

Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 16 (16th April – 22nd April 2018)

Summary

In week 16, the surveillance data indicates influenza activity continues to decrease. Rates remain below the baseline Moving Epidemic Method (MEM) threshold for Northern Ireland and are below normal seasonal activity¹.

Northern Ireland Primary Care Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) decreased from 6.5 per 100,000 population in week 15 to 5.3 per 100,000 population in week 16.
- OOH GP consultation rates for flu/FLI increased slightly in week 16, 2018 from 2.5 per 100,000 population in week 15 to 2.6 per 100,000.

Microbiological Surveillance (Flu and RSV)

- The proportion of all positive influenza specimens decreased from 13% in week 15, 2018 to 9% in week 16.
- No positive detections of RSV were reported.

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 31 detections in week 15, 2018 to 14 in week 16.
- There were two admissions to ICU with confirmed influenza reported in week 16, 2018 giving a total of 118 cases this season to date.
- There was one death reported in week 16. There were 21 deaths in ICU this season in which a diagnosis of influenza was confirmed.

Influenza Outbreaks across Northern Ireland

- There were no influenza outbreaks reported to the PHA in week 16, 2018.

Mortality

- The proportion of deaths related to respiratory keywords (bronchiolitis, bronchitis, influenza and pneumonia) decreased slightly from 31% in week 15, 2018 to 29% in week 16.

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

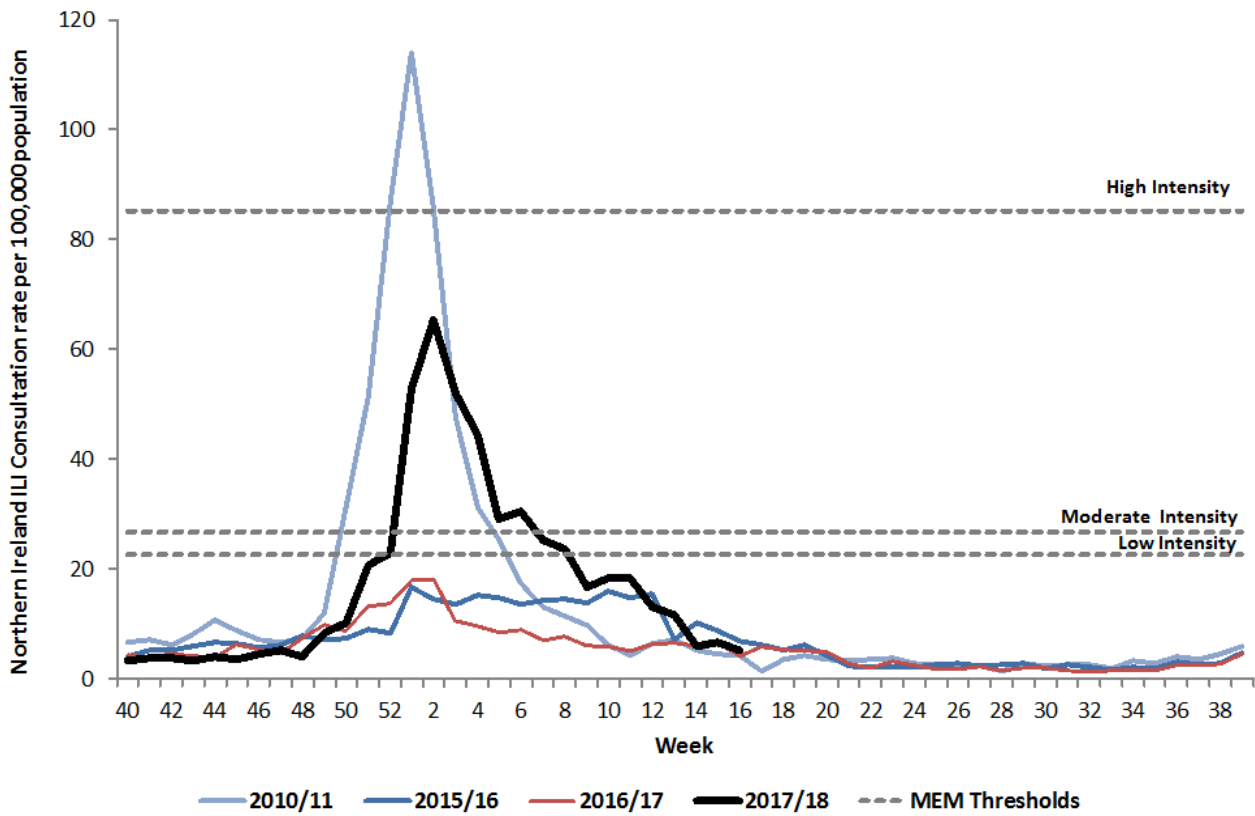


Figure 2. Northern Ireland GP consultation rates for flu/FLI and number of influenza positive detections 2012/13 – 2017/18

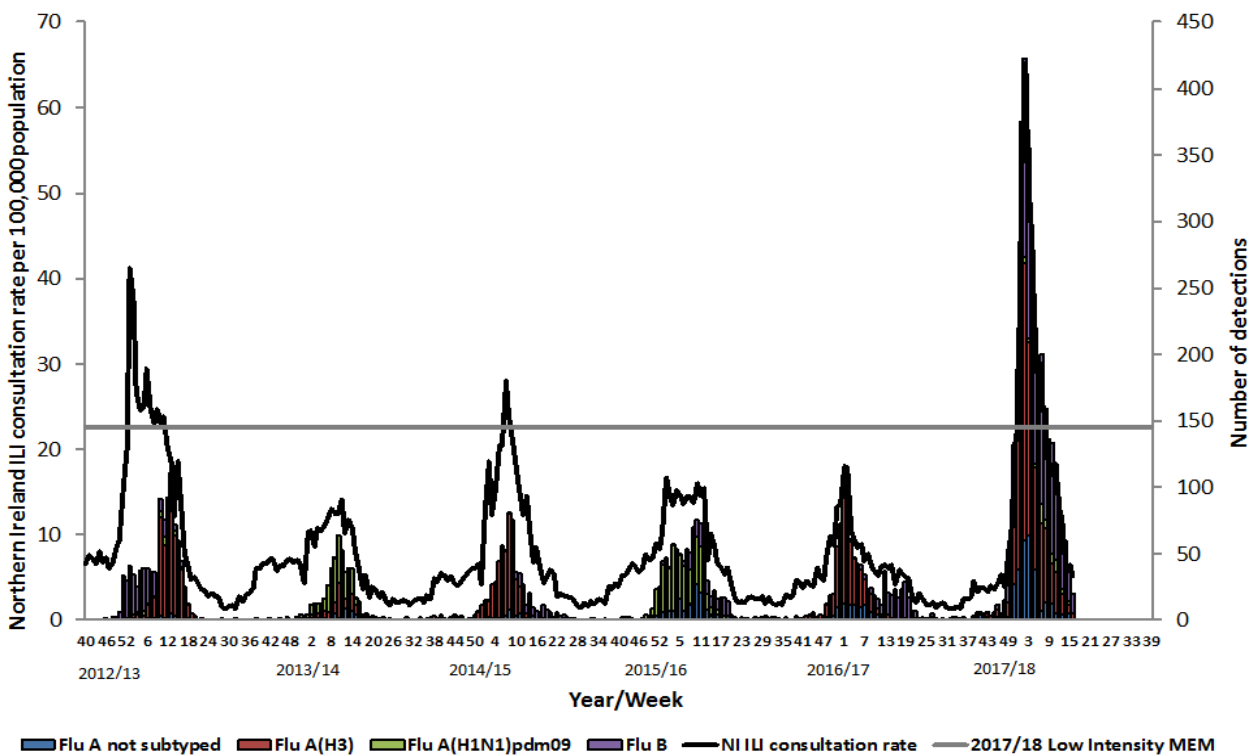
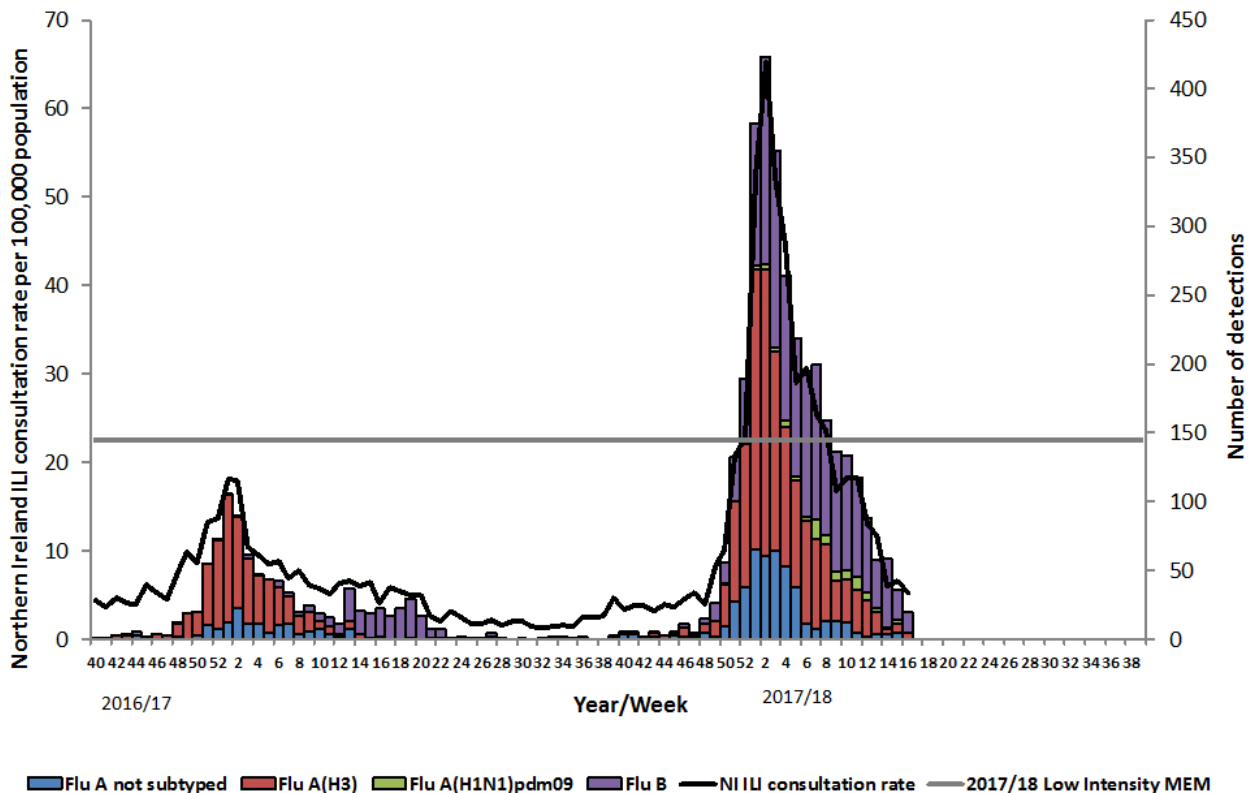


Figure 3. Northern Ireland GP consultation rates for flu/FLI and number of virology 'flu' detections from week 40, 2016



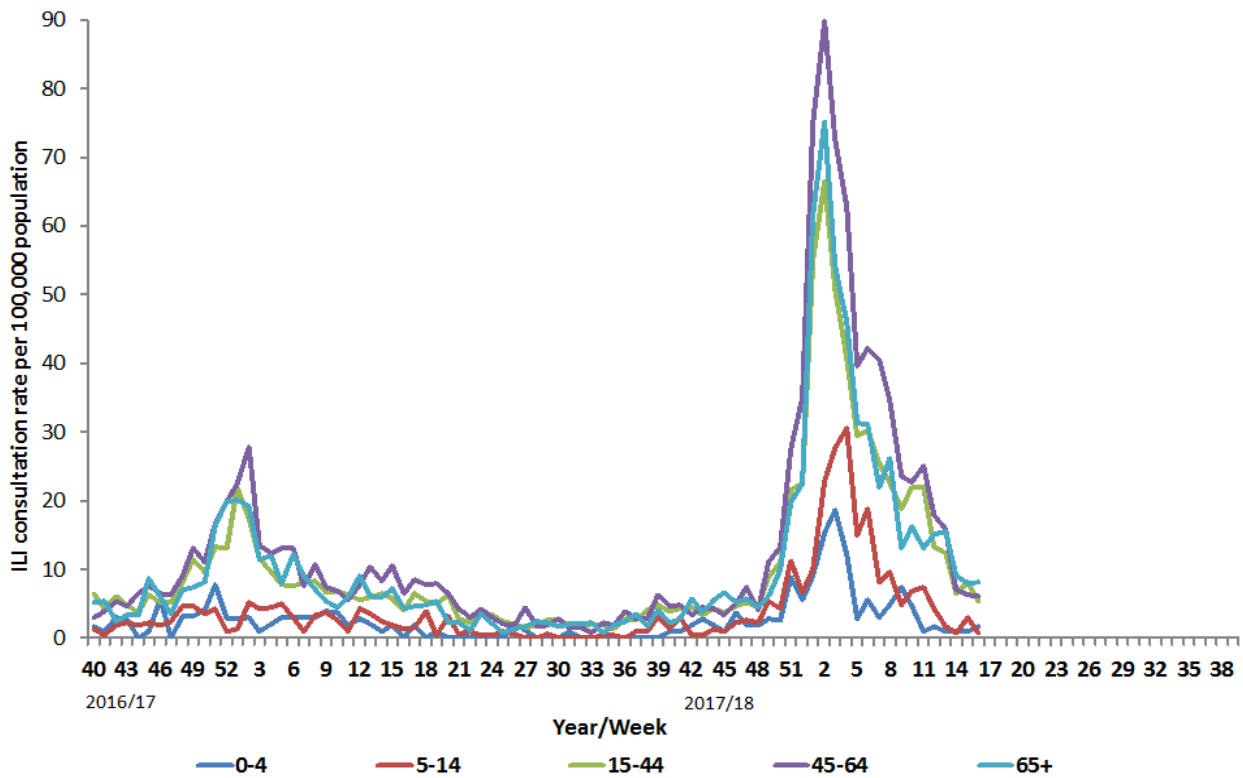
Comment

NI GP consultation rates decreased from 6.5 per 100,000 population in week 15, 2018 to 5.3 per 100,000 in week 16. These rates remain well below the baseline MEM threshold for Northern Ireland (22.6 per 100,000) and are below normal seasonal activity (Figure 1).

The number of positive influenza laboratory detections decreased from 36 in week 15, 2018 to 20 in week 16. At this point in the season there have been a total of 1324 detections of influenza A(H3), 1440 of influenza B, 455 of influenza A (typing awaited), and 80 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 increased for the age groups 0-4 years (0.9 to 1.8 per 100,000 population) and 65 years and over (7.9 to 8.1 per 100,000). Rates decreased in the age groups 5-14 years (3.1 to 0.9 per 100,000), 15-44 years (8.1 to 5.5 per 100,000) and 45-64 (6.3 to 6.2 per 100,000).

Out-of-Hours (OOH) Centres Call Data

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

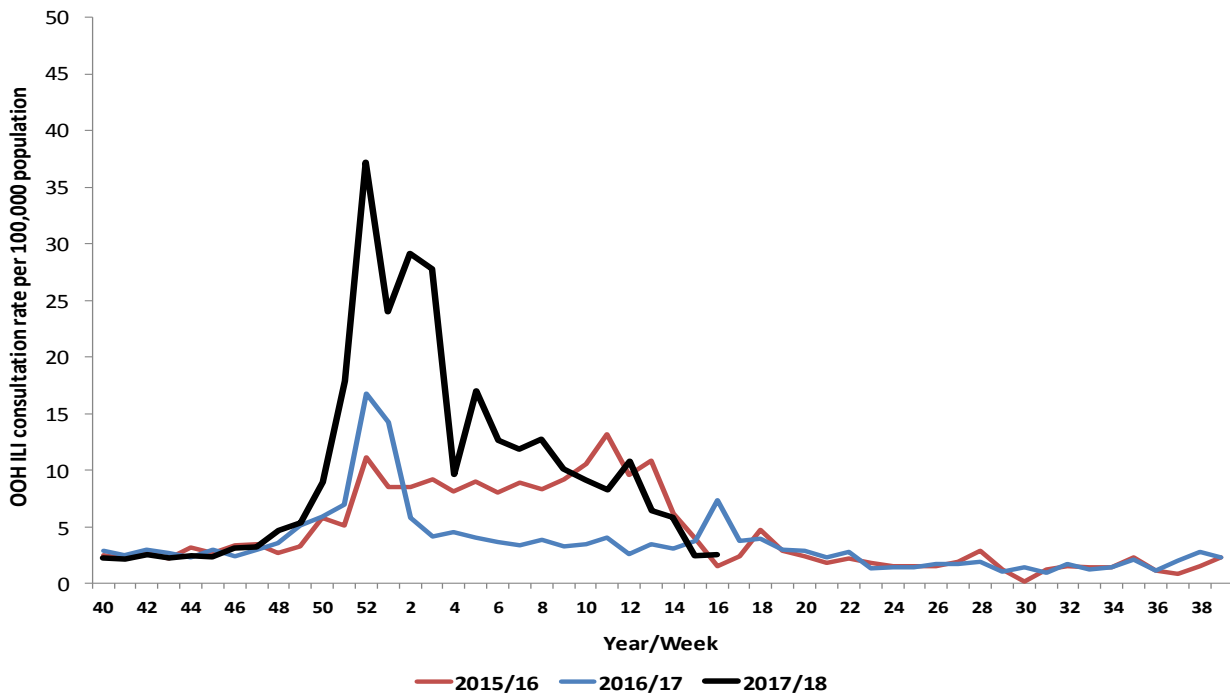
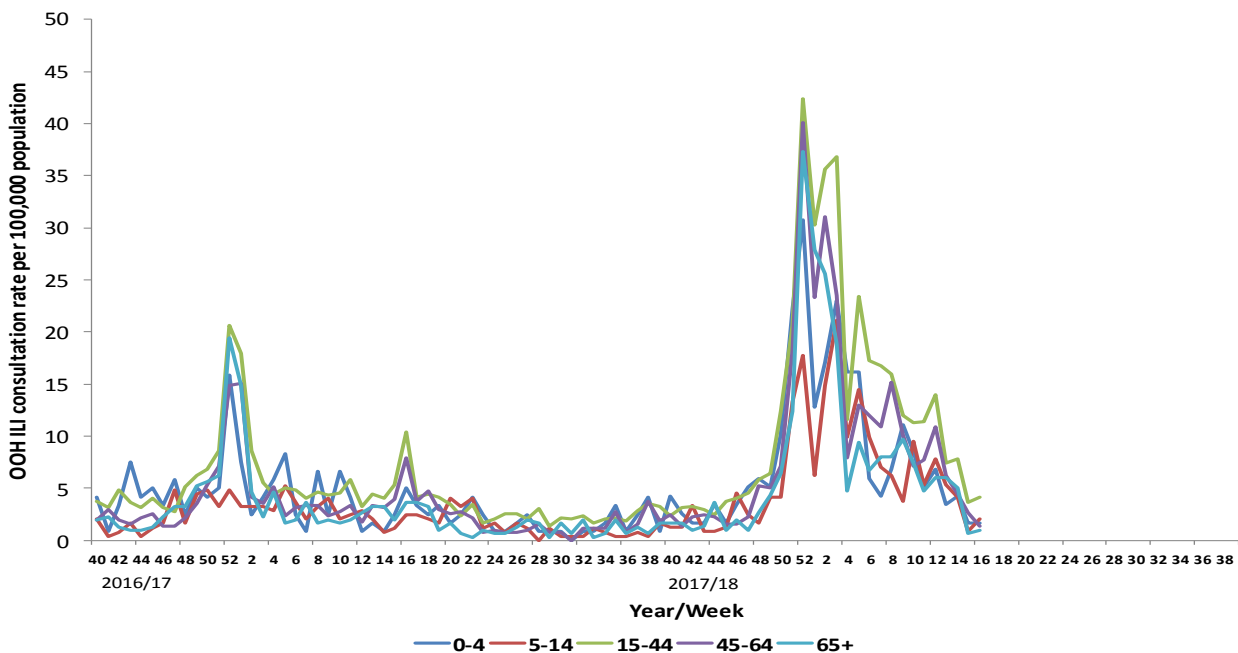


Figure 6. OOH call rates of flu/FLI by age-group from week 40, 2016



Comment

OOH GP consultation rates increased slightly in week 16, 2018 from 2.5 per 100,000 population in week 15 to 2.6 per 100,000. Rates are lower than the same period in 2016/17 (7.4 per 100,000) (Figure 5).

The proportion of calls related to flu in OOH centres remained at 0.5% in week 16.

In week 16, OOH flu/FLI rates decreased for the age group 45–64 years (2.6 to 1.4 per 100,000). Rates increased for the age groups 5-14 years (0.8 to 2.1 per 100,000), 15-44 years (3.7 to 4.2 per 100,000) and 65 years and over (0.7 to 1.0 per 100,000). The rate for 0-4 years remained unchanged from week 15 (1.7 per 100,000).

Virology Data

Table 1. Virus activity in Northern Ireland by source, Week 16, 2017/18

| Source | Specimens Tested | Flu AH3 | Flu A(H1N1) 2009 | A (untyped) | Flu B | RSV | Total influenza Positive | % Influenza Positive |
|--------------|------------------|----------|------------------|-------------|-----------|----------|--------------------------|----------------------|
| Sentinel | 5 | 0 | 0 | 0 | 1 | 0 | 1 | 20% |
| Non-sentinel | 230 | 5 | 0 | 0 | 14 | 0 | 19 | 8% |
| Total | 235 | 5 | 0 | 0 | 15 | 0 | 20 | 9% |

Table 2. Cumulative virus activity from all sources by age group, Week 40 - 16, 2017/18

| | Flu AH3 | Flu A(H1N1) 2009 | A (untyped) | Flu B | Total Influenza | RSV |
|-----------------|-------------|------------------|-------------|-------------|-----------------|------------|
| 0-4 | 45 | 8 | 26 | 41 | 120 | 336 |
| 5-14 | 33 | 1 | 11 | 46 | 91 | 13 |
| 15-64 | 477 | 42 | 188 | 701 | 1408 | 92 |
| 65+ | 768 | 29 | 230 | 650 | 1677 | 139 |
| Unknown | 1 | 0 | 0 | 2 | 3 | 1 |
| All ages | 1324 | 80 | 455 | 1440 | 3299 | 581 |

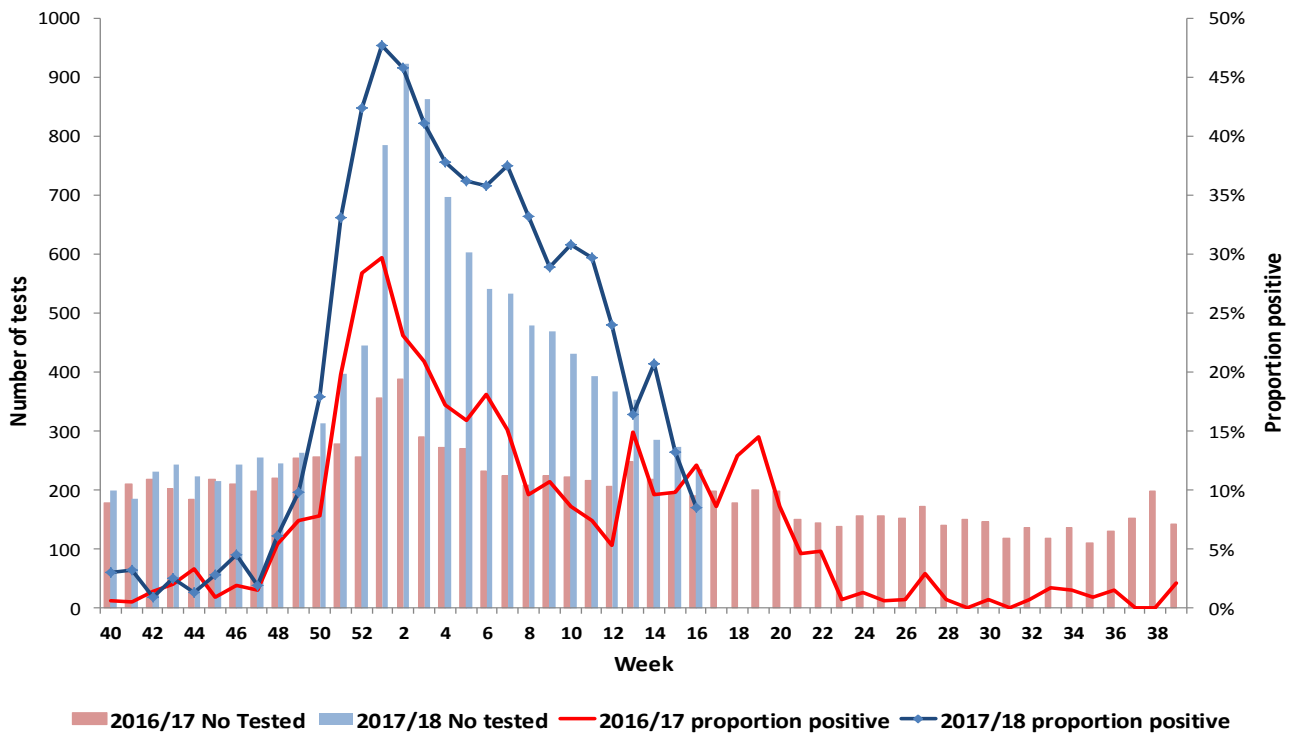
Table 3. Cumulative virus activity by age group and source, Week 40 - Week 16, 2017/18

| | 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 | 44 | 8 | 26 | 40 | 118 | 336 |
| 5-14 | 5 | 0 | 0 | 10 | 15 | 1 | 28 | 1 | 11 | 36 | 76 | 12 |
| 15-64 | 74 | 10 | 14 | 124 | 222 | 9 | 403 | 32 | 174 | 577 | 1186 | 83 |
| 65+ | 26 | 3 | 3 | 21 | 53 | 1 | 742 | 26 | 227 | 629 | 1624 | 138 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 3 | 1 |
| All ages | 106 | 13 | 17 | 156 | 292 | 11 | 1218 | 67 | 438 | 1284 | 3007 | 570 |

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

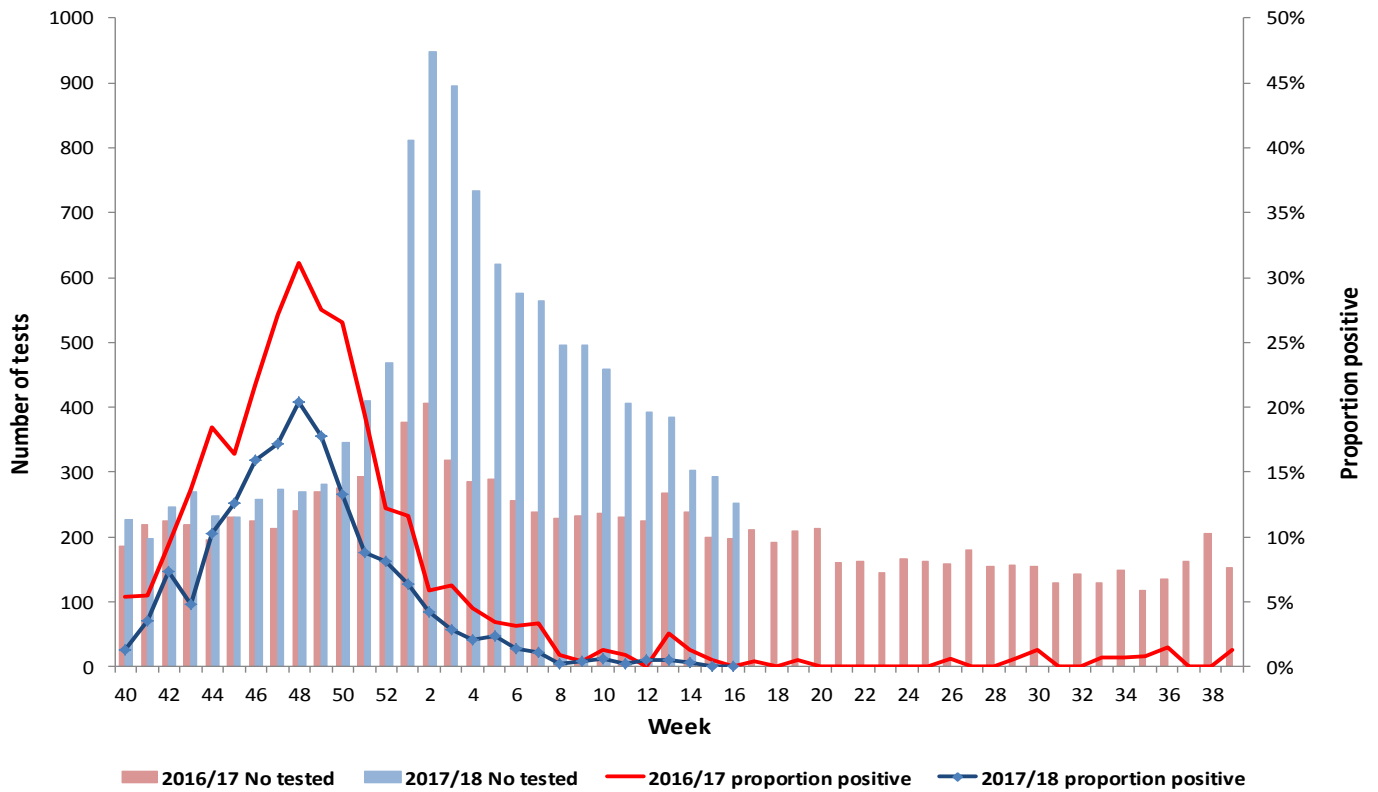
Additional virology testing has been undertaken at one local laboratory since week 2, 2018. This bulletin now includes this data along with the data from the Regional Virology Laboratory. Other local laboratories may begin undertaking influenza testing and this data will be included in later bulletins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

During week 16, 2018 there were 235 specimens submitted for virological testing. There were 20 detections of influenza in total (positivity rate of 9%), of which five were influenza A(H3) and 15 influenza B (Figure 7 and Table 1).

There were five samples submitted through the GP based sentinel scheme across Northern Ireland during this period, of which one was positive for influenza B (positivity rate of 20%) (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

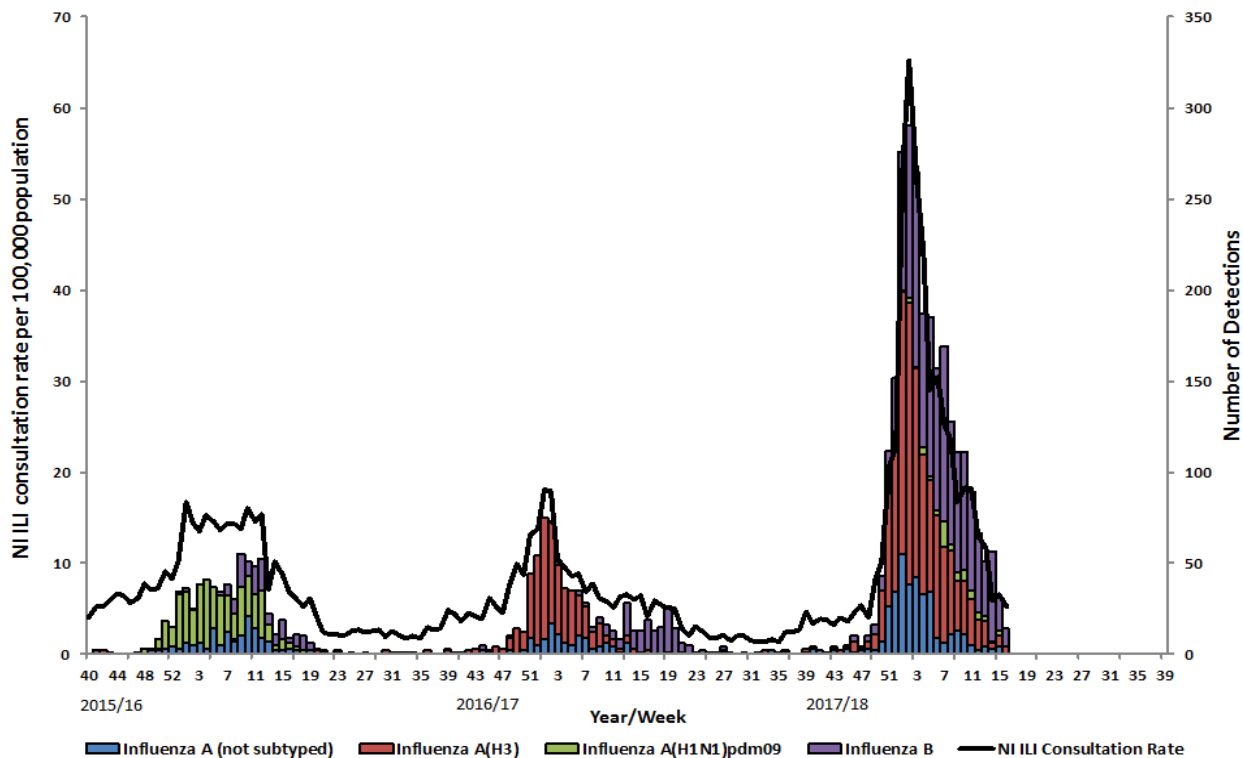


Comment

There were no positive detections of RSV reported in week 16, 2018. To date there have been a total of 581 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



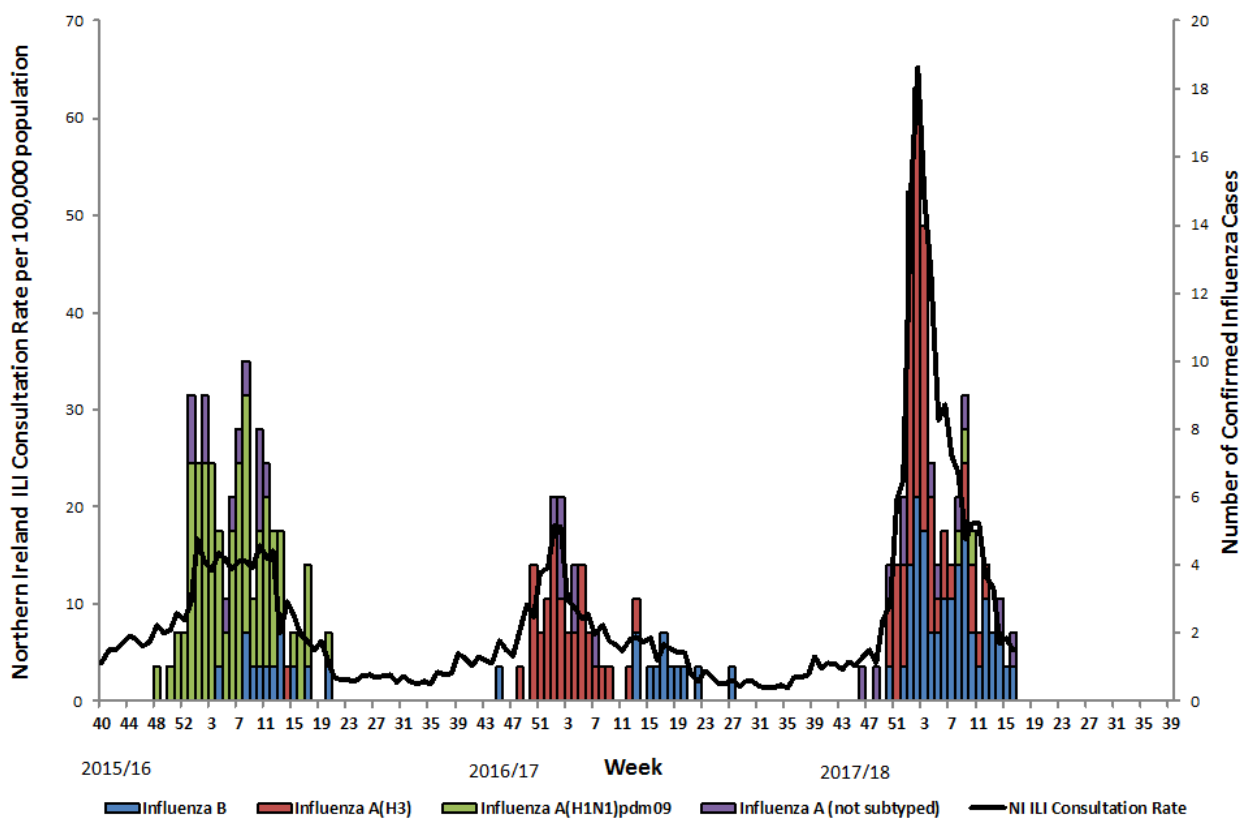
Comment

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 16, 2018 there were a total of 14 detections of influenza from specimens taken in hospital settings across Northern Ireland. Of these there were four detections of influenza A(H3) and 10 of influenza B. This represents a decrease from week 15 (31 positive reports).

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 16, 2018 there were two new admissions to ICU with confirmed influenza reported to the PHA. There was one death reported in an ICU patient who had laboratory confirmed influenza. There were 21 deaths in ICU this season in which a diagnosis of influenza was confirmed. There have been 118 confirmed cases of influenza in ICU reported this season to date, of which 53 have been typed as influenza A(H3), 48 influenza B, three influenza A(H1N1)2009, 13 influenza A (typing awaited) and one confirmed case of both influenza A and B (not shown in figure 10).

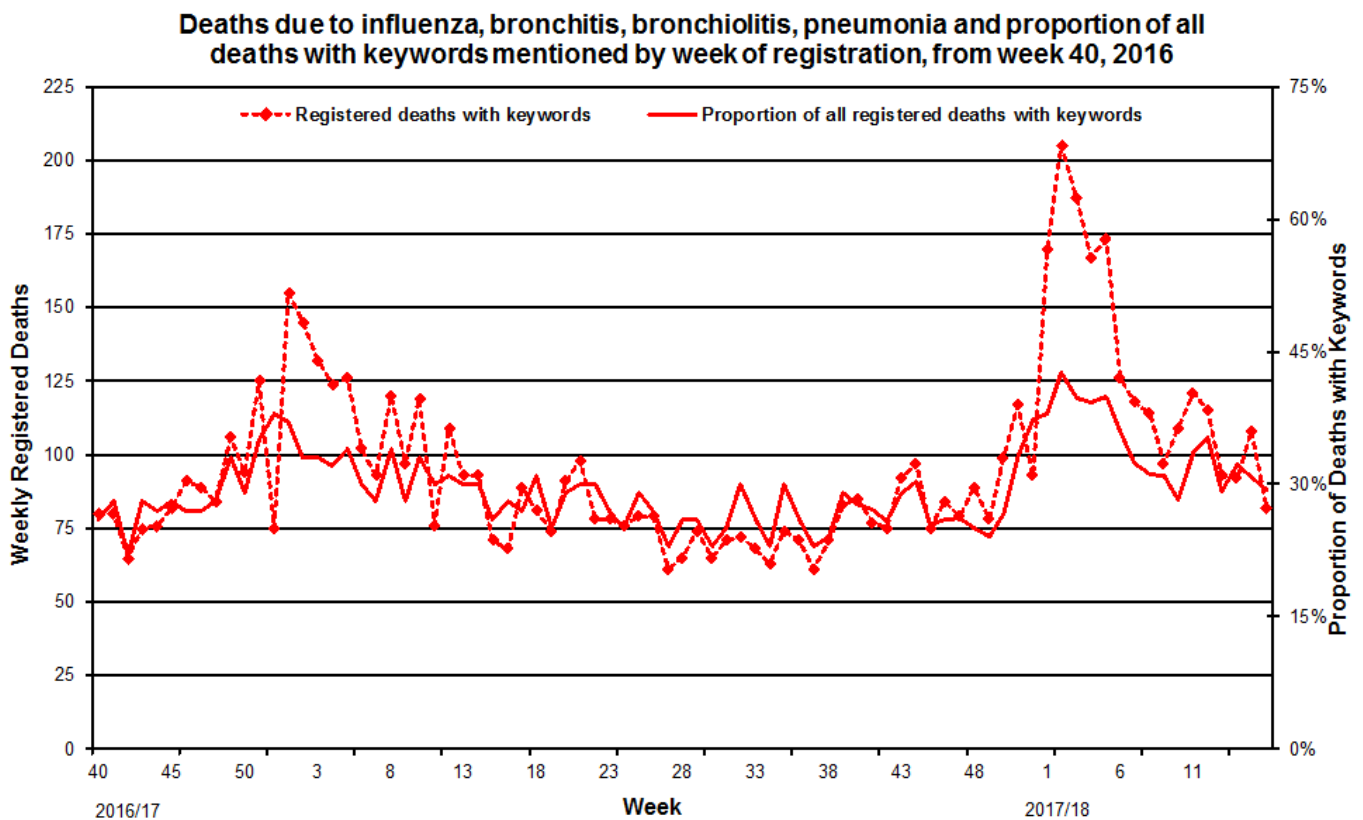
Outbreak Surveillance

During week 16, 2018 there were no influenza outbreaks reported. The total confirmed influenza outbreaks to date are 39.

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

The proportion of deaths related to respiratory keywords decreased from 31% in week 15, 2018 to 29% in week 16. In week 16 there were 280 registered deaths, of which 82 related to specific respiratory infections (Figure 11). The proportion of deaths attributed to specific respiratory infections is slightly higher at this point in the season to the same period in 2016/17 (28%).

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 no excess all-cause mortality reported in Northern Ireland in week 16, 2018. There has been a total of nine weeks in the season where there has been excess all-cause mortality (weeks 49, 51-5, and 7). 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 Mar 31 st) | 2016/17 (to Mar 31 st) |
|-------------------|------------------------------------|------------------------------------|
| >65 years | 71.8% | 71.9% |
| <65 years at risk | 56.0% | 57.1% |
| Pregnant women | 56.7% | 58.6% |
| 2 to 4 year olds | 50.6% | 52.6% |
| Primary School | 76.5% | 78.3% |
| Trust Frontline | 33.4% | 29.0% |

*vaccine uptake data is provisional

International Summary

Europe

Week 15/2018 (9 - 15 April 2018)

- Influenza viruses continued to circulate in the Region with 26% of the individuals sampled from primary healthcare settings testing positive, while all countries reported low or medium intensity of activity of respiratory infections.
- Both influenza virus types A and B were co-circulating with the majority being type A viruses.

2017/18 season overview

- Influenza has been circulating widely in the Region since week 52/2017, based on increased proportions of sentinel specimens testing positive for influenza viruses in all countries of the Region up to week 15, which is longer than in recent seasons and may contribute to the severity of this season.
- For the Region overall, the majority of influenza viruses detected were type B, representing a high level of circulation of influenza B viruses compared to recent seasons. B/Yamagata lineage viruses have greatly outnumbered those of the B/Victoria lineage. [Click here for more information](#)
- Different patterns of dominant type and A subtypes were observed between the countries of the Region. By week 15, influenza A viruses were dominant in several eastern European countries.
- Of the type A virus detections from sentinel sources, the majority of which were subtyped, A(H1N1)pdm09 viruses have outnumbered A(H3N2) viruses. In non-sentinel sources, similar numbers of A(H3N2) viruses and A(H1N1)pdm09 viruses were reported. [Click here for more information](#)
- While low in number, 55% of characterized A(H3N2) viruses belong to clade 3C.2a, 42% to clade 3C.2a1 and 41% of B/Victoria lineage viruses belong to a subclade of clade 1A viruses that are antigenically distinct from the current trivalent vaccine component. [Click here for more information](#)
- The majority of severe cases reported this season are due to influenza type B and have mostly occurred in persons older than 15. [Click here for more information](#)
- Mortality from all causes based on pooled data from 22 EU countries and regions that reported to [EuroMOMO](#) remained elevated in some countries. [Click here for more information](#)
- Interim results from [5 European studies](#) indicate 25 to 52% vaccine effectiveness against any influenza.

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

Worldwide (WHO)

As at 16 April 2018 - based on data up to 01 April 2018

Influenza activity decreased in most of the countries in the temperate zone of the northern hemisphere, with exception of Eastern Europe where activity continued to increase. In the temperate zone of the southern hemisphere, influenza activity remained at inter-seasonal levels. Worldwide, influenza A and influenza B accounted for a similar proportion of influenza detections.

National Influenza Centres (NICs) and other national influenza laboratories from 107 countries, areas or territories reported data to FluNet for the time period from 19 March 2018 to 01 April 2018 (data as of 2018-04-13 03:50:07 UTC). The WHO GISRS laboratories tested more than 171054 specimens during that time period. 34751 were positive for influenza viruses, of which 18186 (52.3%) were typed as influenza A and 16565 (47.7%) as influenza B. Of the sub-typed influenza A viruses, 4763 (62.7%) were influenza A(H1N1)pdm09 and 2839 (37.3%) were influenza A(H3N2). Of the characterized B viruses, 1704 (91%) belonged to the B-Yamagata lineage and 169 (9%) 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

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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.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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