

Influenza Weekly Surveillance Bulletin

Northern Ireland, Weeks 17 and 18 (22nd April – 5th May 2019)

Summary

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

Northern Ireland Primary Care Consultation Rates

- GP consultation rates for flu and flu-like illness (flu/FLI) during weeks 17 and 18 were 2.5 and 2.8 per 100,000 population, respectively.
- OOH GP flu/FLI consultation rates for weeks 17 and 18 were 3.4 and 1.9 per 100,000 population, respectively.

Microbiological Surveillance (Flu and RSV)

- During week 17 and 18 there were 406 specimens submitted for virological testing, of which 28 tested positive for influenza (7% positivity).
- There were 22 detections of Flu A(H3) and six Flu A(untyped).
- There were two positive RSV detections in week 17 and 18 (1% positivity).

Secondary Care (Hospital both non-ICU and ICU)

- In weeks 17 and 18 there were 20 detections of Flu A(H3) and four Flu A(untyped).
- 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 17 and 18 there was one respiratory outbreak reported to PHA (Flu A(untyped)) in a care home setting. To date, there have been 15 respiratory outbreaks reported, 11 in care homes (seven Flu A(untyped), one Flu B and three RSV) and four in a hospital setting (Flu A(untyped)).

Mortality

- The proportion of deaths related to respiratory keywords increased from week 17 to week 18 (28% to 25%)

Influenza Vaccine Uptake (end of season)

	2018/19 (to Mar 31 st)	2017/18 (to Mar 31 st)
>65 years	70.0%	71.8%
<65 years at risk	52.4%	56.0%
Pregnant women	44.3%	47.1%
2 to 4 year olds	47.6%	50.6%
Primary School	75.9%	76.5%
Trust Frontline	35.4%	33.4%
Trust Frontline (excluding social workers and social care workers)	39.5%	-

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

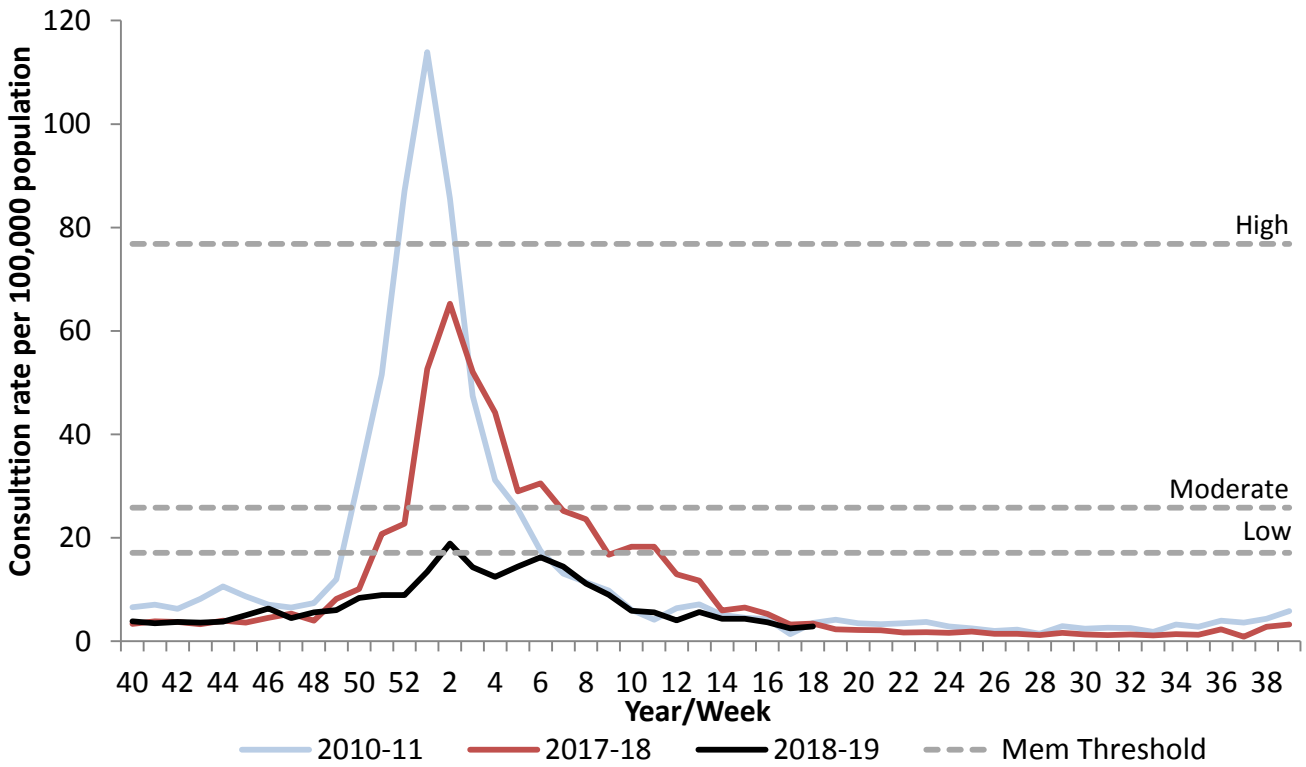
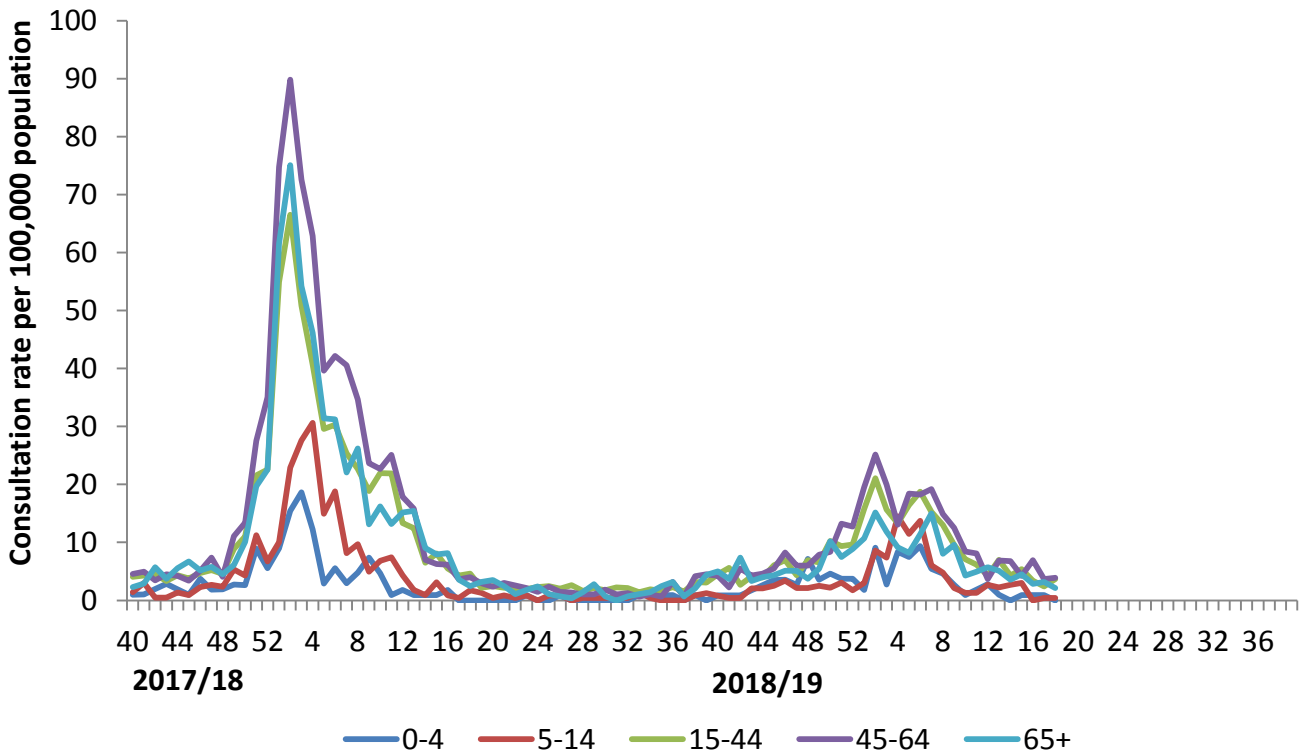


Figure 2. Northern Ireland GP age-specific consultation rates for flu/FLI from week 40, 2017



Comment

The NI consultation rates for flu and flu-like illness (flu/FLI) for weeks 17 and 18, 2019 were 2.5 and 2.8 per 100,000 respectively. Activity remains well below the baseline MEM threshold for Northern Ireland (<17.1 per 100,000) and are at baseline levels (Figure 1). These rates are lower compared to the same weeks in 2017/18 (3.3 and 3.5 per 100,000, respectively) (Figure 1).

Consultation rates increased from week 17 to week 18 in those aged 15-44 years (2.4 to 3.7 per 100,000) and 45-64 years (3.7 to 3.9 per 100,000). Rates decreased in those aged 0-4 years (0.9 to 0.0 per 100,000) and 65 years and over (3.2 to 2.1 per 100,000). Rates remained stable in those aged 5-14 years (0.4 per 100,000). The consultation rate was highest in those aged 45-64 years in week 17 (3.7 per 100,000) and week 18 (3.9 per 100,000). Rates were lowest in those aged 5-14 years in week 17 (0.4 per 100,000) and in those aged 0-4 years (0.0 per 100,000) in week 18 (Figure 2).

Out-of-Hours (OOH) Centres Call Data

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

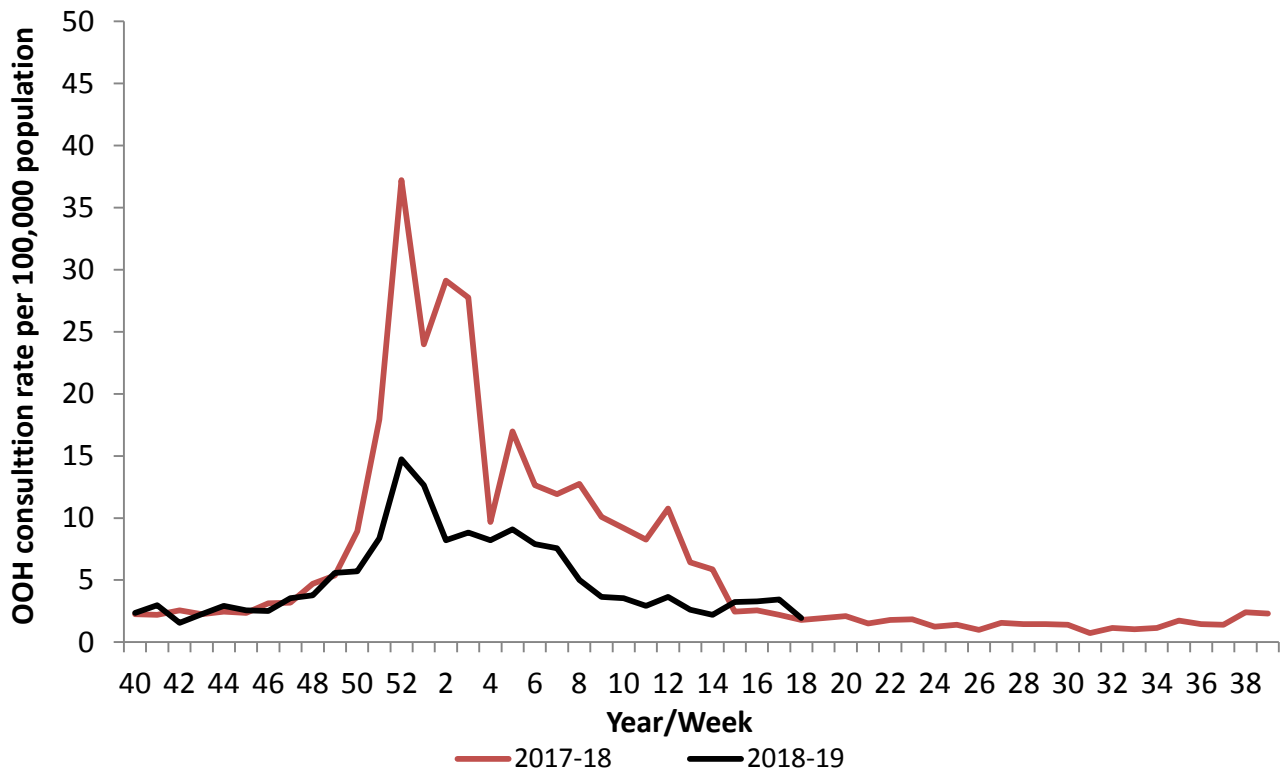
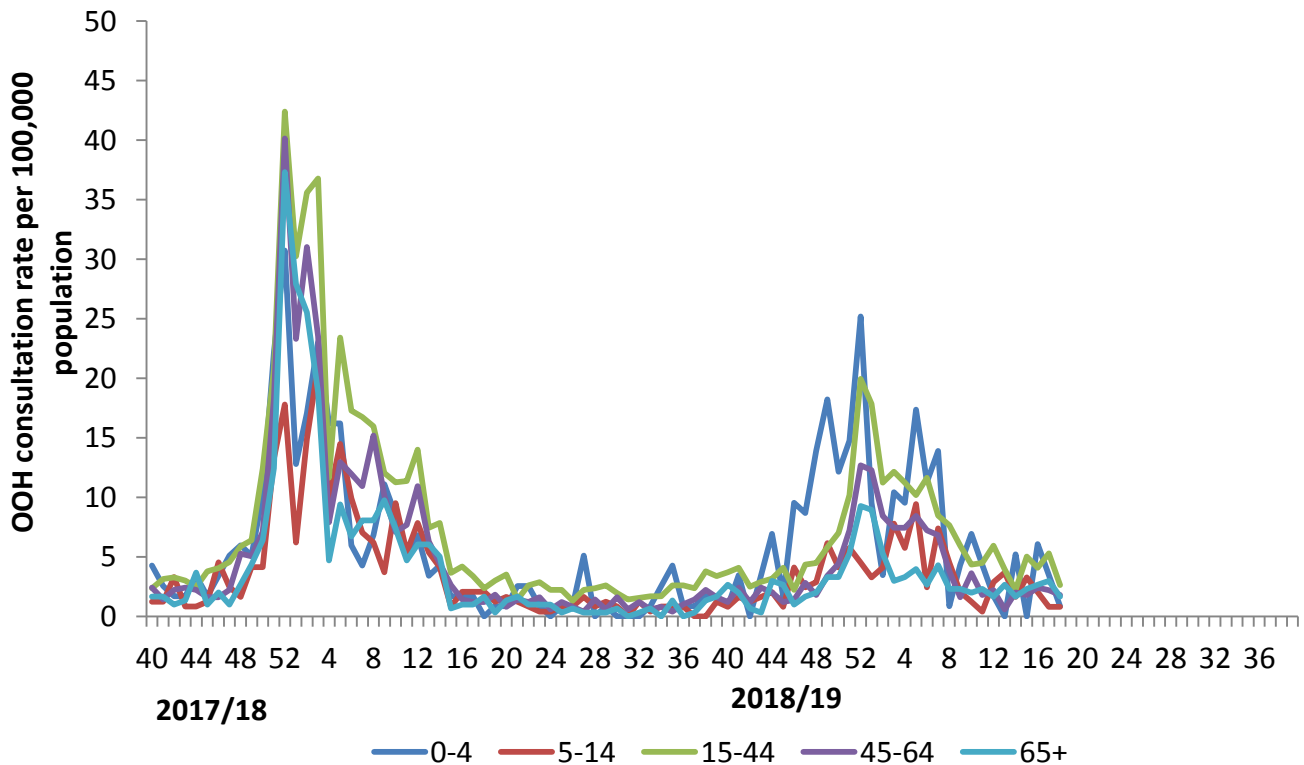


Figure 4. OOH call rates of flu/FLI by age-group from week 40, 2017



Comment

The OOH flu/FLI consultation rate decreased from 3.4 per 100,000 in week 17, 2019 to 1.9 per 100,000 in week 18 (Figure 3). The rate in week 17 was higher than in the same week in 2017/18 (3.4 compared to 2.2 per 100,000). The proportion of calls related to flu/FLI in OOH centres remained stable between weeks 17 and 18 (0.4%).

Consultation rates from week 17 to week 18 decreased in all age groups with the exception of those aged 5-14 years which remained stable (0.8 per 100,000).

Virology Data

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

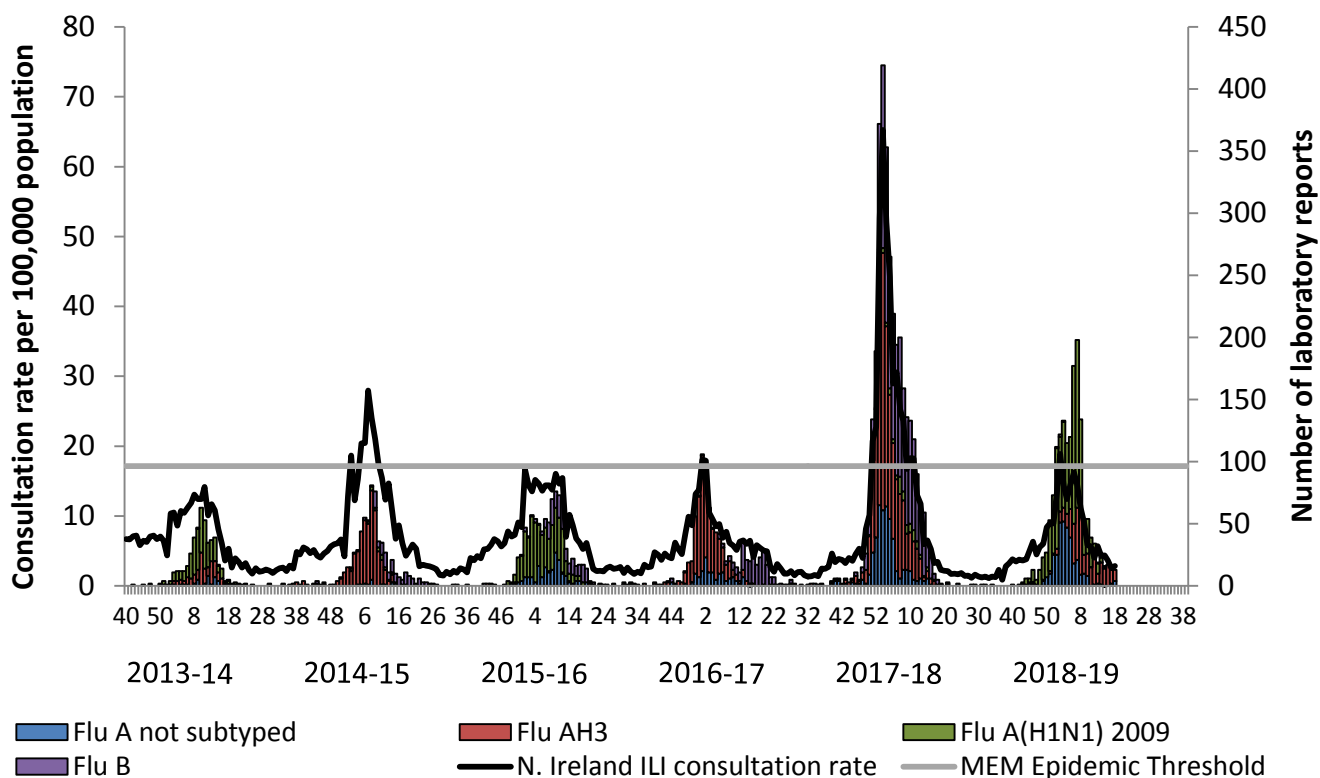


Figure 6. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2017

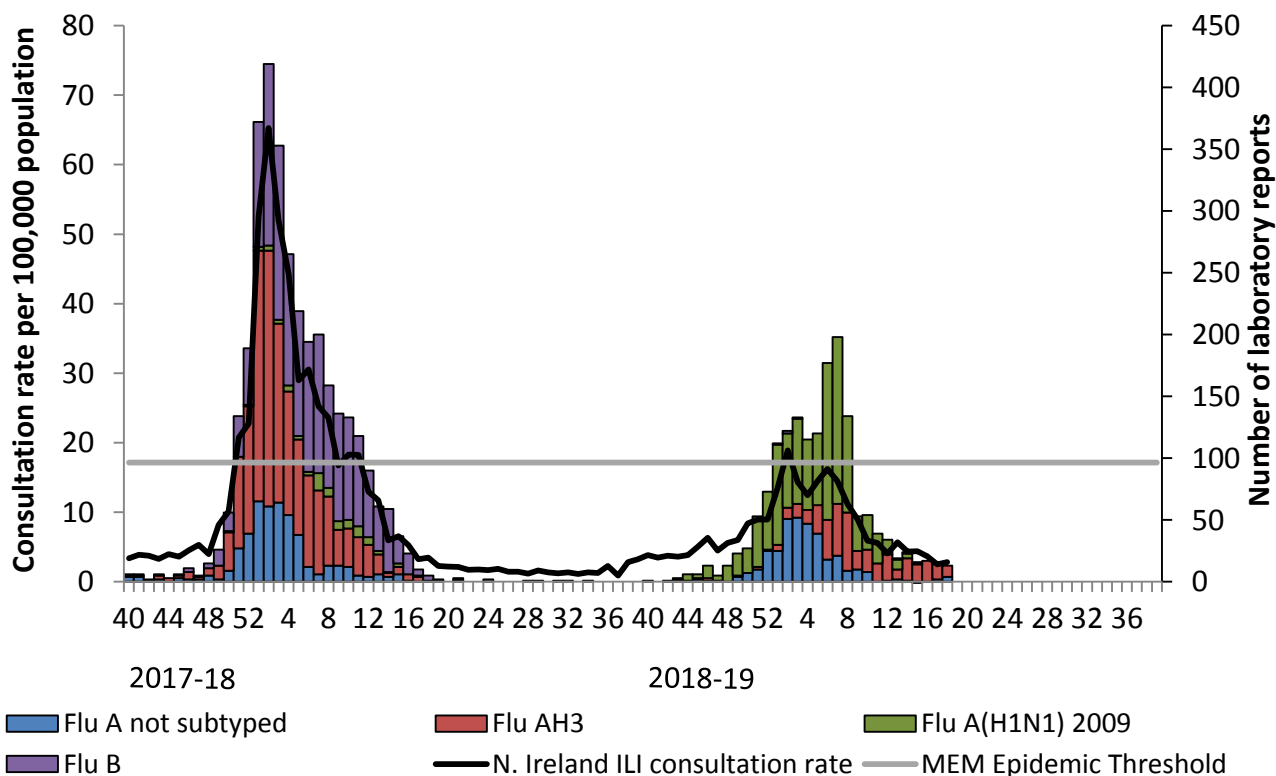


Table 1. Virus activity in Northern Ireland by source, Weeks 17-18, 2018-19

Source	Specimens tested	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	4	0	0	0	0	0	0	0%
Non-sentinel	402	22	0	6	0	2	28	7%
Total	406	22	0	6	0	2	28	7%

Table 2. Cumulative virus activity from all sources by age group, Week 40 - 18, 2018-19

Age Group	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
0-4	14	154	20	0	188	364
5-14	21	44	14	0	79	16
15-64	166	559	203	5	933	126
65+	135	175	105	3	418	181
Unknown	0	0	0	0	0	0
All ages	336	932	342	8	1618	687

Table 3. Cumulative virus activity by age group and source, Week 40 - Week 18, 2018-19

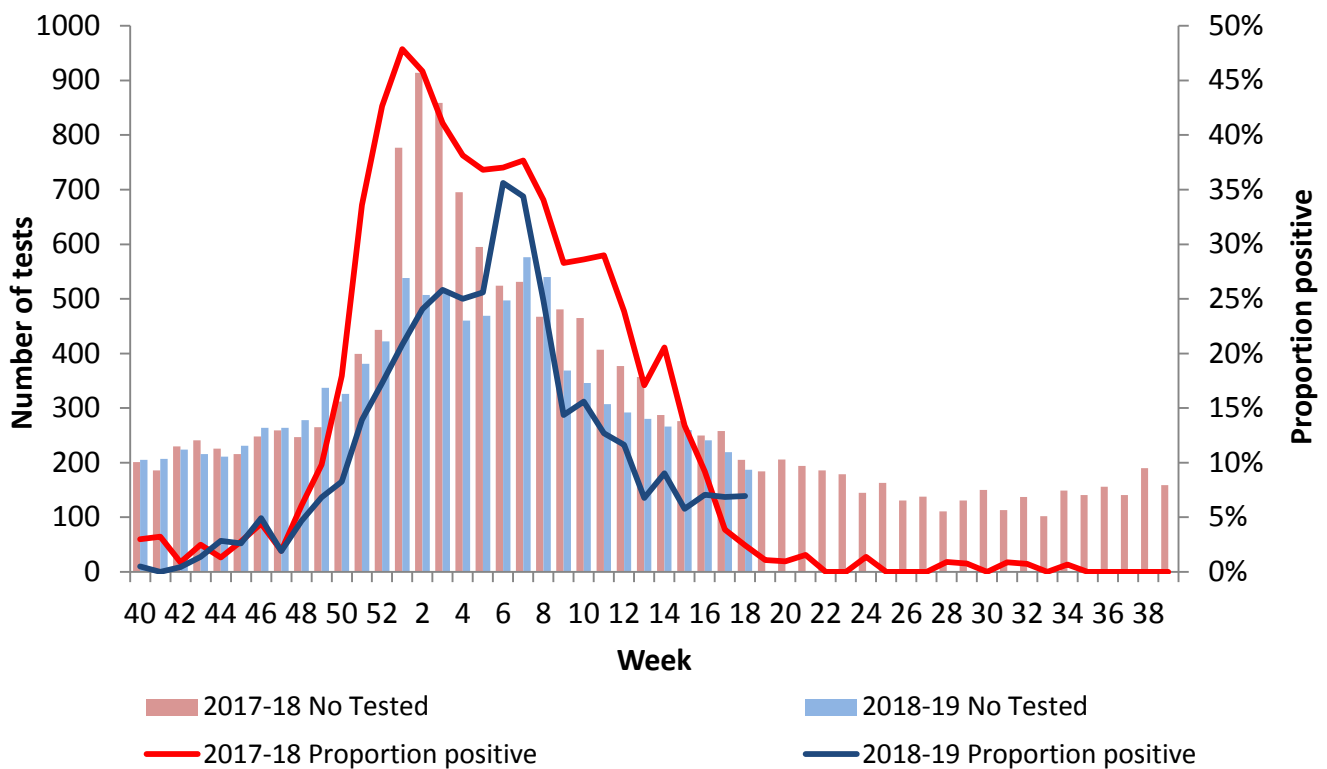
Age Group	Sentinel						Non-sentinel					
	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV	Flu AH3	Flu A(H1N1) 2009	A (Untyped)	Flu B	Total Influenza	RSV
0-4	0	3	0	0	3	0	14	151	20	0	185	364
5-14	1	4	0	0	5	0	20	40	14	0	74	16
15-64	16	45	10	0	71	10	150	514	193	5	862	116
65+	6	3	2	1	12	1	129	172	103	2	406	180
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
All ages	23	55	12	1	91	11	313	877	330	7	1527	676

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



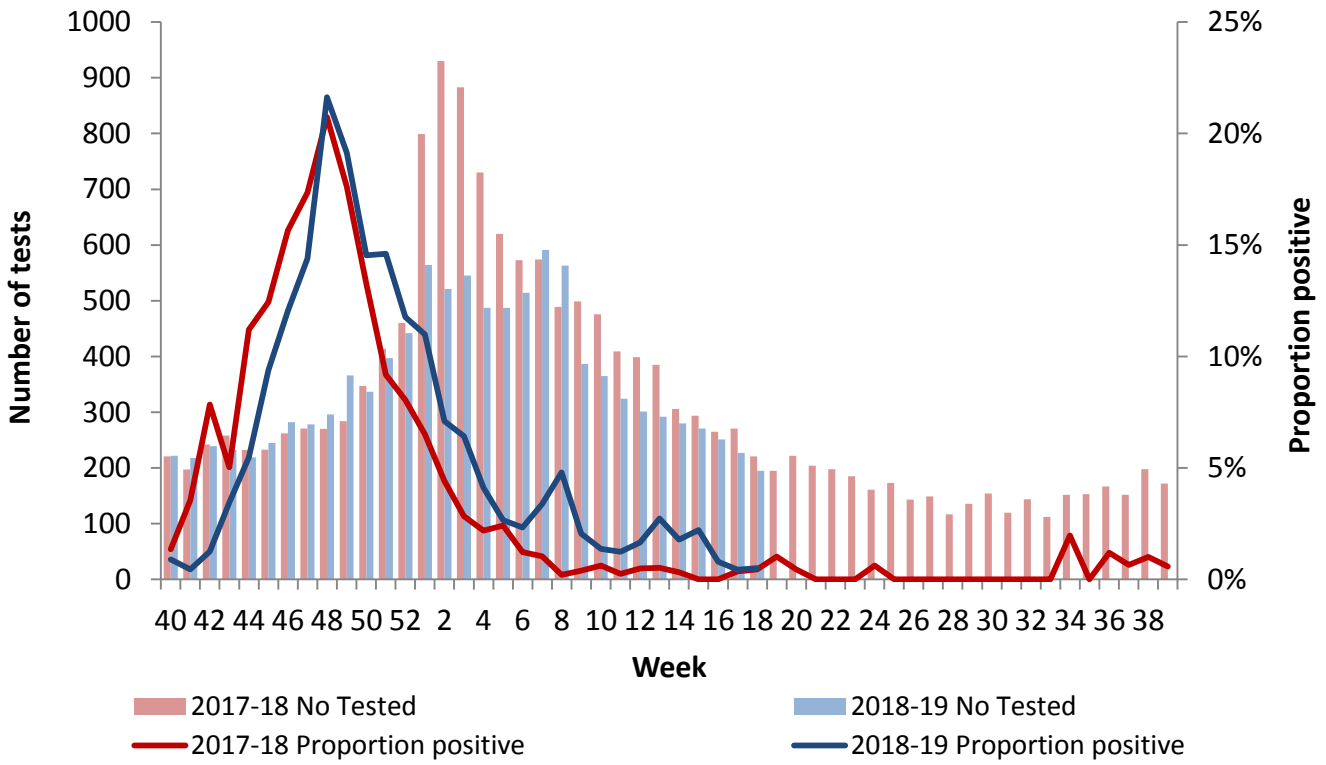
Comment

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 17 and 18, 2019 there were 406 specimens submitted for virological testing. There were 28 detections of influenza in total (7% positivity); 22 Flu A(H3) and six Flu A(untyped). There were four samples submitted through the GP based sentinel scheme across Northern Ireland but there were no positive detections of influenza (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

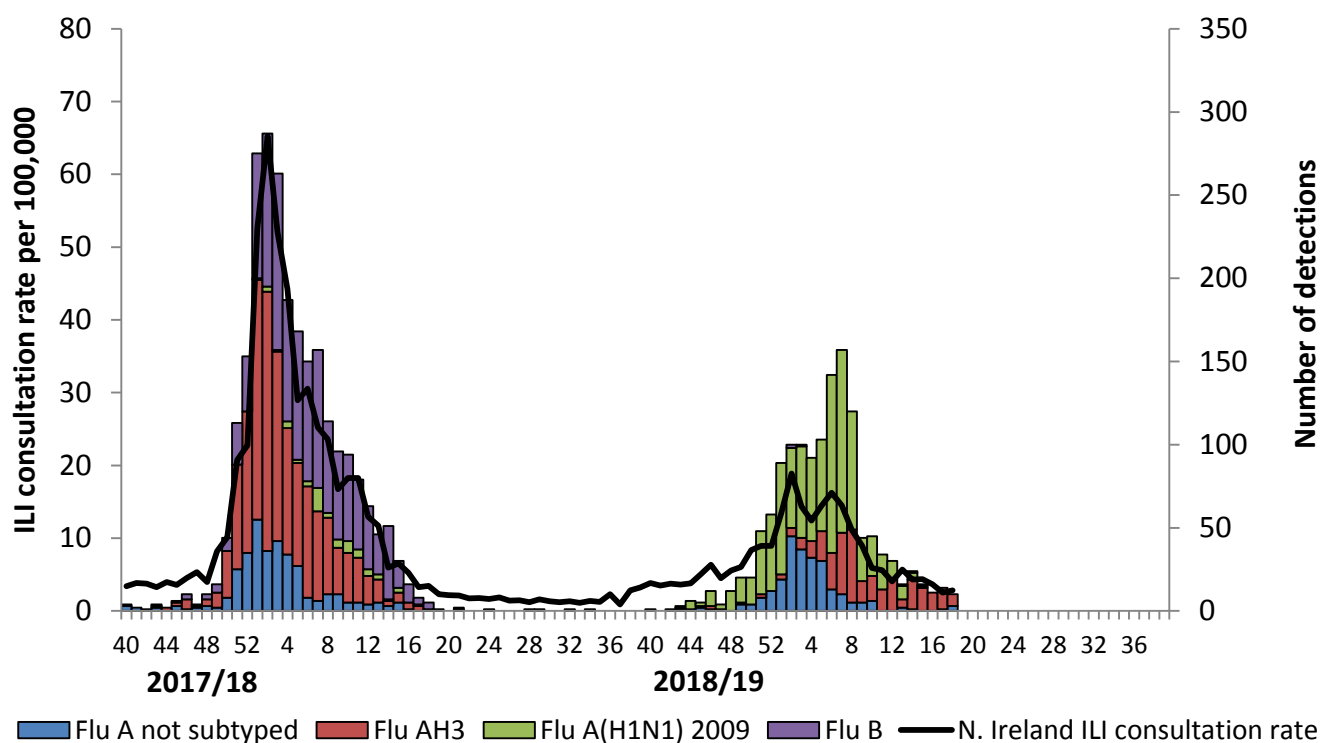


Comment

During weeks 17 and 18, 2019 there were two positive detections of RSV (1% positivity). To date there have been a total of 687 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

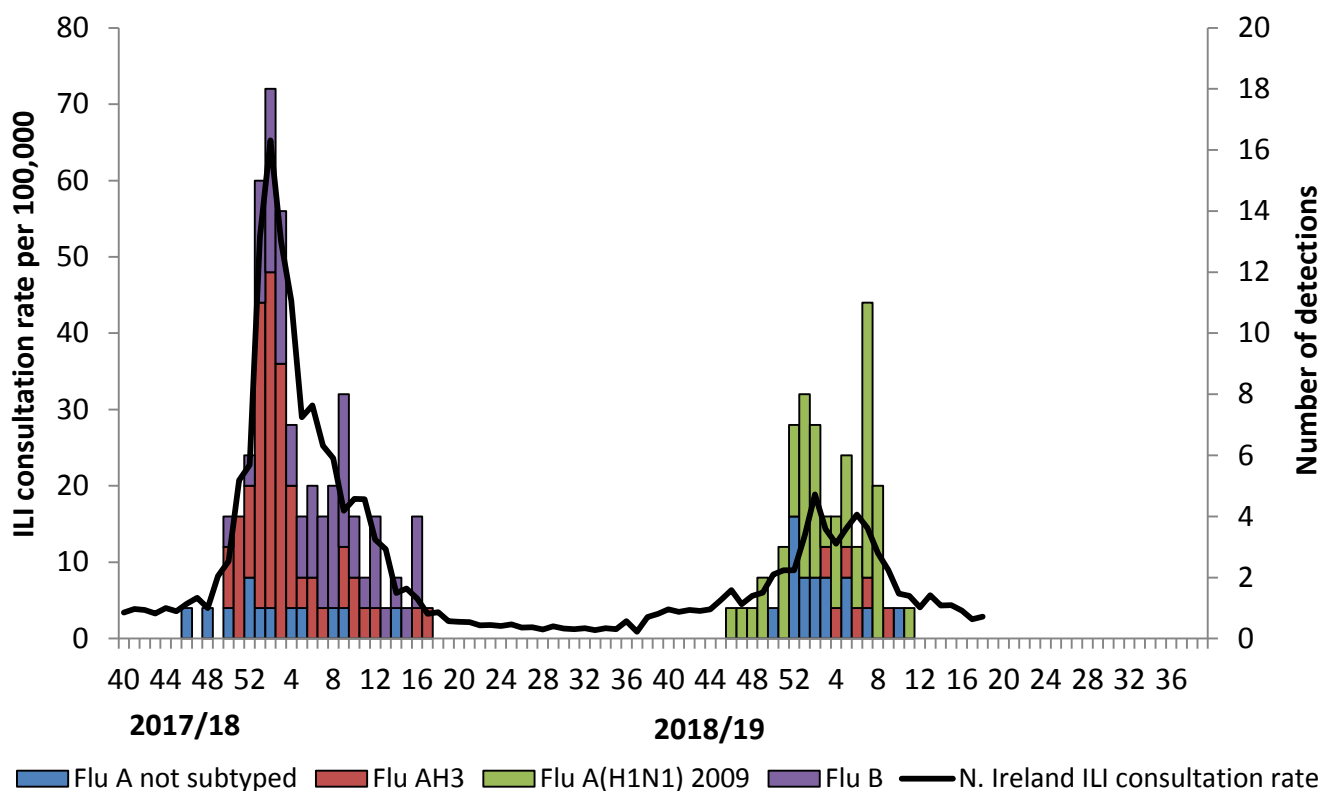


Comment

During weeks 17 and 18, 2019 there were 24 detections of influenza from specimens taken in hospital settings across Northern Ireland. There were 20 Flu A(H3) and four Flu A(untyped). It should be kept in mind that it is possible that not all positive specimens (for weeks 17 and 18) 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 17 and 18, 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 17 and 18. So far this season there have been seven deaths reported in ICU patients who had laboratory confirmed influenza. In comparison, up to week 18, 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.

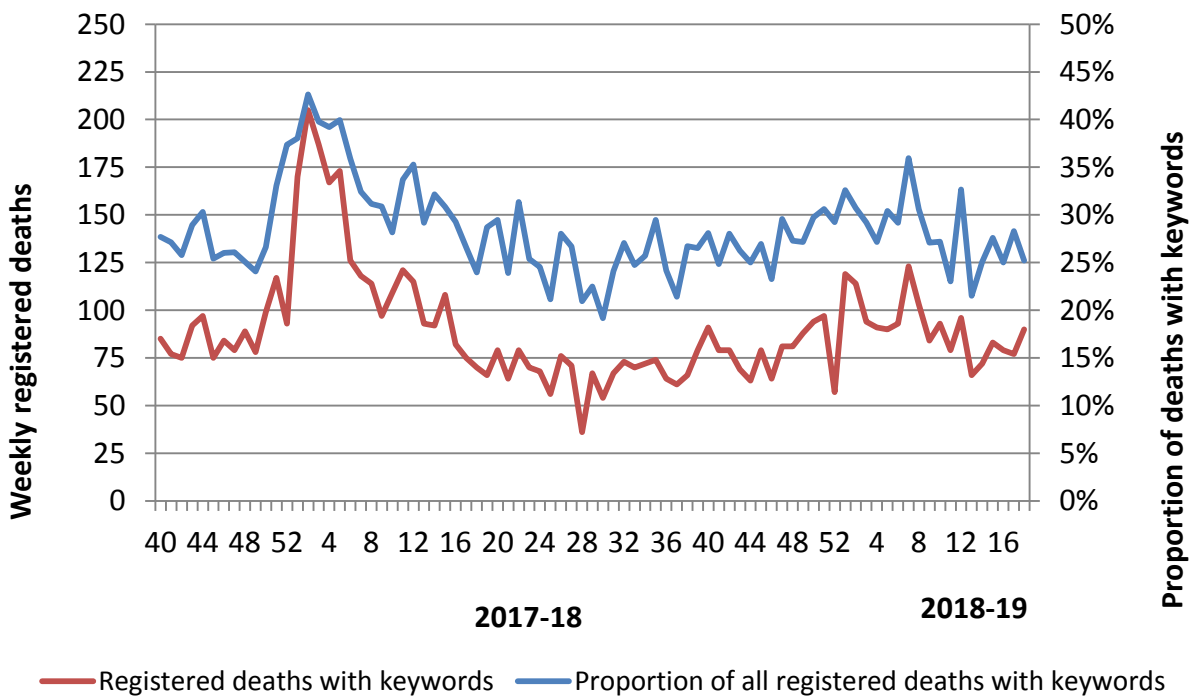
Outbreak Surveillance

During weeks 17 and 18, 2019 there was one respiratory outbreak reported to the PHA (Flu A(untyped)) in a care home setting. To date, there have been 15 respiratory outbreaks reported, 11 in a care home setting (seven Flu A(untyped), one Flu B and three RSV) and four 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 week 17 to week 18, 2019 (28% to 25%). In week 18, there were 357 registered deaths of which 90 related to specific respiratory infections. The proportion of deaths attributed to specific respiratory infections is slightly higher at this point in the season as the same period in 2017/18 (24%).

EuroMOMO

There was no excess all-cause mortality reported in Northern Ireland in week 17 or week 18, 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

The 2018-19 flu vaccination programme is now officially over. Figures in the table below outline end of season uptake for eligible groups.

	2018/19 (to Mar 31 st)	2017/18 (to Mar 31 st)
>65 years	70.0%	71.8%
<65 years at risk	52.4%	56.0%
Pregnant women	44.3%	47.1%
2 to 4 year olds	47.6%	50.6%
Primary School	75.9%	76.5%
Trust Frontline	35.4%	33.4%
Trust Frontline (excluding social workers and social care workers)	39.5%	-

International Summary

Week 17/2019 (22–28 April 2019)

- For week 17/2019, all countries reporting ILI or ARI thresholds reported activity at baseline levels, indicating that the influenza season may be coming to an end in Europe.
- Few countries reported influenza detections and the number of detections was low. Specimens collected from individuals presenting with ILI or ARI to sentinel primary health care sites yielded an influenza virus positivity rate of 16%, this rate was mainly driven by a high proportion of positives in one country.
- In a subset of specimens from patients with severe acute respiratory infection (SARI) collected in week 17/2019 that were tested for influenza viruses, 3.5% were positive and all viruses detected were type A.
- Pooled data from 20 Member States and areas reporting to the [EuroMOMO](#) project indicated that all-cause mortality remained at levels expected for this time of year.

2018/19 season overview

- Influenza activity in the European Region, based on sentinel sampling, reached a positivity rate of 10% in week 49/2018, exceeded 50% between weeks 3/2019 and 7/2019, peaked in week 5/2019, and in week 17/2019 is still above the 10% threshold.
- 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, 67% were A(H1N1)pdm09. Among influenza virus-infected patients admitted to other wards, 99% were infected with type A viruses, with 55% of those subtyped being A(H1N1)pdm09.
- Of the patient specimens from SARI surveillance that tested positive for an influenza virus, 99% were type A viruses, with 80% of those subtyped being A(H1N1)pdm09.

- A 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.
- The vast majority of circulating viruses in the European Region were susceptible to neuraminidase inhibitors supporting use of antiviral treatment according to national guidelines.

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

Worldwide (WHO)

29 April 2019 - based on data up to 14 April 2019

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

- In North America, influenza activity continued to decrease with influenza A(H3N2) the dominant virus, followed by influenza B.
- In Europe, influenza activity decreased across the continent. Both influenza A viruses co-circulated; influenza A(H3N2) was the most frequently identified subtype.
- In North Africa, influenza detections were low across reporting countries.
- In Western Asia, influenza activity appeared to decrease overall, with exception of Saudi Arabia where activity remained elevated.
- In East Asia, influenza activity was reported in some countries, with influenza B viruses most frequently detected, followed by influenza A(H3N2). A second wave of influenza activity was reported in the Republic of Korea.
- In Southern Asia, influenza activity was low overall.
- In the Caribbean, Central American countries, and the tropical countries of South America, influenza and RSV activity were low in general.

- In West and Middle Africa, influenza activity was low across reporting countries. Influenza activity continued to be reported from Eastern Africa although in decreasing trend with predominantly influenza A(H3N2) followed by B detections.
- In the temperate zones of the southern hemisphere, influenza detections increased in southern Australia and South Africa. The influenza activity in South America 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 124 countries, areas or territories reported data to FluNet for the time period from 01 April 2019 to 14 April 2019 (data as of 2019-04-26 03:51:00 UTC). The WHO GISRS laboratories tested more than 137187 specimens during that time period. A total of 20772 were positive for influenza viruses, of which 17422 (83.9%) were typed as influenza A and 3350 (16.1%) as influenza B. Of the sub-typed influenza A viruses, 1917 (32.8%) were influenza A(H1N1)pdm09 and 3922 (67.2%) were influenza A(H3N2). Of the characterized B viruses, 108 (8.3%) belonged to the B-Yamagata lineage and 1196 (91.7%) to the B-Victoria lineage.

- [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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