

## Summary

### Week 03/2023 (16 January – 22 January 2023)

- The percentage of sentinel primary care specimens from patients presenting with ILI or ARI symptoms that tested positive for an influenza virus remained above the epidemic threshold (10%) and remained stable at 22% compared to 23% in the previous week.
- 31 of 38 countries or areas reported high or very-high intensity and/or widespread activity indicating high seasonal influenza virus circulation across the Region.
- Belgium, Finland, Netherlands, Romania, Slovenia and Kosovo (in accordance with UN Security Council Resolution 1244 (1999)) reported seasonal influenza activity above 40% positivity in sentinel primary care.
- Both influenza type A and type B viruses were detected with A(H1)pdm09 viruses dominating in both sentinel and non-sentinel surveillance systems.
- Hospitalized patients with confirmed influenza virus infection were reported from ICU, other wards (with mainly influenza type A viruses reported) and SARI surveillance (with mainly influenza A(H1)pdm09 subtype viruses reported). Nine countries or areas reported influenza positivity rates above 10% in SARI surveillance.

### 2022-2023 season overview

- The seasonal epidemic activity threshold of 10% positivity in sentinel specimens was first crossed in week 45/2022.
- Influenza activity appears to have decreased across the Region since week 51/2022 following an early start to seasonal influenza activity, though transmission remains at moderate or high intensity in many countries.
- Countries are experiencing a mixed distribution of circulating viruses with increasing circulation of A(H1)pdm09 and B viruses.
- Overall this season, influenza A(H3) viruses have dominated in primary care sentinel specimens but with similar proportions of A(H1)pdm09 and A(H3) viruses in non-sentinel specimens.
- Type A viruses (mostly not subtyped) have been detected in hospitalized patients in ICU and other wards and influenza A(H1)pdm09 viruses have dominated in SARI specimens.

### Other news

- RSV is another respiratory virus that causes acute respiratory disease, mainly among young infants and the elderly, often mild but frequently severe among

children less than 1 year of age and frail elderly. High levels of RSV have been circulating across the Region since week 40/2022, but overall positivity amongst patients in primary care with acute respiratory illness has remained around 10% since week 1/2023. More information on the risk of RSV infections can be found here: <https://www.ecdc.europa.eu/sites/default/files/documents/RRA-20221128-473.pdf>

For information about the SARS-CoV-2 situation in the WHO European Region visit:

WHO website: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

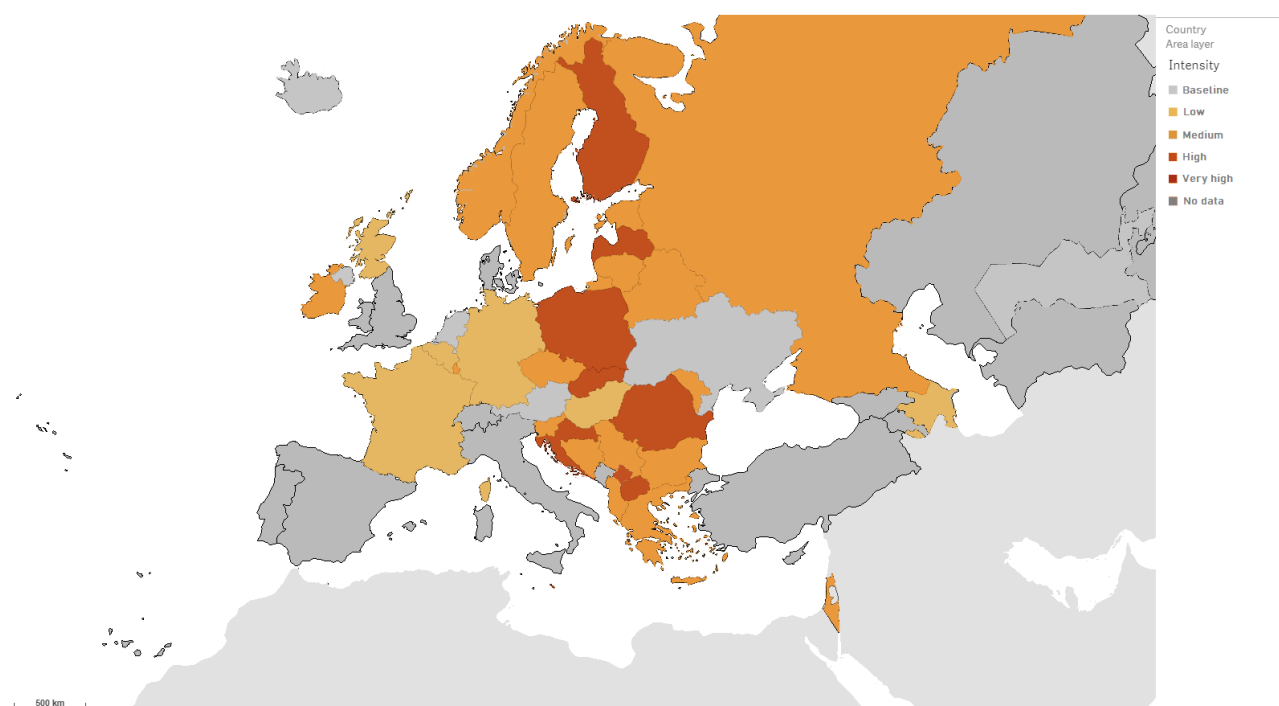
ECDC website: <https://www.ecdc.europa.eu/en/novel-coronavirus-china>

## Qualitative indicators

For week 3/2023, of 38 countries and areas reporting on intensity of influenza activity, 6 reported baseline-intensity (Austria, Iceland, Netherlands, Ukraine, United Kingdom (Northern Ireland) and Uzbekistan), 6 reported low-intensity (Azerbaijan, Belgium, France, Germany, Hungary and United Kingdom (Scotland)), 17 reported medium-intensity (across the Region) and 9 reported high-intensity (across the Region) (Fig. 1).

Of 38 countries and areas reporting on geographic spread of influenza viruses, 3 reported sporadic spread (Azerbaijan, United Kingdom (Northern Ireland) and Uzbekistan), 3 reported local spread (Belarus, Malta and Slovakia), 4 reported regional spread (Austria, Bulgaria, Serbia and Kosovo (in accordance with UN Security Council Resolution 1244 (1999))) and 28 reported widespread activity (across the Region) (Fig. 2).

**Figure 1. Intensity of influenza activity in the European Region, week 3/2023**

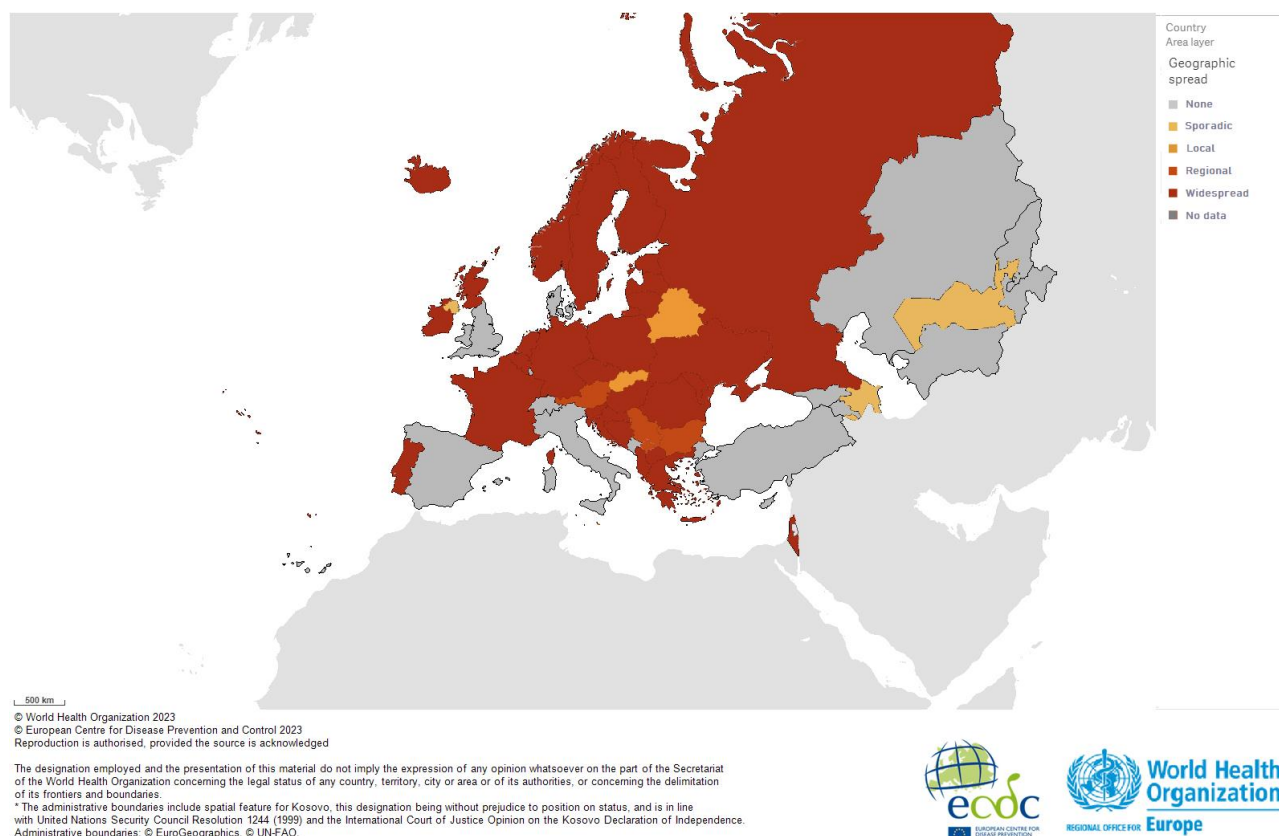


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\* The administrative boundaries include spatial feature for Kosovo, this designation being without prejudice to position on status, and is in line with United Nations Security Council Resolution 1244 (1999) and the International Court of Justice Opinion on the Kosovo Declaration of Independence.  
Administrative boundaries: © EuroGeographics, © UN-FAO.



**Figure 2. Geographic spread of influenza viruses in the European Region, week 3/2023**



For interactive maps of influenza intensity and geographic spread, see the [Flu News Europe website](#).

### Please note:

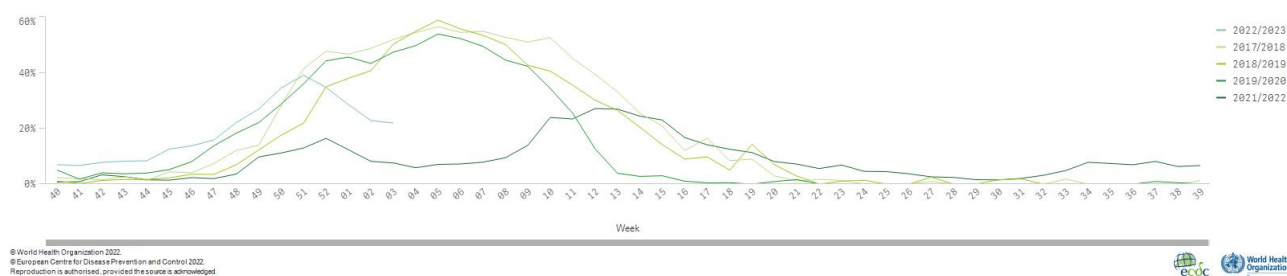
Assessment of the intensity of activity indicator includes consideration of ILI or ARI rates. These ILI or ARI rates might be driven by respiratory infections caused by viruses other than influenza, including SARS-CoV-2 and RSV, leading to observed increases in the absence of influenza virus detections.

Assessment of intensity and geographic spread indicators includes consideration of sentinel and non-sentinel influenza virus detection data. Non-sentinel influenza virus detections, often higher, might translate into reporting of elevated geographic spread even in the absence of sentinel detections.

## Influenza positivity

For the European Region, influenza virus positivity in sentinel primary care specimens decreased from 23% in the previous week to 22% in week 3/2023. Seasonal activity above the epidemic threshold, which is set at 10%, started in week 45/2022 and there has been a continued decline since week 51/2022. This is an earlier influenza epidemic start than in the four previous seasons: ranging from week 47 (2019/20 season) to 49 (2021/22 season). This is also an earlier peak than in the four previous seasons: ranging from week 52 (2021/22 season) to 5 (2017/18 to 2019/20) (Fig. 3).

**Figure 3. Influenza virus positivity in sentinel-source specimens by week, WHO European Region, 2022/2023 and 4 recent seasons**



## External data sources

### Mortality monitoring:

EuroMOMO estimates all-cause mortality for the participating European countries, the full report can be found here: <https://www.euromomo.eu/>

Please refer to the EuroMOMO website for a cautionary note relating to interpretation of these data.

## Primary care data

### Syndromic surveillance data

Of the countries and areas in which thresholds for ILI activity are defined, countries in eastern (n=2; Azerbaijan and Republic of Moldova), northern (n=5; Estonia, Ireland, Latvia, Lithuania and Norway), southern (n=6; Croatia, Greece, Israel, North Macedonia, Romania and Slovenia) and western (n=7; Austria, Belgium, Czechia, Hungary, Luxembourg, Poland and Switzerland) areas of the European Region reported activity above baseline levels.

Of the countries and areas in which thresholds for ARI activity are defined, countries in eastern (n=1; Republic of Moldova), northern (n=1; Latvia), southern (n=4; Albania, Bulgaria, Romania and Slovenia) and western (n=1; Czechia) areas of the European Region reported activity above baseline levels.

### Please note:

Assessment of the syndromic surveillance data of ILI or ARI rates might be driven by respiratory infections with viruses other than influenza, including SARS-CoV-2 and RSV, leading to observed increases in the absence of influenza virus detections. The thresholds mentioned are related to the Moving Epidemic Method (MEM) method and based on historic ILI/ARI data.

### Viruses detected in sentinel-source specimens (ILI and ARI)

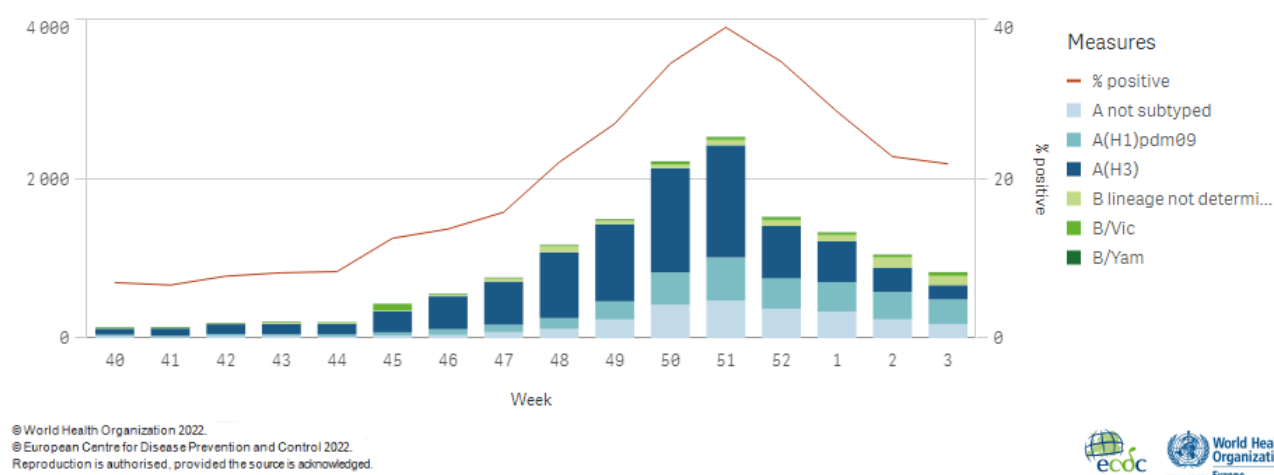
For week 3/2023, 827 (22%) of 3 777 sentinel specimens tested positive for an influenza virus; 80% were type A and 20% were type B. Of 488 subtyped A viruses, 63% were A(H1)pdm09 and 37% A(H3). All 46 type B viruses ascribed to a lineage were B/Victoria (Fig. 4 and Table 1).

Of 34 countries and areas across the Region that each tested at least 10 sentinel specimens in week 3/2023, 28 reported a positivity rate at or above 10% (median 29%; range 10% - 82%), of which 6 reported positivity above 40%: Romania (82%), Netherlands (48%), Belgium (46%), Finland (46%), Slovenia (44%) and Kosovo (in accordance with UN Security Council Resolution 1244 (1999)) (43%).

For the season to date, 14 709 (23%) of 64 517 sentinel specimens tested positive for an influenza virus. More influenza type A (n=13 591, 92%) than type B (n=1 118, 8%) viruses have been detected. Of 10 984 subtyped A viruses, 7 945 (72%) were A(H3) and 3 039 (28%) were A(H1)pdm09. All 355 influenza type B viruses ascribed to a lineage were B/Victoria (68% of type B viruses were reported without a lineage) (Fig. 4 and Table 1).

Details of the distribution of viruses detected in non-sentinel-source specimens are presented in the **virus characteristics** section.

**Figure 4. Influenza virus positivity and detections by type, subtype/lineage – sentinel sources, WHO European Region, season 2022/2023**



**Table 1. Influenza virus detections in sentinel source specimens by type and subtype for week 3/2023 and cumulatively for the season**

Sentinel	Current Week (3)		Season 2022-2023	
Virus type and subtype	Number	% <sup>a</sup>	Number	% <sup>a</sup>
<b>Influenza A</b>	<b>665</b>	<b>80</b>	<b>13 591</b>	<b>92</b>
A(H1)pdm09	309	63	3 039	28
A(H3)	179	37	7 945	72
A not subtyped	177	-	2 607	-
<b>Influenza B</b>	<b>162</b>	<b>20</b>	<b>1 118</b>	<b>8</b>
B/Victoria lineage	46	100	355	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	116	-	763	-
<b>Total detections (total tested)</b>	<b>827 (3 777)</b>	<b>22</b>	<b>14 709 (64 517)</b>	<b>23</b>

<sup>a</sup> For influenza type percentage calculations, the denominator is total detections; for subtype and lineage, it is total influenza A subtyped and total influenza B lineage determined, respectively; for total detections, it is total tested.

## External data sources

**Influenzanet** collects weekly data on symptoms in the general community from different participating countries across the EU/EEA. Please refer to the website for additional information for week 3/2023.

## Hospital surveillance

A subset of Member States and areas monitors severe disease related to influenza virus infection by surveillance of 1) hospitalized laboratory-confirmed influenza cases in ICUs, or other wards, or 2) severe acute respiratory infections (SARI).

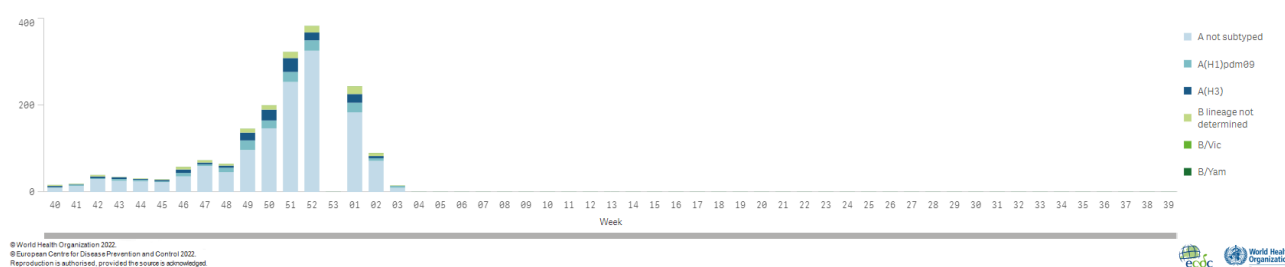
### Laboratory-confirmed hospitalized cases

#### 1.1) Hospitalized laboratory-confirmed influenza cases - Intensive care units (ICUs)

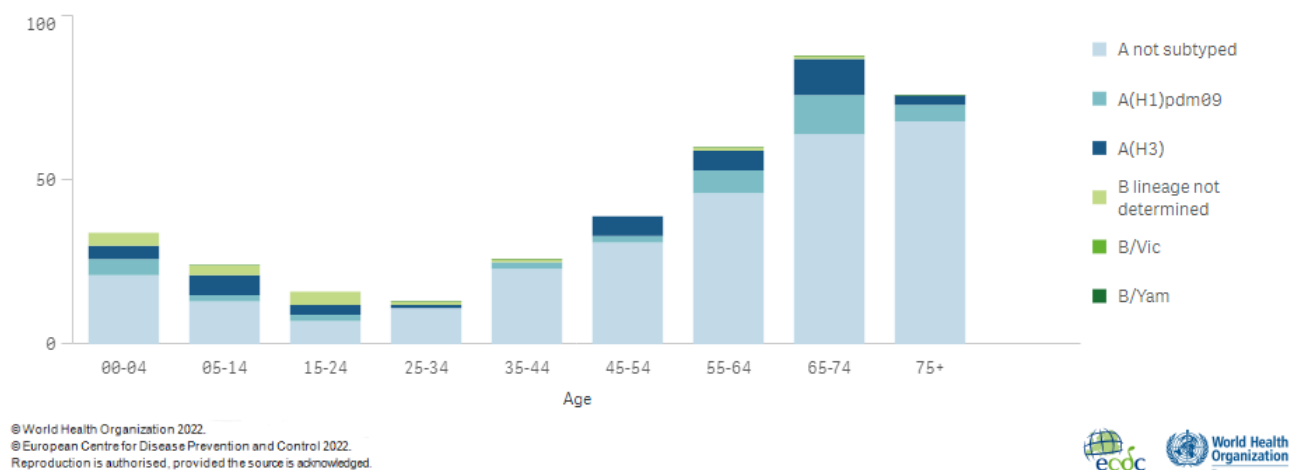
For week 3/2023, 15 laboratory-confirmed influenza cases were reported from ICU wards (in Ireland and Sweden). Both influenza type A viruses (n=93%) and type B viruses (n=7%) were detected. All 4 subtyped influenza type A viruses were A(H1)pdm09 (Fig. 5 and 6).

Since week 40/2022, more influenza type A (n=1 668, 95%) than type B (n=97, 5%) viruses were detected (Czechia, Ireland, Sweden and United Kingdom (England)). Of 308 subtyped influenza A viruses, 51% were A(H1)pdm09 and 49% were A(H3). No influenza B viruses were ascribed to a lineage. Of 376 cases with known age, 164 were 65 years and older, 154 were 15-64 years old, 34 were 0-4 years old and 24 were 5-14 years old.

**Figure 5. Number of laboratory-confirmed hospitalized influenza cases in intensive care units (ICU) by week of reporting, WHO European Region, season 2022/2023**



**Figure 6. Distribution of influenza virus types, subtypes/lineages by age group in intensive care units (ICU), WHO European Region, season 2022/2023**

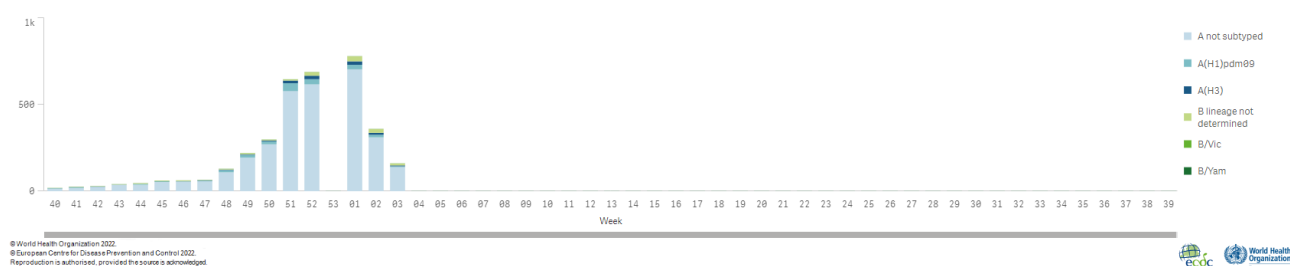


## 1.2) Hospitalized laboratory-confirmed influenza cases – other wards

For week 3/2023, 160 laboratory-confirmed influenza cases were reported from other wards by Ireland. Influenza type A viruses (93%) were detected more frequently than influenza type B viruses (7%). Of 10 subtyped influenza type A viruses, 5 were A(H1)pdm09 and 5 were A(H3) (Fig. 7 and 8).

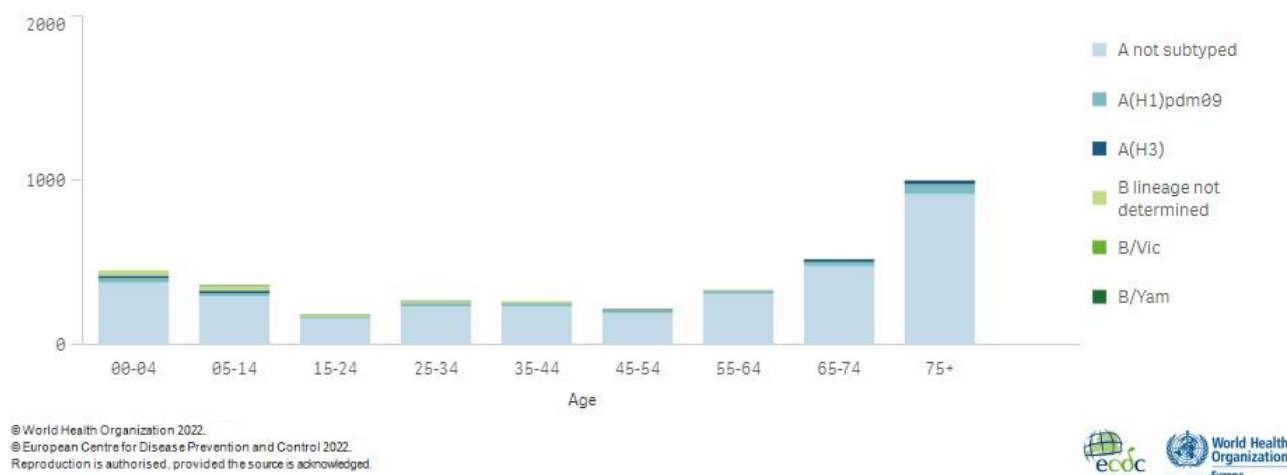
Since week 40/2022, 3 499 influenza type A viruses and 127 influenza type B viruses were reported from patients in other wards in Czechia and Ireland. Of 279 subtyped influenza A viruses, 69% (n=192) were A(H1)pdm09 and 31% (n=87) A(H3). The 3 626 cases with known age fell in 4 age groups: 1 533 were 65 years and older, 1 274 were 15-64 years old, 455 were 0-4 years old and 364 were 5-14 years old.

**Figure 7. Number of laboratory-confirmed hospitalized influenza cases in wards other than intensive care units (non-ICU) by week of reporting, WHO European Region, season 2022/2023**





**Figure 8. Distribution of influenza virus types, subtypes/lineages by age group in wards other than intensive care units (non-ICU), WHO European Region, season 2022/2023**



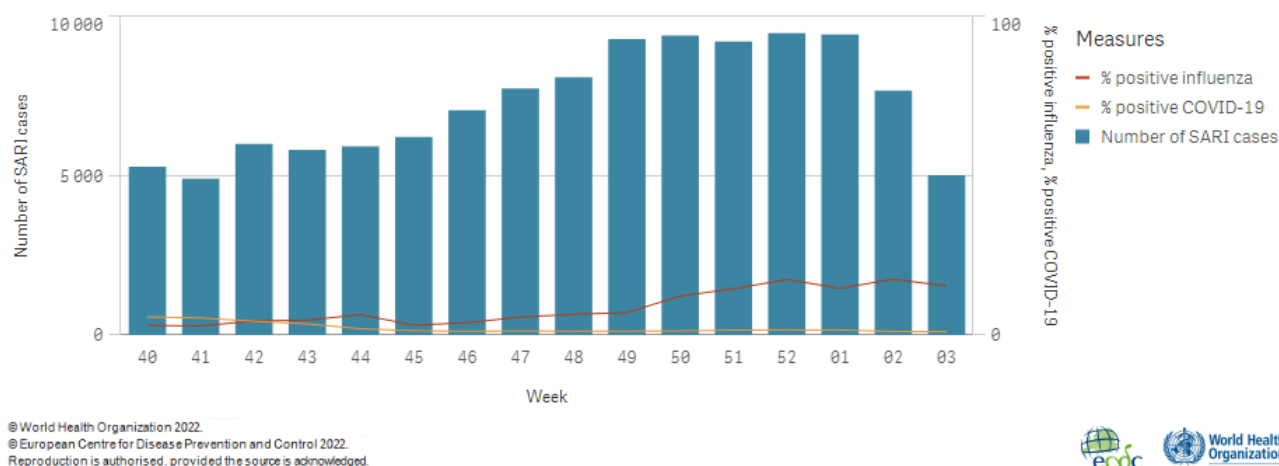
## Severe acute respiratory infection (SARI)-based hospital surveillance

For week 3/2023, 3 379 SARI cases were reported by 17 countries or areas (Albania, Belarus, Belgium, Bosnia and Herzegovina, Germany, Ireland, Kyrgyzstan, Lithuania, Malta, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Spain, Ukraine and Uzbekistan). Of 1 037 specimens tested for influenza viruses, 15% (n=160) were positive (Fig. 9). Of these, influenza type A viruses (n=126, 79%) were detected more frequently than influenza type B viruses (n=34, 21%). Of 97 subtyped A viruses, 78% were A(H1)pdm09 and 22% A(H3). No type B viruses were ascribed to a lineage. Of 11 countries and areas across the Region that each tested at least 10 SARI cases, 9 reported positivity rates above 10%: Romania (49%), Serbia (42%), Lithuania (36%), Russian Federation (31%), Ireland (27%), Ukraine (26%), Albania (25%), Kyrgyzstan (25%) and Bosnia and Herzegovina (23%).

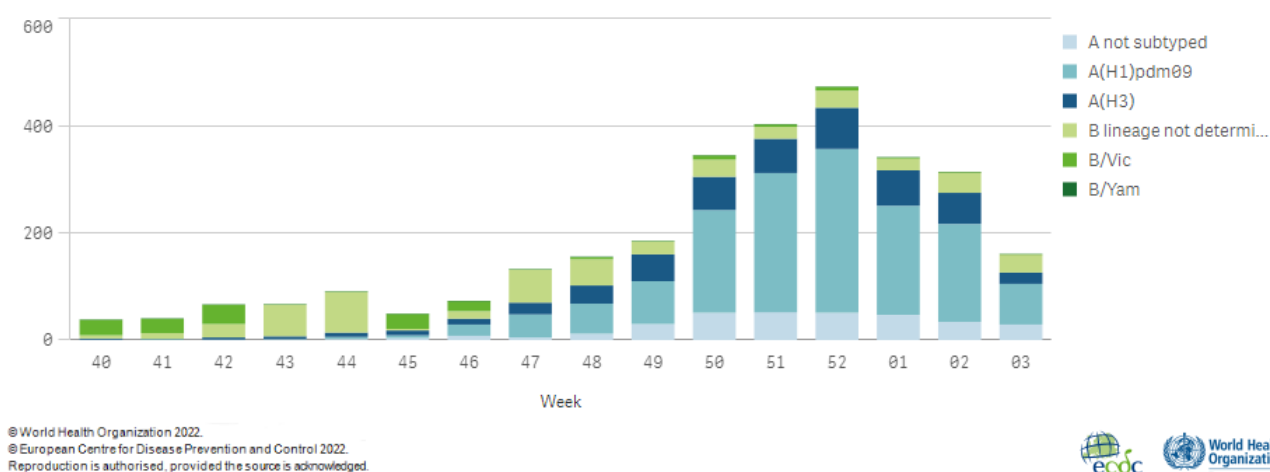
For the season, 87 474 SARI cases were reported by 26 countries or areas (Albania, Armenia, Belarus, Belgium, Bosnia and Herzegovina, Croatia, Georgia, Germany, Ireland, Kazakhstan, Kyrgyzstan, Lithuania, Malta, Montenegro, North Macedonia, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Spain, Tajikistan, Türkiye, Ukraine, Uzbekistan and Kosovo\* (in accordance with Security Council resolution 1244 (1999))).

For SARI cases testing positive for influenza virus since week 40/2022, type A viruses have been the most common (n=2 254, 77%) and of these 1 927 were subtyped: 1 434 (74%) were infected by A(H1)pdm09 viruses and 493 (26%) were infected by A(H3) viruses. Only 23% (n=167) of the influenza B viruses were ascribed to a lineage, all were B/Victoria (Fig. 10).

**Figure 9. Number of severe acute respiratory infection (SARI) cases (bar) and positivity for influenza virus and SARS-CoV-2 (line) by week, WHO European Region, season 2022/2023**



**Figure 10. Influenza virus detections by type, subtype/lineage from severe acute respiratory infection (SARI) cases, WHO European Region, season 2022/2023**



## Virus characteristics

Details of the distribution of viruses detected in sentinel-source specimens can be found in the **Primary care data** section.

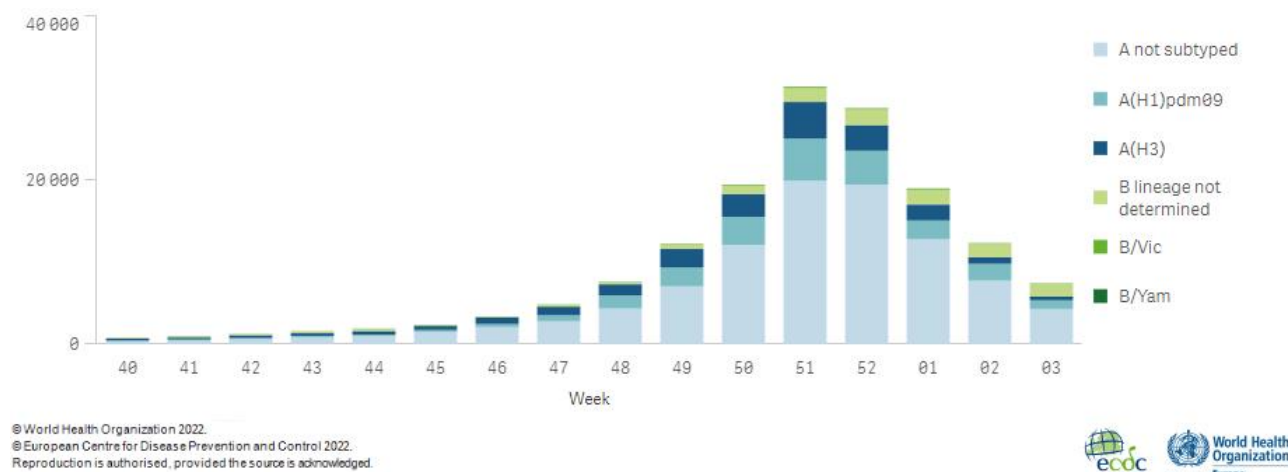
### Non-sentinel virologic data

For week 3/2023, 7 438 of 64 201 specimens from non-sentinel sources (such as hospitals, schools, primary care facilities not involved in sentinel surveillance, or nursing homes and other institutions) tested positive for an influenza virus; 5 855 (79%) were type A and 1 583 (21%) were type B. Of 1 547 subtyped A viruses, 1 047 (68%) were A(H1)pdm09 and 500 (32%) A(H3). All 36 type B viruses ascribed to a lineage were B/Victoria (Fig. 11 and Table 2).

For the season to date, more influenza type A (n=142 844, 92%) than type B (n=12 352, 8%) viruses have been detected. Of 45 401 subtyped A viruses, 24 170 (53%) were

A(H1)pdm09 and 21 231 (47%) were A(H3). All 967 influenza type B viruses ascribed to a lineage were B/Victoria (92% of type B viruses were reported without a lineage) (Fig. 11 and Table 2).

**Figure 11. Influenza detections by type, subtype/lineage and week, non-sentinel sources, WHO European Region, season 2022/2023**



**Table 2. Influenza virus detections in non-sentinel-source specimens by type and subtype, week 3/2023 and cumulatively for the season**

Non-sentinel	Current Week (3)		Season 2022-2023	
Virus type and subtype	Number	% <sup>a</sup>	Number	% <sup>a</sup>
<b>Influenza A</b>	<b>5 855</b>	<b>79</b>	<b>142 844</b>	<b>92</b>
A(H1)pdm09	1 047	68	24 170	53
A(H3)	500	32	21 231	47
A not subtyped	4 308	-	97 443	-
<b>Influenza B</b>	<b>1 583</b>	<b>21</b>	<b>12 352</b>	<b>8</b>
B/Victoria lineage	36	100	967	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	1 547	-	11 385	-
<b>Total detections (total tested)</b>	<b>7 438 (64 201)</b>	<b>NA</b>	<b>155 196 (1 164 295)</b>	<b>NA</b>

<sup>a</sup> For type percentage calculations, the denominator is total detections; for subtype and lineage, it is total influenza A subtyped and total influenza B lineage determined, respectively; as not all countries have a true non-sentinel testing denominator, no percentage calculations for total tested are shown.

## Genetic characterization

Of the 784 genetically characterized A(H1)pdm09 viruses up to week 3/2023, 717 were attributed to clade 6B.1A.5a.2 of which 300 (42%) were represented by A/Norway/25089/2022, 213 (30%) by A/Sydney/5/2021 and 204 (28%) by A/Victoria/2570/2019. Three (<1%) were attributed to clade 6B.1A.5a.1 represented by A/Guangdong-Maonan/SWL1536/2019. 64 (8%) were not attributed to a subgroup.

Among the 1 186 A(H3) viruses characterized up to week 3/2023, 1 140 were attributed to clade 3C.2a1b.2a.2, of which 746 (65%) were represented by A/Bangladesh/4005/2020, 370 (32%) by A/Slovenia/8720/2022, 24 (2%) by A/Darwin/9/2021. 3 (<1%) were attributed to clade 3C.2a1b.1a represented by A/Denmark/3264/2019. 43 (4%) viruses were not attributed to a subgroup.

Up to week 3/2023, 248 B/Victoria viruses were characterized, 114 (46%) of which were attributed to clade V1A.3a.2 represented by B/Austria/1359417/2021. 134 viruses (54%) were not attributed to a subgroup.

**Table 3. Number of influenza viruses attributed to genetic groups, cumulative for the season, WHO European Region**

*\* Due to data entry error, this table cannot be display at this time.*

Currently, **WHO Europe and ECDC's December** virus characterization report is available and describes available data from circulating viruses for the early weeks of the 2022-2023 influenza season: type A influenza virus circulation dominated over type B, with similar proportions of circulating A(H3) and A(H1)pdm09 viruses. Vaccination remains the best protective measure for prevention of influenza.

Previously published influenza virus characterization reports are available on the **ECDC website** and the **WHO website**.

## **Antiviral susceptibility testing**

Up to week 3/2023, 1 745 viruses were assessed for susceptibility to neuraminidase inhibitors (719 A(H3), 540 A(H1)pdm09 and 224 B viruses genotypically and 195 A(H3), 53 A(H1)pdm09 and 14 B viruses phenotypically), and 1 246 viruses were assessed for susceptibility to baloxavir marboxil (732 A(H3), 313 A(H1)pdm09 and 201 B viruses genotypically). Phenotypically and genotypically, no virus yielded evidence for reduced susceptibility to any of the drugs.

## **Vaccine**

Results from a controlled, randomised trial in UK concluded that concomitant vaccination with one of two SARS-CoV-2 vaccines (ChAdOx1 or BNT162b2) plus an age-appropriate influenza vaccine raised no safety concerns and preserves **antibody responses** to both vaccines.

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(21\)02329-1/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)02329-1/fulltext)

### **Available vaccines in Europe**

<https://www.ecdc.europa.eu/en/seasonal-influenza/prevention-and-control/vaccines/types-of-seasonal-influenza-vaccine>

**European Vaccination Information Portal**

## **Vaccine composition**

On 25 February 2022, WHO published **recommendations** for the components of influenza vaccines for use in the 2022-2023 northern hemisphere influenza season:

The WHO recommended that quadrivalent vaccines for use in the 2022-2023 influenza season in the northern hemisphere contain the following:

#### **Egg-based Vaccines**

- an A/Victoria/2570/2019 (H1N1)pdm09-like virus;
- an A/Darwin/9/2021 (H3N2)-like virus;
- a B/Austria/1359417/2021 (B/Victoria lineage)-like virus; and
- a B/Phuket/3073/2013 (B/Yamagata lineage)-like virus.

#### **Cell culture- or recombinant-based Vaccines**

- an A/Wisconsin/588/2019 (H1N1)pdm09-like virus;
- an A/Darwin/6/2021 (H3N2)-like virus;
- a B/Austria/1359417/2021 (B/Victoria lineage)-like virus; and
- a B/Phuket/3073/2013 (B/Yamagata lineage)-like virus.

The WHO recommended that trivalent vaccines for use in the 2022-2023 influenza season in the northern hemisphere contain the following:

#### **Egg-based vaccines**

- an A/Victoria/2570/2019 (H1N1)pdm09-like virus;
- an A/Darwin/9/2021 (H3N2)-like virus; and
- a B/Austria/1359417/2021 (B/Victoria lineage)-like virus.

#### **Cell culture- or recombinant-based vaccines**

- an A/Wisconsin/588/2019 (H1N1)pdm09-like virus;
- an A/Darwin/6/2021 (H3N2)-like virus; and
- a B/Austria/1359417/2021 (B/Victoria lineage)-like virus

**On 23 September 2022, WHO published recommendations for the components of influenza vaccines for use in the 2023 southern hemisphere influenza season:**

#### **Egg-based Vaccines**

- an A/Sydney/5/2021 (H1N1)pdm09-like virus;
- an A/Darwin/9/2021 (H3N2)-like virus;
- a B/Austria/1359417/2021 (B/Victoria lineage)-like virus; and
- a B/Phuket/3073/2013 (B/Yamagata lineage)-like virus.

#### **Cell- or recombinant-based Vaccines**

- an A/Sydney/5/2021 (H1N1)pdm09-like virus;
- an A/Darwin/6/2021 (H3N2)-like virus;
- a B/Austria/1359417/2021 (B/Victoria lineage)-like virus; and
- a B/Phuket/3073/2013 (B/Yamagata lineage)-like virus.

It was recommended that **trivalent influenza vaccines** for use in the 2023 southern hemisphere influenza season contain the following:

#### **Egg-based vaccines**

- an A/Sydney/5/2021 (H1N1)pdm09-like virus;
- an A/Darwin/9/2021 (H3N2)-like virus; and
- a B/Austria/1359417/2021 (B/Victoria lineage)-like virus.

**Cell- or Recombinant-based vaccines**

- an A/Sydney/5/2021 (H1N1)pdm09-like virus;
- an A/Darwin/6/2021 (H3N2)-like virus; and
- a B/Austria/1359417/2021 (B/Victoria lineage)-like virus

The full report is published [here](#).

## Acknowledgements

The weekly updates are prepared by an editorial team at the European Centre for Disease Prevention and Control (Cornelia Adlhoch and Edoardo Colzani) and the WHO Regional Office for Europe (Margaux Meslé, Piers Mook and Richard Pebody). It was reviewed by experts from the network (Adam Meijer, National Institute for Public Health and the Environment (RIVM), the Netherlands); Rod Daniels WHO Collaborating Centre for Reference and Research on Influenza, Francis Crick Institute, United Kingdom).

Maps and commentary do not represent a statement on the legal or border status of the countries and territories shown.

All data are up to date on the day of publication. Past this date, however, published data should not be used for longitudinal comparisons, as countries retrospectively update their databases. The WHO Regional Office for Europe is responsible for the accuracy of the Russian translation.

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