In week 7, 2019 there were 20 positive detections of RSV (4% positivity). To date there have been a total of 615 detections of RSV of which the majority (54%) 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

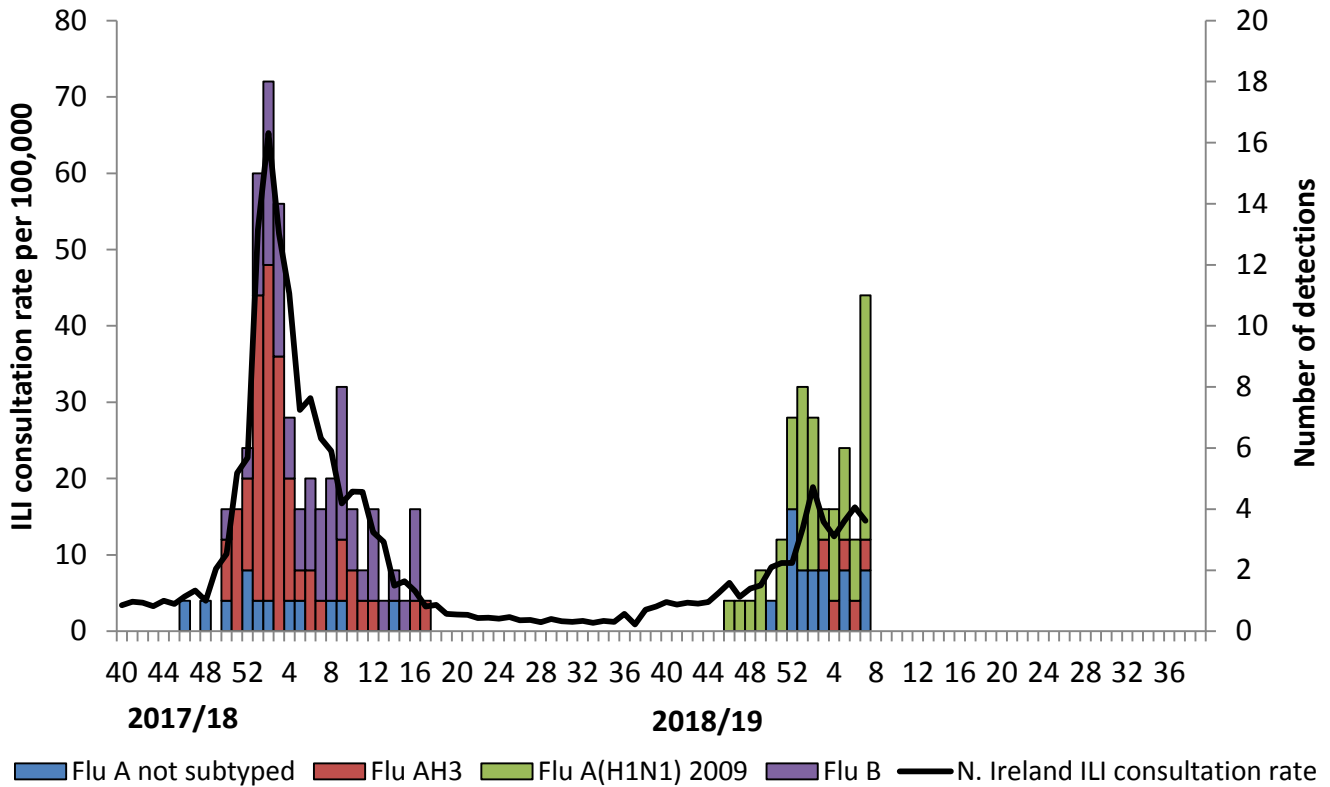


Comment

In week 7, 2019 there were 143 detections of influenza from specimens taken in hospital settings across Northern Ireland. There were 28 Flu A(H3), 91 Flu A(H1N1)pdm09 and 24 Flu A(untyped). It should be kept in mind that it is possible that not all positive specimens (for week 7) 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 7, 2019 there were 11 new admissions to ICU with confirmed influenza reported to the PHA; eight Flu A(H1N1)pdm09, one Flu A(H3) and two Flu A(untyped). So far this season there has been 59 admissions to ICU with confirmed influenza reported to PHA. There were no deaths reported in week 7. So far this season there have been five deaths reported in ICU patients who had laboratory confirmed influenza. In comparison, up to week 7 of the 2017/18 season there were 84 admissions to ICU with confirmed influenza reported to PHA, with 17 deaths reported in ICU patients who had laboratory confirmed influenza.

Of the 59 admissions to ICU, 39% (n=23) were female. The ages range from <1 year to 78 years, with a median age of 53 years and a mean age of 49 years. 44% (n=26) were classed as being in a vaccine risk group, of which 35% (n=9) were vaccinated this season. All five deaths were classed as being in a vaccine risk group, with three having been vaccinated this season. The deaths occurred in patients aged 45 years and over.

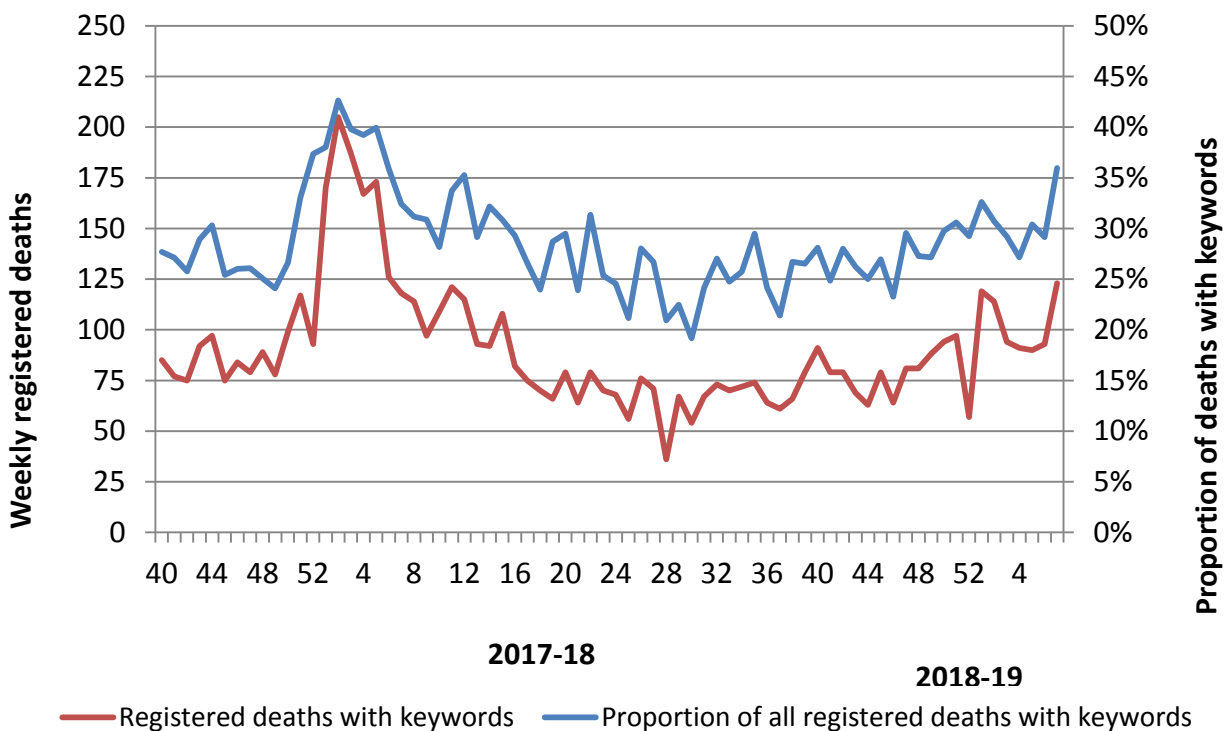
Outbreak Surveillance

During week 7, 2019 there were two respiratory outbreaks reported to the PHA, one in a care home (RSV) and one in a hospital setting (Flu A(untyped)). To date, there have been ten respiratory outbreaks reported, seven in care homes (three 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 from 29% in week 6, 2019 to 36% in week 7. There were 342 registered deaths of which 123 related to specific respiratory infections. The proportion of deaths attributed to specific respiratory infections is higher at this point in the season as the same period in 2017/18 (32%).

EuroMOMO

To week 7, 2019 there has been an excess all-cause mortality for one week in this season to date (week 1).

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 6/2019 (4 -10 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 53%, slightly lower than in the previous week (58%).
- Influenza type A virus detections dominated with A(H1N1)pdm09 viruses and A(H3N2) viruses co-circulating. Very few influenza B viruses were detected.
- 46% of specimens from patients hospitalized with severe acute respiratory infection (SARI) collected in week 6/2019 were positive for influenza virus, and all were type A.
- Pooled data from 24 Member States and areas reporting to the [EuroMOMO](#) project indicated excess mortality mostly among elderly aged 65 years and above, but also in adults in the age group of 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 and has increased continuously into week 5/2019 after which it started to decrease. The positivity rate has exceeded 50% since week 3/2019.
- 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, 40% of influenza A viruses were subtyped; of these 78% were A(H1N1)pdm09 virus. Among influenza virus-infected patients admitted to other wards, 28% of influenza A viruses were subtyped and 71% were A(H1N1)pdm09 virus.
- Over 90% of influenza A viruses detected from SARI surveillance since week 40/2018 were subtyped and 81% were A(H1N1)pdm09 virus.
- In general, current influenza vaccines tend to work better against influenza A(H1N1)pdm09 and influenza B viruses than against influenza A(H3N2) viruses and preliminary vaccine effectiveness estimates continue to support the use of vaccines. Early data suggests the vaccine are effective and estimates vary depending on the population studied and the proportions of circulating influenza A virus subtypes (e.g., higher VE in children). See data from [Canada](#), [Finland](#), [Hong Kong](#), [Sweden](#), and the [United States](#).
- 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)

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

Summary

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

- In North America, influenza activity continued to be reported, with influenza A(H1N1)pdm09 predominating.
- In Europe, influenza activity increased and in most of the countries was above the epidemic threshold. Influenza A viruses co-circulated.
- In North Africa, influenza A(H1N1)pdm09 detections sharply increased.
- In Western Asia, influenza activity remained elevated with increased activity in Cyprus, Israel, Jordan and Lebanon and appeared to have peaked in most countries of the Arabian Peninsula.
- In East Asia, influenza activity appeared to have peaked already, with influenza A(H1N1)pdm09 virus predominating.
- In Southern Asia, influenza detections remained elevated overall. Influenza activity appeared to decrease in Iran (Islamic Republic of) with influenza A(H3N2) the predominant circulating virus.
- 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 111 countries, areas or territories reported data to FluNet for the time period from 21 January 2019 to 03 February 2019 (data as of 2019-02-15 04:05:38 UTC). The WHO GISRS laboratories tested more than 213440 specimens during that time period. A total of 69007 were positive for influenza viruses, of which 67733 (98.2%) were typed as influenza A and 1274 (1.8%) as influenza B. Of the sub-typed influenza A viruses, 25052 (72%) were influenza A(H1N1)pdm09 and 9734 (28%) were influenza A(H3N2). Of the characterized B viruses, 83 (27.8%) belonged to the B-Yamagata lineage and 216 (72.2%) 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:

Dr Mark O'Doherty
Senior Epidemiological Scientist
Public Health Agency

Ms Emma Walker
Surveillance Information Officer
Public Health Agency

Ms Emma Dickson
Epidemiological Scientist
Public Health Agency

Dr Jillian Johnston
Public Health Consultant
Public Health Agency

Email: flusurveillance@hscni.net

This report was compiled by Ms Emma Walker, Ms Emma Dickson, Dr Mark O'Doherty and Dr Jillian Johnston.