



A Monthly e Magazine
ISSN:2583-2212

April 2024 Vol.4(4), 1328-1331

Popular Article

Current status of canine rabies elimination in India

Lekshmi J Das¹, Xavier mathew²

¹Ph.D. Scholar, Department of Veterinary Microbiology, Indian Veterinary Research Institute, Izzatnagar, Bareilly (U.P.), India

²Ph.D. Scholar, Department of Veterinary Preventive Medicine, Madras Veterinary College, Tamil Nadu, India

<https://doi.org/10.5281/zenodo.10937856>

Abstract

Rabies, responsible for over 99% of human deaths attributed to domestic dogs, poses a significant public health challenge in India. The government's "National Action Plan for Dog-Mediated Rabies Elimination from India by 2030" underscores prevention by prophylaxis, promotion of rabies awareness, and partnership of agencies as pivotal strategies. Globally, the World Health Organization aims for zero human deaths from dog-mediated rabies by 2030, aligning with India's integrated 'One Health' approach. This article examines India's efforts, focusing on the National Rabies Control Programme (NRCP) and collaborative initiatives from health, animal, and local governance sectors. Challenges include insufficient awareness, diagnostic facilities, and a tradition of feeding stray dogs. Success stories in Goa and Bengaluru highlight the impact of mass vaccination and strategic dog population management. Addressing challenges requires stringent regulations, responsible ownership, and innovative strategies like oral vaccines. This article advocates for a comprehensive approach, drawing insights from successful regional models, to achieve India's ambitious goal of rabies elimination by 2030.

Keywords: Rabies, NAPRE, stray dogs.

Introduction

Domestic dogs are responsible for more than 99% of human deaths from rabies (1). Rabies is endemic in India except for Andaman & Nicobar and Lakshadweep Islands (2, 3). The government of India has introduced "National action plan for dog-mediated rabies elimination from India by 2030" (NAPRE). Three key principles were pointed out by NAPRE for rabies elimination, ie. "prevention" by cost-effective post-exposure prophylaxis, "promotion" for awareness to improve understanding of



rabies, and “partnership” by combining rabies drive from rural, government, private and international agencies. According to World Organization for Animal Health (WOAH) estimates, there are 59000 human deaths globally owing to dog-mediated rabies, with India accounting for one-third of the total global burden (4).

Rabies is a classic ‘One health’ candidate due to its public health significance and its elimination needs an integrated approach to recognizing the interconnection between the health of people, animals and ecosystems. Hence in 2015, WOAH, Food and Agriculture Organization (FAO), and World Health Organization (WHO) jointly declared a global goal of zero human death by dog-mediated rabies by 2030 worldwide (4). Likewise, India is following one health approach for rabies elimination. A pilot project for control of human rabies was 1st announced in the 11th five-year plan by the Ministry of Health and Family Welfare, Government of India, and implemented in five cities, Delhi, Ahmedabad, Pune, Madurai and Bengaluru, from 2008 to 2012. Based on the findings of the pilot study, the Ministry of Health and Family Welfare initiated the National Rabies Control Programme (NRCP) for the 12th five-year plan, from 2014 to 2017 advocating increased awareness, surveillance, rabies diagnostics and promoting administration of anti-rabies vaccine via intra-dermal route and post-exposure prophylaxis. Department of Animal Husbandry and Dairying launched Assistance to State Government for Animal Disease (ASCAD) during 2003-2004 to strengthen surveillance and monitoring of rabies, anti-rabies vaccination, training of veterinarians, and establishment of state disease diagnostic labs. Animal Welfare Board of India (AWBI) also contributes impressively by a separate scheme for Birth control and Immunization for stray dogs with the aid of registered NGOs for mass rabies vaccination and sterilization of stray dogs. Under the “Prevention and control of Infectious and Contagious Disease in Animal Act, 2009” animal rabies is a notifiable disease and under “Animal Birth Control (Dogs) rules, 2001” municipal corporations have to undertake stray dog management (4).

Current opportunities and challenges for rabies elimination

A minimum of 70% vaccination coverage among dogs in a defined geographical area is necessary for rabies elimination which can be achieved by mass vaccination. India’s rabies elimination is mainly targeted with one health approach with combined efforts from the veterinary sector, human sector, local authorities, and other stakeholders. NAPRE ensures human health components such as: the accessibility of Anti-rabies vaccine (ARV) as well as Anti-rabies serum (ARS) for animal bite victims at every district-level health facility, awareness programs for dog bite wound management,



and encourages pre-exposure prophylaxis for high-risk group, strengthen diagnostics capacity for rabies, promoting research and surveillance of rabies, information education and communication (IEC) for improving awareness on the timely and appropriate treatment for animal bites. Whereas, animal health components include estimation of the canine population, planning and executing strategic mass dog vaccination programs, evaluation of post-vaccination coverage, promoting responsible dog ownership, and solid waste management. In 2021, Goa became the first “rabies-controlled area” in India by achieving 70% vaccination coverage (5). Similarly in Bengaluru city, no death due to rabies was reported in the year 2023, achieved by attaining 70% of stray dogs with adequate antibodies against rabies (6). These were achieved through aggressive vaccination programs and appropriate dog population management by animal birth control. Prevention of Cruelty (Animal Birth Control) Rules 2023, recommends responsibility of ABC implementation on local bodies/municipal corporations in addition to immunization. ABC programs should be carried out by AWBI-recognized organizations and it further emphasizes the feeding point for stray dogs to be away from children and senior citizens.

Apart from this, India is facing challenges in rabies control including inadequate awareness of wound treatment, insufficient facilities for confirmatory diagnosis, and lack of sufficient awareness among health professionals resulting in delayed or insufficient treatment. India has a tradition of feeding leftover food to dogs which inversely affects dog population management. Pet dogs are thrown into the street when they become old/diseased, this aggravates the stray dog menace. To address these issues, the prohibition of dog feeding in public places together with responsible dog ownership and stringent pet ownership rules can be implemented. Stray dog accessibility for vaccination is a major hurdle in high-coverage mass vaccination, specialist equipment, net-catching, and trained dog catchers are in pressing priority. India can set up dog shelters for free-roaming dogs and funnel the ABC program for them. Rabies researchers should aim to focus on the field implementation of rabies diagnosis and evaluation of current rabies elimination strategies. Regular assessment of post-vaccinal antibody levels during the rabies control programs will aid in identifying the gaps in the approach and improvement. The oral vaccine drive is a strong tool that India is missing, complementing the parenteral vaccination. Implementing Goa's ‘mission rabies’ throughout India can help in eliminating rabies by 2030.

Conclusion

In conclusion, India's pursuit of rabies elimination demands an unwavering commitment to a



comprehensive 'One Health' strategy. The achievements in Goa and Bengaluru underscore the effectiveness of mass vaccination and targeted population management. However, persistent challenges such as inadequate awareness, diagnostic facilities, and dog accessibility necessitate innovative solutions. The success of rabies control hinges on collaborative efforts, involving government bodies, healthcare professionals, animal welfare organizations, and the public. Proactive measures like responsible dog ownership, prohibition of public dog feeding, and stringent pet ownership rules are imperative. Furthermore, leveraging oral vaccines and adopting successful models, such as Goa's mission rabies, can fortify the nation's resolve to meet the global target of zero human deaths from dog-mediated rabies by 2030. As India continues its fight against rabies, ongoing research, field implementation, and periodic assessments of vaccination programs are vital. The road to elimination requires adaptability, persistence, and a collective commitment to building a safer future for both humans and animals. Through sustained efforts and a united approach, India can emerge triumphant in eradicating rabies and achieving a significant milestone in global public health.

References

1. World Health Organization. (2013). *WHO expert consultation on rabies: second report* (Vol. 982). World Health Organization.
2. Brock, J.H. (1980). Lactoferrin in human milk: its role in iron absorption and protection against enteric infection in the newborn infant. *Archives of disease in childhood*, 55(6), 417.
3. Sudarshan, M.K., Madhusudana, S.N., Mahendra, B.J., Rao, N.S.N., Narayana, D.A., Rahman, S.A., and Ravikumar, K. (2007). Assessing the burden of human rabies in India: results of a national multi-center epidemiological survey. *International Journal of Infectious Diseases*, 11(1), 29-35.
4. Isloor, S., Mani, R.S. and Jayakrishnappa, M.B. (2019). Assessing rabies-free status of Andaman, Nicobar, and Lakshadweep Islands, India. *Indian Journal of Public Health*, 63(5), 48-50.
5. Division of Zoonotic Disease Program (2021). National Action Plan for Dog Mediated Rabies Elimination from India by 2030. 13 July 2022 Available from: <https://ncdc.gov.in/WriteReadData/linkimages/NationalActionPlan.pdf>.
6. Gibson, A.D., Yale, G., Corfmatt, J., Appupillai, M., Gigante, C.M., Lopes, M.M., Betodkar, U., Costa, N.C., Fernandes, K.A., Mathapati, P. and Suryawanshi, P.M. (2022). Elimination of human rabies in Goa, India through an integrated One Health approach. *Nature Communications*, 13(1), 2788.
7. Prakash Rao, V.C., Ramakrishnaiah, S., Isloor, S., Doddamane, R., Lakshman, D., Maralavadi, M. S.S.R., Bhat, A., Chandrashekar, B., Natesan, K., Kondabattula, G. and Hegde, N.R. (2023). Assessment of Immune Responses to Rabies Vaccination in Free-Ranging Dogs in Bengaluru, India. *Vaccines*, 11(5), 888.

