





# **Summary**

# Week 02/2023 (9 January – 15 January 2023)

- The percentage of sentinel primary care specimens from patients presenting with ILI or ARI symptoms that tested positive for an influenza virus remained above the epidemic threshold (10%) and decreased to 22% from 29% in the previous week.
- 33 of 40 countries or areas reported high or very-high intensity and/or widespread activity indicating high seasonal influenza virus circulation across the Region.
- Armenia, Finland, Israel, Montenegro, Poland, Republic of Moldova and Slovenia reported seasonal influenza activity above 40% positivity in sentinel primary care.
- Both influenza type A and type B viruses were detected with A(H1)pdm09 viruses dominating in both sentinel and non-sentinel surveillance systems.
- Hospitalized patients with confirmed influenza virus infection were reported from ICU, other wards (with mainly influenza type A unsubtyped viruses reported) and SARI surveillance (with mainly influenza A(H1)pdm09 subtype viruses reported). Eleven 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 appears to have decreased across the Region since week 51/2022 following an early start to seasonal influenza activity. However, some of this decrease in certain weeks might be due to the impact of the festive period with lower testing and reporting in some countries and areas.
- Countries are experiencing a mixed distribution of circulating viruses with increasing circulation of A(H1)pdm09 and B viruses.
- Overall this season, influenza A(H3) viruses have dominated in primary care sentinel specimens but with similar proportions of A(H1)pdm09 and A(H3) viruses in nonsentinel specimens.
- Type A viruses (mostly not subtyped) 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, but overall positivity amongst patients in primary care with acute respiratory illness has remained around 10% in since week 1/2023. 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

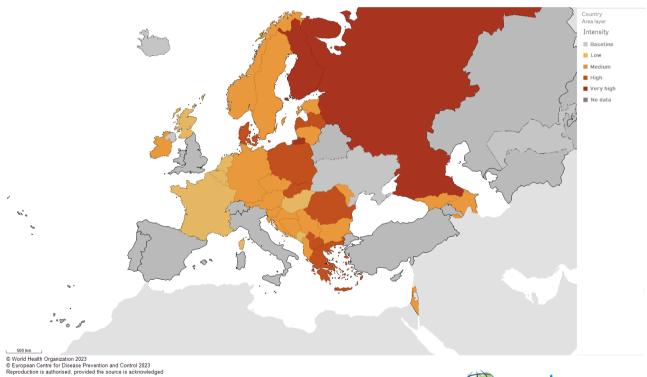
ECDC website: https://www.ecdc.europa.eu/en/novel-coronavirus-china

# **Qualitative indicators**

For week 2/2023, of 40 countries and areas reporting on intensity of influenza activity, 4 reported baseline-intensity (Iceland, Ukraine, United Kingdom (Northern Ireland) and Uzbekistan), 7 reported low-intensity (Belgium, France, Hungary, Luxembourg, Montenegro, Netherlands and United Kingdom (Scotland)), 18 reported medium-intensity (across the Region), 9 reported high-intensity (across the Region) and 2 reported very high-intensity (Finland and Russian Federation) (Fig. 1).

Of 40 countries and areas reporting on geographic spread of influenza viruses, 3 reported sporadic spread (Azerbaijan, United Kingdom (Northern Ireland) and Uzbekistan), 2 reported local spread (Malta and Slovakia), 5 reported regional spread (Bosnia and Herzegovina, Bulgaria, Montenegro, Serbia and Kosovo (in accordance with UN Security Council Resolution 1244 (1999))) and 30 reported widespread activity (across the Region) (Fig. 2).

Figure 1. Intensity of influenza activity in the European Region, week 2/2023



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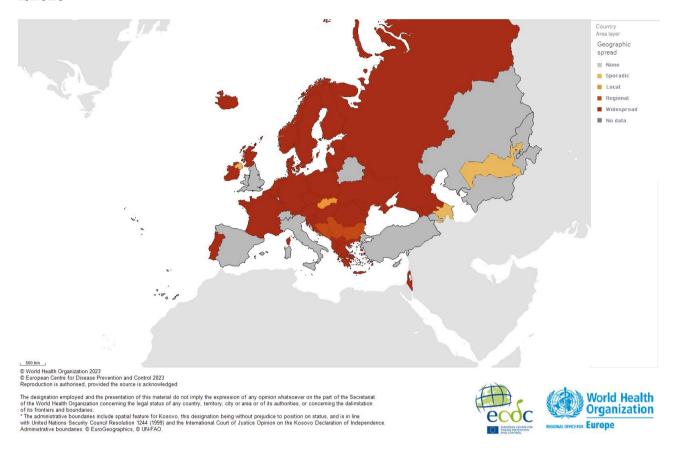




of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimit of its frontiers and boundaries.

The administrative boundaries include spatial feature for Kosovo, this designation being without prejudice to position on status, and is in line with United Nations Security Council Resolution 1244 (1999) and the International Count of Justice Opinion on the Kosovo Declaration of Inde Administrative boundaries. © EuroGeographics, S UNFAO.

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



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

#### Please note:

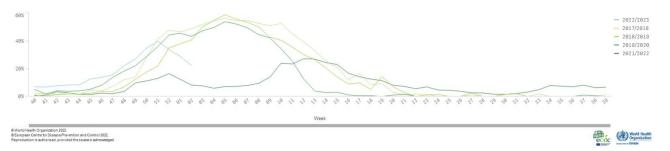
Assessment of the intensity of activity indicator includes consideration of ILI or ARI rates. These ILI or ARI rates might be driven by respiratory infections caused by viruses other than influenza, including SARS-CoV-2 and RSV, leading to observed increases in the absence of influenza virus detections.

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.

# **Influenza positivity**

For the European Region, influenza virus positivity in sentinel primary care specimens decreased from 29% in the previous week to 22% in week 2/2023. Seasonal activity above the epidemic threshold, which is set at 10%, started in week 45/2022 and there has been a continued decline since week 51/2022. 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). This is also an earlier peak than in the four previous seasons: ranging from week 52 (2021/22 season) to 5 (2017/18 to 2019/20) (Fig. 3).

Figure 3. Influenza virus positivity in sentinel-source specimens by week, WHO European Region, 2022/2023 and 4 recent seasons



## **External data sources**

## Mortality monitoring:

EuroMOMO estimates all-cause mortality for the participating European countries, the full report can be found here: <a href="https://www.euromomo.eu/">https://www.euromomo.eu/</a>

Please refer to the EuroMOMO website for a cautionary note relating to interpretation of these data.

# **Primary care data**

## Syndromic surveillance data

Of the countries and areas in which thresholds for ILI activity are defined, countries in eastern (n=3; Azerbaijan, Georgia and Republic of Moldova), northern (n=6; Denmark, Estonia, Ireland, Latvia, Lithuania and Norway), southern (n=6; Croatia, Greece, Israel, North Macedonia, Romania and Slovenia) and western (n=8; Austria, Belgium, Czechia, Hungary, Luxembourg, Netherlands, 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; Republic of Moldova), northern (n=2; Estonia and Latvia), southern (n=4; Albania, Bulgaria, Romania and 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 with viruses other than influenza, including SARS-CoV-2 and RSV, 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 2/2023, 822 (22%) of 3 679 sentinel specimens tested positive for an influenza virus; 87% were type A and 13% were type B. Of 511 subtyped A viruses, 60% were A(H1)pdm09 and 40% A(H3). All 13 type B viruses ascribed to a lineage were B/Victoria (Fig. 4 and Table 1).

Of 33 countries and areas across the Region that each tested at least 10 sentinel specimens in week 2/2023, 29 reported a positivity rate above 10% (median 26%; range 15% - 71%), of which 7 reported positivity above 40%: Republic of Moldova (71%), Montenegro (62%), Armenia (60%), Finland (55%), Slovenia (47%), Israel (45%) and Poland (41%).

For the season to date, 13 219 (23%) of 58 465 sentinel specimens tested positive for an influenza virus. More influenza type A (n=12 299, 93%) than type B (n=920, 7%) viruses have been detected. Of 9 992 subtyped A viruses, 7 274 (73%) were A(H3) and 2 718 (27%) were A(H1)pdm09. All 260 influenza type B viruses ascribed to a lineage were B/Victoria (72% 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

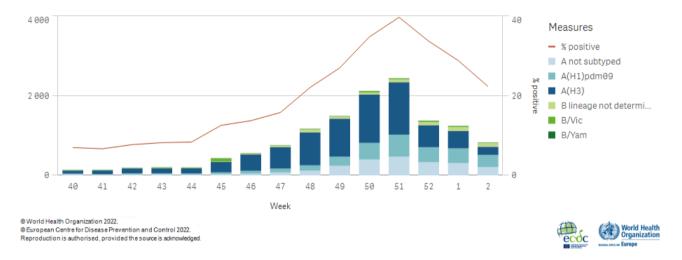


Table 1. Influenza virus detections in sentinel source specimens by type and subtype for week 2/2023 and cumulatively for the season

Sentinel	Current Week (2)		Season 2022-2023	
Virus type and subtype	Number	% <sup>a</sup>	Number	% <sup>a</sup>
Influenza A	717	87	12 299	93
A(H1)pdm09	308	60	2 718	27
A(H3)	203	40	7 274	73
A not subtyped	206	-	2 307	-
Influenza B	105	13	920	7
B/Victoria lineage	13	100	260	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	92	-	660	-
Total detections (total tested)	822 (3 679)	22	13 219 (58 465)	23

<sup>&</sup>lt;sup>a</sup> 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 week 2/2023.

# 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 2/2023, 86 laboratory-confirmed influenza cases were reported from ICU wards (in Ireland, Sweden and United Kingdom (England)). Both influenza type A viruses (n=92%) and type B viruses (n=8%) were detected. Of 11 subtyped influenza type A viruses, 6 were A(H1)pdm09 and 5 were A(H3) (Fig. 5 and 6).

Since week 40/2022, more influenza type A (n=1 641, 95%) than type B (n=94, 5%) viruses were detected (Czechia, Ireland, Sweden and United Kingdom (England)). Of 292 subtyped influenza A viruses, 50% were A(H3) and 50% were A(H1)pdm09. No influenza B viruses were ascribed to a lineage. Of 346 cases with known age, 159 were 65 years and older, 139 were 15-64 years old, 27 were 0-4 years old and 21 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

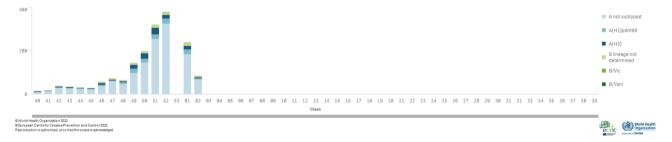
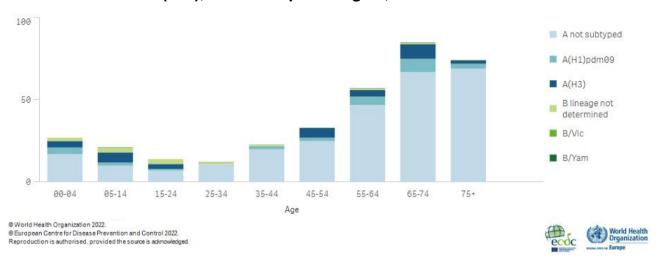


Figure 6. Distribution of influenza virus types, subtypes/lineages by age group in intensive care units (ICU), WHO European Region, season 2022/2023



## 1.2) Hospitalized laboratory-confirmed influenza cases – other wards

For week 2/2023, 357 laboratory-confirmed influenza cases were reported from other wards by Ireland. Influenza type A viruses (94%) were detected more frequently than influenza type B viruses (6%). Of 22 subtyped influenza type A viruses, 15 were A(H1)pdm09 and 7 were A(H3) (Fig. 7 and 8).

Since week 40/2022, 3 240 influenza type A viruses and 115 influenza type B viruses were reported from patients in other wards in Czechia and Ireland. Of 215 subtyped influenza A viruses, 68% (n=146) were A(H1)pdm09 and 32% (n=69) A(H3). The 3 355 cases with known age fell in 4 age groups: 1 384 were 65 years and older, 1 189 were 15-64 years old, 426 were 0-4 years old and 356 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

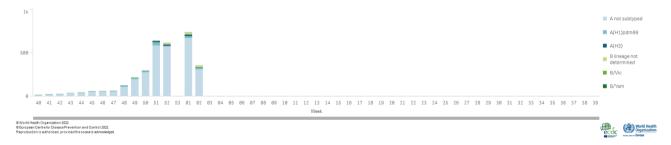
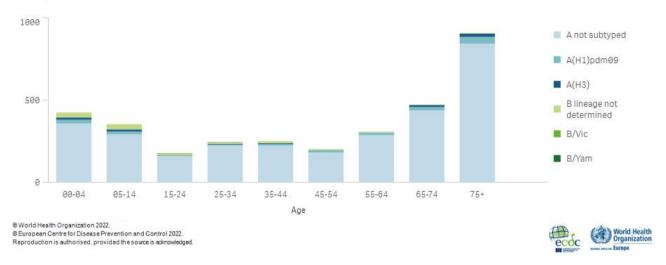


Figure 8. Distribution of influenza virus types, subtypes/lineages by age group in wards other than intensive care units (non-ICU), WHO European Region, season 2022/2023



## Severe acute respiratory infection (SARI)-based hospital surveillance

For week 2/2023, 3 912 SARI cases were reported by 17 countries or areas (Albania, Belgium, Bosnia and Herzegovina, Georgia, Germany, Ireland, Kyrgyzstan, Malta, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Spain, Ukraine, Uzbekistan and Kosovo (in accordance with Security Council resolution 1244 (1999))). Of 1 315 specimens tested for influenza viruses, 16% (n=216) were positive (Fig. 9). Of these, influenza type A viruses (n=182, 84%) were detected more frequently than influenza type B viruses (n=34, 16%). Of 148 subtyped A viruses, 85% were A(H1)pdm09 and 16% A(H3). No type B viruses were ascribed to a lineage. Of 12 countries and areas across the Region that each tested at least 10 SARI cases, 11 reported positivity rates above 10%: Romania (59%), Ireland (33%), Kazakhstan (33%), Ukraine (31%), Kyrgyzstan (29%), Bosnia and Herzegovina (28%), Russian Federation (26%), Albania (23%), Slovakia (21%), Serbia (19%) and Malta (11%).

For the season, 82 168 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, Tajikistan, Türkiye, 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=1 917, 75%) and of these 1 620 were subtyped: 1 190 (73%) were infected by A(H1)pdm09 viruses and 430 (27%) were infected by A(H3) viruses. Only 25% (n=166) of the influenza B viruses were ascribed to a lineage, 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

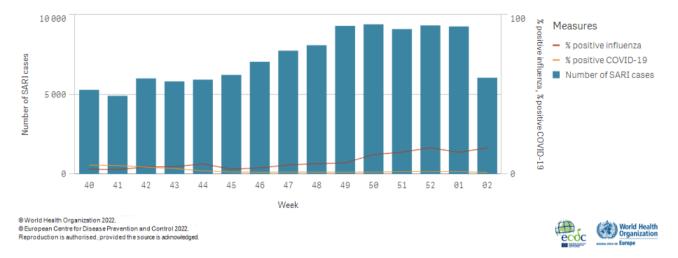
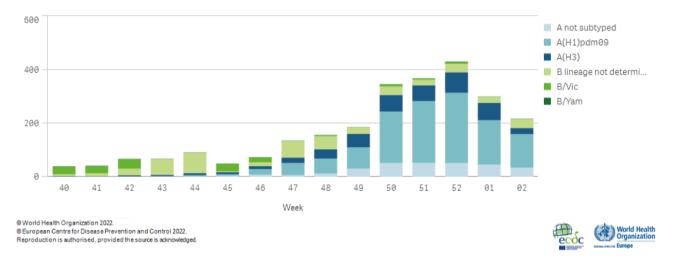


Figure 10. Influenza virus detections by type, subtype/lineage from severe acute respiratory infection (SARI) cases, WHO European Region, season 2022/2023



## 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 2/2023, 10 894 of 78 699 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; 9 402 (86%) were type A and 1 492 (14%) were type B. Of 2 341 subtyped A viruses, 1 813 (77%) were A(H1)pdm09 and 528 (23%) A(H3). All 26 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=133 767, 93%) than type B (n=9 968, 7%) viruses have been detected. Of 41 965 subtyped A viruses, 22 543 (54%) were A(H1)pdm09 and 19 422 (46%) were A(H3). All 625 influenza type B viruses ascribed to a lineage were B/Victoria (94% 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

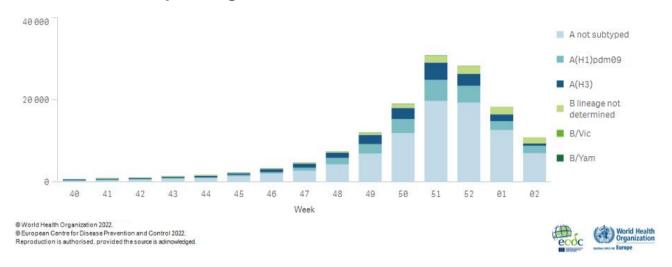


Table 2. Influenza virus detections in non-sentinel-source specimens by type and subtype, week 2/2023 and cumulatively for the season

Non-sentinel	Current Week (2)		Season 2022-	Season 2022-2023	
Virus type and subtype	Number	% <sup>a</sup>	Number	% <sup>a</sup>	
Influenza A	9 402	86	133 767	93	
A(H1)pdm09	1 813	77	22 543	54	
A(H3)	528	23	19 422	46	
A not subtyped	7 061	-	91 802	-	
Influenza B	1 492	14	9 968	7	
B/Victoria lineage	26	100	625	100	
B/Yamagata lineage	0	0	0	0	
Unknown lineage	1 466	-	9 343	-	
Total detections (total tested)	10 894 (78 699)	NA	143 735 (1 086 071)	NA	

<sup>&</sup>lt;sup>a</sup> 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 302 genetically characterized A(H1)pdm09 viruses up to week 2/2023, 256 were attributed to clade 6B.1A.5a.2 of which 164 (64%) were represented by A/Norway/25089/2022 and 92 (36%) by A/Sydney/5/2021. Three (<1%) were attributed to

clade 6B.1A.5a.1 represented by A/Guangdong-Maonan/SWL1536/2019. 43 (14%) were not attributed to a subgroup.

Among the 704 A(H3) viruses characterized up to week 2/2023, 682 were attributed to clade 3C.2a1b.2a.2, of which 419 (61%) were represented by A/Bangladesh/4005/2020, 243 (36%) by A/Slovenia/8720/2022 and 20 (3%) by A/Darwin/9/2021. 22 (3%) viruses were not attributed to a subgroup.

Up to week 2/2023, 162 B/Victoria viruses were characterized, 45 (28%) of which were attributed to clade V1A.3a.2 represented by B/Austria/1359417/2021. 117 viruses (73%) were not attributed to a subgroup.

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	1168
Influenza A	1006
A(H1)pdm09	302
A(H1)pdm09_SubgroupNotListed *	43
A/Guangdong-Maonan/SWL1536/2019(H1N1)pdm09_6B.1A.5a.1	3
A/Norway/25089/2022(H1N1)pdm09_6B.1A.5a.2	164
A/Sydney/5/2021(H1N1)pdm09_6B.1A.5a.2	92
A(H3)	704
A(H3)_SubgroupNotListed *	22
A/Bangladesh/4005/2020(H3)_3C.2a1b.2a.2	419
A/Darwin/9/2021(H3)_3C.2a1b.2a.2	20
A/Slovenia/8720/2022(H3)_3C.2a1b.2a.2	243
Influenza B	162
B/Vic	162
B/Austria/1359417/2021(Victoria lineage_1A.3a.2)	45
BVic_SubgroupNotListed *	117

<sup>\*</sup> No Clade: not attributed to a pre-defined clade and SubaroupNotListed: attributed to recoanised group in current auidance but not listed here

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Currently, WHO's November 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. due mainly to A(H3) viruses. Vaccination remains the best protective measure for prevention of influenza.

Previously published influenza virus characterization reports are available on the ECDC website (up to September 2022) and the WHO website.

## Antiviral susceptibility testing

Up to week 2/2023, 1 208 viruses were assessed for susceptibility to neuraminidase inhibitors (527 A(H3), 280 A(H1)pdm09 and 158 B viruses genotypically and 185 A(H3), 45 A(H1)pdm09 and 13 B viruses phenotypically), and 988 viruses were assessed for susceptibility to baloxavir marboxil (566 A(H3), 265 A(H1)pdm09 and 157 B viruses genotypically). Genotypically, no markers of reduced susceptibility were identified for any of the drugs. Phenotypically, 1 A(H1)pdm09 virus with reduced susceptibility to oseltamivir was identified, but genotypically no markers associated with reduced susceptibility against this drug were identified in this virus.

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#### Vaccine

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

#### **Available vaccines in Europe**

https://www.ecdc.europa.eu/en/seasonal-influenza/prevention-and-control/vaccines/types-of-seasonal-influenza-vaccine

European Vaccination Information Portal

## **Vaccine composition**

On 25 February 2022, WHO published recommendations for the components of influenza vaccines for use in the 2022-2023 northern hemisphere influenza season:

The WHO recommended that quadrivalent vaccines for use in the 2022-2023 influenza season in the northern hemisphere contain the following:

### **Egg-based Vaccines**

- an A/Victoria/2570/2019 (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/588/2019 (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 recommended that trivalent vaccines for use in the 2022-2023 influenza season in the northern hemisphere contain the following:

#### **Egg-based vaccines**

- an A/Victoria/2570/2019 (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/588/2019 (H1N1)pdm09-like virus;
- an A/Darwin/6/2021 (H3N2)-like virus; and
- a B/Austria/1359417/2021 (B/Victoria lineage)-like virus

# 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 was recommended that **trivalent influenza vaccines** for use in the 2023 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**

The weekly updates are prepared by an editorial team at the European Centre for Disease Prevention and Control (Cornelia Adlhoch 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 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 2/2023.

Tables and figures should be referenced:

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