WEEKLY BULLETIN

Communicable Disease Threats Report

Week 49, 4 - 10 December 2022

Today's disease topics

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1. COVID-19 associated with SARS-CoV-2 Multi-country (EU/EEA) - 2019 - 2022

Summary:
At the end of week 48, 2022 (week ending 4 December), EU/EEA-level COVID-19 case rates in people aged 65 years and older continued to decrease by 3.9%, while the overall (all ages) COVID-19 cases increased 4% when compared to the previous week. EU/EEA-level hospital and ICU admissions have increased since the previous week, while both occupancy indicators currently remain stable. Overall, the EU/EEA death rate also continued to decrease and is at low levels compared to the pandemic maximum. Given the current reversal of trends for some epidemiological indicators and the evolving variant scenarios, it remains important to continue monitoring the epidemiological situation.

Increases in either notification rates for all ages or among people aged 65 years and older occurred in thirteen countries, and concurrently in eleven countries. In spite these increasing trends, country-level rates for either notification rates indicator have not surpassed 30% of the respective country pandemic maximum.

Pooled EU/EEA hospital and ICU admissions have increased 13% and 14%, respectively, compared to the previous week. Five countries reported an increase in at least one admission indicator since the previous week. Hospital and

ICU occupancy at the EU/EEA level have remained stable, with seven countries reporting increases compared to the previous week. A decreasing trend continues to be observed for pooled EU/EEA COVID-19 death rate, with no country in the EU/EEA reporting increases in the past week.

Forecasts of cases, hospital admissions and deaths from the **European COVID-19 Forecast Hub** provide predictions for weeks 49 and 50. Compared with the previous week, increasing trends in cases, increasing trends in hospital admissions, and stable trends in deaths are forecast for the EU/EEA overall by the end of week 50. The cumulative uptake of a first booster dose was 65.1% (country range: 11.3–86.9%) among adults aged 18 years and older, 84.7% (country range: 13.3–100.0%) among individuals aged 60 years and older, and 54.4% (country range: 9.2–75.7%) in the total population. The cumulative uptake of a second booster was 14.4% (country range: 0.1–41.0%) among adults aged 18 years and older, 29.5% (country range: 0.3–84.6%) among individuals aged 60 years and older, and 11.8% (country range: 0.1–32.9%) in the total population.

Among the six countries with an adequate volume of sequencing or genotyping for weeks 46–47 (14 to 27 November 2022), the estimated distribution of variants of concern (VOC) or of interest (VOI) was 48.1% (28.5–96.7% from six countries) for BA.5, 42.5% (30.4–63.8% from four countries) for BQ.1, 4.4% (1.4–15.1% from six countries) for BA.2.75, 1.7% (1.0–3.1% from six countries) for BA.4 and 0.8% (0.3–5.7%, 557 detections from six countries) for BA.2.

As of 20 June 2022, ECDC discontinued the data collection and publication of the number of COVID-19 cases and deaths worldwide. Please refer to World Health Organization (WHO) data on COVID-19 and WHO's Weekly Epidemiological and Weekly Operational Updates page for non-EU/EEA countries. For the latest COVID-19 country overviews, please see the dedicated web page.

Other news:
On 6 December 2022, the European Medicines Agency (EMA) published a press release informing that its Emergency Task Force (ETF) considers adapted mRNA bivalent vaccines targeting the original strain and Omicron BA.4-5 subvariants of SARS-CoV-2 may be used for primary vaccination. EMA made this recommendation based on laboratory studies and immune response data, which suggest that primary vaccination with these adapted bivalent vaccines should give rise to a broad immune response in people who have not yet been exposed to, or vaccinated against, SARS-CoV-2.

On 5 December 2022, the European Commission (EC) and Organization for Economic Co-operation and Development (OECD) jointly published a report stating that the COVID-19 pandemic reduced the average life expectancy by more than one year in the European Union (EU) in 2021 compared to the pre-pandemic level, and that this is the largest drop observed in most EU countries since the Second World War. According to the report, as of October 2022, more than 1.1 million COVID-19-related deaths have been reported from 27 EU countries and over 90% of COVID-19-related deaths have occurred among people over 60 years old. The lowest mortality impact of COVID-19 has been observed in the Nordic countries while the highest impact has been observed in central and east European countries.

On 8 December 2022, the United States Food and Drug Administration (FDA) amended its emergency use authorizations (EUAs) of the bivalent COVID-19 vaccines developed by Moderna and Pfizer-BioNTech to include use in children. Based on this amendment, children aged between six months and five years who received the monovalent Moderna COVID-19 Vaccine are now eligible to receive a single booster of the bivalent Moderna COVID-19 Vaccine two months after completing a primary series. Children aged between six months and four years who have not yet begun their three-dose primary series of the Pfizer-BioNTech COVID-19 Vaccine or have not yet received the third dose of their primary series can now receive bivalent Pfizer-BioNTech COVID-19 vaccine as their third dose following two doses of the monovalent Pfizer-BioNTech COVID-19 Vaccine.

Weekly update on SARS-CoV-2 variants:
Since the last update on 24 November 2022, and as of 8 December 2022, several changes have been made to ECDC classification of variants.

All previous variants under monitoring defined by their mutational profile are now instead tracked by their most important sub-lineages. Hence the variants under monitoring B.1.1.529 + K444X, N460X, B.1.1.529 + N460X + F490X and B.1.1.529 + R346X are de-escalated and replaced by BA.2.3.20 and BF.7 as variants under monitoring and Omicron recombinant XBB as a variant of interest (in addition to the previously added BQ.1).
Also, XBC is added as a variant under monitoring. This recombinant has a Delta backbone and Omicron spike sequence and many additional mutations. Although a concerning genomic profile, the cases are very few so far.
For the latest information on variants, please see ECDC's webpage on variants.

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, twelfth, and thirteenth 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, 11 April 2022, 8 July 2022, and 13 October 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 webpage.

Actions:

On 27 January 2022, ECDC published its Rapid Risk Assessment, 'Assessment of the further spread and potential impact of the SARS-CoV-2 Omicron variant of concern in the EU/EEA, 19th update'.
Detailed country-specific COVID-19 updates are available on ECDC's website. For the latest update on SARS-CoV-2 variants of concern, please see ECDC's webpage on variants.
ECDC invites countries to use the EpiPulse event (**2022-IRV-00008**) on BQ.1 and sub-lineages to discuss and share information on this variant as it becomes available. Of particular interest is information on virus characterisation and evidence regarding changes in disease severity, virus transmissibility, immune evasion, and effects on diagnostics and therapeutics. Case reporting should continue through TESSy.

2. Ebola virus disease due to Sudan ebolavirus – Uganda – 2022

Overview: According to the Africa Centres for Disease Control and Prevention (ACDC), as of 6 December 2022, there have been 142 confirmed cases of Sudan virus disease (SVD), including 55 deaths (CFR: 39%). In addition, 22 deaths among probable cases have been **reported** in individuals who died before a sample was taken. At least 19 healthcare workers have been infected and seven of them died. There have been 87 recoveries **reported.**

The last reported case was a stillborn 32-week year old male delivered on 27 November 2022 to a woman who survived SVD late in her pregnancy. This case was confirmed after a period of 13 days with no confirmed cases. As of **5 December 2022**, there are 36 active contacts under follow up across four districts, with a follow up rate of 100%. A total of 4 754 contacts of cases have been identified across 15 districts.

Overall, there have been nine Ugandan districts affected by this outbreak: Bunyangabu, Jinja, Kagadi, Kampala, Kassanda, Kyegegwa, Masaka, Mubende, and Wakiso. Bunyangabu and Kagadi have completed two incubation cycles of the virus without reporting any cases (no cases since 21 and 24 September 2022, respectively).

Other news:
On 8 December 2020, the Ministry of Health of Uganda announced that 1 200 doses of vaccine have arrived in the country which will be used in the Tokomeza Ebola vaccine trial. This is the first batch of one of three vaccine candidates. According to the Sabin Vaccine Institute, the doses that have arrived are Sabin's vaccine and they will make another 8 500 doses available to WHO on a rolling basis through January.

Background: On 20 September 2022, the Ministry of Health in Uganda, together with WHO AFRO, confirmed an outbreak of SVD in Mubende District, Uganda, after one fatal case was confirmed.

The index case was a 24-year-old man, a resident of Ngabano village of the Madudu sub-county in Mubende District. The patient experienced high fever, diarrhoea, abdominal pain, and began vomiting blood on 11 September 2022. Samples were collected on 17 September 2022 and SVD was laboratory-confirmed on 19 September. The patient died on the same day, five days after hospitalisation.

On 15 October 2022, the **President of Uganda** imposed a 21-day lockdown on the Mubende and Kassanda districts to contain the outbreak. Measures included an overnight curfew, closing places of worship and entertainment, and restricting movement in and out of the two districts. These measures were extended on 5 November 2022 and again on 26 November, until 17 December 2022.

The Ugandan government is carrying out community-based surveillance and active case finding. An on-site **mobile laboratory** has been established in Mubende and risk communication activities are ongoing in all affected districts.

Africa CDC, WHO, GOARN and other partners have teams in Uganda to support the coordination of the response. As of **16 November 2022**, all travellers leaving or arriving at Entebbe International Airport in Uganda are required to complete a health declaration form.

As of **5 November 2022**, there were five Ebola treatment units (ETUs) between Mubende, Kampala, and Kabarole districts. A new ETU is being established in Kassanda in response to an increase in reported cases from the region.

SVD outbreaks have previously occurred in Uganda (four outbreaks) and Sudan (three outbreaks). The last SVD outbreak in Uganda was in 2012.

ECDC assessment:

Risk to EU/EEA citizens living in or travelling to affected areas in Uganda

The current probability that EU/EEA citizens living in or travelling to SVD-affected areas of Uganda will be exposed to the virus is very low, provided they adhere to the recommended precautionary measures. Transmission requires direct contact with blood, secretions, organs or other bodily fluids of dead or living infected people or animals; all unlikely exposures for general EU/EEA tourists or expatriates in Uganda.

Considering that infection with Sudan ebolavirus leads to severe disease but that the probability of exposure of EU/EEA citizens is very low, the impact for EU/EEA citizens living and travelling in affected areas of Uganda is considered low. Overall, the current risk for EU/EEA citizens living in or travelling to affected areas in Uganda is considered low.

Risk of introduction and spread within the EU/EEA

The most likely route by which the virus could be introduced to the EU/EEA is through infected people from affected areas travelling to the EU/EEA or medical evacuation of cases to the EU/EEA. According to the International Air Transport Association (IATA), in 2019, there were about 126 000 travellers arriving in the EU/EEA from Uganda. Based on experience from the largest Ebola disease outbreak in West Africa to date (2013–2016, due to Zaire ebolavirus), where thousands of cases were reported, with transmission in large urban centres, and the deployment of hundreds of EU/EEA humanitarian and military personnel to the affected areas, importation of cases by travellers is considered unlikely.

The likelihood of secondary transmission of Sudan ebolavirus within the EU/EEA and the implementation of sustained chains of transmission within the EU/EEA is very low, as cases are likely to be promptly identified and isolated and follow-up control measures implemented. During the large Ebola disease outbreak in West Africa in 2013–2016, there was only one local transmission in the EU/EEA (in Spain), in a healthcare worker who had cared for an evacuated patient. The impact of SVD for EU/EEA citizens living in the EU/EEA is considered low, and overall the current risk of SVD for the citizens in the EU/EEA is considered very low.

Actions:

ECDC is monitoring this situation through its epidemic intelligence activities, and will report relevant updates twice a week. On 12 October 2022, ECDC published a **news item** on the Ebola outbreak in Uganda. ECDC provides a weekly epidemiological update on the outbreak on its **website**. On 3 November 2022, ECDC deployed an expert to Uganda to support the DG ECHO country office and the overall outbreak response.
ECDC published a rapid risk assessment, 'Risk of Sudan virus to EU/EEA citizens considered very low', on 9 November 2022.

Further information:

EU/EEA visitors and residents in affected areas in Uganda should observe the following precautionary measures:
- Avoid contact with symptomatic patients/their bodily fluids, bodies and/or bodily fluids from deceased patients.
- Avoid consumption of bush meat and contact with wild animals, both alive and dead.
- Wash and peel fruits and vegetables before consumption.
- Wash hands regularly using soap or antiseptics.
- Ensure safe sexual practices.

ECDC considers that the screening of travellers returning from Uganda would not be an effective measure to prevent introduction of the disease in Europe. Screening incoming travellers is time- and resource-consuming and will not effectively identify infected cases. Both experience and evidence show that exit screening from affected regions/countries can be an effective measure to support the containment of disease spread.

WHO advises against any restrictions on travel and/or trade to/with Uganda based on available information for the current outbreak.
The licensed vaccines available protect against Ebola disease resulting from Zaire ebolavirus. There are no licensed vaccines against SVD, and there are no available data on the level of cross-protections. The availability of a

vaccine was proven to be very helpful in the control of the recent outbreaks in the Democratic Republic of the Congo. The unavailability of vaccines is an additional challenge in the control of this outbreak.

Maps and graphs

Figure 1. Ebola disease cases reported in Uganda in 2022, by week of reporting.

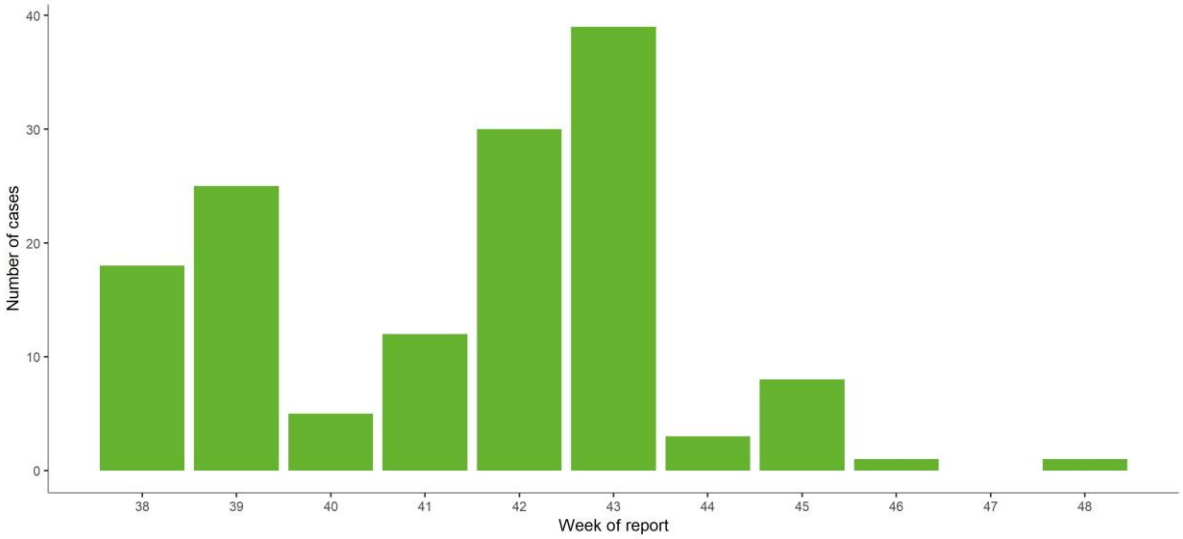
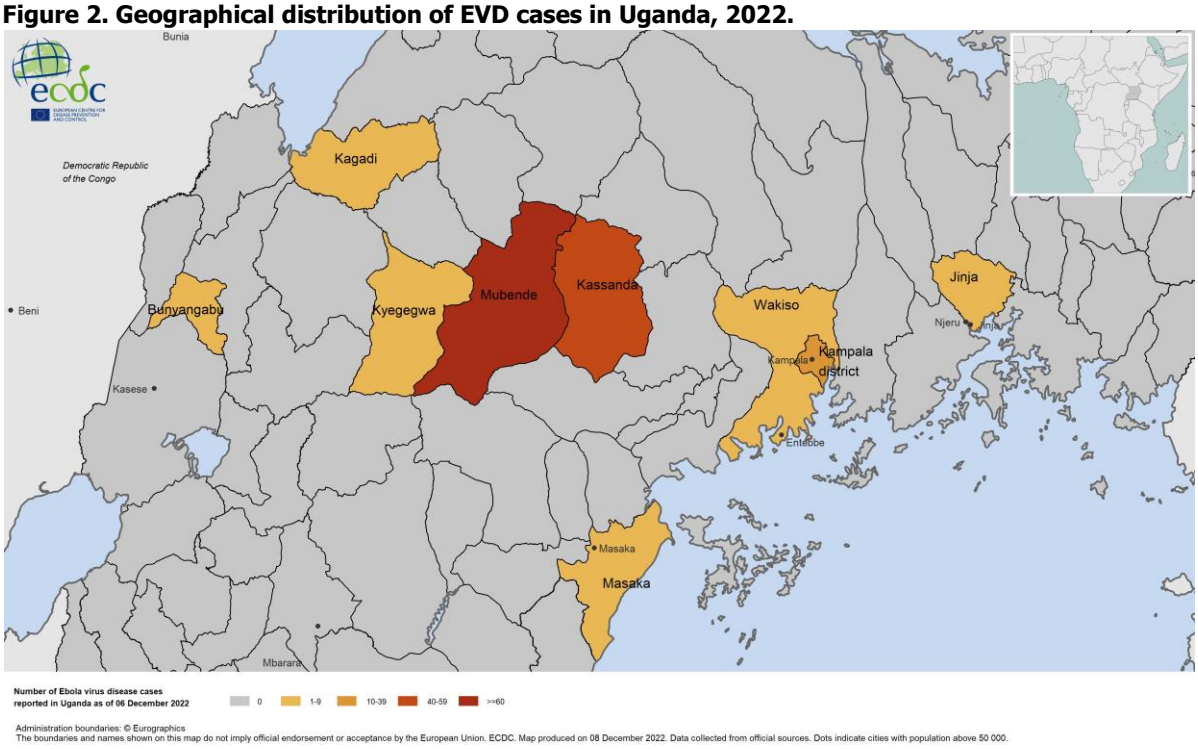


Figure 2. Geographical distribution of EVD cases in Uganda, 2022.



3. Increasing trend of infection with Respiratory Syncytial Virus (RSV) – Multicountry – 2022

Overview:

In October 2022, signals were detected in some EU/EEA Member States reporting increasing numbers of paediatric hospitalisations and increasing pressure on healthcare facilities due to respiratory syncytial virus (RSV) cocirculating with other respiratory viruses e.g. influenza and SARS-CoV-2.

As of week 48/2022, 22 EU/EEA Member States have reported sentinel or non-sentinel RSV detection data to The European Surveillance System (TESSy) since week 40/2022, which is considered the start of the reporting period for respiratory viruses. Overall, 21 EU/EEA Member States (Belgium, Bulgaria, Czechia, Croatia, Denmark, Estonia, France, Germany, Hungary, Iceland, Ireland, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Slovakia, Slovenia, Spain, and Sweden) have reported RSV positivity rates above 3% for three or more consecutive weeks from their surveillance systems (sentinel and non-sentinel) during weeks 40-48/2022.

In weeks 40-48/2022, 30 113 RSV detections out of 283 826 specimens tested (10.6%) have been reported to TESSy from the primary care sentinel and non-sentinel (such as hospitals, schools, primary care facilities not involved in sentinel surveillance, or nursing homes and other institutions) sources.
Of those, 1 901 detections were from the sentinel and 28 212 from the non-sentinel sources. In the sentinel system 15 128 specimens have been tested since week 40 for RSV and 268 698 in the non-sentinel surveillance system.

In addition, Malta reported 250 records of RSV case-based data, including five cases from intensive care units and eight deaths, based on their hospital surveillance data. Information on age was complete for all these cases: 143 were 0-4 years old (57%), of these, 80 were under one years of age.

In weeks 40-48/2022, eight EU/EEA Member States submitted severe acute respiratory infections (SARI) data to TESSy, either case-based or aggregated (Belgium, Croatia, Germany, Ireland, Lithuania, Malta, Romania, and Spain) – for a total of 22 785 SARI cases.
Five countries (Belgium, Croatia, Ireland, Malta, and Romania) have reported the number of cases tested (601) and positive (137) for RSV. The overall positivity ranges from 13% (Malta) to 60.6% (Romania).
In these same countries, the pooled SARI RSV positivity has been increasing since week 40/2022 (4%), reaching 32% by week 44/2022, and plateauing at this level until week 48 (32%).

ECDC assessment:

RSV is a common respiratory virus that generally leads to mild respiratory symptoms. It can, however, lead to severe illness among infants and the elderly and is a main cause of bronchiolitis and pneumonia in infants. Therapeutics against severe RSV infection have been approved by European Medicines Agency (EMA) and researchers are in the process of developing vaccines.

A number of countries have reported an increase in RSV detections very early during the season, with reports of increasing paediatric hospital admissions in France, Ireland, Spain, Sweden and the United States. The RSV season also started earlier than in pre-pandemic seasons, likely due to a combination of increased contact among children in day-care centres and schools following the full relaxation of pandemic-related non-pharmaceutical interventions, and competition of a number of respiratory viruses (RSV, SARS-CoV-2 and influenza) for circulation this season. The early increase in cases is not fully unexpected although requires further monitoring and raised awareness among clinicians. Such large numbers of paediatric hospitalisation are putting stress on the paediatric healthcare sectors in several countries.

While RSV is not a mandatory reportable disease at the EU level, many EU/EEA Member States have strong laboratory and sentinel surveillance systems in place. There are limitations to the RSV data that ECDC collects through The European Surveillance System (TESSy). ECDC collects numbers of detections of laboratory-confirmed RSV cases from sentinel and non-sentinel surveillance systems based on voluntary reporting. The data do not include age or hospitalisation information. ECDC has started a new integrated respiratory surveillance system, where more details can be collected from this season onwards. Countries can also share available data or assessments through EpiPulse.

Actions:

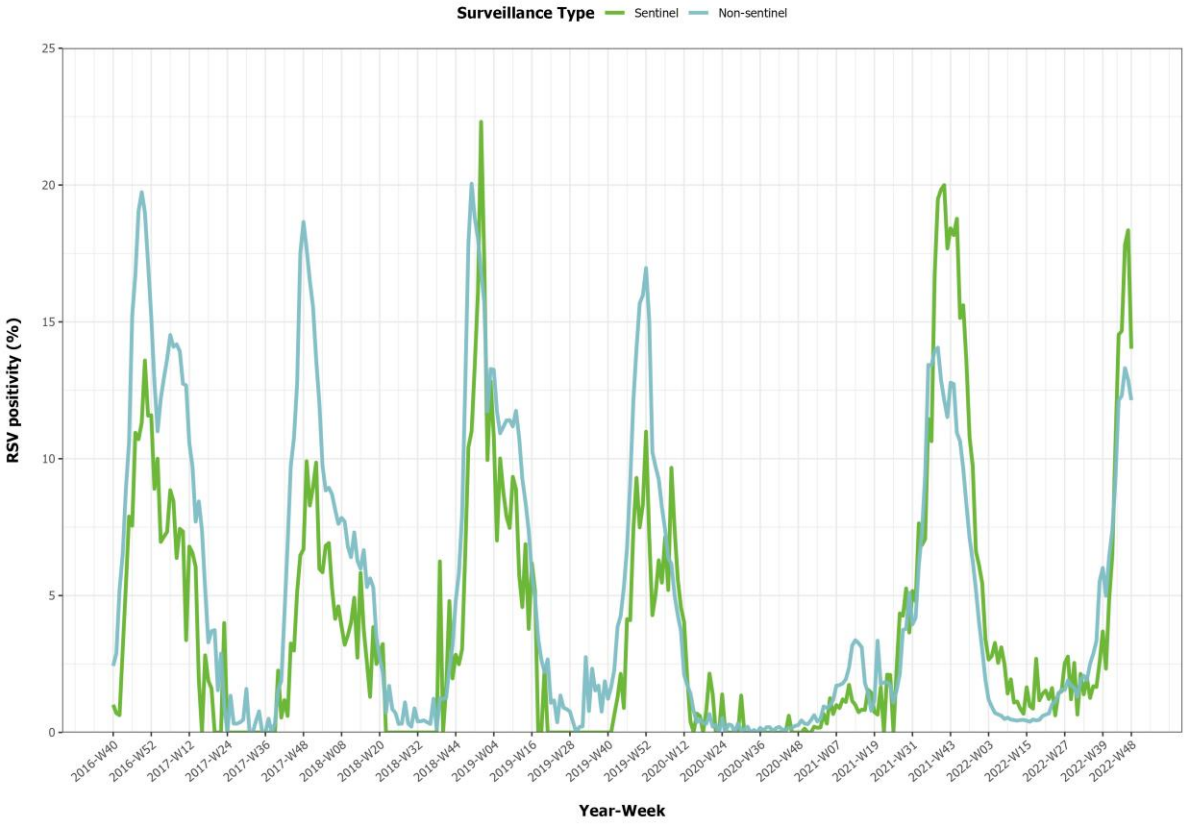
ECDC monitors and collects available data on RSV through TESSy and reports on it regularly in the Surveillance Atlas of Infectious Diseases and on FluNewsEurope. ECDC published a news item on the current situation on 23 November 2022 and continues monitoring the situation through its epidemic intelligence activities. A rapid risk assessment is in production.

Additional Sources:

Media reports from Spain and France mention increased burden of paediatric patients in emergency departments, and even shortages of paracetamol and amoxicillin on the market.

Maps and graphs

Figure 1. RSV surveillance test positivity EU-EEA_week48 2022



Source: TESSy (INFLVIR)

Legend: Proportions of RSV positive samples by epidemiological week in the EU/EEA, sentinel and non-sentinel surveillance, week 40, 2016 – week 48, 2022

4. Group A streptococcal infection - Multicountry - 2022

Overview:

Recent updates from different sources show a surge of invasive Group A streptococcus (iGAS) cases and associated fatalities from different countries. Countries reporting iGAS cases since previous updates are: **France**: Media sources refer to the deaths of two children and an adult from iGAS infection.

Ireland: On 7 December, the Irish Health Protection Surveillance Centre (HPSC) published an **update** on iGAS stating that in 2022, 56 iGAS cases have been notified to HPSC, of which 15 are in children less than 10 years of age, compared to 22 cases in children aged under 10 for the same period in 2019. Twenty two of the 55 iGAS cases have been reported in October 2022, of which five are children less than 10 years of age. One fatality due to iGAS in a four year old child was confirmed.

The Netherlands: Data **reported** from the Netherlands for the period between March and July 2022, indicated increased numbers of iGAS infections caused by diverse emm types and potentially connected to increased varicella virus circulation. In addition, according to NIVEL there is a significant increase of both GAS and iGAS cases (necrotising fasciitis and toxic shock syndrome) since September 2022 in young children.

Spain: **Media** sources from Spain report that 14 children have been hospitalised in the Community of Madrid in recent weeks for iGAS (meningitis, septic shock or pneumonia) and two have died. In addition, the Spanish Society of Paediatric Infectious Diseases (SEIP) published an alert to its members mentioning that data in Spain are being analysed and that the increase of cases is noted with some deaths. They also recommended increased clinical awareness for iGAS.

UK: on 8 December, the UK Health Security Agency (UKHSA) published an update on GAS infections in the country, reporting that GP consultations for scarlet fever are higher than normal and iGAS cases are also higher than expected this time of year. Since mid-September 2022, 652 iGAS cases have been reported in the UK. 24% of these cases are in children (aged 10 years and under), which is higher than the range observed in the past five seasons (4-12%). Sixty deaths have been recorded of which 10 are in children less than 10 years of age. Antimicrobial susceptibility profiles were not worrisome. Typing data indicate a diverse range of emm gene sequences with emm1 and emm12 being the most frequent.

Other countries reported they are currently not observing any significant increases in iGAS infections (Bulgaria, Croatia, Finland, Norway, Sweden)

ECDC assessment:

Group A Strep (GAS) is considered the most common cause of bacterial pharyngitis in school-aged children and may also affect their younger siblings. The incidence of GAS pharyngitis usually peaks during winter months and early spring. Outbreaks in kindergartens and schools are frequently reported. GAS pharyngitis is easily diagnosed by a rapid antigen detection test (Rapid Strep) and/or bacterial culture and treated with antibiotics and supportive care. Good hand hygiene and general personal hygiene (e.g. avoid sharing utensils, drinking glasses and personal items etc) helps control transmission within these settings.

iGAS infections are rare life-threatening infections complicating simple scarlet fever or GAS pharyngitis. Children recovering from varicella (chickenpox) are at higher risk of developing iGAS infection.

Neither GAS, nor iGAS infections are notifiable at the EU level, therefore the ability to assess increased circulation in the EU/EEA countries is limited. However, given that the current increase in iGAS cases is relatively low overall, the reported cases are not caused by a new strain, and that the disease is easily treatable with antibiotics, WHO and ECDC currently assess that the risk for the general population posed by iGAS is low.

Although investigations are ongoing, early typing data suggests that the surge of cases is not related to a specific or new strain or an increase in antibiotic resistance of GAS. Countries experiencing an increased number of cases are encouraged to share any emm-typing, M-typing, MLST, and/or WGS data via the related EpiPulse event page.

Actions:

ECDC has opened an Epipulse item and has invited EU/EEA countries and the UK to share information. In addition, in collaboration with WHO Regional Office for Europe, EU/EEA countries and the UK have been contacted about the current situation related to GAS and iGAS infections through Epipulse. ECDC continues monitoring this event through Epidemic Intelligence activities and will report when relevant epidemiological updates are available.

5. C. diphtheriae among migrants – Europe – 2022

Overview:

Summary: As of 7 December 2022, and since the last update on 30 November 2022, one new case was reported by the Netherlands.

Background: Since the beginning of 2022, and as of 30 November 2022, there have been 154 cases of diphtheria among migrants reported by eight EU/EEA countries: Austria (42), Belgium (18), France (14), Germany (64), Italy (3), the Netherlands (5), Norway (7) and Spain (1). Cases have also been reported in Switzerland (25) and the United Kingdom (53), bringing the overall number for Europe to 232.

Among these cases, the majority presented with the cutaneous form of the disease (n=160), 34 cases had respiratory diphtheria, six cases had both respiratory and cutaneous presentations, 19 cases were asymptomatic, and information was missing for 13 cases. All cases were caused by toxigenic C. diphtheriae, and the majority were detected in male migrants aged eight to 49 years.

ECDC has no data indicating further transmission and outbreaks of C. diphtheriae in the broader EU/EEA population resulting from the increased number of diphtheria cases observed.

On 11 November 2022, the UKHSA published updated guidelines on the control and management of diphtheria in England as well as a supplementary guidance document for cases and outbreaks in asylum-seeker accommodation settings.

On 3 November 2022, a rapid communication published in Eurosurveillance reported two C. diphtheriae isolates in Switzerland possibly linked to the increase observed in the EU/EEA, and an unusually broad predicted resistance to common oral and parenteral antibiotics. According to the authors, these findings challenged the treatment options for bacterial co-infections in the wounds of the cases.

On 17 November 2022, another rapid communication was published in Eurosurveillance, in which phenotypic and predicted resistance data from cases in Germany confirmed the predicted resistance profile observations from the two isolates in Switzerland. On 1 December 2022, the United Kingdom Health Security Agency (UKHSA) released a 'Supplementary guidance for cases and outbreaks in asylum seeker accommodation settings', in which antimicrobial susceptibility testing of all C. diphtheriae isolates is recommended.

ECDC assessment:

Diphtheria is a rare disease in EU/EEA countries. According to **WHO/UNICEF**, the immunisation coverage estimates for DTP3 in 2021 in the EU/EEA varied across Member States, ranging from 85% (Austria) to 99% (Greece, Hungary, Luxembourg, Malta and Portugal). Universal immunisation is the only effective method for preventing the toxin-mediated disease. This includes the administration of a booster dose of diphtheria toxoid if more than 10 years have passed since the last dose. The occurrence of the disease in fully vaccinated individuals is very rare.

The increase in cases reported among this group and the occurrence of similar outbreaks in several EU/EEA countries recently is unusual and needs to be carefully monitored, alongside the implementation of necessary public health measures to avoid the occurrence of more cases and further spread.

In this context, the probability of developing the disease is very low for individuals residing in the community, provided they have completed a full diphtheria vaccination series and have an up-to-date immunisation status. Nevertheless, the possibility of secondary infections in the community cannot be excluded and severe clinical diphtheria is possible in unvaccinated or immunosuppressed individuals.

In exposed unvaccinated or immunosuppressed individuals in migrant centres, a severe outcome following a diphtheria infection is possible. Nevertheless, the impact of the disease for individuals with a completed course of diphtheria vaccination is considered to be low. Given the moderate probability of exposure and the potential individual impact as described above, the risk is considered to be moderate for unvaccinated or immunosuppressed individuals in migrant reception centres or other similar crowded settings in the EU/EEA, but low for fully vaccinated individuals in those settings.

The occurrence of isolates (in other European countries) showing a genomic profile suggestive of antimicrobial resistance similar to that observed in Switzerland and Germany cannot be ruled out. However, these findings are preliminary and more evidence would be needed before assessing the potential implications of these observations, including the adaptation of the currently recommended antibiotic treatment regimes. In view of these ongoing developments, ECDC recommends, as a precautionary measure, that antimicrobial susceptibility testing is performed on all C. diphtheriae isolates.

On 6 October 2022, ECDC published a Rapid Risk Assessment (RRA) on the increase of reported diphtheria cases among migrants in Europe due to Corynebacterium diphtheriae, stressing the importance of universal immunisation with diphtheria toxoid-containing vaccines. Options for responses recommended in this RRA included:

- Identification and vaccination of individuals residing in migrant centres who have incomplete vaccination status.
- Provision of information to migrant centres' health service providers for the rapid identification and isolation of possible cases pending diagnostic confirmation.
- Respiratory droplet isolation of all confirmed or suspected cases with respiratory diphtheria.
- Contact precautions, such as avoiding contact with wounds and the dressing of wounds, for confirmed and suspected cases of cutaneous diphtheria.
- Isolation of all confirmed cases (respiratory and cutaneous presentation) until the elimination of the organism is demonstrated by two negative cultures obtained at least 24 hours apart after the completion of antimicrobial treatment.
- Identification of close contacts, including the personnel providing assistance, especially if they have performed procedures without appropriate personal protective equipment (PPE).
- Antimicrobial post-exposure prophylaxis and vaccination of incompletely vaccinated or unvaccinated close contacts.
- Alerting clinicians to the possibility of cutaneous and/or respiratory diphtheria among migrants and travellers returning from endemic areas.
- Collection of data on the country of origin and migratory route from all suspected diphtheria cases.
- Up-to-date vaccination status for all personnel working in reception centres for migrants.
- Limiting situations of overcrowding in migrant centres, verification of the availability of laboratory diagnostics in each country.

- Timely reporting to authorities of cases confirmed according to the EU case definition for diphtheria.
- Enhanced surveillance, including molecular typing and whole genome sequencing of patient isolates to improve the understanding and monitoring of transmission patterns.
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Additional ECDC tools, such as the **Expert Opinion on the public health needs of irregular migrants, refugees or asylum seekers across the EU's southern and south-eastern borders**, the **Handbook on implementing syndromic surveillance in migrant reception/detention centres and other refugee settings** and the **Handbook on using the ECDC preparedness checklist tool to strengthen preparedness against communicable disease outbreaks at migrant reception/detention centres** may be of relevance during outbreak investigation activities.

Actions:

ECDC continues to monitor this event through its epidemic intelligence activities and will provide weekly updates. The latest information available can be found on EpiPulse.
On 6 October 2022, ECDC published a **Rapid Risk Assessment (RRA)** on the increase of reported diphtheria cases among migrants in Europe due to Corynebacterium diphtheriae which conclusions and options for response proposed remain valid for this event. Additionally, on 5 December 2022, ECDC published an epidemiological update on the "Increase of reported diphtheria cases among migrants in Europe due to Corynebacterium diphtheriae, 2022".

6. Influenza – Multi-country – Monitoring 2022/2023 season

Overview:

Week 48, 2022 (28 November–04 December2022)

- The percentage of all sentinel primary care specimens from patients presenting with influenza-like illness(ILI) or acute respiratory infections (ARI) symptoms that tested positive for an influenza virus remained above the epidemic threshold (10%) and increased to 20% from 15% in the previous week.
- Influenza activity is increasing across the Region with 14 countries reporting regional or widespread activitywith medium to very high intensity.
- Germany, Greece, Kyrgyzstan, Uzbekistan, and Italy reported seasonal influenza activity above 40%positivity in sentinel primary care.
- Both influenza type A and type B viruses were detected with A(H3) viruses being dominant in sentinel and,for the first time this season, A(H1)pdm09 viruses were dominant in non-sentinel surveillance systems.
- Hospitalised patients with confirmed influenza virus infection were reported from ICU wards, other wardsand SARI surveillance. Infections with type B viruses were reported from countries in the eastern part of the Region while mainly A(H3) detections were reported in the western part of the Region and EU/EEA countries, but with increasing numbers of A(H1)pdm09 virus detections. When comparing the different influenza type distributions by system, it is important to consider that different sets of countries report to each system.

Source: Flu News Europe

ECDC assessment:

Seasonal influenza activity is increasing with sentinel positivity for influenza virus detections above 10% with minimum 10 tested specimens: Germany (50%), Greece (46%), Italy (40%), Slovakia (37%), France (26%), Estonia (26%), Poland (25%), Belgium (22%),Spain (18%), Netherlands (17%), Luxembourg (15%), Czechia (11%).

Actions:

ECDC and WHO monitor influenza activity in the WHO European Region. Data are available on the **Flu News Europe** website.

7. Mpox - Multi-country - 2022

Overview:

Update:
Since the last update on 22 November 2022, and as of 6 December 2022, 36 mpox cases have been reported from 10 EU/EEA countries: Sweden (16), Ireland (5), Italy (5), Spain (3), Germany (2), Austria (1), Belgium (1), Czechia (1), Poland (1) and Romania (1).

Summary:
EU/EEA
Since the start of the mpox outbreak and as of 6 December 2022, 20 934 confirmed cases of mpox have been reported from 29 EU/EEA countries: Spain (7 408), France (4 110), Germany (3 673), Netherlands (1 251), Portugal (942), Italy (923), Belgium (790), Austria (327), Sweden (236), Ireland (223), Poland (214), Denmark (191), Norway (93), Greece (85), Hungary (80), Czechia (71), Luxembourg (57), Slovenia (47), Romania (46), Finland (42), Malta (33), Croatia (29), Iceland (16), Slovakia (14), Estonia (11), Bulgaria (6), Latvia (6), Cyprus (5) and Lithuania (5).
Deaths have been reported from: Spain (3), Belgium (1) and Czechia (1).

Western Balkans and Türkiye:
Since the start of the mpox outbreak and as of 6 December 2022, the following Western Balkan countries have reported confirmed cases of mpox: Serbia (40), Bosnia and Herzegovina (9) and Montenegro (2). In addition, 11 cases have been reported from Türkiye.

Disclaimer: Data presented in this update are compiled from TESSy.
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.

Public Health Emergency of International Concern (PHEIC): On 23 July 2022, the Director-General of the World Health Organization declared the global mpox outbreak a Public Health Emergency of International Concern (PHEIC). On 1 November 2022, WHO advised that the multi-country outbreak of mpox still met the criteria included in the definition of a PHEIC set out in Article 1 of the International Health Regulations (2005) (IHR).

ECDC assessment:

The weekly number of mpox cases reported in the EU/EEA peaked in July 2022 and a steady declining trend has been observed since then. Multiple factors have probably contributed to the decline of this outbreak, including efforts in risk communication and community engagement resulting in behavioural changes, increasing immunity in the most affected population due to natural immunity and vaccination, and a decrease in the number of large cultural and social events after the summer, frequented by the main risk groups for this outbreak.
Mpox continues to primarily affect young men who have sex with men (MSM), between 18 and 50 years (87%). Mass gatherings in summer and specific sexual practices facilitated the transmission of mpox among MSM groups. Sporadic cases in women and children have also been reported.

Cases in the current outbreak continue to present with a spectrum of symptoms and signs that differ from what has been described in past outbreaks of mpox in endemic countries, where symptoms were mainly mild. Only a few severe cases (including encephalitis) leading to hospitalisations and five deaths have been reported by Spain (3), Belgium (1), and Czechia (1).

Based on evidence in the current outbreak and the declining number of new infections, the overall risk of mpox infection is assessed as moderate for MSM and low for the broader population.

Response options for EU/EEA countries include: creating awareness among health professionals and supporting sexual health services to continue case detection, contact tracing, and management of cases; continuing to offer testing for orthopoxvirus; vaccination strategy; and continuing risk communication and community engagement, despite the decreasing number of cases.

Given the limitations in vaccine supplies, primary preventive vaccination (PPV) and post-exposure preventive vaccination (PEPV) strategies may be combined to focus on individuals at substantially higher risk of exposure and close contacts of cases, respectively. PPV strategies should prioritise gay, bisexual, or other men or transgender people who have sex with men, who are at higher risk of exposure and individuals at risk of occupational exposure, based on epidemiological or behavioural criteria. Health promotion interventions and community engagement are also critical to ensure effective outreach and high vaccine acceptance and uptake among those most at risk of exposure.

Actions:

ECDC continues to monitor this event through its epidemic intelligence activities and reports relevant news on an ad-hoc basis. Multilateral meetings between affected countries, the WHO Regional Office for Europe, and ECDC

have taken place to share information and coordinate responses. A process in EpiPulse has been created to allow countries to share information with one another, WHO and ECDC.

A rapid risk assessment, 'Mpox multi-country outbreak', was published on 23 May 2022, the first update was published on 8 July 2022 and a second update was published on 18 October 2022. For the latest updates, visit ECDC's mpox 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 MSM communities. ECDC provided guidance to countries hosting events during the summer as well. ECDC provides 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.

8. Mass gathering monitoring - the FIFA World Cup 2022 Qatar

Overview:

The 2022 FIFA World Cup is taking place between 20 November and 18 December 2022 in Qatar. Thirty-two countries are participating in this event, including nine EU Member States: Belgium, Croatia, Denmark, France, Germany, the Netherlands, Poland, Portugal, and Spain. A total of 64 matches will take place in eight stadiums spread across five Qatari cities. It is expected that approximately **1.5 million** football fans from around the world will travel to Qatar during this event, some of them staying outside of the country. The **FIFA Fan Festival** will take place at the Al Bidda Park in Doha, and will be open every day of the tournament from 19 November to 18 December.

Since the last update and as of 7 December 2022, ECDC and networking partners, through epidemic intelligence activities have detected two local events in Qatar related to the World Cup.

On 02 December 2022, the media reported several Dutch football players becoming sick with a cold before their match against the United States. On 3 December 2022, another media source reported the Senegal head coach becoming sick with flu-like symptoms. Both events are similar to previously reported illnesses in the Brazilian team. Media sources suggest all these cases among players and team officials are most likely related to massive air conditioning units that have been installed in the stadiums.

Below we provide a short epidemiological summary related to global or regional public health threats from infectious diseases:

COVID-19: Since the beginning of the pandemic, and as of 7 December 2022, the **Qatar Ministry of Public Health** has reported 482 499 SARS-CoV-2 positive cases including 685 deaths. Qatar has a relatively high vaccination rate for COVID-19, with 98.86% of eligible individuals being fully vaccinated with the primary series (**Qatar MoPH**, **WHO**). From 1 November 2022, visitors have no longer been required to present a negative COVID-19 PCR or rapid antigen test result before traveling to Qatar.

MERS-CoV: No new cases have been reported in Qatar during the monitoring week 02 December–07 December 2022. In 2022 overall, there were two cases of MERS-CoV reported in Qatar, and 25 cases since 2012. Overall, globally over 2 600 cases of MERS-CoV have been reported since 2012, with most of the cases reported in Saudi Arabia.

Mpox: No new cases have been reported in Qatar since September 2022. Overall, five cases of mpox were reported in Qatar in 2022, and the first case was imported.

ECDC assessment:

As is often the case with mass gathering events, during the 2022 FIFA World Cup in Qatar, visitors may be most at risk of gastrointestinal illnesses and vaccine-preventable infections. Thus, travellers from the EU/EEA going to the event are advised to be vaccinated according to their national immunisation programme, and to ensure that they are vaccinated against seasonal influenza and have taken updated boosters for COVID-19, as recommended by respective national authorities. The following are recommended: employing standard hygiene measures, including regular handwashing with soap; drinking safe water (bottled, chlorinated or boiled before consumption); eating thoroughly cooked food and carefully washing fruits and vegetables with safe drinking water before consumption; and staying at home or in a hotel room when sick. The risk for EU/EEA citizens of becoming infected with

communicable diseases during the 2022 FIFA World Cup in Qatar is considered low if travellers observe the suggested measures before, during, and after the event.

Actions:

ECDC's epidemic intelligence team is monitoring this event in collaboration with global partners between 14 November and 22 December 2022.

9. Increase in hepatitis cases in children – United Kingdom – 2022

Overview:

Update: Since the last surveillance bulletin on 27 October 2022, 10 new cases have been reported to ECDC via The European Surveillance System (TESSy).

As of 24 November 2022, 572 cases of acute hepatitis of unknown aetiology have been reported by 22 countries: Austria (6), Belgium (14), Bulgaria (2), Cyprus (2), Denmark (8), Finland (1), France (10), Greece (21), Ireland (29), Israel (5), Italy (50), Latvia (1), Luxembourg (1), the Netherlands (16), Norway (6), Poland (23), Portugal (28), Republic of Moldova (1), Serbia (1), Spain (54), Sweden (12), and the United Kingdom (280).
There have been seven deaths associated with the disease in the European Region.
While a reporting delay may influence case numbers in recent weeks, there has been a steady decrease in the number of cases reported weekly since week 17.

A detailed summary and analysis of data reported to TESSy can be found in the **Joint ECDC-WHO Regional Office for Europe Surveillance Bulletin**.

As trends have been consistently stable and due to the low incidence of hepatitis of unknown aetiology (reporting not exceeding 10 cases per month since week 40), ECDC and the WHO Regional Office for Europe have decided to temporarily stop routine case reporting to TESSy and updates in the CDTR.

An EpiPulse item will remain open and ECDC encourages countries to report any exceedance of cases or other relevant information in relation to this outbreak via EpiPulse. ECDC will continue to monitor this situation carefully and will report further should the epidemiological situation change.

Summary: On 5 April 2022, the UK reported an increase in acute hepatitis cases of unknown aetiology for whom laboratory testing had excluded hepatitis types A, B, C, D and E among previously healthy children aged under 10 years from Scotland. On 12 April, the United Kingdom (UK) reported that in addition to the cases in Scotland, there were approximately 61 further similar cases under investigation in England, Wales, and Northern Ireland. The cases presented with symptoms and signs of severe acute hepatitis, including increased levels of liver enzymes (aspartate aminotransaminase/ aspartate transaminase [AST] or alanine aminotransaminase/ alanine transaminase [ALT] greater than 500 IU/L) and jaundice. Some of the cases also presented with gastrointestinal symptoms such as vomiting, pale stools, diarrhoea, nausea and abdominal pain. A small number of cases presented with fever.

Early investigations of the cases in the UK identified that many of the cases were infected with adenovirus. The UKHSA presented preliminary results in the 4th technical briefing from a national matched case-control study which indicated a strong association between adenovirus infection and cases of hepatitis of unknown origin. This finding was noted to be supported by routine surveillance data, in particular increases in adenovirus detection and positivity in laboratory reports in young children preceding and corresponding to the alert of the incident.

According to the preliminary results of two case control studies conducted by the University of Glasgow Centre for Virus Research and University College London and Great Ormond Street Hospital, cases with hepatitis of unknown origin seemed more likely to have an Adeno-associated virus 2 (AAV2) infection compared to controls, indicating its potential implication in the pathology of the disease. The prevalence of adenovirus and human herpesvirus 6B was higher among the cases but numbers were low and/or association was not always statistically significant.
In both studies, analysis of HLA allele positivity showed that class II HLA, particularly HLA DRB 1*04:01, was more prevalent among cases than in controls and in the general population.

Overall, neither the study in Glasgow or London provided definitive evidence that adenovirus or AAV2 were directly responsible for the liver damage seen in those cases. There was not enough evidence to rule out the implication of SARS-CoV-2 infection in the disease, but it remains an unlikely cause. The main conclusions drawn by both research teams are that pandemic restrictions disrupted normal childhood mixing patterns, so children were not exposed to AAV2 or AdV infections and that the AdV outbreaks that followed lifting of restrictions, together with

AAV2 infection, triggered an immune mediated hepatitis in genetically susceptible children. However, both studies had limitations and both research teams concluded that further research was needed through larger studies to provide more conclusive evidence.

According to the latest update from WHO, as of 12 July 2022, probable cases and cases pending classification have been reported from the Region of the Americas (435, including 334 in the US), Western Pacific Region (67), the South-East Asia Region (19) and the Eastern Mediterranean Region (2).
According to WHO, at least 46 children worldwide have required liver transplants and 22 deaths have occurred.

ECDC assessment:

AAV2 and adenovirus have been detected in a high number of cases and as a result, the current leading hypotheses concern AAV2 and adenovirus involvement, possibly with an immunological cofactor that is triggering a more severe infection or immune-mediated liver damage. The increase in cases that was observed in April and early May, and particularly in the youngest age group, may be affected by the lack of exposure to several pathogens and increased susceptibility to infection due to measures taken to curb the COVID-19 pandemic.

Evidence of human-to-human transmission remains unclear. Cases in the EU/EEA are sporadic with a definite decreasing trend. While the risk for further spread cannot be accurately assessed, cases appear to be declining. A case control study is planned and should provide greater information on the aetiological factors underlying the cases.

Actions:

ECDC has developed a protocol to conduct an exceedance analysis using ICD codes to understand whether or not we have observed an increase of cases of hepatitis of unknown aetiology compared to previous years in EU/EEA countries. Analysis is ongoing. ECDC is working with countries and clinical networks to conduct a case control study to determine the underlying aetiology.
ECDC will stop reporting monthly updates on this outbreak but will provide ad hoc updates should the epidemiological situation change.

10. Middle East respiratory syndrome coronavirus (MERS-CoV) - Multi-country

Overview:

Update: Since the previous update published on 10 November 2022, and as of 5 December 2022, the Saudi Arabian health authorities have reported four new MERS-CoV cases and no new deaths to the World Health Organization. The dates of onset were December 2021, April 2022, July 2022, and September 2022. All four cases were primary cases, and three of them reported contact with camels.
In addition, three cases of MERS from 2017 were retrospectively reported to WHO from Qatar, including one death.

Summary: Since the beginning of 2022, and as of 5 December 2022, six MERS-CoV cases have been reported in Saudi Arabia (3), Qatar (2), and Oman (1), including one death. All cases were primary cases, and all but one reported contact with camels. The most recent cases reported in Qatar prior to these were in February 2020 and February 2019.

Since April 2012, and as of 5 December 2022, 2 607 cases of MERS-CoV, including 944 deaths, have been reported by health authorities worldwide.

Sources: ECDC MERS-CoV page | WHO MERS-CoV | ECDC factsheet for professionals | WHO updated global summary and assessment of risk (November 2022) | Qatar MoPH Case #1 | Qatar MoPH Case #2 | FAO MERS-CoV situation update | WHO DON Oman | WHO DON Saudi Arabia

ECDC assessment:

Human cases of MERS-CoV continue to be reported in the Arabian Peninsula. However, the number of new cases detected and reported through surveillance has dropped to the lowest levels since 2014. The risk of sustained human-to-human transmission in Europe remains very low. The current MERS-CoV situation poses a low risk to the EU, as stated in ECDC's rapid risk assessment published on 29 August 2018, which also provides details on the last case reported in Europe.

ECDC published a technical report Health emergency preparedness for imported cases of high-consequence infectious diseases in October 2019, which will be useful for EU Member States wanting to assess their level of preparedness for a disease such as MERS. ECDC also published Risk assessment guidelines for infectious diseases transmitted on aircraft (RAGIDA) – Middle East Respiratory Syndrome Coronavirus (MERS-CoV) on 22 January 2020.

Actions:

ECDC is monitoring this threat through its epidemic intelligence activities and reports on it on a monthly basis.

11. Healthcare associated meningitis due to Fusarium solani - Mexico - 2022

Overview:

Update

Since 4 December 2022, two new cases and two new fatalities have been reported by Mexican health authorities.

Summary

Following epidemiological investigations, the Federal Commission for the Protection against Sanitary Risks (Cofepris) has ruled out the presence of Fusarium solani in the medications related to cases of meningitis reported in the State of Durango. Further hypothesis under investigation point to the anaesthesia procedures as the presumed route of infection.

On 2 November 2022, the health authorities in Durango - a north-central state of Mexico - reported seven cases of aseptic meningitis of unknown aetiology. Of these cases, three were in critical condition and one died. All cases were female of reproductive age, with previous medical history of obstetric surgical procedures between May and November 2022, who required epidural anaesthesia and experienced an unrelieved severe headache.

On 4 December, local health authorities reported that Fusarium solani is considered the cause of these cases of meningitis.

As of 8 December 2022, a total of 72 cases have been reported, including 23 deaths (CFR = 32%). Most cases were women in addition to one male case who underwent orthopaedic surgery and died.

On 24 November 2022, the Mexican health authorities reported the withdrawal of the following medications:

- bupivacaine /glucose (Buvacaína Pesada) 5 mg/1 ml batches b22m142, b22a263 and b22e87;
- bupivacaine (Buvacaína) 50 mg/10 ml batch b20j500;
- morphine (Graten) 2.5 mg/2.5 ml batch b19e125;
- morphine (Graten) 10 mg/10 ml batches b19n451 and b21v116.

ECDC assessment:

More information is required to assess this event. The health authorities are working to carry out the investigation of the outbreak, which includes follow-up of the people who underwent a surgical procedure in four private hospitals in Durango.

Actions:

ECDC will continue monitoring this event through Epidemic Intelligence activities and will report when relevant epidemiological updates are available.