





Summary

Week 9/2023 (27 February - 5 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 from 27% in the previous week to 24% in week 9/2023 which remains above the epidemic threshold (10%).
- 17 of 39 countries or areas reported medium or high intensity and 21 of 39 countries reported widespread activity indicating substantial seasonal influenza virus circulation across the Region.
- Of the 24 countries that reported sentinel primary care specimen influenza virus positivity above the 10% epidemic threshold, Hungary, Netherlands, 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 similar proportions of type A and B viruses), other wards (only influenza type A viruses) and SARI surveillance (similar proportions of A(H1)pdm09 and 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 after a peak at week 51/2022 until week 4/2023, and increased again up to week 7/2023 due to increased type B virus circulation.
- 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. A similar 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 after a peak at 18% positivity in week 47/2022 to 5% for week 9/2023. 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 9/2023, of 39 countries and areas reporting on intensity of influenza activity, 10 reported baseline-intensity (across the Region), 12 reported low-intensity (across the Region), 16 reported medium-intensity (across the Region) and 1 reported high-intensity (Bosnia and Herzegovina) (Fig. 1).

Of 39 countries and areas reporting on geographic spread of influenza viruses, 7 reported sporadic spread (Azerbaijan, Belgium, Ireland, Kazakhstan, United Kingdom (England), United Kingdom (Northern Ireland) and Uzbekistan), 4 reported local spread (Lithuania, Malta, Slovakia and United Kingdom (Scotland)), 7 reported regional spread (Austria, Belarus, Bulgaria, Republic of Moldova, Romania, Serbia 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 9/2023

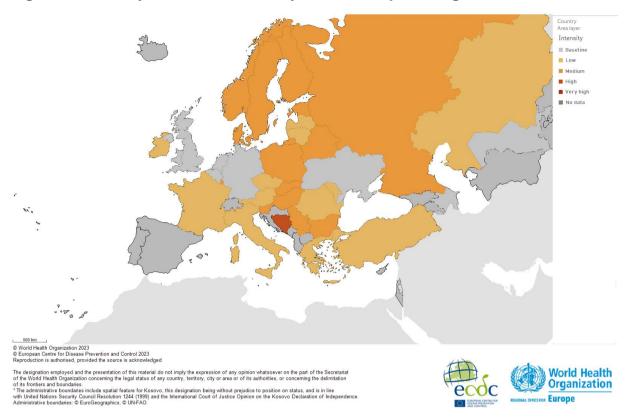
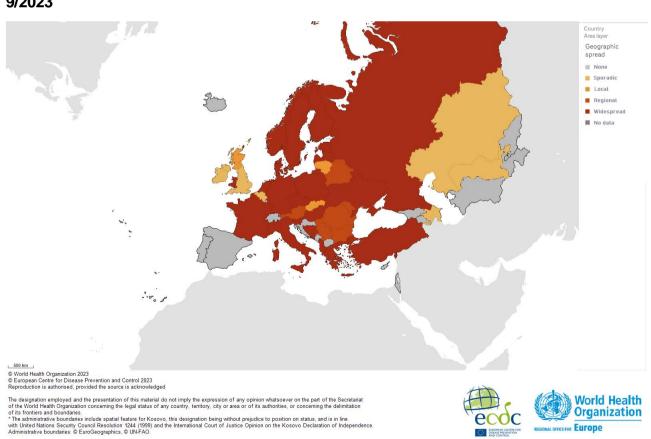


Figure 2. Geographic spread of influenza viruses in the European Region, week 9/2023



Organization

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

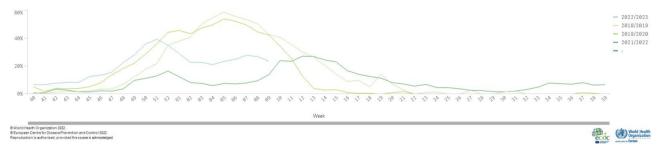
Please note:

- 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 nonsentinel 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 27% in the previous week to 24% in week 9/2023. 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, however an increase in positivity was noted between weeks 5 and 7/2023 (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, Kazakhstan and Republic of Moldova), northern (n=4; Denmark, Estonia, Latvia and Lithuania), southern (n=5; Greece, Italy, 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 Republic of Moldova), northern (n=1; Latvia), southern (n=1; Slovenia) 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 9/2023, 864 (24%) of 3 673 sentinel specimens tested positive for an influenza virus; 33% were type A and 67% were type B. Of 198 subtyped A viruses, 85% were A(H1)pdm09 and 15% A(H3). All 143 type B viruses ascribed to a lineage were B/Victoria (Fig. 4 and Table 1). Of 34 countries and areas across the Region that each tested at least 10 sentinel specimens in week 9/2023, 24 reported a rate of influenza virus detections at or above 10% (median 31%; range 16% - 56%): Netherlands (56%), Slovenia (54%), Romania (46%), Hungary (46%), Lithuania (39%), Switzerland (38%), Luxembourg (35%), France (34%), Spain (33%), Israel (32%), Ukraine (31%), Bulgaria (31%), Portugal (30%), Slovakia (30%), Armenia (28%), Estonia (26%), Denmark (25%), Kosovo (in accordance with UN Security Council Resolution 1244 (1999)) (23%), Norway (22%), Austria (21%), Poland (19%), Italy (18%), Republic of Moldova (17%) and Germany (16%).

For the season to date, 22 164 (24%) of 93 979 sentinel specimens tested positive for an influenza virus. More influenza type A (n=17 793, 80%) than type B (n=4 371, 20%) viruses have been detected. Of 14 608 subtyped A viruses, 9 720 (66%) were A(H3) and 4 888 (34%) were A(H1)pdm09. All 1 135 influenza type B viruses ascribed to a lineage were B/Victoria (74% 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

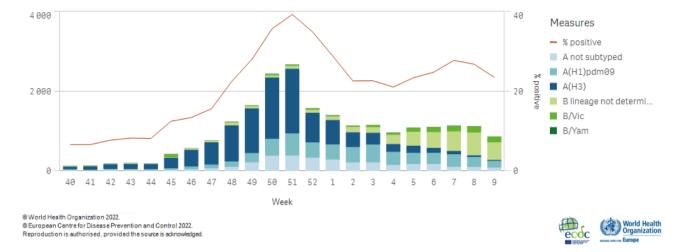


Table 1. Influenza virus detections in sentinel source specimens by type and subtype for week 9/2023 and cumulatively for the season

Sentinel	Current Week (9)		Season 2022-2023	
Virus type and subtype	Number	% ^a	Number	% ^a
Influenza A	285	33	17 793	80
A(H1)pdm09	168	85	4 888	34
A(H3)	30	15	9 720	66
A not subtyped	87	-	3 185	-
Influenza B	579	67	4 371	20
B/Victoria lineage	143	100	1 135	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	436	-	3 236	-
Total detections (total tested)	864 (3 673)	23.5	22 164 (93 979)	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 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 9/2023, 13 laboratory-confirmed influenza cases were reported from ICU wards (in Czechia, France and Sweden). Influenza type A (n=54%) and type B viruses (n=46%) were detected. Both influenza type A viruses assigned to a subtype were A(H1)pmd09 (Fig. 5 and 6).

Since week 40/2022, more influenza type A (n=2 631, 92%) than type B (n=230, 8%) viruses were detected (in Czechia, France, Ireland, Sweden and United Kingdom (England)). Of 480 subtyped influenza A viruses, 54% were A(H3) and 46% were A(H1)pdm09. No influenza B viruses were ascribed to a lineage. Of 1 347 cases with known age, 624 were 15-64 years old, 566 were 65 years and older, 98 were 0-4 years old and 59 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

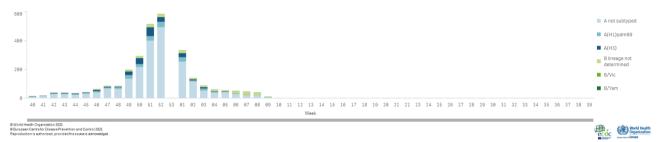
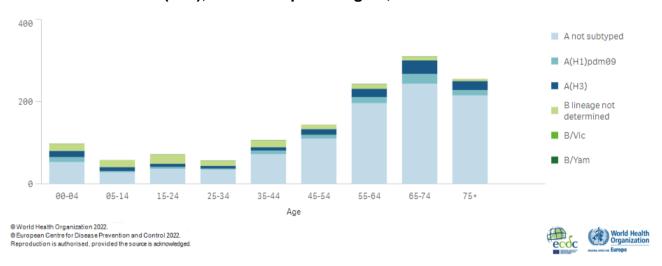


Figure 6. Distribution of influenza virus types, subtypes/lineages by age group in intensive care units (ICU), WHO European Region, season 2022/2023



1.2) Hospitalized laboratory-confirmed influenza cases - other wards

For week 9/2023, 2 laboratory-confirmed influenza A cases without subtype were reported from other wards (in Czechia) (Fig. 7 and 8).

Since week 40/2022, 3 798 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 3 973 cases with known age fell in 4 age groups: 1 704 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

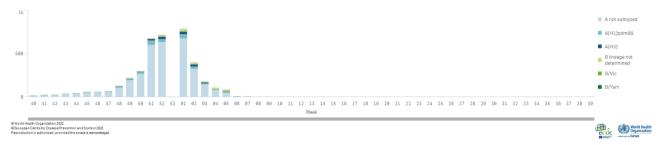
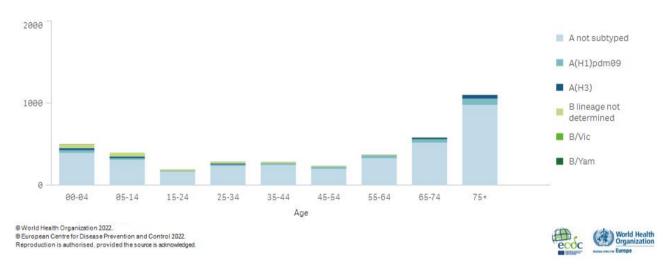


Figure 8. Distribution of influenza virus types, subtypes/lineages by age group in wards other than intensive care units (non-ICU), WHO European Region, season 2022/2023



Severe acute respiratory infection (SARI)-based hospital surveillance

For week 9/2023, 4 206 SARI cases were reported by 18 countries or areas (Albania, Belarus, Belgium, Bosnia and Herzegovina, Germany, Ireland, Kazakhstan, Malta, North Macedonia, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Spain, Türkiye, Ukraine and Uzbekistan). Of 1 131 specimens tested for influenza viruses, 10% (n=116) were positive (Fig. 9). Of these, influenza type A viruses (n=58, 50%) were detected as frequently as influenza type B viruses (n=58, 50%). Of 29 subtyped influenza type A viruses, 27 (93%) were A(H1)pdm09 and 2 (7%) were A(H3). Of 29 type B viruses ascribed to a lineage, 4 were B/Victoria. Of 13 countries and areas across the Region that each tested at least 10 specimens, 6 reported positivity rates above 10%: Albania (49%), Romania (39%), Serbia (38%), Ukraine (28%), North Macedonia (27%) and Bosnia and Herzegovina (15%).

For the season, 123 636 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=3 304, 75%) and of these 2 692 were subtyped: 1 993 (74%) were infected by A(H1)pdm09 viruses and 699 (26%) were infected by A(H3) viruses. All type B viruses (n=275) 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

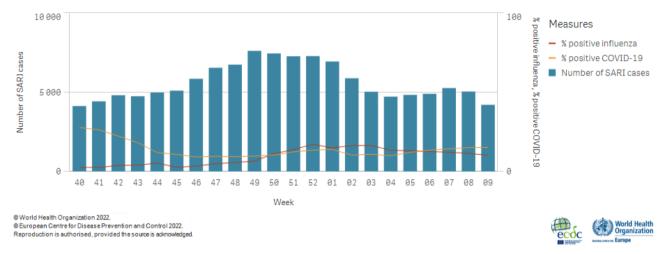


Figure 10. Influenza virus detections by type, subtype/lineage from severe acute respiratory infection (SARI), WHO European Region, season 2022/2023

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 9/2023, 7 437 of 60 298 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; 4 236 (57%) were type B and 3 201 (43%) were type A. Of 376 subtyped A viruses, 289 (77%) were A(H1)pdm09 and 87 (23%) A(H3). Of 142 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=180 829, 82%) than type B (n=39 893, 18%) viruses have been detected. Of 53 350 subtyped A viruses, 29 160 (55%) were A(H1)pdm09 and 24 190 (45%) were A(H3). Of 2 675 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).

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

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

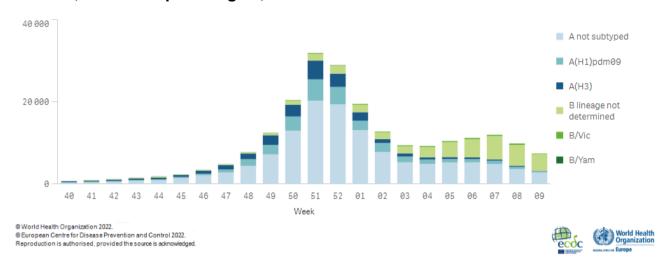


Table 2. Influenza virus detections in non-sentinel-source specimens by type and subtype, week 9/2023 and cumulatively for the season

Non-sentinel	Current Week (9)		Season 2022-2023	
Virus type and subtype	Number	% ^a	Number	% ^a
Influenza A	3 201	43	180 829	82
A(H1)pdm09	289	77	29 160	55
A(H3)	87	23	24 190	45
A not subtyped	2 825	-	127 479	-
Influenza B	4 236	57	39 893	18
B/Victoria lineage	142	100	2 675	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	4 094	-	37 218	-
Total detections (total tested)	7 437 (60 298)	-	220 722 (1 632 460)	-

^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 2 019 genetically characterized A(H1)pdm09 viruses up to week 9/2023, 1 054 were attributed to clade 6B.1A.5a.2, of which 563 (53%) were represented by A/Norway/25089/2022, 458 (43%) 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. 961 (48%) viruses could not be attributed to a subgroup in the guidance.

Among the 2 166 A(H3) viruses characterized up to week 9/2023, 2 054 were attributed to clade 3C.2a1b.2a.2, of which 1 290 (63%) were represented by A/Bangladesh/4005/2020,

647 (30%) by A/Slovenia/8720/2022 and 117 (7%) by A/Darwin/9/2021. 109 (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 9/2023, 592 B/Victoria viruses were characterized, 325 (55%) of which were attributed to clade V1A.3a.2 represented by B/Austria/1359417/2021. 267 (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, cumulative for the season - WHO Europe

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	Number of influenza viruses attributed to genetic groups 2022/2023
Total	4777
Influenza A	4 185
A(H1)pdm09	2 019
A(H1)pdm09_SubgroupNotListed *	961
A/Guangdong-Maonan/SWL1536/2019(H1N1)pdm09_6B.1A.5a.1	4
A/Norway/25089/2022(H1N1)pdm09_6B.1A.5a.2	563
A/Sydney/5/2021(H1N1)pdm09_6B.1A.5a.2	458
A/Victoria/2570/2019(H1N1)pdm09_6B.1A.5a.2	33
A(H3)	2 166
A(H3)_SubgroupNotListed *	109
A/Bangladesh/4005/2020(H3)_3C.2a1b.2a.2	1 290
A/Darwin/9/2021(H3)_3C.2a1b.2a.2	117
A/Denmark/3264/2019(H3N2)_3C.2a1b.1a	3
A/Slovenia/8720/2022(H3)_3C.2a1b.2a.2	647
Influenza B	592
B/Vic	592
B/Austria/1359417/2021(Victoria lineage_1A.3a.2)	325
BVic_SubgroupNotListed *	267

^{*} 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, <u>WHO Europe and ECDC's December</u> 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 9/2023, 3 144 viruses were assessed for susceptibility to neuraminidase inhibitors (1 183 A(H3), 998 A(H1)pdm09 and 468 B viruses genotypically and 265 A(H3), 173 A(H1)pdm09 and 57 B viruses phenotypically), and 2 336 viruses were assessed for susceptibility to baloxavir marboxil (1 294 A(H3), 625 A(H1)pdm09 and 417 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.

World Health Organization 2022.

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.

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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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