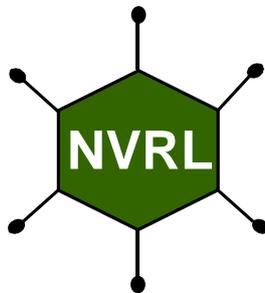


Weekly Influenza Surveillance Report



Week 45 2003

Report produced: 14/11/2003

This report is produced in collaboration with the Departments of Public Health

Summary

GP consultations rates for influenza-like illness increased further during week 45 in Ireland. Influenza activity levels are higher than previously recorded for this time of year and also higher than recorded for the previous 2 seasons, however activity levels are still within the range of normal seasonal activity. It is important to note that this increased influenza activity is compared to the last 3 seasons when unusually mild influenza activity was reported. Influenza A is now circulating throughout the country at an earlier stage than usually observed. The first detections of influenza B virus this season were also reported in weeks 44 and 45.

Clinical data

During week 45 2003 (the week ending the 9th of November 2003), 67 influenza-like illness (ILI) cases were reported from sentinel general practices, corresponding to an ILI consultation rate of 74.4 per 100,000 population, increasing from the updated rate of 58.4 per 100,000 in week 44. Twenty-eight of the sentinel general practices reported during week 45, with 18 reporting ILI. During week 45, ILI cases in the 0-4, 5-14 and 25-64 year age groups have all increased. Between weeks 40 and 45 2003, 8 ILI cases were aged between 0 and 4 years, 16 cases were 5-14 years, 48 cases were 15-24, 95 were 25-64 and 18 cases were aged 65 years or older.* ILI rates per 100,000 have reached the highest recorded levels for weeks 43, 44 and 45, since the influenza sentinel surveillance scheme began in October 2000. The ILI rates for week 45 2003 were also higher than any rates recorded in the previous 2 influenza seasons. It is important to note that influenza activity levels have been at low levels for the last 3 influenza seasons.

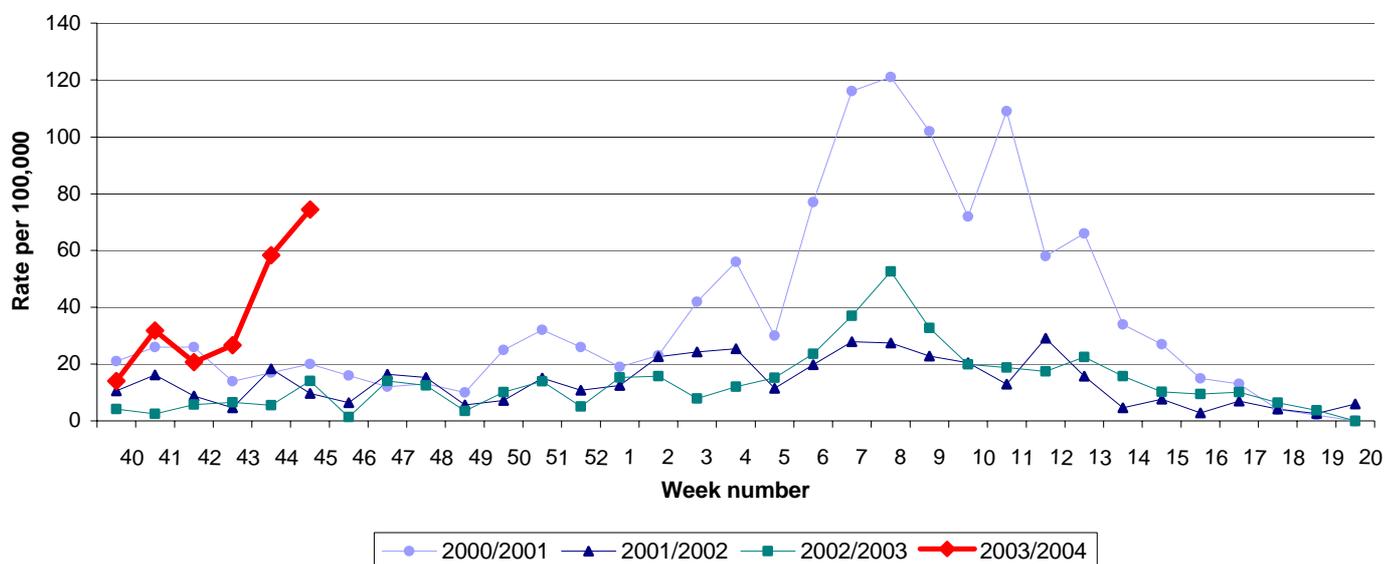


Figure 1: GP consultation rate for influenza-like illness per 100,000 population by report week, during the 2000/2001, 2001/2002, 2002/2003 & 2003/2004-influenza seasons.

*Age group denominator data is currently not available.

Virological data from the National Virus Reference Laboratory

During week 45, the National Virus Reference Laboratory (NVRL) received 48 swabs from sentinel GPs (table 1). Twenty-five swabs were positive for influenza, with 23 influenza A (unsubtyped) and 2 influenza B. Sentinel data for week 44 has been

updated, with 17 influenza A (unsubtyped), 6 influenza A (H3N2) and 1 influenza B viruses detected. The total number of positive influenza specimens from sentinel GPs for the 2003/2004 season to date is 64: 46 influenza A (unsubtyped), 15 influenza A (H3N2) and 3 influenza B viruses. The 3 influenza B viruses detected during weeks 44 and 45 are the first detections of influenza B in Ireland this season.

The NVRL also tested 103 respiratory non-sentinel specimens mainly from hospitals and some GPs during week 45, 12 were positive for influenza A and 2 for respiratory syncytial (RSV) virus. Between weeks 40 and 45 2003, a total of 223 respiratory non-sentinel specimens have been tested by the NVRL, 22 were positive for influenza A, 3 were positive for RSV, 3 for parainfluenza virus type 1 and 1 for parainfluenza virus type 3. Of the 22 influenza A positive specimens detected this season, 14 were in the 0 to 4 year age group.

The total number of influenza positive specimens from all sources (sentinel and non-sentinel) this season is 86; 83 influenza A and 3 influenza B (table 2). The first detections of influenza virus last season were during week 2 2003. The majority of influenza positive cases this season have been in children and young adults, with 16 cases in the 0 to 4 year age group, 11 cases were 5-14, 17 were 15-24, 38 were 25-64 years and 1 case was 65 years or older. Detection of influenza in these younger age groups is not unexpected as there has been very little influenza in circulation for the last few seasons, therefore the opportunity for development of immunity has been limited.

Table 1: Total number of sentinel swabs tested for influenza by week and positive results by type, subtype and report week for the 2003/2004-influenza season

| Week number | Total swabs | Positive swabs | Percentage positive | Influenza A (unsubtyped) | Influenza A (H1) | Influenza A (H3N2) | Influenza B |
|--------------|-------------|----------------|---------------------|--------------------------|------------------|--------------------|-------------|
| 40 | 9 | 0 | 0.0 | 0 | 0 | 0 | 0 |
| 41 | 12 | 4 | 33.3 | 0 | 0 | 4 | 0 |
| 42 | 14 | 7 | 50.0 | 2 | 0 | 5 | 0 |
| 43 | 10 | 4 | 40.0 | 4 | 0 | 0 | 0 |
| 44 | 35 | 24 | 68.6 | 17 | 0 | 6 | 1 |
| 45 | 48 | 25 | 52.1 | 23 | 0 | 0 | 2 |
| Total | 128 | 64 | 50.0 | 46 | 0 | 15 | 3 |

Table 2: Total number of sentinel and non-sentinel* respiratory specimens and positive results by week for the 2003/2004 season

| Week number | Total specimens | Influenza positive specimens | % Influenza positive | Influenza A | Influenza B | RSV |
|--------------|-----------------|------------------------------|----------------------|-------------|-------------|----------|
| 40 | 17 | 0 | 0.0 | 0 | 0 | 0 |
| 41 | 32 | 4 | 12.5 | 4 | 0 | 0 |
| 42 | 28 | 9 | 32.1 | 9 | 0 | 0 |
| 43 | 40 | 6 | 15.0 | 6 | 0 | 1 |
| 44 | 83 | 30 | 36.1 | 29 | 1 | 0 |
| 45 | 151 | 37 | 24.5 | 35 | 2 | 2 |
| Total | 351 | 86 | 24.5 | 83 | 3 | 1 |

* Please note that non-sentinel specimens include all specimens referred to the NVRL, these specimens are mainly from hospitals and some GPs and may include more than one specimen from each case.

Table 3: Total number of sentinel and non-sentinel* influenza A and B positive specimens by health board for week 45 and the 2003/2004 season to date

| | Week 45 2003 | | | Season to date | | |
|--------------|--------------|----------|-----------|----------------|----------|-----------|
| | Flu A | Flu B | Total | Flu A | Flu B | Total |
| ERHA | 18 | 0 | 18 | 40 | 0 | 40 |
| MHB | 1 | 0 | 1 | 2 | 0 | 2 |
| MWHB | 4 | 0 | 4 | 10 | 1 | 11 |
| NEHB | 6 | 0 | 6 | 9 | 0 | 9 |
| NWHB | 1 | 0 | 1 | 3 | 0 | 3 |
| SEHB | 1 | 1 | 2 | 9 | 1 | 10 |
| SHB | 2 | 0 | 2 | 5 | 0 | 5 |
| WHB | 2 | 1 | 3 | 5 | 1 | 6 |
| Total | 35 | 2 | 37 | 83 | 3 | 86 |

* Please note that non-sentinel specimens include all specimens referred to the NVRL, these specimens are mainly from hospitals and some GPs and may include more than one specimen from each case.

Antigenic characterisation

To date this season, 8 influenza A (H3N2) samples were sequenced at the NVRL and phylogenetic analysis was carried out at Mill Hill laboratories. All 8 samples were characterized as A (H3N2)/Fujian/411/2002-like strains. This year some antigenic drift has been detected in the virus strains circulating in some countries in Europe and in Australia and New Zealand. The A (H3N2)/Fujian/411/2002-like strains are related to the A (H3N2)/Panama/2007/99 strain included in the current 2003/2004 vaccine and antibodies induced against this vaccine strain cross react with A/Fujian/411/2002-like strains, but generally to a reduced level. On the evidence available so far, it is expected that the vaccine will also offer some cross protective immunity to the H3N2 drift variant A (H3N2)/Fujian/411/2002-like viruses.

School outbreak reports

No school outbreaks of influenza were reported to NDSC during week 45. A total of 3 school outbreaks associated with influenza-like illness have been reported since the start of the 2003/2004-influenza season. Significant increases in absenteeism in a sentinel secondary school in the ERHA were reported to NDSC during week 44.

Hospital admissions data

Hospital admissions for respiratory tract infections in sentinel hospitals in the SEHB and NEHB were at increased levels during week 44 2003.

Influenza activity by health board/authority

Influenza activity is reported on a weekly basis from the Departments of Public Health. Influenza activity is based on sentinel GP ILI consultation rates, laboratory confirmed cases of influenza, and/or sentinel hospital admissions data, and/or sentinel school absenteeism data. During week 44, the ERHA reported localised influenza activity, 6 health boards reported sporadic influenza activity (MWHB, NEHB, NWHB, SEHB, SHB & WHB) and 1 health board reported no influenza activity (MHB) (figure 2). Data for week 43 was updated to include localised activity reported in the ERHA.

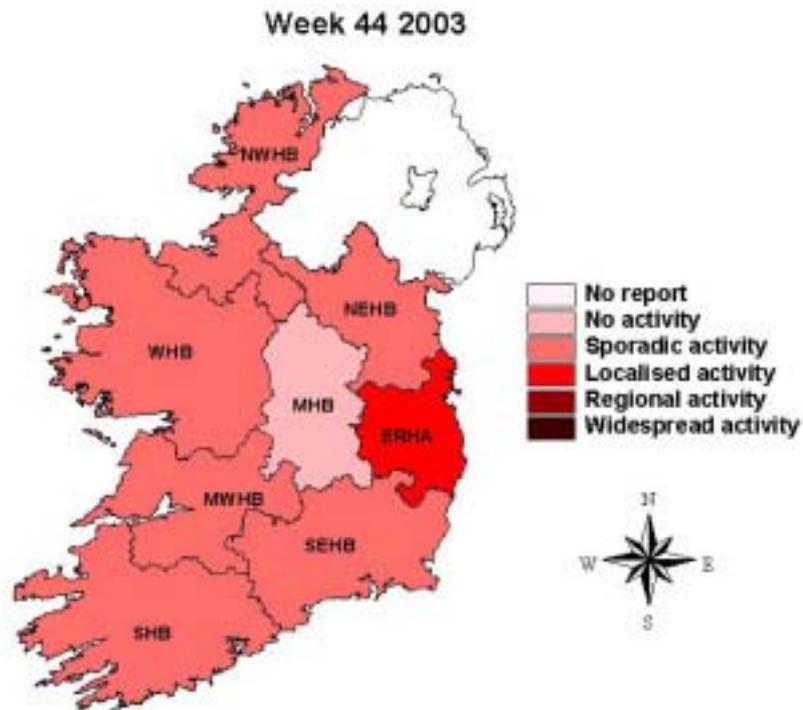


Figure 2: Map of influenza activity by health board during week 44 2003.

Influenza activity in Northern Ireland

In Northern Ireland during week 45, the GP consultation rate for combined influenza and ILI was 138.8 per 100,000 population, an increase from 95.4 per 100,000 in week 44. This is the highest rate recorded in Northern Ireland since the influenza surveillance scheme began in October 2000. Ten GP sentinel and hospital specimens were positive for influenza A (H3) during week 45. <http://www.cdscni.org.uk/>

Influenza activity in England, Scotland and Wales

Clinical indicators of influenza activity in England remain within baseline levels during week 45, with GP consultation rates for ILI increasing to 47.7 per 100,000 in week 45. In Scotland, ILI rates are within the range considered normal seasonal activity, with GP consultation rates increasing from 56.0 per 100,000 in week 44 to 99.0 per 100,000 in week 45. In Wales, the GP consultation rates for ILI remained unchanged during week 45, at 7.0 per 100,000. Fifty-six detections of influenza A (H3) were reported from the ERNVL during week 45. Of the isolations typed to date this season, 6 are A (H3N2)/Fujian-like and 3 are A (H3N2) /Panama-like (the current vaccine AH3N2 strain).

http://www.hpa.org.uk/infections/topics_az/influenza/fluactivity0304.htm

Influenza activity in Europe

Spain reported regional influenza activity to the European Influenza Surveillance Scheme (EISS) during week 44, indicating that influenza activity was above baseline levels in one or more regions. Norway reported localised activity and sporadic activity

was reported in Belgium, France, Portugal, and Switzerland. Based on the networks reporting age specific data, incidence rates were highest among the 0 to 4 year age group. During week 44, 157 sentinel and non-sentinel isolates reported to EISS were influenza A and 1 sentinel isolate from the Czech Republic was typed influenza B. All 68 influenza A isolates that were subtyped were H3N2. The H3N2 virus was predominant in France, Norway, Portugal, Spain and Switzerland, with influenza A (unsubtyped) predominant in England, Ireland, Scotland and The Netherlands. A/Fujian/411/2002 (H3N2)-like isolates have been reported from England, Scotland, Denmark, Ireland, Northern Ireland, Norway, Portugal, and Switzerland, indicating A/Fujian/411/2002 (H3N2)-like viruses are currently circulating in Europe. <http://www.eiss.org/>

Influenza activity in Canada

Widespread influenza activity was reported in all regions in the Northwest Territories during week 44. Localized activity was reported in all parts of Alberta and Saskatchewan and in one region of Ontario. Sporadic influenza activity was reported in four regions in British Columbia. During week 44, sentinel physicians reported 31 cases of ILI per 1000 patient visits, which is within baseline rates. Health Canada received 1597 reports of laboratory tests for influenza, with 238 influenza A detections and one influenza B detection. The National Microbiology Laboratory has antigenically characterized 14 influenza viruses to date; all were found to be A/Panama/2007/99-like, which is included in the 2003/2004 vaccine. During week 44, influenza outbreaks were reported in 5 schools, one hospital and four long term care facilities. <http://www.hc-sc.gc.ca/pphb-dgsp/fluwatch/index.html>

Influenza activity in the United States

During week 44, one state health department reported regional influenza activity, 3 states reported localised activity, 19 reported sporadic activity and 24 reported no influenza activity. The proportion of patient visits to sentinel providers for ILI was less than the national baseline. WHO and NREVSS laboratories reported 674 specimens tested for influenza viruses; 4 were positive for influenza A (H3N2) and 41 for influenza A (unsubtyped). <http://www.cdc.gov/ncidod/diseases/flu/fluvirus.htm>

Influenza activity Worldwide

No influenza activity was reported in Argentina, French Guiana, Mexico, and Australia in week 44. Sporadic activity was reported in Hong Kong (9A unsubtyped, 9AH3N2 & 1B), the Russian Federation and Thailand (9B). Widespread influenza activity was reported in Iceland, with 10 influenza A (unsubtyped) viruses detected. <http://rhone.b3e.jussieu.fr/flunet/www/>

Northern Hemisphere influenza vaccine for the 2003/2004

On February the 28th 2003, WHO published a recommendation on the composition of influenza vaccines for use in the 2003-2004 Northern Hemisphere influenza season.

- A/New Caledonia/20/99(H1N1)-like virus
- A/Moscow/10/99(H3N2)-like virus*
- B/Hong Kong/330/2001-like virus**

*The widely used vaccine strain is A/Panama/2007/99

** Currently used vaccine strains include B/Shandong/7/97, B/Hong Kong/330/2001, B/Hong Kong/1434/2002 <http://www.emea.eu.int>

<http://www.who.int/csr/disease/influenza/vaccinerecommendations1/en/>

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