UPDATE: CRIMEAN-CONGO HAEMORRHAGIC FEVER IN SOUTH AFRICA

Veerle Msimang, Jacqueline Weyer, Pat Leman, Alan Kemp, Janusz Paweska

Centre for Emerging and Zoonotic Diseases, NICD

Background

Crimean-Congo haemorrhagic fever (CCHF) virus occurs in many countries in Africa and the Middle East, as well as in the southern part of Europe (Balkans), Turkey, the southern Russian Federation, central Asia and the western part of China.[1,2] CCHF is a tick borne disease which, in South Africa, induces an average human fatality rate of 30%. The occurrence of this virus correlates with the distribution of *Hyalomma* spp. ticks, the principal vectors of the disease.[1,2]

Crimean-Congo haemorrhagic fever virus may infect a variety of domesticated and wild animals resulting in the development of a high level but transient viraemia. Infected animals are otherwise unaffected. This short-period viraemia is also a source for human exposure through hunting or slaughtering of infected animals.[3] Large herbivores present a high antibody seroprevalence to CCHF virus. Seroprevalence rates of 13–36% have been reported in some studies, while others suggest that more than 50% of adult livestock in endemic regions have antibodies.[1,2]

CCHF in South Africa

Crimean-Congo haemorrhagic fever cases occur sporadically in South Africa, with a yearly average of five. Since the first recorded case in 1981, 192 CCHF cases have been recorded in South Africa.

Although most cases are reported as single, isolated incidents, two foci of nosocomial spread were recorded in the 1980s.[3,4] The only recorded outbreak of CCHF virus in humans in Africa occurred in 1996, with 17 cases diagnosed at an ostrich abattoir in Oudtshoorn in the Western Cape Province.[5] The majority of these cases reported exposures to ticks via tick bites or squashing of ticks; the remainder were assumed to have been infected by exposure to infected ostrich tissues or blood whilst removing feathers and hides. Infected persons are usually farmers, farm workers or veterinary professionals.

Reports of CCHF in South Africa in recent years

Thirty-five suspected viral haemorrhagic fever cases were investigated in South Africa during 2012 but no CCHF cases were laboratory-confirmed.

However, five cases of CCHF were diagnosed this year (2013): two from the Free State Province in January, one from the North-West Province in February, and two from Mpumalanga in July and August. All diagnoses were based on specimens referred to the National Institute for Communicable Diseases (NICD), Johannesburg. Diagnoses of CCHF were confirmed in patients on repeat specimens by reverse transcription polymerase chain reaction assay and by the presence of CCHF virus-specific IgG and IgM antibodies detected by enzyme-linked immunosorbent assay.

Tick exposure was identified as the most likely source of CCHF infection in three of the cases, all of whom reported having been bitten by ticks on the farms where they worked. Tick exposure was also the most likely source of infection in the remaining two cases, a farmer and a game warden from a game ranch, although neither can be confirmed. In all five cases, moderate symptoms were noted and CCHF was diagnosed in the early stage of the disease. All patients recovered following in-hospital supportive care and treatment.

CCHF in South Africa from 2000 to date

From January 2000 to August 2013 fifty-four cases of CCHF were laboratory-confirmed in patients from South Africa. The overall mortality rate during this period was 35% i.e. 19 deaths (figure 1). These cases originated from the Free State, Northern Cape, North West, Gauteng, Mpumalanga, Western and Eastern Cape provinces (figure 2). The majority of cases occurred in farming areas in the Free State (n=17) and Northern Cape (n=20). CCHF cases have been recorded in all nine of South Africa's provinces.

Acknowledgements

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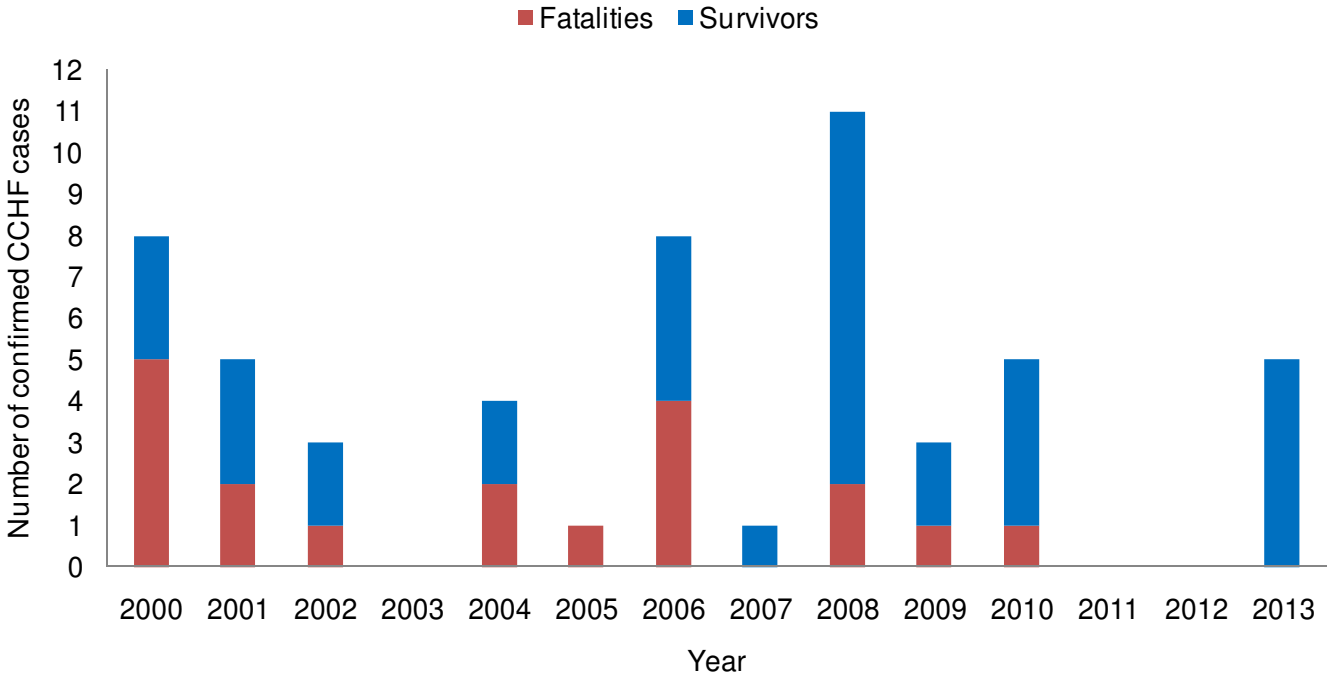

Figure 1: Outcomes of 54 human cases of Crimean-Congo haemorrhagic fever (CCHF) virus infections in South Africa during the period January 2000 to August 2013.

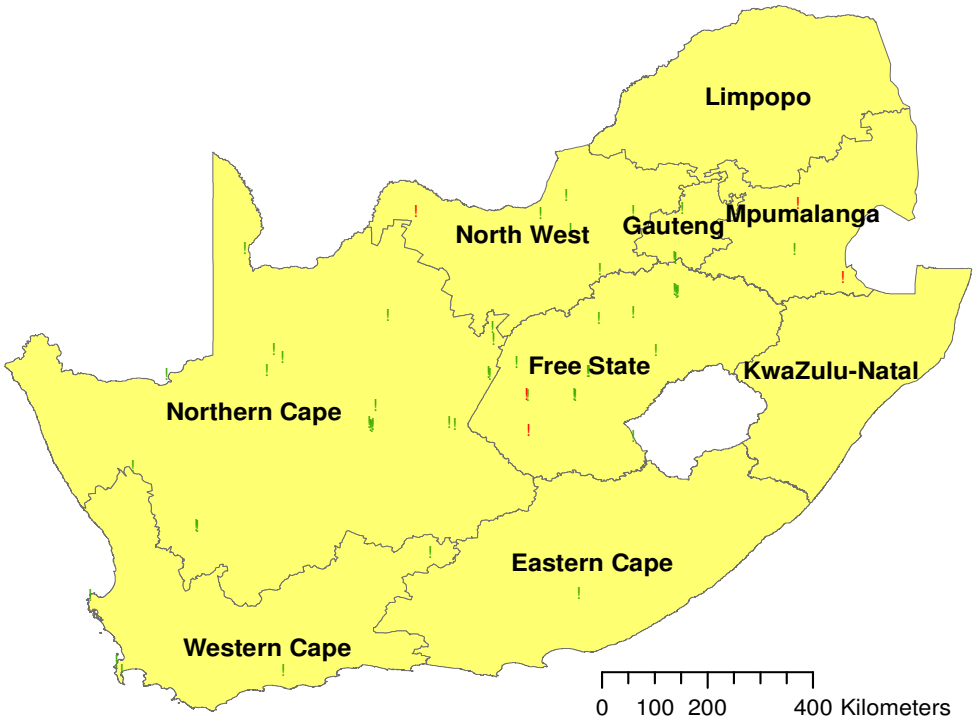

Figure 2: Distribution of laboratory-confirmed Crimean-Congo haemorrhagic fever cases (n=54) in South Africa by province during the period January 2000 to August 2013.

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