

ZOONOTIC AND VECTOR-BORNE DISEASES**Rift Valley fever infections in South Africa**

The increased rainfall experienced in many parts of South Africa in recent months (and as forecast for the coming months) may result in an increased risk for exposure to mosquitoes and other arthropod vectors, and therefore the risk of endemic arboviral disease. Rift Valley fever (RVF) is an endemic mosquito-borne viral disease in South Africa. The disease affects both animals (wildlife species and domestic ruminants) and humans. This virus causes outbreaks of abortions (so-called 'abortion storms') and deaths of livestock (predominantly involving sheep, goat and cattle). The disease occurs throughout Africa and especially when heavy rains (similar to the increased rainfall experienced in many parts of South Africa in recent months and as forecast for the coming months) favour the breeding of mosquito vectors.

During RVF outbreaks reported from east or southern Africa, humans become infected primarily from contact with infected tissues and/or blood of livestock (and wildlife), and less frequently from mosquito bites. As such, veterinarians and other veterinary professionals, farmers and farm workers present higher risk groups for RVF. Cases of human RVF infections are generally recognized when epizootics are reported in livestock, and few cases are diagnosed during the so-called inter-epidemic period and often only confirmed with serological testing. RVF has been known to occur in South Africa since the 1950s, with large outbreaks being recorded during the 1970s and 2010-2011. Widespread RVF epizootics from 2008 to 2011 with more than 14,000 animal cases recorded in eight of nine provinces, were reported in South Africa. During this period, a total of 302 human cases was laboratory-confirmed, of which 25 were fatal.* About 83% of human cases were associated with confirmed exposures involving direct handling of animal tissues and/or blood. These cases involved the aforementioned risk groups for RVF and were mostly male. In May 2018, an isolated epizootic of RVF was reported in sheep on a farm in the Jacobsdal area in the Free State Province and related to the laboratory confirmation of four human cases, all involving

farm workers.** Overall, human infections via mosquitoes and raw (unpasteurised/uncooked) milk were noted infrequently, although such cases may be under-recognised.

The majority of RVF infections in humans are subclinical and self-resolving, with a small number of severe and fatal cases. Mild illness presents as fever with influenza-like symptoms (including myalgia, arthralgia and headache) and symptom onset can range from two to six days after exposure. Some patients may also develop neck stiffness, photophobia, pain behind the eyes, loss of appetite and vomiting. In such patients, the clinical presentation may be mistaken for meningitis. Severe illness can manifest as one of the following: ocular disease (retinitis), meningoencephalitis, hepatitis, renal failure or haemorrhagic fever. Mortality rate in cases presenting with haemorrhagic features approach 45%.

Specialised laboratory diagnostic investigation for RVF is required to confirm or exclude diagnosis. The Centre for Emerging Zoonotic and Parasitic Diseases at the NICD performs the function of the national reference laboratory for RVF in humans in South Africa. Blood samples should be submitted to the NICD for investigation. A repertoire of serological and molecular tests is available for investigation of cases. Refer to the NICD website for sample submission and test information (www.nicd.ac.za/rift-valley-fever/).

Rift Valley fever in humans is a Category I notifiable medical condition in South Africa. For more information on notifiable medical conditions, https://www.nicd.ac.za/wp-content/uploads/2018/10/Notifiable-Medical-Condition_Z-foldBleed20-July2018.pdf. For more information about RVF in South Africa, www.nicd.ac.za; see A-Z disease webpages.

* Archer et al. Epidemiologic Investigations into Outbreaks of Rift Valley Fever in Humans, South Africa, 2008-2011. *Emerg Infect Dis.* 2013 (12):1918–25.

** Jansen van Vuren et al. Human cases of Rift Valley fever in South Africa, 2018. *Vector-Borne and Zoonotic Dis.* 2018, 18(12): 713-715.