



Viral Haemorrhagic Fevers: Occupational risks

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Crimean-Congo haemorrhagic fever

Transmission to humans

- - infected *Hyalomma* ticks
- - contact with blood of infected cattle, sheep, ostriches
- - nosocomial transmission



2013-2023: 33 lab-confirmed cases CCHF RSA

Occupations: 2 animal health workers, 1 abattoir
2 hunters, 1 game warden, 22 farmers, 1 tourist,
1 informal "slaughter"

36 yr farm worker, Prieska , N Cape Province
Acute febrile illness 24 hrs post- tick bite
Epistaxis 3 days later
T/f to Kimberley Hospital



2022, N Cape farmer with fever, respiratory symptoms +
profound thrombocytopenia
COVID-19 + CCHF

Differential diagnosis of fever/progressive illness/bleeding



- Resident of JHB with haematemesis – gastroscopy for ? peptic ulcer. No travel
- Febrile, WCC 3.2, platelets 12 000

Vet technician, Kroonstad farm
Fever myalgia
WCC 2.4, platelets 125 000
AST 67, ALT 79

Key to diagnosis of VHF:

acute febrile illness/ bleeding/multisystem pathology

- Where do you live, travel history –where and when
- Occupation: animal /patient contact, abattoir worker, animal health worker, taxidermist , hunter, HCW (including lab worker), funeral workers
- Exposures- ‘insects’, animals /products , patients
- **PREVENTION???**

Early recognition and infection control is the key to preventing spread of VHF

SAMT DEEL 88 9 NOVEMBER 1985 711

A nosocomial outbreak of Crimean-Congo haemorrhagic fever at Tygerberg Hospital

Part I. Clinical features

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Summary

Crimean-Congo haemorrhagic fever (CCHF) is a rare disease in South Africa. From 1981 to September 1984, 8 sporadic primary cases were reported. An outbreak of CCHF in a large university hospital is described; of 8 patients diagnosed 2 died (the index and a secondary case). Four patients were seriously ill and 2 had a mild illness.

Problems were encountered in diagnosing the disease, which presents initially with influenza-like symptoms, differing only in severity from influenza. However, petechiae and other manifestations of a bleeding tendency distinguished it from influenza in the later phase of the disease. Special investigations, especially those revealing leucopenia and thrombocytopenia, were critically important in early diagnosis. The dilemma of handling this highly contagious disease is that definite virological diagnosis is time-consuming and is conducted in only one high-security laboratory 1600 km distant. A further case was admitted 3 months later from a different locality and confirmed virologically but no secondary cases could be confirmed or traced.

hospitals in South Africa cannot be underestimated. The Department of Internal Medicine at Tygerberg Hospital admits more than 14000 patients a year, including very ill patients with disease patterns which can be confused with the clinical picture of CCHF. The 2 patients who died had no circulating antibodies, and a period of 3-8 days was required for viral culture to be positive. The logistic consequences included isolation and treatment of highly suspect cases without causing undue concern to family members and the public while the final diagnosis was awaited.

The purpose of this report is to present the most important symptoms and signs of CCHF to facilitate early diagnosis and treatment. We include the spectrum of signs and symptoms with which CCHF may present and the relevant differential diagnosis of haemorrhagic fevers. It is emphasized that patients were placed in different categories based on clinical and laboratory findings for prognostic and therapeutic purposes. This is particularly important for early institution of barrier nursing while the diagnosis is being finalized. Patient survival depends on a team effort to which general physicians, haematologists, intensive care specialists, laboratory personnel, highly trained nursing staff and hospital administrators can contribute.

Patients and methods

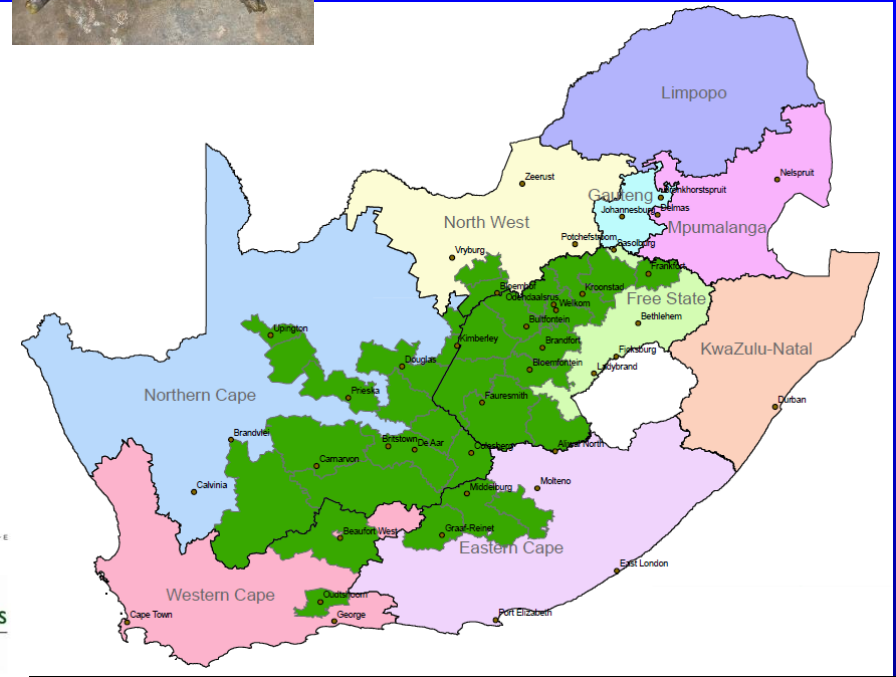
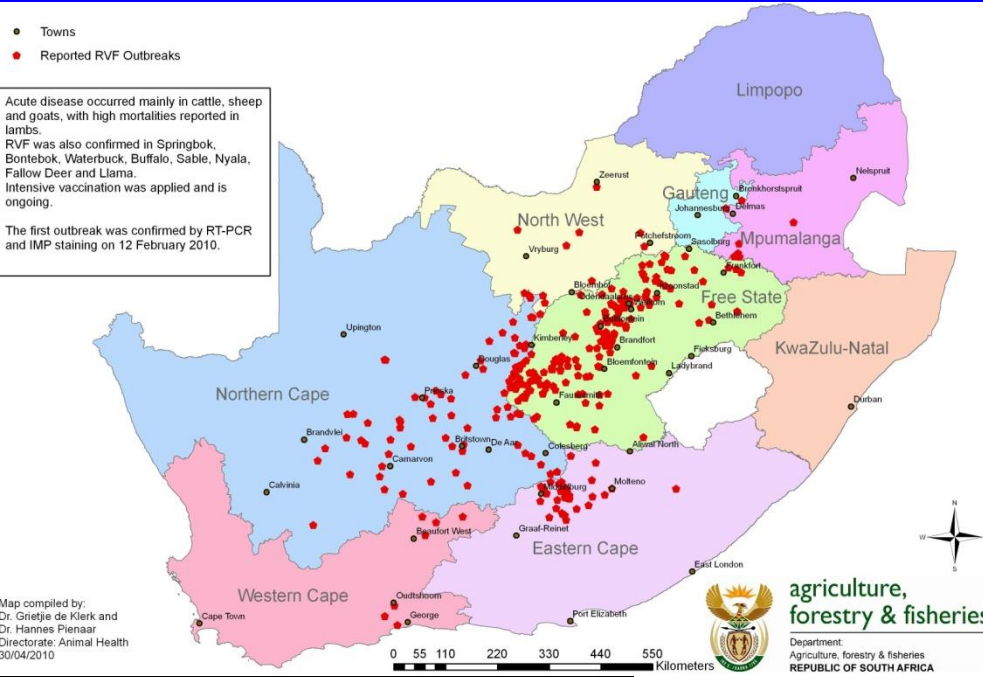
Patients were categorized in three groups depending on clinical presentation. The 2 patients in group 1 both died while the 4



Supportive treatment, 30% mortality

Monitoring of exposed HCW- fever/ symptoms x 14 days
Ribavirin post -needlestick injury

Alert from Dept of Agriculture -abortion storm in livestock: Rift Valley fever confirmed



Animal outbreaks^o

Human cases

➤ 242 laboratory-confirmed human cases, 26 deaths

Case Definition & Criteria for Lab Testing

- Recent close contact with animals in or from suspected RVF areas, or residence in an area with animal cases of RVF
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)

Transmission of RVF virus to humans:

- **Exposure to infected animal tissue and blood-occupational risks in farm workers, animal health workers, slaughtermen**
- No human to human transmission



Occupation and exposure

81% work within occupations where direct contact with animals frequently occurs

• Occupation	No. (%)
• Farmer or farm worker	130 (61)
• Animal health worker†	16 (7)
• Abattoir worker, meat inspector or hunter	28 (13)
• Farm resident (non farm-worker)	3 (1)
• Non-animal related occupation	37 (17)
• Total with known occupation	214 (100)

- †Includes veterinarians, veterinary assistants/nurses, animal health technicians.

Prevention

- **Avoid unprotected handling of animal tissues/carcasses/aborted foetuses - through post-mortems, slaughter/butchering, assisting with deliveries etc**

Outbreak response- health promotion

ONE HEALTH

Multi-sectoral teams: health and veterinary/agriculture



Field teams

Prevention in animal health workers workers-infection control?!?

Accidental inoculation with live attenuated vaccine can potentially result in RVF infection



RVF outbreak in veterinary students exposed during necropsies: RVF outbreak 2008



31 Veterinary School students
and staff surveyed:

- 6 acute cases
- 2 individuals with past immunising events

Sunday Times

up
Nov 1996

THE PAPER FOR THE PEOPLE

PRICE R3.9

Ebola virus hits SA

Nurse fights for her life
as authorities try to
trace source of infection



By NICOLA KOZ, CAS ST LEGER
and CRAIG DOONAN

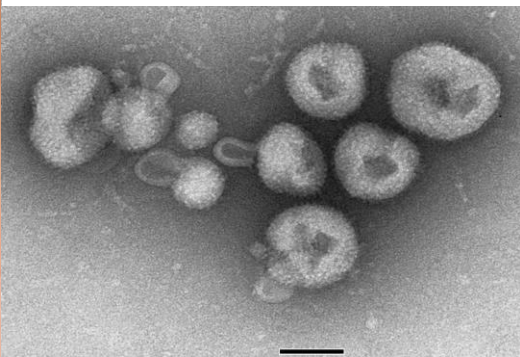
THE deadly Ebola virus has arrived in South Africa, infecting a nurse at a top hospital.

Gauteng health authorities said it was the first time the killer disease had been contracted in South Africa.

The victim is a 46-year-old nursing sister, Marilyn Lahana, of Parkmore, Sandton, the wife of the Springbok lawn bowler Cyril Lahana.

She is fighting for her life this weekend in an isolation ward at Johannesburg's Herold (E) after being moved from

OUTBREAK Lusaka/JHB 2008: Lujo- new arenavirus



Index patient – ex Lusaka ? TBF

**Four health workers: fever, rash;
thrombocytopaenia, ↑ ↑ AST/ALT**



VIRAL HAEMORRHAGIC FEVER SYNDROME ??????

VIRAL HAEMORRHAGIC FEVER SYNDROME ??????

Bleeding not a feature

80% mortality

“VHF” Infection Control
Contact tracing and monitoring

 **Reliable and detailed histories: where, when and what (exposures, occupation- animal/patient)**

 **Alert -previously healthy health worker/clusters with acute febrile illness, multi-system pathology/fatal disease**

 **Personal protection, infection control**

We are investigating the death of 39 children hospitalized in the northern province of Uige, in Angola. I received only yesterday some information on the cases/deaths which are summarized in the enclosed slides. As of this morning there had not been adult cases reported (or very few at least) and there had not been adult deaths. A team that was sent from National level arrived in Uige this morning, and the team leader just called to say that a nurse looking after some of the patients had died. Unfortunately we don't have more information, or a specimen from the nurse.

Though we are missing a lot of information, when we looked at the data this morning, we thought, given the geographic distribution, the age of the cases and the nature of the epi curve, that it might be an intoxication, possibly from some local traditional therapy, but also we thought of yellow fever or meningococemia. The death of the health care worker has raised new concerns.