

## 1 ZOO NOTIC AND VECTOR-BORNE DISEASES

# END RABIES TOGETHER

## WORLD RABIES DAY, SEPTEMBER 28

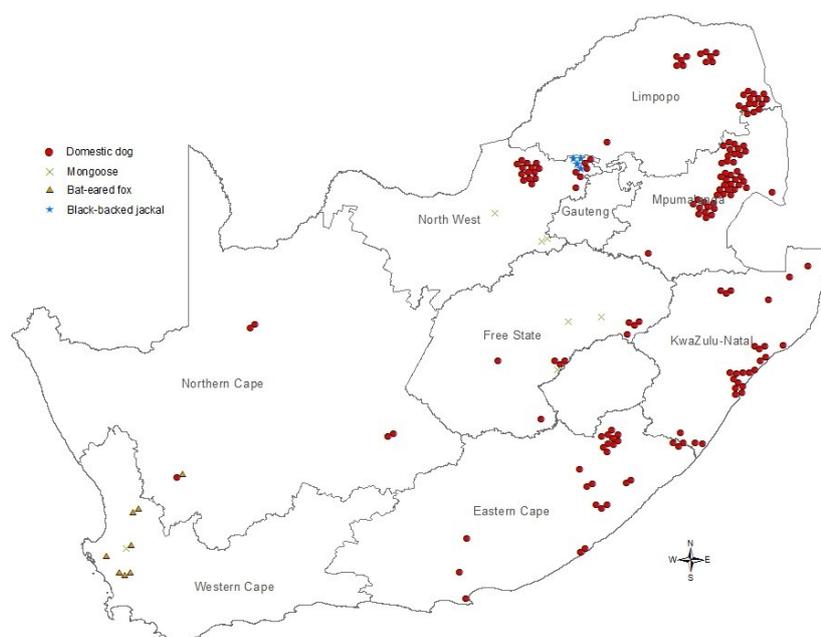
### a Rabies

#### World Rabies Day – Let's end rabies together.

The 28<sup>th</sup> of September every year is World Rabies Day - a day dedicated to raising awareness and fostering commitment to global rabies control and elimination. Despite longstanding knowledge on rabies control in animals, and the availability of prophylaxis for humans, rabies remains one of the most formidable zoonoses worldwide. A recent study has shown that an estimated 59,000 persons die of rabies each year, equating to a rabies death every 10 minutes. Economic losses attributed to rabies exceed US\$ 8.6 billion globally. These costs are partly ascribed to post-exposure prophylaxis regimens (including human rabies vaccines and immunoglobulin) and losses in livestock (US\$ 512 million per year alone). In South Africa, a study published in 2014 calculated the cost of vaccination of a dog at less than US\$ 7, and the cost of post-exposure prophylaxis for dog-bite victims US\$ 333. In the 2015 the Rabies Advisory Committee of South Africa reported the total cost of human rabies prophylaxis to be ZAR 70 million per annum.

In South Africa rabies in domestic dogs remains the

major concern (Figure 1). In the past decade sizeable outbreaks of dog rabies have been reported from Limpopo, Mpumalanga, Gauteng, Free State and the North West provinces. Currently 77% of animal rabies cases are reported from the Eastern Cape, North West, Mpumalanga and KwaZulu-Natal provinces. The highest density of rabies per square kilometre in South Africa is the Ehlanzeni District of Mpumalanga Province. Poor adherence to rabies vaccination schedules by pet owners leads to susceptible dog populations, which are then able to sustain rabies virus transmission when it is introduced. This circumstance led to outbreaks in Vhembe district (Limpopo Province) from 2004 onwards, and in Soweto, Johannesburg in 2010. Concerns were raised this year when a pet dog was diagnosed with rabies in the Roodepoort suburb of Helderkruijn in April, and a second infected dog in Kloofendal in August. Complacency regarding pet vaccinations renders any location in South Africa susceptible to rabies. Apart from dog rabies, rabies in livestock including bovine, ovine and caprine animals, and in wildlife including mongoose species and jackal, are also reported. In September 2015, a report of rabies in a the wild



**Figure 1. Distribution of confirmed rabies cases in animals in South Africa, 2014. (Source: Data obtained from the Department of Agriculture, Forestry and Fisheries)**

dog (*Lycaon pictus*) pack in a private reserve near Hoedspruit, the only pack resident outside of the Kruger National Park, raised conservation concerns.

The past decade has seen advances in rabies control in South Africa. In KwaZulu-Natal and Mpumalanga Provinces, the incidence of dog and human rabies has declined markedly, in part through an increase in funding of anti-rabies efforts by a Bill and Melinda Gates Foundation-funded initiative. In the past fifteen years a total of 171 human rabies cases was laboratory confirmed in South Africa. These cases were reported from KwaZulu-Natal (n=73, 43%); Limpopo (n=42, 24%) Eastern Cape (n=36, 21%); Mpumalanga (n=8, 5%); Free State (n=5, 3%); North West (n=4, 2%); Northern Cape (n=2, 1%) and Gauteng provinces (n=1, ~0.5%) (Figure 2). No human cases of rabies have been confirmed from the Western Cape Province during this period. The majority (80%) of confirmed human cases were directly linked to exposures associated with domestic dogs. Since 2000, 6 human rabies cases were reportedly associated with non-canine exposures as follows: bat (n=1), jackal (n=1), leopard (n=1) and mongoose (n=3). Only two cases of human rabies have been associated with cat exposures in the past fifteen years. Domestic cats are not epidemiologically important for rabies and do not sustain transmission cycles of the virus. Rabies vaccination of cats is however required due to the frequent and possible close contact that these domestic animals have with humans.

**Figure 2 (right). Confirmed human rabies cases per province in South Africa, 2000-to date**

**Figure 3 (below). Post-exposure management of confirmed human rabies cases in South Africa, 2000 to date.**

For the period of 2008 to 2013, the Department of Agriculture, Forestry and Fisheries reported 304 confirmed bovine cases of rabies. Bovine rabies not only incurs economic losses, but also poses a risk to humans who may have close contact with the saliva and secretions of sick animals.

A review of confirmed human rabies cases from 2000 to date reveals that low community awareness of rabies is a major contributing factor to inadequate post-exposure prophylaxis (PEP), as in about half of cases (52%), victims did not seek medical attention after an exposure event (Figure 3). Amongst cases that did seek medical care, health care workers did not recognise the need for PEP (38% of cases), or gave inadequate PEP (3%). Additional challenges such as unavailability of vaccine at facility level (3%) and loss to follow up for completion of four-dose rabies vaccine schedule (4%) are also reported.

Despite these challenges, it is possible with consistent effort from veterinarians and public health administrators, health care workers and the public to eliminate dog rabies in South Africa. For more information regarding rabies, including the PEP guidelines, please visit [www.nicd.ac.za](http://www.nicd.ac.za)

**Source:** Centre for Emerging and Zoonotic Diseases, NICD-NHLS

