

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 1 2016 (4th - 10th January 2016)



Summary

All indicators of influenza activity in Ireland increased significantly during week 1 2016 (week ending January 10, 2016), with activity at moderate levels. Influenza A(H1N1)pdm09 and influenza B are co-circulating, with increasing hospitalisations and ICU admissions reported during this period. It is now recommended that antivirals be considered for the treatment or prevention of influenza in high risk groups.

- **Influenza-like illness (ILI):** The sentinel GP influenza-like illness (ILI) consultation rate was 48.5 per 100,000 population in week 1 2016, a significant increase compared to the rate 11.3 per 100,000 reported during week 53 2015.
 - ILI rates have increased above the Irish baseline ILI threshold (18 per 100,000 population), for the first time this season.
 - ILI rates increased in all age groups; with the highest rates reported in the 15-64 year age group.
- **GP Out of Hours:** The proportion of influenza-related calls to GP Out-of-Hours services remained elevated during week 1 2016.
- **National Virus Reference Laboratory (NVRL):**
 - Influenza positivity increased during week 1 2016, with 72 (18.6%) influenza positive specimens reported from the NVRL: 31 A(H1N1)pdm09, 2 A (H3), 5 A (not subtyped) and 34 B.
 - The predominant influenza viruses circulating are influenza A(H1N1)pdm09 and influenza B.
 - Respiratory syncytial virus (RSV) positivity remained at high levels during week 1 2016.
 - Positive detections of adenovirus, parainfluenza viruses and human metapneumovirus were reported during week 1 2016.
- **Respiratory admissions:** Respiratory admissions reported from a network of sentinel hospitals were at high levels during week 53 2015.
- **Hospitalisations:** 76 confirmed influenza hospitalised cases were notified to HPSC for the 2015/2016 season to date: two associated with influenza A(H3), 16 with A(H1N1)pdm09, 16 with influenza A (not subtyped) and 42 with influenza B.
- **Critical care admissions:** Six new confirmed influenza cases were admitted to critical care units and reported to HPSC during the week ending January 10, 2016, bringing the season total to 13 cases.
- **Mortality:** Four confirmed influenza cases died and were reported to HPSC for the 2015/2016 season to date.
- **Outbreaks:** Four acute respiratory/influenza outbreaks were reported to HPSC during the week ending January 10, 2016, one in an acute hospital setting and three in residential care facilities.
- **International:** The 2015/16 influenza season has started in Europe; with the proportion of influenza virus-positive sentinel specimens over 10% for three consecutive weeks. The increase in influenza positivity in recent weeks, is mainly associated with influenza A(H1N1)pdm09. Viruses characterised to date this season in Europe are genetically similar to the strains recommended for inclusion in this winter's trivalent or quadrivalent vaccines for the northern hemisphere.

1. GP sentinel surveillance system - Clinical Data

- During week 1 2016, 116 influenza-like illness (ILI) cases were reported from sentinel GPs, corresponding to an ILI consultation rate of 48.5 per 100,000 population, a significant increase compared to the updated rate of 11.3 per 100,000 reported during week 53 2015. ILI rates have increased above the Irish baseline ILI threshold (18/100,000 population), for the first time this season (figure 1).
- ILI age specific rates increased in all age groups during weeks 1 2016, with the highest rates in the 15-64 year age group (at 60.6/100,000 population) (figure 2).
- HPSC in consultation with the European Centre for Disease Prevention and Control (ECDC) has revised the Irish baseline ILI threshold for the 2015/2016 influenza season to 18 per 100,000 population; this threshold indicates the likelihood that influenza is circulating in the community. The Moving Epidemic Method (MEM) has been adopted by ECDC to calculate thresholds for GP ILI consultations in a standardised approach across Europe.¹
- The baseline ILI threshold, medium (57/100,000 population) and high (114/100,000 population) intensity ILI thresholds are shown in figure 1.

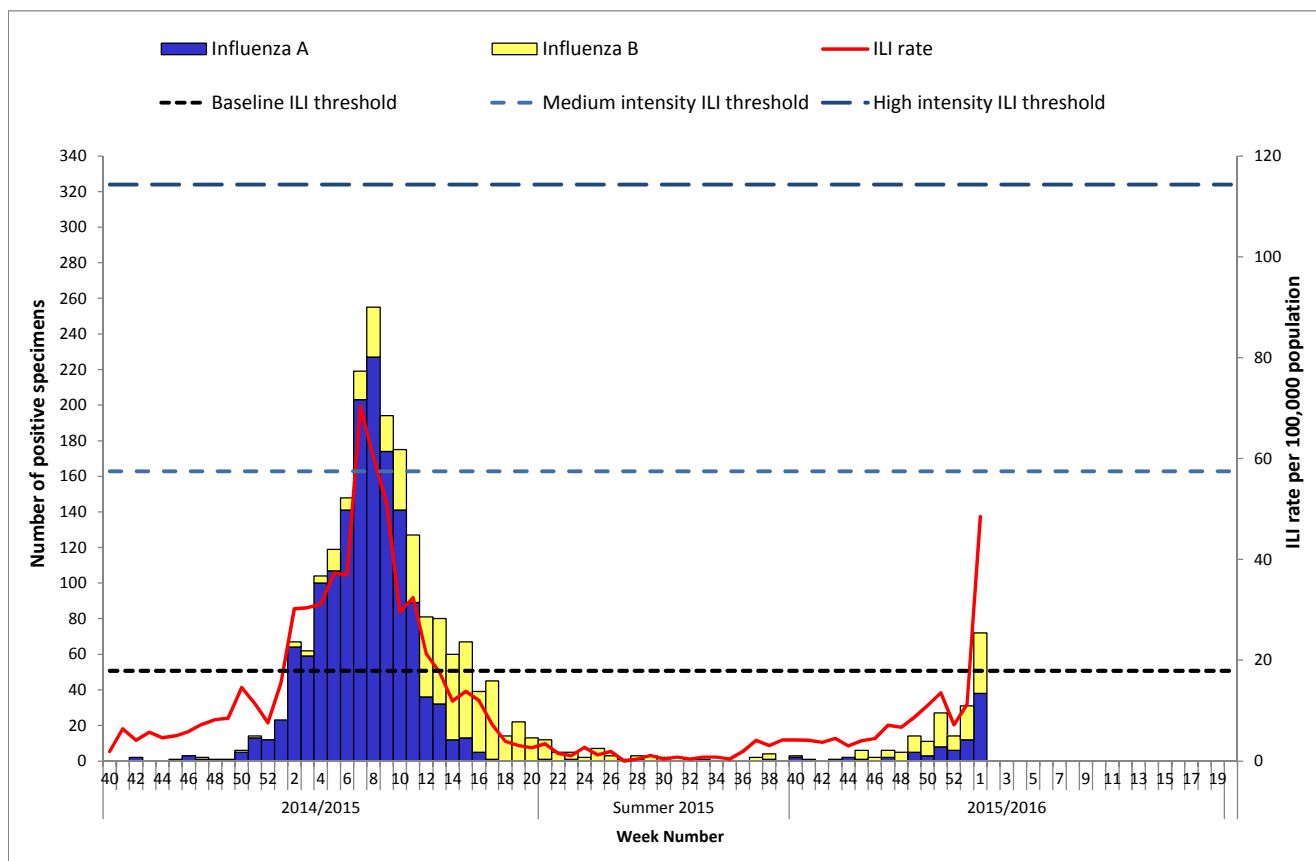


Figure 1. ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold, medium and high intensity ILI thresholds¹ and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season.
 Source: ICGP and NVRL

¹ For further information on the Moving Epidemic Method (MEM) to calculate ILI thresholds:
<http://www.ncbi.nlm.nih.gov/pubmed/22897919>

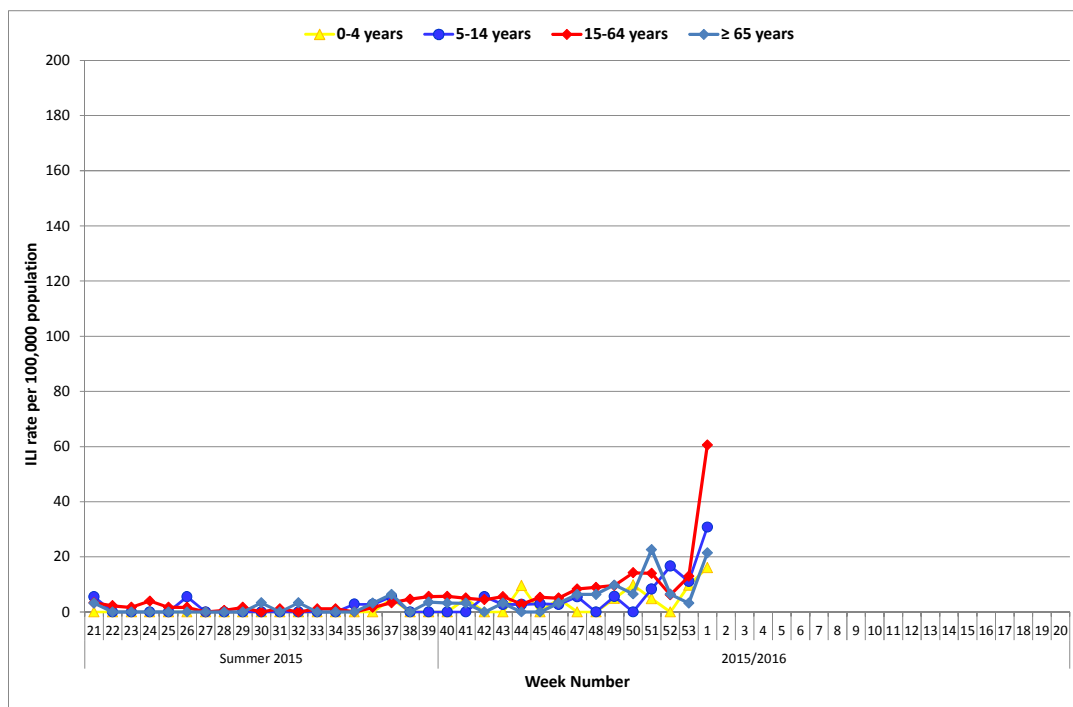


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2015 and the 2015/2016 influenza season to date. Source: ICGP.

2. Influenza and Other Respiratory Virus Detections - NVRL

The data reported in this section for the 2015/2016 influenza season refers to sentinel and non-sentinel respiratory specimens routinely tested for influenza, respiratory syncytial virus (RSV), adenovirus, parainfluenza viruses types 1, 2, 3 & 4 (PIV-1, -2, -3 & -4) and human metapneumovirus (hMPV) by the National Virus Reference Laboratory (NVRL) (figures 3, 4 & 5, tables 1 & 2).

- Influenza positivity increased significantly during week 1 2016, compared to recent weeks, with 72 (18.6%) influenza positive specimens reported from the NVRL: 31 A(H1)pdm09, 2 A(H3), 5 A (not subtyped) and 34 B.
- Influenza A(H1)pdm09 and influenza B are currently co-circulating in Ireland.
- To date this season, of the 195 confirmed influenza positive specimens reported by the NVRL, 59% (n=115) were positive for influenza B, 32.8% (n=64) for influenza A(H1)pdm09, 4.1% (n=8) were positive for influenza A(H3) and 4.1% (n=8) were positive for influenza A(not subtyped).
- Week 1 2016:
 - 33 of 51 (64.7%) sentinel specimens were influenza positive: 13 A(H1)pdm09, 1 A(H3) and 19 B.
 - 39 of 337 (11.6%) non-sentinel specimens were influenza positive: 18 A(H1)pdm09, 1 A(H3), 5 A (not subtyped) and 15 B.
- Fifty-five (55/388; 14.2%) respiratory syncytial virus (RSV) positive sentinel and non-sentinel specimens were reported during week 1 2016. RSV positivity has remained at high levels, decreasing slightly in recent weeks. Figure 5 shows the number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2015/2016 season, compared to the 2014/2015 season.
- Nine human metapneumovirus (hMPV), one parainfluenza virus and three adenovirus positive sentinel and non-sentinel specimens were reported by the NVRL during week 1 2016 (table 2).
- The overall proportion of non-sentinel specimens positive for seasonal respiratory viruses* remained high, at 30% during week 1 2016. * Seasonal respiratory viruses tested by the NVRL are detailed above.

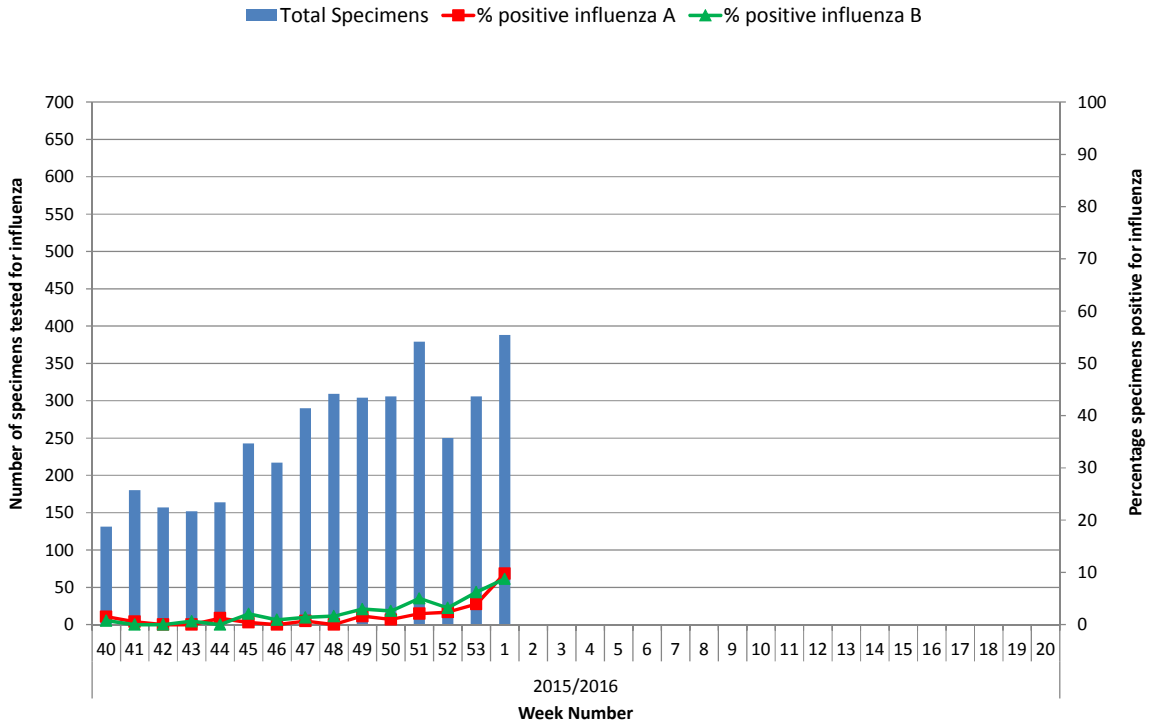


Figure 3: Number of sentinel and non-sentinel specimens tested by the NVRL for influenza and percentage influenza positive by week for the 2015/2016 influenza season. Source: NVRL

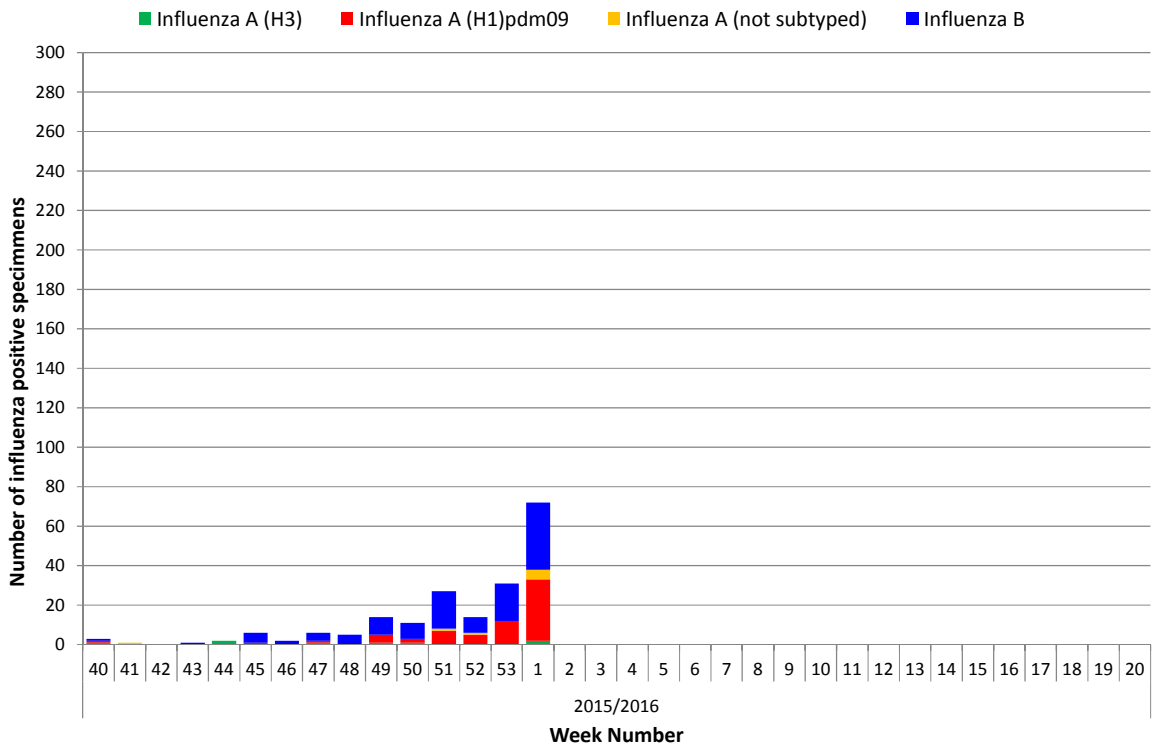


Figure 4: Number of positive influenza specimens by influenza type/subtype from sentinel and non-sentinel sources tested by the NVRL, by week for the 2015/2016 influenza season. Source: NVRL.

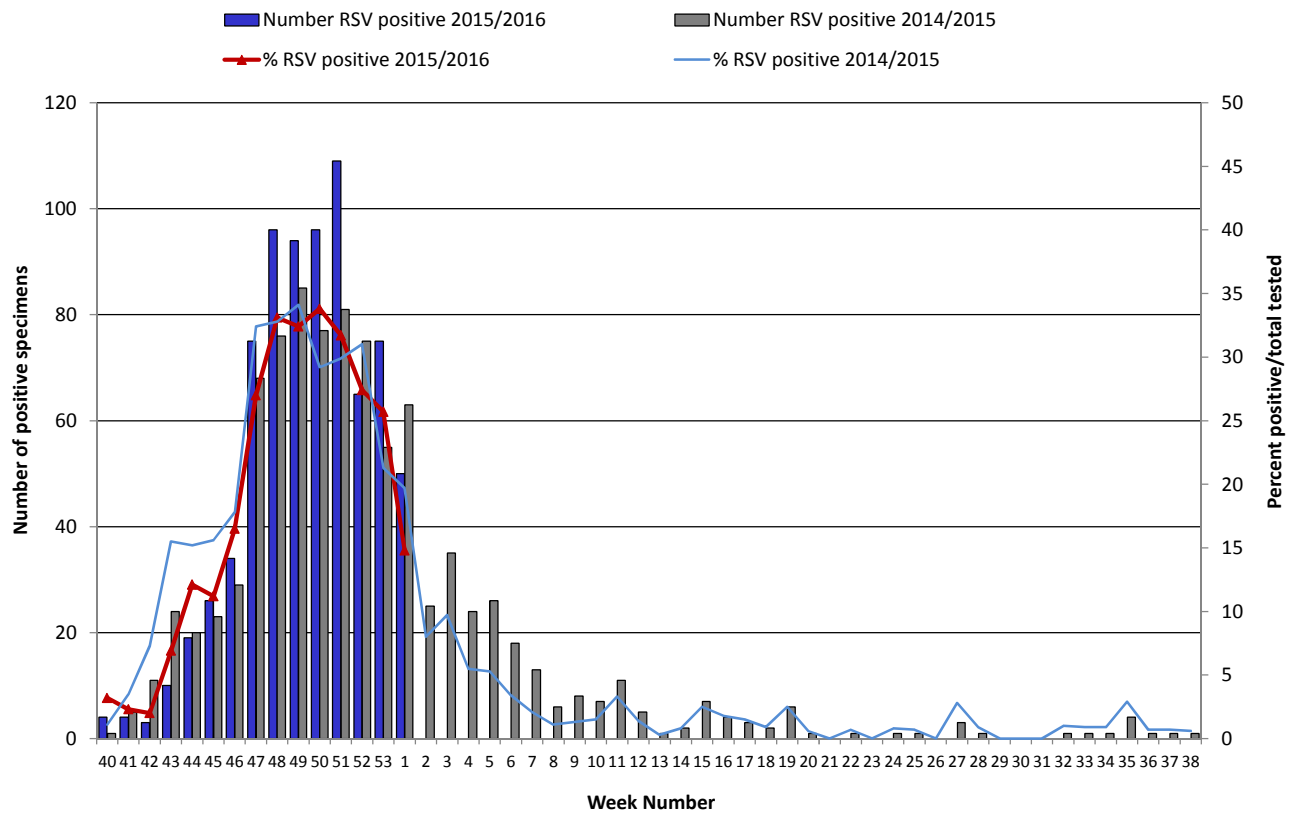


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL by week during the 2015/2016 season, compared to the 2014/2015 season. Source: NVRL.

Table 1: Number of sentinel and non-sentinel[†] respiratory specimens tested by the NVRL and positive influenza results, for week 1 2016 and the 2015/2016 season to date. Source: NVRL

Week	Specimen type	Total tested	Number influenza positive	% Influenza positive	Influenza A				Influenza B
					A (H1)pdm09	A (H3)	A (not subtyped)	Total influenza A	
1 2016	Sentinel	51	33	64.7	13	1	0	14	19
	Non-sentinel	337	39	11.6	18	1	5	24	15
	Total	388	72	18.6	31	2	5	38	34
2015/2016	Sentinel	233	65	27.9	21	2	1	24	41
	Non-sentinel	3543	130	3.7	43	6	7	56	74
	Total	3776	195	5.2	64	8	8	80	115

Table 2: Number of non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 1 2016 and the 2015/2016 season to date. Source: NVRL

Week	Specimen type	Total tested	RSV	% RSV	Adenovirus	% Adenovirus	PIV-1	% PIV-1	PIV-2	% PIV-2	PIV-3	% PIV-3	PIV-4	% PIV-4	hMPV	% hMPV
1 2016	Sentinel	51	5	9.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	2.0
	Non-sentinel	337	50	14.8	3	0.9	0	0.0	0	0.0	0	0.0	1	0.3	8	2.4
	Total	388	55	14.2	3	0.8	0	0.0	0	0.0	0	0.0	1	0.3	9	2.3
2015/2016	Sentinel	233	17	7.3	2	0.9	6	2.6	1	0.4	0	0.0	0	0.0	5	2.1
	Non-sentinel	3543	760	21.5	28	0.8	62	1.7	21	0.6	25	0.7	0	0.0	87	2.5
	Total	3776	777	20.6	30	0.8	68	1.8	22	0.6	25	0.7	0	0.0	92	2.4

[†] 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 based on sentinel GP ILI consultation rates, laboratory data and outbreaks.

Influenza/ILI activity increased in all HSE-Areas in Ireland during the week ending January 10, 2016 (week 1 2016). Localised influenza activity was reported in HSE-E, -MW, -NE, -SE and -S and sporadic influenza activity was reported in HSE-M, -NW and -W during week 1 2016 (figure 6).

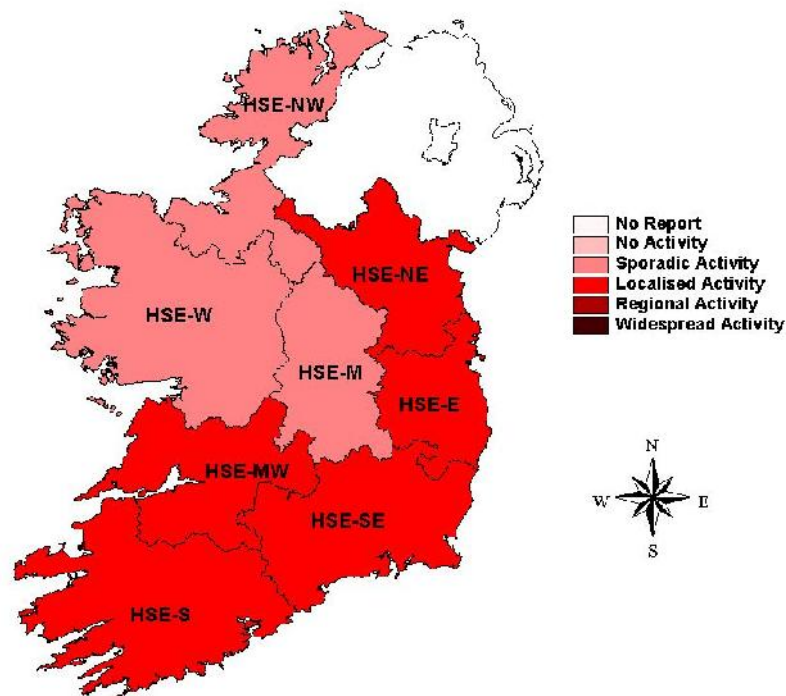


Figure 6: Map of provisional influenza activity by HSE-Area during influenza week 1 2016

Sentinel hospitals

The Departments of Public Health have established at least one sentinel hospital in each HSE-Area, to report data on total, emergency and respiratory admissions on a weekly basis. For the 2015/2016 influenza season, eight sentinel hospitals are regularly reporting respiratory admissions data.

Respiratory admissions reported from a network of sentinel hospitals were at high levels during week 53 2015 at 471, compared to 419 during week 52 2015. It should be noted that data for week 1 2016 were incomplete at the time of publication; with data missing from two sentinel hospitals (figure 7).

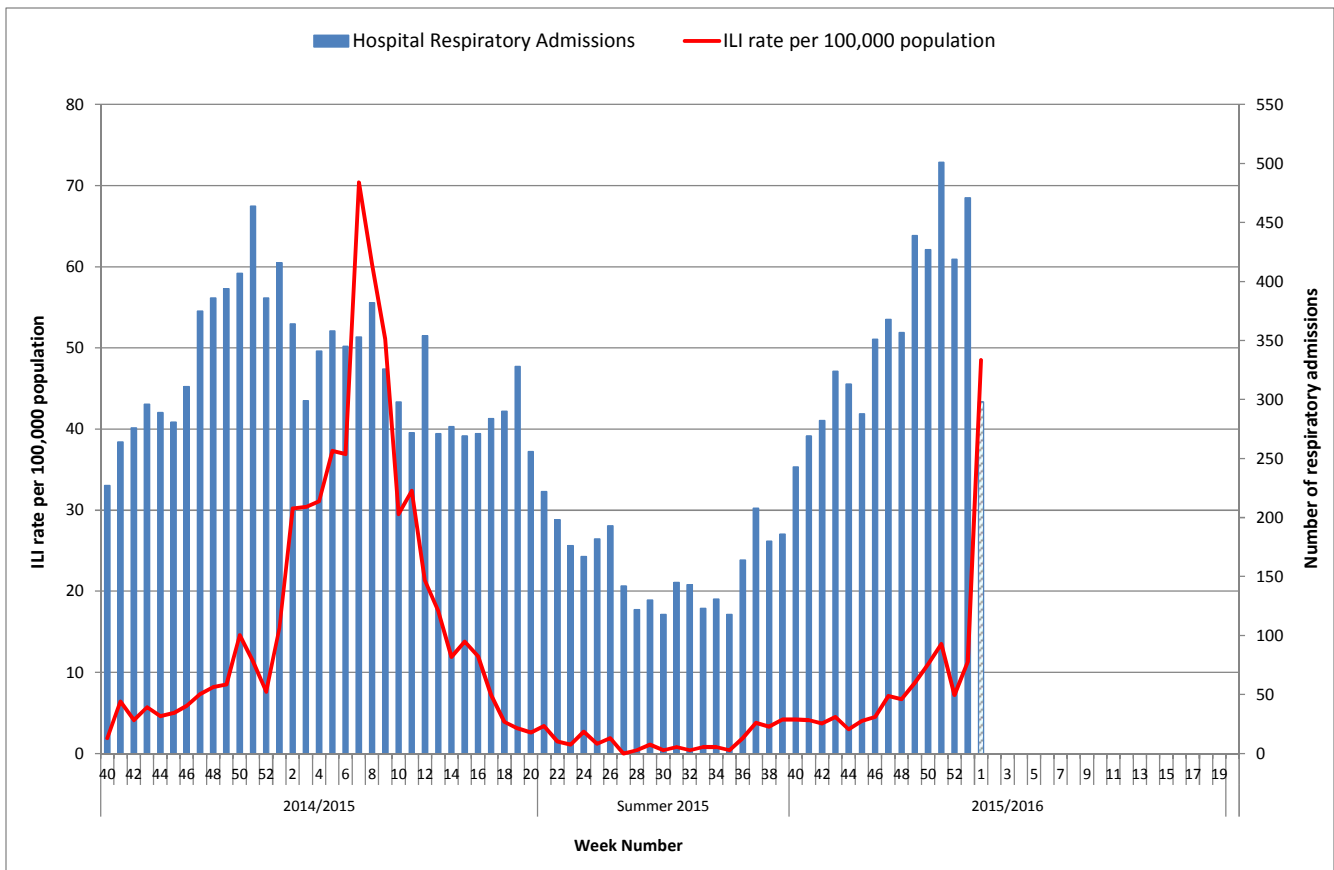


Figure 7: Number of respiratory admissions reported from sentinel hospitals and ILI sentinel GP consultation rate per 100,000 population by week and season. Source: Departments of Public Health - Sentinel Hospitals & ICGP. Data was missing from two sentinel hospitals for week 1 2016; hatched area.

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. 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 remained elevated during week 1 2016 at 3.8%, compared to 4.5% during week 53 2015 (figure 8). Data for weeks 52 and 53 2015 need to be interpreted with caution, as reporting levels are affected during the Christmas/New Year Holiday period.

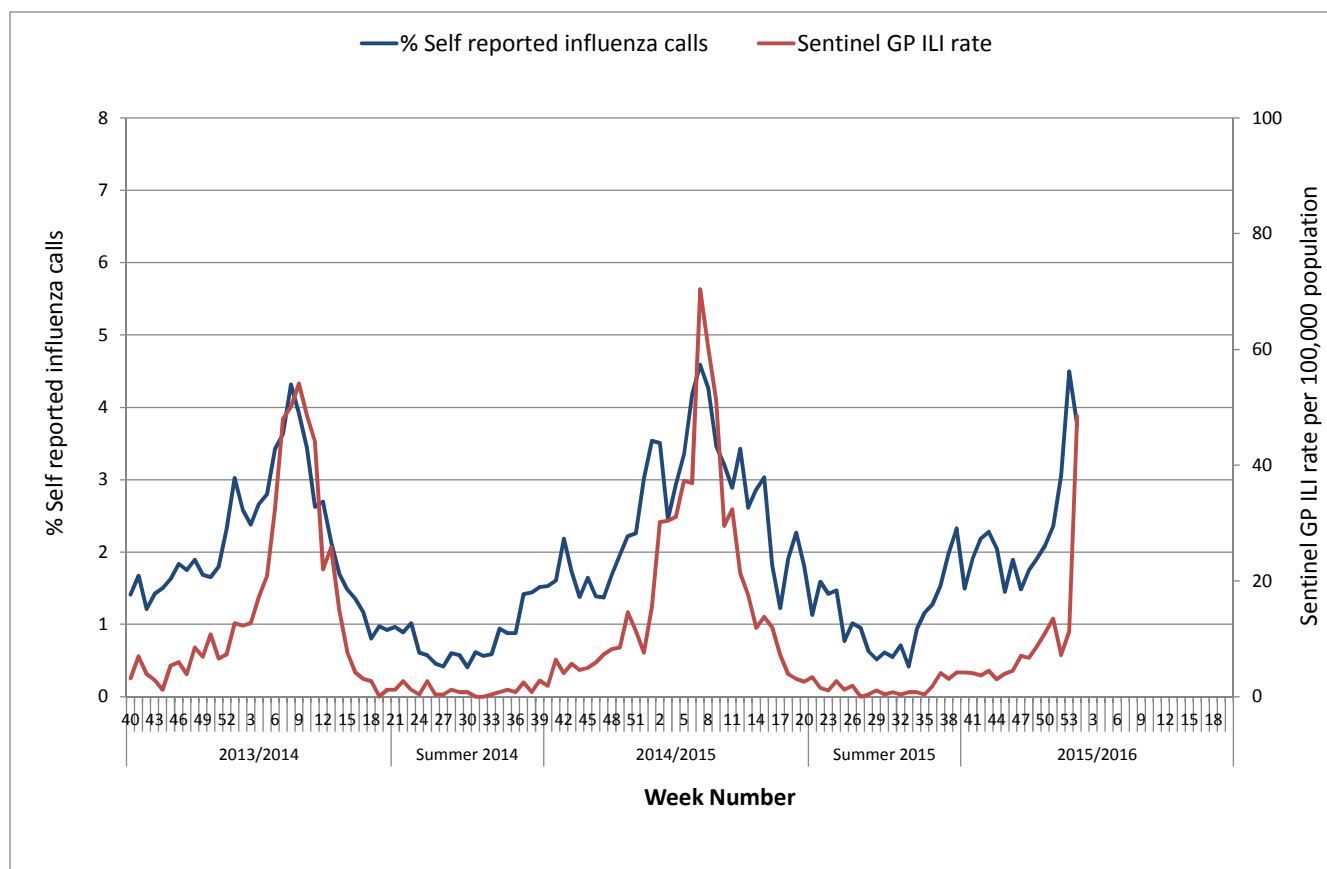


Figure 8: Self-reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and sentinel GP ILI consultation rate per 100,000 population by week and season. Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.

5. Influenza & RSV notifications

Influenza and RSV cases notifications are reported on Ireland's Computerised Infectious Disease Reporting System (CIDR), including all positive influenza /RSV specimens reported from all laboratories testing for influenza/RSV and reporting to CIDR.

Influenza and RSV notifications are reported in the [Weekly Infectious Disease Report for Ireland](#). RSV notifications remained at high levels during the week ending January 10, 2016, with 214 cases notified, compared to 166 during the previous week. Influenza notifications increased during the week ending January 10, 2016, with 86 cases notified, compared to 12 during the previous week.

6. Influenza Hospitalisations

Seventy-six confirmed influenza hospitalised cases were notified to HPSC for the 2015/2016 season to date: two associated with influenza A(H3), 16 with A(H1)pdm09, 16 with influenza A (not subtyped) and 42 with influenza B. The highest age specific rates were in those aged less than one year. The median age of hospitalised cases for the season to date is 21 years (ranging from 0-77 years) (table 3).

7. Critical Care Surveillance

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. HPSC process and report on this information on behalf of the regional Directors of Public Health/Medical Officers of Health.

Six new confirmed influenza cases were admitted to critical care units and reported to HPSC during the week ending January 10, 2015. For the 2015/2016 season to date, 13 confirmed influenza cases (five associated with influenza A(H1N1)pdm09, five with influenza A-not subtyped and three with influenza B). The highest age specific rates were in those aged less than one year. The median age of cases admitted to critical care units for the season to date is 53 years (ranging from 0-77 years) (table 3).

Table 3: Age specific rates for confirmed influenza cases hospitalised and admitted to critical care during the 2015/2016 influenza season to date. Age specific rates are based on the 2011 CSO census.

Age (years)	Hospitalised		Admitted to ICU	
	Number	Age specific rate per 100,000 pop.	Number	Age specific rate per 100,000 pop.
<1	7	9.7	2	2.8
1-4	15	5.3	1	0.4
5-14	13	2.1	0	0.0
15-24	8	1.4	0	0.0
25-34	12	1.6	1	0.1
35-44	5	0.7	0	0.0
45-54	1	0.2	3	0.5
55-64	5	1.1	3	0.6
≥65	10	1.9	3	0.6
Total	76	1.7	13	0.3

8. Mortality Surveillance

Influenza-associated deaths include all deaths where influenza is reported as the primary/main cause of death by the physician or if influenza is listed anywhere on the death certificate as the cause of death. HPSC receives daily mortality data from the General Register Office (GRO) on all deaths from all causes registered in Ireland. These data have been used to monitor excess all-cause and influenza and pneumonia deaths as part of the influenza surveillance system and the European Mortality Monitoring Project. These data are provisional due to the time delay in deaths' registration in Ireland. <http://www.euromomo.eu/>

- Four confirmed influenza cases (two associated with influenza A(H1N1)pdm09, one with influenza A-not subtyped and one with influenza B) died and were reported to HPSC for the 2015/2016 season to date.
- No excess all-cause mortality was reported in Ireland for the 2015/2016 season to date, after correcting GRO data for reporting delays with the standardised EuroMOMO algorithm.

9. Outbreak Surveillance

Four acute respiratory/influenza outbreaks were reported to HPSC during the week ending January 10, 2016: one influenza A and B outbreak in an acute hospital setting in HSE-E; two acute respiratory outbreaks in HSE-S and one acute respiratory outbreak in HSE-W - associated with unknown pathogens in residential care facilities. To date this season (up to the week ending January 10, 2015), 12 acute respiratory/influenza outbreaks have been reported to HPSC, two outbreaks associated with influenza (one associated with influenza A and B and one associated with influenza B), two were associated with parainfluenza type 1, three with RSV and five with unknown pathogens. Ten outbreaks were in community hospital/residential care facilities, one was in an acute hospital setting and one was in a school. It should be noted that family outbreaks are not included in this report. *All outbreaks notified to HPSC are reported in the [HPSC Outbreak Weekly Report](#).*

10. International Summary

The 2015/16 influenza season has started in Europe, with the proportion of influenza virus-positive sentinel specimens over 10% for three consecutive weeks. The increase in virus detections among sentinel and non-sentinel patients with respiratory disease since week 49 2015, is mainly associated with influenza A(H1)pdm09 viruses, representing 80% of subtyped influenza A viruses. Viruses characterised to date this season are genetically similar to the strains recommended for inclusion in this winter's trivalent or quadrivalent vaccines for the northern hemisphere. Influenza activity remained low in most countries in the European Region, with sporadic influenza viruses detected. As of December 28 2015, globally, influenza activity generally remained low in both hemispheres. In a few countries in Central and Northern Asia, as well as in Eastern and Northern Europe, there were slight increases in influenza detections in recent weeks. In Eastern Asia, the rest of Europe, North Africa and North America, influenza activity continued at low, inter-seasonal levels. See [ECDC](#) and [WHO](#) influenza surveillance reports for further information.

- Further information is available on the following websites:
 - Northern Ireland <http://www.fluawareni.info/>
 - Europe – ECDC <http://ecdc.europa.eu/>
 - Public Health England <http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SeasonalInfluenza/>
 - United States CDC <http://www.cdc.gov/flu/weekly/fluactivitysurv.htm>
 - Public Health Agency of Canada <http://www.phac-aspc.gc.ca/fluwatch/index-eng.php>
- Information on Middle Eastern Respiratory Syndrome Coronavirus (MERS), including the latest ECDC rapid risk assessment is available on the [ECDC website](#). Further information and guidance documents are also available on the [HPSC](#) and [WHO](#) websites.
- Further information on avian influenza is available on the [ECDC website](#). The latest ECDC rapid risk assessment on highly pathogenic avian influenza A of H5 type is also available on the [ECDC website](#).

11. WHO recommendations on the composition of influenza virus vaccines

The WHO vaccine strain selection committee recommended that vaccines for use in the 2015/2016 influenza season (northern hemisphere winter) contain the following: an A/California/7/2009 (H1N1)pdm09-like virus; an A/Switzerland/9715293/2013 (H3N2)-like virus; a B/Phuket/3073/2013-like virus.

<http://www.who.int/influenza/vaccines/virus/recommendations/en/>

Further information on influenza in Ireland is available at www.hpsc.ie

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