

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 2 2016 (11th - 17th January 2016)



 **Intensive Care Society of Ireland**

Summary

Influenza activity in Ireland increased slightly during week 2 2016 (week ending January 17, 2016), with activity remaining 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 52.4 per 100,000 population in week 2 2016, a slight increase compared to the updated rate of 46.3 per 100,000 reported during week 1 2016.
 - ILI rates remained above the Irish baseline ILI threshold (18 per 100,000 population).
 - ILI age specific rates increased in 0-4 and 5-14 year olds and in those aged 65 years and older and remained stable in the 15-64 year age group during week 2 2016, compared to the previous week.
- **GP Out of Hours:** The proportion of influenza-related calls to GP Out-of-Hours services remained elevated during week 2 2016.
- **National Virus Reference Laboratory (NVRL):**
 - Influenza positivity decreased slightly during week 2 2016, compared to the previous week, with 87 (20.8%) influenza positive specimens reported: 42 A(H1N1)pdm09, 5 A (not subtyped) and 40 B.
 - The predominant influenza viruses circulating are influenza A(H1N1)pdm09 and influenza B.
 - RSV continues to circulate at moderate to high levels, with positivity decreasing in recent weeks.
 - Positive detections of parainfluenza viruses and human metapneumovirus were reported during week 2 2016.
- **Respiratory admissions:** Respiratory admissions reported from a network of sentinel hospitals were at high levels during weeks 1 and 2 2016.
- **Hospitalisations:** 137 confirmed influenza hospitalised cases were notified to HPSC for the 2015/2016 season to date: 46 associated with influenza A(H1N1)pdm09, 3 with A(H3N2), 22 with A-not subtyped and 66 with influenza B.
- **Critical care admissions:** Three new confirmed influenza cases were admitted to critical care units and reported to HPSC during the week ending January 17, 2016, bringing the season total to 16 cases.
- **Mortality:** Five confirmed influenza cases died and were reported to HPSC for the 2015/2016 season to date.
- **Outbreaks:** Eight acute respiratory/influenza outbreaks were reported to HPSC during the week ending January 17, 2016.
- **International:** In Europe, influenza activity continued at low levels, except in some countries in Northern and Eastern Europe where an increase in influenza activity was observed. 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 2 2016, 127 influenza-like illness (ILI) cases were reported from sentinel GPs, corresponding to an ILI consultation rate of 52.4 per 100,000 population, a slight increase compared to the updated rate of 46.3 per 100,000 reported during week 1 2016. ILI rates remain above the Irish baseline ILI threshold (18/100,000 population) (figure 1).
- ILI age specific rates increased in the 0-4 and 5-14 year age groups and in those aged 65 years and older and remained stable in the 15-64 year age group during week 2 2016, with the highest rates in those aged 65 years and older (at 56.5/100,000 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.

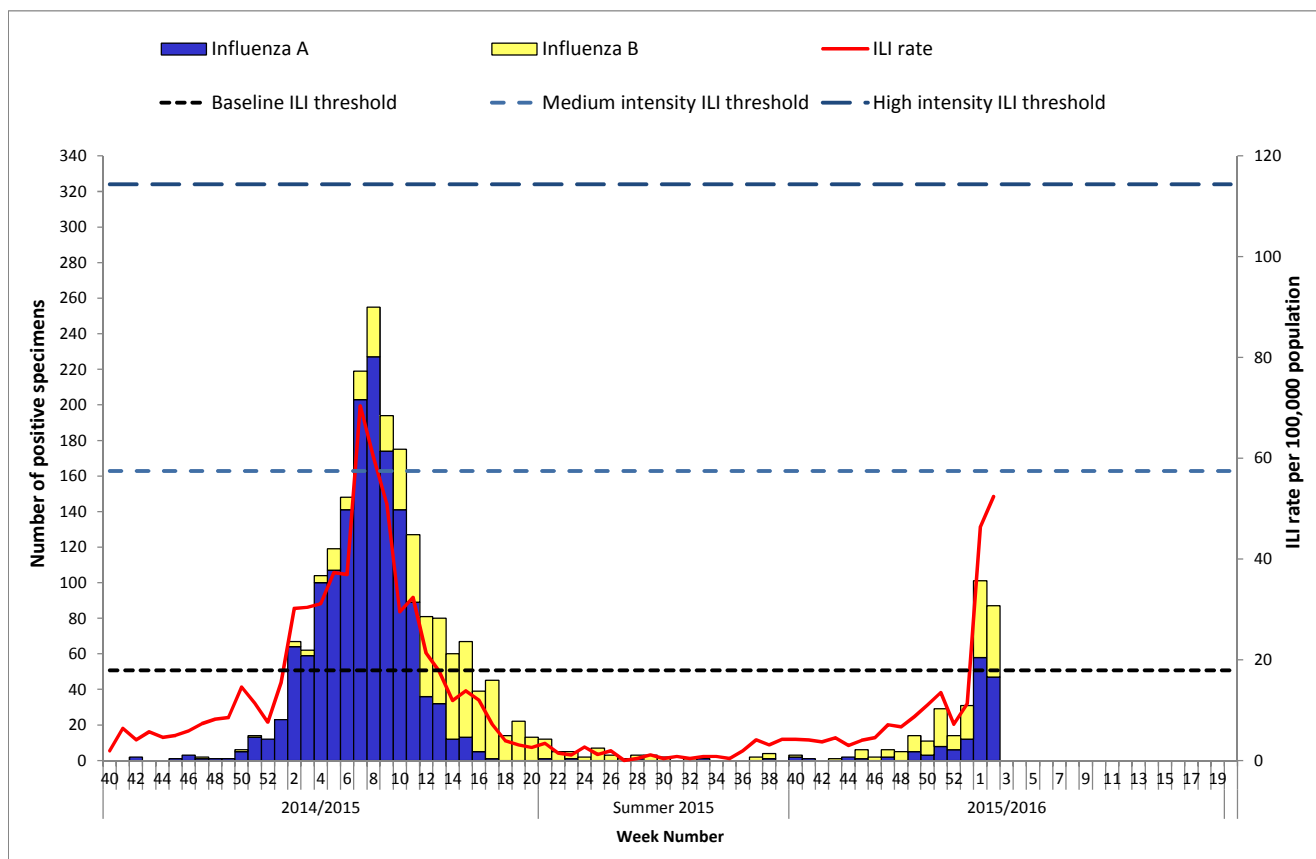


Figure 1. ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold, medium and high intensity ILI thresholds¹ and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season.
Source: ICGP and NVRL

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

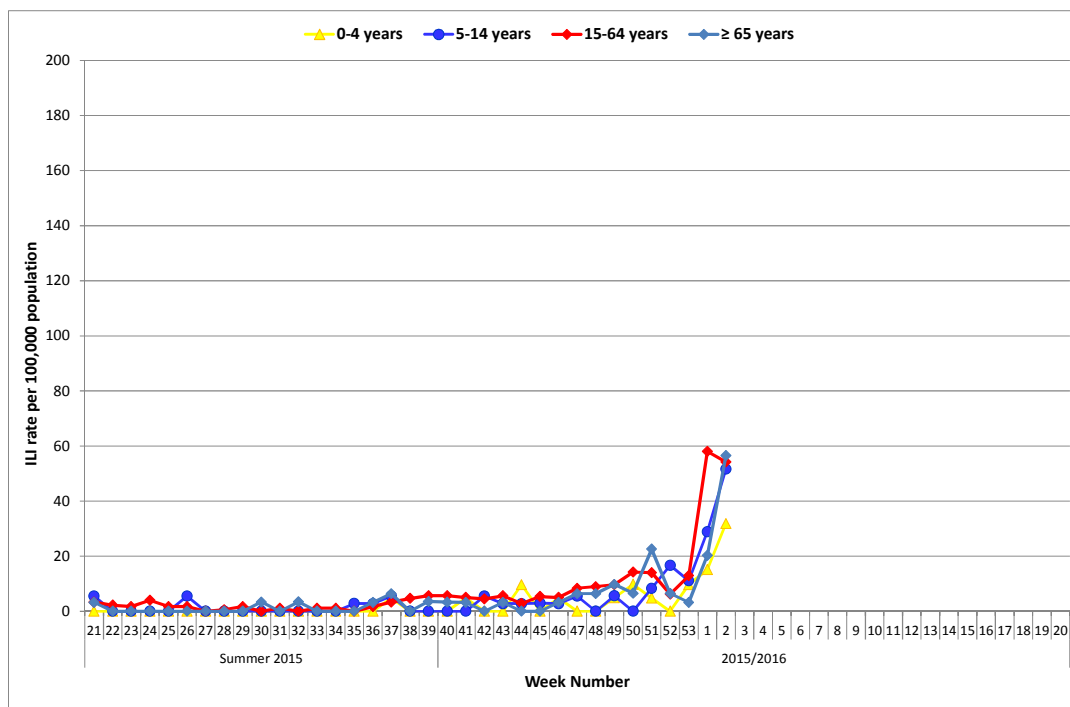


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2015 and the 2015/2016 influenza season to date. Source: ICGP.

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 decreased slightly during week 2 2016, compared to the previous week, with 87 (20.8%) influenza positive specimens reported from the NVRL: 42 A(H1)pdm09, 5 A (not subtyped) and 40 B.
- Influenza A(H1)pdm09 and influenza B are currently co-circulating in Ireland.
- To date this season, of the 313 confirmed influenza positive specimens reported by the NVRL, 53% (n=166) were positive for influenza B, 39.3% (n=123) for influenza A(H1)pdm09, 2.6% (n=8) were positive for influenza A(H3) and 5.1% (n=16) were positive for influenza A (not subtyped).
- Week 2 2016:
 - 36 of 63 (57.1%) sentinel specimens were influenza positive: 18 A(H1)pdm09 and 18 B.
 - 51 of 355 (14.4%) non-sentinel specimens were influenza positive: 24 A(H1)pdm09, 5 A (not subtyped) and 22 B.
- Forty-six (46/418; 11.0%) respiratory syncytial virus (RSV) positive sentinel and non-sentinel specimens were reported during week 2 2016. RSV continues to circulate at moderate to high levels, with positivity decreasing 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.
- Thirteen human metapneumovirus (hMPV) and one parainfluenza virus (PIV-4) positive sentinel and non-sentinel specimens were reported by the NVRL during week 2 2016 (table 2).
- The overall proportion of non-sentinel specimens positive for seasonal respiratory viruses* remained high, at 30% during week 2 2016. * Seasonal respiratory viruses tested by the NVRL are detailed above.

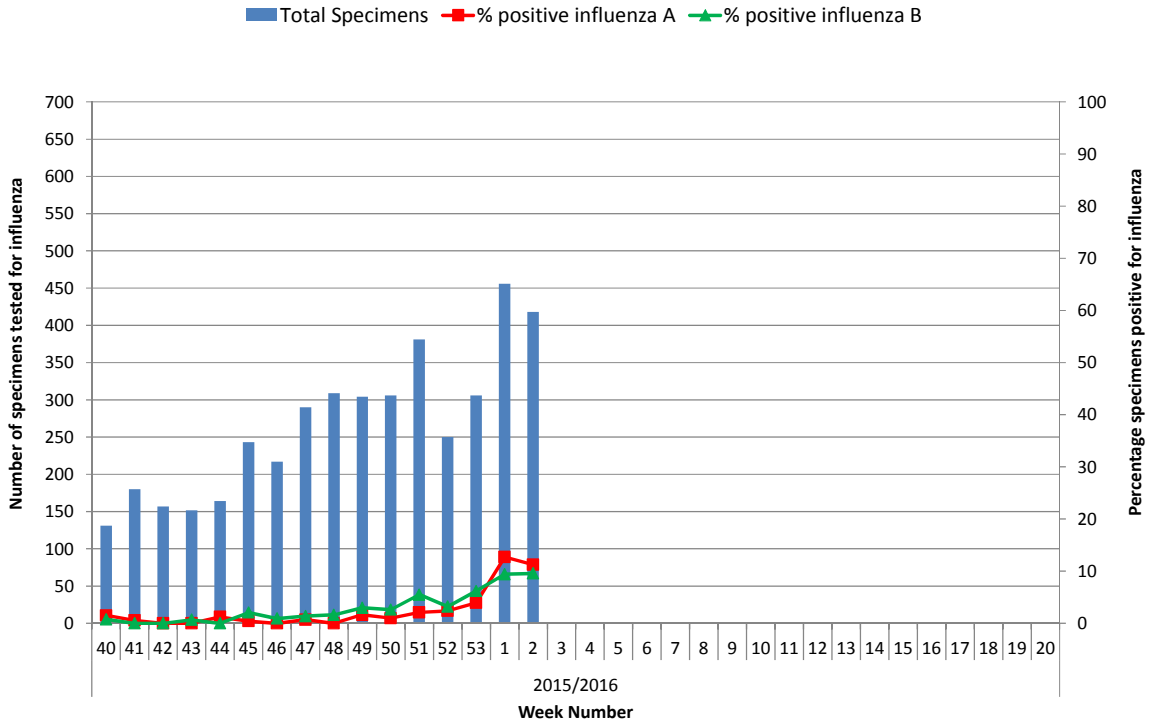


Figure 3: Number of sentinel and non-sentinel specimens tested by the NVRL for influenza and percentage influenza positive by week for the 2015/2016 influenza season. *Source: NVRL*

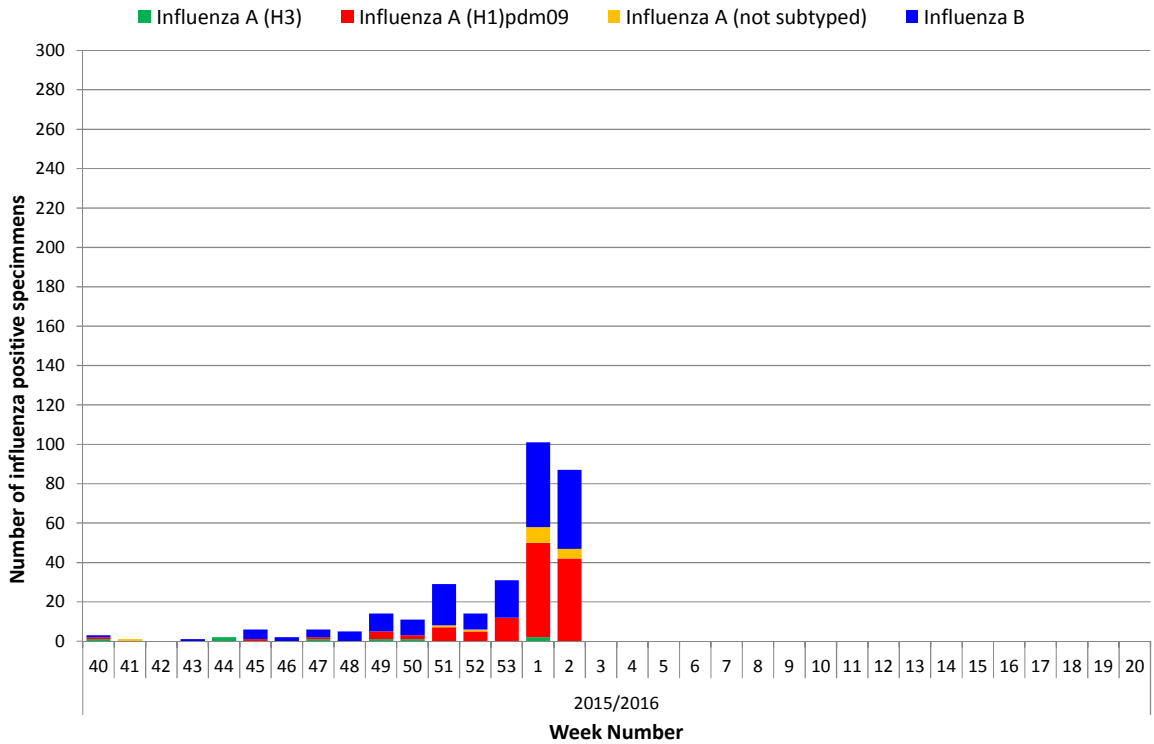


Figure 4: Number of positive influenza specimens by influenza type/subtype from sentinel and non-sentinel sources tested by the NVRL, by week for the 2015/2016 influenza season. *Source: NVRL*

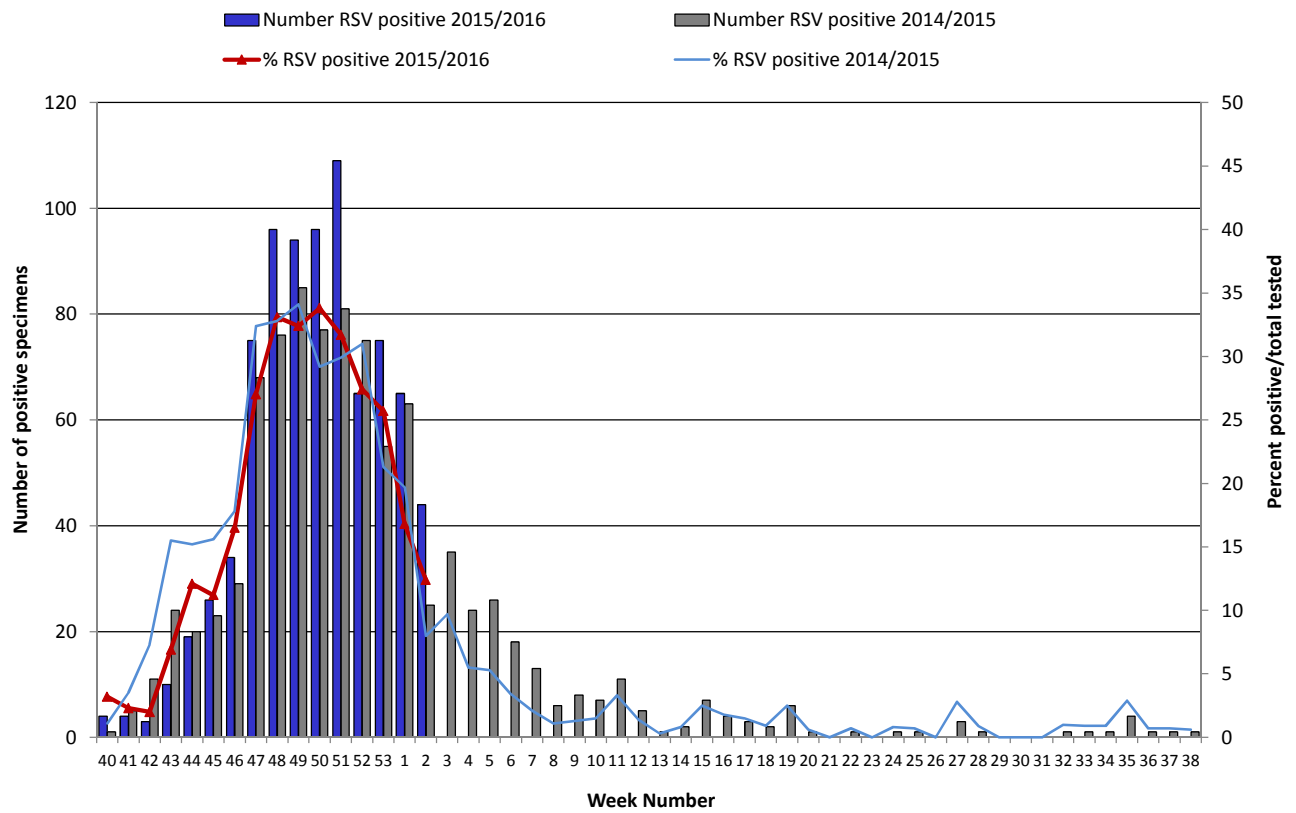


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL by week during the 2015/2016 season, compared to the 2014/2015 season. Source: NVRL.

Table 1: Number of sentinel and non-sentinel[†] respiratory specimens tested by the NVRL and positive influenza results, for week 2 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	
2 2016	Sentinel	63	36	57.1	18	0	0	18	18
	Non-sentinel	355	51	14.4	24	0	5	29	22
	Total	418	87	20.8	42	0	5	47	40
2015/2016	Sentinel	315	111	35.2	44	2	1	47	64
	Non-sentinel	3949	202	5.1	79	6	15	100	102
	Total	4264	313	7.3	123	8	16	147	166

Table 2: Number of non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 2 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
2 2016	Sentinel	63	2	3.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	4.8
	Non-sentinel	355	44	12.4	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3	10	2.8
	Total	418	46	11.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	13	3.1
2015/2016	Sentinel	315	21	6.7	2	0.6	6	1.9	1	0.3	0	0.0	0	0.0	9	2.9
	Non-sentinel	3949	819	20.7	30	0.8	62	1.6	21	0.5	27	0.7	0	0.0	98	2.5
	Total	4264	840	19.7	32	0.8	68	1.6	22	0.5	27	0.6	0	0.0	107	2.5

[†] 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 17, 2016 (week 2 2016). Localised influenza activity was reported in HSE-E, -M, -MW, -NE, -SE and -S and sporadic influenza activity was reported in HSE-NW and -W during week 2 2016 (figure 6).

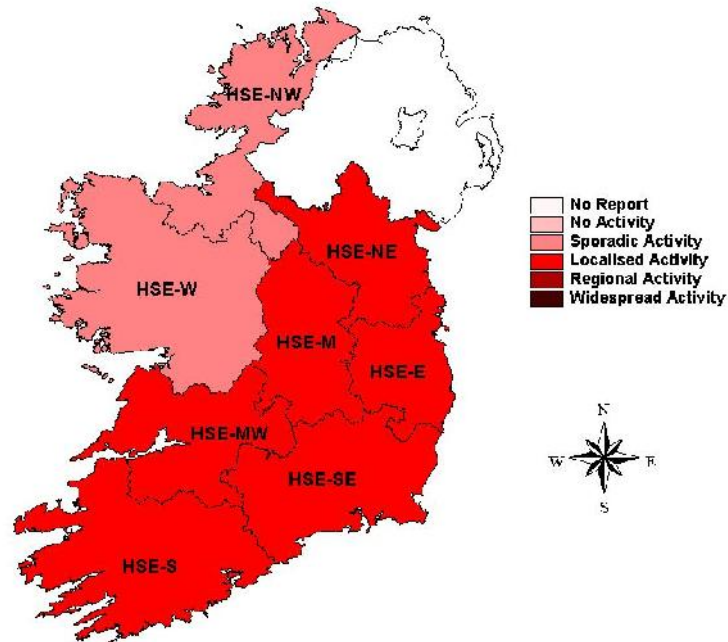


Figure 6: Map of provisional influenza activity by HSE-Area during influenza week 2 2016

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 remained at high levels during weeks 1 and 2 2016, however, decreased compared to recent weeks (figure 7). During weeks 1 and 2 2016, 351 and 370 respiratory admissions were reported from sentinel hospitals, respectively, compared to 471 during week 53 2015.

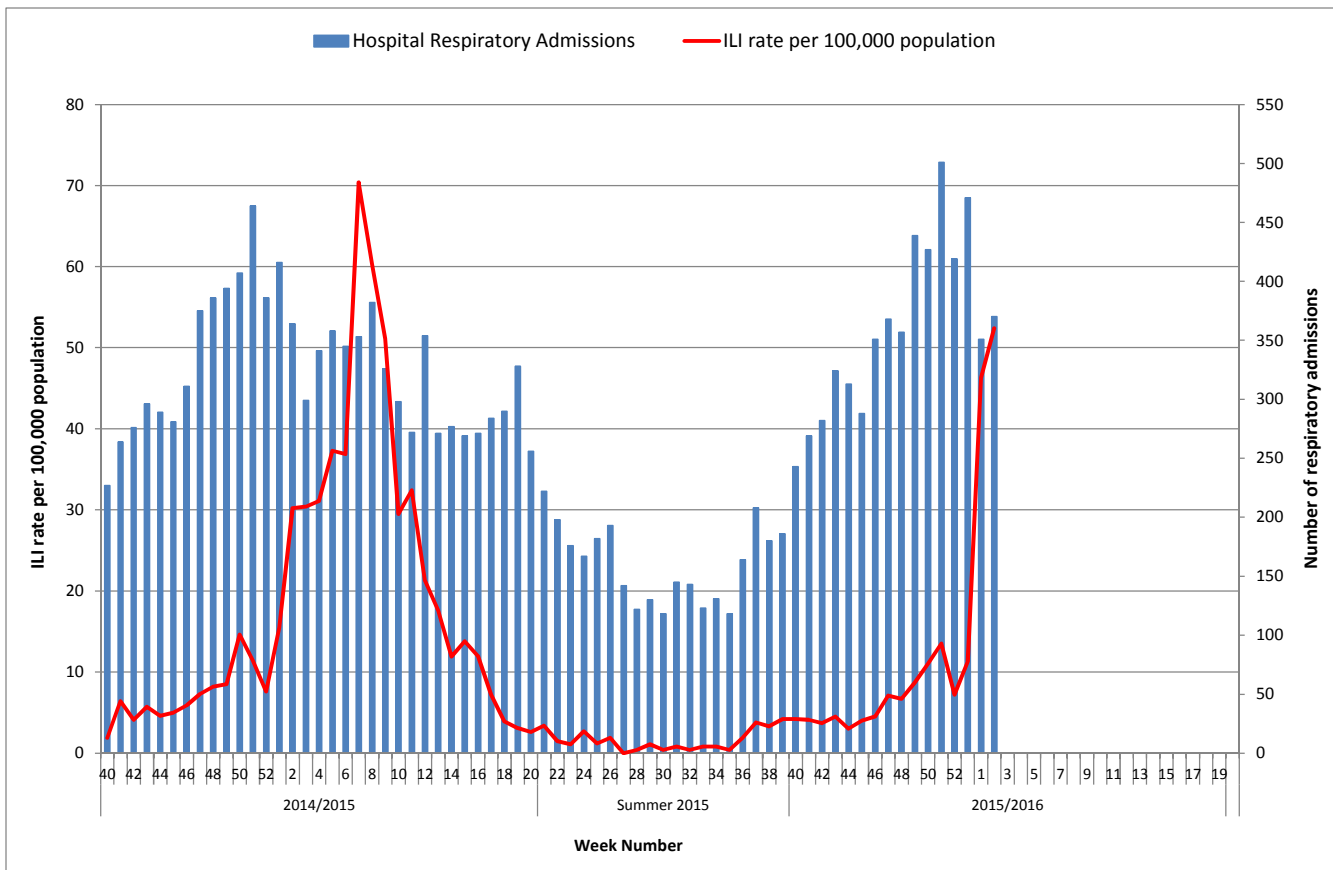


Figure 7: Number of respiratory admissions reported from sentinel hospitals and ILI sentinel GP consultation rate per 100,000 population by week and season. Source: Departments of Public Health - Sentinel Hospitals & ICGP.

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 2 2016 at 3.8%, compared to 4.0% during week 1 2016 (figure 8).

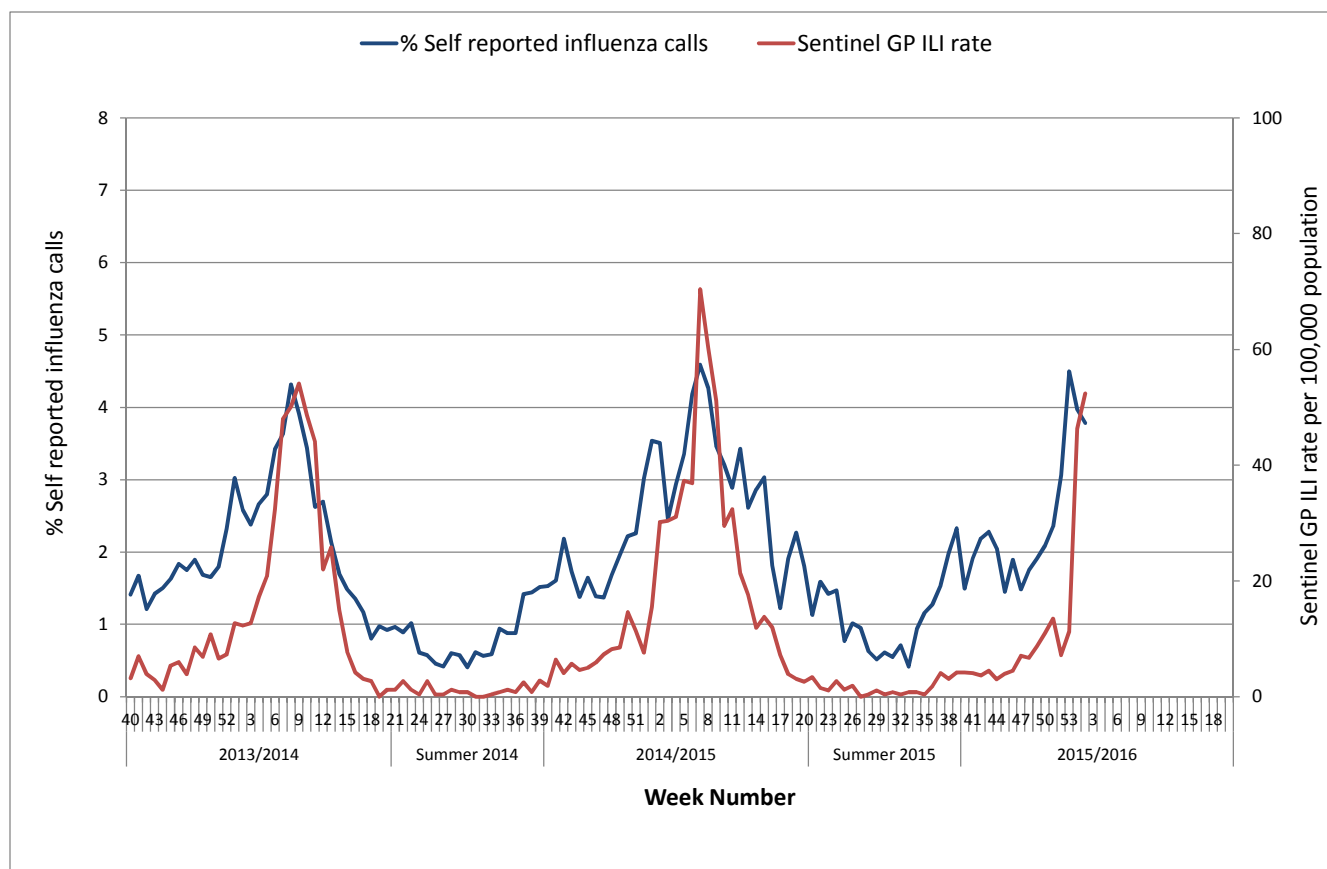


Figure 8: Self-reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and sentinel GP ILI consultation rate per 100,000 population by week and season. *Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.*

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 17, 2016, with 182 cases notified, compared to 214 during the previous week. Influenza notifications increased during the week ending January 17, 2016, with 147 cases notified, compared to 86 during the previous week.

6. Influenza Hospitalisations

One hundred and thirty seven confirmed influenza hospitalised cases were notified to HPSC for the 2015/2016 season to date: 46 associated with A(H1)pdm09, 3 with influenza A(H3), 22 with influenza A (not subtyped) and 66 with influenza B. The highest age specific rates were in those aged less than one year (table 3). The median age of hospitalised cases for the season to date is 25 years (ranging from 0-85 years).

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.

Three new confirmed influenza cases were admitted to critical care units and reported to HPSC during the week ending January 17, 2016. For the 2015/2016 season to date, 16 confirmed influenza cases (seven associated with influenza A(H1N1)pdm09, six 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 58 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	9	12.4	2	2.8
1-4	23	8.1	1	0.4
5-14	20	3.2	0	0.0
15-24	15	2.6	0	0.0
25-34	24	3.2	1	0.1
35-44	10	1.3	1	0.1
45-54	5	0.9	3	0.5
55-64	11	2.4	4	0.9
≥65	20	3.7	4	0.7
Total	137	3.0	16	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/>

- Five confirmed influenza cases (two associated with influenza A(H1N1)pdm09, two 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

Eight acute respiratory/influenza outbreaks were reported to HPSC during week 2 2016. One influenza A(H1N1)pdm09 outbreak in an acute hospital setting in HSE-M was reported during this period. Three RSV outbreaks (one in HSE-E and two in HSE-S), two hMPV outbreaks (one in HSE-E and one in HSE-SE) and two acute respiratory outbreaks associated with unknown pathogens (one in HSE-S and one in HSE-SE) were reported in community hospitals/residential care facilities during week 2 2016. To date this season (up to the week ending January 17, 2016), 18 acute respiratory/influenza outbreaks have been reported to HPSC: three outbreaks associated with influenza (one with influenza A and B, one with influenza B and one with influenza A(H1N1)pdm09), six with RSV, two with parainfluenza type 1, two with hMPV and five with unknown pathogens. Fifteen outbreaks were in community hospital/residential care facilities, two were in acute hospital settings and one was in a school. Family outbreaks are not included in this report. *All outbreaks notified to HPSC are reported in the [HPSC Outbreak Weekly Report](#).*

10. International Summary

As of January 11 2016, globally, influenza activity was increasing in some temperate countries of the Northern Hemisphere, but in general remained low. High levels of influenza activity were reported from some countries in Western Asia.

In Europe, influenza activity continued at low levels, except in some countries in Northern and Eastern Europe where an increase in influenza activity was observed. The vast majority of subtyped influenza A viruses and B viruses ascribed to a lineage were A(H1N1)pdm09 and B/Victoria, respectively. The predominance of influenza A(H1N1)pdm09, coincides with reports of severe disease and deaths associated with this virus in Armenia, Israel, Turkey and Ukraine. The majority of influenza viruses characterised to date this season are genetically similar to the strains recommended for inclusion in the 2015/2016 influenza trivalent and quadrivalent vaccines for the northern hemisphere. 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

Acknowledgements

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