

# Summary

## Week 13/2022 (28 March – 3 April 2022)

- 11 of 38 countries across the Region reported widespread influenza activity.
- The percentages of all sentinel primary care specimens from patients presenting with ILI or ARI symptoms that tested positive for an influenza virus have remained at similar levels, around 27%, for the last four weeks.
- Countries, mostly in the western-central part of the Region, reported seasonal influenza activity above 30% positivity in sentinel primary care: Netherlands (72%), Luxembourg (62%), Norway (62%), France (60%), Slovenia (60%), Italy (53%), Hungary (51%), Poland (50%), Serbia (47%), Belgium (40%) and Spain (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 has increased and remains well above what was seen in 2020-2021 but is still 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, first peaked in week 52/2021 (when it reached 20% positivity), declining thereafter until week 4/2022 and reaching a plateau phase (26-28%) since week 10/2022.
- 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 A(H3N2), the dominant influenza virus in circulation, was 16% (95% CI = -16% to 39%).
- 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).
- With increased circulation of influenza viruses 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:

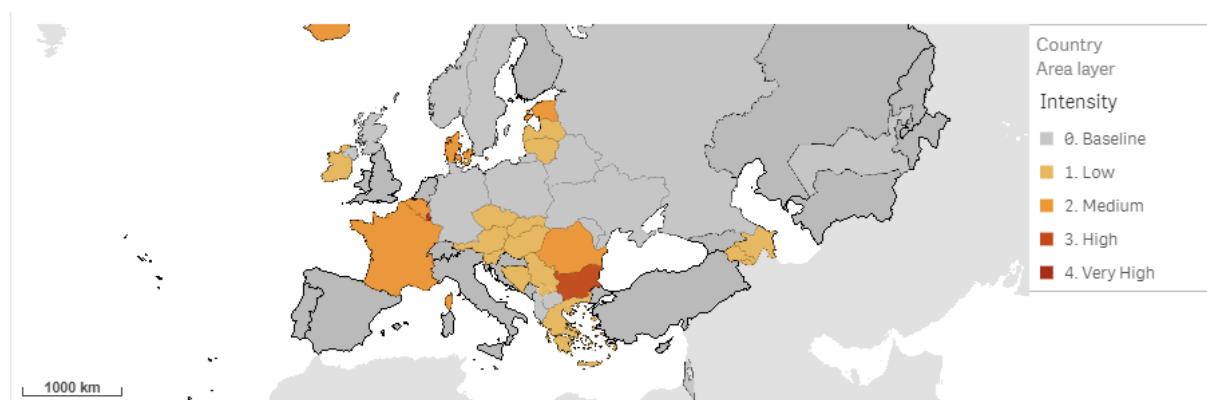
- WHO website: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
- ECDC website: <https://www.ecdc.europa.eu/en/novel-coronavirus-china>

## Qualitative indicators

For week 13/2022, of 37 countries and areas reporting on intensity of influenza activity, 15 reported baseline-intensity (across the Region) and 14 reported low-intensity (across the Region), 6 reported medium-intensity (Belgium, Denmark, Estonia, France, Iceland and Romania), 1 reported high-intensity (Bulgaria) and 1 reported very high-intensity (Luxembourg) (Fig. 1).

Of 38 countries and areas reporting on geographic spread of influenza viruses, 8 reported no activity (Armenia, Belarus, Israel, North Macedonia, Poland, Ukraine, Uzbekistan and Kosovo (in accordance with UN Security Council Resolution 1244 (1999))), 7 reported sporadic spread (Albania, Azerbaijan, Bosnia and Herzegovina, Greece, Republic of Moldova, Russian Federation and United Kingdom (Northern Ireland)), 5 reported local spread (Czechia, Germany, Malta, Romania and Slovakia), 7 reported regional spread (Austria, Bulgaria, Latvia, Lithuania, Serbia, Sweden and United Kingdom (Scotland)) and 11 reported widespread activity (across the Region) (Fig. 2).

**Figure 1. Intensity of influenza activity in the European Region, week 13/2022**

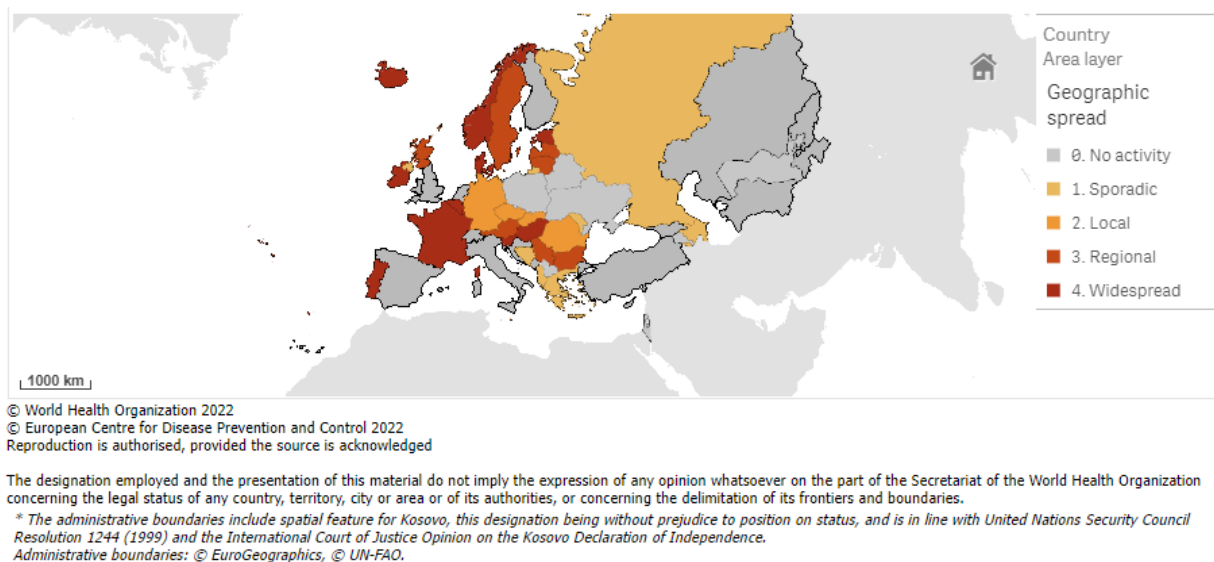


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\* The administrative boundaries include spatial feature for Kosovo, this designation being without prejudice to position on status, and is in line with United Nations Security Council Resolution 1244 (1999) and the International Court of Justice Opinion on the Kosovo Declaration of Independence.  
Administrative boundaries: © EuroGeographics, © UN-FAO.

**Figure 2. Geographic spread of influenza viruses in the European Region, week 13/2022**



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

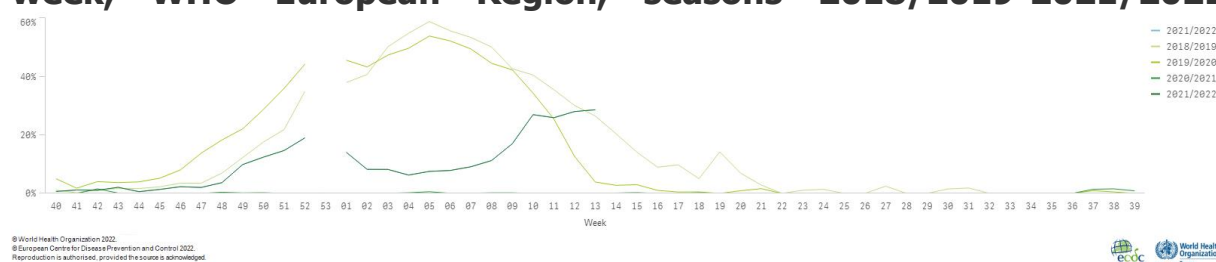
### Please note:

- 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 remained around 28% for the fourth consecutive week, 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 2018/2019-2021/2022**



## External data sources

**Mortality monitoring:** Week 13/2022 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 26 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=1; Azerbaijan), northern (n=6; Denmark, Estonia, Iceland, Ireland, Latvia and Lithuania), southern (n=3; Greece, Romania and Serbia) and western (n=5; Austria, Belgium, Hungary, Luxembourg 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=1; Uzbekistan), northern (n=2; Estonia and Latvia) and southern (n=2; Bulgaria and Romania) 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.

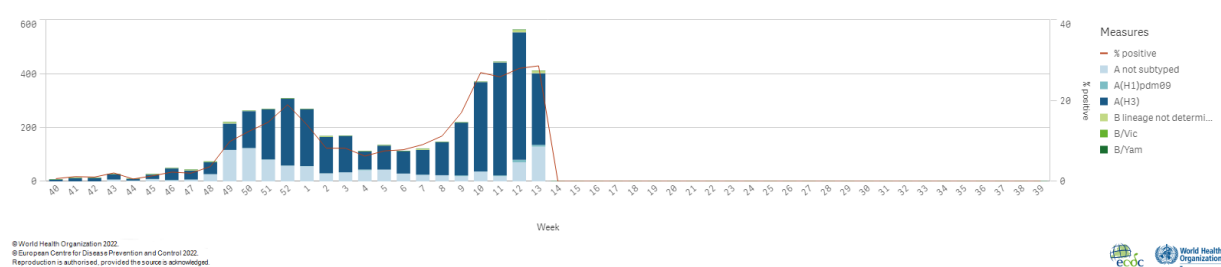
## Viruses detected in sentinel-source specimens (ILI and ARI)

For week 13/2022, 432 (28%) of 1 534 sentinel specimens tested positive for an influenza virus; 423 (98%) were type A and 9 (2%) were type B. Of 294 subtyped A viruses, 90% were A(H3) and 10% A(H1)pdm09. No type B viruses were ascribed to a lineage (Fig. 4 and Table 1). Of 25 countries or areas across the Region that each tested at least 10 sentinel specimens in week 13/2022, 16 reported a rate of influenza virus detections at or above 10% (median 48%; range 20% - 72%): Netherlands (72%), Luxembourg (62%), Norway (62%), France (60%), Slovenia (60%), Italy (53%), Hungary (51%), Poland (50%), Serbia (47%), Belgium (40%), Spain (34%), Switzerland (25%), Georgia (24%), Bulgaria (22%), Estonia (21%) and Austria (20%).

For the season to date, 4 824 (10%) of 46 304 sentinel specimens tested positive for an influenza virus. More influenza type A (n=4 765, 99%) than type B (n=59, 1%) viruses have been detected. Of 3 772 subtyped A viruses, 3 488 (92%) were A(H3) and 284 (8%) were A(H1)pdm09. Of 7 influenza type B viruses ascribed to a lineage, all were B/Victoria (88% 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 13/2022 and cumulatively for the season**

Sentinel	Current Week (13)		Season 2021-2022	
Virus type and subtype	Number	% <sup>a</sup>	Number	% <sup>a</sup>
<b>Influenza A</b>	<b>423</b>	<b>98</b>	<b>4 765</b>	<b>98.8</b>
A(H1)pdm09	28	9.5	284	7.5

A(H3)	266	90.5	3 488	92.5
A not subtyped	129	-	993	-
<b>Influenza B</b>	<b>9</b>	<b>2.1</b>	<b>59</b>	<b>1.2</b>
B/Victoria lineage	0	-	7	100
B/Yamagata lineage	0	-	0	0
Unknown lineage	9	-	52	-
<b>Total detections (total tested)</b>	<b>432 (1 534)</b>	<b>28.2</b>	<b>4 824 (46 304)</b>	<b>10.4</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

[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 13/2022.

## 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

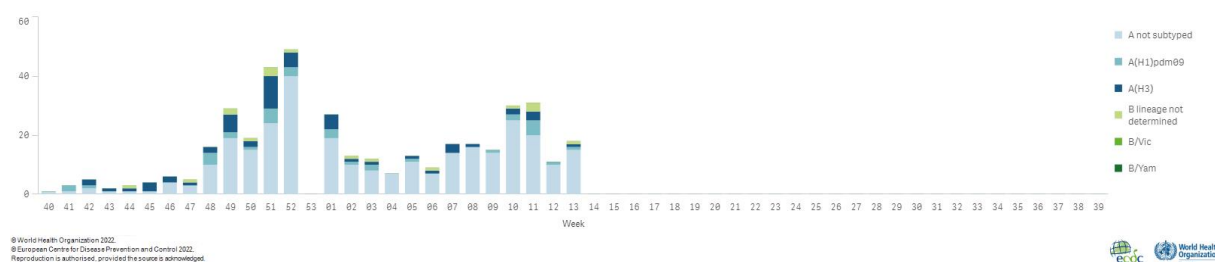
### 1.1) Hospitalized laboratory-confirmed influenza cases – ICUs

For week 13/2022, 18 laboratory-confirmed influenza cases were reported from ICU wards (in Sweden and United Kingdom (England)). Influenza type A viruses (94%, n=17) were detected more frequently than influenza type B viruses (6%, n=1) (Fig. 5 and 6).

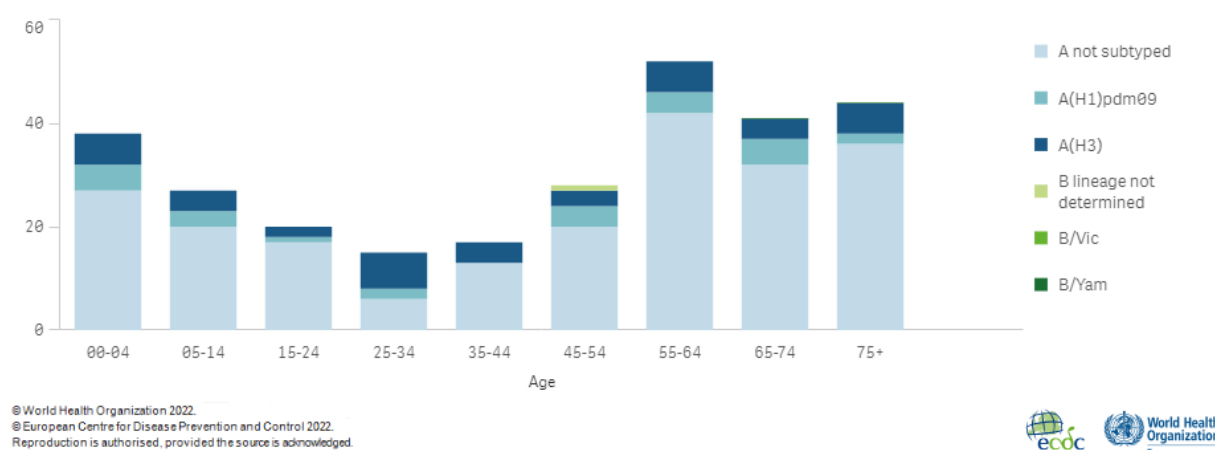
Since week 40/2021, more influenza type A (n=388, 96%) than type B (n=17, 4%) viruses were detected. Of 90 subtyped influenza A viruses, 61% were A(H3) and 39% were A(H1)pdm09. No influenza B viruses were ascribed to a lineage. Of 282 cases with known age, 132 were 15-64 years old, 85 were 65 years and older, 38 were 0-4 years old and 27 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**



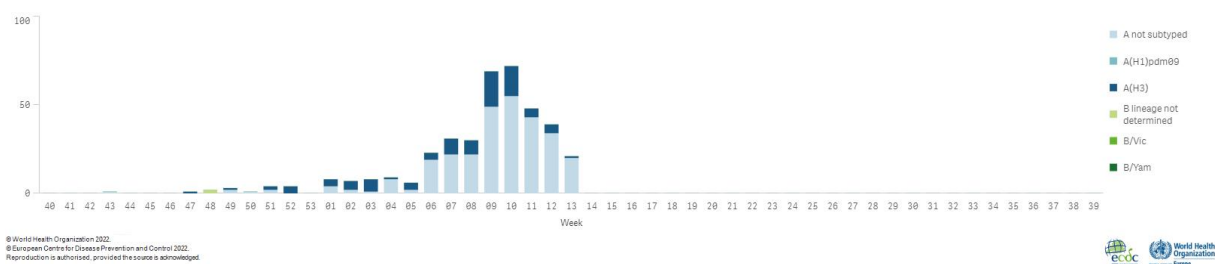
## 1.2) Hospitalized laboratory-confirmed influenza cases – other wards

For week 13/2022, 21 laboratory-confirmed influenza cases were reported from other wards (in Ireland and Czechia). Only influenza type A viruses were detected, of which 1 was subtyped as A(H3) (Fig. 7 and 8).

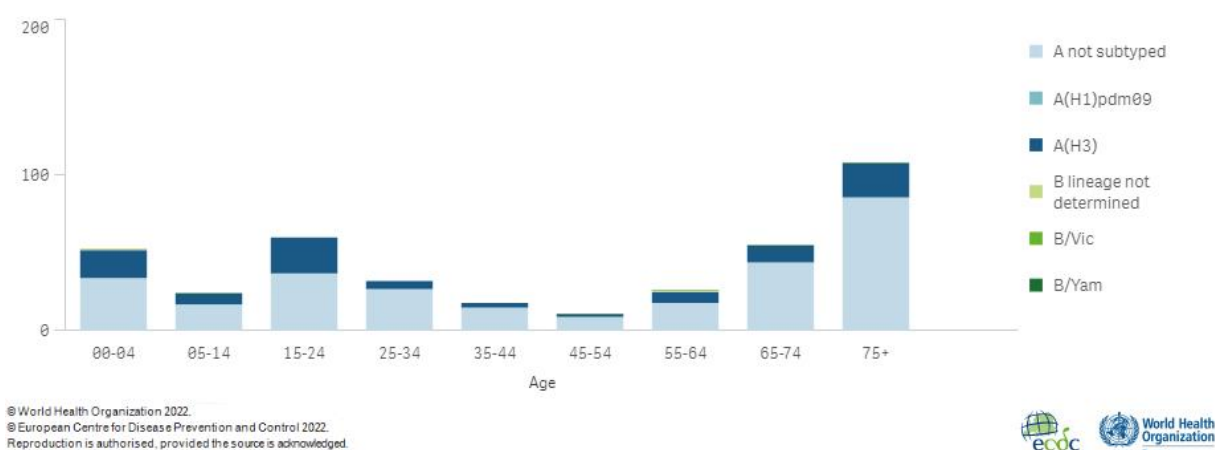
Since week 40/2021, 385 influenza type A viruses and 2 influenza type B viruses were detected. Of 98 subtyped influenza A viruses, all were A(H3). The 387 cases with known age fell in 4 age groups: 163 were 65 years and older, 147 were 15-64 years old, 53 were 0-4 years old and 24 were 5-14 years old.

**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**



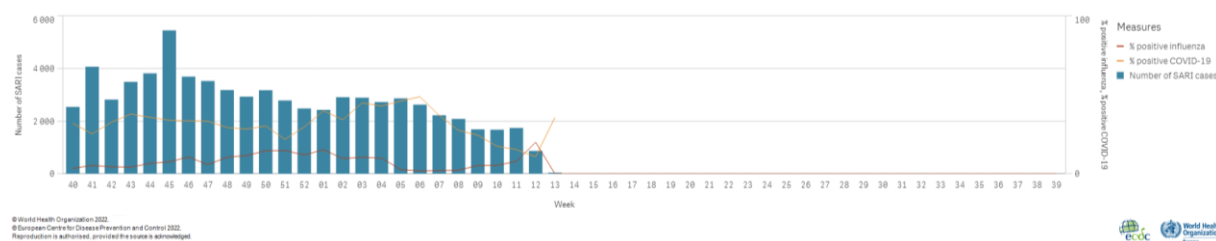
## Severe acute respiratory infection (SARI)-based hospital surveillance

For week 13/2022, 2 102 SARI cases were reported by 11 countries or areas (Albania, Armenia, Belarus, Germany, Lithuania, Malta, Russian Federation, Serbia, Spain, Ukraine and Uzbekistan). Of 270 specimens tested for influenza viruses, 7% (n=20) were positive. Of these, influenza type A viruses (n=17, 85%) were detected more frequently than influenza type B viruses (n=3, 15%) (Fig. 9 and Fig. 10). The highest positivity rates for influenza virus detections were reported by Serbia (41%) and Lithuania (22%).

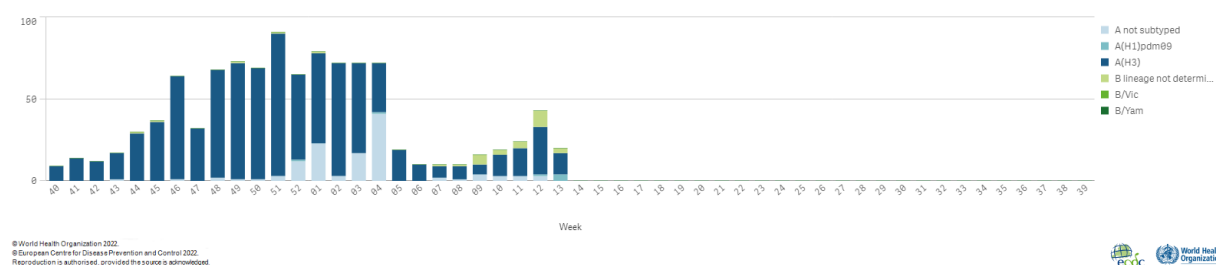
For the season, 112 196 SARI cases were reported by 19 countries or areas (Albania, Armenia, Belarus, Georgia, Germany, Kazakhstan, Kyrgyzstan, Lithuania, Malta, Montenegro, North Macedonia, Republic of Moldova, Russian Federation, Serbia, Spain, Turkey, Ukraine, Uzbekistan and Kosovo\* (in accordance with Security Council resolution 1244 (1999))). For SARI cases testing positive for influenza virus since week 40/2021, type A viruses have been the most common (n=1 014, 97%). For 893 cases where influenza virus

subtyping was performed, 886 (99%) were infected by A(H3) viruses and 7 (1%) were infected by A(H1)pdm09 viruses. Of the 33 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**



**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.

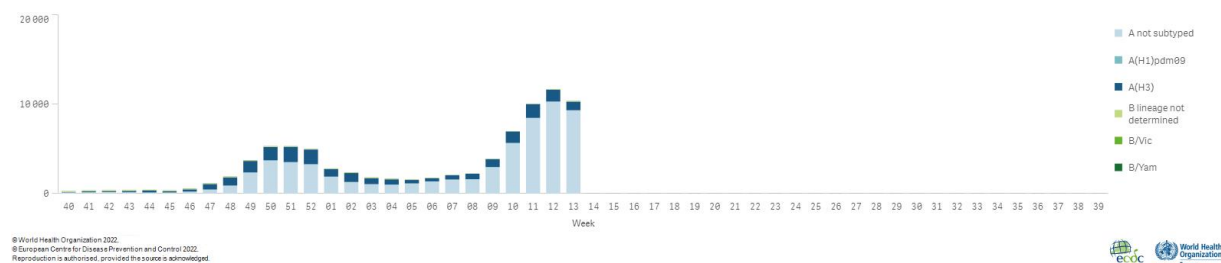
## Non-sentinel virologic data

For week 13/2022, 10 446 of 76 198 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; 10 377 (99%) were type A and 69 (1%) were type B. Of 1 060 subtyped A viruses, 971 (92%) were A(H3) and 89 (8%) were A(H1)pdm09. The 3 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=84 113, 98%) than type B (n=1 707, 2%) viruses have been detected. Of 21 252 subtyped A viruses, 19 647 (92%) were A(H3) and 1 605 (8%) were A(H1)pdm09. Of 25 influenza type B viruses

ascribed to a lineage, 24 (96%) were B/Victoria and 1 (4%) were B/Yamagata (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 13/2022 and cumulative for the season**

Virus type and subtype	Current Week (13)		Season 2021-2022	
	Number	% <sup>a</sup>	Number	% <sup>a</sup>
<b>Influenza A</b>	<b>10 377</b>	<b>99.3</b>	<b>84 113</b>	<b>98</b>
A(H1)pdm09	89	8.4	1 605	7.6
A(H3)	971	91.6	19 647	92.4
A not subtyped	9 317	-	62 861	-
<b>Influenza B</b>	<b>69</b>	<b>0.7</b>	<b>1 707</b>	<b>2</b>
B/Victoria lineage	3	100	24	96
B/Yamagata lineage	0	-	1	4
Unknown lineage	66	-	1 682	-
<b>Total detections (total tested)</b>	<b>10 446 (76 198)</b>	<b>13.7</b>	<b>85 820 (2 129 302)</b>	<b>4</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 135 genetically characterized A(H1)pdm09 viruses up to week 13/2022, the majority (117; 86%) 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: 7 (5%) were represented by A/India/Pun-NIV312851/2021 and 4 (3%) were represented by A/Victoria/2570/2019, the virus component for the 2021/22 and 2022/23 northern hemisphere vaccines. Seven were not attributed to a clade.

Among the A(H3) viruses characterized up to week 13, 1 741 were attributed to a clade. The majority 1 731 (99%) belonged to clade 3C.2a1b.2a.2, represented by the A/Darwin/9/2021 component of 2022/23 northern hemisphere vaccines. Only 1 (1%) virus fell into clade 3C.2a1b.2a.1 and 9 were clade 3C.2a1b.1a viruses.

Up to week 13/2022, 11 B/Victoria viruses were characterized. 8 of the viruses belonged to clade V1A.3a.2, represented by B/Austria/1359417/2021, the recommended vaccine virus strain for the 2022/23 northern hemisphere influenza season. 2 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 1 was not attributed to a clade.

Seven viruses were characterized as B/Yamagata with 4 being B/Phuket/3073/2013-like. 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 2021/2022
<b>Total</b>	<b>1 894</b>
<b>Influenza A</b>	<b>1 876</b>
<b>A(H1)pdm09</b>	<b>135</b>
A(H1)pdm09_NOClade *	1
A(H1)pdm09_SubgroupNotListed *	6
A/Guangdong-Maonan/SWL1536/2019(H1N1)pdm09_6B.1A.5a.1	117
A/India/Pun-NIV312851/2021(H1N1)pdm09_6B.1A.5a.2	7
A/Victoria/2570/2019(H1N1)pdm09_6B.1A.5a.2	4
<b>A(H3)</b>	<b>1 741</b>
A/Bangladesh/4005/2020(H3)_3C.2a1b.2a.2	1 731
A/Cambodia/e0826360/2020(H3)_3C.2a1b.2a.1	1
A/Denmark/3264/2019(H3N2)_3C.2a1b.1a	9
<b>Influenza B</b>	<b>18</b>
<b>B/Vic</b>	<b>11</b>
B/Austria/1359417/2021(Victoria lineage_1A.3a.2)	8
B/Victoria_NOClade *	1
B/Washington/02/2019(Victoria lineage_1A.3)	2
<b>B/Yam</b>	<b>7</b>
B/Phuket/3073/2013(Yamagata lineage_3)	4

\* 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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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 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. 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 13/2022, 1 669 viruses were assessed for susceptibility to neuraminidase inhibitors (1 173 A(H3), 116 A(H1)pdm09 and 3 B viruses genotypically and 353 A(H3), 11 A(H1)pdm09 and 13 B viruses phenotypically), and 999 viruses were assessed for susceptibility to baloxavir marboxil (898 A(H3), 98 A(H1)pdm09 and 3 B viruses genotypically). Phenotypically, no viruses with reduced susceptibility were identified and genotypically 2 A(H3) viruses with potentially reduced susceptibility to baloxavir marboxil were identified.

## **Vaccine effectiveness**

[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.”

The European I-MOVE network estimated influenza 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).

### **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:

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- 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:

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- an A/Victoria/2570/2019 (H1N1)pdm09-like virus;
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- 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
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- 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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Suggested citation:

European Centre for Disease Prevention and Control/WHO Regional Office for Europe. Flu News Europe, Joint ECDC–WHO weekly influenza update, week 13/2022.

Tables and Figures should be referenced:

European Centre for Disease Prevention and Control/WHO Regional Office for Europe. Flu News Europe, Joint ECDC–WHO weekly influenza update, week 13/2022.

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