



## Epidemiology and Control of Rabies Disease

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### DESCRIPTION

Rabies is a disease of zoonotic importance and is prevalent almost all over the world, except a few countries. Australia, Japan, New Zealand, Singapore, Great Britain, Hong Kong, continents of Antarctica and many smaller islands which are reported to be free from the disease. Rabies in animals is present in three epidemiological forms urban, sylvatic (wild) and bat rabies. In urban rabies, virus is maintained in dogs which act as the main reservoir. The wild life cycle is perpetuated by the jackal, fox, hyena, mongoose and other wild animals. Bat rabies is prevalent in certain Latin American countries and parts of USA. The saliva of rabid animal is the source of infection. Rabies virus is present in the saliva of infected animals 3-4 days prior to the onset of clinical symptoms and during the course of illness till death. All warm blooded animals including man are susceptible to rabies. Mode of infection is mainly by animal bite and licks. The incubation period is highly variable, commonly 2-3 month following exposure and also depending on the site of inoculation of the virus. Worldwide 50,000-55,000 deaths occur every year due to rabies, with 25,000-30,000 death in India alone. Canine rabies continues to exist in 87 countries or territories of the world and this account for 99% of all human rabies cases. Despite the fact that safe and effective animal and human vaccines are widely available, rabies remains a neglected disease that is poorly controlled throughout much of the developing world, particularly Africa and Asia.

Though rabies is a fatal disease, yet fortunately, is vaccine preventable. The key interventions for rabies control include

vaccination for high-risk individuals, surveillance of human cases, post-exposure prophylaxis following animal bites, vaccination and/or culling of the canine population and other animal reservoirs. In human, WHO recommends an intradermal route of administration when there is a short supply of vaccine, thereby reducing 60%-80% of cost and vaccine consumption. Canine vaccination is the suggested strategy of choice towards elimination of rabies. However, it is estimated that the cost of a canine vaccination programme is three to ten times costlier than the cost of human prophylaxis. Therefore, eliminating rabies by vaccinating the entire canine population is understandably a low priority for most decision-makers in the country. Further, there is inadequate epidemiological data of the disease burden in India. The lack of more reliable information makes it difficult to plan and evaluate the success of any rabies-control measures. A multi-pronged approach will be required to reduce human rabies cases in India. Some of the strategies that need to be adopted include, compulsory licensing and vaccination of pet dogs, Stringent dog birth control programmes for controlling the population of stray street dogs, The issue of incorporation of pre-exposure rabies vaccine in childhood immunization programmer needs to be considered, Sustained Information Education and Communication (IEC) activities, and Declaration of rabies as a notifiable disease. Hence, prevention of human rabies in the long-run will require an all-inclusive, coordinated, community-based effort, with active participation of the general public, Non-Governmental Organizations (NGOs), as well as government staff from the veterinary and public health wings of the health system.

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