

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 5 2011 (31st January – 6th February 2011)



Summary

- Influenza activity has continued to decline at a slow rate, and remains above baseline threshold levels.
 - The sentinel GP influenza-like illness (ILI) consultation rate was 86.2 per 100,000 population in week 5 2011, a slight decrease from the updated rate of 89.3 per 100,000 reported during week 4 2011.
 - ILI in 0-4 and 5-14 year olds continues to remain at high levels in the community and is mainly associated with influenza B.
 - The proportion of influenza-related calls to GP Out-of-Hours services decreased slightly in week 5 2011, coinciding with the decrease in sentinel GP ILI consultation rates.
 - The proportion of influenza positive specimens detected by the NVRL decreased further in week 5 2011 to 17.9%, compared to 24.8% the previous week.
 - Influenza B is the predominant circulating influenza type in Ireland, accounting for 74.3% of all positive influenza specimens detected by the NVRL in week 5 2011.
 - The weekly number of hospitalised cases of influenza remained stable, at 59 in week 5 2011.
 - To date (February 9th 2011) this season, 848 confirmed influenza cases have been hospitalised, 113 cases have been admitted to ICU and 18 deaths have been reported to HPSC.
 - As of February 9th 2011, 14 influenza/ILI outbreaks have been reported to HPSC this season.
 - The proportion of respiratory syncytial virus (RSV) positive detections remained stable in week 5 2011.

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 5 2011, 50 of 60 (83.3%) sentinel general practices provided data, with 37 practices (74.0%) reporting 189 influenza-like illness (ILI) cases. This corresponds to an ILI consultation rate of 86.2 per 100,000 population, a small decrease compared to the updated rate of 89.3 per 100,000 reported during week 4 2011. The ILI rate for week 5 2011 is above the Irish baseline threshold (17.8 per 100,000 population). Thirteen (26.0%) sentinel practices reported no ILI cases during week 5 2011. Figure 1 shows the ILI consultation rates, the baseline threshold rate and the number of positive specimens detected by the NVRL.

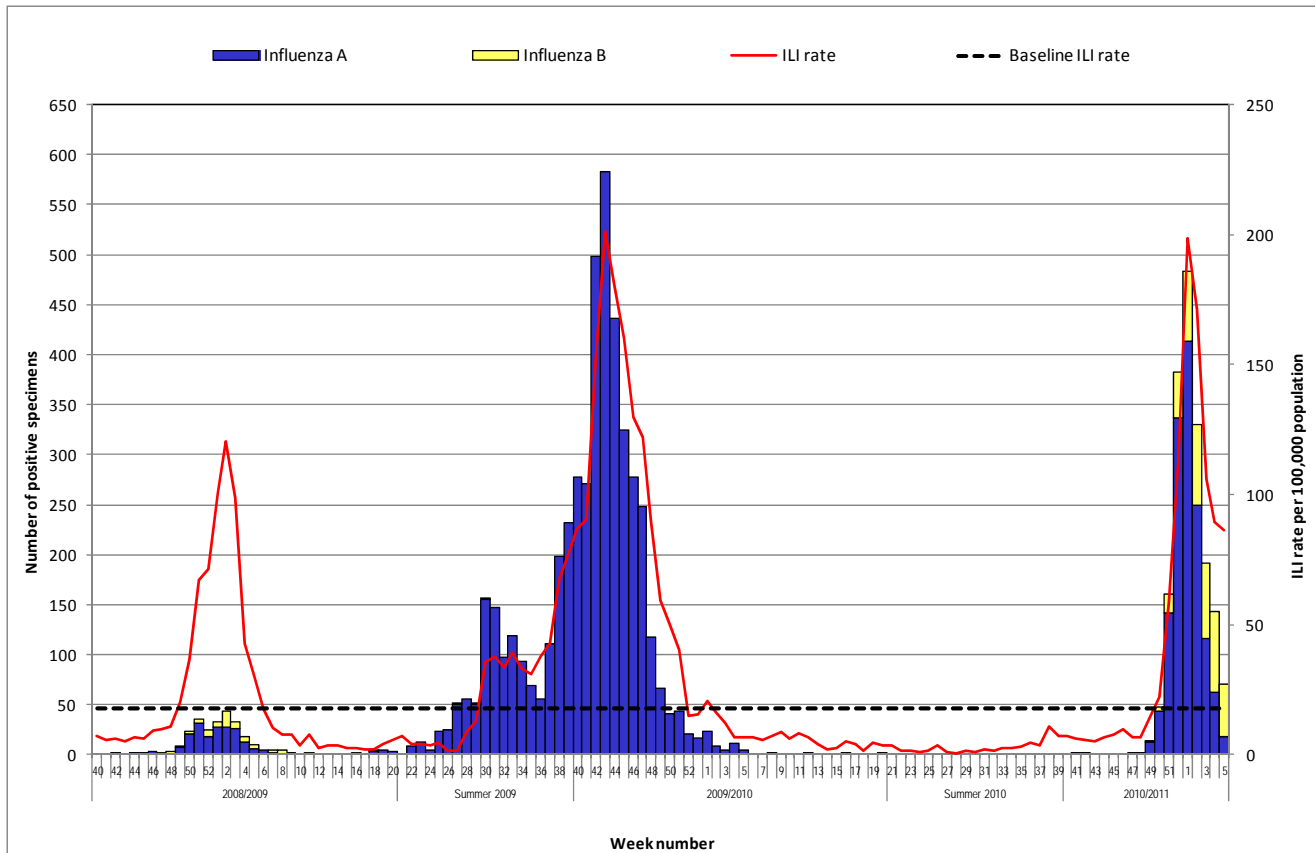


Figure 1. ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold rate, and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season.

Source: Clinical ILI data from ICGP and virological data from the NVRL^{1,2}

ILI age specific rates were highest in the 5-14 year age group during week 5 2011, although a small decrease occurred in this age group, compared to the previous week. ILI rates increased in the 0-4 year age group and in those aged 65 years or older, and decreased slightly in the 15-64 year age group during week 5 2011, compared to the previous week. During week 5 2011, 26 ILI cases were reported in the 0-4 year age group (166.3 per 100,000), 73 cases were reported in the 5-14 year age group (251.0 per 100,000), 87 in the 15-64

¹ 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.

² Sentinel GP consultations and virological data are updated on an ongoing basis, ILI rates and virological data are adjusted accordingly.

year age group (57.8 per 100,000) and 3 ILI cases in those aged 65 years or older (12.4 per 100,000). Age specific ILI rates in the 0-4 and 5-14 year olds remain at a significantly lower level than those reported during the pandemic period in 2009/2010. During the pandemic period, ILI rates in 0-4 year olds peaked at 387.3 per 100,000 population and at 772.0 per 100,000 population in 5-14 year olds.

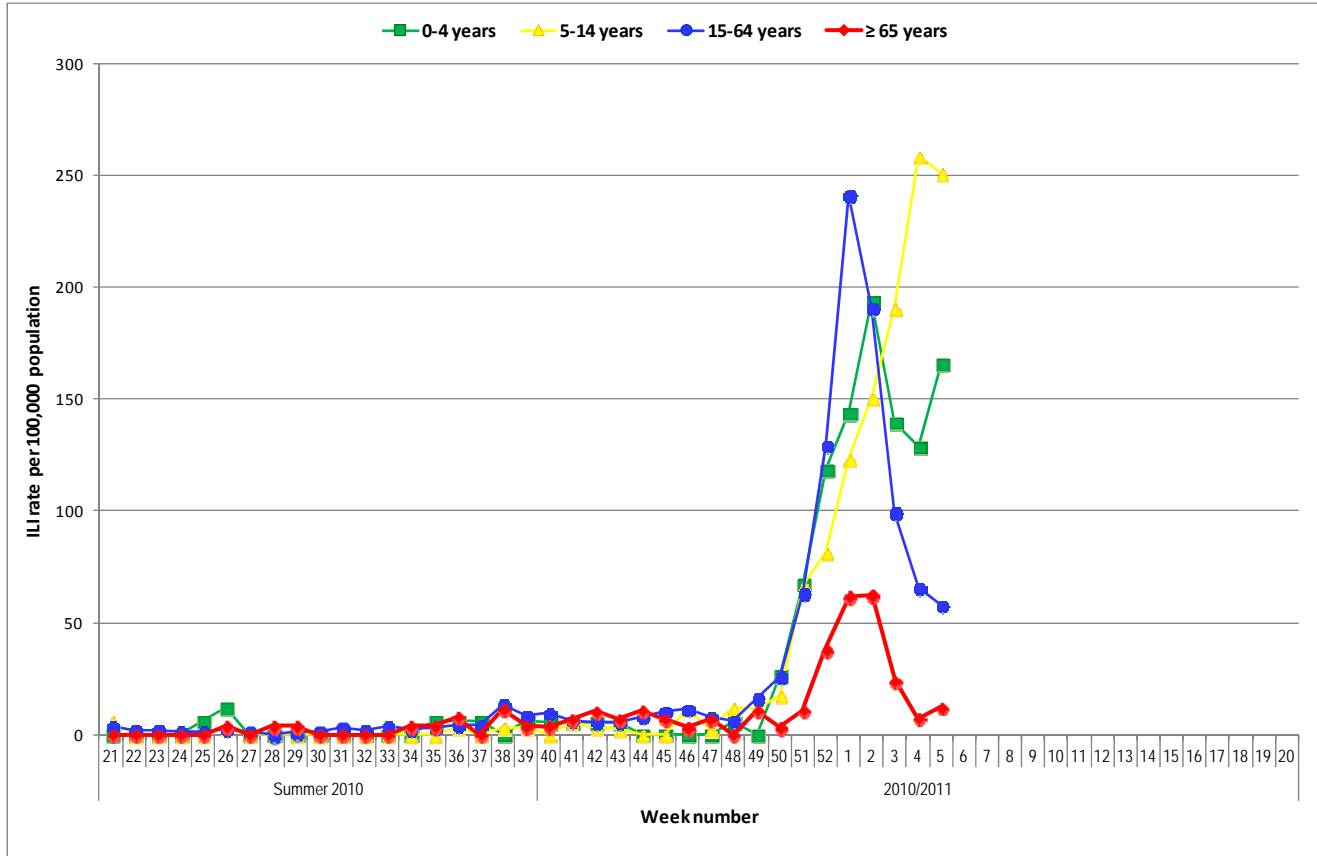


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2010 and the 2010/2011 influenza season to date

Source: ICGP ILI clinical data

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

The data reported in this section for the 2010/2011 influenza season refers to specimens tested by the National Virus Reference Laboratory (NVRL). A total of 390 specimens (63 sentinel and 327 non-sentinel[§] specimens) were tested by the NVRL during week 5 2011. Seventy (17.9%) specimens were positive for influenza: 18 (25.7%) influenza A (H1N1 2009) and 52 (74.3%) influenza B. Influenza B is the predominant circulating influenza type in Ireland, accounting for 74.3% of all positive influenza specimens detected by the NVRL in week 5 2011.

Of the 63 GP sentinel specimens taken during week 5 2011, 30 (47.6%) were positive for influenza: 6 (20.0%) influenza A (H1N1 2009) and 24 (80.0%) influenza B. Of the 327 non-sentinel specimens taken during week 5 2011, 40 (12.2%) were positive for influenza: 12 (30.0%) A (H1N1 2009) and 28 (70.0%) B. Fifty-three percent (27/51) of all influenza B positive specimens (sentinel and non sentinel) detected during week 5 2011 were from patients aged less than 15 years.

To date this season, 5928 sentinel and non-sentinel specimens have been tested by the NVRL, 1828 (30.8%) specimens tested positive for influenza: 1340 influenza A (H1N1 2009), 35 influenza A (H3), 25 influenza A (unsubtyped) and 428 influenza B. Of the 1828 positive influenza specimens, 1400 (76.6%) were influenza A and 428 (23.4%) were influenza B. Of the 1340 influenza A (H1N1 2009) specimens detected, 263 were sentinel specimens and 1077 were from non-sentinel sources (figures 3 & 4).

The NVRL has tested seven non-sentinel specimens from six confirmed influenza A (H1N1 2009) cases for antiviral resistance. All six patients were hospitalised and admitted to intensive care. One (14.3%) specimen was resistant to oseltamivir, carrying the H275Y mutation.

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

[§] 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.

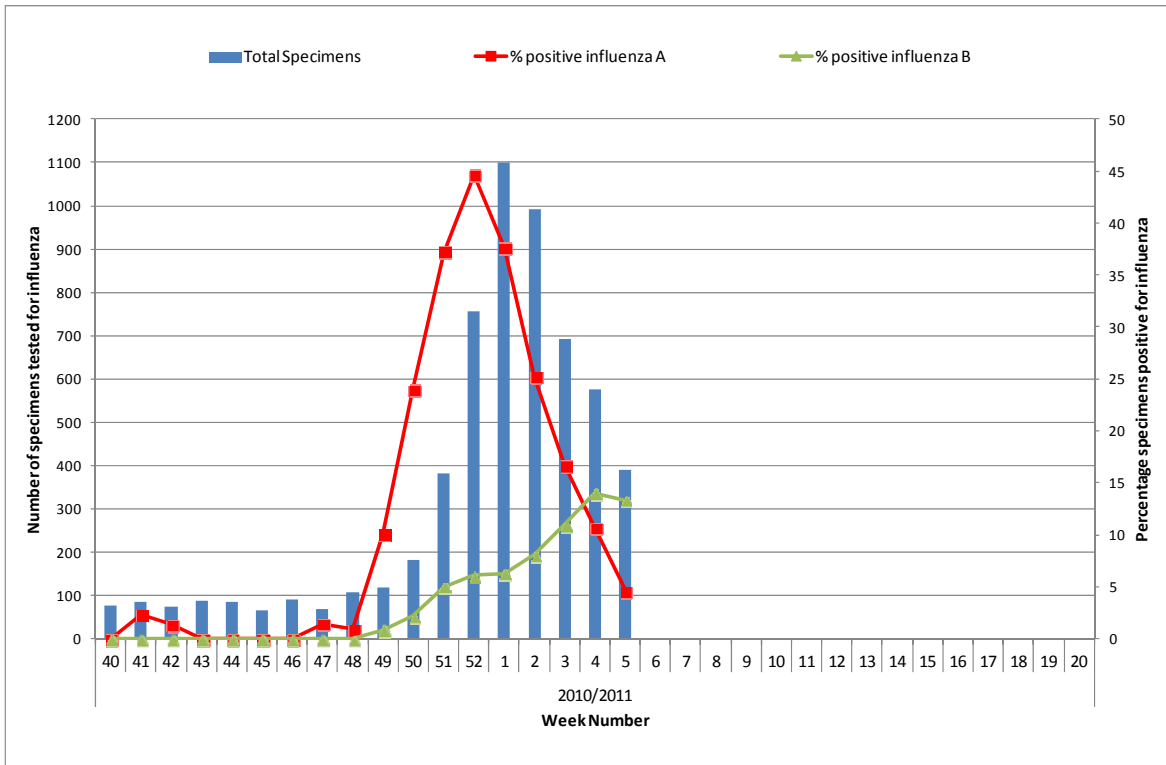


Figure 3: Number of sentinel and non-sentinel specimens tested for influenza and percentage influenza positive by week for the 2010/2011 influenza season. *Source: NVRL*

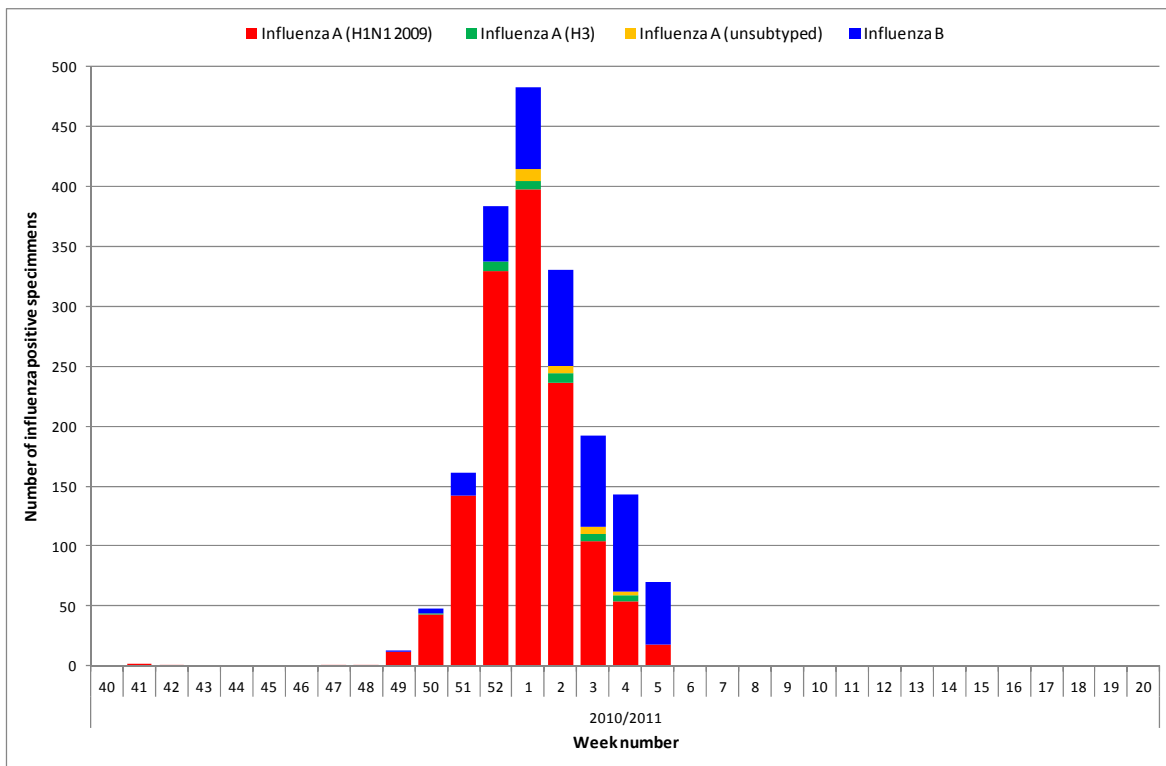


Figure 4: Number of sentinel and non-sentinel specimens positive for influenza by type/subtype and week for the 2010/2011 influenza season. *Source: NVRL*

Of the 327 non-sentinel specimens tested during week 5 2011, 6.7% (n=22) were positive for RSV, remaining stable compared to the updated numbers (n=33, 6.9%) for week 4 2011 (Tables 1 & 2). The current proportion of RSV positive detections remains at low levels, compared to average proportions for the same period over the last 10 years. It should be noted that RSV data only include specimens referred to the NVRL for RSV testing. Not all hospitals refer respiratory specimens for RSV testing to the NVRL. 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.**

There were no positive detections of adenovirus or parainfluenza viruses reported from the NVRL for week 5 2011. To date this season, there have been sporadic detections of adenovirus and parainfluenza virus (PIV) types -1, -2 and -3.

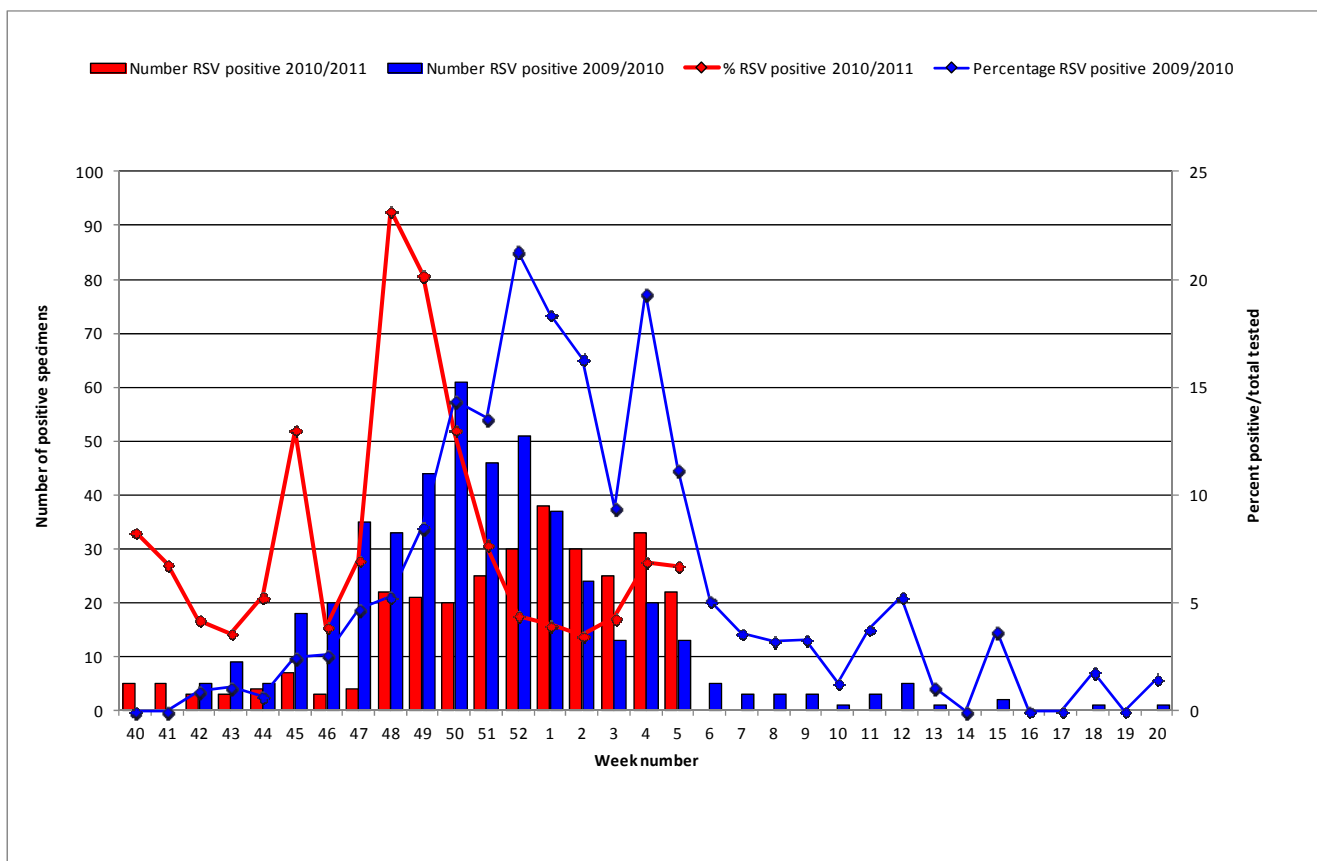


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2010/2011 season, compared to the 2009/2010 season. Source: NVRL

** 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 by the NVRL and positive influenza results, for week 5 2011 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)	
5 2011	Sentinel	63	30	47.6	6	6	0	0	0	24
	Non-sentinel	327	40	12.2	12	12	0	0	0	28
	Total	390	70	17.9	18	18	0	0	0	52
2010/2011 season	Sentinel	828	429	51.8	273	263	7	0	3	156
	Non-sentinel	5100	1399	27.4	1127	1077	28	0	22	272
	Total	5928	1828	30.8	1400	1340	35	0	25	428

Table 2: Number of non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 5 2011 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
5 2011	327	22	6.7	0	0.0	0	0.0	0	0.0	0	0.0
2010/2011 season	5100	300	5.9	12	0.2	6	0.1	2	0.04	4	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

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 5 2011, widespread influenza activity was reported from three HSE-Areas (HSE-E, -NE and -MW), regional influenza activity from HSE-SE and -W, localised activity was reported from HSE-M, -NW and -S (figure 6).

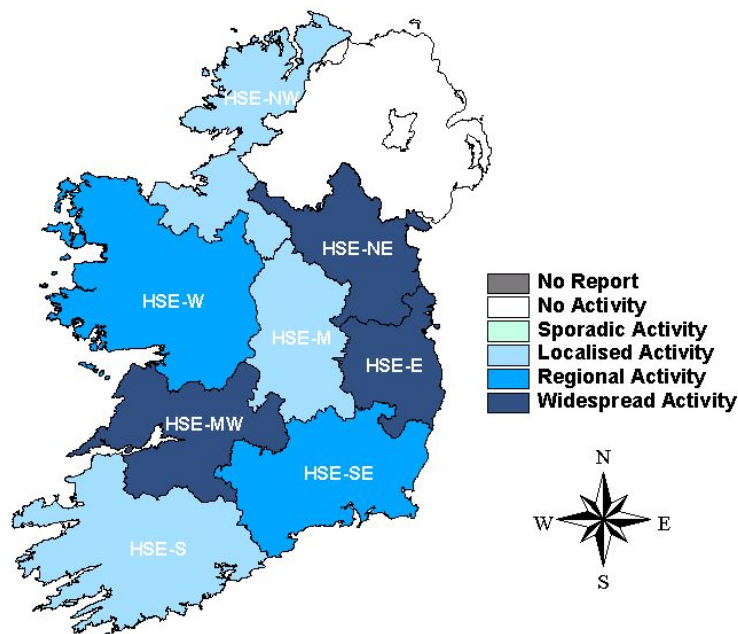


Figure 6: Map of provisional influenza activity by HSE-Area during influenza week 5 2011

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.

Three sentinel hospitals reported slight increases in the proportion of respiratory admissions in HSE-E and -W during weeks 4 and 5 2011. The proportion of respiratory admissions from reporting sentinel hospitals in HSE-E, -S, -SE and -W peaked during weeks 51 and 52 2010. Three sentinel primary schools reported

colds/ILI/gastrointestinal symptoms and increased absenteeism amongst pupils in HSE-NW, two during week 4 and one 5 2011.

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.

The proportion of influenza-related calls to GP Out-of-Hours services decreased to 5.0% during week 5 2011, compared to 5.9% in week 4 2011. Seven GP Out-of-Hours services reported during week 4 2011 (figure 7).

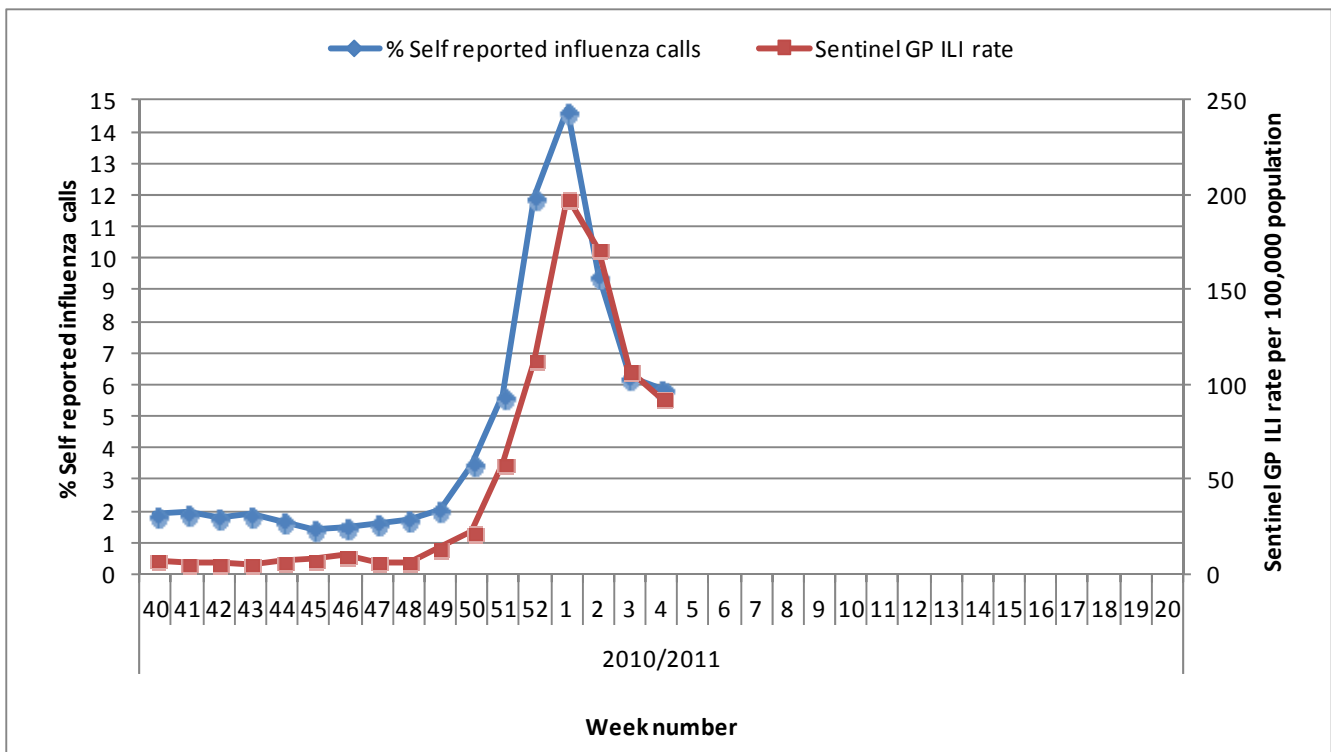


Figure 7: Self reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and national sentinel GP ILI consultation rate per 100,000 population by week for the 2010/2011 season

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

5. Influenza notifications (CIDR)

As of 9th February 2011 (09:00), 1956 confirmed influenza cases were notified on CIDR for the 2010/2011 influenza season. Laboratory confirmed influenza cases notified on CIDR include all positive influenza specimens reported from all laboratories testing for influenza and reporting to CIDR. Currently, the NVRL is the only laboratory subtyping positive influenza A specimens for *all* influenza A subtypes. Of the 1956 confirmed influenza cases, 1290 (66.0%) were confirmed influenza A (H1N1 2009), 18 (0.9%) were influenza A (H3), 192 (9.8%) were influenza A (unsubtyped), 455 (23.3%) were influenza B cases and one case was reported as

influenza (type unknown). It should be noted that data for week 6 2011 are incomplete and only include notified cases as of Wednesday 9th February 2011 (09:00).

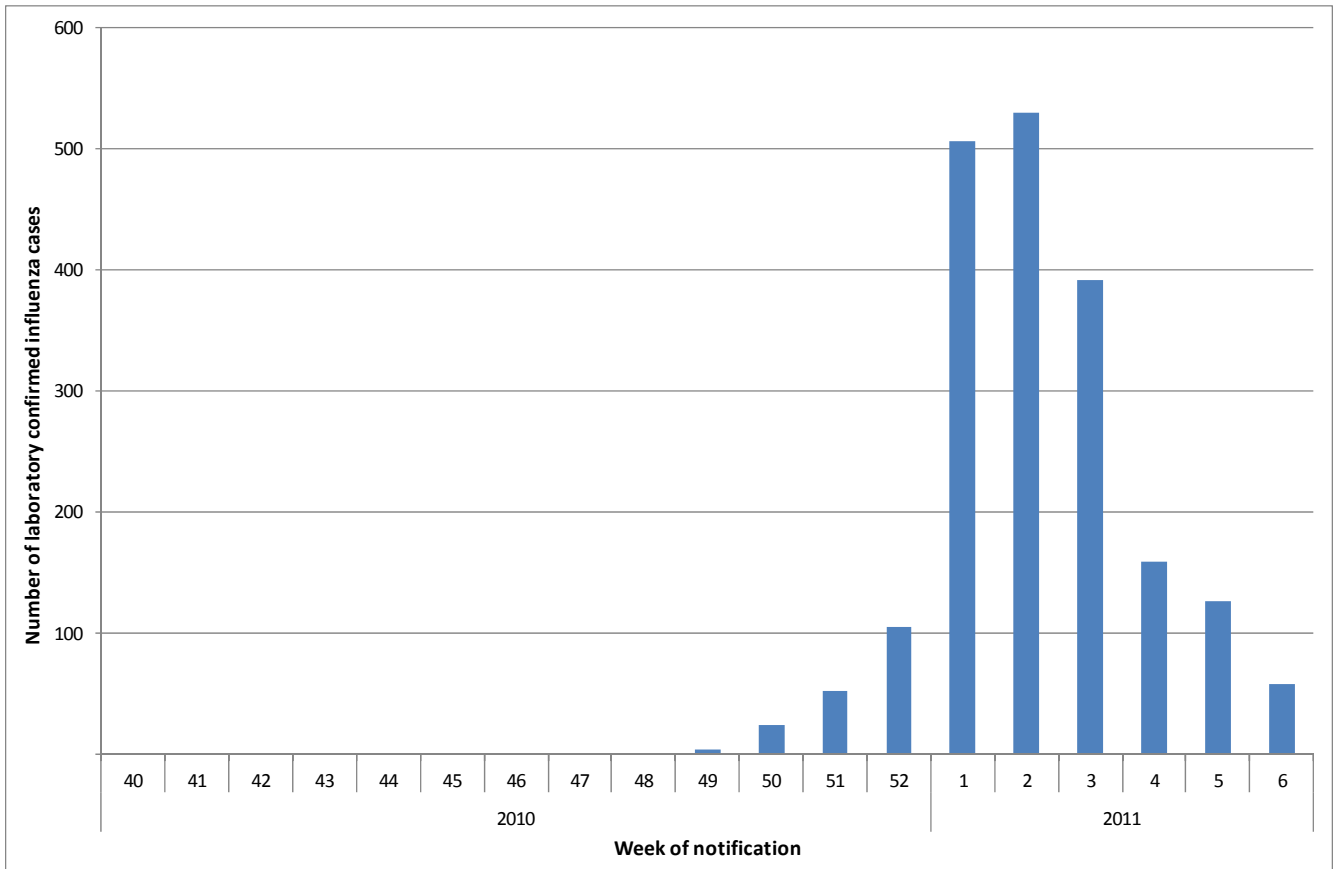


Figure 8: Number of laboratory confirmed influenza cases by week of notification on CIDR for the 2010/2011 influenza season. *It should be noted that data for week 6 2011 are incomplete and only include notified cases as of 9th February 2011 (09:00). Source: CIDR 09/02/2011 09:00

Eight hundred and forty-eight (43.4%) of the 1956 confirmed influenza cases notified this influenza season were hospitalised (i.e. these cases were recorded on CIDR as hospital inpatients) (figure 9). Of the 848 hospitalised cases, 588 (69.3%) were influenza A (H1N1 2009) cases, 6 (0.7%) were influenza A (H3) cases, 106 (12.5%) were influenza A (unsubtyped) and 148 (17.5%) were influenza B cases. The proportion of hospitalised cases confirmed as influenza B cases increased to 45.8% during week 5 2011, compared to 40.0% during the previous week.

The highest cumulative age specific rate for influenza confirmed hospitalised cases for the 2010/2011 influenza season to date is currently in the 0-4 year age group (54.6 per 100,000 population), followed by the 55-64 year age group (22.8 per 100,000 population) and the 25-34 year age group (22.0 per 100,000 population) (table 3). It should be noted that age was unknown for one hospitalised case.

To date this season, 76 (3.9%) of the 1956 laboratory confirmed influenza cases were reported as pregnant. Forty-eight (63.2%) of these cases were reported as hospitalised: 41 influenza A (H1N1 2009), 2 influenza A (unsubtyped) cases and 5 influenza B cases.^{##}

Age (years)	Hospitalised		Admitted to ICU	
	Number	Age specific rate per 100,000 population	Number	Age specific rate per 100,000 population
0-4	165	54.6	10	3.3
5-14	75	13.3	2	0.4
15-24	86	13.6	3	0.5
25-34	159	22.0	20	2.8
35-44	94	15.1	17	2.7
45-54	84	16.1	22	4.2
55-64	93	22.8	23	5.7
65+	91	19.4	16	3.4

Table 3: Age specific rate per 100,000 population by age group (years) for all influenza confirmed hospitalised cases and cases admitted to ICU for the 2010/2011 influenza season to date. Source: CIDR and ICU enhanced surveillance system 09/02/2011 09:00

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

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, and notify any cases to HPSC, who process and report on this information on behalf of the regional Director of Public Health/Medical Officer of Health.

As of 9th February 2011 (09:00), HPSC has been notified of 113 hospitalised patients admitted to critical care units with confirmed influenza, 101 of whom are adults and 12 are paediatric cases. Thirty-one (27.4%) of the 113 cases are currently in ICU^{§§}. Eighty-six of the 113 (76.1%) cases have underlying medical conditions, 78 adults and eight paediatric cases. The underlying medical conditions include: chronic respiratory disease, chronic heart disease, immunosuppression, pregnancy, metabolic disorders and morbid obesity.

The age specific rates for all cases admitted to ICU are detailed in table 3 above. The number of confirmed influenza hospitalised cases by ICU status and by week of notification on CIDR for the 2010/2011 influenza season is detailed in figures 9. The number of adult and paediatric ICU admissions for confirmed influenza cases by date of ICU admission is detailed in figure 10.

^{##} It should be noted that information on pregnancy is not completed for all cases.

^{§§} This information is based on the enhanced surveillance data.

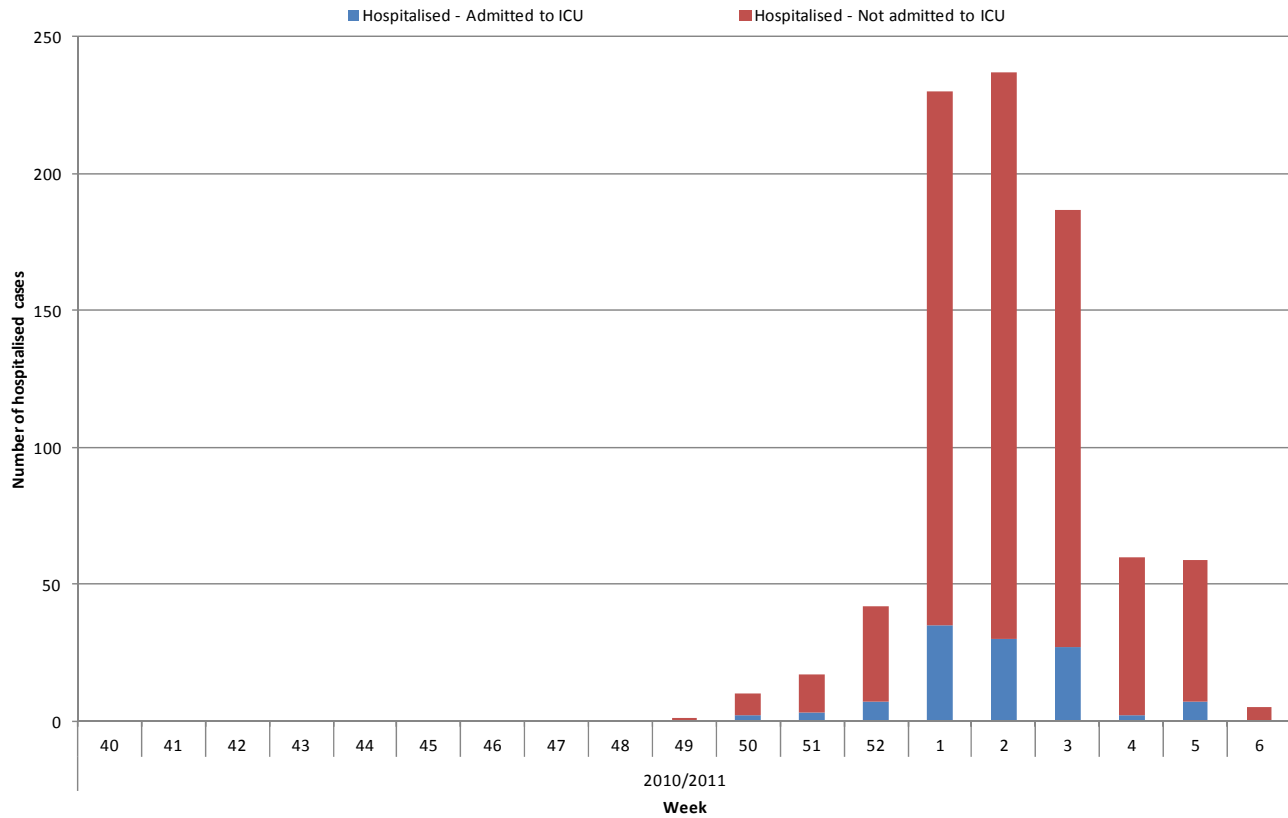


Figure 9: Number of confirmed influenza hospitalised cases by ICU status by week of notification on CIDR for the 2010/2011 influenza season. It should be noted that data for week 6 2011 are incomplete and only include notified cases as of 9th February 2011 (09:00). Source: CIDR and ICU enhanced surveillance system 09/02/2011 09:00

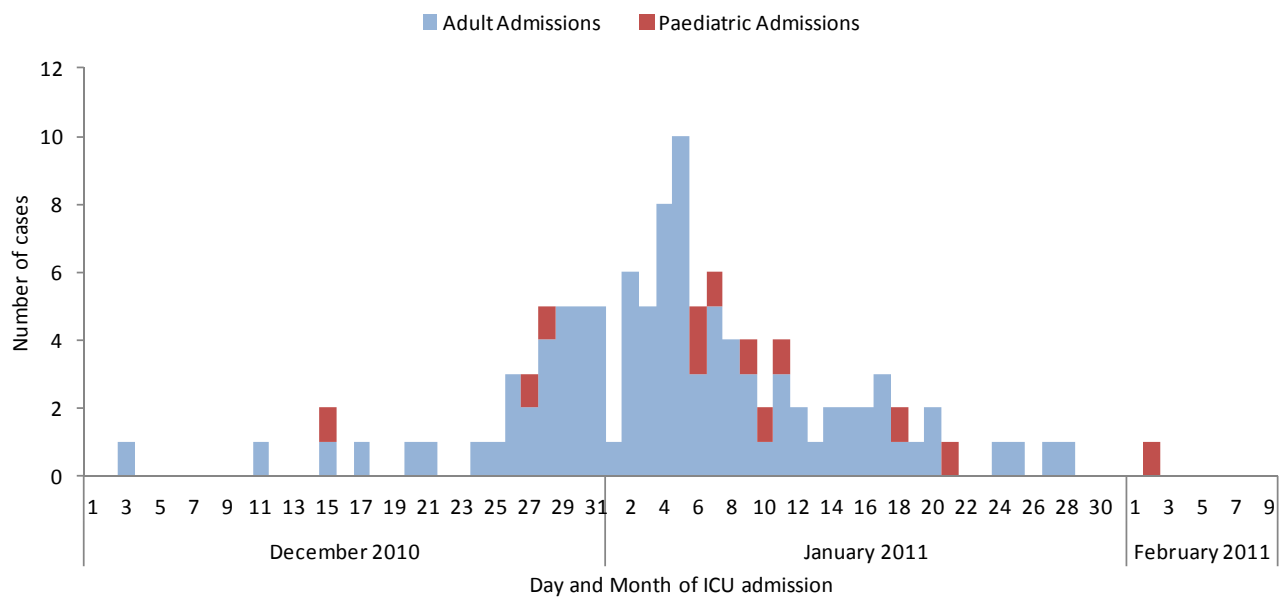


Figure 10: Number of confirmed influenza hospitalised adult and paediatric cases admitted to ICU by date of ICU admission, for December 2010 and January 2011 to date (n=113). Source: ICU enhanced surveillance system 09/02/2011 09:00

7. Mortality surveillance

HPSC has been informed of 18 influenza associated deaths to date this season (as of 09/02/2011), 14 influenza A (H1N1 2009), one influenza A (unsubtyped) and three influenza B. One death was in a patient in the 0-4 year age group, 13 patients were in the 15-64 year age group and four patients were aged 65 years and older. Sixteen deaths occurred in patients with underlying medical conditions. One death occurred in week 52 2010, one in week 1 2011, five in week 2 2011, six in week 3 2011, three in week 4 2011 and two in week 5 2011. Table 4 outlines the influenza associated deaths by HSE-Area for the 2010/2011 influenza season to date.

Table 4: Influenza associated deaths in laboratory confirmed influenza cases by HSE-Area for the 2010/2011 influenza season to date. *Source: Deaths reported to HPSC as of 09/02/2011 09:00*

HSE Area	Influenza Deaths
HSE-E	10
HSE-M	1
HSE-MW	0
HSE-NE	2
HSE-NW	2
HSE-SE	1
HSE-S	1
HSE-W	1
Total	18

8. Outbreak surveillance

To date this season, (as of 9th February 2011 09:00), 14 general outbreaks of ILI/influenza/influenza A (H1N1 2009) were reported to CIDR: eight ILI outbreaks, five influenza A (H1N1 2009) outbreaks and one outbreak associated with both influenza A (H1N1 2009) and influenza B. One outbreak was reported in week 49 2010, two in week 50 2010, four in week 51 2010, three in week 2 2011, three in week 4 2011 and one in week 5 2011. Five outbreaks were reported from HSE-E, seven from HSE-S and two from HSE-W. Two outbreaks were in healthcare settings (one of which was a maternity hospital), seven in schools, one in a community setting, one in a residential institution, one in a prison, one travel related outbreak and one outbreak reported as 'Other' setting.

9. International summary

United Kingdom

Influenza activity continued to decline in the UK during week 4 2011. GP consultation rates were below baseline levels in England, Wales and Scotland. All influenza types are reducing, with influenza B the predominant virus; influenza A (H1N1 2009) continues to circulate, with very few, sporadic influenza A (H3N2) virus detections. The influenza A (H1N1 2009) virus strain is virologically and epidemiologically similar to that seen during the pandemic. The virus strains circulating are overall well matched to the current influenza vaccine. The weekly national proportions of NHS Direct calls for cold/flu and fever also decreased. Three acute respiratory disease outbreaks were reported in the UK in week 4, one in a care home, one in a prison and one in a school, bringing the total reported this season to date to 168. Twenty-eight of 128 (21.96%) specimens from ILI patients presenting to sentinel GPs in England in week 4 2011, were reported as positive for influenza. The proportion of specimens reported to DataMart (England) as positive for influenza decreased to 10.2% (186 of 1,816). The proportion of samples positive for RSV and rhinovirus increased and was low for parainfluenza,

adenovirus and human metapneumovirus. Since week 36 2010, 395 UK deaths associated with influenza infection have been reported. Excess all-cause mortality continues to be observed in week 3 2011.

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

Europe

During week 4 2011, most European countries continued to report medium to high ILI/acute respiratory infection (ARI) consultation rates and widespread influenza activity. Increasing trends were mainly observed in central, eastern and southern Europe whereas countries in Western Europe reported declining trends. The proportion of influenza positive sentinel specimens has decreased for the fourth consecutive week, dropping from 54% during the peak (week 52 2010) to 47% in week 4 2011. Seventy percent of influenza detections were influenza A and 30% were influenza B. More than 97% of subtyped influenza A viruses were A (H1N1 2009). To date this season, nine countries have reported 2,488 hospitalised severe acute respiratory infection (SARI) cases from all causes, including 154 fatalities. Overall, 43% of these cases were not known to have any underlying conditions. In western countries with surveillance of severe cases, the numbers of new admissions requiring hospital care were generally dropping though numbers requiring higher level care remain substantial. Most of the severely affected cases are in the age group 15–64 years. Since week 40 2010, 1009 influenza viruses from sentinel and non-sentinel specimens have been characterised antigenically, 570 as A/California/7/2009 (H1N1)-like; 73 as A/Perth/16/2009 (H3N2)-like; 346 as B/Brisbane/60/2008-like (Victoria lineage) and 20 as B/Florida/4/2006-like (Yamagata lineage). Antiviral resistance data have been reported from Italy, Norway and the UK. A total of 714 influenza A (H1N1 2009), one influenza A (H3) and 61 influenza B viruses have been tested for susceptibility to oseltamivir, and 714 A (H1N1 2009), one influenza A (H3) and 62 B viruses for susceptibility to zanamivir. Twenty-six (3.6%) of influenza A (H1N1 2009) viruses were resistant to oseltamivir but remained sensitive for zanamivir. All the resistant viruses carried the H275Y mutation. Seven of the 26 resistant viruses were from patients for whom no exposure to oseltamivir was reported.

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

USA

During week 4 2011, influenza activity in the United States increased. The proportion of ILI outpatient visits was 4.0%, which is above the national baseline of 2.5%. Of the 6,209 specimens tested, 2,044 (32.9%) were positive for influenza: 423 A (H1N1 2009), 718 A (H3), 530 A (unsubtyped) and 373 B. CDC has antigenically characterised 46 A (H1N1 2009) viruses as A/California/7/2009-like, 188 A (H3N2) viruses as A/Perth/16/2009-like, 170 as B/Victoria lineage viruses and 12 as B/Yamagata lineage viruses. The proportion of deaths attributed to pneumonia and influenza (P&I) was above the epidemic threshold. Six influenza-associated paediatric deaths were reported. Four of these deaths were associated with influenza B viruses, one of these deaths was associated with an influenza A (H3) virus, and one was associated with influenza A (H1N1 2009) virus.

One case of human infection with a novel influenza A virus was reported during week 4 2011. The patient was infected with a swine origin influenza A (H3N2) virus. The patient reported contact with pigs in the week preceding symptom onset, did not require hospitalisation, and has since fully recovered. Six other human infections with swine origin influenza A (H3N2) viruses have been identified in the US during 2009 and 2010. No epidemiologic links between this case and any of the other cases of swine-origin A (H3N2) infection have been identified and the viruses from all seven cases have genetic differences indicating different sources of infection. There is no evidence of human-to-human transmission with this virus. <http://www.cdc.gov/flu/weekly/>

Canada

During week 4 2011, overall influenza detections appear to have peaked, with most regions in Canada continuing to show a decline in the percentage of positive influenza detections. Other indicators of influenza activity have either decreased or remained similar to the previous week. To date this season, 88.9% of the subtyped positive influenza A specimens were influenza A (H3N2). In week 4 2011, detections of influenza A

(H1N1 2009) decreased slightly as a proportion of subtyped influenza A specimens, while influenza B virus detections increased slightly. The proportion of positive tests for RSV continued to increase. <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 January 28th 2011, the large majority of viruses characterised from North America and Europe continue to be of the same lineages as those found in the current seasonal influenza vaccine. Transmission in Northern Africa and Northern Asia has peaked recently and is declining. In the tropics, several countries of southern Asia have reported increasing trends recently, mainly due to A (H1N1 2009). Other tropical areas of the world and the temperate countries of the Southern Hemisphere are currently reporting very little influenza circulation. <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

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

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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.