www.publichealth.hscni.net

# Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 7 (09 February 2015 – 15 February 2015)

## Summary


- GP Influenza activity in Northern Ireland has increased although most indicators remain at a relatively moderate level.
- GP consultation rates for combined flu and flu-like illness (flu/FLI) have increased in week 7, 2015, and now exceed the pre-epidemic Northern Ireland threshold of 52.0 per 100,000 population for the first time this season at 58.3 per 100,000 population. Most indicators are higher than noted during the same period last year.
- The OOH consultation rate for flu/FLI has decreased and remains low in week 7 at 8.7 per 100,000 population. The rate also remained relatively low in almost all age groups with the highest rate noted among the 0-4 years age group.
- RSV activity has slightly decreased in week 7, 2015.
- Influenza vaccine uptake to 31st January 2015 was 71.7% for those aged 65 and over, 69.0% for those aged under 65 and in an at risk group, 53.8% among 2-4 year old children and 79.6% among children in P1 to P7.
- There have been eight new admissions to ICU with confirmed influenza reported since the last bulletin; there have been a total of 27 ICU patients with confirmed influenza this season to date.
- There were three deaths in ICU patients with laboratory confirmed influenza reported since the last bulletin. There have been 7 deaths in ICU patients with laboratory confirmed influenza this season to date.
- There were four new confirmed influenza outbreaks reported to PHA in week 7, 2015.
- In week 7 2015, significant all-cause excess mortality was reported through the EuroMOMO algorithm.
- In week 7, 2015 there were fewer than five attendances for influenza like illness across the contributing emergency departments.


## Introduction

In order to monitor influenza activity in Northern Ireland a number of surveillance systems are in place.

Additional surveillance systems are:

- GP sentinel surveillance representing 11.7% of Northern Ireland population;
- GP Out-of-Hours surveillance system representing the entire population;
- Virological reports from the Regional Virus Laboratory (RVL);
- Mortality data from Northern Ireland Statistics and Research Agency (NISRA);
- Excess mortality estimations are also provided by Public Health England using the EuroMOMO (Mortality Monitoring in Europe) model based on raw death data supplied by NISRA;
- Critical Care Network for Northern Ireland reports on critical care patients with confirmed influenza;
- Emergency department syndromic surveillance system (EDSSS) which includes attendance data from 5 emergency departments in Northern Ireland.

## Sentinel GP Consultation Data

**Figure 1. Sentinel GP consultation rates for flu/FLI 2012/13 - 2014/15**

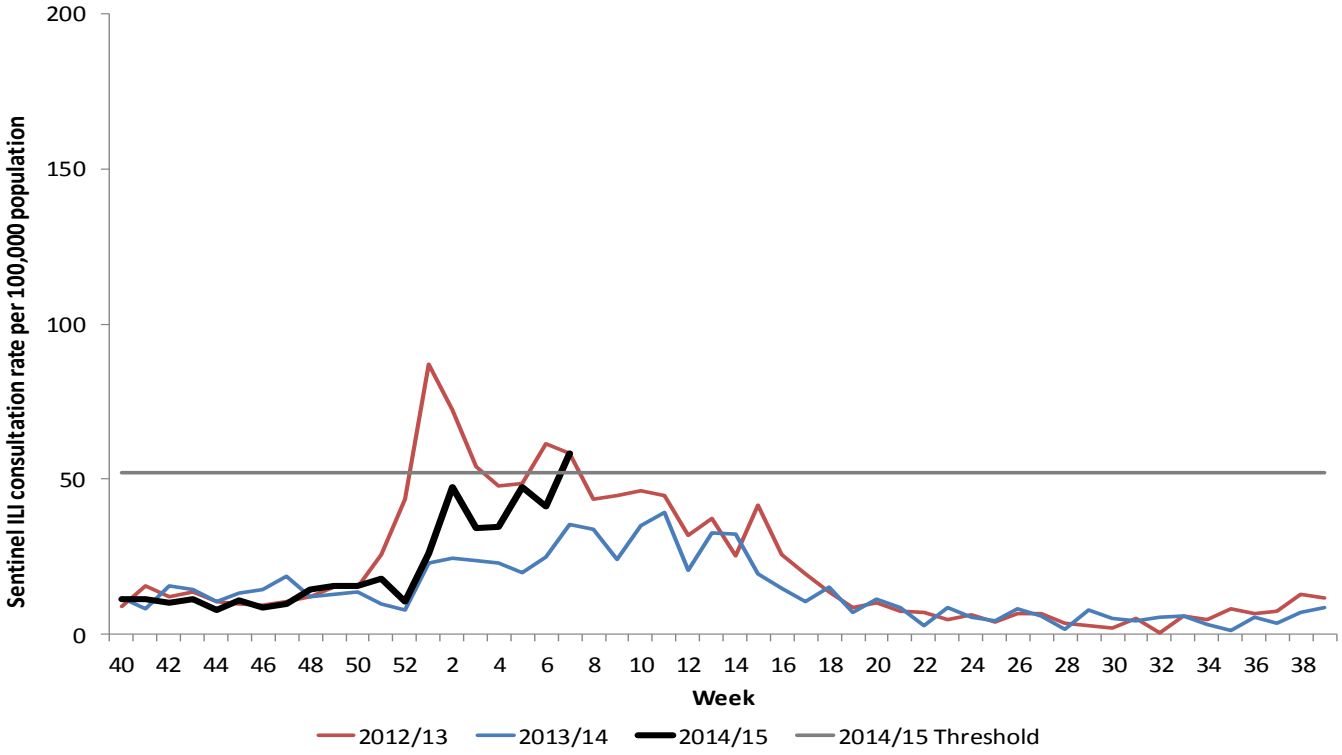



**Figure 2. Sentinel GP combined consultation rates for flu/FLI and number of influenza positive detections 2009/10 – 2014/15**

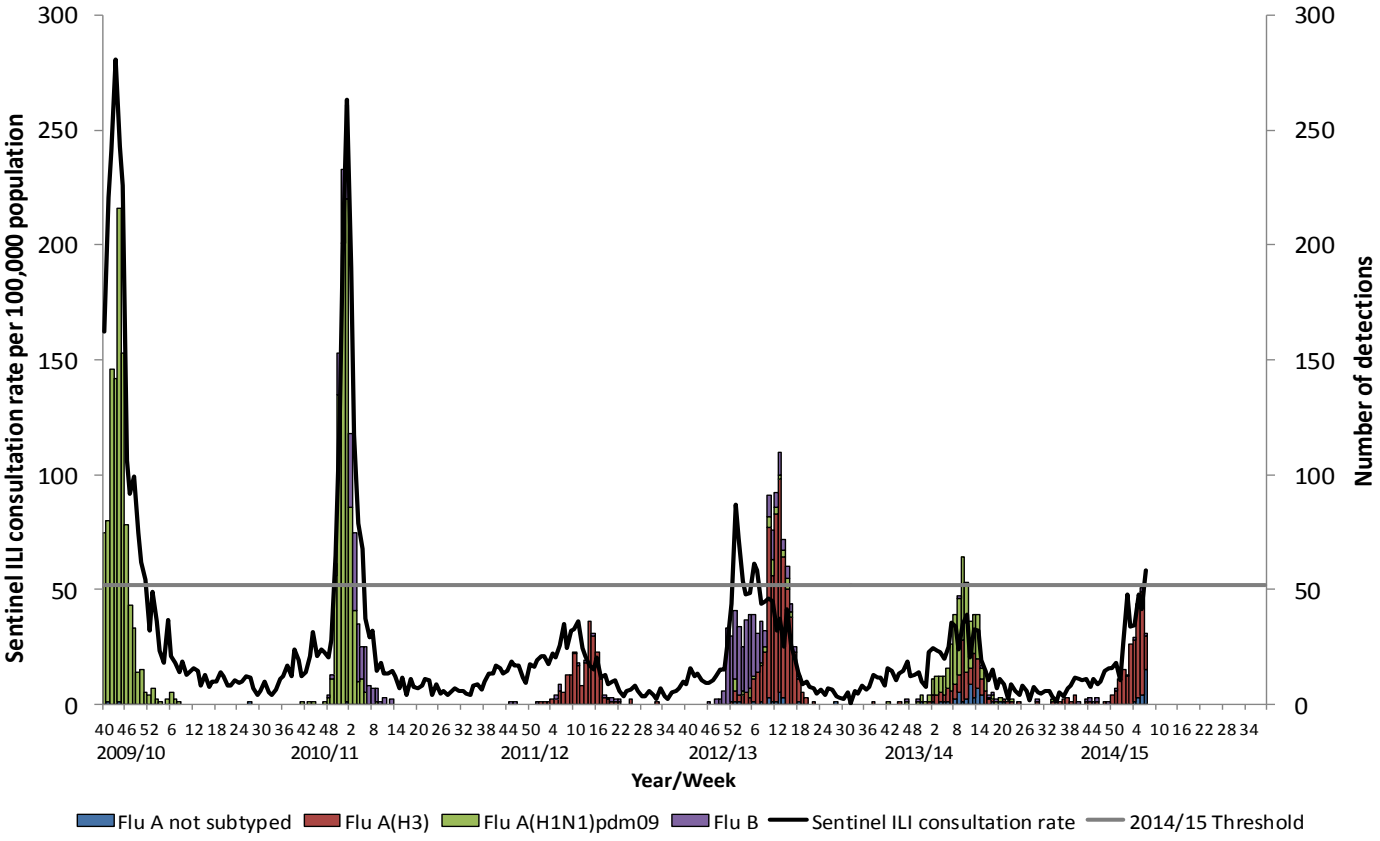
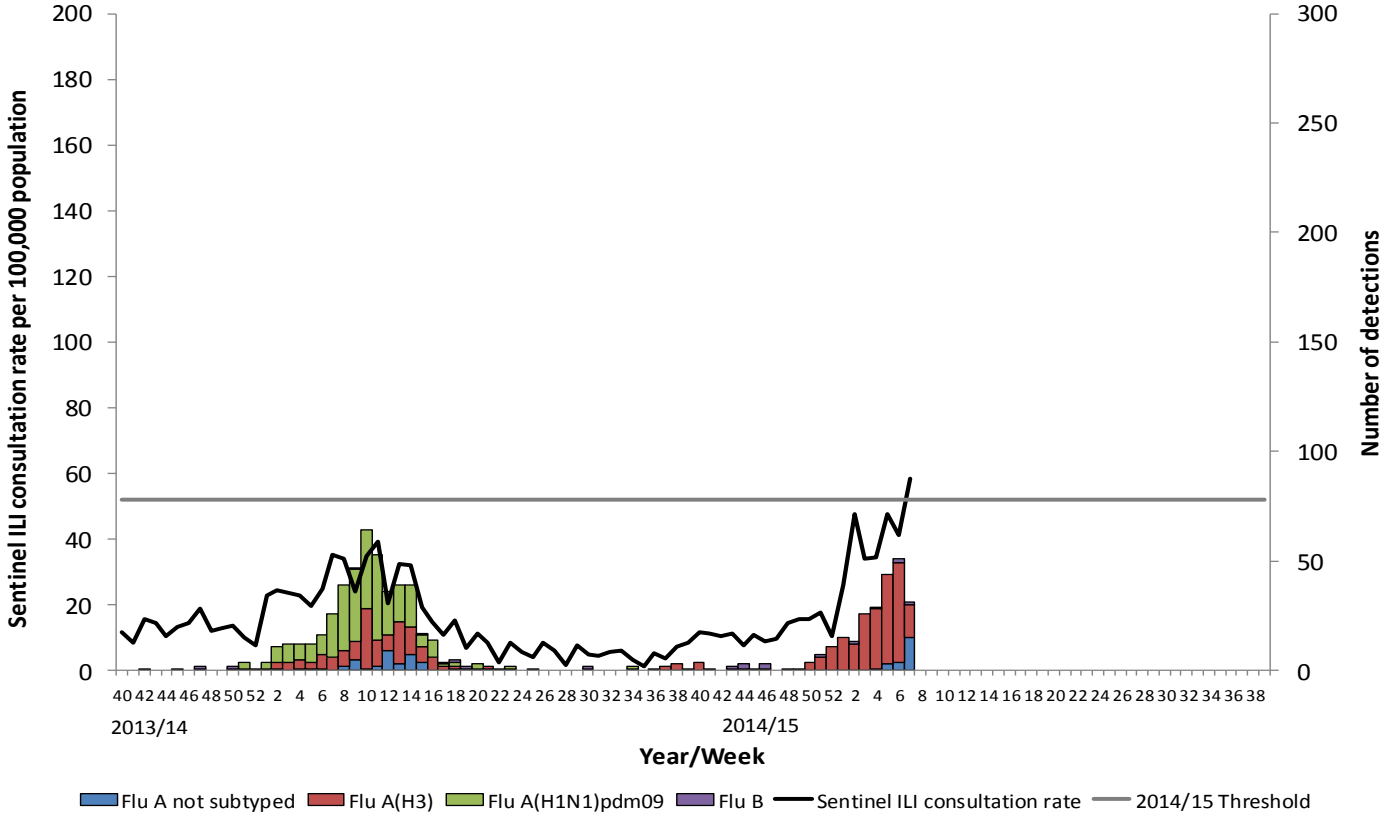


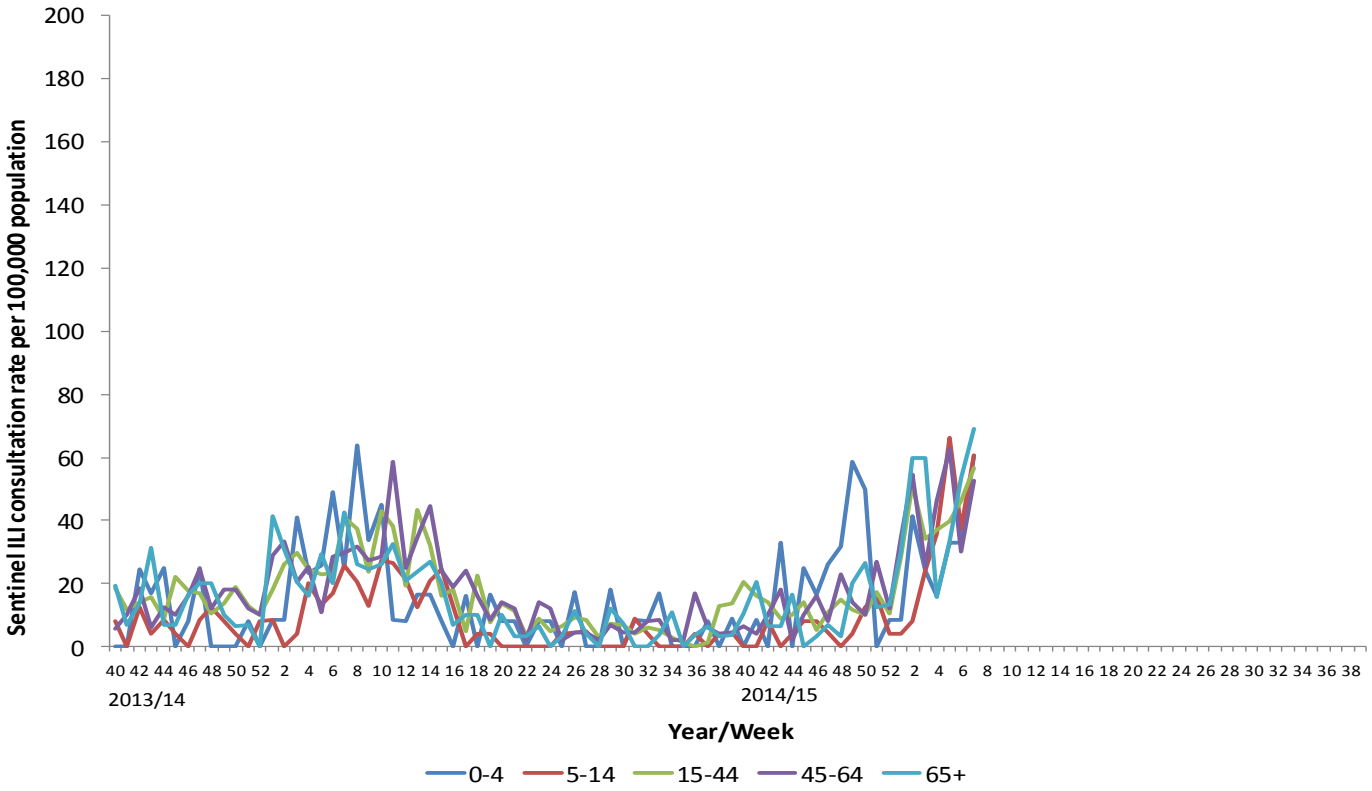
**Figure 3. Sentinel GP consultation rates for flu/FLI and number of virology 'flu detections from week 40, 2013**




## Comment

GP consultation rates have increased in week 7 to 58.3 per 100,000 from 41.4 per 100,000 in week 6, 2015. GP flu/FLI consultation rates in week 7, 2015 have increased above the pre-epidemic Northern Ireland 2014/15 threshold of 52.0 per 100,000 for the first time this season, and this is also the first threshold exceedance since 2012/13.Thus GP consultation rates are higher than noted this time last year but are similar to that noted during the same period in 2012/13 (Figures 1, 2 and 3).

**Figure 4. Sentinel GP age-specific consultation rates for flu/FLI from week 40, 2013**




## Comment

Sentinel GP flu/FLI consultations have increased among all age groups in week 7, 2015, with the most notable increases among those aged 0-4, 5-14 and 45-64 years.

GP Flu/FLI consultation rates for combined flu' and flu'-like-illness have generally increased among most age groups in recent weeks with a steady rise noted among those aged 0-4, 15-44 and 65 years and over. In week 7, 2015 rates among those aged 0-4, 15-44 and 65 years and over are the highest noted this season to date, while those aged 65 years and over again represented the highest age-specific consultation rate this week (Figure 4).

## Out-of-Hours (OOH) Centres Call Data

**Figure 5. OOH call rate for flu/FLI, 2012/13 – 2014/15**

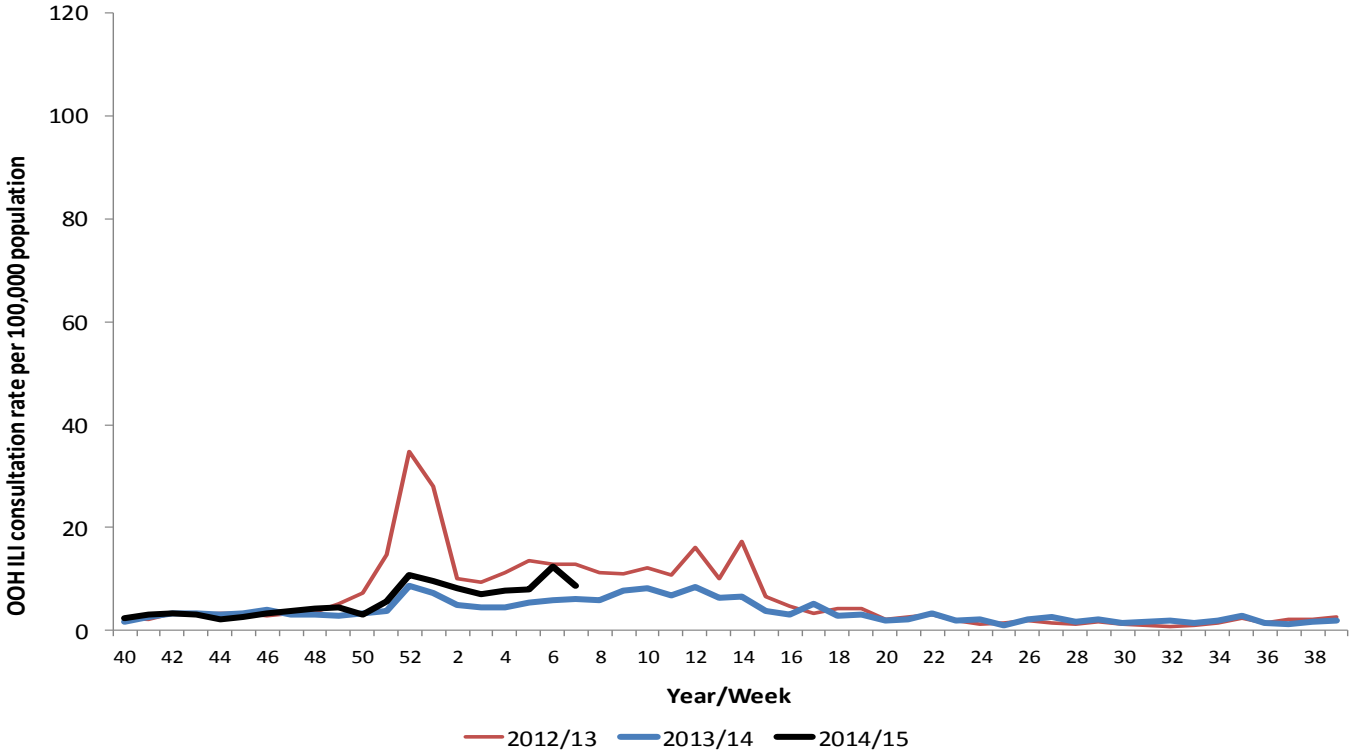
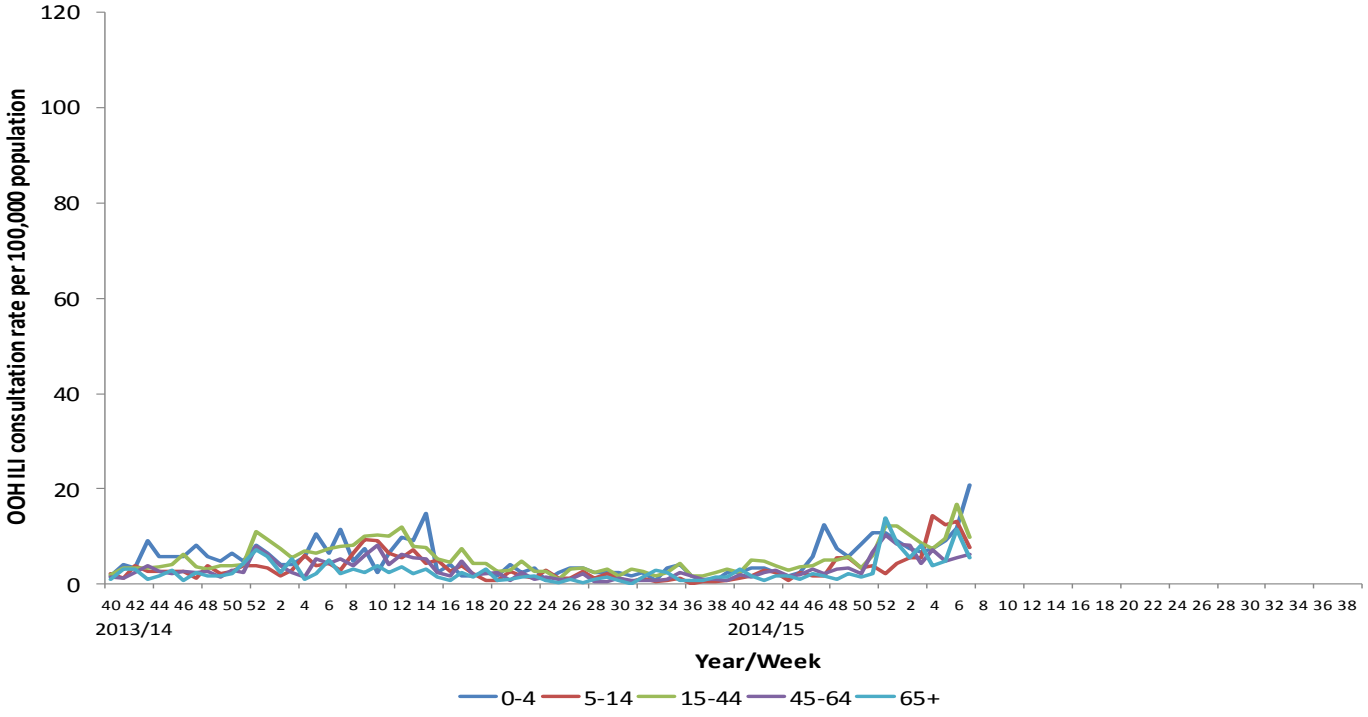



**Figure 6. OOH Call rates of flu/FLI by age-group from week 40, 2013**




## Comment

The OOH consultation rate for flu/FLI has decreased in week 7, but remains higher than the same period last year. Rates in week 7, 2015 decreased to 8.7 per 100,000 population from 12.4 per 100,000 in week 6 and although remaining higher than the same period in 2013/14 are lower than noted during the same period in 2012/13 (Figures 5 and 6).

The OOH flu/FLI rate has decreased among most age groups and remained relatively low. In week 7, 2015, an increase was however noted among those aged 0-4 and 45-64 years, with the rate among the 0-4 years age group representing the highest noted among this group during the current season. OOH flu/FLI consultation rates decreased among those aged 5-14, 15-44 and 65 years and over. The proportion of OOH total calls increased from 2.0% in week 6 to represent 2.1% of total calls to the OOH service in week 7, 2015.

## Virology Data

**Table 1. Virus activity in Northern Ireland, Week 7, 2014/15**

| Source | Specimens Tested | Flu AH3 | Flu A (H1N1) 2009 | A (untyped) | Flu B | RSV | Total influenza Positive | % Influenza Positive |
|---|---|---|---|---|---|---|---|---|
| Sentinel | 8 | 5 | 0 | 3 | 0 | 1 | 8 | 100% |
| Non-sentinel | 115 | 10 | 1 | 12 | 1 | 15 | 24 | 21% |
| Total | 123 | 15 | 1 | 15 | 1 | 16 | 32 | 26% |

**Table 2. Cumulative virus activity in Northern Ireland, Week 40 - 7, 2014/15**

| | Flu AH3 | Flu A (H1N1) 2009 | A (untyped) | Flu B | Total Influenza | RSV |
|---|---|---|---|---|---|---|
| 0-4 | 22 | 0 | 1 | 3 | 26 | 383 |
| 5-14 | 24 | 1 | 1 | 2 | 28 | 19 |
| 15-64 | 71 | 2 | 7 | 5 | 85 | 96 |
| 65+ | 93 | 2 | 14 | 4 | 113 | 84 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 1 |
| All ages | 210 | 5 | 23 | 14 | 252 | 583 |

**Table 3. Cumulative virus activity, Week 40 - Week 7, 2014/15**

| | 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 | 0 | 1 | 0 | 21 | 0 | 1 | 3 | 25 | 383 |
| 5-14 | 5 | 0 | 0 | 0 | 5 | 2 | 19 | 1 | 1 | 2 | 23 | 17 |
| 15-64 | 22 | 1 | 2 | 1 | 26 | 15 | 49 | 1 | 5 | 4 | 59 | 81 |
| 65+ | 6 | 0 | 1 | 0 | 7 | 4 | 87 | 2 | 13 | 4 | 106 | 80 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| All ages | 34 | 1 | 3 | 1 | 39 | 21 | 176 | 4 | 20 | 13 | 213 | 562 |

**Note**

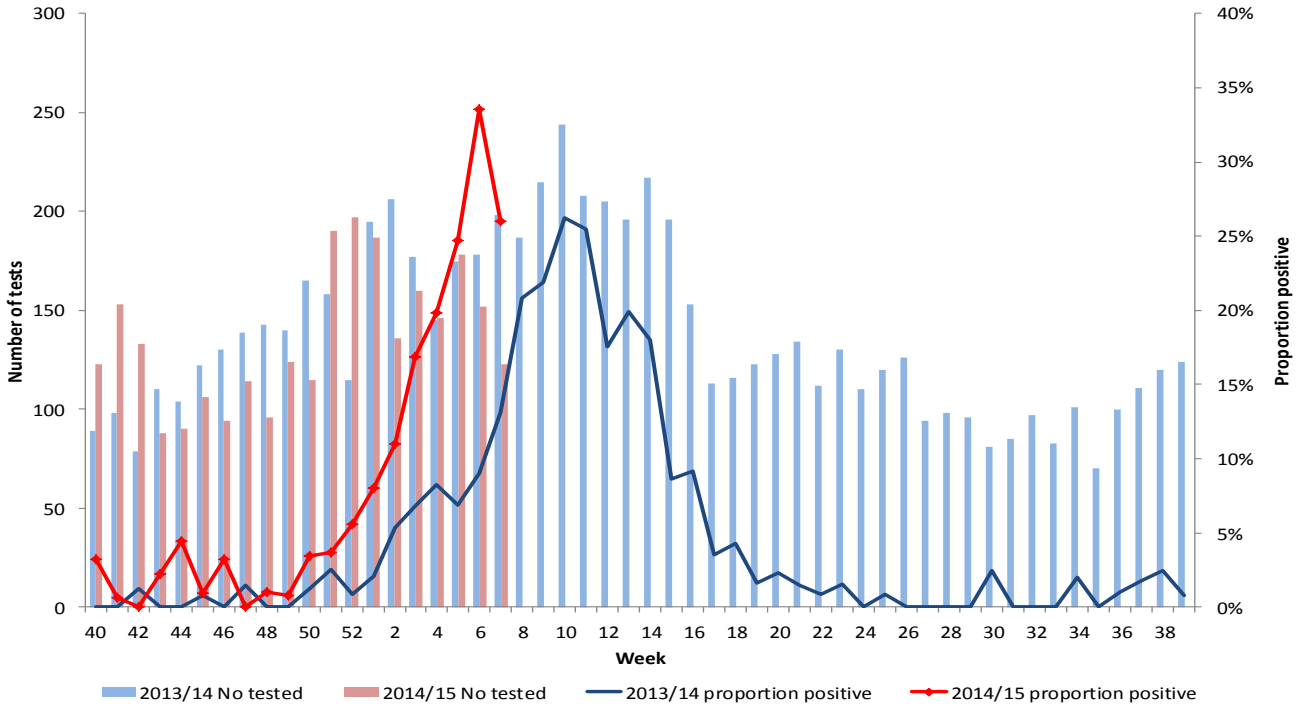
All virology data is provisional. The virology figures for previous weeks included in this or future bulletins are updated with data from laboratory returns received after the production of the last bulletin. The current bulletin reflects the most up-to-date information available.

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.

## Comment

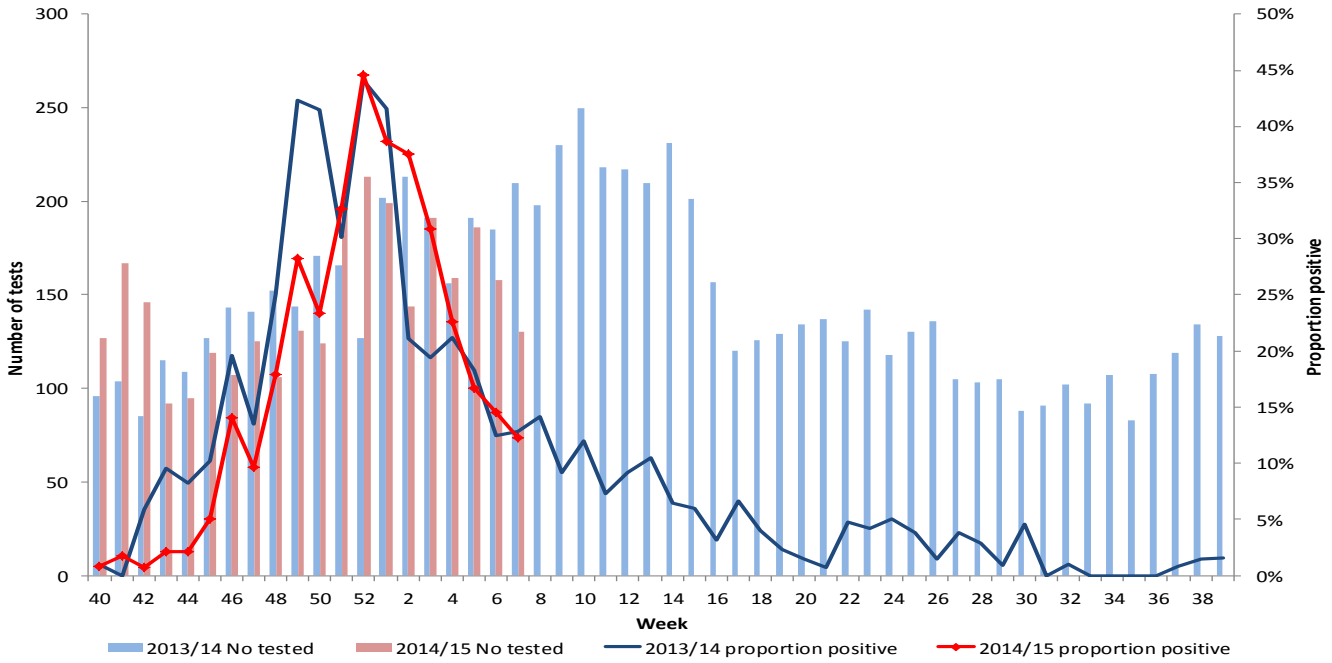
During week 7, 2015 there were 123 specimens submitted for testing, of which 15 were confirmed as influenza A(H3), 15 as influenza A untyped (typing awaited), 1 as influenza A (H1N1)pdm09 and 1 as influenza B. This is lower than the number detected in week 6 but is higher than the number of positive detections during the same period last year. Positivity rates for influenza have decreased this week to 26% from 34% the previous week, however data are provisional and more accurate data will be available in the next bulletin. The proportion positive in week 7, 2015 is however higher than the same period in both 2013/14 and 2012/13 (Figure 7).

**Figure 7. Number of samples tested for influenza and proportion positive, 2013/14 and 2014/15, all sources**



## Respiratory Syncytial Virus

**Figure 8. Number of samples tested for RSV and proportion positive, 2013/14 and 2014/15, all sources**




### Comment

There were 16 RSV positive detections in week 7, 2015 with positivity rates decreasing to 12% from 15% in week 6, however this should be interpreted with caution as the most recent week's data is at this stage incomplete – more accurate data will be available in the next bulletin. The positivity rate is lower than noted during the same period in 2013/14 but higher than noted in 2012/13. There have been a total of 583 detections of RSV since the beginning of the 2014-15 influenza season of which 66% fall within the 0-4 years age group (Figure 8, Table 2).

## Influenza Vaccine Uptake

To 31st January 2015, provisional data suggested that vaccine uptake for those aged 65 years and over was 71.7%, lower than the same period in last season (73.6%); while 69.0% of those under 65 and in an at risk group had received the vaccine, lower than in the 2013/14 season when 74.4% had received the vaccine during the same period.

This season for the first time, all children aged between 2 and 4 years and all those in P1 – P7 have been offered the seasonal influenza vaccine. To 31st January 2015, provisional data suggested that vaccine uptake among 2-4 year old children was 53.8%, while provisional uptake among children in P1 – P7 was 79.6%.

## Emergency Department Syndromic Surveillance System

In week 7, 2015 there were fewer than five influenza-like-illness (ILI) attendances reported in EDSSS. Later in the season the bulletin will include a graphical representation of ILI attendances if numbers increase.

## ICU/HDU Surveillance

There have been eight ICU patients confirmed with influenza since the last bulletin. To date there have been twenty-seven ICU patients with confirmed influenza, of which twenty-one have been confirmed as influenza A (H3), two as influenza A (H1N1)pdm09 and four as influenza A untyped (typing awaited).

There were three deaths in ICU patients with laboratory confirmed influenza reported since the last bulletin. To date, there have been seven deaths in ICU patients with laboratory confirmed influenza.

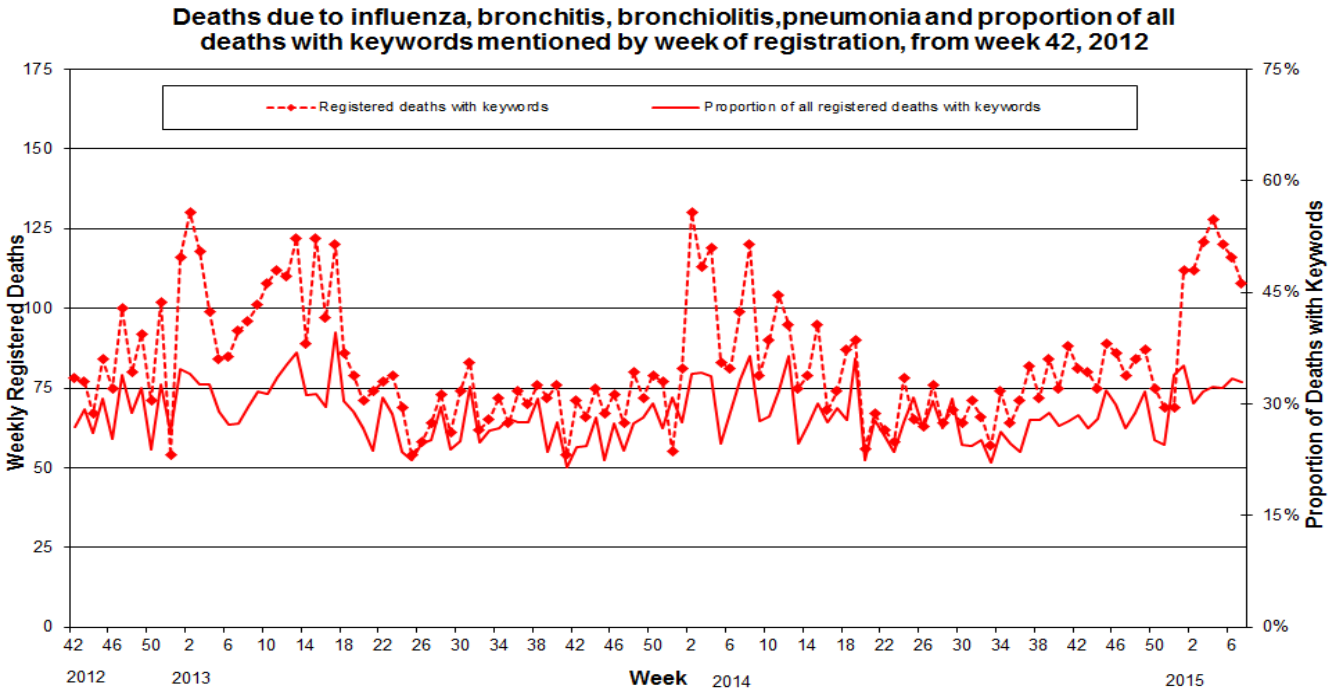
## Outbreak Surveillance

There were four new confirmed influenza outbreaks reported in week 7, 2015, of which two were confirmed as influenza A (H3) and two as influenza A untyped (typing awaited). There have been a total of nine confirmed influenza outbreaks reported so far this season, of which seven have been confirmed as influenza A (H3) and two as influenza A untyped (typing awaited). This compares with a total of three outbreaks for the duration of the 2013/14 season.

## Mortality Data

Weekly mortality data is provided from Northern Ireland Statistics and Research Agency. 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 9. Weekly registered deaths**



### Comment

The proportion of deaths related to respiratory keywords has remained stable at 33% in week 7, 2015. This is the same as noted during week 7 in 2014 (33%). In week 7, 2015, there were 328 registered deaths of which 108 related to these specific respiratory infections.

## EuroMOMO

Significant excess all-cause mortality was reported for week 7 in Northern Ireland, continuing the trend seen in weeks 3 – 6. This trend is being driven by excess mortality in the over 65 year age group. This data is provisional due to the time delay in registration; numbers may vary from week to week. To date this influenza season, excess all-cause mortality has been reported during five weeks of the season. This data will be presented in a chart later in the season.

## International Summary

**Europe**

Week 6, 2015:

The influenza season is well under way, in particular in western and central European countries in the WHO European Region.

- For week 06/2015, 20 countries reported increasing influenza activity.
- Of 2625 sentinel specimens, 1331 (51%) tested positive for influenza virus with positive detections being made in all 33 countries that reported virological data.
- Influenza A(H1N1)pdm09, A(H3N2) and type B viruses continued to circulate in the Region, with A(H3N2) predominating.
- Excess all-cause mortality among elderly people (aged ≥65 years), concomitant with increased influenza activity and the predominance of A(H3N2) viruses, has been observed in recent weeks in Belgium, France, Portugal, Spain, Switzerland and the United Kingdom (England, Scotland and Wales). Across all countries, a pooled analysis shows a higher level of mortality among elderly people than in the four previous seasons (see the European project for monitoring excess mortality for public health action (EuroMOMO – http://www.euromomo.eu)).
- Most of the A(H3N2) viruses characterized so far show antigenic differences from the virus included in the 2014–2015 northern hemisphere influenza vaccine. A reduction in the effectiveness of the A(H3N2) component of the vaccine may therefore be expected, which in turn may contribute to the excess mortality reported among elderly people in six European countries. The vaccine is still expected to provide some cross-protection against A(H3N2) viruses, which may reduce the likelihood of severe outcomes, such as hospitalization or death, in some cases. The A(H1N1)pdm09 and B components of the vaccine are likely to be effective.
- The circulation of respiratory syncytial virus (RSV) has decreased across the Region, following peak activity during the first two weeks of 2015.

http://www.flunewseurope.org/

**Worldwide (WHO) and CDC**

As at 9th February 2015:

Globally, influenza activity remained high in the northern hemisphere with influenza A(H3N2) viruses predominating so far this season. Antigenic characterization of most recent A(H3N2) viruses thus far indicated differences from the A(H3N2) virus used in the influenza vaccines for the northern hemisphere 2014-2015. The vast majority of influenza A(H3N2) viruses tested to date this season were sensitive to neuraminidase inhibitors.

- In North America, the influenza activity seemed to have peaked. Influenza A(H3N2) virus predominated this season. During week 5 (February 1-7, 2015), influenza activity decreased, but remained elevated in the United States. Of 21,340 specimens tested and reported by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories during week 5, 3,174 (14.9%) were positive for influenza. Outpatient Illness Surveillance: The proportion of outpatient visits for influenza-like illness (ILI) was 3.8%, above the national baseline of 2.0%. All 10 regions reported ILI at or above region-specific baseline levels.
- In Europe, the influenza season is well under way, particularly in western and central countries in the WHO European Region. Influenza A(H3N2) was the dominant virus detected this season.
- In northern Africa and the middle East, influenza activity due to influenza A(H3N2) and B seemed to have peaked but increasing activity with influenza A(H1N1)pdm09 was reported by Algeria, and Iran.
- In the temperate countries of Asia, influenza activity appeared to have peaked in northern China, but was still increasing in Japan and the Republic of Korea. Influenza A(H3N2) virus predominated so far.
- In tropical countries of the Americas, influenza activity was low in most countries of the Caribbean, Central America and in the tropical countries of South America.
- In tropical Asia, influenza activity increased in south China; China Hong Kong Special Administrative Region and India.
- In the southern hemisphere, influenza activity remained at inter-seasonal levels.
- Based on FluNet reporting (as of 5 February 2015, 10:20 UTC), during weeks 2 to 3 (11 January 2015 to 24 January 2015), National Influenza Centres (NICs) and other national influenza laboratories from 93 countries, areas or territories reported data. The WHO GISRS laboratories tested more than 135 489 specimens. 32 188 were positive for influenza viruses, of which 28 139 (87.4%) were typed as influenza A and 4049 (12.6%) as influenza B. Of the sub-typed influenza A viruses, 1151 (7.6%) were influenza A(H1N1)pdm09, 13 968 (92.4%) were A(H3N2). Of the characterized B viruses, 1463 (99%) belonged to the B-Yamagata lineage and 15 (1%) 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, Regional Virus Laboratory, Critical Care Network for Northern Ireland, Public Health England and NISRA. Their work is greatly appreciated and their support vital in the production of this bulletin.

## Further information

Further information on influenza is available at the following websites:

http://www.fluawareni.info Now on Facebook (Flu Aware NI)

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

http://www.publichealth.hscni.net

http://www.who.int http://ecdc.europa.eu

http://euroflu.org

Flusurvey, an online flu surveillance system run by the PHE and London School of Hygiene and Tropical Medicine was launched in 2013/14 and will continue into 2014/15. For further information and please see the Flusurvey website.

**Detailed influenza weekly reports can be found at the following websites:**

Northern Ireland:
http://www.publichealth.hscni.net/directorate-public-health/health-protection/seasonal-influenza

England, Scotland and Wales:
https://www.gov.uk/government/collections/seasonal-influenza-guidance-data-and-analysis#epidemiology

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:

**Chris Nugent**
**Surveillance Officer**
**Public Health Agency**
**028 9536 3407**

**Dr Naomh Gallagher**
**Senior Epidemiological Scientist**
**Public Health Agency**
**028 9536 3498**

**Email:** flusurveillance@hscni.net

**This report was compiled by Chris Nugent, Dr Naomh Gallagher and Dr Jillian Johnston.**