

Summary

Weeks 21–25/2020 (18 May – 20 June 2020)

- Influenza activity is at inter-seasonal levels.
- Of 182 sentinel specimens tested for influenza virus in weeks 21-25, 1 tested positive for influenza type B.
- The novel coronavirus disease 2019 (COVID-19) pandemic in the Region is affecting healthcare presentations and testing capacities in Member States, which has a negative impact on reporting of influenza epidemiologic and virologic data. Therefore, the data we present, notably in terms of seasonal patterns, must be interpreted with caution.
- The next inter-seasonal update will be published on 31 July 2020.

2019–2020 season overview

- For the Region as a whole, influenza activity commenced earlier than in recent years and, based on sentinel sampling, first exceeded a positivity rate of 10% in week 47/2019.
- The influenza season for the Region as a whole peaked in week 05/2020, reaching a maximum positivity rate of 55%. The peak phase with positivity levels above 50% lasted for just two weeks, 05/2020 and 06/2020, but reporting in subsequent weeks has been adversely affected by Member State responses to the COVID-19 pandemic. In the previous influenza season, the influenza positivity rate exceeded 50% for six weeks.
- Both influenza types A and B co-circulated in the Region. Of the influenza A viruses, both influenza A(H1N1)pdm09 and A(H3N2) co-circulated. Of the circulating B viruses, the vast majority belonged to the B/Victoria lineage.
- The percentage of specimens testing positive for an influenza virus from patients who presented with ILI or ARI to sentinel primary healthcare sites dropped below 10% in week 13/2020, where it has since remained. In the 2018/2019 season, the positivity rate first dropped below 10% in week 17/2019.
- The majority of analysed viruses were susceptible to neuraminidase inhibitors supporting early treatment or prophylactic use according to national guidelines.
- Interim estimates of 2019–2020 seasonal influenza vaccine effectiveness in the northern hemisphere are [available](#). Vaccination remains the best possible method for prevention of influenza and/or reducing the risk of serious complications.
- WHO has published [recommendations](#) for the composition of influenza vaccines to be used in the 2020–2021 northern hemisphere season. Based on these recommendations, the influenza A(H1N1)pdm09, A(H3N2) and B/Victoria-lineage virus components should be updated for the 2020–2021 influenza vaccine.

Other news

The World Health Organization categorized COVID-19 as a pandemic on 11 March 2020. For more information about the 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>

Primary care data

Syndromic surveillance data

For week 25/2020, no Member States or areas reported on ILI or ARI activity levels.

Influenza activity

Of 20 Member States and areas that reported on the intensity indicator, 17 reported activity at baseline levels and 3 reported low intensity (Azerbaijan, Georgia and Slovakia) for week 25/2020 (Fig. 1).

Of 19 Member States and areas that reported on geographic spread, 16 reported no activity, 3 reported sporadic spread (Azerbaijan, Ireland and United Kingdom (Northern Ireland)) for week 25/2020 (Fig. 2).

Fig. 1. Intensity in the European Region, week 25/2020

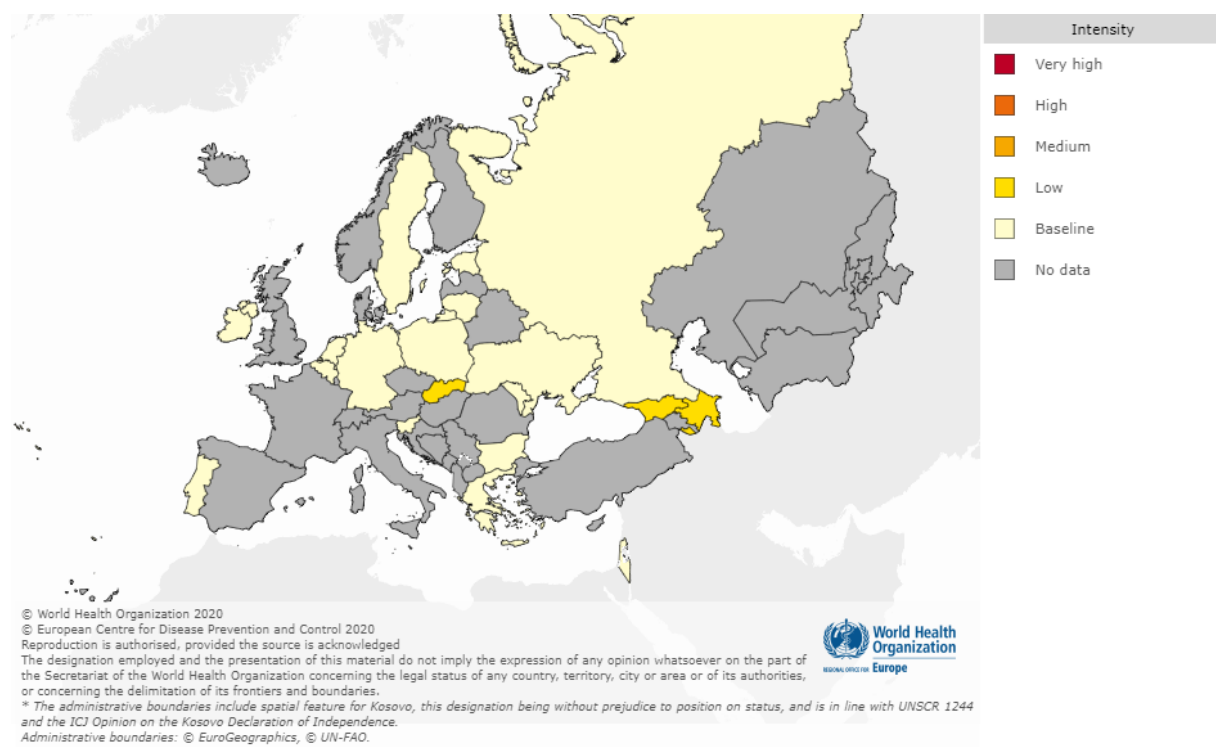
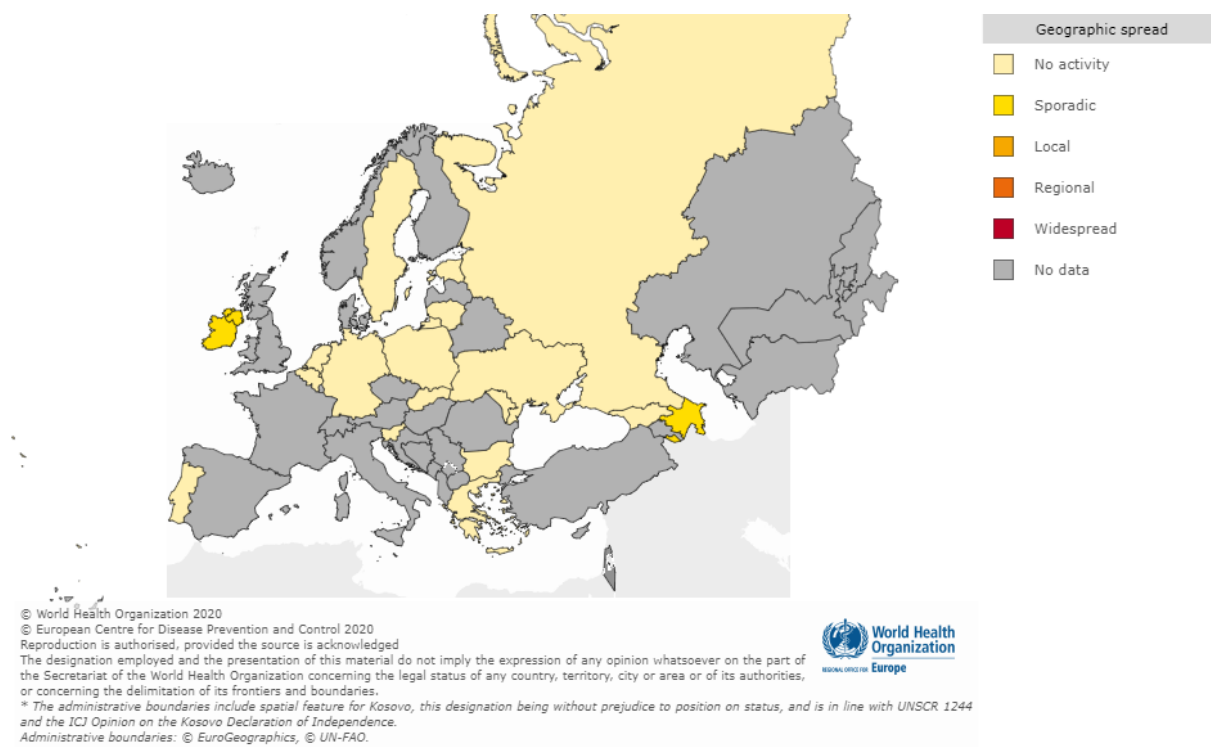


Fig. 2. Geographic spread in the European Region, week 25/2020



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

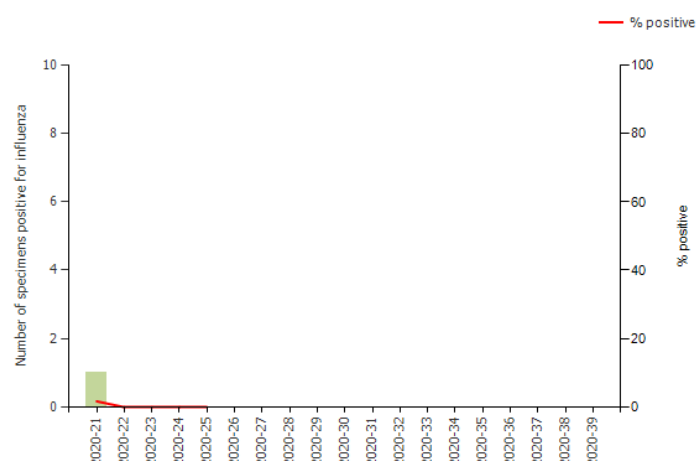
Viruses detected in sentinel-source specimens (ILI and ARI)

For week 25/2020, of 13 sentinel specimens tested for influenza virus, none were positive (Fig. 3 and Table 1).

Cumulatively, for weeks 21-25/2020, 1 of 182 (0.5%) sentinel specimens tested positive for influenza virus. It was influenza type B and not ascribed to a lineage (Table 1).

Details of the distribution of viruses detected in non-sentinel-source specimens can be found in the [Virus characteristics](#) section.

Fig. 3. Influenza virus detections in sentinel-source specimens by type and subtype, by week and cumulatively for week 21/2020 - week 25/2020



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Table 1. Influenza virus detections in sentinel-source specimens by type and subtype, week 25/2020 and cumulatively for week 21/2020 - week 25/2020

Virus type and subtype	Current Week		Season 2019–2020 Weeks 21–25	
	Number	% ^a	Number	% ^a
Influenza A	0	-	0	0
A(H1N1)pdm09	0	-	0	-
A(H3N2)	0	-	0	-
A not subtyped	0	-	0	-
Influenza B	0	-	1	100
B/Victoria lineage	0	-	0	-
B/Yamagata lineage	0	-	0	-
Unknown lineage	0	-	1	-
Total detections (total tested)	0 (13)	-	1 (182)	0.5

^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.

Severity

A subset of Member States and areas monitor severe disease related to influenza virus infection by surveillance of 1) hospitalized laboratory-confirmed influenza cases in ICUs (11 Member States and areas) or other wards (7 Member States and areas), or 2) severe acute respiratory infection (SARI; 17 Member States and areas, mostly located in the eastern part of the Region).

1.1) Hospitalized laboratory-confirmed influenza cases – ICUs

There were no reports of hospitalized laboratory-confirmed influenza in an ICU for weeks 21/2020 to 25/2020.

1.2) Hospitalized laboratory-confirmed influenza cases – other wards

There were no reports of laboratory-confirmed influenza in wards other than ICUs for weeks 21/2020 to 25/2020.

2. SARI surveillance

For week 25/2020, 80 SARI cases were reported by 4 Member States or areas. None of the 17 specimens tested for influenza virus were positive.

Of the SARI cases tested for influenza viruses from week 21/2020 to week 25/2020, 1 tested positive. It was influenza type B.

Of 1 618 SARI cases reported from week 21/2020 to week 25/2020, 1 617 had a recorded age and, of these, 50% were 15–64 years old.

Mortality monitoring

Pooled estimates of all-cause mortality for the countries participating in the [EuroMOMO](#) network have reached normal levels, following a period of a substantial excess mortality observed in some countries, coinciding with the COVID-19 pandemic. A few countries still see a small excess mortality.

The excess mortality has been seen primarily in the age group of ≥ 65 years, but also in the age groups of 45-64 and 15-44 years.

Virus characteristics

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

Viruses detected in non-sentinel source specimens

For week 25/2020, 3 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 influenza viruses; 2 were type A and 1 was type B (Table 2).

Cumulatively, for weeks 21/2020 to week 25/2020, 8 influenza type A and 6 influenza type B viruses were detected. Both of the subtyped A viruses were A(H3N2) (Table 2).

Table 2. Influenza virus detections in non-sentinel source specimens by type and subtype, cumulative for week 21/2020 – week 25/2020

Virus type and subtype	Current Week		Season 2019–2020 Weeks 21-25	
	Number	% ^a	Number	% ^a
Influenza A	2	66.7	8	57.1
A(H1N1)pdm09	0	-	0	0
A(H3N2)	0	-	2	100
A not subtyped	2	-	6	-
Influenza B	1	33.3	6	42.9
B/Victoria lineage	0	-	0	-
B/Yamagata lineage	0	-	0	-
Unknown lineage	1	-	6	-
Total detections (total tested)	3 (1 740)	-	14 (15 880)	-

^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 and antigenic characterization

From weeks 21-25/2020, no influenza viruses were characterised genetically. Genetic data from the 2019-2020 can be found in the FNE report for week 20/2020.

While the great majority of A(H1N1)pdm09 viruses have fallen within subgroups of subclade 6B.1A5 and subclade 6B.1A7 that are different from that of the vaccine virus A/Brisbane/02/2018 (6B.1A1), it was and is anticipated that the vaccine virus will still be effective based on HI assays conducted with post-infection ferret antisera raised against the vaccine virus.

As seen elsewhere in the world, there has been significant genetic diversity among circulating A(H3N2) viruses in the European region for the 2019–2020 influenza season to date, with 53% clade 3C.3a and 47% subclade 3C.2a. All subclade 3C.2a1 viruses have fallen in subgroup 3C.2a1b (with the latter splitting between 3 designated genetic clusters). The vaccine virus, A/Kansas/14/2017, falls within clade 3C.3a and viruses within this clade induce clade-specific antibodies in ferrets, so viruses falling in other clades/subclades may be less well covered by human immune responses to the vaccine.

For the B/Victoria-lineage, viruses in the B/Colorado/06/2017 vaccine virus double deletion clade (1A (del 162-163)) have been in the great minority. However, there is evidence of some cross-reactivity with viruses in the triple deletion clade (1A (del 162-164)) by post-infection ferret antisera raised against the egg-propagated vaccine virus.

B/Yamagata lineage viruses have been detected in low numbers worldwide and, despite some genetic drift with associated HA amino acid substitutions, retain good reactivity with post-infection ferret antisera raised against the B/Phuket/3073/2013 vaccine virus.

ECDC published a [report](#) in June relating to viruses circulating globally, with collection dates after 31 August, but focusing on those from European Union/European Economic Area (EU/EEA) countries. Since the April 2020 characterization report, 8 shipments of influenza-

positive specimens from EU/EEA countries had been received by the WHO Collaborating Centre, London (the Francis Crick Institute, Worldwide Influenza Centre (WIC)). In total, 1 362 virus specimens had been received, with collection dates after 31 August. A summary of viruses from EU/EEA countries characterized in May is given below. Previously published [influenza virus characterization reports](#) are also available on the ECDC website.

A(H1N1)pdm09 viruses

Since the last report, no A(H1N1)pdm09 test viruses from EU/EEA countries were characterised antigenically but previous analyses have shown the great majority of test viruses to be well recognised by antisera raised against the 2019–20 vaccine virus, A/Brisbane/02/2018. Those viruses showing poor reactivity generally carried amino acid substitutions (notably N156K) in the HA1 150-loop region. The 296 EU/EEA test viruses with collection dates from week 40/2019 genetically characterised at the WIC have fallen within subclades of clade 6B.1A: 263 6B.1A5A, 23 6B.1A5B, 1 6B.1A6 and 9 6B.1A7.

A(H3N2) viruses

Since the last report, no A(H3N2) viruses have been characterised antigenically, but previous analyses have shown clade3C.3a-specific recognition by antisera raised against egg-propagated A/Kansas/14/2017, the current vaccine virus. Globally there have been approximately equal proportions of clade 3C.3a and subgroups 3C.2a1b+T131K and 3C.2a1b+T135K viruses detected. However, based on sequences available in GISAID from viruses detected since 1 February 2020, subgroups 3c.2a1b+T135KA/B are prevalent in the USA while those of clade 3C.3a and subgroup 3C.2a1b+T131K dominate in Europe. In total, 355 viruses from EU/EEA countries have been characterised genetically at the WIC: 185 clade 3C.3a, 112 3C.2a1b+T131K, 43 3C.2a1b+T135K-A and 15 3C.2a1b+T135K-B.

B/Victoria viruses

No B/Victoria-lineage viruses were characterised antigenically in this reporting period. Viruses detected in EU/EEA countries during February and March 2020, based on sequences available in GISAID, have all fallen in the 1A(Δ3)B subgroup. Viruses in this subgroup have been antigenically similar to B/Washington/02/2019, the vaccine virus for the 2020–2021 northern hemisphere influenza season. In total, 221 EU/EEA viruses have been characterised genetically at the WIC: 208 subgroup 1A(Δ3)B and 13 subclade 1A(Δ2).

B/Yamagata viruses

No B/Yamagata-lineage viruses were characterised antigenically in this reporting period. All 8 EU/EEA viruses characterised genetically at the WIC since week 40/2019, as for all recently circulating B/Yamagata-lineage viruses, belong to genetic clade 3 and contain at least two HA amino acid substitutions (HA1 L172Q and M251V) compared to B/Phuket/3073/2013, the antigenic effects of which have been minimal as assessed in earlier reports.

Vaccine composition

Based on WHO published recommendations on 21 February 2019, the composition of influenza vaccines for use in the **2019–2020 northern hemisphere influenza season** contain the following:

- an A/Brisbane/02/2018 (H1N1)pdm09-like virus (Clade 6B.1A1);

- an A/Kansas/14/2017 (H3N2)-like virus (Clade 3C.3a);
- a B/Colorado/06/2017-like virus (B/Victoria/2/87 lineage) (Clade 1A(Δ 2)); and
- a B/Phuket/3073/2013-like virus (B/Yamagata/16/88 lineage) (Clade 3).

It was recommended that the influenza B virus component of trivalent vaccines for use in the 2019–2020 northern hemisphere influenza season be a B/Colorado/06/2017-like virus of the B/Victoria/2/87-lineage.

The [full report](#) and [Frequently Asked Questions](#) for the 21 February 2019 decision and the 21 March 2019 [addendum](#) are available on the [WHO website](#).

The report from the [Vaccine Composition Meeting for the southern hemisphere](#) 2020 season can be found [here](#).

On 28 February 2020, WHO published recommendations for the components of influenza vaccines for use in the **2020–2021 northern hemisphere influenza season**.

Egg-based vaccines should contain following:

- an A/Guangdong-Maonan/SWL1536/2019 (H1N1)pdm09-like virus (Clade 6B.1A5A);
- an A/Hong Kong/2671/2019 (H3N2)-like virus (Clade 3C.2a1b+T135K-B);
- a B/Washington/02/2019 (B/Victoria lineage)-like virus (Clade 1A(Δ 3)B); and
- a B/Phuket/3073/2013 (B/Yamagata lineage)-like virus (Clade 3).

Cell- or recombinant-based vaccines should contain following:

- an A/Hawaii/70/2019 (H1N1)pdm09-like virus (Clade 6B.1A5A);
- an A/Hong Kong/45/2019 (H3N2)-like virus (Clade 3C.2a1b+T135K-B);
- a B/Washington/02/2019 (B/Victoria lineage)-like virus (Clade 1A(Δ 3)B); and
- a B/Phuket/3073/2013 (B/Yamagata lineage)-like virus (Clade 3).

It is recommended that the influenza B virus component of both trivalent vaccine types for use in the 2020–2021 northern hemisphere influenza season should be a B/Washington/02/2019-like virus of the B/Victoria-lineage.

The [full report](#) and [Frequently Asked Questions](#) for the 28 February 2020 decision are available on the [WHO website](#).

Vaccine effectiveness

Interim estimates of 2019-2020 seasonal influenza vaccine effectiveness (VE) for the northern hemisphere have been published based on [six European studies](#) (see below) and independent studies conducted in [Finland](#), [Canada](#) and [the United States of America](#). Influenza vaccine effectiveness estimates can vary depending on several factors, for example, study methods, health facility type, population, disease outcome, influenza vaccine types, influenza activity and type/subtype/lineage of circulating viruses. Vaccination against influenza remains the best method for prevention of influenza infection and/or development of severe disease during the ongoing 2019-2020 influenza season.

Interim 2019-2020 influenza VE estimates from the six European studies for all ages ranged from 29% to 61% against any influenza in the primary care setting and 35% to 60% in hospitalized older adults (aged 65 years and over). The VE point estimates against influenza A(H1N1)pdm09 (all ages, both settings) was 48% to 75%, and against influenza A(H3N2) ranged from –58% to 57% (primary care) and –16% to 60% (hospital). Against influenza type B, VE for all ages was 62% to 83% (primary care only).

Antiviral susceptibility testing

From week 40/2019 to week 25/2020, 1993 influenza viruses, collected up to week 14, were tested for susceptibility to neuraminidase inhibitors: 825 A(H1N1)pdm09, 694 A(H3N2) and 474 type B viruses.

In total, 5 A(H1N1)pdm09 viruses showed highly reduced inhibition (HRI) or reduced inhibition (RI) to oseltamivir and/or zanamivir. Of these, 3 viruses carried amino acid substitution H275Y in NA, with one of them also having H295S substitution, both of which are indicative of HRI by oseltamivir. An additional 2 A(H1N1)pdm09 viruses showed RI by oseltamivir by phenotypic assays; 1 of these viruses also showed RI by zanamivir by phenotypic assays.

1 A(H3N2) virus carried amino acid substitution R292K in NA and showed evidence of HRI by oseltamivir and RI by zanamivir.

1 type B/Victoria virus showed RI by zanamivir and highly reduced inhibition (HRI) by oseltamivir by phenotypic assays.

This weekly update was prepared by an editorial team at the European Centre for Disease Prevention and Control (Angeliki Melidou, Nick Bundle, Silvia Funke, Lucia Pastore Celentano, Andrew Amato-Gauci, and Oksana Martinuka) and the WHO Regional Office for Europe (James Fielding, Dmitriy Pereyaslov, and Miriam Sneiderman). It was reviewed by country experts (Ana Paula Rodrigues, National Institute of Health Dr Ricardo Jorge (INSA), Portugal and Božidarka Rakočević, Centre for Disease Control, Institute of Public Health, Montenegro) and by experts from the network (Adam Meijer, National Institute for Public Health and the Environment (RIVM), the Netherlands; Rod Daniels and John McCauley, WHO Collaborating Centre for Reference and Research on Influenza, Francis Crick Institute, United Kingdom).

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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