

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 7 2011 (14th – 20th February 2011)



Summary

- Influenza activity has continued to decrease in Ireland during week 7 2011.
 - The sentinel GP influenza-like illness (ILI) consultation rate was 36.2 per 100,000 population in week 7 2011, a decrease from the updated rate of 46.2 per 100,000 reported during week 6 2011.
 - ILI rates have decreased in all age groups; however continue to remain above baseline levels.
 - The proportion of influenza-related calls to GP Out-of-Hours services continued to decrease in week 7 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 7 2011 to 13.8%, compared to 17.9% in the previous week.
 - All influenza types decreased in week 7 2011, with influenza B remaining the predominant circulating influenza type.
 - The weekly number of hospitalised cases of influenza remained unchanged in week 7 2011 compared to the previous week, with 30 cases reported for each week.
 - To date (February 23rd 2011) this season, 905 confirmed influenza cases have been hospitalised, 120 cases have been admitted to ICU and 23 deaths have been reported to HPSC.
 - No new outbreaks of influenza/ILI have been reported since week 5 2011. As of February 23rd 2011, 14 influenza/ILI outbreaks have been reported to HPSC this season.
 - The proportion of respiratory syncytial virus (RSV) positive detections increased slightly in week 7 2011.
 - The WHO announced the viruses recommended for use in the Northern Hemisphere 2011/2012 influenza vaccine.

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
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 7 2011, 54 of 60 (90.0%) sentinel general practices provided data, with 33 practices (61.1%) reporting 88 influenza-like illness (ILI) cases. This corresponds to an ILI consultation rate of 36.2 per 100,000 population, a decrease compared to the updated rate of 46.2 per 100,000 reported during week 6 2011. The ILI rate for week 7 2011 is above the Irish baseline threshold (17.8 per 100,000 population). Twenty-one (38.9%) sentinel practices reported no ILI cases during week 7 2011. Figure 1 shows the ILI consultation rates, the baseline threshold rate and the number of positive specimens detected by the NVRL.

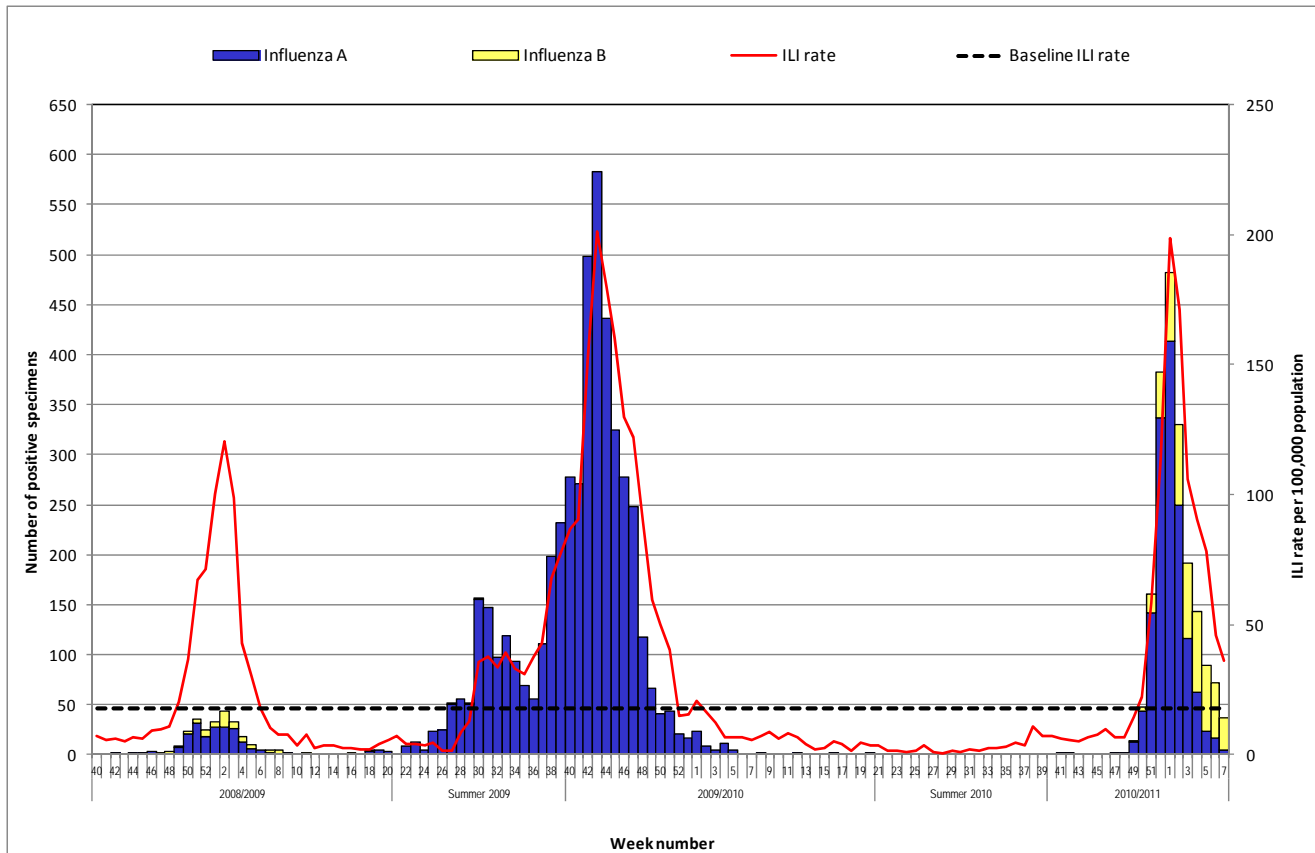


Figure 1. ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold rate, and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season.

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

ILI age specific rates decreased in all age groups in week 7 2011, compared to the previous week. ILI age specific rates were highest in the 5-14 year age group during week 7 2011. During week 7 2011, 9 ILI cases were reported in the 0-4 year age group (52.0 per 100,000), 20 cases were reported in the 5-14 year age group (62.1 per 100,000), 57 in the 15-64 year age group (34.2 per 100,000) and 2 ILI cases in those aged 65 years or older (7.5 per 100,000). Age specific ILI rates in the 0-4 and 5-14 year olds remain at a significantly

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.

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.

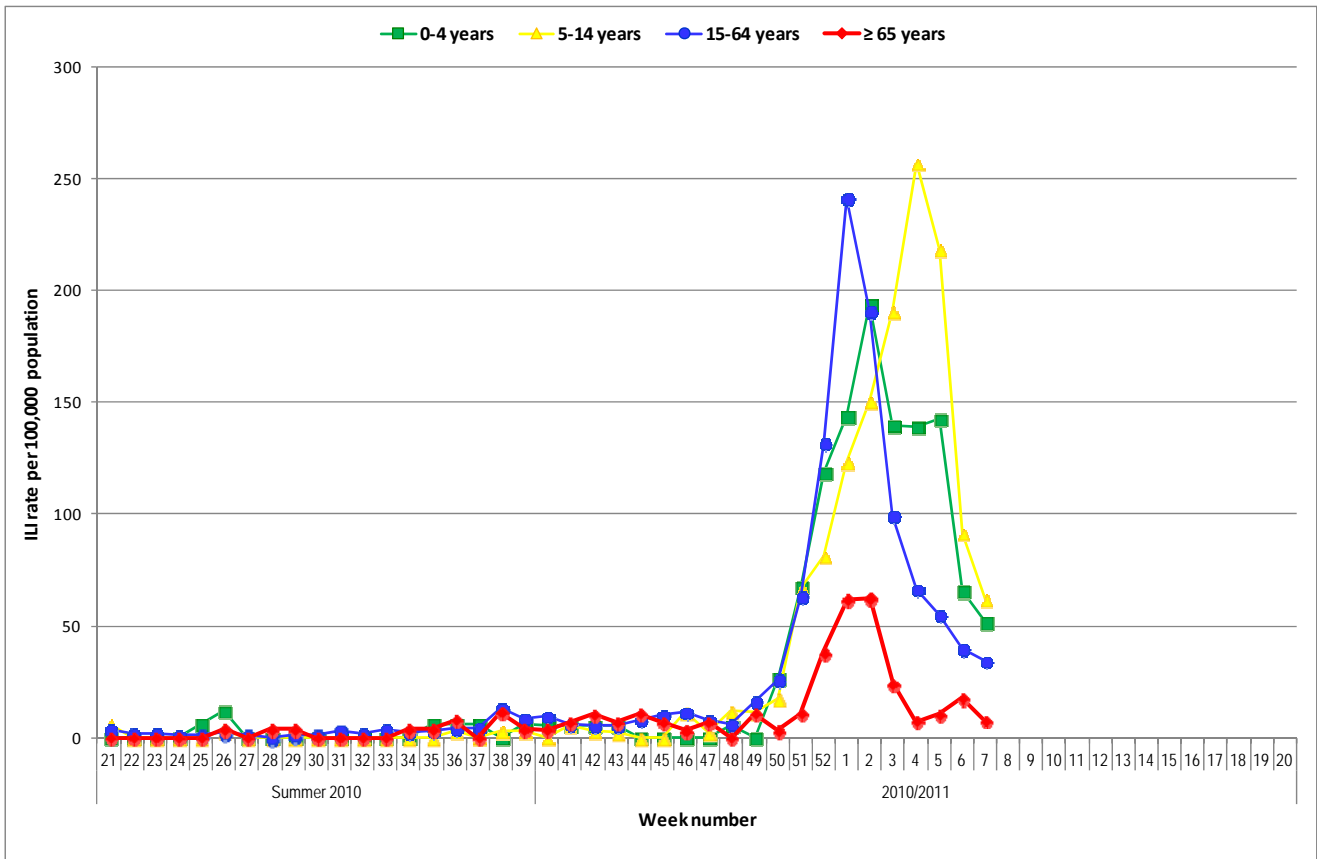


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2010 and the 2010/2011 influenza season to date

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 269 specimens (47 sentinel and 222 non-sentinel[§] specimens) were tested by the NVRL during week 7 2011. Thirty-seven (13.8%) specimens were positive for influenza: 3 (8.1%) influenza A (H1N1 2009), 1 (2.7%) influenza A (H3), 1 (2.7%) influenza A (unsubtyped) and 32 (86.5%) influenza B. Influenza B is the predominant circulating influenza type in Ireland, accounting for 86.5% of all positive influenza specimens detected by the NVRL in week 7 2011.

Of the 47 GP sentinel specimens taken during week 7 2011, 15 (31.9%) were positive for influenza. All 15 positive specimens were positive for influenza B. There were no positive influenza A sentinel specimens during week 7 2011. Of the 222 non-sentinel specimens taken during week 7 2011, 22 (9.9%) were positive for influenza: 3 (13.6%) influenza A (H1N1 2009), 1 (4.5%) influenza A (H3), 1 (4.5%) influenza A (unsubtyped) and 17 (77.3%) influenza B. Sixty-three percent (20/32) of all influenza B positive specimens (sentinel and non-sentinel) detected during week 7 2011 were from patients aged less than 15 years.

To date this season, 6647 sentinel and non-sentinel specimens have been tested by the NVRL, 1955 (29.4%) specimens tested positive for influenza: 1361 influenza A (H1N1 2009), 36 influenza A (H3), 30 influenza A (unsubtyped) and 528 influenza B. Of the 1955 positive influenza specimens, 1427 (73.0%) were influenza A and 528 (27.0%) were influenza B (figures 3 & 4). To date this season, six influenza B cases were co-infected with influenza A: 5 with influenza A (H1N1 2009) and one with influenza A (unsubtyped).

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.

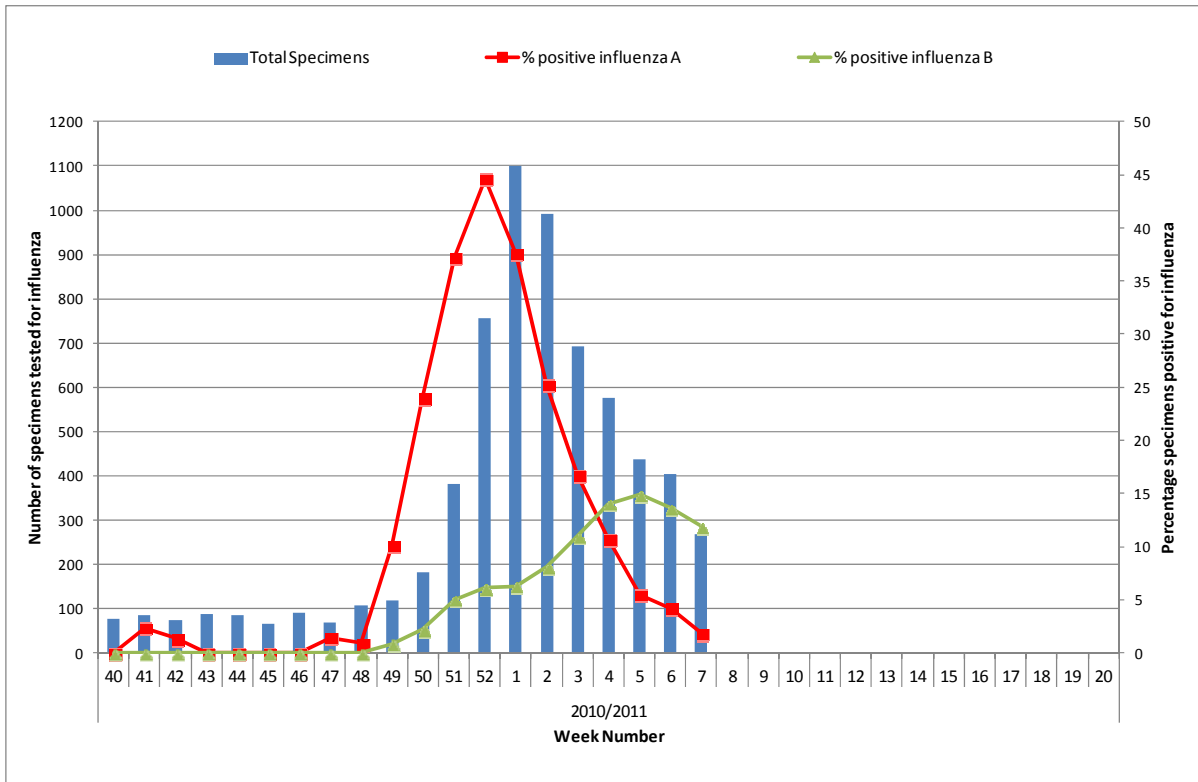


Figure 3: Number of sentinel and non-sentinel specimens tested for influenza and percentage influenza positive by week for the 2010/2011 influenza season. Source: NVRL

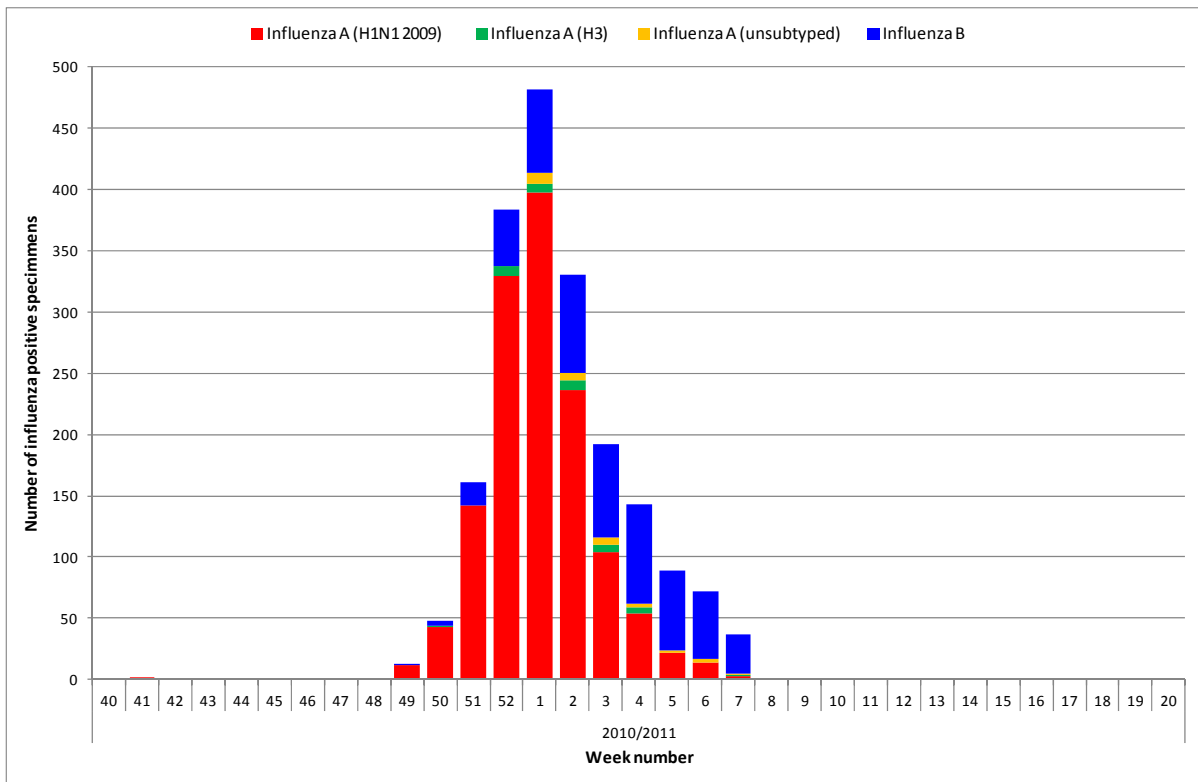


Figure 4: Number of sentinel and non-sentinel specimens positive for influenza by type/subtype and week for the 2010/2011 influenza season. Source: NVRL

Of the 222 non-sentinel specimens tested during week 7 2011, 13.5% (n=30) were positive for RSV. RSV positive specimens remain at higher levels than for the same period during the 2009/2010 season (Tables 1 & 2). 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.**

One (0.5%) positive detection of parainfluenza virus type 3 was reported from the NVRL for week 7 2011. To date this season, there have been sporadic detections of adenovirus and parainfluenza virus (PIV) types -1, -2 and -3.

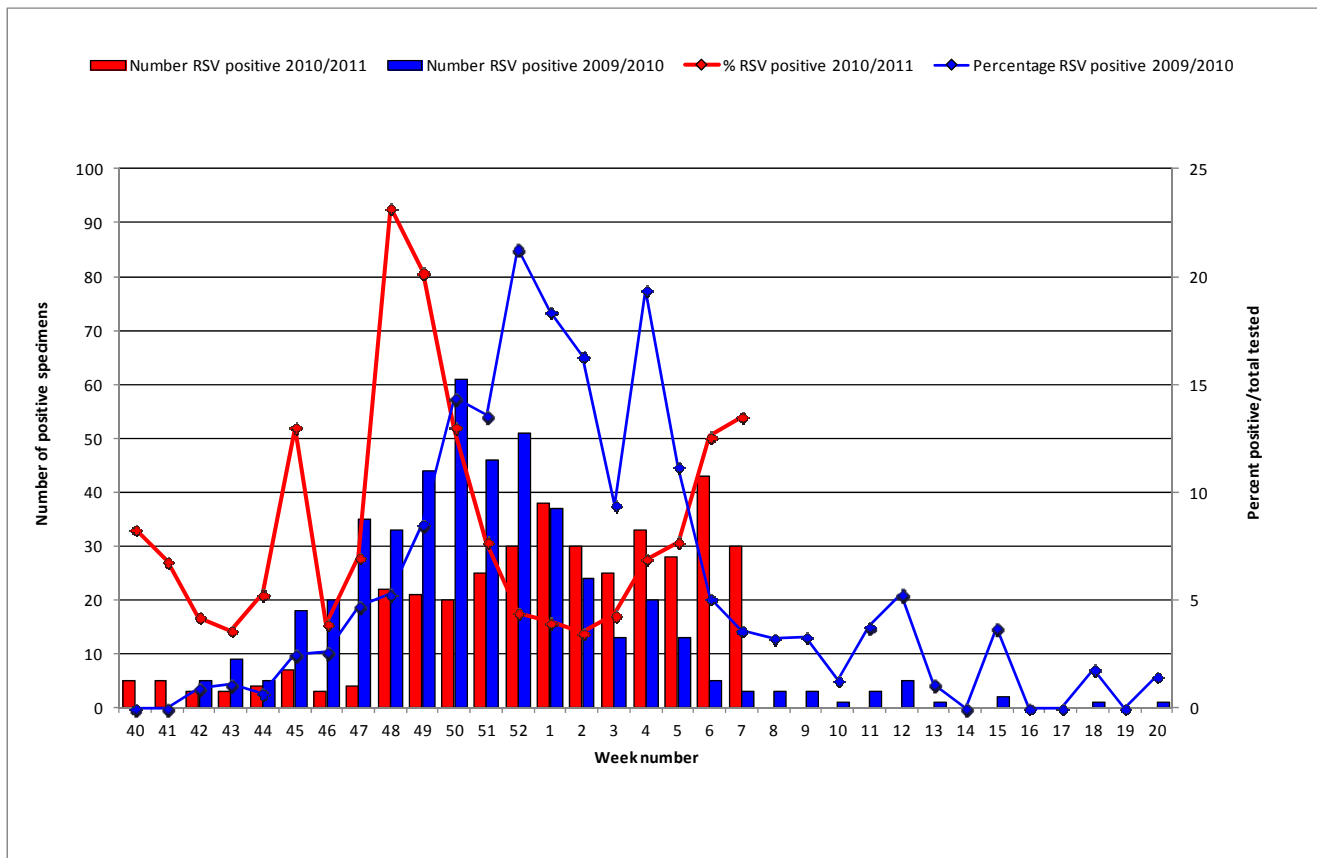


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2010/2011 season, compared to the 2009/2010 season. Source: NVRL

** 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 7 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)	
7 2011	Sentinel	47	15	31.9	0	0	0	0	0	15
	Non-sentinel	222	22	9.9	5	3	1	0	1	17
	Total	269	37	13.8	5	3	1	0	1	32
2010/2011 season	Sentinel	946	483	51.1	277	267	7	0	3	206
	Non-sentinel	5701	1472	25.8	1150	1094	29	0	27	322
	Total	6647	1955	29.4	1427	1361	36	0	30	528

Table 2: Number of non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 7 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
7 2011	222	30	13.5	0	0.0	0	0.0	0	0.0	1	0.5
2010/2011 season	5701	379	6.6	14	0.2	6	0.1	2	0.04	6	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 7 2011, widespread influenza activity was reported from one HSE-Area (HSE-MW), regional influenza activity from HSE-E, localised activity was reported from HSE-SE and sporadic activity from HSE-M,-NE -NW, -S and -W (figure 6).

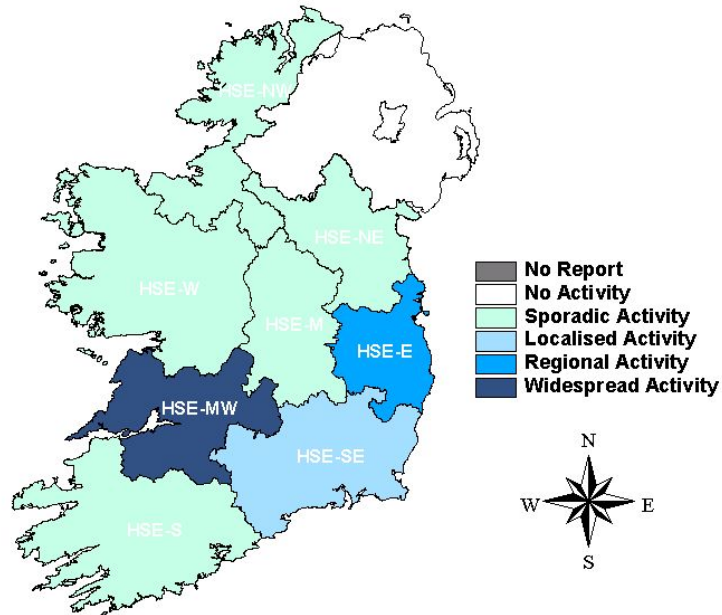


Figure 6: Map of provisional influenza activity by HSE-Area during influenza week 7 2011

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.

No sentinel hospitals reported any significant increases in the proportion of respiratory admissions during week 7 2011. The proportion of respiratory admissions from reporting sentinel hospitals in HSE-E, -S, -SE and -W peaked during weeks 51 and 52 2010.

During weeks 6 and 7 2011, one secondary and three primary sentinel schools reported slight increases in absenteeism (in HSE-E, -M and -NW). Three of these schools reported gastrointestinal/cold/croup-like/ILI symptoms among students during this period.

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 3.0% during week 7 2011, compared to 3.7% in week 6 2011. Seven GP Out-of-Hours services reported during week 7 2011 (figure 7).

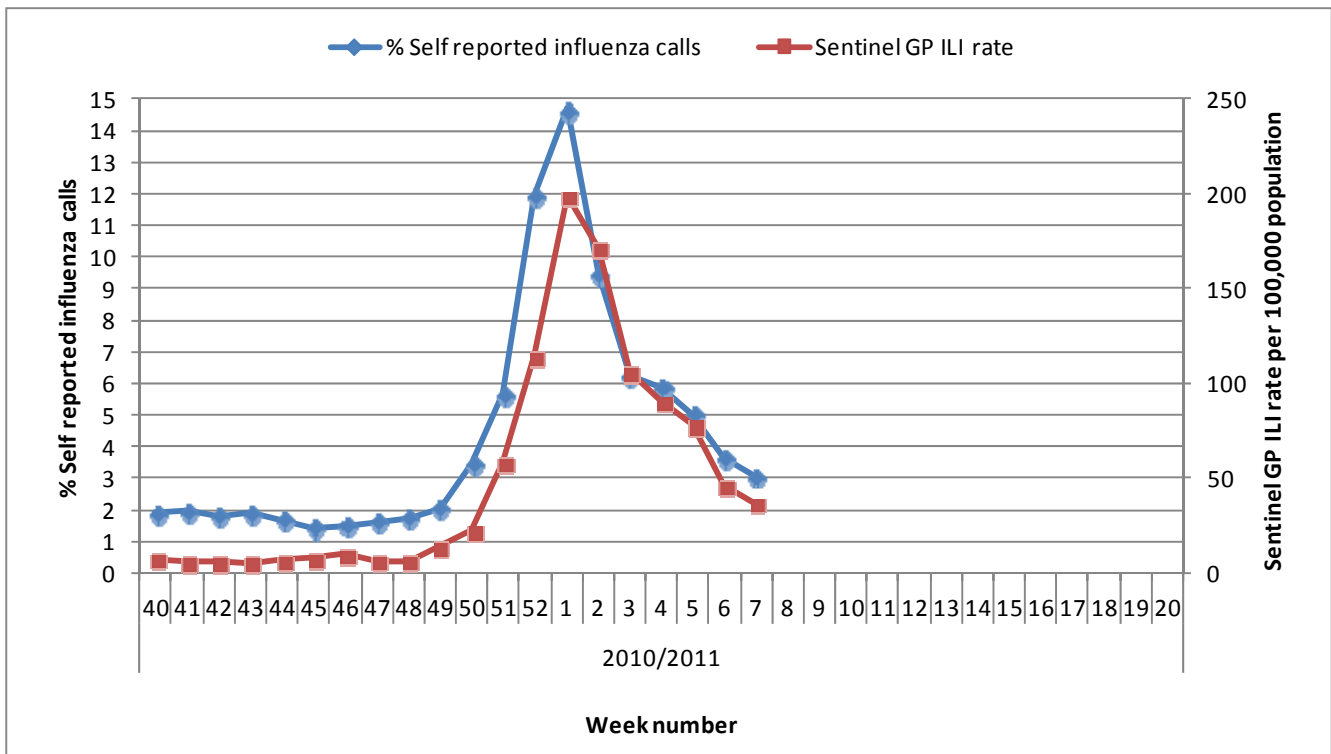


Figure 7: Self reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and national sentinel GP ILI consultation rate per 100,000 population by week for the 2010/2011 season

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

5. Influenza notifications (CIDR)

As of 23rd February 2011 (09:00), 2129 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 2129 confirmed influenza cases, 1317 (61.9%) were confirmed influenza A (H1N1 2009), 20 (0.9%) were influenza A (H3), 199 (9.3%) were influenza A (unsubtyped), 593 (27.9%) were influenza B cases. It should be noted that data for week 8 2011 are incomplete and only include notified cases as of Wednesday 23rd February 2011 (09:00).

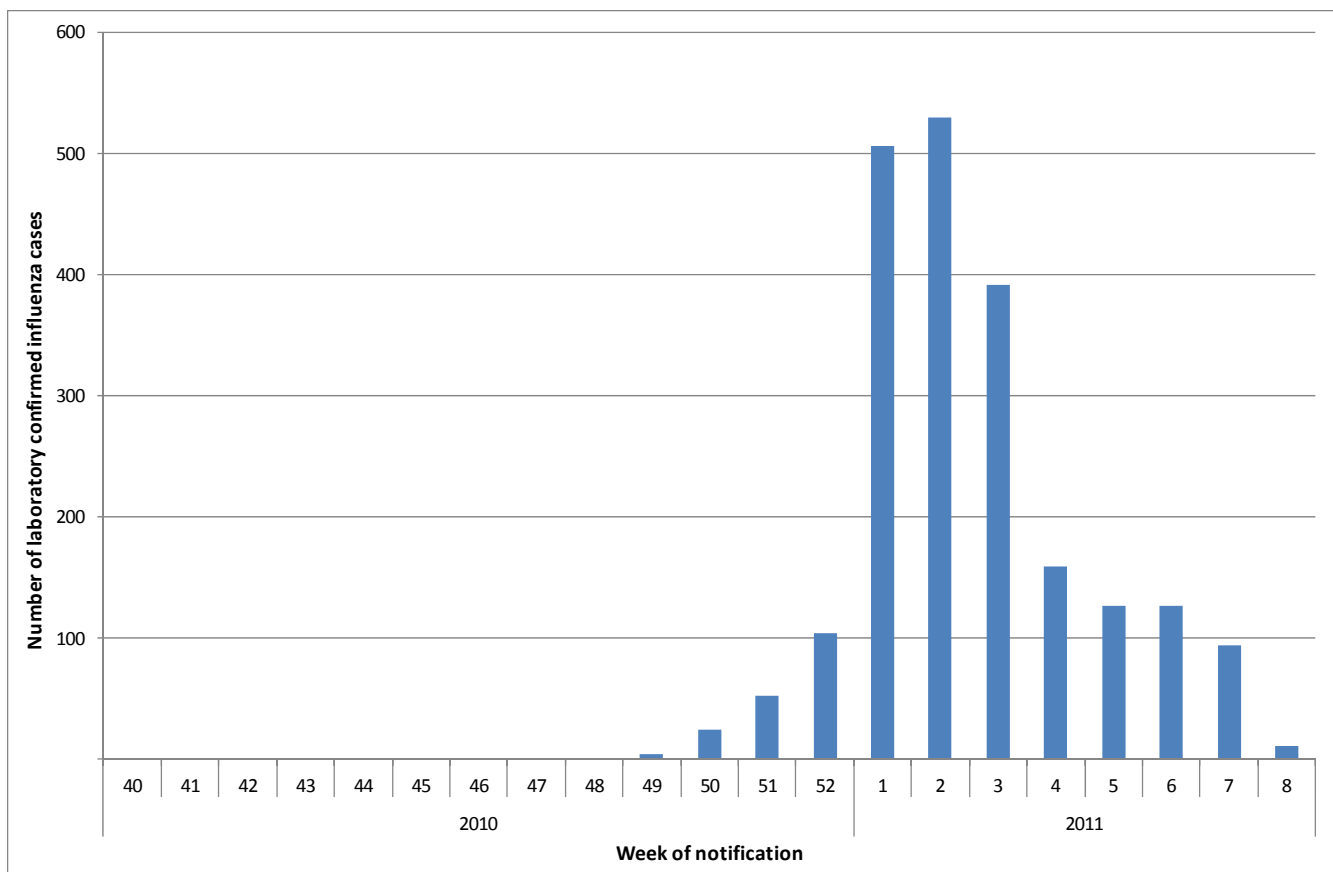


Figure 8: Number of laboratory confirmed influenza cases by week of notification on CIDR for the 2010/2011 influenza season. *It should be noted that data for week 8 2011 are incomplete and only include notified cases as of 23rd February 2011 (09:00). Source: CIDR 23/02/2011 09:00

Nine hundred and five (42.5%) of the 2129 confirmed influenza cases notified this influenza season were hospitalised (i.e. these cases were recorded on CIDR as hospital inpatients) (figure 9). Of the 905 hospitalised cases, 596 (65.8%) were influenza A (H1N1 2009) cases, 6 (0.7%) were influenza A (H3) cases, 110 (12.2%) were influenza A (unsubtyped), 193 (21.3%) were influenza B cases. The proportion of hospitalised cases confirmed as influenza B cases remained stable at 80.0% during week 7 2011, unchanged from 80.0% during week 6 2011.

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 (59.6 per 100,000 population) (table 3). It should be noted that age was unknown for one hospitalised case.

To date this season, 78 (3.7%) of the 2129 laboratory confirmed influenza cases were reported as pregnant. Fifty (64.1%) of these cases were reported as hospitalised: 43 influenza A (H1N1 2009), 2 influenza A (unsubtyped) cases and 5 influenza B cases.**

** It should be noted that information on pregnancy is not completed for all 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	180	59.6	12	4.0
5-14	87	15.5	2	0.4
15-24	95	15.0	3	0.5
25-34	167	23.1	21	2.9
35-44	97	15.6	18	2.9
45-54	86	16.5	23	4.4
55-64	95	23.3	24	5.9
65+	97	20.7	17	3.6

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 23/02/2011 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 23rd February 2011 (09:00), HPSC has been notified of 120 hospitalised patients admitted to critical care units with confirmed influenza, 106 of whom are adults and 14 are paediatric cases. Nineteen (15.8%) of the 120 cases are currently in ICU^{§§}. Ninety of the 120 (75.0%) cases have underlying medical conditions, 81 adults and nine 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 first admission to ICU is detailed in figure 10.

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

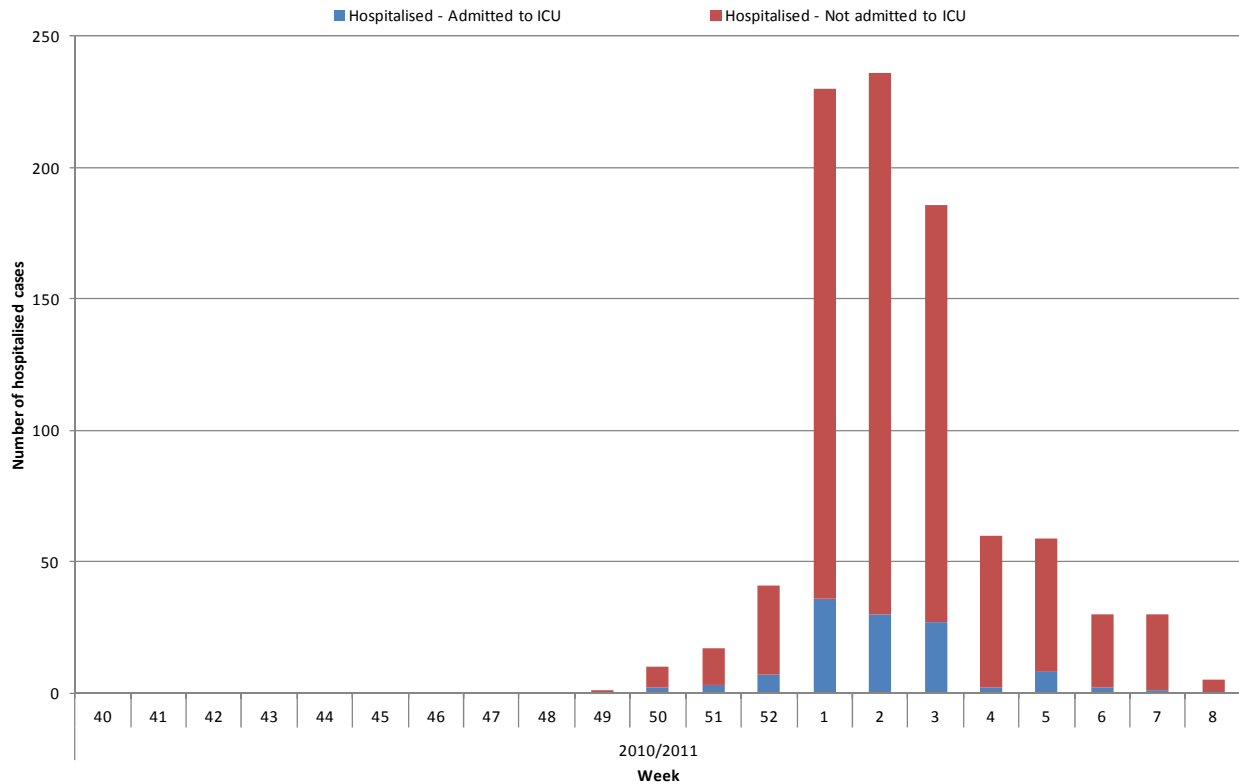


Figure 9: Number of confirmed influenza hospitalised cases by ICU status by week of notification on CIDR for the 2010/2011 influenza season. It should be noted that data for week 8 2011 are incomplete and only include notified cases as of 23rd February 2011 (09:00). Source: CIDR and ICU enhanced surveillance system 23/02/2011 09:00

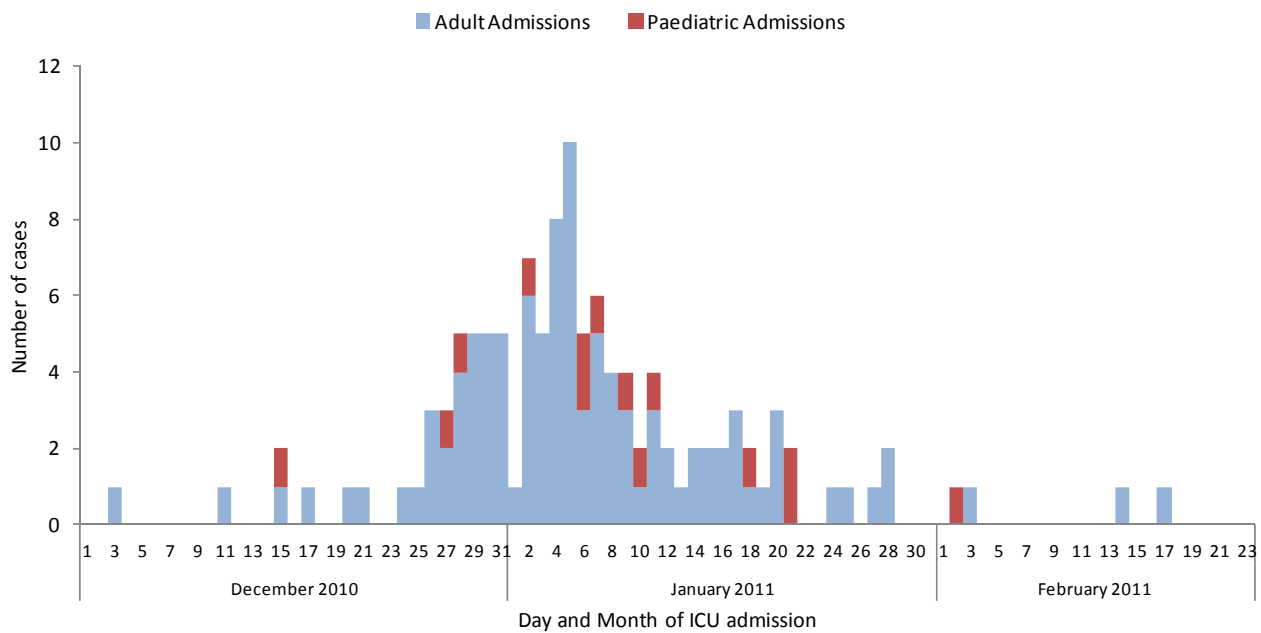


Figure 10: Number of confirmed influenza hospitalised adult and paediatric cases admitted to ICU, by date of first admission to ICU, for December 2010 - February 2011 to date (n=120). Source: ICU enhanced surveillance system 23/02/2011 09:00

7. Mortality surveillance

HPSC has been informed of 23 influenza associated deaths to date this season (as of 23/02/2011), 18 influenza A (H1N1 2009), one co-infection of influenza A (H1N1) and influenza B, one influenza A (unsubtyped) and three influenza B. One death was in a patient in the 0-4 year age group, 16 patients were in the 15-64 year age group and six patients were aged 65 years and older. Twenty-one deaths occurred in patients with underlying medical conditions. One death occurred in week 52 2010, two in week 1 2011, five in week 2 2011, six in week 3 2011, four in week 4 2011, four in week 5 2011 and one in week 6 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 23/02/2011 09:00*

HSE Area	Influenza Deaths
HSE-E	12
HSE-M	1
HSE-MW	0
HSE-NE	2
HSE-NW	3
HSE-SE	2
HSE-S	2
HSE-W	1
Total	23

8. Outbreak surveillance

No new outbreaks of influenza/ILI have been reported since week 5 2011. To date this season, (as of 23rd 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 6 2011. In week 6 2011, the weekly ILI consultation rate decreased and remained below baseline levels in England (18.4 per 100,000), Wales (8.3 per 100,000), Northern Ireland (35.6 per 100,000) and Scotland (43.7 per 100,000). All influenza types decreased in week 6 2011, with influenza B remaining the predominant virus; influenza A (H1N1 2009) continued to circulate, with very few, sporadic influenza A (H3N2) virus detections. The 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/influenza and fever also decreased. One acute respiratory disease outbreak was reported in the UK in week 6 in a special school, bringing the total reported this season to date to 170. Ten of 58 (17.2%) specimens

from ILI patients presenting to sentinel GPs in England in week 6, were reported as positive for influenza. The proportion of specimens reported to DataMart (England) as positive for influenza decreased to 6.1% (67 of 1,094). The proportion of positive samples decreased for RSV (10.2%) and rhinovirus (15.6%), while the proportion remains low for parainfluenza, adenovirus and human metapneumovirus. Since week 36 2011, 494 confirmed UK deaths associated with influenza infection have been reported. Following the excess all-cause mortality observed over the Christmas period, excess mortality remains below the upper limit of expected levels for this time of year in week 5. <http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SeasonalInfluenza/>

Europe

Most European countries continued to report medium to high ILI /acute respiratory infection (ARI) consultation rates and widespread activity. Decreasing ILI/ARI trends were reported by 14 countries. The proportion of influenza virus-positive sentinel specimens has gradually decreased to 43%, after peaking in week 52 2010 at 57%. Sixty-seven per cent of influenza virus detections in week 6 2011 were type A and 33% were type B. More than 99% of subtyped influenza A viruses were influenza A (H1N1 2009). In week 6 2011, ten countries reported 180 all-cause SARI and hospitalised confirmed influenza cases, the latter mostly due to influenza virus A (H1N1 2009) infection. Numbers of influenza infections with severe outcome have decreased in western Europe (Denmark, France, the Netherlands, Ireland, Spain and the UK). Since week 40 2010, 1655 influenza viruses from sentinel and non-sentinel specimens have been characterised antigenically, 915 as A/California/7/2009 (H1N1)-like; 86 as A/Perth/16/2009 (H3N2)-like; 601 as B/Brisbane/60/2008-like (Victoria lineage) and 53 as B/Florida/4/2006-like (Yamagata lineage). Ireland, Italy, Norway, Spain and the UK have reported antiviral resistance data to ECDC. To date this season, 28 (3.8%) of 738 influenza A (H1 2009) viruses tested for susceptibility to neuraminidase inhibitors were resistant to oseltamivir, but remained sensitive to zanamivir. All the resistant viruses carried the H275Y substitution. Eight of 24 resistant viruses, from patients for which exposure to antivirals was known, were from patients that had not been treated with oseltamivir.

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

USA

During week 6 2011, influenza activity in the United States remained elevated. The proportion of ILI outpatient visits was above the national baseline. Of the 9,448 specimens tested, 3,306 (35.0%) were positive for influenza: 773 A (H1N1 2009), 1021 A (H3), 804 A (unsubtyped) and 708 B. The proportion of deaths attributed to pneumonia and influenza was above the epidemic threshold. Five influenza-associated paediatric deaths were reported. CDC has antigenically characterised 85 A (H1N1 2009) viruses as A/California/7/2009-like, 345 A (H3N2) viruses as A/Perth/16/2009-like, 199 as B/Victoria lineage viruses and 12 as B/Yamagata lineage viruses.

<http://www.cdc.gov/flu/weekly/>

Canada

Several indicators of influenza activity have increased in Canada during week 6 2011, including the number of regions reporting widespread and localised influenza activity, the number of outbreaks, adult hospitalisations with influenza and the ILI consultation rate. The percentage of positive influenza detections overall increased slightly in week 6 2011, compared to week 5 2011, as did the proportion of RSV positive tests. Since the beginning of the season, 87.0% of the subtyped positive influenza A specimens were A (H3N2). Influenza B detections continued to increase as a proportion of positive influenza detections. <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 February 11th 2011, several countries of southern Asia have reported a recent increase in influenza virus transmission mainly due to influenza A (H1N1 2009). Other tropical areas of the world and the temperate countries of the southern hemisphere reported very little influenza circulation. Transmission in most of northern Africa and the Middle East has peaked recently and is declining. Some countries in northern

Asia reported an increase in A (H1N1 2009) transmissions and some reported an increase in ILI activity. The majority of the viruses characterised from North America and Europe are closely related to the vaccine viruses for the current seasonal vaccines. <http://www.who.int/csr/disease/influenza/en/>

8. Northern hemisphere influenza vaccine for the 2011/2012 season:

Following a WHO Consultation, it is recommended that vaccines for use in the 2011/2012 influenza season (northern hemisphere) contain the following viruses:

- 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/recommendations_2011_12north/en/index.html

9. 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

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.