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Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 52 (25th December – 31st December 2017)

Summary

Both GP and OOH consultation rates increased in week 52 (week commencing 25th December 2017). Detections of influenza virus decreased slightly, with both influenza types AH3 and B strains of the virus predominating. Note that the public holidays during this period may have had an impact on both the consultation rates and the virology data reported.

Northern Ireland Primary Care Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) increased from 20.7 per 100,000 population in week 51 to 22.7 per 100,000 population in week 52. Rates are higher than the same period last and have exceeded the 2017/18 Northern Ireland pre-epidemic threshold[1]
- OOH GP consultation rates for flu/FLI increased substantially rising from 17.9 per 100,000 population in week 51 to 37.2 per 100,000 population in week 52, 2017.

Microbiological Surveillance (Flu and RSV)

- The proportion of positive influenza detections from both sentinel and non-sentinel sources increased from 33% in week 51 to 42% in week 52.
- RSV continued to decline from 9% of specimens positive for RSV in week 51 to 8% in week 52, 2017.

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 112 detections in week 51, to 90 in week 52, 2017.
- There were six cases reported in ICU with laboratory confirmed influenza in week 52 giving a total of 16 cases this season to date.
- Two deaths were reported in week 52 among ICU patients with laboratory confirmed influenza.

Influenza Outbreaks across Northern Ireland

- There were five confirmed influenza outbreaks reported to the PHA in week 52.

Mortality

- Excess all-cause mortality data was not available for week 52. There no excess all-cause mortality reported through the EuroMOMO algorithm up to week 50, 2017.

[11] The pre-epidemic threshold for Northern Ireland is 22.58 per 100,000 population this year (2017/18)

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);
- 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

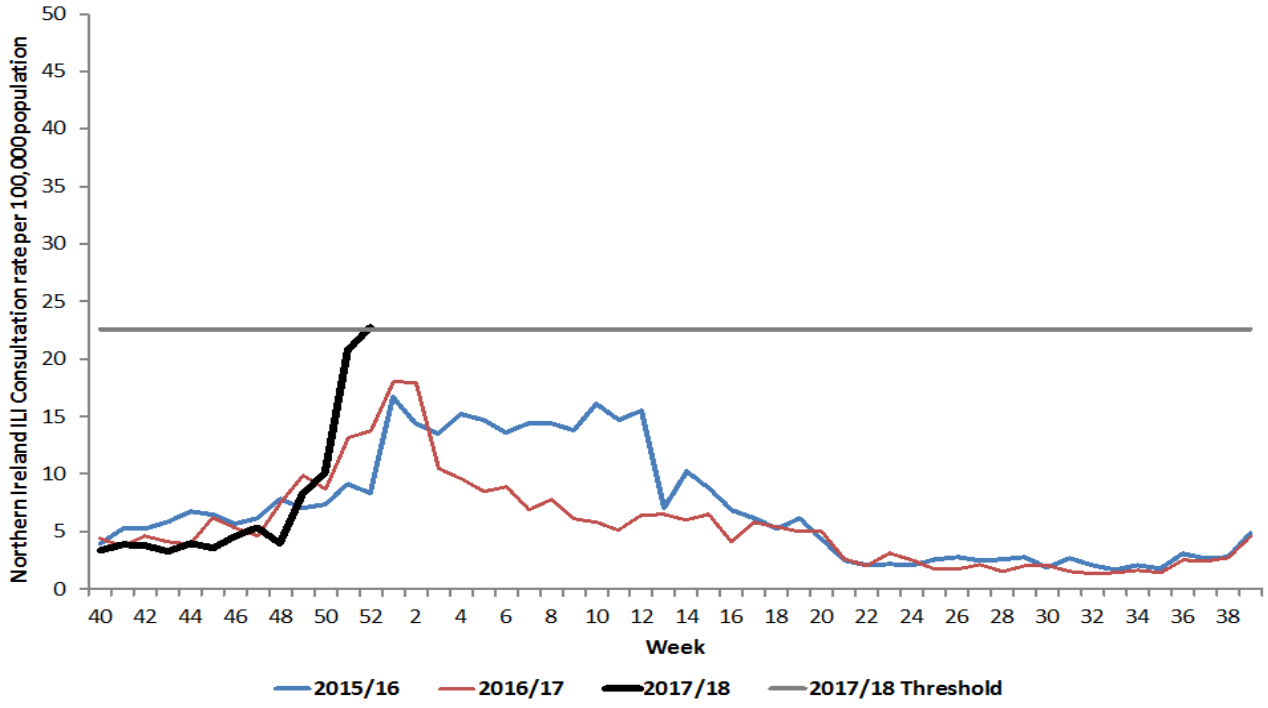


Figure 2. Northern Ireland GP consultation rates for flu/FLI and number of influenza positive detections 2012/13 – 2017/18

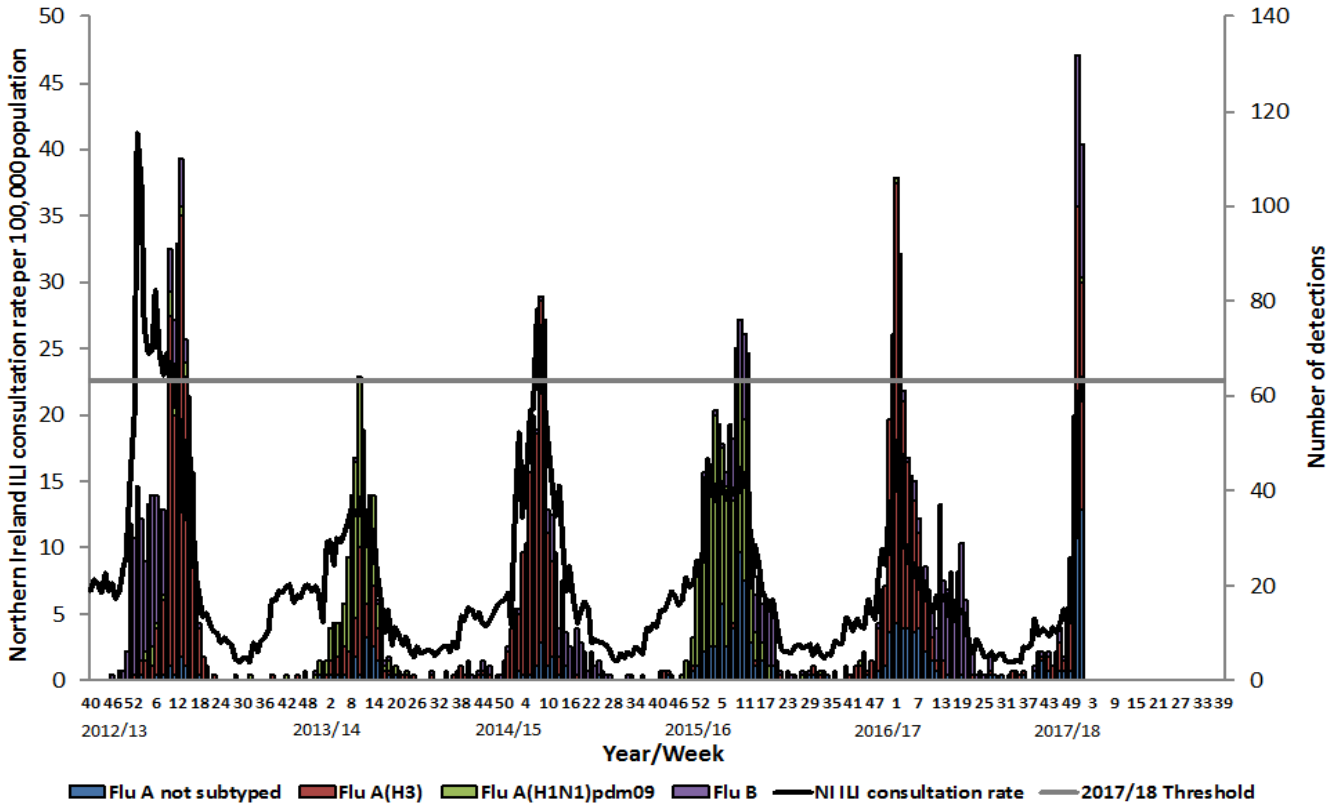
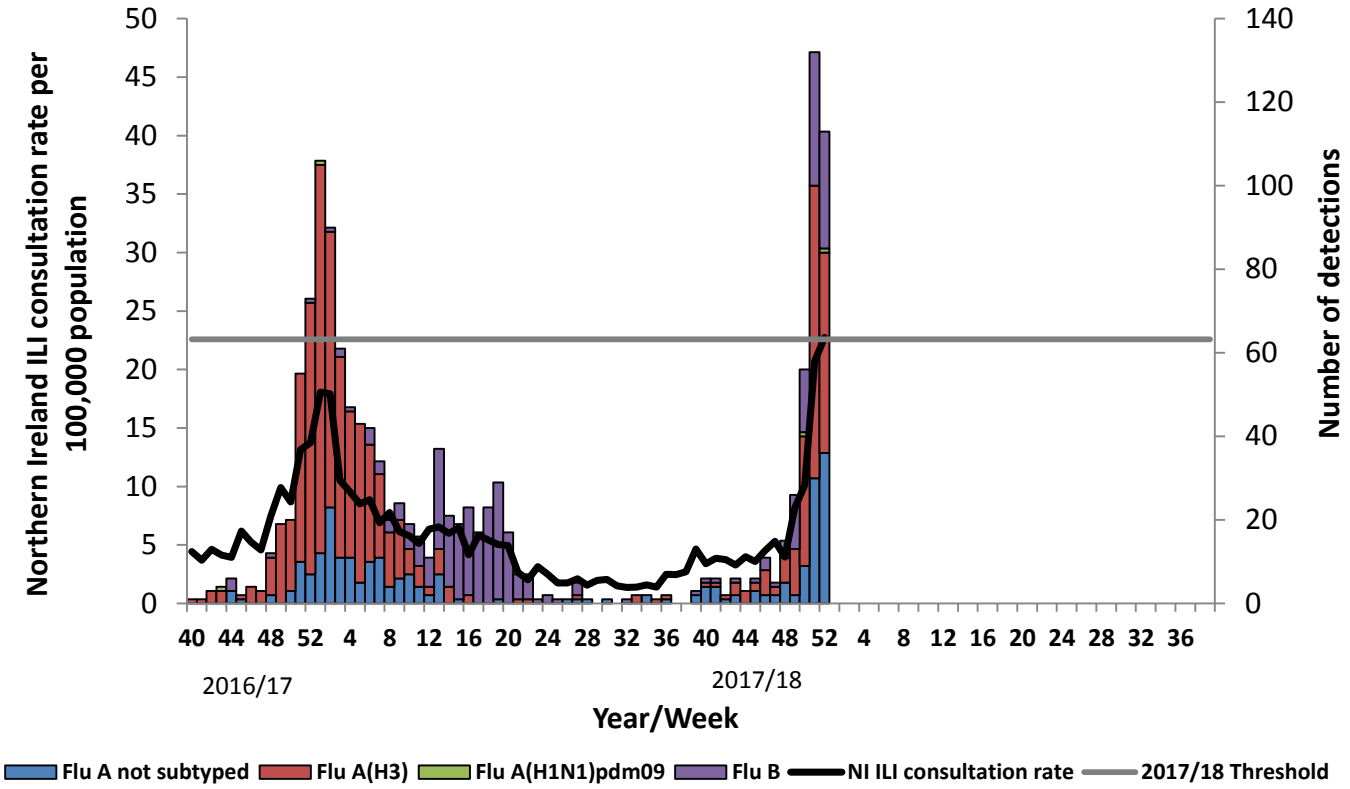


Figure 3. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2016



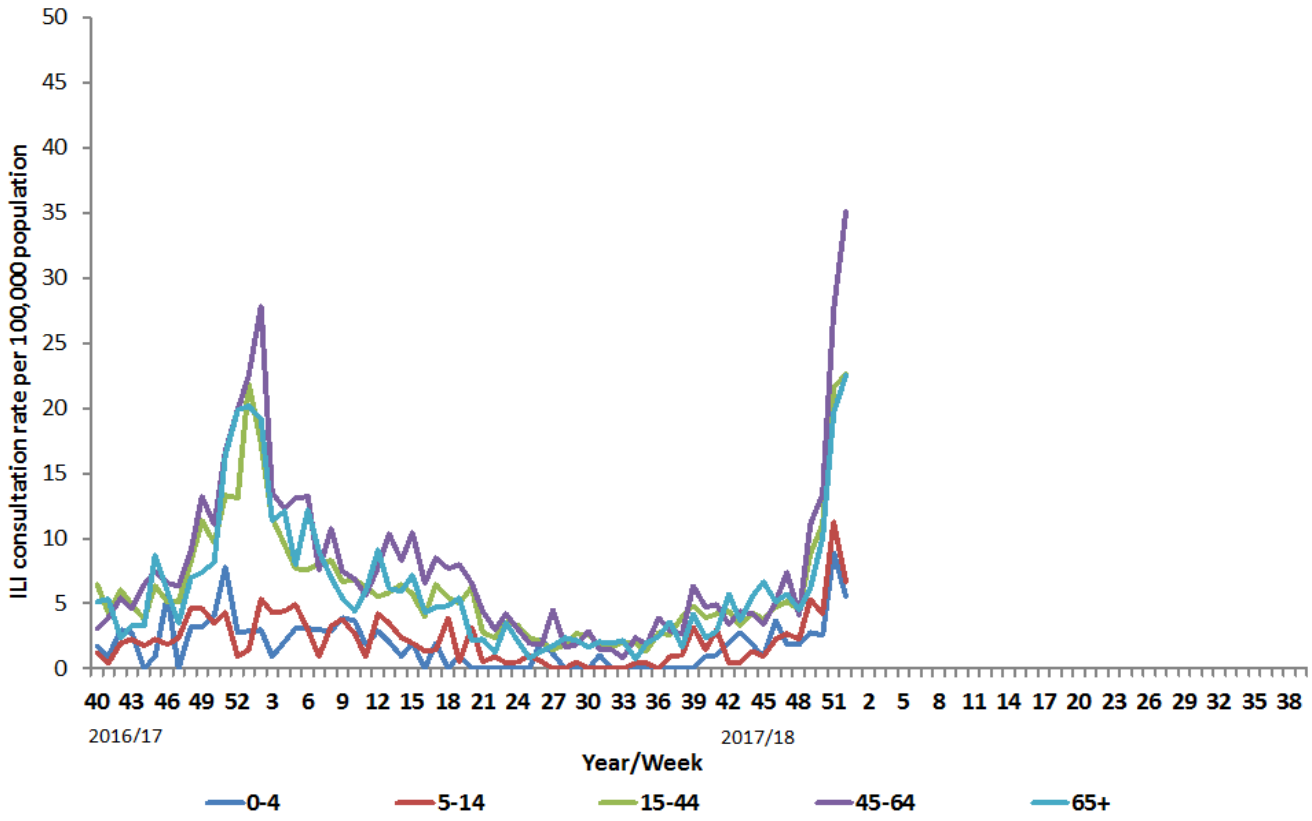
Comment

NI GP consultation rates increased slightly from 20.7 per 100,000 population in week 51 to 22.7 per 100, 000 population in week 52, 2017 exceeding the pre-epidemic threshold of 22.58 per 100,000 population. The NI GP consultation rate in week 52 is higher than the same period in 2016/17 (13.7 per 100,000 population).

The number of positive influenza laboratory detections decreased from 132 in week 51 to 113 in week 52. At this point in the season there have been a total of 185 detections of influenza A(H3), 100 of influenza B, 100 of influenza A (typing awaited), and 2 detections of influenza A(H1N1) 2009 (Figures 1, 2 and 3).

Further information about laboratory detections of influenza is detailed on page 9.

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



Comment

The age-specific consultation rates in the younger age groups (0-4 and 5-14) decreased in week 52 with all other age groups increasing. The 45-64 showed the largest increase and was also the highest rate at 35.0 per 100,000 population. The lowest age-specific rate continues to be in the 0-4 year age group. (Figure 4).

Out-of-Hours (OOH) Centres Call Data

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

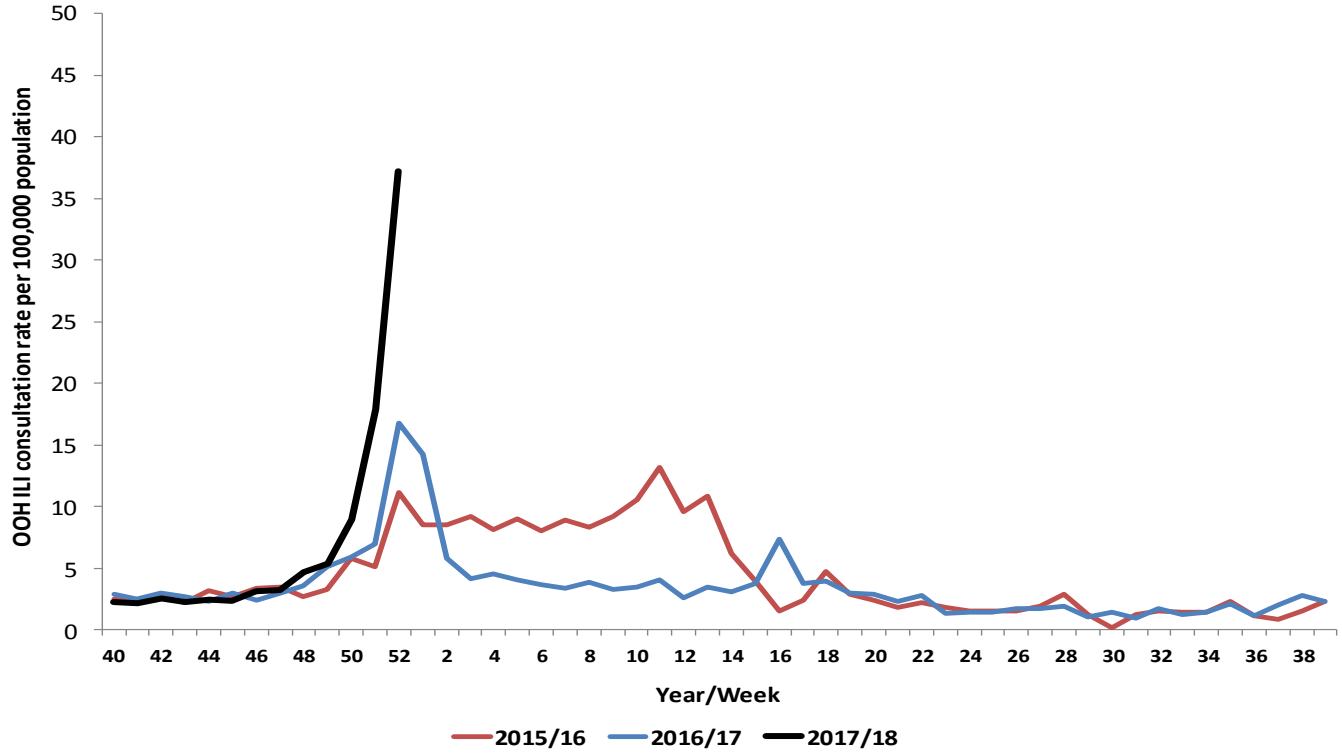
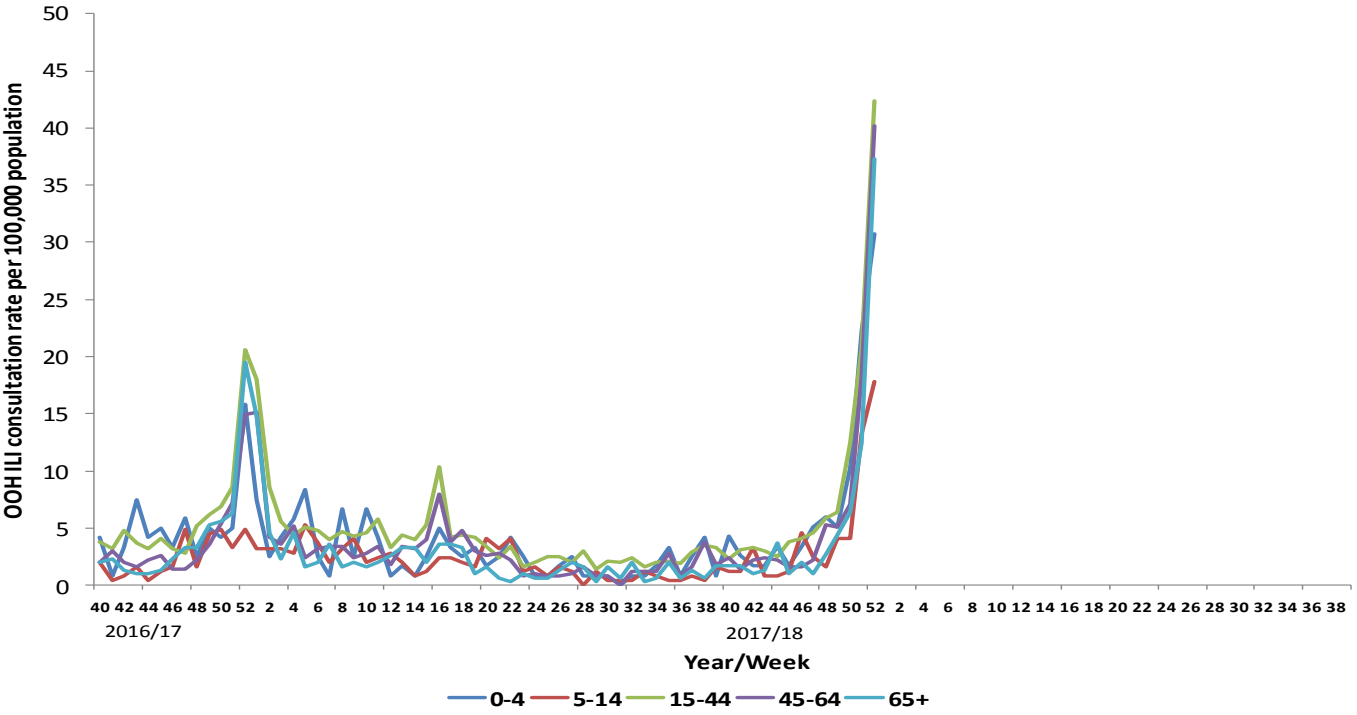


Figure 6. OOH call rates of flu/FLI by age-group from week 40, 2016



Comment

OOH GP consultation rates in week 52 showed a substantial increase rising from 17.9 per 100,000 population to 37.2 in week 52. Whilst an increase in OOH consultation rates would be expected due to the bank holiday period the increase is significantly higher than in the previous two years. Rates are significantly higher than those in the same period in 2016/17 (16.7 per 100,000 population) (Figure 5).

The proportion of calls related to flu in OOH centres also increased from 2.2% in week 51 to 3.4% in week 52, 2017.

OOH flu/FLI rates increased substantially amongst all the age groups in week 52. Similar to the previous report the highest age-specific OOH flu/FLI rate in week 52 was in the 15-44 years age group (42.4 per 100,000 population). The lowest rate in week 52 was in the 5-14 year olds (17.8 per 100,000 population) (Figure 6).

Virology Data

Table 1. Virus activity in Northern Ireland by source, Week 52, 2017/18								
Source	**Specimens Tested**	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	**Total influenza Positive**	**% Influenza Positive**
Sentinel	19	4	1	5	1	1	11	58%
Non-sentinel	250	44	0	31	27	30	102	41%
Total	**269**	**48**	**1**	**36**	**28**	**31**	**113**	42%

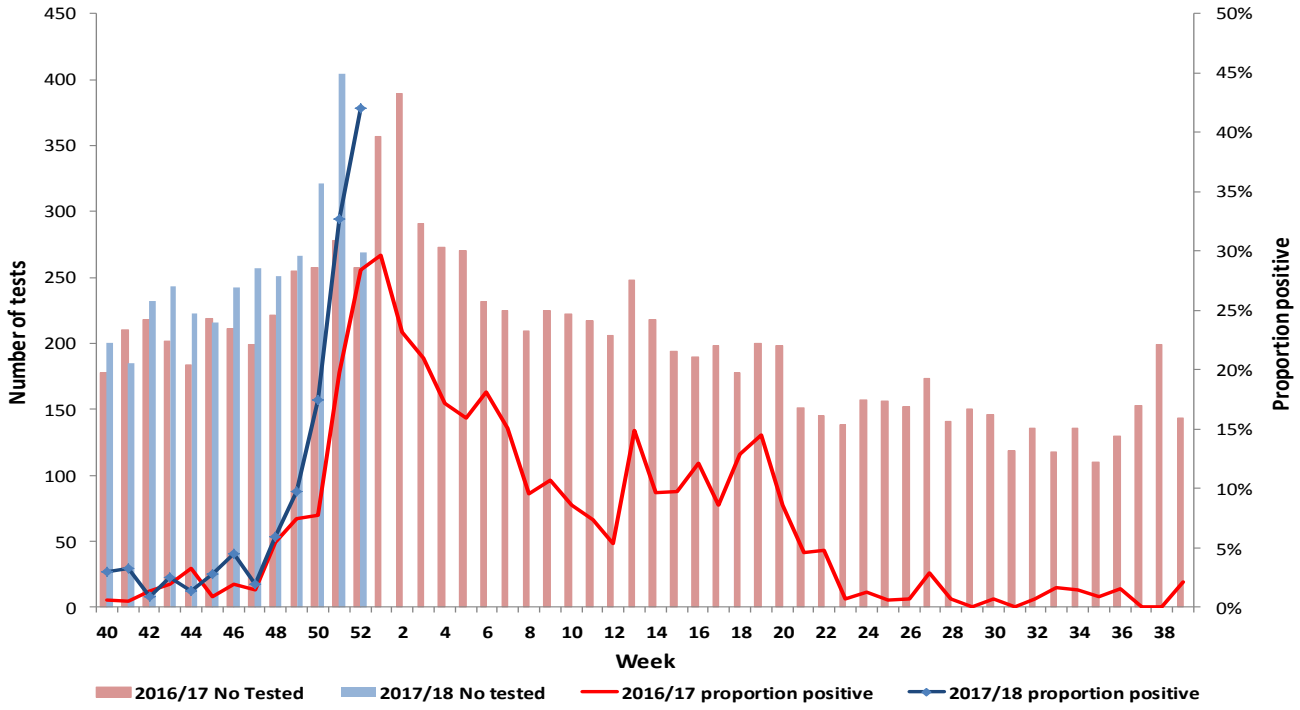
Table 2. Cumulative virus activity from all sources by age group, Week 40 - 52, 2017/18						
	Flu AH3	**Flu A(H1N1) 2009**	**A (untyped)**	**Flu B**	**Total Influenza**	**RSV**
0-4	**6**	**0**	**7**	**4**	**17**	**256**
5-14	**7**	**0**	**0**	**4**	**11**	**9**
15-64	**69**	**2**	**43**	**57**	**171**	**51**
65+	**103**	**0**	**50**	**35**	**188**	**84**
Unknown	**0**	**0**	**0**	**0**	**0**	**1**
All ages	**185**	**2**	**100**	**100**	**387**	**401**

Table 3. Cumulative virus activity by age group and source, Week 40 - Week 52, 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	**0**	**0**	**1**	**0**	**1**	**0**	**6**	**0**	**6**	**4**	**16**	**256**
5-14	**2**	**0**	**0**	**1**	**3**	**1**	**5**	**0**	**0**	**3**	**8**	**8**
15-64	**10**	**2**	**5**	**19**	**36**	**5**	**59**	**0**	**38**	**38**	**135**	**46**
65+	**4**	**0**	**3**	**1**	**8**	**0**	**99**	**0**	**47**	**34**	**180**	**84**
Unknown	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
All ages	**16**	**2**	**9**	**21**	**48**	**6**	**169**	**0**	**91**	**79**	**339**	**395**

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



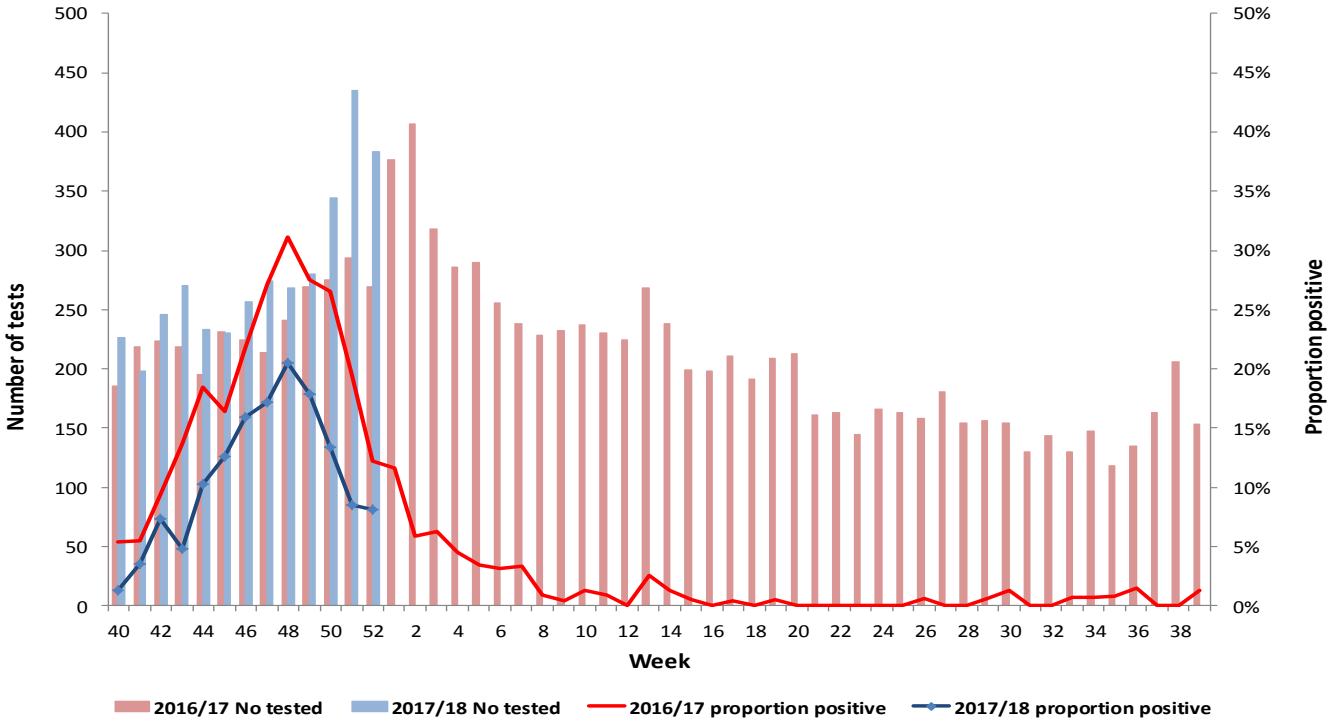
Comment

During week 52, 2017 there were 269 specimens submitted for virological testing. There were 113 detections of influenza in total (positivity rate of 42%), of which 48 were influenza A(H3), 36 influenza A (typing awaited), 28 influenza B, and there was one detection of influenza A(H1N1)pdm09 (Figure 7).

There were 19 samples submitted through the GP based sentinel scheme across Northern Ireland during this period, of which 11 (58%) were positive for influenza. Of the 11 positive, five were reported as influenza A (typing awaited), four as influenza A(H3), one as influenza B, and one report of influenza A(H1N1)pdm09 (Tables 1, 2, 3; Figures 2 and 3).

Respiratory Syncytial Virus

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

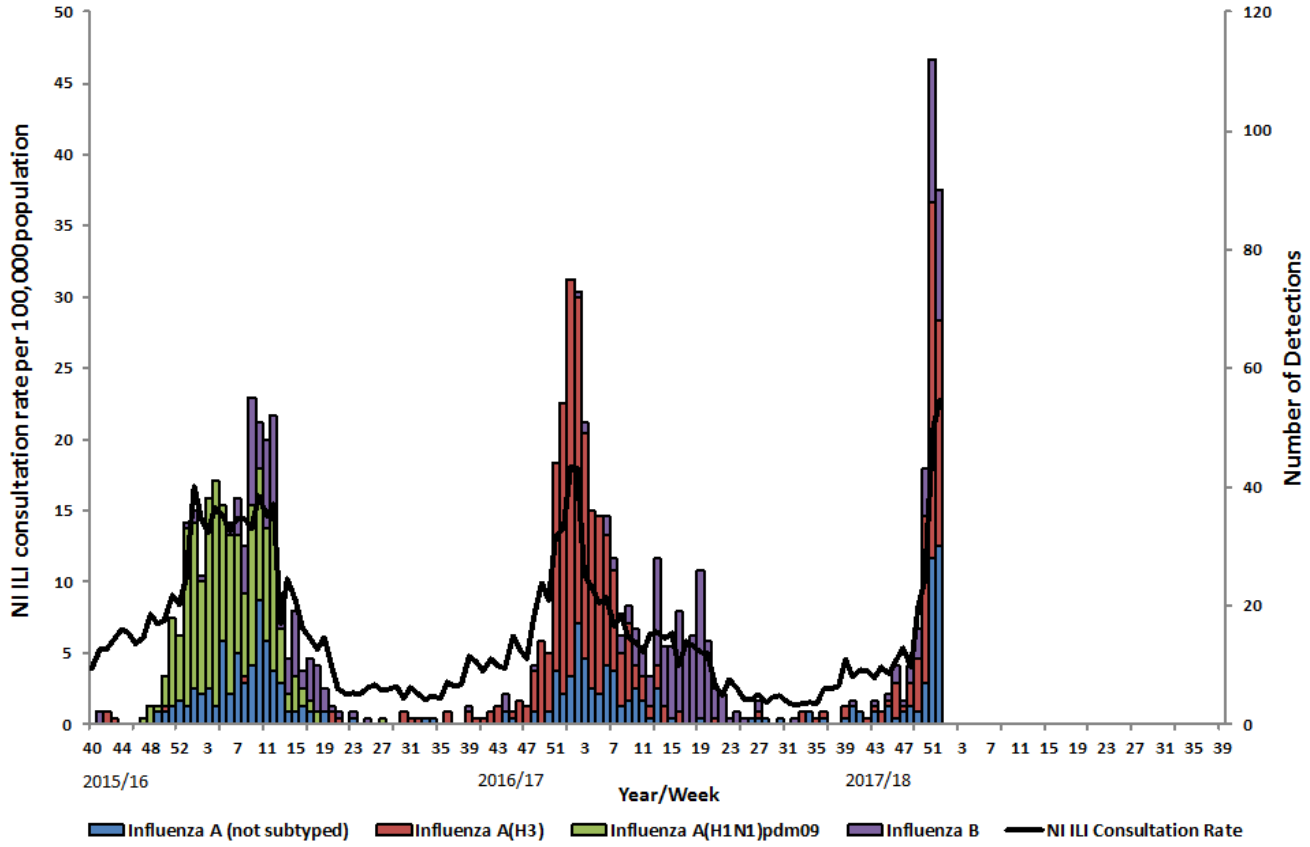


Comment

During week 52, 2017 there were 31 positive detections of RSV giving a positivity rate of 8%, lower than the same period in 2016/17 (12%). To date there have been a total of 401 detections of RSV of which the majority (63%) 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



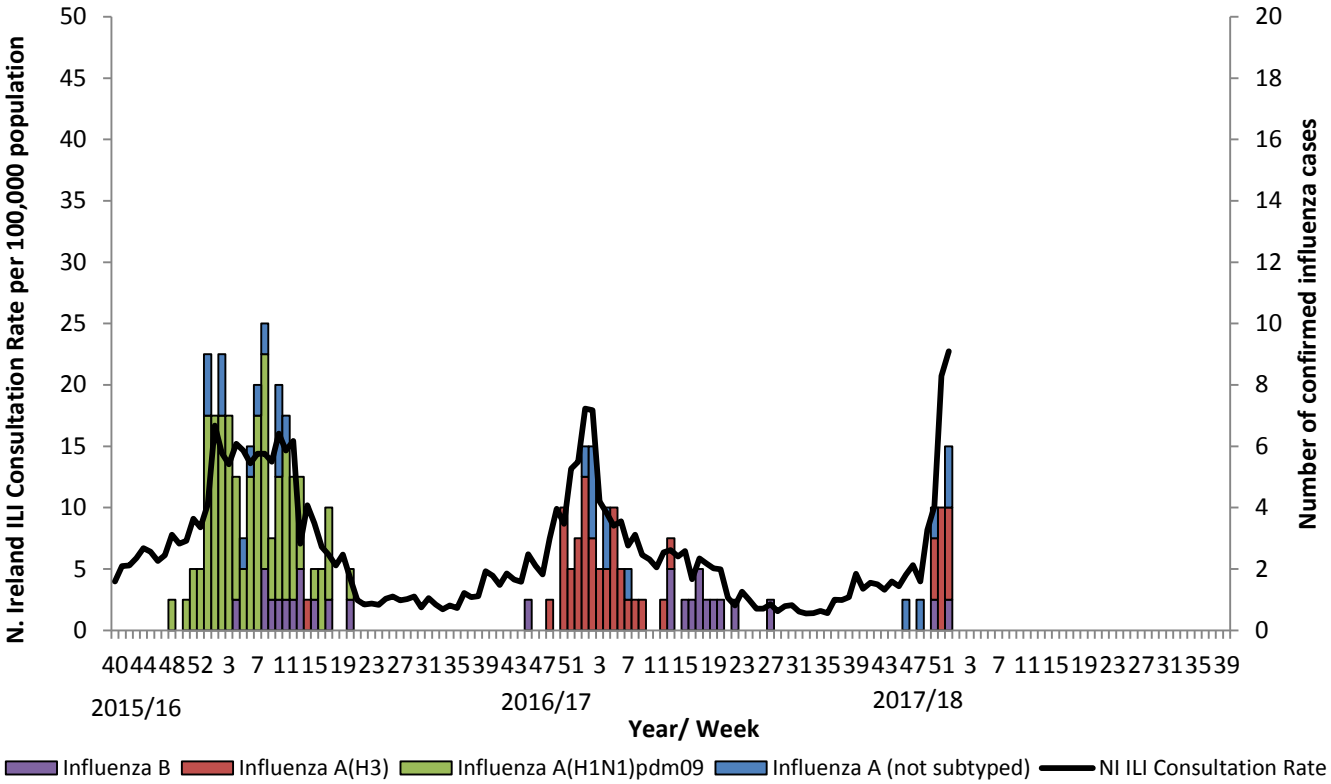
Comment

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 52, 2017 there were a total of 90 detections of influenza from specimens taken in hospital settings across Northern Ireland. Of these there were 38 detections of influenza A(H3), 30 of influenza A (typing awaited) and 22 of influenza B. This represents a decrease from week 51 (112 positive reports); however, it should be borne in mind that not all positive specimens for week 52 may have been reported as 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 52, six confirmed cases of influenza in ICU were reported to the PHA. There were two deaths reported in ICU patients with laboratory confirmed influenza, bringing the total reported deaths in ICU this season with confirmed influenza to three. There have been 16 confirmed case of influenza in ICU reported this season to date, of which nine have been typed as influenza A(H3), two influenza B and five influenza A (typing awaited).

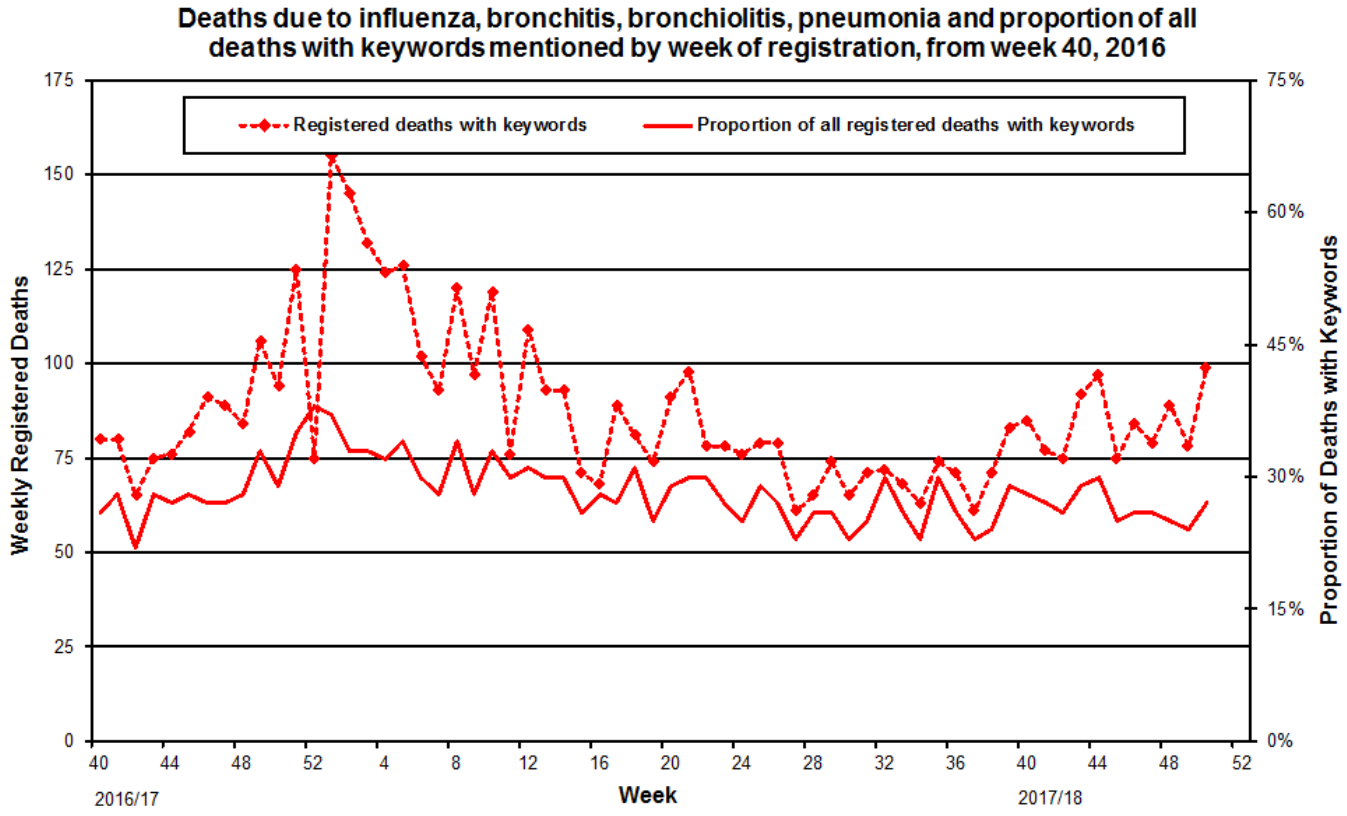
Outbreak Surveillance

During week 52, 2017 there were five confirmed influenza outbreaks reported to the PHA.

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

Due to the holiday period death data is only available up to week 50. During week 50, 2017 the proportion of deaths related to respiratory keywords increased slightly from 24% in week 49 to 27% in week 50. In week 50 there were 372 registered deaths, of which 99 related to specific respiratory infections (Figure 10).

The proportion of deaths attributed to specific respiratory infections is lower at this point in the season to the same period in 2016/17 (29%) and in 2015/16 (30%).

EuroMOMO

Due to the holiday period there was no EuroMOMO data available for week 52.

There was no excess all-cause mortality reported in Northern Ireland up to week 50.

Please note this data is provisional due to the time delay in registration; numbers may vary from week to week.

Influenza Vaccine Uptake.

Vaccine uptake rates will be reported in the bulletin later in the season.

International Summary

Europe

Week 51, 2017

- Influenza activity was increasing in countries in western, northern and southern Europe.
- Both influenza type A and B viruses were co-circulating and mixed patterns were observed across the Region.
- Of the individuals sampled, on presenting with ILI or ARI to sentinel primary healthcare sites, 32% tested positive for influenza viruses, an increase over 28% in the previous week.

Additional information on global influenza activity is available from WHO's biweekly global updates.

Season Overview:

- An early risk assessment based on data from EU/EEA countries was published by ECDC on 20 December 2017. First detections indicated circulation of A(H3N2) and B/Yamagata viruses in the highest proportions. As the A(H3N2) subtype dominated last season, a high proportion of the population should be protected.
- From sentinel sources, a higher proportion of type B viruses compared to type A viruses has been detected. A higher proportion of A(H1N1)pdm09 than A(H3N2) viruses have been detected.
- For type B viruses from both sentinel and non-sentinel sources, B/Yamagata lineage viruses have greatly outnumbered those of the B/Victoria lineage.
- While low in number, 59% of the genetically characterized A(H3N2) viruses belonged to clade 3C.2a, the vaccine virus clade as described in the WHO recommendations for vaccine composition for the northern hemisphere 2017–18, and 40% to clade 3C.2a1, the viruses of which are antigenically similar to those of clade 3C.2a.

http://www.flunewseurope.org/

Worldwide (WHO)

As at 25th December 2017 (no update available):

Influenza activity continued to increase in the temperate zone of the northern hemisphere while in the temperate zone of the southern hemisphere activity decreased at inter-seasonal levels. In

Central America and the Caribbean, influenza activity remained low. Worldwide, influenza A(H3N2) and B viruses accounted for the majority of influenza detections.

- In North America, overall influenza activity continued to increase in the region, with detections of predominantly influenza A(H3N2) viruses.
- In Europe, influenza activity continued to increase, but remained low in most of the countries, with detections of predominantly influenza B followed by influenza A(H3N2) viruses.
- In Western Asia, elevated levels of influenza activity were reported in in recent weeks, with influenza A(H1N1)pdm09 predominantly detected.
- In Central Asia, low to no influenza activity was reported.
- In East Asia, influenza activity remained low in most of the countries with the exception of China where influenza like illness (ILI) and influenza percentage positive continued to increase, with influenza B Yamagata-lineage viruses predominantly detected.
- In South East Asia, low levels of influenza activity were reported.
- In Southern Asia, influenza activity remained low in general. Detections of influenza A(H1N1)pdm09 and A(H3N2) viruses were reported in India and of all seasonal subtypes in the Islamic Republic of Iran.
- In Northern Africa, low levels of influenza activity were reported. Detections of influenza A(H1N1)pdm09 virus increased slightly in Tunisia.
- In Western Africa, influenza virus detections were reported in Burkina Faso, Ghana, and Sierra Leone, with influenza A(H1N1) pdm09 virus predominating. In Middle Africa, sporadic detections of influenza A were reported in Cameroon. In Eastern Africa, influenza A(H3N2) and B detections were reported in Madagascar and Mozambique.
- In the Caribbean and Central American countries, respiratory illness indicators and influenza activity remained low in general but respiratory syncytial virus (RSV) activity remained high in several countries.
- In the tropical countries of South America, influenza and RSV activity remained at low levels overall.
- In the temperate zone of the Southern Hemisphere, influenza activity decreased overall to inter-seasonal levels.
- National Influenza Centres (NICs) and other national influenza laboratories from 106 countries, areas or territories reported data to FluNet for the time period from 27 November 2017 to 10 December 2017 (data as of 2017-12-22 01:31:51 UTC).The WHO GISRS laboratories tested more than 127006 specimens during that time period. 15344 were positive for influenza viruses, of which 9579 (62.4%) were typed as influenza A and 5765 (37.6%) as influenza B. Of the sub-typed influenza A viruses, 1596 (30.1%) were influenza A(H1N1)pdm09 and 3698 (69.9%) were influenza A(H3N2). Of the characterized B viruses, 2640 (85.2%) belonged to the B-Yamagata lineage and 460 (14.8%) 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

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:

Cathriona Kearns
Epidemiological Scientist
Public Health Agency
028 9536 3405

Email: flusurveillance@hscni.net

This report was compiled by Cathriona Kearns and Dr Muhammad Sartaj.