

## Rabies

For 2014 to date, one case of human rabies has been laboratory confirmed for South Africa; this patient was from Limpopo Province. In addition, three cases of suspected human rabies have also been recorded, originating from Limpopo (n=1) and Mpumalanga (n=2) provinces.

The most recent case-patient with suspected human rabies was a ten-year-old boy who presented to a Mpumalanga Province hospital during March 2014 with signs and symptoms suggestive of rabies and died shortly after. He was bitten by a dog during a visit to Mozambique earlier in the year, and it could not be ascertained whether he received any rabies post-exposure prophylaxis after the event. Unfortunately, the only sample collected for rabies investigation before the patient demised was a blood specimen (which is not useful for diagnosis of clinical rabies disease). Family members did not provide consent for post-mortem specimen collection, so the diagnosis could not be confirmed.

Rabies in humans can be investigated by laboratory testing of ante-mortem or post-mortem specimens. During the acute phase of rabies disease, saliva, cerebrospinal fluid and skin biopsies collected from the nape of the neck are useful for laboratory investigations. Reverse transcription PCR performed

on these specimens may reveal the presence of rabies virus RNA, but negative PCR results should not be considered as evidence for exclusion of the diagnosis. It is recommended that three saliva specimens collected on consecutive days must be submitted for testing, since the rabies virus is shed intermittently in the saliva and specimens may test false-negative. The ante-mortem laboratory confirmation of rabies can be challenging and it is recommended that multiple specimens are submitted for a battery of tests, and appropriate care must be taken to maintain the cold chain during transport of specimens to the laboratory. The most sensitive test for rabies remains the direct fluorescent antibody test performed on post-mortem collected brain specimens, which can reveal the presence of rabies virus antigen in brain impression smears. This test is robust and sensitive, and remains the gold standard for rabies diagnosis. Brain specimens must be submitted to the laboratory preserved in glycerol saline (not formalin).

**Source:** Centre for Emerging and Zoonotic Diseases and Division of Public Health Surveillance and Response, NICD-NHLS