

# Communicable Diseases Communiqué

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## Rift Valley Fever Virus Outbreak

There is an ongoing outbreak of Rift Valley Fever Virus (RVFV) infection affecting sheep, goats and cattle on farms within Free State (FSP) and Northern Cape (NCP) Provinces. As of 4 March 2010, 15 farms (14 farms in FSP, and 1 farm in Colesberg District NCP) reported laboratory-confirmed animal cases, with extensive livestock deaths reported. Affected farms are primarily clustered within central FSP (Tswelopele District, Bultfontein area); however, there are numerous farms in several other districts with confirmed RVF.

The NICD has confirmed a total of 6 human cases (5 cases in FSP and 1 case in NCP) to date. Five of these cases reported direct contact with RVFV-infected livestock. Additional suspect cases are currently being tested. Outbreak investigations by the Department of Health and the Department of Agriculture, Forestry and Fisheries are ongoing, and are being supported by the South African Field Epidemiology and Training Programme (SA-FELTP) and NICD.

Clinicians throughout South Africa are urged to include RVFV infection in their differential diagnosis should a patient meet the following case definition: Any person with recent close contact with livestock in or from suspected RVF areas, presenting with:

- Flu-like illness (which may include fever, myalgia, arthralgia or headache), **OR**
- Fever and features of: encephalitis, haemorrhage, hepatitis and/or ocular pathology (retinitis)

**\*\*Precautions – other possible causes for these symptoms must be excluded** such as Crimean Congo haemorrhagic fever (CCHF), tick-bite fever and malaria (where applicable).

All suspected cases of RVF should have both a clotting blood (red/yellow top tube) and EDTA blood

(purple top tube) specimen taken for viral detection and antibody testing. Prior to specimen collection, the case must be notified and discussed with the NICD doctor on call (**Hotline 082-883-9920, strictly for use by health professionals only**). The specimens should be packaged in accordance with the guidelines for the transport of dangerous biological goods (triple packaging using absorbent material). The specimen should be clearly labelled with the patient's name, hospital number, date of collection, and contact numbers of the referring physician and laboratory on the outside of the package. Ensure that clinical details are provided - especially date of onset of illness, symptoms and salient clinical features. Samples should be kept cold during transport and transported directly to:

The Special Pathogens Unit, National Institute for Communicable Diseases (NICD)  
No. 1 Modderfontein Rd  
Sandringham, 2131

RVF is a viral zoonosis endemic to Africa, which primarily affects animals but also has the capacity to affect humans. Among ruminants (e.g. cattle or sheep), the virus is known to cause large epizootics with high mortality rates in young animals and abortions of pregnancies. These typically occur following periods of heavy rainfall that promote the hatching of mosquito eggs carrying the virus. Transmission to humans usually occurs by direct contact with animal tissue or fluids. Less common modes of transmission include: vector-borne transmission via mosquitoes, aerosolization and inhalation of infected animal tissues or fluid, or, rarely, ingestion of unpasteurized milk from an infected animal. Due to these transmission dynamics, certain occupational groups such as farmers, slaughterhouse workers and veterinarians are at higher risk of infection. No human-to-human transmission has been documented to date.

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Illness is asymptomatic or mild in the vast majority of infected persons, and severe disease would be expected to occur in less than 1% of infected persons. Mild illness typically presents after an incubation period of 2-6 days as a fever with sudden onset of flu-like illness and/or muscle pain. Some patients develop neck stiffness, sensitivity to light (photophobia), pain behind the eyes, loss of appetite and vomiting. A small percentage of patients develop a much more severe form of the disease. Complications include: ocular (retinal) disease (0.5-2% of patients), meningoencephalitis (<1%) or haemorrhagic fever (<1%). Onset of retinal lesions usually occurs 1 to 3 weeks after the first symptoms appear, and may lead to permanent loss of vision, necessitating continual follow-up of patients for a 1 month period after symptoms resolve. Disease is rarely fatal (<1% of cases, 50% of cases with the haemorrhagic form of disease).

There is no specific treatment available for RVFV infection. Management is aimed at general supportive therapy. Ribavirin is not recommended. Standard infection control precautions should be followed and patients do not require isolation or barrier nursing. Human-to-human transmission has not been demonstrated, although it remains a theoretically possibility if exposure to bodily fluids of a markedly viraemic patient occurs.

Control and prevention of RVFV outbreaks primarily relies on the control of infection in livestock, through

vaccination and vector control. Public education, however, plays a vital role in reducing the risks of infection among the local population. These messages should focus on:

- Avoiding high-risk animal husbandry and slaughtering practices through use of gloves and other protective clothing, especially when handling sick animals.
- Avoiding the unsafe consumption of fresh blood, raw milk or animal tissue. In the epizootic regions, all animal products (blood, meat and milk) should be thoroughly cooked before eating. Slaughtering of animals for consumption should be discouraged during outbreaks.
- Personal and community protection against mosquito bites through the use of insect repellents (containing 30-50% DEET) and insecticide-treated bed nets, and wearing of light-coloured clothing.

Sporadic cases of RVFV infection have been documented within South Africa in recent years. The last major outbreak to affect the country occurred during 1974-76 on the interior plateau, where between 10,000 to 20,000 human cases were estimated. The current outbreak is within the same area, highlighting the importance of timely interventions to prevent further spread.

**Source:** Outbreak Response Unit, Special Pathogens Unit, and SA-FELTP, NICD. Free State and Northern Cape Departments of Health. Department of Agriculture, Forestry and Fisheries.

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