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

Summary

Week 52/2022 (26 December – 1 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 34% from 37% in the previous week most probably due to the impact of the festive period with lower testing and reporting.
- 16 of 32 countries or areas reported high or very-high intensity and 22 of 31 widespread activity indicating high seasonal influenza circulation across the Region.
- The Republic of Moldova, Sweden, Lithuania, Slovakia, Slovenia, Poland, the Netherlands, and Estonia reported seasonal influenza activity above 50% positivity in sentinel primary care.
- Both influenza type A and type B viruses were detected with A(H3) viruses being dominant 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 and SARI surveillance, mostly type A virus without subtype. The highest positivity rates for influenza virus detections in SARI surveillance were reported by Romania (64%), Ukraine (59%), Russian Federation (49%), and Serbia (43%).

2022-2023 season overview

- The seasonal epidemic activity threshold of 10% positivity in sentinel specimens was first crossed in week 45/2022.
- Influenza activity continues to increase across the Region with an early seasonal activity.
- 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 have dominated in SARI specimens.

Other news

- RSV is another respiratory virus that causes acute respiratory disease, mainly amongst young infants and the elderly, often mild but frequently severe among the youngest 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 increased to 13.0% in week 50/2022, from 12.6% in week 49/2022. More information 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 52/2022, of 32 countries and areas reporting on intensity of influenza activity, 11 reported low-intensity (across the Region), 5 reported medium-intensity (Belgium, France, Israel, Kosovo* (in accordance with UN Security Council Resolution 1244 (1999)) and Slovenia), 11 reported high-intensity (across the Region) and 5 reported very high-intensity (Austria, Finland, Latvia, Luxembourg and Russian Federation) (Fig. 1).

Of 31 countries and areas reporting on geographic spread of influenza viruses, 1 reported no activity (Azerbaijan), 1 reported sporadic spread (United Kingdom (Northern Ireland)), 1 reported local spread (Malta), 6 reported regional spread (Bulgaria, Hungary, North Macedonia, Romania, Serbia and Kosovo* (in accordance with UN Security Council Resolution 1244 (1999))) and 22 reported widespread activity (across the Region) (Fig. 2).

Figure 1. Intensity of influenza activity in the European Region, week 52/2022

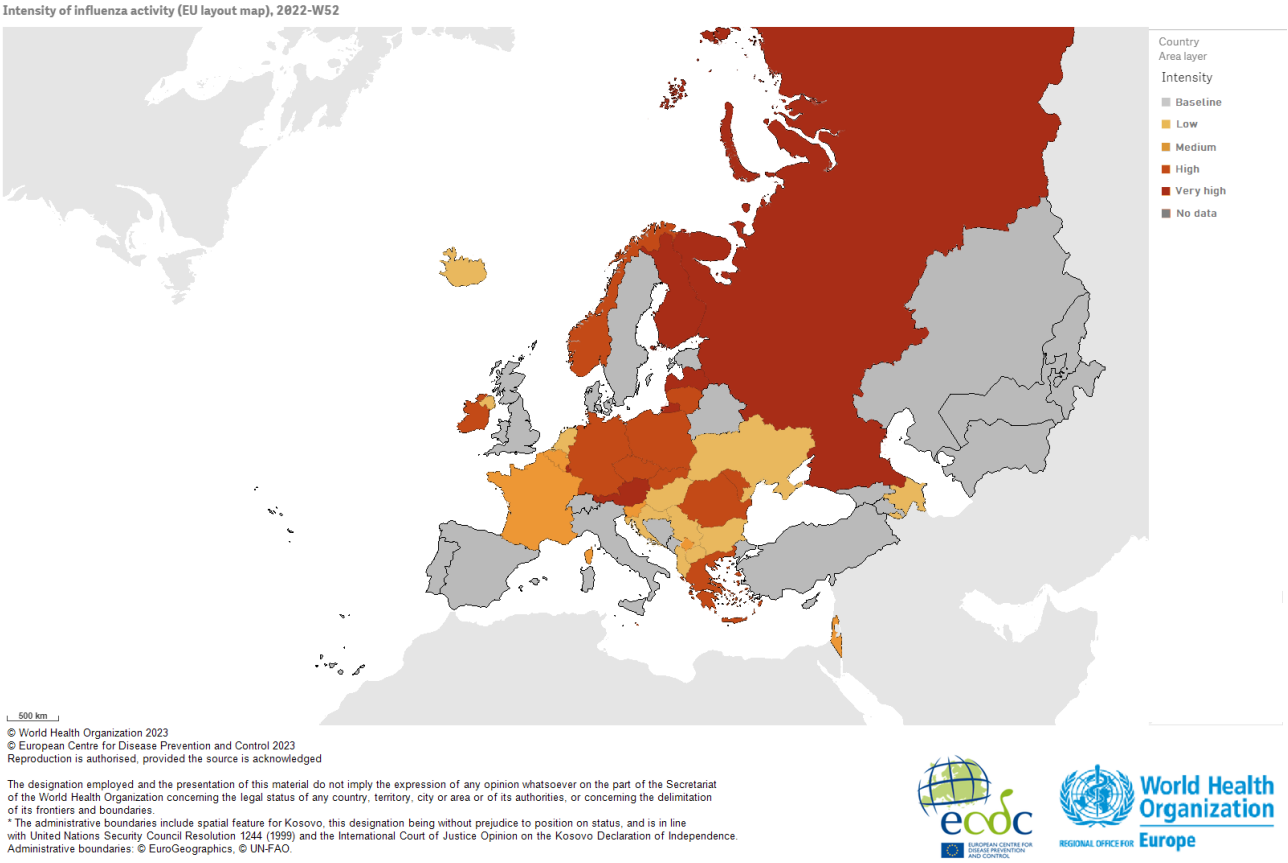
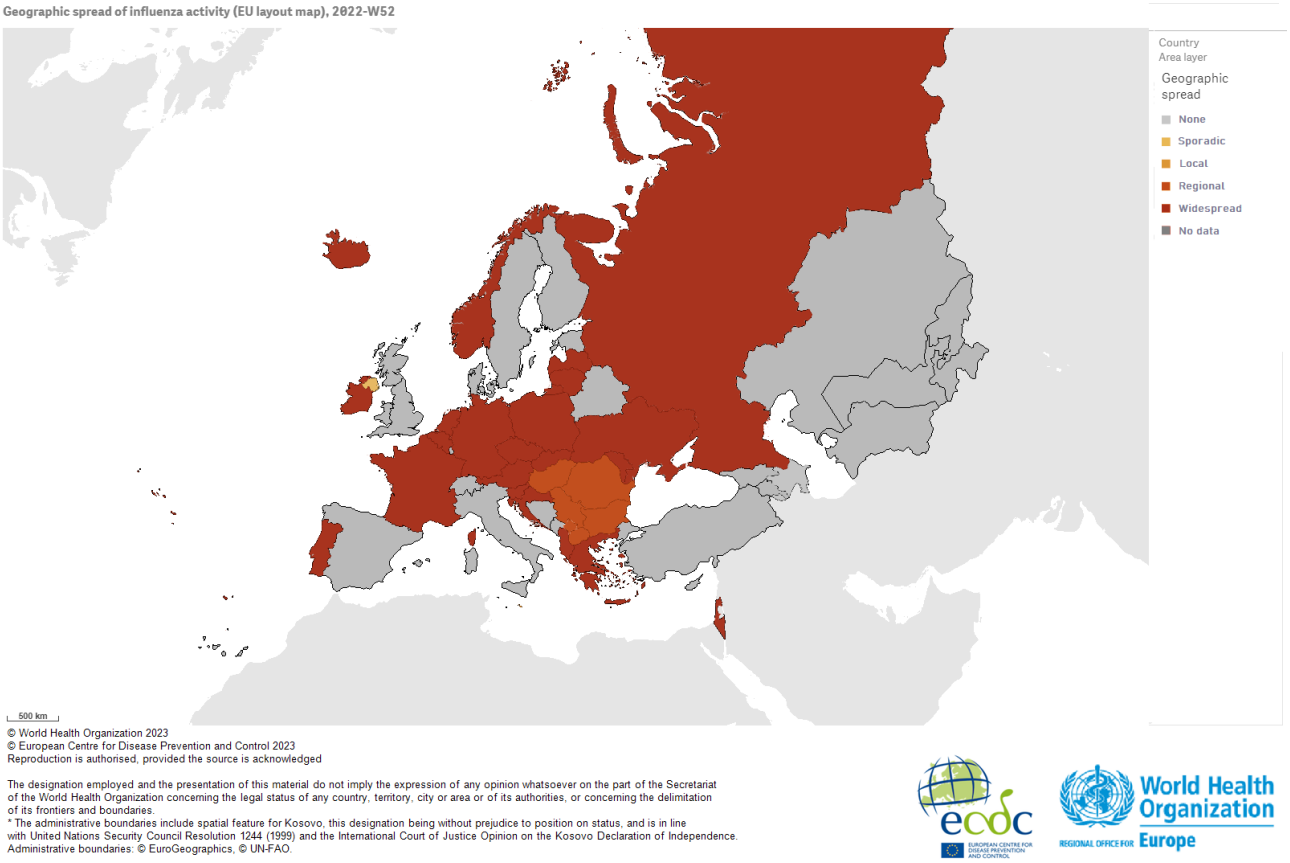


Figure 2. Geographic spread of influenza viruses in the European Region, week 52/2022



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

Please note:

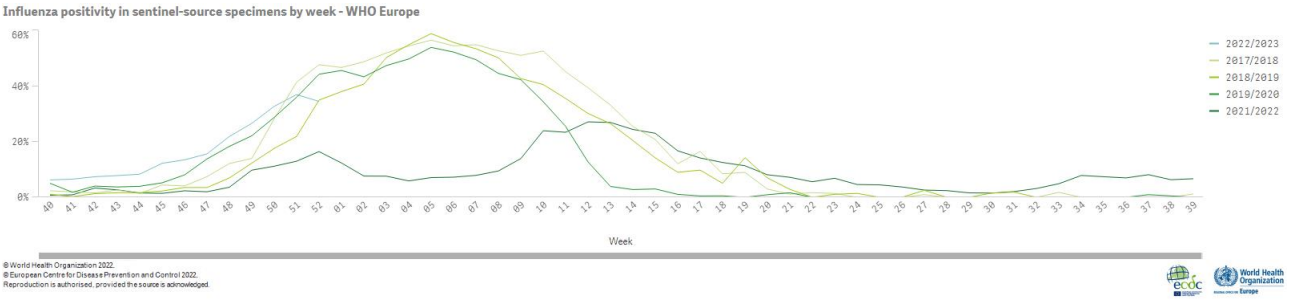
Assessment of the intensity of activity indicator includes consideration of ILI or ARI rates. These ILI or ARI rates might be driven by respiratory infections caused by viruses other than influenza, including SARS-CoV-2 and RSV, leading to observed increases in the absence of influenza virus detections.

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 slightly decreased from 37% in the previous week to 34% in week 52/2022 most probably due to the festive period with lower testing and reporting. 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 Russian Federation), northern (n=5; Iceland, Ireland, Latvia, Lithuania and United Kingdom (Northern Ireland)), southern (n=4; Croatia, Greece, Israel and Serbia) 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 Russian Federation), northern (n=2; Latvia and Lithuania) 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 52/2022, 821 (34%) of 2 384 sentinel specimens tested positive for an influenza virus; 92% were type A and 8% were type B. Of 418 subtyped A viruses, 67% were A(H3) and 33% A(H1)pdm09. All 15 type B viruses ascribed to a lineage were B/Victoria (Fig. 4 and Table 1).

Of 27 countries and areas across the Region that each tested at least 10 sentinel specimens in week 52/2022, 25 reported positivity at or above 10% (median 44%; range 10% - 83%): Republic of Moldova (83%), Sweden (80%), Lithuania (75%), Slovakia (73%), Slovenia (64%), Poland (62%), the Netherlands (58%), Estonia (54%), Russian Federation (47%), Ukraine (46%), France (45%), Luxembourg (44%), Norway (44%), Germany (43%), Serbia (37%), Armenia (33%), Switzerland (33%), Uzbekistan (33%), Kyrgyzstan (29%), Tajikistan (26%), United Kingdom (Northern Ireland) (24%), Spain (21%), Portugal (20%), Italy (18%) and Kosovo (10%).

For the season to date, 9 603 (20%) of 47 319 sentinel specimens tested positive for an influenza virus. More influenza type A (n=8 957, 93%) than type B (n=646, 7%) viruses have been detected. Of 6 992 subtyped A viruses, 5 582 (80%) were A(H3) and 1 410 (20%) were A(H1)pdm09. All 200 influenza type B viruses ascribed to a lineage were B/Victoria (69% 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

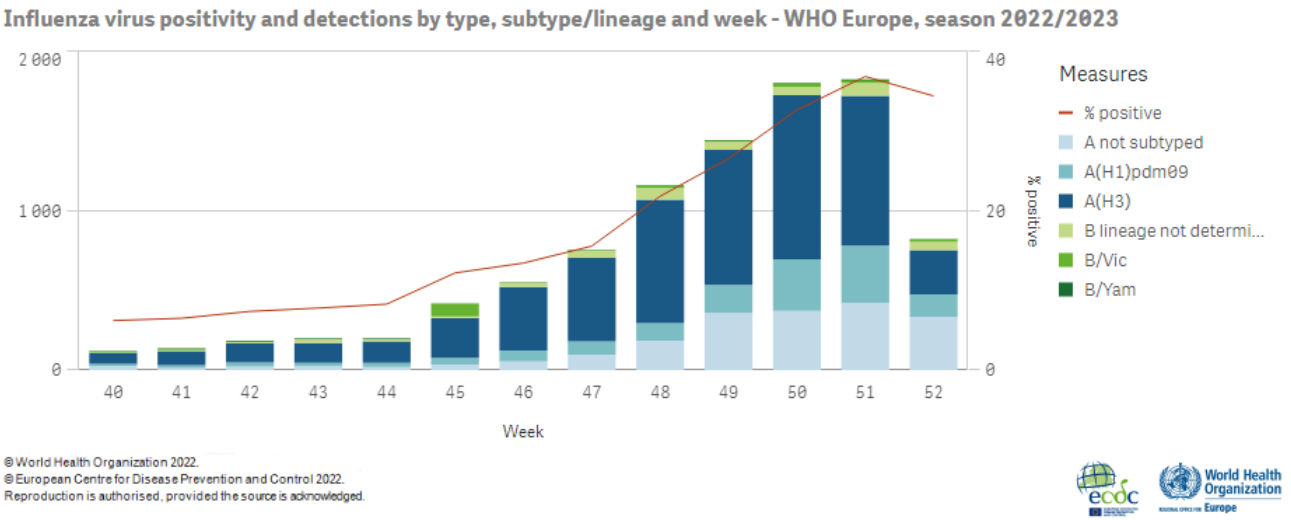


Table 1. Influenza virus detections in sentinel source specimens by type and subtype for week 52/2022 and cumulatively for the season

Sentinel	Current Week (50)		Season 2022-2023	
Virus type and subtype	**Number**	**%[a]**	**Number**	**%[a]**
Influenza A	**753**	**92**	**8 957**	**93**
A(H1)pdm09	140	33	1 410	20
A(H3)	278	67	5 582	80
A not subtyped	335	-	1 965	-
Influenza B	**68**	**8**	**646**	**7**
B/Victoria lineage	15	100	200	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	53	-	446	-
Total detections	**821 (2 384)**	**34**	**9 603 (47 319)**	**20**

(total tested)				

[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 52/2022.

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 52/2022, 66 laboratory-confirmed influenza cases were reported from ICU wards (Czechia, Ireland and Sweden). Both influenza type A viruses (n=98%) and type B viruses (n=2%) were detected. Of 6 subtyped influenza type A viruses, 4 were A(H3) and 2 were A(H1)pdm09 (Fig. 5 and 6).

Since week 40/2022, more influenza type A (n=783, 95%) than type B (n=40, 5%) viruses were detected (Czechia, Ireland, Sweden and United Kingdom (England)). Of 155 subtyped influenza A viruses, 53% were A(H3) and 47% were A(H1)pdm09. No influenza B viruses were ascribed to a lineage. Of 194 cases with known age, 89 were 65 years and older, 75 were 15-64 years old, 16 were 0-4 years old and 14 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

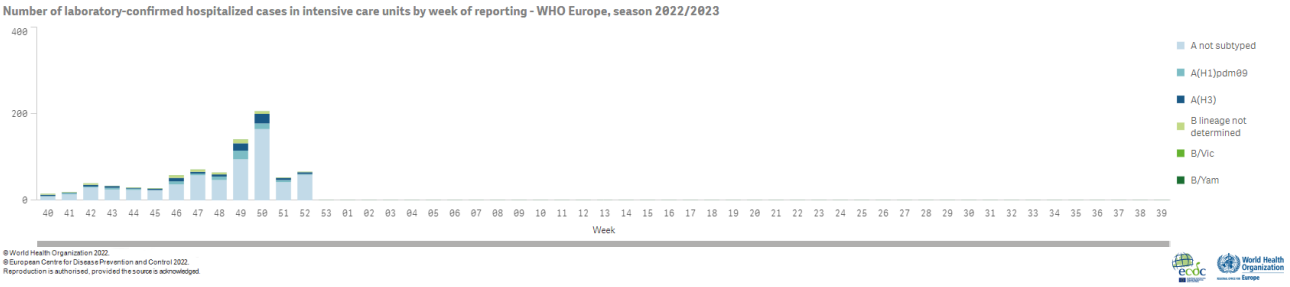
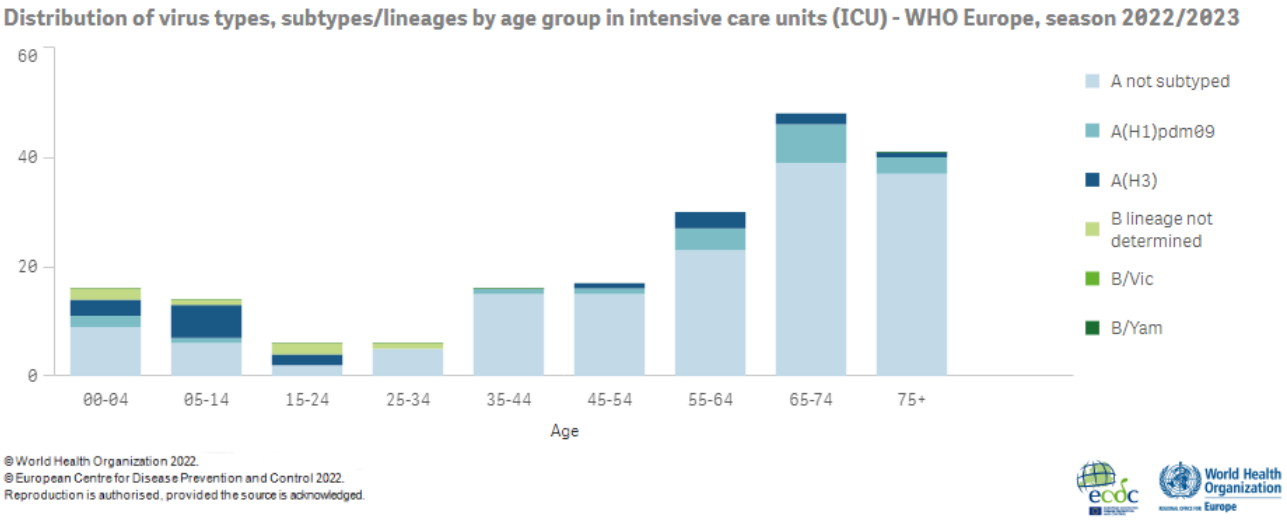


Figure 6. Distribution of influenza virus types, subtypes/lineages by age group in intensive care units (ICU), WHO European Region, season 2022/2023



1.2) Hospitalized laboratory-confirmed influenza cases – other wards

For week 52/2022, 608 laboratory-confirmed influenza cases were reported from other wards by Czechia and Ireland. Influenza type A virus (97%) were detected more frequently than influenza type B viruses (3%). Of 13 subtyped influenza type A viruses, 11 were A(H3) and 2 were A(H1)pdm09 (Fig. 7 and 8).

Since week 40/2022, 2 166 influenza type A viruses and 63 influenza type B viruses were reported from patients in other wards in Czechia and Ireland. Of 104 subtyped influenza A viruses, 71% (n=74) were A(H1)pdm09 and 28% (n=30) A(H3). The 2 229 cases with known age fell in 4 age groups: 866 were 65 years and older, 811 were 15-64 years old, 279 were 0-4 years old and 273 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

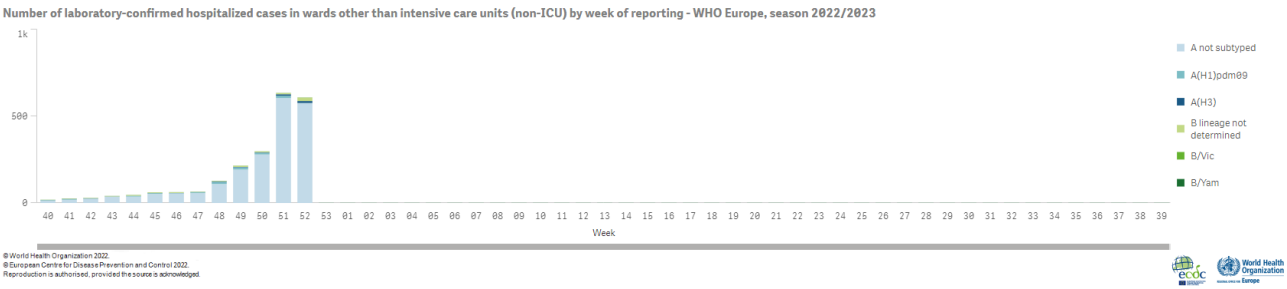
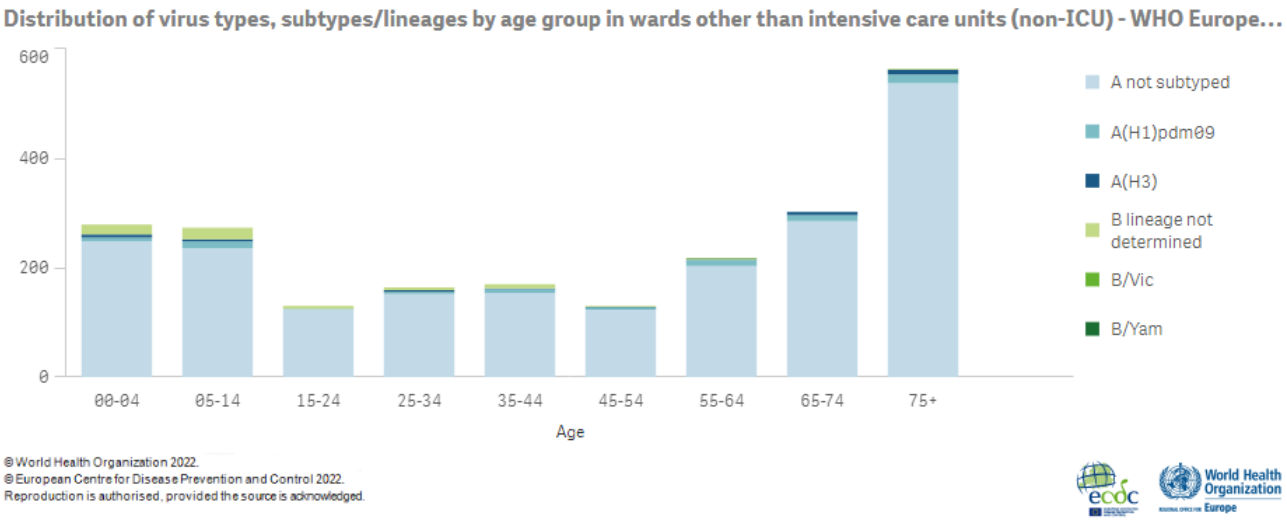


Figure 8. Distribution of influenza virus types, subtypes/lineages by age group in wards other than intensive care units (non-ICU), WHO European Region, season 2022/2023



Severe acute respiratory infection (SARI)-based hospital surveillance

For week 52/2022, 4 164 SARI cases were reported by 12 countries or areas (Albania, Croatia, Germany, Malta, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Spain, Ukraine and Kosovo* (in accordance with Security Council resolution 1244 (1999))). Of 337 specimens tested for influenza viruses, 40% (n=135) were positive (Fig. 9). Of these, influenza type A viruses (n=129, 96%) were detected more frequently than influenza type B viruses (n=6). The highest positivity rates for influenza virus detections were reported by Romania (64%), Ukraine (59%), Russian Federation (49%), Serbia (43%), Albania (37%) and Malta (24%).

For the season, 68 297 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=1 034, 66%). Of the 1 034 cases with influenza A, subtyping was performed for 805 viruses: cases where influenza virus subtyping was performed, 620 (77%) were infected by A(H1)pdm09 viruses and 185 (23%) were infected by A(H3) viruses. All influenza B viruses reported have been ascribed to a B/Victoria (n=155, 34%) (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

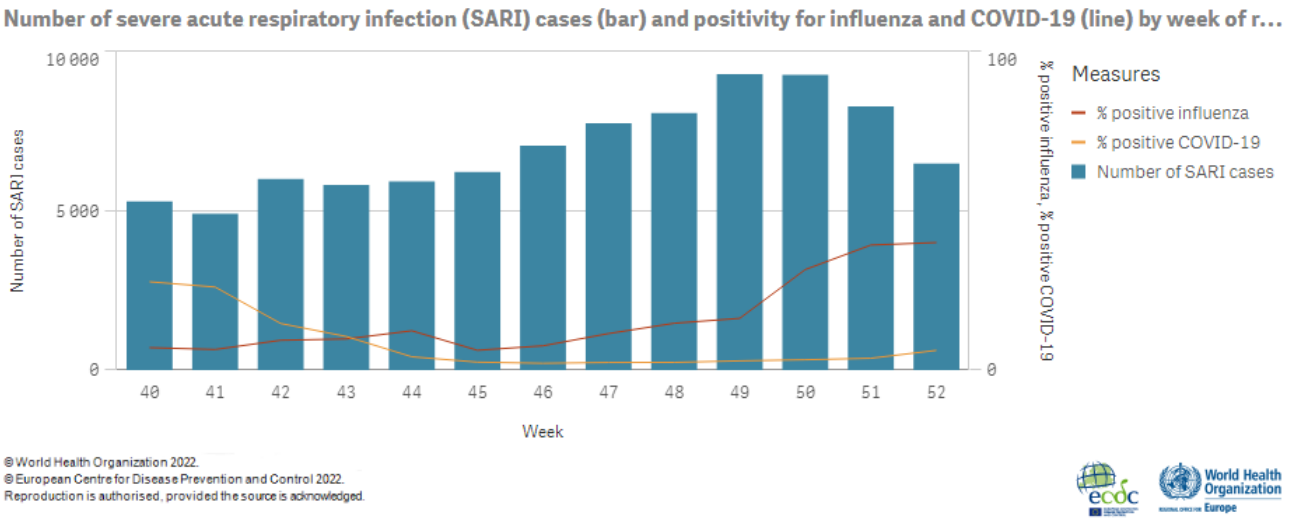
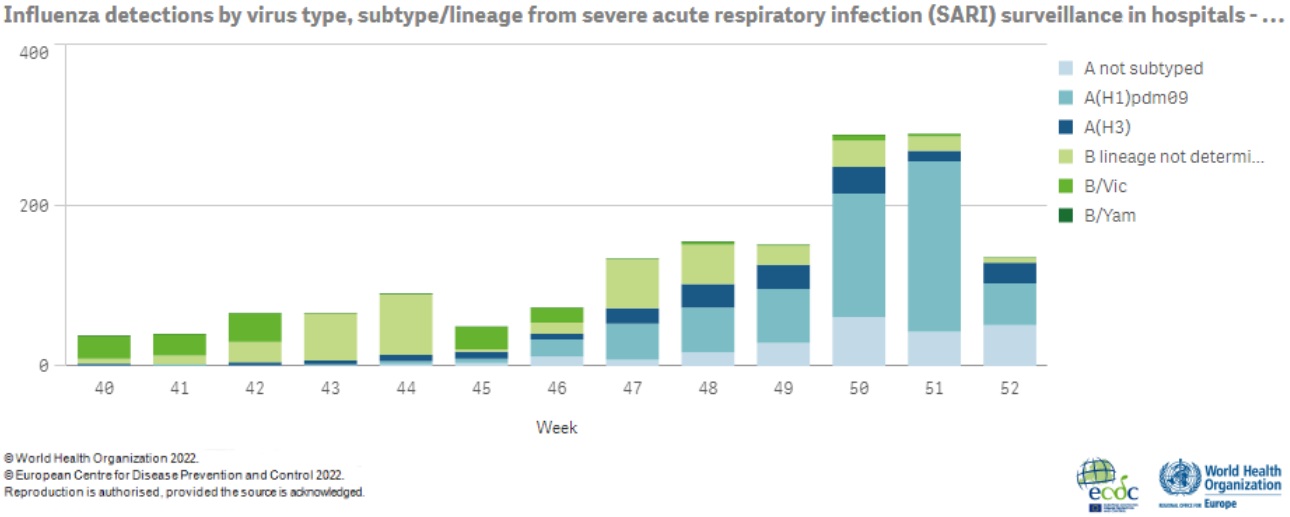


Figure 10. Influenza virus detections by type, subtype/lineage from severe acute respiratory infection (SARI) cases, WHO European Region, season 2022/2023



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 52/2022, 20 884 of 84 164 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; 19 523 (94%) were type A and 1 361 (6%) were type B. Of 4 540 subtyped A viruses, 3 191 (70%) were A(H1)pdm09 and 1 349 (30%) A(H3). All 19 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=93 895, 94%) than type B (n=5 823, 6%) viruses have been detected. Of 30 782 subtyped A viruses, 17 056 (55%) were A(H1)pdm09 and 13 726 (45%) were A(H3). All 507 influenza type B viruses ascribed to a lineage were B/Victoria (91% 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

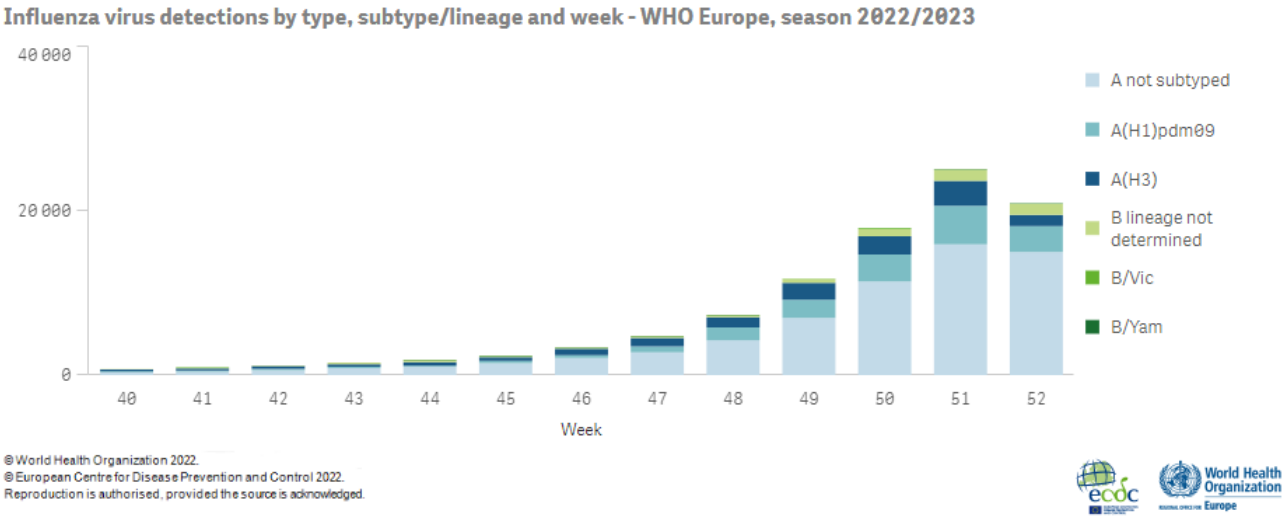


Table 2. Influenza virus detections in non-sentinel-source specimens by type and subtype, week 50/2022 and cumulatively for the season

Non-sentinel	Current Week (50)		Season 2022-2023	
Virus type and subtype	**Number**	**%[a]**	**Number**	**%[a]**
Influenza A	**19 523**	**93**	**93 895**	**94**
A(H1)pdm09	3 191	70	17 056	55
A(H3)	1 349	30	13 726	45
A not subtyped	14 983	-	63 113	-
Influenza B	**1 361**	**7**	**5 823**	**6**
B/Victoria lineage	19	100	507	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	1 342	-	5 316	-
Total detections (total tested)	**20 884 (84 164)**	**NA**	**99 718 (864 308)**	**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 242 genetically characterized A(H1)pdm09 viruses up to week 52/2022, 104 were attributed to clade 6B.1A.5a.2 of which 138 (57%) were represented by AH1/Norway/25089/2022, 102 (42%) were represented by AH1/Sydney/5/2021, 1 (>1%)

was represented by AH1/Guangdong-Maonan/SWL1536/2019 and 1 (<1%) was represented by AH1/Victoria/2570/2019.

Among the 475 A(H3) viruses characterized up to week 52/2022, 99 were attributed to a clade. 99 belonged to clade 3C.2a1b.2a.2 represented by AH3/Bangladesh/4005/2020. 11 viruses were not attributed to a subgroup.

Up to week 52/2022, 57 B/Victoria viruses were characterized 44 were attributed to clade V1A.3a.2 of which 38 (67%) were represented by B/Austria/1359417/2021 and 19 (33%) were represented by 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, cumulative for the season - WHO Europe

Virus Type	Virus Subtype	Genetic charact...	Number of influenza viruses attributed to genetic groups 2022/2023
Total			**856**
Influenza A			**799**
	A(H1)pdm09		**248**
		A/Guangdong-Maonan/SWL1536/2019(H1N1)pdm09_6B.1A.5a.1	1
		A/Norway/25089/2022(H1N1)pdm09_6B.1A.5a.2	143
		A/Sydney/5/2021(H1N1)pdm09_6B.1A.5a.2	103
		A/Victoria/2570/2019(H1N1)pdm09_6B.1A.5a.2	1
	A(H3)		**551**
		A(H3)_SubgroupNotListed *	11
		A/Bangladesh/4005/2020(H3)_3C.2a1b.2a.2	332
		A/Darwin/9/2021(H3)_3C.2a1b.2a.2	20
		A/Slovenia/8720/2022(H3)_3C.2a1b.2a.2	188
Influenza B			**57**
	B/Vic		**57**
		B/Austria/1359417/2021(Victoria lineage_1A.3a.2)	38
		BVic_SubgroupNotListed *	19

** No Clade: not attributed to a pre-defined clade and SubgroupNotListed: attributed to recognised group in current guidance but not listed here*

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Currently, WHO'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 52/2022, 906 viruses were assessed for susceptibility to neuraminidase inhibitors (420 A(H3), 234 A(H1)pdm09 and 53 B viruses genotypically and 161 A(H3), 32 A(H1)pdm09 and 6 B viruses phenotypically), and 516 viruses were assessed for susceptibility to baloxavir marboxil (345 A(H3), 124 A(H1)pdm09 and 47 B viruses genotypically). Phenotypically, 1 A(H1) virus with reduced susceptibility were identified and genotypically no markers associated with reduced susceptibility were identified.

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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