Flu News Europe

Joint ECDC–WHO/Europe weekly influenza update

Summary

Week 12/2023 (20 March – 26 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 decreased to 22% in week 12/2023 from 24% in the previous week and remaining above the epidemic threshold (10%).
- 15 of 37 countries or areas reported medium intensity and 20 of 37 countries reported widespread activity indicating substantial seasonal influenza virus circulation across the Region.
- Of the 20 countries that reported sentinel primary care specimen influenza virus positivity above the 10% epidemic threshold, only Hungary 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) and SARI surveillance (with higher proportions of type B viruses). Four countries or areas reported influenza virus positivity rates above 10% in SARI surveillance (Lithuania, Romania, Serbia and Ukraine).

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, influenza activity had been decreasing across the Region until week 4/2023 when it reached 22% positivity before rising again to fluctuate around 25% positivity between weeks 6 and 11/2023 before decreasing again to 22% positivity in week 12/2023.
- 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 similar prevalence 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 among SARI patients.

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 12/2023. 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 12/2023, of 37 countries and areas reporting on intensity of influenza activity, 8 reported baseline-intensity (Azerbaijan, Belgium, Iceland, Netherlands, Republic of Moldova, United Kingdom (Northern Ireland), United Kingdom (Scotland) and Uzbekistan), 14 reported low-intensity (across the Region) and 15 reported medium-intensity (across the Region) (Fig. 1).

Of 37 countries and areas reporting on geographic spread of influenza viruses, 4 reported no activity (Azerbaijan, Kazakhstan, Kyrgyzstan and Uzbekistan), 5 reported sporadic spread (Belgium, Bulgaria, Israel, North Macedonia and United Kingdom (Northern Ireland)), 3 reported local spread (Belarus, Malta and Slovakia), 5 reported regional spread (Lithuania, Republic of Moldova, Romania, Serbia 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 12/2023

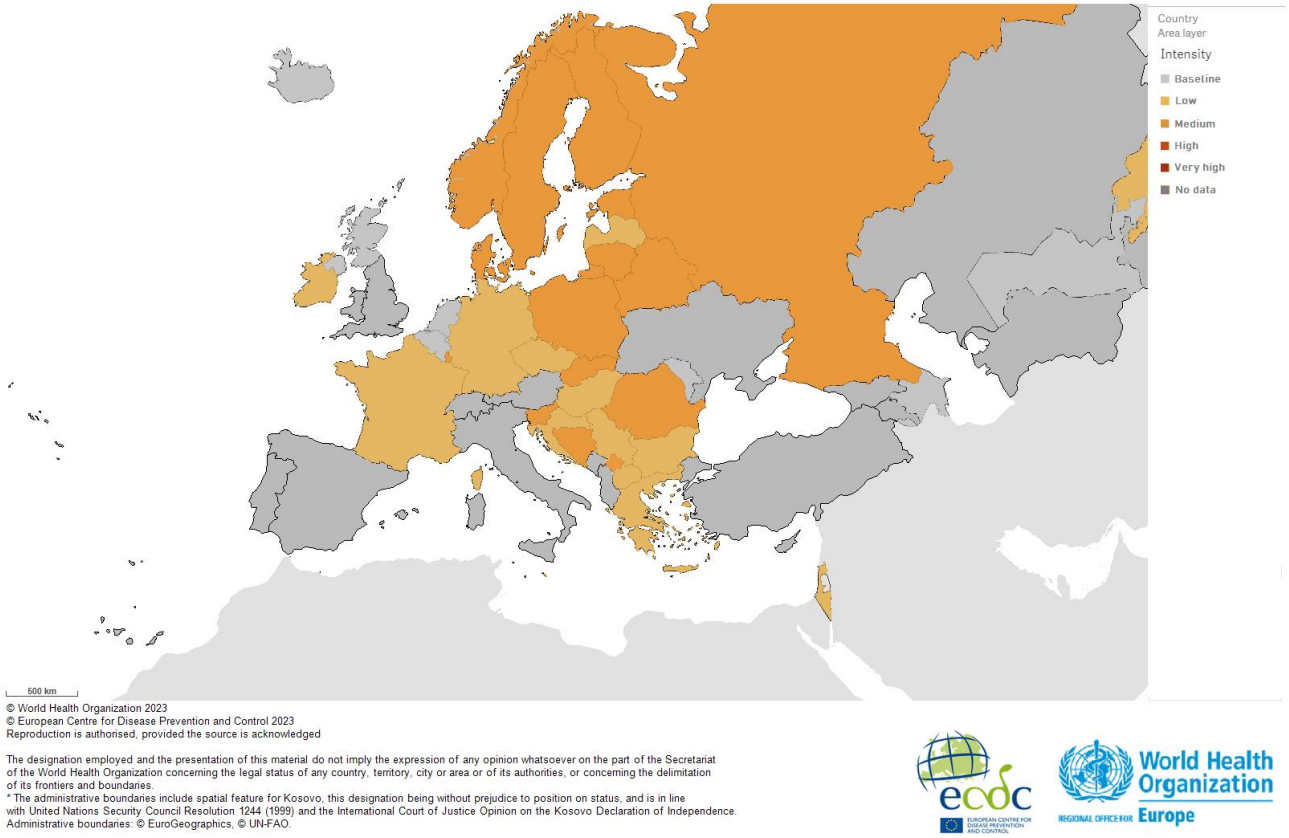
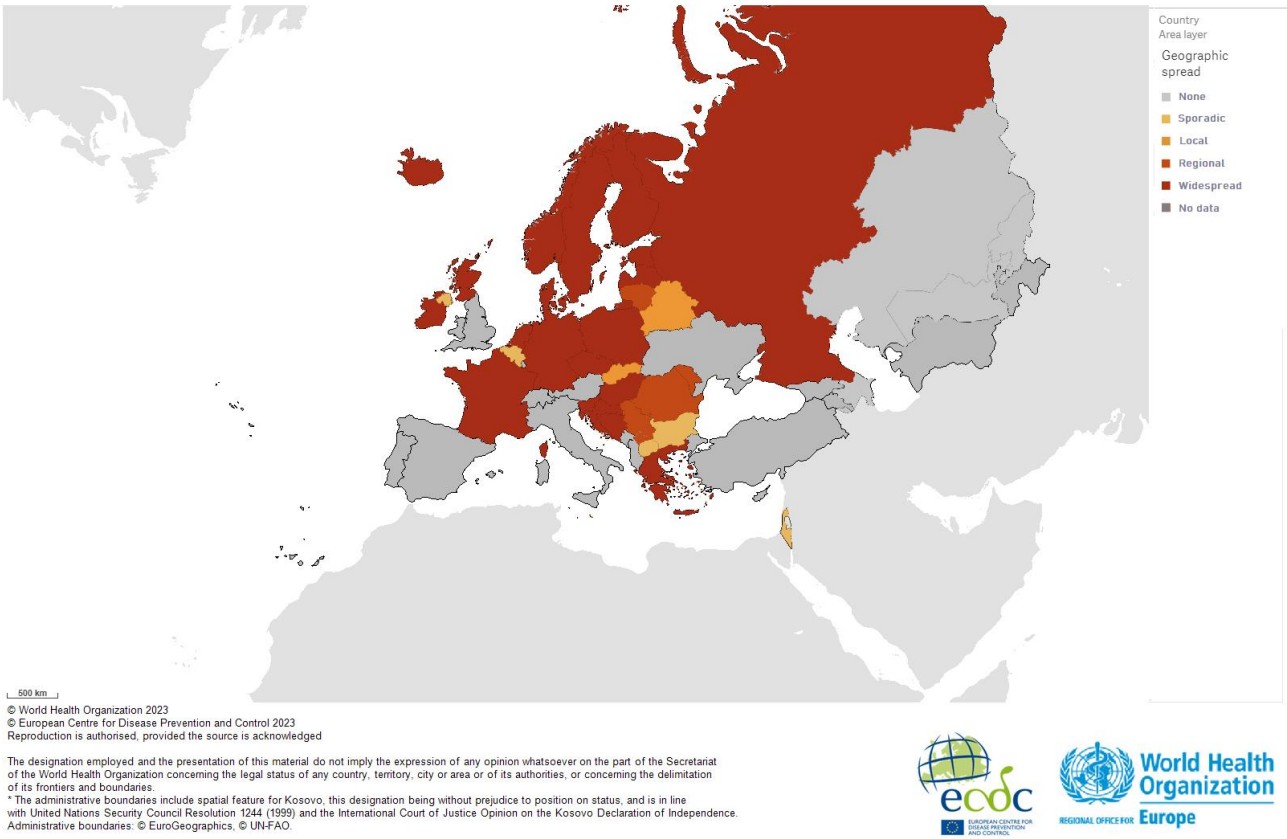


Figure 2. Geographic spread of influenza viruses in the European Region, week 12/2023



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.

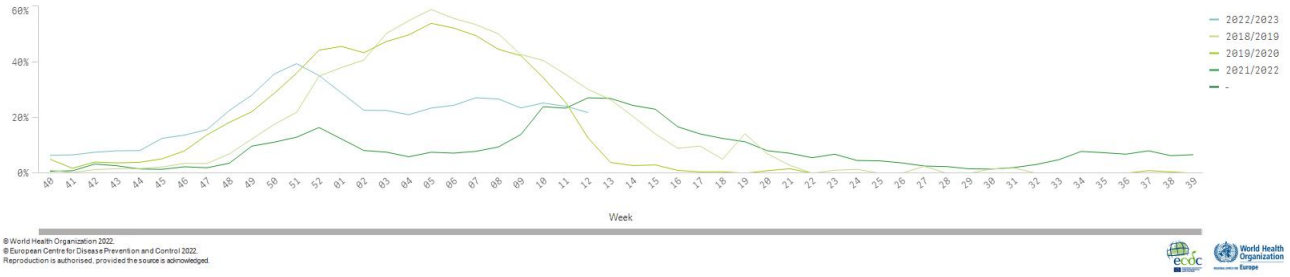
- Assessment of intensity and geographic spread indicators includes consideration of sentinel and non-sentinel influenza virus detection data. Non-sentinel influenza virus detections, often higher, might translate into reporting of elevated geographic spread even in the absence of sentinel detections 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 24% in the previous week to 22% in week 12/2023. 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 at 39% 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 when it reached a positivity level of 22% before

fluctuating around 25% between weeks 6 and 11/2023 and decreasing again from week 11/2023 to 22% in week 12/2023 (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 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, Kazakhstan, Kyrgyzstan and Republic of Moldova), northern (n=4; Denmark, Estonia, Latvia and Lithuania), southern (n=3; Croatia, Greece and Slovenia) and western (n=6; Belgium, Czechia, Hungary, Luxembourg, Poland and Switzerland) areas of the European Region reported activity above baseline levels.

Of the countries and areas in which thresholds for ARI activity are defined, countries in eastern (n=1; Kazakhstan), 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 12/2023, 664 (22%) of 3 048 sentinel specimens tested positive for an influenza virus; 82% were type B and 18% were type A. Of 95 subtyped A viruses, 80% were A(H1)pdm09 and 20% A(H3). All 153 type B viruses ascribed to a lineage were B/Victoria (Fig. 4 and Table 1). Of 29 countries and areas across the Region that each tested at least 10 sentinel specimens in week 12/2023, 20 reported a rate of influenza virus detections above 10% (median 21%; range 11% - 54%): Hungary (54%), Luxembourg (35%), Germany

(31%), France (30%), Slovakia (29%), Denmark (27%), Armenia (26%), Poland (25%), Spain (24%), Serbia (21%), Italy (21%), Slovenia (20%), Kosovo (in accordance with Security Council resolution 1244 (1999)) (20%), Estonia (19%), Republic of Moldova (17%), Netherlands (17%), Ukraine (16%), Norway (15%), Switzerland (14%) and Czechia (11%).

For the season to date, 25 565 (24%) of 108 535 sentinel specimens tested positive for an influenza virus. More influenza type A (n=18 846, 74%) than type B (n=6 719, 26%) viruses have been detected. Of 15 283 subtyped A viruses, 9 872 (65%) were A(H3) and 5 411 (35%) were A(H1)pdm09. All 1 975 influenza type B viruses ascribed to a lineage were B/Victoria (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

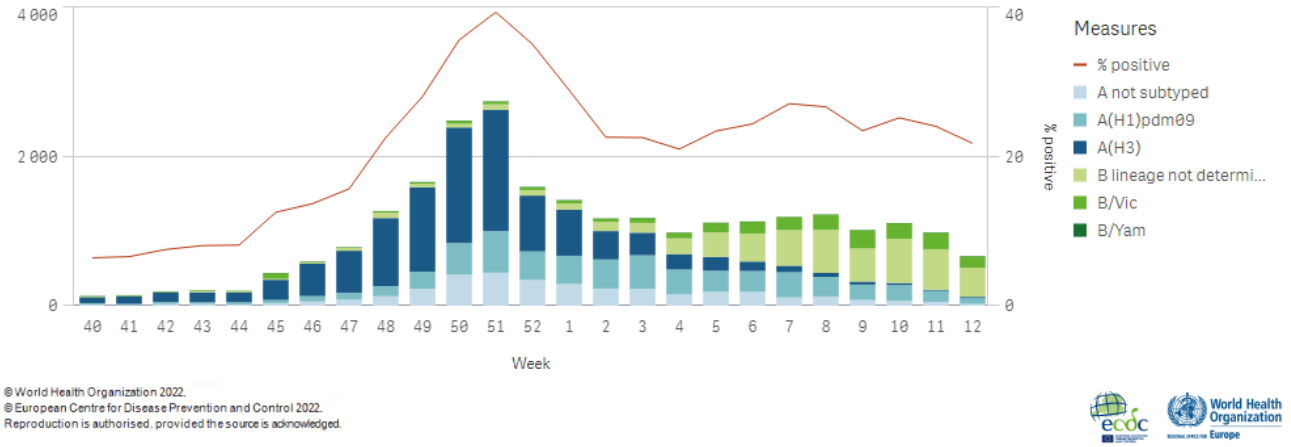


Table 1. Influenza virus detections in sentinel source specimens by type and subtype for week 12/2023 and cumulatively for the season

Sentinel	Current Week (12)		Season 2022-2023	
Virus type and subtype	**Number**	**%[a]**	**Number**	**%[a]**
Influenza A	**120**	**18.1**	**18 846**	**73.7**
A(H1)pdm09	76	80.0	5 411	35.4
A(H3)	19	20.0	9 872	64.6
A not subtyped	25	-	3 563	-
Influenza B	**544**	**81.9**	**6 719**	**26.3**
B/Victoria lineage	153	100	1 975	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	391	-	4 744	-
Total detections (total tested)	**664 (3 048)**	**21.8**	**25 565 (108 535)**	**23.6**

[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 12/2023, 10 laboratory-confirmed influenza cases were reported from ICU wards (in Czechia (n=1), France (n=3) and Sweden (n=6)). Both influenza type B viruses (n=70%) and type A viruses (n=30%) were detected. No viruses were ascribed to a subtype or lineage (Fig. 5 and 6).

Since week 40/2022, 2 683 influenza type A (91%) and 275 type B (9%) viruses were detected (in Czechia (n=138), France (n=915), Ireland (n=151), Sweden (n=250) and United Kingdom (England) (n=1 504)). Of 484 subtyped influenza A viruses, 54% were A(H3) and 46% were A(H1)pdm09. No influenza B viruses were ascribed to a lineage. Of 1 445 cases with known age, 678 were 15-64 years old, 590 were 65 years and older, 110 were 0-4 years old and 67 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

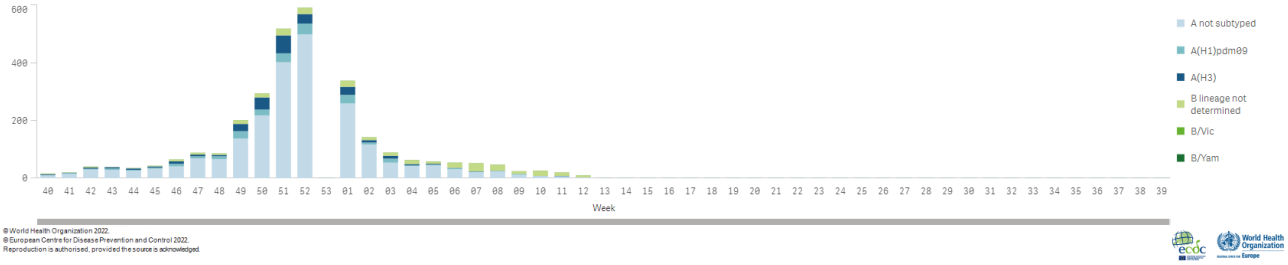
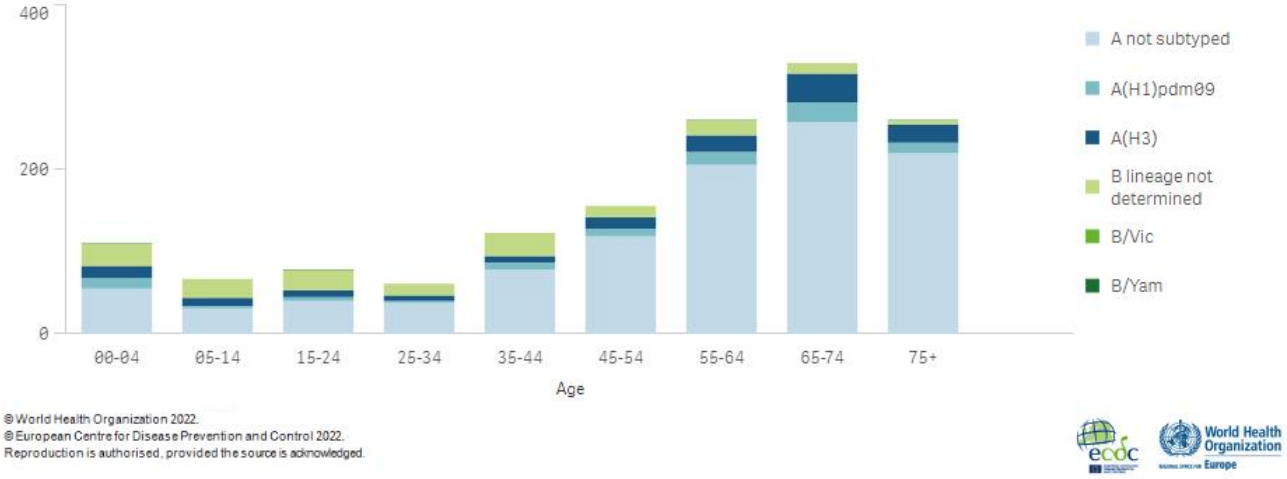


Figure 6. Distribution of influenza virus types, subtypes/lineages by age group in intensive care units (ICU), WHO European Region, season 2022/2023



1.2) Hospitalized laboratory-confirmed influenza cases – other wards

For week 12/2023, there were no reports of hospitalized laboratory-confirmed influenza cases in other wards (Fig. 7 and 8).

Since week 40/2022, 3 805 influenza type A viruses and 177 influenza type B viruses were detected (in Czechia (n=165) and Ireland (n=3 817)). Of 397 subtyped influenza A viruses, 63% (n=251) were A(H1)pdm09 and 37% (n=146) A(H3). The 3 982 cases with known age fell in 4 age groups: 1 709 were 65 years and older, 1 373 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

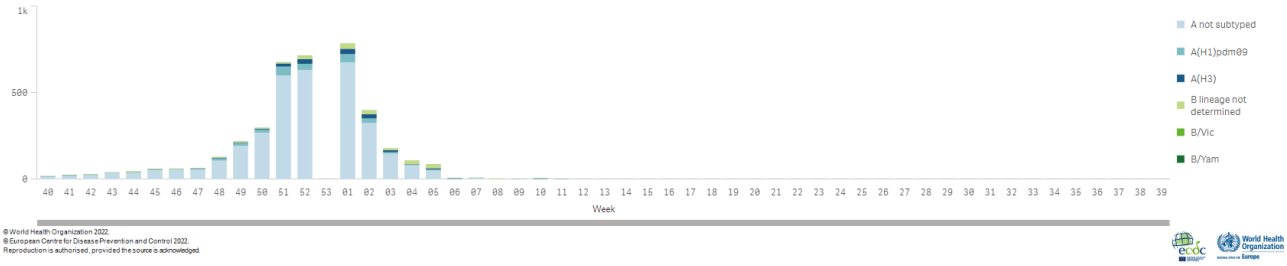
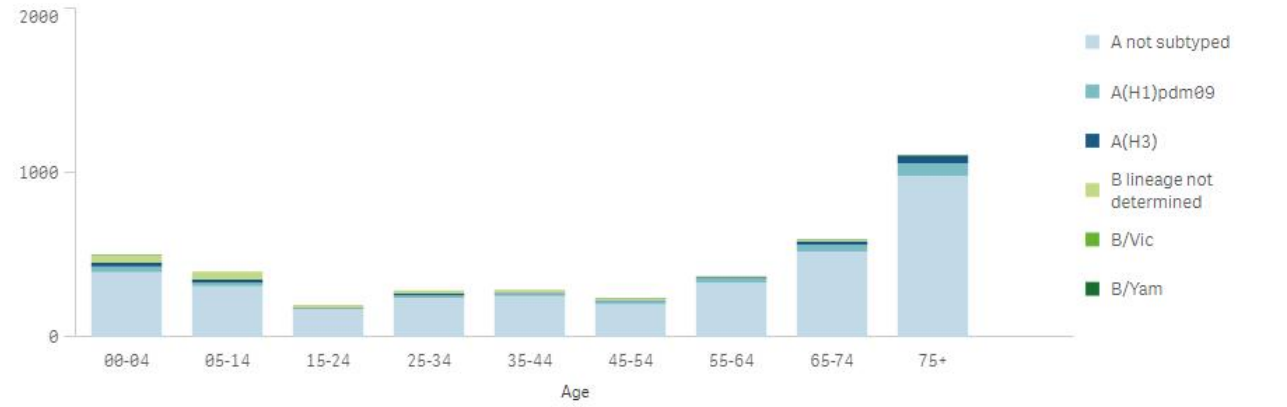


Figure 8. Distribution of influenza virus types, subtypes/lineages by age group in wards other than intensive care units (non-ICU), WHO European Region, season 2022/2023



Severe acute respiratory infection (SARI)-based hospital surveillance

For week 12/2023, 3 542 SARI cases were reported by 17 countries or areas (Belarus, Belgium, Bosnia and Herzegovina, Germany, Ireland, Kyrgyzstan, Lithuania, Malta, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Spain, Türkiye, Ukraine and Kosovo (in accordance with Security Council resolution 1244 (1999))). Of 1 105 specimens tested for influenza viruses, 8% (n=93) were positive (Fig. 9). Of these, influenza type B viruses (n=80, 86%) were detected more frequently than influenza type A viruses (n=13, 14%). Of 4 subtyped influenza type A viruses, 3 were A(H1)pdm09 and 1 was A(H3). Only 1 type B virus was ascribed to a lineage and it was B/Victoria. Of 11 countries and areas across the Region that each tested at least 10 specimens, 4 reported positivity rates above 10%: Lithuania (97%), Romania (31%), Serbia (24%) and Ukraine (17%).

For the season, 136 776 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=3 394, 71%) and of these 2 737 were subtyped: 2 027 (74%) were infected by A(H1)pdm09 viruses and 710 (26%) were infected by A(H3) viruses. All influenza type B viruses ascribed to a lineage (n=353) were B/Victoria.

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

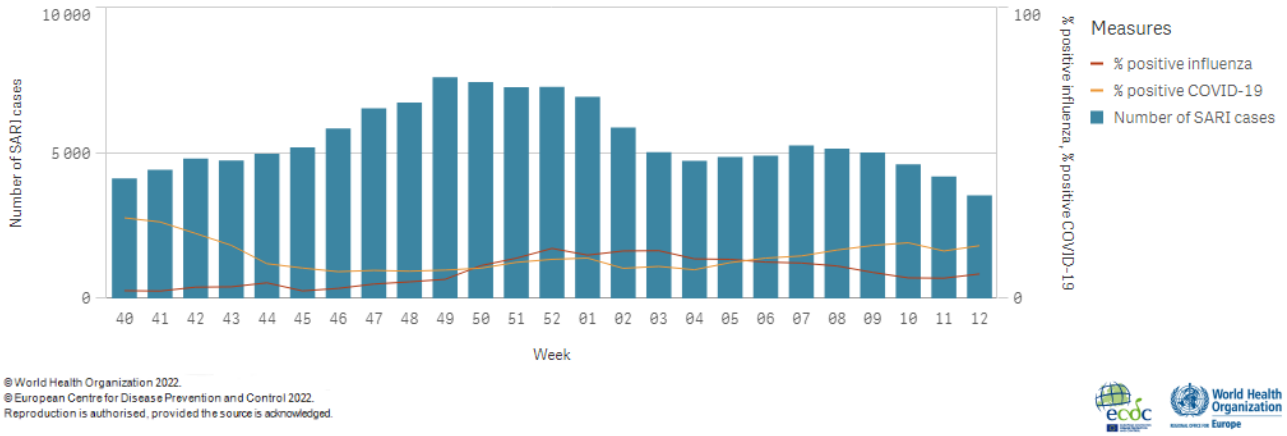


Figure 10. Influenza virus detections by type, subtype/lineage from severe acute respiratory infection (SARI), WHO European Region, season 2022/2023

* *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 12/2023, 5 494 of 53 283 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; 3 793 (69%) were type B and 1 701 (31%) were type A. Of 182 subtyped A viruses, 146 (80%) were A(H1)pdm09 and 36 (20%) A(H3). All 241 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=188 577, 78%) than type B (n=53 483, 22%) viruses have been detected. Of 55 093 subtyped A viruses, 30 323 (55%) were A(H1)pdm09 and 24 770 (45%) were A(H3). Of the 3 795 influenza type B viruses ascribed to a lineage, all but one 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

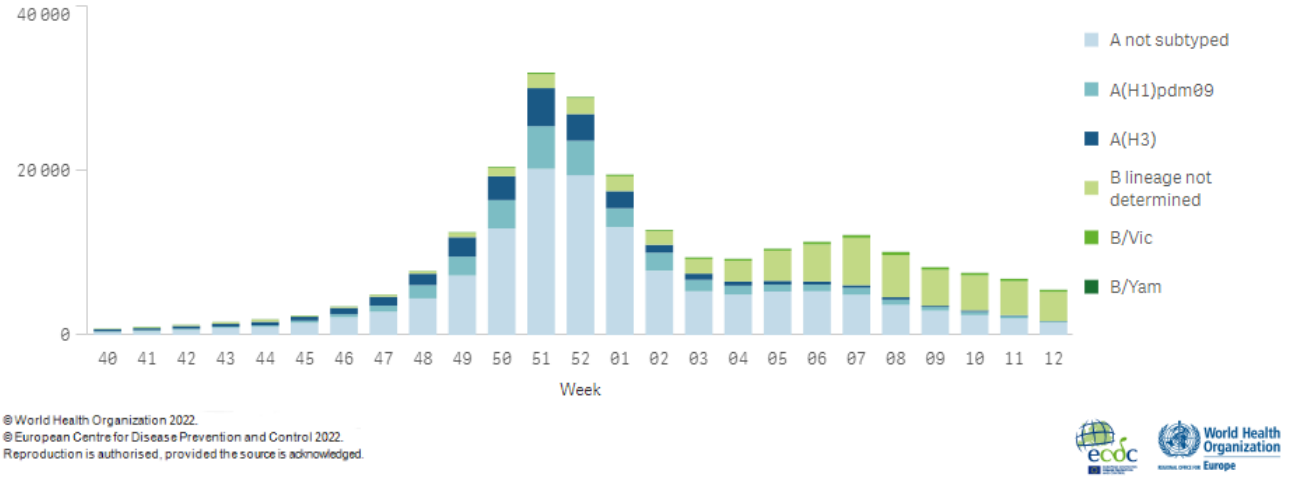


Table 2. Influenza virus detections in non-sentinel-source specimens by type and subtype, week 12/2023 and cumulatively for the season

Non-sentinel	Current Week (12)		Season 2022-2023	
Virus type and subtype	**Number**	**%[a]**	**Number**	**%[a]**
Influenza A	**1 701**	**31.0**	**188 577**	**77.9**
A(H1)pdm09	146	80.2	30 323	55.0
A(H3)	36	19.8	24 770	45.0
A not subtyped	1 519	-	133 484	-
Influenza B	**3 793**	**69.0**	**53 483**	**22.1**
B/Victoria lineage	241	100	3 795	100
B/Yamagata lineage	0	0	1	0
Unknown lineage	3 552	-	49 687	-
Total detections (total tested)	**5 494 (53 283)**	**-**	**242 060 (1 834 006)**	**-**

[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.

Note: The influenza B/Yamagata lineage detection is currently being investigated

Genetic characterization

Of the 2 180 genetically characterized A(H1)pdm09 viruses up to week 12/2023, 1 173 were attributed to clade 6B.1A.5a.2, of which 606 (51%) were represented by A/Norway/25089/2022, 534 (45%) by A/Sydney/5/2021 and 33 (3%) by A/Victoria/2570/2019. 4 (<1%) were attributed to clade 6B.1A.5a.1 represented by A/Guangdong-Maonan/SWL1536/2019. 1 003 (46%) viruses could not be attributed to a pre-defined subgroup in the guidance.

Among the 2 312 A(H3) viruses characterized up to week 12/2023, 2 193 were attributed to clade 3C.2a1b.2a.2, of which 1 354 (62%) were represented by A/Bangladesh/4005/2020, 693 (32%) by A/Slovenia/8720/2022 and 146 (7%) by A/Darwin/9/2021. Only 3 viruses were ascribed to clade 3C.2a1b.1a represented by A/Denmark/3264/2019. 116 (5%) viruses could not be attributed to a pre-defined subgroup in the guidance.

Up to week 12/2023, 687 B/Victoria viruses were characterized, 381 (55%) of which were attributed to clade V1A.3a.2 represented by B/Austria/1359417/2021. 306 (45%) 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	**5 179**
Influenza A	**4 492**
A(H1)pdm09	**2 180**
A(H1)pdm09_SubgroupNotListed *	1 003
A/Guangdong-Maonan/SWL1536/2019(H1N1)pdm09_6B.1A.5a.1	4
A/Norway/25089/2022(H1N1)pdm09_6B.1A.5a.2	606
A/Sydney/5/2021(H1N1)pdm09_6B.1A.5a.2	534
A/Victoria/2570/2019(H1N1)pdm09_6B.1A.5a.2	33
A(H3)	**2 312**
A(H3)_SubgroupNotListed *	116
A/Bangladesh/4005/2020(H3)_3C.2a1b.2a.2	1 354
A/Darwin/9/2021(H3)_3C.2a1b.2a.2	146
A/Denmark/3264/2019(H3N2)_3C.2a1b.1a	3
A/Slovenia/8720/2022(H3)_3C.2a1b.2a.2	693
Influenza B	**687**
B/Vic	**687**
B/Austria/1359417/2021(Victoria lineage_1A.3a.2)	381
BVic_SubgroupNotListed *	306

** 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 February 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 12/2023, 3 681 viruses were assessed for susceptibility to neuraminidase inhibitors (1 295 A(H1)pdm09, 1 235 A(H3), and 563 B viruses only genotypically and 283 A(H3), 211 A(H1)pdm09 and 94 B viruses phenotypically and a portion of these also genotypically), and 2 732 viruses were assessed genotypically for susceptibility to baloxavir marboxil (1 527 A(H3), 727 A(H1)pdm09 and 478 B viruses). Phenotypically and/or genotypically, 5 A(H1)pdm09 viruses showing (highly) reduced inhibition by oseltamivir and normal inhibition by zanamivir were identified of which 4 were reported to carry reduced inhibition markers, 3 with NA-H275Y (1 confirmed phenotypically) and 1 with NA-D199G (confirmed phenotypically), and for 1 the amino acid change was not reported. 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 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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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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