

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 1 2020 (30th December 2019 – 5th January 2020)



Summary

Influenza activity was high in Ireland during week 1 2020 (week ending 5th January 2020). 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 77.2 per 100,000 population in week 1 2020. This compares to the updated rate of 84.2 per 100,000 population reported during week 52 2019.
 - ILI rates were above the medium Irish ILI threshold in week 1 (57.5/100,000 population).
 - ILI age specific rates increased in those aged 15-64 years and in those aged 65 years and older. The rate was highest in people aged 65 years and older.
- **GP Out of Hours:** The proportion of influenza-related calls to GP Out-of-Hours services increased to 8.5% during week 1 2020 and is at high levels.
- **National Virus Reference Laboratory (NVRL):**
 - Influenza detections decreased with 246 (28.5%) influenza positive specimens reported by the NVRL in week 1 2020. This compares to an updated figure of 337 (43.5%) detections during week 52 2019.
 - Respiratory syncytial virus (RSV) positivity decreased in week 1 2020. RSV activity is currently at high levels nationally.
 - Sporadic detections of parainfluenza virus, adenovirus and human metapneumovirus (hMPV) have also been reported to date this season.
- **Hospitalisations:** During week 1 2020, 662 confirmed influenza hospitalised cases were notified to HPSC. During the 2019/2020 influenza season to date, 2,038 confirmed influenza hospitalised cases have been notified to HPSC.
- **Critical care admissions:** Thirteen confirmed influenza cases were admitted to critical care units and reported to HPSC during week 1 2020. Seventy-two confirmed influenza cases have been reported as admitted to ICU in the 2019/2020 season to date.
- **Mortality:** Five influenza-associated deaths were reported during week 1 2020. Twenty-eight influenza-associated deaths have been reported to HPSC during the 2019/2020 season to date.
- **Outbreaks:** Fifteen influenza outbreaks, five acute respiratory infection outbreaks and one outbreak due to both influenza type B and human metapneumovirus were reported to HPSC during week 1 2020.
- **International:** In the temperate zone of the northern hemisphere, respiratory illness indicators and influenza activity continued to increase in most countries.

1. GP sentinel surveillance system - Clinical Data

- During week 1 2020, 246 influenza-like illness (ILI) cases were reported by sentinel GPs, this corresponds to an ILI consultation rate of 77.2 per 100,000 population and compares to the updated rate of 84.2 per 100,000 population reported during week 52 2019.
- The ILI rate for week 1 2020 is above the medium intensity Irish ILI threshold (57.5/100,000 population) (figure 1).
- Of the 60 sentinel GP practices, 54 reported data in week 1.
- ILI age specific rates increased in those aged 15-64 years and in those aged 65 years and older, and decreased in children aged less than 15 years. The rate was highest in those aged 65 years and older (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.*
- 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.

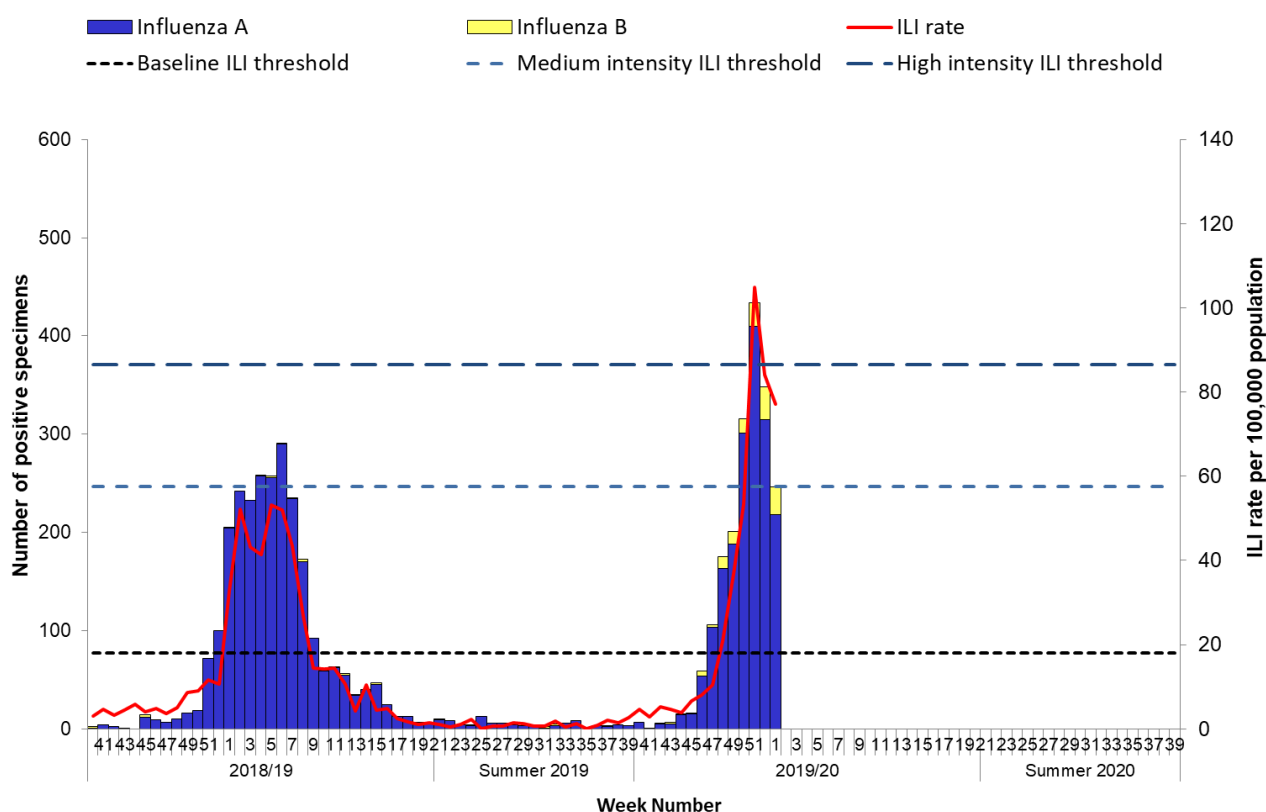


Figure 1: ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold, medium and high intensity ILI thresholds* and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season. Source: ICGP and NVRL

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

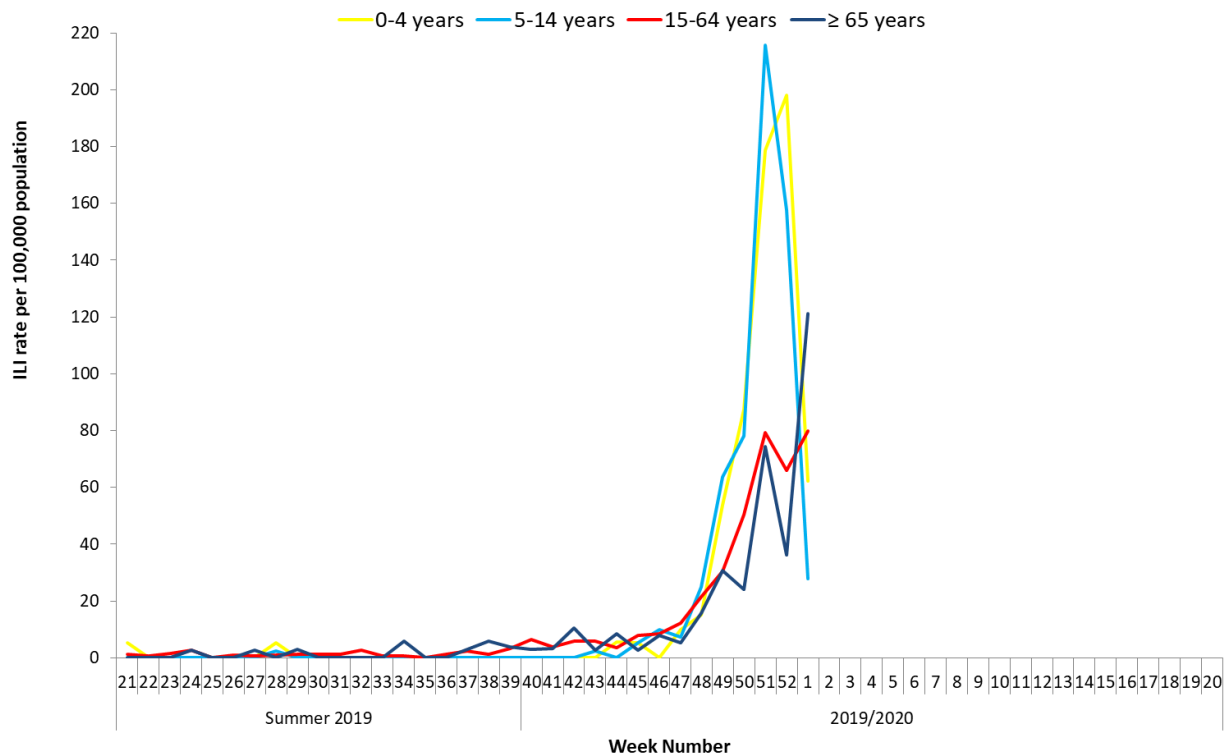


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2019 and the 2019/2020 influenza season to date. Source: ICGP.

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 table 1, 2 & 3).

- During week 1 2020, influenza detections decreased with 246 (28.5%) influenza positive specimens reported by the NVRL from sentinel and non-sentinel sources, compared to an updated figure of 337 (43.5%) detections during week 52 2019.
- During week 1, 205 confirmed influenza positive specimens were reported from non-sentinel sources; 150 were influenza A(H3N2), 29 were influenza A(H1N1)pdm09 and 26 were influenza B.
- During week 1, 41 confirmed influenza positive specimens were reported from the sentinel GP network; 34 were influenza A(H3N2), 5 were influenza A(H1N1)pdm09 and 2 were influenza B.
- Data from the NVRL for week 1 2020 and the 2019/2020 season to date are detailed in tables 1, 2 and 3.
- Respiratory syncytial virus (RSV) positivity decreased in week 1 2020 (figure 5). RSV activity remains at high levels nationally.
- 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 week 1 2020.
- The overall proportion of non-sentinel specimens positive for respiratory viruses was 39.9% during week 1 2020.

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 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

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

See [ECDC](#) influenza surveillance reports for further information.

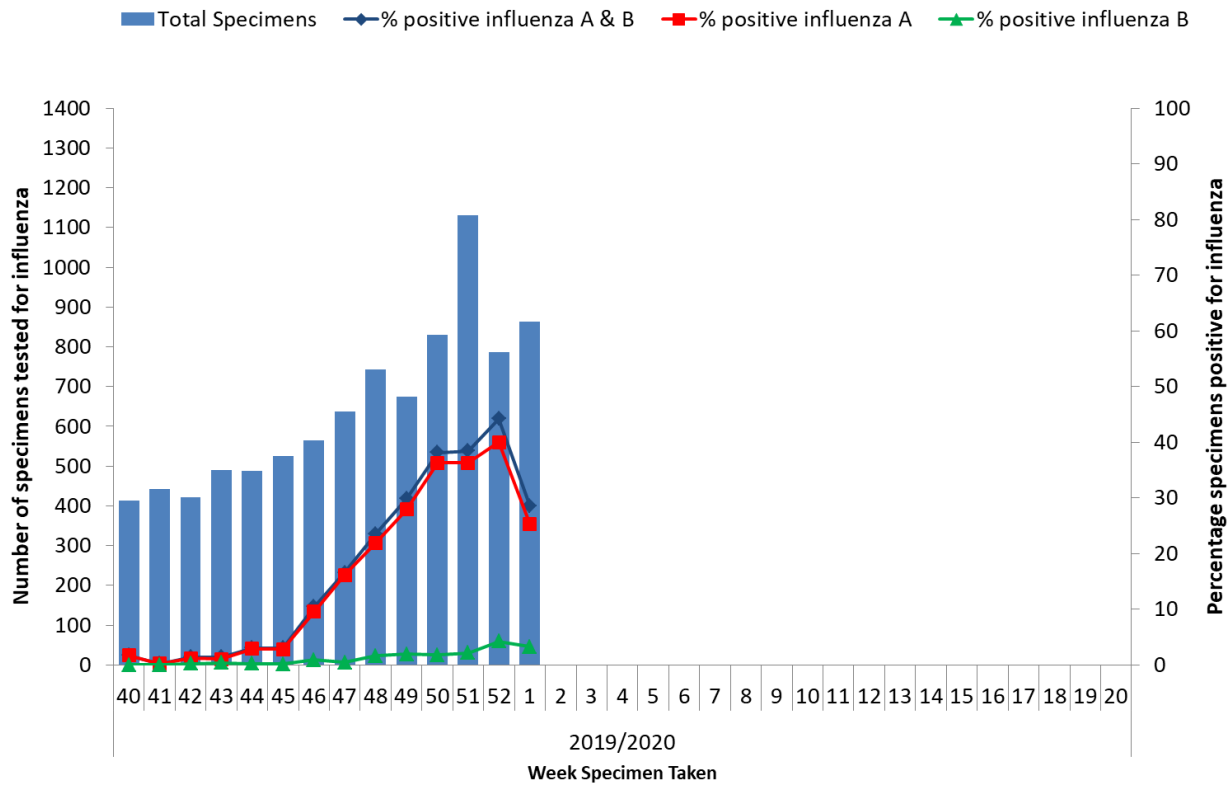


Figure 3: Number of specimens (from sentinel and non-sentinel sources combined) tested by the NVRL for influenza and percentage influenza positive by week for the 2019/2020 influenza season. Source: NVRL.

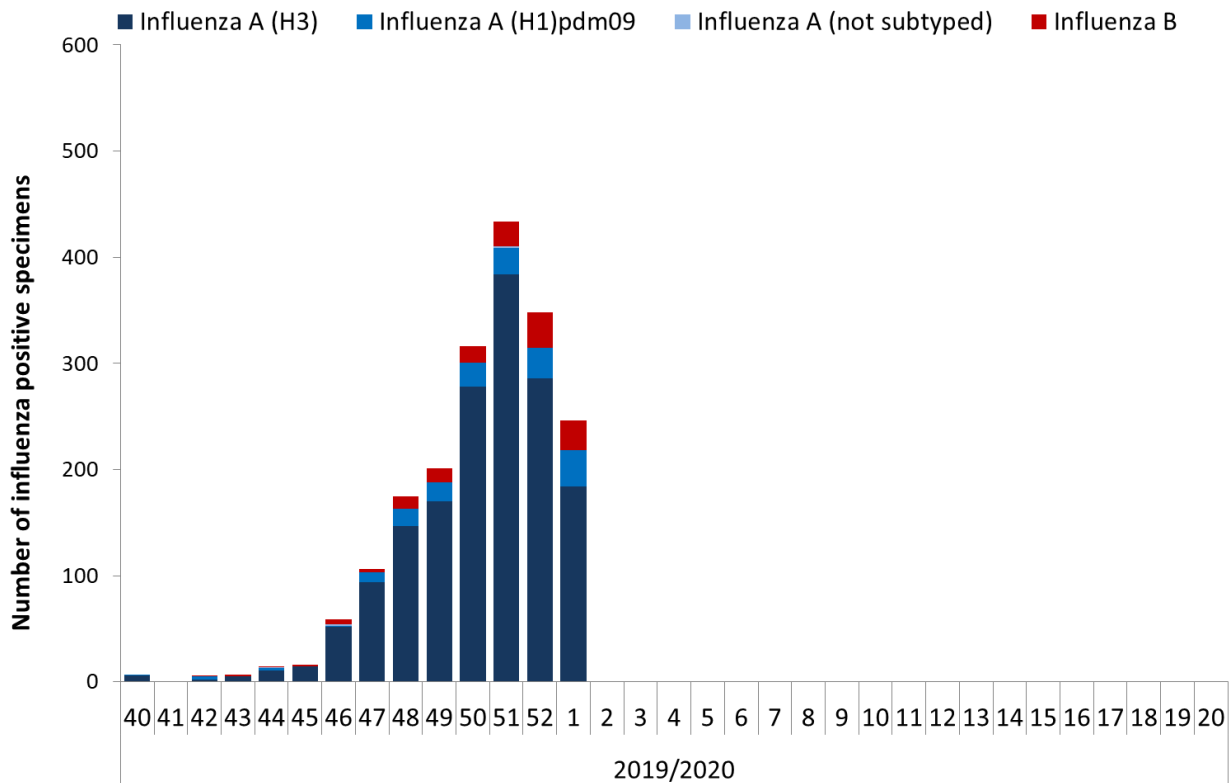


Figure 4: Number of positive influenza specimens (from sentinel and non-sentinel sources combined) by influenza type/subtype tested by the NVRL, by week for the 2019/2020 influenza season. Source: NVRL.

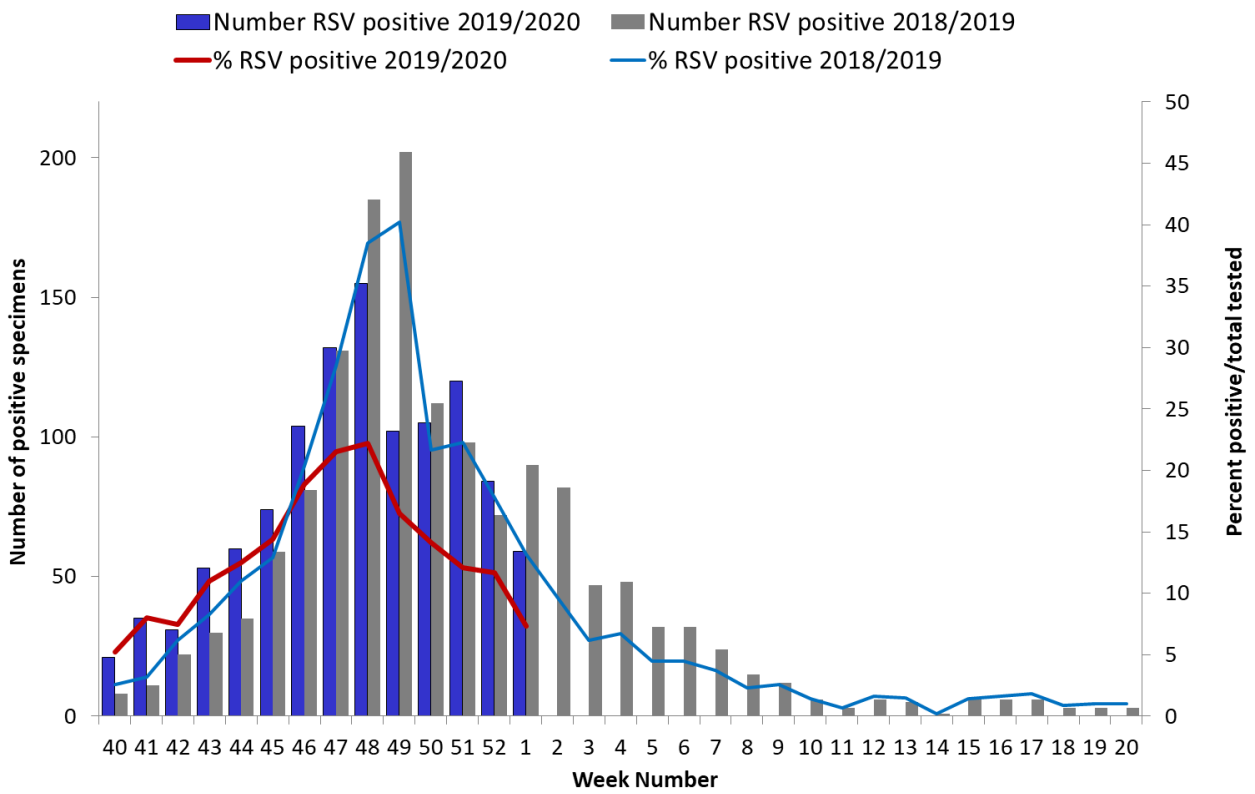


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2019/2020 season, compared to the 2018/2019 season. *Source: NVRL.*

Table 1: Number of sentinel* and non-sentinel[†] respiratory specimens tested by the NVRL and positive influenza results, for week 1 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 |
| 1 2020 | Sentinel | 55 | 41 | 74.5 | 5 | 34 | 0 | 39 | 0 | 2 | 0 | 2 |
| | Non-sentinel | 808 | 205 | 25.4 | 29 | 150 | 0 | 179 | 26 | 0 | 0 | 26 |
| | Total | 863 | 246 | 28.5 | 34 | 184 | 0 | 218 | 26 | 2 | 0 | 28 |
| 2019/2020 | Sentinel | 535 | 318 | 59.4 | 25 | 262 | 1 | 288 | 0 | 29 | 1 | 30 |
| | Non-sentinel | 8474 | 1619 | 19.1 | 136 | 1373 | 2 | 1511 | 108 | 0 | 0 | 108 |
| | Total | 9009 | 1937 | 21.5 | 161 | 1635 | 3 | 1799 | 108 | 29 | 1 | 138 |

Table 2: Number of sentinel* and non-sentinel respiratory specimens tested by the NVRL and positive RSV results, for week 1 2020. Source: NVRL

| Week | Specimen type | Total tested | Total RSV | % RSV | RSV A | RSV B | RSV (unspecified) |
|------------------|---------------|--------------|-------------|-------------|-----------|----------|-------------------|
| 1 2020 | Sentinel | 55 | 2 | 3.6 | 2 | 0 | 0 |
| | Non-sentinel | 808 | 59 | 7.3 | 0 | 0 | 59 |
| | Total | 863 | 61 | 7.1 | 2 | 0 | 59 |
| 2019/2020 | Sentinel | 535 | 21 | 3.9 | 21 | 0 | 0 |
| | Non-sentinel | 8474 | 1135 | 13.4 | 0 | 0 | 1135 |
| | Total | 9009 | 1156 | 12.8 | 21 | 0 | 1135 |

Table 3: Number of non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 1 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 |
|------------------|---------------|--------------|------------|--------------|-------|---------|-------|---------|-------|---------|-------|---------|------|--------|
| 1 2020 | Non-sentinel | 808 | 9 | 1.1 | 5 | 0.6 | 4 | 0.5 | 0 | 0.0 | 1 | 0.1 | 39 | 4.8 |
| 2019/2020 | Non-sentinel | 8474 | 144 | 1.7 | 202 | 2.4 | 102 | 1.2 | 19 | 0.2 | 23 | 0.3 | 325 | 3.8 |

*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 1 2020 is shown in figure 6. During week 1, widespread influenza activity was reported in HSE-E, -S and -MW, while regional influenza activity was reported in HSE-NE, -SE and -W. The remaining HSE areas, HSE-M and -NW, reported localised activity.

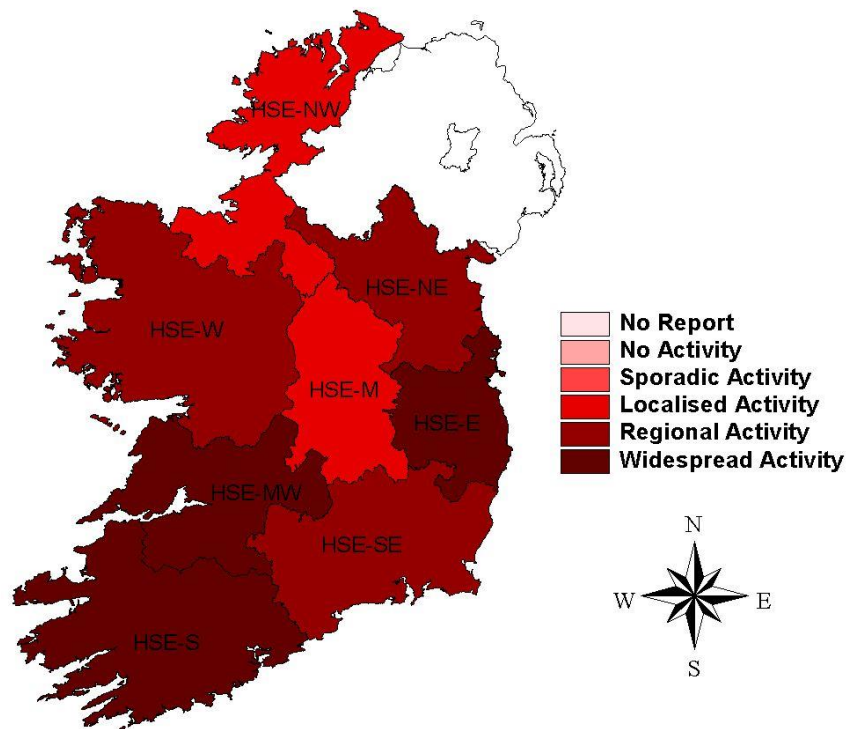


Figure 6: Map of provisional influenza activity by HSE-Area during influenza week 1 2020

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 436 admissions during week 1 2020 (figure 7). This was a decrease compared to the 633 respiratory admissions reported during week 52 2019. Six of the eight hospitals reported data for week 1 2020.

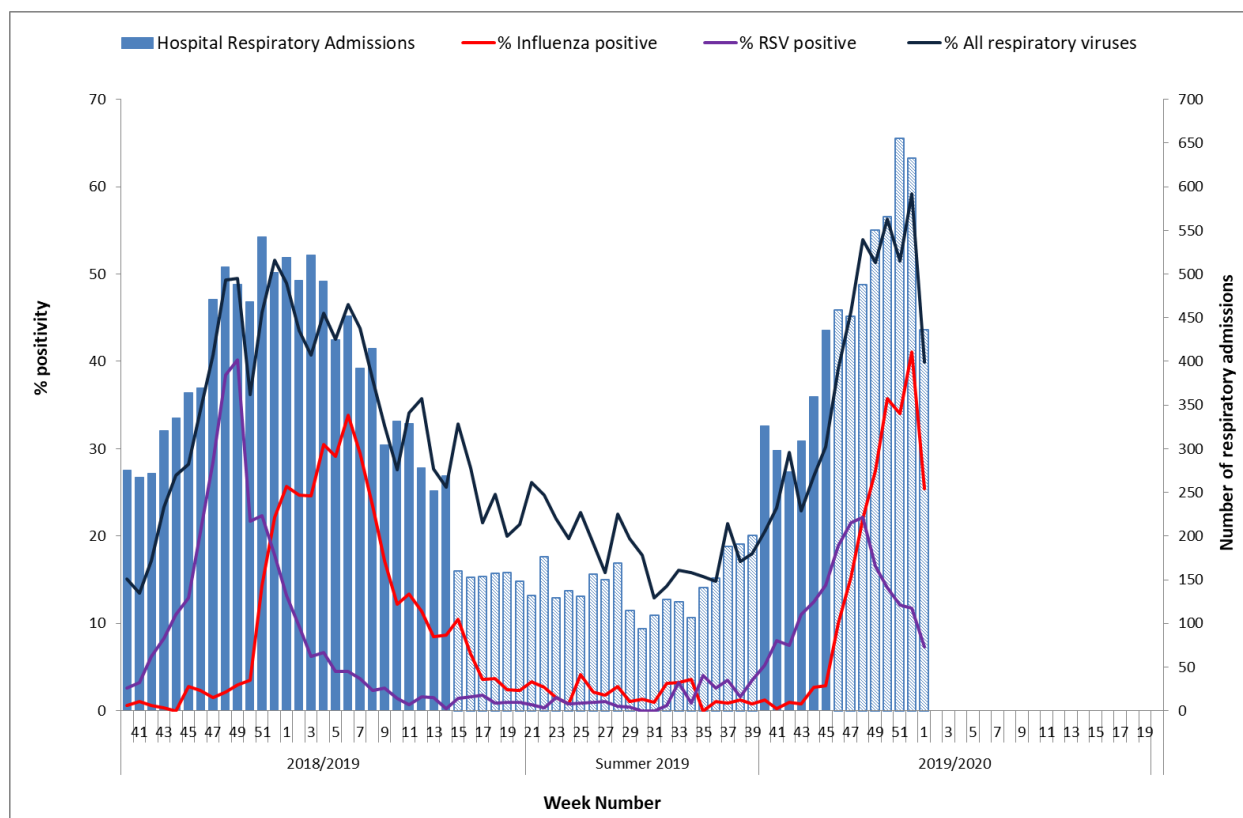


Figure 7: Number of respiratory admissions reported from the sentinel hospital network and % positivity for influenza, RSV and all seasonal respiratory viruses tested* by the NVRL by week and season. Source: Departments of Public Health - Sentinel Hospitals & NVRL. *All seasonal respiratory viruses tested 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.

The proportion of influenza-related calls to GP Out-of-Hours services increased to 8.5% during week 1 2020, up from 7.9% in week 52 2019. Four services reported data for week 1 and there were 1,340 calls relating to self-reported influenza (figure 8).

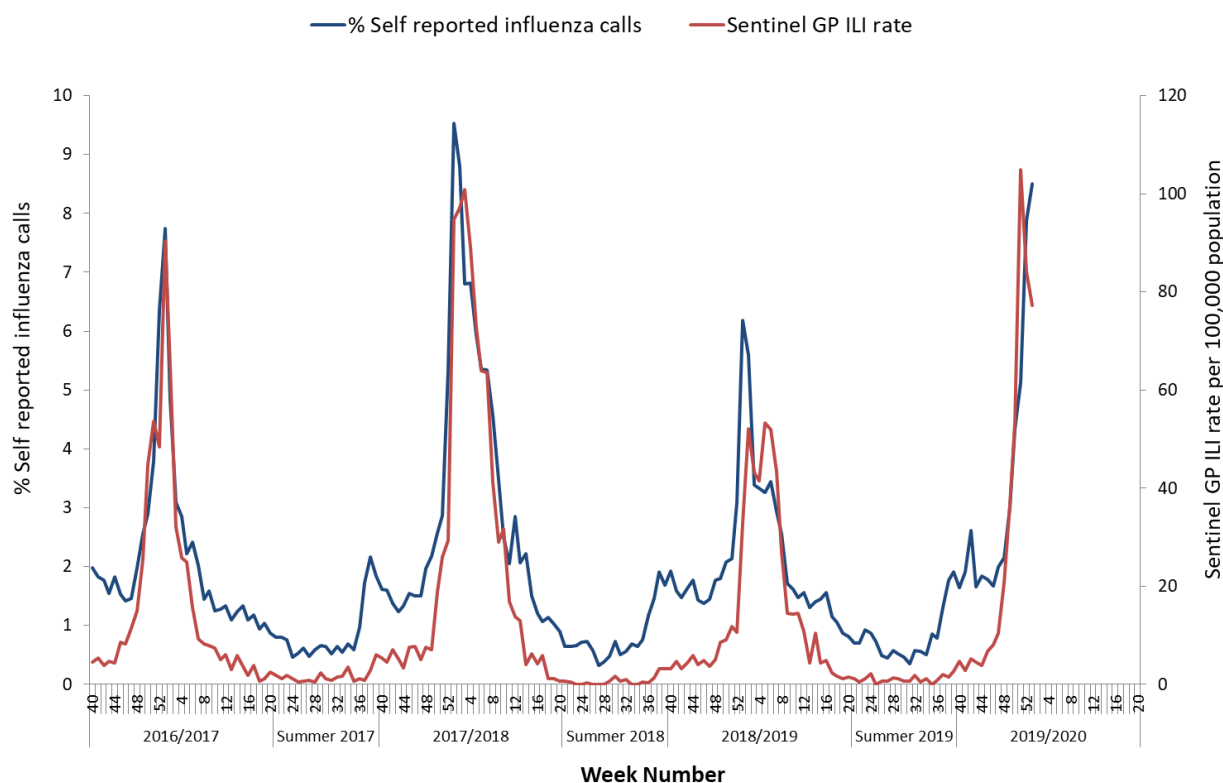


Figure 8: Self-reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and sentinel GP ILI consultation rate per 100,000 population by week and season. Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.

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.

- Influenza notifications increased to 1,399 during week 1 2020, compared to 876 during week 52 2019 and 1,005 during week 51 2019. The decrease in notifications during week 52 2019 is likely to be due to changes in reporting levels over the Christmas holiday period. Influenza remains at high levels in Ireland.
- Of the 1,399 cases notified during week 1 2020, 169 were due to influenza A(H3N2), 20 were due to influenza A(H1N1)pdm09, 1,129 were due to influenza A (not subtyped), 79 were due to influenza B and the influenza type was not reported for the remaining two cases.
- To date this season, 4,777 confirmed cases of influenza have been notified to HPSC; 94% have been due to influenza A (n=4,469) and 6% due to influenza B (n=299). The influenza type was not reported for the remaining 9 cases (0.2%). Of the 1,056 influenza A viruses subtyped, 91% (n=958) were A(H3N2) and 9% (n=98) were A(H1N1)pdm09.
- During week 1 2020, 352 RSV cases were notified. This compares to 136 cases notified in week 52, 2019. RSV is currently at high levels in Ireland.

6. Influenza Hospitalisations

- 662 confirmed influenza hospitalised cases were notified to HPSC during week 1 2020. Of these, 42 were due to influenza A(H3N2), two due to influenza A(H1N1)pdm09, 590 due to influenza A (not subtyped), 26 due to influenza B and the influenza type was not reported for the remaining two cases.
- For the 2019/2020 season to date, 2,038 confirmed influenza hospitalised cases have been notified to HPSC; 311 were due to influenza A(H3N2), 19 due to influenza A(H1N1)pdm09, 1,606 due to influenza A (not subtyped) and 94 due to influenza B. The influenza type was not reported for the remaining eight cases.
- Age specific rates for hospitalised influenza cases are reported in table 4, with the highest rates reported in children aged less than 1 year 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.

- Thirteen confirmed influenza cases were admitted to critical care units and reported to HPSC during week 1 2020.
- During the 2019/2020 season to date, 72 influenza cases have been reported to HPSC as having been admitted to ICU. Eighteen ICU cases were due to influenza A (H3N2), two were due to A(H1N1)pdm09, 50 were due to influenza A (not subtyped), and two were due to influenza B.
- Fifty-seven 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.

| Age (years) | Hospitalised | | Admitted to ICU | |
|--------------|--------------|--|-----------------|--|
| | Number | Age specific rate per 100,000 population | Number | Age specific rate per 100,000 population |
| <1 | 95 | 152.6 | 0 | 0 |
| 1-4 | 245 | 91 | 2 | 0.7 |
| 5-14 | 269 | 39.8 | 4 | 0.6 |
| 15-24 | 94 | 16.3 | 3 | 0.5 |
| 25-34 | 92 | 14 | 2 | 0.3 |
| 35-44 | 92 | 12.3 | 5 | 0.7 |
| 45-54 | 99 | 15.8 | 4 | 0.6 |
| 55-64 | 158 | 31 | 11 | 2.2 |
| ≥65 | 894 | 140.2 | 41 | 6.4 |
| Total | 2,038 | 42.8 | 72 | 1.5 |

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-eight influenza-associated deaths were reported to HPSC to date this season. Twenty-three 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 week 1 after correcting GRO data for reporting delays with the standardised EuroMOMO algorithm.

9. Outbreak Surveillance

- Fifteen influenza outbreaks, five acute respiratory infection outbreaks, and one outbreak due to both influenza type B and human metapneumovirus were reported to HPSC during week 1 2020. There were no RSV outbreaks reported during week 1 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 | 17 | 2 | 11 | 30 |
| HSE-M | 3 | | 1 | 4 |
| HSE-MW | 2 | 1 | 1 | 4 |
| HSE-NE | 3 | 1 | | 4 |
| HSE-NW | 2 | 1 | 2 | 5 |
| HSE-SE | 12 | | 6 | 18 |
| HSE-S | 6 | | 3 | 9 |
| HSE-W | 15 | | 1 | 16 |
| Total | 60 | 5 | 25 | 90 |

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 | 5 |
| | Influenza A | 3 |
| | Influenza A(H3) | 1 |
| | Rhinovirus | 1 |
| | RSV | 1 |
| | RSV B | 1 |
| (blank) | 2 | |
| Community hospital/Long-stay unit total | | 15 |
| Hospital | Influenza | 5 |
| | Influenza A | 8 |
| | Influenza A(H3) | 1 |
| | Influenza A&B | 2 |
| | Influenza B | 1 |
| | RSV | 1 |
| | (blank) | 1 |
| Hospital total | | 19 |
| Nursing home | Influenza | 9 |
| | Influenza A | 17 |
| | Influenza A(H3) | 4 |
| | Mixed influenza B and human metapneumovirus | 1 |
| | Human metapneumovirus and Rhinovirus | 1 |
| | Coronavirus and Rhinovirus | 1 |
| | Rhino/Enterovirus | 1 |
| (blank) | 6 | |
| Nursing home total | | 40 |
| Residential institution | Influenza | 1 |
| | Influenza A | 1 |
| | Rhino/Enterovirus | 1 |
| | RSV | 1 |
| | (blank) | 1 |
| Residential institution total | | 5 |
| School | Influenza A | 2 |
| | (blank) | 7 |
| School total | | 9 |
| Total | | 90 |

10. International Summary

In the temperate zone of the northern hemisphere, respiratory illness indicators and influenza activity continued to increase in most countries. Sentinel surveillance data indicated influenza activity was still increasing across the European Region. Type A viruses have dominated across the European Region. The proportion of influenza A viruses decreased from 75% in week 50 to 62% in week 52, although the distribution of A and B viruses varied considerably between Member States and areas.

Worldwide, seasonal influenza A(H3N2) viruses accounted for the majority of detections. In North America, influenza activity further increased and although all seasonal influenza subtypes were co-circulating there was a high proportion of influenza B viruses. In Europe, influenza activity continued to increase across the region and was reported at moderate levels in some countries of Northern Europe. In Central Asia, influenza activity increased with influenza A and B viruses co-circulating.

National Influenza Centres (NICs) and other national influenza laboratories from 110 countries, areas or territories reported data to FluNet for the time period from 9th December 2019 to 22nd December 2019. The WHO GISRS laboratories tested more than 96,024 specimens during that time period. 20,706 were positive for influenza viruses, of which 14,225 (69%) were typed as influenza A and 6,481 (31%) as influenza B. Of the sub-typed influenza A viruses, 3,210 (29%) were influenza A(H1N1)pdm09 and 7,890 (71%) were influenza A(H3N2). Of the characterized B viruses, 45 (2%) belonged to the B-Yamagata lineage and 2,962 (98%) to the B-Victoria 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](https://ecdc.europa.eu/en/flu/situation-assessment-18-december-2019)

See [ECDC](https://ecdc.europa.eu/en/flu) and [WHO](https://www.who.int/flu) 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](https://ecdc.europa.eu/en/flu). Further information and guidance documents are also available on the [HPSC](https://www.hpsc.ie) and [WHO](https://www.who.int) websites.
- Further information on avian influenza is available on the [ECDC website](https://ecdc.europa.eu/en/flu). The latest ECDC rapid risk assessment on highly pathogenic avian influenza A of H5 type is also available on the [ECDC website](https://ecdc.europa.eu/en/flu).

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

Acknowledgements

This report was prepared by Melissa Brady, Rachel Fiegenbaum, Margaret Fitzgerald, Sarah Jackson and Joan O'Donnell, HPSC. HPSC wishes to thank the sentinel GPs, the ICGP, NVRL, Departments of Public Health, ICSI and HSE-NE for providing data for this report.