Flu News Europe
Joint ECDC–WHO/Europe weekly influenza update

Summary

Week 04/2023 (23 January – 29 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 decreased to 21% from 23% in the previous week.
- 29 of 38 countries or areas reported high or medium intensity and/or widespread activity indicating substantial seasonal influenza virus circulation across the Region.
- Armenia, Bulgaria, France, Slovenia, Switzerland and Republic of Moldova 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). Eight 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 the seasonal influenza epidemic, though transmission remains at moderate or high levels in many countries.
- Countries are experiencing a mixed distribution of circulating viruses with increasing circulation of A(H1)pdm09 and type 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 4/2023, of 38 countries and areas reporting on intensity of influenza activity, 7 reported baseline-intensity (Azerbaijan, Germany, Netherlands, Ukraine, United Kingdom (Northern Ireland), United Kingdom (Scotland) and Uzbekistan), 7 reported low-intensity (Austria, Belgium, Czechia, France, Hungary, Ireland and Kyrgyzstan), 16 reported medium-intensity (across the Region) and 8 reported high-intensity (Croatia, Finland, Latvia, Malta, North Macedonia, Poland, Russian Federation and Slovakia) (Fig. 1).

Of 38 countries and areas reporting on geographic spread of influenza viruses, 1 reported no activity (Uzbekistan), 2 reported sporadic spread (Azerbaijan and United Kingdom (Northern Ireland)), 3 reported local spread (Belarus, Malta and Slovakia), 5 reported regional spread (Austria, Bulgaria, Czechia, Kyrgyzstan and Serbia) and 27 reported widespread activity (across the Region) (Fig. 2).

Figure 1. Intensity of influenza activity in the European Region, week 4/2023

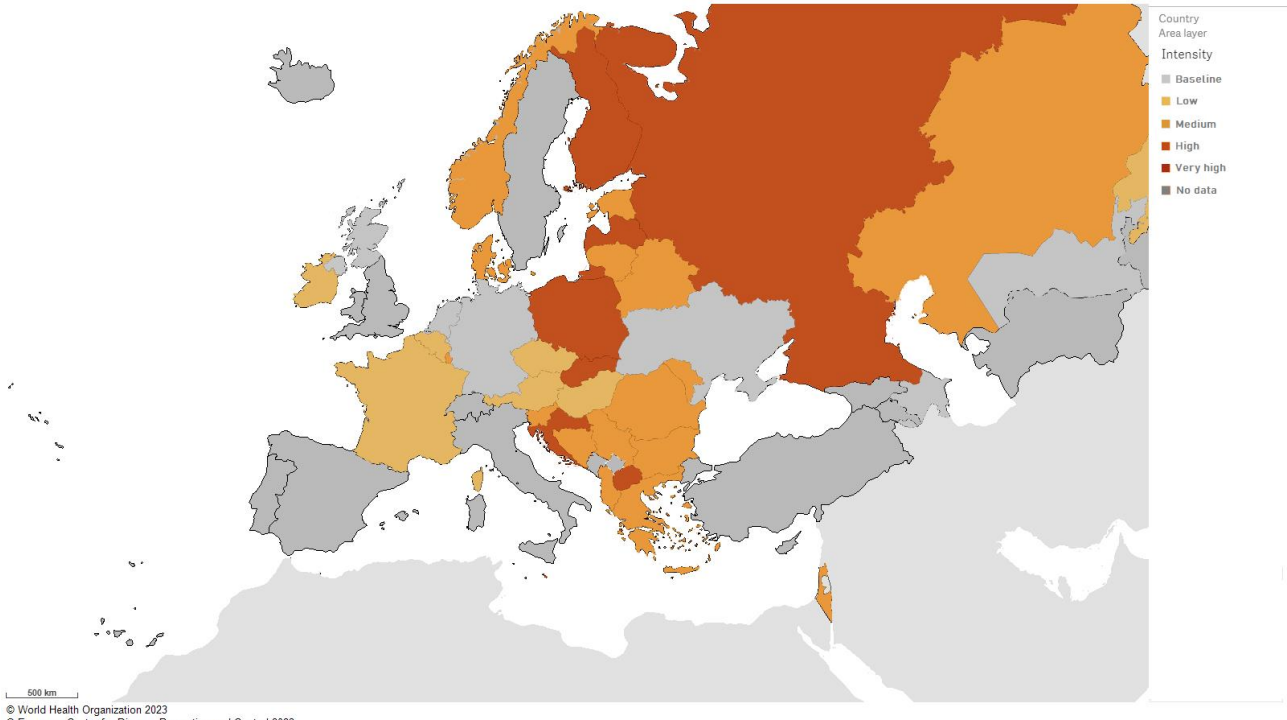
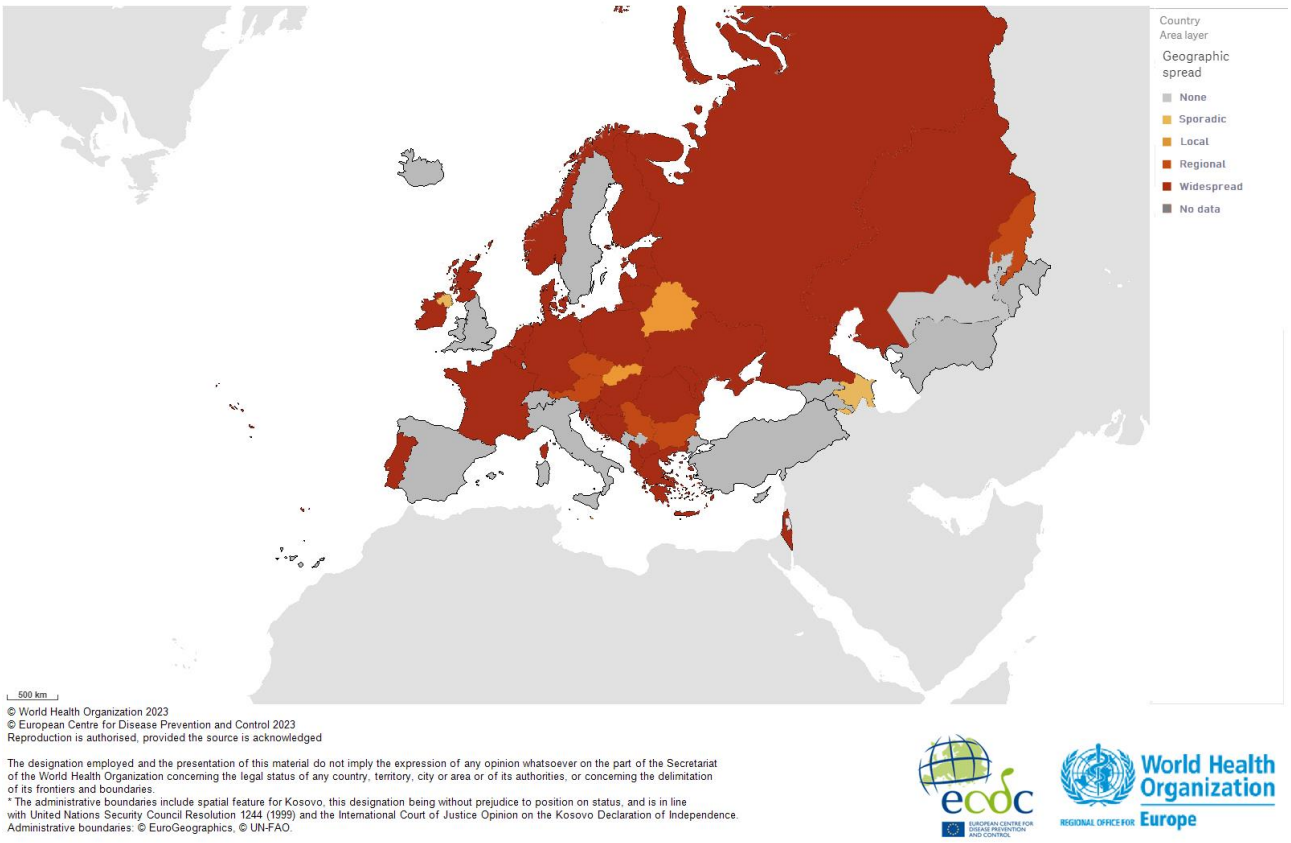


Figure 2. Geographic spread of influenza viruses in the European Region, week 4/2023



For interactive maps of influenza intensity and geographic spread, see the Flu News Europe website.

Please note:

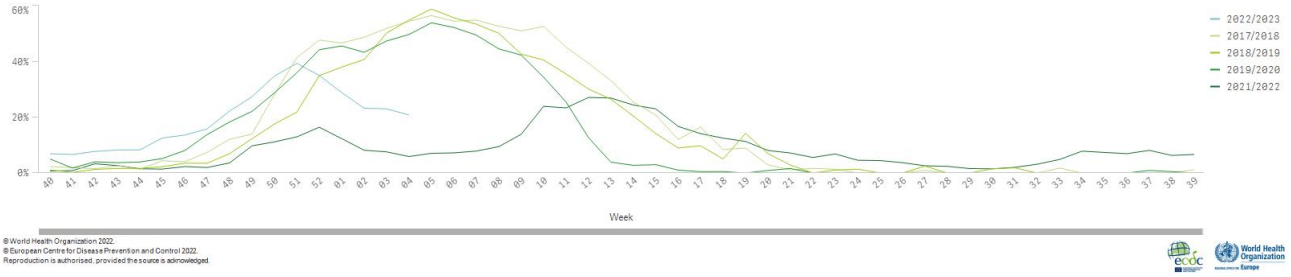
Assessment of the intensity of activity indicator includes consideration of ILI or ARI rates. These ILI or ARI rates might be driven by respiratory infections caused by viruses other than influenza, including SARS-CoV-2 and RSV, leading to observed increases in the absence of influenza virus detections.

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 21% in week 4/2023. 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=4; Azerbaijan, Kazakhstan, Kyrgyzstan and Republic of Moldova), northern (n=6; Denmark, Estonia, Ireland, Latvia, Lithuania and Norway), southern (n=6; Croatia, Greece, Israel, North Macedonia, Romania and Slovenia) and western (n=6; Austria, Belgium, Czechia, Hungary, Luxembourg 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=4; Kazakhstan, Kyrgyzstan, Republic of Moldova and Uzbekistan), northern (n=1; Latvia), southern (n=3; Albania, Bulgaria 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 4/2023, 679 (21%) of 3 264 sentinel specimens tested positive for an influenza virus; 68% were type A and 32% were type B. Of 302 subtyped A viruses, 69% were A(H1)pdm09 and 31% A(H3). All 32 type B viruses ascribed to a lineage were Victoria lineage (Fig. 4 and Table 1).

Of 29 countries and areas across the Region that each tested at least 10 sentinel specimens in week 4/2023, 22 reported a rate of influenza virus detections at or above 10% (median 26%; range 10% - 50%), of which 6 reported positivity of 40% or above: Armenia (50%), France (46%), Switzerland (46%), Slovenia (42%), Republic of Moldova (40%) and Bulgaria (40%).

For the season to date, 15 783 (23%) of 68 972 sentinel specimens tested positive for an influenza virus. More influenza type A (n=14 417, 91%) than type B (n=1 366, 9%) viruses have been detected. Of 11 591 subtyped A viruses, 8 212 (71%) were A(H3) and 3 379 (29%) were A(H1)pdm09. All 405 influenza type B viruses ascribed to a lineage were B/Victoria (70% 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

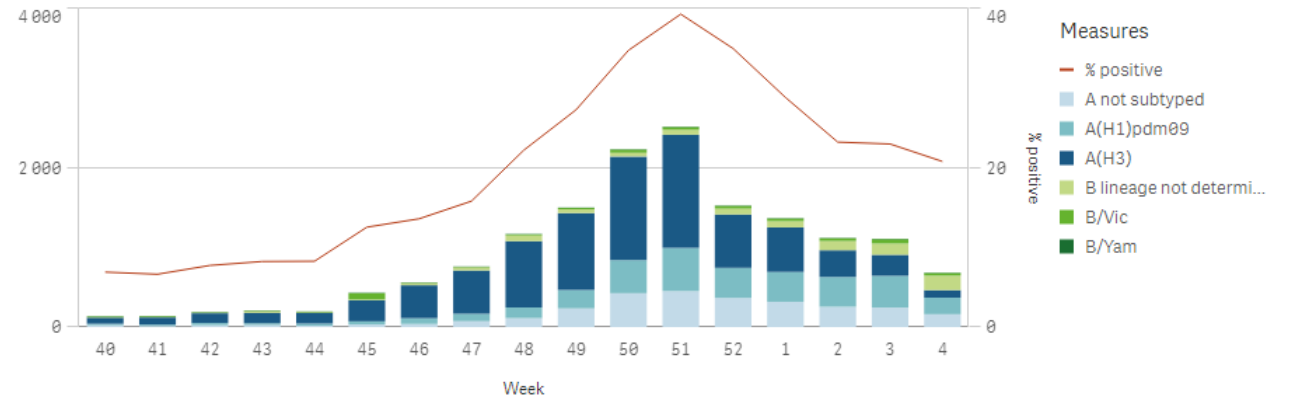


Table 1. Influenza virus detections in sentinel source specimens by type and subtype for week 4/2023 and cumulatively for the season

Sentinel	Current Week (4)		Season 2022-2023	
Virus type and subtype	**Number**	**%[a]**	**Number**	**%[a]**
Influenza A	**464**	**68.3**	**14 417**	**91.3**
A(H1)pdm09	208	68.9	3 379	29.2
A(H3)	94	31.1	8 212	70.8
A not subtyped	162	-	2 826	-
Influenza B	**215**	**31.7**	**1 366**	**8.7**
B/Victoria lineage	32	100	405	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	183	-	961	-
Total detections (total tested)	**679 (3 264)**	**20.8**	**15 783 (68 972)**	**22.9**

[a] 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 4/2023.

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 4/2023, 17 laboratory-confirmed influenza cases were reported from ICU wards (in Czechia, Ireland and Sweden). Both influenza type A viruses (n=88%) and type B viruses (n=12%) were detected. All 4 subtyped influenza type A viruses were A(H3) (Fig. 5 and 6).

Since week 40/2022, more influenza type A (n=1 764, 94%) than type B (n=105, 6%) viruses were detected (from Czechia, Ireland, Sweden and United Kingdom (England)). Of 336 subtyped influenza A viruses, 51% were A(H3) and 49% were A(H1)pdm09. No influenza B viruses were ascribed to a lineage. Of 440 cases with known age, 201 were 65 years and older, 175 were 15-64 years old, 39 were 0-4 years old and 25 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

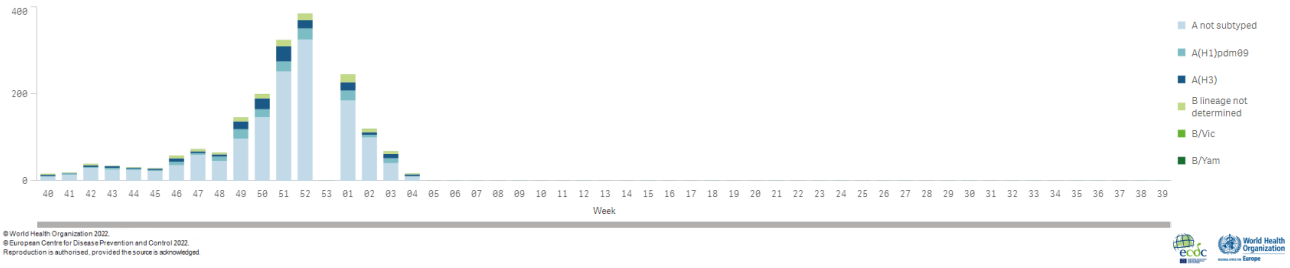
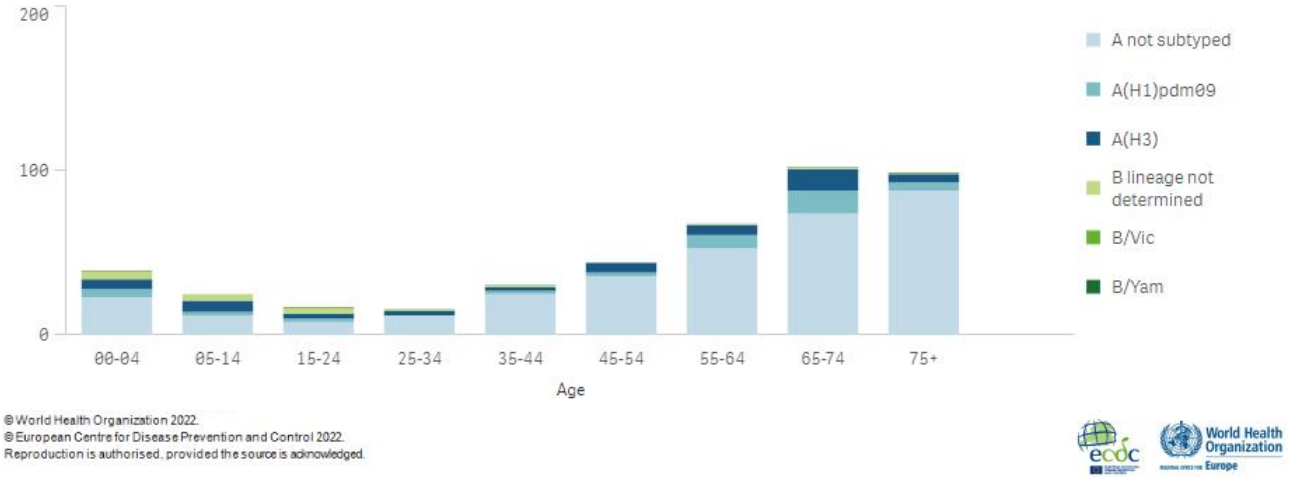


Figure 6. Distribution of influenza virus types, subtypes/lineages by age group in intensive care units (ICU), WHO European Region, season 2022/2023



1.2) Hospitalized laboratory-confirmed influenza cases – other wards

For week 4/2023, 109 laboratory-confirmed influenza cases were reported from other wards (in Czechia and Ireland). Influenza type A virus (81%) were detected more frequently than influenza type B viruses (19%). Of 5 subtyped influenza type A viruses, 2 were A(H3) and 3 were A(H1)pdm09 (Fig. 7 and 8).

Since week 40/2022, 3 708 influenza type A viruses and 149 influenza type B viruses were detected from patients in other wards in Czechia and Ireland. Of 344 subtyped influenza A viruses, 67% (n=229) were A(H1)pdm09 and 33% (n=115) were A(H3). The 3 857 cases with known age fell in 4 age groups: 1664 were 65 years and older, 1332 were 15-64 years old, 478 were 0-4 years old and 383 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

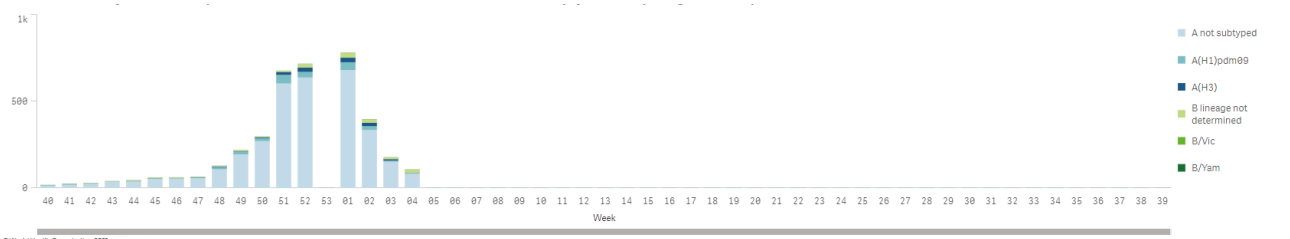
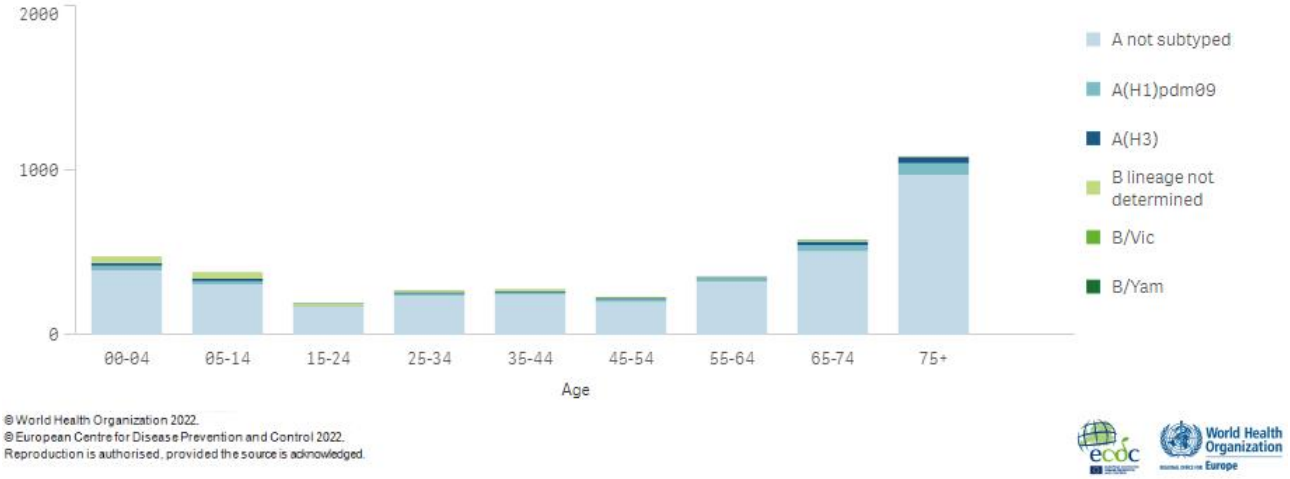


Figure 8. Distribution of influenza virus types, subtypes/lineages by age group in wards other than intensive care units (non-ICU), WHO European Region, season 2022/2023



Severe acute respiratory infection (SARI)-based hospital surveillance

For week 4/2023, 3 769 SARI cases were reported by 16 countries or areas (Albania, Belarus, Bosnia and Herzegovina, Germany, Ireland, Kazakhstan, Kyrgyzstan, Lithuania, Malta, Republic of Moldova, Romania, Russian Federation, Serbia, Spain, Ukraine and Uzbekistan). Of 1 214 specimens tested for influenza viruses, 12% (n=140) were positive (Fig. 9). Of these, influenza type A viruses (n=92, 66%) were detected more frequently than influenza type B viruses (n=48, 34%). Of 56 subtyped influenza type A viruses, 43 (77%) were A(H1)pdm09 and 13 (23%) were A(H3). Only 1 type B viruses was ascribed to a lineage and it was B/Victoria. Of 9 countries and areas across the Region that each tested at least 10 specimens, 8 reported positivity rates above 10%: Romania (52%), Ukraine (29%), Albania (27%), Bosnia and Herzegovina (27%), Lithuania (26%), Serbia (25%), Russian Federation (24%) and Kyrgyzstan (15%).

For the season, 96 054 SARI cases were reported by 27 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, Turkmenistan, 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=2 456, 77%) and of these 2 085 were subtyped: 1551 (74%) were infected by A(H1)pdm09 viruses and 534 (26%) were infected by A(H3) viruses. Only 23% (n=171) 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

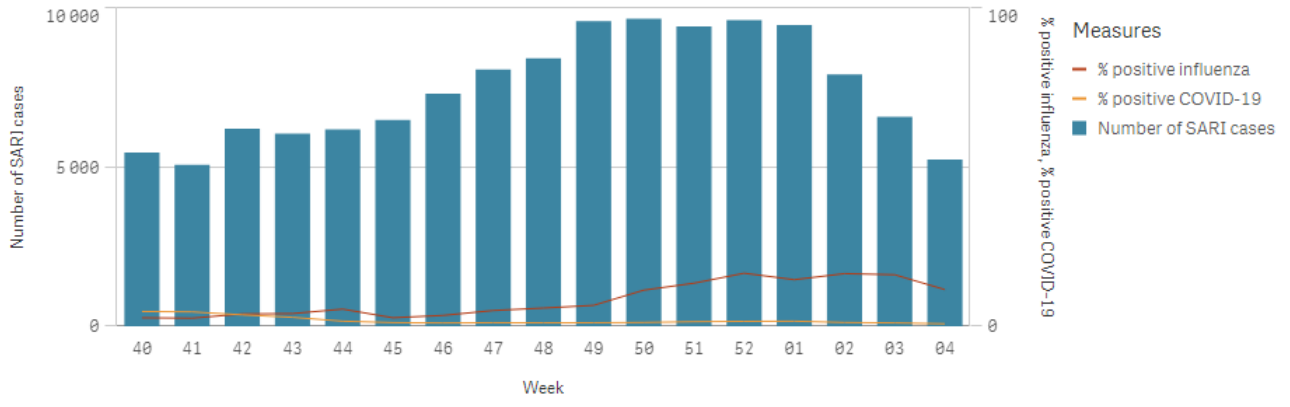
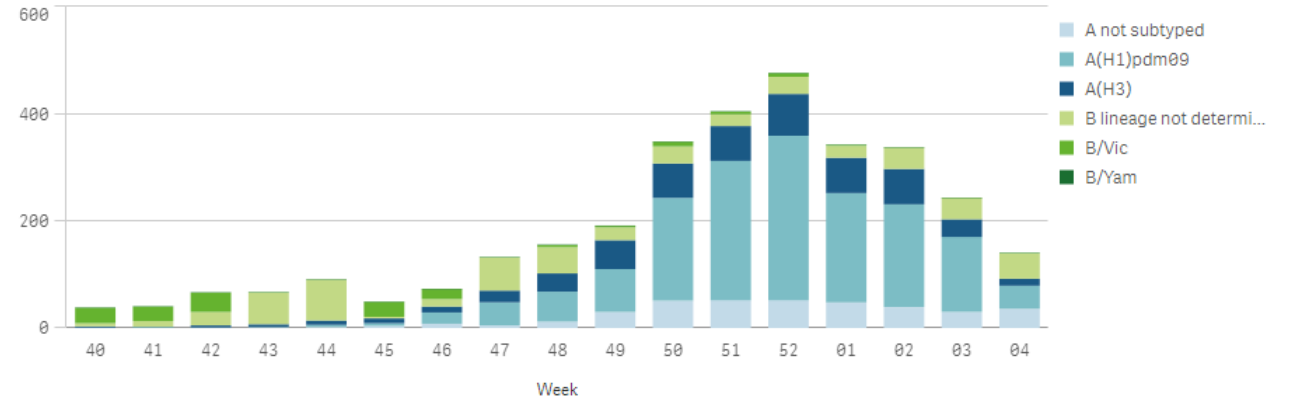


Figure 10. Influenza virus detections by type, subtype/lineage from severe acute respiratory infection (SARI) cases, WHO European Region, season 2022/2023



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 4/2023, 7 206 of 53 124 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; 5 069 (70%) were type A and 2 137 (30%) were type B. Of 1 034 subtyped A viruses, 767 (74%) were A(H1)pdm09 and 267 (26%) A(H3). Of 37 type B viruses ascribed to a lineage, all were Victoria lineage (Fig. 11 and Table 2).

For the season to date, more influenza type A (n=149 664, 91%) than type B (n=14 804, 9%) viruses have been detected. Of 47 268 subtyped A viruses, 25 315 (54%) were A(H1)pdm09 and 21 953 (46%) were A(H3). Of 1112 influenza type B viruses ascribed to a lineage, all 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

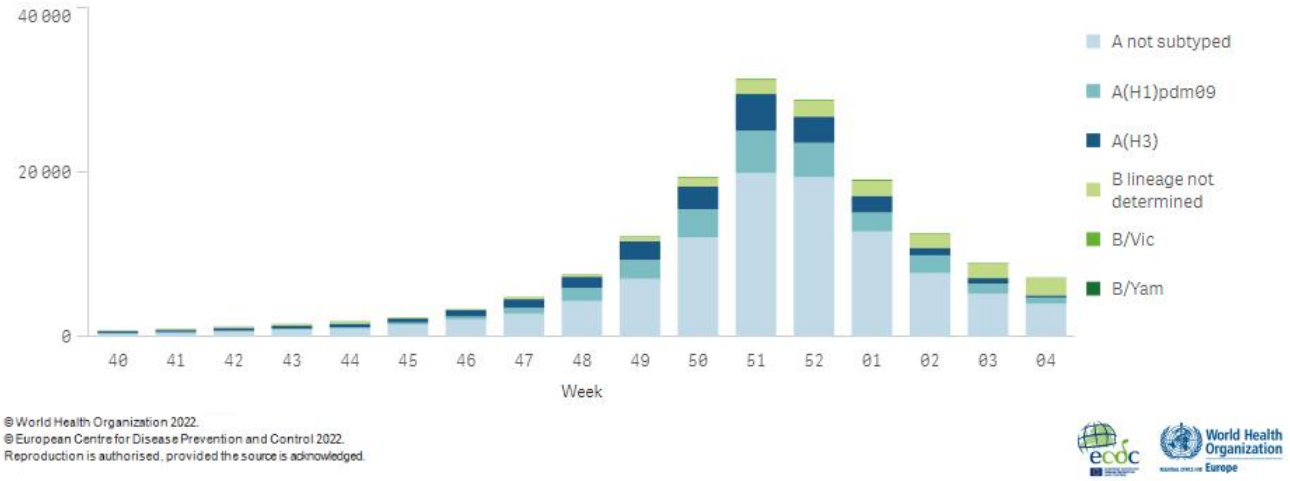


Table 2. Influenza virus detections in non-sentinel-source specimens by type and subtype, week 4/2023 and cumulatively for the season

Non-sentinel	Current Week (4)		Season 2022-2023	
Virus type and subtype	**Number**	**%[a]**	**Number**	**%[a]**
Influenza A	**5 069**	**70.3**	**149 664**	**91**
A(H1)pdm09	767	74.2	25 315	53.6
A(H3)	267	25.8	21 953	46.4
A not subtyped	4 035	-	102 396	-
Influenza B	**2 137**	**29.7**	**14 804**	**9**
B/Victoria lineage	37	100	1 112	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	2 100	-	13 692	-
Total detections (total tested)	**7 206 (53 124)**	**-**	**164 468 (1 240 602)**	**-**

[a] 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 1 508 genetically characterized A(H1)pdm09 viruses up to week 4/2023, 662 (<44%) were attributed to clade 6B.1A.5a.2 of which 397 (60%) were represented by A/Norway/25089/2022, 259 (39%) by A/Sydney/5/2021 and 6 (<1%) by

A/Victoria/2570/2019. Three (<1%) were attributed to clade 6B.1A.5a.1 represented by A/Guangdong-Maonan/SWL1536/2019. 843 (<56%) were not attributed to a subgroup.

Among the 1373 A(H3) viruses characterized up to week 4/2023, 1319 (96%) were attributed to clade 3C.2a1b.2a.2, of which 879 (67%) were represented by A/Bangladesh/4005/2020, 399 (30%) by A/Slovenia/8720/2022 and 41 (3%) by A/Darwin/9/2021. 51 (<4%) viruses were not attributed to a subgroup. Only 3 viruses were ascribed to clade 3C.2a1b.1a represented by A/Denmark/3264/2019.

Up to week 4/2023, 314 B/Victoria viruses characterized, 151 (48%) of which were attributed to clade V1A.3a.2 represented by B/Austria/1359417/2021. 163 (52%) viruses 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 displayed 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 4/2023, 2 058 viruses were assessed for susceptibility to neuraminidase inhibitors (825 A(H3), 643 A(H1)pdm09 and 234 B viruses genotypically and 223 A(H3), 116 A(H1)pdm09 and 17 B viruses phenotypically), and 1 509 viruses were assessed for susceptibility to baloxavir marboxil (926 A(H3), 370 A(H1)pdm09 and 213 B viruses genotypically). Genotypically, 2 A(H1) viruses with reduced susceptibility to oseltamivir were identified and phenotypically no markers associated with reduced susceptibility were identified.

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

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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Tables and figures should be referenced:

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