

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 49 2010 (6th – 12th December 2010)



Summary

- During week 49 2010, influenza activity increased across Ireland.
- Although, sentinel GP influenza-like illness (ILI) rates remain at relatively low levels, detections of influenza A (H1N1 2009) increased in week 49 2010, coinciding with an increase in hospitalised confirmed cases and two outbreaks being reported. The positivity rate of sentinel specimens for influenza was 83.3%, with 5 of 6 specimens testing positive.
- The sentinel GP ILI consultation rate was 14.4 per 100,000 population in week 49 2010, more than double the updated rate of 6.4 per 100,000 reported during week 48 2010.
- ILI rates remain below baseline.
- One influenza B and eight influenza A (H1N1 2009) cases were detected in week 49 2010 by the NVRL.
- There was an increase in the number of hospitalised cases of influenza A (H1N1 2009) during week 49 2010, with reports of two cases admitted to ICU.
- Two outbreaks were reported, one ILI outbreak in a community setting and one influenza A (H1N1 2009) outbreak in a maternity hospital.
- The current proportion of respiratory syncytial virus (RSV) positive detections although increasing remains at low levels.
- Sporadic detections of adenovirus and parainfluenza virus types -1, -2 and -3 have been reported since week 40 2010.
- The proportion of influenza-related calls to GP Out-of-Hours services increased slightly in week 49 2010, however 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. Intensive Care Society of Ireland (ICSI) enhanced surveillance of all critical care patients with confirmed influenza A (H1N1 2009)
7. Outbreak reporting on CIDR
8. Network of sentinel schools reporting absenteeism and sentinel hospitals reporting admission data

1. GP sentinel surveillance system

Clinical Data

During week 49 2010, 57 of 60 (95.0%) sentinel general practices provided data, with 21 practices (36.8%) reporting 36 influenza-like illness (ILI) cases. This corresponds to an ILI consultation rate of 14.4 per 100,000 population, an increase compared to the updated rate of 6.4 per 100,000 reported during week 48 2010. ILI rates remain below the Irish baseline threshold (17.8 per 100,000 population). Thirty-six (63.2 %) practices reported no ILI cases during week 49 2010. Figure 1 shows the ILI consultation rates, the baseline threshold rate and the number of positive specimens detected by the NVRL.

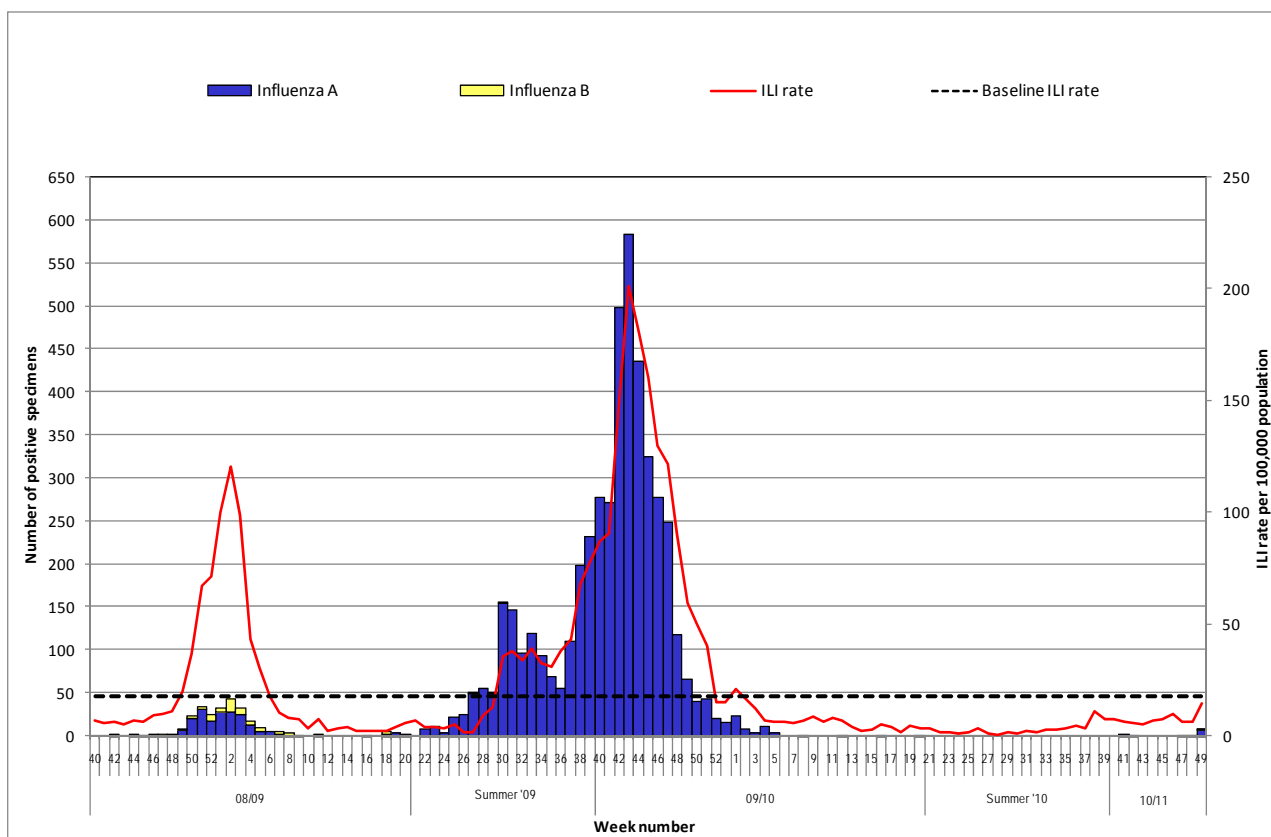


Figure 1. ILI GP consultation rates per 100,000 population, baseline ILI threshold rate, and number of positive influenza A and B specimens, by influenza week and season.

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

ILI rates increased in the 5-14, 15-64 and 65+ year age groups during week 49 2010, although rates remain at relatively low levels. Four ILI cases were reported in the 5-14 year age group (12.1 per 100,000), 29 cases were reported in the 15-64 year age group (16.9 per 100,000) and 3 ILI cases in those aged 65 years or older (10.9 per 100,000). No ILI cases were reported in those aged 0-4 years.

* 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.

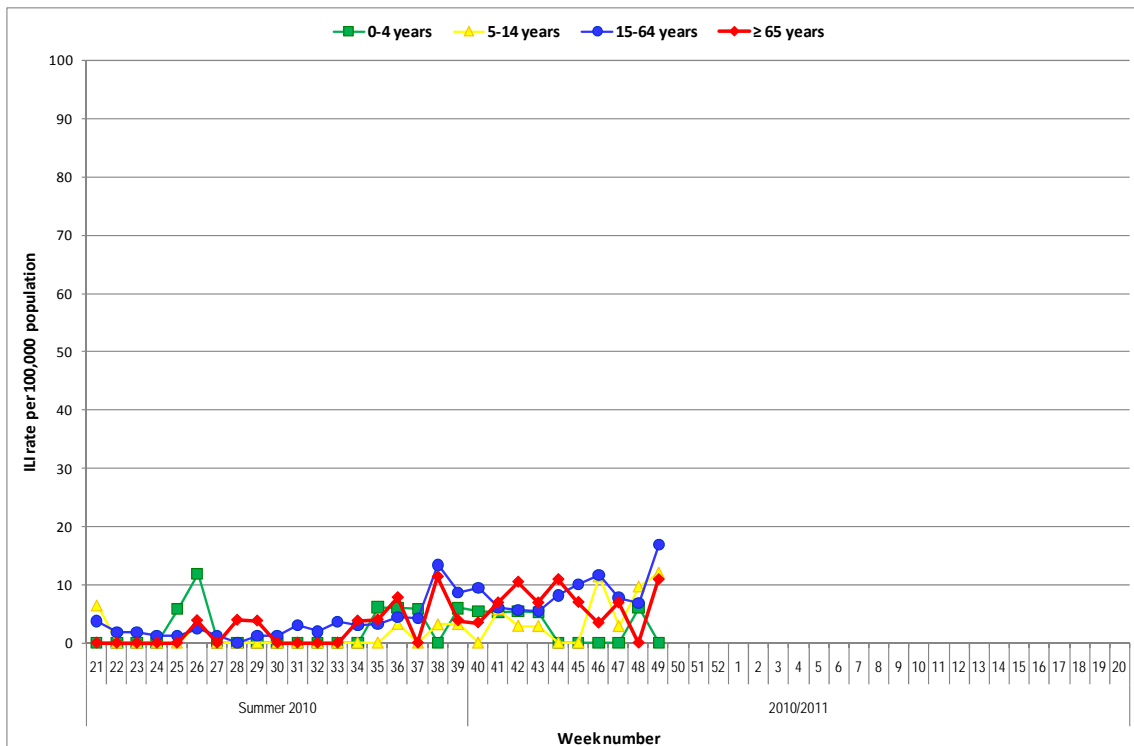


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2010 and the 2010/2011 influenza season to date
 Source: ICGP ILI clinical data

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

A total of 106 specimens (6 sentinel and 100 non-sentinel) were tested by the NVRL during week 49 2010. Nine (8.5%) specimens were positive for influenza: eight influenza A (H1N1 2009) and one influenza B. Of the six sentinel specimens taken during week 49 2010, five (83.3%) were positive for influenza: 4 influenza A (H1N1 2009) and one influenza B. Of the 100 non-sentinel specimens taken during week 49 2010, four (4.0%) were positive for influenza: all four were influenza A (H1N1 2009).

To date this season, 846 sentinel and non-sentinel specimens were tested by the NVRL, 14 (1.7%) specimens tested positive for influenza: 11 influenza A (H1N1 2009), two influenza A (unsubtyped) and one influenza B. Of the 11 influenza A (H1N1 2009) specimens detected, six were sentinel specimens and five were from non-sentinel sources (figures 3 & 4).

[‡] It should be noted that virological data refer to weekly data received from the NVRL on Tuesday of each week.

Of the 100 non-sentinel specimens tested during week 49 2010, 16.0% (16) were positive for RSV, a slight decrease from the updated proportion, 23.2%, for week 48 2010 (Tables 1 & 2). The current proportion of RSV positive detections although higher than the 2009/2010 season, remains at low levels compared to average levels for the same period over the last 10 years. Figure 5 shows the number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2010/2011 and 2009/2010 seasons.[§] One (1.0%) non-sentinel specimen was positive for adenovirus during week 49 2010. To date this season, there have been sporadic detections of adenovirus and parainfluenza virus (PIV) types -1, -2 and -3.

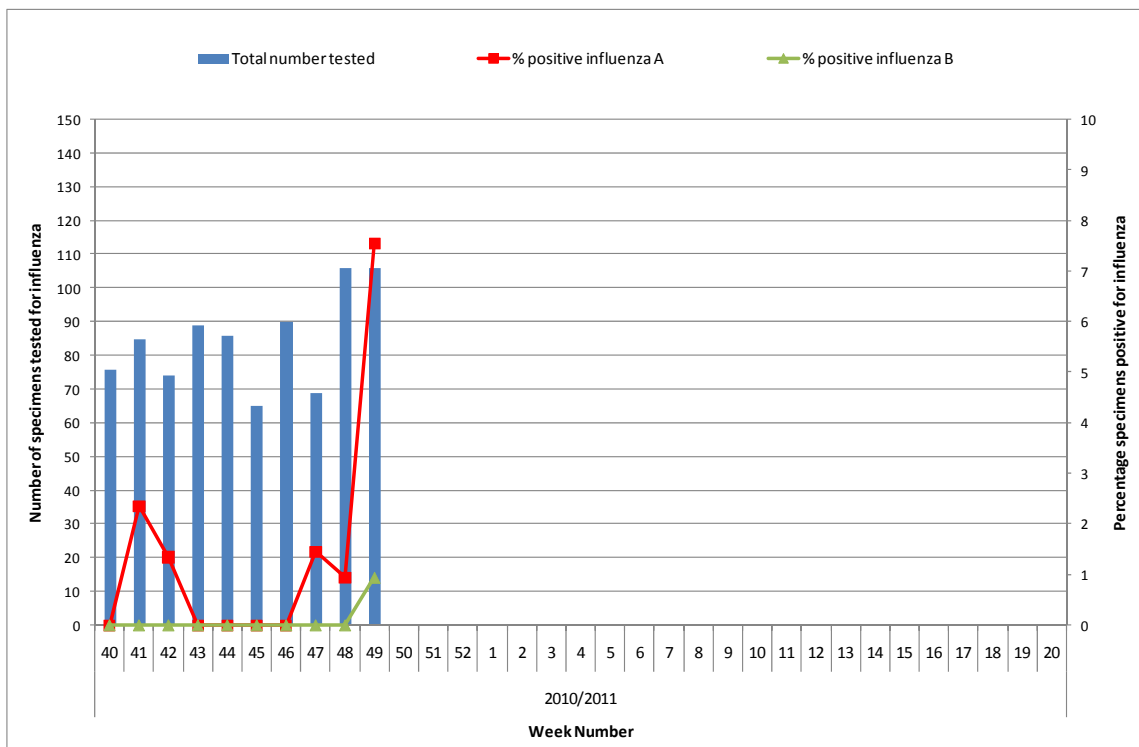


Figure 3: Number of sentinel and non-sentinel specimens tested for influenza and percentage influenza positive by week for the 2010/2011 influenza season. Source: NVRL**

[§] 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.

** 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.

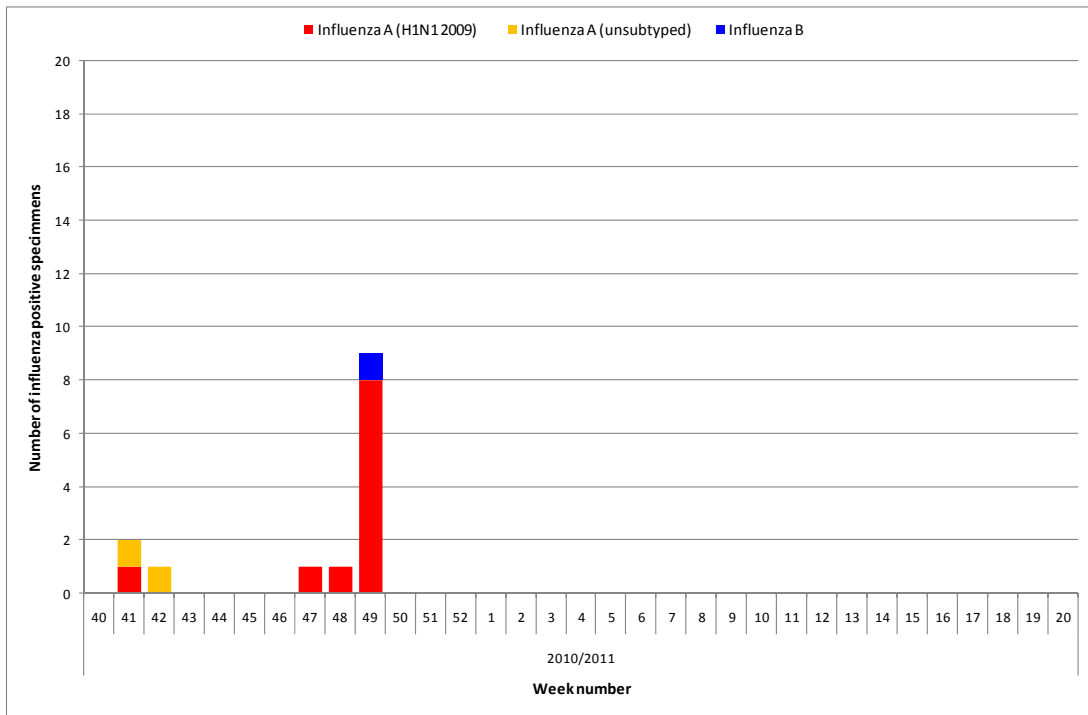


Figure 4: Number of sentinel and non-sentinel specimens positive for influenza by type/subtype and week for the 2010/2011 influenza season. Source: NVRL^{††}

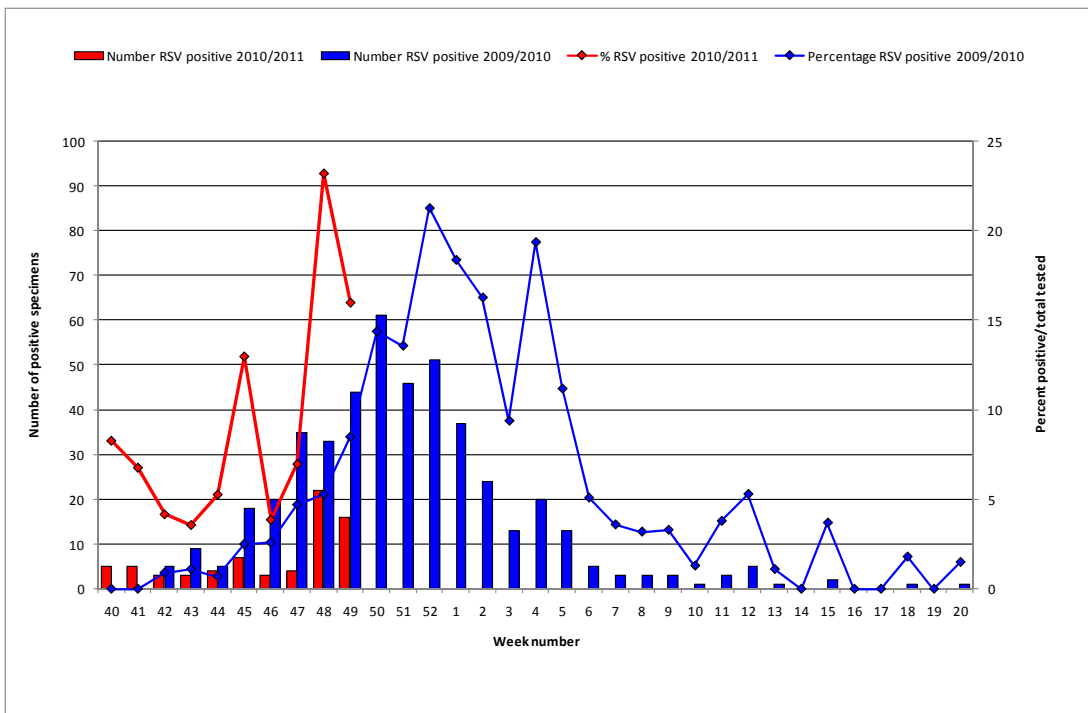


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2010/2011 season, compared to the 2009/2010 season. Source: NVRL

^{††} 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 49 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)	
49 2010	Sentinel	6	5	83.3	4	4	0	0	0	1
	Non-sentinel	100	4	4.0	4	4	0	0	0	0
	Total	106	9	8.5	8	8	0	0	0	1
2010/2011 season	Sentinel	99	7	7.1	6	6	0	0	0	1
	Non-sentinel	747	7	0.9	7	5	0	0	2	0
	Total	846	14	1.7	13	11	0	0	2	1

Table 2: Number of non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 49 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
49 2010	100	16	16.0	1	1.0	0	0.0	0	0.0	0	0.0
2010/2011 season	747	72	9.6	6	0.8	5	0.7	2	0.3	1	0.1

^{††} 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 49 2010, sporadic influenza activity (based on sporadic ILI cases and/or positive influenza detections) was reported from seven HSE-Areas and localised activity was reported from one HSE Area (HSE-E) (figure 6).

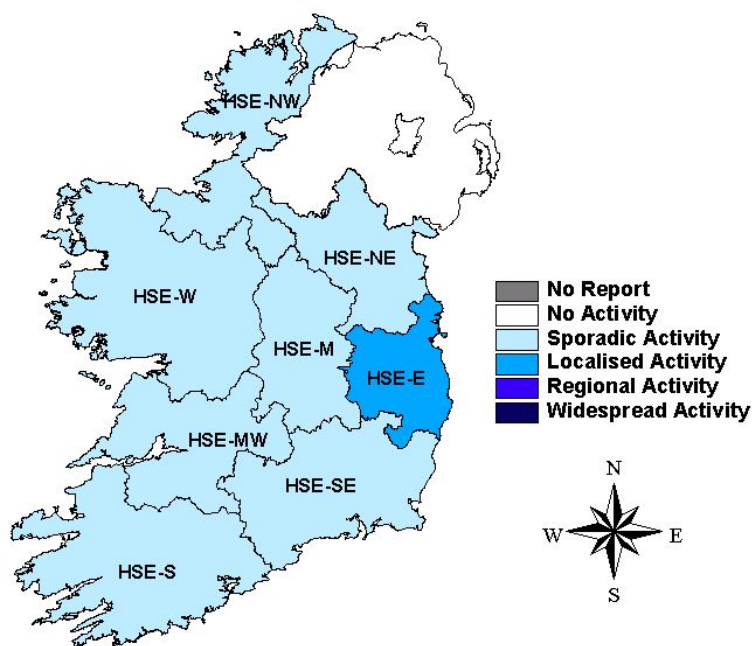


Figure 6: Map of provisional influenza activity by HSE-Area during influenza week 49 2010

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 were no reports of increases in the proportion of respiratory admissions in sentinel hospitals during week 49 2010. During weeks 48 and 49 2010, a large proportion of sentinel schools were either closed or experienced increased absenteeism due to severe weather conditions.

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 49 2010, the proportion of influenza-related calls to GP Out-of-Hours services increased slightly although remained at low levels, at 2.0%, a slight increase from the updated data for week 48 2010 of 1.6% (figure 7). Seven GP Out-of-Hours services reported during week 49 2010.

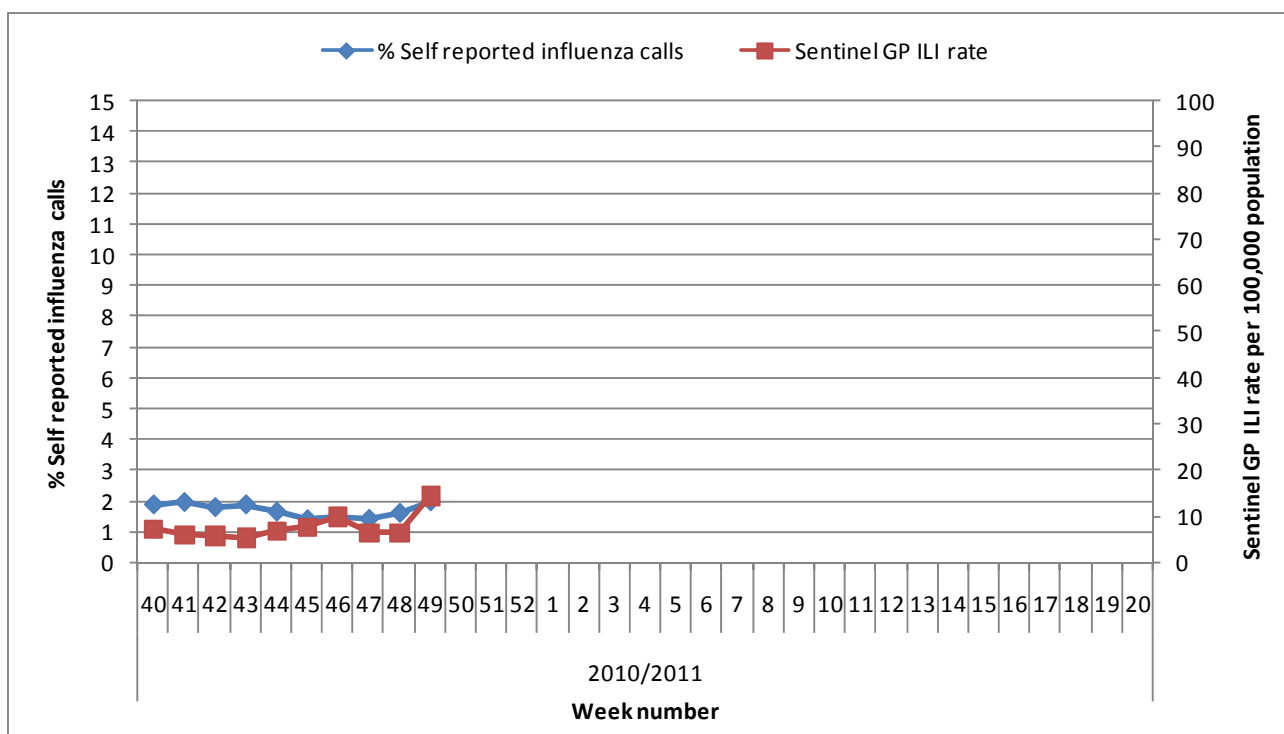


Figure 7: Self reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and national sentinel GP ILI consultation rate per 100,000 population by week for the 2010/2011 season

Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.

5. Influenza notifications (CIDR)

As of 15th December 2010 (16:28), 19 confirmed influenza cases were notified on CIDR for the 2010/2011 influenza season to date; all 19 cases were confirmed influenza A (H1N1 2009). One case was notified during week 43 2010, one during week 47 2010, four in week 49 2010 and 13 in week 50 2010.

Four (21.1%) of the 19 cases were hospitalised (i.e. hospital inpatient status), one (5.3%) case was a hospital outpatient, five (26.3%) cases were GP patients and hospital status was unknown for nine (47.4%) cases (figure 8). Six (31.6%) of the 19 cases were reported as either pregnant or postnatal related cases, four of whom were reported as hospitalised. Of the 19 notified cases, there were no cases the 0-4 year age group, three cases were aged 5-14 years, 15 were in the 15-64 year age group and one case was aged 65 years or older.

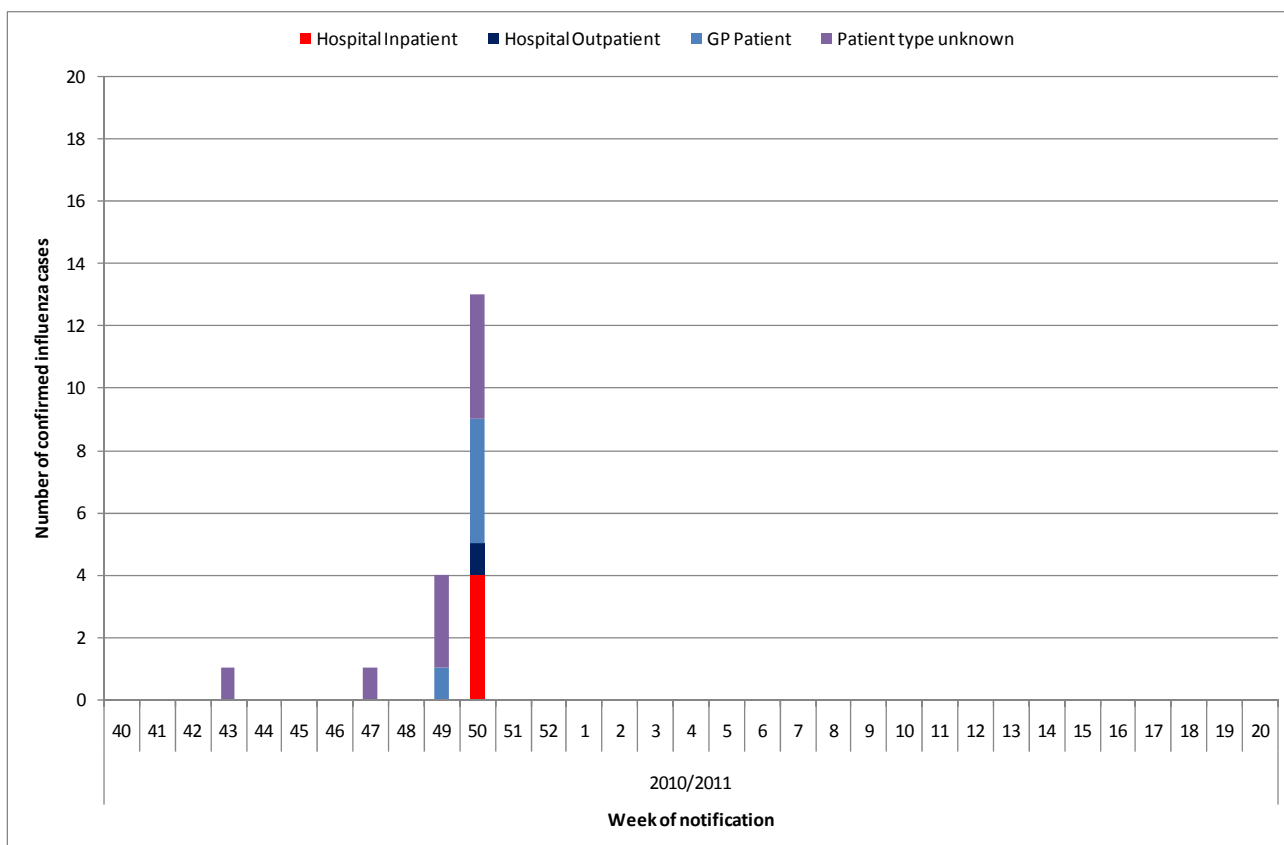


Figure 8: Number of confirmed influenza cases reported to CIDR by patient type and week of notification for the 2010/2011 influenza season.

Source: CIDR

6. Intensive Care Society of Ireland (ICSI) enhanced surveillance of all critical care patients with confirmed influenza A (H1N1 2009)

The Intensive Care Society of Ireland (ICSI) are continuing with the enhanced surveillance system, set up during the 2009 pandemic, on all critical care patients with confirmed influenza A (H1N1 2009), and will notify any cases to HPSC, who will process and report on this information on behalf of the regional Director of Public Health/Medical Officer of Health.

As of 15th December 2010 (16:28), HPSC has been notified of two hospitalised patients admitted to critical care units with confirmed influenza A (H1N1 2009) during the 2010/2011 influenza season to date. Both patients

had underlying medical conditions, one case was in the 15-64 year age group and the other was in the 65 years or older age group. Both cases were notified on CIDR during week 50 2010.

7. Outbreak surveillance

As of 15th December 2010 (16:28), two general outbreaks of ILI/influenza/influenza A (H1N1 2009) were reported to CIDR for the 2010/2011 influenza season to date. Both outbreaks were reported from HSE-East, one ILI outbreak in a community setting was notified during week 49 2010 and the second outbreak associated with influenza A (H1N1 2009) in a maternity hospital was notified during week 50 2010.

8. International summary

United Kingdom

During week 48 2010, influenza activity was increasing across the UK. Although GP consultation rates remain low, several outbreaks and severe, hospitalised cases have been reported. In week 48 2010, the weekly influenza/ILI consultation rates increased slightly in England (13.3 per 100,000) and Wales (10.5 per 100,000), while decreasing in Scotland (28.8 per 100,000) and Northern Ireland (21.0 per 100,000). All GP consultation rates are within baseline levels. Consultation rates for acute bronchitis and pneumonia slightly increased. Nine acute respiratory disease outbreaks were reported in UK in week 48, eight (three influenza B and one influenza A (H1N1 2009)) were reported from schools and one influenza A (H1N1 2009) from a military base. Thirty-one outbreaks have been reported to date this season. Twenty nine of 86 (33.7%) specimens from ILI patients presenting to sentinel GPs in England in week 48, were reported as positive for influenza: 18 A (H1N1 2009), 1 A (unsubtyped) and 10 B. The proportion of samples positive for RSV and rhinovirus remains high, though is decreasing for rhinovirus. All influenza B and A (H1N1 2009) viruses characterised have been found to be similar to the vaccine strains.

Several severe cases of influenza were reported in the last two weeks resulting in an increase in ITU-bed occupancy and in the provision of beds used for Extra-Corporeal Membrane Oxygenation (ECMO). The majority of these patients are aged less than 65 years. Since week 36, ten deaths associated with influenza infection have been reported in the UK.

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SeasonalInfluenza/>

Europe

During week 48 2010, although all reporting countries experienced low intensity influenza activity, an increasing trend was notified by 11 countries. Finland, Norway and England reported localised outbreaks. An increasing percentage (10.1%) of positive influenza sentinel specimens was reported compared to last week. From positive sentinel and non-sentinel specimens, 60% were type A and 40% were type B. Of the 52 sub-typed influenza A viruses, 48 (92.3%) were A (H1N1 2009) and four (7.7%) were A (H3). Influenza B was the dominant virus circulating in five countries. To date this season, circulating influenza strains match the current influenza vaccine strains.

http://ecdc.europa.eu/en/healthtopics/influenza/epidemiological_data/Pages/Weekly_Influenza_Surveillance_Overview.aspx

USA

During week 48 2010, influenza activity in the United States remained relatively low overall. The proportion of outpatient ILI visits was below the national baseline. The proportion of deaths attributed to pneumonia and influenza was below the epidemic threshold. No influenza-associated paediatric deaths were reported. Of the 3,572 specimens tested during week 48, 386 (10.8%) were positive for influenza: 21 A (H1N1 2009), 96 A (H3), 106 A (unsubtyped) and 163 B. CDC has antigenically characterised 13 A (H1N1 2009) viruses as A/California/7/2009-like, 26 A (H3N2) viruses as A/Perth/16/2009-like and 18 B viruses as B/Brisbane/60/2008-like, all of which are components of the 2010/2011 influenza vaccine. <http://www.cdc.gov/flu/weekly/>

Canada

During week 48 2010, overall influenza activity in Canada increased from the previous week. The proportion of positive influenza specimens reported during week 48 doubled compared to week 47, with 225 specimens out of 2728 (8.3%) testing positive. Of the positive tests, 46.2% specimens were reported as influenza A (H3N2), 49.4% as influenza A (unsubtyped), 2.2% as influenza A (H1N1 2009) and 2.2% as influenza B. Both the number of paediatric and adult hospitalisations with influenza have increased during week 48 compared to the previous week. <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 December 3rd 2010, worldwide, influenza activity remained low, except in areas of South Asia and central and western Africa, which have seen recent surges in influenza A (H1N1 2009) virus detections. As the northern hemisphere winter approaches, with few exceptions, most countries in the temperate zone of the northern hemisphere continued to report low levels of ILI and influenza virus detections. Except for a few countries in Southeast Asia, most countries in the tropics of the Americas and Asia have recently reported low levels of influenza activity. Globally, there continued to be co-circulation of A (H1N1 2009), A (H3N2) and B viruses, with the latter two being predominant. <http://www.who.int/csr/disease/influenza/en/>

8. 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

HPSC wishes to thank the ICGP, NVRL, Departments of Public Health, ICSI, HSE-NE, CUH and GUH for providing data for this report

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