

Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 8 (19th February – 25th February 2018)

Summary

In week 8, the surveillance data indicates low seasonal flu activity. GP consultation rates decreased, while OOH rates slightly increased in week 8 (week commencing 19th February 2018).

Northern Ireland Primary Care Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) decreased from 25.2 per 100,000 population in week 7, 2018 to 23.6 per 100,000 in week 8.
- Rates remain within the Moving Epidemic Method (MEM) threshold for low level flu activity¹.
- OOH GP consultation rates for flu/FLI increased slightly in week 8, 2018 from 11.9 per 100,000 population in week 7 to 12.8 per 100,000.

Microbiological Surveillance (Flu and RSV)

- The proportion of all positive influenza specimens decreased from 38% in week 7, 2018 to 35% in week 8.
- One positive detection of RSV was detected giving a lower positivity rate than the same period in 2016/17 (1%).

Secondary Care (Hospital both non-ICU and ICU)

- The number of detections of influenza from hospital wards reported to PHA decreased from a total of 165 detections in week 7, 2018 to 109 in week 8.
- There were six cases reported in ICU with laboratory confirmed influenza in week 8 giving a total of 90 cases this season to date.
- No deaths were reported in week 8 among ICU patients. The total deaths in ICU with confirmed influenza to date are 16.

Influenza Outbreaks across Northern Ireland

- There was one influenza outbreak reported to the PHA in week 8, 2018. The total confirmed Influenza outbreaks to date are 36.

Mortality

- The proportion of deaths related to respiratory keywords (bronchiolitis, bronchitis, influenza and pneumonia) decreased from 32% in week 7, 2018 to 31% in week 8.

¹ The baseline MEM threshold for Northern Ireland is 22.58 per 100,000 population this year (2017/18). Low activity is 22.6 to <26.6, moderate activity 26.6 to <85.1, high activity 85.1 to <142.4 and very high activity is >142.4.

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 2017/18 season commenced on 2nd October 2017.

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 in 2017-18. Data will now be collected from 325 GP practices, representing 98% of the Northern Ireland (NI) population. This represents a change from previous seasons 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 in 2017-18 will be generally lower than in previous years. Please take this into account when interpreting the figures in this season's bulletin.

Northern Ireland GP Consultation Data

Figure 1. Northern Ireland GP consultation rates for flu/FLI 2015/16 - 2017/18

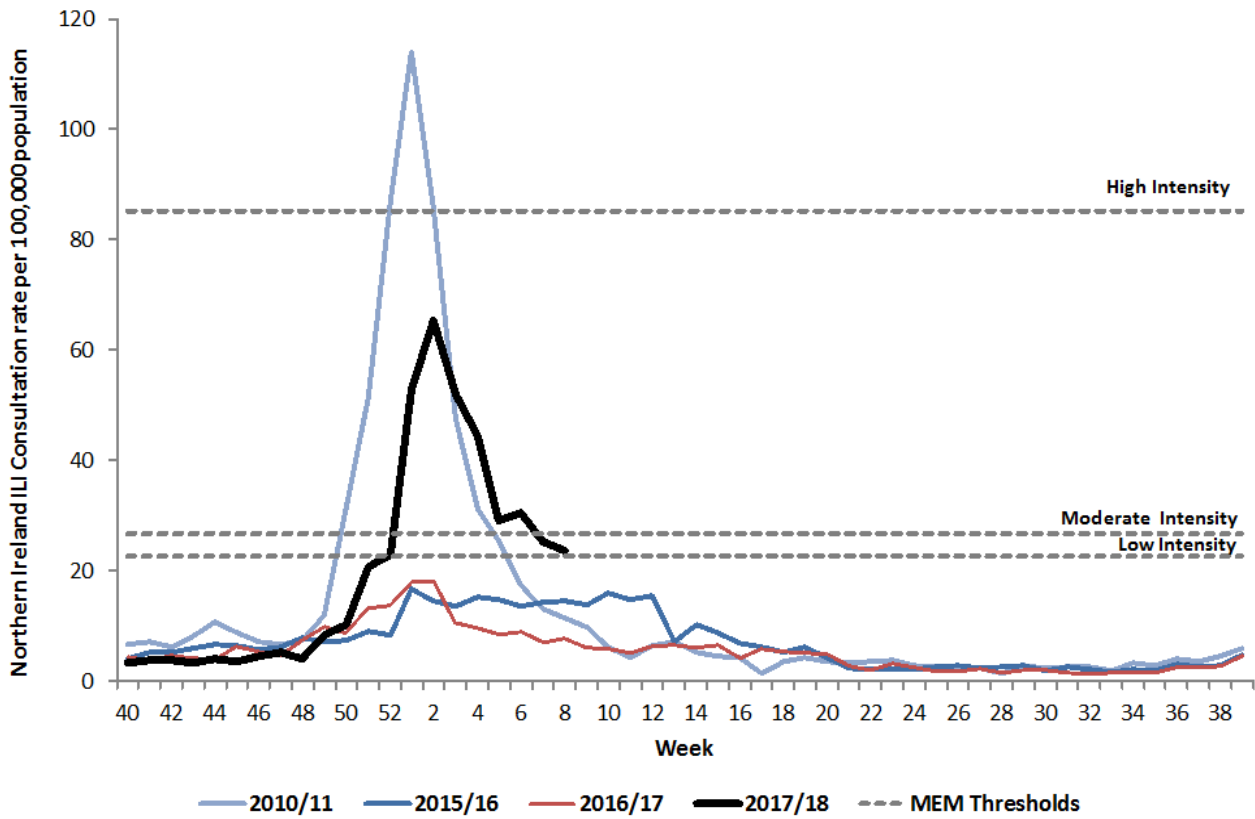


Figure 2. Northern Ireland GP consultation rates for flu/FLI and number of influenza positive detections 2012/13 – 2017/18

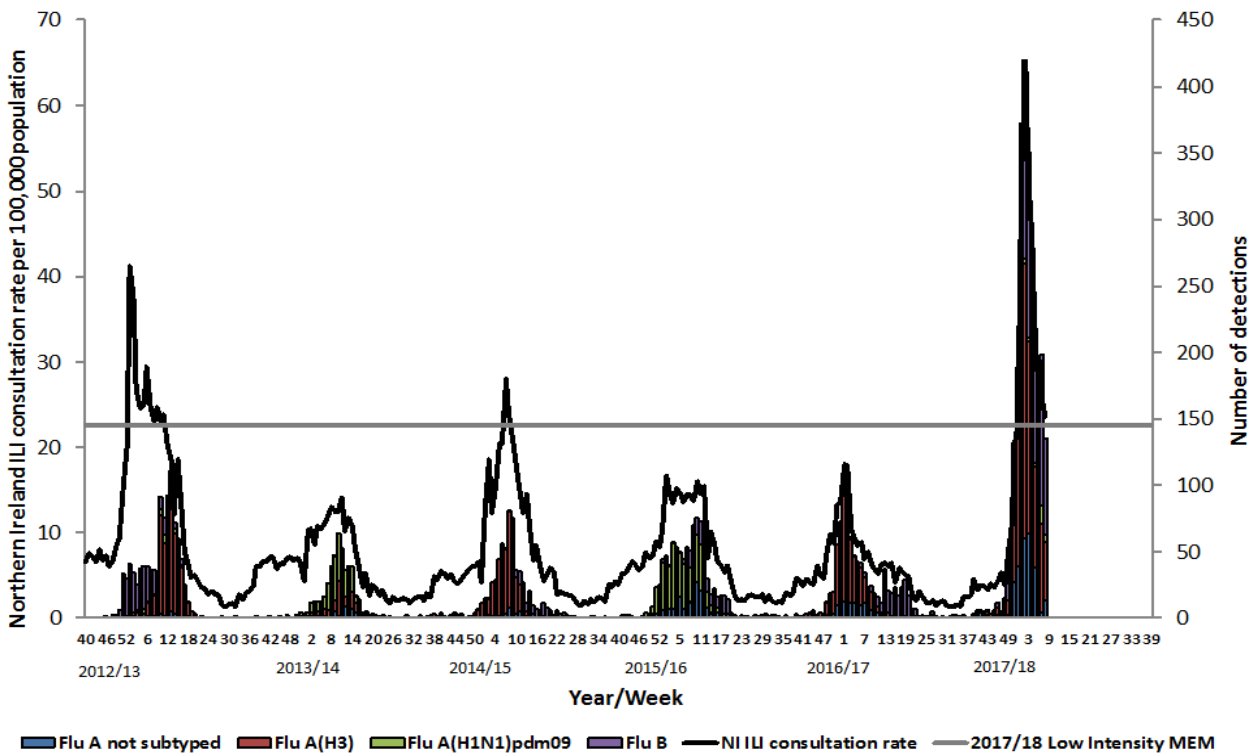
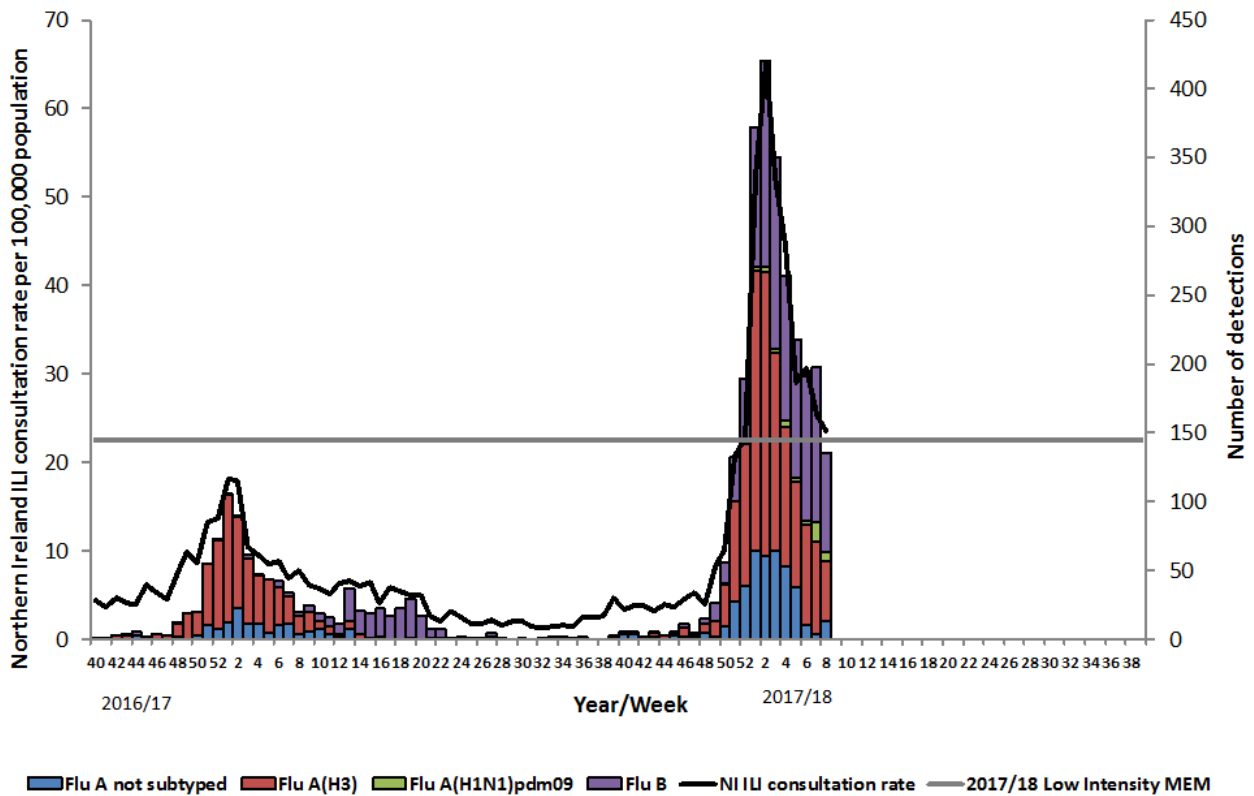


Figure 3. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2016



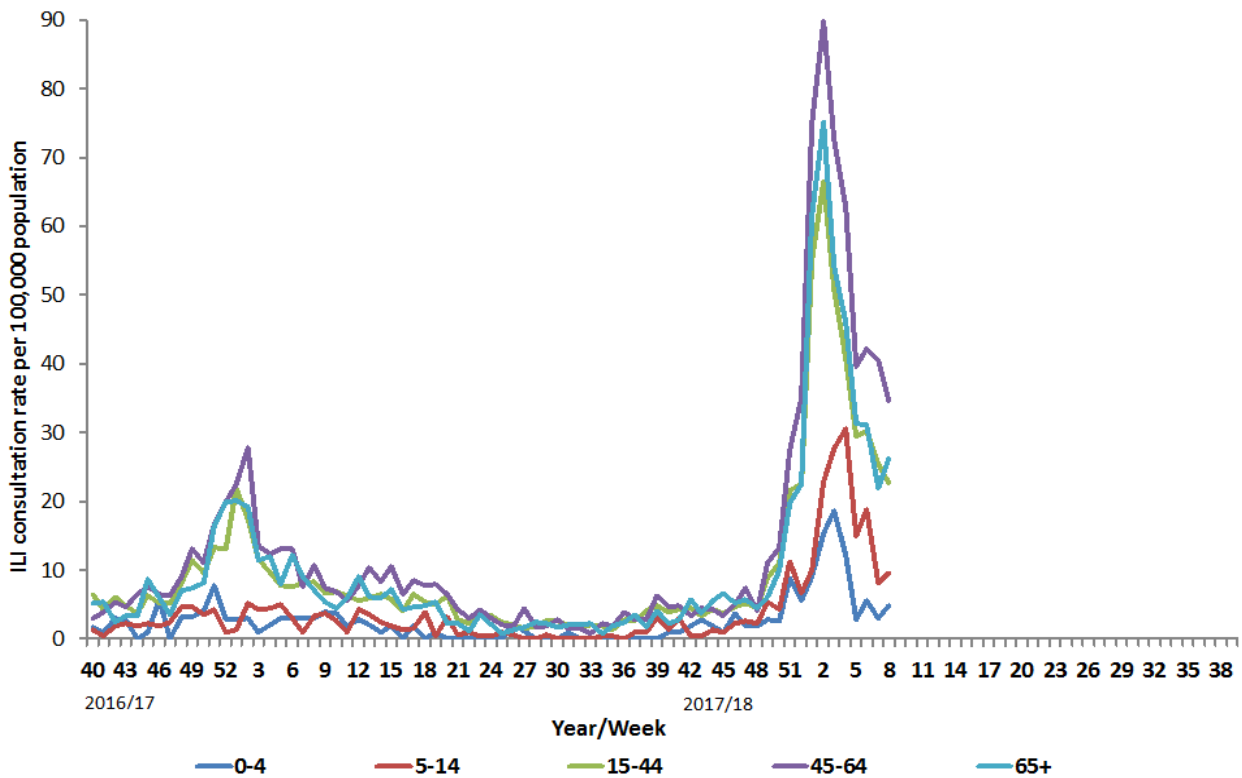
Comment

NI GP consultation rates continued to decrease from 25.2 per 100,000 population in week 7, 2018 to 23.6 per 100,000 in week 8. These rates remain within the threshold for low level flu activity (between 22.6 to <26.6 per 100,000 population). The NI GP consultation rate in week 8 remains higher than rates for similar periods in the last number of years (Figure 1).

The number of positive influenza laboratory detections decreased from 198 in week 7, 2018 to 135 in week 8. At this point in the season there have been a total of 1159 detections of influenza A(H3), 1003 of influenza B, 406 of influenza A (typing awaited), and 43 detections of influenza A(H1N1) 2009 (Figures 1, 2 and 3).

Further information about laboratory detections of influenza is detailed on page 8.

Figure 4. Northern Ireland GP age-specific consultation rates for flu/FLI from week 40, 2016



Comment

NI GP age-specific consultation rates have increased in those aged 0-4 and 5-14 years, and 65 years and older. Rates continue to decrease in those aged 15-44 and 45-64 years in week 8, 2018. Consultation rates remained highest in those aged 45-64 years at 34.7 per 100,000 population and lowest in those aged 0-4 years at 4.8 per 100,000. Consultation rates in those aged 5-14 years is 9.7 per 100,000, in those aged 15-44 years is 22.7 per 100,000 and 26.2 per 100,000 in those aged 65 years and older (Figure 4).

Out-of-Hours (OOH) Centres Call Data

Figure 5. OOH call rate for flu/FLI, 2015/16 – 2017/18

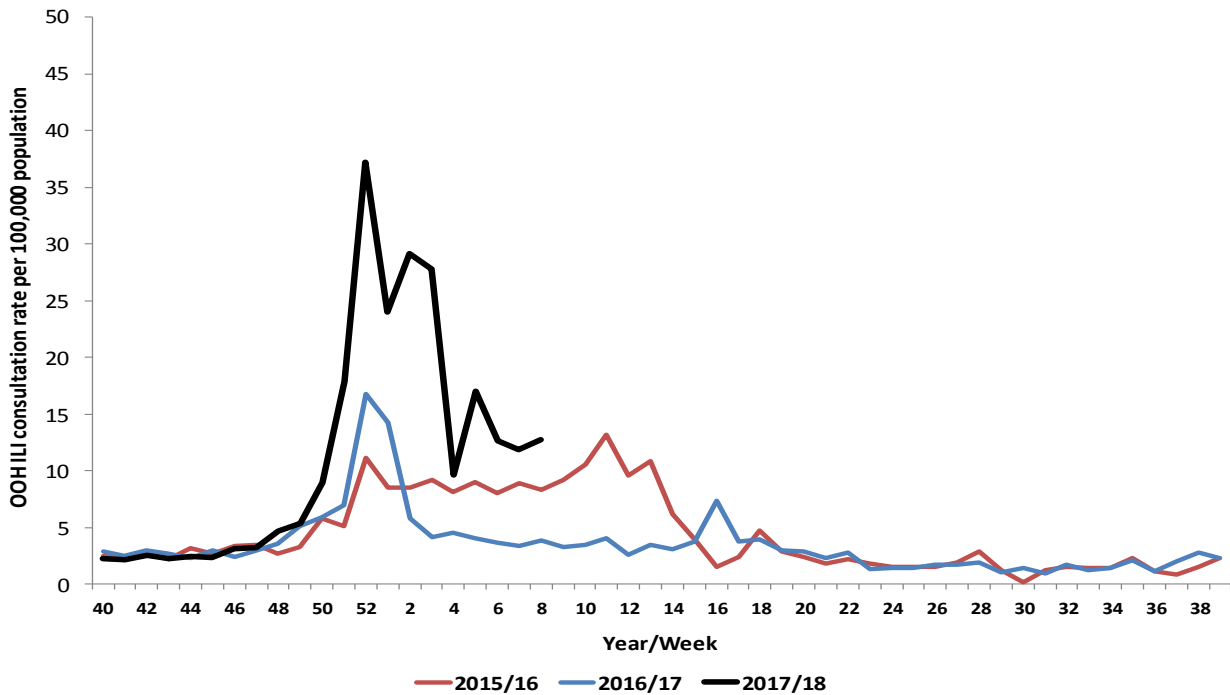
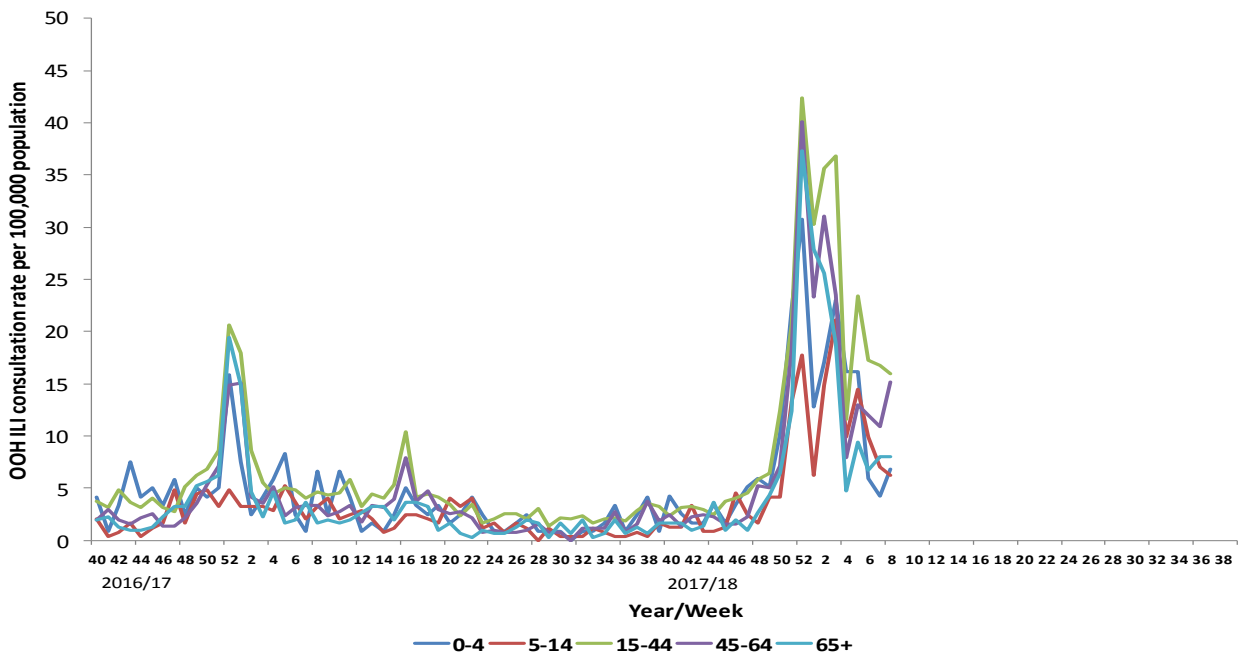


Figure 6. OOH call rates of flu/FLI by age-group from week 40, 2016



Comment

OOH GP consultation rates increased slightly in week 8, 2018 from 11.9 per 100,000 population in week 7 to 12.8 per 100,000. Rates remain higher than those in the same period in 2016/17 (3.8 per 100,000) (Figure 5).

The proportion of calls related to flu in OOH centres increased slightly from 2.0% in week 7, 2018 to 2.2% in week 8.

OOH flu/FLI rates increased in week 8, 2018 in those aged 0-4 (4.3 to 6.8 per 100,000) and 45-64 years (10.9 to 15.2 per 100,000). Rates decreased in week 8, 2018 in those aged 5-14 (7.0 to 6.2 per 100,000) and 15-44 years (16.8 to 16.0 per 100,000). Rates remained static in those aged 65 years and older (8.1 per 100,000).

The highest age-specific OOH flu/FLI rate in week 8 was in those aged 15-44 years (16.0 per 100,000). The lowest rate was in those aged 5-14 years (6.2 per 100,000) (Figure 6).

Virology Data

Table 1. Virus activity in Northern Ireland by source, Week 8, 2017/18

Source	Specimens Tested	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	14	3	3	0	4	0	10	71%
Non-sentinel	372	41	3	13	68	1	125	34%
Total	386	44	6	13	72	1	135	35%

Table 2. Cumulative virus activity from all sources by age group, Week 40 - 8, 2017/18

	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
0-4	42	3	24	27	96	331
5-14	32	0	9	32	73	12
15-64	415	24	167	492	1098	89
65+	669	16	206	450	1341	136
Unknown	1	0	0	2	3	1
All ages	1159	43	406	1003	2611	569

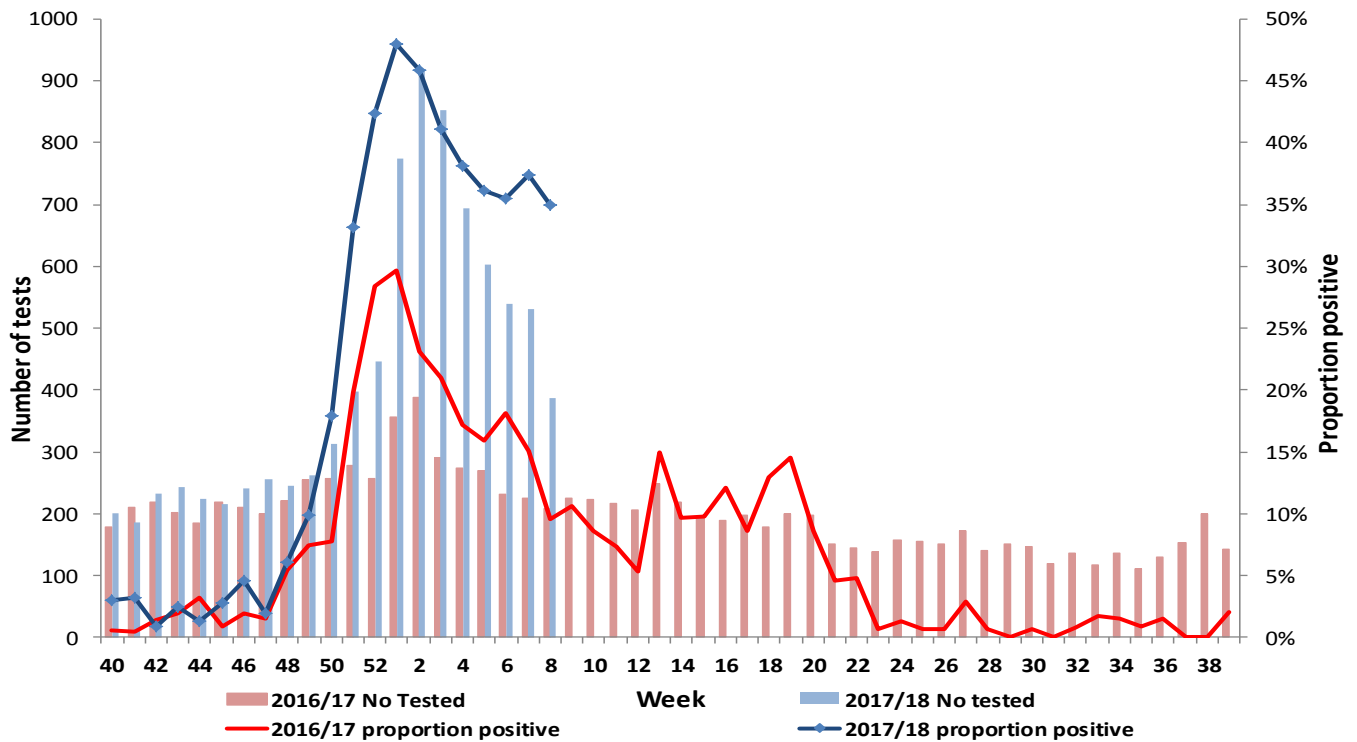
Table 3. Cumulative virus activity by age group and source, Week 40 - Week 8, 2017/18

	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	1	0	0	1	2	0	41	3	24	26	94	331
5-14	5	0	0	9	14	1	27	0	9	23	59	11
15-64	70	9	12	91	182	9	345	15	155	401	916	80
65+	25	0	3	16	44	1	644	16	203	434	1297	135
Unknown	0	0	0	0	0	0	1	0	0	2	3	1
All ages	101	9	15	117	242	11	1058	34	391	886	2369	558

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, 2016/17 and 2017/18, all sources



Comment

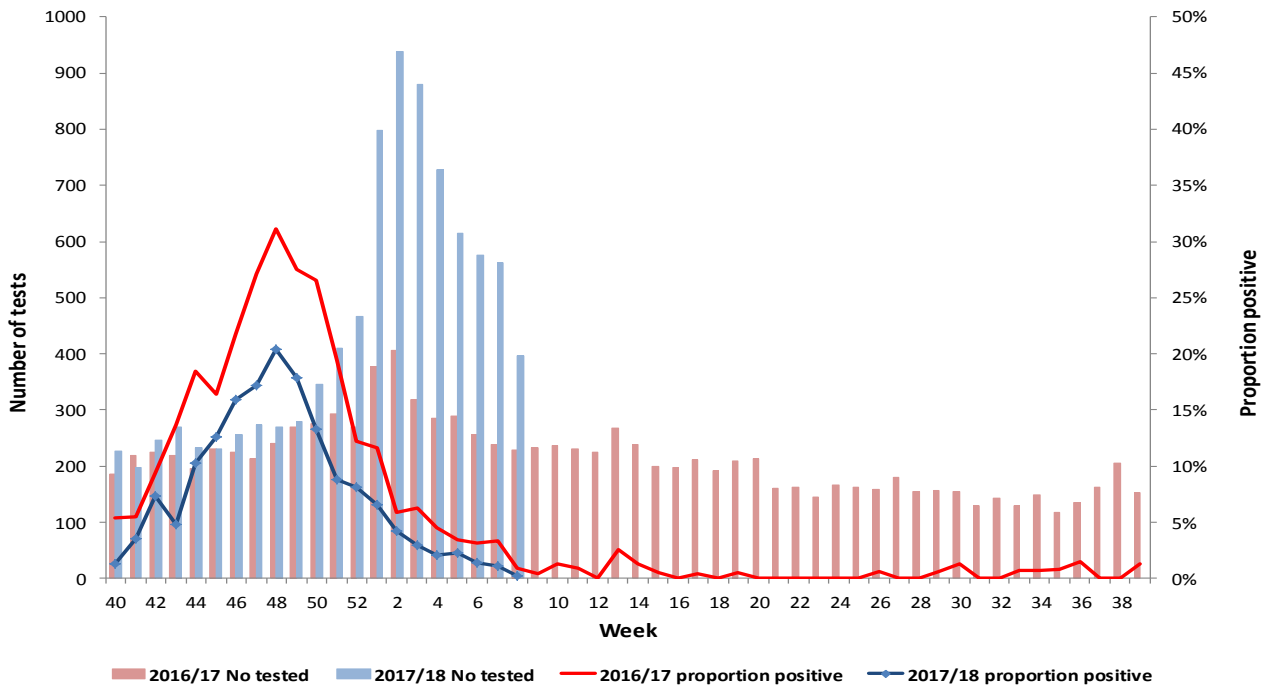
Additional virology testing has been undertaken at one local laboratory since week 2, 2018. This bulletin now includes this data along with the data from the Regional Virology Laboratory. Other local laboratories may begin undertaking influenza testing and this data will be included in later bulletins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

During week 8, 2018 there were 386 specimens submitted for virological testing. There were 135 detections of influenza in total (positivity rate of 35%), of which 44 were influenza A(H3), 72 influenza B, 13 influenza A (typing awaited) and there were six detections of influenza A(H1N1)pdm09 (Figure 7 and Table 1).

There were 14 samples submitted through the GP based sentinel scheme across Northern Ireland during this period, of which ten (positivity rate of 71%) were positive for influenza. Of the ten positive, three were reported as influenza A(H3), four as influenza B and three as influenza A(H1N1)pdm09 (Tables 1, 2, 3; Figures 2 and 3).

Respiratory Syncytial Virus (RSV)

Figure 8. Number of samples tested for RSV and proportion positive, 2016/17 and 2017/18, all sources

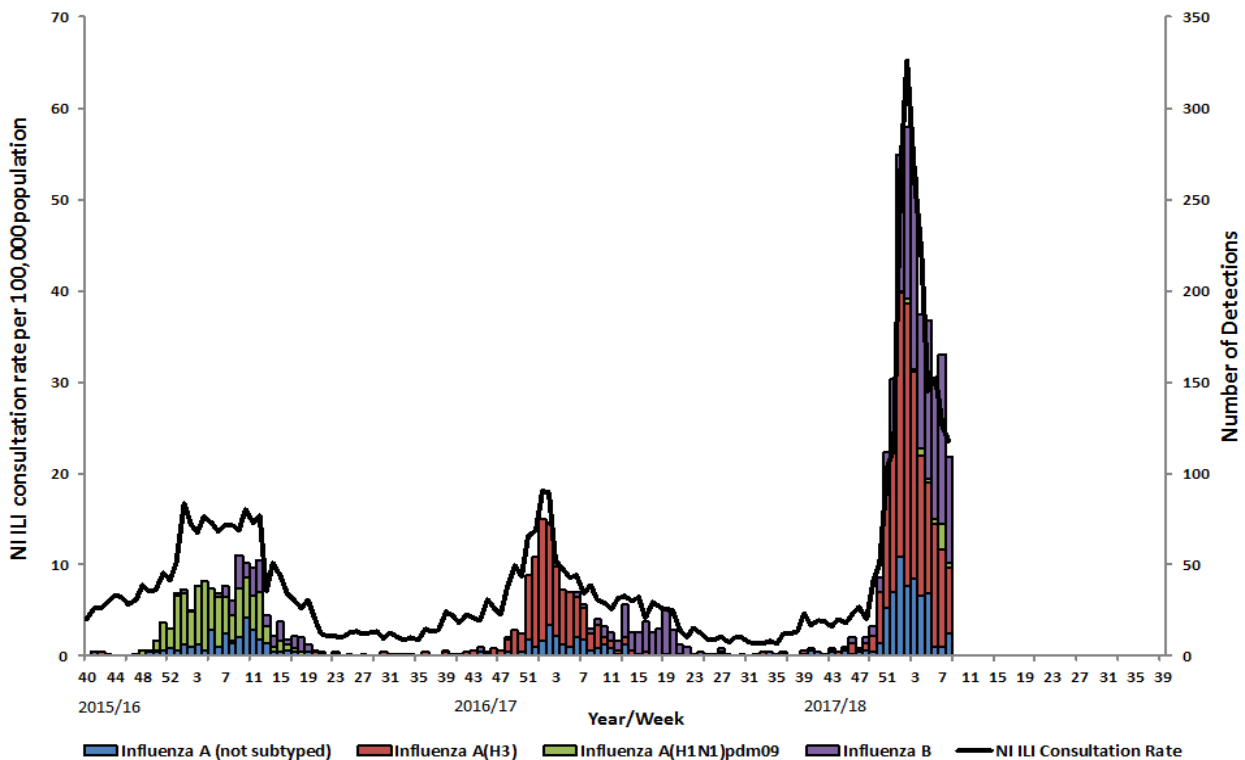


Comment

One positive detection of RSV was reported in week 8, 2018 giving a lower positivity rate than the same period in 2016/17 (1%). To date there have been a total of 569 detections of RSV of which the majority (58%) were in those aged 0-4 years (Figure 8 and Table 2).

Hospital Surveillance (Non-ICU/HDU)

Figure 9. Confirmed influenza cases in hospital by week of specimen, with Northern Ireland ILI consultation rate, 2015/16 - 2017/18



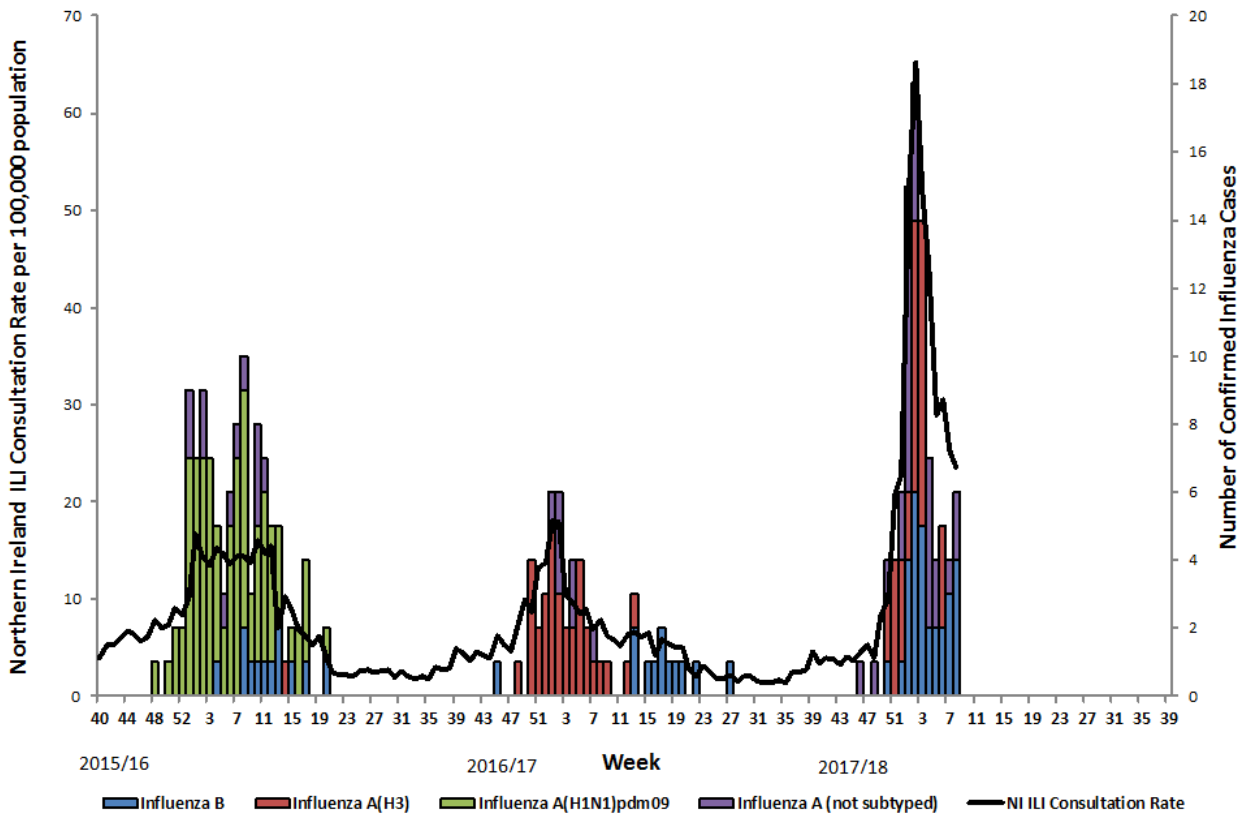
Comment

For the first time in 2017/18 the PHA will be reporting on detections of influenza from specimens taken in hospital wards across Northern Ireland, reported to PHA through the regional virology laboratory.

During week 8, 2018 there were a total of 109 detections of influenza from specimens taken in hospital settings across Northern Ireland. Of these there were 36 detections of influenza A(H3), 58 of influenza B, 12 of influenza A (typing awaited) and three detections of influenza A(H1N1)2009. This represents a decrease from week 7 (165 positive reports); however, it should be kept in mind that not all positive specimens for week 8 may 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, 2015/16 - 2017/18



Comment

Data are collected on laboratory confirmed influenza patients and deaths in critical care (level 2 and level 3).

During week 8, 2018 six confirmed cases of influenza in ICU were reported to the PHA. There were no deaths reported in ICU patients with laboratory confirmed influenza in week 8. The total reported deaths in ICU this season with confirmed influenza to date are 16. There have been 90 confirmed case of influenza in ICU reported this season to date, of which 31 have been typed as influenza A(H3), 30 influenza B, 28 influenza A (typing awaited) and one confirmed case of both influenza A and B (not shown in figure 10).

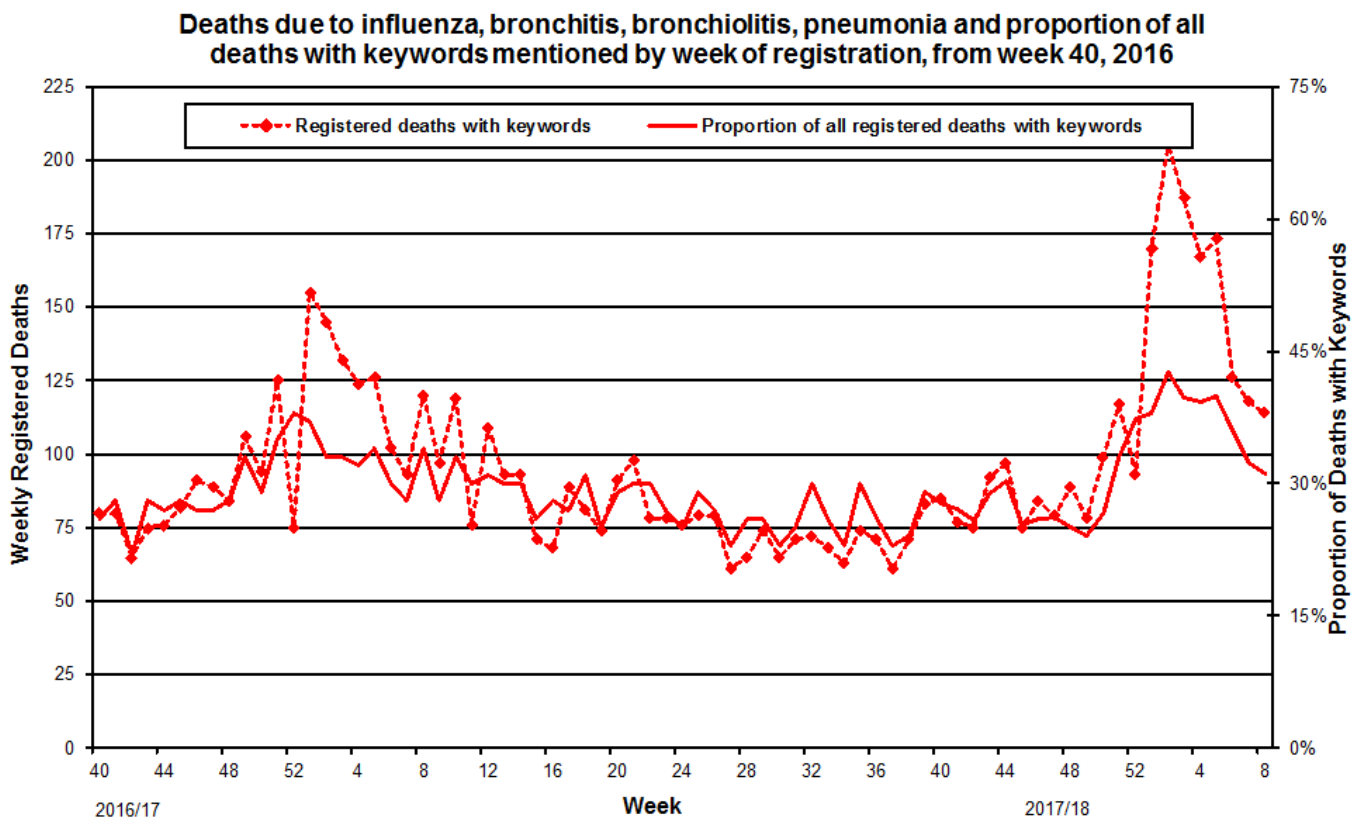
Outbreak Surveillance

During week 8, 2018 there was one confirmed influenza outbreak in care homes. The total confirmed Influenza outbreaks to date are 36.

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



Comment

During week 8, 2018 the proportion of deaths related to respiratory keywords decreased from 32% in week 7 to 31%. In week 8 there were 366 registered deaths, of which 114 related to specific respiratory infections (Figure 11). The proportion of deaths attributed to specific respiratory infections is lower at this point in the season to the same period in 2016/17 (34%).

EuroMOMO

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>.

There was an excess all-cause mortality reported in Northern Ireland in week 8, 2018. Including this week, there has been a total of ten weeks in the season to date where there has been excess all-cause mortality (weeks 51-8). 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.

Influenza Vaccine Uptake

	2017/18 (to Jan 31 st)	2016/17 (to Jan 31 st)
>65 years	70.4%	71.7%
<65 years at risk	53.5%	55.9%
Pregnant women	47.9%	50.3%
2 to 4 year olds	49.1%	52.0%
Primary School	76.2%	78.2%
Trust Frontline	33.0%	28.6%

*vaccine uptake data is provisional

International Summary

Europe

Week 7/2018 (12-18 February 2018)

- Influenza activity was widespread in the majority of reporting countries, with overall 51% of individuals sampled from primary healthcare testing positive for influenza. The detection rate decreased slightly compared to the previous week (53%).

- Both influenza virus types A and B were co-circulating with a higher proportion of type B viruses. Different proportions of circulating influenza virus types and A subtypes were observed between countries.
- The majority of severe cases admitted to non-ICU hospital wards were adults infected by influenza type B viruses. The majority of severe cases admitted to ICU were adults infected mostly by influenza type A viruses.

2017/18 season overview

- For the Region overall, a higher proportion of type B compared to type A viruses has been detected in sentinel and non-sentinel sources, representing a high level of influenza B compared with previous seasons. Of the type A detections from sentinel sources, whereby the majority of viruses were subtyped, A(H1N1)pdm09 viruses have outnumbered A(H3N2) viruses. In non-sentinel sources, whereby only 35% of influenza viruses were subtyped, more A(H3N2) viruses were reported than A(H1N1)pdm09 viruses.
- The majority of severe cases reported this season are due to influenza B and occur in persons above the age of 15 years. In confirmed influenza cases in ICU, similar numbers were infected by influenza type A and B viruses, and approximately equal numbers of cases were reported in the 15–64 and >64 year age groups. In laboratory confirmed cases reported in wards other than ICU, type B viruses were detected approximately twice as frequently as type A viruses and twice as many cases occurred among those aged >64 years compared with patients in the 15–64 age group.
- Concomitant with the increase in influenza activity, mortality due to any cause among the elderly has significantly increased over the past weeks in the western parts of the Region based on data provided by 20 EU countries to EuroMOMO.
- For type B viruses from both sentinel and non-sentinel sources, B/Yamagata lineage viruses have greatly outnumbered those of the B/Victoria lineage. The current trivalent seasonal influenza vaccine does not include a virus from the B/Yamagata lineage.
- Different patterns of dominant type and A subtype were observed between the countries of the Region, which may be due to differences in relative weights of information being derived from sentinel, non-sentinel and severe influenza case sources of information.
- While low in number, 59% of the genetically characterized A(H3N2) viruses belong to clade 3C.2a, the clade of the vaccine virus described in the [WHO recommendations for vaccine composition for the northern hemisphere 2017–2018](#), and 37% to subclade 3C.2a1, with mammalian cell-cultured viruses in both clades being antigenically similar.
- Although low in number detected and characterised, an increasing percentage (currently 40%) of B/Victoria lineage viruses belonged to B/Norway/2409/2017, representing the Victoria lineage clade 1A with deletion Δ 162-163 which is antigenically different from the current quadrivalent vaccine component B/Brisbane/60/2008-like virus.
- Interim or real-time vaccine effectiveness estimates from [Canada](#), [Finland](#), [Germany](#), [Spain](#), [Stockholm County](#) and the [United States of America](#) suggest overall vaccine effectiveness of 15–46%, depending on the proportions of circulating (sub)types. Effectiveness against influenza B is in the range of 16–67%, despite the circulating lineage not being included in the most commonly used trivalent vaccine.
- Additional information on global influenza activity is available from [WHO's biweekly global updates](#).

- WHO convened the Vaccine Composition Meeting on 19–21 February and recommended the composition of the 2018–2019 northern hemisphere vaccine. The full report is available [here](#).

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

Worldwide (WHO)

As at 19 February 2018 (based on update to 04 February 2018)

Influenza activity remained high in the temperate zone of the northern hemisphere while in the temperate zone of the southern hemisphere activity was at inter-seasonal levels. Worldwide, influenza A accounted still for the majority of influenza detections but influenza B (mostly B-Yamagata lineage) increased in recent weeks.

Up to now, the majority of countries which are in the influenza season, reported influenza- like illness reaching moderate levels in comparison with previous years, with few reaching levels exceeding those of previous years. Some countries however have reported levels of hospitalization and ICU admissions reaching or exceeding peak levels of previous influenza seasons. WHO recommends countries with current influenza activity or entering their season to adopt necessary measures for ensuring appropriate case management, compliance with infection control measures and seasonal influenza vaccination for high risk groups.

- Overall, influenza virus activity remained high in the region. In Canada, influenza activity remain elevated while influenza-like illness (ILI) activity continued to increase and was above the 5-year average for this time of the year. Influenza B detections increased in recent weeks reaching equal proportion as influenza A detections. In the United States of America (USA), influenza activity remained high, with influenza A (H3N2) viruses most frequently detected followed by influenza B viruses. Hospitalization cumulative rate for influenza were reported at high levels, and above levels observed during the same period over the previous seven seasons. In both Canada and the USA, adults aged 65 years and older accounted for the majority of influenza cases and influenza-related hospitalizations. In Mexico, influenza activity decreased slightly, with influenza A(H3N2) virus predominantly detected.
- In Europe, influenza activity remained high in most countries. All seasonal influenza subtypes co-circulated across the region, but influenza B virus predominated in most countries. ILI and influenza detections increased further in most countries in Eastern and Northern Europe, and appeared to have peaked in few countries in Southwestern Europe. Influenza B detections increased in Denmark, Estonia, Norway, and Sweden. Influenza illness indicators appeared to decrease in Ireland and the United Kingdom, but influenza-related hospitalizations remain high in England.
- In Northern Africa, influenza detections remained high in Algeria, Egypt and Morocco, and continued to decrease in Tunisia. Influenza A(H1N1)pdm09 virus predominated in Algeria and Tunisia, and detections of influenza A(H1N1)pdm09 and influenza B were reported in Egypt and Morocco.
- In Western Asia, influenza activity continued to be reported across the region. In some countries of the Arabian Peninsula, influenza activity appeared to have peaked, while

increased influenza A(H1N1)pdm09 detections were reported in Iraq. In Israel, influenza activity remained high with influenza B viruses predominating. Detections of influenza B-Yamagata lineage and influenza A(H1N1)pdm09 were reported in Armenia.

- In Central Asia, influenza A and B detections increased across the region in recent weeks.
- In East Asia, influenza activity remained high across the region. ILI activity appeared to decrease in Northern and Southern China but influenza detections remained elevated, with influenza B-Yamagata lineage and influenza A(H1N1)pdm09 viruses predominating. ILI consultation rate remained high in Hong Kong SAR, China, with influenza B most frequently detected. Decreased detections of influenza A(H1N1)pdm09 were reported in the Democratic People's Republic of Korea. In Mongolia, respiratory illness indicators and influenza detections appeared to decrease with influenza B-Yamagata lineage virus predominately detected in recent weeks. In the Republic of Korea, ILI activity decreased although influenza A(H3N2) and B virus detections remained high.
- In Southern Asia, influenza activity remained low in general. Detection of influenza A(H1N1)pdm09 and influenza A(H3N2) viruses continued to increase in Pakistan, while activity decreased in the Islamic Republic of Iran.
- In South East Asia, low levels of influenza activity were reported in most countries. Increased detections of influenza A(H1N1)pdm09 and influenza B-Yamagata lineage viruses were reported in Singapore.
- In Western Africa, little to no influenza activity was reported across the region. In Middle Africa, there were no updates available for this reporting period. In Eastern Africa, increased influenza A(H1N1)pdm09 detections were reported in Madagascar.
- In the Caribbean and Central American countries, respiratory illness indicators and influenza activity remained low in general. Influenza activity increased in Puerto Rico, with influenza A(H3N2) and B viruses co-circulating. Increased detections of influenza B virus were reported in Suriname. Influenza activity decreased in Jamaica.
- In the tropical countries of South America, influenza activities and respiratory illness indicators were generally low with a few exceptions. Influenza A(H3N2) detections slightly increased in Colombia. Influenza activity remained elevated in Ecuador, with influenza A(H1N1)pdm09 virus predominating.
- In the temperate zone of the Southern Hemisphere, influenza activity remained overall at inter-seasonal levels.
- National Influenza Centres (NICs) and other national influenza laboratories from 104 countries, areas or territories reported data to FluNet for the time period from 22 January 2018 to 04 February 2018 (data as of 2018-02-16 04:33:50 UTC). The WHO GISRS laboratories tested more than 302596 specimens during that time period. 98068 were positive for influenza viruses, of which 54142 (55.2%) were typed as influenza A and 43926 (44.8%) as influenza B. Of the sub-typed influenza A viruses, 10290 (58%) were influenza A(H1N1)pdm09 and 7441 (42%) were influenza A(H3N2). Of the characterized B viruses, 7553 (92.5%) belonged to the B-Yamagata lineage and 615 (7.5%) to the B-Victoria lineage.

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.fluawareni.info>

<https://www.gov.uk/government/organisations/public-health-england>

<http://www.publichealth.hscni.net>

<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:

Republic of Ireland:

<http://www.hpsc.ie/hpsc/A-Z/Respiratory/Influenza/SeasonalInfluenza/Surveillance/InfluenzaSurveillanceReports/>

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>

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