

Summary

Week 40/2020 (28 September–4 October 2020)

- This is the first report for the 2020-2021 influenza season.
- Influenza activity remained at interseasonal levels over the period of this report.
- Of 163 sentinel specimens tested for influenza viruses in week 40, none tested positive and, of 5 714 non-sentinel specimens tested for influenza viruses, 1 tested positive (type B no lineage ascribed).
- The novel coronavirus disease 2019 (COVID-19) pandemic has affected healthcare presentations and testing capacities of countries and areas in the Region, which negatively impacted reporting of influenza epidemiologic and virologic data during the 2019-2020 season. It is not unusual for influenza activity to be low at this time of year but, if the COVID-19 pandemic continues, influenza data we present, notably in terms of seasonal patterns, will need to be interpreted with caution.

2020-2021 season overview

- For the Region as a whole, influenza activity remains at baseline levels.
- 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 compared to the 2019–2020 influenza vaccine.

Other news

- A technical note relating to antigenic and genetic category reporting to TESSy for the 2020-2021 will be published shortly.

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>

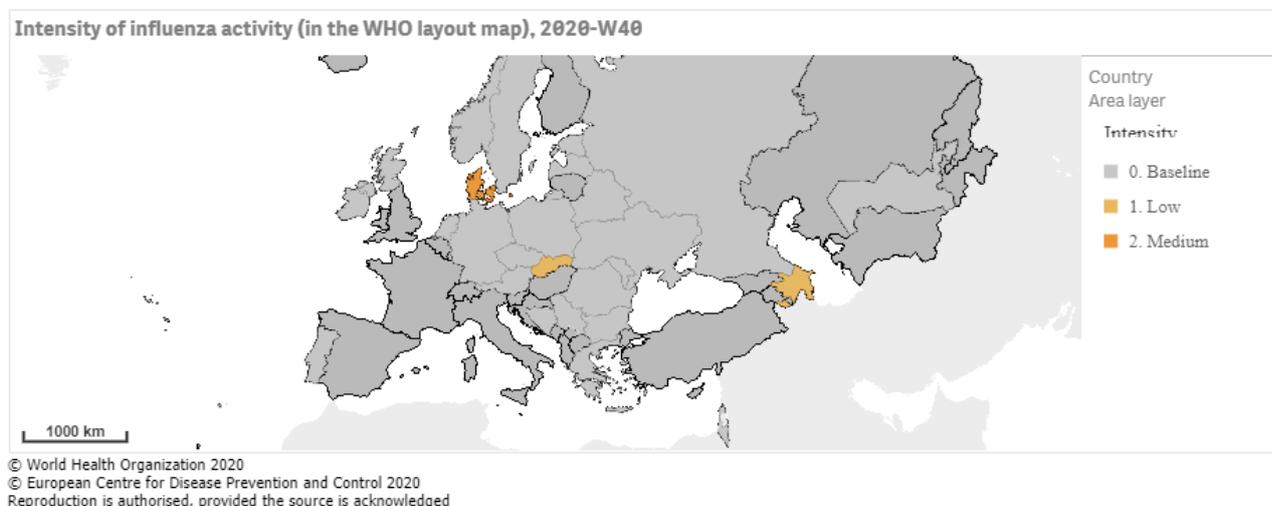
Primary care data

Influenza activity

Of 27 countries and areas that reported on the intensity indicator, 24 reported activity at baseline levels, 2 reported low intensity (Azerbaijan and Slovakia), 1 reported medium intensity (Denmark) for week 40/2020 (Fig. 1).

Of 26 countries and areas that reported on geographic spread, 22 reported no activity and 4 reported sporadic spread (Denmark, United Kingdom (Northern Ireland and Scotland) and Slovakia) for week 40/2020 (Fig. 2).

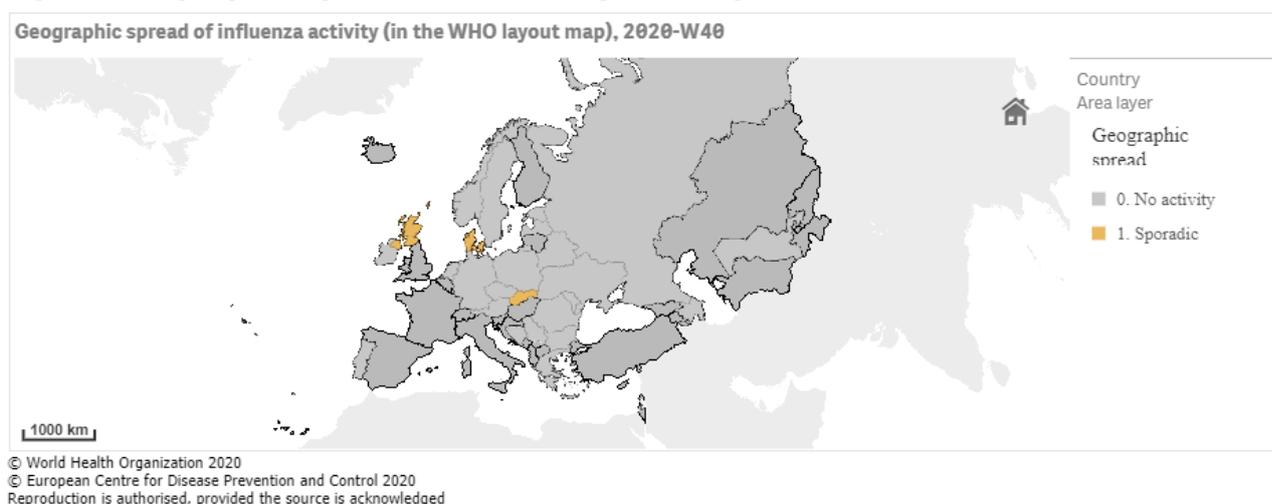
Fig. 1. Intensity in the European Region, week 40/2020



The designation employed and the presentation of this material do not imply the expression of any opinion whatsoever on the part of the Secretariat of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries.

* 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.

Fig. 2. Geographic spread in the European Region, week 40/2020



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Administrative boundaries: © EuroGeographics, © UN-FAO.

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 40/2020, of 163 sentinel specimens tested for influenza viruses, none were positive (Fig. 3. Influenza virus detections in sentinel-source specimens by type and subtype, by week for week 40/2020 and Table 1. Influenza virus detections in sentinel-source specimens by type and subtype for week 40/2020 and cumulatively for the influenza season 2020-2021).

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 for week 40/2020

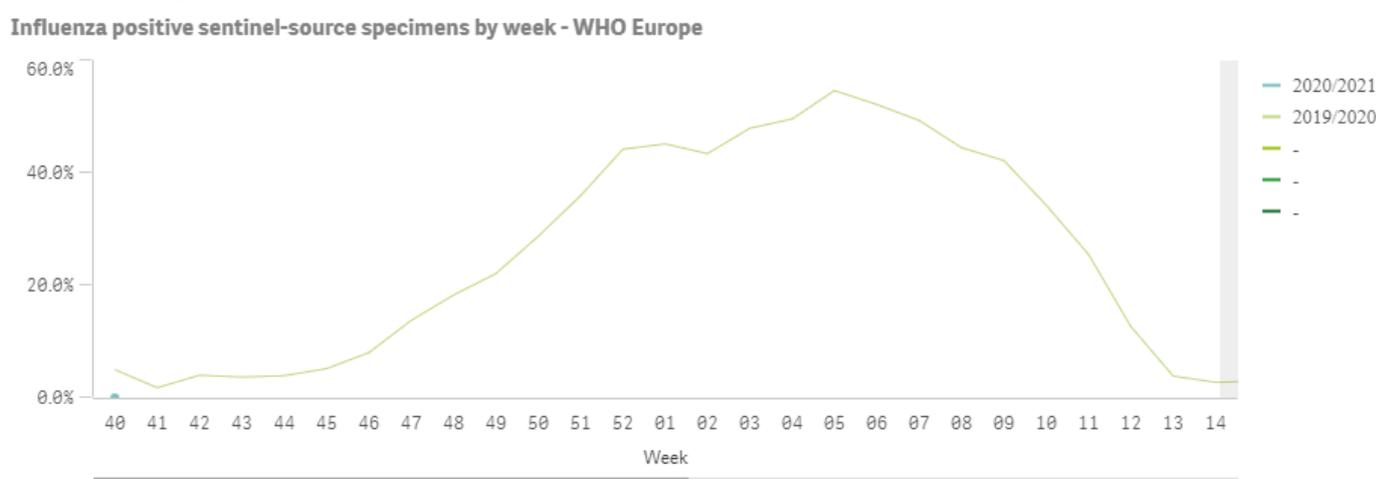


Table 1. Influenza virus detections in sentinel-source specimens by type and subtype for week 40/2020 and cumulatively for the influenza season 2020-2021

Virus type and subtype	Current Week (40)		Influenza Season 2020-2021	
	Number	% ^a	Number	% ^a
Influenza A	0	-	0	-
A(H1N1)pdm09	0	-	0	-
A(H3N2)	0	-	0	-
A not subtyped	0	-	0	-
Influenza B	0	-	0	-
B/Victoria lineage	0	-	0	-
B/Yamagata lineage	0	-	0	-
Unknown lineage	0	-	0	-
Total detections (total tested)	0 (163)	-	0 (163)	-

^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 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).

1.1) Hospitalized laboratory-confirmed influenza cases – ICUs

There were no hospitalized laboratory-confirmed influenza cases in ICUs for week 40/2020.

1.2) Hospitalized laboratory-confirmed influenza cases – other wards

There were no laboratory-confirmed influenza cases in wards outside ICUs for week 40/2020.

2. SARI surveillance

For week 40/2020, specimens from 57 SARI cases were tested for influenza viruses. All were negative.

Mortality monitoring

Overall pooled estimates of all-cause mortality for 24 countries and areas participating in the [EuroMOMO](#) showed normal levels for the time of year. However, in some countries and areas there was slight excess mortality.

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 40/2020, one specimen 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 (type B: Table 2. Influenza virus detections in non-sentinel source specimens by type and subtype, week 40/2020 and cumulatively for influenza season 2020-2021).

Table 2. Influenza virus detections in non-sentinel source specimens by type and subtype, week 40/2020 and cumulatively for influenza season 2020-2021

Virus type and subtype	Current Week (40)		Influenza Season 2020-2021	
	Number	% ^a	Number	% ^a
Influenza A	0	-	0	-
A(H1N1)pdm09	0	-	0	-
A(H3N2)	0	-	0	-
A not subtyped	0	-	0	-
Influenza B	0	-	0	-
B/Victoria lineage	0	-	0	-
B/Yamagata lineage	0	-	0	-
Unknown lineage	1	-	1	100
Total detections (total tested)	1 (5 741)	-	1 (5 741)	-

^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

For week 40/2020, no influenza viruses were characterised genetically.

Data from influenza season 2019-2020

The great majority of A(H1N1)pdm09 viruses have fallen within subgroups of subclade 6B.1A5 and subclade 6B.1A7, with those of 6B.1A5A becoming dominant as the 2019-2020 season progressed. While these viruses have HA amino acid substitutions compared to the vaccine virus A/Brisbane/02/2018 (6B.1A1), it was anticipated that the vaccine virus would still be effective based on HI assays conducted with post-infection ferret antisera raised against the vaccine virus, until emergence of a group of viruses with HA1 N156K substitution. The vaccine virus has been updated for the 2020-2021 season to be A/Guangdong-Maonan/SWL1536/2019-like.

As seen elsewhere in the world, there was significant genetic diversity among circulating A(H3N2) viruses in the European region for the 2019–2020 influenza season, with 53% clade 3C.3a and 47% subclade 3C.2a. All subclade 3C.2a1 viruses fell 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 and viruses falling in other clades/subclades were less well covered by human immune responses to the vaccine. The vaccine virus has been updated for the 2020-2021 season to be A/Hong Kong/2671/2019-like.

For the B/Victoria-lineage, viruses in the B/Colorado/06/2017 vaccine virus double deletion clade (1A (del 162-163)) were in the great minority. However, there was 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. The vaccine virus has been updated for the 2020-2021 season to be B/Washington/02/2019 (B/Victoria lineage)-like.

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

ECDC published a [report](#) in August relating to viruses circulating globally, with collection dates after 31 August 2019, but focusing on those from European Union/European Economic Area (EU/EEA) countries. Since the June 2020 characterization report, 3 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°661 virus specimens had been received, with collection dates after 31 August 2019. A summary of viruses from EU/EEA countries characterized in July is given below. Previously published [influenza virus characterization reports](#) are also available on the ECDC website.

A(H1N1)pdm09 viruses

Of the 49 A(H1N1)pdm09 viruses from EU/EEA countries characterised antigenically since the June report, 36 were well recognised by antisera raised against the 2019–20 vaccine virus, A/Brisbane/02/2018. The 13 viruses that showed poor reactivity generally carried amino acid substitutions (notably N156K) in the HA1 150-loop region. The 468 EU/EEA test viruses with collection dates from week 40/2019 genetically characterised at the WIC fell within subclades of clade 6B.1A: 425 6B.1A5A, 30 6B.1A5B, 1 6B.1A6 and 12 6B.1A7.

A(H3N2) viruses

The majority (39) of the 68 A(H3N2) viruses from EU/EEA countries characterised antigenically in July were clade 3C.3a and were well recognised by antiserum raised against egg-propagated A/Kansas/14/2017, the 2019-2020 vaccine virus. Globally, approximately equal proportions of clade 3C.3a and subgroups 3C.2a1b+T131K and 3C.2a1b+T135K viruses had been detected, but for viruses detected since 1 February 2020, subgroups 3c.2a1b+T135KA/B prevailed in the USA while those of clade 3C.3a and subgroup 3C.2a1b+T131K dominated in Europe. In total, 500 viruses from EU/EEA countries had been characterised genetically at the WIC: 282 clade 3C.3a, 137 3C.2a1b+T131K, 61 3C.2a1b+T135K-A and 20 3C.2a1b+T135K-B.

B/Victoria viruses

Thirty-two B/Victoria-lineage viruses from EU/EEA countries were antigenically characterised in July, all were subclade 1A(Δ3)B. Approximately 25% of the subclade 1A(Δ3)B viruses were not recognised well by antiserum raised against B/Washington/02/2019, the vaccine virus for the 2020–2021 northern hemisphere influenza season. Poor recognition was generally associated with HA1 amino acid substitutions of either N126K or E128K. In total, 306 EU/EEA viruses had been characterised genetically at the WIC: 290 subclade 1A(Δ3)B and 16 subclade 1A(Δ2).

B/Yamagata viruses

One B/Yamagata-lineage viruses was characterised antigenically in July. All 8 EU/EEA viruses characterised genetically at the WIC since week 40/2019, as for all recently circulating B/Yamagata-lineage viruses, belonged to genetic clade 3 and contained 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

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 the 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 the 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](#).

Based on WHO published recommendations on 25 September 2020, the composition of influenza vaccines for use in the **2021 southern hemisphere influenza season** will contain the following:

Egg-based Vaccines

- an A/Victoria/2570/2019 (H1N1)pdm09-like virus;
- an A/Hong Kong/2671/2019 (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/Hong Kong/45/2019 (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 is recommended that the influenza B virus component of **both trivalent vaccine types** for use in the 2021 southern hemisphere influenza season should be a B/Washington/02/2019-like virus of the B/Victoria-lineage.

The full report can be found [here](#).

Antiviral susceptibility testing

For week 40/2020, no influenza viruses were tested for susceptibility to neuraminidase inhibitors.

This weekly update was prepared by an editorial team at the European Centre for Disease Prevention and Control (Cornelia Adlhoch, Lisa Ferland, Favelle Lamb, Andrew Amato-Gauci) and the WHO Regional Office for Europe (Piers Mook, Richard Pebody and Miriam Sneiderman). It was reviewed by 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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