

This weekly bulletin provides updates on threats monitored by ECDC.

## I. Executive summary

### EU Threats

#### West Nile virus - Multi-country (World) - Monitoring season 2022

Opening date: 2 June 2022

Latest update: 15 July 2022

During the transmission season for West Nile Virus (WNV), which usually runs from June to November, ECDC monitors the occurrence of infections in the European Union (EU), the European Economic Area (EEA) and EU-neighbouring countries. ECDC publishes weekly epidemiological updates to inform blood safety authorities. Data reported through The European Surveillance System (TESSy) are presented at the NUTS 3 (nomenclature of territorial units for statistics 3) level for EU/EEA countries and at the GAUL 1 (global administrative unit layers 1) level for EU-neighbouring countries.

→ Update of the week

Since last week's update, and as of 13 July 2022, European Union (EU) and European Economic Area (EEA) countries reported two human cases of West Nile virus (WNV) infection and no deaths related to WNV infections. Cases were reported by Greece (1) and Italy (1). EU-neighbouring countries reported no human cases of WNV infection. There were no deaths related to WNV infections.

#### COVID-19 associated with SARS-CoV-2 – Multi-country EU/EEA – 2019 - 2022

Opening date: 7 January 2020

Latest update: 15 July 2022

On 31 December 2019, the Wuhan Municipal Health Commission reported a cluster of pneumonia cases of unknown aetiology with a common source of exposure at Wuhan's South China Seafood City market. Further investigations identified a novel coronavirus as the causative agent of respiratory symptoms for these cases. The outbreak rapidly evolved, affecting other parts of China and other countries worldwide. On 30 January 2020, WHO declared that the outbreak of coronavirus disease (COVID-19) constituted a Public Health Emergency of International Concern (PHEIC), accepting the Committee's advice and issuing temporary recommendations under the International Health Regulations (IHR). On 11 March 2020, the Director-General of WHO declared the COVID-19 outbreak a pandemic. The third, fourth, fifth, sixth, seventh, eighth, ninth, 10th and 11th IHR Emergency Committee meetings for COVID-19 were held in Geneva on 30 April 2020, 31 July 2020, 29 October 2020, 14 January 2021, 15 April 2021, 14 July 2021, 22 October 2021, 13 January 2022, and 11 April 2022, respectively. The Committee concluded during these meetings that the COVID-19 pandemic continues to constitute a PHEIC.

→ Update of the week

As of week 2022-27, 152 665 981 cases and 1 118 164 deaths have been reported in the EU..

The figures reported worldwide and in the EU/EEA are probably an underestimate of the true number of cases and deaths, due to various degrees of under-ascertainment and under-reporting.

The latest situation update for the EU/EEA is available [here](#).

In week 2022-27, in the EU/EEA overall, the reported weekly cases increased by 1.6% compared to the previous week. Overall, 12 countries reported a decrease in the weekly cases (Cyprus, Czechia, Estonia, Finland, Germany, Ireland, Italy, Luxembourg, Malta, Norway, Portugal, and Spain). The countries with the highest 14-day notification rates per 100 000 population are: Cyprus (4 422), France (2 445), Luxembourg (2 275), Greece (2 135), and Iceland (1 733).

At the end of week 27, 2022 (week ending 10 July), the rate of cases among people aged 65 years and above increased in 23 out of the 27 countries reporting these data at the EU/EEA-level. Compared to the previous week, this corresponds to a 23% increase, and has reached 62.8% of the pandemic maximum. These increases have been observed for five weeks in nine countries and for six weeks in two countries. The increasing transmission among older age groups has led to increasing rates of severe disease.

Out of 30 countries with data on hospital or ICU admissions/occupancy up to week 27, 12 reported an increasing trend in at least one of these indicators compared with the previous week. The 14-day COVID-19 death rate has been stable for five weeks (8.3 deaths per million population, compared with 8.5 deaths the previous week). Increasing trends in the COVID-19 death rate were observed in seven countries.

Among the 12 countries with an adequate sequencing volume for weeks 25–26 (20 June to 3 July 2022), the estimated distribution of variants of concern (VOC) or variants of interest (VOI) was 82.8% (15.4–100.0% from 12 countries) for BA.4/BA.5; 15.4% (1.8–84.3% from 11 countries) for BA.2; 7.2% (1.5–8.8% from three countries) for BA.2+L452X; 0.2% (0.0–0.4%, 164 detections from five countries) for BA.1; and 0.1% (0.0–0.3%, four detections from two countries) for B.1.617.2.

Since the last update on 7 July 2022 and as of 14 July 2022, ECDC decided to re-classify the Omicron sub-lineage BA.2.75 from variant under monitoring (VUM) to variant of interest (VOI).

BA.2.75 is a newly designated sub-lineage of BA.2, mainly circulating in India (234 sequences reported to GISAID EpiCoV as of 14 July 2022), but also detected in 14 other countries spanning four continents (51 sequences). Often incorrectly referred to in the media as 'Centaurus', this variant has not yet officially received a name in the WHO SARS-CoV-2 variant nomenclature.

BA.2.75 was designated by ECDC as a variant under monitoring (VUM) on 7 July 2022 and subsequently escalated to variant of interest (VOI) on 14 July 2022. This change was made due to increasing number of detections in India and world-wide as well as the concerning mutation profile of this variant. Such a profile might potentially be associated with a change in the antigenic properties of the virus, which could ultimately lead to a new surge in COVID-19 cases. No solid scientific evidence on the transmissibility, disease severity, or immune escape of BA.2.75 is currently available. The WHO designated BA.2.75 as a variant of concern – lineage under monitoring (VOC-LUM).

BA.2.75 shows an increasing trend in India. This SARS-CoV-2 lineage accounted for 10% of the sequenced genomes in such country in week 25 and early data for week 26 point towards that a further increase in proportions. In India the infection background is mostly BA.2, suggesting that this variant may have increased transmissibility compared to this variant. BA.4/BA.5 constitute a lower proportion of circulating variants in India. Whether BA.2.75 has a growth advantage over these two variants, which are currently dominant in the EU/EEA remains to be determined. The currently available data are very limited and should be interpreted carefully. WHO and ECDC are continuing to monitor the situation very closely.

Within the EU/EEA, BA.2.75 variant cases are reported to GISAID from Denmark (1), Germany (2), Luxembourg (1), and the Netherlands (1) as of 14 July 2022. Outside the EU/EEA, BA.2.75 variant cases were detected in Australia (2), Canada (4), Indonesia (4), Japan (3), Martinique (1), Nepal (2), New Zealand (6), Turkey (1), USA (9) and the United Kingdom (14).

For the latest information on variants, please see [ECDC's webpage on variants](#).

## Monkeypox - Multi-country - 2022

Opening date: 3 June 2022

Latest update: 15 July 2022

Since early May 2022, cases of monkeypox (MPX) have been reported from countries where the disease is not endemic.

→Update of the week

Since the last update of 11 July, and as of 14 July 2022, 1 149 monkeypox (MPX) cases have been reported from 15 EU/EEA countries: Spain (443), Germany (405), France (191), the Netherlands (32), Norway (30), Denmark (15), Austria (12), Sweden (9), Czechia (3), Croatia (2), Luxembourg (2), Romania (2), Greece (1), Italy (1), and Slovenia (1). No new countries have reported confirmed cases.

**Disclaimer:** Data presented in this update are compiled from TESSy and official sources, we selected the database with the larger number of MPX cases reported for each country. Therefore, for this update countries for which TESSy data were used are the following: Austria, Belgium, Bulgaria, Estonia, Finland, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Luxembourg, Malta, the Netherlands, Poland, Romania, Slovakia, Sweden

### Other news:

In a [press release](#) published on 8 July 2022, the French National Authority for Health (HAS – Haute Autorité de Santé), an independent advisory body, updated its recommendations on MPX vaccination in France. Previously, HAS had only endorsed a [post-exposure](#) vaccination for healthcare workers and adults who had high-risk contact with cases. As an additional measure, HAS now recommends targeted pre-exposure vaccination for population groups at higher risk of exposure, including men who have sex with men, transgender people with multiple sexual partners, and sex workers.

On 12 July 2022, after an exceptional use authorisation was granted for JYNNEOS® as an additional measure to control the MPX outbreak in Portugal, the General Directorate for Health issued a [regulation](#) outlining the country's vaccination strategy. Authorities recommend that the JYNNEOS® vaccine be offered as post-exposure prophylaxis. JYNNEOS® is a live attenuated, replication-deficient vaccine based on a modified vaccinia Ankara. The eligible population includes asymptomatic close contacts of cases, ideally within four days of exposure. However, vaccination is still possible within 14 days after a known exposure if the person has not contracted a confirmed monkeypox infection the meantime. People without a prior history of smallpox vaccine will be offered two doses at least 28 days apart, whereas those who have been vaccinated against smallpox will only receive one dose.

According to [media sources](#), on 12 July 2022 Spain's Public Health Commission, a technical body gathering the country's Ministry of Health and the Autonomous Regions, approved a pre-exposure vaccination scheme for at-risk populations. This will include people with multiple sexual partners or who have engaged in casual or anonymous sex in the last year. The proposal was formulated by Madrid's Autonomous Community. Health officials in Madrid are quoted as being concerned about a possible surge in monkeypox cases following two mass gatherings in the area, namely the Orgullo Pride Parade and the [Mad Cool](#) music festival.

Following previous [announcements](#), the World Health Organization (WHO) Director-General [declared](#) he will reconvene an Emergency Committee by 21 July 2022 to reassess whether the current multi-country monkeypox outbreak constitutes a Public Health Emergency of International Concern (PHEIC) according to the International Health Regulations (IHR). A previous Emergency Committee [meeting](#) held on 23 June 2022 concluded that although the current outbreak is unusual and may require collaborative international efforts, it did not meet the IHR criteria for a PHEIC.

## Measles monitoring – Multi-country (World)

Opening date: 9 February 2011

Latest update: 15 July 2022

A sharp decrease in measles cases has been observed globally during the COVID-19 pandemic. A few measles cases are now being reported in the EU/EEA, including in countries that had previously eliminated or interrupted endemic transmission.

### →Update of the week

Since the previous monthly measles update in ECDC's Communicable Disease Threats Report (CDTR) on 10 June 2022, and as of 12 July, nine new cases were reported by five countries in the EU/EEA: Germany (2), Greece (1), Ireland (1), Poland (1), and Sweden (4). No other EU/EEA countries reported new cases of measles.

No deaths have been reported in the EU/EEA in 2022 to date.

Relevant updates outside the EU/EEA are available for Switzerland, Scotland (UK), the Republic of Congo, Democratic Republic of the Congo, WHO Regional Office for Europe (EURO), WHO Regional Office for Africa (WHO AFRO), WHO Pan American Health Organization (PAHO), WHO Regional Office for South-East Asia (SEARO), and WHO Western Pacific Regional Office (WPRO). No updates were available for WHO Regional Office for Eastern Mediterranean (EMRO).

## Non EU Threats

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### Monitoring environmental suitability of *Vibrio* growth in the Baltic Sea - Summer 2022

Opening date: 30 June 2022

Latest update: 15 July 2022

Elevated sea surface temperature (SST) in marine environments with low salt content offer ideal growth conditions for certain *Vibrio* species. These conditions occur during the summer months in estuaries and enclosed water bodies with moderate salinity. ECDC has developed a model to map the environmental suitability for *Vibrio* growth in the Baltic Sea ([ECDC Vibrio Map Viewer](#)). Please note that this model has been calibrated to the Baltic Region in northern Europe and might not apply to other worldwide settings prior to validation.

#### →Update of the week

As of 14 July 2022, the environmental suitability for *Vibrio* growth in the Baltic Sea was identified as medium to high in Finland, the Southern Estonian coast, Klaipeda county (Lithuania) and Stockholm (Sweden); and very low to low in the rest.

For the next five days, the environmental suitability for *Vibrio* growth in the Baltic Sea is considered to be medium to high in the Southern Finnish coast, the Southern Estonian coast and Kalmar (Sweden); and very low to low in the rest.

Outside of EU/EEA countries, the environmental suitability for *Vibrio* growth in the Baltic Sea was identified as medium to high in Saint Petersburg (Russia) and very low to low in Kaliningrad (Russia). It will remain the same for the next five days.

Since May 2022 and as of 14 July 2022, one human case of locally-acquired vibriosis has been reported in [Sweden](#).

### Mass gatherings - Hajj - Saudi Arabia - 2022

Opening date: 8 July 2022

Latest update: 15 July 2022

The Hajj is an annual Islamic pilgrimage to Mecca in Saudi Arabia, a mandatory religious duty for all adult Muslims that must be carried out at least once in their lifetime. This year, Hajj took place from 7 to 12 July. Around one million pilgrims were permitted to attend. ECDC is monitoring this event through its epidemic intelligence activities from 4 July to 19 July 2022 and reports on a weekly basis.

#### →Update of the week

Saudi Arabia's General Authority for Statistics [estimated](#) that a total of 900 000 pilgrims attended Hajj this year. Of those, 780 000 were from outside of Saudi Arabia, of whom the vast majority arrived by airplane (738 000). An estimated 90 000 pilgrims arrived from Europe, the United States, and Australia combined. [Media](#) reports that about 9 000 arrived from France.

On 14 July 2022, [media quoting Saudi Arabia's Ministry of Health](#) reported a first case of monkeypox (MPX) in the capital city Riyadh in a person with travel history abroad. No other events of public health concern related to the Hajj have been detected by ECDC through its epidemic intelligence activities.

### Influenza A(H9N2) - Multi-country (World) - Monitoring human cases

Opening date: 30 January 2019

Latest update: 15 July 2022

Avian influenza viruses that infect people are considered novel to humans and have the potential to become pandemic threats.

#### →Update of the week

As of 12 July 2022, and since the latest cases reported in a monthly update on 19 May 2022, one new case of human infection with avian influenza A(H9N2) has been reported from China. Overall, 113 cases were reported globally, none of them in EU/EEA countries.

### Influenza A(H5N6) – Multi-country – Monitoring human cases

Opening date: 17 January 2018

Latest update: 15 July 2022

Animal influenza viruses that cross the animal-human divide to infect people are considered novel to humans and have the potential to become pandemic threats. Highly pathogenic avian influenza viruses A(H5) of Asian origin are extremely infectious for several bird species, including poultry. In 2014, a novel avian influenza A(H5N6) reassortant causing a human infection was detected in China. To date, only sporadic human cases of avian influenza A(H5N6) virus infection have been reported, mainly from China.

#### →Update of the week

As of 12 July 2022, and since the latest cases reported in a monthly update on 19 May 2022, one new human case with avian influenza A(H5N6) virus infection was reported in China.

## II. Detailed reports

### West Nile virus - Multi-country (World) - Monitoring season 2022

Opening date: 2 June 2022

Latest update: 15 July 2022

#### Epidemiological summary

Since last week's update, and as of 13 July 2022, European Union (EU) and European Economic Area (EEA) countries reported two human cases of West Nile virus (WNV) infection and no deaths related to WNV infections. Cases were reported by Greece (1) and Italy (1). EU-neighbouring countries reported no human cases of WNV infection. There were no deaths related to WNV infections.

Since the beginning of the 2022 transmission season and as of 13 July 2022, EU/EEA countries have reported two human cases of WNV infection in Greece (1) and Italy (1) and no deaths. EU-neighbouring countries have reported no human cases of WNV infection.

During the current transmission season, within the reporting countries, human cases of WNV infection were reported from two different NUTS 3 or GAUL 1 regions.

Since the beginning of the 2022 transmission season, no outbreaks among equids and five outbreaks among birds have been reported by EU/EEA countries.

Outbreaks among birds have been reported by Italy (4) and Germany (1).

**ECDC links:** [West Nile virus infection webpage](#)

**Sources:** TESSy | Animal Disease Information System

#### ECDC assessment

During the current transmission season, two human cases and five outbreaks among animals have been reported in three EU Member States. The cases were reported from countries that reported WNV infections in previous years.

In accordance with [Commission Directive 2014/110/EU](#), prospective donors should be deferred for 28 days after leaving a risk area for locally acquired WNV infection, unless the result of an individual nucleic acid test is negative.

#### Actions

During transmission seasons, ECDC publishes a set of WNV transmission maps, a dashboard, and an epidemiological summary every Friday.

### Distribution of human West Nile virus infections by affected areas as of 13.07

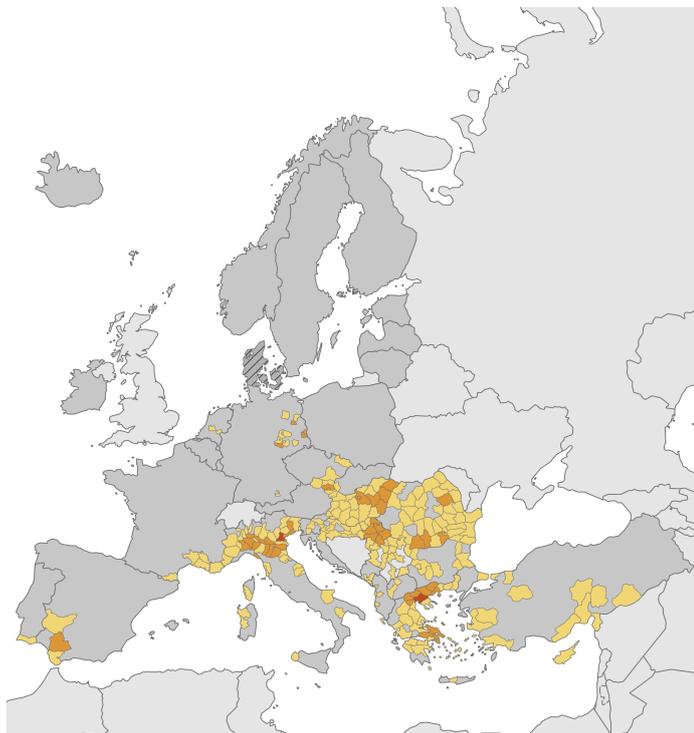
ECDC



**Distribution of human West Nile virus infections in NUTS 3 or GAUL 1 regions in the EU/EEA and neighbouring countries during 2011–2022, as of 13 July 2022**

- Human infections reported, current season (2022)
- Human infections reported, 2021
- Human infections reported, 2011–2019
- No data reported
- No infections reported
- Not included

- Countries not visible in the main map extent
- Malta
  - Liechtenstein



Administrative boundaries: © EuroGeographics ©  
The boundaries and names shown on this map do not imply official endorsement or acceptance by the European Union. Map produced by ECDC on 14 July 2022

### Distribution of West Nile virus infections among humans and outbreaks among equids and/or birds in the EU as of 13.07

ECDC and ADIS



**Distribution of human and animal West Nile virus infections in NUTS 3 or GAUL 1 regions of the EU/EEA and neighbouring countries during the 2022 season, as of 13 July 2022**

- Human infections, with or without outbreaks among equids and/or birds
- Outbreaks among equids and/or birds
- No infections reported
- Not included

- Countries not visible in the main map extent
- Malta
  - Liechtenstein



Administrative boundaries: © EuroGeographics ©  
The boundaries and names shown on this map do not imply official endorsement or acceptance by the European Union. Map produced by ECDC on 14 July 2022

### COVID-19 associated with SARS-CoV-2 – Multi-country EU/EEA – 2019 - 2022

Opening date: 7 January 2020

Latest update: 15 July 2022

## Epidemiological summary

### EU/EEA

As of week 2022-27, 154 579 271 cases have been reported in the EU/EEA: France (32 346 793), Germany (29 025 760), Italy (19 460 063), Spain (13 080 292), Netherlands (8 242 380), Poland (6 030 629), Portugal (5 256 875), Austria (4 565 369), Belgium (4 313 427), Czechia (3 938 199), Greece (3 853 205), Romania (2 940 064), Denmark (2 866 863), Sweden (2 525 079), Slovakia (2 305 471), Hungary (1 940 905), Norway (1 692 835), Ireland (1 601 584), Lithuania (1 409 345), Bulgaria (1 177 936), Croatia (1 159 177), Finland (1 158 485), Slovenia (1 050 175), Latvia (838 484), Cyprus (607 912), Estonia (567 580), Luxembourg (303 071), Iceland (202 375), Malta (108 725) and Liechtenstein (18 080).

As of week 2022-27, 1 121 840 deaths have been reported in the EU/EEA: Italy (170 622), France (164 103), Germany (141 870), Poland (116 823), Spain (108 945), Romania (65 749), Hungary (45 479), Czechia (40 271), Bulgaria (37 266), Belgium (31 486), Greece (30 502), Portugal (24 344), Netherlands (22 409), Slovakia (19 482), Sweden (19 144), Austria (16 402), Croatia (16 107), Lithuania (9 203), Slovenia (7 842), Denmark (6 518), Latvia (6 502), Ireland (6 371), Finland (4 941), Norway (3 415), Estonia (2 481), Luxembourg (1 297), Cyprus (1 256), Malta (759), Iceland (179) and Liechtenstein (82).

In week 2022-27, in the EU/EEA overall, the reported weekly cases increased by 1.6% compared to the previous week. Overall, 12 countries reported a decrease in the weekly cases (Cyprus, Czechia, Estonia, Finland, Germany, Ireland, Italy, Luxembourg, Malta, Norway, Portugal, and Spain). The countries with the highest 14-day notification rates per 100 000 population are: Cyprus (4 422), France (2 445), Luxembourg (2 275), Greece (2 135), and Iceland (1 733).

At the end of week 27, 2022 (week ending 10 July), the rate of cases among people aged 65 years and above increased in 23 out of the 27 countries reporting these data at the EU/EEA-level. Compared to the previous week, this corresponds to a 23% increase, and has reached 62.8% of the pandemic maximum. These increases have been observed for five weeks in nine countries and for six weeks in two countries. The increasing transmission among older age groups has led to increasing rates of severe disease.

Out of 30 countries with data on hospital or ICU admissions/occupancy up to week 27, 12 reported an increasing trend in at least one of these indicators compared with the previous week. The 14-day COVID-19 death rate has been stable for five weeks (8.3 deaths per million population, compared with 8.5 deaths the previous week). Increasing trends in the COVID-19 death rate were observed in seven countries.

Among the 12 countries with an adequate sequencing volume for weeks 25–26 (20 June to 3 July 2022), the estimated distribution of variants of concern (VOC) or variants of interest (VOI) was 82.8% (15.4–100.0% from 12 countries) for BA.4/BA.5; 15.4% (1.8–84.3% from 11 countries) for BA.2; 7.2% (1.5–8.8% from three countries) for BA.2+L452X; 0.2% (0.0–0.4%, 164 detections from five countries) for BA.1; and 0.1% (0.0–0.3%, four detections from two countries) for B.1.617.2.

The latest situation update for the EU/EEA is available [here](#).

### EU

As of week 2022-27, 152 665 981 cases and 1 118 164 deaths have been reported in the EU.

### Western Balkans

As of week 2022-27, the following Western Balkan countries reported COVID-19 cases: Serbia (2 040 227), Bosnia and Herzegovina (379 563), North Macedonia (315 699), Albania (287 694), Montenegro (243 070) and Kosovo\* (231 414).

As of week 2022-27, the following Western Balkan countries reported COVID-19 deaths: Serbia (16 147), Bosnia and Herzegovina (15 809), North Macedonia (9 331), Albania (3 513), Kosovo\* (3 133) and Montenegro (2 729).

\*This designation is without prejudice to positions on status, and is in line with UN Security Council Resolution 1244/1999 and the International Court of Justice Opinion on the Kosovo Declaration of Independence

As of week 13, 2022, ECDC has discontinued the assessment of each country's epidemiological situation using its composite score, mainly due to changes in testing strategies affecting the reliability of the indicators for all age case rates and test positivity.

For the latest COVID-19 country overviews, please see the [dedicated web page](#).

### Variant update

Since the last update on 7 July 2022 and as of 14 July 2022, ECDC decided to re-classify the Omicron sub-lineage BA.2.75 from variant under monitoring (VUM) to variant of interest (VOI).

BA.2.75 is a newly designated sub-lineage of BA.2, mainly circulating in India (234 sequences reported to GISAID EpiCoV as of 14 July 2022), but also detected in 14 other countries spanning four continents (51 sequences). Often incorrectly referred to in the media as 'Centaurus', this variant has not yet officially received a name in the WHO SARS-CoV-2 variant nomenclature.

BA.2.75 was designated by ECDC as a variant under monitoring (VUM) on 7 July 2022 and subsequently escalated to variant of interest (VOI) on 14 July 2022. This change was made due to increasing number of detections in India and world-wide as well as the concerning mutation profile of this variant. Such a profile might potentially be associated with a change in the antigenic properties of the virus, which could ultimately lead to a new surge in COVID-19 cases. No solid scientific evidence on the transmissibility, disease severity, or immune escape of BA.2.75 is currently available. The WHO designated BA.2.75 as a variant of concern – lineage under monitoring (VOC-LUM).

The proportion of BA.2.75 shows an increasing trend in India, where the infection background is mostly BA.2, suggesting that this variant may have increased transmissibility compared to this variant. BA.4/BA.5 constitute a lower proportion of circulating variants in India. Whether BA.2.75 has a growth advantage over these two variants, which are currently dominant in the EU/EEA remains to be determined. The currently available data are very limited and should be interpreted carefully. WHO and ECDC are continuing to monitor the situation very closely.

Within the EU/EEA, BA.2.75 variant cases are reported to GISAID from Denmark (1), Germany (2), Luxembourg (1), and the Netherlands (1) as of 14 July 2022. Outside the EU/EEA, BA.2.75 variant cases were detected in Australia (2), Canada (4), Indonesia (4), Japan (3), Martinique (1), Nepal (2), New Zealand (6), Turkey (1), USA (9) and the United Kingdom (14).

For the latest information on variants, please see [ECDC's webpage on variants](#).

As of 20 June 2022, ECDC is discontinuing the data collection and publication of the number of COVID-19 cases and deaths worldwide. Please refer to the World Health Organization (WHO) data on COVID-19 and the WHO Weekly Epidemiological and Weekly Operational Updates page for the non-EU/EEA countries.

### Other news

According to a [press briefing](#) on COVID-19 from the European Medicines Agency (EMA) held on 7 July 2022, in the context of the new emerging BA.4/BA.5 Omicron sublineages, the existing COVID-19 vaccines currently available in the European Union (EU) continue to provide protection against severe disease, hospitalisation and death. New vaccines are being developed by manufacturers targeted against Omicron or non-Omicron lineages (Beta variant), which could be used as boosters. However, it is unclear when exactly BA.4/BA.5 Omicron targeted vaccines currently under evaluation would be available or whether these sublineages will still be circulating in the fall. It was also emphasised that those over the age of 80, those between 60 and 79 and the medically vulnerable population should receive a second booster dose. A decision on the approval of vaccines for children between six months to five years of age is expected to be made after the period of summer.

On 8 July 2022, [media](#) reported that the Polish Minister of Health recommended wearing masks for risk groups due to the recent increase of COVID-19 cases in Poland. These recommendations are especially applicable for confined spaces such as public transport and shops, or where there is a large-scale exposure to other contacts.

On 8 July 2022, the [Australian Health Protection Principal Committee](#) (AHPPC) published a news item recommending the reduction of the reinfection period for COVID-19. According to the AHPPC: 'Given reinfections may occur as early as 28 days after recovery from a previous COVID-19 infection, the AHPPC advises that the reinfection period be reduced from 12 weeks to 28 days. People who test positive to COVID-19 more than 28 days after ending isolation due to previous infection should be reported and managed as new cases.'

On 11 July 2022, ECDC and EMA issued a [joint statement](#) recommending that second booster doses of COVID-19 vaccines be considered for people between 60 and 79 years old and people with medical conditions putting them at high risk of severe disease.

On 11 July 2022, the [Italian Ministry of Health](#) issued a circular following a [joint statement](#) by European Medicines Agency (EMA) and European Centre for Disease Prevention and Control (ECDC) updating recommendations on additional booster doses of mRNA COVID-19 vaccines. According to the circular, an additional booster dose will be recommended for age groups over 60 years and/or with underlying comorbidities as indicated in the circular. The additional booster doses will be provided at a minimum interval of 120 days, after the last booster dose or last known infection.

On 11 July 2022, [media](#) quoting the Irish Health Service Executive (HSE) reported that the number of COVID-19 patients in hospitals have increased to the highest levels since April 2022. According to media, the [HSE](#) showed over 1 000 hospitalisations in Ireland as of 11 July 2022.

According to a [press release](#) published by Moderna, Inc., on 11 July 2022, new clinical data have shown that the company's bivalent Omicron (BA.1) booster candidate (mRNA-1273.214) demonstrates a significantly higher neutralising antibody response against Omicron subvariants BA.4 and BA.5, compared to the currently authorised booster (mRNA-1273). Neutralising titres were measured one month after booster administration. Results were regardless of prior infection status or age (adults over 18, greater or less than 65 years old). Regulatory submissions for mRNA-1273.214 have been completed in the European Union (EU), United Kingdom (UK) and Australia. Moderna is simultaneously developing a bivalent candidate based on BA.4/BA.5 (mRNA-1273.222). Both bivalent candidates contain 25 µg of the currently authorised booster (mRNA-1273) and 25 µg of an Omicron subvariant.

On 11 July 2022, [Maltese authorities](#) updated the COVID-19 entry requirements to the country. From 25 July 2022 onwards, travellers to Malta without vaccination or recovery certificates will not be required to show negative PCR/rapid tests before arrival.

On 12 July 2022, the World Health Organization (WHO) published a [statement](#) on the 12th meeting of the International Health Regulations (2005) (IHR) Emergency Committee. The meeting, which was held on 8 July 2022, was regarding the coronavirus disease (COVID-19) pandemic. According to the statement, the WHO Director-General agreed with the advice offered by the Emergency Committee that the ongoing COVID-19 pandemic continues to constitute a Public Health Emergency of International Concern (PHEIC).

On 13 July 2022, [media](#) reported comments by the World Health Organization's (WHO) Director-General Tedros Adhanom Ghebreyesus, who has urged governments around the world to continue implementing non-pharmaceutical measures such as masking and improved ventilation to combat the recent increase in COVID-19 cases.

On 14 July 2022, WHO published a [press release](#) recommending two new drugs to treat COVID-19. The first drug, baricitinib, has been recommended to treat severe or critical COVID-19, being part of the Janus kinase inhibitors. The second drug, Sotrovimab, a monoclonal antibody drug, has been conditionally recommended to treat moderate COVID-19.

### Public Health Emergency of International Concern (PHEIC):

On 30 January 2020, the World Health Organization (WHO) declared that the outbreak of COVID-19 constitutes a PHEIC. On 11 March 2020, the Director-General of [WHO](#) declared the COVID-19 outbreak a pandemic. The [third](#), [fourth](#), [fifth](#), [sixth](#), [seventh](#), [eighth](#), [ninth](#), [tenth](#), [eleventh](#) and [twelfth](#) International Health Regulations (IHR) Emergency Committee meetings for COVID-19 were held in Geneva on 30 April 2020, 31 July 2020, 29 October 2020, 14 January 2021, 15 April 2021, 14 July 2021, 22 October 2021, 13 January 2022 and 11 April 2022, respectively. The Committee concluded during these meetings that the COVID-19 pandemic continues to constitute a PHEIC.

### ECDC assessment

For the most recent risk assessment, please visit [ECDC's dedicated web page](#).

### Actions

On 27 January 2022, ECDC published its Rapid Risk Assessment '[Assessment of the further emergence and potential impact of the SARS-CoV-2 Omicron variant of concern in the EU/EEA, 19th update](#)'.

A [dashboard](#) with the latest updates is available on ECDC's [website](#). For the latest update on SARS-CoV-2 variants of concern, please see [ECDC's web page on variants](#).

## Monkeypox - Multi-country - 2022

Opening date: 3 June 2022

Latest update: 15 July 2022

### Epidemiological summary

As of 14 July 2022, 7 128 confirmed cases of monkeypox have been reported from 27 EU/EEA countries: Spain (2 477), Germany (1 790), France (912), Netherlands (547), Portugal (473), Italy (292), Belgium (225), Austria (75), Sweden (58), Ireland (54), Norway (34), Denmark (33), Hungary (28), Poland (22), Slovenia (19), Romania (16), Finland (13), Greece (13), Czechia (12), Malta (9), Luxembourg (8), Iceland (7), Bulgaria (3), Croatia (3), Estonia (2), Latvia (2), and Slovakia (1).

### Western Balkans and Turkey

As of 14 July 2022, the following Western Balkan countries have reported confirmed MPX cases: Serbia (5).

As of 14 July 2022, there is one confirmed case in Turkey.

A detailed summary and analysis of data reported to TESSy can be found in the [Joint ECDC-WHO regional Office for Europe Surveillance Bulletin](#), published weekly.

### ECDC assessment

MPX does not spread easily between people. Human-to-human transmission of MPX occurs through close contact with infectious material from skin lesions of an infected person, through respiratory droplets in prolonged face-to-face contact and through fomites.

In the current outbreak in non-endemic countries, cases of MPX are still identified primarily among groups of men who have sex with men (MSM) aged 18-50 years of age. Particular sexual practices are very likely to have facilitated and could further facilitate the transmission of MPX among MSM groups. Despite the current focus of circulation of MPX virus (MPXV) among groups of MSM with multiple partners, the potential exists for transmission in other population groups. As regards the severity of the disease, in this outbreak cases have presented with mild to moderate symptoms with only a few hospitalisations reported. Severity of MPX may be higher among young children, pregnant women, and immunocompromised individuals.

Based on ECDC's epidemiological assessment, the likelihood of MPX spreading further in networks of people with multiple sexual partners in the EU/EEA is considered high and the likelihood of spreading among the broader population is assessed as very low. The impact of the disease remains low for most cases. The overall risk is therefore assessed as moderate for people having multiple sexual partners (including some groups of MSM) and low for the broader population. The risk of establishment of an enzootic cycle in EU/EEA and spill-over events to humans is considered to be low.

In endemic areas, MPX virus has been detected in a broad range of animal species, and the occurrence of zoonotic transmission events cannot be excluded, but there is no documented evidence of human-to-animal or animal-to-human transmission in the EU/EEA to date.

Early diagnosis, isolation, effective contact tracing, and vaccination strategies are key for the effective control of this outbreak. It is essential to underpin all response measures with strong risk communication and community engagement efforts, as well as awareness and educational activities for health professionals. At this point, mass vaccination for MPX is not required nor recommended. Unless contact tracing can successfully identify a high proportion of infected contacts, mathematical modelling results indicate that targeted pre-exposure vaccination (PrEP) of individuals at high risk of exposure would be the most effective strategy to use vaccines to control the outbreak. PrEP vaccination would also be the most efficient strategy when there is less effective tracing. Therefore, prioritising groups of MSM at higher risk of exposure, as well as front-line staff with a risk for occupational exposure, should be considered in developing vaccination strategies. Modelling the efficient use of vaccines indicates that PrEP vaccination would be the most efficient strategy when there is less effective tracing. The modelling also suggests that post-exposure prophylaxis (PEP) vaccination of contacts would offer a marginally more efficient approach if there are both higher uptake levels and more effective tracing (as fewer vaccines would be needed for a relatively larger increase in the probability of outbreak control per vaccinated individual), while the absolute probability of outbreak control with PEP vaccination is still lower than with PrEP vaccination. In settings where higher vaccine uptake is expected, PEP vaccination of close contacts of cases should also be considered, or even ring vaccination. Among these, contacts with a high risk of developing severe disease, like children, pregnant women, and immunocompromised individuals, should be prioritised. Targeted national vaccination programmes should be implemented within a framework of collaborative research and clinical trial protocols with standardised data collection tools for clinical and outcome data.

### Actions

ECDC will continue to monitor this event through its epidemic intelligence activities and report relevant news on an ad hoc basis. Multi-lateral meetings between affected countries, WHO EURO, and ECDC have taken place to share information and coordinate response. A process in [EpiPulse](#) has been created to allow countries to share information with one another, WHO, and ECDC. Case reporting in TESSy was set up on 2 June 2022. ECDC published a [rapid risk assessment](#) on 23 May 2022, and an [update](#) of this on 8 July 2022. For all the latest updates, visit [ECDC's monkeypox page](#).

ECDC is also offering laboratory support to Member States and collaborating with stakeholders on risk communication activities, such as targeted messaging for the general public and for MSM communities, and providing guidance to countries hosting events in the summer. ECDC is also providing guidance on clinical sample storage and transport, case and contact management and contact tracing, IPC guidance, cleaning and disinfection in healthcare settings and households, and vaccination approaches.

## Measles monitoring – Multi-country (World)

Opening date: 9 February 2011

Latest update: 15 July 2022

### Epidemiological summary

Since the previous monthly measles update in ECDC's Communicable Disease Threats Report (CDTR) on 10 June 2022 and as of 12 July, nine new cases were reported by five countries in the EU/EEA: Germany (2), Greece (1), Ireland (1), Poland (1), and Sweden (4). Other EU/EEA countries did not report new cases of measles.

So far, in 2022, no deaths have been reported in the EU/EEA.

Relevant updates outside the EU/EEA are available for Switzerland, Scotland (the United Kingdom), the Republic of Congo, the Democratic Republic of the Congo, WHO Regional Office for Europe (EURO), WHO Regional Office for Africa (WHO AFRO), WHO Pan American Health Organization (PAHO), WHO Regional Office for South-East Asia (SEARO), and WHO Western Pacific Regional Office (WPRO). No updates were available for WHO Regional Office for Eastern Mediterranean (EMRO).

**Disclaimer:** the [monthly measles report published in the CDTR](#) provides the most recent data on cases and outbreaks from the publicly available information of national public health authorities or the media. This report is a supplement to [ECDC's monthly measles and rubella monitoring report](#), based on data routinely submitted by 29 EU/EEA countries to The European Surveillance System (TESSy). Data presented in the two monthly reports may differ.

### Epidemiological summary for EU/EEA countries with updates since last month

**Bulgaria correction:** in 2022 and as of week 26 (ending 3 July 2022) Bulgaria reported one case (not two cases as published in the previous monthly report).

**Germany** reported 43 confirmed and suspected cases in 2022 weeks 1 to 27 (ending on 10 July 2022), an increase of two cases since week 22 (ending 5 June 2022).

**Greece** reported one case in 2022, in May.

**Ireland** reported five cases in 2022 and as of week 26 (ending 2 July 2022), an increase of one case since the report for week 21 2022 (ending 29 May 2022).

**Poland** reported 16 cases in the period from [January to June 2022](#) (data available as of 11 July), an increase of one case since the previous update.

**Spain correction:** following the previous measles monthly update in the CDTR, published on 10 June 2022, the Spanish authorities confirmed this case was discarded. In 2022, and as of 11 July, Spain has no confirmed cases of measles.

**Sweden** reported four cases in 2022 as of 11 July 2022, one of which was imported. All cases are in Goteborg and all are related to the imported case who became infected abroad, according to a [media](#) report on 9 July 2022.

### Relevant epidemiological summary for countries outside the EU/EEA

A global provisional monthly measles and rubella overview by month and country is available from [WHO's website](#).

**Switzerland** reported one case in 2022 as of 11 July 2022.

The United Kingdom (UK)

**Scotland** reported one imported case (from outside of the UK) in the first quarter of 2022, according to the epidemiological report from 7 June 2022. This is the first case in Scotland since 2019.

According to WHO's Regional Office for Europe ([EURO](#)) data for January–May 2022 (data access on 12 July 2022) sporadic cases of measles were reported in the following non-EU/EEA countries: Bosnia and Herzegovina (2), Georgia (3), Kyrgyzstan (10),

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Russia (10), Tajikistan (130), Turkey (23), Ukraine (3), United Kingdom (1). According to the same report in the EU/EEA, confirmed cases were reported in Belgium (5), Bulgaria (1), France (8), Germany (7), Greece (1), Ireland (3), Italy (4), Poland (12), and Romania (1). Please note that numbers provided to WHO for EU/EEA countries are from TESSy data.

According to a report from WHO's Regional Office for Africa ([AFRO](#)) report as of 3 July 2022 (week 27), cases and outbreaks of measles in 2022 were reported in the following countries: Cameroon, Chad, Congo, Democratic Republic of the Congo (DRC), Ethiopia, Guinea, Liberia, Mali, Mozambique, Namibia, Niger, Sierra Leone, South Africa, South Sudan, Togo, Zambia, and Zimbabwe. Due to varying reporting periods by the countries, please visit the latest weekly bulletin available [here](#).

Congo reported 6 314 confirmed measles cases, including 132 deaths (CFR: 2%) between 1 January 2022 and 12 June 2022. Confirmed outbreaks have been reported in 23 of 52 districts.

DRC reported 71 327 suspected measles cases, including 1 001 measles related deaths (CFR: 1.4%) in period from 1 January 2022 to 19 June 2022. 63% lab confirmed measles cases are children under five years old, and only 25% with history of vaccination; 110 health zones with confirmed outbreak at some point since the start of this year.

According to WHO's Pan American Health Organization ([PAHO](#)) report (Vol. 28, No. 26) in 2022 week 27 (ending 2 July 2022) 51 cases were reported in four countries: Brazil (41), the United States of America (6), Argentina (1), and Canada (3).

According to a report from WHO's Western Pacific Region ([WPRO](#)) report for May 2022 (Vol 16, Issue 6), overall, there were 515 confirmed and clinically compatible cases, including ten deaths (CFR: 1.9%). The cases were reported by six countries: China (245), the Philippines (171), Malaysia (93), Vietnam (4), Cambodia (1), and Singapore (1).

Between January and April 2022, according to WHO's Regional Office for South-East Asia (SEARO), from January to May 2022 there were 6 210 cases of measles reported by seven countries: India (5 327), Indonesia (753), Bangladesh (69), Nepal (40), Thailand (13), Myanmar (7), and Timor-Leste (1). The update is provided from the WHO [Provisional monthly measles and rubella data](#) available on 12 July 2022.

## ECDC assessment

The substantial decline in measles cases reported by EU/EEA countries after March 2020, and continuing through 2022, contrasts with the usual annual and seasonal pattern for measles, which peaks during the spring in temperate climates. A similar decrease has been observed in other countries worldwide during the same period. Under-reporting, under-diagnosis, or a real decrease due to the direct or indirect effects of COVID-19 pandemic measures could explain the observed decline in cases. The lifting of non-pharmaceutical interventions related to the COVID-19 pandemic could lead to measles outbreaks in the EU/EEA. Active measles surveillance and public health measures, including high vaccination uptake, provide the foundation for a proper response to possible increases in the number of cases/outbreaks.

## Actions

ECDC monitors the measles situation through its epidemic intelligence activities, which supplement monthly outputs with measles surveillance data from The European Surveillance System (TESSy) routinely submitted by 29 EU/EEA countries. ECDC published a [risk assessment](#) entitled 'Who is at risk of measles in the EU/EEA?' on 28 May 2019.

## Monitoring environmental suitability of *Vibrio* growth in the Baltic Sea - Summer 2022

Opening date: 30 June 2022

Latest update: 15 July 2022

### Epidemiological summary

As of 14 July 2022, the environmental suitability for *Vibrio* growth in the Baltic Sea was identified as medium to high in Finland, the Southern Estonian coast, Klaipeda county (Lithuania) and Stockholm (Sweden); and very low to low in the rest.

For the next five days, the environmental suitability for *Vibrio* growth in the Baltic Sea is considered to be medium to high in the Southern Finnish coast, the Southern Estonian coast and Kalmar (Sweden); and very low to low in the rest.

Outside of EU/EEA countries, the environmental suitability for *Vibrio* growth in the Baltic Sea was identified as medium to high in Saint Petersburg (Russia) and very low to low in Kaliningrad (Russia). It will remain the same for the next five days.

Since May 2022 and as of 14 July 2022, one human case of locally-acquired vibriosis has been reported in [Sweden](#).

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Since May 2022 and as of 14 July 2022, one human case of locally-acquired vibriosis has been reported in [Norway](#).

According to [media](#) quoting health authorities, an 81-year-old woman contracted non-cholera *Vibrio* on the Baltic Sea coast in Mecklenburg-Western Pomerania, Germany. The patient had underlying conditions and was taken to a hospital.

On 4 July 2022, Finland's Institute for Health and Welfare (THL) published a [press release](#) to raise awareness about the potential presence of *Vibrio* in the Baltic Sea during hot weather and associated risk for immunocompromised people to swim in these conditions.

Source: [ECDC Vibrio Map Viewer](#)

## ECDC assessment

Elevated sea surface temperatures (SSTs) in marine environments with low salt content offer ideal environmental growth conditions for certain *Vibrio* species. These conditions can be found during the summer months in estuaries and enclosed water bodies with moderate salinity. Open ocean environments do not offer appropriate growth conditions for these bacteria due to high salt content, low temperatures and limited nutrient content.

These *Vibrio* species can cause vibriosis (non-cholera), particularly species such as *V. parahaemolyticus*, *V. vulnificus* and non-toxicogenic *V. cholera*. In the past, vibriosis in humans in the Baltic region has occurred during hot summer months, particularly when SSTs were elevated (above 20 degrees Celsius).

The most common clinical manifestations are gastroenteritis with nausea, vomiting, and diarrhoea, wound infections when a cut or skin abrasions have been exposed to contaminated seawater, primary septicemia, and otitis externa.

In addition to contracting vibriosis through contact with natural bodies of water, especially marine or estuarine water, other risk factors for illness include the consumption of shellfish, particularly raw oysters.

## Actions

ECDC is monitoring this threat on a weekly basis during the summer of 2022 and reports on increased environmental suitability for the growth of *Vibrio* bacteria.

## Mass gatherings - Hajj - Saudi Arabia - 2022

Opening date: 8 July 2022

Latest update: 15 July 2022

### Epidemiological summary

Here we provide a short epidemiological summary of some infectious diseases:

**Monkeypox (MPX):** On 14 July 2022, [media quoting Ministry of Health of Saudi Arabia](#) reported a first case of MPX in the capital city Riyadh in a person with travel history abroad. According to a [WHO](#) report on 4 July 2022, 15 cases were reported in three WHO Eastern Mediterranean Region countries: Lebanon (1), Morocco (1), and the United Arab Emirates (13).

**COVID-19:** from the beginning of the pandemic, and as of 14 July 2022, [Saudi Arabia](#) reported 801 935 confirmed COVID-19 cases, including 9 228 deaths, an increase of 3 461 cases and 13 deaths since the previous report on 7 July. According to [media report](#) on 11 July, 38 COVID-19 cases were detected in holy sites since the beginning of Hajj.

**MERS-CoV:** no cases have been reported in Saudi Arabia in 2022 and as of 14 July 2022. Overall, 2 124 human cases have been reported in Saudi Arabia since 2012, of which 17 were reported in 2021. Globally, the most recent case in 2022 was reported from Qatar with exposure outside of the country.

**Sources:** Ministry of Health, Saudi Arabia [1](#), [2](#) | [media report](#)

## ECDC assessment

The risk for EU/EEA citizens to become infected with communicable diseases during the 2022 Hajj is considered low, thanks to the vaccination requirements for travelling to Mecca and the Saudi Arabian preparedness plans that address the management of health hazards before, during, and after Hajj. As with other mass gathering events, the risk of communicable disease outbreaks is greatest for respiratory and food- and waterborne diseases. Outbreaks of MERS-CoV continue to be reported from the Arabian

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Peninsula, which implies that there is a risk of importation of cases to Europe after the Hajj. The risk of vaccine-preventable and vector-borne diseases is considered low if preventive measures are applied.

ECDC published a [rapid risk assessment](#) on Hajj on 2 July 2019; the risks and advice to pilgrims attending the Hajj remain valid for this year.

## Actions

ECDC monitors this event through its intelligence for mass gatherings from 4 July to 19 July 2022, and reports weekly in the CDTR.

## Influenza A(H9N2) - Multi-country (World) - Monitoring human cases

Opening date: 30 January 2019

Latest update: 15 July 2022

### Epidemiological summary

**Update:** As of 12 July 2022, and since the latest cases reported in a monthly update on 19 May 2022, one new case of human infection with avian influenza A(H9N2) has been reported from China. The [case](#) is a one-year-old boy from Sichuan province with onset of symptoms on 28 April 2022.

**Summary:** As of 12 July 2022, and since 1998, a total of 113 laboratory-confirmed cases, including two deaths, of human infection with avian influenza A(H9N2) viruses have been reported, from China (100), Egypt (4), Bangladesh (3), Cambodia (2), Oman (1), Pakistan (1), India (1), and Senegal (1). Most of the cases were children with mild disease.

### ECDC assessment

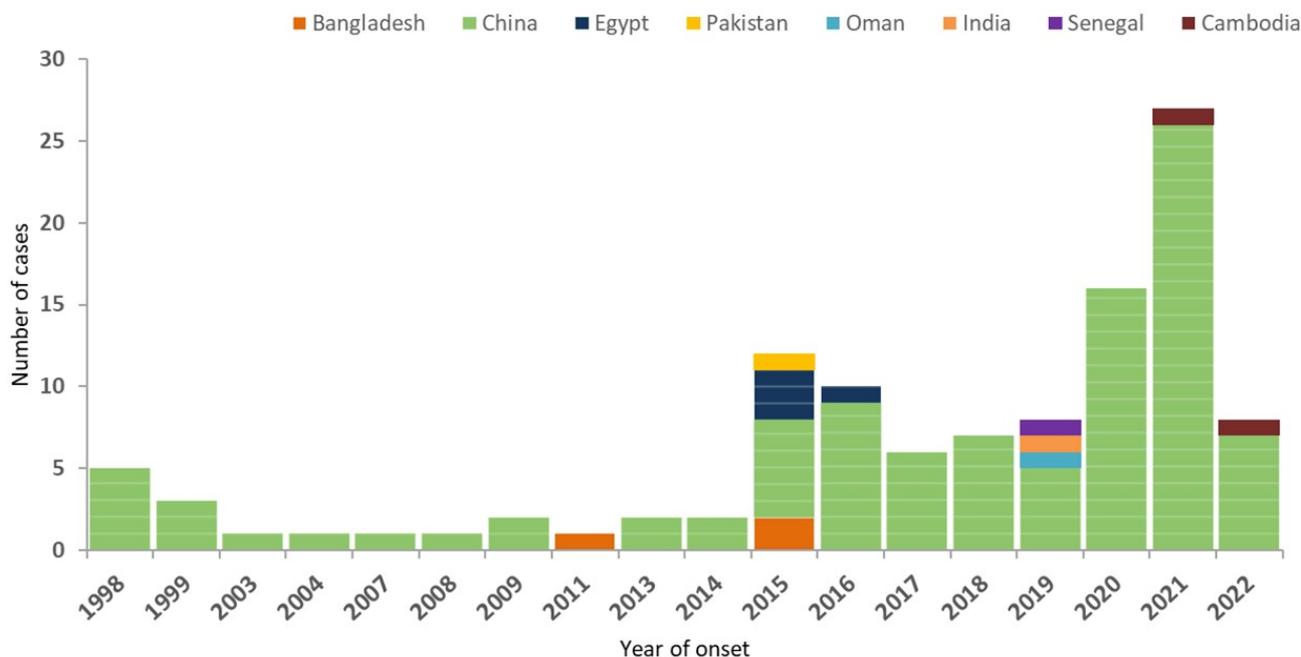
Sporadic human cases of avian influenza A(H9N2) have been observed, but no cases of human-to-human transmission have been documented. The use of personal protective measures for people directly exposed to poultry and birds potentially infected with avian influenza viruses will minimise the risk of infection. The risk of zoonotic influenza transmission to the general public in EU/EEA countries is considered to be very low.

## Actions

ECDC monitors avian influenza strains through its epidemic intelligence activities and in collaboration with EFSA and the EU reference laboratory in order to identify significant changes in the epidemiology of the virus. ECDC, together with EFSA and the EU reference laboratory for avian influenza, produces a quarterly updated report on the [avian influenza situation](#). The most recent report was published in June 2022.

## Distribution of confirmed human cases of avian influenza A(H9N2) virus infection by year of onset and country, 1998-2022 (updated on 13 July, n=113)

Source: ECDC



## Influenza A(H5N6) – Multi-country – Monitoring human cases

Opening date: 17 January 2018

Latest update: 15 July 2022

### Epidemiological summary

**Update:** as of 12 July 2022, and since the latest cases reported in a monthly update on 19 May 2022, one new human case with avian influenza A(H5N6) virus infection was reported in China. The patient was a 58-year-old man from Ganzhou, Jiangxi province in China. He developed symptoms on 2 June and was hospitalised on 5 June 2022. The patient was in critical condition. He had exposure to a live poultry market prior to the onset of symptoms.

**Summary:** To date, overall, 80 laboratory-confirmed cases, including 33 deaths (CFR: 41%) of human infection with influenza A (H5N6) virus, have been reported since 2014. Most of these cases were reported from China (79), with one from Laos.

Sources: [WHO](#)

### ECDC assessment

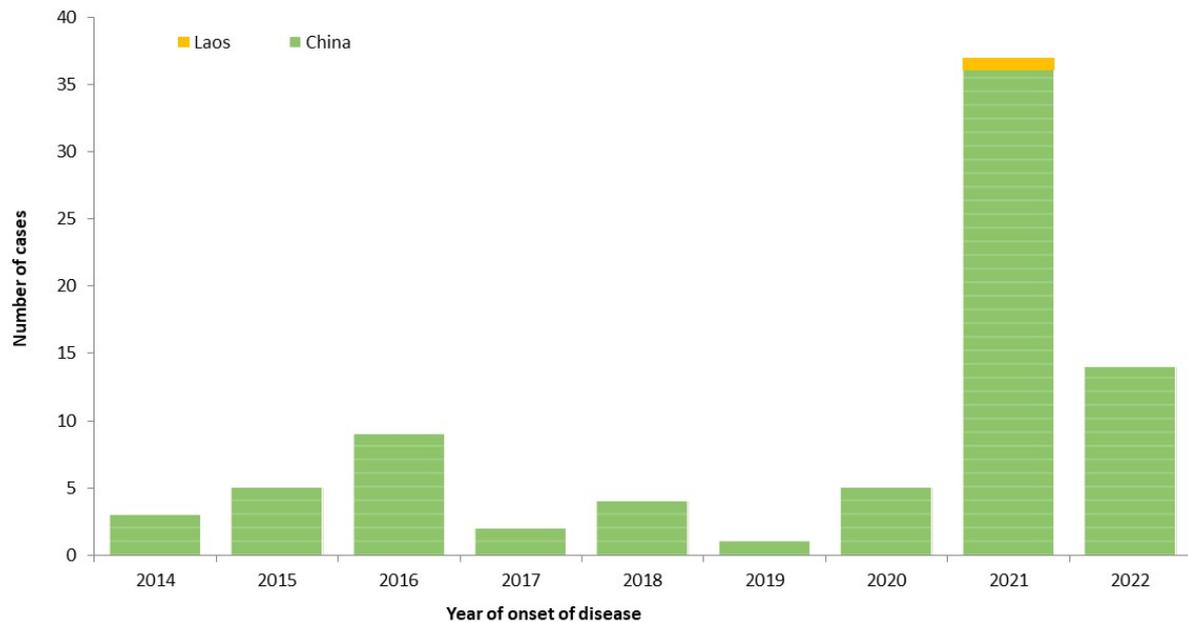
Sporadic human cases of avian influenza A(H5N6) have been previously observed. No human-to-human transmission has been reported to date. Sporadic zoonotic transmission cannot be excluded; the use of personal protective measures for people directly exposed to potentially infected poultry and birds with avian influenza viruses will minimise the remaining risk. The risk of zoonotic influenza transmission to the general public in EU/EEA countries is considered to be very low.

### Actions

ECDC monitors avian influenza strains through its epidemic intelligence activities and in collaboration with EFSA and the EU reference laboratory in order to identify significant changes in the epidemiology of the virus. ECDC, together with EFSA and the EU reference laboratory for avian influenza, produces a quarterly updated [report of the avian influenza situation](#). The most recent report was published in June 2022.

## Distribution of confirmed human cases of avian influenza A(H5N6) virus infection by year of onset and country, 2014–2022 (n=80)

Source: ECDC



The Communicable Disease Threat Report may include unconfirmed information which may later prove to be unsubstantiated.