



Letter to the Editor

Divided by borders, united by rabies: A call for integrated rabies control in India and Pakistan

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Dear Editor,

India and Pakistan are neighboring countries that have been separated by borders for over seven decades. Despite their political differences, these two nations have a common public health concern: rabies [1]. Rabies is a fatal virus carried in infected animals' saliva, such as dogs, cats, and bats. When symptoms appear, they are almost always fatal [1,2]. Rabies is a serious public health issue in both India and Pakistan, where it is endemic, and it affects both humans and animals. Over 20,000 individuals are projected to die from rabies in India each year, accounting for one-third of all rabies deaths globally [1,3]. In Pakistan, the number of rabies cases is comparable, with an estimated 2000 human deaths each year. The majority of these deaths occur in rural areas, where access to healthcare and rabies vaccines is limited [2].

The vast number of stray dogs is one of the most significant hurdles to eradicating rabies in both India and Pakistan. These canines are often not rabies-vaccinated and may transmit the virus to humans via bites and scratches. Furthermore, many people in these countries are unaware of the dangers of rabies and do not seek treatment after being bitten or scratched by a potentially infected animal [4].

Both India and Pakistan have established national rabies control initiatives to address these concerns. These efforts aim to raise rabies awareness, vaccinate dogs against the virus, and provide post-exposure prophylaxis (PEP) to people who have been bitten or scratched by a potentially infected animal [2,4]. However, these programs face a number of challenges, including inadequate funding, a scarcity of experienced workers, and limited access to healthcare in rural areas. Despite these obstacles, tremendous progress has been made in the fight against rabies in both India and Pakistan [4]. In India, for example, since

the start of the national rabies control program in 2018, the number of human deaths from rabies has dropped by over 90 %. In Pakistan, the government has recently launched a new effort to eliminate rabies by 2030, with a focus on dog vaccination and increased access to PEP [1,5].

There are also several non-governmental organizations (NGOs) striving to control rabies in both India and Pakistan. In India, for example, the Animal Welfare Board of India has attempted to sterilize and vaccinate stray dogs in a number of cities, including Mumbai and Chennai. In Pakistan, the World Health Organization (WHO) has collaborated with local NGOs to provide PEP and rabies vaccines to people living in rural areas [1,4].

In addition to these measures, there is a growing recognition of the need for cross-border cooperation in the fight against rabies. The South Asian Association for Regional Cooperation (SAARC), which includes India and Pakistan, launched a regional rabies prevention campaign in 2014 [2,5]. The project's goal is to encourage cooperation among member countries, share best practices, and coordinate efforts to eradicate rabies in the region. Despite these efforts, there is still more work to be done in India and Pakistan to control rabies. The challenges are complex and multifaceted, necessitating a continual and coordinated effort by governments, non-governmental organizations, and international organizations [1,2]. However, the progress made so far suggests that it is possible to make progress in the fight against this dreadful illness.

Furthermore, there is a need to raise public awareness about the need for vaccination. This includes educating people about the dangers of rabies, how to recognize the symptoms, and the need to seek medical attention after being bitten or scratched by an animal. There is also a need to ensure that immunizations and PEP are widely accessible and

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Table 1
Recommendations for India and Pakistan to improve rabies control and prevention.

Recommendations for India	Recommendations for Pakistan
Increase vaccination coverage through free or subsidized vaccination programs, particularly in rural areas where access to healthcare is limited.	Improve access to affordable and effective rabies vaccines, particularly in rural areas where healthcare infrastructure is weak.
Implement a national rabies surveillance program to monitor and track the incidence of rabies cases and use this data to inform prevention and control strategies.	Develop a comprehensive national rabies prevention and control strategy, with a focus on education and awareness campaigns to promote responsible pet ownership and animal control.
Strengthen animal control measures, including stray dog population management and enforcement of animal vaccination regulations.	Strengthen veterinary services and improve access to veterinary care, particularly in remote and underserved areas.
Increase public awareness and education on rabies prevention, including the importance of timely post-exposure prophylaxis and responsible pet ownership.	Establish a national rabies task force or working group to coordinate efforts across different sectors and stakeholders.
Promote research and development of new rabies vaccines and treatments, including alternative methods such as oral vaccination of wildlife.	Strengthen laboratory capacity and diagnostic capabilities for rabies, including the establishment of regional reference laboratories.

affordable, particularly in rural areas [3].

Table 1 reflect some of the key strategies that India and Pakistan can undertake to reduce the incidence of rabies in their respective countries. By working together and implementing effective prevention and control measures, both countries can make progress towards eliminating this deadly disease.

Finally, the fight against rabies unites India and Pakistan in their efforts to limit the spread of this devastating disease. Despite their political differences and long-standing border tensions, both countries recognize the need to collaborate to control and eliminate rabies [4,5]. The effective adoption of vaccination campaigns, awareness initiatives, and monitoring systems has resulted in substantial progress in both nations in lowering the rabies burden [4,5]. However, more work has to be done, and continuous efforts are required to reach the ultimate aim of eradicating rabies. India and Pakistan can ensure a safer future for their people and animals through continued collaboration and mutual support. Finally, despite their geographical separation, India and Pakistan are unified in their battle against rabies.

Data statement

The data that support the findings of this study are available from the corresponding author, Harendra Kumar, upon reasonable request. The data are not publicly available since this could compromise the privacy of research participants.

CRedit authorship contribution statement

All the authors contributed equally to the research.
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