Flu News Europe

Joint ECDC–WHO/Europe weekly influenza update

Summary

Week 10/2023 (6 March – 12 March 2023)

- The percentage of all sentinel primary care specimens from patients presenting with ILI or ARI symptoms that tested positive for an influenza virus increased from 24% in the previous week to 26% in week 10/2023 which remains above the epidemic threshold (10%).
- 19 of 40 countries or areas reported medium or high intensity and 20 of 39 countries reported widespread activity indicating substantial seasonal influenza virus circulation across the Region.
- Of the 21 countries that reported sentinel primary care specimen influenza virus positivity above the 10% epidemic threshold, France, Hungary, Romania and Slovenia reported activity above 40%.
- Influenza type A and type B viruses were detected in sentinel and non-sentinel surveillance, with influenza type B predominating in both systems.
- Hospitalized patients with confirmed influenza virus infection were reported from ICU (with higher proportions of type B viruses), other wards (with higher proportions of type A viruses) and SARI surveillance (with higher proportions of type B viruses). Six countries or areas reported influenza virus 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 had been decreasing across the Region until week 4/2023, following a peak at week 51/2022, but has fluctuated around 25% since week 6/2023.
- Overall this season, influenza A(H3) viruses have dominated in sentinel primary care specimens, however higher circulation of A(H1)pdm09 and type B viruses was observed starting from week 50/2022 and week 2/2023, respectively. A higher prevalence of A(H1)pdm09 over A(H3) viruses was detected in non-sentinel specimens.
- Both influenza type A and type B viruses have been detected in hospitalized patients in ICU and other wards and influenza A(H1)pdm09 viruses have dominated among 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, with overall positivity amongst patients in primary care with acute respiratory illness decreasing after a peak at 18% positivity in week 47/2022 to 2% for week 10/2023. 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 more 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 10/2023, of 40 countries and areas reporting on intensity of influenza activity, 6 reported baseline-intensity (Iceland, Netherlands, Ukraine, United Kingdom (England, Northern Ireland and Scotland), 15 reported low-intensity (across the Region), 18 reported medium-intensity (across the Region) and 1 reported high-intensity (Croatia) (Fig. 1).

Of 39 countries and areas reporting on geographic spread of influenza viruses, 1 reported no activity (Georgia), 7 reported sporadic spread (Azerbaijan, Belgium, Bulgaria, Kazakhstan, North Macedonia, United Kingdom (England and Northern Ireland)), 4 reported local spread (Belarus, Lithuania, Malta and Slovakia), 7 reported regional spread (Albania, Austria, Republic of Moldova, Romania, Serbia, United Kingdom (Scotland) and Kosovo (in accordance with UN Security Council Resolution 1244 (1999))) and 20 reported widespread activity (across the Region) (Fig. 2).

Figure 1. Intensity of influenza activity in the European Region, week 10/2023

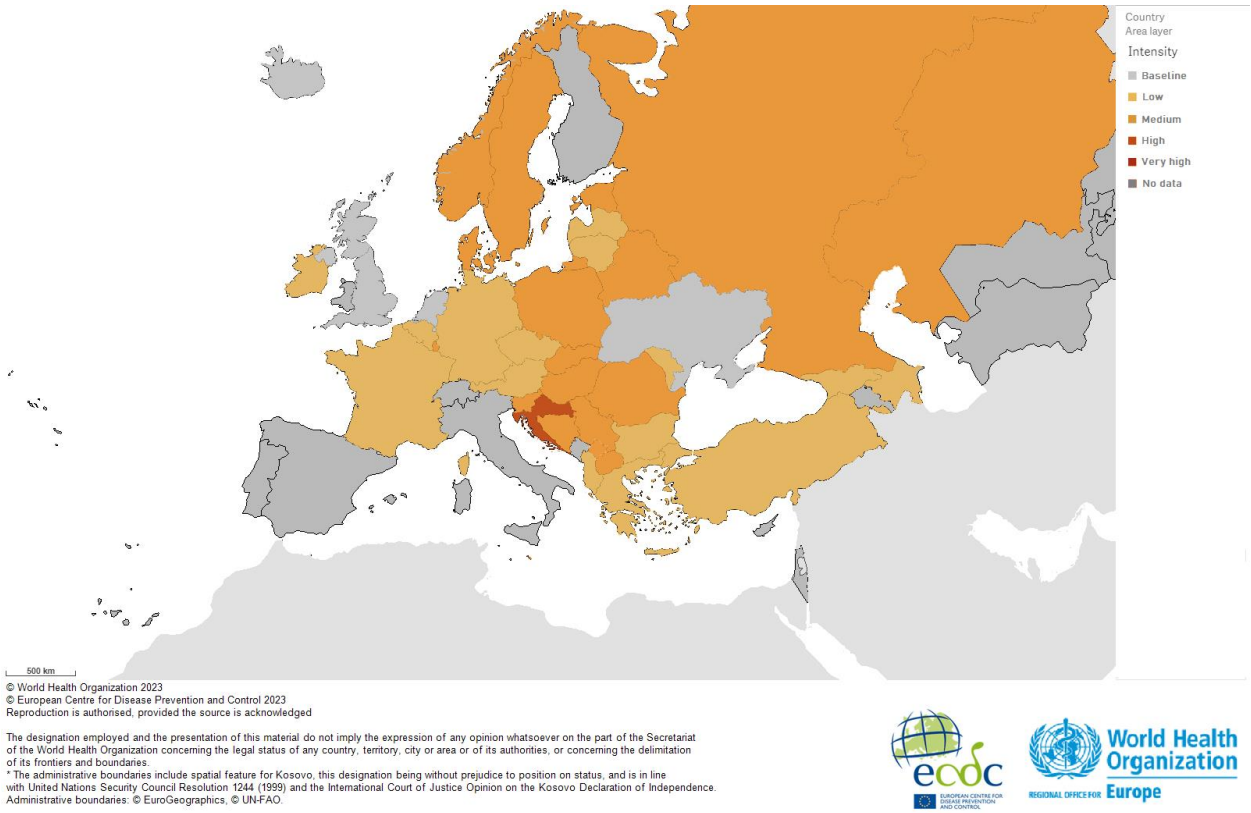
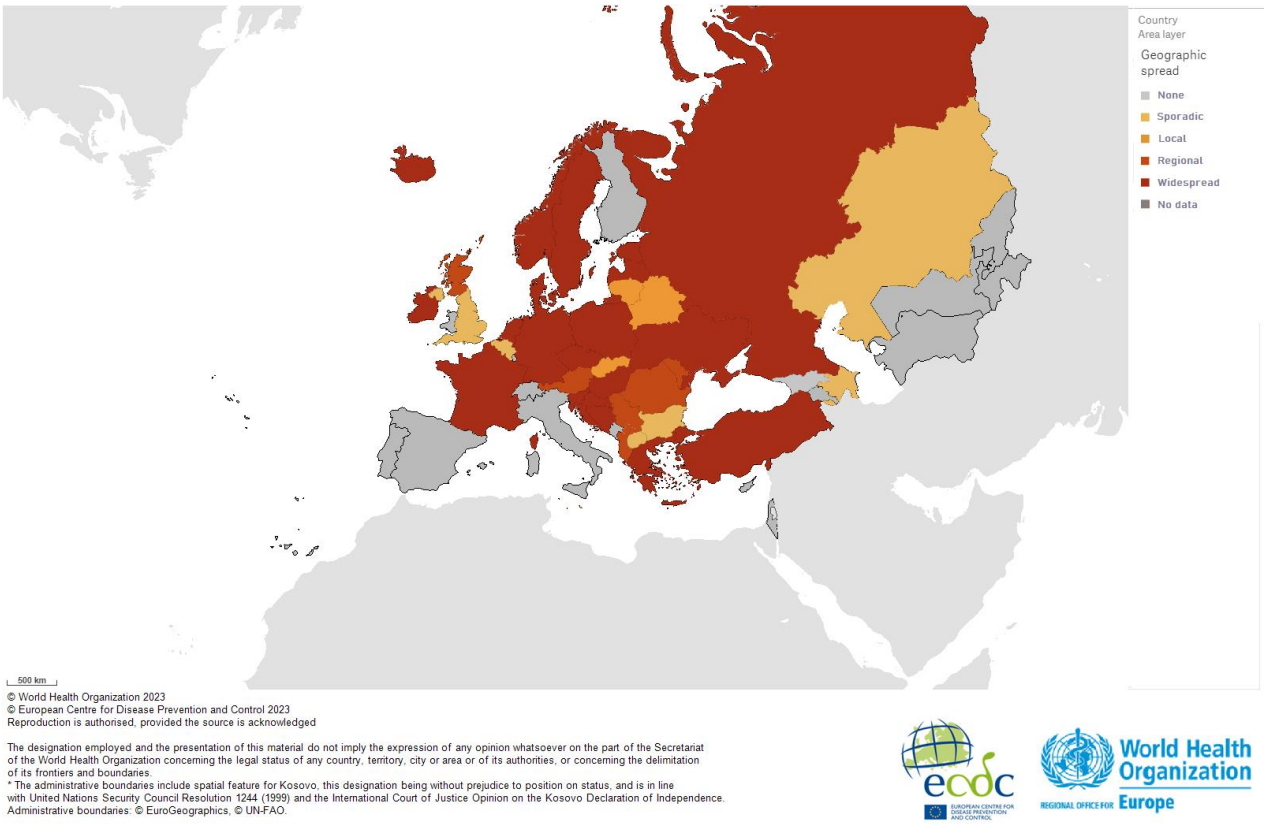


Figure 2. Geographic spread of influenza viruses in the European Region, week 10/2023



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

Please note:

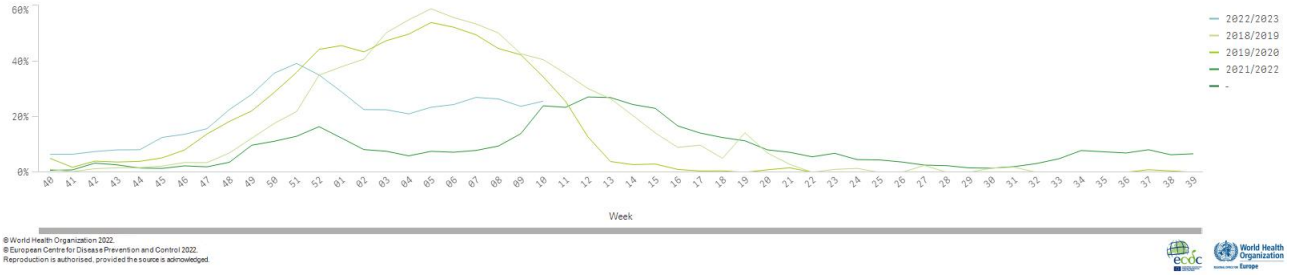
- Assessment of the intensity of activity indicator includes consideration of ILI or ARI rates. These ILI or ARI rates might be driven by respiratory infections other than influenza virus, including SARS-CoV-2, leading to observed increases in the absence of influenza virus detections.

- 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 and/or low intensity of activity measured by ILI and ARI incidence.

Influenza positivity

For the European Region, influenza virus positivity in sentinel primary care specimens increased from 24% in the previous week to 26% in week 10/2023. Seasonal activity above the epidemic threshold, which is set at 10%, started in week 45/2022. This is an earlier start of a seasonal influenza epidemic than in the four previous seasons: ranging from week 47 (2019/20 season) to 49 (2021/22 season). Positivity reached a peak in week 51/2022 which was earlier than in the four previous seasons: ranging from week 52 (2021/22 season) to 5 (2018/19 and 2019/20). Influenza activity had been decreasing across the Region until week 4/2023, but has fluctuated around 25% since week 6/2023 (Fig. 3).

Figure 3. Influenza virus positivity in sentinel-source specimens by week, WHO European Region, seasons 2018/2019, 2019/2020, 2021/2022 and 2022/2023



External data sources

Mortality monitoring:

The full EuroMOMO 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=3; Azerbaijan, Georgia and Kazakhstan), northern (n=4; Denmark, Estonia, Latvia and Lithuania), southern (n=5; Croatia, Greece, Romania, Slovenia and Türkiye) 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=2; Kazakhstan and Ukraine), northern (n=2; Latvia and Lithuania), southern (n=3; 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 other than influenza virus, including SARS-CoV-2, 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 10/2023, 939 (26%) of 3 671 sentinel specimens tested positive for an influenza virus; 72% were type B and 28% were type A. Of 186 subtyped A viruses, 93% were A(H1)pdm09 and 7% A(H3). All 184 type B viruses ascribed to a lineage were B/Victoria (Fig. 4 and Table 1). Of 33 countries and areas across the Region that each tested at least 10 sentinel specimens in week 10/2023, 21 reported a rate of influenza virus detections above 10% (median 26%; range 13% - 68%): Romania (68%), Hungary (52%), France (52%), Slovenia (46%), Armenia (35%), Spain (35%), Denmark (34%), Serbia (33%), Kosovo (32%), Luxembourg (29%), Ukraine (26%), Germany (25%), Slovakia (24%), Poland (24%), Republic of Moldova (23%), Austria (23%), Netherlands (21%), Norway (21%), Switzerland (19%), Italy (16%) and Ireland (13%).

For the season to date, 23 541 (24%) of 100 053 sentinel specimens tested positive for an influenza virus. More influenza type A (n=18 332, 78%) than type B (n=5 209, 22%) viruses have been detected. Of 14 934 subtyped A viruses, 9 820 (66%) were A(H3) and 5 114 (34%) were A(H1)pdm09. All 1 564 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

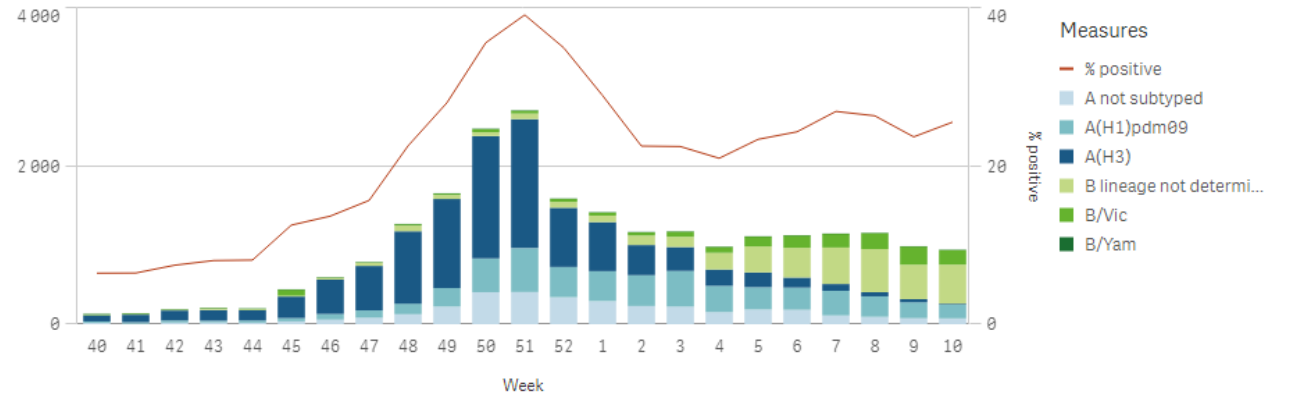


Table 1. Influenza virus detections in sentinel source specimens by type and subtype for week 10/2023 and cumulatively for the season

Sentinel	Current Week (10)		Season 2022-2023	
Virus type and subtype	**Number**	**%[a]**	**Number**	**%[a]**
Influenza A	**260**	**28**	**18 332**	**78**
A(H1)pdm09	173	93	5 114	34
A(H3)	13	7	9 820	66
A not subtyped	74	-	3 398	-
Influenza B	**679**	**72**	**5 209**	**22**
B/Victoria lineage	184	100	1 564	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	495	-	3 645	-
Total detections (total tested)	**939 (3 671)**	25.6	**23 541 (100 053)**	23.5

[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 this week.

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 10/2023, 18 laboratory-confirmed influenza cases were reported from ICU wards (in Czechia (n=1), France (n=6) and Sweden (n=11)). Both influenza type B (n=67%) and type A viruses (n=33%) were detected. No viruses were ascribed to a subtype or lineage (Fig. 5 and 6).

Since week 40/2022, more influenza type A (n=2 647, 91%) than type B (n=246, 9%) viruses were detected (in Czechia (5%), France (30%), Ireland (5%), Sweden (8%) and United Kingdom (England) (52%)). Of 482 subtyped influenza A viruses, 53% were A(H3) and 47% were A(H1)pdm09. No influenza B viruses were ascribed to a lineage. Of 1 380 cases with known age, 643 were 15-64 years old, 572 were 65 years and older, 102 were 0-4 years old and 63 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

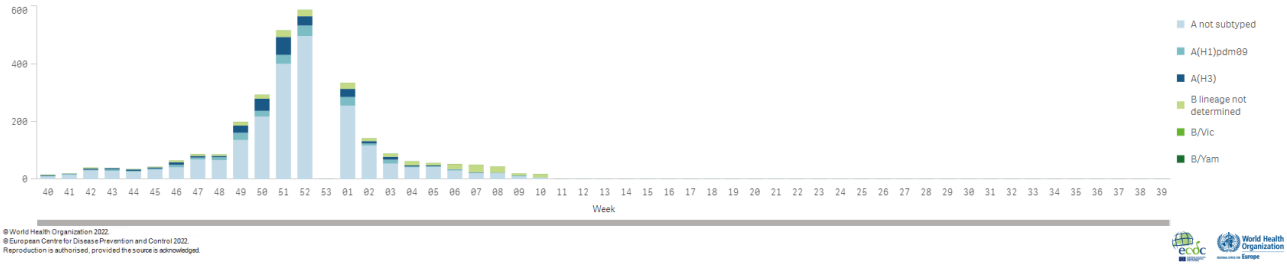
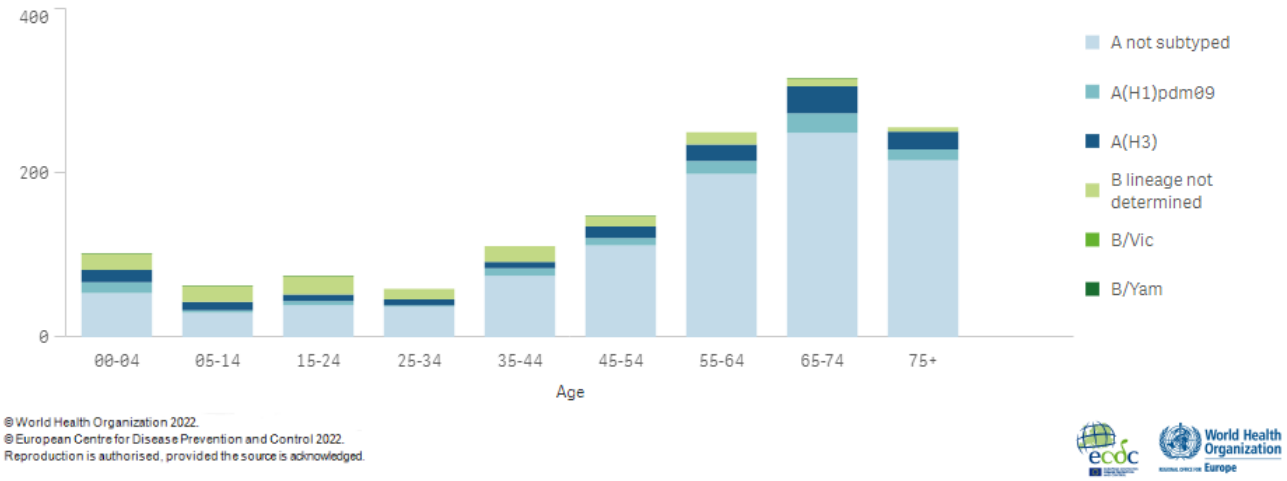


Figure 6. Distribution of influenza virus types, subtypes/lineages by age group in intensive care units (ICU), WHO European Region, season 2022/2023



1.2) Hospitalized laboratory-confirmed influenza cases – other wards

For week 10/2023, 7 laboratory-confirmed influenza cases were reported from other wards (in Czechia). Of these cases, 6 were caused by type A viruses and 1 by a type B virus.

Three influenza type A viruses were subtyped, 2 were A(H3) and 1 was A(H1)pdm09 (Fig. 7 and 8).

Since week 40/2022, 3 804 influenza type A viruses and 176 influenza type B viruses were detected (in Czechia (4%) and Ireland (96%)). Of 396 subtyped influenza A viruses, 63% (n=251) were A(H1)pdm09 and 37% (n=145) A(H3). The 3 980 cases with known age fell in 4 age groups: 1 708 were 65 years and older, 1 372 were 15-64 years old, 499 were 0-4 years old and 401 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

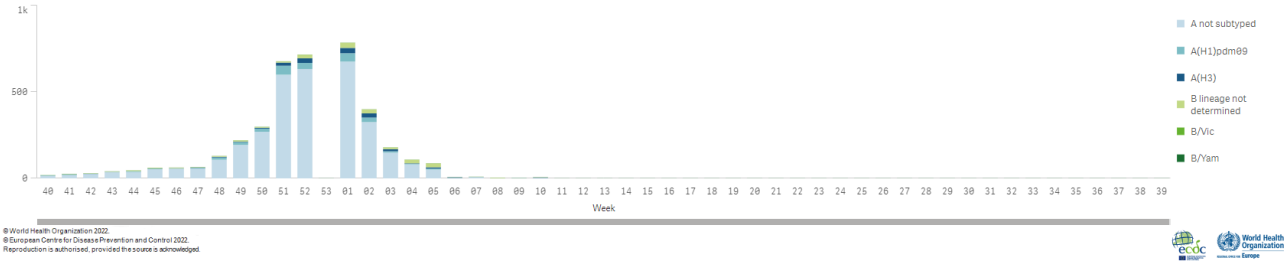
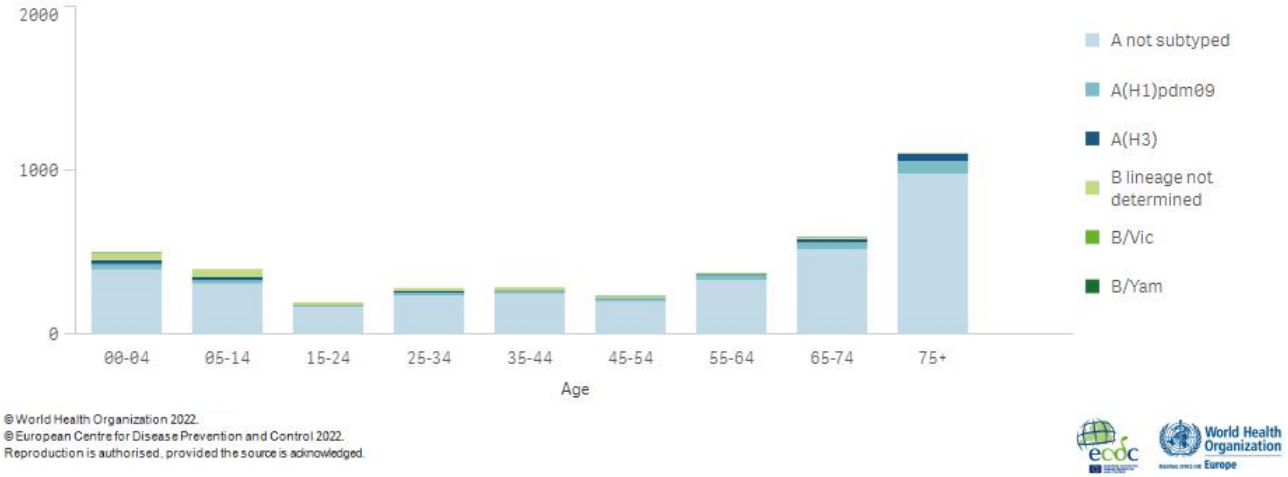


Figure 8. Distribution of influenza virus types, subtypes/lineages by age group in wards other than intensive care units (non-ICU), WHO European Region, season 2022/2023



Severe acute respiratory infection (SARI)-based hospital surveillance

For week 10/2023, 3 398 SARI cases were reported by 17 countries or areas (Albania, Belarus, Belgium, Bosnia and Herzegovina, Georgia, Ireland, Kazakhstan, Lithuania, Malta, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Spain, Türkiye and Ukraine). Of 598 specimens tested for influenza viruses, 15% (n=90) were positive (Fig. 9). Of these, influenza type B viruses (n=63, 70%) were detected more frequently than influenza type A viruses (n=27, 30%). Of 10 subtyped influenza type A viruses, 9 (90%) were A(H1)pdm09 and 1 (10%) was A(H3). All 4 type B viruses ascribed to a lineage were B/Victoria. Of 12 countries and areas across the Region that each tested at least 10 specimens, 6 reported positivity rates above 10%: Lithuania (66%), Ukraine (30%), Romania (29%), Serbia (28%), Bosnia and Herzegovina (21%) and Albania (16%).

For the season, 127 554 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=3 343, 73%) and of these 2 710 were subtyped: 2 007 (74%) were infected by A(H1)pdm09 viruses and 703 (26%) were infected by A(H3) viruses. All type B viruses (n=310) ascribed to a lineage 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

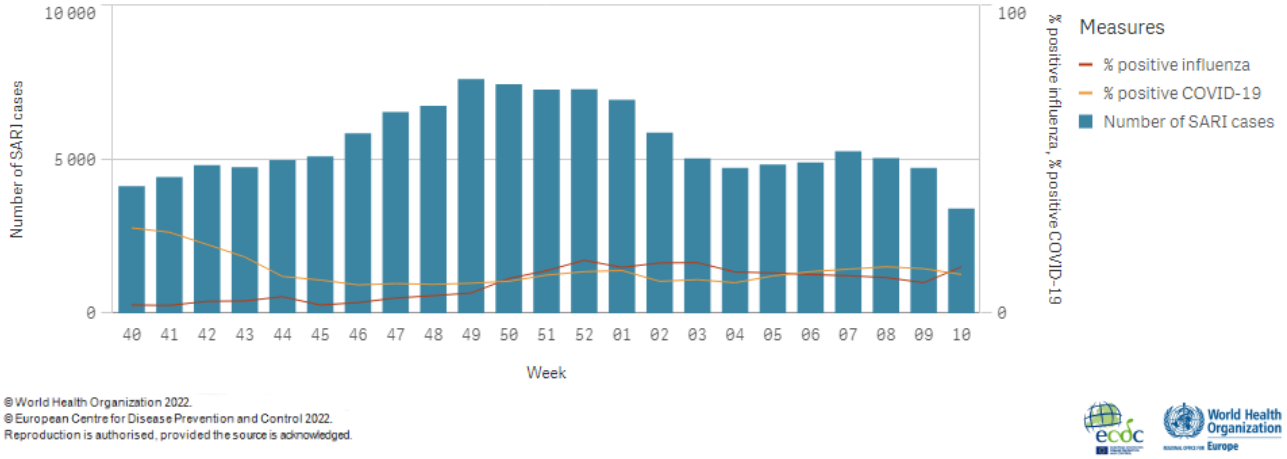


Figure 10. Influenza virus detections by type, subtype/lineage from severe acute respiratory infection (SARI), WHO European Region, season 2022/2023

** Due to a reporting error, this figure cannot be shown at this time.*

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 10/2023, 6 693 of 55 690 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; 4 035 (60%) were type B and 2 658 (40%) were type A. Of 362 subtyped A viruses, 272 (75%) were A(H1)pdm09 and 90 (25%) A(H3). Of 135 type B viruses ascribed to a lineage, all were B/Victoria (Fig. 11 and Table 2).

For the season to date, more influenza type A (n=183 847, 81%) than type B (n=44 358, 19%) viruses have been detected. Of 53 954 subtyped A viruses, 29 581 (55%) were A(H1)pdm09 and 24 373 (45%) were A(H3). Of 2 985 influenza type B viruses ascribed to a lineage, all were B/Victoria (93% 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

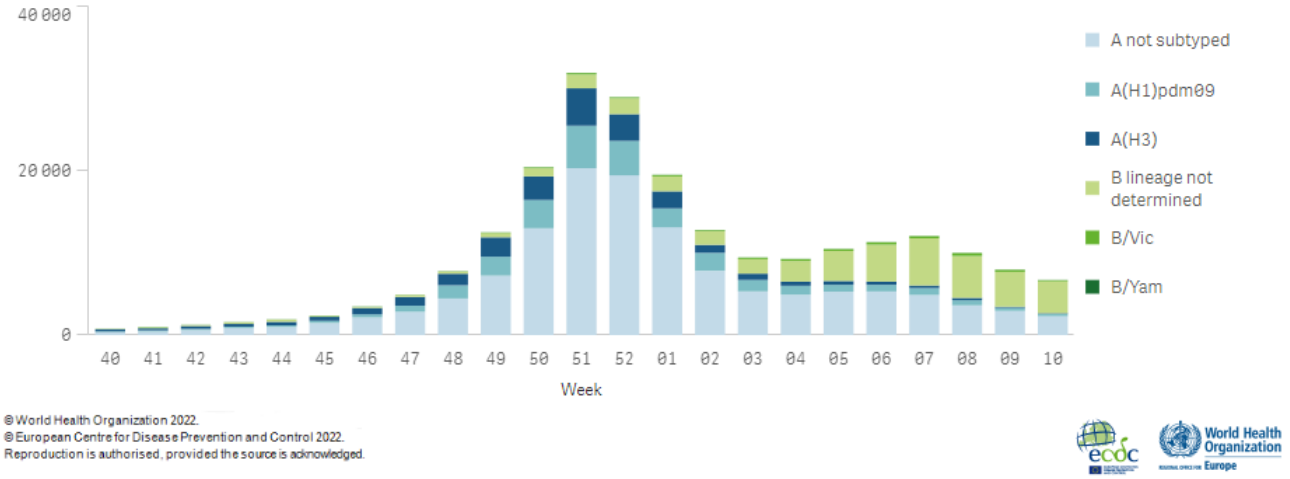


Table 2. Influenza virus detections in non-sentinel-source specimens by type and subtype, week 10/2023 and cumulatively for the season

Non-sentinel	Current Week (10)		Season 2022-2023	
Virus type and subtype	**Number**	**%[a]**	**Number**	**%[a]**
Influenza A	**2 658**	**40**	**183 847**	**81**
A(H1)pdm09	272	75	29 581	55
A(H3)	90	25	24 373	45
A not subtyped	2 296	-	129 893	-
Influenza B	**4 035**	**60**	**44 358**	**19**
B/Victoria lineage	135	100	2 985	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	3 900	-	41 373	-
Total detections (total tested)	**6 693 (55 690)**	-	**228 205 (1 700 681)**	-

[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 2 124 genetically characterized A(H1)pdm09 viruses up to week 10/2023, 1 142 were attributed to clade 6B.1A.5a.2, of which 596 (52%) were represented by A/Norway/25089/2022, 513 (45%) by A/Sydney/5/2021 and 33 (3%) by A/Victoria/2570/2019. Four (<1%) were attributed to clade 6B.1A.5a.1 represented by A/Guangdong-Maonan/SWL1536/2019. 978 (46%) viruses could not be attributed to a subgroup in the guidance.

Among the 2 234 A(H3) viruses characterized up to week 10/2023, 2 121 were attributed to clade 3C.2a1b.2a.2, of which 1 313 (62%) were represented by A/Bangladesh/4005/2020, 663 (31%) by A/Slovenia/8720/2022 and 145 (7%) by A/Darwin/9/2021. 110 (5%) viruses could not be attributed to a subgroup in the guidance. Only 3 viruses were ascribed to clade 3C.2a1b.1a represented by A/Denmark/3264/2019.

Up to week 10/2023, 627 B/Victoria viruses were characterized, 344 (55%) of which were attributed to clade V1A.3a.2 represented by B/Austria/1359417/2021. 283 (45%) viruses could not be attributed to a subgroup in the guidance.

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

	Number of influenza viruses attributed to genetic groups 2022/2023
Total	**4 985**
Influenza A	**4 358**
A(H1)pdm09	**2 124**
A(H1)pdm09_SubgroupNotListed *	978
A/Guangdong-Maonan/SWL1536/2019(H1N1)pdm09_6B.1A.5a.1	4
A/Norway/25089/2022(H1N1)pdm09_6B.1A.5a.2	596
A/Sydney/5/2021(H1N1)pdm09_6B.1A.5a.2	513
A/Victoria/2570/2019(H1N1)pdm09_6B.1A.5a.2	33
A(H3)	**2 234**
A(H3)_SubgroupNotListed *	110
A/Bangladesh/4005/2020(H3)_3C.2a1b.2a.2	1 313
A/Darwin/9/2021(H3)_3C.2a1b.2a.2	145
A/Denmark/3264/2019(H3N2)_3C.2a1b.1a	3
A/Slovenia/8720/2022(H3)_3C.2a1b.2a.2	663
Influenza B	**627**
B/Vic	**627**
B/Austria/1359417/2021(Victoria lineage_1A.3a.2)	344
BVic_SubgroupNotListed *	283

** No Clade: not attributed to a pre-defined clade and SubgroupNotListed: attributed to recognised group in current guidance but not listed here*

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.

Antiviral susceptibility testing

Up to week 10/2023, 3 491 viruses were assessed for susceptibility to neuraminidase inhibitors (1 265 A(H1)pdm09, 1 205 A(H3) and 507 B viruses genotypically and 269 A(H3), 177 A(H1)pdm09 and 68 B viruses phenotypically), and 2 657 viruses were assessed for susceptibility to baloxavir marboxil (1 500 A(H3), 701 A(H1)pdm09 and 456 B viruses genotypically). Genotypically, two (H1)pdm09 viruses were found to carry the NA H275Y marker, indicative of highly reduced inhibition (HRI) by oseltamivir and peramivir, and phenotypically no viruses with reduced susceptibility were identified. No markers of reduced susceptibility to baloxavir marboxil were detected.

Vaccine

Recently published 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 preserved 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

Vaccine composition

On 24 February 2023, WHO published recommendations for the components of influenza vaccines for use in the 2023-2024 northern hemisphere influenza season:

The WHO recommends that trivalent vaccines for use in the 2023-2024 influenza season in the northern hemisphere contain the following:

Egg-based vaccines

- an A/Victoria/4897/2022 (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/67/2022 (H1N1)pdm09-like virus;
- an A/Darwin/6/2021 (H3N2)-like virus; and
- a B/Austria/1359417/2021 (B/Victoria lineage)-like virus.

For quadrivalent egg- or cell culture-based or recombinant vaccines for use in the 2023-2024 northern hemisphere influenza season, the WHO recommends inclusion of the following as the B/Yamagata lineage component:

- a B/Phuket/3073/2013 (B/Yamagata lineage)-like virus.

The full report is published here.

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 is recommended that **trivalent influenza vaccines** for use in the 2022 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

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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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