

Rabies is fully preventable and yet results in thousands of human deaths per year. According to the World Health Organization an estimated 55 000 human deaths occur worldwide per year due to canine rabies, accounting for 1 death and 300 exposures every 15 minutes. Almost all human fatalities occur in developing countries with 56% occurring in Asia and 44% in Africa. In Africa a great number of human rabies deaths occurs year-after-year, seemingly unnoticed. Rabies is primarily a disease of children, who are particularly at risk due to their close contact with dogs, and are more likely than adults to suffer multiple bites and bites to the face and head, both of which impose a higher risk of contracting rabies.

About rabies

Rabies is a neurotropic disease (encephalitic disease i.e. targets the brain) caused by the rabies virus and can affect humans and any other warm blooded animal. The virus is transmitted in saliva from the close contact with an infected animal (bites, scratches, licks on broken skin and mucous membranes). The early signs of rabies in humans are non-specific and may include fever or headaches and are followed by rapid progression of nervous signs such as confusion, sleepiness or agitation. In animals initial signs are also non-specific. Dramatic behavioral alteration such as wild animals losing their fear of humans may be an indication of infection. Importantly, clinical presentation may be furious or dumb with furious rabies characterized by aggression and dumb rabies by paralysis. Incubation periods are extremely variable but

usually 2-8 weeks after an exposure. The disease should be treated immediately after exposure but if no action is taken and once clinical rabies sets in, it is too late for treatment and the person will not survive.

Rabies in South Africa

The true extent of rabies in South Africa remains uncertain due to the undiagnosed human and animal rabies cases not reflected in official statistics. Animal rabies is present throughout South Africa (and neighboring countries) and in the range of 10-30 human cases are laboratory confirmed annually (see Figure 1). Tragically, most of those who succumbed to the disease did not receive the correct or any post-exposure prophylaxis and most died following bites by rabid dogs. Rabies deaths in humans in South Africa are increasing with a record number of human deaths reported in 2006. The death of a person from rabies should be viewed as a health system failure since rabies is 100% preventable if correct post-exposure prophylaxis is administered soon after exposure to a rabid animal.

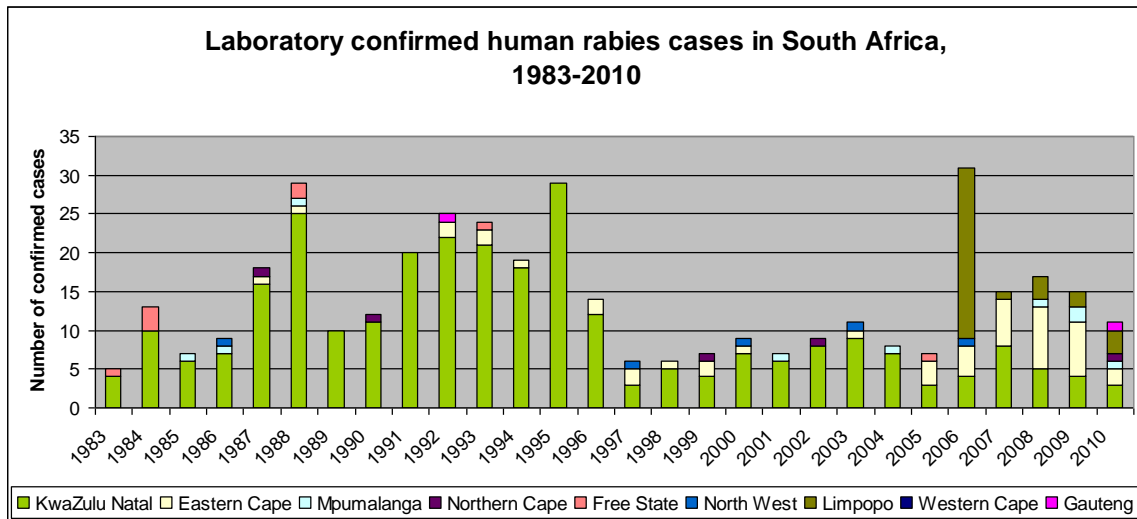


Figure 1: Laboratory confirmed cases for human rabies in South Africa for the period 1983-2010 (Special Pathogens Unit, National Institute for Communicable Disease, South Africa).

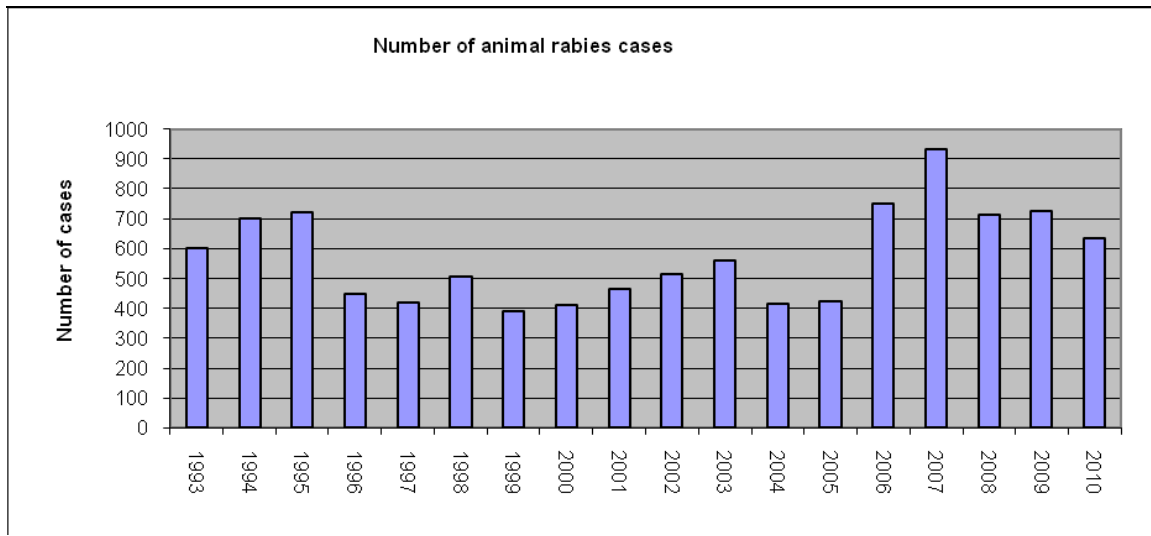


Figure 2: Laboratory confirmed cases for animal rabies in South Africa for the period 1993-2010 (Onderstepoort Veterinary Institute, Allerton Provincial Veterinary Laboratory, South Africa).

Many kinds of animals can transmit rabies virus to people. In South Africa the most common transmission of rabies to humans is by the bite of domestic dogs. Cats, mongooses, black-backed jackals and bat-eared foxes are also important vectors transmitting rabies. Of considerable concern is the re-emerging status of rabies in South Africa despite various efforts to control the disease. An increase in rabies cases have been observed in areas in South Africa where rabies has previously been properly controlled e.g. the recent outbreak in the Limpopo Province.

What can you do to control the spread of rabies?

- All cats and dogs (and wild carnivore species kept as pets) should be vaccinated against rabies and vaccinations should be kept up to date. Vaccination will protect your pets from getting rabies but also provide a barrier of protection for you if the pet is bitten by a rabid animal.
- Call your local animal control agency to remove stray dogs. Such dogs are usually unvaccinated and present a rabies threat.
- Spay-and-neuter your pets to reduce the number of unwanted animals that cannot be properly cared for and vaccinated against rabies (and other diseases).

Rabies prevention in people

- Avoid contact with wild animals, especially if animals are behaving strangely such as wild animals behaving tame.
- If bitten the animal must be tested for rabies where possible. If rabies is suspected the person must receive post-exposure prophylaxis. There is no treatment for rabies after symptoms appear but a vaccine regimen is available that can be administered after an exposure occurred (post-exposure

prophylaxis). If this is administered correctly it is 100% effective in preventing rabies. Administration of rabies post-exposure prophylaxis is urgent, and must be done as soon as possible after the bite/lick. Pre-exposure prophylaxis is given to people in high risk groups such as veterinarians, animal handlers and laboratory workers. This however does not eliminate the need for post-exposure prophylaxis should an exposure occur, although it minimizes the number of vaccine doses required and there is no need for immunoglobulin. The most frequent causes of failure of post-exposure treatment are delays in administering the first dose, failure to complete the vaccine course and failure of correct wound management.

What to do if exposed to a potentially rabid animal?

1. Wash the wound copiously with soap and water and seek medical attention immediately (Rabies post-exposure prophylaxis but also anti-tetanus vaccination and broad-spectrum antibiotics for potential bacterial infections in the wound).
2. Note the geographical location of the incident.
3. Note the type of animal involved.
4. Note the details of the exposure (provoked or unprovoked).
5. Note the vaccination status of the animal (obtain vaccination certificates if possible).
6. Can the animal be safely captured/euthanized for rabies testing without placing the captor in jeopardy? When the animal cannot be traced, caught or identified, a reliable vaccination history established, or the brain is not available for laboratory examination, it should be assumed that the animal was rabid.

Control

Scientific advances have given us the tools necessary for effective rabies control and prevention. These include post-exposure prophylaxis of people exposed to the virus, pre-exposure vaccination of people at potential risk and vaccines targeting the animal reservoir, with the most important animal species the domestic dog. The high costs of prevention exert a substantial economic burden on individuals and societies in developing countries, and particularly affects those who can least afford it. Dog rabies vaccination is more cost-effective for preventing human rabies than reliance on post-exposure prophylaxis for dog-bite victims. As demonstrated in North America, Europe and Latin America, social mobilization towards rabies vaccination of dogs is a successful technique that will result in the extinction of rabies in dogs, especially if coupled with modern advances for stray dog control and new rabies vaccination through edible baits. When rabies is eliminated in the reservoir animal, the end result is that human exposures to rabies decline. It is widely recognized that the number of deaths officially reported greatly underestimates the true incidence of rabies with a result that rabies is often considered insignificant by policy-makers. In order to better control this horrific disease, motivation, political will, commitment, resources and

knowledge (awareness) are required. Indeed proven rabies control methods are available and should be better utilized.

Learn more about rabies from the following websites:

<http://www.worldrabiesday.org/>

<http://www.rabiescontrol.org/>

<http://www.cdc.gov/ncidod/dvrd/rabies/>

<http://www.who.int/topics/rabies/en/>

Who to contact?

National Institute for Communicable Disease (Human exposures)

24-hour Doctor on call

Tel: 082 8839920

Allerton Provincial Veterinary Laboratory (Animals)

Tel: (033) 347 6200

OIE Regional Rabies Reference Centre for Southern and Eastern Africa (Onderstepoort Veterinary Institute) (Animals)

Tel: (012) 529 9440

Department of Agriculture, Forestry and Fisheries, Directorate Veterinary Services

Tel: 012-319 7456