

ZOONOTIC AND VECTOR-BORNE DISEASES

An update on rabies in South Africa, 2021

Since the previous report, three cases of human rabies were confirmed in South Africa. These cases were reported from the Eastern Cape (EC) (n=2) and KwaZulu-Natal (KZN) (n=1) provinces. The total number of laboratory confirmed human rabies cases in South Africa for 2021 (as of 25 October 2021, and including the cases reported here) is eleven. These cases originate from the EC (n=5), KZN (n=3) and Limpopo (LPP) provinces (n=3). In addition, three probable cases were reported from KZN. Probable cases are defined by the World Health Organization as cases that present with clinical disease and outcome compatible with a diagnosis of rabies and an epidemiological link constituting exposure to a possibly rabid animal (for example a dog bite). Additionally, a suspected case from LPP is under investigation at the time of this report (not reported here).

The most recent cases have all involved children. The first case was a 2-year-old boy from Empangeni, King Cetshwayo District (KZN). The child sustained a deep and jagged laceration to the face and a deep puncture wound when attacked by a dog at the end of August 2021. The child was taken to a healthcare facility for medical attention the same day as the dog attack and received rabies vaccine. Rabies immunoglobulin therapy was only provided the following day. The child was admitted to the hospital in mid-September with a fever of 39.9°C, tremors, hallucination, poor appetite, muscle spasms, stiffness, and convulsions. The case reportedly had a “blank stare” and died a week following admission. A postmortem-collected brain sample tested positive for rabies at the NICD.

The second case involved an 11-year-old boy from Mdantsane, Buffalo City Metro District (EC). The child died in hospital after a week of rabies-like symptoms, including visual and auditory hallucinations, abdominal pains, psychotic event, hyper-salivation, weakness and reduced consciousness. No dog bite

history was recorded for this case and it is likely that no rabies post-exposure prophylaxis (PEP) was sought. The diagnosis of rabies was confirmed by RT-PCR testing using an antemortem-collected cerebrospinal fluid sample.

The third case was a 5-year-old boy from Gqeberha, Nelson Mandela Metro Municipality (EC). The boy was bitten by a dog on the forehead and arm. The patient presented with anxiety, aggression, vomiting, confusion, aerophobia, and agitation. Rabies PEP was provided on admission to hospital. Rabies was confirmed by testing of post-mortem-collected brain samples.

Important observations about these cases:

- Wounds of the head and shoulders are problematic and often associated with shortened incubation periods for rabies. Several cases of human rabies have been recorded in cases that sustained such wounds and either did not receive PEP, or disease onset commenced before PEP completion.
- Exposure events may go unnoted for many reasons. Even small wounds, contamination of broken skin or contamination of mucosal membranes may provide an avenue of entry for the virus into the body. These may go unnoticed or unreported, especially in small children.
- Rabies PEP is an effective preventive measure for rabies when provided promptly following exposure and in accordance with guidelines. Rabies PEP has no preventive or curative effect when provided to patients on presentation with clinical rabies disease.

The NICD urges pet owners to ensure the vaccination of their pets and to report any animals with suspicious behaviour (i.e. could be rabid) to their local veterinary authorities. When possible exposures occur, visit a health care facility promptly for assessment for rabies PEP. More information can be found at www.nicd.ac.za.

Crimean-Congo haemorrhagic fever

A case of Crimean-Congo haemorrhagic fever (CCHF) was reported in September 2021, the first case confirmed in South Africa since February 2020. The case reported travel to the Northern Cape Province prior to falling ill.

The case involved a 70-year-old woman, who suffered a tick bite while on a guided trip in the Namaqualand Flower Route, Northern Cape Province. On 24 September, she presented to a general practitioner with malaise, fever, chills, headache, muscle and back pain, ecchymosis, and a maculopapular rash. During the medical examination, a tick was detected on the patient's neck. Following the development of profuse ecchymosis the patient was hospitalized in the Western Cape (as she resides in Ceres). Tick bite fever was considered as a differential diagnosis and doxycycline treatment was given. However, PCR testing for rickettsiae was negative. Further investigation included the differential diagnosis of CCHF. A blood sample submitted to the NICD did, however, test positive for CCHFV and CCHF IgG and

IgM antibodies. The patient made a full recovery. Extensive contact tracing was conducted by the Western Cape Provincial Department of Health, and no secondary cases of CCHF have been found to date.

From 1981 to October 2021, a total of 218 human cases of CCHF has been reported in South Africa (including the case reported here). Nearly two-thirds of CCHF cases confirmed in South Africa are linked to tick (mostly *Hyalomma spp.*) exposures. A small number of cases are linked to exposure to infected animal tissues and blood. CCHF cases are often reported among animal workers, such as farmers, veterinarians, wildlife or abattoir workers, or hunters. Nosocomial transmission was reported in the 1980s and transmission to a laboratory worker was observed in 1996. CCHF has been reported from all provinces in South Africa, but most often from the Northern Cape, North West and Free State provinces.

More information on CCHF and other viral haemorrhagic fevers, including guidance on the submission of samples for investigation are available on www.nicd.ac.za