

# Seasonal influenza 2020–2021

## Annual Epidemiological Report

### Key facts

- For the EU/EEA, influenza activity remained at or below inter-seasonal levels throughout the 2020–21 season, probably due to the impact of the various public health and social measures implemented to reduce transmission of SARS-CoV-2.
- Only 10 sentinel and 158 non-sentinel specimens tested positive for influenza during the 2020–21 season. Compared with previous seasons a slightly lower number of samples were tested in sentinel surveillance and a similar number in non-sentinel surveillance. However, there was a remarkable decrease in the number of influenza infections detected, with numbers detected on a weekly basis being similar to those reported during the inter-seasonal periods for both sentinel and non-sentinel surveillance systems.
- There were no hospitalised cases of influenza reported by EU/EEA countries in the 2020-21 season and neither were there any fatalities from influenza reported this season.
- Very few viruses were sent for characterisation this season, which has hampered the decision on vaccine composition for the coming season.

### Methods

For a detailed description of methods used to produce this report, please refer to the Methods chapter [1].

An overview of the national surveillance systems is available online [2].

Additional data on influenza are available from ECDC's online 'Surveillance atlas of infectious diseases' [3].

Surveillance of influenza in EU/EEA countries is carried out by the European Influenza Surveillance Network (EISN), coordinated by the European Centre for Disease Prevention and Control (ECDC).

EU/EEA influenza surveillance is based on weekly data reported to ECDC by sentinel general practitioners (in some countries also other physicians, such as paediatricians) and national influenza reference laboratories from week 40 to week 20 of the following year.

Surveillance data include:

- Qualitative indicators of influenza activity, namely intensity, geographical spread and trend. Intensity - ranging from low activity (i.e. no activity or activity at baseline level) to very high - is an indicator of the level of influenza activity. Geographical spread - ranging from no activity to widespread - refers to the number of affected areas in a given country. Trend - increasing, stable or decreasing - compares the level of ILI/ARI sentinel consultations with the previous week.

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- The aggregate number of influenza-like illness (ILI) and/or acute respiratory infection (ARI) cases seen by sentinel physicians<sup>1</sup> [2]. Each country also reports denominator data (population covered by sentinel surveillance) to enable calculation of weekly ILI and ARI consultation rates.
- The aggregate number of sentinel specimens obtained from a systematic sample of ILI/ARI patients testing positive for influenza, by type, A subtype and B lineage [2]. Overall positivity rates of sentinel specimens are used to estimate the start, duration and end of influenza activity; a 10% threshold is used to indicate the start of the seasonal epidemic.
- Antigenic and genetic characterisation and strain-based antiviral susceptibility data for a subset of influenza viruses detected in sentinel and non-sentinel specimens [2].
- Case-based hospital data reported by a subset of countries on a voluntary basis<sup>2</sup>, including demographic, clinical and virological data [2].

Since the 2014-15 season, influenza surveillance in the 53 countries of the WHO European Region has been jointly coordinated by ECDC and WHO's Regional Office for Europe. Results are disseminated through a joint weekly bulletin ([www.FlunewsEurope.org](http://www.FlunewsEurope.org)) [4].

This report presents data from EU/EEA countries and the [EuroMOMO](http://www.flunewsEurope.org/Archives) project [5] which monitors weekly all-cause excess mortality in Europe. Archived weekly data from October 2014 onwards are available from: <http://www.flunewsEurope.org/Archives> [4].

Seasonal data in this report, covering the period from week 40/2020 to 20/2021, were extracted from the database during week 21/2021 for the reporting week 20/2021.

## Note about the unusual 2020–21 season

In December 2019, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), responsible for coronavirus disease (COVID-19), emerged in China [6]. The virus rapidly spread worldwide and was subsequently declared by the World Health Organization (WHO) as a pandemic on 11 March 2020. In order to control the transmission of SARS-CoV-2, countries implemented strict public health measures (e.g. physical distancing, working from home, ban on all public events, school closures, increased hygiene measures etc.) which has had a positive effect on reducing transmission of other respiratory viruses, including influenza. The implementation of COVID-19 surveillance systems and strict public health measures was reflected by an all-time low level of influenza activity in 2020 [7-9].

The COVID-19 pandemic affected healthcare seeking behaviour, healthcare provision, and testing practices and capacities in the EU/EEA and has had a negative impact on the collection of epidemiological and virological data on influenza since March 2020 [10]

## Qualitative indicators of influenza activity

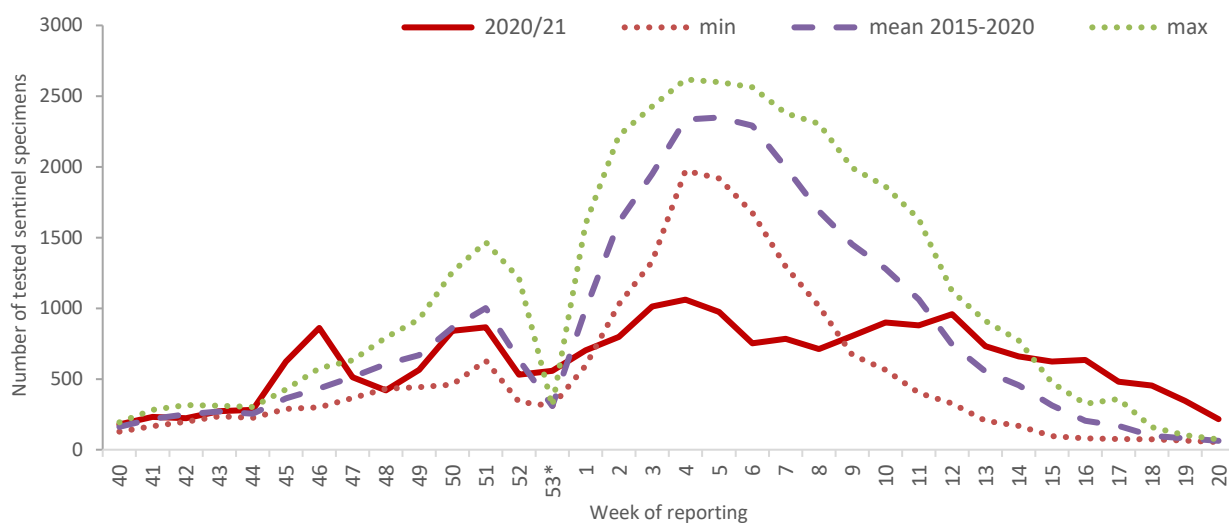
Most countries reported no activity, with a few countries reporting sporadic or local geographical spread. Influenza intensity was reported as baseline, apart from in Estonia and Slovakia which reported weeks with low intensity of influenza circulation during the 2020–21 season [4].

## Sentinel surveillance

During the influenza 2020–21 season, the number of tested specimens from sentinel surveillance was slightly lower than for previous seasons, despite ongoing COVID-19 surveillance. Between week 16/2015 and week 2019, on average 27 903 (range 25 616–31 955) sentinel specimens were tested and 12 212 were positive (range 10 880–16 268). However, during the 2020–2021 season only 10 positive specimens were identified out of 21 442 tested (Figure 1).

<sup>1</sup> ILI and a denominator were reported by Austria, Belgium, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and United Kingdom. ARI and a denominator were reported by Belgium, Bulgaria, Cyprus, the Czech Republic, Estonia, Finland, Germany, Latvia, Lithuania, Luxembourg, the Netherlands, Romania, Slovakia and Slovenia.

**Figure 1. Number of tested specimens from sentinel surveillance, week 40/2020 to week 20/2021, compared to minimum, mean and maximum values from seasons 2015-16 to 2019-20, EU/EEA**



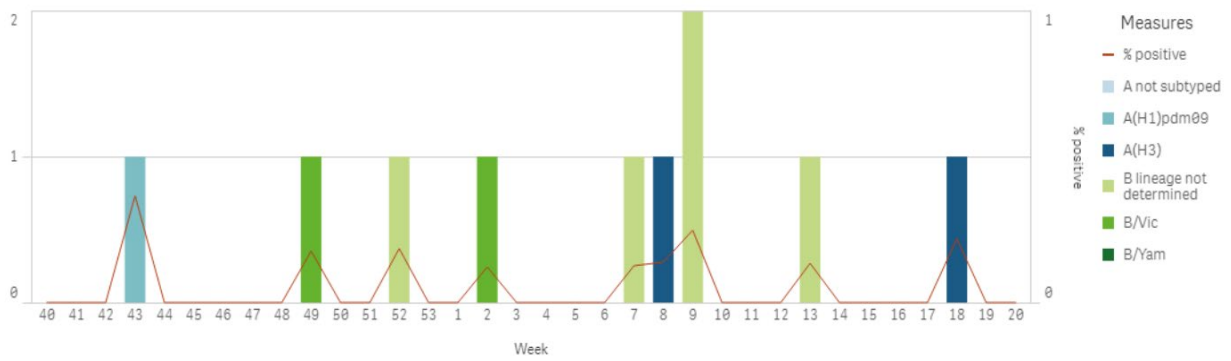
\*Seasons 2014-15 and 2020-21 have 53 weeks of reporting.

**Table 1. Number of positive tested sentinel and non-sentinel specimens by type and subtype/lineage, EU/EEA countries, 2020-21**

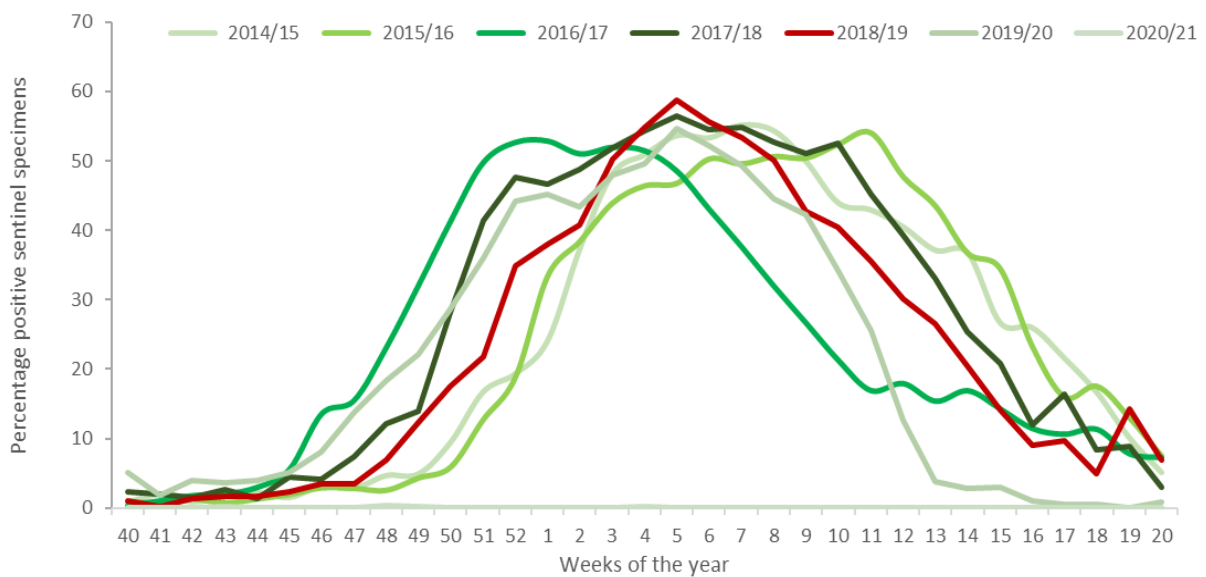
Virus subtype	Number of positive tested sentinel specimens (number tested)	%	Number of positive tested non-sentinel specimens (number tested)	%
Type A total	3	30	65	41
Influenza type A not subtyped	0		36	
A(H1)pdm09	1		8	
A(H3)	2		21	
Influenza type B total	7	70	93	59
B lineage not determined	5		79	
B/Vic	2		11	
B/Yam	0		3	
<b>Total</b>	<b>10 (21 442)</b>		<b>158 (577 476)</b>	

Of more than 20 000 tested specimens from sentinel sites, only 10 tested positive, with slightly more type B viruses than type A (Table 1 and Figure 2). Only sporadic positive detections were observed without clear seasonal pattern (Figure 2). The positivity rate for influenza of sentinel specimens remained at baseline levels throughout the season (Figure 3)

**Figure 2. Weekly proportion of sentinel specimens positive for influenza virus and number of detections by virus type, subtype/lineage and week of reporting, EU/EEA, 2020-21**



**Figure 3. Weekly proportion of sentinel specimens positive for influenza virus by season and week of reporting, EU/EEA, 2015-16 to 2020-21**

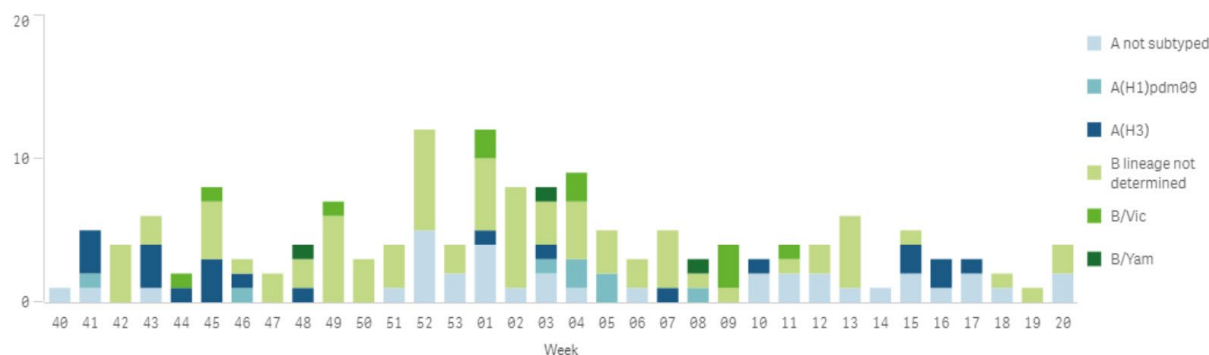


### Non-sentinel surveillance

Similar to sentinel surveillance, only sporadic influenza detections were reported from non-sentinel surveillance, with only 158 of a total 577 476 specimens testing positive (Table 1). In the seasons 2015-16 to 2019-20, on average 580 033 non-sentinel specimens were tested (range 357 552–664 629) and on average 29 340 tested positive (range 84 091–151 684). This indicates that although similar numbers have been tested, a significantly lower number was influenza positive, with 99.5% less detections in 2020-21.

Slightly more influenza type B viruses were reported than type A. Viruses without subtype or lineage accounted for most of the detections. Although no clear seasonal pattern with onset, increase, peak and decrease of influenza virus detections was observed, the highest number of detections by week were reported during the final weeks of 2020 and the first weeks of 2021, where the influenza season would be usually be in full swing (Figure 4).

**Figure 4. Influenza virus detections from non-sentinel surveillance by type, subtype/lineage and week, EU/EEA countries, 2020/21**



## Hospitalisations due to influenza

There were no reports of hospitalised cases of influenza or fatalities from EU/EEA countries during the 2020-21 influenza season.

## Virus characterisations

Only 14 influenza viruses were genetically characterised during the season, with the majority being type A viruses (Figure 5). More information on influenza virus characterisation can be seen in the April summary report [15].

**Figure 5. Number of influenza viruses attributed to genetic groups, EU/EEA, 2020/21**

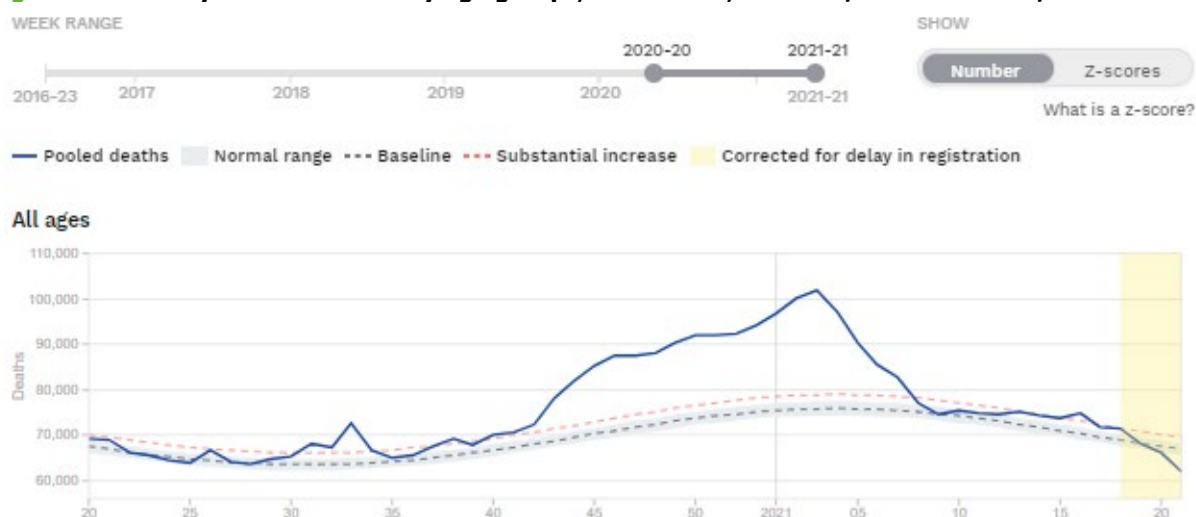
	Number of influenza viruses attributed to genetic groups 2020/2021
<b>Total</b>	<b>14</b>
<b>Influenza A</b>	<b>9</b>
<b>A(H1)pdm09</b>	<b>1</b>
A/Guangdong-Maonan/SWL1536/2019(H1N1)pdm09	1
<b>A(H3)</b>	<b>8</b>
A/Bretagne/1323/2020(H3N2)_3C.2a1b+T131K-B	1
A/Denmark/3264/2019(H3N2)_3C.2a1b+T135K-A	1
A/Slovenia/1637/2020(H3N2)_3C.2a1b+T131K-A	6
<b>Influenza B</b>	<b>5</b>
<b>B/Vic</b>	<b>5</b>
B/Washington/02/2019(Victoria lineage_1A(del162-164))	5

## Antiviral susceptibility and vaccine effectiveness

During the season 2020-21, very few (n=13) influenza viruses were tested for susceptibility to neuraminidase inhibitors and sequence analysis indicated normal inhibition by both oseltamivir and zanamivir.

## All-cause excess mortality

Pooled data from 28 European countries reporting to the EuroMOMO project showed an excess mortality from all causes. This overall mortality increase is driven by excess mortality in a few countries, while most countries have been experiencing normal mortality levels (Figure 6) [5]. As no influenza circulation has been reported this season, the high excess all-cause mortality levels can possibly be chiefly attributed to COVID-19 and heat waves during the summer months [11,12].

**Figure 6. Mortality from all causes by age groups, EuroMOMO, week 40/2020–week 20/2021**

Source: [www.euromomo.eu](http://www.euromomo.eu)

## Discussion

The influenza season 2020-21 was a very unusual season, with influenza activity remaining at a very low level (baseline) throughout the season. This was probably due to the various public health and social measures implemented by European countries to reduce transmission of SARS-CoV-2.

The number of specimens tested from sentinel and non-sentinel sources was comparable to previous seasons, but the number of influenza detections decreased substantially to a level similar to or lower than that of the inter-seasonal periods.

There were very few hospitalised cases of influenza during the season and no fatalities reported. Very few viruses were sent for characterisation, hampering the vaccine composition decision for the coming season.

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

## Public health implications

The COVID-19 pandemic also had implications for the number of characterised viruses, so the total number of genetically characterised viruses during the 2020-21 season was lower than in previous seasons. This may have an impact on the coming season, as antigenic and genetic characterisation of viruses is essential for the selection of the most appropriate vaccine virus components.

The very low level of detections for the 2020-21 season compared to previous seasons raises the question as to what the 2021-22 season will look like. It could be similar to 2020-21 or there might be a return to a more typical season, with ongoing SARS-CoV-2 circulation. It is also difficult to predict the extent to which SARS-CoV-2 measures will be lifted, when this will occur and whether it will result in influenza returning to its previous levels. As measures are lifted, people will begin travelling between countries again and larger groups will be able to gather, potentially increasing the risk of seeding events for influenza outbreaks and spread.

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