

# Summary

## Week 20/2022 (16 May-22 May 2022)

- 8 of 39 countries across the Region reported widespread influenza activity.
- The percentage of all sentinel primary care specimens from patients presenting with ILI or ARI symptoms that tested positive for an influenza virus decreased to 7% from 10% in the previous week, which is below the epidemic threshold set at 10%.
- Finland, with a rate of 50%, was the only country to report seasonal influenza activity above 30% positivity in sentinel primary care.
- Both influenza type A and type B viruses were detected with A(H3) viruses being dominant across all monitoring systems.
- Hospitalized patients with laboratory confirmed influenza were infected with either type A or B viruses.

## 2021-2022 season overview

- This is the last weekly update of the influenza season and updates during the interseason period (weeks 21-39) will be on a monthly basis.
- For the Region as a whole, influenza activity reached levels well above those observed in the 2020/21 season.
- Influenza activity, based on sentinel primary care specimens from patients presenting with ILI or ARI symptoms, first peaked in week 52/2021 (reaching 19% positivity), declining thereafter until week 4/2022, when it increased again reaching a plateau phase (25-30% positivity) between weeks 10 and 15/2022 (this represents late activity compared to most previous seasons) followed by a subsequent 5-week decline.
- Different timings, epidemiological situations and levels of influenza activity in countries across the Region have been observed over the course of the season, with A(H3) viruses being dominant in all 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](#).
- The European I-MOVE network estimated influenza VE using a multicenter test-negative design among symptomatic patients presenting at primary care between October 2021 and March 2022. Preliminary influenza VE against influenza A among seven study sites and among all ages was 36% (95% CI: 13–53) and 41% (95% CI: 15–59) among those aged 18–64 years. All-age VE against influenza A(H3N2) was 35% (95% CI: 6–54) and 37% (95% CI: 3–59) among those aged 18–64 years. There were too few influenza-positive cases among other age groups to allow VE estimations.
- In [Sweden](#), the vaccine effectiveness against laboratory-confirmed influenza was estimated to be 47% for individuals over 65 years of age.
- According to preliminary data in mainland [France](#), the VE was estimated to be 50% (95% CI: 14-71) against all circulating influenza viruses, 77% (95% CI: 36-92) for A(H1N1)pdm09 and 31% (95% CI: -29-64) for A(H3N2).
- For children aged 2 to 6 years in [Denmark](#), the estimated VE against influenza A viruses was estimated at 63% (95% CI: 10.9–84.4) in those hospitalized, and 64% (95% CI: 50.5–74.1) in those not hospitalized.
- 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 A(H3N2), the dominant influenza virus in circulation, was 16% (95% CI = –16% to 39%).
- Clinicians should consider early antiviral treatment of patients in at-risk groups with influenza virus infection, according to local guidance, to prevent severe outcomes. The majority of 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>

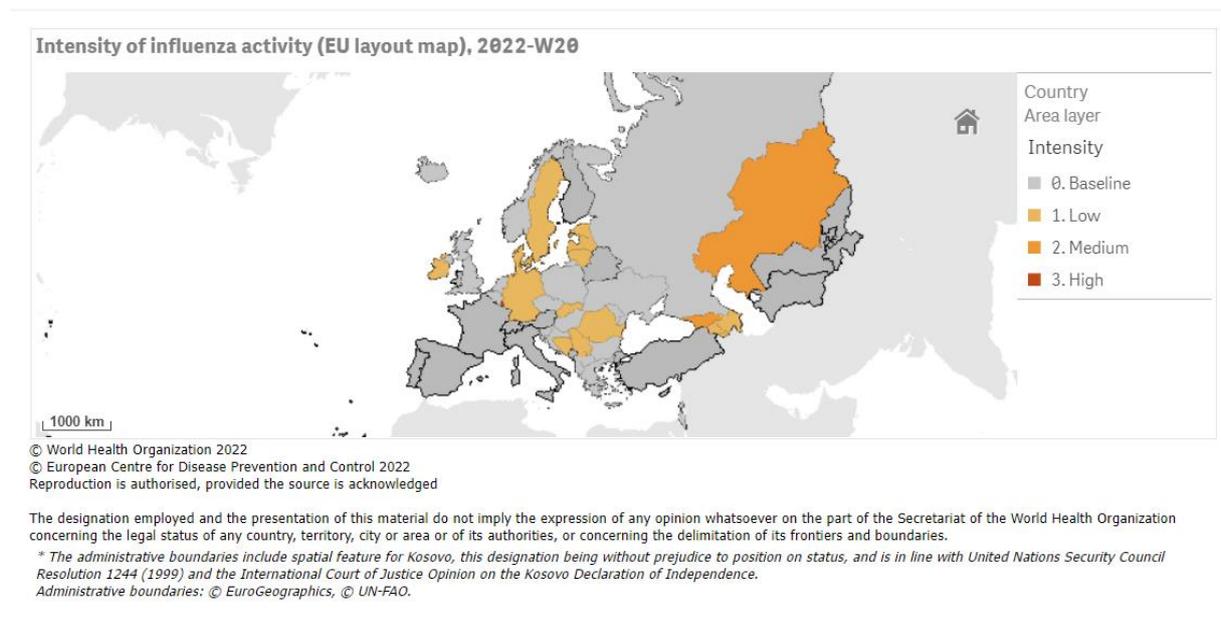
- ECDC website: <https://www.ecdc.europa.eu/en/novel-coronavirus-china>

## Qualitative indicators

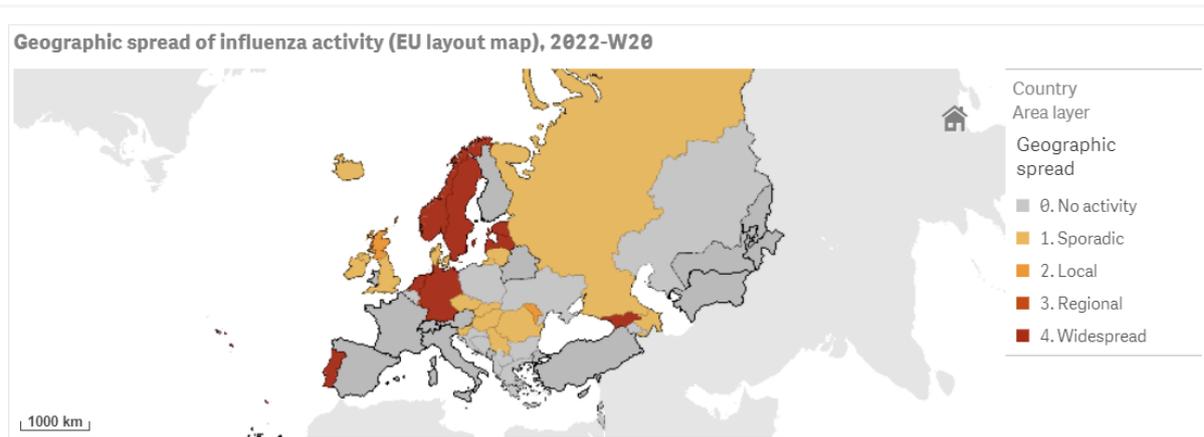
For week 20/2022, of 38 countries and areas reporting on intensity of influenza activity, 21 reported baseline-intensity (across the Region), 14 reported low-intensity (across the Region), 2 reported medium-intensity (Georgia and Kazakhstan) and 1 reported high-intensity (Luxembourg) (Fig. 1).

Of 39 countries and areas reporting on geographic spread of influenza viruses, 14 reported no activity (in eastern, southern and western areas), 14 reported sporadic spread (across the Region), 2 reported local spread (Republic of Moldova and United Kingdom (Scotland)), 1 reported regional spread (Luxembourg) and 8 reported widespread activity (Estonia, Georgia, Germany, Latvia, Netherlands, Norway, Portugal and Sweden) (Fig. 2).

**Figure 1. Intensity of influenza activity in the European Region, week 20/2022**



**Figure 2. Geographic spread of influenza viruses in the European Region, week 20/2022**



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\* 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.  
 Administrative boundaries: © EuroGeographics, © UN-FAO.

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

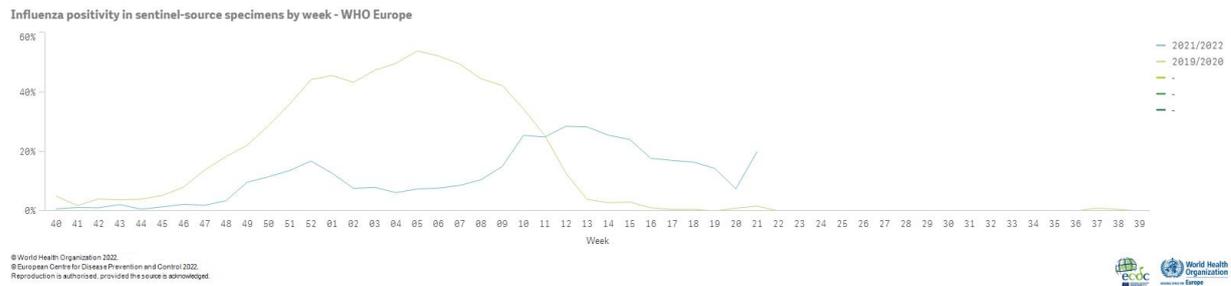
**Please note:**

- 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 decreased from 10% in the previous week to 7% in week 20 which is below the epidemic threshold set at 10% (Fig. 3).

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



## External data sources

**Mortality monitoring:** In week 20/2022 overall pooled EuroMOMO estimates of all-cause mortality for the participating European countries showed decreasing, but still elevated, excess mortality among the elderly (65 years or older). Data from 24 European countries or subnational regions were included in the week's 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=2; Denmark and Latvia) and western (n=1; Luxembourg) areas of the European Region reported activity above baseline levels.

Of the countries and area in which thresholds for ARI activity are defined, only Bulgaria reported activity above its baseline level.

#### 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)

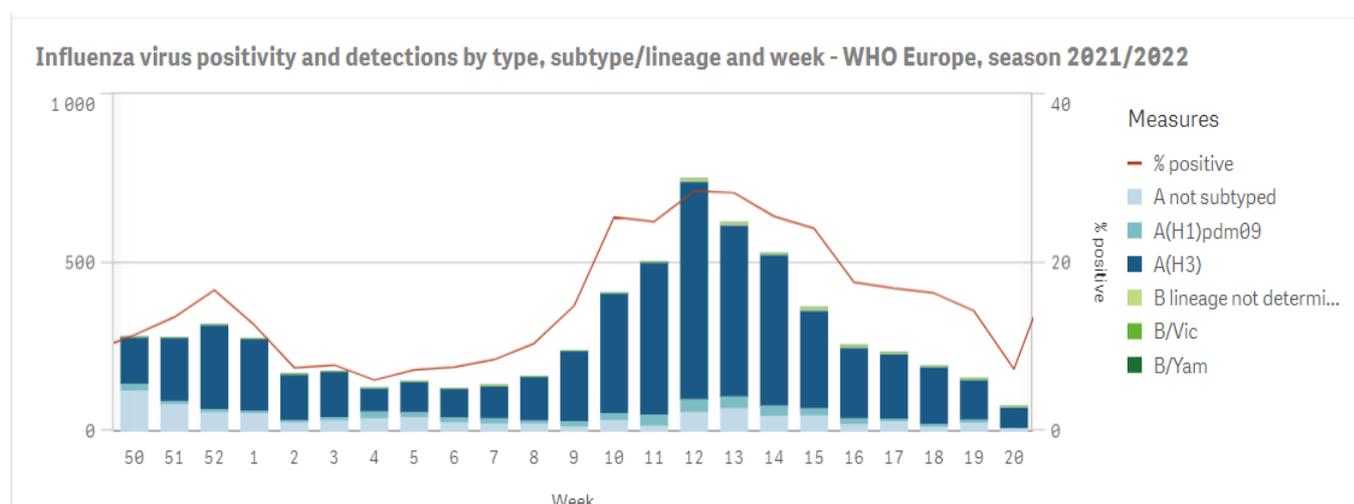
For week 20/2022, 77 (7%) of 1 034 sentinel specimens tested positive for an influenza virus; 72 (94%) were type A and 5 (6%) were type B. Of 62 subtyped

A viruses, 97% were A(H3) and 3% A(H1)pdm09. Only 1 type B virus was ascribed to a lineage and it was B/Victoria (Fig. 4 and Table 1). Of 20 countries or areas across the Region that each tested at least 10 sentinel specimens in week 20/2022, 3 reported a rate of influenza virus detections above 10%: Finland (50%), Poland (19%) and Germany (18%).

For the season to date, 7 063 (12%) of 59 814 sentinel specimens tested positive for an influenza virus. More influenza type A (n=6 962, 99%) than type B (n=101, 1%) viruses have been detected. Of 5 837 subtyped A viruses, 5 449 (93%) were A(H3) and 388 (7%) were A(H1)pdm09. Of 15 influenza type B viruses ascribed to a lineage, all were B/Victoria (85% 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**



**Table 1. Influenza virus detections in sentinel source specimens by type and subtype for week 20/2022 and cumulatively for the season**

Sentinel Virus type and subtype	Current Week (20)		Season 2021-2022	
	Number	% <sup>a</sup>	Number	% <sup>a</sup>
<b>Influenza A</b>	<b>72</b>	<b>93.5</b>	<b>6 962</b>	<b>98.6</b>
A(H1)pdm09	2	3.2	388	6.6
A(H3)	60	96.8	5 449	93.4
A not subtyped	10	-	1 125	-
<b>Influenza B</b>	<b>5</b>	<b>6.5</b>	<b>101</b>	<b>1.4</b>

B/Victoria lineage	1	100	15	100
B/Yamagata lineage	0	-	0	0
Unknown lineage	4	-	86	-
<b>Total detections (total tested)</b>	<b>77 (1 034)</b>	<b>7.4</b>	<b>7 063 (59 814)</b>	<b>11.8</b>

<sup>a</sup> For influenza type percentage calculations, the denominator is total detections; for subtype and lineage, it is total influenza A subtyped and total influenza B lineage determined, respectively; for total detections, it is total tested.

## External data sources

[Influenzaneet](#) 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 20/2022.

## 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 or other wards, or 2) severe acute respiratory infection (SARI).

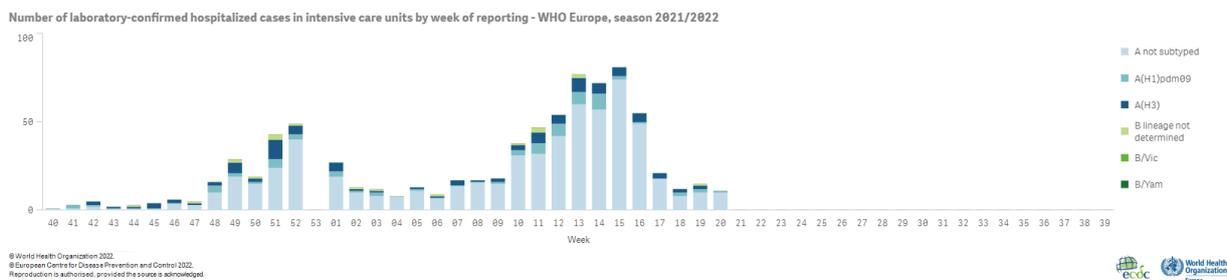
## Laboratory-confirmed hospitalized cases

### 1.1) Hospitalized laboratory-confirmed influenza cases – ICUs

For week 20/2022, 11 laboratory-confirmed influenza cases were reported from ICU wards (in United Kingdom (England)). Only influenza type A viruses (n=11) were detected. One influenza type A virus was assigned to a subtype, and it was A(H1)pmd09 (Fig. 5 and 6).

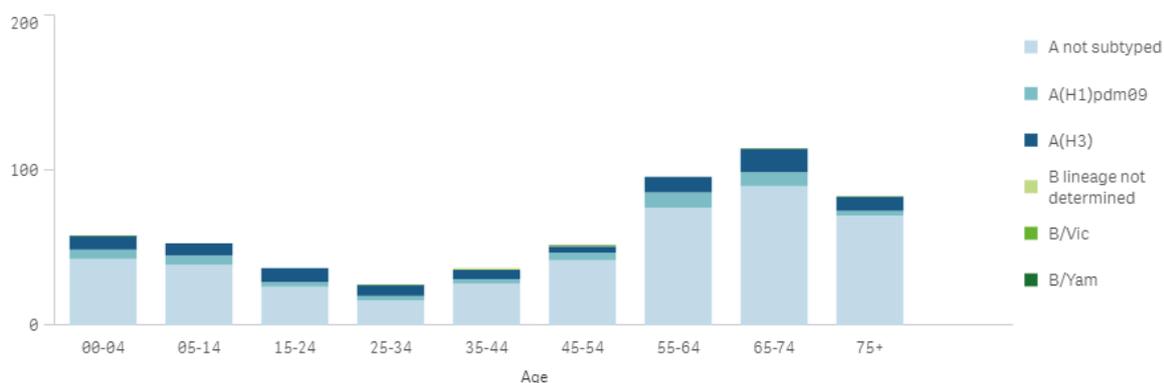
Since week 40/2021, more influenza type A (n=783, 97.6%) than type B (n=19, 2.4%) viruses were detected (in Czechia, France, Ireland, Sweden and United Kingdom (England)). Of 162 subtyped influenza A viruses, 59% were A(H3) and 41% were A(H1)pdm09. No influenza B viruses were ascribed to a lineage. Of 556 cases with known age, 248 were 15-64 years old, 197 were 65 years and older, 58 were 0-4 years old and 53 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

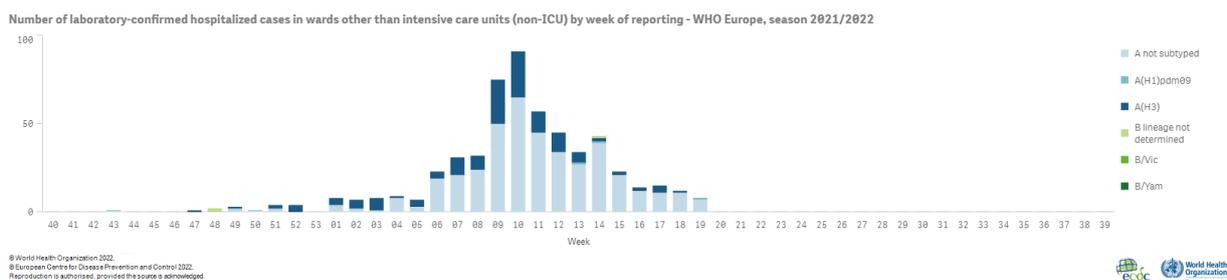


## 1.2) Hospitalized laboratory-confirmed influenza cases – other wards

There were no reports of hospitalized laboratory-confirmed influenza cases in other wards during week 20/2022 (Fig. 7 and 8).

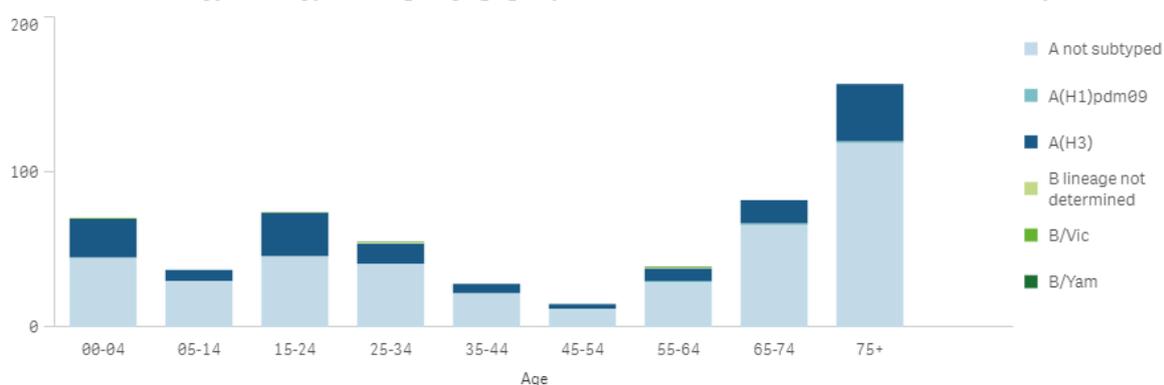
Since week 40/2021, 555 influenza type A viruses and 3 influenza type B viruses were detected (in Czechia, Ireland and Ukraine). Of 145 subtyped influenza A viruses, 98% were A(H3) and 2% A(H1)pdm09. The 558 cases with known age fell in 4 age groups: 239 were 65 years and older, 211 was 15-64 years old, 71 was 0-4 years old and 37 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**



**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...



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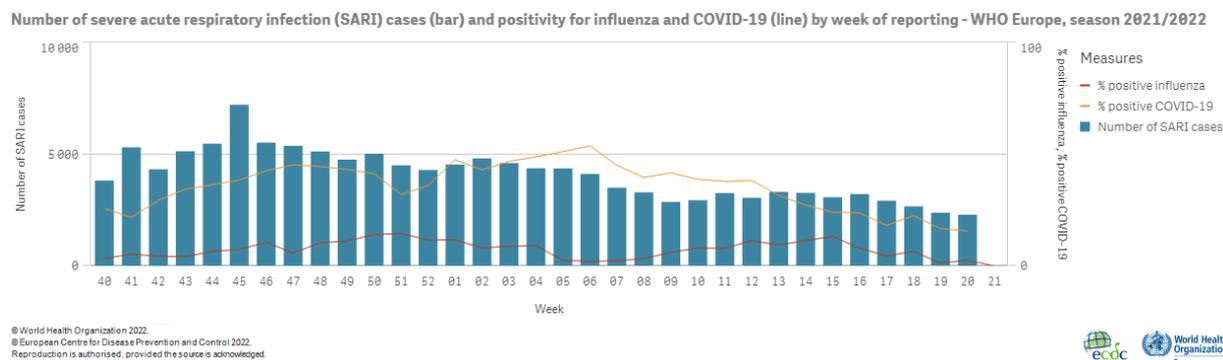


## Severe acute respiratory infection (SARI)-based hospital surveillance

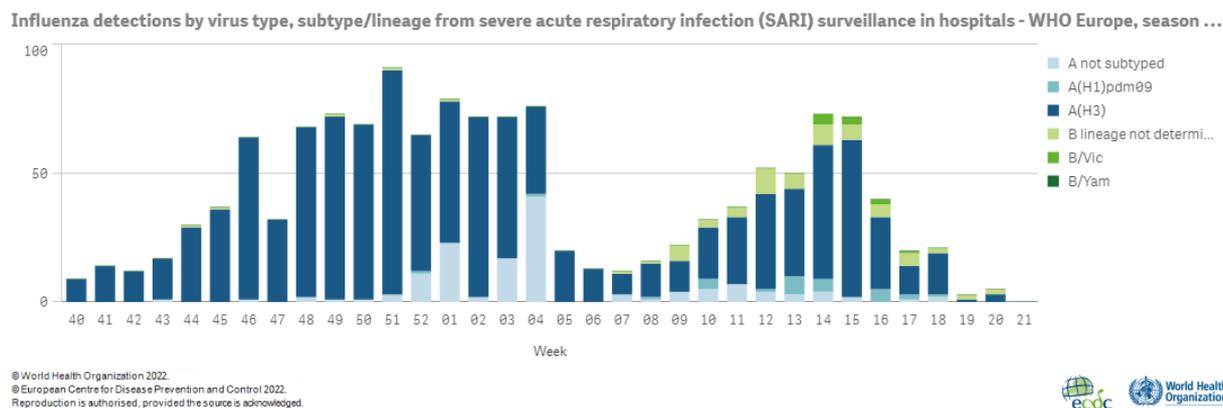
For week 20/2022, 2 278 SARI cases were reported by 15 countries or areas (Albania, Armenia, Belgium, Georgia, Germany, Ireland, Kazakhstan, Kyrgyzstan, Lithuania, North Macedonia, Republic of Moldova, Russian Federation, Serbia, Spain and Ukraine). Of 213 specimens tested for influenza viruses, 2% (n=5) were positive. Of these, influenza type A viruses (n=3) were detected more frequently than influenza type B viruses (n=2). Of 3 subtyped influenza type A viruses, all were A(H3) (Fig. 9 and Fig. 10). No country reported positivity rates above 10%.

For the season, 134 201 SARI cases were reported by 23 countries or areas (Albania, Armenia, Belarus, Belgium, Croatia, Georgia, Germany, Ireland, Kazakhstan, Kyrgyzstan, Lithuania, Malta, Montenegro, North Macedonia, Republic of Moldova, Romania, Russian Federation, Serbia, Spain, Turkey, Ukraine, Uzbekistan and Kosovo (in accordance with Security Council resolution 1244 (1999))). For SARI cases testing positive for influenza virus since week 40/2021, type A viruses have been the most common (n=1 292, 94%). For 1 153 cases where influenza virus subtyping was performed, 1125 (98%) were infected by A(H3) viruses and 28 (2%) were infected by A(H1)pdm09 viruses. Of those influenza B viruses that have been ascribed to a lineage (n=10, 6%), 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 2021/2022**



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



## Virus characteristics

Details of the distribution of viruses detected in sentinel-source specimens can be found in the [Primary care data](#) section.

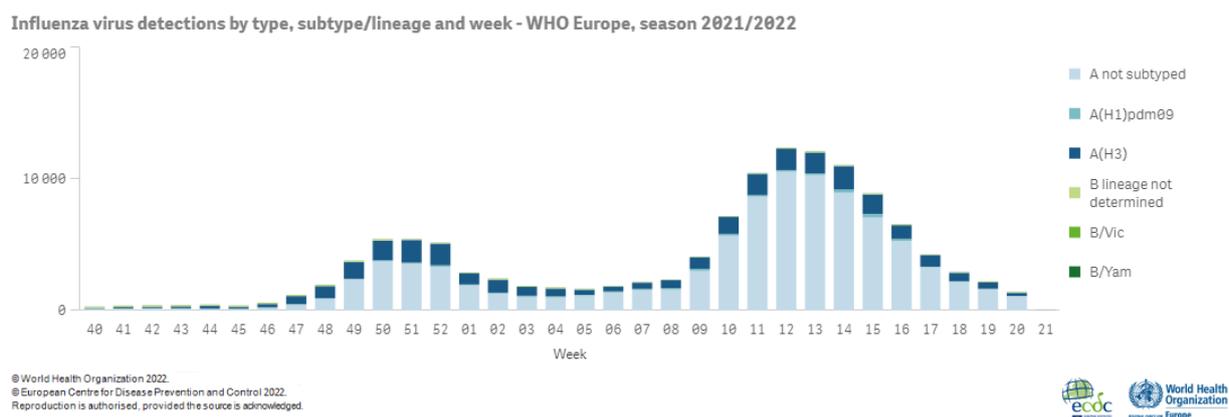
## Non-sentinel virologic data

For week 20/2022, 1 396 of 41 611 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; 1 344 (96%) were type A and 52 (4%) were type B. Of 236 subtyped A viruses, 234 (99%) were A(H3) and 2 (1%) were A(H1)pdm09. Of 3 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=123 835, 98%) than type B (n=2 201, 2%) viruses have been detected. Of 29 762 subtyped A viruses, 27 297 (92%)

were A(H3) and 2 465 (8%) were A(H1)pdm09. Of 96 influenza type B viruses ascribed to a lineage, 96% were B/Victoria and 4% were B/Yamagata (96% 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 20/2022 and cumulative for the season**

Virus type and subtype	Current Week (20)		Season 2021-2022	
	Number	% <sup>a</sup>	Number	% <sup>a</sup>
<b>Influenza A</b>	<b>1 344</b>	<b>96.3</b>	<b>123 835</b>	<b>98.3</b>
A(H1)pdm09	2	0.8	2 465	8.3
A(H3)	234	99.2	27 297	91.7
A not subtyped	1 108	-	94 073	-
<b>Influenza B</b>	<b>52</b>	<b>3.7</b>	<b>2 201</b>	<b>1.7</b>
B/Victoria lineage	3	100	92	95.8
B/Yamagata lineage	0	0	4	4.2
Unknown lineage	49	-	2 105	-
<b>Total detections (total tested)</b>	<b>1 396 (41 611)</b>	<b>-</b>	<b>126 036 (2 554 328)</b>	<b>-</b>

<sup>a</sup> For type percentage calculations, the denominator is total detections; for subtype and lineage, it is total influenza A subtyped and total influenza B lineage determined, respectively; as not all countries have a true non-sentinel testing denominator, no percentage calculations for total tested are shown.

## Genetic characterization

Of the 309 genetically characterized A(H1)pdm09 viruses up to week 20/2022, the majority (282; 91%) belonged to clade 6B.1A.5a.1, represented by A/Guangdong-Maonan/SWL1536/2019. Only a few viruses belonged to clade 6B.1A.5a.2: 8 (3%) were represented by A/India/Pun-NIV312851/2021 and 18 (6%) were represented by A/Victoria/2570/2019, the virus component for the 2021/22 and 2022/23 northern hemisphere vaccines. 1 virus was not attributed to a clade.

Among the A(H3) viruses characterized up to week 20/2022, 3 121 were attributed to a clade. The majority 3 105 (99%) belonged to clade 3C.2a1b.2a.2, represented by the A/Darwin/9/2021 component of 2022/23 northern hemisphere vaccines. Only 15 (<1%) were clade 3C.2a1b.1a viruses and 1 (<1%) virus fell into clade 3C.2a1b.2a.1.

Up to week 20/2022, 63 B/Victoria viruses were characterized. 37 of the viruses belonged to clade V1A.3a.2, represented by B/Austria/1359417/2021, the recommended vaccine virus for the 2022/23 northern hemisphere influenza season. 24 of the viruses fell into clade V1A.3, represented by B/Washington/02/2019, the recommended vaccine virus strain for the 2021/22 northern hemisphere influenza season, and 2 were not attributed to a clade.

7 viruses were characterized as B/Yamagata with 4 being B/Phuket/3073/2013-like, while 3 viruses were not attributed to a clade. However, the possibility that these 7 viruses 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

Virus Type	Virus Subtype	Genetic charact...	Number of influenza viruses attributed to genetic groups 2021/2022
<b>Total</b>			<b>3 500</b>
<b>Influenza A</b>			<b>3 430</b>
<b>A(H1)pdm09</b>			<b>309</b>
	A(H1)pdm09_NOClade *		1
	A/Guangdong-Maonan/SWL1536/2019(H1N1)pdm09_6B.1A.5a.1		282
	A/India/Pun-NIV312851/2021(H1N1)pdm09_6B.1A.5a.2		8
	A/Victoria/2570/2019(H1N1)pdm09_6B.1A.5a.2		18
<b>A(H3)</b>			<b>3 121</b>
	A/Bangladesh/4005/2020(H3)_3C.2a1b.2a.2		3 105
	A/Cambodia/e0826360/2020(H3)_3C.2a1b.2a.1		1
	A/Denmark/3264/2019(H3N2)_3C.2a1b.1a		15
<b>Influenza B</b>			<b>70</b>
<b>B/Vic</b>			<b>63</b>
	B/Austria/1359417/2021(Victoria lineage_1A.3a.2)		37
	B/Victoria_NOClade *		1
	B/Washington/02/2019(Victoria lineage_1A.3)		24
	BVic_SubgroupNotListed *		1
<b>B/Yam</b>			<b>7</b>
	B/Phuket/3073/2013(Yamagata lineage_3)		4
	B/Yamagata_NOClade *		3

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

ECDC published the [March](#) virus characterization report that describes the available data from circulating viruses this influenza season: currently type A influenza virus circulation was 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 A(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 possible that the A(H3) vaccine component may induce less good recognition of the prevalent A(H3) viruses, although [preliminary VE data](#) indicates a still moderate level of protection against laboratory confirmed infection. 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 20/2022, 2 547 viruses were assessed for susceptibility to neuraminidase inhibitors (1 715 A(H3), 258 A(H1)pdm09 and 54 B viruses genotypically and 476 A(H3), 31 A(H1)pdm09 and 13 B viruses phenotypically), and 1 792 viruses were assessed for susceptibility to baloxavir marboxil (1 528 A(H3), 227 A(H1)pdm09 and 37 B viruses genotypically). Phenotypically, no viruses with reduced susceptibility were identified and genotypically 2 A(H3) viruses with potentially reduced susceptibility to baloxavir marboxil and 1 A(H1)pdm09 virus with potential highly reduced inhibition by oseltamivir were identified.

## Vaccine effectiveness

The European I-MOVE network estimated influenza vaccine effectiveness (VE) using a multicentre test-negative design among symptomatic patients presenting at primary care level between October 2021 and March 2022. Preliminary influenza VE against influenza A among seven study sites and among all ages was 36% (95% CI: 13–53) and 41% (95% CI: 15–59) among those aged 18–64 years. All-age VE against influenza A(H3N2) was 35% (95% CI: 6–54) and 37% (95% CI: 3–59) among those aged 18–64 years. There were too few influenza-positive cases among other age groups to allow VE estimations.

In [Sweden](#), the VE against laboratory-confirmed influenza was estimated to be 47% for individuals over 65 years of age.

According to [preliminary data in mainland France](#), the VE was estimated to be 50% (95% CI: 14–71) against all circulating influenza viruses, 77% (95% CI: 36–92) for A(H1N1)pdm09 and 31% (95% CI: -29–64) for A(H3N2).

For children aged 2 to 6 years in [Denmark](#), the estimated VE against influenza A viruses was estimated at 63% (95% CI: 10.9–84.4) in those hospitalised, and 64% (95% CI: 50.5–74.1) in those non-hospitalised.

[Preliminary results](#) of 2021–2022 seasonal influenza 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:

The WHO recommends that quadrivalent vaccines for use in the 2022 influenza season in the southern 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- 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.*

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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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