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

Summary

Week 8/2023 (20 February-26 February 2023)

- The percentage of all sentinel primary care specimens from patients presenting with ILI or ARI symptoms that tested positive for an influenza virus decreased from 28% in the previous week to 25% in week 8/2023 which remains above the epidemic threshold (10%).
- 21 of 38 countries or areas reported medium or high intensity and 21 of 37 countries reported widespread activity indicating substantial seasonal influenza virus circulation across the Region.
- Of the 22 countries with seasonal activity above epidemic threshold of 10% positivity, Sweden, Slovenia, Netherlands, France, and Slovakia reported activity above 40% positivity in sentinel primary care.
- 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 similar proportions of influenza type A and type B), other wards (with similar proportions of influenza type A and type B) 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 had been decreasing across the Region until week 4/2023, however an increase in positivity was noted between week 5 and 7/2023 related to increased type B virus circulation.
- 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 sentinel primary care specimens, however a higher circulation of A(H1)pdm09 and type B viruses was observed starting from week 50/2022 and week 2/2023, respectively. An almost even distribution of A(H1)pdm09 and 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 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, with overall positivity amongst patients in primary care with acute respiratory illness decreasing to 3% for week 8/2023. 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 8/2023, of 38 countries and areas reporting on intensity of influenza activity, 6 reported baseline-intensity (Germany, Netherlands, Ukraine, United Kingdom (Northern Ireland), United Kingdom (Scotland) and Uzbekistan), 11 reported low-intensity (across the Region), 19 reported medium-intensity (across the Region) and 2 reported high-intensity (Bosnia and Herzegovina, and Croatia) (Fig. 1).

Of 37 countries and areas reporting on geographic spread of influenza viruses, 4 reported sporadic spread (Azerbaijan, Kazakhstan, United Kingdom (Northern Ireland) and Uzbekistan), 4 reported local spread (Kyrgyzstan, Lithuania, Malta and Slovakia), 8 reported regional spread (Austria, Czechia, Georgia, North Macedonia, Republic of Moldova, Serbia, United Kingdom (Scotland) and Kosovo (in accordance with UN Security Council Resolution 1244 (1999)) and 21 reported widespread activity (across the Region) (Fig. 2).

Figure 1. Intensity of influenza activity in the European Region, week 8/2023

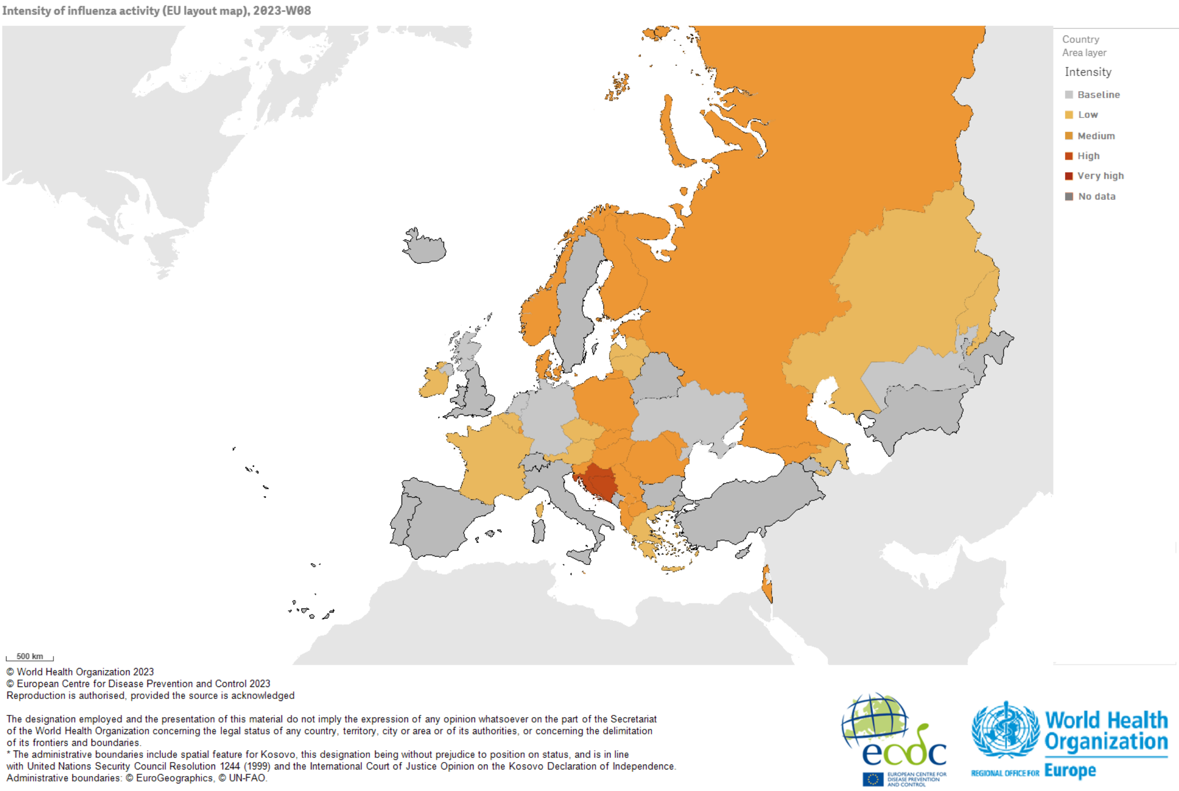
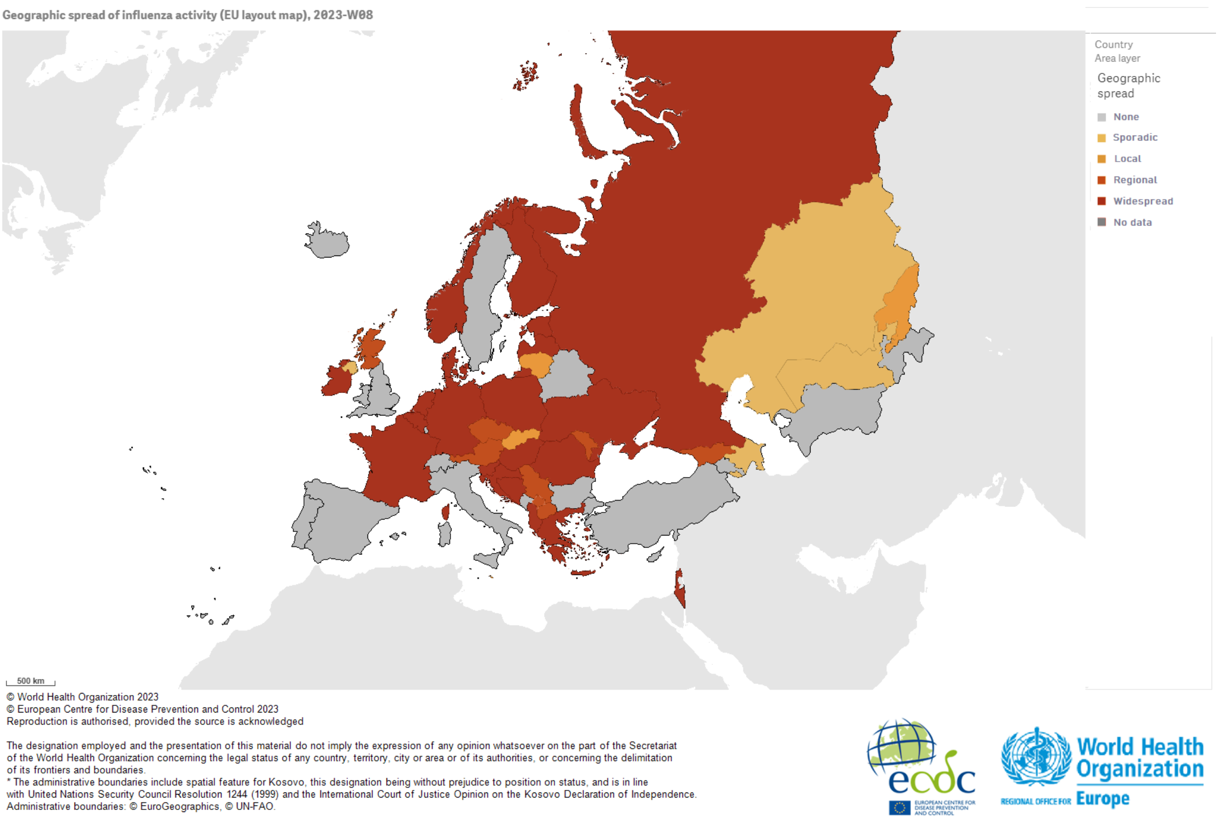


Figure 2. Geographic spread of influenza viruses in the European Region, week 8/2023



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

Please note:

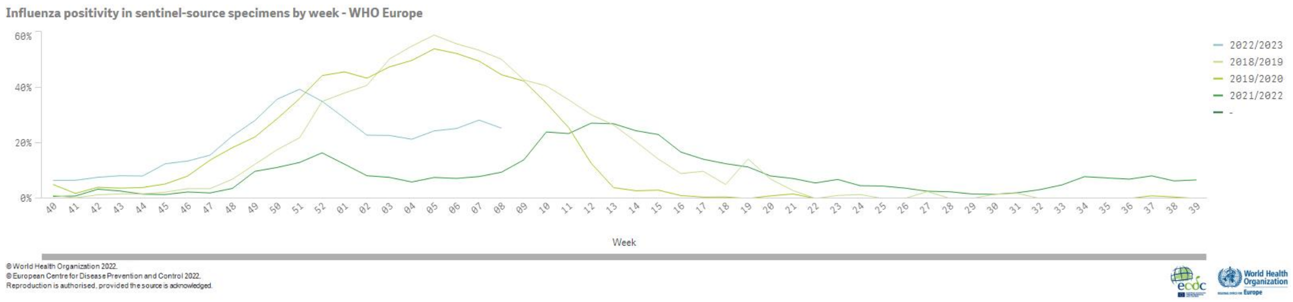
- Assessment of the intensity of activity indicator includes consideration of ILI or ARI rates. These ILI or ARI rates might be driven by respiratory infections other than influenza virus, including SARS-CoV-2, leading to observed increases in the absence of influenza virus detections.

- 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 decreased from 28% in the previous week to 25% in week 8/2023. Seasonal activity above the epidemic threshold, which is set at 10%, started in week 45/2022. 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). 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) (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=7; Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation and Ukraine), northern (n=4; Denmark, Estonia, Latvia and Lithuania), southern (n=5; Croatia, Greece, Israel, North Macedonia and Serbia) 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=3; Kazakhstan, Republic of Moldova and Uzbekistan), northern (n=1; Latvia), southern (n=2; Albania and Romania) and western (n=2; Czechia and Slovakia) 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 8/2023, 836 (25%) of 3 306 sentinel specimens tested positive for an influenza virus; 30% were type A and 70% were type B. Of 159 subtyped A viruses, 87% were A(H1)pdm09 and 13% A(H3). All 136 type B viruses ascribed to a lineage were Victoria lineage (Fig. 4 and Table 1). Of 30 countries and areas across the Region that each tested at least 10 sentinel specimens in week 8/2023, 22 reported a rate of influenza virus detections at or above 10% (median 31%; range 10% - 73%): Sweden (73%), Slovenia (50%), Netherlands (48%), France (42%), Slovakia (41%), Romania (36%), Denmark (36%), Switzerland (35%), Spain (34%), Republic of Moldova (32%), Ukraine (31%), Armenia (30%), Luxembourg (26%), Poland (25%), Belgium (25%), Norway (23%), Italy (22%), Austria (20%), Kosovo (17%), Germany (16%), Estonia (12%) and Bulgaria (10%).

For the season to date, 21 064 (24%) of 89 424 sentinel specimens tested positive for an influenza virus. More influenza type A (n=17 415, 83%) than type B (n=3 649, 17%) viruses have been detected. Of 14 251 subtyped A viruses, 9 668 (68%) were A(H3) and 4 583 (32%) were A(H1)pdm09. All 1 049 influenza type B viruses ascribed to a lineage were Victoria lineage (71% 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

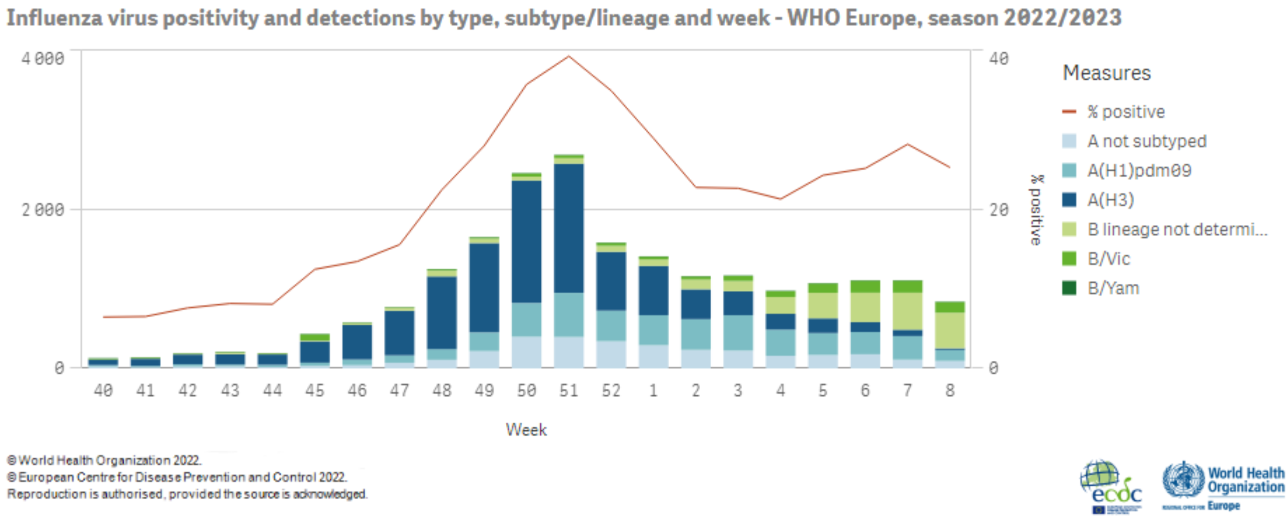


Table 1. Influenza virus detections in sentinel source specimens by type and subtype for week 8/2023 and cumulatively for the season

Due to data entry error, this table cannot be displayed at this time.

[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 8/2023, 27 laboratory-confirmed influenza cases were reported from ICU wards (in Czechia, France and Sweden). Both influenza type A viruses (n=52%) and type B viruses (n=48%) were detected. The single influenza type A virus assigned to a subtype was A(H1)pmd09 (Fig. 5 and 6).

Since week 40/2022, more influenza type A (n=1 873, 93%) than type B (n=144, 7%) viruses were detected (in Czechia, France, Ireland, Sweden and United Kingdom (England)). Of 350 subtyped influenza A viruses, 50% were A(H1)pdm09 and 50% were A(H3). No influenza B viruses were ascribed to a lineage. Of 513 cases with known age, 234 were 65 years and older, 205 were 15-64 years old, 41 were 0-4 years old and 33 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

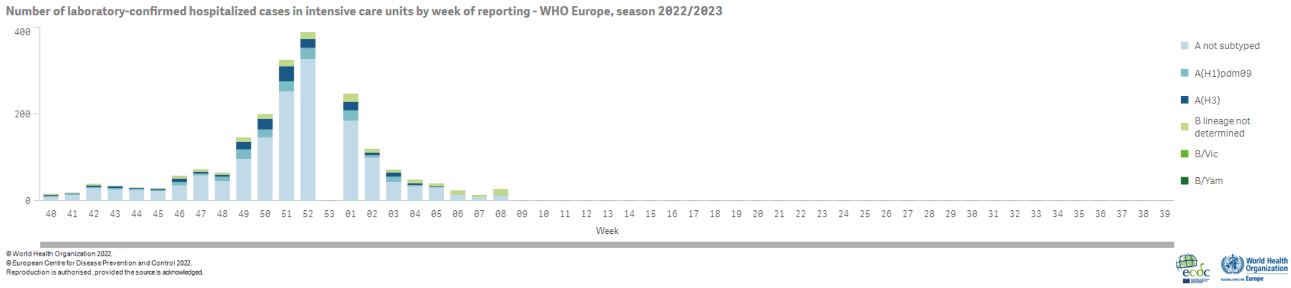
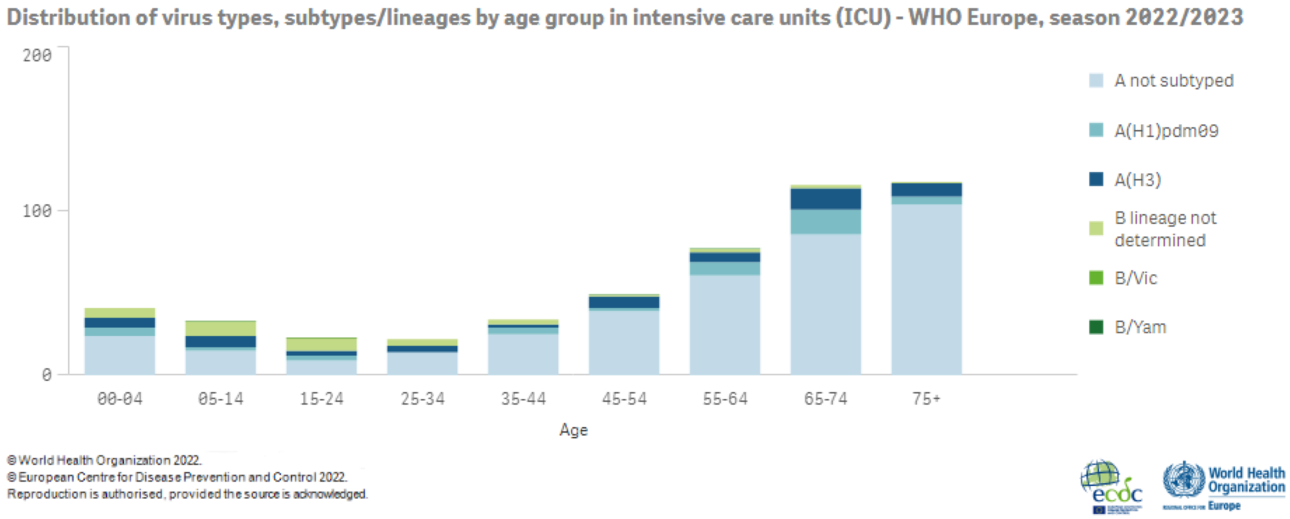


Figure 6. Distribution of influenza virus types, subtypes/lineages by age group in intensive care units (ICU), WHO European Region, season 2022/2023



1.2) Hospitalized laboratory-confirmed influenza cases – other wards

For week 8/2023, 6 laboratory-confirmed influenza cases were reported from other wards (in Czechia). Of these, 3 influenza type A viruses and 3 influenza type B viruses were detected. No viruses were ascribed to a subtype or lineage (Fig. 7 and 8).

Since week 40/2022, 3 796 influenza type A viruses and 175 influenza type B viruses were detected in Czechia and Ireland. Of 393 subtyped influenza A viruses, 64% (n=250) were A(H1)pdm09 and 36% (n=143) A(H3). The 3 971 cases with known age fell in 4 age groups: 1 702 were 65 years and older, 1 369 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

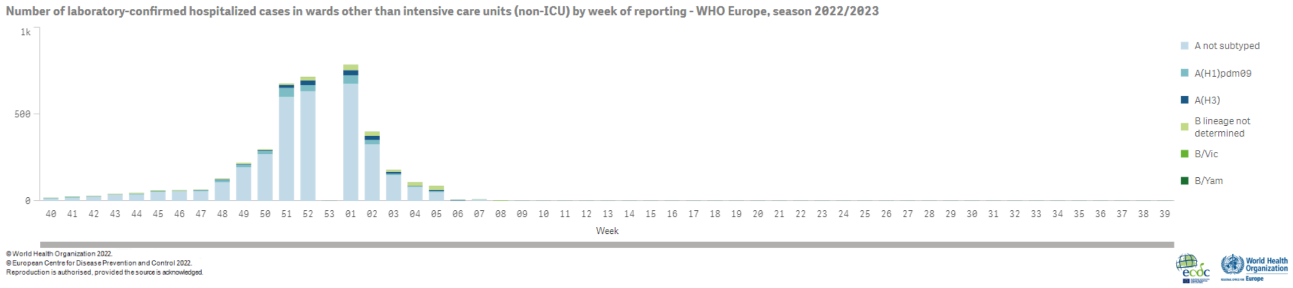
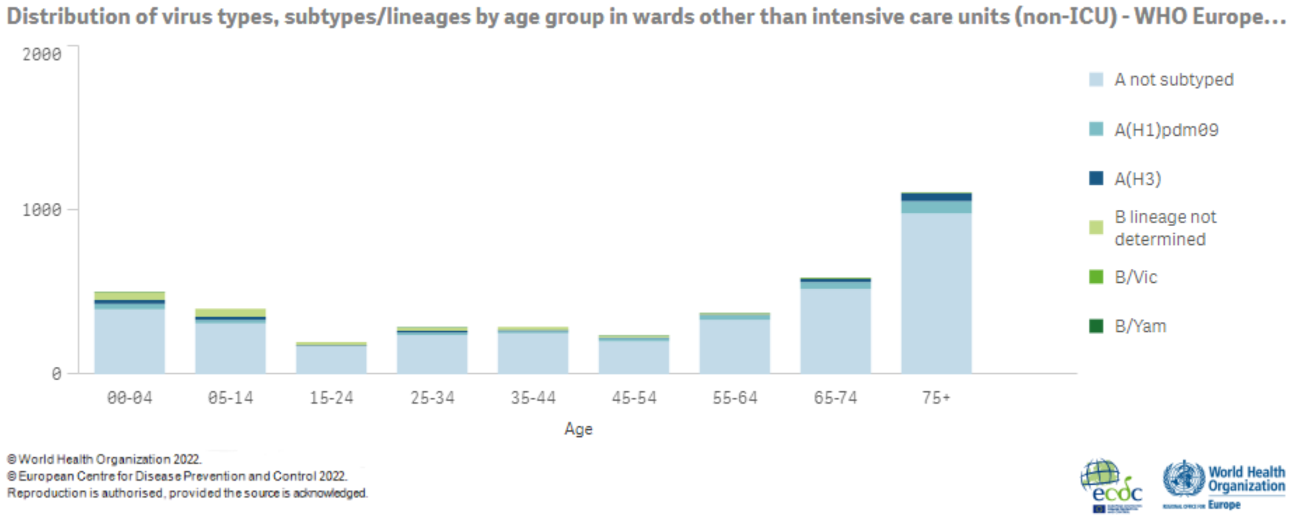


Figure 8. Distribution of influenza virus types, subtypes/lineages by age group in wards other than intensive care units (non-ICU), WHO European Region, season 2022/2023



Severe acute respiratory infection (SARI)-based hospital surveillance

For week 8/2023, 5 839 SARI cases were reported by 19 countries or areas (Albania, Belgium, Bosnia and Herzegovina, Georgia, Germany, Ireland, Kazakhstan, Kyrgyzstan, Lithuania, Malta, North Macedonia, Republic of Moldova, Romania, Russian Federation, Serbia, Spain, Ukraine, Uzbekistan and Kosovo (in accordance with Security Council resolution 1244 (1999)). Of 1 305 specimens tested for influenza viruses, 11% (n=145) were positive (Fig. 9). Of these, influenza type A viruses (n=90, 62%) were detected more frequently than influenza type B viruses (n=55, 38%). Of 45 subtyped influenza type A viruses, 38 (84%) were A(H1)pdm09 and 7 (16%) were A(H3). All 5 type B viruses ascribed to a lineage were B/Victoria. Of 10 countries and areas across the Region that each tested at least 10 specimens, 8 reported positivity rates above 10%: Serbia (52%), North Macedonia (33%), Ukraine (33%), Albania (29%), Bosnia and Herzegovina (29%), Lithuania (26%), Russian Federation (25%) and Romania (20%).

For the season, 83 237 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=3 164, 76%) and of these 2 601 were subtyped: 1 925 (74%) were infected by A(H1)pdm09 viruses and 676 (26%) were infected by A(H3) viruses. 24% (n=995) were influenza type B viruses. All type B viruses (n=210) 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

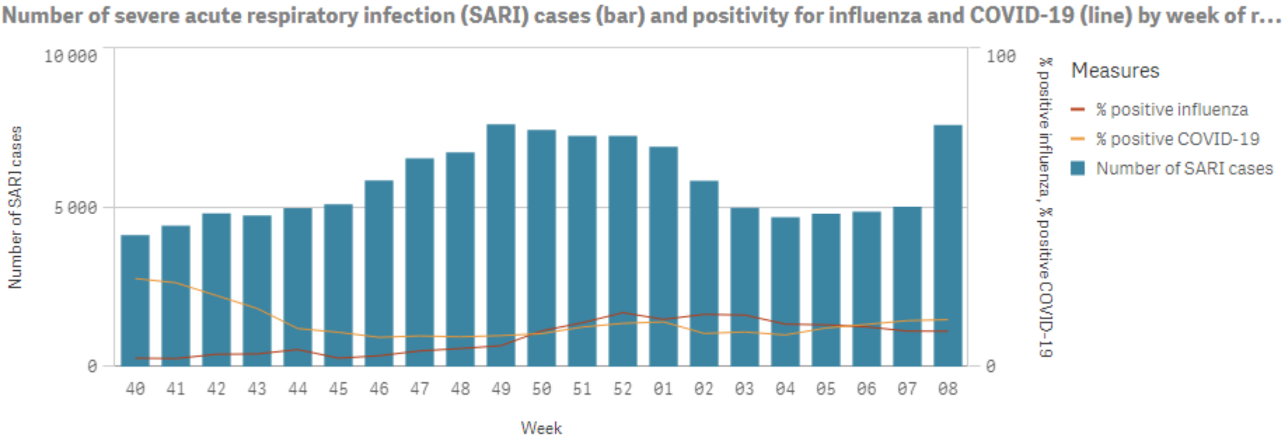


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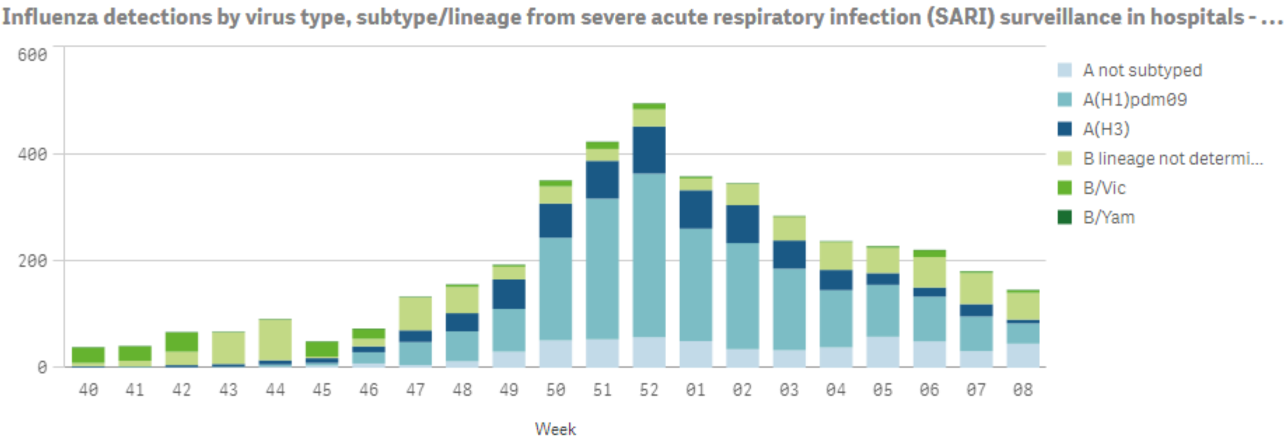
Figure 10. Influenza virus detections by type, subtype/lineage from severe acute respiratory infection (SARI), WHO European Region, season 2022/2023



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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 8/2023, 7 641 of 59 752 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; 3 484 (46%) were type A and 4 157 (54%) were type B. Of 506 subtyped A viruses, 360 (71%) were A(H1)pdm09 and 146 (29%) A(H3). Of 198 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=176 001, 84%) than type B (n=33 950, 16%) viruses have been detected. Of 52 424 subtyped A viruses, 28 514 (54%) were A(H1)pdm09 and 23 910 (46%) were A(H3). Of 2322 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

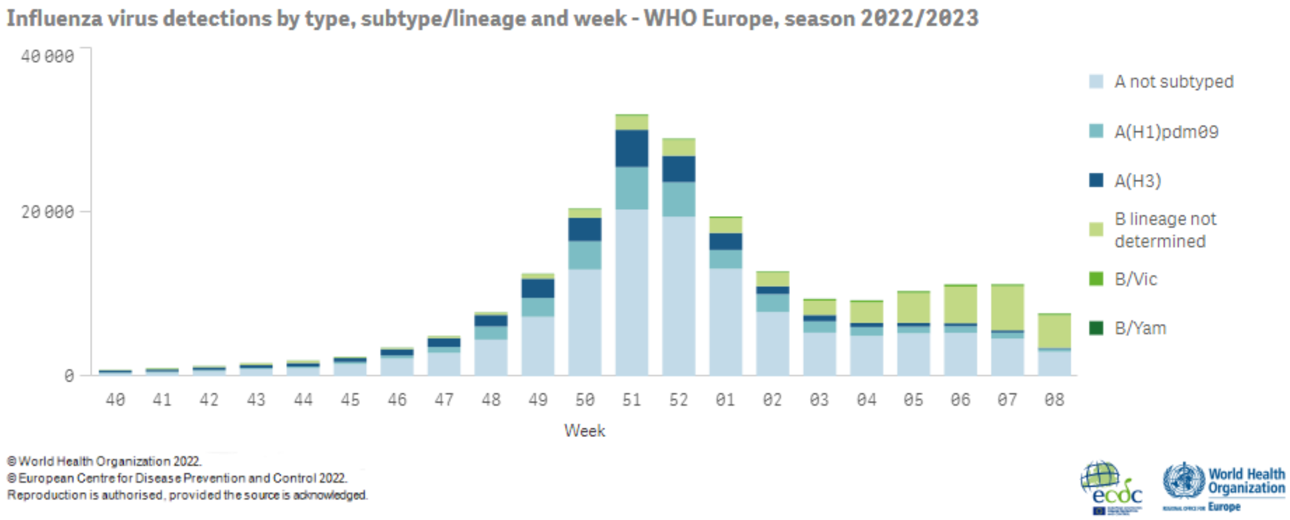

Table 2. Influenza virus detections in non-sentinel-source specimens by type and subtype, week 8/2023 and cumulatively for the season

Non-sentinel	Current Week (8)		Season 2022-2023	
Virus type and subtype	Number	%[a]	Number	%[a]
Influenza A	**3 484**	**45.6**	**176 001**	**83.8**
A(H1)pdm09	360	71.1	28 514	54.4
A(H3)	146	28.9	23 910	45.6
A not subtyped	2 978	-	123 577	-
Influenza B	**4 157**	**54.4**	**33 950**	**16.2**
B/Victoria lineage	198	100	2 322	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	3 959	-	31 628	-
Total detections (total tested)	**7 641 (59 752)**	-	**209 951 (1 559 976)**	-

[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 1 807 genetically characterized A(H1)pdm09 viruses up to week 8/2023, 885 were attributed to clade 6B.1A.5a.2, of which 515 (58%) were represented by A/Norway/25089/2022, 337 (38%) by A/Sydney/5/2021 and 33 (4%) by A/Victoria/2570/2019. Four (<1%) were attributed to clade 6B.1A.5a.1 represented by A/Guangdong-Maonan/SWL1536/2019. 918 (51%) viruses could not be attributed to a subgroup in the guidance.

Among the 1 789 A(H3) viruses characterized up to week 8/2023, 1 692 were attributed to clade 3C.2a1b.2a.2, of which 1 065 (63%) were represented by A/Bangladesh/4005/2020, 513 (30%) by A/Slovenia/8720/2022 and 114 (7%) by A/Darwin/9/2021. 94 (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 8/2023, 470 B/Victoria viruses were characterized, 229 (49%) of which were attributed to clade V1A.3a.2 represented by B/Austria/1359417/2021. 241 (51%) 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, cumulative for the season - WHO Europe

Virus Type / Virus Subtype / Genetic charact...	Number of influenza viruses attributed to genetic groups 2022/2023
Total	**4 066**
Influenza A	**3 596**
A(H1)pdm09	**1 807**
A(H1)pdm09_SubgroupNotListed *	918
A/Guangdong-Maonan/SWL1536/2019(H1N1)pdm09_6B.1A.5a.1	4
A/Norway/25089/2022(H1N1)pdm09_6B.1A.5a.2	515
A/Sydney/5/2021(H1N1)pdm09_6B.1A.5a.2	337
A/Victoria/2570/2019(H1N1)pdm09_6B.1A.5a.2	33
A(H3)	**1 789**
A(H3)_SubgroupNotListed *	94
A/Bangladesh/4005/2020(H3)_3C.2a1b.2a.2	1 065
A/Darwin/9/2021(H3)_3C.2a1b.2a.2	114
A/Denmark/3264/2019(H3N2)_3C.2a1b.1a	3
A/Slovenia/8720/2022(H3)_3C.2a1b.2a.2	513
Influenza B	**470**
B/Vic	**470**
B/Austria/1359417/2021(Victoria lineage_1A.3a.2)	229
BVic_SubgroupNotListed *	241

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

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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 8/2023, 2 689 viruses were assessed for susceptibility to neuraminidase inhibitors (1 030 A(H3), 832 A(H1)pdm09 and 352 B viruses genotypically and 261 A(H3), 166 A(H1)pdm09 and 48 B viruses phenotypically), and 2 067 viruses were assessed for susceptibility to baloxavir marboxil (1 150 A(H3), 561 A(H1)pdm09 and 356 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 quadrivalent 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;
- 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/67/2022 (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 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.

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

This weekly update was prepared by an editorial team at the European Centre for Disease Prevention and Control (Cornelia Adlhoch, Maja Vukovikj, 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 and Nicola Lewis, 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.

Suggested citation: European Centre for Disease Prevention and Control/WHO Regional Office for Europe. Flu News Europe, Joint ECDC–WHO weekly influenza update, week 8/2023.

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