Summary Report of 2007/2008 Influenza Season

Report produced: 19th January 2009

Summary

The 2007/2008-influenza season was the eighth year of influenza surveillance using computerised sentinel general practices in Ireland. The Health Protection Surveillance Centre (HPSC) is working in collaboration with the National Virus Reference Laboratory (NVRL), the Irish College of General Practitioners (ICGP) and the Departments of Public Health on this surveillance project.

Influenza activity was moderate in Ireland for most of the 2007/2008 season, with the peak of activity occurring during week 1 2008. Influenza A and B co-circulated, with 109 influenza A and 101 influenza B specimens detected. Influenza activity mainly affected the 15-64 year age group.

The most significant global event during the 2007/2008-influenza season was the continuing global spread of poultry outbreaks of avian influenza A (H5N1) associated with sporadic cases/clusters of human infection and a significant proportion of human deaths.[1]

Background to influenza surveillance in Ireland

Clinical Data

During the 2007/2008 season, 52 general practices were recruited to report electronically, on a weekly basis, the number of patients with influenza-like illness (ILI). ILI is defined as the sudden onset of symptoms with a temperature of 38°C or more, with two or more of the following: headache, sore throat, dry cough and myalgia. Cases were those attending for the first time with these symptoms. In total, the 52 sentinel general practices comprise 116 general practitioners and represent 4.8% of the national population. Practices were located in all HSE areas with the number of sentinel practices in each HSE area largely based on the population of the HSE area (table 1).

Table 1. Number of sentinel GPs by HSE area, percentage of total practice population and percentage of population in each HSE area, 2007/2008 season

HSE area	No. Practices	No. Practitioners	Patient population	% Patient population (n=204,816)	2006 census*	% National Coverage (n=4,239,848)	% Regional Coverage (n=4,239,848)
HSE-E	15	33	56,546	27.6	1,499,705	35.4	3.8
HSE-M	2	4	8,440	4.1	251,664	5.9	3.4
HSE-MW	4	6	9,712	4.7	361,028	8.5	2.7
HSE-NE	6	17	29,900	14.6	394,098	9.3	7.6
HSE-NW	4	9	13,946	6.8	237,108	5.6	5.9
HSE-SE	8	24	51,738	25.3	460,838	10.9	11.2
HSE-S	9	17	27,084	13.2	621,130	14.6	4.4
HSE-W	4	6	7,450	3.6	414,277	9.8	1.8
Total	**52**	**116**	**204,816**	**100**	**4,239,848**	**100**	**4.8**

* Source: CSO 2006 population census

Virological Data

Sentinel GPs were requested to send a combined nasal and throat swab on at least one patient per week where a clinical diagnosis of ILI was made. Swabs were sent to the NVRL for testing for influenza using real-time PCR and results were reported to HPSC. The NVRL also reported the results of respiratory specimens (predominantly paediatric), referred mainly from hospitals, on a weekly basis.

Other Indicators of Influenza Activity

The Departments of Public Health reported an influenza activity index (no report, no activity, sporadic, localised, regional or widespread activity) every week, to HPSC. The activity index is analogous to that used by the European Influenza Surveillance Scheme (EISS) and the World Health Organization (WHO) global influenza surveillance system.[2, 3] The index is based on sentinel GP ILI consultation rates, laboratory-confirmed cases of influenza, and influenza/ILI outbreaks.

Each Department of Public Health also established one sentinel hospital in each HSE area, reporting total hospital admissions, emergency admissions and respiratory admissions data on a weekly basis. Sentinel primary and secondary schools were also located in each HSE area in close proximity to the sentinel GPs, reporting absenteeism data on a weekly basis. Data from sentinel hospitals and schools were used as a crude indicator of influenza activity.

The Departments of Public Health also notified all cases of possible and confirmed influenza and all influenza/ILI outbreaks to HPSC on a weekly basis (following the amendments to the infectious disease regulations (SI No. 707 of 2003)). An enhanced dataset on all hospitalised influenza cases aged between 0 and 14 years of age was also reported to HPSC by the Departments of Public Health. Influenza notifications, ILI/influenza outbreaks and the enhanced influenza dataset are all included in the computerised infectious disease reporting system (CIDR).

From January 2005, HPSC was notified of all registered deaths on a weekly basis from the General Registrar's Office, including influenza and pneumonia deaths.

Weekly Report and EISS

HPSC produce a weekly influenza report, which is posted on the HPSC website www.hpsc.ie each Thursday. Results of clinical and virological data are reported, along with a map of influenza activity and a summary of influenza activity worldwide. HPSC also report the clinical and virological dataset to EISS every Thursday.

Results

Clinical Data

During the 2007/2008 season, influenza activity in Ireland peaked six weeks earlier than the 2006/2007 season. Activity was moderate for most of the 2007/2008 influenza season, with a peak during week 1 2008 of 49.1 per 100,000 population (figure 1). During the peak in ILI consultation rates, the majority of cases reported were in the 15-64 year age group. Figure 2 shows the age-specific GP ILI consultation rate per 100,000 population by week for the 2007/2008-influenza season. A total of 927 ILI cases were reported by sentinel GPs during the 2007/2008 season compared to 821 during the 2006/2007 season (figure 3).

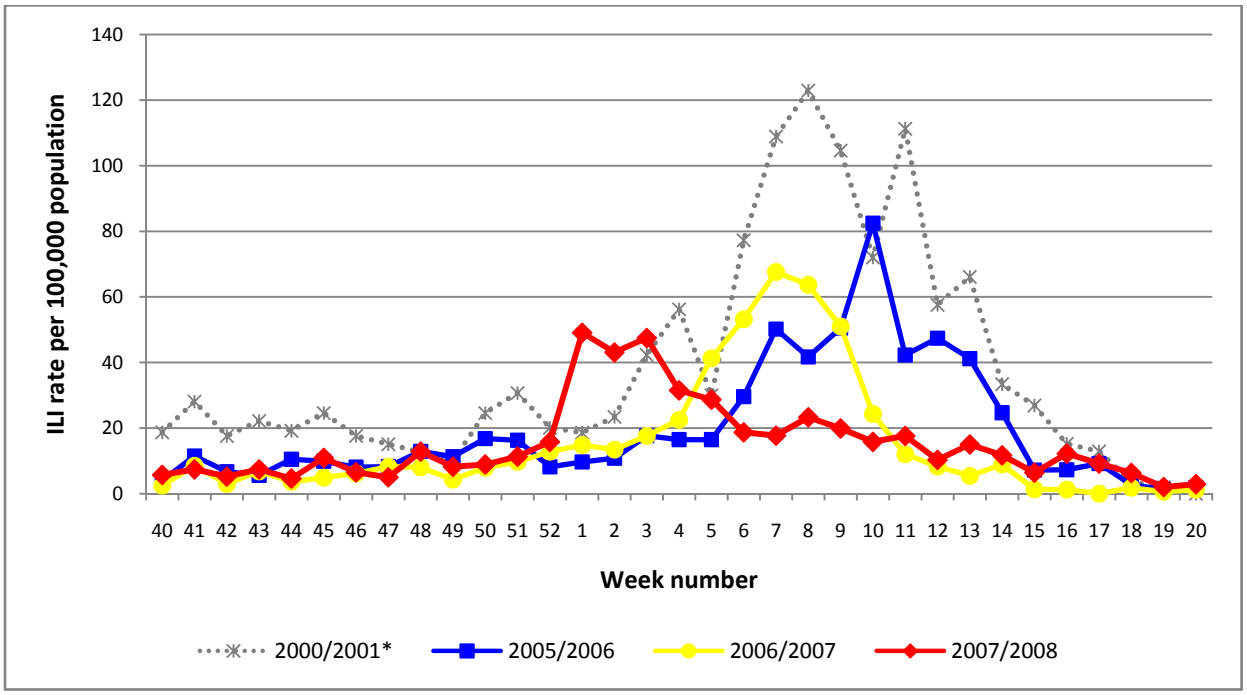

Figure 1. GP ILI consultation rate per 100,000 population by week during the 2000/2001*, 2005/2006, 2006/2007 and 2007/2008 influenza seasons.
* Highest recorded ILI rates since the initiation of the sentinel surveillance system.

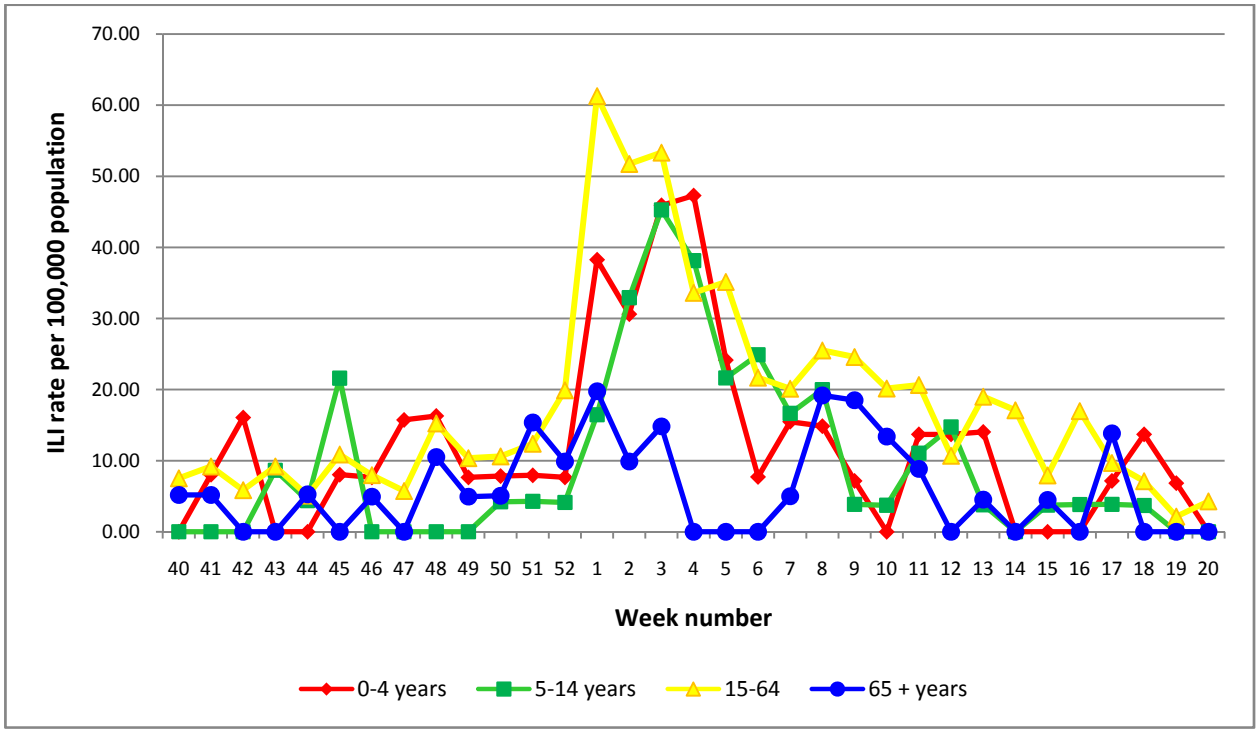

Figure 2. Age-specific[†] GP ILI consultation rate per 100,000 population by week for the 2007/2008-influenza season

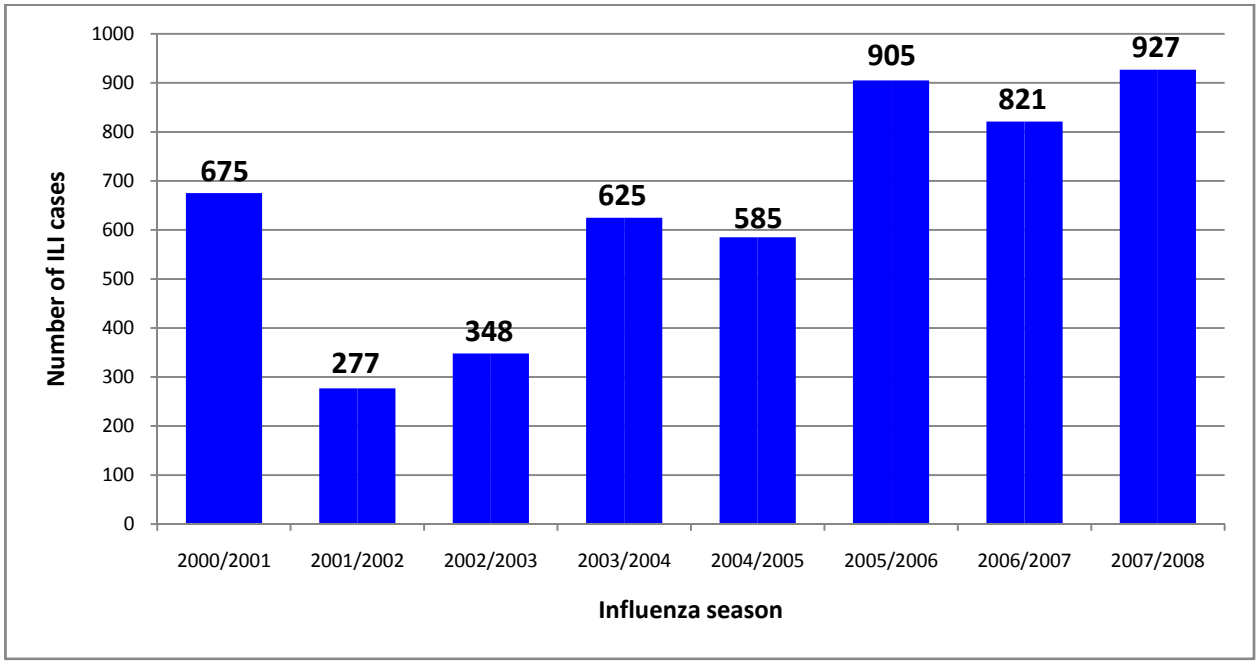

Figure 3. ILI cases reported by sentinel GPs by season[‡] from 2000/2001 to 2007/2008

[†] *Please note the denominator used in the age-specific consultation rate is from the 2006 census data; this assumes that the age distribution of the sentinel general practices is similar to the national age distribution.*

[‡] *Please note when comparing the number of ILI cases reported per season that the number of sentinel practices has increased each season (see table 2).*

Virological Data

The NVRL tested 342 sentinel specimens for influenza virus during the 2007/2008 season (tables 2 & 3). One hundred and fifty (43.9%) sentinel specimens were positive for influenza: 78 influenza A [74 A (H1N1), 1 A (H3N2) and 3 A (unsubtyped)] and 72 influenza B. The predominant influenza virus subtype identified was influenza A (H1N1), accounting for 94.9% of positive influenza A sentinel specimens. The majority of positive influenza sentinel cases were in the 15-64 year age group (87.9%) (figure 4).

The NVRL also tested 2,207 non-sentinel[§] respiratory specimens, mainly from hospitals. Of the 2,207 specimens tested, 32 (1.4%) were positive for influenza A, 29 (1.3%) were positive for influenza B and 463 (21.0%) were positive for RSV. The majority (56.1%) of non-sentinel influenza cases were in the 15-64 year age group while the majority of those with RSV positive specimens (93.5%) were aged between 0 and 4 years (table 4). It should be noted that non-sentinel specimens are predominantly from hospitalised paediatric cases.

The number of sentinel and non-sentinel positive influenza specimens by season is shown in figure 5 and compared to the ILI rate per 100,000 population. Figure 6 shows the number of non-sentinel influenza and RSV positive specimens by week for the 2007/2008 season.

Table 2: Number of sentinel GP swabs tested and number and percentage positive for influenza by season

Season	Sentinel practices	Total specimens tested	Influenza	% Influenza positive	Influenza A	Influenza B
2000/2001	20	339	151	44.5	59	92
2001/2002	32	243	58	23.9	57	1
2002/2003	34	249	86	34.5	27	59
2003/2004	35	350	149	42.6	142	7
2004/2005	36	370	142	38.4	103	39
2005/2006	46	378	132	34.9	64	68
2006/2007	48	351	126	35.9	124	2
2007/2008	52	342	150	43.9	78	72
Total	**-**	**2622**	**994**	**37.9**	**654**	**340**

Table 3: Number of sentinel and non-sentinel[§] respiratory specimens and positive results for 2007/2008 season

Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV	% RSV Positive
Sentinel	342	150	43.9	78	72	NA	NA
Non-Sentinel	2207	61	2.8	32	29	463	21
Total	**2549**	**211**	**8.3**	**110**	**101**	**463**	**18.2**

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

Table 4. Total number of sentinel and non-sentinel[§] influenza A and B positive specimens by age group (in years) for the 2007/2008 season

Age group (years)	Sentinel			Non-Sentinel			Total		
	Flu A	Flu B	Total	Flu A	Flu B	Total	Flu A	Flu B	Total
0-4	2	1	3	3	3	6	5	4	9
5-14	9	3	12	0	1	1	9	4	13
15-64	65	66	131	11	21	32	76	87	163
65+	1	2	3	14	4	18	15	6	21
Age group unknown	1	0	1	4	0	4	5	0	5
Total	**78**	**72**	**150**	**32**	**29**	**61**	**110**	**101**	**211**

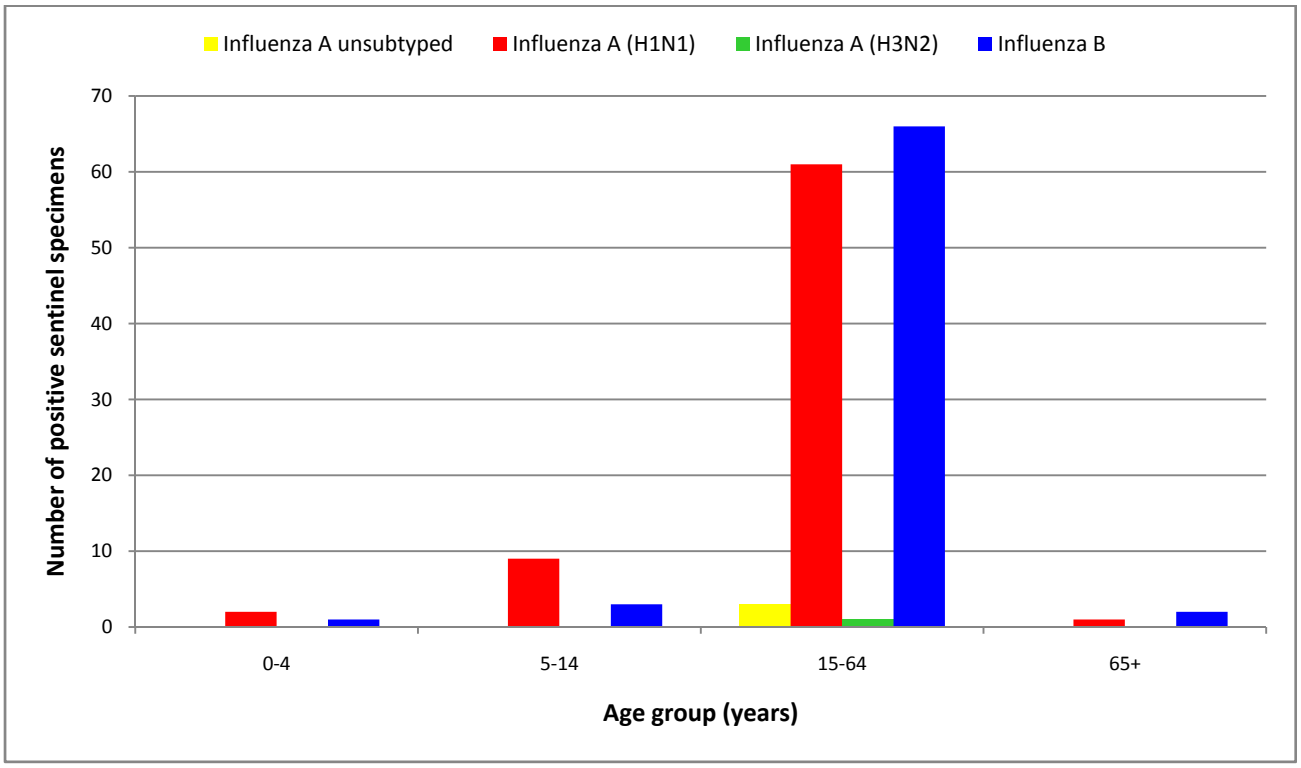

Figure 4. Number of sentinel swabs positive for influenza virus by type, subtype, and age group (years), for the 2007/2008 season

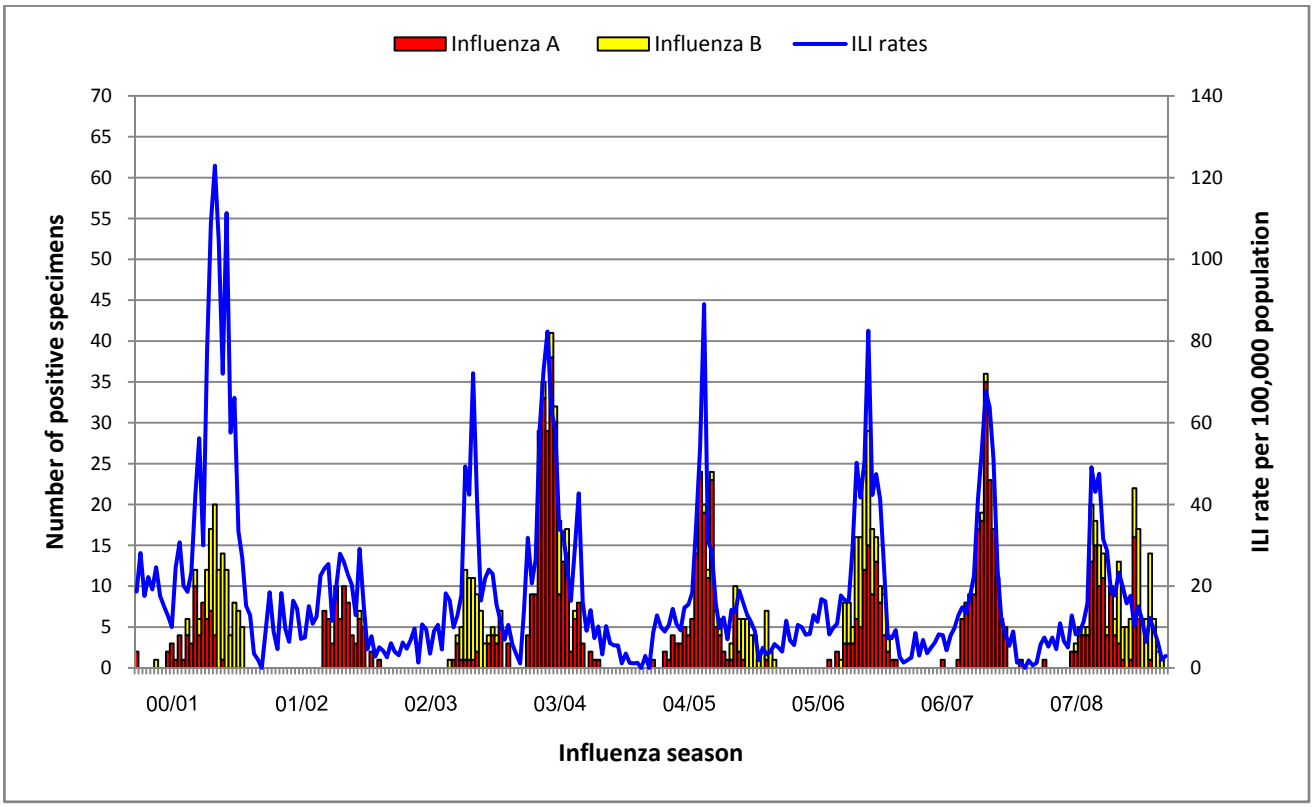

Figure 5: ILI rate per 100,000 population and the number of positive influenza specimens (sentinel & non-sentinel[§]) detected by the NVRL by season from 2000/2001 to 2007/2008

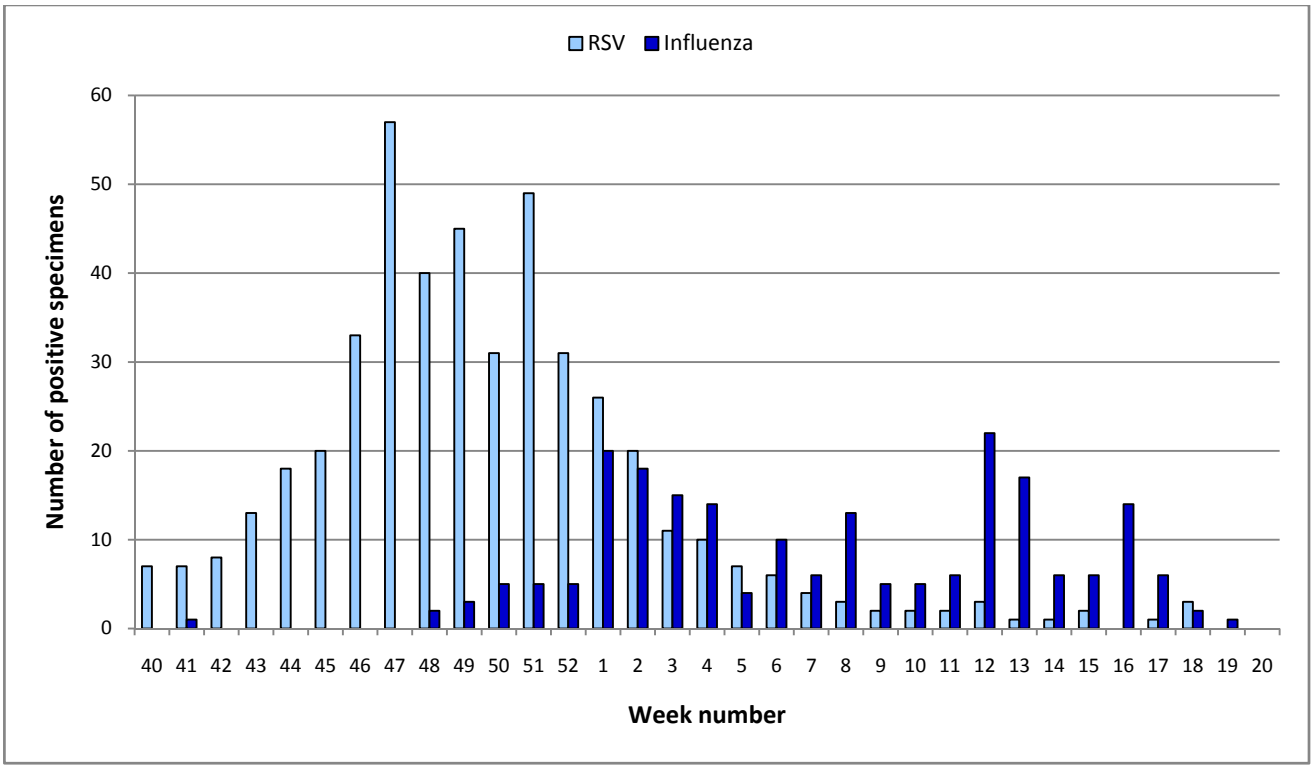

Figure 6. Number of influenza and RSV positive non-sentinel specimens detected during the 2007/2008 season

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

Vaccination Status

Of the 150 positive influenza virus detections from sentinel specimens, 131 (87.3%) were unvaccinated, 5 (3.3%) were vaccinated and vaccination status was unknown in 14 (9.3%) cases. Of the five cases that were vaccinated, influenza A (H1N2) was detected in two and influenza B was detected in three (table 5).

Table 5: Influenza vaccination status of influenza virus positive cases detected from sentinel specimens during the 2007/2008-influenza season (n=150)

Influenza type/subtype	Vaccinated	Not Vaccinated	Unknown vaccination status	Positive cases
Influenza A (unsubtyped)	0	3	0	3
Influenza A (H1N1)	2	65	7	74
Influenza A (H3N2)	0	1	0	1
Influenza B	3	62	7	72
Total	**5**	**131**	**14**	**150**

Antigenic Characterisation

The NVRL genetically characterised 66 influenza A viruses this season, 59 were A/Solomon Islands/3/2006 (H1N1)-like and seven were A/Wisconsin/67/2005 (H3N2)-like. A/Solomon Island/3/2006-like virus and A/Wisconsin/67/2005 (H3N2)-like virus were both included in the 2007/2008 influenza vaccine. The WHO Influenza Reference Laboratory at the National Institute for Medical Research, Mill Hill, London antigenically characterised one influenza A and two influenza B viruses. The two B viruses were closely related to B/Florida/4/2006 and the more recent reference viruses B/Barcelona/143/08, B/England/145/08 and B/Valladolid/18/08. B/Florida/4/2006-like virus is included in the 2008/2009 influenza season vaccine. The influenza A (H1) virus was characterised as A/Netherlands/345/07, which is similar to A/Solomon Islands/3/2006 (H1N1)-like viruses.

Oseltamivir Resistance in Ireland

The NVRL conducted nucleotide sequencing on specimens taken by sentinel GPs between November 2007 and February 2008. Seven of 63 specimens (11.1%) tested by the NVRL were resistant to oseltamivir. To date, oseltamivir resistant viruses have been detected in 20 European countries (including Ireland), the USA, Canada, Australia and Hong Kong. An interim risk assessment has been published by ECDC (http://www.ecdc.europa.eu/pdf/080127_os.pdf).

Regional Influenza Activity

Influenza A was the dominant influenza type detected in HSE-M, -S, SE and -W, influenza B was the predominant type detected in HSE-MW, -NE and -NW, while influenza A and B co-circulated in HSE-E during the 2007/2008 season (table 6). Influenza activity peaked during week 1 2008, with HSE-MW, -NE and -SE all reporting localised influenza activity. HSE-E, -M, -NW, -S and –W all reported sporadic influenza activity during week 1 2008. Regional or widespread influenza activity were not reported by any HSE area during the 2007/2008 season (figure 7). Overall, influenza activity was most intense in HSE-E, -MW, -NE and -SE during the

2007/2008 season (figure 8). The highest ILI consultation rates were observed in HSE-M, peaking during week 3 2008[**].

Table 6. Total number of sentinel and non-sentinel[††] influenza A and B positive specimens by HSE area for the 2007/2008 season to date

HSE area	Sentinel			Non-Sentinel			Total		
	Flu A	Flu B	Total	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-E	12	17	29	30	23	53	42	40	**82**
HSE-M	6	1	7	2	0	2	8	1	**9**
HSE-MW	6	10	16	0	1	1	6	11	**17**
HSE-NE	12	14	26	0	2	2	12	16	**28**
HSE-NW	2	11	13	0	0	0	2	11	**13**
HSE-SE	13	7	20	0	0	0	13	7	**20**
HSE-S	17	8	25	0	3	3	17	11	**28**
HSE-W	10	4	14	0	0	0	10	4	**14**
Total	**78**	**72**	**150**	**32**	**29**	**61**	**110**	**101**	**211**

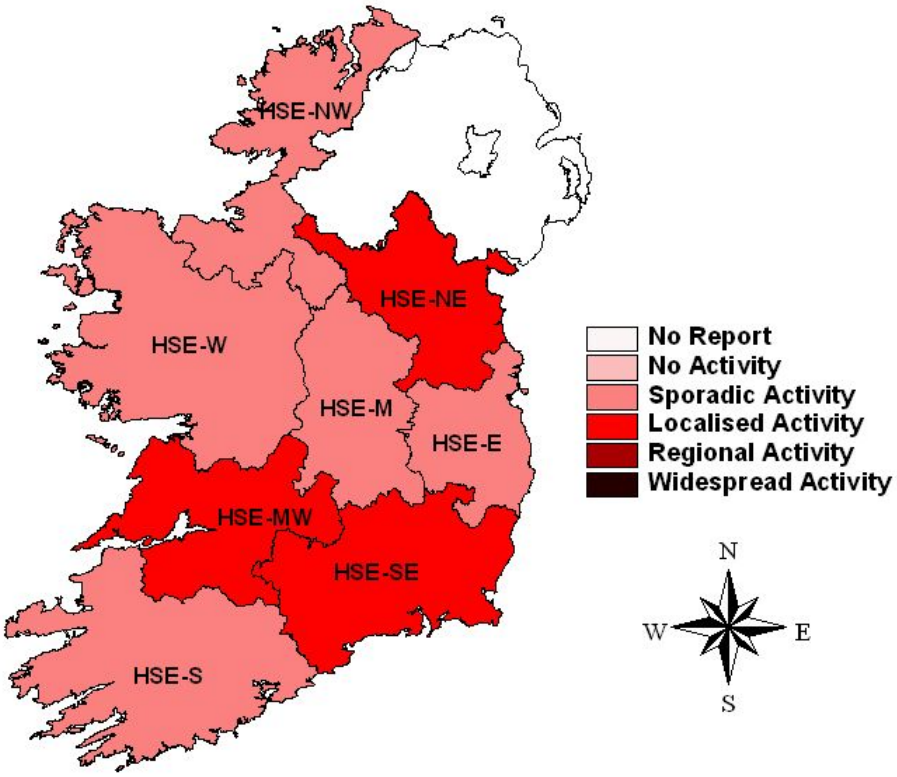

Figure 7. Map of influenza activity by HSE-Area during the 2007/2008 season peak of influenza activity, week 1 2008

[**] It should be noted that rates for individual HSE areas may be based on small numbers and denominators and can vary substantially from week to week. The national ILI consultation rates are more likely to give a more consistent and accurate picture of influenza activity.

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

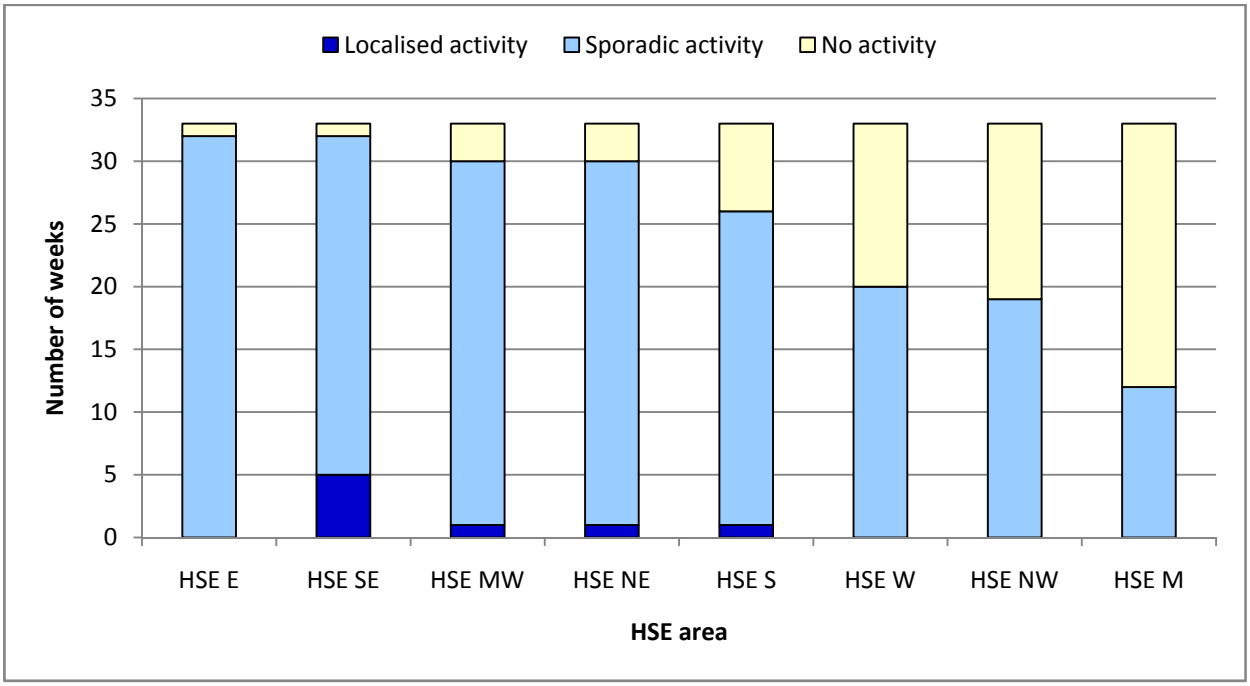

Figure 8. Number of weeks during the 2007/2008 season that each HSE area reported influenza activity

Outbreaks

Two ILI/influenza outbreaks were reported to HPSC this season, both from HSE-E, one during week 12 2008 in a long term care facility associated with influenza A (H3N2) and one during week 16 2008 on a coach tour from Dublin to Clare associated with influenza B.

Sentinel Hospitals & Sentinel Schools

Hospital respiratory admissions (as a proportion of total hospital admissions) in sentinel hospitals peaked during week 52 2007, coinciding with the second peak in RSV and immediately preceding the peak in sentinel GP ILI consultation rates during week 1 2008 (figures 9 & 10). Absenteeism in several sentinel schools was also at elevated levels during the peak in ILI consultation rates.

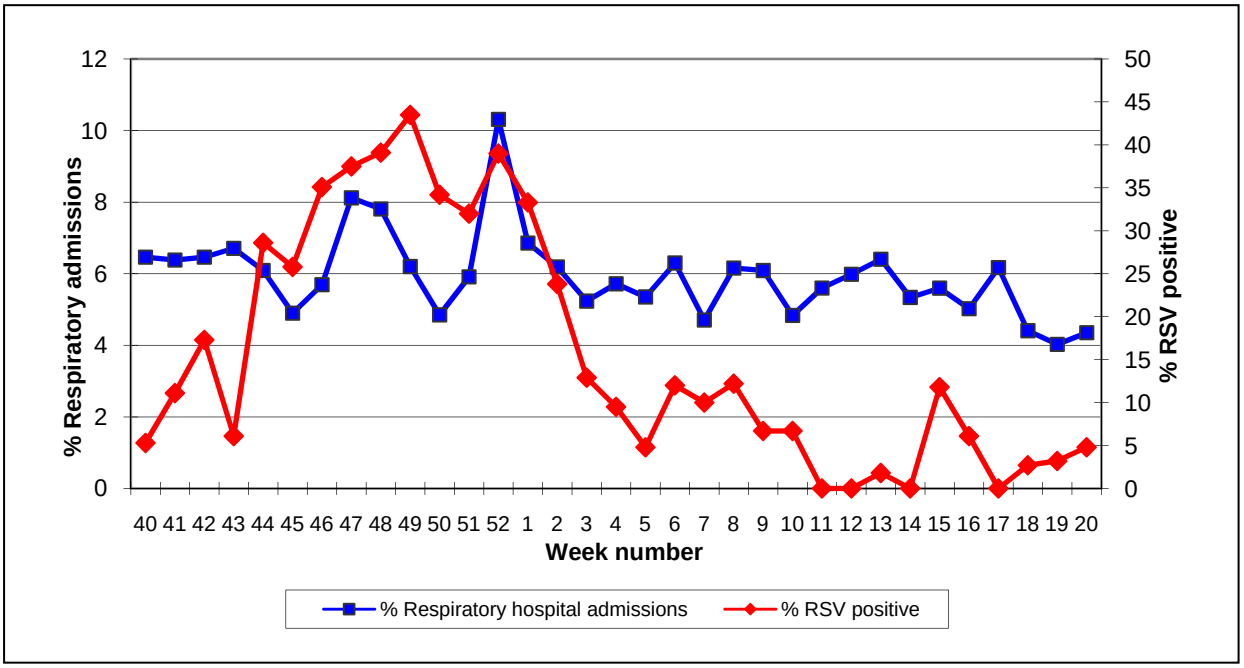

Figure 9. Respiratory admissions as a percentage of total hospital admissions in eight sentinel hospitals and RSV positive specimens (from non-sentinel sources) by week for the 2007/2008-influenza season.

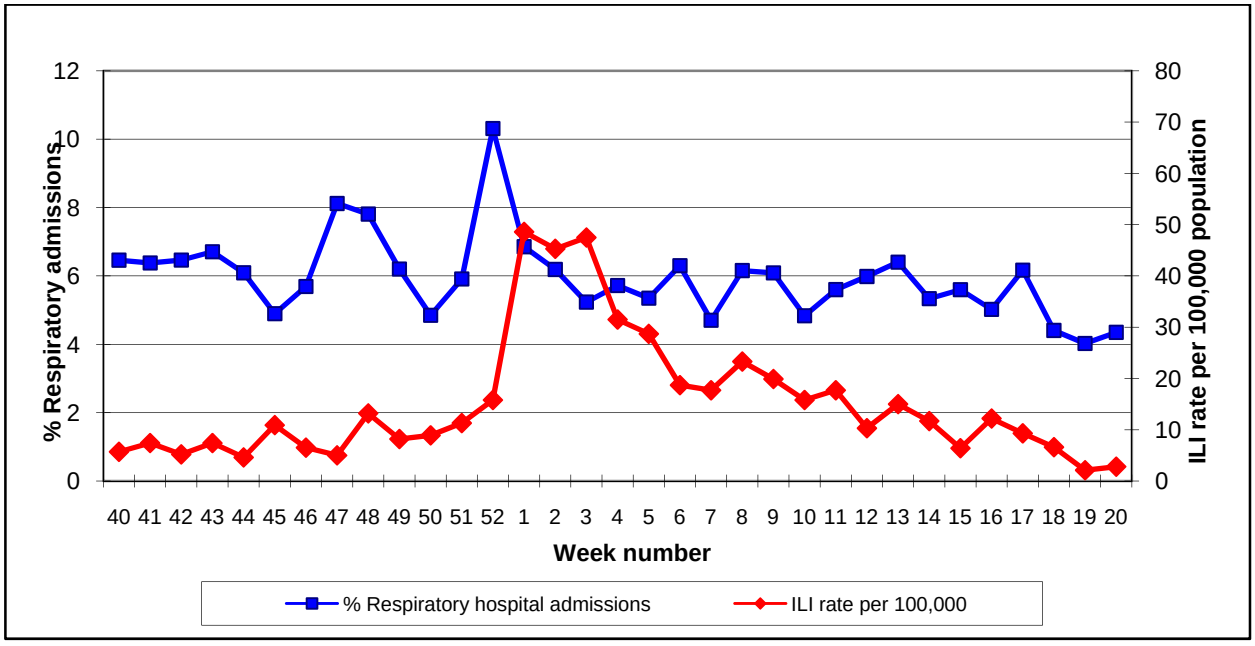

Figure 10. Respiratory admissions as a percentage of total hospital admissions in eight sentinel hospitals and GP sentinel ILI consultation rates per 100,000 population by week for the 2007/2008-influenza season.

Influenza Notifications Data

A total of 299 influenza notifications were reported to HPSC during the 2007/2008 influenza season. Thirty-three (11.0%) cases were in the 0-4 year age group, 22 (7.4%) were in the 5-14 year age group, 219 (73.2%) were in the 15-64 year age group and 21 (7.0%) cases were aged 65 years or older (date of birth was not provided for four cases). Influenza notifications peaked during week 16 2008. It should be noted

that 16 of the notifications in week 16 were influenza (type unspecified) notified as possible cases (i.e. clinical cases with no laboratory confirmation). These were late GP notifications from HSE-E for 2007. The number of influenza notifications (possible & confirmed) by type and week of notification are shown in figure 11 and compared to the GP sentinel ILI consultation rate per 100,000 population.

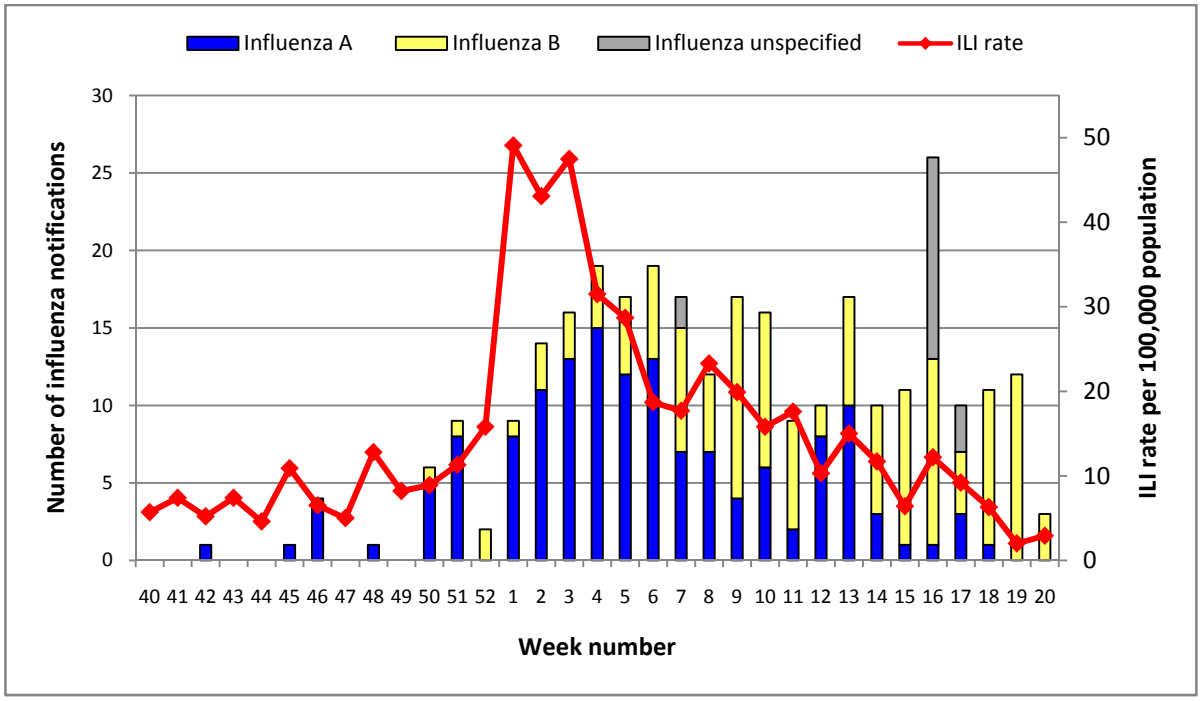

Figure 11. Number of notifications of influenza (possible & confirmed) by type and by week of notification* and ILI rates per 100,000 population during the 2007/2008 influenza season.**Please note that notification data are provisional and were extracted from CIDR on 03/11/2008 15.22.*

Enhanced Influenza Surveillance

A total of 299 influenza notifications were reported on CIDR during the 2007/2008 influenza season. Fifty-five of these notifications were patients aged between 0 to 14 years and six were hospitalised (between December 2007 and March 2008). Enhanced data were completed for all six cases. One enhanced case was in the 5-14 year age group and five were under one year of age. Four cases were notified from HSE-E and two from HSE-M. Three enhanced cases were positive for influenza A and three were positive for influenza B. Symptoms included fever (5/6), cough (6/6), gastrointestinal manifestations (2/6) and fatigue (2/6). Complications reported included bronchitis, croup and other respiratory complications. The mean number of days hospitalised was 13.6 (ranging from 5-30). One case was in an at-risk category for influenza vaccine. No cases were vaccinated. Outcome was recorded in all cases; four recovered and outcome was unknown in two cases.

Mortality Data

During the 2007/2008 influenza season, two deaths attributed to influenza were registered with the General Register Office. These deaths were both in adults over 65 years of age, one in HSE-NW registered in week 8 2008 and one in HSE-S registered in week 14 2008. It should be noted that the death registered in HSE-S was not a laboratory confirmed case of influenza.

Influenza Activity Worldwide

During the 2007/2008 season, the United Kingdom experienced the eighth consecutive year of low levels of influenza activity, peaking in mid-January 2008. The predominant circulating strain was A/Solomon Island/3/2006 (H1N1)-like (60% of strains characterised) followed by B/Florida/4/2006-like viruses (36%).[4]

During the 2007/2008-influenza season, influenza activity first increased above baseline levels in Europe towards the end of 2007 (weeks 48-51 2007). The first countries where clinical influenza activity peaked were Ireland (week 1 2008), England and Spain (both in week 2 2008). In most countries, influenza activity peaked between weeks 4 and 8 2008. Clinical consultation rates were lower than during the 2006-2007-influenza season for the majority of countries. The highest consultation rates were reported in the 0-4 and 5-14 year age groups. However, England, Ireland, Norway and Switzerland also reported elevated consultation rates in the 15-64 year age group. A spatial analysis of the spread of influenza activity in Europe revealed that the timing of peak clinical influenza activity followed a general pattern from south to north, but this year there was no obvious west to east pattern observed. Based on subtyping data of all influenza virus detections (N=16,763), 5,102 (30%) were type A unsubtyped, 5,021 (30%) were A(H1), 176 (1%) were A(H3) and 6,464 (39%) were B. Based on the antigenic and/or genetic characterisation of 3,504 influenza viruses, 10 were A/New Caledonia/20/99 (H1N1)-like, 2,141 were A/Solomon Island/3/2006 (H1N1)-like, 21 were A/Wisconsin/67/2005 (H3N2)-like, 23 were A/Brisbane/10/2007 (H3N2)-like, 1,293 were B/Florida/4/2006-like (B/Yamagata/16/88 lineage) and 16 were B/Malaysia/2506/2004-like (B/Victoria/2/87 lineage). As of 23 April 2008, A(H1N1) viruses resistant to oseltamivir have been found in 19 countries in Europe with an overall prevalence of 23%. [2]

In Canada, ILI activity peaked during week 1 2008, with influenza A predominating. The National Microbiology Laboratory characterised 1,281 influenza viruses: 461 (36.0%) A(H1N1), 218 (17.0%) A(H3N2) and 602 (47.0%) B viruses. Of the 461 A (H1N1) viruses characterised, 95.2% were antigenically similar to A/Solomon Islands/3/2006 and 4.8% were antigenically similar to A/Brisbane/59/2007. Of the 218 A(H3N2) viruses characterised, 4.1% were antigenically similar to A/Wisconsin/67/2005 and 95.9% were antigenically similar to A/Brisbane/10/2007. Of the 602 influenza B isolates characterised, 2.7% were antigenically similar to B/Malaysia/2506/2004 and 97.3% were antigenically similar to B/Florida/4/2006. The majority of influenza viruses identified early in the season were influenza A/Solomon Islands/3/2006 (H1N1)-like. The A/Brisbane/59/2007, A/Brisbane/10/2007 and B/Florida/4/2006 strains were not included in the composition of the 2007/2008 Canadian influenza vaccine. Four hundred and seventy-two paediatric hospitalisations were reported during the 2007/2008 season, the majority (62.9%) of which were due to influenza A. In addition, two paediatric deaths were reported, both were due to influenza B.[5]

During the 2007-2008 season in the US, influenza activity peaked in mid-February and was associated with greater overall mortality and higher rates of hospitalisations among children aged 0-4 years compared with each of the previous three seasons. Influenza A (H1) viruses were most commonly isolated from October to mid-January, but influenza A (H3) viruses increased in circulation in January and predominated during the season overall. From late March through May, when overall influenza

activity was declining, more influenza B than influenza A viruses were reported. Laboratories tested 225,329 specimens for influenza viruses; 39,827 (18%) were positive. Of the positive specimens, 28,263 (71%) were influenza A and 11,564 (29%) were influenza B viruses. Among the influenza A viruses, 8,290 (29%) were subtyped; 26% were influenza A(H1) and 74% were influenza A(H3) viruses.
CDC antigenically characterised 1,161 influenza viruses collected by US laboratories: 407 A(H1N1) viruses, 404 A(H3N2) viruses and 350 influenza B viruses. Of the 407 A(H1N1) viruses, 66% were characterised as antigenically similar to A/Solomon Islands/3/2006, (the influenza A (H1N1) component of the 2007-2008 Northern Hemisphere influenza vaccine) and 29% were characterised as A/Brisbane/59/2007-like. Of the 404 A(H3N2) viruses, 23% were characterised as similar to A/Wisconsin/67/2005 (the influenza A (H3) component of the 2007-2008 Northern Hemisphere influenza vaccine) and 60% viruses were characterised as A/Brisbane/10/2007-like.[6]

The most significant global influenza event during the 2007/2008 influenza season was the continuing spread of poultry outbreaks of avian influenza A (H5N1). As of January 14th 2009, 16 EU Member States (Austria, Bulgaria, Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, Poland, Romania, Slovakia, Slovenia, Spain, Sweden and the UK) have reported cases of highly pathogenic avian influenza A (H5N1) in wild birds/poultry. As of January 14th 2009, 394 human cases and 248 deaths (CFR: 62.9%) have been reported in 11 countries worldwide.[1]

The WHO announced its recommendations for the composition of the influenza vaccine for the northern hemisphere for 2008/2009 in February 2008. It was recommended that vaccines used in the 2008/2009 season (northern hemisphere winter) contain the following strains: an A/Brisbane/59/2007 (H1N1)-like virus, an A/Brisbane/10/2007 (H3N2)-like virus and a B/Florida/4/2006-like virus.[7]

Discussion

Influenza activity was moderate in Ireland during the 2007/2008-influenza season, with 15-64 year olds being the main age group affected. Influenza A and B co-circulated this season, with 109 influenza A and 101 influenza B specimens detected. Influenza A (H1N1) was the predominant circulating subtype. The A (H1N1) strains circulating matched the strains contained in the 2007/2008-influenza season vaccine. Medium levels of influenza activity were also reported in most of Europe, Canada and the US during the 2007/2008 season.[2, 4, 5, 6]

Surveillance of hospital admissions data and school absenteeism data plays a significant role in monitoring influenza activity and planning health service requirements. This was demonstrated during the 2007/2008 season, with increased levels of admissions reported from sentinel hospitals following the seasonal peak in RSV and immediately preceding the peak in sentinel GP ILI consultation rates. The value of collating school absenteeism data as a crude indicator for influenza activity was also highlighted with increased absenteeism reported from several sentinel schools during the peak of influenza activity.

During the 2007/2008 influenza season, enhanced surveillance of influenza in hospitalised 0-14 year olds significantly improved. The high rate of completion of enhanced influenza forms for hospitalised paediatric cases was very encouraging. The enhanced dataset highlighted the significant morbidity associated with influenza in children e.g. croup, bronchitis and other respiratory complications. None of the children in at-risk groups were vaccinated, reiterating the need for health care professionals to promote influenza vaccine uptake in these groups.

The small number of influenza-attributed deaths reported to HPSC for the last few seasons is not unexpected. Excess deaths due to influenza are often not registered as influenza deaths.[8] [⌗⌗] Monitoring all cause deaths and influenza and pneumonia deaths is one method of identifying these influenza-non-attributed deaths and from this, estimating the mortality burden caused by influenza and its complications each season. A system that monitors all cause deaths and influenza and pneumonia deaths in Ireland is currently being developed which could prove to be a significant early warning tool and would be invaluable for health system response planning in the event of an influenza pandemic.

Avian influenza A (H5N1) outbreaks have posed a significant threat to human health since 2003. In a number of outbreaks, the virus has jumped from infected chickens or ducks directly to humans. These direct human infections have produced severe and sometimes fatal outcomes. The risk of virus transmission to humans from infected poultry will continue as long as poultry outbreaks are occurring. Of greatest concern is the risk that continuing transmission of the virus to humans will give avian and influenza viruses an opportunity to reassort their genes, thereby acquiring the ability to transmit easily from person-to-person and thus triggering a pandemic. Avian influenza A (H5N1) remains predominantly a disease of birds, with outbreaks

[⌗⌗] The current best Irish national estimate of the number of deaths annually from influenza and its complications is 300-400 deaths per year and is based on extrapolation of studies done in the UK and the US. (Source: HPSC)

spreading rapidly and widely and resulting in mass poultry culls. All evidence to date, has shown an association between human cases and close contact with dead or dying poultry. There has been no evidence of efficient human-to-human transmission. Human infections remain a rare event.[1]

However, with the ever-greater threat of a pandemic posed by influenza A (H5N1), EU Member States are strengthening their preparedness for a potential human influenza pandemic. As a result of this threat, a number of additional measures have been put in place in Ireland to improve surveillance of ILI/influenza. Work is in progress to increase the number of sentinel GPs, thereby improving geographical and population representation. Sentinel GPs are also currently monitoring ILI on a year round basis. In addition, influenza and all outbreaks became notifiable in Ireland on January 1st 2004 and an ILI/influenza specific outbreak reporting form was piloted during the 2007/2008 season. Reporting of such events is critical for the early detection of influenza activity. Work is also in progress on an age denominator project, to assess the age profile of sentinel GP patient lists. Other activities that are being implemented to improve the surveillance of influenza include weekly surveillance of all cause mortality and mortality due to influenza, the construction and use of baseline and epidemic threshold levels for influenza activity and monthly surveillance of influenza vaccine uptake data in medical and GP visit cardholders aged 65 years and older. A national telephone-survey to estimate influenza and pneumococcal vaccine uptake and morbidity from ILI was completed for the 2005/2006 influenza season.[9] An evaluation of sentinel hospital admissions and school absenteeism data has also been completed and the recommendations are currently being implemented. Case based reporting of avian influenza is now operational on CIDR and an interim MS Access database is being developed for contacts of avian influenza cases. Data from these projects will in turn inform continuing national progress on pandemic preparedness and will be vital in the event of an influenza pandemic for planning and control measures.

Further information on influenza is available on the HPSC website at
http://www.ndsc.ie/hpsc/A-Z/Respiratory/Influenza/

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