

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 10 2020 (2nd March – 08th March 2020)



 **Intensive Care Society of Ireland**

Summary

Influenza activity peaked in late December 2019 and has decreased significantly since. Activity was below baseline levels in Ireland during week 10 2020 (week ending 1st March 2020). Overall, influenza A(H3N2) has been the dominant circulating virus this season, however during week 10 influenza B was the dominant circulating virus. Confirmed influenza hospitalisations are now at low levels.

- **Influenza-like illness (ILI):** The sentinel GP influenza-like illness (ILI) consultation rate was 14.4 per 100,000 population in week 10 2020. This was an increase compared to the updated rate of 9.8 per 100,000 population reported during week 9 2020. Reporting was lower than previous weeks and the ILI rate will be monitored closely in the coming weeks.
 - The ILI rate has now been below baseline for three continuous weeks (17th February – 8th March 2020)
 - ILI age specific rates increased in those aged 15-64 and decreased in all other age groups.
- **GP Out of Hours:** The proportion of influenza-related calls to GP Out-of-Hours services was 2.8% during week 9 2020 and remains at low levels.
- **National Virus Reference Laboratory (NVRL):**
 - Influenza detections decreased during week 10 with 74 (9%) influenza positive specimens reported by the NVRL. This compares to an updated figure of 117 (15%) detections during week 9 2020.
 - Respiratory syncytial virus (RSV) positivity continued to decrease in week 10 2020. RSV activity peaked in late December 2019, and is at low levels nationally.
 - Parainfluenza virus, adenovirus and human metapneumovirus (hMPV), coronavirus and picornavirus (which includes both rhinovirus and enterovirus) continue to be detected.
- **Hospitalisations:** During week 10 2020, 92 confirmed influenza hospitalised cases were notified to HPSC. For the 2019/2020 season to date, 3,776 confirmed influenza hospitalised cases have been notified to HPSC.
- **Critical care admissions:** No confirmed influenza cases were admitted to critical care units and reported to HPSC during week 10 2020. During the 2019/2020 season to date, 139 confirmed influenza cases have been reported as admitted to ICU.
- **Mortality:** During week 10 2020, there was one influenza associated death reported. During the 2019/2020 season to date, 101 influenza-associated deaths have been reported to HPSC. Excess all-cause mortality was reported, in adults aged 65 years and older, during weeks 51, 52 (2019) and weeks 1 and 2 2020. Excess all-cause mortality was also reported for those aged 15-64 years in week 3 2020.
- **Outbreaks:** There were no outbreaks of Acute Respiratory Infection (ARI), Respiratory Syncytial Virus Infection (RSV) or Influenza reported to the HPSC during week 10 2020.
- **International:** In the temperate zone of the northern hemisphere, respiratory illness indicators remain elevated overall. In Europe, influenza activity continued to increase across much of the region, but appeared to have peaked in some countries. Worldwide, seasonal influenza A viruses accounted for the majority of detections.

1. GP sentinel surveillance system - Clinical Data

- During week 10 2020, 32 influenza-like illness (ILI) cases were reported by sentinel GPs, this corresponds to an ILI consultation rate of 14.4 per 100,000 population, an increase compared to the updated rate of 9.8 per 100,000 population reported during week 9 2020.
- The ILI rate for week 10 2020 is below the baseline threshold (18.1/100,000 population) (figures 1 & 2).
- During week 10, 43 (72%) of the 60 sentinel GP practices reported data.
- ILI age specific rates increased in those aged 15-64 years and decreased in those aged 0-4 years and persons ≥ 65 years during week 10 (figure 3).
- 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.*
- 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.

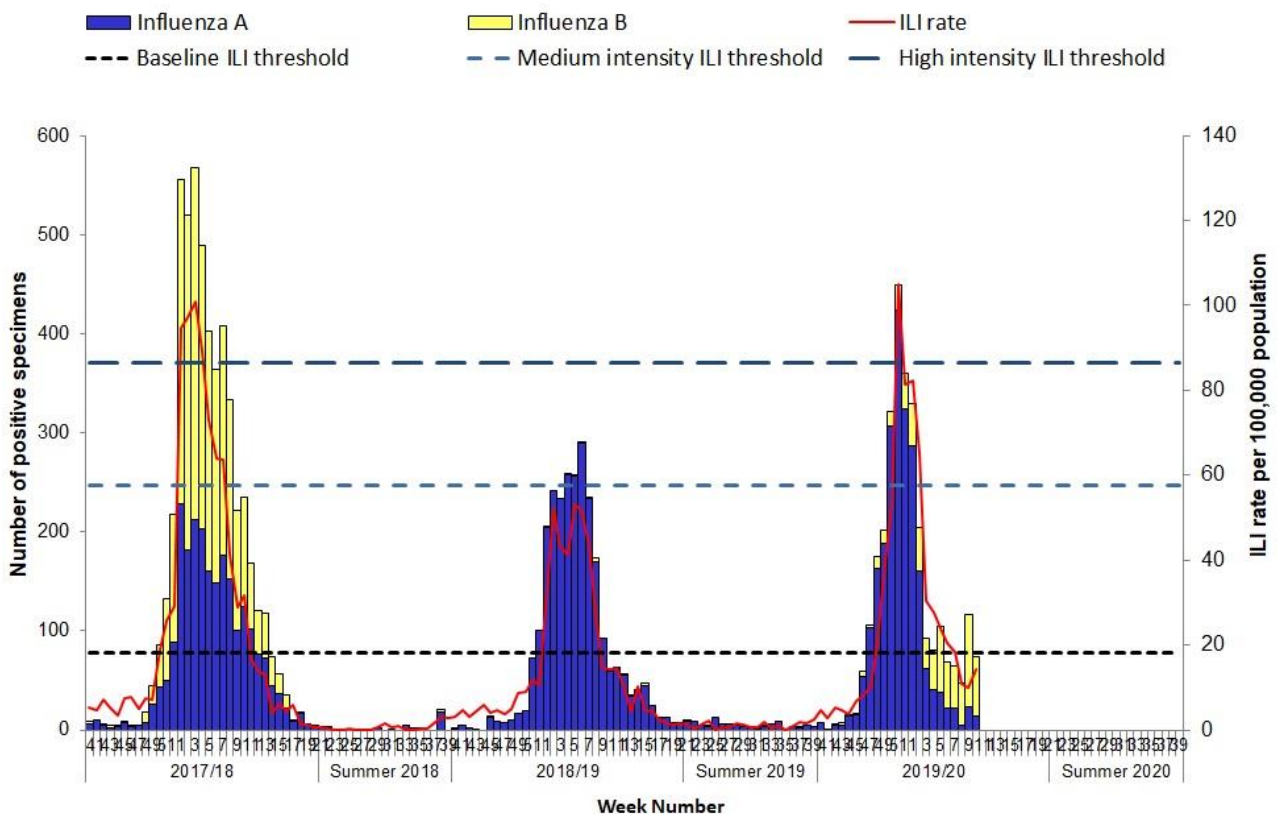


Figure 1: ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold, medium and high intensity ILI thresholds* and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season. Source: ICGP and NVRL

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

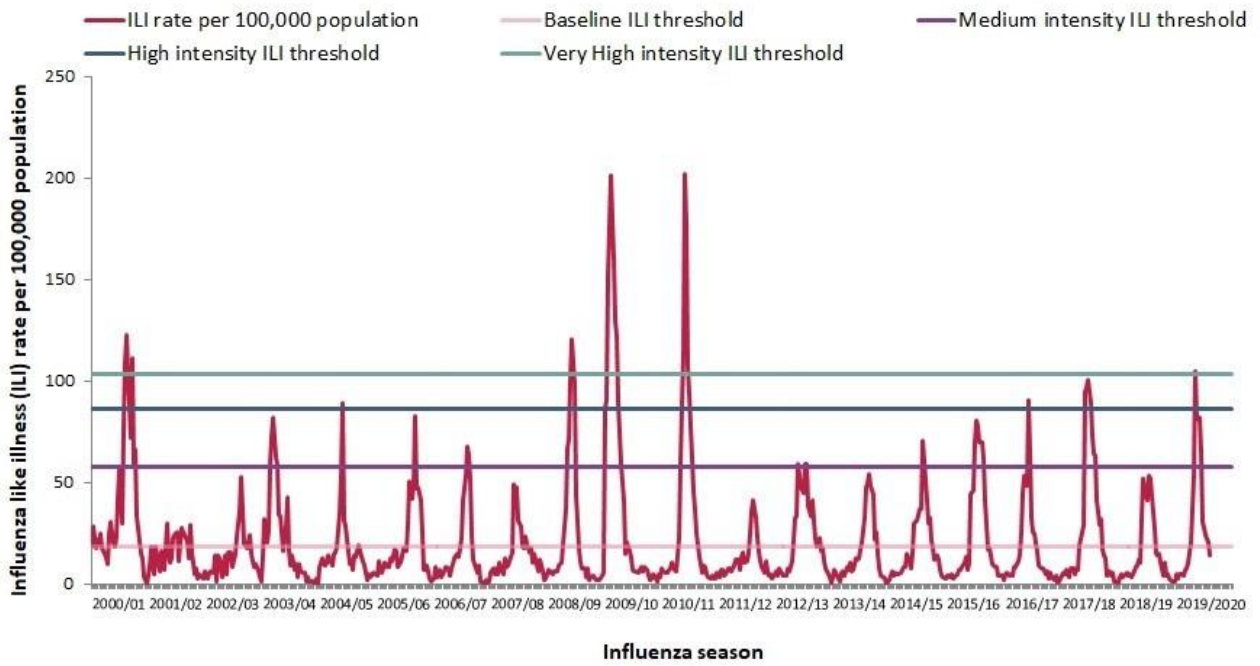


Figure 2: Sentinel GP ILI consultation rate per 100,000 population by week and influenza season (excluding summer periods). Source: ICGP.

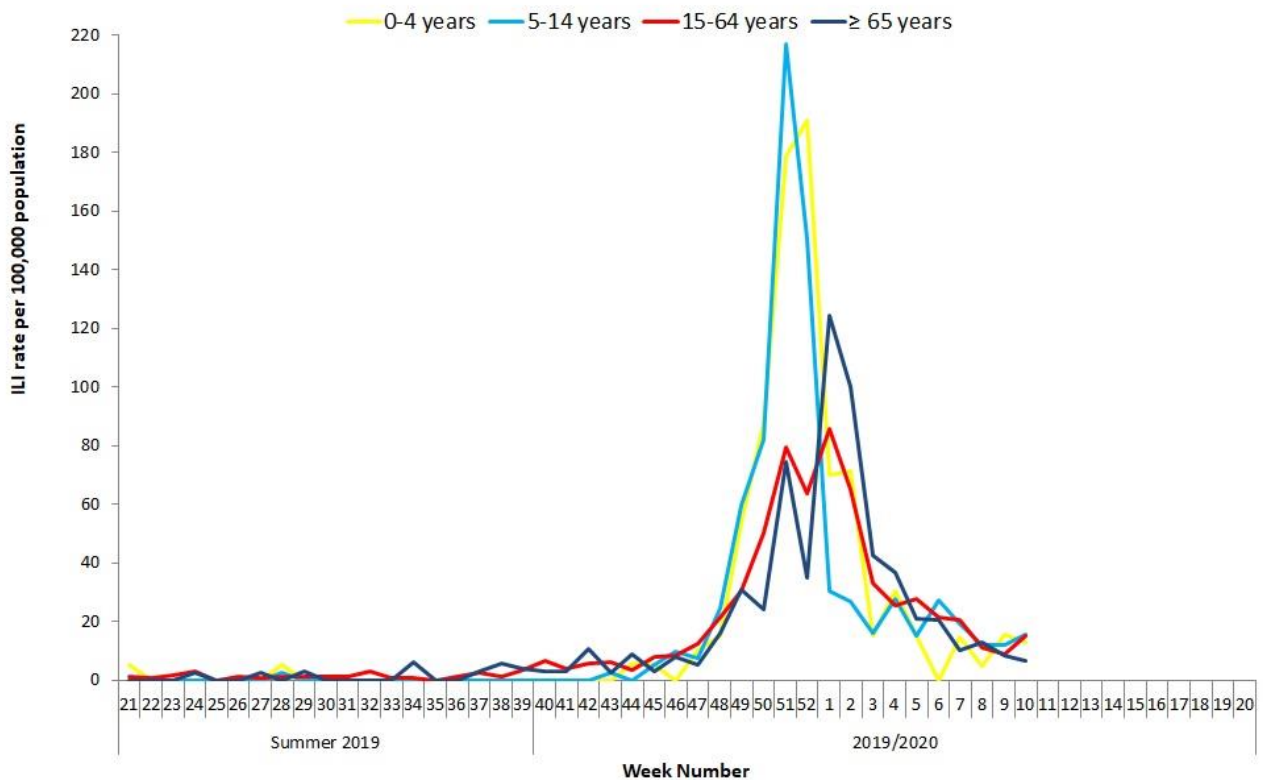


Figure 3: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2019 and the 2019/2020 influenza season to date. Source: ICGP.

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) (figures 4, 5 & 6 and tables 1, 2 & 3). As there are no historic data on picornaviruses or coronaviruses for seasonal comparisons, data on these viruses are not included in this report.

- During week 10 2020, influenza detections from non-sentinel sources decreased with 74 (9%) influenza positive specimens reported by the NVRL. This compares to an updated figure of 115 (15%) detections during week 9 2020.
- During week 10, 74 confirmed influenza positive specimens were reported from non-sentinel sources; 3 influenza A(H3), 10 were influenza A(H1N1)pdm09, 1 influenza A not subtyped and 60 influenza B.
- Due to technical issues, influenza sentinel GP samples were not reported by the NVRL to the HPSC during week 10.
- Data from the NVRL for week 10 2020 and the 2019/2020 season to date are detailed in tables 1, 2 and 3.
- Respiratory syncytial virus (RSV) positivity decreased in week 10 compared to week 9 and as shown in figure 6 is at low levels nationally.
- Sporadic detections of parainfluenza virus, adenovirus and human metapneumovirus (hMPV) have been reported to date this season (table 3).
- Influenza A(H3) has been the dominant circulating virus this season overall, with lower numbers of A(H1N1)pdm09 and increasing numbers of influenza B also being reported (figures 4 & 5). Influenza B is currently the dominant virus circulated.
- During week 10 coinfections of all seasonal respiratory viruses were reported.
- Human metapneumovirus, adenovirus, parainfluenza virus (table 3) and picornavirus (which includes both rhinovirus and enterovirus) continue to be detected.
- During week 10, the overall proportion of non-sentinel specimens positive for respiratory viruses was 1.1%.

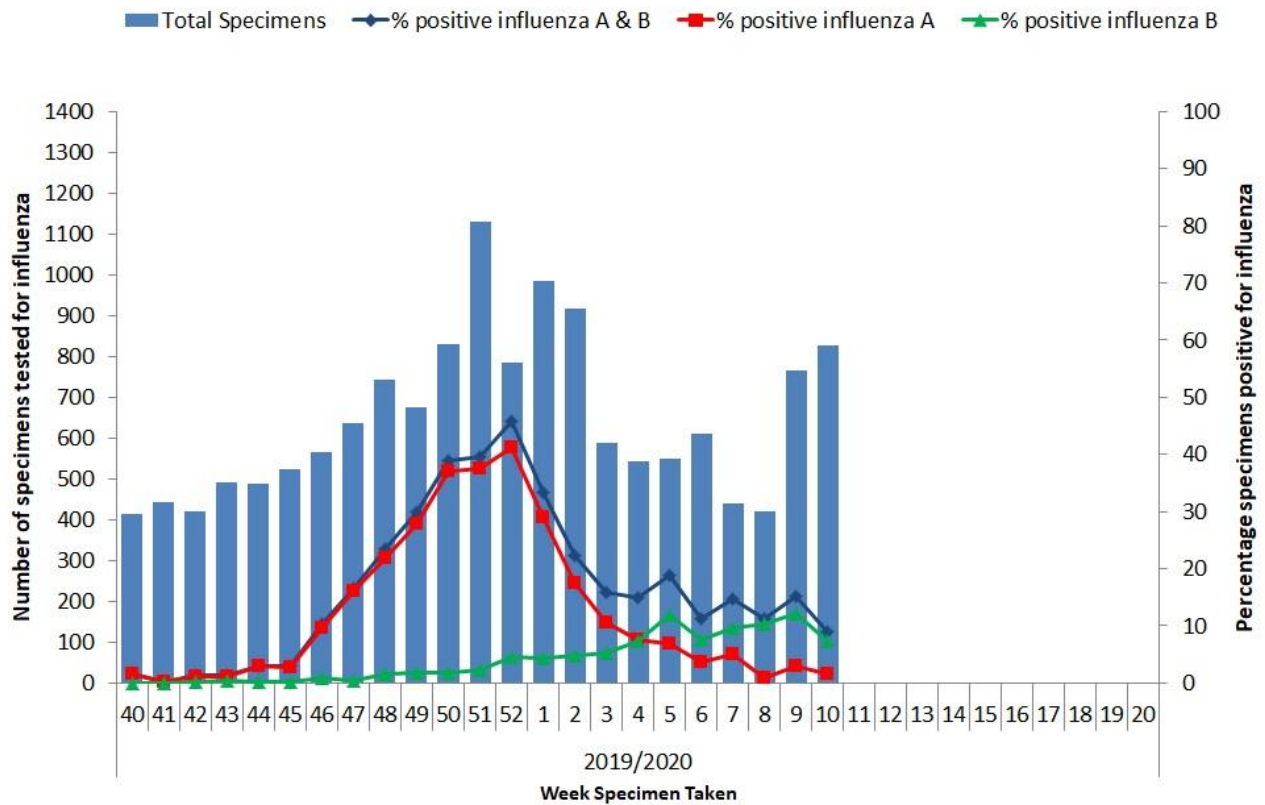


Figure 4: Number of specimens (from sentinel and non-sentinel sources combined) tested by the NVRL for influenza and percentage influenza positive by week for the 2019/2020 influenza season. Source: NVRL.

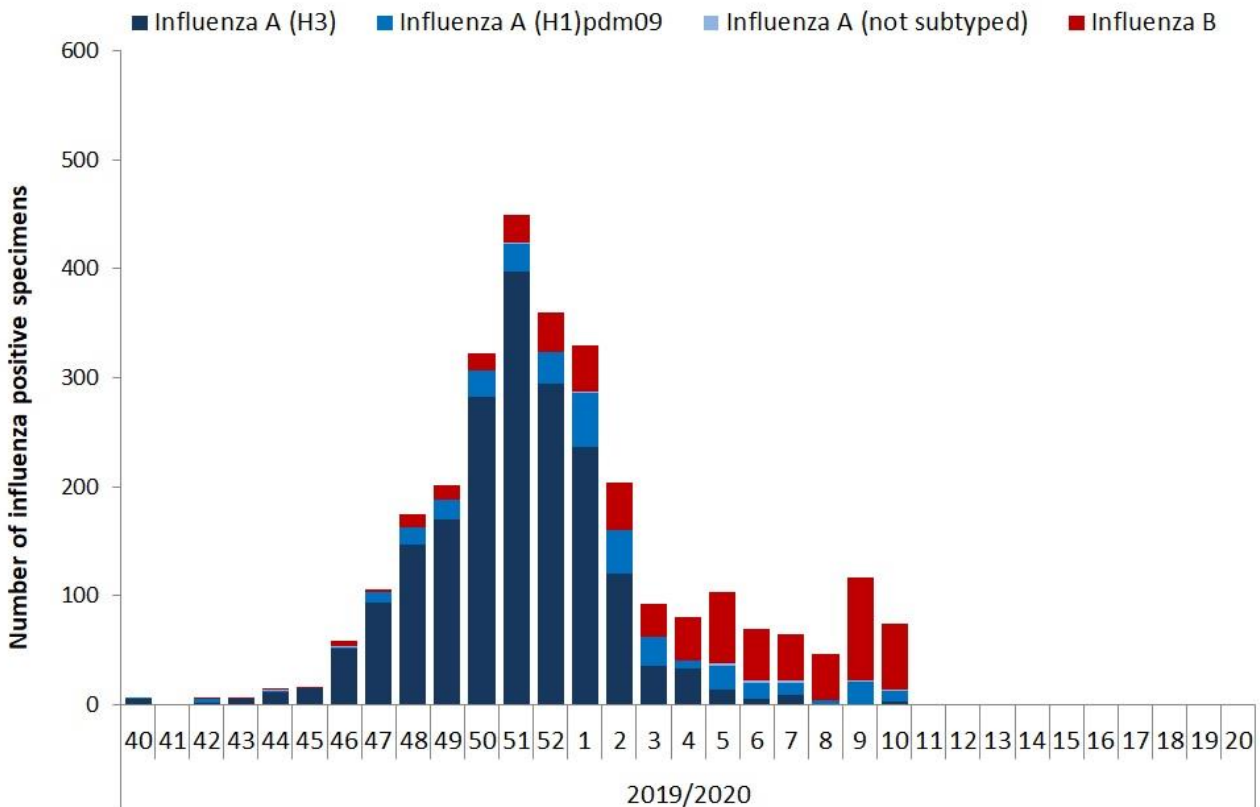


Figure 5: Number of positive influenza specimens (from sentinel and non-sentinel sources combined) by influenza type/subtype tested by the NVRL, by week for the 2019/2020 influenza season. Source: NVRL.

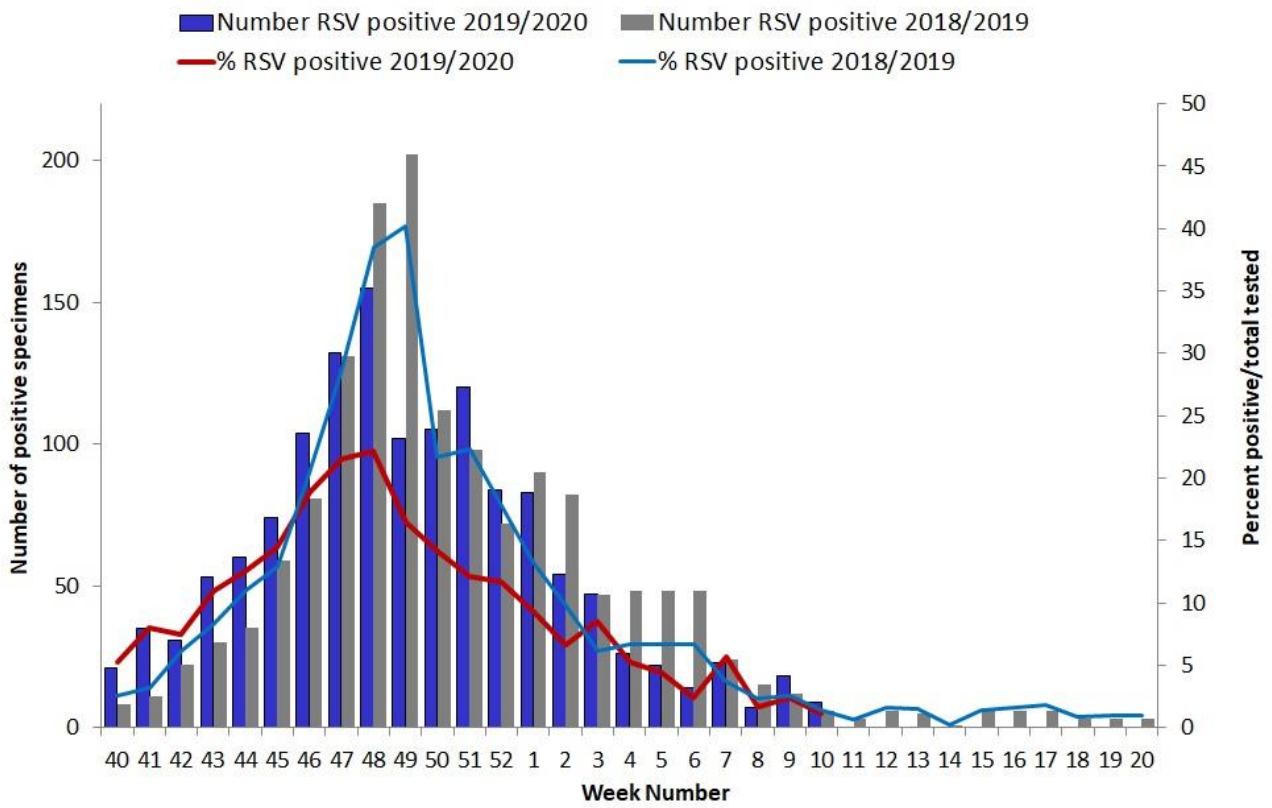


Figure 6: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2019/2020 season, compared to the 2018/2019 season. *Source: NVRL.*

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) pdm09 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)pdm09 group reported in Europe at the moment. One of the five viruses fell within the A(H1)pdm09 6B.1A5B group represented by A/Switzerland/3330/2018. The current Northern Hemisphere A(H1)pdm09 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 haemagglutination 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.

Table 1: Number of sentinel* and non-sentinel[†] respiratory specimens tested by the NVRL and positive influenza results, for week 10 2020. 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
10 2020	Sentinel	-	-	-	-	-	-	-	-	-	-	-
	Non-sentinel	828	74	8.9	10	3	1	14	60	0	0	60
	Total	828	74	8.9	10	3	1	14	60	0	0	60
2019/2020	Sentinel	908	464	51.1	51	304	1	356	1	105	2	108
	Non-sentinel	13883	2444	17.6	282	1632	13	1927	517	0	0	517
	Total	14791	2908	19.7	333	1936	14	2283	518	105	2	625

Table 2: Number of sentinel* and non-sentinel respiratory specimens tested by the NVRL and positive RSV results, for week 10 2020. Source: NVRL

Week	Specimen type	Total tested	Number RSV positive	% RSV positive	RSV A	RSV B	RSV (unspecified)
10 2020	Sentinel	-	-	-	-	-	-
	Non-sentinel	828	9	1.1	0	0	9
	Total	828	9	1.1	0	0	9
2019/2020	Sentinel	908	35	3.9	31	4	0
	Non-sentinel	13883	1379	9.9	0	0	1379
	Total	14791	1414	9.6	31	4	1379

Table 3: Number of non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 10 2020. Source: NVRL

Week	Specimen type	Total tested	Adenovirus	% Adenovirus	PIV-1	% PIV-1	PIV-2	% PIV-2	PIV-3	% PIV-3	PIV-4	% PIV-4	hMPV	% hMPV
10 2020	Non-sentinel	828	30	3.6	2	0.2	3	0.4	2	0.2	1	0.1	69	8.3
2019/2020	Non-sentinel	13883	326	2.3	227	1.6	129	0.9	34	0.2	33	0.2	766	5.5

*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 10 2020 is shown in figure 7. During week 10, localised influenza activity was reported in HSE-E, HSE-MW, and HSE-S, sporadic activity was reported in the remaining HSE areas.

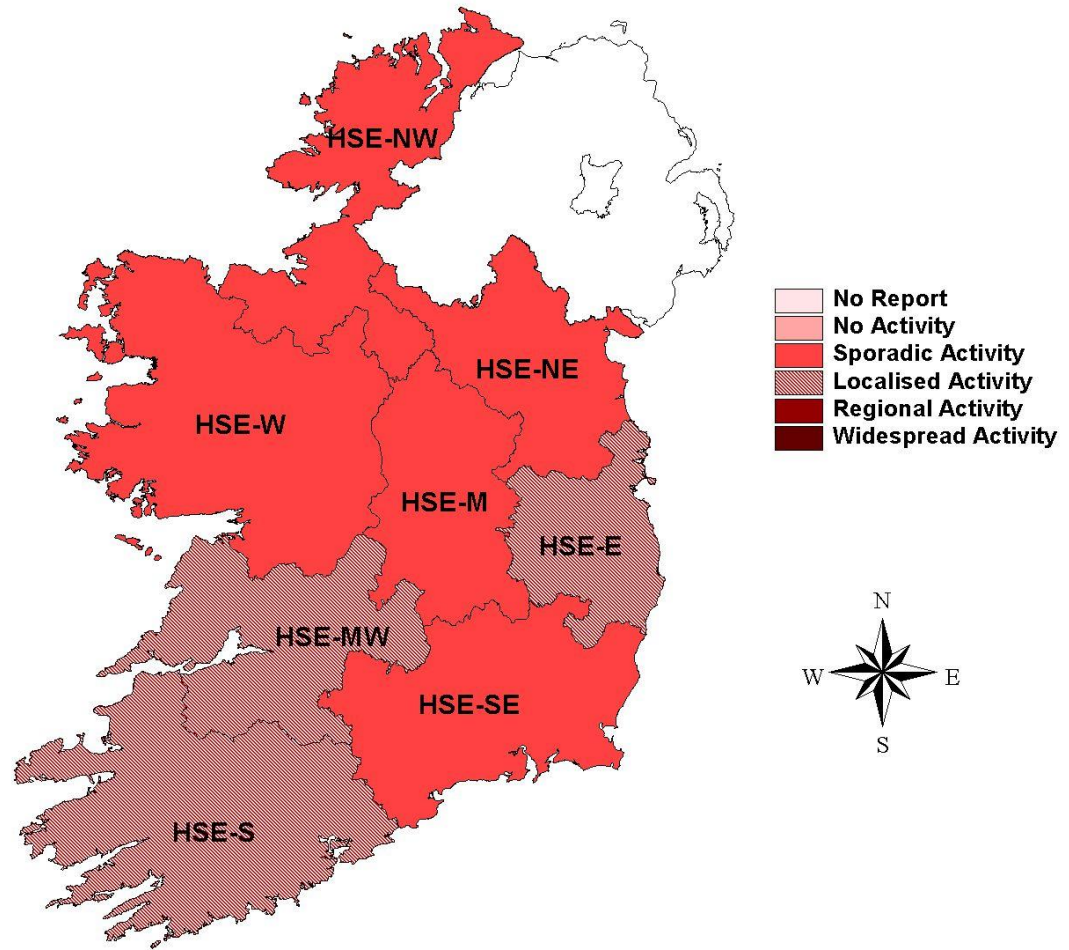


Figure 7: Map of provisional influenza activity by HSE-Area during influenza week 10 2020

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 medium levels, at 297 admissions during week 10 2020 (figure 8). This was an increase compared to the 221 respiratory admissions reported during week 9 2020. Six of the eight hospitals reported data for the current week.

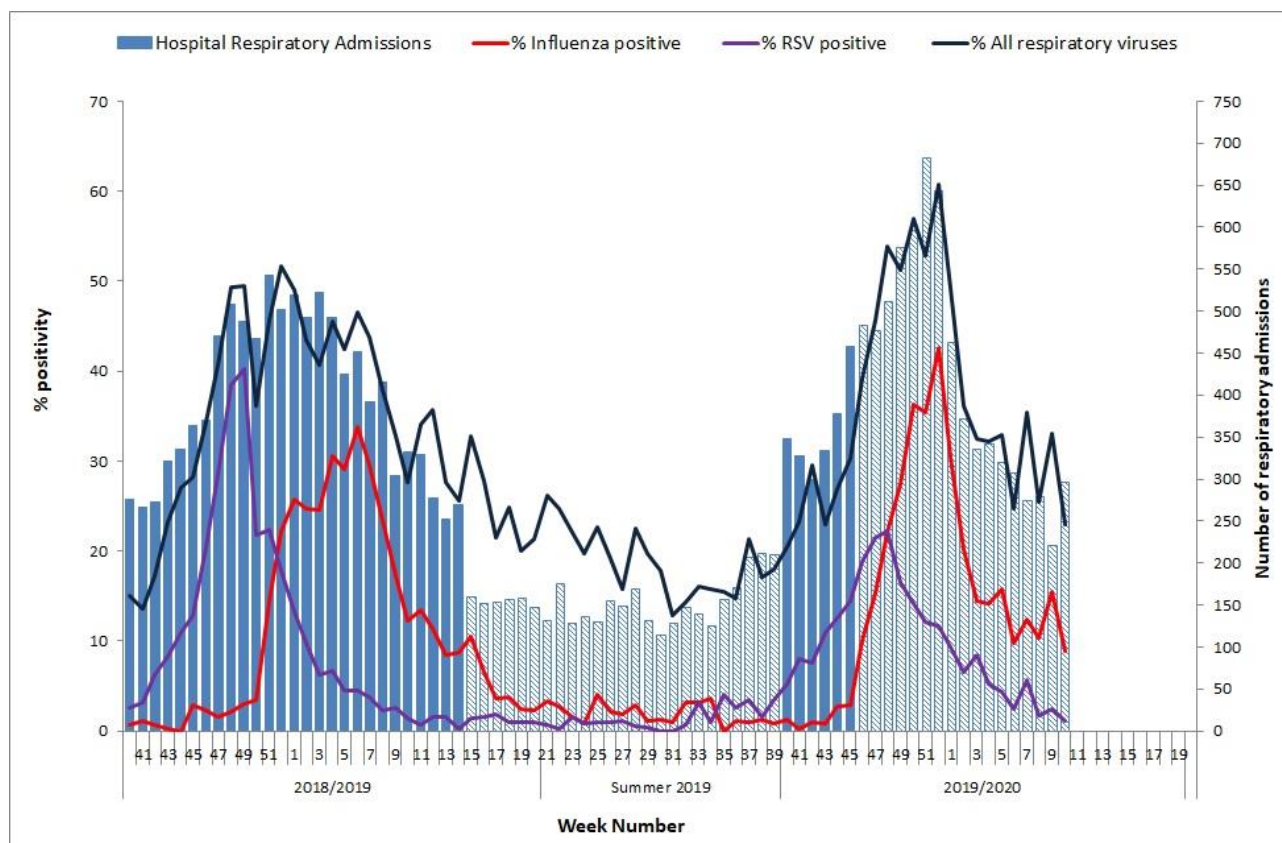


Figure 8: Number of respiratory admissions reported from the sentinel hospital network and % positivity for influenza, RSV and all seasonal respiratory viruses tested* by the NVRL by week and season. Source: Departments of Public Health - Sentinel Hospitals & NVRL. *All seasonal respiratory viruses tested 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.

The proportion of influenza-related calls to GP Out-of-Hours services was 2.8% during week 10 2020, a slight increase in comparison to week 9 (2.3%). Three services reported data for the current week and there were 96 calls relating to self-reported influenza (figure 9).

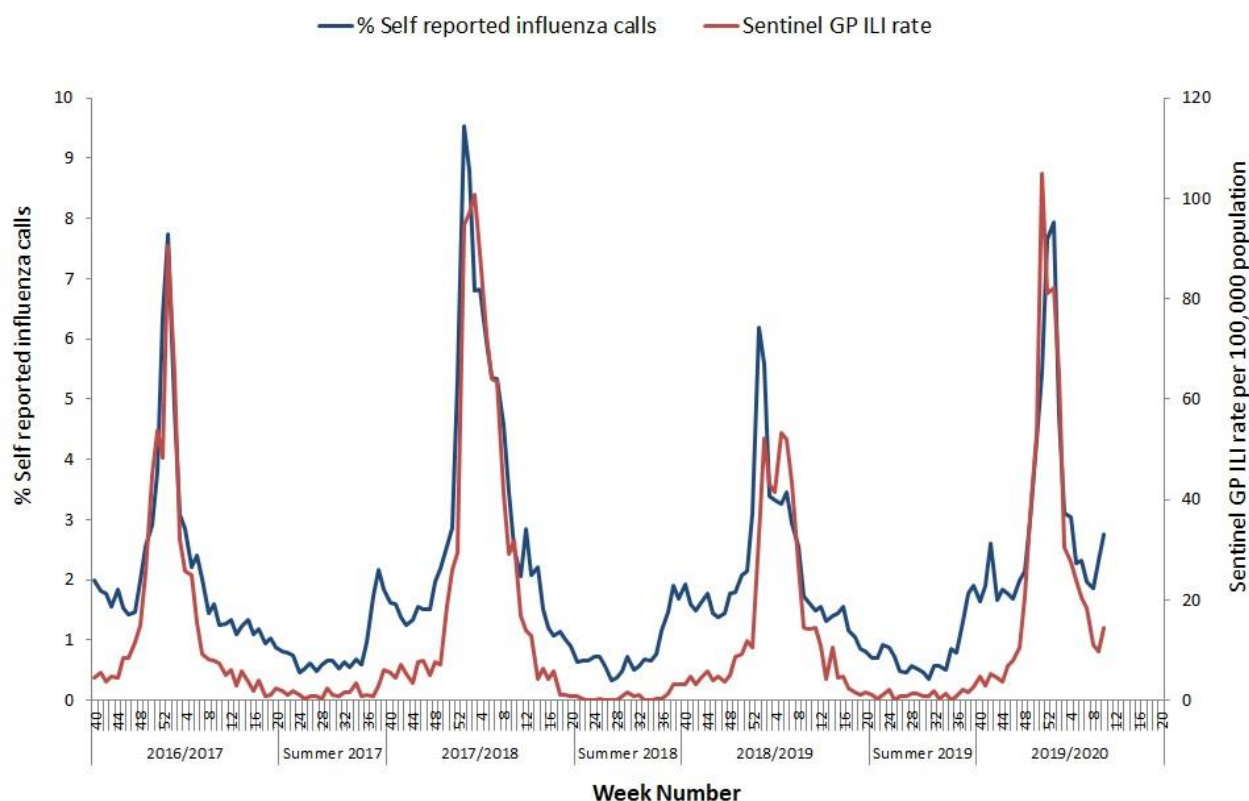


Figure 9: Self-reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and sentinel GP ILI consultation rate per 100,000 population by week and season. *Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.*

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.

- Influenza notifications slightly decreased to 297 during week 10 2020, compared to 302 during week 9 2020.
- Of the 297 cases notified during week 10 2020, 1 was due to influenza A(H3N2), 11 were due to influenza A(H1N1)pdm09, 39 were due to influenza A (not subtyped), 246 were due to influenza B.
- To date this season, 9,813 confirmed cases of influenza have been notified to HPSC; 83% (n=8,097) were influenza A, 17% (n=1700) were influenza B and the influenza type was not known for <1% (n=15). Of the 2,078 subtyped cases of influenza A, 84% (n=1,747) were A(H3N2) and 16% (n=331) were A(H1N1)pdm09, 1 case was unsubtyped. Influenza A(H3N2) dominated for most of this season and influenza B dominated in weeks 8,9 and 10 2020.
- During week 10 2020, 47 RSV cases were notified, 32 of the cases notified were in those aged 0-4 years. This was an increase compared to 32 cases notified in week 9 2020.

The number of influenza cases notifications slightly increased in week 9 2020. Analysis of the notified cases by symptom onset date/laboratory specimen collection date indicates that it is likely that influenza peaked in week 51 and 52 2019 (see figure 10 appendix 1).

6. Influenza Hospitalisations

- 92 confirmed influenza hospitalised cases were notified to HPSC during week 10 2020. Of these, two were due to A(H1N1)pdm09, 15 were due to influenza A (not subtyped), and 75 were due to influenza B.
- For the 2019/2020 season to date, 3776 confirmed influenza hospitalised cases have been notified to HPSC; 87% were due to influenza A (n=3,274) and 13% were due to influenza B (n=496). The influenza type was not reported for the remaining six cases (<1%). Of the 612 influenza A viruses subtyped, 87% (n=534) were A(H3N2) and 13% (n=78) were A(H1N1)pdm09.
- Age specific rates for hospitalised influenza cases are reported in table 4, with the highest rates reported in adults aged 65 years and older and in children aged less than 1 year.

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.

- There was no influenza cases reported as admitted to ICU during during week 10 2020.
- During the 2019/2020 season to date, 139 confirmed influenza cases have been reported as having been admitted to ICU. Of those, 31 were due to influenza A (H3N2), 13 were due to A(H1N1)pdm09, 84 were due to influenza A (not subtyped) and 11 were due to influenza B.
- Of the cases admitted to ICU, 52% were aged 65 years and older. The age specific rates for admission to critical care are shown in table 4.

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.

Age (years)	Hospitalised		Admitted to ICU	
	Number	Age specific rate per 100,000 population	Number	Age specific rate per 100,000 population
<1	167	268.2	0	0
1-4	470	174.6	10	3.7
5-14	526	77.9	12	1.8
15-24	175	30.4	4	0.7
25-34	187	28.4	2	0.3
35-44	171	22.9	6	0.8
45-54	149	23.8	8	1.3
55-64	292	57.4	24	4.7
>65	1638	256.9	72	11.3
Age unknown	-		1	
Total	3775	79.3	139	2.9

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/>

- During week 10 2020, there was one influenza associated death reported. To date this season, 101 influenza-associated deaths were reported to HPSC. Eighty five (84%) of the deaths occurred in adults aged 65 years and older, twelve (12%) were in adults aged between 35 and 64 years, three (3%) occurred in children aged less than 15 years and one (1%) in the 16-34 age group.
- Excess all-cause mortality was reported in Ireland, in adults aged 65 years and older, during weeks 51 & 52 2019 and weeks 1 and 2 2020 (mid-December to mid-January). Excess all-cause mortality was also reported for those aged 15-64 years in week 3 2020, after correcting GRO data for reporting delays with the standardised EuroMOMO algorithm.

9. Outbreak Surveillance

- There were no outbreaks of Acute Respiratory Infection (ARI), Respiratory Syncytial Virus Infection (RSV) or Influenza reported to the HPSC during week 10 2020
- 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	32	2	11	45
HSE-M	9	0	3	12
HSE-MW	10	2	1	13
HSE-NE	5	1	1	7
HSE-NW	2	1	2	5
HSE-SE	17	0	8	25
HSE-S	12	0	2	14
HSE-W	17	0	1	18
Total	104	6	29	139

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

Outbreak location	Organism/Pathogen	Total
Nursing home/Community hospital/Long-stay unit/Residential institution	Influenza A	34
	Influenza A (H3N2)	11
	Influenza A(H1N1)pdm09	1
	Influenza B	2
	Influenza (type not reported)	27
	RSV	3
	Rhino/enterovirus	2
	Coronavirus and Rhinovirus	1
	Coronavirus	1
	Human Metapneumovirus and Rhinovirus	1
	RSV and human metapneumovirus	1
	Human metapneumovirus	2
	Parainfluenza	1
Acute respiratory infection, organism not specified	13	
Nursing home/Community hospital/Long-stay unit/Residential institution Total		100
Acute Hospital	Influenza A	15
	Influenza A(H3N2)	1
	Influenza A(H3N2) & human metapneumovirus	1
	Influenza A & B	1
	Influenza B	1
	Influenza (type not reported)	6
	RSV	2
	Acute respiratory infection, organism not specified	1
Acute Hospital Total		28
School or childcare facility	Influenza A	2
	RSV	1
	Acute respiratory infection, organism not specified	8
School or Childcare Facility Total		11
Total		139

10. International Summary

In the Europe Union, during week 10 2020, influenza activity remained elevated with six Member States and areas reporting high influenza activity. Geographically, widespread influenza activity was reported by the majority of Member States and areas across the Region. Of the individuals sampled who presented with influenza-like illness (ILI) or acute respiratory infection (ARI) to sentinel primary healthcare sites, 44% tested positive for influenza viruses. Both influenza virus types A and B were co-circulating in sentinel source specimens with a higher proportion (60%) of type A viruses detected. Of the type A detections, A(H1N1)pdm09 viruses were detected most often (52%) and of the influenza B viruses, the vast majority were B/Victoria lineage. The distribution of viruses detected varied between Member States and areas and within sub-regions. Of the 31 reports from across the Region: 18 reported dominance of type A viruses; 7 co-dominance of types A and B viruses; and 6 dominance of type B viruses. Pooled estimates of all-cause mortality from 21 countries participating in the EuroMOMO project or regions indicate normal expected levels of mortality in those Regions.

For the European Region as a whole, influenza activity commenced earlier than in recent years and, based on sentinel sampling, first exceeded a positivity rate of 10% in week 47/2019. The influenza season for the European Region as a whole appears to have peaked around week 05/2020 reaching a positivity rate of 55%. The majority of circulating viruses were susceptible to neuraminidase inhibitors supporting early initiation of treatment or prophylactic use according to national guidelines. Interim estimates of 2019-2020 seasonal influenza vaccine effectiveness from studies in the northern hemisphere are available. Vaccination remains the best possible method for prevention of influenza and/or reducing the risk of serious complications. Member states should continue to promote vaccination while influenza viruses continue to circulate in the community.

In the temperate zone of the northern hemisphere, respiratory illness indicators and influenza activity remained elevated overall. In Europe, influenza activity continued to increase across the region, but appeared to have peaked in some countries. In North America, influenza remained elevated, influenza A (H1N1)pdm09 and B viruses co-circulating. Worldwide, seasonal influenza A viruses accounted for the majority of detections.

National Influenza Centres (NICs) and other national influenza laboratories from 122 countries, areas or territories reported data to FluNet for the time period from 03rd February 2020 to 16th February 2020. The WHO GISRS laboratories tested more than 201,954 specimens during that time period. A total of 58,268 were positive for influenza viruses, of which 36580 (63%) were typed as influenza A and 21688 (41%) as influenza B. Of the sub-typed influenza A viruses, 7,897 (66.5%) were influenza A(H1N1)pdm09 and 3,978 (33.5%) were influenza A(H3N2). Of the characterized B viruses, 2177 (99%) belonged to the B-Victoria lineage and 21 (1%) belonged to the B-Yamagata lineage.

Information on the novel coronavirus (2019-nCoV) is available on the [ECDC](#) and [WHO](#) websites. ECDC has also produced Rapid Risk Assessments which are available on the [ECDC](#) website. The [HPSC](#) has a dedicated webpage on novel coronavirus (2019-nCoV), which is updated regularly.

ECDC and WHO Regional Office for Europe published a joint [Regional Situation Assessment](#) for the 2019-2020 influenza season up to week 49/2019, which focused on disease severity and impact on healthcare systems to assist forward planning in Member State.

- Further information is available on the following websites:

Northern Ireland	http://www.fluawareni.info/
Flu News Europe	http://flunewseurope.org/
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

On the 28th February 2020, the WHO vaccine strain selection committee issued recommendations for the composition of influenza virus vaccines for use in the 2020-2021 northern hemisphere influenza season. It is recommended that quadrivalent vaccines used in the 2020/2021 influenza season contain the following.

Egg-base Vaccines

- an A/Guangdong-Maonan/SWL1536/2019(H1N1)pdm09-like virus;
- an A/Hong Kong/2671/2019(H3N2)-like virus;
- a B/Washington/02/2019 (B/Victoria lineage)-like virus; and
- a B/Phuket/3073/2013 (B/Yamagata lineage)-like virus.

Cell- or recombinant-based Vaccines

- an A/Hawaii/70/2019 (H1N1)pdm09-like virus;
- an A/Hong Kong/45/2019 (H3N2)-like virus;
- a B/Washington/02/2019(B/Voctoria lineage)-like virus; and
- a B/Phuket/3073/2013(B/Yamagata lineage)-like virus

It is recommended that that trivalent vaccines used in the 2020/2021 influenza season contain the following.

Egg-base Vaccines

- an A/Guangdong-Maonan/SWL1536/2019(H1N1)pdm09-like virus;
- an A/Hong Kong/2671/2019(H3N2)-like virus;
- a B/Washington/02/2019 (B/Victoria lineage)-like virus;

Cell- or recombinant-based Vaccines

- an A/Hawaii/70/2019 (H1N1)pdm09-like virus;
- an A/Hong Kong/45/2019 (H3N2)-like virus;
- a B/Washington/02/2019(B/Voctoria lineage)-like virus;

https://www.who.int/influenza/vaccines/virus/recommendations/2020-21_north/en/

https://www.who.int/influenza/vaccines/virus/recommendations/202002_recommendation.pdf?ua=1

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

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Appendix 1

Figure 10: Number of notifications of laboratory confirmed cases of influenza reported on CIDR, by week of notification (based on the date the case was created on CIDR) and epidemiological week (based on earliest available date: date of disease onset, specimen collected date, date of diagnosis or date of notification). *Source: CIDR*

