

Influenza Weekly Surveillance Bulletin

Northern Ireland, Weeks 13 and 14 (25th March – 7th April, 2019)

Summary

The surveillance data indicates that influenza in community and hospital settings across Northern Ireland has decreased. Primary Care influenza rates remain well below the baseline Moving Epidemic Method (MEM) threshold¹ for Northern Ireland and have now returned to baseline levels.

Northern Ireland Primary Care Consultation Rates

- GP consultation rate for flu and flu-like illness (flu/FLI) during weeks 13 and 14, 2019 was 5.7 and 4.3 per 100,000 population respectively.
- OOH GP flu/FLI consultation rate was 2.6 and 2.2 per 100,000 population respectively.

Microbiological Surveillance (Flu and RSV)

- During week 13 and 14 there were 504 specimens submitted for virological testing, of which 39 tested positive for influenza (8% positivity).
- There were 20 detections of Flu A(H3), nine Flu A(H1N1)pdm09, eight (Flu A (untyped)) and two Flu B.
- There were 13 positive RSV detections in week 13 and 14 (8% positivity).

Secondary Care (Hospital both non-ICU and ICU)

- In week 13 and 14 there were nine detections of Flu A(H1N1)pdm09, 17 Flu A(H3), eight Flu A (untyped) and two Flu B.
- There were no new cases reported in ICU with laboratory confirmed influenza and no deaths reported.
- To date, there have been a total of 67 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 weeks 13 and 14 there were no respiratory outbreaks reported to PHA.
- To date, there have been 12 respiratory outbreaks reported, nine in care homes (five 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) rose in week 14 (25%) compared to week 13 (21%).

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%	-

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

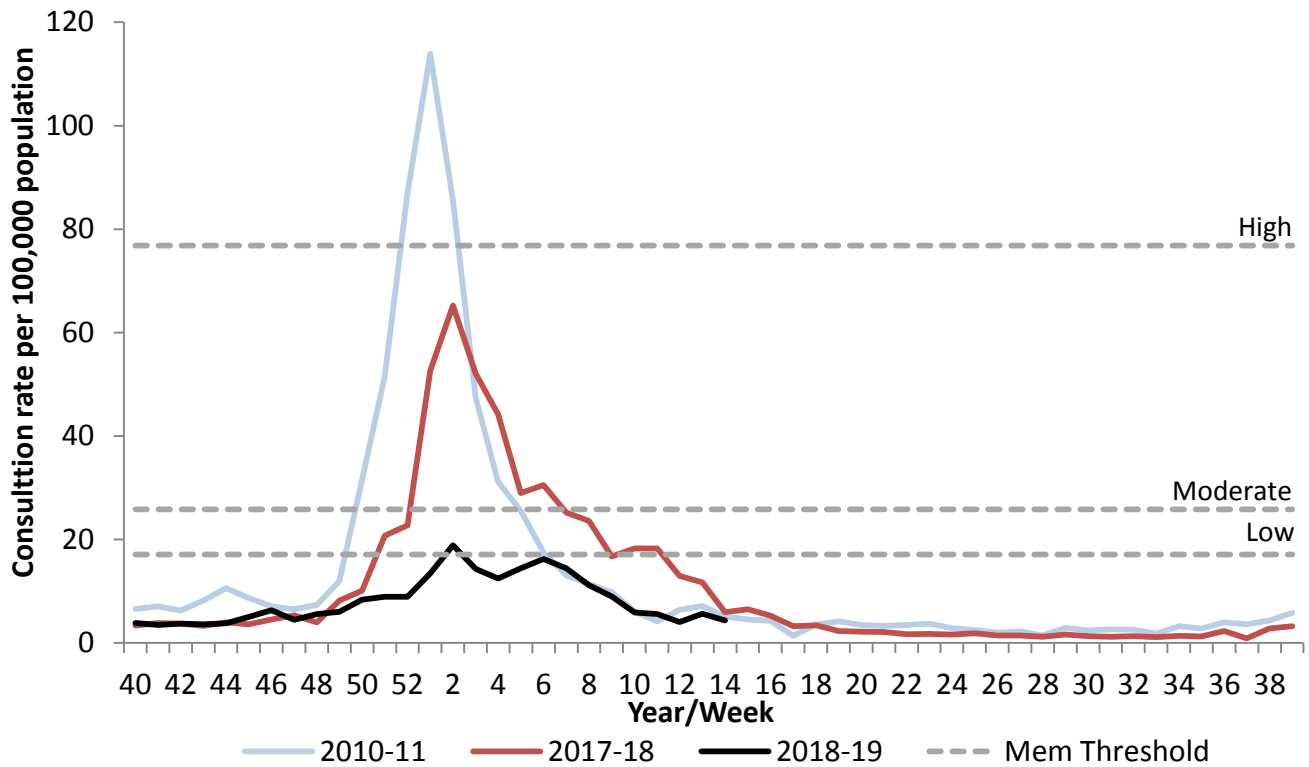
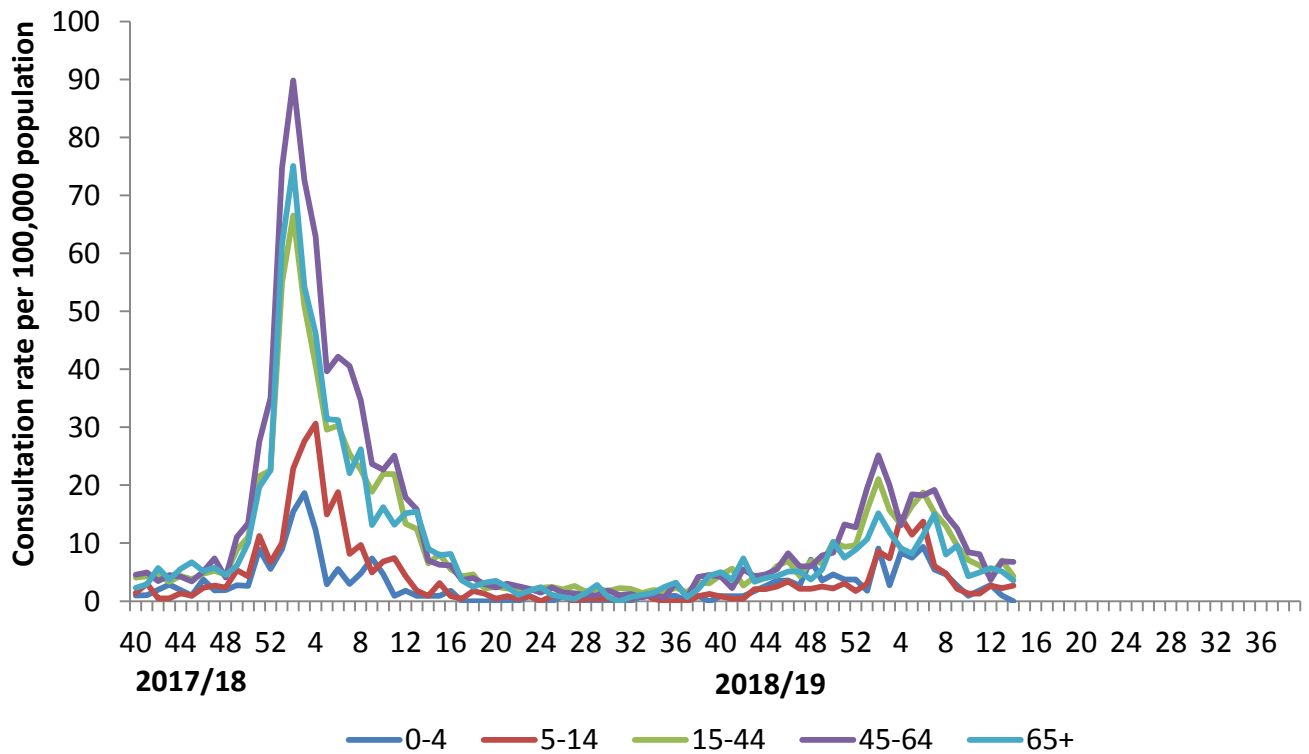


Figure 2. Northern Ireland GP age-specific consultation rates for flu/FLI from week 40, 2017



Comment

The NI GP consultation rate for flu and flu-like illness (flu/FLI) for weeks 13 and 14, 2019 was 5.7 and 4.3 per 100,000 population respectively. Activity remains well below the baseline MEM threshold for Northern Ireland (<17.1 per 100,000) (Figure 1). The rate is lower in weeks 13 and 14 than the same week in 2017/18 (5.7 compared to 11.7 per 100,000 in week 13 and 4.3 compared to 6.0 in week 14) (Figure 1).

The consultation rates decreased from week 13 to week 14 in all age groups with the exception of those aged 5-14 years which increased from 2.2 to 2.7 per 100,000. The consultation rate was highest in those aged 15-44 years in week 13 (7.0 per 100,000) and highest in those aged 45-64 years in week 14 (6.7 per 100,000). Rates were lowest in those aged 0-4 years in week 13 and week 14 (0.9 and 0.0 per 100,000 respectively) (Figure 2).

Out-of-Hours (OOH) Centres Call Data

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

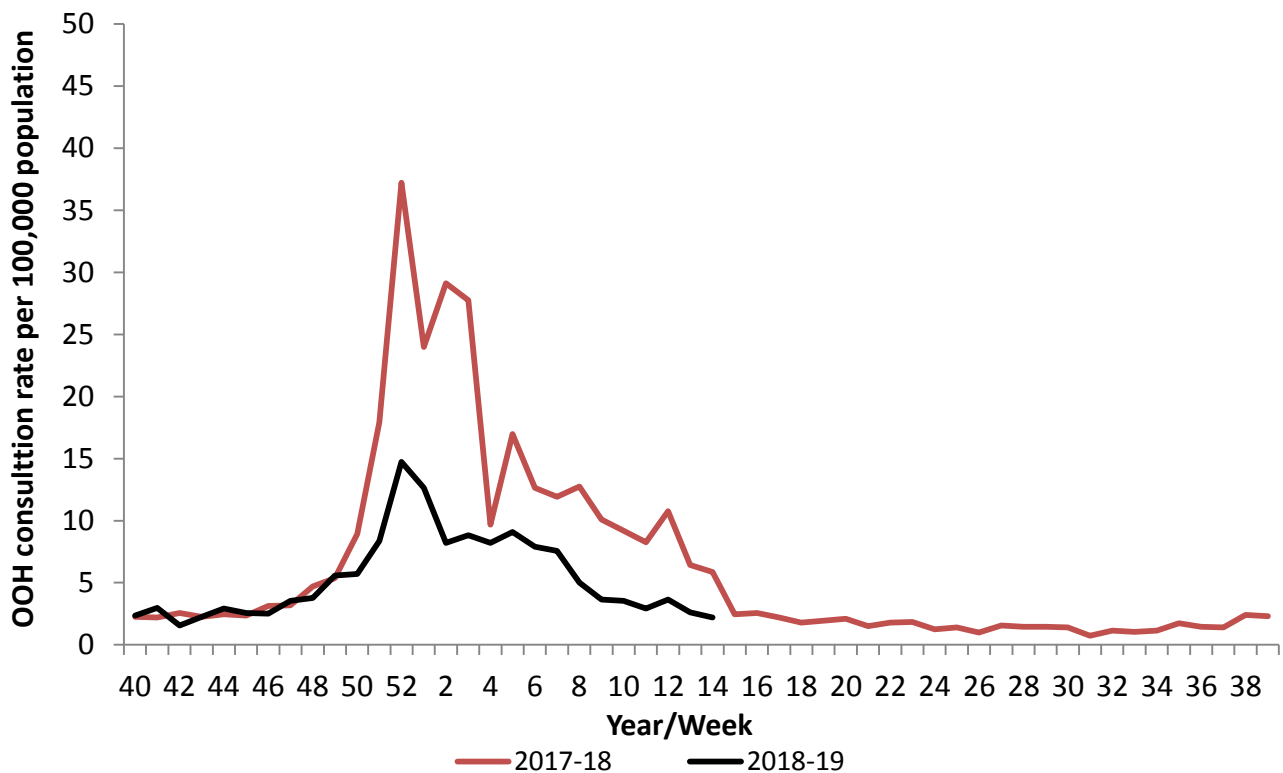
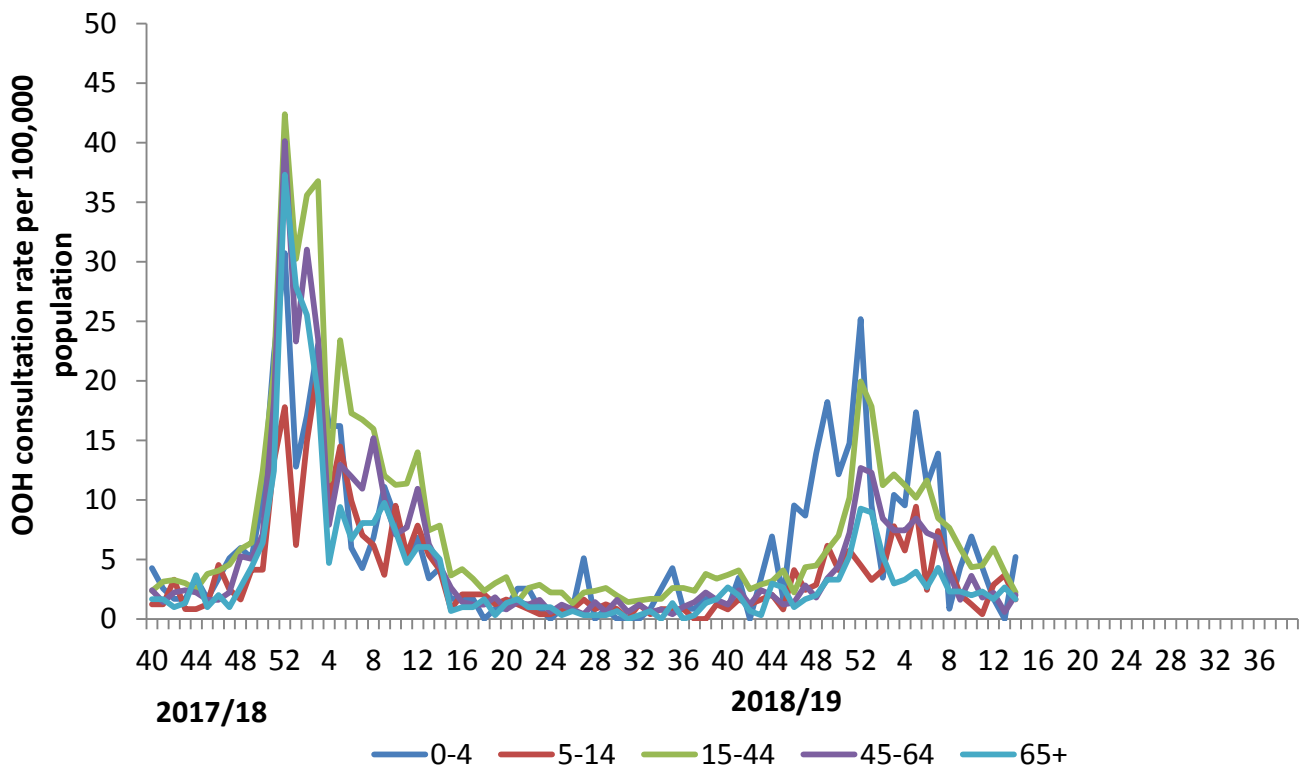


Figure 4. OOH call rates of flu/FLI by age-group from week 40, 2017



Comment

The OOH flu/FLI consultation rates during weeks 13 and 14, 2019 were 2.6 and 2.2 per 100,000 population respectively (Figure 3). The rate in week 13 was lower than the same week in 2017/18 (2.6 compared to 6.4 per 100,000). The proportion of calls related to flu/FLI in OOH centres remained stable at 0.5%. The rate in week 14 decreased from week 13 from 2.6 to 2.2 per 100,000. The rate in week 14 was lower than the same week in 2017/18 (2.2 compared to 5.9 per 100,000). The proportion of calls related to flu/FLI in OOH centres decreased slightly in week 14 to 0.4%.

Consultation rates decreased between weeks 13 and 14 in those aged 5-14 years (3.7 to 1.6 per 100,000), 15-44 years (4.0 to 2.2 per 100,000) and 65 years and over (2.7 to 1.7 per 100,000), but increased in those aged 0-4 years (0.0 to 5.2 per 100,000) and 45-64 years (0.6 to 2.0 per 100,000) (Figure 4).

Virology Data

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

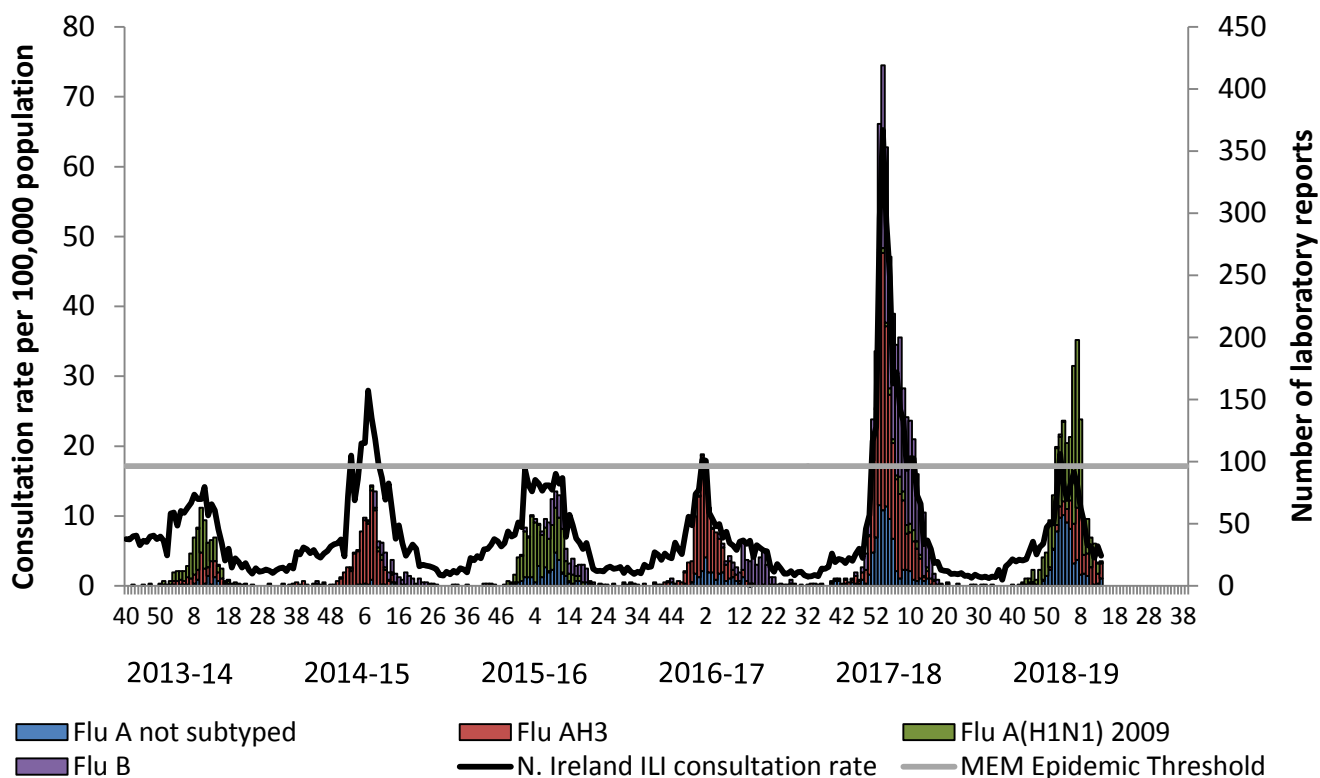


Figure 6. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2017

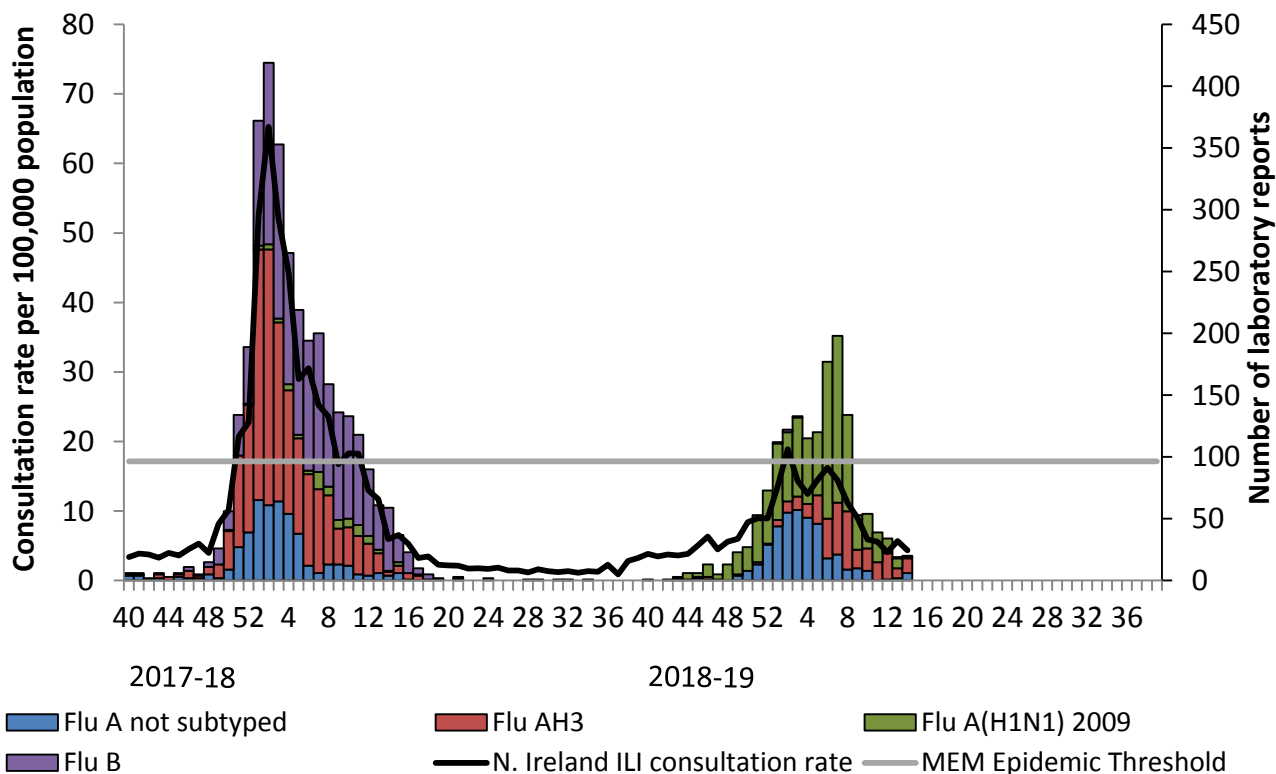


Table 1. Virus activity in Northern Ireland by source, Weeks 13-14, 2018-19

Source	Specimens tested	Flu AH3	Flu A(H1N1) 2009)	A (Untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	15	2	0	0	0	0	2	13%
Non-sentinel	489	18	9	8	2	13	37	8%
Total	504	20	9	8	2	13	39	8%

Table 2. Cumulative virus activity from all sources by age group, Week 40 - 14, 2018-19

Age Group	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
0-4	12	148	26	0	186	357
5-14	17	42	15	0	74	16
15-64	136	529	233	4	902	125
65+	112	162	115	3	392	179
Unknown	0	0	0	0	0	0
All ages	277	881	389	7	1554	677

Table 3. Cumulative virus activity by age group and source, Week 40 - Week 14, 2018-19

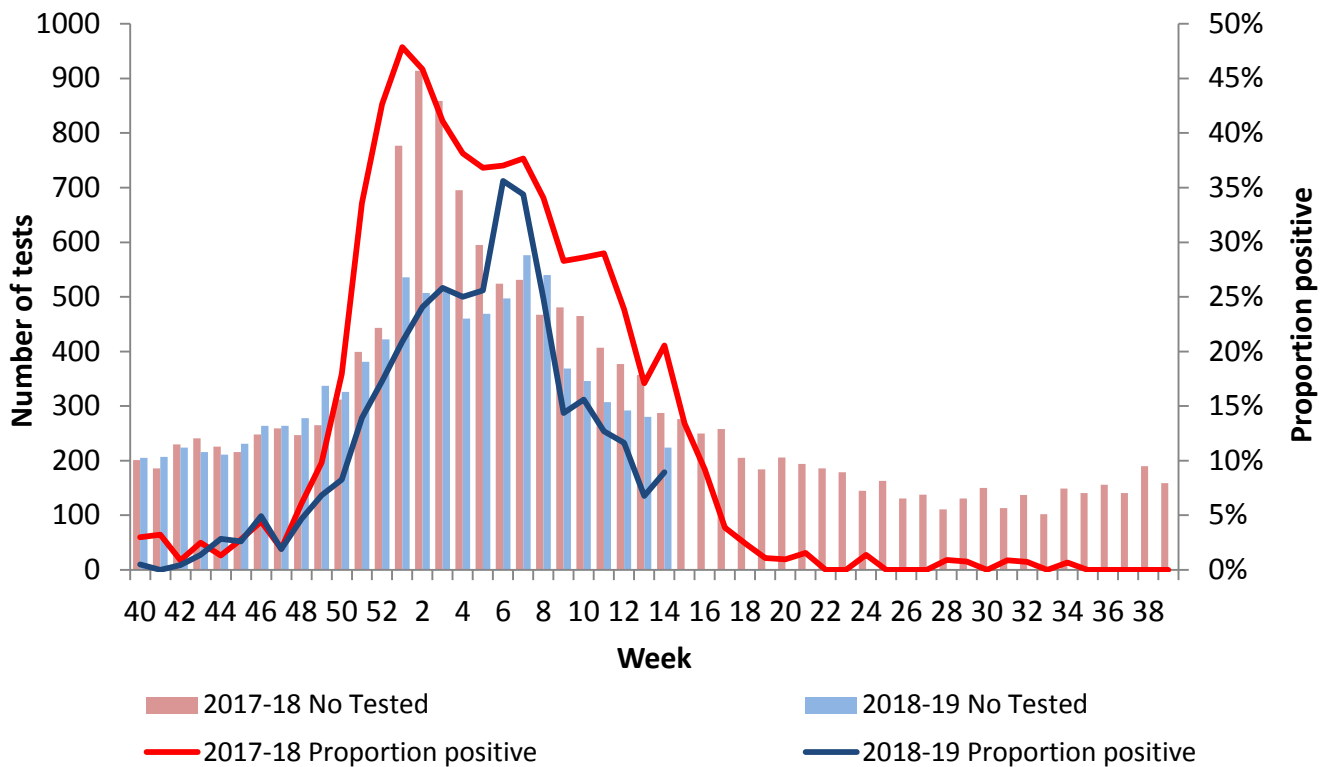
Age Group	Sentinel						Non-sentinel					
	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
0-4	0	3	0	0	3	0	12	145	26	0	183	357
5-14	1	4	0	0	5	0	16	38	15	0	69	16
15-64	15	44	11	0	70	10	121	485	222	4	832	115
65+	2	3	2	1	8	1	110	159	113	2	384	178
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
All ages	18	54	13	1	86	11	259	827	376	6	1468	666

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



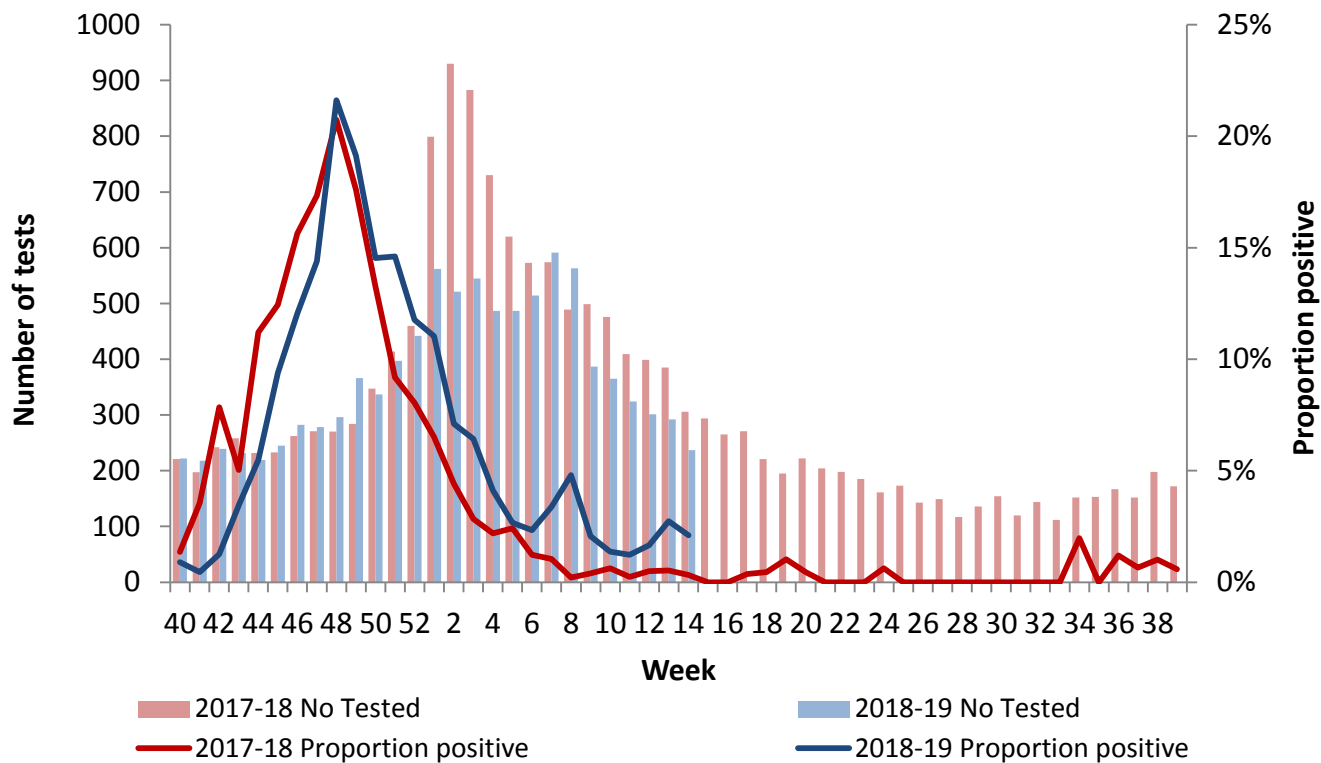
Comment

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.

During weeks 13 and 14, 2019 there were 504 specimens submitted for virological testing. There were 39 detections of influenza in total (8% positivity); 20 Flu A(H3), nine Flu A(H1N1)pdm09, eight Flu A(untyped) and two Flu B. Flu A(H3) appears to be the dominant virus circulating now. There were 15 samples submitted through the GP based sentinel scheme across Northern Ireland. There were two detections of influenza in total (13% positivity); both Flu A(H3) (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

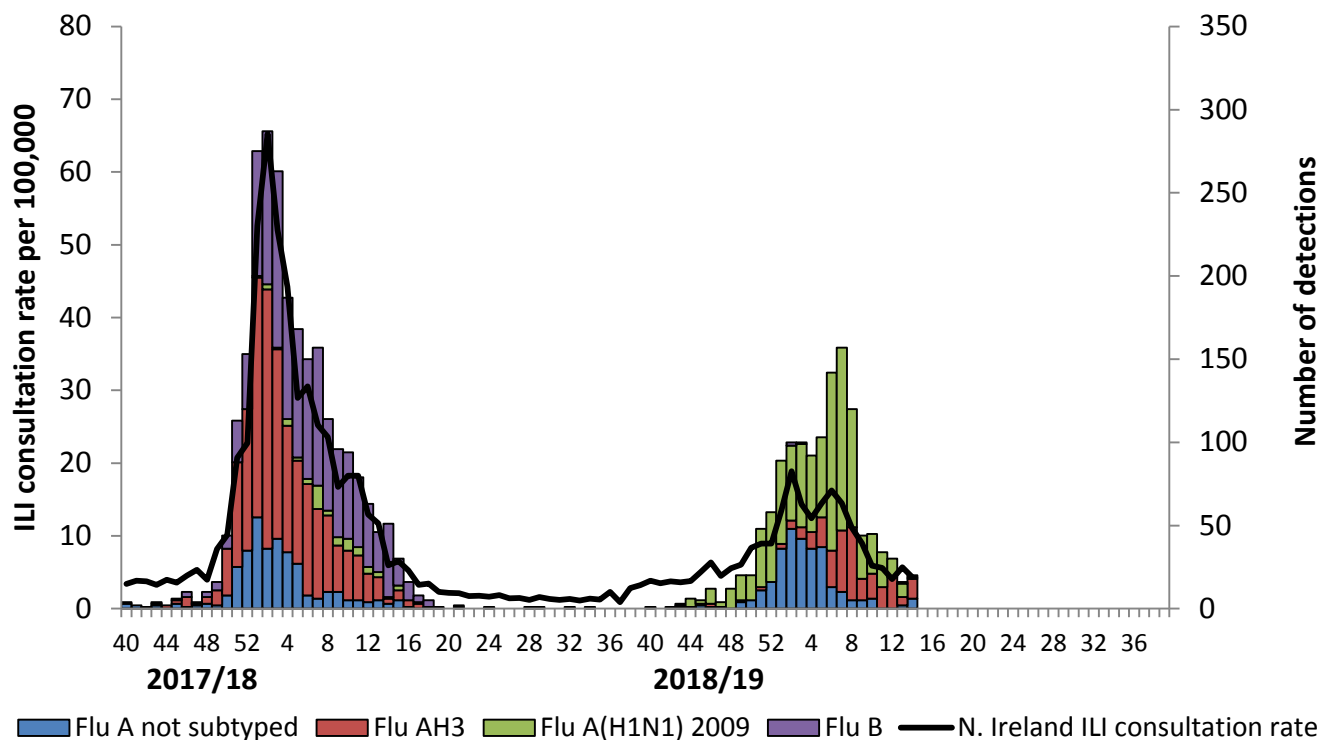


Comment

During weeks 13 and 14, 2019 there were thirteen positive detections of RSV (2% positivity). To date there have been a total of 677 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

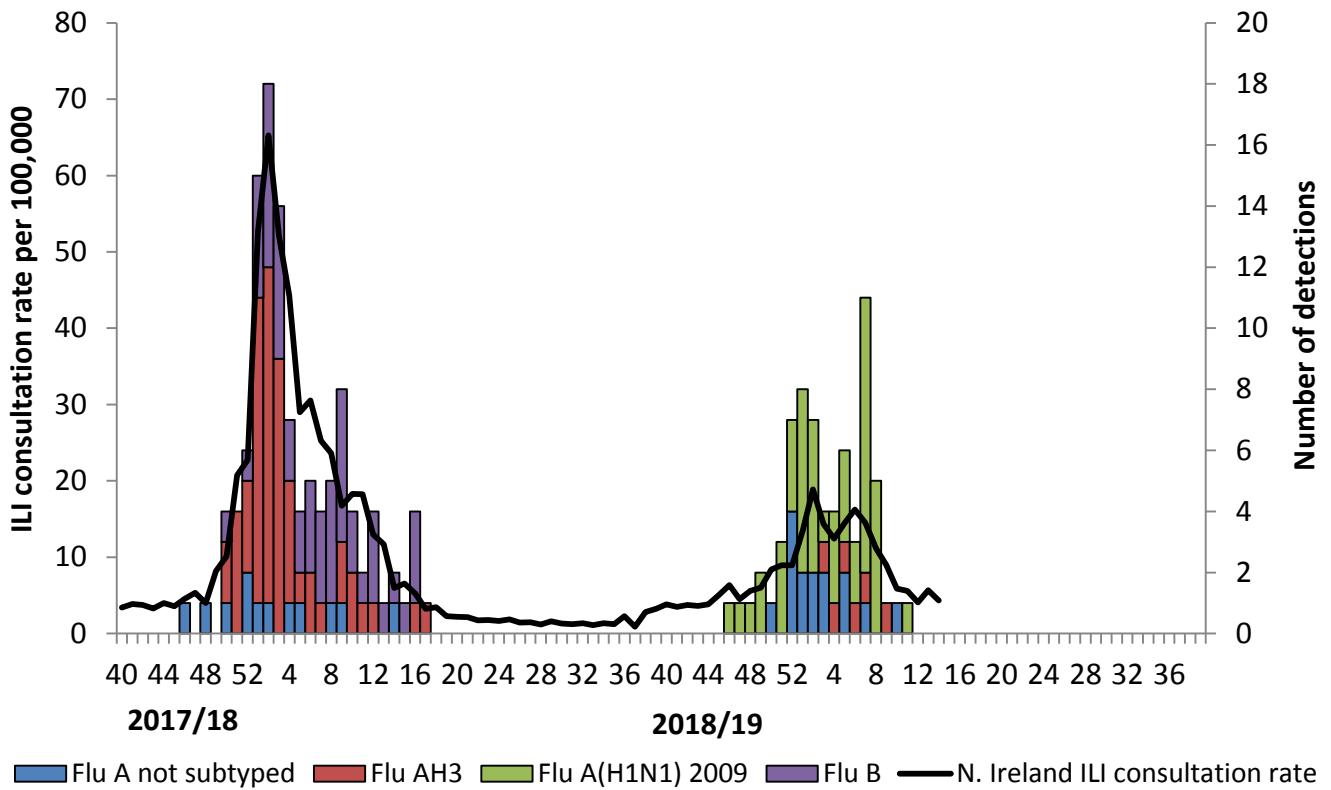


Comment

During weeks 13 and 14, 2019 there were 36 detections of influenza from specimens taken in hospital settings across Northern Ireland. There were 17 Flu A(H3), nine Flu A(H1N1)pdm09, eight Flu A(untyped) and two Flu B. Flu A(H3) appears to be the dominant virus circulating now. It should be kept in mind that it is possible that not all positive specimens (for weeks 13 and 14) 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 weeks 13 and 14, 2019 there were no new admissions to ICU with confirmed influenza reported to the PHA. So far this season there has been 67 admissions to ICU with confirmed influenza reported to PHA. There were no deaths reported in weeks 13 and 14. So far this season there have been seven deaths reported in ICU patients who had laboratory confirmed influenza. In comparison, up to week 14, 2018 there were 119 admissions to ICU with confirmed influenza reported to PHA, with 22 deaths reported in ICU patients who had laboratory confirmed influenza.

Of the 67 admissions to ICU, 43% (n=29) 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. 43% (n=29) were classed as being in a vaccine risk group, of which 38% (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.

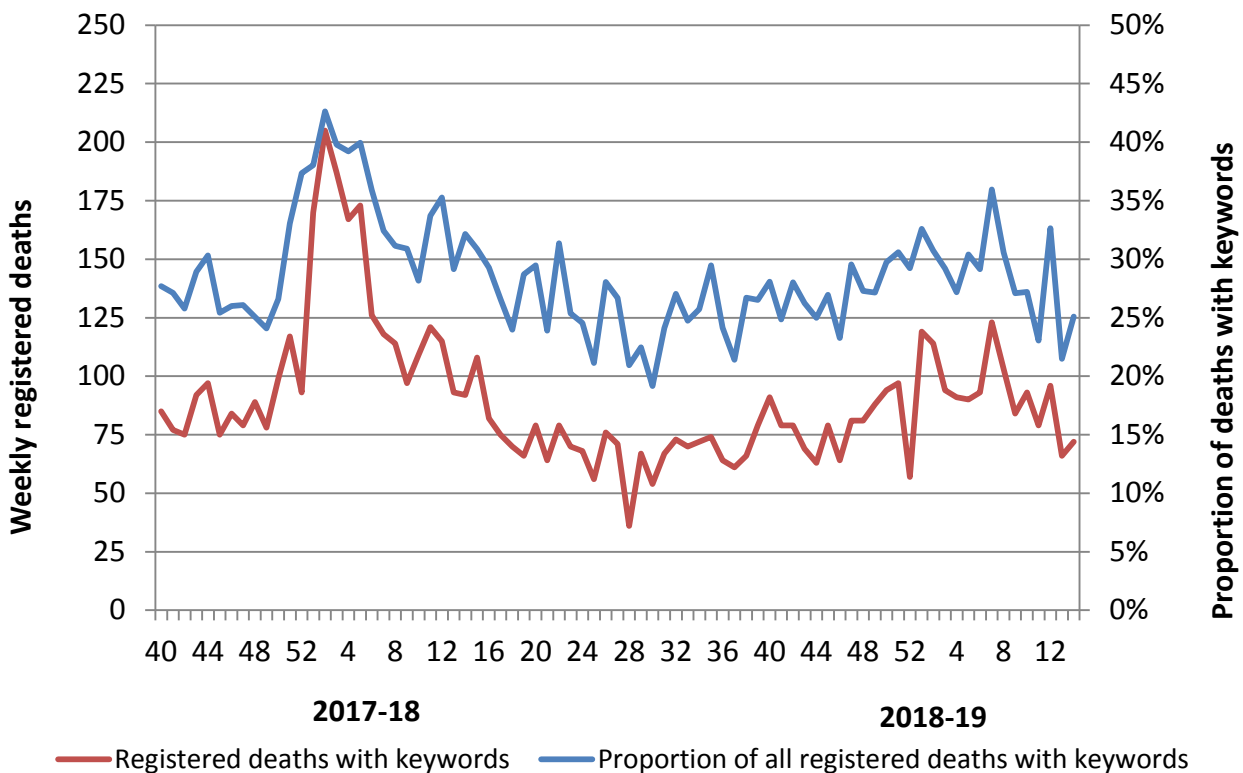
Outbreak Surveillance

During weeks 13 and 14, 2019 there were no respiratory outbreaks reported to the PHA. To date, there have been 12 respiratory outbreaks reported, nine in care homes (five 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 in week 14, 2019 (25%) compared to week 13 (21%). In week 14 there were 287 registered deaths of which 72 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 (32%).

EuroMOMO

There was no excess all-cause mortality reported in Northern Ireland in week 13 or week 14, 2019. There has been two weeks in the season where there has been excess all-cause mortality (week 6 and week 11, 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 13/2019 (25-31 March 2019)

- Of 45 countries reporting on geographic spread, 11, located in northern, southern, and western areas of the European Region, reported widespread activity. Specimens collected from individuals presenting with ILI or ARI to sentinel primary health care sites yielded an influenza virus positivity rate of 32%, a decrease for the third week in a row.
- Of 45 countries reporting on influenza activity, 42 reported baseline or low intensity levels and none reported high intensity.
- Influenza type A virus detections dominated with more A(H3N2) than A(H1N1)pdm09 viruses among sentinel and non-sentinel source specimens. Very few influenza B viruses were detected.
- Of the specimens from patients with severe acute respiratory infection (SARI) collected in week 13/2019 that were tested for influenza viruses, 33% were positive and all viruses were type A.
- Pooled data from 22 Member States and areas reporting to the [EuroMOMO](#) project indicated that the excess mortality observed in previous weeks has returned to normal levels.

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 have circulated, with co-circulation in some countries while others reported dominance of either A(H1N1)pdm09 or A(H3N2) viruses.
- Among hospitalized influenza virus-infected patients admitted to ICU wards, 99% were infected with type A viruses, and of those subtyped, 69% were A(H1N1)pdm09. Among influenza virus-infected patients admitted to other wards, 99% were infected with type A viruses, with 58% of those subtyped being A(H1N1)pdm09.
- Of the patient specimens from SARI surveillance that tested positive for influenza, 99% were infected with influenza type A virus, with 80% of those subtyped being A(H1N1)pdm09.

- A recent summary of regional activity from October 2018 to February 2019 was published in Eurosurveillance and can be found [here](#).
- Current influenza vaccines tend to work better against influenza A(H1N1)pdm09 and influenza B viruses than against influenza A(H3N2) viruses. For more detail, see the [Vaccine effectiveness](#) section
- WHO has published [recommendations](#) for the composition of influenza vaccines to be used in the 2019–2020 northern hemisphere season. The recommendation was that type B lineage viruses remain unchanged, while the A(H1N1)pdm09 and A(H3N2) viruses were updated.
- Circulating viruses in the European Region remained susceptible to neuraminidase inhibitors supporting use of antiviral treatment according to national guidelines.

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

Worldwide (WHO)

1 April 2019 - based on data up to 17 March 2019

Summary

In the temperate zone of the northern hemisphere influenza activity decreased overall.

- In North America, influenza activity appeared to decrease with influenza A(H3N2) the dominant virus, followed by influenza A(H1N1)pdm09.
- In Europe, influenza activity decreased across the continent. Both influenza A viruses co-circulated.
- In North Africa, influenza activity was still reported in some countries.
- In Western Asia, influenza activity appeared to decrease overall, with exception of some countries where activity remained elevated.
- In East Asia, although decreased influenza activity continued to be reported. Increased detections of influenza A(H3N2) and B (Victoria-lineage) viruses were reported in the recent weeks.
- In Southern Asia, influenza appeared to decrease with influenza A(H1N1)pdm09 virus 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 March 2019 to 17 March 2019 (data as of 2019-03-29 03:30:56 UTC). The WHO GISRS laboratories tested more than 176726 specimens during that time period. 43084 were positive for influenza viruses, of which 39652 (92%) were typed as influenza A and 3432 (8%) as influenza B. Of the sub-typed influenza A viruses, 8769 (49.9%) were influenza A(H1N1)pdm09 and 8795 (50.1%) were influenza A(H3N2). Of the characterized B viruses, 119 (5.1%) belonged to the B-Yamagata lineage and 2193 (94.9%) 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](#)
- [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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