WEEKLY BULLETIN

Communicable Disease Threats Report

Week 20, 14–17 May 2023

Today's disease topics

1. Legionnaires' disease – Lithuania - 2023
2. Detection of avian or animal influenza (H5) in poultry workers - United Kingdom - 2023
3. MDR S.Typhi associated with travel to Pakistan
4. Marburg virus disease - Equatorial Guinea - 2023
5. Marburg virus disease - Tanzania - 2023
6. Cases of antifungal-resistant Trichophyton indotineae in the United States

Executive Summary

Legionnaires' disease – Lithuania - 2023

- The Lithuanian National Public Health Center is investigating an outbreak of Legionnaires' disease in the Kaunas district of Lithuania.
- As of 11 May 2023, a total of 23 cases have been detected, including five deaths.
- Outbreaks of Legionnaires' disease are caused by aerosolised water droplets carrying Legionella bacteria. Infection risk is limited to a localised geographical area around the outbreak source.

Detection of avian or animal influenza (H5) in poultry workers - United Kingdom - 2023

- On 16 May 2023, the UK Health Security Agency (UKHSA) reported that influenza A(H5) virus had been detected in two poultry workers in the country, following the implementation of an asymptomatic testing programme for individuals who had been in contact with infected birds.
- The risk has been assessed as low for the general population, based on the low likelihood of exposure to infected birds and the lack of clinical symptoms observed for this event.

MDR S. Typhi associated with travel to Pakistan

- An outbreak of multi-drug resistant and closely related isolates of Salmonella Typhi has been detected among typhoid fever cases with travel links to Pakistan.
- Since 2018 and as of today, 77 cases have been identified in Ireland (17), Denmark (8), Germany (26), Netherlands (3), New Zealand (4), Norway (11) and Sweden (8), with the most recent cases reported in Ireland in April 2023.
- Sequences from cases show extensive antibiotic drug resistance, including resistance to third-generation cephalosporins (cefotaxime, ceftriaxone) and fluoroquinolones. Isolates also often have resistance

determinants to multiple other agents, such as chloramphenicol, sulphonamide, trimethoprim, and penicillins but remain susceptible to azithromycin and carbapenems.
- Among 68 cases with known travel history, the majority (n=66; 97%) are linked to travel to Pakistan.
- Healthcare providers should be made aware of the possibility of multi-drug resistant Salmonella Typhi infection in patients returning from Pakistan. The limited treatment options among such patients should be highlighted to clinicians. Travellers to Pakistan should be reminded of the need for vaccination against typhoid fever before travelling, as well as the importance of proper food hygiene and hand-washing practices during travel.

Marburg virus disease - Equatorial Guinea - 2023
- As of 16 May 2023 and since the previous update, no relevant epidemiological updates were available.
- On 8 May 2023, WHO reported that no new Marburg virus disease (MVD) cases have been reported since 20 April 2023. As of 16 May 2023, over 21 days have passed since the last reported case.
- The total number of confirmed MVD cases since the beginning of the outbreak is 17, with 12 deaths.
- Epidemiological surveillance and contact tracing efforts are ongoing.
- WHO and partners are supporting Equatorial Guinea and neighbouring countries.

Marburg virus disease - Tanzania - 2023
- Since the previous update on 10 May 2023 and as of 16 May 2023, no new relevant epidemiological updates have become available.
- According to the latest WHO Disease Outbreak News, published on 8 May 2023, as of 30 April 2023, no new MVD cases have been reported in the country since 11 April 2023.
- Since the beginning of the outbreak, there have been eight confirmed cases and one probable case, including six deaths (case-fatality rate (CFR) 66.7%) from Marburg virus disease (MVD) in Tanzania. All cases have been reported from the Kagera region.
- The Ministry of Health of Tanzania has deployed a rapid response team in the affected area and active surveillance continues.

Cases of antifungal-resistant Trichophyton indotineae in the United States
- Trichophyton indotineae is an emerging resistant fungus that causes severe skin inflammation. It has now been found in the United States.
- These difficult-to-treat fungal infections can be expected to increase, and clinicians should be aware that they can be difficult to diagnose as well.
- The use of EpiPulse is encouraged for rapid information sharing at the European level, should countries detect clusters or cases of T. indotineae.

1. Legionnaires' disease – Lithuania - 2023

Overview

Summary

On 9 May 2023, the Lithuanian National Public Health Center reported that it is investigating an unexpected number of cases of Legionnaires' disease in the Kaunas district of Lithuania. As of 11 May 2023, a total of 23 cases have been detected, including five deaths. Legionella bacteria has been found in water samples from the buildings where cases reside, and the authorities have advised a thermal shock of the water systems at the buildings.
As of 15 May 2023, and since the beginning of 2023, no travel-related cases associated with accommodation sites in Lithuania have been reported to ECDC.

Background

Between 2016 and 2021, Lithuania reported between 11 and 21 Legionnaires' disease cases annually to the European Surveillance System.

Sources: Lithuanian National Public Health Center, ECDC Surveillance Atlas of Infectious Diseases

ECDC assessment

Outbreaks of Legionnaires' disease are caused by aerosolised water droplets carrying Legionella bacteria. Infection risk is limited to a localised geographical area around the outbreak source.

Actions

ECDC is in contact with the Lithuanian authorities and will continue to monitor this event through epidemic intelligence activities.

2. Detection of avian or animal influenza (H5) in poultry workers - United Kingdom - 2023

Overview

On 16 May 2023, the **UK Health Security Agency (UKHSA)** reported that influenza A(H5) virus had been detected in two poultry workers in the country, following the implementation of an asymptomatic testing programme for individuals who had been in contact with infected birds.

The two individuals who tested positive had recently worked on an infected poultry farm in England. Both of them were asymptomatic throughout and both have since tested negative. According to the **report**, due to the overall timeline of exposure and testing, one of the workers is likely to have experienced contamination of the nose and/or throat from material that was inhaled on the farm. Investigations are being conducted to understand more about the second worker. Contact tracing is underway for the second individual.

The **UKHSA** has not found any evidence of human-to-human transmission of influenza A (H5) virus. As part of the asymptomatic surveillance programme, poultry workers are tested in the 10 days following exposure.

ECDC assessment

The risk has been assessed as low for the general population, based on the low likelihood of exposure to infected birds and the lack of clinical symptoms observed in this event. For those who are occupationally exposed, the risk is enhanced due to their potential contact with infected animals, and is assessed to be low-to-medium.

With ongoing outbreaks in wild birds and at poultry farms and in other settings, exposed individuals are encouraged to wear appropriate personal protective equipment. Health authorities should continue to follow up on those exposed and test people with respiratory symptoms or other atypically severe symptoms following exposure to potentially infected animals.

More data, such as results from serological investigations, are needed to better understand if these were real infections or contaminations related to exposure to highly contaminated environments where culling takes place.

Actions

ECDC is closely following this event through epidemic intelligence activities and has been in contact with DG SANTE and other partners.

3. MDR S.Typhi associated with travel to Pakistan

Overview

On 8 May 2023, **Ireland** reported 17 Salmonella Typhi cases with blaCTX-M-15 (extended-spectrum β-lactamase-producing (ESBL), associated with cefotaxime and ceftriaxone resistance) and gyrA mutations (associated with fluoroquinolone resistance) since beginning of 2019 (four in 2019, none in 2020, three in 2021, six in 2022 and four in the first four months of 2023). The isolates are part of a loose cluster with the earliest dating from 2017, however blaCTX-M was not detected in the cluster before 2019. Isolates also often have resistance determinants to multiple other agents, such as chloramphenicol, sulphonamide and trimethoprim. Resistance determinants for azithromycin and carbapenems have not been detected. Cases include 10 males (59%), age range 1-39 years (median 15). In total, 65% are children, aged 15 years and younger. Ten cases (59%) reported recent travel to Pakistan. An additional three cases were linked to an outbreak which was associated with travel to Pakistan but where the country of infection was not clear. In addition, 12% (two cases) reported recent travel to Afghanistan. One case was a lab-acquired infection in Ireland. In all, 65% of cases (11 cases) were hospitalised.

Denmark has reported eight cases (two in 2019, two in 2020 and four in 2022) of ESBL (blaCTX-M-15) MDR Salmonella Typhi ST1 which cluster with 1-4 AD of the Irish reference sequence. Five cases reported travel to Pakistan and three cases have unknown travel information. Cases include five females and three males in the age range of 4-49 years. The eight ESBL cases are part of a larger closely-related cluster, with an additional 10 non-ESBL cases (from 2018-2022).

Germany reports observing extensively-drug resistant (XDR) Salmonella Typhi associated with travel to Pakistan since 2018. To date, a total of 26 cases with XDR isolates carrying resistance against chloramphenicol, ampicillin, trimethoprim-sulfamethoxazole, fluoroquinolones and third-generation cephalosporines have been reported.

Netherlands has reported three cases - September 2019 (one case) and September 2022 (two cases) - for which isolates were available. Two are male and one is female. Age range is 7-23 years. Travel history is available for two cases; both reported travel to Pakistan. Cases have 2-4 AD with the Irish reference sequence based on cgMLST.

Norway has reported 11 cases between 2019 and 2023 with S. Typhi with blaCTX-M-15 and gyrA mutations clustering with the Irish reference sequence (≤ 2AD): two cases in 2019, three cases in 2020, three cases in 2021, two cases in 2022, and one case in 2023. All of the cases reported travel to Pakistan prior to infection. Age range is 6-63 years (median 30 years). Six cases are female.

Sweden has reported eight cases with disease onsets between July 2019 and January 2023. All cases have reported travel to Pakistan. Age range is 2-41 years (median 19). Seven cases are female. The Swedish cases differs by approximately 4-10 SNPs from the Irish reference sequence. All isolates carry resistance determinants to multiple agents and seven of the eight cases carry blaCTX-M-15.

New Zealand reported four cases in children under 13 years of age between 2020-2022 (three in 2020 and one in 2022). The core SNP distance is between 0 and 3. All isolates are Salmonella ST1 with blaCTX-M-15 and gyrA mutation. All four cases are linked to travel to Pakistan.

ECDC assessment

An outbreak of multi-drug resistant and closely-related isolates of Salmonella Typhi has been detected among typhoid fever cases with travel links to Pakistan, where a surge of MDR S. Typhi has been ongoing since November 2016. Since 2018 and up until today, 73 cases have been identified in Ireland (17), Denmark (8), Germany (26), Netherlands (3), New Zealand (4), Norway (11), and Sweden (8). Among cases with available information, nine were reported in 2019, eight in 2020, six in 2021, fifteen in 2022 and five in 2023. Among 68 cases with known travel history, the majority (n=66; 97%) are linked to travel to Pakistan. Two cases are linked to travel to Afghanistan.

Sequences isolated from cases are characterised by the blaCTX-M-15 gene (extended-spectrum β-lactamase-producing (ESBL)) which is associated with cefotaxime and ceftriaxone resistance, and the gyrA mutation which is associated with fluoroquinolone resistance. Isolates also often have resistance determinants to multiple other agents, such as chloramphenicol, sulphonamide, trimethoprim, quinolones and penicillins.

In 2019, ECDC published an epidemiological update regarding an increase in extensively drug-resistant (XDR) typhoid fever in travellers returning from Pakistan. Australia, Canada, Denmark, Taiwan, the United Kingdom and the United States are among some of the countries reporting detections of extensively-drug-resistant typhoid fever cases among travellers returning from Pakistan.

Actions

Healthcare providers should be made aware of the possibility of multi-drug/extensively-drug resistant Salmonella Typhi infection in patients returning from Pakistan. The limited treatment options among such cases should be highlighted among clinicians. Travellers to Pakistan should be reminded of the need for vaccination against typhoid fever before travelling, as well as the importance of proper food hygiene and hand-washing practices during travel. ECDC encourages public health authorities in the EU/EEA to ensure that cases of typhoid fever with recent travel history to Pakistan are thoroughly investigated and epidemiological data collected, including risk factors, travel history, clinical course, and antimicrobial susceptibility of isolates. ECDC invites countries to respond to the alert in EpiPulse (2023-FWD-00022) and to share relevant epidemiological and sequencing data to enable cluster analysis and risk assessment.

Further information

TESSy data: during the period 2019-2021, 48 cases of Salmonella Typhi with resistance to both fluoroquinolones (ciprofloxacin/pefloxacin and/or nalidixic acid) and third-generation cephalosporins (cefotaxime and ceftazidime, plus resistance to ampicillin, indicative of ESBL) were reported to TESSy. Of these, 35 were resistant also to chloramphenicol, sulfonamides and trimethoprim when tested. The 48 cases were reported by 13 countries (including the UK for 2019), with 23 cases in 2019, 12 in 2020 and 13 in 2021. Specimen type was provided for 40 isolates, 27 of which (68%) were isolated from blood. Two cases were reported as domestically acquired and for 17 cases, no travel information was available. Of 29 cases reported as travel-related, Pakistan was the most common destination (14 cases), followed by Iraq (five) and Iran (one case). For nine travel-related cases, the destination was unknown. All cases with travel to Pakistan and those with unknown destination were also resistant to chloramphenicol, sulfonamides and trimethoprim, in addition to fluoroquinolones and ESBL. This is indicative of the XDR Salmonella Typhi strain that has been spreading in the Sindh province in Pakistan since November 2016.

4. Marburg virus disease - Equatorial Guinea - 2023

Overview

Update:
As of 16 May 2023, and since the previous update, there are no relevant epidemiological updates. According to the latest **Disease Outbreak News Item** from WHO, as of 8 May, the last confirmed case was reported on 20 April 2023. According to the **Ministry of Health of Equatorial Guinea**, as of 10 May, Nsork district, Wele-Nzas province has concluded follow-up after not reporting any new cases or contacts for 42 days. Bata district, Litoral province, has completed 21 days of follow-up and has 21 days remaining to complete.

Since the beginning of the outbreak, and as of 10 May 2023, 17 confirmed cases - including 12 deaths, four recoveries, and one case with an unknown outcome - have been **reported**.

Summary: On 8 February 2023, the **Ministry of Health of Equatorial Guinea** published an epidemiological alert regarding an unknown disease causing haemorrhagic fever in two neighbouring communities in the district Nsok-Nsomo, in the province of Kié-Ntem. On 13 February 2023, **Equatorial Guinea** confirmed the first MVD outbreak in the country. The **index case** died in **early January 2023** and the Ministry of Health of Equatorial Guinea was notified on 7 February 2023.

On 18 April 2023, **WHO** reported that one new case of MVD has been detected in a healthcare worker from Bata district, Litoral province, who was being monitored following exposure to a previous MVD case. The healthcare worker is currently receiving treatment. According to the **Ministry of Health of Equatorial Guinea**, as of 1 May 2023, 17 confirmed MVD cases, including 12 deaths, had been reported from four districts in four provinces: Ebibeyin, Kié-Ntem province (three cases, including two deaths); Evinayong, Centro Sur province (two cases, including two deaths); Nsork, Wele-Nzas province (one case, including one death); Bata, Litoral province (11 cases, including seven deaths). The last confirmed case was **reported** on 20 April in Bata district, Litoral province. The case is a first-order relative of another confirmed case in Bata who was reported on **6 April**. Of the **16 confirmed cases** for which information is available, 10 are female and six are male, and 35% are between 30 and 44 years old. Five of the confirmed cases are healthcare workers, two of whom have died. According to the latest **Disease Outbreak News item**, published on 8 May 2023 by WHO, there are currently no confirmed cases receiving care at the Marburg treatment centre since the last case was discharged on 26 April 2023.

On 14 February 2023, during an **emergency meeting of the Marburg virus vaccine consortium (MARVAC)**, the **WHO** representative for Equatorial Guinea reported that epidemiological surveillance in the country was increasing, including intensified contact tracing. A 30-day response plan was also being developed to assess the needs and impact of the current situation.

The National Technical Committee of Health Emergencies is **working** closely with the Ministry of Health and Social Welfare to coordinate and strengthen disease control and prevention. **WHO** and its **partners** are supporting Equatorial Guinea and **neighbouring countries**.

Marburg virus disease is a severe disease in humans caused by Marburg marburgvirus (MARV), with a case **fatality ratio of up to 88%**. Although MVD is uncommon, the virus has the potential to cause epidemics with significant case fatality rates. All recorded MVD outbreaks have originated in Africa.

Since 1967, when MVD was first detected, approximately **600 MVD cases** have been reported as a result of outbreaks in Angola, the Democratic Republic of the Congo, Ghana, Guinea, Equatorial Guinea, Kenya, South Africa, Tanzania and Uganda.

Please refer to ECDC's **factsheet** on MVD for additional information.

ECDC assessment

This is the first MVD outbreak to occur in Equatorial Guinea.

Although the disease is severe with a high fatality rate, the likelihood of exposure and infection by MARV for EU/EEA citizens travelling to or residing in the affected areas of Equatorial Guinea is currently very low. As a result, the risk of MVD for EU/EEA citizens travelling to or residing in Equatorial Guinea is currently very low.

The most likely route of introduction for MARV into the EU/EEA would be via infected travellers. While importation of the virus cannot be excluded, it is currently very unlikely to occur. Nevertheless, if a case were to be imported, the likelihood of the virus spreading within the EU/EEA is considered to be very low.

Direct contact with blood and other body fluids of infected people or indirect contact with contaminated surfaces and materials such as clothing, bedding, and medical equipment should be avoided. Furthermore, habitats that

may be populated by bats, such as caves or mines in areas where MVD has been reported, should be avoided. Similarly, any form of close contact with wild animals, including monkeys, forest antelopes, rodents, and bats, alive or dead, and the manipulation or consumption of any type of bushmeat should be avoided.

Actions

ECDC is monitoring this event through its epidemic intelligence activities and will report when relevant information is available.

ECDC is in contact with partners.

Last time this event was included in the CDTR: 12 May 2023

5. Marburg virus disease - Tanzania - 2023

Overview

Update: As of 16 May 2023, and since the previous update on 10 May 2023, there are no relevant epidemiological updates. On 8 May, WHO published a **Disease Outbreak News item**, according to which the last confirmed Marburg virus disease (MVD) was reported on 11 April 2023. Overall, nine cases, including six deaths, have been reported since the beginning of the outbreak.

Summary: On 17 March 2023, the **Ministry of Health of Tanzania** reported seven people affected by an undiagnosed disease in Kagera, northern Tanzania, including five deaths and two people treated at hospitals. The affected individuals presented with symptoms of fever, vomiting, bleeding from various parts of their body, and kidney failure. An investigation was initiated to determine the cause of the outbreak.

On 21 March 2023, according to the **Africa Centres for Disease Control and Prevention (Africa CDC)**, the Ministry of Health confirmed an outbreak of MVD in the Bukoba rural district of the Kagera region, northwest Tanzania. On 8 May 2023, WHO reported in a **Disease Outbreak News** item that overall, eight confirmed and one probable MVD case have been reported in the Bukoba district of the Kagera region. Since the beginning of the outbreak, six deaths have been reported (five among the confirmed cases and the one probable case) (CFR 66.7%). The last confirmed case was reported on 11 April. and as of 30 April there were no further cases in treatment. Among the 212 contacts identified, all have concluded their monitoring period.

This is the first reported outbreak of **MVD** in Tanzania. The Kagera region borders Uganda, Rwanda, and Burundi. The **population** in this region is highly mobile, creating the risk of cross-border spread. MVD outbreaks have been previously reported in Uganda in regions neighbouring the currently affected area in Tanzania, which is remote, not densely populated, and not often frequented by tourists.

The Ministry of Health of Tanzania has sent a rapid response team to the affected area. Contact tracing, case management, and risk communication are being carried out. **Africa CDC** and **WHO** are also assisting the Ministry of Health with the deployment of teams of experts. During a **press conference** on 21 March 2023, a WHO representative emphasised the internal capacity and preparedness of Tanzania for managing the situation and stated that WHO is committed to supporting the Tanzanian government in their response.

Marburg virus disease is a severe disease in humans caused by Marburg marburgvirus (MARV), with a case **fatality ratio of up to 88%**. Although MVD is uncommon, the virus has the potential to cause epidemics with significant case fatality rates. All recorded MVD outbreaks have originated in Africa.

Since 1967, when MVD was first detected, approximately **600 MVD cases** have been reported as a result of outbreaks in Angola, the Democratic Republic of the Congo, Ghana, Guinea, Equatorial Guinea, Kenya, South Africa, Tanzania, and Uganda.

Please refer to the ECDC **factsheet** on MVD for additional information.

ECDC assessment

This is the first MVD outbreak to occur in Tanzania.

Although the disease is severe, with a high fatality rate, the likelihood of exposure and infection with MARV for EU/EEA citizens travelling to or residing in the Kagera region of Tanzania is currently very low. As a result, the risk of MARV infection for EU/EEA citizens travelling to or residing in the affected region is currently very low, provided they adhere to the recommended precautionary measures.

The most likely route of introduction for MARV into the EU/EEA would be via infected travellers. While importation of the virus cannot be excluded, it is currently very unlikely. Nevertheless, if a case were to be imported, the likelihood of the virus spreading within the EU/EEA is considered to be very low.

Direct contact with blood and other body fluids from infected people, or indirect contact with contaminated surfaces and materials such as clothing, bedding, and medical equipment should be avoided. It is advisable to avoid habitats that may be populated by bats, such as caves or mines in areas/countries where MVD has been reported, as well as any form of close contact with wild animals, including monkeys, forest antelopes, rodents, and bats, alive or dead, and the manipulation or consumption of any type of bushmeat.

Actions

ECDC is closely monitoring this event through its epidemic intelligence activities.

Last time this event was included in the CDTR: 12 May 2023

6. Cases of antifungal-resistant Trichophyton indotineae in the United States

Overview

Source: US CDC's Morbidity and Mortality Weekly Report (MMWR, 12 May 2023)
Two cases of severe tinea caused by Trichophyton indotineae, a novel antifungal-resistant dermatophyte species, were reported in the United States. These are the first cases of T. indotineae reported in the US. The patients' symptoms were consistent with the widespread, inflamed, pruritic plaques throughout the body described previously in T. indotineae infections. Both cases did not improve following treatment with the antifungal agent terbinafine, and were reported by the same dermatologist to public health officials in New York City.

The first case, with onset in 2021, was not associated with international travel and resolved completely after four weeks of itraconazole, but is being monitored for recurrence. The second case was associated with travel to Bangladesh in 2022 and improved but did not resolve with four weeks of treatment with griseofulvin; further treatment with itraconazole is being considered and the case's household contacts are undergoing evaluation.

ECDC assessment

Tinea is common and highly contagious, causing inflammation and pruritis that can become severe.
T. indotineae emerged in South Asia and has spread rapidly during the past decade throughout Asia, Europe and Canada. Its emergence is thought to have been driven by misuse and overuse of topical antifungals and corticosteroids. T. indotineae infections have been severe. They are frequently resistant to terbinafine, a mainstay of tinea treatment. Local transmission is likely in the US as there was a case with no recent international travel.

In Europe, cases of T. indotineae infection **have recently been reported** in France, Belgium, Greece, and Denmark. There is no systematic public health surveillance of severe tinea cases. These rare, difficult-to-treat infections can be expected to increase, and awareness among clinicians may need to be increased. T. indotineae infection should be considered when widespread tinea does not improve with topical or oral terbinafine. Detection of T. indotineae is complicated by the need for genomic sequencing for correct identification. Culture-based identification techniques used by most clinical laboratories typically misidentify T. indotineae as T. mentographytes or T. interdigitale. Specialised laboratories may need to be consulted for correct identification, via genomic sequencing.

Actions

The use of EpiPulse is encouraged for rapid information sharing at the European level, should countries detect clusters or cases of T. indotineae.