

Summary

Week 50/2021 (13 December– 19 December 2021)

- Influenza activity continued to increase throughout the European Region particularly in countries of the Northern and Eastern areas of the Region.
- Albania, Kazakhstan, Kosovo*, Norway, Russian Federation and Sweden reported widespread influenza activity and/or medium to high influenza intensity.
- 9.5% 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.
- The influenza epidemic threshold is usually defined as two consecutive weeks in which, at the European Region level, $\geq 10\%$ of patients in sentinel primary care settings tested positive for influenza virus infection. Following on from 11.7% of such patients testing positive for an influenza virus in week 49/2021, there was 9.5% positivity in week 50/2021, but given how close this is to the threshold and in light of the on-going COVID-19 pandemic with its impact on health care systems, we consider it prudent not to wait for additional data (which often leads to a retrospective increase of prior weeks' positivity rates) before defining the influenza epidemic to have started.
- Five countries reported seasonal influenza activity above the 10% positivity threshold in sentinel primary care or hospital settings: Israel (66%), Armenia (47%), Sweden (43%), Russian Federation (35%), Republic of Moldova: (15%).
- 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

- 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. 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:

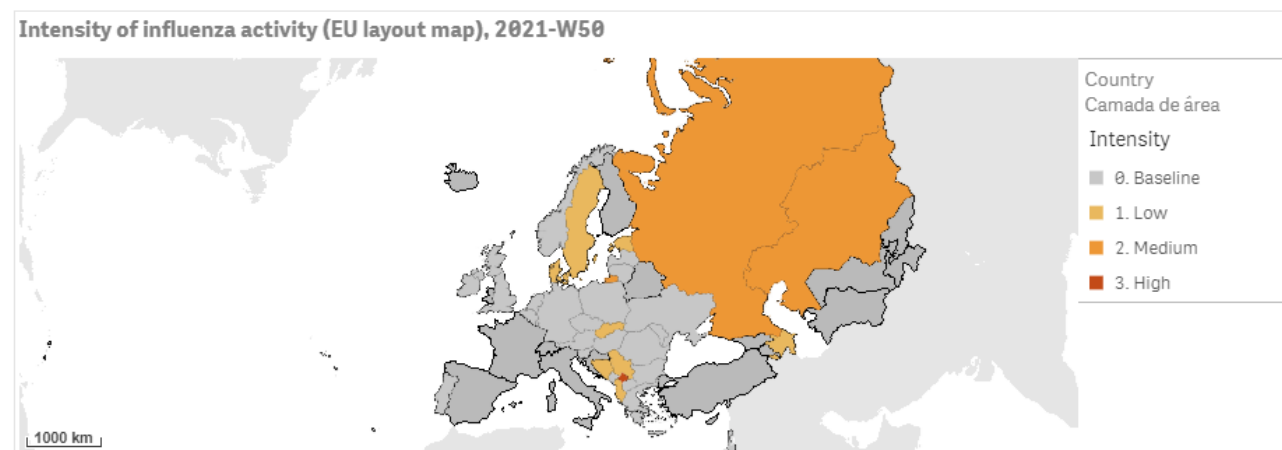
- WHO website: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
- ECDC website: <https://www.ecdc.europa.eu/en/novel-coronavirus-china>

Qualitative indicators

For week 50/2021, of 37 Member States and areas reporting on intensity, 26 reported baseline, 8 low (Albania, Azerbaijan, Bosnia and Herzegovina, Denmark, Estonia, Serbia, Slovakia, Sweden), 2 medium (Kazakhstan and Russian Federation) and 1 (Kosovo*) reported high intensity (Fig. 1).

Of 37 Member States and areas reporting on geographic spread of influenza viruses, 15 reported no activity, 13 reported sporadic spread (across the region), 1 reported local spread (Slovakia), 4 reported regional spread (Kazakhstan, Kosovo*, Republic of Moldova and North Macedonia) and 4 reported widespread activity (Albania, Norway, Russian Federation and Sweden) (Fig. 2).

Figure 1. Intensity of influenza activity in the European Region, week 50/2021

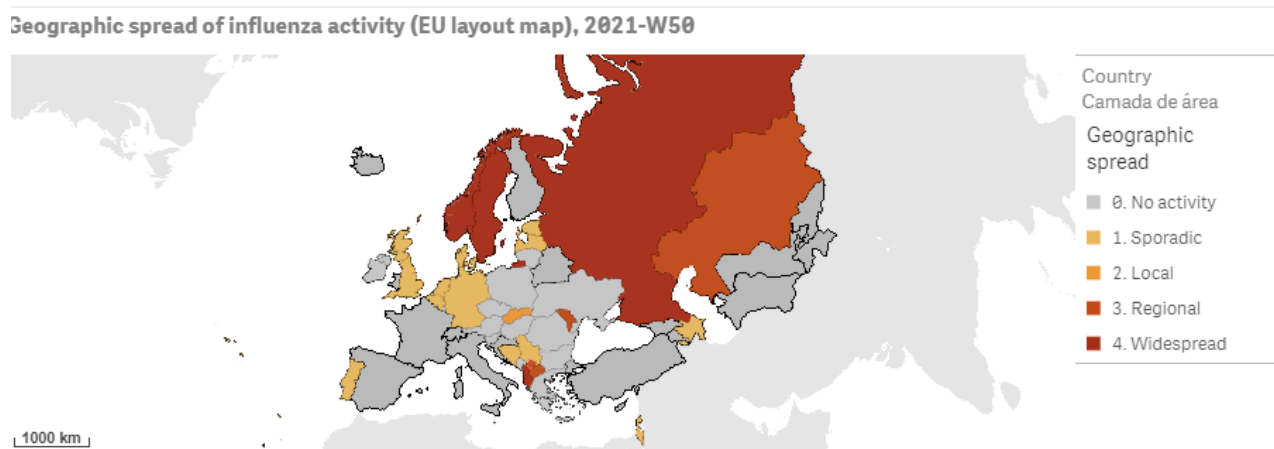


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Figure 2. Geographic spread of influenza viruses in the European Region, week 50/2021



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

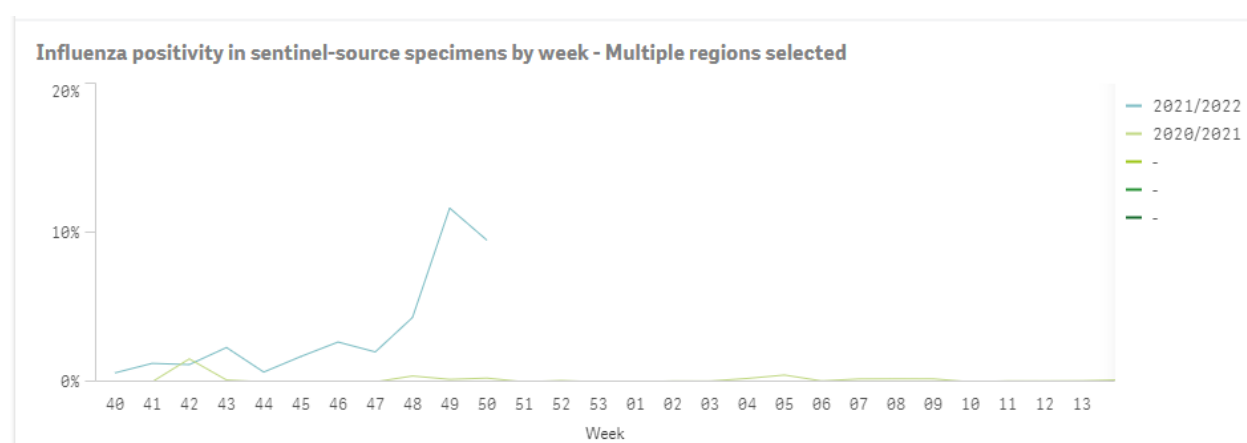
Please note:

- 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

The influenza epidemic threshold is usually defined as two consecutive weeks in which, at the European Region level, $\geq 10\%$ of patients in sentinel primary care settings tested positive for influenza virus infection. Following on from 11.7% of such patients testing positive for an influenza virus in week 49/2021, there was 9.5% positivity in week 50/2021 (Fig. 3). Given how close this is to the threshold and in light of the on-going COVID-19 pandemic with its impact on health care systems, we consider it prudent not to wait for additional data (which often leads to a retrospective increase of prior weeks' positivity rates) before defining the influenza epidemic to have started.

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 50/2021 overall pooled EuroMOMO estimates of all-cause mortality for the participating European countries showed an elevated level of excess mortality. The excess was observed mainly among the elderly (65 years or

older), but also among elderly 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=2; Azerbaijan, Russian Federation), northern (n=2; Denmark, Estonia), southern (n=2; Israel, Serbia) and western (n=3; Austria, Belgium, Hungary) areas of the European Region reported activity above baseline levels.

Of the countries and areas in which thresholds for ARI activity are defined, countries in eastern (n=2; Kazakhstan, 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 50/2021, 108 (9.5%) of 1 136 sentinel specimens tested positive for an influenza virus; 107 (99%) were type A and 1 was type B. Of 80 subtyped A viruses, all were A(H3) (Fig. 4 and Table 1). Of 24 Member States or areas across the Region that each tested at least 10 sentinel specimens in week 50/2021, 5 reported a rate of influenza virus detections above 10% (median 43%; range 15% - 66%) (Israel: 66%, Armenia: 47%, Sweden: 43%, Russian Federation: 35%, Republic of Moldova: 15%)

For the season to date, 581 (4%) of 15 828 sentinel specimens tested positive for an influenza virus. More influenza type A (n=563, 97%) than type B (n=18,

3%) viruses have been detected. Of 361 subtyped A viruses, 10 (3%) were A(H1N1)pdm09 and 351 (97%) were A(H3). All 4 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

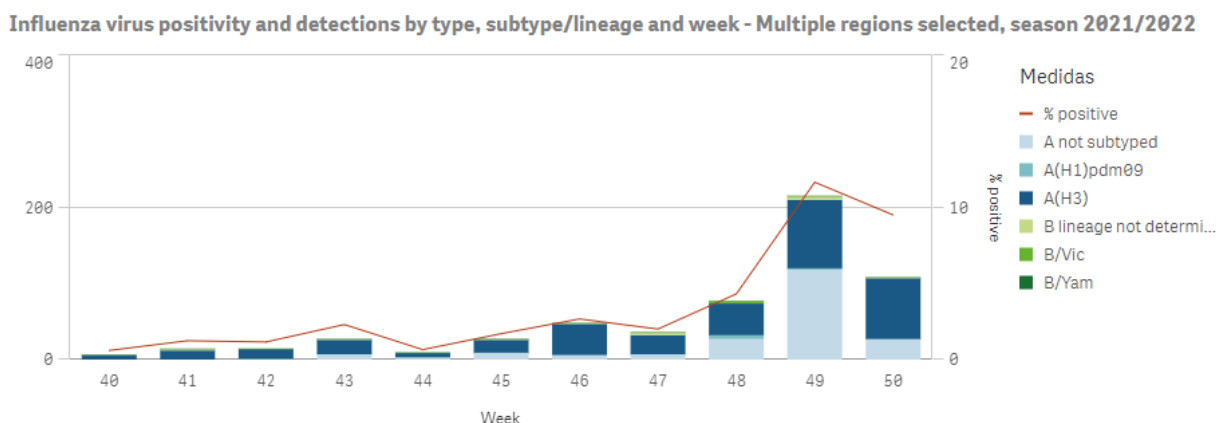


Table 1. Influenza virus detections in sentinel source specimens by type and subtype for week 50/2021 and cumulatively for the season

Sentinel	Current Week (50)		Season 2021-2022	
Virus type and subtype	Number	% ^a	Number	% ^a
Influenza A	107	99.1	563	96.9
A(H1)pdm09	0	0	10	2.8
A(H3)	80	100	351	97.2
A not subtyped	27	-	202	-
Influenza B	1	0.9	18	3.1
B/Victoria lineage	0	0	4	100
B/Yamagata lineage	0	0	0	0
Unknown lineage	1	-	14	-
Total detections (total tested)	108 (1 136)	9.5	581 (15 828)	3.7

^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](https://influenzanet.eu/) 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 50/2021.

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 50/2021, 8 laboratory-confirmed influenza cases were reported from ICU wards (in Czechia, Sweden and United Kingdom (England)). All patients were infected with influenza A viruses (Fig. 5 and 6).

Since week 40/2021, 79 influenza virus infected patients were admitted to ICUs, with more influenza type A (n=75, 94.9%) than type B (n=4, 5.1%) viruses detected. Of 26 subtyped influenza A viruses, 30.8% were A(H1)pdm09 and 69.2% A(H3). No influenza B viruses were ascribed to a lineage. Of 54 cases with known age, 24 were 15-64 years old, 12 were 0-4 years old, 12 were 64 years and older and 6 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

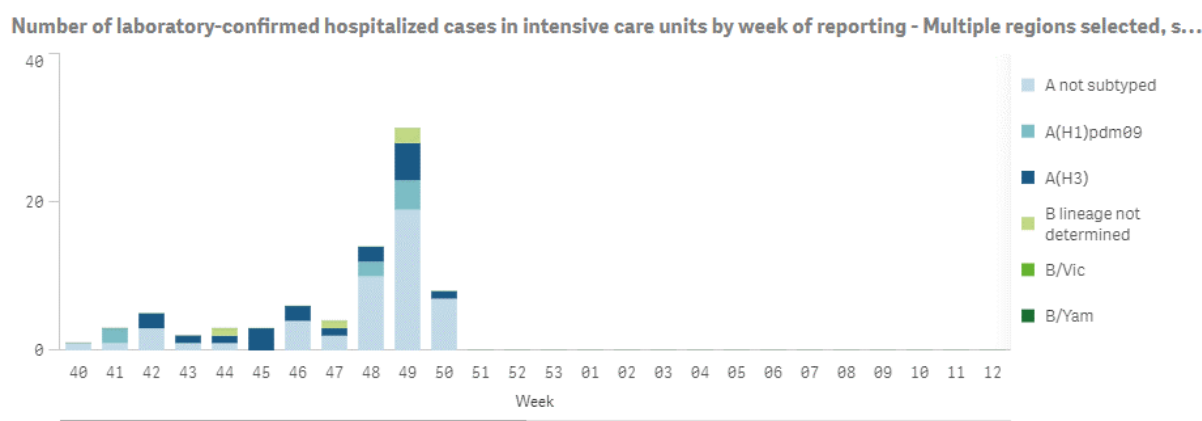
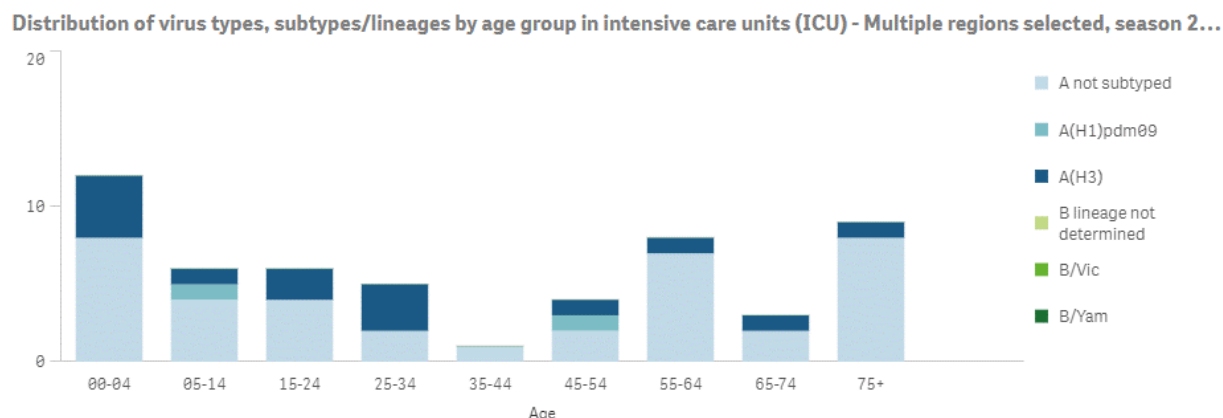


Figure 6. Distribution of virus types, subtypes/lineages by age group in intensive care units (ICU), WHO European Region, season 2021/2022



1.2) Hospitalized laboratory-confirmed influenza cases – other wards

For week 50/2021, 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

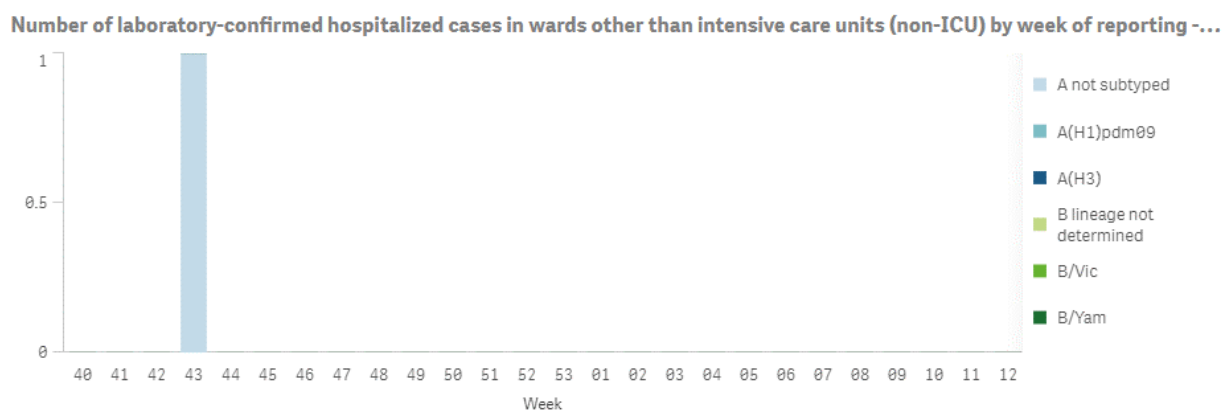
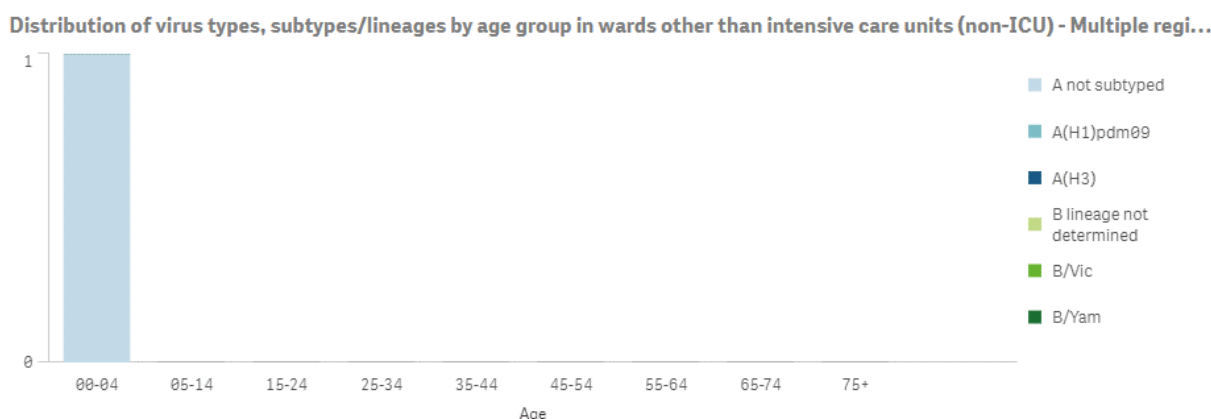


Figure 8. Distribution of virus types, subtypes/lineages by age group in wards other than intensive care units (non-ICU), WHO European Region, season 2021/2022



Severe acute respiratory infection (SARI)-based hospital surveillance

For week 50/2021, 3 503 SARI cases were reported by 11 countries or areas (Albania, Germany, Kazakhstan, Lithuania, Malta, Montenegro, Republic of Moldova, Russian Federation, Serbia, Spain and Ukraine). Of 255 specimens tested for influenza viruses, 12% (n=31) were positive. The highest positivity rates for influenza viruses were reported by the Russian Federation (29.8%), Serbia (20.0%), and Kazakhstan (18.1%). All 31 positive specimens were influenza type A (Fig. 9).

For week 50/2021, 7 countries or areas reported testing 1 225 SARI specimens for SARS-CoV-2, with 596 detections (49%). Two countries reported SARS-CoV-2 positivity rates of 50% or higher: Germany (53%) and Montenegro (98%).

For the season, 53 494 SARI cases were reported by 19 countries. Of 4 682 SARI cases tested for influenza virus, 386 (8%) tested positive with 383 reported as type A virus and 377 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

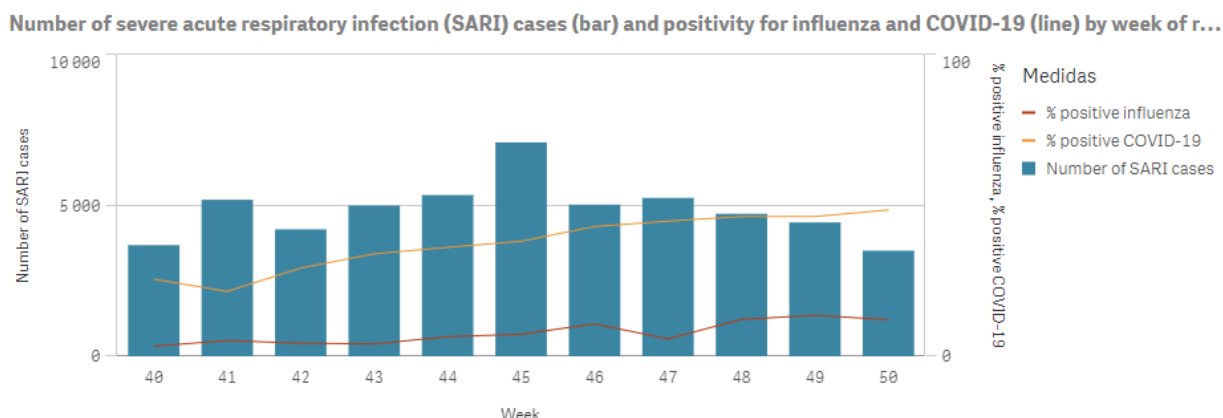
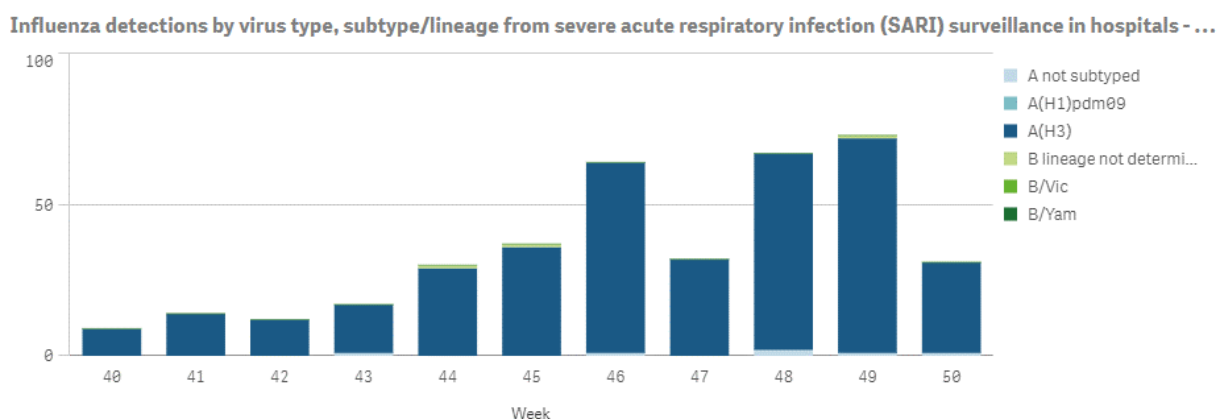


Figure 10. Influenza detections by virus type, subtype/lineage from severe acute respiratory infection (SARI), WHO European Region, season 2021/2022



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 50/2021, 3 765 of 44 374 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; 3 722 (99%) were type A and 43 (1%) were type B. Of 1 151 subtyped A viruses, 4 (0.3%) were A(H1)pdm09 and 1 147 (99.7%) A(H3). No B viruses were ascribed to a lineage (Fig. 11 and Table 2). Sweden reported 63% (2 377) of all non-sentinel detections. Among countries where more than 10 specimens were tested, high positivity rates were seen in the Russian Federation (1 080/6 319; 17%), Israel (40/294; 14%), Croatia (6/45; 13%), and Sweden (2 377/20 620; 12%).

For the season to date, 13 008 of 607 257 non-sentinel specimens tested for influenza were positive with more type A (n=12 088, 93%) than type B (n=920, 7%) viruses detected. Of 4 884 subtyped A viruses, 104 (2%) were A(H1)pdm09 and 4 780 (98%) were A(H3). Of 4 influenza type B viruses ascribed to a lineage, all were B/Victoria (99.6% 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

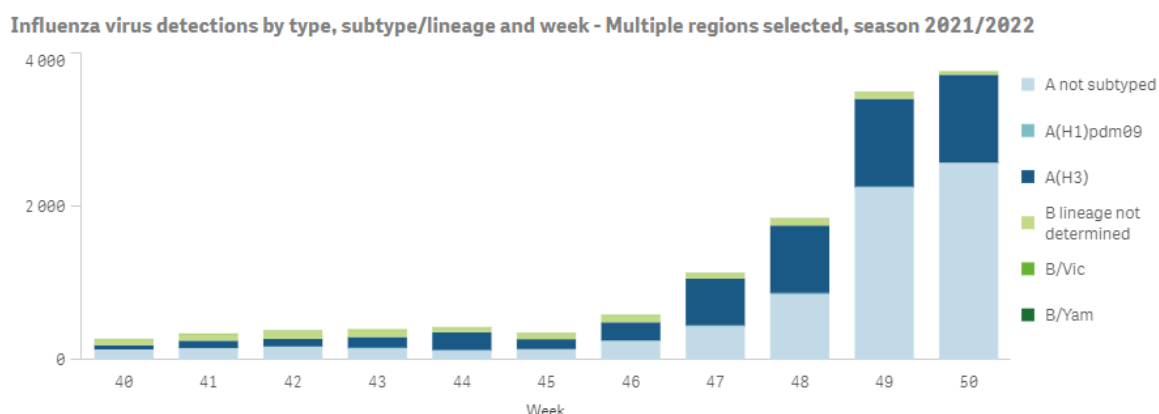


Table 2. Influenza virus detections in non-sentinel source specimens by type and subtype, week 50/2021 and cumulative for the season

Current Week (50)	Season 2021-2022
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Virus type and subtype	Number	% ^a	Number	% ^a
Influenza A	3 722	98.9	12 088	90.5
A(H1)pdm09	4	0.3	104	2.7
A(H3)	1 147	99.7	4 780	97.3
A not subtyped	2 571	-	7 204	-
Influenza B	43	1.1	920	9.5
B/Victoria lineage	0	0	4	80
B/Yamagata lineage	0	0	0	20
Unknown lineage	43	-	916	-
Total detections (total tested)	3 765 (44 374)	8.5	13 008 (607 257)	2.1

^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 50/2021, 283 A(H3) viruses had been characterized genetically, 282 of which belonged to clade 3C.2a1b.2a.2. One A(H3) virus was characterized genetically during week 41 and attributed to clade 3C.2a1b.1a. One A(H1) virus was characterized genetically during week 42 and not attributed to any clade and one A(H1) virus in week 45 belonged to clade 6B.1A.5a.1. Up to week 50/2021, 2 B/Victoria viruses were characterized genetically, one belonging to clade V1A.3a.2 and one to clade V1A.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 - Multiple regions selected

<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	287
Influenza A	285
A(H1)pdm09	2
A/Guangdong-Maonan/SWL1536/2019(H1N1)pdm09	2
A(H3)	283
A/Bangladesh/4005/2020(H3)_3C.2a1b.2a.2	282
A/Denmark/3264/2019(H3N2)_3C.2a1b+T135K-A	1
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 50/2021, 192 viruses (191 A(H3) and one A(H1)pdm09) were assessed for susceptibility to neuraminidase inhibitors, and 125 viruses (124 A(H3) and one A(H1)pdm09) 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.*

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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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