

Summary

Week 10/2022 (7 – 13 March 2022)

- Belgium, Denmark, Estonia, France, Georgia, Ireland, Kazakhstan, Luxembourg, Montenegro, Netherlands, Norway, Portugal, Slovenia and United Kingdom (Scotland) reported widespread influenza activity and/or medium influenza intensity.
- The percentage of all sentinel primary care specimens from patients presenting with ILI or ARI symptoms that tested positive for an influenza virus has been rising again since week 4/2022 and was 24%.
- Countries mostly in the western-central part of the Region reported seasonal influenza activity at or above 30% positivity in sentinel primary care: the Netherlands (85%), Hungary (69%), France (57%), Slovenia (57%), Luxembourg (44%), Denmark (36%) and Switzerland (34%).
- Both influenza type A and type B viruses were detected with A(H3) viruses being dominant across all monitoring systems.
- A(H3) viruses were most frequently detected in patients hospitalized with confirmed influenza virus infection.

2021-2022 season overview

- For the Region as a whole influenza activity is increasing but remains at lower levels compared to seasons prior to the COVID-19 pandemic.
- Influenza activity, based on sentinel primary care specimens from patients presenting with ILI or ARI symptoms, started to increase in week 49/2021 and reached a peak of 20% in week 52/2021, declining thereafter until week 4/2022 before a resurgence of percentage positivity to levels above 10% since week 8/2022.
- Different levels of activity have been observed between the countries and areas of the Region, with a dominance of A(H3) viruses in most countries.
- During the influenza Vaccine Composition Meeting for the northern hemisphere 2022/23 season, held in February 2022, WHO recommended

updating of the A(H3N2) and the B/Victoria-lineage components. The full report can be found [here](#).

- [Preliminary results](#) of 2021-2022 seasonal influenza vaccine effectiveness (VE) estimates from the United States showed that VE against medically attended outpatient acute respiratory infection associated with the dominant circulation influenza A(H3N2) virus was 16% (95% CI = -16% to 39%).
- With increased circulation of influenza virus clinicians should consider early antiviral treatment of patients in at-risk groups with influenza virus infection, according to local guidance, to prevent severe outcomes. Viruses analyzed so far have remained susceptible to neuraminidase inhibitors and baloxavir marboxil.

Other news

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 10/2022, of 36 countries and areas reporting on intensity of influenza activity, 16 reported baseline-intensity (across the Region), 14 reported low-intensity (across the Region), 5 reported medium-intensity (Belgium, Denmark, Estonia, Georgia and Kazakhstan) and 1 reported high-intensity (Luxembourg) (Fig. 1).

Of 37 countries and areas reporting on geographic spread of influenza viruses, 7 reported no activity (Armenia, Israel, Kazakhstan, Kosovo* (in accordance with UN Security Council Resolution 1244 (1999)), Lithuania, North Macedonia and Poland), 11 reported sporadic spread (across the Region), 2 reported local spread (Germany and Slovakia), 4 reported regional spread (Albania, Latvia, Republic of Moldova and Serbia) and 13 reported widespread activity (across the Region) (Fig. 2).

Figure 1. Intensity of influenza activity in the European Region, week 10/2022

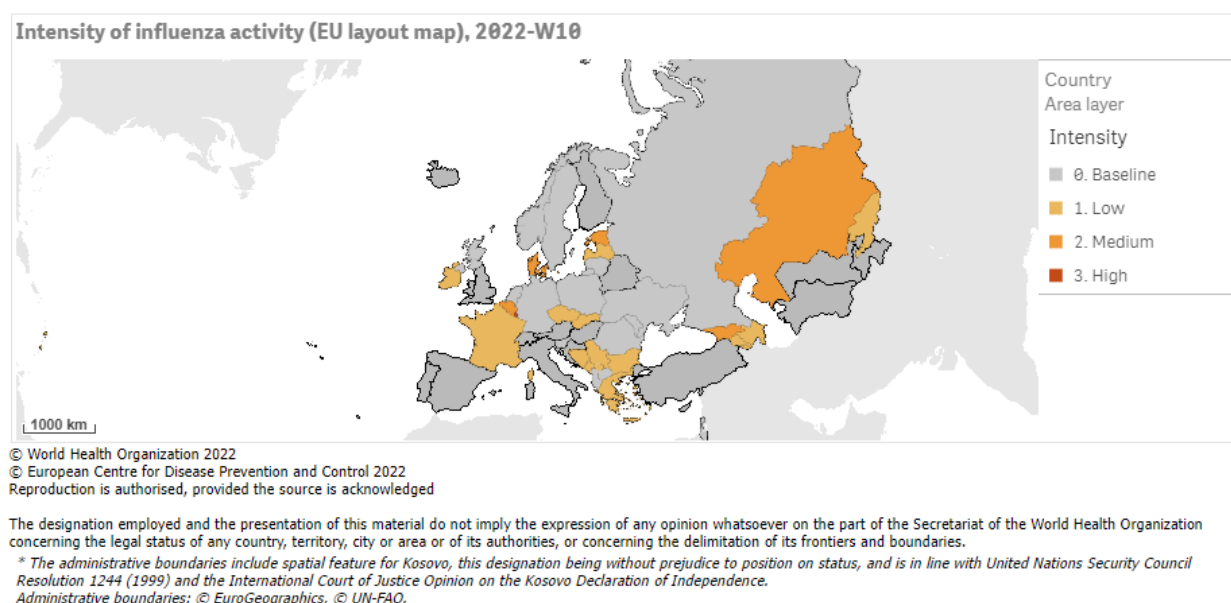
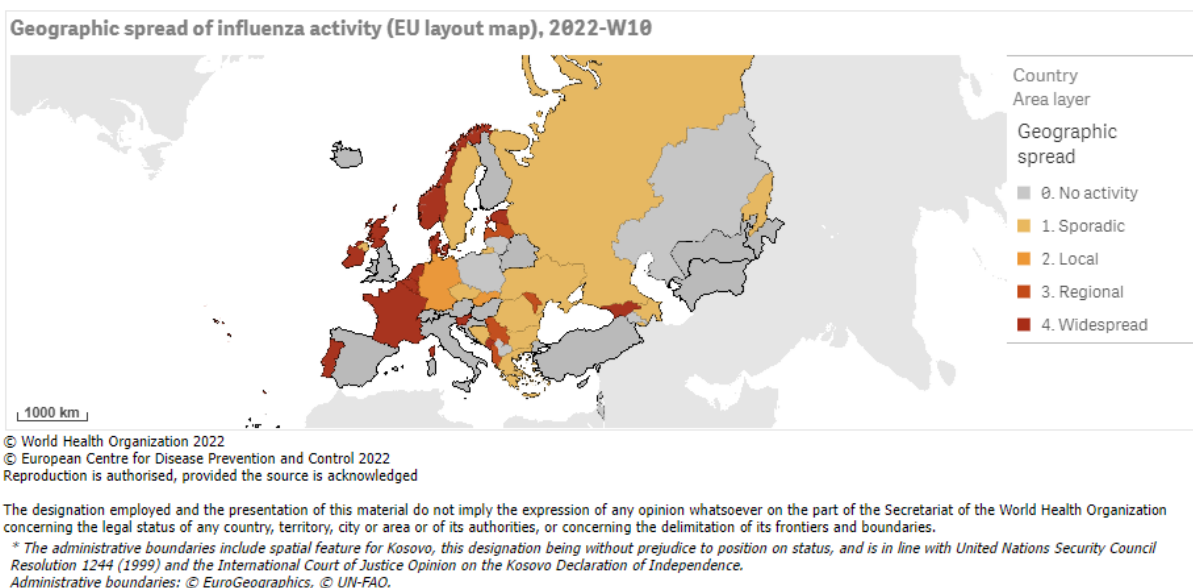


Figure 2. Geographic spread of influenza viruses in the European Region, week 10/2022



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

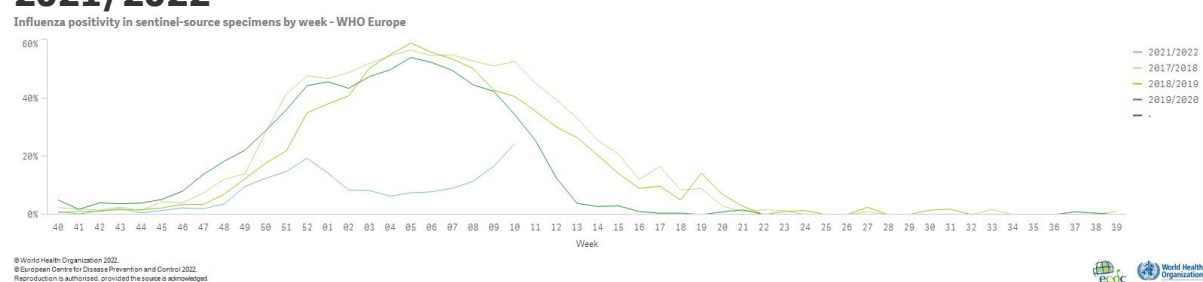
infections other than influenza virus, including SARS-CoV-2, leading to observed increases in the absence of influenza virus detections.

- Assessment of intensity and geographic spread indicators includes consideration of sentinel and non-sentinel influenza virus detection data. Non-sentinel influenza virus detections, 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 24%, well above the epidemic threshold which is set at 10% (Fig. 3).

Figure 3. Influenza virus positivity in sentinel-source specimens by week, WHO European Region, seasons 2017/2018-2019/2020 and 2021/2022



External data sources

Mortality monitoring: Week 10/2022 overall pooled EuroMOMO estimates of all-cause mortality for the participating European countries showed signs of decreasing excess mortality among the elderly (65 years or older) and among older adults (45 to 64 years of age). Data from 23 European countries or subnational regions were included in this pooled analysis of all-cause mortality. The full EuroMOMO report can be found here: <https://www.euromomo.eu/>.

Primary care data

Syndromic surveillance data

Of the countries and areas in which thresholds for ILI activity are defined, countries in eastern (n=2; Azerbaijan and Georgia), northern (n=4; Denmark,

Estonia, Ireland and Latvia), southern (n=2; Montenegro and Serbia) and western (n=2; Belgium and Luxembourg) 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 northern (n=2; Estonia and Latvia) 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 10/2022, 226 (24%) of 931 sentinel specimens tested positive for an influenza virus; 225 (~100%) were type A and 1 was type B. Of 166 subtyped A viruses, 95% were A(H3) and 5% A(H1)pdm09 (Fig. 4 and Table 1). Of 20 countries or areas across the Region that each tested at least 10 sentinel specimens in week 10/2022, 13 reported rates at or above 10%, with 7 of these reporting rates above 30% (median 57%; range 34% - 86%). The 13 countries reporting rates of $\geq 10\%$ were: the Netherlands (85%), Hungary (69%), France (57%), Slovenia (57%), Luxembourg (44%), Denmark (36%), Switzerland (34%), Serbia (26%), United Kingdom (Scotland) (24%), Spain (24%), Italy (23%), Norway (15%) and Republic of Moldova (10%).

For the season to date, 3 083 (8%) of 39 551 sentinel specimens tested positive for an influenza virus. More influenza type A (n=3 045, 99%) than type B (n=38, 1%) viruses have been detected. Of 2 267 subtyped A viruses, 2 094 (92%) were A(H3) and 173 (8%) were A(H1)pdm09. Of 6 influenza type B viruses ascribed to a lineage, all were B/Victoria (84% 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 2021/22

Influenza virus positivity and detections by type, subtype/lineage and week - WHO Europe, season 2021/2022

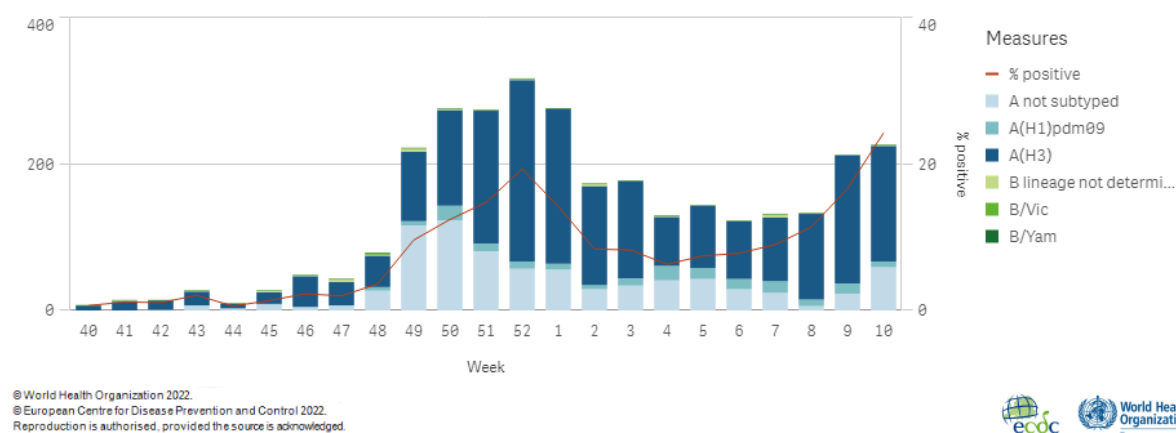


Table 1. Influenza virus detections in sentinel source specimens by type and subtype for week 10/2022 and cumulatively for the season

Sentinel	Current Week (10)		Season 2021-2022	
Virus type and subtype	Number	% ^a	Number	% ^a
Influenza A	225	100	3 045	98.8
A(H1)pdm09	8	4.8	173	7.6
A(H3)	158	95.2	2 094	92.4
A not subtyped	59	-	778	-
Influenza B	1	0.4	38	1.2
B/Victoria lineage	0	-	6	100
B/Yamagata lineage	0	-	0	0
Unknown lineage	1	-	32	-
Total detections (total tested)	226 (931)	24.3	3 083 (39 551)	7.8

^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 10/2022.

Hospital surveillance

A subset of countries and areas monitor severe disease related to influenza virus infection by surveillance of 1) hospitalized laboratory-confirmed influenza cases in ICUs (Czechia, France, Ireland, Sweden and the UK-England) or other wards (Czechia, Ireland and Ukraine), or 2) severe acute respiratory infection (SARI; mainly in the eastern part of the Region).

Laboratory-confirmed hospitalized cases

1.1) Hospitalized laboratory-confirmed influenza cases – ICUs

For week 10/2022, 22 laboratory-confirmed influenza cases were reported from ICU wards (in France and United Kingdom (England)). Influenza type A viruses (95%, n=21) were detected more frequently than influenza type B viruses (5%, n=1) (Fig. 5 and 6).

Since week 40/2021, more influenza type A (n=322, 96%) than type B (n=13, 4%) viruses were detected. Of 75 subtyped influenza A viruses, 36% were A(H1)pdm09 and 64% were A(H3). No influenza B viruses were ascribed to a lineage. Of 245 cases with known age, 112 were 15-64 years old, 70 were 65 years and older, 38 were 0-4 years old and 25 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 2021/2022

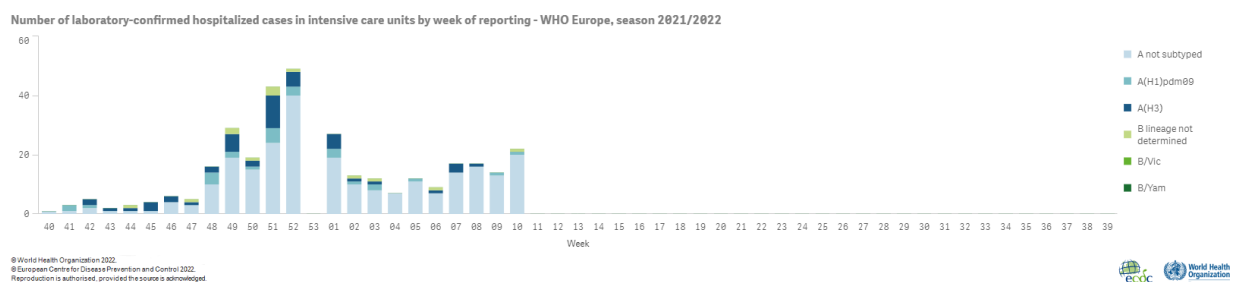
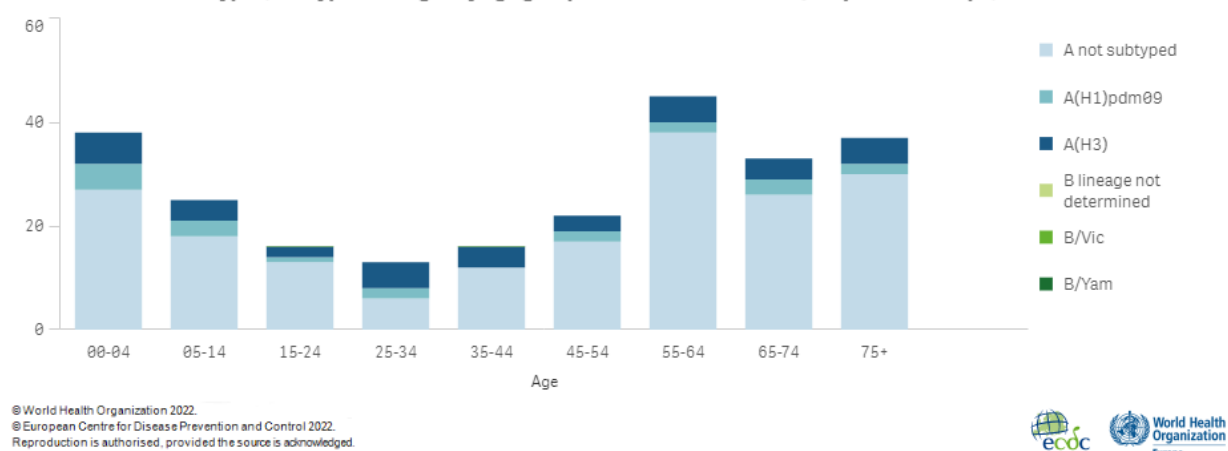


Figure 6. Distribution of influenza virus types, subtypes/lineages by age group in intensive care units (ICU), WHO European Region, season 2021/2022

Distribution of virus types, subtypes/lineages by age group in intensive care units (ICU) - WHO Europe, season 2021/2022



1.2) Hospitalized laboratory-confirmed influenza cases – other wards

Among laboratory-confirmed influenza cases reported in wards other than ICUs in week 10/2022 (n = 27), all were reported from Ireland and typed as influenza A viruses (Fig. 7 and 8).

Since week 40/2021, 224 influenza type A viruses and 2 influenza type B viruses were detected. Of 58 subtyped influenza A viruses, all were A(H3). The 226 patients fell in 4 age groups: 93 were 65 years and older, 91 were 15-64 years old, 27 were 0-4 years old and 15 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 2021/2022

Number of laboratory-confirmed hospitalized cases in wards other than intensive care units (non-ICU) by week of reporting - WHO Europe, season 2021/2022

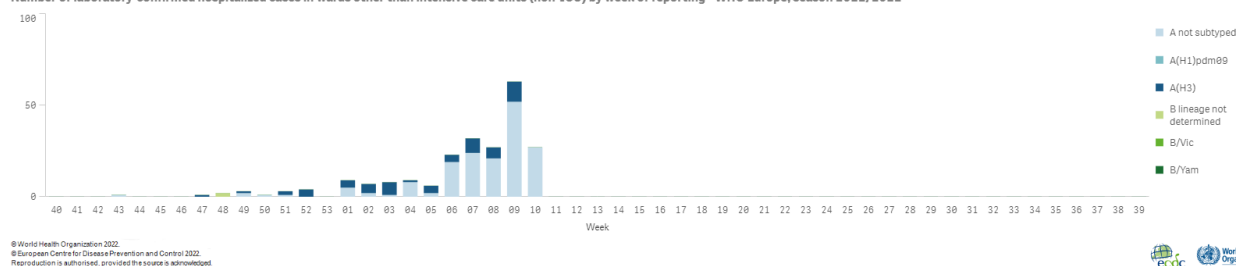
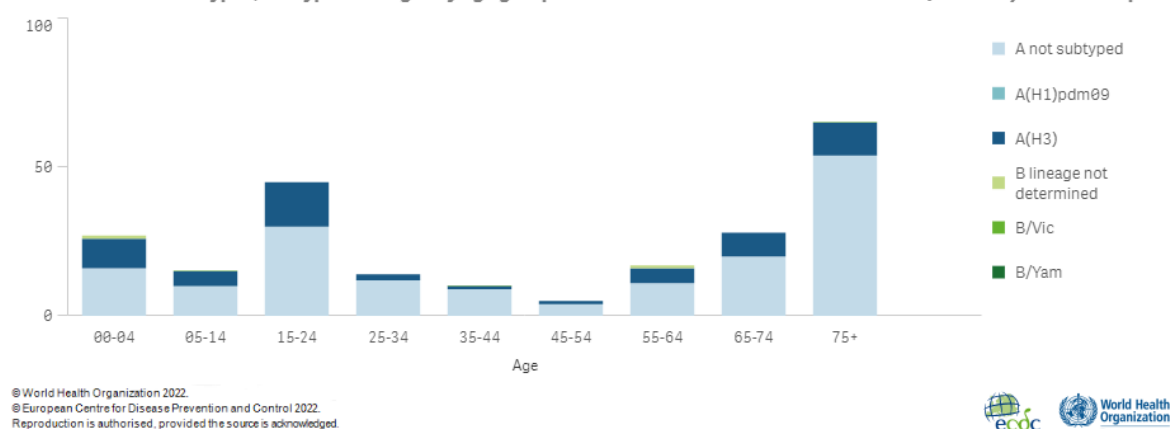


Figure 8. Distribution of influenza virus types, subtypes/lineages by age group in wards other than intensive care units (non-ICU), WHO European Region, season 2021/2022

Distribution of virus types, subtypes/lineages by age group in wards other than intensive care units (non-ICU) - WHO Europe...



Severe acute respiratory infection (SARI)-based hospital surveillance

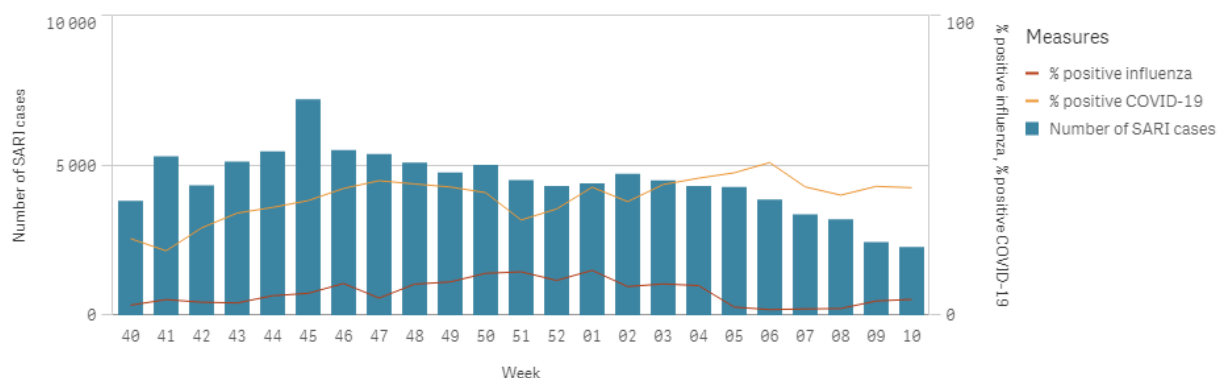
For week 10/2022, 2 283 SARI cases were reported by 13 countries or areas (Albania, Armenia, Georgia, Germany, Kazakhstan, Kyrgyzstan, Lithuania, Malta, Republic of Moldova, Russian Federation, Serbia, Spain and Ukraine). Of 246 specimens tested for influenza viruses, 5% (n=13) were positive. Of these, influenza type A viruses (n=10, 77%) were detected more frequently than influenza type B viruses (n=3, 23%) (Fig. 9 and 10). The highest positivity rate for influenza viruses was reported by Malta (18%).

For the season, 103 311 SARI cases were reported by 19 countries or areas (Albania, Armenia, Belarus, Georgia, Germany, Kazakhstan, Kyrgyzstan, Lithuania, Malta, Montenegro, North Macedonia, Republic of Moldova, Russian Federation, Serbia, Spain, Turkey, Ukraine, Uzbekistan and Kosovo* (in accordance with Security Council resolution 1244 (1999))).

Of 950 SARI cases testing positive for influenza virus since week 40/2021, type A viruses have been the most common (n=934, 98%). For 819 cases where influenza virus subtyping was performed, 817 (99.8%) were infected by A(H3) viruses and 2 (0.2%) were infected by A(H1)pdm09 viruses. Of the 19 influenza B viruses detected, none were ascribed to a lineage (Fig. 10).

Figure 9. Number of severe acute respiratory infection (SARI) cases (bar) and positivity for influenza and COVID-19 (line) by week, WHO European Region, season 2021/2022

Number of severe acute respiratory infection (SARI) cases (bar) and positivity for influenza and COVID-19 (line) by week of re...

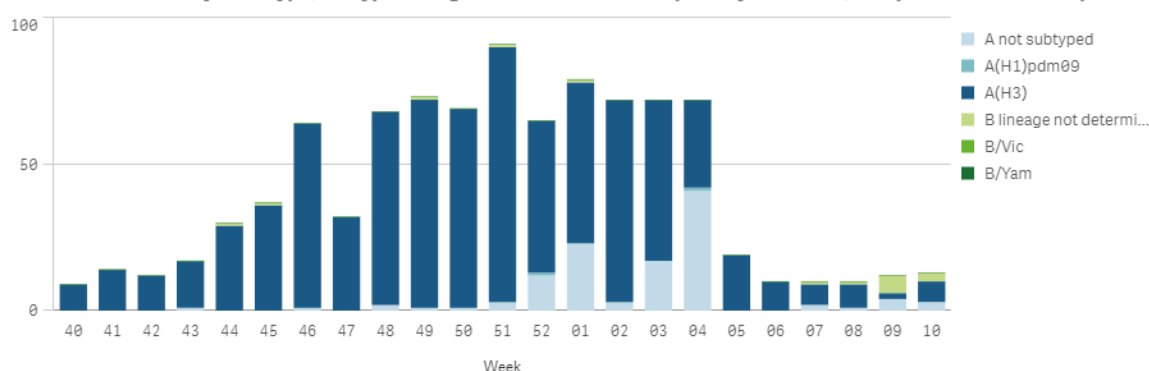


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Figure 10. Influenza virus detections by type, subtype/lineage from severe acute respiratory infection (SARI), WHO European Region, season 2021/2022

Influenza detections by virus type, subtype/lineage from severe acute respiratory infection (SARI) surveillance in hospitals - ...



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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 10/2022, 5 851 of 68 218 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; 5 826 (~100%) were type A and 25 (<1%) were type B. Of 738 subtyped A

viruses, 665 (90%) were A(H3) and 73 (10%) were A(H1)pdm09. No B viruses were ascribed to a lineage (Fig. 11 and Table 2).

For the season to date, more influenza type A (n=50 401, 97%) than type B (n=1 565, 3%) viruses have been detected. Of 16 234 subtyped A viruses, 15 002 (92%) were A(H3) and 1 232 (8%) were A(H1)pdm09. Of 16 influenza type B viruses ascribed to a lineage, all were B/Victoria (99% of type B viruses were reported without a lineage) (Fig. 11 and Table 2).

Figure 11. Influenza virus detections by type, subtype/lineage and week, non-sentinel sources, WHO European Region, season 2021/2022

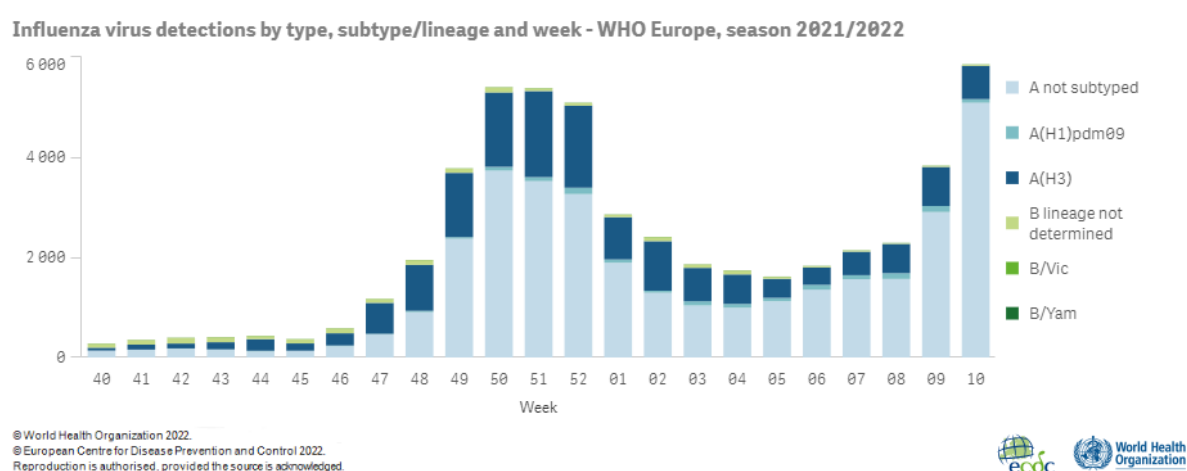


Table 2. Influenza virus detections in non-sentinel source specimens by type and subtype, week 10/2022 and cumulative for the season

Virus type and subtype	Current Week (10)		Season 2021-2022	
	Number	% ^a	Number	% ^a
Influenza A	5 826	99.6	50 401	97.0
A(H1)pdm09	73	9.9	1 232	7.6
A(H3)	665	90.1	15 002	92.4
A not subtyped	5 088	-	34 167	-
Influenza B	25	0.4	1 565	3.0
B/Victoria lineage	0	-	16	100
B/Yamagata lineage	0	-	0	0
Unknown lineage	25	-	1 549	-
Total detections (total tested)	5 851 (68 218)	-	51 966 (1 849 356)	-

^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

Up to week 10/2022, 1 160 A(H3) viruses had been characterized genetically, 1 152 of which were attributed to clade 3C.2a1b.2a.2, 7 to clade 3C.2a1b.1a and 1 to clade 3C.2a1b.2a.1. Of 108 genetically characterized A(H1)pdm09 viruses, 91 were attributed to clade 6B.1A.5a.1, 10 to clade 6B.1A.5a.2 and 7 were either not attributed to a clade or not of a recognized group.

Up to week 10/2022, 10 B/Victoria viruses had been characterized genetically, 7 were clade V1A.3a.2, 2 belonged to clade V1A.3 and 1 was not attributed to a clade. Seven viruses were characterized as B/Yamagata, however, the possibility that they were derived from live attenuated influenza vaccine (LAIV) could not be excluded.

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

Number of influenza viruses attributed to genetic groups, cumulative for the season - WHO Europe	
<div>Virus Type</div> <div>Virus Subtype</div> <div>Genetic charact...</div>	<div>Number of influenza viruses attributed to genetic groups</div> <div>2021/2022</div>
Total	1 285
Influenza A	1 268
A(H1)pdm09	108
A(H1)pdm09_NOClade	1
A(H1)pdm09_SubgroupNotListed	6
A/Guangdong-Maonan/SWL1536/2019(H1N1)pdm09_6B.1A.5a.1	91
A/India/Pun-NIV312851/2021(H1N1)pdm09_6B.1A.5a.2	6
A/Victoria/2570/2019(H1N1)pdm09_6B.1A.5a.2	4
A(H3)	1 160
A/Bangladesh/4005/2020(H3)_3C.2a1b.2a.2	1 152
A/Cambodia/e0826360/2020(H3)_3C.2a1b.2a.1	1
A/Denmark/3264/2019(H3N2)_3C.2a1b.1a	7
Influenza B	17
B/Vic	10
B/Austria/1359417/2021(Victoria lineage_1A.3a.2)	7
B/Victoria_NOClade	1
B/Washington/02/2019(Victoria lineage_1A.3)	2
B/Yam	7
B/Phuket/3073/2013(Yamagata lineage_3)	4
B/Yamagata_NOClade	3

ECDC published the [February](#) virus characterization report that describes the available data from circulating viruses this influenza season: currently type A influenza virus circulation is dominating over type B, due mainly to A(H3) viruses. Vaccination remains the best protective measure for prevention of influenza. However, based on post-infection ferret antisera data, the predominant H3N2 viruses in circulation are not well recognized by antisera raised against viruses genetically and antigenically similar to the vaccine virus, indicating antigenic diversity. Therefore, it is feasible that the A(H3) vaccine component may induce less good recognition of the prevalent A(H3) viruses. Clinicians should therefore consider early antiviral treatment of at-risk groups with influenza infection, according to local guidance, to prevent severe outcomes.

This and previously published influenza virus characterization reports are available on the [ECDC website](#).

Antiviral susceptibility of seasonal influenza viruses

Up to week 10/2022, 1 103 viruses were assessed for susceptibility to neuraminidase inhibitors (694 A(H3), 81 A(H1)pdm09 and 2 B virus genotypically and 304 A(H3), 10 A(H1) and 12 B viruses phenotypically), and 669 viruses were assessed for susceptibility to baloxavir marboxil (595 A(H3), 72 A(H1)pdm09 and 2 B virus genotypically). Phenotypically no viruses with reduced susceptibility were identified and genotypically no markers associated with reduced susceptibility were identified.

Vaccine

[Preliminary results](#) of 2021-2022 seasonal influenza vaccine effectiveness (VE) estimates from the United States showed that VE against medically attended outpatient acute respiratory infection associated with influenza A(H3N2) virus was 16% (95% CI = -16% to 39%), this was interpreted to show that “influenza vaccination did not reduce the risk for outpatient medically attended illness with influenza A(H3N2) viruses that predominated so far this season.”

Available vaccines in Europe

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

Vaccine composition

On 24 September 2021, WHO published [recommendations](#) for the components of influenza vaccines for use in the 2022 southern hemisphere influenza season:

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- 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.

It is recommended that **trivalent influenza vaccines** for use in the 2022 southern hemisphere influenza season 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- 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

The full report is published [here](#).

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

Disclaimer:

** 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 Court of Justice Opinion on the Kosovo Declaration of Independence.*

This weekly update was prepared by an editorial team at the European Centre for Disease Prevention and Control (Cornelia Adlhoch, Carlos Carvalho, and Edoardo Colzani) and the WHO Regional Office for Europe (Margaux Meslé, Piers Mook and Richard Pebody).

External reviewers are: Rod Daniels, WHO Collaborating Centre for Reference and Research on Influenza, Francis Crick Institute (United Kingdom) and Adam Meijer, National Institute for Public Health and the Environment (the Netherlands).

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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