

Summary

Week 45/2022 (07 November – 13 November 2022)

- Germany, Kazakhstan, Malta and Portugal reported widespread influenza activity and/or at least medium intensity.
- The percentage of all sentinel primary care specimens from patients presenting with ILI or ARI symptoms that tested positive for an influenza virus was 13% which is higher than the previous week (8%) and above the epidemic threshold set at 10%.
- The start of the influenza epidemic at the Regional level is usually defined as two consecutive weeks in which $\geq 10\%$ of patients in sentinel primary care settings tested positive for influenza virus infection.
- Germany, Georgia, Kazakhstan, Portugal and United Kingdom (Scotland) reported seasonal influenza activity above 10% positivity in sentinel primary care.
- Both influenza type A and type B viruses were detected among all monitoring systems, with influenza A(H3) viruses being dominant in sentinel surveillance while similar numbers of A(H1)pdm09 and A(H3) viruses were detected in non-sentinel surveillance.
- Hospitalized cases with confirmed influenza virus infection were reported from other wards (1 type A virus) and SARI surveillance (31 type B viruses, of which 28 were from Kazakhstan, and 8 type A viruses), but only one was reported from an ICU ward. When comparing the different influenza type distributions by system, it is important to consider that different sets of countries are reporting to each system.

2022-2023 season overview

- Influenza activity, based on patients in sentinel primary care settings testing positive for influenza virus infection, crossed the epidemic threshold of 10% set for the Region for the first time in week 45/2021.
- Overall, influenza A(H3) viruses have dominated across most surveillance systems.

Other news

For more information about the SARS-CoV-2 situation in the WHO European Region visit:

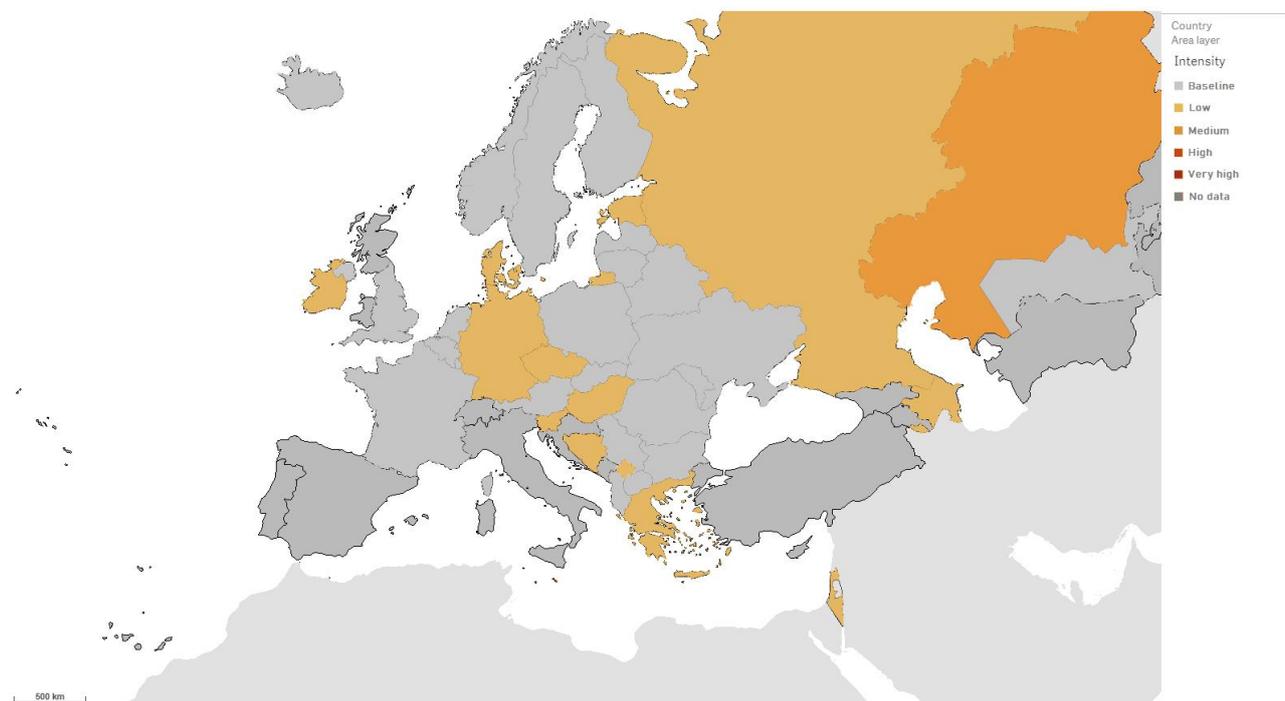
- WHO website: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
- ECDC website: <https://www.ecdc.europa.eu/en/novel-coronavirus-china>

Qualitative indicators

For week 45/2022, of 39 countries and areas reporting on intensity of influenza activity, 24 reported baseline-intensity (across the Region), 13 reported low-intensity (across the Region), 1 reported medium-intensity (Kazakhstan) and 1 reported high-intensity (Malta) (Fig. 1).

Of 39 countries and areas reporting on geographic spread of influenza viruses, 10 reported no activity (across the Region), 18 reported sporadic spread (across the Region), 4 reported local spread (Lithuania, Malta, Norway and United Kingdom (Northern Ireland)), 5 reported regional spread (Albania, Finland, France, Kazakhstan and Republic of Moldova) and 2 reported widespread activity (Germany and Portugal) (Fig. 2).

Figure 1. Intensity of influenza activity in the European Region, week 45/2022

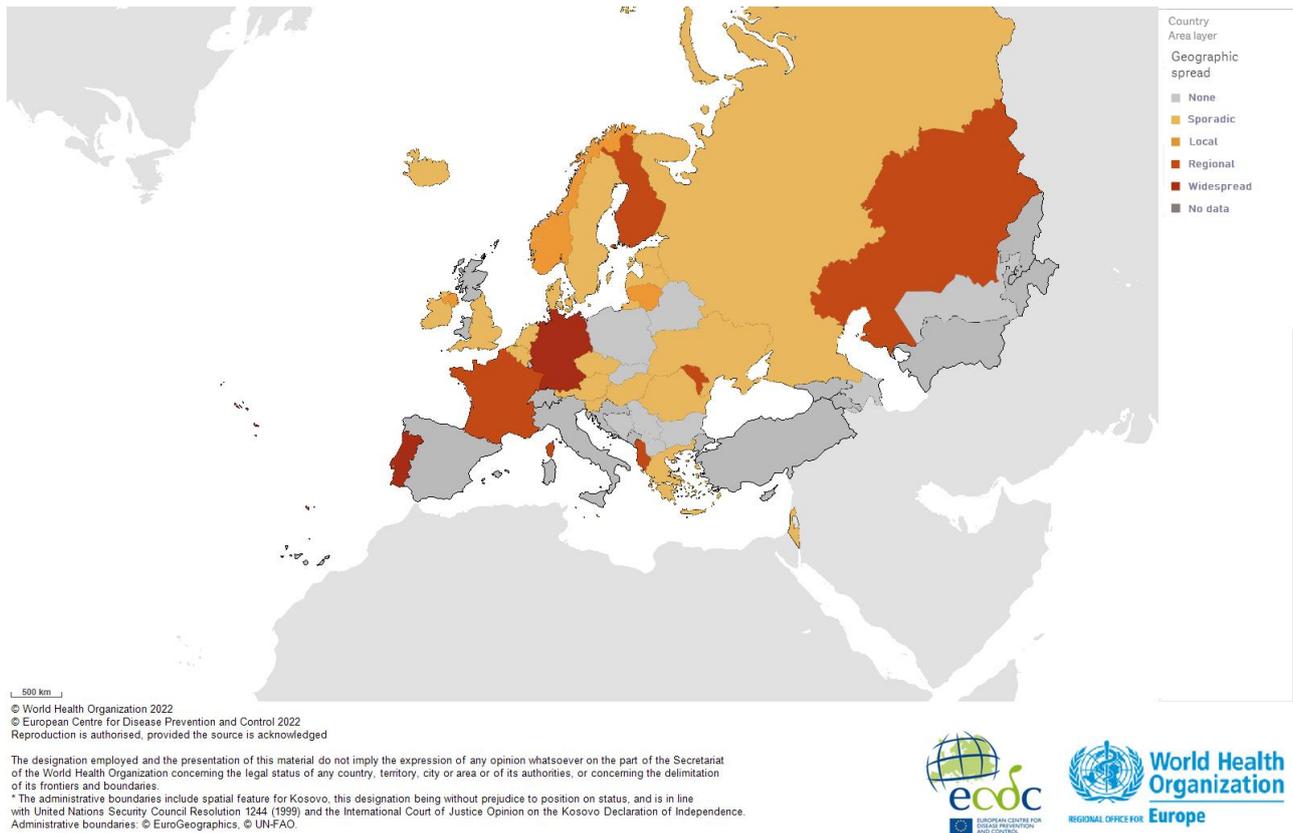


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Figure 2. Geographic spread of influenza viruses in the European Region, week 45/2022



For interactive maps of influenza intensity and geographic spread, see the [Flu News Europe website](#).

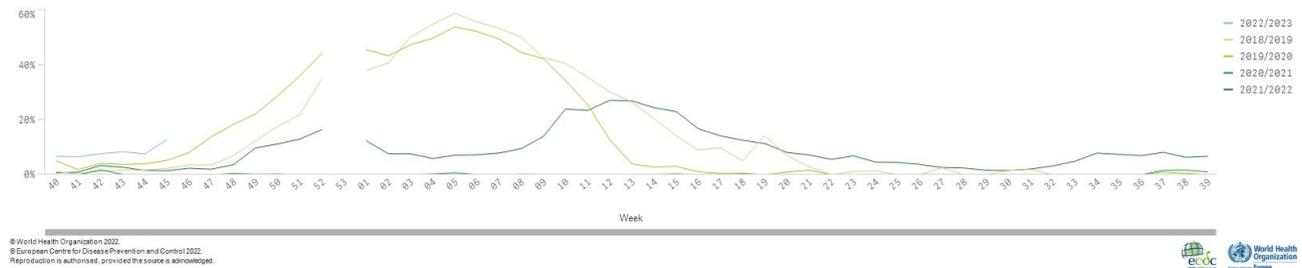
Please note:

- 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 other than influenza virus, including SARS-CoV-2, leading to observed increases in the absence of influenza virus detections.
- Assessment of intensity and geographic spread indicators includes consideration of sentinel and non-sentinel influenza virus detection data. Non-sentinel influenza virus detections, which are 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 was 13% in week 45/2022 which is higher than in the previous week (8%) and is above the epidemic threshold set at 10%. This is above the levels seen in the 4 previous seasons for the same time of year (Fig. 3).

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



External data sources

Mortality monitoring:

For week 45/2022 overall pooled EuroMOMO estimates of all-cause mortality for the participating European countries showed elevated excess mortality. Data from 25 European countries or subnational regions were included for pooled analysis of all-cause mortality.

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 (Azerbaijan and Kazakhstan), northern (Denmark, Estonia and Ireland), southern (Greece) and western (Austria and Hungary) 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 (Kazakhstan and Uzbekistan), northern (Latvia) and southern (Slovenia) 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) and based on historic ILI/ARI data.

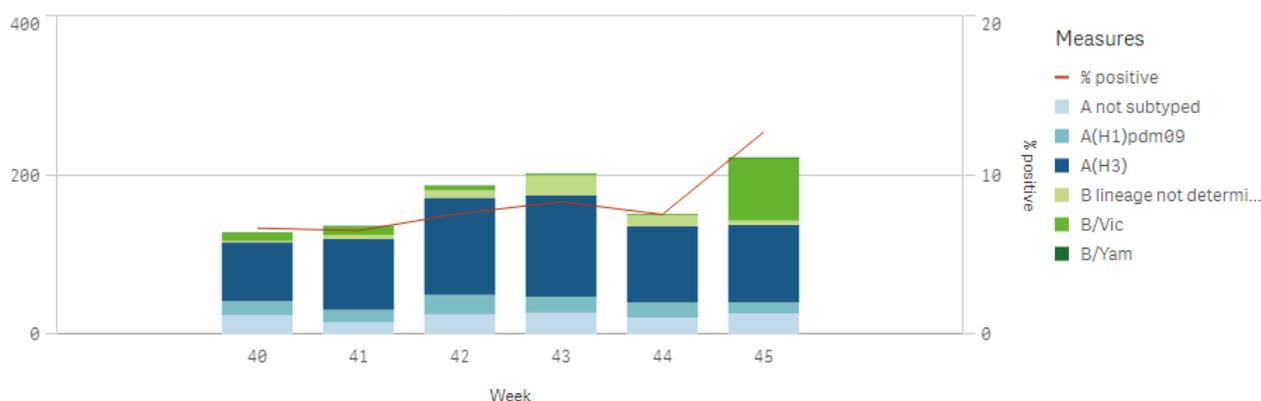
Viruses detected in sentinel-source specimens (ILI and ARI)

For week 45/2022, 222 (13%) of 1 746 sentinel specimens tested positive for influenza virus; 62% were type A and 38% were type B. Of 112 subtyped A viruses, 88% were A(H3) and 12% A(H1)pdm09. Of 79 type B viruses ascribed to a lineage, all were B/Victoria (Fig. 4 and Table 1). Of 25 countries and areas across the Region that each tested at least 10 sentinel specimens in week 45/2022, 5 reported a rate of influenza virus detections above 10% (median 30%; range 12% - 100%): Kazakhstan (100%), Portugal (42%), Germany (30%), Georgia (12%) and United Kingdom (Scotland) (12%).

For the season to date, 1 026 (8%) of 12 639 sentinel specimens tested positive for an influenza virus. More influenza type A (n=857, 84%) than type B (n=169, 16%) viruses have been detected. Of 719 subtyped A viruses, 607 (84%) were A(H3) and 112 (16%) were A(H1)pdm09. Of 109 influenza type B viruses ascribed to a lineage, all were B/Victoria (36% 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



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Table 1. Influenza virus detections in sentinel source specimens by type and subtype for week 45/2022 and cumulatively for the season

Sentinel Virus type and subtype	Current Week (45)		Season 2022-2023	
	Number	% ^a	Number	% ^a
Influenza A	138	62.2	857	83.5
A(H1)pdm09	14	12.5	112	15.6
A(H3)	98	87.5	607	84.4
A not subtyped	26	-	138	-
Influenza B	84	37.8	169	16.5
B/Victoria lineage	79	100	109	100
B/Yamagata lineage	0	-	0	0
Unknown lineage	5	-	60	-

Total detections (total tested)	222 (1 746)	12.7	1 026 (12 639)	8.1
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^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 45/2022, 1 laboratory-confirmed influenza case was reported from an ICU ward (in Ireland), infected with a type A virus which was not subtyped (Fig. 5 and 6).

Since week 40/2022, more influenza type A (n=76, 90%) than type B (n=8, 10%) viruses were detected (from Czechia, Ireland, Sweden and United Kingdom (England)). Of 7 subtyped influenza A viruses, 4 were A(H1)pdm09 and 3 were A(H3). No influenza B viruses were ascribed to a lineage. Of 11 cases with known age, 6 were 65 years and older and 5 were in the age group 15-64.

Figure 5. Number of laboratory-confirmed hospitalized influenza cases in intensive care units (ICU) by week of reporting, WHO European Region, season 2022/2023

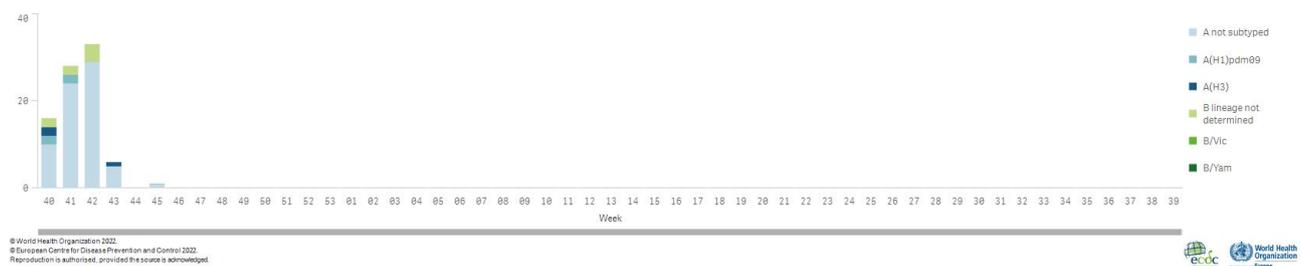
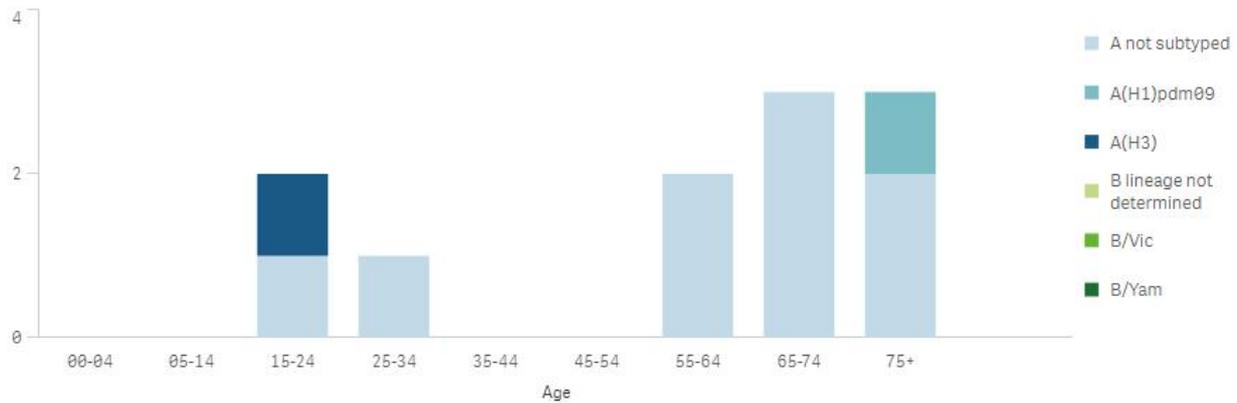


Figure 6. Distribution of influenza virus types, subtypes/lineages by age group in intensive care units (ICU), WHO European Region, season 2022/2023



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1.2) Hospitalized laboratory-confirmed influenza cases – other wards

For week 45/2022, 19 laboratory-confirmed influenza cases were reported from other wards in Ireland. Only one influenza type A virus was assigned to a subtype, and it was A(H1)pmd09 (Fig. 7 and 8).

Since week 40/2022, 207 influenza type A viruses and 14 influenza type B viruses were detected from Ireland. Of 14 subtyped influenza A viruses, 80% (n=11) were A(H1)pdm09 and 20% (n=3) were A(H3). The 221 cases with known age fell in four age groups: 80 were 15-64 years old, 78 were 65 years and older, 36 were 5-14 years old and 27 were 0-4 years old.

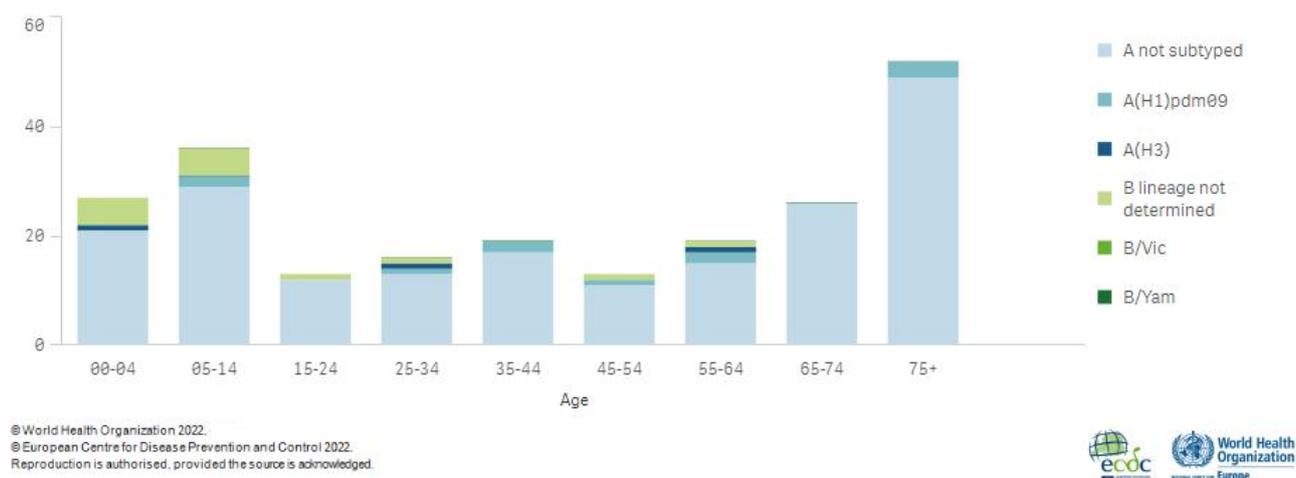
Figure 7. Number of laboratory-confirmed hospitalized influenza cases in wards other than intensive care units (non-ICU) by week of reporting, WHO European Region, season 2022/2023



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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 45/2022, 3 611 SARI cases were reported by 16 countries or areas (Albania, Belarus, Bosnia and Herzegovina, Germany, Ireland, Kazakhstan, Kyrgyzstan, Lithuania, Malta, North Macedonia, Republic of Moldova, Russian Federation, Serbia, Spain, Ukraine and Uzbekistan). Of 511 specimens tested for influenza viruses, 8% (n=39) were positive (Fig. 9). Of these, influenza type B viruses (n=31, 79%; 28 from Kazakhstan and 3 from Kyrgyzstan) were detected more frequently than influenza type A viruses (n=8, 21%). The highest positivity rates for influenza virus detections were reported by Malta (33%) and Kazakhstan (17%).

For the season, 24 953 SARI cases were reported by 22 countries or areas (Albania, Armenia, Belarus, Bosnia and Herzegovina, Croatia, Georgia, Germany, Ireland, Kazakhstan, Kyrgyzstan, Lithuania, Malta, Montenegro, North Macedonia, Republic of Moldova, Russian Federation, Serbia, Spain, 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 B viruses have been the most common (n=300, 89%; 281 from Kazakhstan, 17 from Kyrgyzstan and 2 from Russian Federation). Of the 38 cases infected with influenza A, subtyping was performed for 30 viruses: 22 (73%) were A(H3) and 8 (27%) were A(H1)pdm09 viruses. The influenza type B viruses ascribed to a lineage (n=120, 89%) were all 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

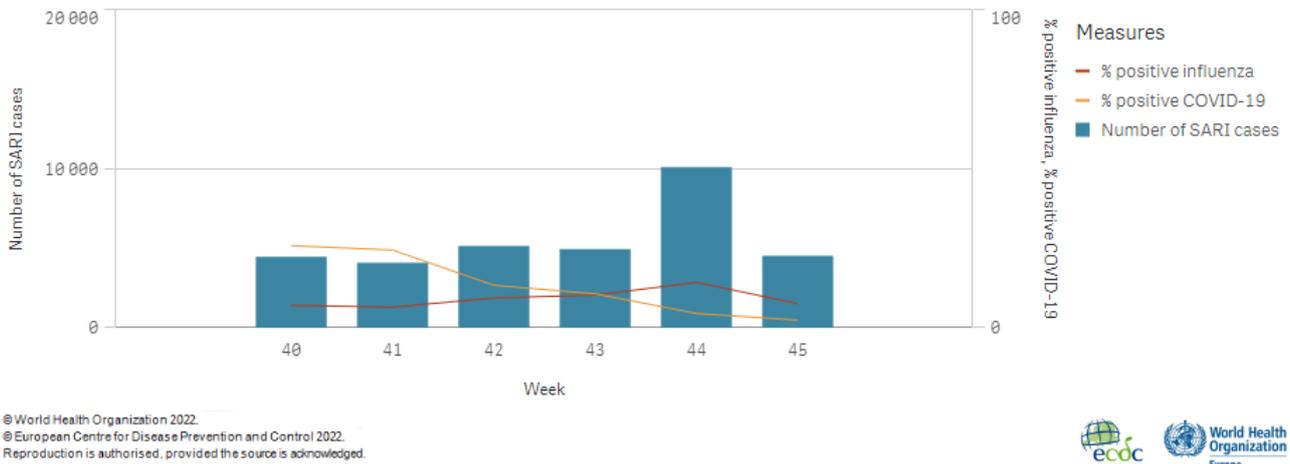
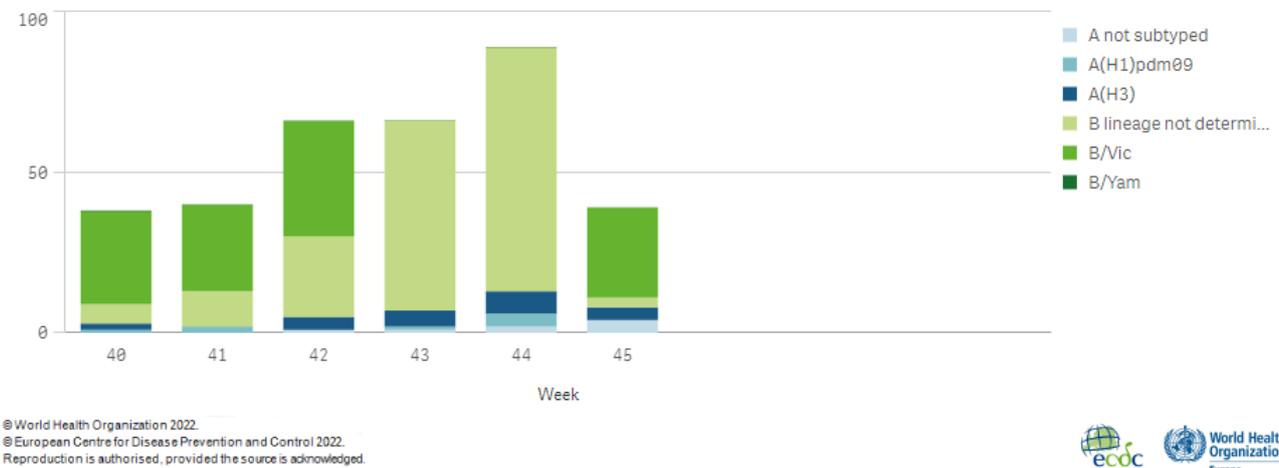


Figure 10. Influenza virus detections by type, subtype/lineage from severe acute respiratory infection (SARI), WHO European Region, season 2022/2023



Virus characteristics

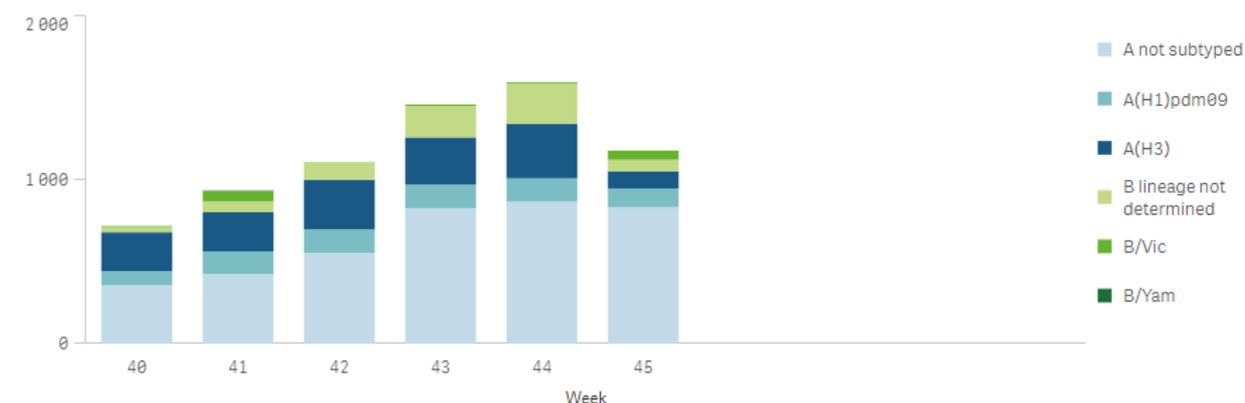
Details of the distribution of viruses detected in sentinel-source specimens can be found in the **Primary care data** section.

Non-sentinel virologic data

For week 45/2022, 1 179 of 38 410 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 influenza virus; 1 053 (89%) were type A and 126 (11%) were type B. Of 219 subtyped A viruses, 115 (53%) were A(H1)pdm09 and 104 (47%) were A(H3). Of 56 type B viruses ascribed to a lineage, all were Victoria lineage (Fig. 11 and Table 2).

For the season to date, more influenza type A (n=6 143, 88%) than type B (n=856, 12%) viruses have been detected. Of 2 274 subtyped A viruses, 1 503 (66%) were A(H3) and 771 (34%) were A(H1)pdm09. Of 143 influenza type B viruses ascribed to a lineage, all were B/Victoria (83% 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



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Table 2. Influenza virus detections in non-sentinel-source specimens by type and subtype, week 45/2022 and cumulatively for the season

Non-sentinel Virus type and subtype	Current Week (45)		Season 2022-2023	
	Number	% ^a	Number	% ^a
Influenza A	1 053	89.3	6 143	87.8
A(H1)pdm09	115	53	771	34
A(H3)	104	47	1 503	66
A not subtyped	834	-	3 869	-
Influenza B	126	10.7	856	12.2
B/Victoria lineage	56	100	143	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	70	-	713	-
Total detections (total tested)	1 179 (38 410)	NA	6 999 (263 634)	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 36 genetically characterized A(H1)pdm09 viruses up to week 45/2022, all belonged to clade 6B.1A.5a.2, of which 32 (89%) were represented by A/Norway/25089/2022, 3 (8%) were represented by A/Sydney/5/2021 and 1 (3%) was represented by A/Victoria/2570/2019.

Among the 84 A(H3) viruses characterized up to week 45/2022, all belonged to clade 3C.2a1b.2a.2, of which 39 (46%) were represented by A/Slovenia/8720/2022, 38 (45%) were represented by A/Bangladesh/4005/2020 and 5 (6%) were represented by A/Darwin/9/2021. Two viruses were not attributed to a subgroup.

Up to week 45/2022, 11 B/Victoria viruses were characterized and assigned to clade V1A.3a.2 of which 6 (55%) were represented by B/Austria/1359417/2021 and 5 (45%) were not attributed to a subgroup.

Currently, WHO's **September** virus characterization report is available and describes available data from circulating viruses for the 2021-2022 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 May 2022) and the **WHO website**.

Antiviral susceptibility testing

Up to week 45/2022, 183 viruses were assessed for susceptibility to neuraminidase inhibitors (NAI) (84 A(H3), 38 A(H1)pdm09 and 11 B viruses genotypically, and 47 A(H3), 2 A(H1)pdm09 and 1 B viruses phenotypically), and 101 viruses were assessed for susceptibility to baloxavir marboxil (BXM) (61 A(H3), 33 A(H1)pdm09 and 7 B viruses genotypically). Phenotypically no viruses exceeded IC₅₀-fold-change thresholds for reduced susceptibility to NAI and, genotypically, no markers associated with reduced susceptibility to NAI or BXM were identified.

Vaccine

Recently published results from a controlled, randomised trial in UK concluded that concomitant vaccination with one of two SARS-CoV-2 vaccines (ChAdOx1 or BNT162b2) plus an age-appropriate influenza vaccine raised no safety concerns and preserved **antibody responses** to both vaccines.

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(21\)02329-1/fulltext](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 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](#).

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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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