

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 45 2010 (8th – 14th November 2010)



Summary

- During week 45 2010, all indicators of influenza activity in Ireland are at low levels.
 - ♦ The sentinel GP ILI consultation rate was 8.7 per 100,000 population in week 45 2010, a slight increase from the updated rate of 6.6 per 100,000 reported during week 44 2010.
 - ILI rates remain well below the Irish baseline threshold (17.8 per 100,000 population)
 - ILI rates remain at low levels in all age groups
 - ♦ The first and only positive influenza case of the 2010/2011 influenza season to date was reported by the National Virus Reference Laboratory (NVRL) during week 41 2010, an influenza A (H1N1 2009) case.
 - ♦ Respiratory syncytial virus (RSV) positive detections have increased over the last week, and are at low to moderate levels compared to the same period in previous seasons.
 - ♦ Sporadic detections of adenovirus and parainfluenza virus type-1 and -2 have been reported since week 40 2010.
 - ♦ The proportion of influenza-related calls to GP Out-of-Hours services remains at low levels.

Surveillance Systems

In order to monitor influenza activity in Ireland a number of surveillance systems are currently in place:

1. Irish College of General Practitioners (ICGP) GP sentinel surveillance system
2. Virological data from the National Virus Reference Laboratory (NVRL)
3. GP Out-of-Hours surveillance system
4. Influenza notifications reported on the Computerised Infectious Disease Reporting system (CIDR)
5. Enhanced surveillance of all hospitalised confirmed influenza cases aged 0-14 years
6. Outbreak reporting on CIDR
7. Network of sentinel schools reporting absenteeism and sentinel hospitals reporting admission data

1. GP sentinel surveillance system

Clinical Data

During week 45 2010, 50 of 60 (83.3%) sentinel general practices provided data, with 13 practices (26.0%) reporting 19 influenza-like illness (ILI) cases. This corresponds to an ILI consultation rate of 8.7 per 100,000 population, a slight increase from the updated rate of 6.6 per 100,000 reported during week 44 2010. Thirty-seven (74.0%) practices reported no ILI cases during week 45 2010. Figure 1 shows the ILI consultation rates, the baseline threshold rate (17.8 per 100,000 population) and the number of positive specimens detected by the NVRL.

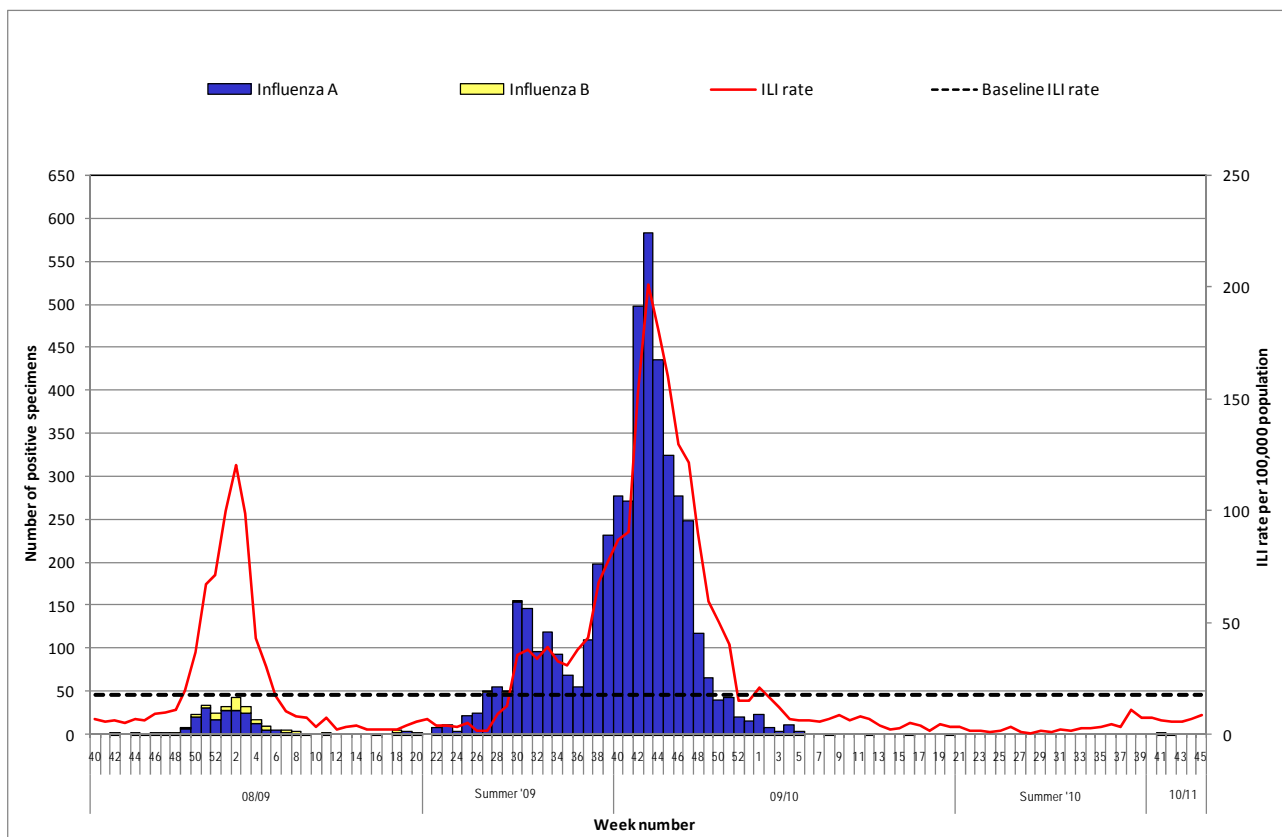


Figure 1. ILI GP consultation rates per 100,000 population, baseline ILI threshold rate, and number of positive influenza A and B specimens, by influenza week and season.

Source: Clinical ILI data from ICGP and virological data from the NVRL ^{*†}

* Please note that in addition to the NVRL, Cork University Hospital (CUH) and Galway University Hospital(s) (GUH) also tested for influenza A (H1N1 2009) during the pandemic period.

† Sentinel GP consultations and virological data are updated on an ongoing basis, ILI rates and virological data are adjusted accordingly.

ILI rates remained at low levels in all age groups during week 45 2010, with the highest rates reported from those aged 15-64 years. ILI rates in the 15-64 year age group have increased slightly each week since week 42 2010. During week 45 2010, sentinel GPs reported 17 ILI cases in the 15-64 year age group (11.3 per 100,000 population) and two ILI cases in those aged 65 years or older (8.3 per 100,000 population). No ILI cases have been reported in the 0-4 and 5-14 year age groups during weeks 44 or 45 2010 (figure 2).

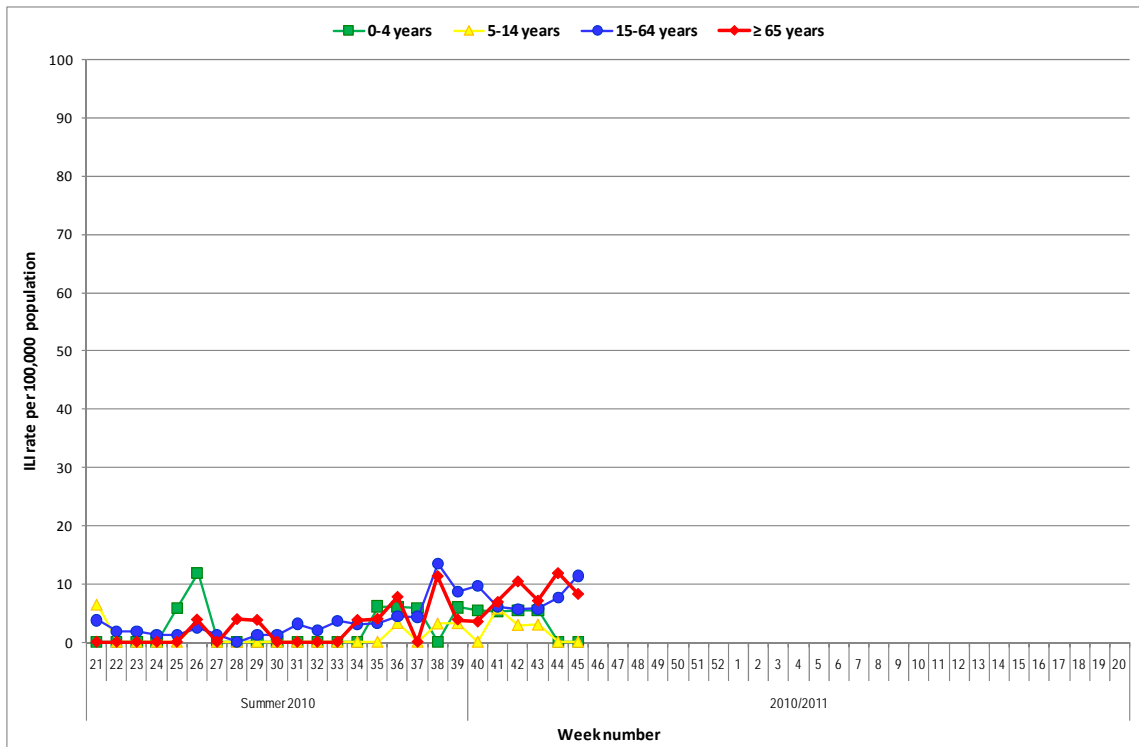


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the Summer of 2010 and the 2010/2011 influenza season to date

Source: ICGP ILI clinical data

2. Virological Data from the National Virus Reference Laboratory (NVRL)

A total of 58 specimens (7 sentinel and 51 non-sentinel) were tested by the NVRL during week 45 2010, all of which were negative for influenza virus. All sentinel specimens tested to date this season have been negative for influenza. To date this season, three non-sentinel specimens have tested positive for influenza: one A (H1N1 2009) and two A (unsubtyped). All three specimens were from the same patient, a hospitalised case in the 0-4 year age group.

Of the 51 non-sentinel specimens tested during week 45 2010, six (11.8%) were positive for RSV, two (3.9%) for adenovirus and one (2.0%) for parainfluenza virus type 1 (Tables 1 & 2 and figure 3). RSV positive detections increased from 5.3% in week 44 to 11.8% in week 45 2010. The current proportion of RSV positive detections are at low to moderate levels compared to average levels for the same period over the last 10 years. Figure 4 shows the number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2010/2011 and 2009/2010 seasons.[‡] To date this season, there have been sporadic detections of adenovirus and parainfluenza virus types -1 and -2.

[‡] Please note that non-sentinel specimens relate to specimens referred to the NVRL (other than sentinel specimens) and may include more than one specimen from each case.

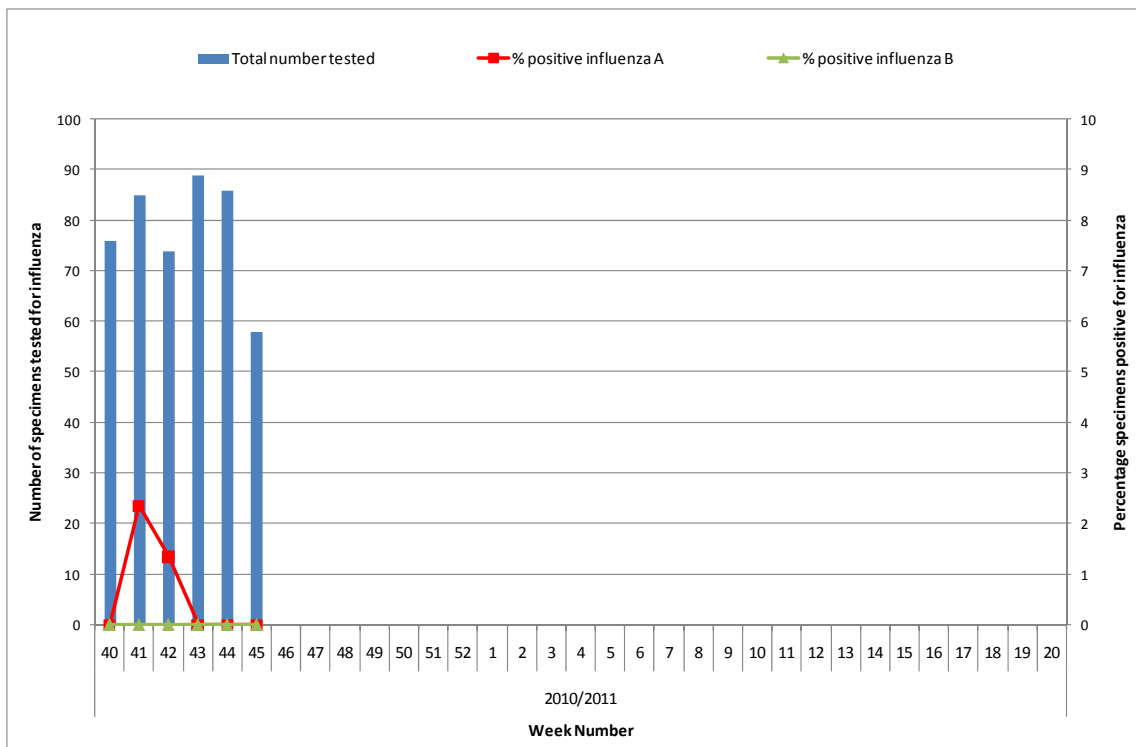


Figure 3: Number of sentinel and non-sentinel specimens tested for influenza and percentage influenza positive
 Source: NVRL[§]

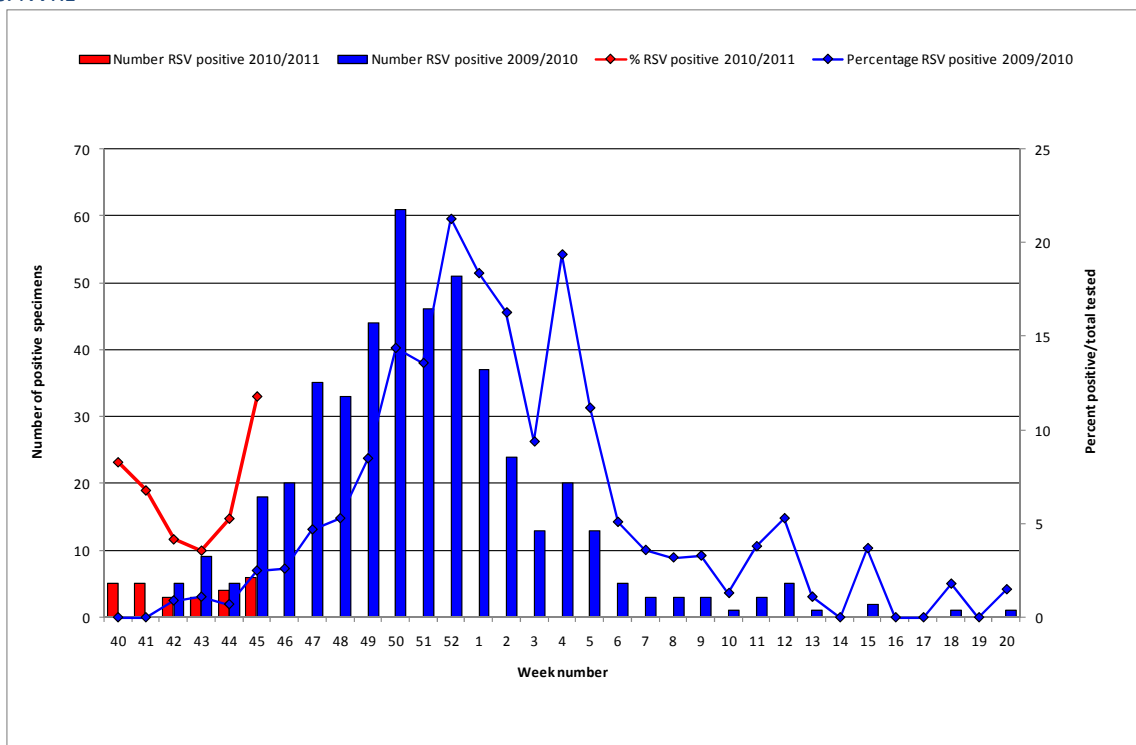


Figure 4: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2010/2011 season, compared to the 2009/2010 season. Source: NVRL

[§] Please note that non-sentinel specimens relate to specimens referred to the NVRL (other than sentinel specimens) and may include more than one specimen from each case.

Table 1: Number of sentinel and non-sentinel respiratory specimens tested and positive influenza results, for week 45 and the season to date**

Source: NVRL

Week number	Specimen type	Total specimens tested	Number influenza positive	% Influenza positive	Influenza A					Influenza B
					Total influenza A	A (H1N1 2009)	A (H3)	A (H1)	A (unsubtyped)	
45 2010	Sentinel	7	0	0.0	0	0	0	0	0	0
	Non-sentinel	51	0	0.0	0	0	0	0	0	0
	Total	58	0	0.0	0	0	0	0	0	0
2010/2011 season	Sentinel	53	0	0.0	0	0	0	0	0	0
	Non-sentinel	415	3	0.7	3	1	0	0	2	0
	Total	468	3	0.6	3	1	0	0	2	0

Table 2: Number of non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 45 and the season to date Source: NVRL

Week number	Total specimens tested	RSV	% RSV Positive	Adenovirus	% Adenovirus positive	Parainfluenza virus type 1	% Parainfluenza virus type 1	Parainfluenza virus type 2	% Parainfluenza virus type 2	Parainfluenza virus type 3	% Parainfluenza virus type 3
45 2010	51	6	11.8	2	3.9	1	2.0	0	0.0	0	0.0
2010/2011 season	415	26	6.3	5	1.2	3	0.7	2	0.5	0	0.0

** Please note that non-sentinel specimens relate to specimens referred to the NVRL (other than sentinel specimens) and may include more than one specimen from each case.

3. Regional Influenza Activity by HSE-Area

Regional influenza activity is reported on a weekly basis for each HSE area. Influenza activity is based on sentinel GP ILI consultation rates, laboratory confirmed influenza cases and ILI/influenza outbreaks.

During week 45 2010, sporadic influenza activity (based on sporadic ILI cases and/or positive influenza detections) was reported from two HSE-Areas (HSE-E and HSE-MW). All other areas reported no influenza activity during week 45 2010 (figure 5).

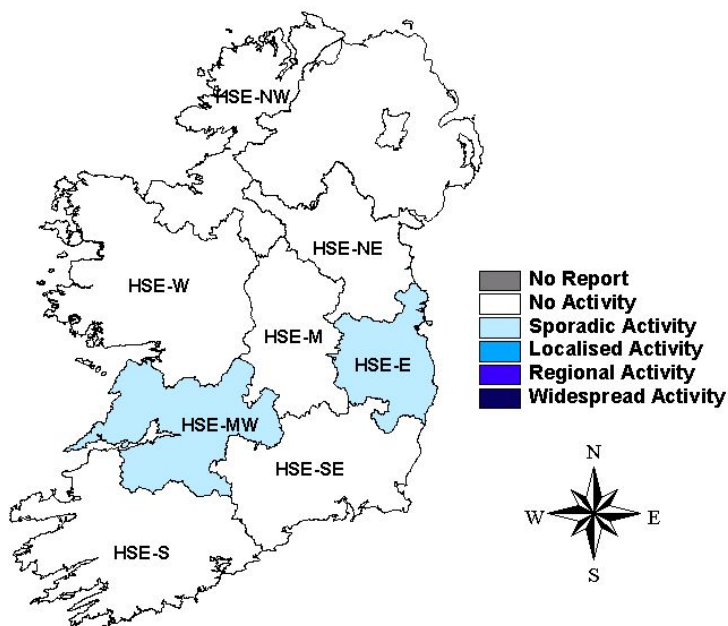


Figure 5: Map of provisional influenza activity by HSE-Area during influenza week 45 2010

Sentinel hospitals and schools

The Departments of Public Health have established at least one sentinel hospital in each HSE-Area, to report data on total hospital admissions, total emergency admissions and total respiratory admissions by age group on a weekly basis. Sentinel primary and secondary schools were also established in each HSE-Area, in close proximity to the sentinel GPs, to report absenteeism data on a weekly basis. Hospital admissions and school absenteeism data act as a crude indicator for influenza activity.

There was a slight increase in the proportion of respiratory admissions reported from a sentinel hospital in HSE-E during week 45 2010. There were no reports of significant increases in absenteeism from sentinel schools during week 45 2010. One sentinel secondary school in HSE-E reported a slight increase in absenteeism during week 44 2010, coinciding with student reports of 'dizziness, nausea and headaches', this was followed by a decrease in absenteeism in week 45 2010.

4. GP Out-Of-Hours services surveillance

The Department of Public Health in HSE-NE is collating national data on calls to nine of thirteen GP Out-of-Hours services in Ireland. Clinical details from all calls are recorded. Records with clinical symptoms reported as flu or influenza are extracted for analysis. This information may act as an early indicator of increased ILI activity. However, data are self-reported by callers and are not based on coded influenza diagnoses.

During week 45 2010, the proportion of influenza-related calls to GP Out-of-Hours services remained at low levels, at 1.5%, a slight decrease from the updated data for week 44 2010 of 1.7% (figure 6). Seven GP Out-of-Hours services reported during week 45 2010.

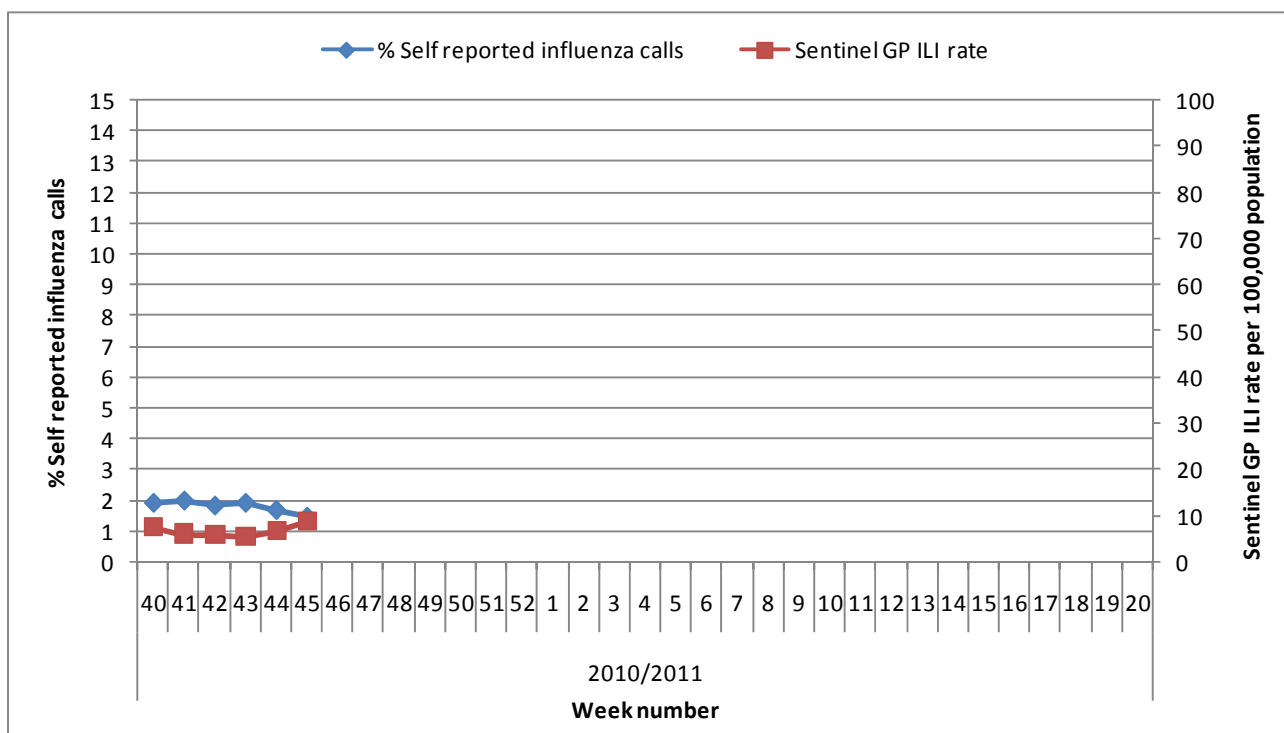


Figure 6: Self reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and national sentinel GP ILI consultation rate per 100,000 population by week for the 2010/2011 season
Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.

5. Influenza notifications and outbreak surveillance (CIDR)

As of 17th November 2010, no general outbreaks of ILI/influenza/pandemic (H1N1) 2009 have been reported to CIDR during the 2010/2011 influenza season. One influenza A (H1N1 2009) case was notified to CIDR during week 43 2010 from HSE-NE, this is the only confirmed positive influenza notification to date this season.

6. International summary

United Kingdom

During week 44 2010, influenza activity remained very low across the UK. The weekly influenza/ILI consultation rates were stable in week 44 in England, while increasing in Scotland, Wales and Northern Ireland. All GP consultation rates were well below baseline levels. Consultation rates for acute bronchitis and pneumonia increased slightly. No acute respiratory disease outbreaks were reported in week 44. Seven sentinel specimens were positive for influenza in week 44 in England: 4 A (H1N1 2009) and 3 B. One influenza A (H1N1 2009) positive sentinel specimen was reported from Northern Ireland in week 44. In England, the number of RSV detections was low while the proportion of specimens positive for rhinovirus started to decrease during this period. <http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SeasonalInfluenza/>

Europe

Epidemiological data indicated either no influenza activity or sporadic activity in 24 of the 25 reporting EU countries in week 44 2010. Malta reported localised influenza activity and Bulgaria reported medium intensity of acute respiratory infection (ARI). Forty-one sentinel and non-sentinel specimens tested positive for influenza virus during this period: 15 A (H1 2009), 1 A (H3), 11 A (unsubtyped) and 14 B. To date this season, influenza A (H3), A (H1 2009) as well as B viruses of the Yamagata- and the Victoria-lineages have been detected. Rare detections of influenza virus along with sporadic detections of RSV in a number of European countries suggest that the low ILI and ARI activity currently observed are most likely due to respiratory pathogens other than influenza. http://ecdc.europa.eu/en/healthtopics/influenza/epidemiological_data/Pages/Weekly_Influenza_Surveillance_Overview.aspx

USA

During week 44 2010, influenza activity remained low in the United States. The proportion of ILI outpatient visits was below the national baseline. Of 2,704 specimens tested, 185 (6.8%) were positive for influenza: 9 A (H1N1 2009), 62 A (H3), 41 A (unsubtyped) and 73 B. The proportion of deaths attributed to pneumonia and influenza was below the epidemic threshold. One influenza A (unsubtyped)-associated paediatric death was reported. CDC has antigenically characterised four A (H1N1 2009) viruses as A/California/7/2009-like, 3 A (H3N2) viruses as A/Perth/16/2009-like and one B virus as B/Brisbane/60/2008-like, all of which are components of the 2010/2011 influenza vaccine. <http://www.cdc.gov/flu/weekly/>

Two human infections with novel influenza A viruses have been reported in the US. Both patients were infected with a swine origin influenza A (H3N2) virus. One case reported contact with pigs in the week preceding symptom onset on September 8, 2010 and required hospitalisation. No contact with pigs has been identified in the second case in the week before symptom onset on October 24, 2010; however the case lives in an area close to pig farms. Both patients have fully recovered from their illness. The cases are not related and the viruses from these two cases have some genetic differences, indicating that they did not come from the same source. Although both investigations are ongoing, there is no evidence of human-to-human transmission. <http://www.cdc.gov/media/subtopic/heard.htm#h3n2>.

Canada

During week 44 2010, the overall influenza activity in Canada remained low with most of the influenza surveillance regions reporting no activity. The proportion of positive influenza specimens reported during week 44 has increased slightly. Twenty-two of 1,784 (1.23%) specimens tested positive: 12 A (H3N2) and 10 A

(unsubtyped). To date this season, A (H3N2) has been the predominant influenza type/subtype circulating in Canada. All of the 17 A (H3N2) viruses characterised to date were related to A/Perth/6/2009, which is the influenza A (H3N2) component recommended for the 2010/2011 influenza vaccine. <http://www.phac-aspc.gc.ca/fluwatch/index-eng.php>

Worldwide (WHO)

The WHO Global Influenza Programme monitors influenza activity worldwide and publishes an update every two weeks. As of November 8th 2010, overall influenza activity remained low worldwide, except in parts of the tropics, most notably in Southeast Asia, and to a lesser extent in the tropical areas of the Americas. After late winter and springtime influenza epidemics in several countries of the temperate southern hemisphere, influenza activity has returned to near or below baseline in most places. Notably, however, a recent post-season rise in cases has been noted across parts of southern Africa associated with localised outbreaks of influenza A (H1N1 2009). Influenza A (H3N2) viruses continue to be the predominant circulating influenza type/subtype worldwide. Many countries have also reported co-circulation of A (H3N2) with influenza B viruses and to a lesser extent with A (H1N1 2009) viruses. The latter has been recently predominant in a limited number of countries, including in India.

The WHO is constantly monitoring the evolution of influenza viruses. Like other influenza viruses, influenza A (H1N1 2009) viruses undergo genetic evolution. Since the emergence of A (H1N1 2009), variants with substitutions (at residues 125/142, 222 and/or 374/391) in the haemagglutinin gene have been detected. Recently other genetic mutations have also been reported. However, antigenic characterisation to date has shown that all these viruses are not antigenically distinguishable from the 2010/2011 influenza vaccine strain A/California/7/2009. <http://www.who.int/csr/disease/influenza/update/en/index.html>

7. Northern hemisphere influenza vaccine for the 2010/2011 season:

For the 2010/2011 influenza season in the Northern Hemisphere, the members of the WHO Collaborating Centres on Influenza have recommended that seasonal influenza vaccines contain the following strains:

- an A/California/7/2009 (H1N1)-like virus
- an A/Perth/16/2009 (H3N2)-like virus^{††}
- a B/Brisbane/60/2008-like virus

http://www.who.int/csr/disease/influenza/recommendations2010_11north/en/index.html
http://www.who.int/csr/disease/influenza/201002_Recommendation.pdf

Further information on influenza in Ireland and internationally can be found on the following websites:

Ireland	www.hpsc.ie
Northern Ireland	http://www.cdscni.org.uk/
Europe – ECDC	http://ecdc.europa.eu/
Europe – EISN	http://ecdc.europa.eu/en/activities/surveillance/EISN/Pages/home.aspx

Acknowledgements

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^{††} A/Wisconsin/15/2009 is an A/Perth/16/2009 (H3N2)-like virus and is a 2010 southern hemisphere vaccine virus.