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

Summary

Week 01/2023 (2 January – 8 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 slightly decreased to 25% from 30% in the previous week which might still be due to the impact of the festive period with lower testing and reporting in some countries and areas.
- 29 of 37 countries or areas reported high or very-high intensity and/or widespread activity indicating high seasonal influenza virus circulation across the Region.
- Armenia, Belgium, Bulgaria, Finland, Israel, Lithuania, Netherlands, Poland, Republic of Moldova, Slovenia, Slovakia, Switzerland and United Kingdom (Northern Ireland) reported seasonal influenza activity above 40% positivity in sentinel primary care.
- Both influenza type A and type B viruses were detected with similar numbers of A(H3) and A(H1)pdm09 viruses being observed in sentinel surveillance systems but with A(H1)pdm09 viruses dominating in non-sentinel surveillance systems.
- Hospitalized patients with confirmed influenza virus infection were reported from ICU, other wards (with influenza type A unsubtyped viruses mainly circulating) and SARI surveillance (with mainly influenza A(H1)pdm09 subtype viruses circulating). The highest positivity rates (at or above 40% positivity) for influenza virus detections in SARI surveillance were reported by Kazakhstan, Lithuania, Romania, Serbia and Slovakia.

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 for two consecutive weeks following an early start to seasonal influenza activity. However, this decrease 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, influenza A(H3) viruses have dominated in primary care sentinel specimens and A(H1)pdm09 viruses in non-sentinel 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 decreased to 11% in week 1/2023, from 13% in week 52/2022. 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 1/2023, of 37 countries and areas reporting on intensity of influenza activity, 2 reported baseline-intensity (Tajikistan and Ukraine), 8 reported low-intensity (Azerbaijan, Croatia, France, Hungary, Iceland, Serbia, United Kingdom (Northern Ireland) and United Kingdom (Scotland)), 13 reported medium-intensity (across the Region), 12 reported high-intensity (across the Region) and 2 reported very high-intensity (Finland and Latvia) (Fig. 1).

Of 37 countries and areas reporting on geographic spread of influenza viruses, 2 reported no activity (Azerbaijan and Tajikistan), 1 reported sporadic spread (United Kingdom (Northern Ireland)), 3 reported local spread (Belarus, Bosnia and Herzegovina and Malta), 4 reported regional spread (Bulgaria, Serbia, Slovakia and Kosovo (in accordance with UN Security Council Resolution 1244 (1999))) and 27 reported widespread activity (across the Region) (Fig. 2).

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

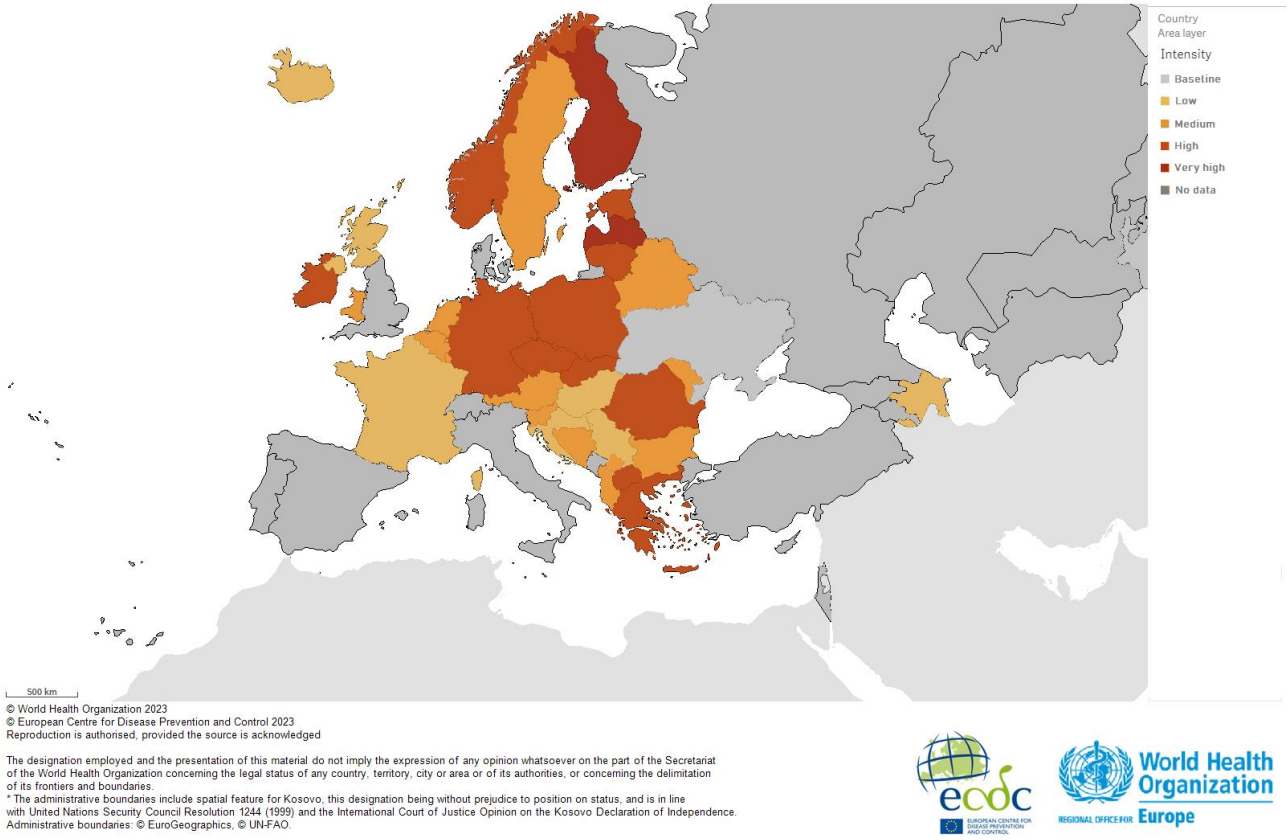
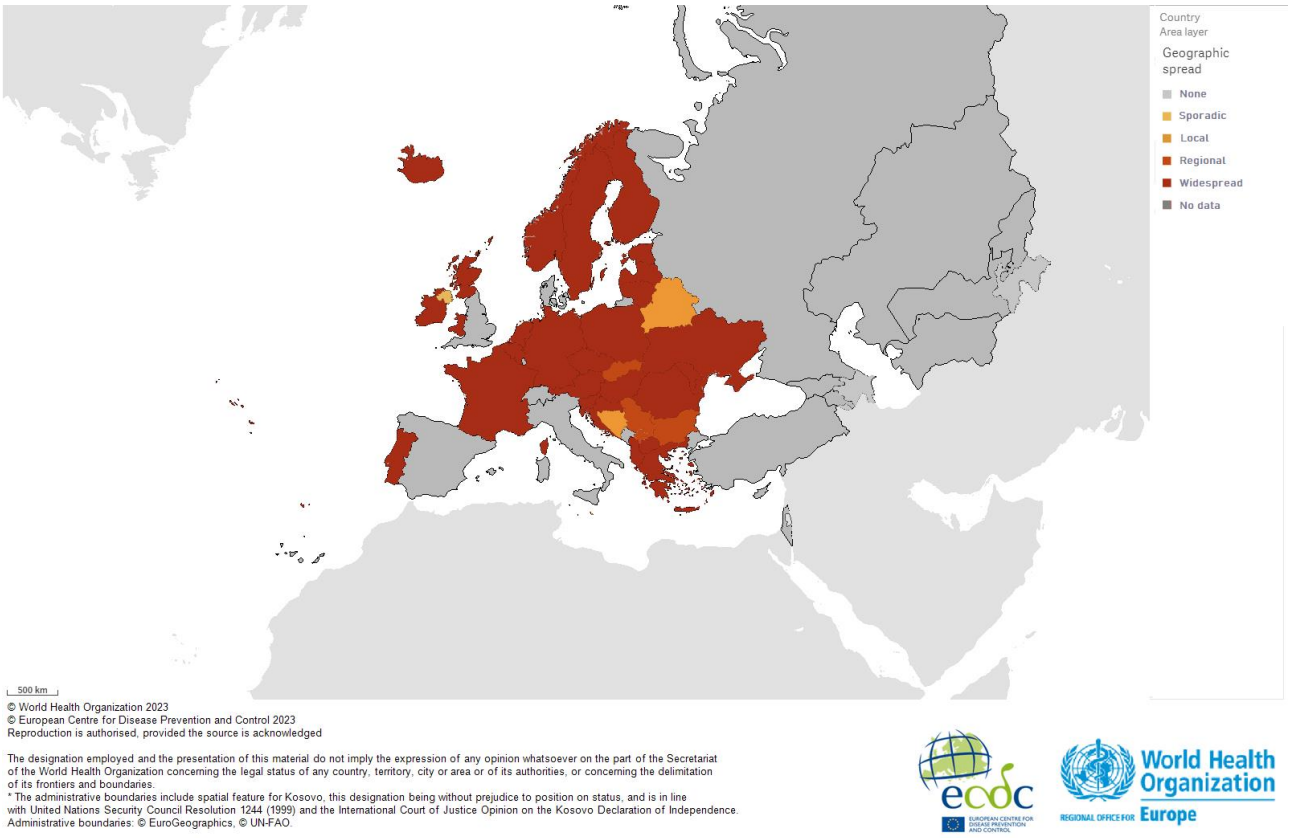


Figure 2. Geographic spread of influenza viruses in the European Region, week 1/2023



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

Please note:

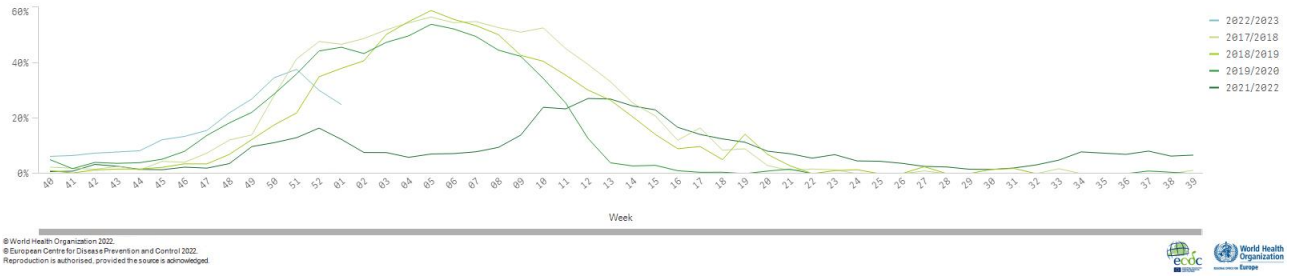
Assessment of the intensity of activity indicator includes consideration of ILI or ARI rates. These ILI or ARI rates might be driven by respiratory infections caused by viruses other than influenza, including SARS-CoV-2 and RSV, leading to observed increases in the absence of influenza virus detections.

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 30% in the previous week to 25% in week 1/2023 which might still be due to the impact of the festive period with reduced consultations and/or reporting in some countries and areas. Seasonal activity above the epidemic threshold, which is set at 10%, started in week 45/2022. This is an earlier influenza epidemic start than in the four previous seasons: ranging from week 47 (2019/20 season) to 49 (2021/22 season) (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: 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, Republic of Moldova and Tajikistan), northern (n=8; Estonia, Ireland, Latvia, Lithuania, Norway, United Kingdom (Northern Ireland), United Kingdom (Scotland) and United Kingdom (Wales)), southern (n=6; Croatia, Greece, Malta, 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=2; Republic of Moldova and Tajikistan), northern (n=3; Estonia, Latvia and Lithuania), 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 1/2023, 852 (25%) of 3 424 sentinel specimens tested positive for an influenza virus; 88% were type A and 12% were type B. Of 459 subtyped A viruses, 52% were A(H3)

and 48% A(H1)pdm09. All 21 type B viruses ascribed to a lineage were B/Victoria (Fig. 4 and Table 1).

Of 35 countries and areas across the Region that each tested at least 10 sentinel specimens in week 1/2023, 30 reported a positivity rate above 10% (median 38%; range 15% - 65%), of which 13 reported positivity at or above 40% : Republic of Moldova (65%), Finland (62%), Slovenia (60%), Slovakia (59%), Poland (56%), Armenia (49%), Switzerland (47%), United Kingdom (Northern Ireland) (47%), Netherlands (47%), Israel (40%), Belgium (40%), Bulgaria (40%) and Lithuania (40%).

For the season to date, 11 569 (22%) of 53 910 sentinel specimens tested positive for an influenza virus. More influenza type A (n=10 776, 93%) than type B (n=793, 7%) viruses have been detected. Of 8 523 subtyped A viruses, 6 522 (77%) were A(H3) and 2 001 (23%) were A(H1)pdm09. All 256 influenza type B viruses ascribed to a lineage were B/Victoria (68% 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

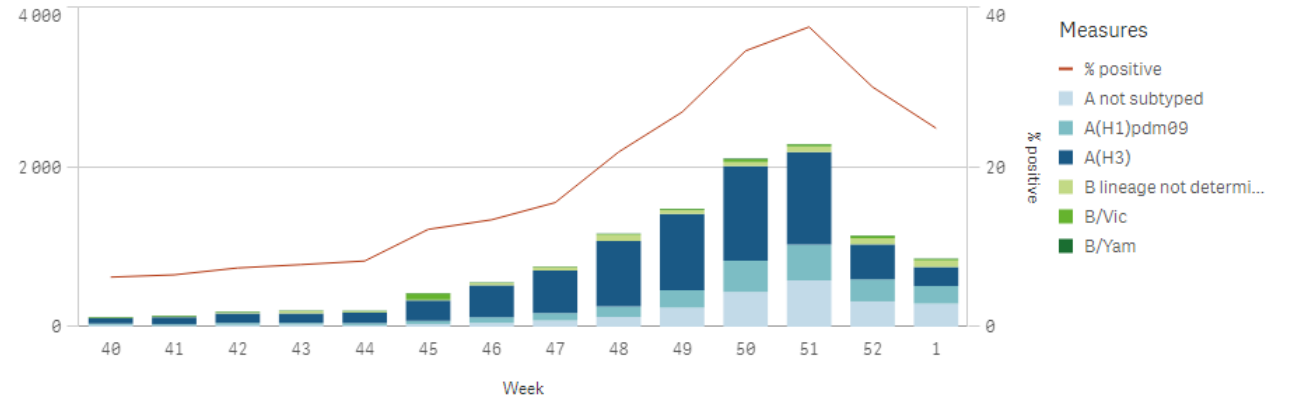


Table 1. Influenza virus detections in sentinel source specimens by type and subtype for week 1/2023 and cumulatively for the season

Sentinel	Current Week (1)		Season 2022-2023	
Virus type and subtype	**Number**	**%[a]**	**Number**	**%[a]**
Influenza A	**750**	**88**	**10 776**	**93**
A(H1)pdm09	220	48	2 001	23
A(H3)	239	52	6 522	77
A not subtyped	291	-	2 253	-
Influenza B	**102**	**12**	**793**	**7**
B/Victoria lineage	21	100	256	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	81	-	537	-
Total detections (total tested)	**852 (3 424)**	**25**	**11 569 (53 910)**	**22**

[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 week 1/2023.

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 1/2023, 81 laboratory-confirmed influenza cases were reported from ICU wards (in Czechia, Ireland and Sweden). Both influenza type A viruses (n=96%) and type B viruses (n=4%) were detected. Of 8 subtyped influenza type A viruses, 7 were A(H3) and 1 was A(H1)pdm09 (Fig. 5 and 6).

Since week 40/2022, more influenza type A (n=885, 95%) than type B (n=44, 5%) viruses were detected (Czechia, Ireland, Sweden and United Kingdom (England)). Of 166 subtyped influenza A viruses, 54% were A(H3) and 46% were A(H1)pdm09. No influenza B viruses were ascribed to a lineage. Of 300 cases with known age, 142 were 65 years and older, 119 were 15-64 years old, 21 were 0-4 years old and 18 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

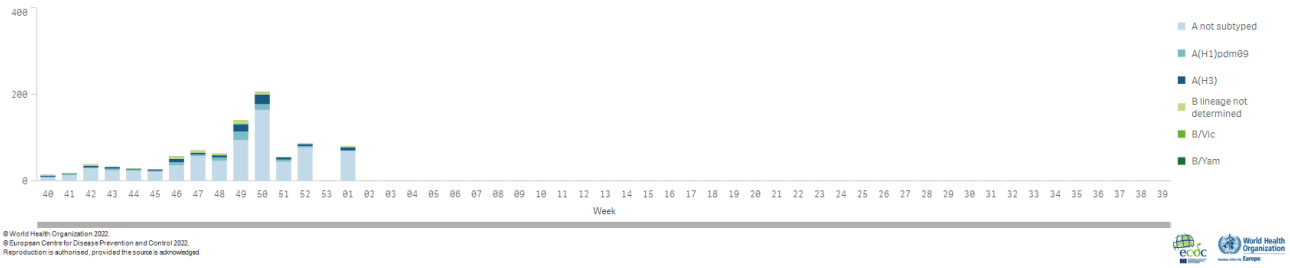
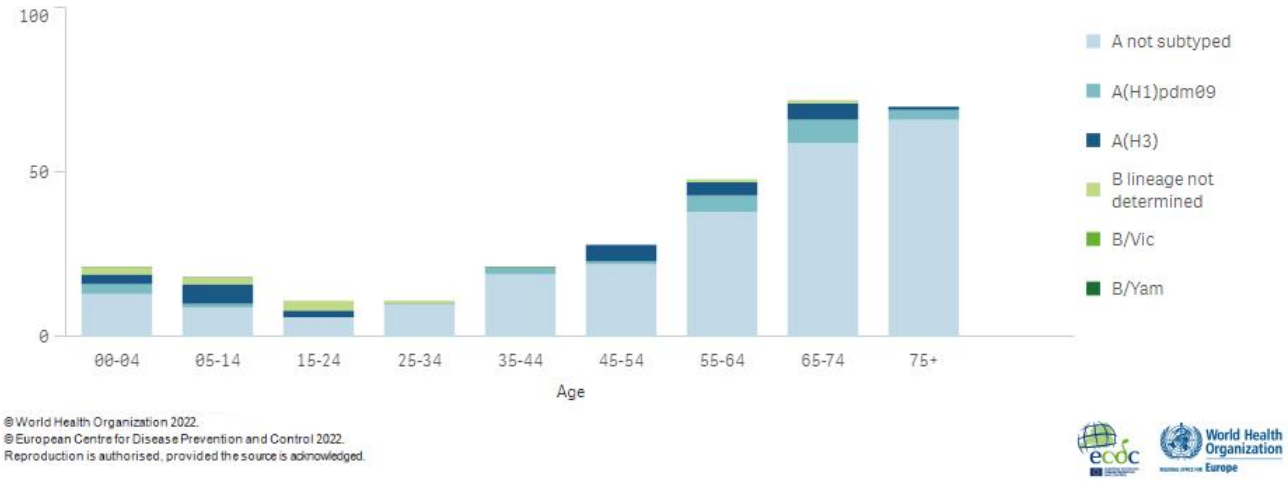


Figure 6. Distribution of influenza virus types, subtypes/lineages by age group in intensive care units (ICU), WHO European Region, season 2022/2023



1.2) Hospitalized laboratory-confirmed influenza cases – other wards

For week 1/2023, 689 laboratory-confirmed influenza cases were reported from other wards by Czechia and Ireland. Influenza type A viruses (96%) were detected more frequently than influenza type B viruses (4%). Of 33 subtyped influenza type A viruses, 20 were A(H1)pdm09 and 13 were A(H3) (Fig. 7 and 8).

Since week 40/2022, 2 837 influenza type A viruses and 89 influenza type B viruses were reported from patients in other wards in Czechia and Ireland. Of 141 subtyped influenza A viruses, 69% (n=97) were A(H1)pdm09 and 31% (n=44) A(H3). The 2 926 cases with known age fell in 4 age groups: 1 188 were 65 years and older, 1 045 were 15-64 years old, 368 were 0-4 years old and 325 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

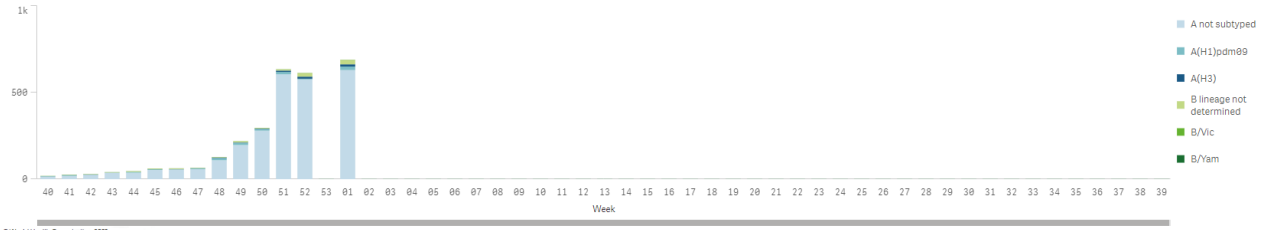
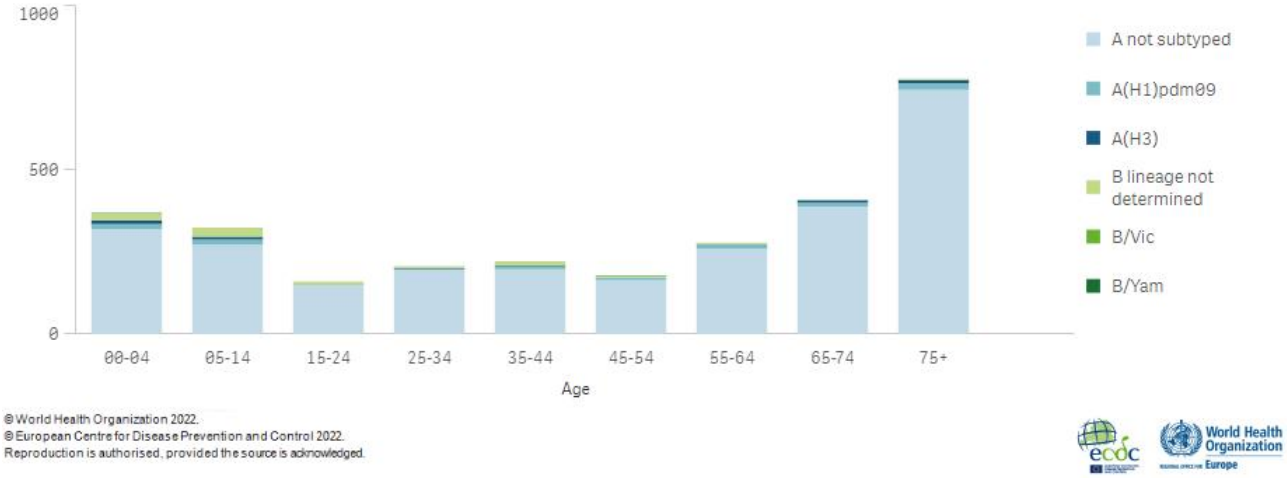


Figure 8. Distribution of influenza virus types, subtypes/lineages by age group in wards other than intensive care units (non-ICU), WHO European Region, season 2022/2023



Severe acute respiratory infection (SARI)-based hospital surveillance

For week 1/2023, 5 495 SARI cases were reported by 17 countries or areas (Albania, Belarus, Belgium, Bosnia and Herzegovina, Germany, Ireland, Kazakhstan, Kyrgyzstan, Lithuania, Malta, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Spain and Ukraine). Of 1 662 specimens tested for influenza viruses, 15% (n=253) were positive (Fig. 9). Of these, influenza type A viruses (n=235, 93%) were detected more frequently than influenza type B viruses (n=18, 7%). The highest positivity rates (at or above 40%) for influenza virus detections were reported by Romania (54%), Serbia (45%), Lithuania (42%), Slovakia (42%) and Kazakhstan (40%).

For the season, 75 955 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=1 638, 73%) and of these 1 355 were subtyped: 1 018 (75%) were infected by A(H1)pdm09 viruses and 337 (25%) were infected by A(H3) viruses. Only 27% (n=163) 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

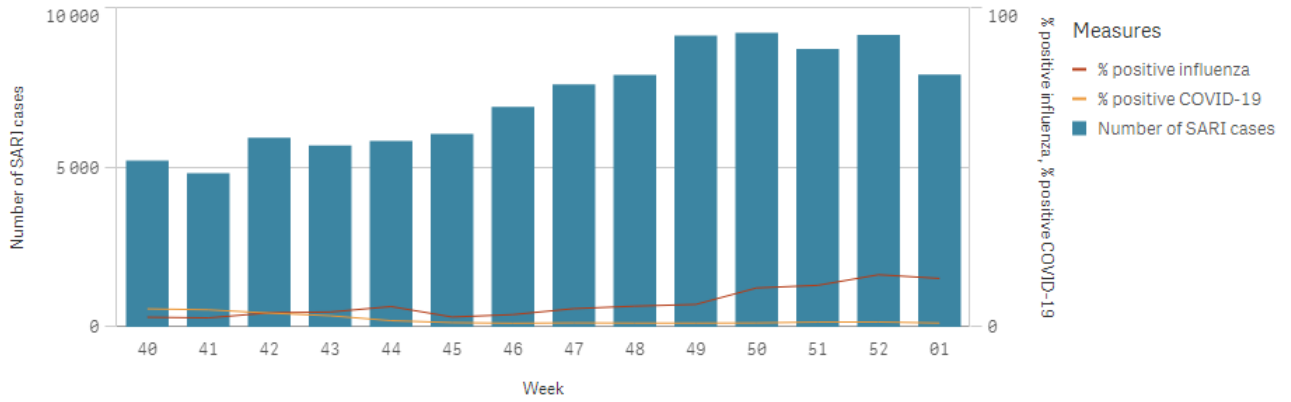
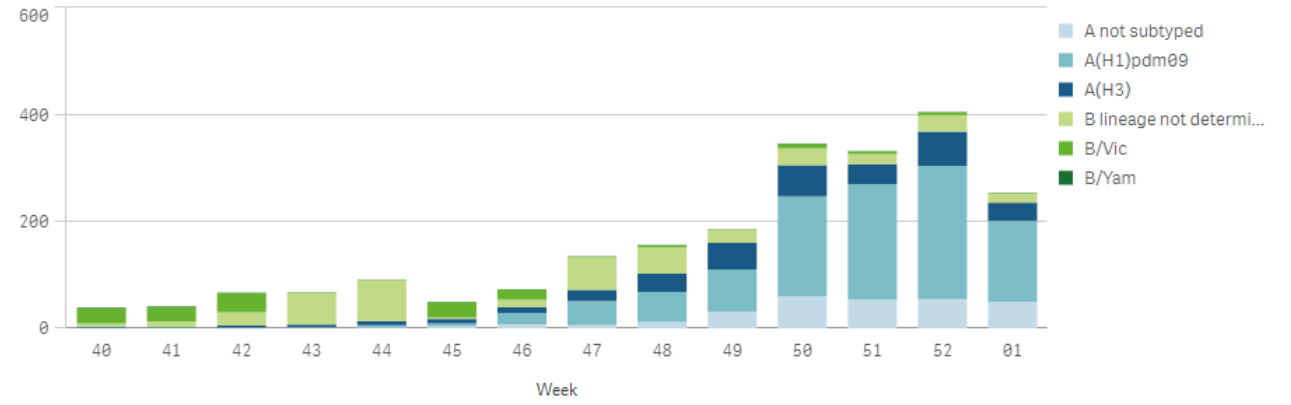


Figure 10. Influenza virus detections by type, subtype/lineage from severe acute respiratory infection (SARI) cases, WHO European Region, season 2022/2023



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 1/2023, 12 652 of 67 248 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; 11 122 (88%) were type A and 1 530 (12%) were type B. Of 2 966 subtyped A viruses, 1 855 (63%) were A(H1)pdm09 and 1 111 (37%) A(H3). All 22 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=118 644, 93%) than type B (n=8 452, 7%) viruses have been detected. Of 38 504 subtyped A viruses, 20 354 (53%) were A(H1)pdm09 and 18 150 (47%) were A(H3). All 553 influenza type B viruses ascribed to a lineage 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

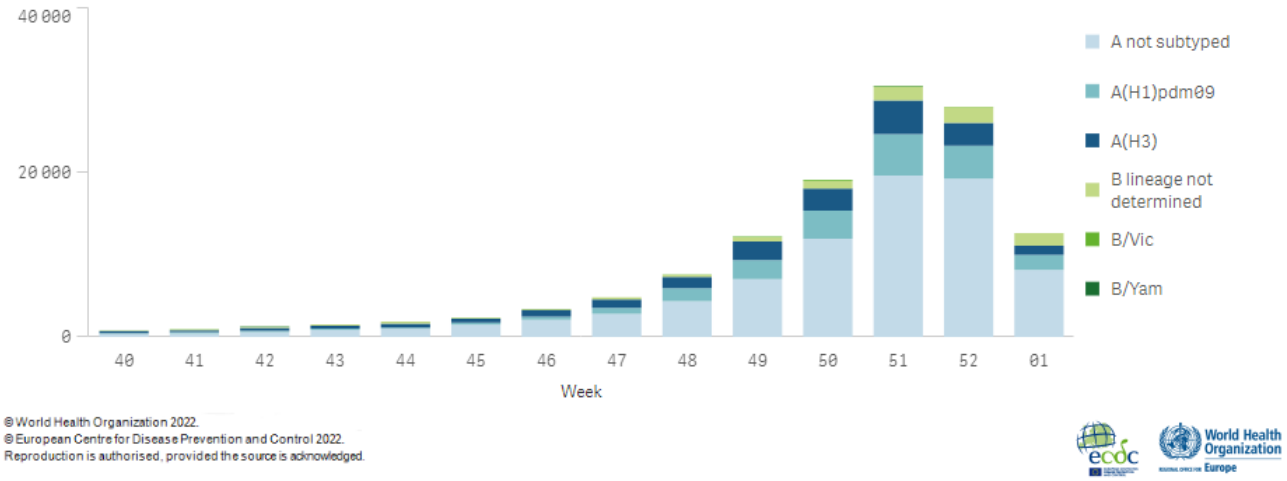


Table 2. Influenza virus detections in non-sentinel-source specimens by type and subtype, week 1/2023 and cumulatively for the season

Non-sentinel	Current Week (1)		Season 2022-2023	
Virus type and subtype	**Number**	**%[a]**	**Number**	**%[a]**
Influenza A	**11 122**	**88**	**118 644**	**93**
A(H1)pdm09	1 855	63	20 354	53
A(H3)	1 111	37	18 150	47
A not subtyped	8 156	-	80 140	-
Influenza B	**1 530**	**12**	**8 452**	**7**
B/Victoria lineage	22	100	553	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	1 508	-	7 899	-
Total detections (total tested)	**12 652 (67 248)**	**NA**	**127 096 (974 503)**	**NA**

[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 442 genetically characterized A(H1)pdm09 viruses up to week 1/2023, 415 were attributed to clade 6B.1A.5a.2 of which 233 (52%) were represented by A/Norway/25089/2022, 180 (41%) by A/Sydney/5/2021, and 1 (<1%) by

A/Victoria/2570/2019. Three (1%) were attributed to clade 6B.1A.5a.1 represented by A/Guangdong-Maonan/SWL1536/2019. 25 (6%) were not attributed to a subgroup.

Among the 665 A(H3) viruses characterized up to week 1/2023, 644 were attributed to clade 3C.2a1b.2a.2, of which 377 were represented by A/Bangladesh/4005/2020, 242 by A/Slovenia/8720/2022 and 25 by A/Darwin/9/2021. 21 viruses were not attributed to a subgroup.

Up to week 1/2023, 147 B/Victoria viruses were characterized 57 (39%) of which were attributed to clade V1A.3a.2 represented by B/Austria/1359417/2021. 90 viruses (61%) were not attributed to a subgroup.

Table 3. Number of influenza viruses attributed to genetic groups, cumulative for the season, WHO European Region

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

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 1/2023, 1 306 viruses were assessed for susceptibility to neuraminidase inhibitors (533 A(H3), 428 A(H1)pdm09 and 144 B viruses genotypically and 162 A(H3), 33 A(H1)pdm09 and 6 B viruses phenotypically), and 781 viruses were assessed for susceptibility to baloxavir marboxil (460 A(H3), 190 A(H1)pdm09 and 131 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.

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 recommends 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 recommends 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 is 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

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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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Tables and figures should be referenced:

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