

Summary

Week 18/2023 (1 May-7 May 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 to 4% from 8% in the previous week, which is below the epidemic threshold set at 10%.
- 19 of 38 countries or areas reported low intensity; there were no reports of medium or higher intensity. 6 of 38 countries across the Region reported widespread activity.
- 3 countries and areas with more than ten specimens tested reported sentinel primary care specimen influenza virus positivity at or above the 10% epidemic threshold.
- Influenza type A and type B viruses were detected in sentinel and non-sentinel surveillance, with type B predominating in both systems.
- Hospitalized patients with confirmed influenza virus infection were reported from ICU (only type A viruses), other wards (only one type B virus) and SARI surveillance (with higher proportions of type B viruses). Only North Macedonia 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.
- Following a peak at week 51/2022 with 39% positivity, influenza activity had been decreasing across the Region until week 4/2023 when it reached 21% positivity before rising again to fluctuate around 25% positivity between weeks 6 and 11/2023 before decreasing below 10% positivity in week 16/2023.
- 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. In non-sentinel specimens, higher circulation of A(H1)pdm09 (55%) than A(H3) viruses (45%) was detected.
- 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 patients.
- Virus type and subtype prevalence by country and surveillance system has been variable across the season.
- The B/Yamagata viruses sporadically detected and reported by different countries have been further investigated and were proven to be LAIV related detections.

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 <1% for week 18/2023. More information on the risk of RSV infections can be found [here](#).

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 18/2023, of 39 countries and areas reporting on intensity of influenza activity, 20 reported baseline-intensity (across the Region) and 19 reported low-intensity (across the Region) (Fig. 1).

Of 38 countries and areas reporting on geographic spread of influenza viruses, 7 reported no activity (Azerbaijan, Belgium, Bulgaria, Israel, Kazakhstan, Kyrgyzstan and Latvia), 15 reported sporadic spread (across the Region), 5 reported local spread (Bosnia and Herzegovina, Estonia, Georgia, Romania and Slovenia), 5 reported regional spread (Albania, Croatia, Finland, Spain and Ukraine) and 6 reported widespread activity (Germany, Greece, Ireland, Norway, Sweden and Türkiye) (Fig. 2).

Figure 1. Intensity of influenza activity in the European Region, week 18/2023

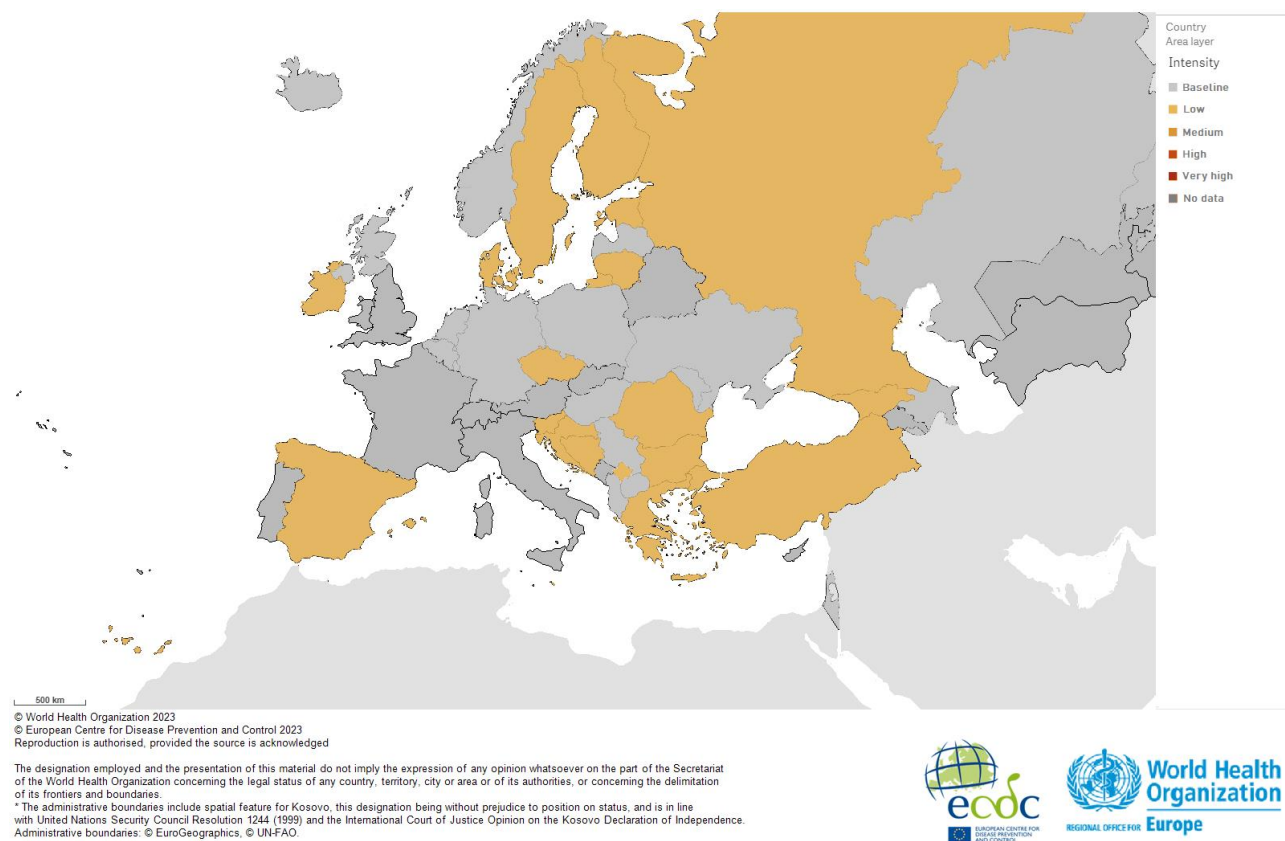
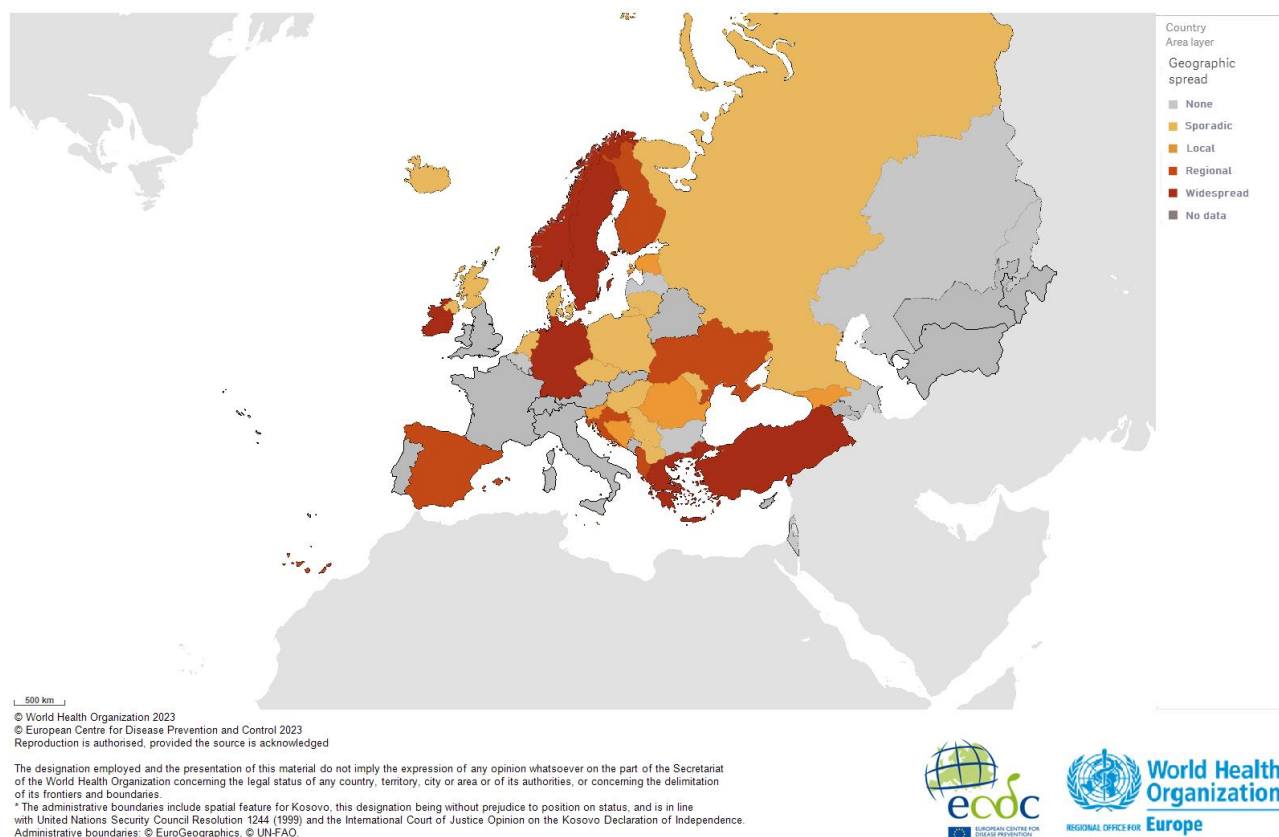


Figure 2. Geographic spread of influenza viruses in the European Region, week 18/2023



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

Please note:

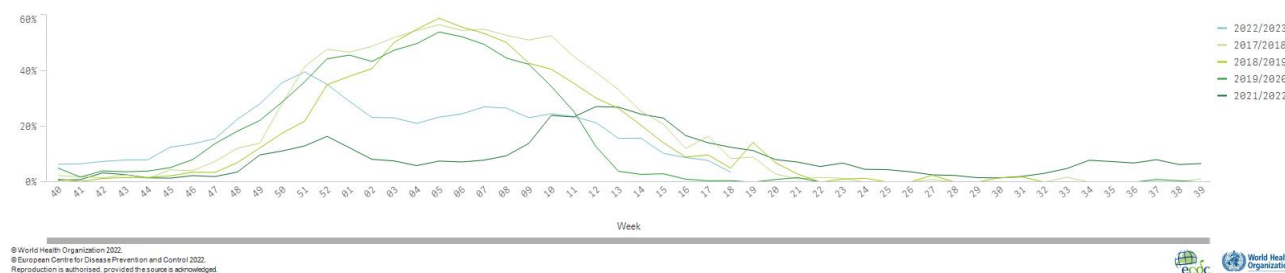
- Assessment of the intensity of activity indicator includes consideration of ILI or ARI rates. These ILI or ARI rates might be driven by respiratory infections other than influenza virus, including SARS-CoV-2, leading to observed increases in the absence of influenza virus detections.
- Assessment of 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 8% in the previous week to 4% in week 18/2023, falling below the epidemic threshold of 10%. Seasonal activity started in week 45/2022 when positivity crossed above the epidemic threshold. The current seasonal influenza epidemic started earlier 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 at 40% which was earlier than in the four previous seasons, ranging from week 52 (2021/22 season) to 5 (2018/19 and 2019/20). Across the Region, influenza activity decreased to 21% up to week 4/2023,

then fluctuated around 25% between weeks 6 and 11/2023 and decreased thereafter (Fig. 3).

Figure 3. Influenza virus positivity in sentinel-source specimens by week, WHO European Region, seasons 2017/2018, 2018/2019, 2019/2020, 2021/2022 and 2022/2023



External data sources

Mortality monitoring:

The 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=4; Azerbaijan, Georgia, Kazakhstan and Kyrgyzstan), northern (n=2; Denmark and Estonia) and southern (n=3; Croatia, Greece and Türkiye) areas of the European Region reported activity above baseline levels.

Of the countries and areas in which thresholds for ARI activity are defined, only Kazakhstan reported activity above its baseline level.

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 18/2023, 48 (4%) of 1 346 sentinel specimens tested positive for an influenza virus; 88% were type B and 12% were type A. Of 3 subtyped A viruses, all were A(H1)pdm09. All 16 type B viruses ascribed to a lineage were B/Victoria (Fig. 4 and Table 1). Of 17 countries and areas across the Region that each tested at least 10 sentinel

specimens in week 18/2023, 3 reported a rate of influenza virus detections at or above 10% (median 11%; range 10% - 13%): Slovakia (13%), France (11%) and Kosovo (in accordance with Security Council resolution 1244 (1999)) (10%).

For the season to date, 27 933 (22%) of 126 609 sentinel specimens tested positive for an influenza virus. More influenza type A (n=19 505, 70%) than type B (n=8 428, 30%) viruses have been detected. Of 15 766 subtyped A viruses, 10 069 (64%) were A(H3) and 5 697 (36%) were A(H1)pdm09. All 2 527 influenza type B viruses ascribed to a lineage were B/Victoria (70% of type B viruses were reported without a lineage). All detected B/Yamagata viruses were confirmed as LAIV related detections and are not included in the season's count (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

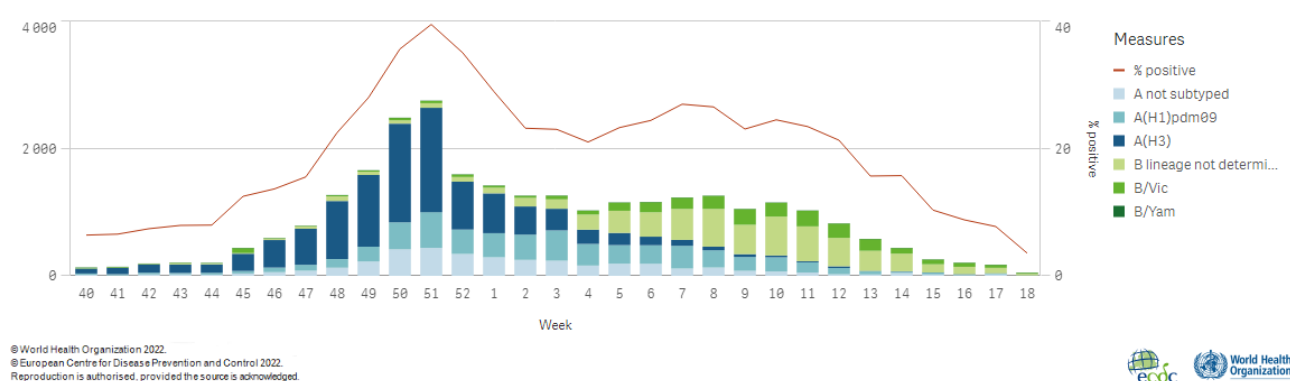


Table 1. Influenza virus detections in sentinel source specimens by type and subtype for week 18/2023 and cumulatively for the season

Sentinel Virus type and subtype	Current Week (18)		Season 2022-2023	
	Number	% ^a	Number	% ^a
Influenza A	6	12.5	19 505	69.8
A(H1)pdm09	3	100	5 697	36
A(H3)	0	0	10 069	64
A not subtyped	3	-	3 739	-
Influenza B	42	87.5	8 428	30.2
B/Victoria lineage	16	100	2 527	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	26	-	5 901	-
Total detections (total tested)	48 (1 346)	3.6	27 933 (126 609)	22.1

^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 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 18/2023, 2 laboratory-confirmed influenza cases were reported from ICU wards (in Sweden). Only influenza type A viruses were detected. No viruses were ascribed to a subtype or lineage (Fig. 5 and 6).

Since week 40/2022, 2 755 influenza type A (89%) and 324 type B (11%) viruses were detected (in Czechia (n=142), France (n=953), Ireland (n=151), Sweden (n=329) and United Kingdom (England) (n=1 504)). Of 499 subtyped influenza A viruses, 54% were A(H3) and 46% were A(H1)pdm09. No influenza B viruses were ascribed to a lineage. Of 1 565 cases with known age, 743 were 15-64 years old, 624 were 65 years and older, 119 were 0-4 years old and 79 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

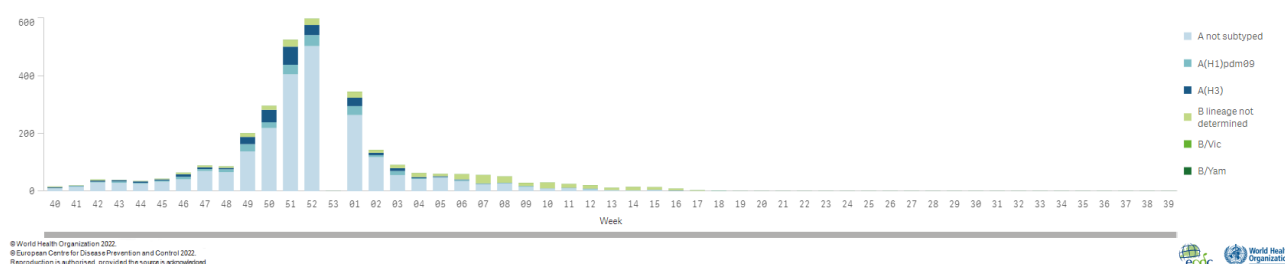
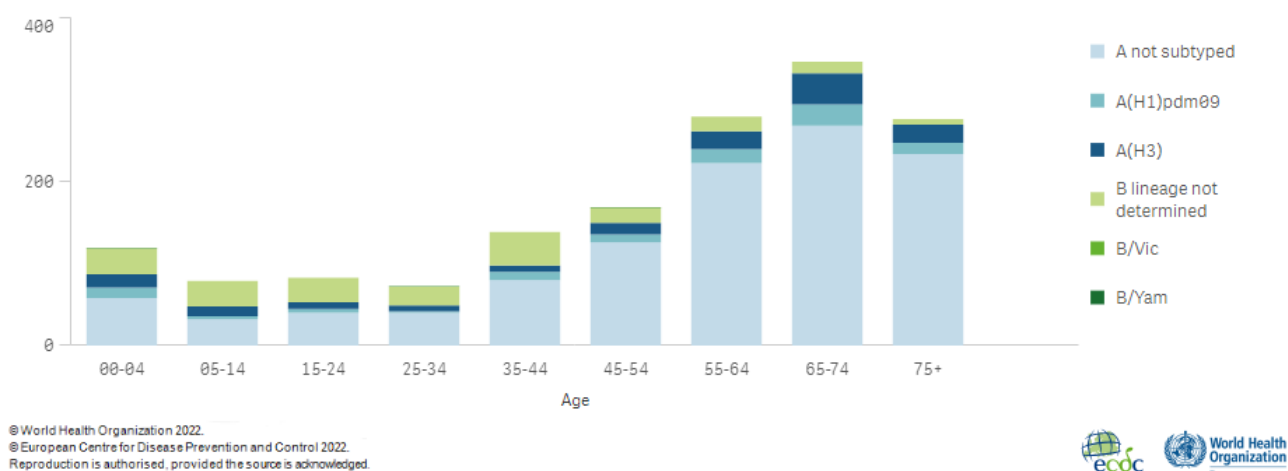


Figure 6. Distribution of influenza virus types, subtypes/lineages by age group in intensive care units (ICU), WHO European Region, season 2022/2023



1.2) Hospitalized laboratory-confirmed influenza cases – other wards

For week 18/2023, 1 laboratory-confirmed influenza case was reported from other wards (in Czechia). Only an influenza type B virus was detected. No viruses were ascribed to a subtype or lineage (Fig. 7 and 8).

Since week 40/2022, 3 810 influenza type A viruses and 180 influenza type B viruses were detected from Czechia (n=173) and Ireland (n=3 817). Of 399 subtyped influenza A viruses, 63% (n=251) were A(H1)pdm09 and 37% (n=148) A(H3). The 3 990 cases with known age fell in 4 age groups: 1 714 were 65 years and older, 1 375 were 15-64 years old, 500 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

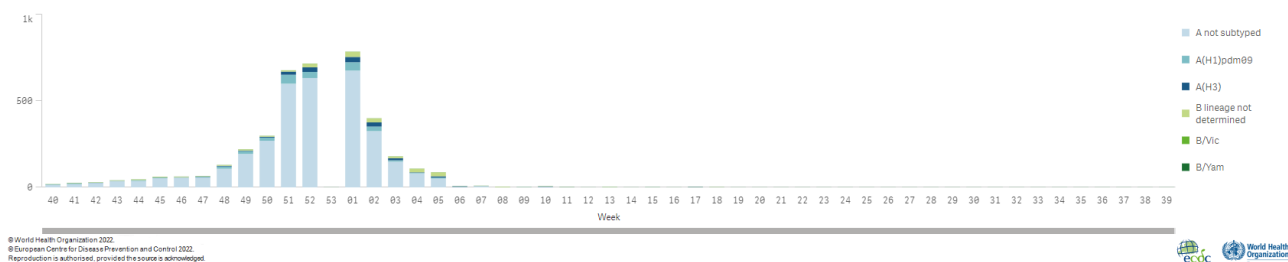
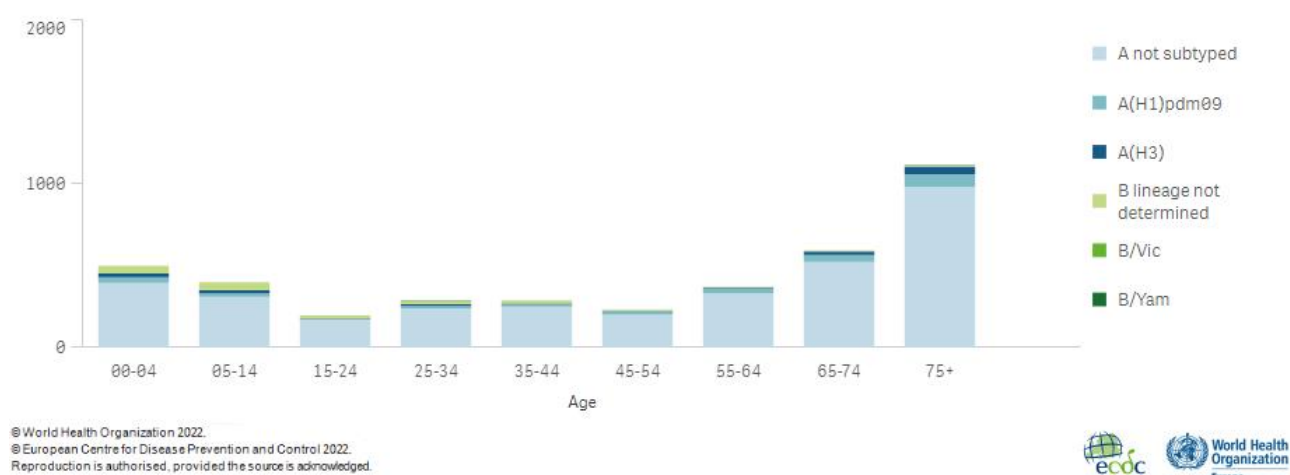


Figure 8. Distribution of influenza virus types, subtypes/lineages by age group in wards other than intensive care units (non-ICU), WHO European Region, season 2022/2023



Severe acute respiratory infection (SARI)-based hospital surveillance

For week 18/2023, 1 905 SARI cases were reported by 17 countries or areas (Albania, Bosnia and Herzegovina, Georgia, Germany, Ireland, Kazakhstan, Kyrgyzstan, Lithuania, Malta, North Macedonia, Republic of Moldova, Romania, Serbia, Spain, Türkiye, Ukraine and Kosovo (in accordance with Security Council resolution 1244 (1999))). Of 851 specimens tested for influenza viruses, 2% (n=14) were positive (Fig. 9). Of these, influenza type B viruses (n=10, 71%) were detected more frequently than influenza type A viruses (n=4, 29%). Of 3 subtyped influenza type A viruses, all were A(H1)pdm09. All 2 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, 1 reported positivity rates above 10%: North Macedonia (18%).

For the season, 111 332 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, 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=4 105, 70%) and of these 3 139 were subtyped: 2 189 (70%) were infected by A(H1)pdm09 viruses and 950 (30%) were infected by A(H3) viruses. Of those influenza B viruses that have been ascribed to a lineage (n=416, 30%), 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

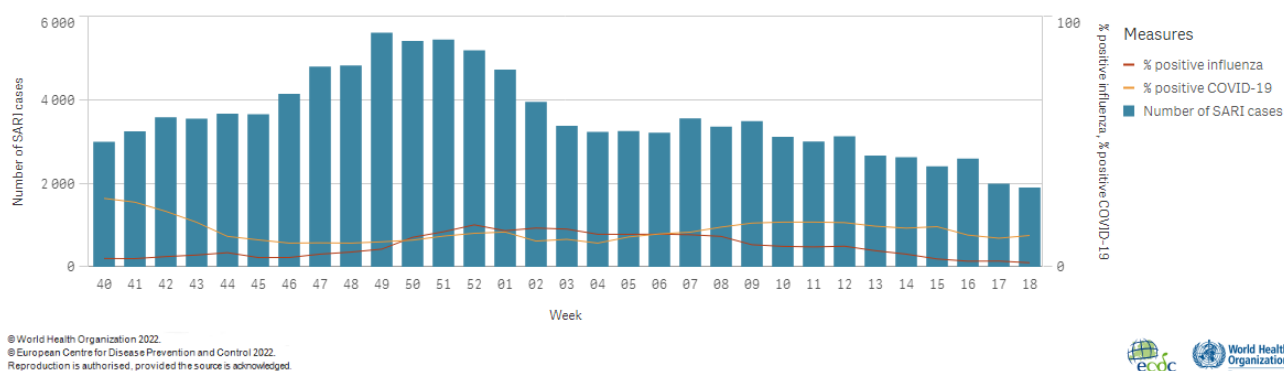
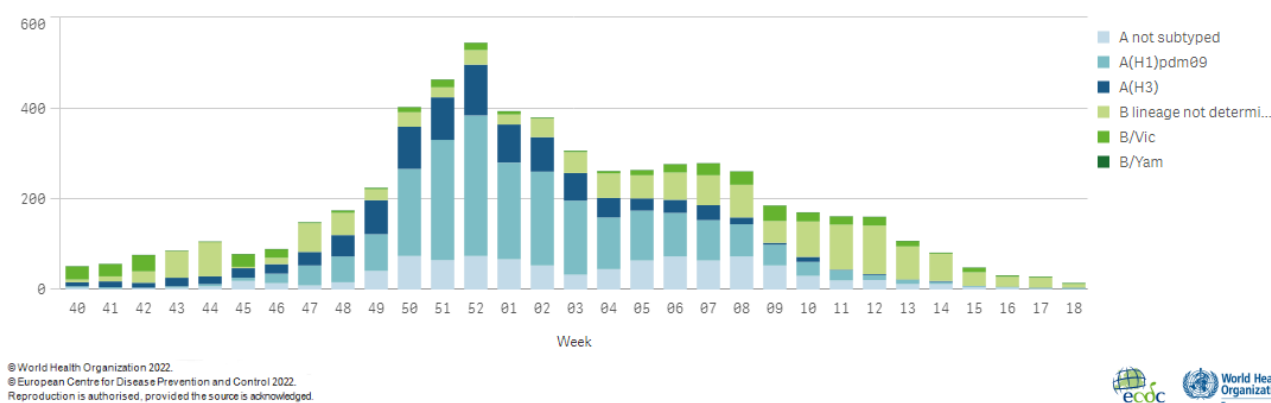


Figure 10. Influenza virus detections by type, subtype/lineage from severe acute respiratory infection (SARI), WHO European Region, season 2022/2023



Virus characteristics

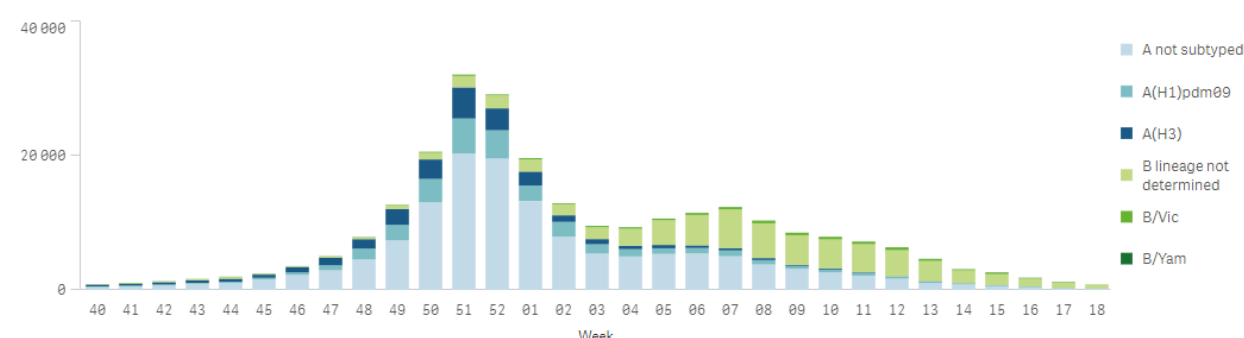
Details of the distribution of viruses detected in sentinel-source specimens can be found in the **Primary care data** section.

Non-sentinel virologic data

For week 18/2023, 785 of 27 862 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; 578 (74%) were type B and 207 (26%) were type A. Of 26 subtyped A viruses, 20 (77%) were A(H1)pdm09 and 6 (23%) A(H3). All 18 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=195 648, 76%) than type B (n=64 584, 25%) viruses have been detected. Of 56 464 subtyped A viruses, 31 268 (55%) were A(H1)pdm09 and 25 196 (45%) were A(H3). All 5 201 influenza type B viruses ascribed to a lineage were B/Victoria (92% of type B viruses were reported without a lineage). All detected B/Yamagata viruses were confirmed as LAIV related detections and are not included in the season's count (Fig. 11 and Table 2).

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



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Table 2. Influenza virus detections in non-sentinel-source specimens by type and subtype, week 18/2023 and cumulatively for the season

Non-sentinel	Current Week (18)		Season 2022-2023	
Virus type and subtype	Number	% ^a	Number	% ^a
Influenza A	207	26.4	195 648	75.2
A(H1)pdm09	20	77	31 268	55
A(H3)	6	24	25 196	45
A not subtyped	181	-	139 184	-
Influenza B	578	73.6	64 584	24.8
B/Victoria lineage	18	100	5 201	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	560	-	59 383	-
Total detections (total tested)	785 (27 862)	-	260 232 (2 150 578)	-

^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 2 496 genetically characterized A(H1)pdm09 viruses up to week 18/2023, 1 469 were attributed to clade 6B.1A.5a.2, of which 737 (50%) were represented by A/Sydney/5/2021, 699 (48%) by A/Norway/25089/2022 and 33 (2%) by A/Victoria/2570/2019. 5 (<1%) were attributed to clade 6B.1A.5a.1 represented by A/Guangdong-Maonan/SWL1536/2019. 1 022 (41%) viruses could not be attributed to a pre-defined subgroup in the guidance.

Among the 2 551 A(H3) viruses characterized up to week 18/2023, 2 430 were attributed to clade 3C.2a1b.2a.2, of which 1 482 (61%) were represented by A/Bangladesh/4005/2020, 793 (33%) by A/Slovenia/8720/2022, 155 (6%) by A/Darwin/9/2021. 3 (<1%) were attributed to clade 3C.2a1b.1a represented by A/Denmark/3264/2019. 118 (5%) viruses could not be attributed to a pre-defined subgroup in the guidance.

Up to week 18/2023, 1 103 B/Victoria viruses were characterized, 784 (71%) of which were attributed to clade V1A.3a.2 represented by B/Austria/1359417/2021. 319 (29%) viruses could not be attributed to a pre-defined 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	6 150
Influenza A	5 047
A(H1)pdm09	2 496
A(H1)pdm09_SubgroupNotListed *	1 022
A/Guangdong-Maonan/SWL1536/2019(H1N1)pdm09_6B.1A.5a.1	5
A/Norway/25089/2022(H1N1)pdm09_6B.1A.5a.2	699
A/Sydney/5/2021(H1N1)pdm09_6B.1A.5a.2	737
A/Victoria/2570/2019(H1N1)pdm09_6B.1A.5a.2	33
A(H3)	2 551
A(H3)_SubgroupNotListed *	118
A/Bangladesh/4005/2020(H3)_3C.2a1b.2a.2	1 482
A/Darwin/9/2021(H3)_3C.2a1b.2a.2	155
A/Denmark/3264/2019(H3N2)_3C.2a1b.1a	3
A/Slovenia/8720/2022(H3)_3C.2a1b.2a.2	793
Influenza B	1 103
B/Vic	1 103
B/Austria/1359417/2021(Victoria lineage_1A.3a.2)	784
BVic_SubgroupNotListed *	319

* 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 February](#) virus characterization report is available and describes available data from circulating viruses for the early weeks of the 2022-2023 influenza season.

Antiviral susceptibility testing

Up to week 18/2023, 4 552 viruses were assessed for susceptibility to neuraminidase inhibitors (1 538 A(H1)pdm09, 1 344 A(H3) and 865 B viruses only genotypically and 337 A(H3), 257 A(H1)pdm09 and 211 B viruses phenotypically and some of these also genotypically), and 3 358 viruses were assessed for susceptibility to baloxavir marboxil (1 685 A(H3), 945 A(H1)pdm09 and 728 B viruses genotypically). Phenotypically and/or genotypically, seven A(H1)pdm09 viruses showed (highly) reduced inhibition by oseltamivir. Six of the viruses were reported to carry reduced inhibition markers, four with NA-H275Y (one confirmed phenotypically), one with NA-D199G (confirmed phenotypically), one with NA-I223R. One of those viruses showed reduced inhibition also by zanamivir due to NA-I223R substitution. Phenotypically, one A(H3) virus showing highly reduced inhibition by oseltamivir was identified. Genotypically, one B/Victoria-lineage virus was showing reduced susceptibility by oseltamivir due to NA-H273Y substitution. Genotypically no markers associated with reduced susceptibility for baloxavir marboxil were identified.

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 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>

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

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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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