

Summary

Week 49/2021 (06 December– 12 December 2021)

- Influenza activity continues to increase throughout the European Region particularly in countries of the Northern and Eastern areas of the Region.
- Belarus, Kazakhstan, Russian Federation, Sweden, Turkey and Kosovo* reported widespread influenza activity and/or medium to high influenza intensity.
- 11% of all sentinel primary care specimens from patients presenting with ILI or ARI symptoms tested positive for influenza virus, with a predominance of A(H3) viruses.
- Several countries (Armenia, France, Israel, Kazakhstan, Kosovo*, Russian Federation and Slovakia) reported seasonal influenza activity above the 10% positivity threshold in sentinel primary care or hospital settings with Kosovo* reporting a rate of 56%.
- Hospitalized cases with confirmed influenza virus infection were reported from intensive care units and SARI surveillance.
- Both influenza type A and type B viruses were detected with a dominance of A(H3) viruses across all monitoring systems and in nearly all SARI cases.

2021-2022 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 in week 49/2021.
- For the Region as a whole influenza activity had been increasing, with different levels of activity across the countries and areas of the Region, with a dominance of A(H3) viruses.
- During the influenza Vaccine Composition Meeting for the southern hemisphere 2022 season, held in September 2021, WHO recommended updating of the A(H3N2) and the B/Victoria-lineage components. The full report can be found [here](#).

- Vaccination remains the best protective measure for prevention of influenza. With dominant A(H3) circulation, clinicians should consider early antiviral treatment of at-risk groups with influenza virus infection according to local guidance to prevent severe outcomes and so far, analyzed viruses are 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 49/2021, of 43 Member States and areas reporting on intensity, 31 reported baseline, 7 low (Azerbaijan, Bosnia and Herzegovina, Denmark, Estonia, Kyrgyzstan, Slovakia, Sweden), 4 medium (Kazakhstan, Russian Federation, Turkey and Kosovo*) and 1 (Belarus) reported high intensity (Fig. 1).

Of 43 Member States and areas reporting on geographic spread of influenza viruses, 18 reported no activity, 12 reported sporadic spread (across the region), 4 reported local spread (Albania, France, Norway, Slovakia), 4 reported regional spread (Kyrgyzstan, Republic of Moldova, North Macedonia, Kosovo*) and 5 reported widespread activity (Belarus, Kazakhstan, Russian Federation, Sweden, Turkey) (Fig. 2).

Figure 1. Intensity of influenza activity in the European Region, week 49/2021

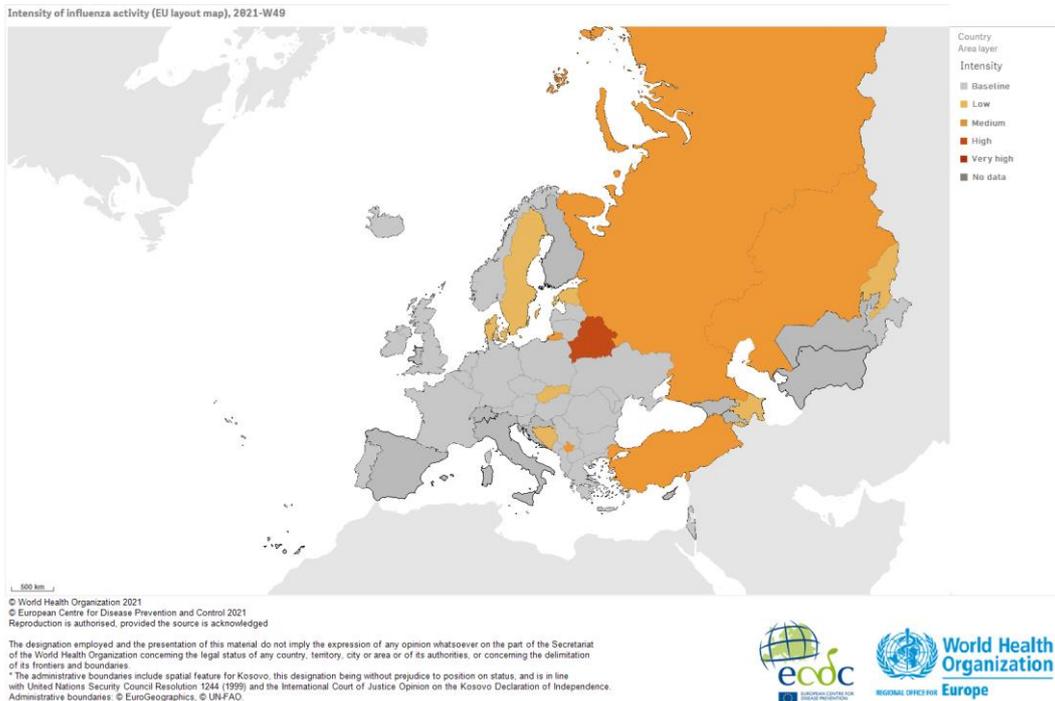
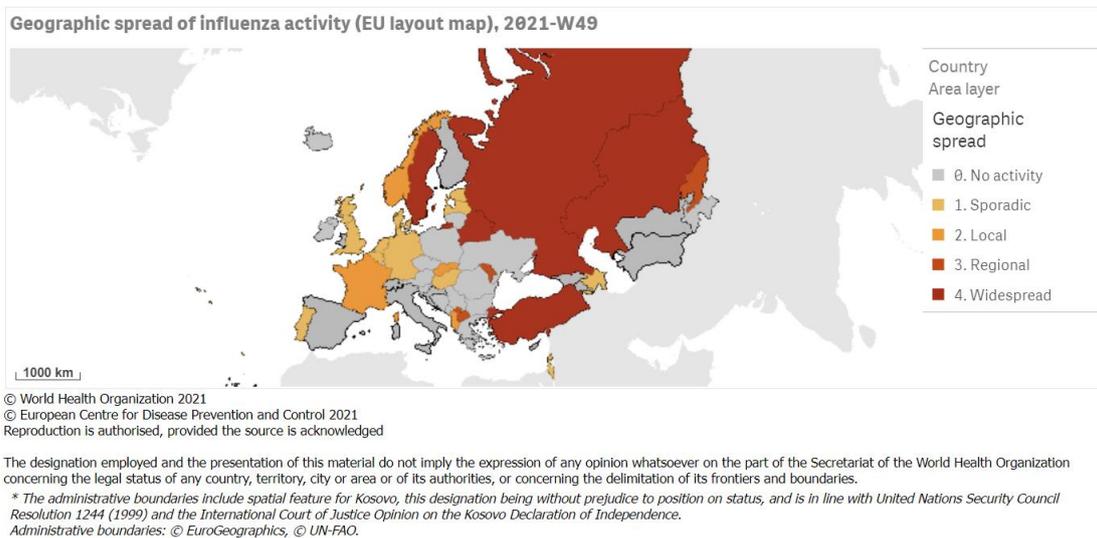


Figure 2. Geographic spread of influenza viruses in the European Region, week 49/2021



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

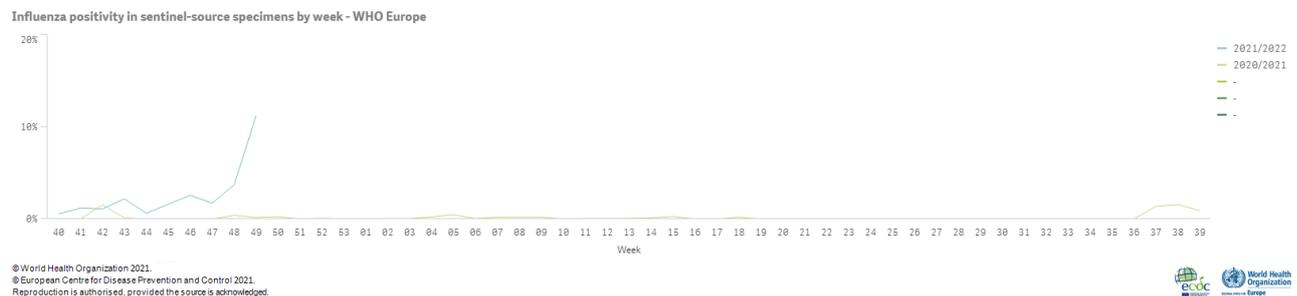
Please note:

- 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 specimens was 11% for week 49/2021, crossing the 10% epidemic threshold for the first time of the season (Fig. 3).

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



External data sources

Mortality monitoring: Week 49/2021 overall pooled EuroMOMO estimates of all-cause mortality for the participating European countries showed an elevated level of excess mortality. In countries experiencing high COVID-19 incidence over recent weeks, several were experiencing low or moderate excess all-cause mortality. The Netherlands in particular is experiencing high levels of excess mortality temporally associated with COVID-19 circulation. 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=5; Azerbaijan, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan), northern (n=2; Denmark, Estonia), southern (n=2; Serbia, Turkey) and western (n=2; Belgium, 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 eastern (n=4; Belarus, Kazakhstan, Kyrgyzstan, Russian Federation) and northern (n=2; Estonia, Latvia) areas of the European Region reported activity above baseline levels.

Please note:

1. 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 MEM method and based on historical ILI/ARI data.

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

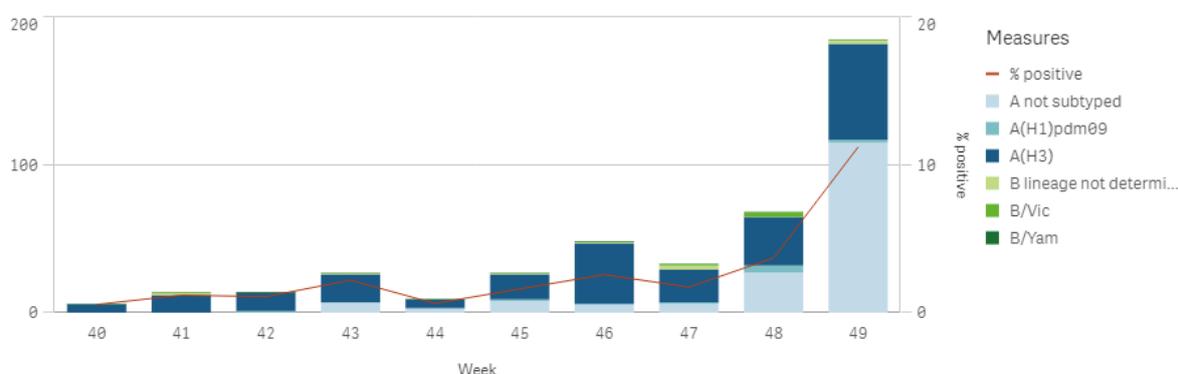
For week 49/2021, 185 (11%) of 1 650 sentinel specimens tested positive for an influenza virus; 182 (98%) were type A and 3 (2%) were type B. Of 67 subtyped A viruses, 3% were A(H1N1)pdm09 and 97% A(H3) (Fig. 4 and Table 1). Of 25 Member States or areas across the Region that each tested at least 10 sentinel specimens in week 49/2021, 7 reported a rate of influenza virus detections at or above 10% (median 21%; range 10% - 56%) (Kosovo*: 56%, Israel: 23%, Kazakhstan: 23%, Armenia: 20%, Russian Federation: 13%, France: 11%, Slovakia: 10%)

For the season to date, 431 (3%) of 15 147 sentinel specimens tested positive for an influenza virus. More influenza type A (n=416, 96%) than type B (n=15, 4%) viruses have been detected. Of 244 subtyped A viruses, 10 (4%) were A(H1N1)pdm09 and 234 (96%) were A(H3). All 3 influenza type B viruses ascribed to a lineage were B/Victoria (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 – WHO Europe, season 2021/22

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



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Table 1. Influenza virus detections in sentinel source specimens by type and subtype for week 49/2021 and cumulatively for the season

Sentinel Virus type and subtype	Current Week (49)		Season 2021-2022	
	Number	% ^a	Number	% ^a
Influenza A	182	98.4	416	96.5
A(H1)pdm09	2	3.0	10	4.1
A(H3)	65	97.0	234	95.9
A not subtyped	115	-	172	-
Influenza B	3	1.6	15	3.5
B/Victoria lineage	0	0	4	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	3	-	11	-
Total detections (total tested)	185 (1 650)	11.2	413 (15 147)	2.8

^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

[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 49/2021.

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; mainly in the eastern part of the Region).

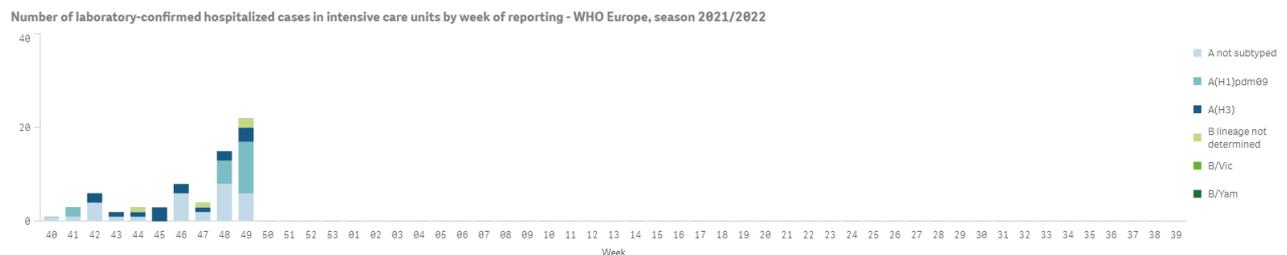
Laboratory-confirmed hospitalized cases

1.1) Hospitalized laboratory-confirmed influenza cases – ICUs

For week 49/2021, 22 laboratory-confirmed influenza cases were reported from ICU wards (in Sweden and United Kingdom (England)). Influenza type A viruses (91%, n=20) were detected more frequently than influenza type B viruses (9%, n=2) (Fig. 5 and 6).

Since week 40/2021, 67 influenza virus infected patients were admitted to ICUs with more influenza type A (n=63, 94.0%) than type B (n=4, 6.0%) viruses detected. Of 33 subtyped influenza A viruses, 54.5% were A(H1)pdm09 and 45.5% A(H3). No influenza B viruses were ascribed to a lineage. Of 37 cases with known age, 18 were 15-64 years old, 10 were 0-4 years old, 7 were 64 years and older and 2 were 5-14 years old.

Figure 5. Number of laboratory-confirmed hospitalized cases in intensive care units (ICU) by week of reporting, WHO European Region, season 2021/2022

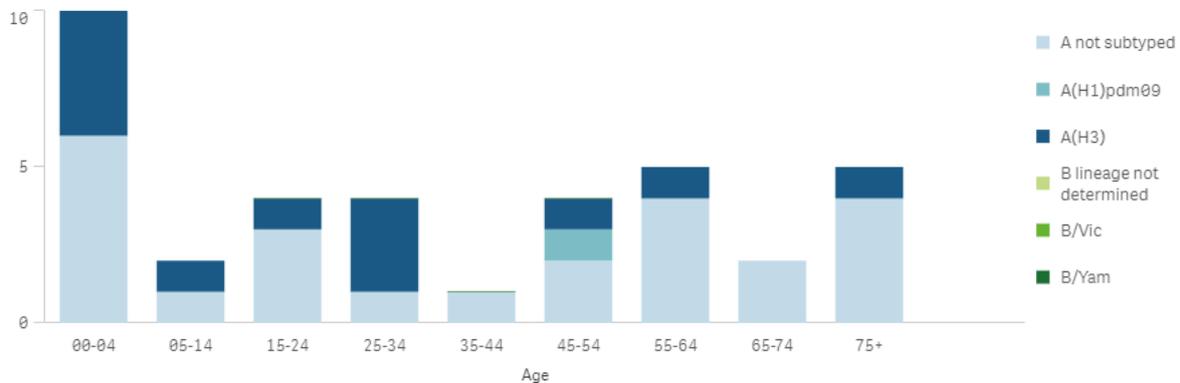


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Figure 6. Distribution of virus types, subtypes/lineages by age group in intensive care units (ICU), WHO European Region, season 2021/2022

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



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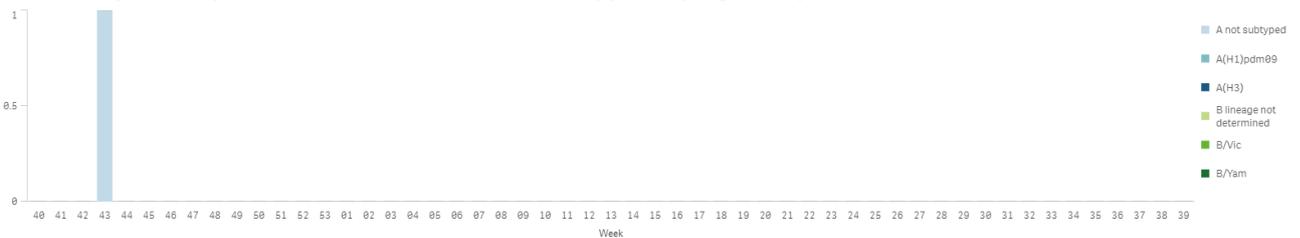
1.2) Hospitalized laboratory-confirmed influenza cases – other wards

For week 49/2021, there were no reports of hospitalized laboratory-confirmed influenza cases in other wards (Fig. 7 and 8).

Since week 40/2021, there has been 1 influenza type A virus detected which was not ascribed to a subtype. The patient was in the 0-4 years old range.

Figure 7. Number of laboratory-confirmed hospitalized 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



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Figure 8. Distribution of 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

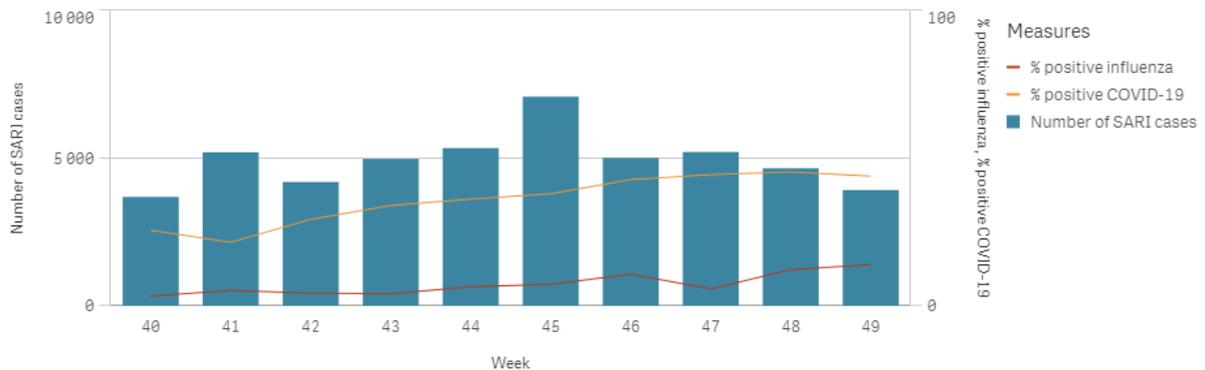
For week 49/2021, 3 920 SARI cases were reported by 12 countries or areas (Albania, Belarus, Germany, Kazakhstan, Kyrgyzstan, North Macedonia, Republic of Moldova, Russian Federation, Serbia, Spain, Turkey and Ukraine). Of 486 specimens tested for influenza viruses, 14% (n=68) were positive. The highest positivity for influenza viruses was reported by Kazakhstan (31.2%) and Russian Federation (23.3%). Of these, influenza type A viruses (n=67, 98%) were detected more frequently than influenza type B viruses (n=1, 2%) (Fig. 9).

For week 49/2021, 15 countries or areas tested a total of 1 594 specimens from SARI cases tested for SARS-CoV-2 with 741 detections (46%). Four countries reported positivity rates of 50% or higher: Bosnia and Herzegovina (75%), Germany (58%), Montenegro (91%), and North Macedonia (50%).

For the season, 49 285 SARI cases were reported. Of 4 375 SARI cases tested for influenza virus, 350 (8%) tested positive with 347 reported as type A virus and 342 of these subtyped as A(H3) virus. Only 3 type B viruses, not ascribed to a lineage, have been reported (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 r...

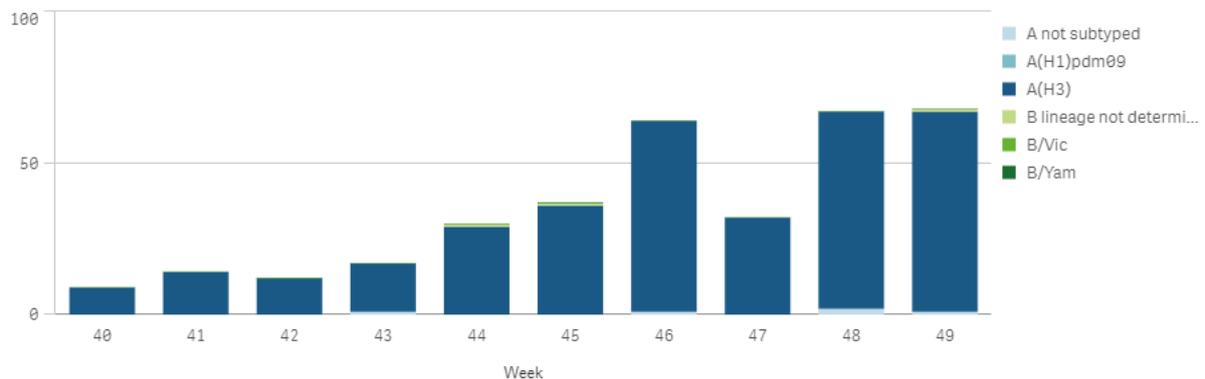


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Figure 10. Influenza detections by virus type, subtype/lineage from severe acute respiratory infection (SARI), WHO European Region, season 2021/2022

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



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Virus characteristics

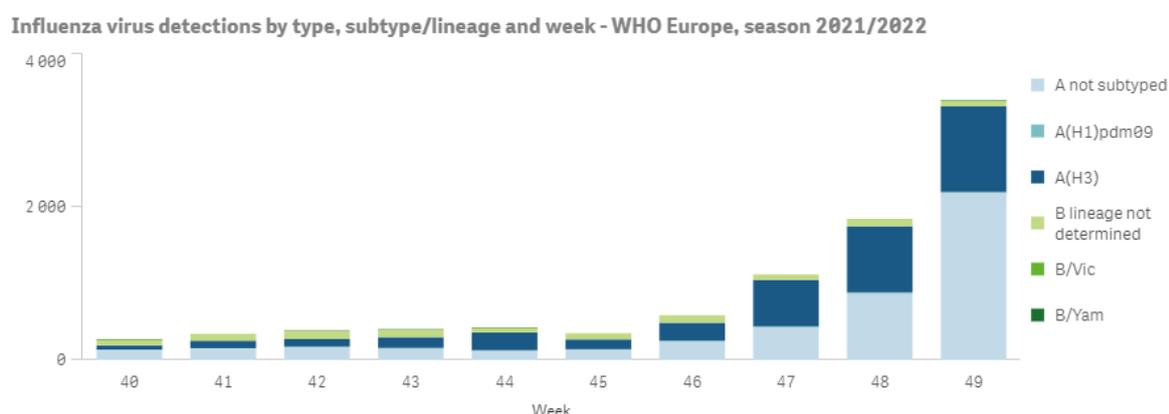
Details of the distribution of viruses detected in sentinel-source specimens can be found in the [Primary care data](#) section.

Non-sentinel virologic data

For week 49/2021, 3 399 of 82 929 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; 3 316 (98%) were type A and 83 (2%) were type B. Of 1 131 subtyped A viruses, 12 (1%) were A(H1)pdm09 and 1 119 (99%) A(H3). No B viruses were ascribed to a lineage (Fig. 11 and Table 2). Sweden reported 52% (1 761) of all non-sentinel detections. Among countries where more than 10 specimens were tested, high positivity rates were seen in Belarus (61/165; 36%), Russian Federation (927/6 189;14%) and Sweden (1 761/18 881; 9%).

For the season to date, 9 118 of 588 811 non-sentinel specimens tested for influenza were positive with more type A (n=8 248, 90%) than type B (n=870, 10%) viruses detected. Of 3 680 subtyped A viruses, 99 (3%) were A(H1)pdm09 and 3 581 (97%) were A(H3). Of 5 influenza type B viruses ascribed to a lineage, 1 was B/Yamagata and 4 were B/Victoria (99% of type B viruses were reported without a lineage) (Fig. 11 and Table 2).

Figure 11. Influenza detections by type, subtype/lineage and week, WHO European Region, season 2021/2022



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Table 2. Influenza virus detections in non-sentinel source specimens by type and subtype, week 49/2021 and cumulative for the season

Virus type and subtype	Current Week (49)		Season 2021-2022	
	Number	% ^a	Number	% ^a
Influenza A	3 316	97.6	8 248	90.5
A(H1)pdm09	12	1.1	99	2.7
A(H3)	1 119	98.9	3 581	97.3
A not subtyped	2 185	-	4 568	-
Influenza B	83	2.4	870	9.5
B/Victoria lineage	0	0	4	80
B/Yamagata lineage	0	0	1	20
Unknown lineage	83	-	865	-
Total detections (total tested)	3 399 (82 929)		9 118 (588 811)	

^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 49/2021, 183 A(H3) viruses have been characterized, all of which belonged to clade 3C.2a1b.2a.2. One A(H1)pdm09 virus not attributed to any clade was characterized in week 42 and one A(H1)pdm09 virus from week 45 belonged to clade 6B.1A.5a. Two B/Victoria viruses have been characterized, one each belonging to clades V1A.3 and V1A.3a.2 (Table 3).

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		
Total		186
Influenza A		184
A(H1)pdm09		1
A/Guangdong-Maonan/SWL1536/2019(H1N1)pdm09		1
A(H3)		183
A/Bangladesh/4005/2020(H3)_3C.2a1b.2a.2		183
Influenza B		2
B/Vic		2
B/Austria/1359417/2021(Victoria lineage_1A.3)		1
B/Washington/02/2019(Victoria lineage_1A(del162-164))		1

ECDC published the [November](#) virus characterization report: 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 recognised by antisera raised against viruses genetically and antigenically similar to the vaccine virus, indicating antigenic diversity. 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 virus 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 49/2021, 122 A(H3) viruses were assessed for susceptibility to neuraminidase inhibitors and 69 A(H3) viruses were assessed for susceptibility to baloxavir marboxil. No amino acid substitutions previously associated with reduced susceptibility were identified.

Vaccine

Results from a controlled, randomised trial in UK concluded that concomitant vaccination with one of two SARS-CoV-2 vaccines (ChAdOx1 or BNT162b2) plus an age-appropriate influenza vaccine raised no safety concerns and 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 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 26 February 2021, WHO published [recommendations](#) for the components of influenza vaccines for use in the 2021-2022 northern hemisphere influenza season:

Egg-based Vaccines

- an A/Victoria/2570/2019 (H1N1)pdm09-like virus;
- an A/Cambodia/e0826360/2020 (H3N2)-like virus;
- a B/Washington/02/2019 (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/Cambodia/e0826360/2020 (H3N2)-like virus;
- a B/Washington/02/2019 (B/Victoria lineage)-like virus; and
- a B/Phuket/3073/2013 (B/Yamagata lineage)-like virus.

It was recommended that the influenza B virus component of **both trivalent vaccine types** for use in the 2021–2022 northern hemisphere influenza season should be a B/Washington/02/2019-like virus of the B/Victoria-lineage.

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, Nishi Dave, and Pasi Penttinen) and the WHO Regional Office for Europe (Margaux Meslé, Piers Mook and Richard Pebody).

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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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