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Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 3 (14th January – 20th January 2019)

Summary

Surveillance data indicates that influenza is circulating in community and hospital settings across Northern Ireland. Indicators for primary care influenza activity is below normal seasonal activity. Indicators of flu in healthcare services show hospitalisations and ICU admissions starting to fall compared to the previous week. Influenza A(H1N1)pdm09 is the dominant circulating type.

Northern Ireland Primary Care Consultation Rates

- GP rates for flu and flu-like illness (flu/FLI) during week 3, 2019 was 14.4 per 100,000 population, a decrease from week 2 (18.9 per 100,000). Rates have fallen below the baseline threshold for flu activity[1].
- OOH GP flu/FLI rates increased between week 3 and week 2 (8.2 to 8.8 per 100,000 population, respectively).

Microbiological Surveillance (Flu and RSV)

- During week 3 there were 496 specimens submitted for virological testing, of which 124 tested positive for influenza (25% positivity).
- There were 39 detections of Flu A(H1N1)pdm09, 74 Flu A(untyped) and 10 Flu A(H3). There was one detection of Flu B.
- There were 35 positive RSV detections in week 3 (7% positivity).

Secondary Care (Hospital both non-ICU and ICU)

- During week 3, there were 91 non-ICU hospital admissions with laboratory confirmed influenza (56 Flu A(untyped), 28 Flu A(H1N1)pdm09, six Flu A(H3) and one Flu B)
- During week 3, there were four ICU admissions with laboratory confirmed influenza (one Flu A(H3) and three Flu A(untyped)). To date, there have been 35 ICU admissions with confirmed influenza and three deaths reported in ICU patients who had laboratory confirmed influenza.

Respiratory Outbreaks across Northern Ireland

- During week 3 there were two confirmed outbreaks reported to the PHA (one Flu B and one RSV). To date, there have been four confirmed respiratory outbreaks reported (one Flu A, one Flu B and two RSV).

Mortality

- The proportion of deaths related to respiratory keywords (bronchiolitis, bronchitis, influenza and pneumonia) decreased in week 3 from week 2 (31% to 29%).

Influenza Vaccine Uptake

	2018/19 (to Dec 31st)	2017/18 (to Dec 31st)
>65 years	64.1%	68.5%
<65 years at risk	47.9%	50.4%
Pregnant women	46.5%	45.6%
2 to 4 year olds	45.7%	46.8%
Primary School	75.5%	75.8%
Trust Frontline	34.3%	31.7%
Trust Frontline (excluding social workers and social care workers)	38.1%	-

[1] The baseline threshold for Northern Ireland is called the Moving Epidemic Method (MEM) threshold and 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

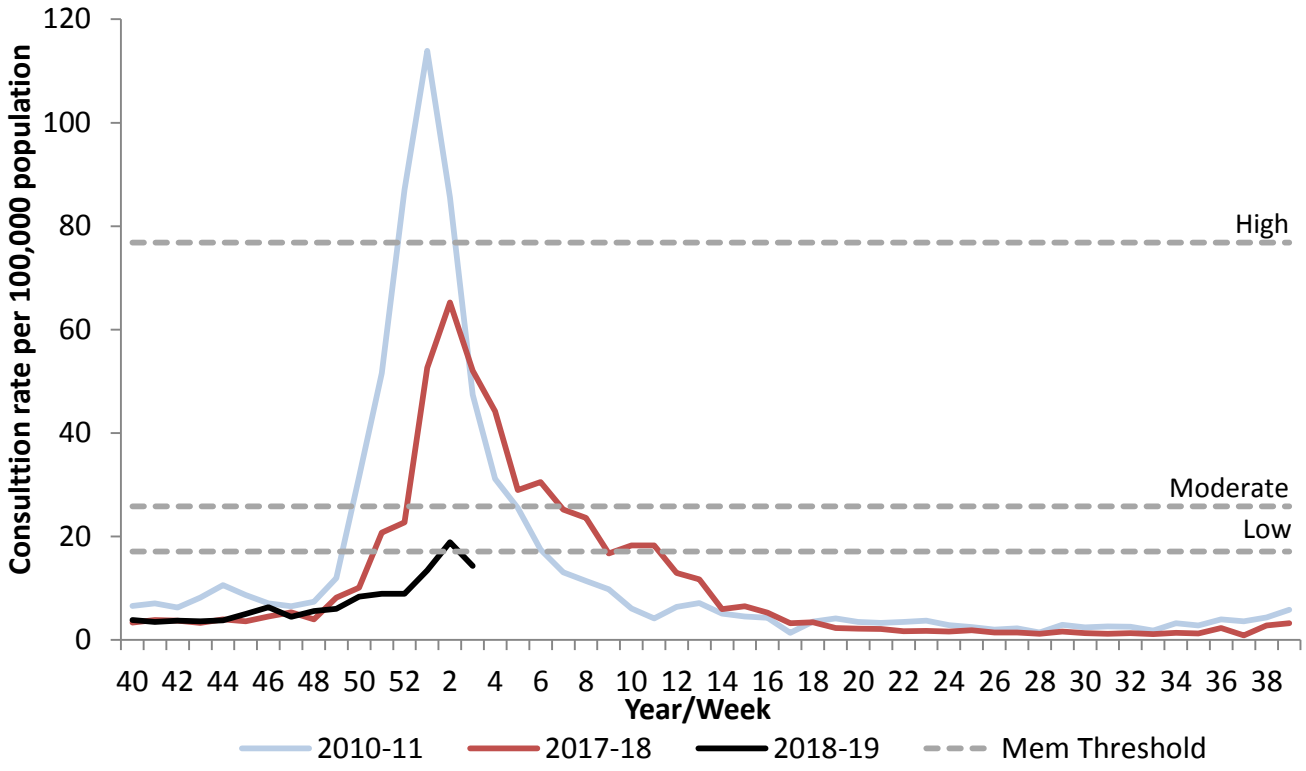
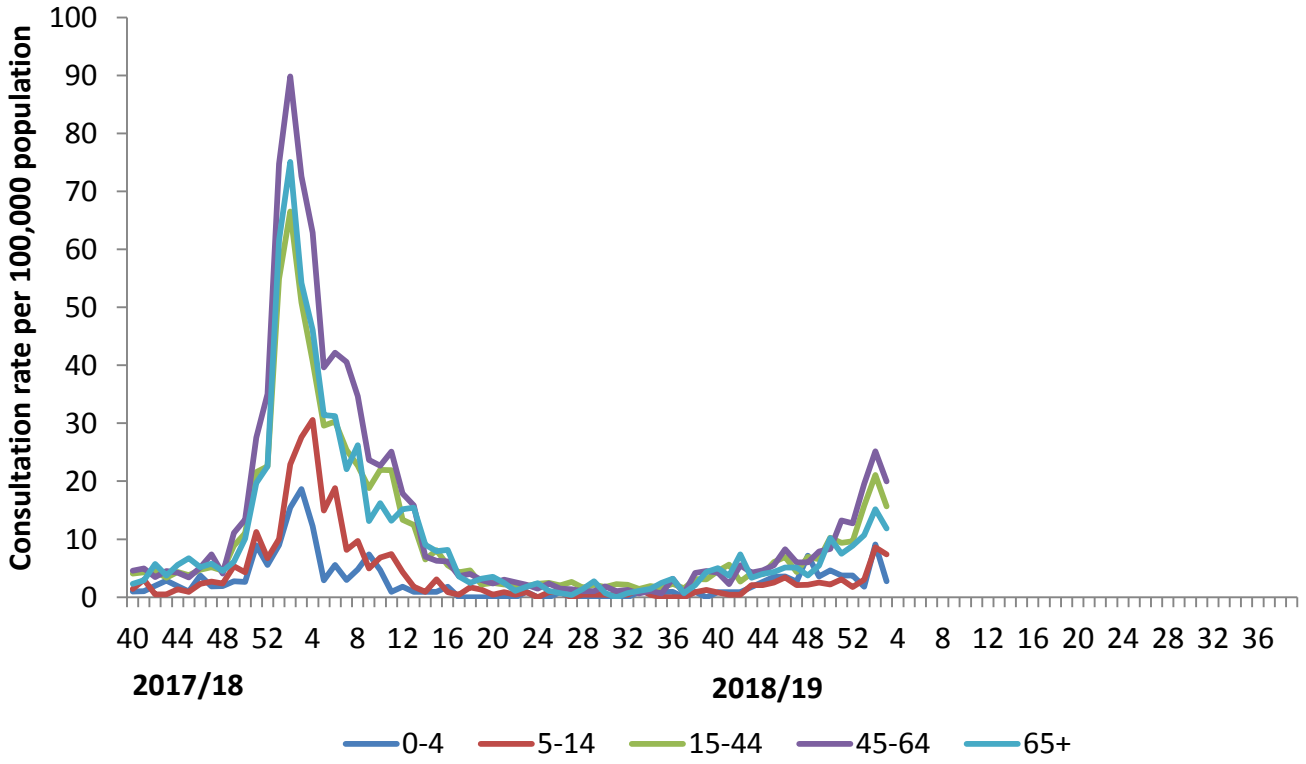


Figure 2. Northern Ireland GP age-specific consultation rates for flu/FLI from week 40, 2017



Comment

The NI GP consultation rates for flu and flu-like illness (flu/FLI) during week 3, 2019 was 14.4 per 100,000 population, a decrease from week 2, 2019 (18.9 per 100,000). Activity has now fallen below the baseline MEM threshold for Northern Ireland (<17.1 per 100,000) (Figure 1).

The consultation rates decreased in week 3 compared to week 2 in all age groups. The flu/FLI consultation rate was highest in those aged 45-64 years (20.0 per 100,000) (Figure 2).

Out-of-Hours (OOH) Centres Call Data

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

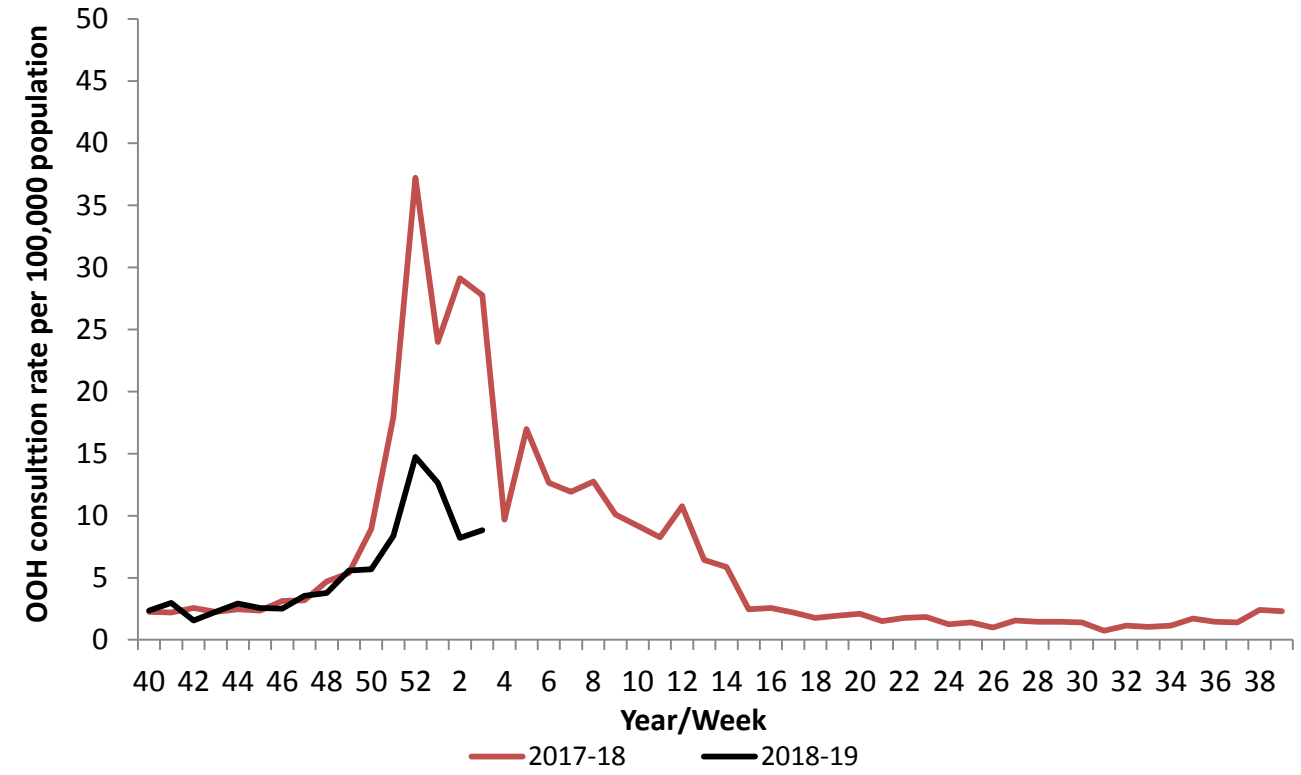
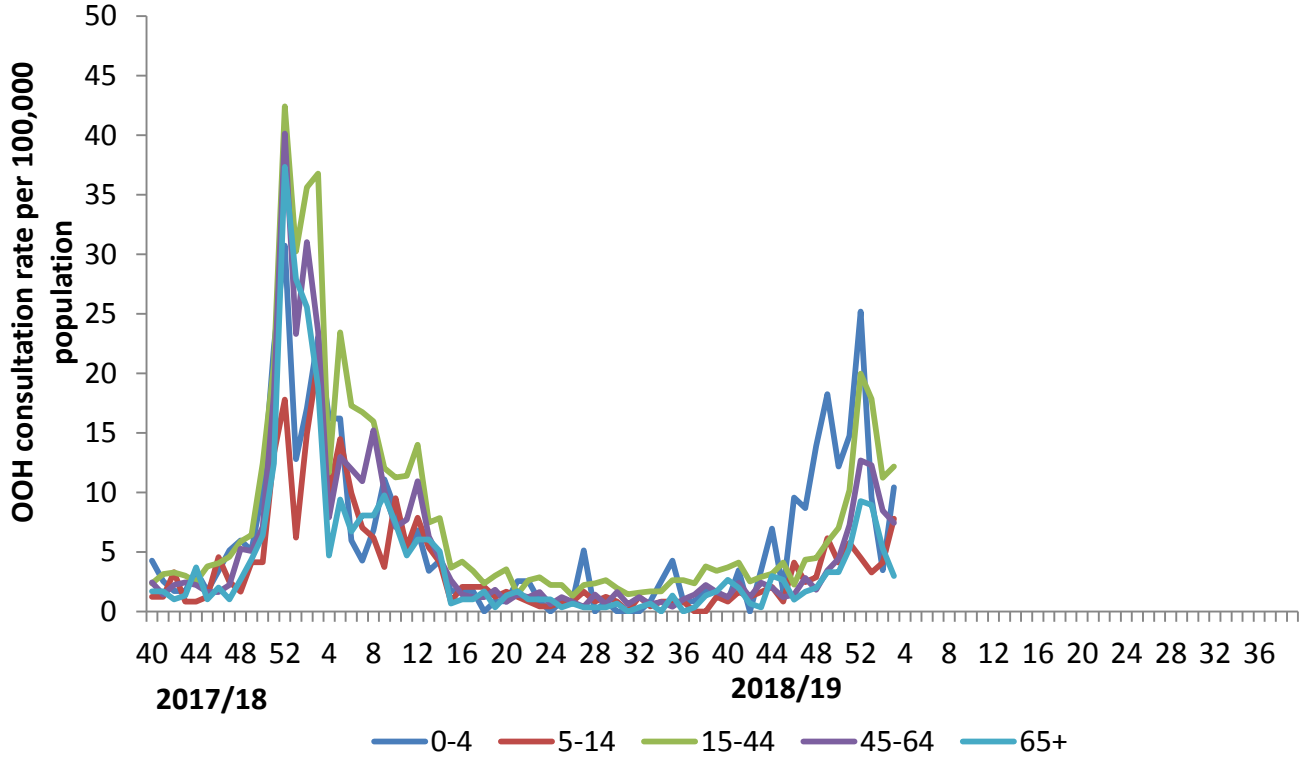


Figure 4. OOH call rates of flu/FLI by age-group from week 40, 2017



Comment

The OOH flu/FLI consultation rate during week 3, 2019 was 8.8 per 100,000 population, (Figure 3). The rate in week 3 is substantially lower than the same week in 2017/18 (8.8 compared to 27.8 per 100,000). The proportion of calls related to flu/FLI in OOH centres increased slightly from 1.5% in week 2 to 1.6% in week 3.

Consultation rates increased in week 3 compared to week 2 in those aged 0-4 years (3.5 to 10.4 per 100,000), 5-14 years (4.1 to 7.8 per 100,000) and 15-44 years (11.2 to 12.2), but decreased in those aged 45-64 years (8.5 to 7.4 per 100,000) and 65 years and over (5.3 to 3.0 per 100,000). The OOH flu/FLI consultation rate was highest in those aged 15-44 years in week 3 (12.2 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

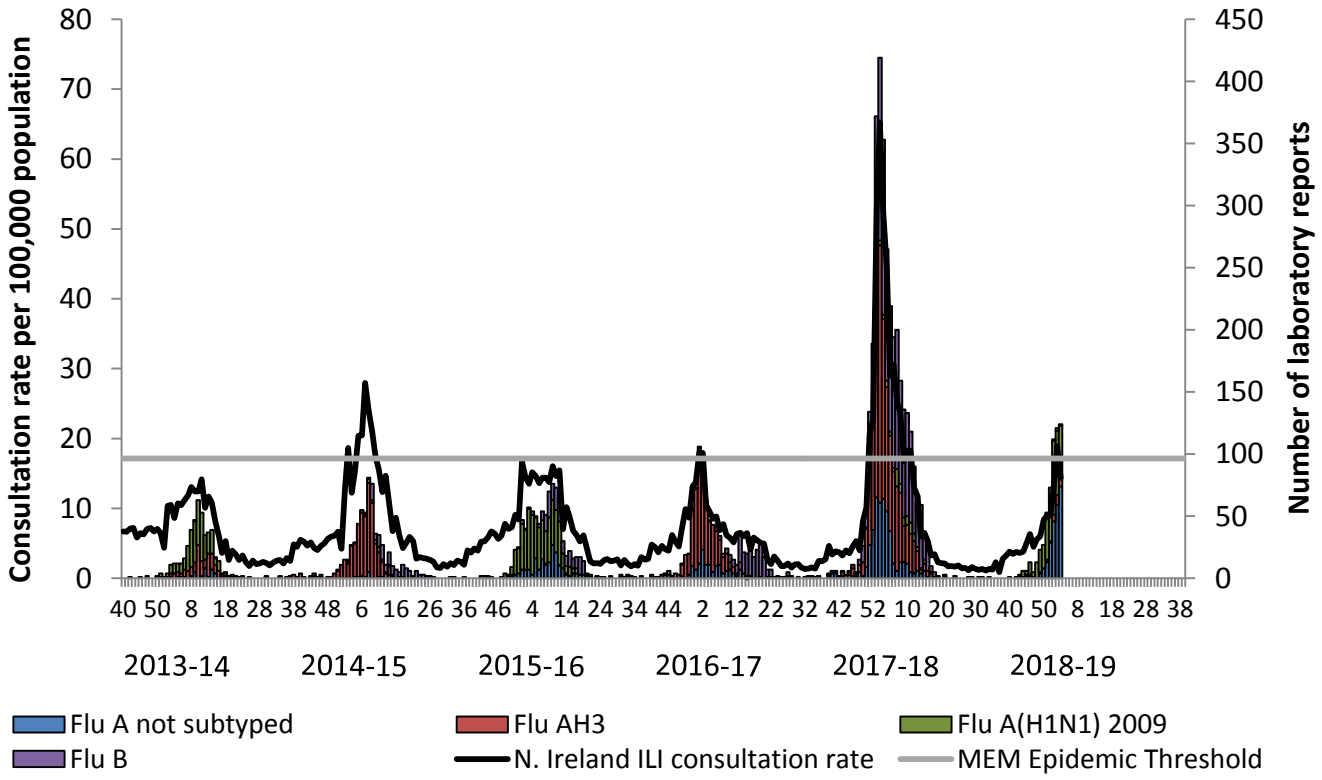


Figure 6. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2017

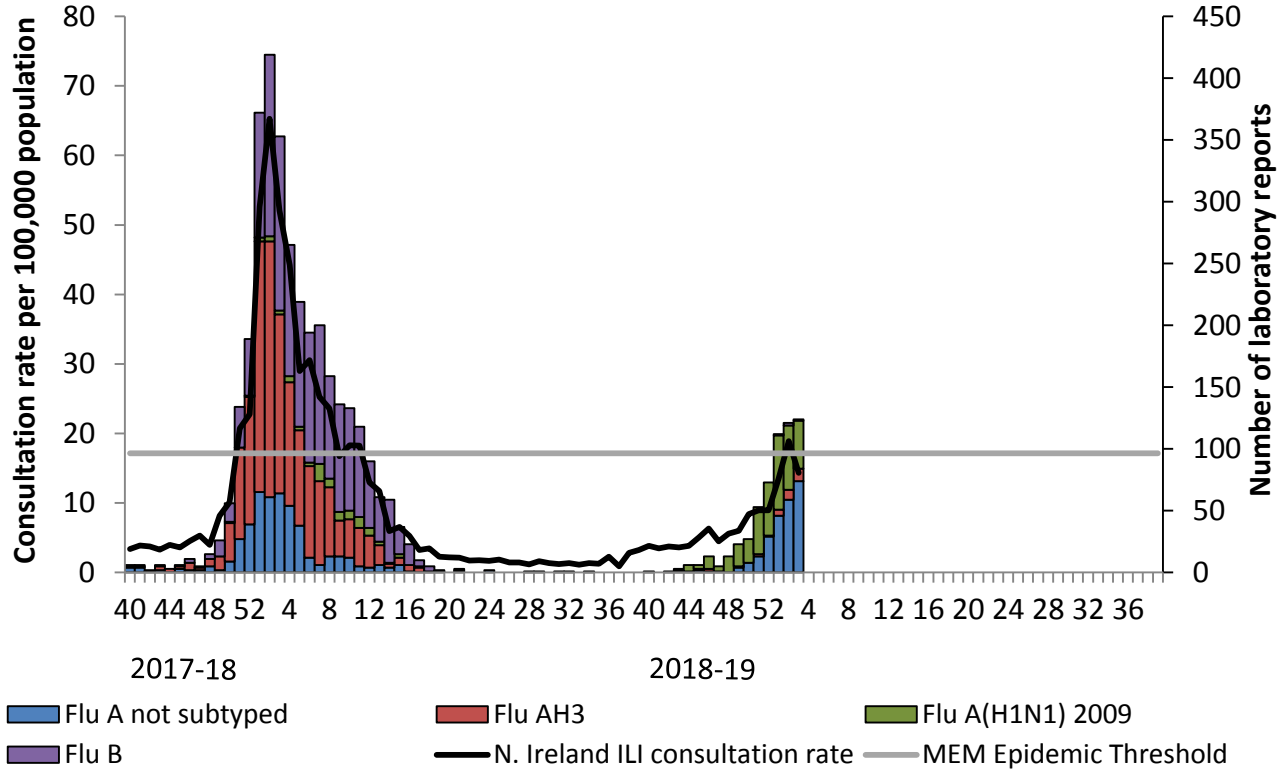


Table 1. Virus activity in Northern Ireland by source, Week 3, 2018-19								
Source	**Specimens tested**	**Flu AH3**	**Flu A(H1N1) 2009**	**A (Untyped)**	**Flu B**	**RSV**	**Total influenza Positive**	**% Influenza Positive**
Sentinel	19	0	4	6	0	2	10	53%
Non-sentinel	477	10	35	68	1	33	114	24%
Total	**496**	**10**	**39**	**74**	**1**	**35**	**124**	**25%**

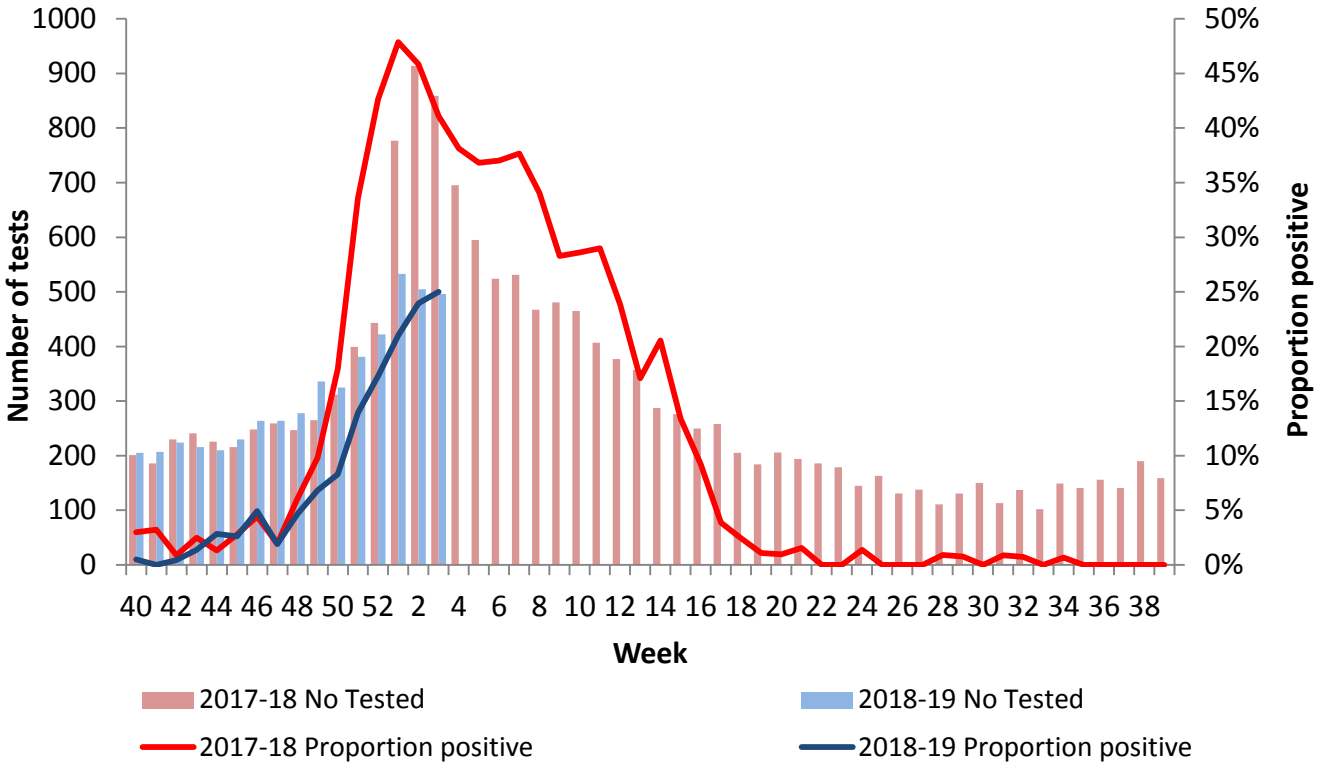
Table 2. Cumulative virus activity from all sources by age group, Week 40 - 3, 2018-19						
Age Group	**Flu AH3**	**Flu A(H1N1) 2009**	**A (Untyped)**	**Flu B**	**Total Influenza**	**RSV**
0-4	0	47	14	0	61	305
5-14	2	10	11	0	23	12
15-64	17	195	145	3	360	102
65+	12	53	70	2	137	130
Unknown	0	0	0	0	0	0
All ages	**31**	**305**	**240**	**5**	**581**	**549**

Table 3. Cumulative virus activity by age group and source, Week 40 - Week 3, 2018-19												
	Sentinel						**Non-sentinel**					
Age Group	**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	0	47	14	0	61	305
5-14	0	1	1	0	2	0	2	9	10	0	21	12
15-64	3	13	11	0	27	10	14	182	134	3	333	92
65+	0	1	0	1	2	0	12	52	70	1	135	130
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
All ages	**3**	**15**	**12**	**1**	**31**	**10**	**28**	**290**	**228**	**4**	**550**	**539**

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.

Figure 7. Number of samples tested for influenza and proportion positive, 2017/18 and 2018/19, all sources



Comment

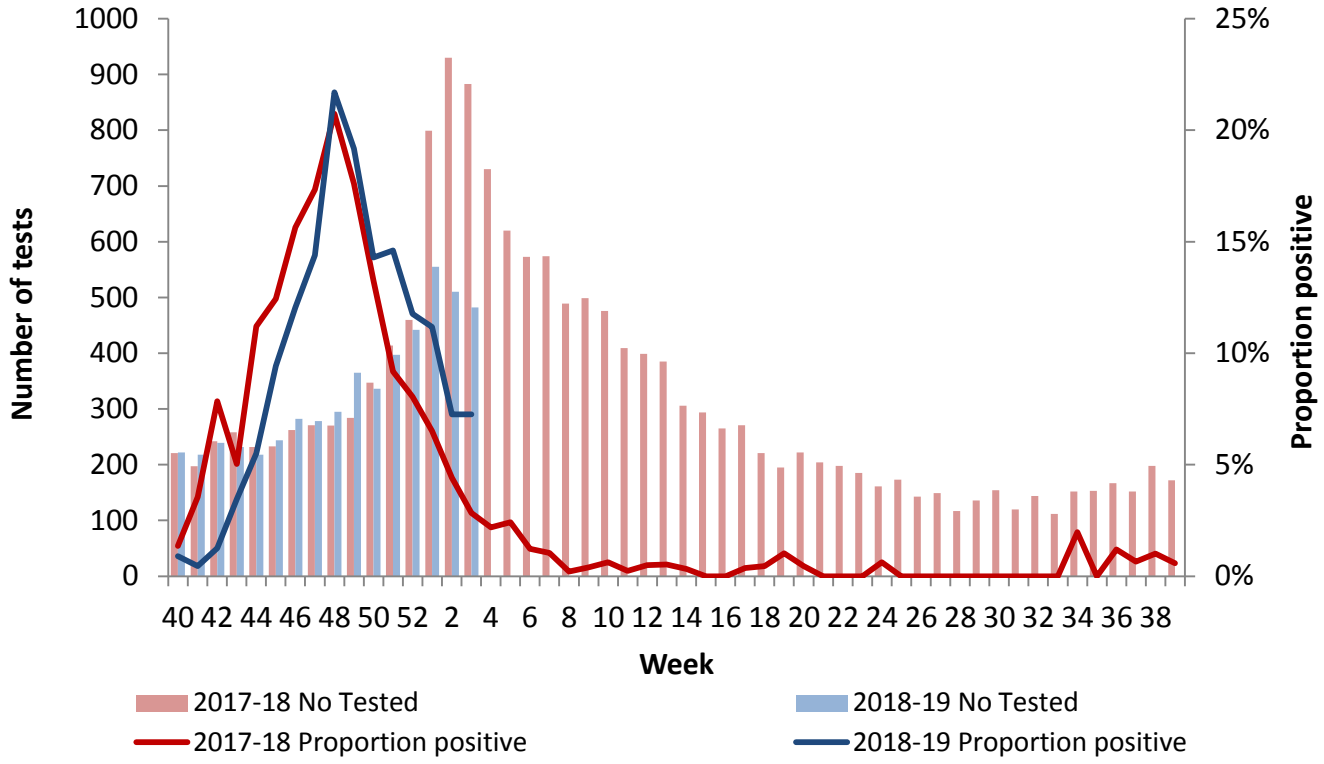
Additional virology testing has been undertaken at a local laboratory since week 2, 2018 and at another since week 2, 2019. This bulletin includes this data along with the data from the Regional Virology Laboratory. Other local laboratories may begin undertaking influenza testing and this data will be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

In week 3, 2019, 496 specimens were submitted for virological testing from sentinel and non-sentinel sources. There were 124 detections of influenza (25% positivity) - 39 Flu A(H1N1)pdm09, 10 Flu A(H3), 74 Flu A(untyped) and one Flu B. (Tables 1, 2 & 3; Figures 5, 6 & 7).

In week 3, 2019, 19/496 specimens were submitted from the GP sentinel flu-swabber scheme. There were 10 detections of influenza (53% positivity) - four Flu A(H1N1) pdm09) and six Flu A(untyped). (Tables 1 & 3).

Respiratory Syncytial Virus (RSV)

Figure 8. Number of samples tested for RSV and proportion positive, 2017/18 and 2018/19, all sources



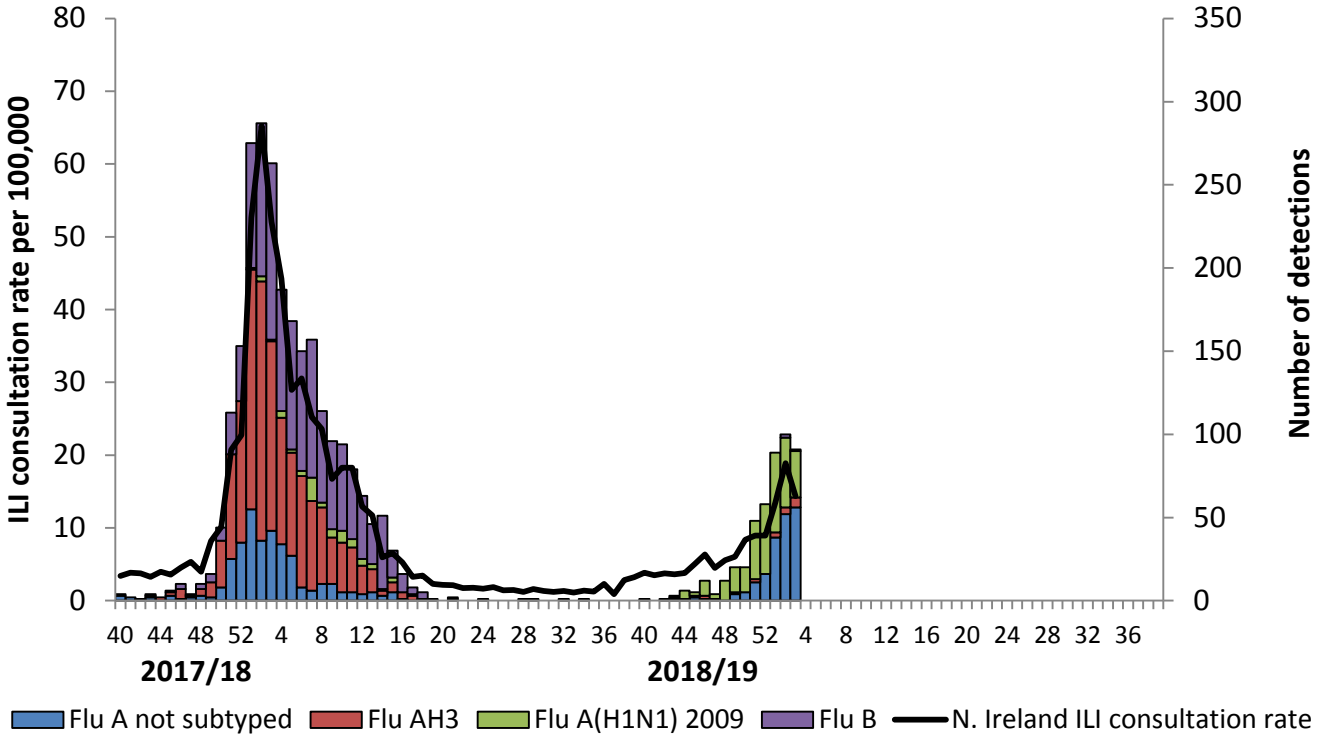
Comment

In week 3, 2019 there were 35 positive detections of RSV (7% positivity). This is a further reduction compared to week 2. Whilst on the downward trajectory, RSV activity remains higher since week 51, 2018 than the same time last season.

This season there have been 549 detections of RSV, with just over half (56%) in those aged 0-4 years and a further 24% in those over 65 years of age (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



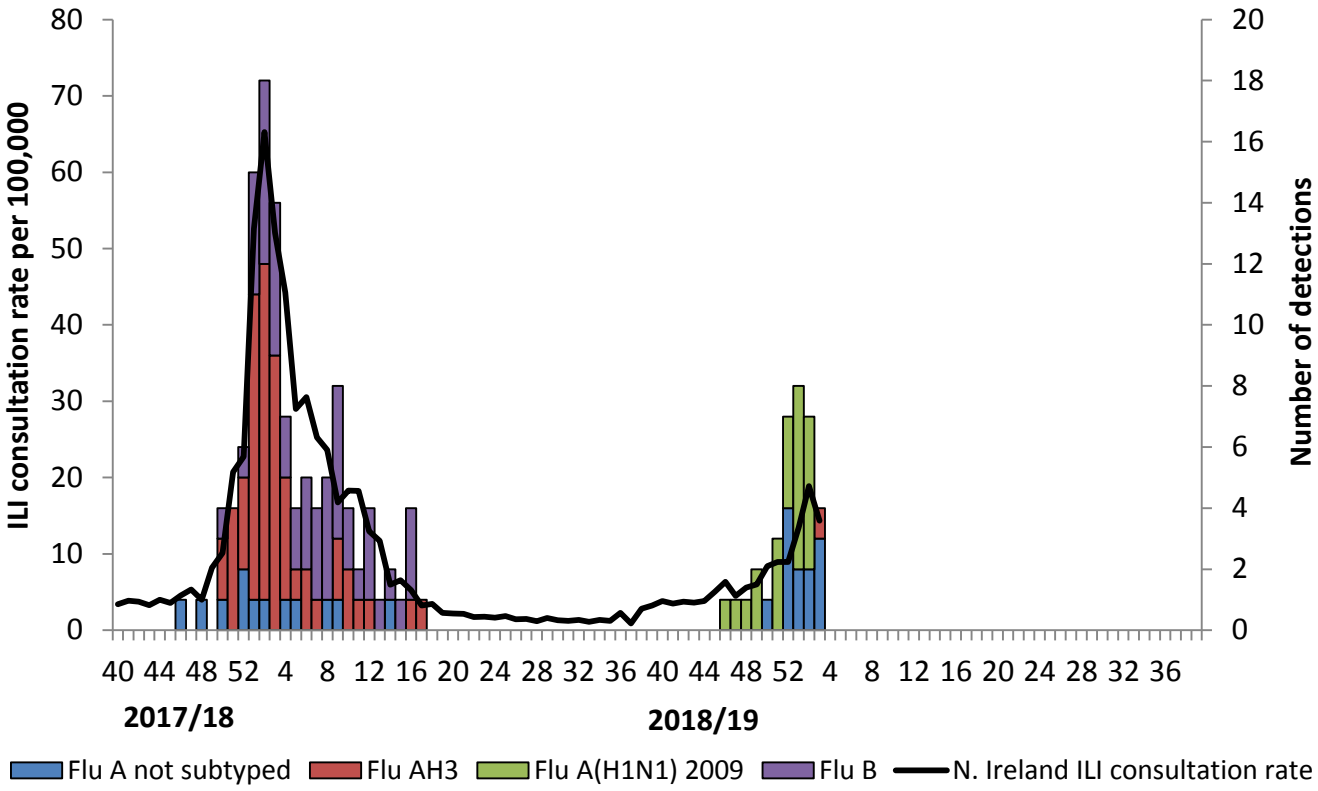
Comment

In week 3, 2019 there were 91 hospital non-ICU admissions with influenza detected across Northern Ireland. There were 28 Flu A(H1N1)pdm09, 56 Flu A(untyped), six Flu A(H3) and one Flu B. This is a reduction compared to week 2 (100 cases) (Figure 9).

It should be kept in mind that it is possible that not all positive specimens (for week 3) 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

In week 3, 2019 there were four new admissions to ICU with confirmed influenza; one Flu A(H3) and three Flu A(untyped), and no deaths in ICU admissions with confirmed influenza.

This season, there have been 35 admissions and three deaths in ICU with confirmed influenza. Compared to last season (2017/18), admissions and deaths are lower/higher, respectively (add number).

Of the 35 admissions to ICU, 40% (n=14) were female. The ages ranged from <1 year to 78 years, with a median age of 54 years and a mean age of 50 years. 49% (n=17) were classed as being in a vaccine risk group, of which 35% (n=6) were vaccinated this season. All three deaths were classed as being in a vaccine risk group, with one having been vaccinated this season. The deaths occurred in patients aged 45 years and over.

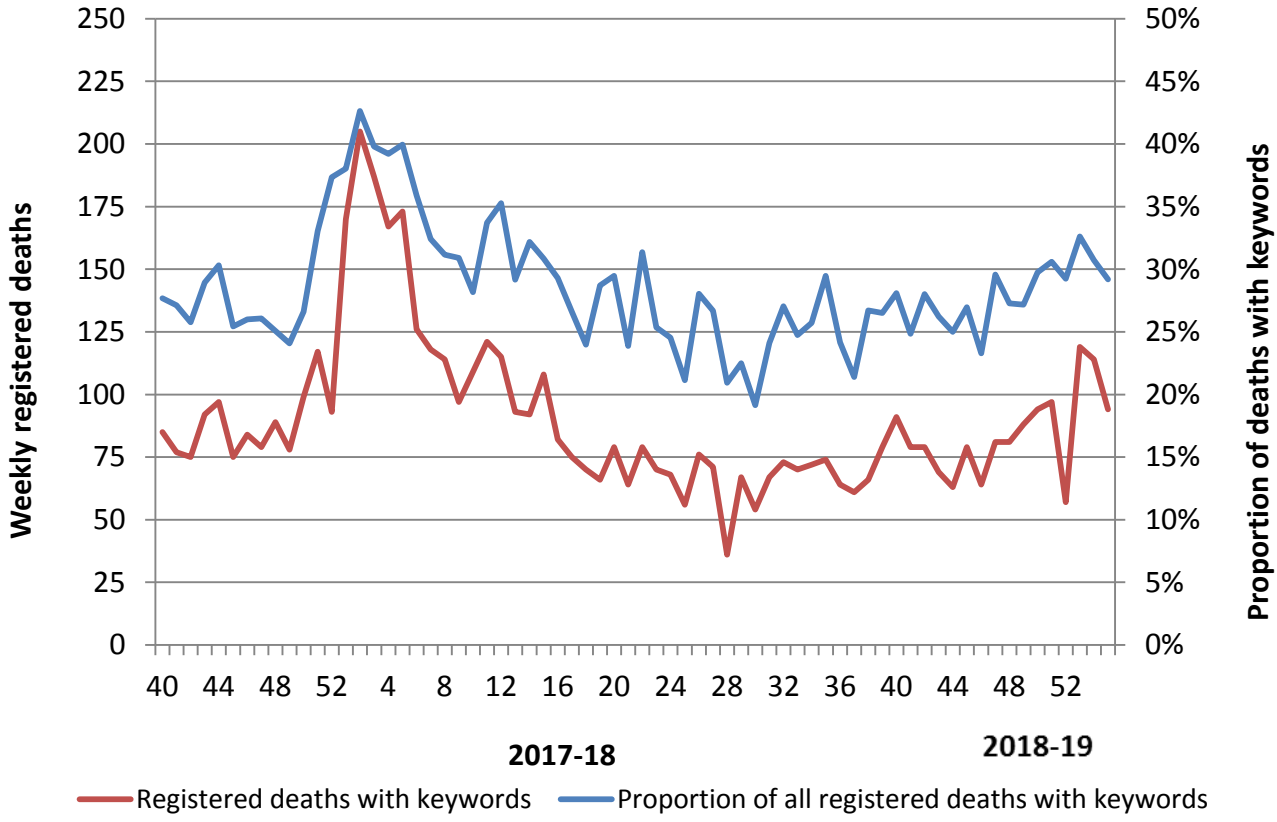
Outbreak Surveillance

During week 3, 2019 there were two confirmed respiratory outbreaks reported to the PHA (one Flu B and one RSV). To date, there have been four confirmed respiratory outbreaks reported (one Flu A, one Flu B and two RSV).

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 31% in week 2, 2019 to 29% in week 2. There were 322 registered deaths of which 94 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 (40%).

EuroMOMO

Up to week 3, 2019 there was no excess all-cause mortality reported in Northern Ireland.
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 Dec 31st)	**2017/18 (to Dec 31st)**
>65 years	64.1%	68.5%
<65 years at risk	47.9%	50.4%
Pregnant women	46.5%	45.6%
2 to 4 year olds	45.7%	46.8%
Primary School	75.5%	75.8%
Trust Frontline	34.3%	31.7%
Trust Frontline (excluding social workers and social care workers)	38.1%	-

International Summary

Europe

Week 2, 2019 (7–13 January 2019) and 2018/19 season overview

- Influenza activity continues to increase in the European Region. Samples collected from individuals presenting with ILI or ARI to sentinel primary health care sites yielded an influenza-positivity rate of 42.2%.
- Influenza type A virus detections dominate with A(H1N1)pdm09 viruses being slightly more prevalent than A(H3N2). Very few influenza B viruses were detected.
- The influenza A(H1N1)pdm09 viruses that have been characterized are antigenically similar to the 2018–2019 northern hemisphere influenza vaccine virus. Fewer influenza A(H3N2) viruses have been antigenically characterized.
- Data from the 23 Member States and areas reporting to the EuroMOMO project indicate that all-cause mortality was at expected levels for this time of year, but with a few countries starting to observe some excess mortality in elderly populations.

http://www.flunewseurope.org/

Worldwide (WHO)

Data to end of week 1, 2019 (06 January 2019) (reported 21 January 2019)

- In North America influenza activity remains elevated overall with influenza A(H1N1)pdm09 predominating.
- In North Africa, influenza A(H3N2) detections continued to be reported in Egypt.
- In Western Asia, influenza activity continues to increase in some countries and appeared to decrease across countries of the Arabian Peninsula.
- In Eastern Asia, influenza activity continues to increase, with influenza A(H1N1)pdm09 most frequently detected.
- In Southern Asia, influenza detections remain elevated overall. Influenza activity continues 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 returned to inter-seasonal levels with exception of some parts in Australia.

- Worldwide, seasonal influenza A viruses accounted for the majority of detections.

Flunet (reported 18th January 2019)

FluNet is a global web-based tool for flu virological surveillance. National Influenza Centres (NICs) of the WHO Global Influenza Surveillance and Response System (GISRS) and other national influenza reference laboratories that collaborate with GISRS from 104 countries, areas or territories provide data to FluNet.

During 24 December 2018 to 06 January 2019:

- 191,778 specimens were tested and 39,161 were positive for influenza viruses (20.4%)
- 38,493 (98.3%) were typed as influenza A and 668 (1.7%) as influenza B
- Of the sub-typed influenza A viruses, 13,313 (79.4%) were influenza A(H1N1)pdm09 and 3446 (20.6%) influenza A(H3N2)
- Of the characterized B viruses, 45 (38.1%) belonged to the B-Yamagata lineage and 73 (61.9%) 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:

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