Influenza Surveillance in Ireland – Weekly Report

Influenza Weeks 51 & 52 2019 (16th – 29th December 2019)

Data for week 52 2019 should be interpreted with caution, as reporting levels are affected by the Christmas holiday period.

Summary

Influenza activity was high in Ireland during weeks 51 and 52 2019 (week ending 29th December 2019). Influenza A(H3N2) is the dominant circulating virus to date this season. Confirmed influenza hospitalisations continue to increase. It is recommended that antivirals be considered for the treatment and prophylaxis of influenza in at-risk groups.

- Influenza-like illness (ILI): The sentinel GP influenza-like illness (ILI) consultation rate was 103.0 per 100,000 population in week 51 and 80.5 per 100,000 in week 52 2019. This compares to the updated rate of 53.3 per 100,000 population reported during week 50 2019.
  - ILI rates were above the high Irish ILI threshold (86.5/100,000 population) in week 51 and above medium in week 52.
  - ILI age specific rates increased in all age groups, but particularly in children aged under 15 years.
- GP Out of Hours: There were no data available on influenza–related calls to GP Out-of-Hours services during week 51 or week 52 2019.
- National Virus Reference Laboratory (NVRL):
  - Influenza detections remained elevated with 408 (37.0%) and 273 (40.3%) influenza positive specimens reported respectively during week 51 and 52. This compares to an updated figure of 316 (38.1%) detections during week 50 2019.
  - Respiratory syncytial virus (RSV) positivity decreased in weeks 51 & 52 2019 and RSV activity is now at medium levels nationally.
  - Sporadic detections of parainfluenza virus, adenovirus and human metapneumovirus (hMPV) have also been reported to date this season.
- Hospitalisations: During weeks 51 & 52 2019, 746 confirmed influenza hospitalised cases were notified to HPSC. During the 2019/2020 influenza season to date, 1,373 confirmed influenza hospitalised cases have been notified to HPSC.
- Critical care admissions: Seventeen confirmed influenza cases were admitted to critical care units and reported to HPSC during weeks 51 & 52 2019. Forty-five confirmed influenza cases have been reported as admitted to ICU in the 2019/2020 season to date.
- Mortality: Nine influenza-associated deaths were reported during weeks 51 & 52 2019. Twenty-two influenza-associated deaths have been reported to HPSC during the 2019/2020 season to date.
- Outbreaks: Twenty-five influenza outbreaks, six acute respiratory infection outbreaks and three RSV outbreaks were reported to HPSC during weeks 51 & 52 2019.
- International: Influenza activity is increasing in the European Region, although many countries still reported influenza activity rates at baseline or low levels in week 51 2019.

1. GP sentinel surveillance system - Clinical Data

Data for weeks 51 and 52 should be interpreted with caution as reporting levels are affected by the Christmas holiday period.

- During weeks 51 & 52 2019, 283 and 200 influenza-like illness (ILI) cases were reported by sentinel GPs, respectively. These correspond to ILI consultation rates of 103.0 per 100,000 population for week 51 and 80.5 per 100,000 population for week 52. This compares to the updated rate of 53.3 per 100,000 reported for week 50 2019.
- The ILI rate for week 51 2019 is above the high Irish ILI threshold (86.5/100,000 population) (figure 1) while the ILI rate for week 52 is above the medium Irish ILI threshold.
- Of the 59 sentinel GP practices, 54 practices reported data in week 51 while 46 practices reported data during week 52.
- ILI age specific rates increased in all age groups, but were particularly high in children aged under 15 years (figure 2).
- HPSC in consultation with the European Centre for Disease Prevention and Control (ECDC) has revised the Irish baseline ILI threshold for the 2019/2020 influenza season to 18.1 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 (18.1/100,000 population), medium (57.5/100,000 population) and high (86.5/100,000 population). Intensity ILI thresholds are shown in figure 1.

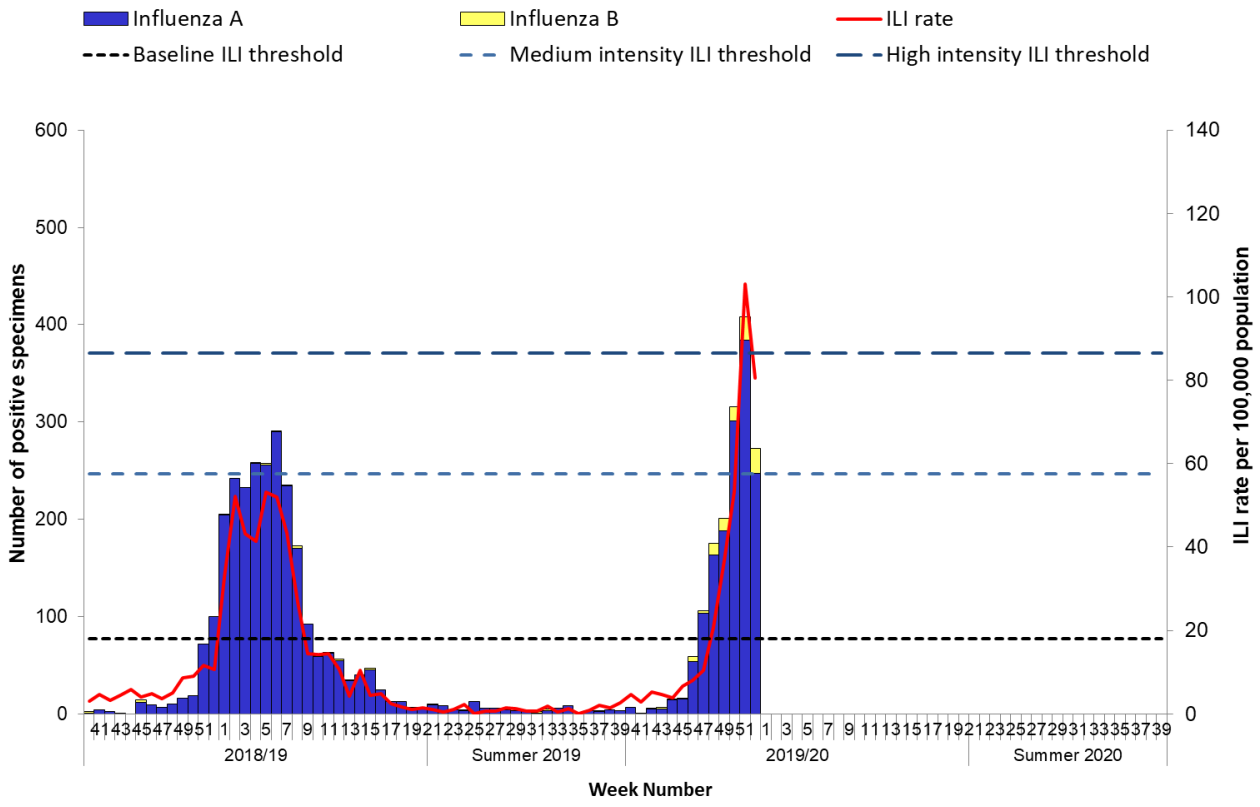


Figure 1: ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold, medium and high intensity ILI thresholds[*] and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season. *Source: ICGP and NVRL*

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

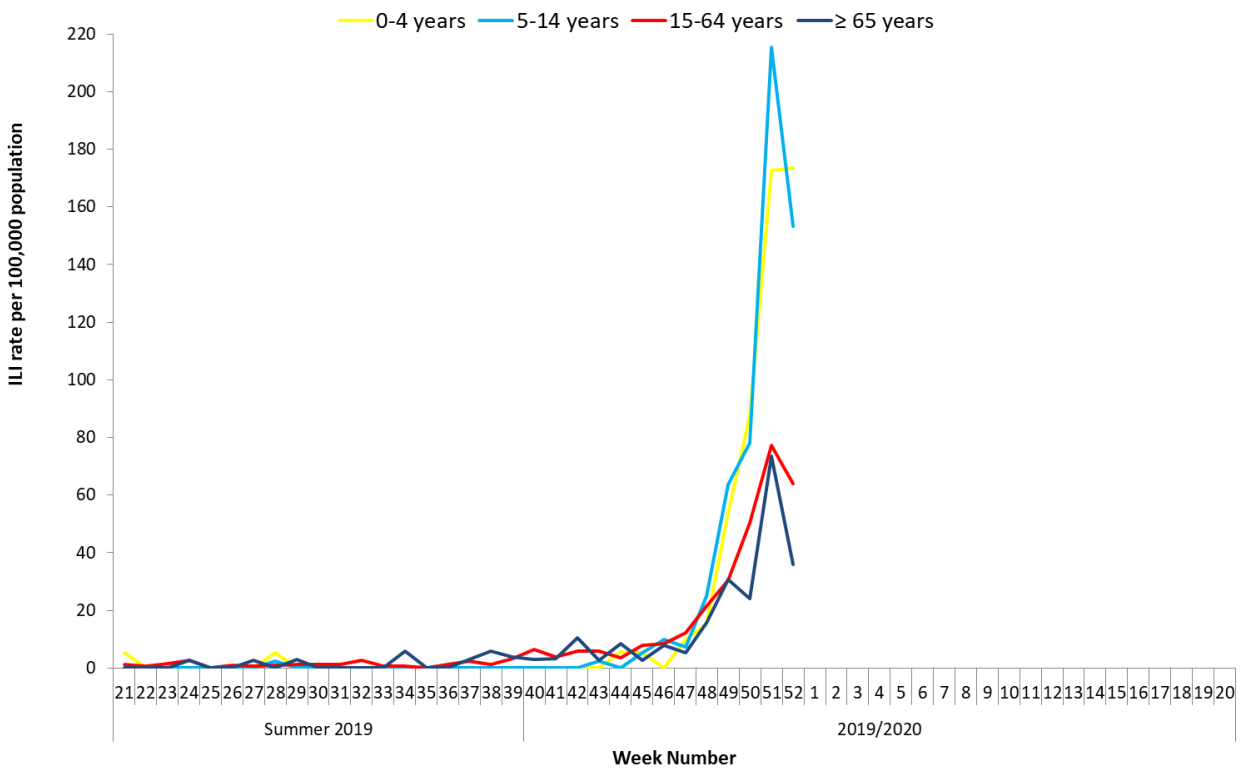


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2019 and the 2019/2020 influenza season to date. *Source: ICGP.*

2. Influenza and Other Respiratory Virus Detections - NVRL

The data reported in this section for the 2019/2020 influenza season refer to sentinel specimens routinely tested for influenza and respiratory syncytial virus (RSV) 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) (figure 3, 4, & 5 and tables 1, 2 & 3).

- During week 51 and 52, influenza detections remained elevated with 408 (37.0%) and 273 (40.3%) influenza positive specimens reported respectively by the NVRL from sentinel and non-sentinel sources, compared to an updated figure of 316 (38.1%) detections during week 50 2019.
- Data from the NVRL for weeks 51 & 52 2019 and the 2019/2020 season to date are detailed in tables 1, 2 and 3.
- Respiratory syncytial virus (RSV) positivity decreased in weeks 51 & 52 2019 and RSV activity is now at medium levels nationally (figure 5).
- Sporadic detections of parainfluenza virus, adenovirus and human metapneumovirus (hMPV) have been reported to date this season (table 3).
- Influenza A(H3) is the dominant circulating virus this season to date, with low numbers of A(H1N1)pdm09 and influenza B also being reported (figures 3 & 4).
- Coinfections of all seasonal respiratory viruses were reported during weeks 51 and 52 2019.

Genetic Characterisation of Influenza Viruses– Early season 2019/20

A selection of influenza positive specimens between week 40 and week 47, 2019 (n=43) was chosen for further molecular characterisation. The full hemagglutinin genes of circulating influenza viruses were sequenced from original clinical specimens. Sequences were compared to a bank of reference sequences recommended in the ECDC/TESSY Technical Note: Influenza virus characterisation guidelines for the northern hemisphere influenza season 2019-2020.

Influenza A(H1) pdm 09 (5)

Of the 5 Influenza (H1) pdm 09 viruses characterised, 4 (80%) fell within A(H1) pdm 09 6B.1A5A group represented by A/Norway/3433/2018. This virus is the predominant A(H1) pdm 09 group reported in Europe at the moment. One of the five viruses fell within the A(H1) pdm 09 6B.1A5B group represented by A/Switzerland/3330/2018. The current Northern Hemisphere A(H1) pdm vaccine component is clade 6B.1A1, represented by A/Brisbane/02/2018 (H1N1)pdm-09 virus. However, it is anticipated that the vaccine virus will be effective based upon heamagglutination Inhibition assays conducted with post-infection ferret antisera raised against the vaccine virus.

Influenza A(H3N2) (33)

Of the 33 Influenza (H3) viruses characterised, 25 (76%) fell within the current Northern Hemisphere H3 vaccine component clade 3C.3a1, represented by A/Kansas/14/2017. However, 8 subclade 3C.2a1b were also detected. Five (62.5%) were classified as 3C.2a1 + T131K mutation, represented by A/South Australia/34/2009 and this virus is the predominant 3C.2a1b virus reported in Europe at the moment. In addition, 3 viruses were classified as subclade 3c.2a1b + T135K mutation. Two viruses were further characterised based upon the presence of additional mutations into the 3C.2A1B + T135K-A cluster represented by A/La Rioja/ 2202/2018 and one virus from the recently emerged 3c.2a1b + T135K –B cluster characterised by A/Hong Kong/2675/2019.

Influenza B (5)

Five influenza B viruses were characterised. All five were Influenza B Victoria lineage 1A with the triple amino acid deletion (Δ 162-164 B subgroup) represented by B/Washington/02/2019. This is the predominant influenza B reported in Europe and is not included in the current Northern Hemisphere vaccine. The World Health Organization, in the "Recommended composition of influenza virus vaccine for use in the 2019-2020 northern hemisphere season" stated that post vaccination sera collected from humans vaccinated with the current vaccine component B/Colorado/06/2017 like-virus (B/Victoria/2/87 lineage) (clade 1A_Δ2) reacted similarly with representative B/Victoria lineage virus with three, two or no amino acid deletions

Further genetic and antigenic testing is ongoing at the National Virus Reference Laboratory.

See ECDC influenza surveillance reports for further information.

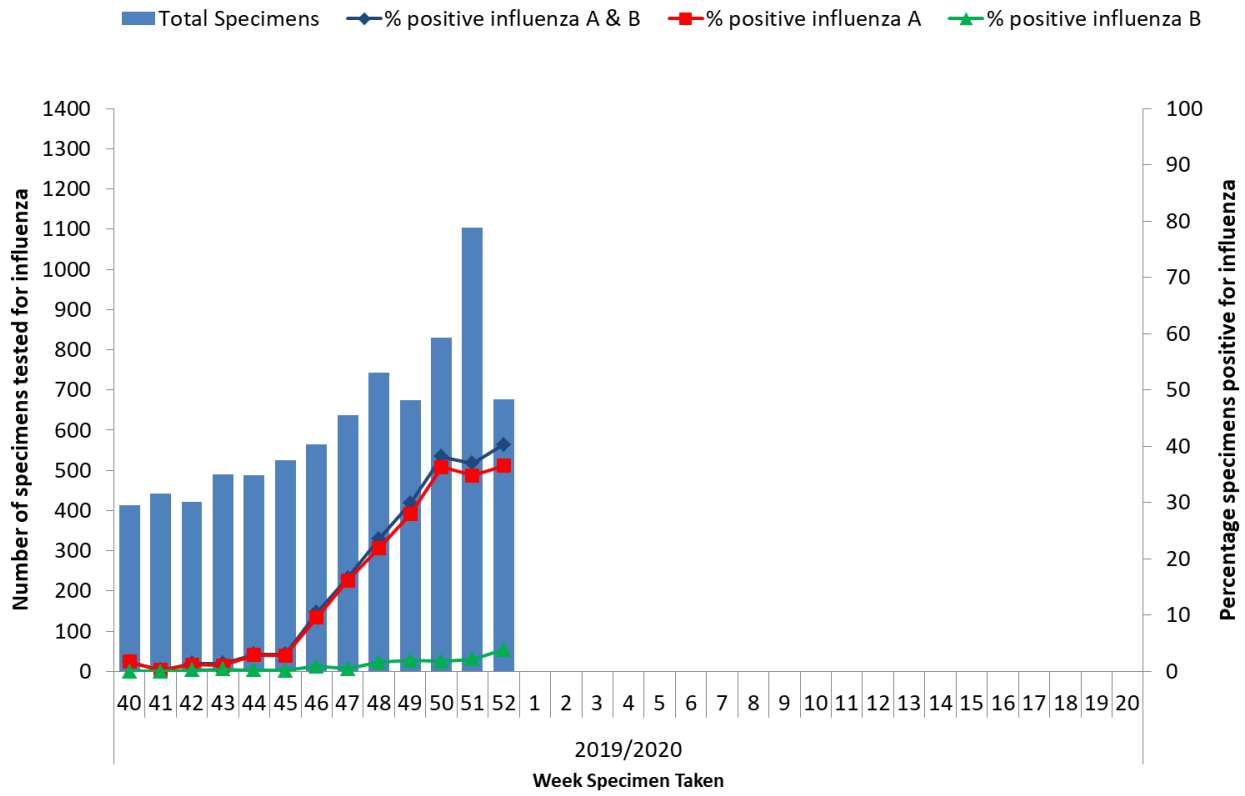


Figure 3: Number of specimens (from sentinel and non-sentinel sources combined) tested by the NVRL for influenza and percentage influenza positive by week for the 2019/2020 influenza season. *Source: NVRL.*

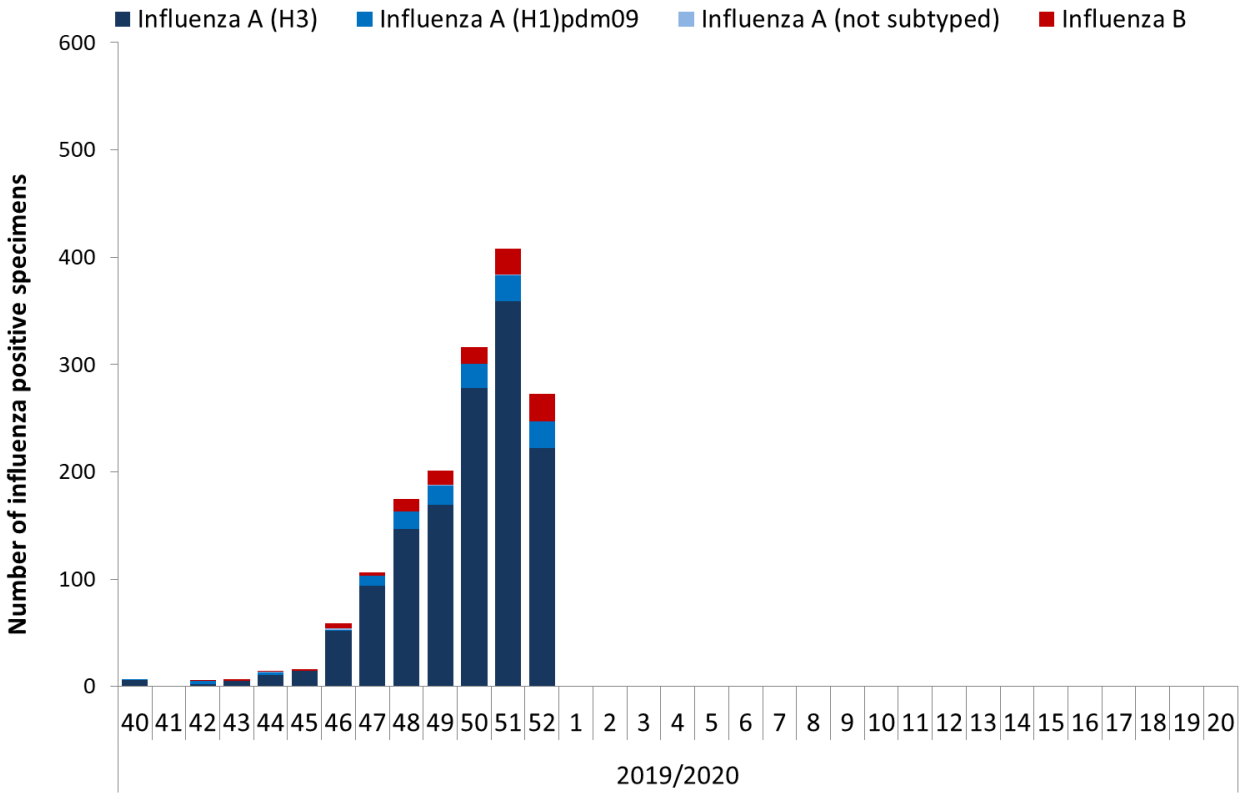


Figure 4: Number of positive influenza specimens (from sentinel and non-sentinel sources combined) by influenza type/subtype tested by the NVRL, by week for the 2019/2020 influenza season. *Source: NVRL.*

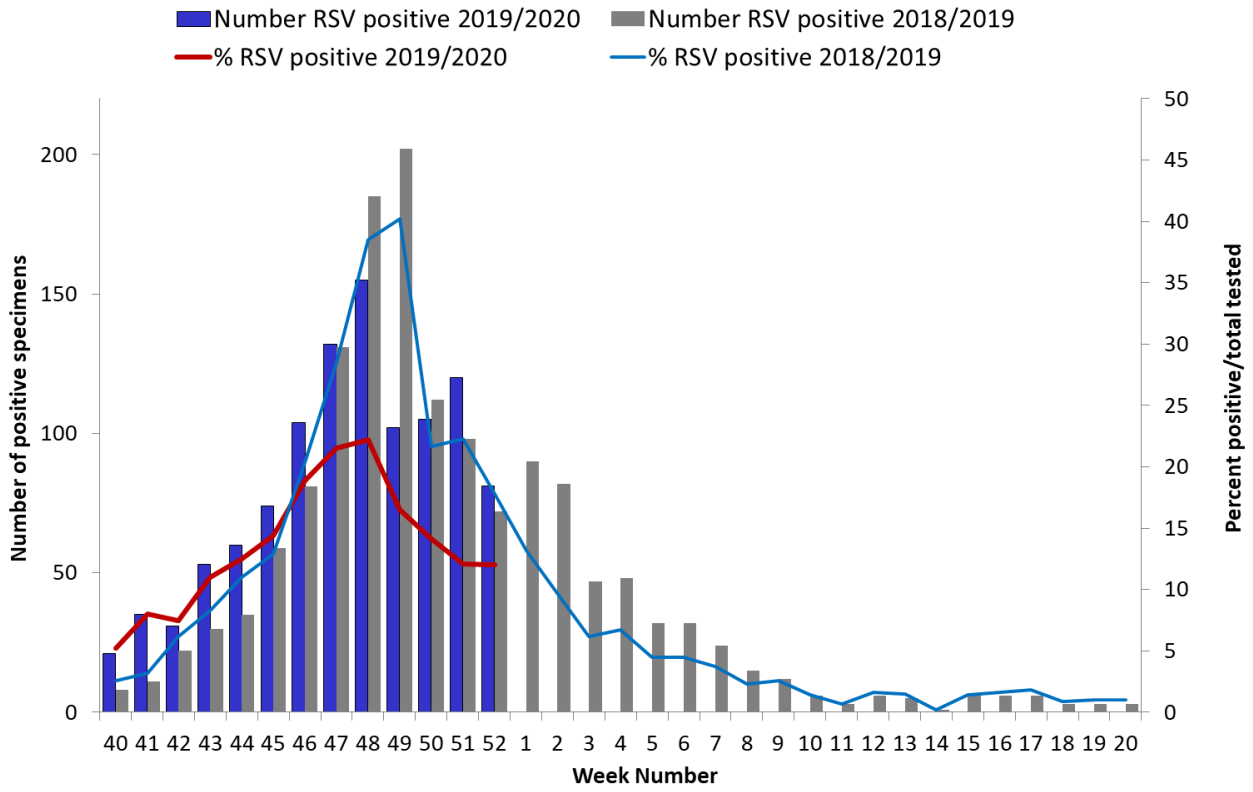


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2019/2020 season, compared to the 2018/2019 season. *Source: NVRL.*

Table 1: Number of sentinel* and non-sentinel† respiratory specimens tested by the NVRL and positive influenza results, for week 51 and 52 2019. *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	B (unspecified)	B Victoria lineage	B Yamagata lineage	Total influenza B
51 2019	Sentinel	110	70	63.6	5	59	1	65	0	5	0	5
	Non-sentinel	994	338	34.0	19	300	0	319	19	0	0	19
	Total	**1104**	**408**	**37.0**	**24**	**359**	**1**	**384**	**19**	**5**	**0**	**24**
52 2019	Sentinel	3	0	0.0	0	0	0	0	0	0	0	0
	Non-sentinel	674	273	40.5	25	222	0	247	26	0	0	26
	Total	**677**	**273**	**40.3**	**25**	**222**	**0**	**247**	**26**	**0**	**0**	**26**
2019/2020	Sentinel	390	199	51.0	15	161	2	178	3	17	1	21
	Non-sentinel	7620	1391	18.3	107	1200	2	1309	82	0	0	82
	Total	**8010**	**1590**	**19.9**	**122**	**1361**	**4**	**1487**	**85**	**17**	**1**	**103**

Table 2: Number of sentinel* and non-sentinel respiratory specimens tested by the NVRL and positive respiratory virus results, for week 51 and 52 2019. *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
51 2019	Sentinel	110	6	5.5	-	-	-	-	-	-	-	-	-	-	-	-
	Non-sentinel	994	120	12.1	5	0.5	4	0.4	7	0.7	0	0.0	2	0.2	36	3.6
	Total	**1104**	**126**	**11.4**	**5**	**0.5**	**4**	**0.4**	**7**	**0.7**	**0**	**0.0**	**2**	**0.2**	**36**	**3.6**
52 2019	Sentinel	3	0	0.0	-	-	-	-	-	-	-	-	-	-	-	-
	Non-sentinel	674	81	12.0	6	0.9	4	0.6	4	0.6	0	0.0	0	0.0	29	4.3
	Total	**677**	**81**	**12.0**	**6**	**0.9**	**4**	**0.6**	**4**	**0.6**	**0**	**0.0**	**0**	**0.0**	**29**	**4.3**
2019/2020	Sentinel	390	18	4.6	-	-	-	-	-	-	-	-	-	-	-	-
	Non-sentinel	7620	1073	14.1	135	1.8	197	2.6	98	1.3	19	0.2	22	0.3	283	3.7
	Total	**8010**	**1091**	**13.6**	**135**	**1.8**	**197**	**2.6**	**98**	**1.3**	**19**	**0.2**	**22**	**0.3**	**283**	**3.7**

*Sentinel specimens are only tested for influenza and RSV

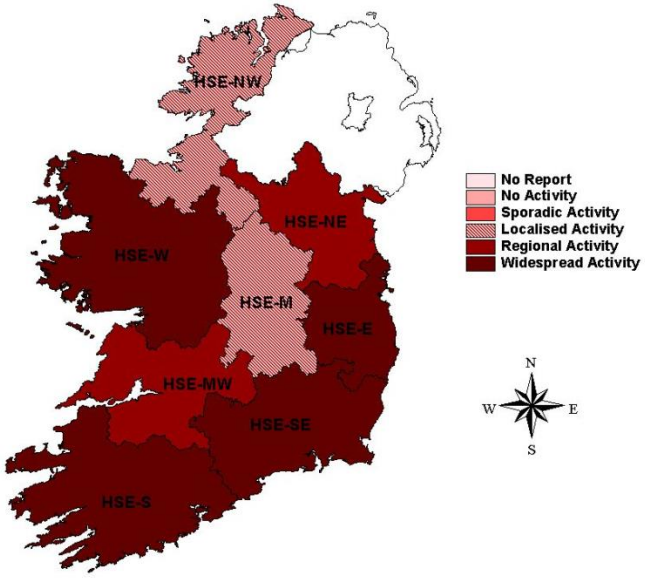
† Please note that non-sentinel specimens relate to specimens referred to the NVRL (other than sentinel specimens) and may include more than one specimen from each case.

3. Regional Influenza Activity by HSE-Area

Influenza activity is based on sentinel GP ILI consultation rates, laboratory data and outbreaks.

The geographical spread of influenza/ILI during week 51 and week 52 2019 is shown in figure 6. During week 51, widespread influenza activity was reported in HSE-E, -S, -SE and –W while regional influenza activity was reported in HSE-MW and -N. The remaining HSE areas, HSE-M and –NW, reported localised activity. During week 52, widespread influenza activity was reported in HSE-E while localised influenza activity was reported in HSE-M. The remaining HSE areas reported regional activity.

Week 51 2019



Week 52 2019

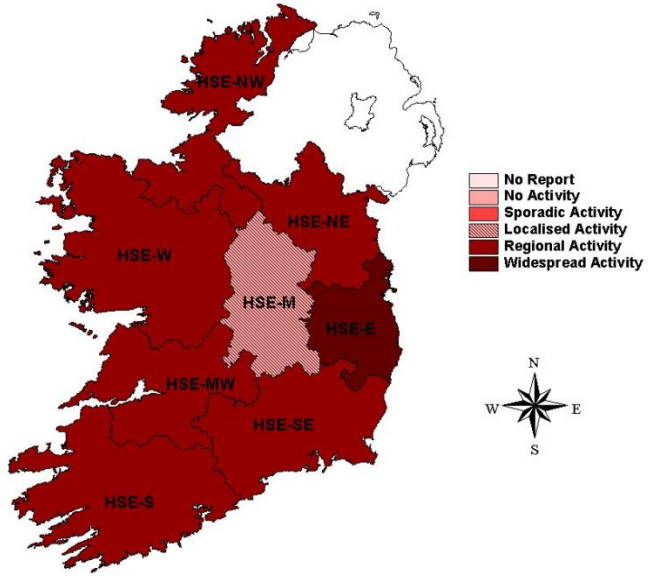


Figure 6: Map of provisional influenza activity by HSE-Area during influenza week 51 and week 52 2019

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.

Respiratory admissions reported from a network of sentinel hospitals were at high levels, at 655 admissions during week 51 and 633 admissions during week 52, 2019 (figure 7). This was an increase compared to the 566 respiratory admissions reported during week 50 2019. Seven of the eight hospitals reported data for week 51 and week 52.

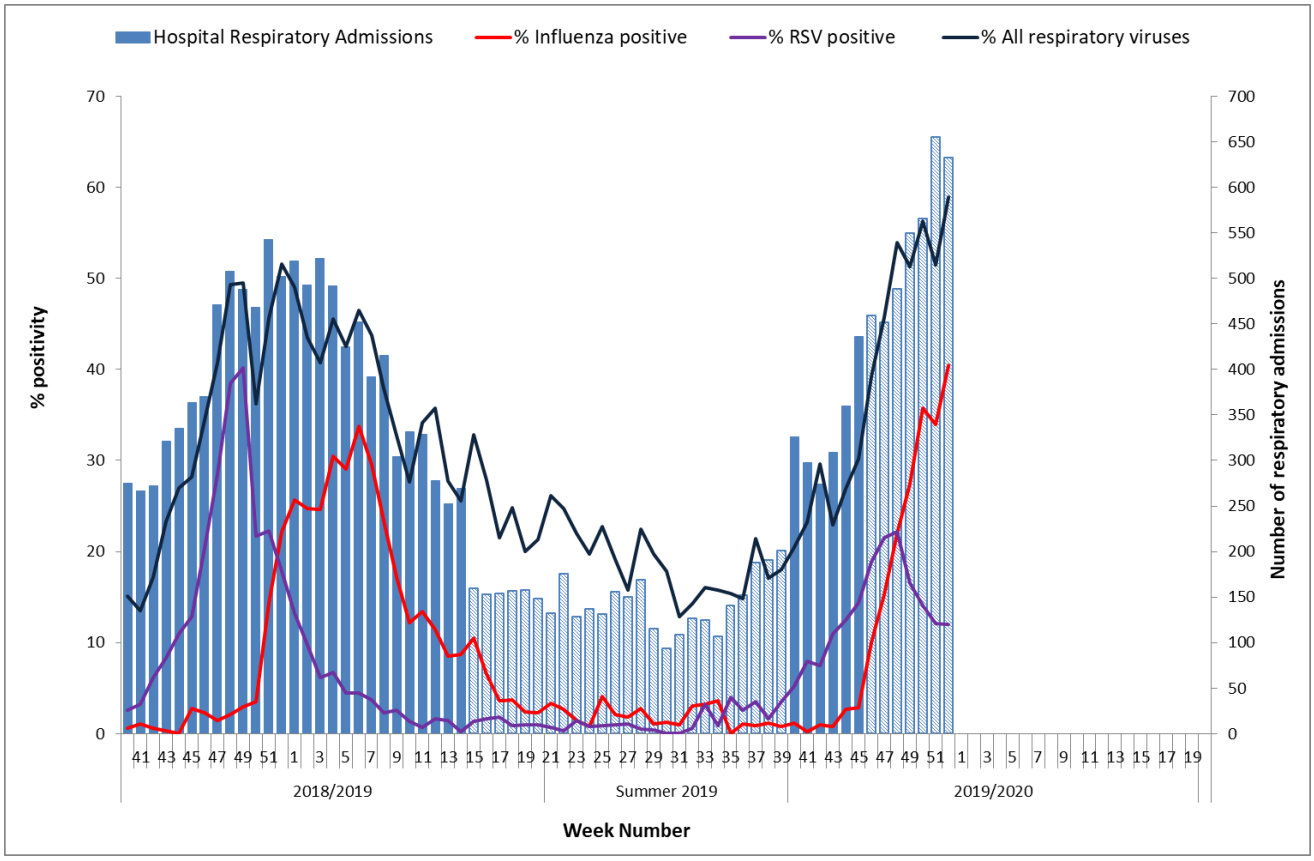


Figure 7: Number of respiratory admissions reported from the sentinel hospital network and % positivity for influenza, RSV and all seasonal respiratory viruses tested* by the NVRL by week and season. *Source: Departments of Public Health - Sentinel Hospitals & NVRL. *All seasonal respiratory viruses tested refer to non-sentinel respiratory specimens routinely tested by the NVRL including influenza, RSV, adenovirus, parainfluenza viruses and human metapneumovirus (hMPV). Weeks with missing data are represented by the hatched bar.*

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.

There were no data available on influenza–related calls to GP Out-of-Hours services during week 51 or week 52 2019. Figure 8 shows the latest available data (up to week 50 2019).

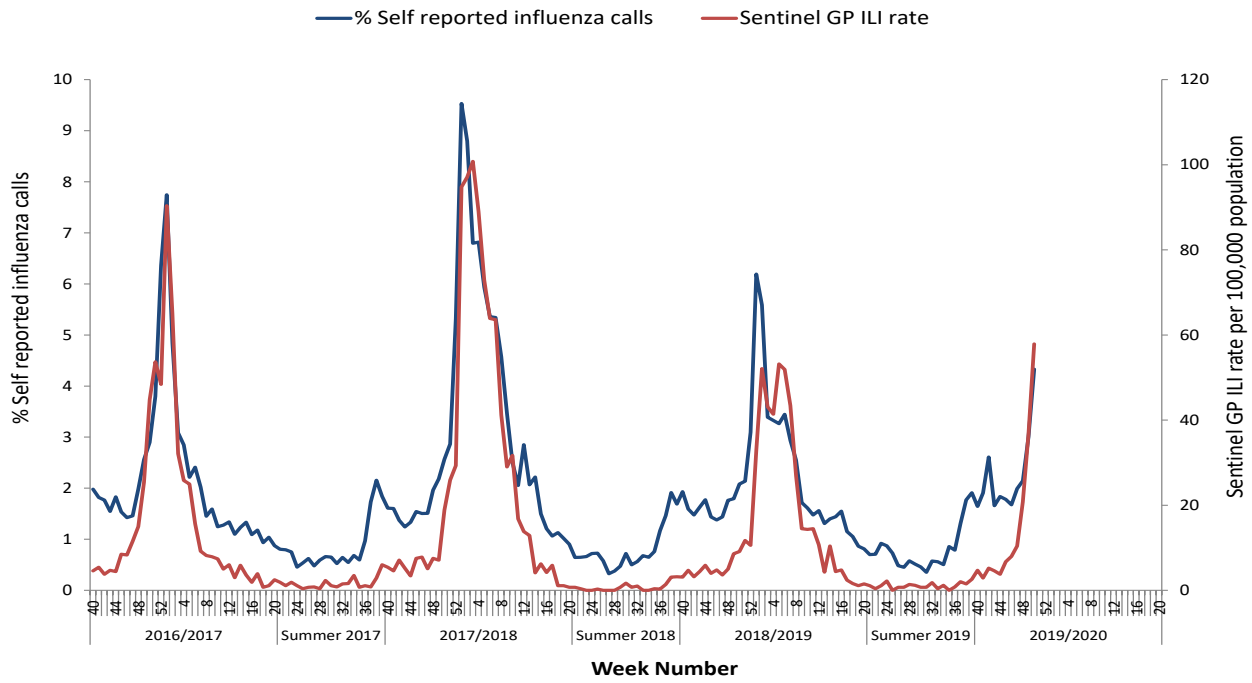


Figure 8: Self-reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and sentinel GP ILI consultation rate per 100,000 population by week and season. *Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP. There were no data available on influenza–related calls to GP Out-of-Hours services during week 51 or week 52 2019.*

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.

- Influenza notifications increased to 1,005 during week 51 2019, compared to 737 in week 50. Notifications decreased to 867 in 52 2019, but this is likely to be due to changes in reporting levels over the Christmas holiday period. Influenza is now at high levels in Ireland.
- Of the 1,872 cases notified during weeks 51 & 52, 331 were due to influenza A(H3N2), 33 were due to influenza A(H1N1)pdm09, 1,401 were due to influenza A (not subtyped), 101 were due to influenza B and the influenza type was not reported for the remaining 6 cases.
- To date this season, 3,378 confirmed cases of influenza have been notified to HPSC; 93% have been due to influenza A (n=3,151) and 7% due to influenza B (n=220). The influenza type was not reported for the remaining 7 cases (0.2%). Of the 861 influenza A viruses subtyped, 91% (n=783) were A(H3N2) and 9% (n=91) were A(H1N1)pdm09.
- During weeks 51 & 52, 386 and 136 RSV cases were notified, respectively. RSV is now decreasing in Ireland, but remains at medium levels.

6. Influenza Hospitalisations

- 746 confirmed influenza hospitalised cases were notified to HPSC during weeks 51 & 52 2019 (380 in week 51 and 366 in week 52). Of these, 66 were due to influenza A(H3N2), 7 due to influenza A(H1N1)pdm09, 638 due to influenza A (not subtyped), 30 due to influenza B and the influenza type was not reported for the remaining 5 cases.
- For the 2019/2020 season to date, 1,373 confirmed influenza hospitalised cases have been notified to HPSC; 266 were due to influenza A(H3N2), 17 due to influenza A(H1N1)pdm09, 1,016 due to influenza A (not subtyped) and 68 due to influenza B. The influenza type was not reported for the remaining six cases.
- Age specific rates for hospitalised influenza cases are reported in table 4, with the highest rates reported in children aged under 5 years and in adults aged 65 years and older.

7. Critical Care Surveillance

The Intensive Care Society of Ireland (ICSI) and the HSE Critical Care Programme are continuing with the enhanced surveillance system set up during the 2009 pandemic, on all critical care patients with confirmed influenza. HPSC processes and reports on this information on behalf of the regional Directors of Public Health/Medical Officers of Health.

- Seventeen confirmed influenza cases were admitted to critical care and reported to HPSC during weeks 51 & 52 2019.
- During the 2019/2020 season to date, 45 influenza cases have been reported to HPSC as having been admitted to ICU. Sixteen ICU cases were due to influenza A (H3N2), two were due to A(H1N1)pdm09 and 27 were due to influenza A (not subtyped).
- Sixty percent of the cases admitted to ICU were aged 65 years and older. The age specific rates for admission to critical care are shown in table 4. These rates are based on small numbers.

Table 4: Age specific rates for confirmed influenza cases hospitalised and admitted to critical care during the 2019/2020 influenza season to date. Age specific rates are based on the 2016 CSO census.

	Hospitalised		Admitted to ICU	
Age (years)	Number	Age specific rate per 100,000 population	Number	Age specific rate per 100,000 population
<1	62	99.6	0	0
1-4	186	69.1	1	0.4
5-14	216	32	2	0.3
15-24	75	13	3	0.5
25-34	64	9.7	2	0.3
35-44	60	8	3	0.4
45-54	59	9.4	2	0.3
55-64	94	18.5	5	1
≥65	557	87.4	27	**4.2**
Total	**1,373**	**28.8**	**45**	**0.9**

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/

- Twenty-two influenza-associated deaths were reported to HPSC to date this season. Seventeen of the deaths occurred in adults aged 65 years and older, two occurred in children aged less than 15 years and three were in adults aged between 35 and 64 years.
- No excess all-cause mortality was reported in Ireland during weeks 51 & 52 after correcting GRO data for reporting delays with the standardised EuroMOMO algorithm.

9. Outbreak Surveillance

- Twenty-five influenza outbreaks, six acute respiratory infection outbreaks and three RSV outbreaks were reported to HPSC during weeks 51 and 52 2019.
- Influenza and acute respiratory outbreaks reported during the influenza 2019/2020 season to date are summarised by HSE area and by pathogen detected in tables 5 and 6.

Table 5: Summary of respiratory outbreaks by HSE area and disease during 2019/2020 season *Source: CIDR*

HSE area	Influenza	Respiratory syncytial virus infection	Acute respiratory infection	Total
HSE-E	12	2	5	19
HSE-M	3		1	4
HSE-MW	2	1		3
HSE-NE		1		1
HSE-NW	2	1	2	5
HSE-SE	10		6	16
HSE-S	2		2	4
HSE-W	10		3	13
Total	**41**	**5**	**19**	**65**

Table 6: Summary of respiratory outbreaks by outbreak location and pathogen during 2019/2020 season *Source: CIDR*

Outbreak location	Organism/ pathogen	Total
Childcare facility	possible RSV	1
	RSV	1
Childcare facility total		**2**
Community hospital/Long-stay unit	Coronavirus	1
	Influenza	3
	Influenza A	2
	Influenza A(H3)	1
	RSV	1
	RSV B	1
	(blank)	1
Community hospital/Long-stay unit		**10**
Hospital	Influenza	4
	Influenza A	5
	Influenza A & B	1
	Influenza A(H3)	1
	Influenza B	1
	RSV	1
	(blank)	1
Hospital total		**14**
Nursing home	Coronavirus and Rhinovirus	1
	Human metapneumovirus and rhinovirus	1
	Influenza	5
	Influenza A	11
	Influenza A(H3)	2
	Rhino/ enterovirus	1
	(blank)	5
Nursing home total		**26**
Residential institution	Rhino/enterovirus	1
	RSV	1
	(blank)	3
Residential institution total		**5**
School	ILI	4
	Influenza A	2
	(blank)	2
School total		**8**
Total		**65**

10. International Summary

In the temperate zone of the northern hemisphere, respiratory illness indicators and influenza activity continued to increase in most countries. Influenza activity is increasing in the European Region, although many countries still reported influenza activity rates at baseline or low levels in week 51 2019. Influenza A viruses are dominating across the European Region, although some countries have reported influenza B virus dominance or co-dominance of influenza A and B.

Worldwide, seasonal influenza A(H3N2) viruses accounted for the majority of detections. National Influenza Centres (NICs) and other national influenza laboratories from 112 countries, areas or territories reported data to FluNet for the time period from 25th November 2019 to 8th December 2019. The WHO GISRS laboratories tested more than 86,210 specimens during that time period. 9,438 were positive for influenza viruses, of which 7,067 (75%) were typed as influenza A and 2,371 (25%) as influenza B. Of the sub-typed influenza A viruses, 2,809 (70%) were influenza A(H3N2) and 1,216 (30%) were influenza A(H1N1)pdm09. Of the characterized B viruses, 458 (95%) belonged to the B-Victoria lineage and 25 (5%) to the B-Yamagata lineage.

Data from the 21 countries or regions that reported to the EuroMOMO project up to week 50/2019 indicated that all-cause mortality was at expected levels for this time of the year.

A joint ECDC and WHO Regional Office for Europe regional early situation assessment for the Influenza season 2019–2020 is available at influenza-situation-assessment-18-December-2019.pdf

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

Ireland has changed from using trivalent vaccine to using quadrivalent vaccine for the 2019/2020 influenza season. Quadrivalent vaccines include a 2nd influenza B virus in addition to the 2 influenza A viruses found in trivalent vaccines.

The WHO vaccine strain selection committee recommend that quadrivalent vaccines for use in the 2019/2020 northern hemisphere influenza season contain the following:

- an A/Brisbane/02/2018 (H1N1)pdm09-like virus;
- an A/Kansas/14/2017 (H3N2)-like virus;
- a B/Colorado/06/2017-like virus (B/Victoria/2/87 lineage); and
- a B/Phuket/3073/2013-like virus (B/Yamagata/16/88 lineage).

It is recommended that the influenza B virus component of trivalent vaccines for use in the 2019-2020 northern hemisphere influenza season be a B/Colorado/06/2017-like virus.
https://www.who.int/influenza/vaccines/virus/recommendations/201902_recommendation.pdf
https://www.who.int/influenza/vaccines/virus/recommendations/201902_recommendation_addendum.pdf

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

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