

BEYOND OUR BORDERS

The 'Beyond our Borders' column focuses on selected and current international diseases that may affect South Africans travelling abroad. Numbers correspond to Figure 3 on page 8.

1. Lassa fever: Nigeria

A total of 1 211 suspected and 191 confirmed cases of Lassa fever had been reported in seven states across Nigeria by mid-March 2021 (epi week 10). The annual spike of case numbers from December to April has so far been less in 2021 than in previous years; but has already resulted in 42 deaths this year. 2020 saw a total of 1 189 confirmed cases and 244 deaths. This zoonotic infection caused by the Lassa virus is endemic to countries in West Africa including Nigeria. The national Lassa fever multi-partner, multi-sectoral Technical Working Group (TWG) continues to coordinate the response activities at all levels.

The Lassa virus is carried by a common rat species, *Mastomys natalensis*, and excreted in the urine and faeces. Ingestion of contaminated foods and drinks or direct contact between contaminated items and open skin lesions result in human infection. Transmission may also occur through inhalation of particles made airborne by activities such as sweeping; or through handling the rodent while preparing it to eat. Person-to-person transmission may occur through contact with body fluids of an infected individual.

80% of people infected with Lassa fever will undergo a mild disease course. Clinical symptoms occur within three weeks of infection, are non-specific and range from malaise, fever and

generalised weakness to multiple organ system involvement resulting in haemorrhage, respiratory distress and neurological disturbance. The case fatality ratio for people infected with the Lassa virus is 1%, with increased rates seen in pregnant women (third trimester) and those who are severe enough to require hospitalisation. However, Nigeria's case fatality ratio for 2019 and 2020 has been over 20%. A third of those infected will be affected by temporary or permanent hearing loss. Blood tests for polymerase chain reaction (PCR) is used for diagnosis; but the Lassa virus infection may also be detected through viral culture, antibodies and antigens.

In-hospital supportive therapy and early administration of the antiviral ribavirin are the mainstay of clinical management for Lassa fever. Prevention of animal-to-human transmission is of utmost importance through health promotion to enforce environmental health controls of 'community hygiene' in endemic areas. This entails good personal and household hygiene, namely hand-washing, keeping a clean home and washing and cooking food well; and discouraging rodents from entering homes by rodent-proofing foodstuffs and household waste, and having biological deterrents such as cats. Contact tracing is also employed to ensure prompt diagnosis and management.

2. Middle East Respiratory Syndrome (MERS): United Arab Emirates

A human case of the Middle East Respiratory Syndrome (MERS) has been reported in the United Arab Emirates, diagnosed in February 2021, the first case in the country since December 2019. Globally, by the end of 2020, 2 566 cases of MERS had been reported across 27 countries with 882 deaths. The majority of cases have been in the Kingdom of Saudi Arabia. This zoonotic disease is caused by the MERS-CoV, a coronavirus older than and distinct from the SARS-CoV-2 of the current COVID-19 pandemic.

MERS is widespread in dromedary (single-humped) camels in the Middle East and northern Africa. The disease in camels is mild and self-limiting with animals requiring an isolation period to overcome the infectious phase of disease. Most human infections have been linked to contact with camels, the first

human infection being found in 2012 in the Middle East (Jordan). Transmission to humans occurs through direct interaction with camels or through ingestion of raw/unpasteurised milk or urine, or uncooked meat. Transmission of MERS between humans is likely through respiratory secretions. While clusters of cases may be found, particularly within the healthcare setting, sustained human-to-human transmission has not been demonstrated, one of the key differences between MERS and COVID-19.

The clinical presentation is often mild with respiratory and gastrointestinal symptoms, but may progress to severe disease and death. The case fatality ratio of 35% is likely an overestimation due to the number of mild cases being higher but not detected by surveillance systems. Severe disease and

Source: Promed (www.promed.org), World Health Organization (www.who.int), Centres for Disease Control and Prevention (www.cdc.gov), Nigeria Centers for Disease Control (ncdc.gov.ng), World Organisation for Animal Health (oie.int), Food and Agriculture Organization for the United Nations (fao.org)

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death are more likely in those with co-morbidities such as obesity, diabetes mellitus, chronic renal failure, chronic lung disease and immunocompromised states.

As there is no animal or human vaccine against infection with MERS-CoV, prevention strategies focus on hand hygiene and

avoiding touching the face following contact with camels; avoiding sick camels; correctly preparing animal products before consumption; personal protective equipment for occupational risks; avoiding camels if at higher risk for severe disease; and ongoing surveillance and outbreak response within the public human and animal health sectors.

3. Foodborne illness: India

It is estimated that one in ten people globally are affected by illness as a result of eating contaminated food each year. In mid-March, over 70 students within a single residence at the Osmania Medical College in India had developed symptoms of food poisoning, of whom 19 required hospitalisation. The suspected aetiology is a staphylococcal enterotoxin illness, norovirus or chemical contamination. India has reported multiple other outbreaks of foodborne disease this year involving food served at a government function and a dinner party, and consumption of the palm-based 'toddy' drink.

Foodborne illnesses are caused by ingestion of food contaminated with bacteria, viruses, fungi, parasites or chemical substances. The clinical course may be mild, with cases experiencing mild gastrointestinal symptoms of nausea, vomiting, abdominal cramps or diarrhoea, but may progress to severe complications and death. Longer-term illnesses

related to contaminated food, such as cancer, also fall within the spectrum of foodborne disease. Treatment of acute illness is supportive, focussed on restoring hydration and the electrolyte balance, but may also include specific treatment aimed at the offending agent and its complications. Foodborne disease is seen worldwide, but disproportionately affects children under 5 years of age and people in low- and middle-income countries.

Addressing foodborne disease is achieved through ensuring food safety protocols through all levels of the food production system. Basic safe food preparation techniques include keeping foodstuffs clean, separating raw and cooked foods, cooking foods thoroughly, keeping foods at safe temperatures, and ensuring that safe water and other materials are used. Outbreak response and surveillance to detect disease patterns and investigate the cause of disease assists to guide management of individual cases and to prevent similar outbreaks in future.



Figure 3. Current outbreaks/events that may have implications for travellers. Numbers correspond to text above. The red dot is the approximate location of the outbreak or event.

Source: Promed (www.promed.org), World Health Organization (www.who.int), Centres for Disease Control and Prevention (www.cdc.gov), Nigeria Centers for Disease Control (ncdc.gov.ng), World Organisation for Animal Health (oie.int), Food and Agriculture Organization for the United Nations (fao.org) .gov)