

Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 6 (4th – 10th 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 6, 2019 was 16.2 per 100,000 population, an increase from week 5 (14.5 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 5 and week 6 (9.1 to 7.9 per 100,000 population, respectively).

Microbiological Surveillance (Flu and RSV)

- During week 6 there were 483 specimens submitted for virological testing, of which 165 tested positive for influenza (34% positivity).
- There were 113 detections of Flu A(H1N1)pdm09, 29 Flu A(H3) and 23 Flu A(untyped).
- There were 12 positive RSV detections in week 6 (2% positivity).

Secondary Care (Hospital both non-ICU and ICU)

- In week 6 there were 97 detections of Flu A(H1N1)pdm09, 18 Flu A(untyped) and 19 Flu A(H3).
- There were three cases reported in ICU with laboratory confirmed influenza (two Flu A(H1N1)pdm09 and one Flu A(H3)).
- To date, there have been 48 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 6, 2019 there were two respiratory outbreaks in care homes and one in a hospital setting reported to the PHA (Flu A(untyped)). To date, there have been eight respiratory outbreaks reported, six in care homes (three Flu A(untyped), one Flu B and two RSV) and two in a hospital setting.

Mortality

- The proportion of deaths related to respiratory keywords (bronchiolitis, bronchitis, influenza and pneumonia) decreased in week 6 compared to week 5 (30% to 29%).

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

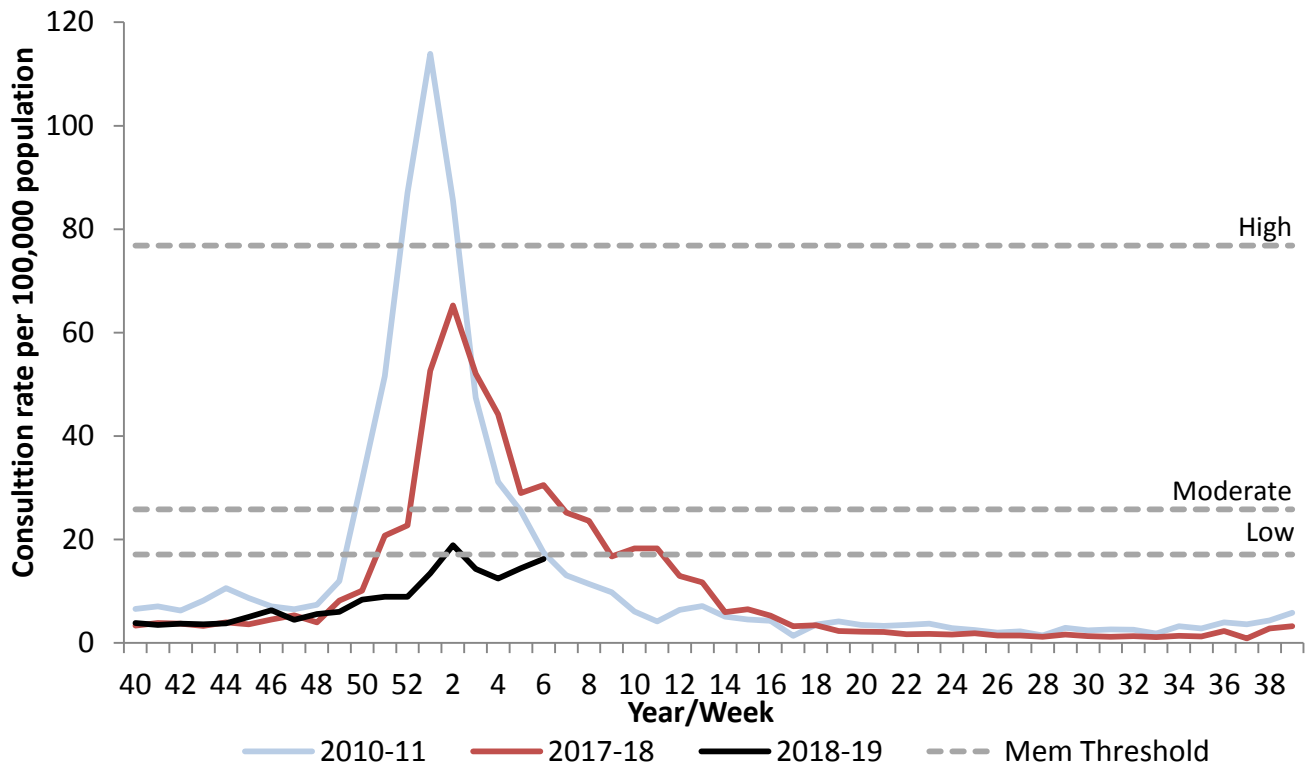
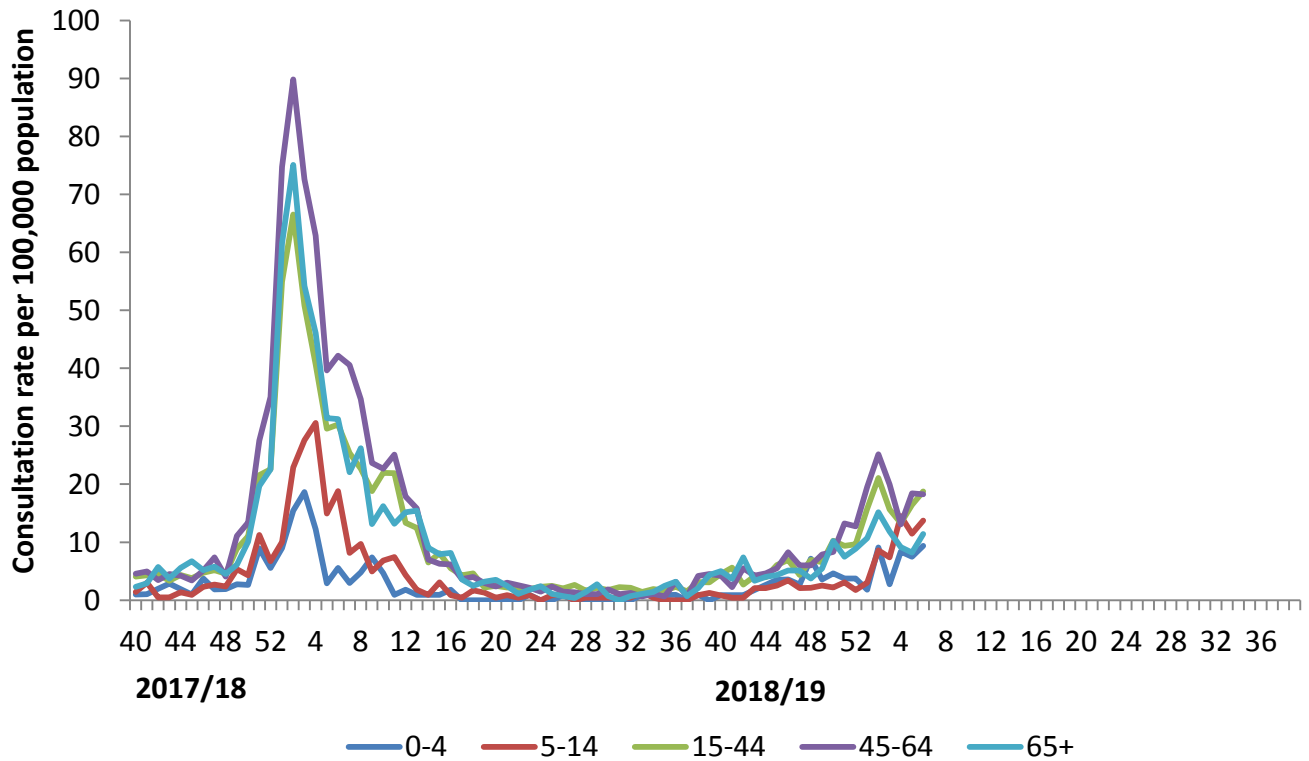


Figure 2. Northern Ireland GP age-specific consultation rates for flu/FLI from week 40, 2017



Comment

The NI GP consultation rate for flu and flu-like illness (flu/FLI) during week 6, 2019 was 16.2 per 100,000 population, an increase from week 5, 2019 (14.5 per 100,000). Activity remains below the baseline MEM threshold for Northern Ireland (<17.1 per 100,000) (Figure 1).

The consultation rates increased in week 6 compared to week 5 in all age groups with the exception of the 45-64 age groups which decreased slightly (18.4 to 18.3 per 100,000). The flu/FLI consultation rate was highest in those aged 15-44 years (18.7 per 100,000) (Figure 2).

Out-of-Hours (OOH) Centres Call Data

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

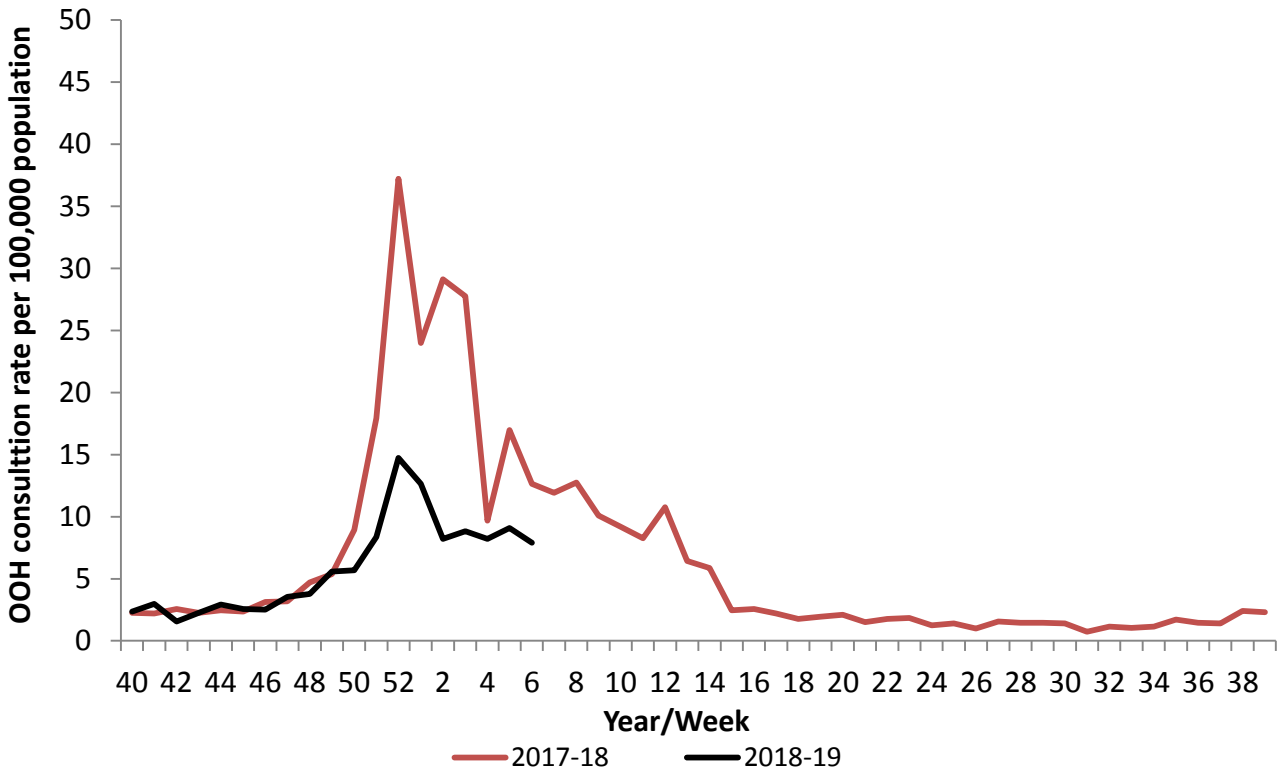
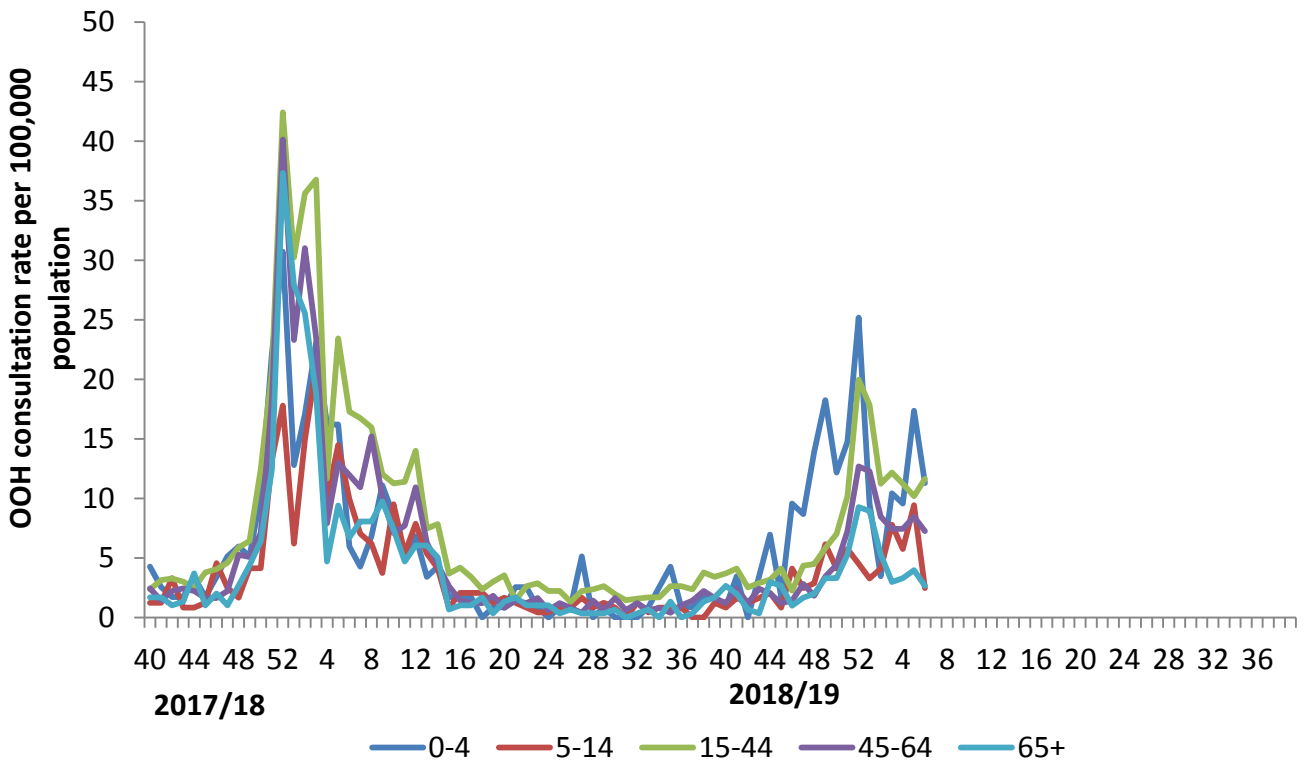


Figure 4. OOH call rates of flu/FLI by age-group from week 40, 2017



Comment

The OOH flu/FLI consultation rate during week 6, 2019 was 7.9 per 100,000 population, a decrease from week 5 (9.1 per 100,000) (Figure 3). The rate in week 6 is lower than the same week in 2017/18 (7.9 compared to 12.6 per 100,000). The proportion of calls related to flu/FLI in OOH centres decreased marginally from 1.6% in week 5 to 1.4% in week 6.

Consultation rates decreased in all age groups in week 6 compared to week 5 with the exception of those aged 15-44 years which increased slightly from 10.2 to 11.6 per 100,000. There were notable decreases in rates in those aged 0-4 years (17.4 per 100,000 in week 5 to 11.3 in week 6) and in those aged 5-14 years (9.4 per 100,000 in week 5 to 2.5 in week 6) (Figure 4).

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

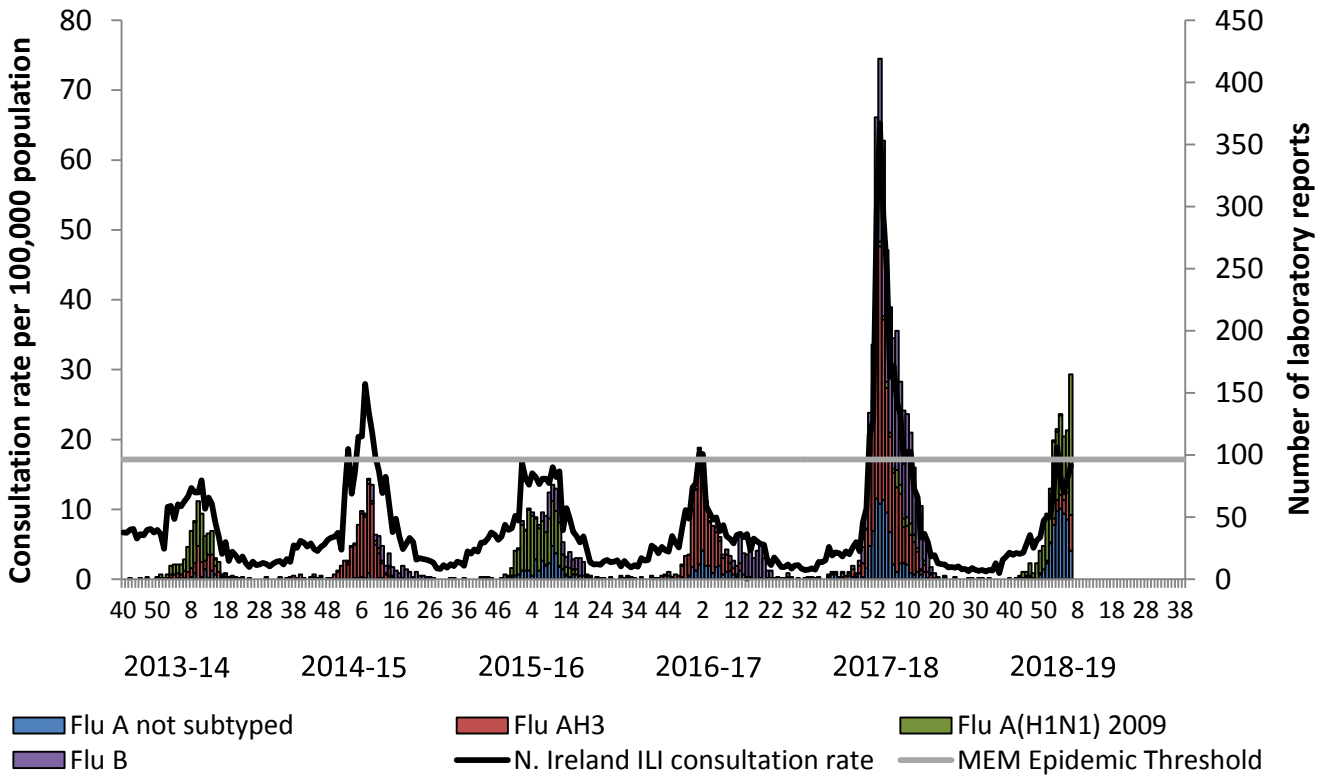


Figure 6. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2017

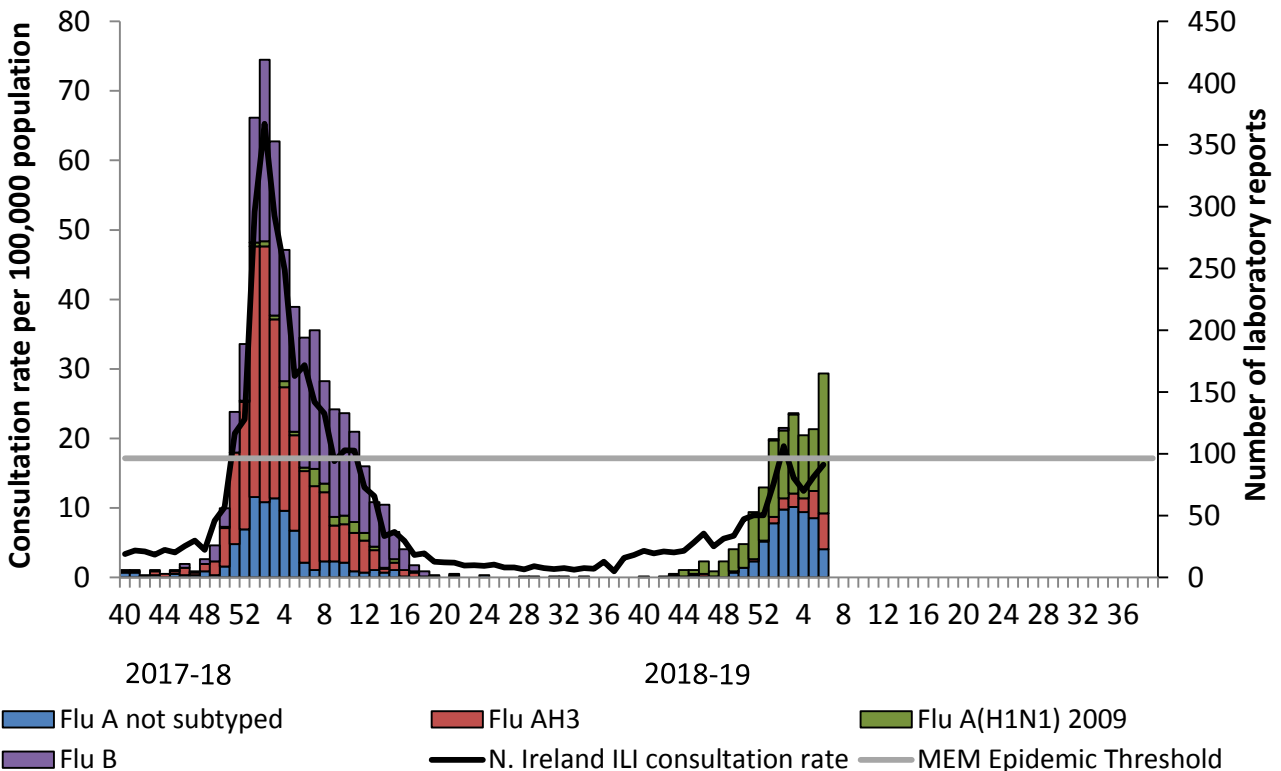


Table 1. Virus activity in Northern Ireland by source, Week 6, 2018-19

Source	Specimens tested	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	13	4	8	0	0	0	12	92%
Non-sentinel	470	25	105	23	0	12	153	33%
Total	483	29	113	23	0	12	165	34%

Table 2. Cumulative virus activity from all sources by age group, Week 40 - 6, 2018-19

Age Group	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
0-4	3	93	21	0	117	322
5-14	6	26	14	0	46	12
15-64	48	336	208	3	595	108
65+	38	94	98	2	232	153
Unknown	0	0	0	0	0	0
All ages	95	549	341	5	990	595

Table 3. Cumulative virus activity by age group and source, Week 40 - Week 6, 2018-19

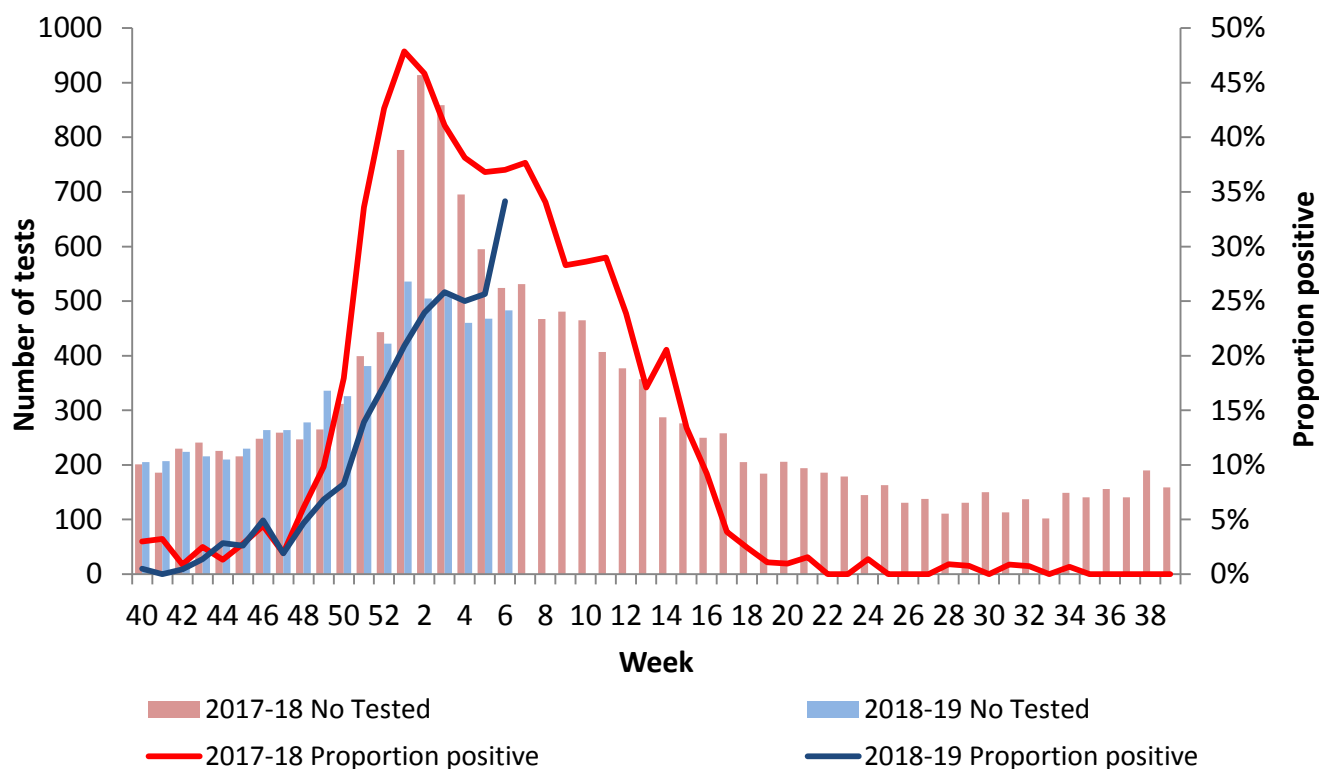
Age Group	Sentinel						Non-sentinel					
	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
0-4	0	0	0	0	0	0	3	93	21	0	117	322
5-14	1	3	0	0	4	0	5	23	14	0	42	12
15-64	9	25	11	0	45	10	39	311	197	3	550	98
65+	1	2	1	1	5	0	37	92	97	1	227	153
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
All ages	11	30	12	1	54	10	84	519	329	4	936	585

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 typing 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 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

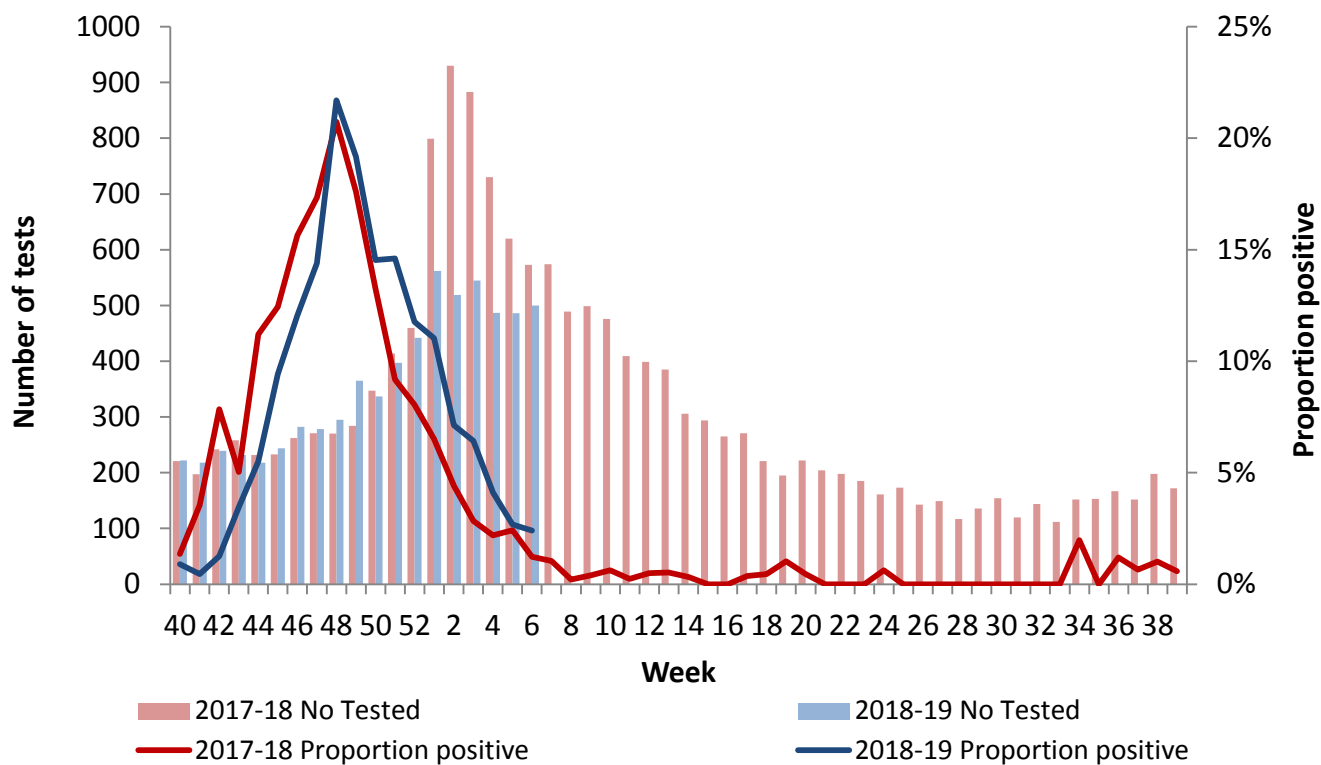
Additional virology testing has been undertaken at a local laboratory since week 2, 2018 and at another since week 2, 2019. This bulletin includes this data along with the data from the Regional Virology Laboratory. Other local laboratories may begin undertaking influenza testing and this data will be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

In week 6, 2019 there were 483 specimens submitted for virological testing. There were 165 detections of influenza in total (34% positivity); 29 Flu A(H3), 113 Flu A(H1N1)pdm09 and 23 Flu A(untyped).

There were 13 samples submitted through the GP based sentinel scheme in week 6 across Northern Ireland. There were 12 positive results (92% positivity); four Flu A(H3) and eight Flu A(H1N1)pdm09 (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

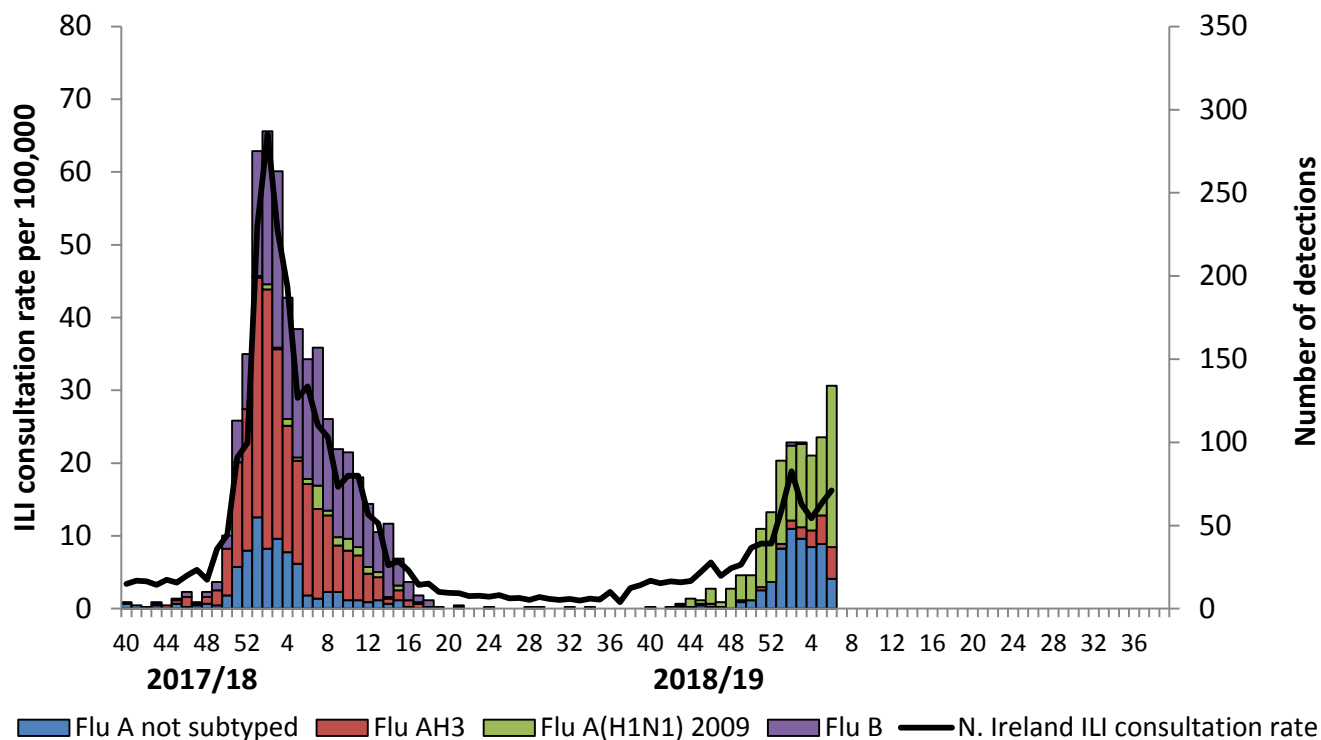


Comment

In week 6, 2019 there were 12 positive detections of RSV (2% positivity). To date there have been a total of 595 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

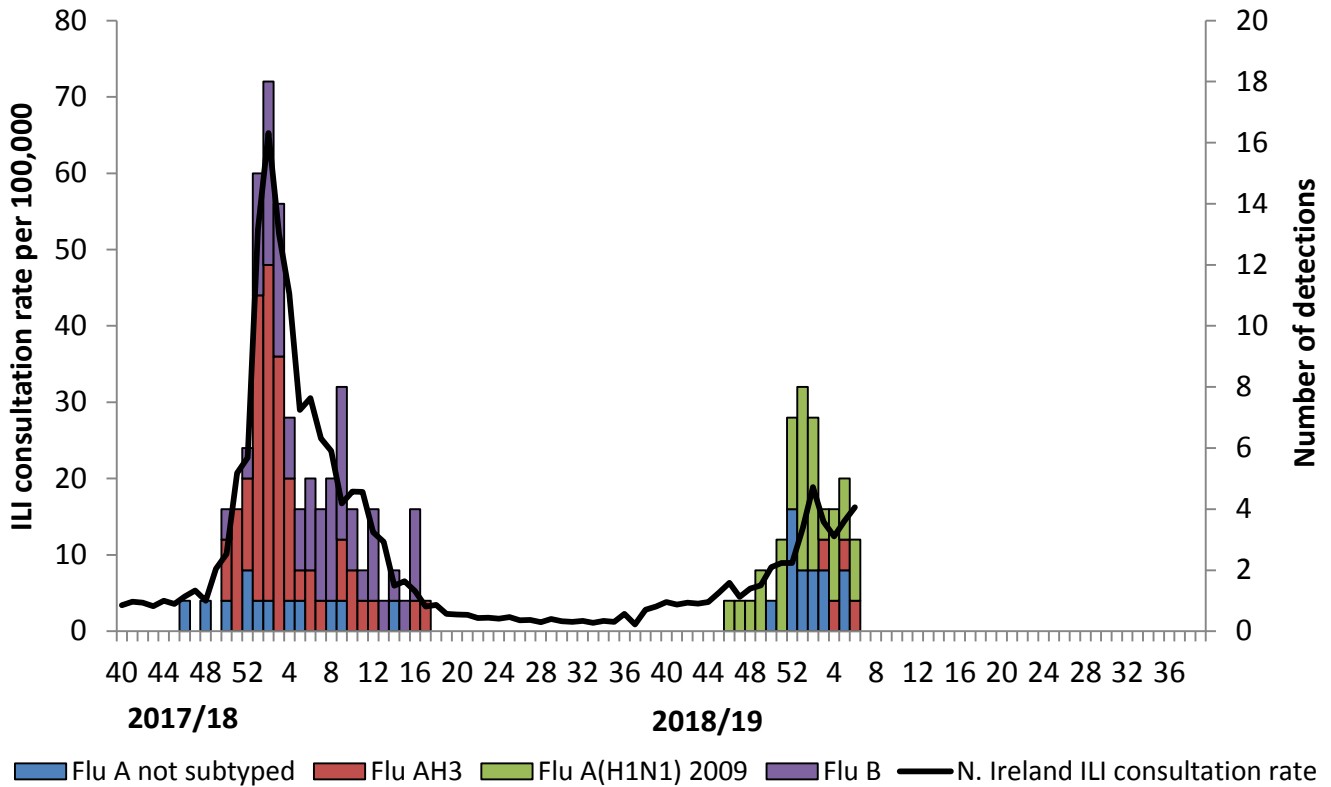


Comment

In week 6, 2019 there were 134 detections of influenza from specimens taken in hospital settings across Northern Ireland. There were 19 Flu A(H3), 97 Flu A(H1N1)pdm09 and 18 Flu A(untyped). It should be kept in mind that it is possible that not all positive specimens (for week 6) 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 6, 2019 there were three new admissions to ICU with confirmed influenza reported to the PHA; two Flu A(H1N1)pdm09 and one Flu A(H3). So far this season there has been 48 admissions to ICU with confirmed influenza reported to PHA. There was one death reported in week 6. So far this season there have been five deaths reported in ICU patients who had laboratory confirmed influenza. In comparison, up to week 6 of the 2017/18 season there were 80 admissions to ICU with confirmed influenza reported to PHA, with 16 deaths reported in ICU patients who had laboratory confirmed influenza.

Of the 48 admissions to ICU, 38% (n=18) were female. The ages range from <1 year to 78 years, with a median age of 54 years and a mean age of 49 years. 48% (n=23) were classed as being in a vaccine risk group, of which 35% (n=8) 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.

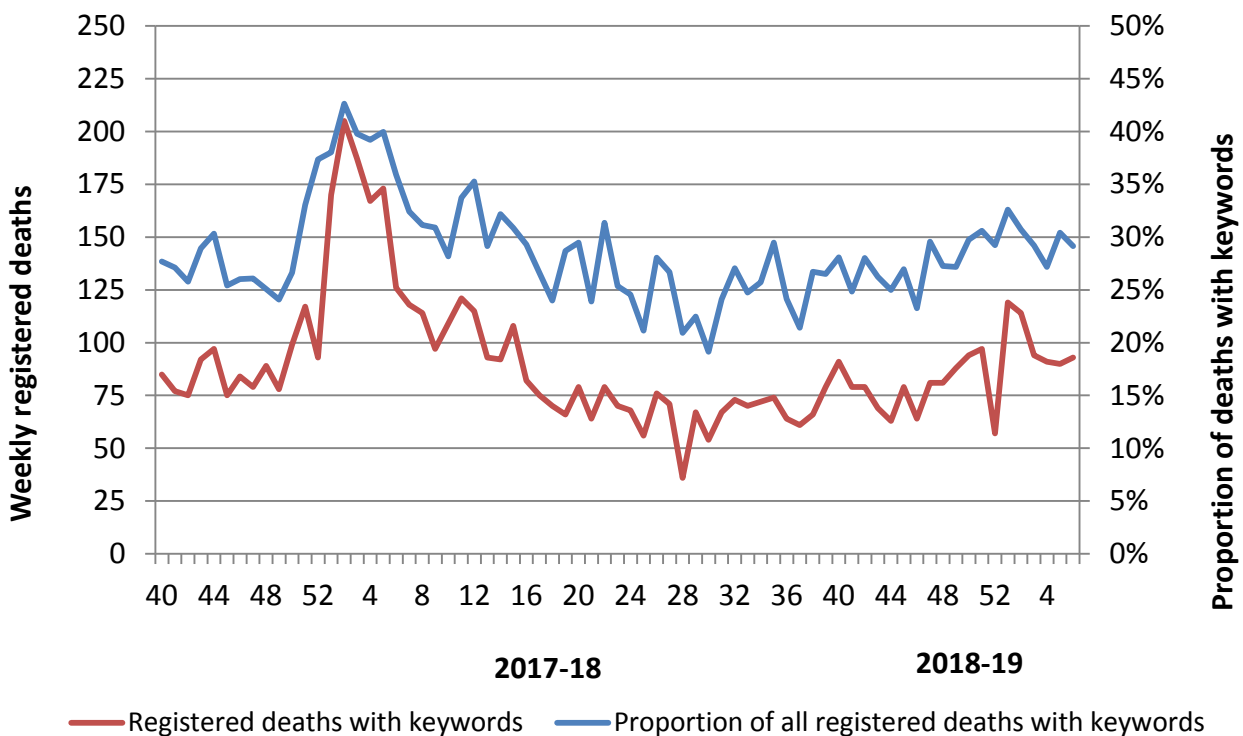
Outbreak Surveillance

During week 6, 2019 there were two respiratory outbreaks in a care home reported to the PHA and one outbreak in a hospital setting (all Flu A(untyped)). To date, there have been eight respiratory outbreaks reported, six in care homes (three Flu A(untyped), one Flu B and two RSV)) and two 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 slightly from 30% in week 5, 2019 to 29% in week 6. There were 319 registered deaths of which 93 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 (36%).

EuroMOMO

Up to week 6 there has been 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)
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<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

Europe

Week 5/2019 (28 January - 3 February 2019)

- Influenza activity is widespread in the European Region and continues to increase. Samples collected from individuals presenting with ILI or ARI to sentinel primary health care sites yielded an influenza positivity rate of 54.7%.
- Influenza type A virus detections dominated with A(H1N1)pdm09 viruses and A(H3N2) viruses co-circulating. Very few influenza B viruses were detected.
- Over 50% of specimens from patients hospitalized with severe acute respiratory infection (SARI) collected in week 5/2019 were positive for influenza, and >99% were type A.
- Pooled data from 22 Member States and areas reporting to the [EuroMOMO](#) project indicated excess mortality in elderly populations overall. However, this result was driven by data from only a few countries.

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, but may be levelling off. 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. Countries should continue to promote vaccination. In addition, countries are encouraged to use antivirals in accordance with national guidelines.
- Among hospitalized influenza virus-infected patients admitted to ICU wards, 76% of influenza A virus detections were subtyped; of these 78% were A(H1N1)pdm09 virus. Among influenza virus-infected patients admitted to other wards, 26% of influenza A virus detections were subtyped and 70% were A(H1N1)pdm09 virus.
- Over 90% of influenza A virus positive cases detected from SARI surveillance since week 40/2018 were subtyped and 82% 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. [Preliminary results](#) from Canada where the predominate circulating viruses are influenza A(H1N1)pdm09 viruses, indicate good vaccine effectiveness. These results are supported by recent preliminary vaccine effectiveness [results](#) from Hong Kong, where the vaccine was very effective at preventing A(H1N1)pdm09 related hospitalizations in children.
- The high vaccine effectiveness against A(H1N1)pdm09 viruses is consistent with genetic characterization reports indicating that all circulating viruses belong to clade 6B.1 and remain antigenically similar to the vaccine virus, despite the emergence of a number of subgroups. The lower vaccine effectiveness against A(H3N2) viruses likely reflects the circulation of multiple genetic clades some of which contain viruses that display low antigenic similarity to the vaccine virus, particularly with egg-propagated vaccine virus as compared to cell culture-propagated vaccine virus.

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

Worldwide (WHO)

04 February 2019 - based on data up to 20 January 2019

Summary

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

- In North America, influenza activity appeared to decrease slightly with influenza A(H1N1)pdm09 predominating.
- In Europe, influenza activity continued to increase, with both A viruses circulating.
- In North Africa, influenza A(H1N1)pdm09 detections sharply increased in Morocco.
- In Western Asia, influenza activity continued to increase in some countries and appeared to decrease across countries of the Arabian Peninsula.
- In East Asia, influenza activity continued to increase, with influenza A(H1N1)pdm09 virus predominating.
- In Southern Asia, influenza detections remained elevated overall. Influenza activity continued to increase in Iran (Islamic Republic of) with influenza A(H3N2) the predominant circulating virus.
- In the temperate zones of the southern hemisphere, influenza activity remained at 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 07 January 2019 to 20 January 2019 (data as of 2019-02-01 04:30:14 UTC). The WHO GISRS laboratories tested more than 232136 specimens during that time period. 59457 were positive for influenza viruses, of which 58436 (98.3%) were typed as influenza A and 1021 (1.7%) as influenza B. Of the sub-typed influenza A viruses, 24559 (77.7%) were influenza A(H1N1)pdm09 and 7058 (22.3%) were influenza A(H3N2). Of the characterized B viruses, 85 (34.6%) belonged to the B-Yamagata lineage and 161 (65.4%) 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

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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/>

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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