

### India's response to combat Rabies

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Rabies is one of the oldest known diseases, caused by the virus belonging to Rhabdoviridae family. It primarily spreads through the saliva of infected animals, most commonly via bites, leading to viral encephalitis, which is often fatal without prompt treatment. Historically, rabies was a uniformly fatal disease. With development of Pasteur’s rabies vaccine in 1885, fatalities were drastically reduced especially in developed countries. In contrast, less developed regions continue to face significant challenges due to inadequate access to prevention and treatment.

Rabies is prevalent in more than 150 countries and territories. India accounts for 35% of the global mortality rate from rabies.<sup>[1]</sup> Dog-bites remain a significant public health concern which contributes up to 99% of all rabies transmission in humans<sup>[2]</sup>, particularly in areas with limited public awareness about rabies prevention. The socio-cultural belief deeply enrooted in lifestyles of citizens in Indian sub-continent is harmful when it comes to animal-friendly traits. There is a benevolent belief of feeding animals as a part of spiritual longing and people, especially children are used to play with street/stray dogs at rural and urban slum areas. On the other hand, a few citizens from higher economic class are gratifying them selves by entertaining dogs of extraneous breed as pets at their homes. The either cohort mentioned above, are lacking first-hand adequate knowledge of necessities of animal

vaccination and consequences in absence of same. The political leadership and judiciary do respect socio-cultural belief of the people against “dog-population control measures” which is creating a setback against on-going tasks of anti-rabies activities in country. Addressing these gaps is crucial for reducing the risk of rabies which is 100 % preventable disease.

In India under the 11<sup>th</sup> Five Year Plan, National Rabies Control Programme (NRCP) was implemented by National Center for Disease Control in five cities; Delhi, Ahmedabad, Pune, Bangalore and Madurai; project began from January 2008 and continued till 2012. During the 12<sup>th</sup> Five-year plan, from 2014 to 2017, a pilot was undertaken to test the strategy of animal Health Components in Haryana and Chennai through Animal Welfare Board of India (AWBI) under the aegis of The Ministry of Environment, Forests and Climate Change (MoEF&CC), Government of India. With the lessons learnt in the pilot, in 12th Five Year Plan, NRCP was rolled out in entire country. Human health component of the NRCP program was successfully implemented by all States/UTs.

In 2015, the global goal of “Zero human deaths from dog-mediated rabies by 2030” was set, with countries like the US, Mexico, and Japan achieving it through the One Health approach.<sup>[3]</sup> India’s commitment to this goal is reflected in the National Rabies Control Program (NRCP), which aims to

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prevent rabies deaths in humans and progressively achieve the global target by 2030 through the One Health approach. State-level activities have been implemented through the National Health Mission since 2019-20, and the program has been approved under the State Finance Commission for 2021-26 under Scheme E of the NCDC umbrella.<sup>[4]</sup>

### Components of NRCP under One Health Approach:

1. Capacity Building of States and district level manpower for prevention and control of rabies
2. Promote of cost effective Intra-dermal rabies vaccines for Rabies Post Exposure Prophylaxis.
3. Strengthen rabies diagnostics
4. Strengthening Surveillance of animal bites and rabies cases
5. Information, Education & Communication
6. Intersectional coordination
7. Operational Research

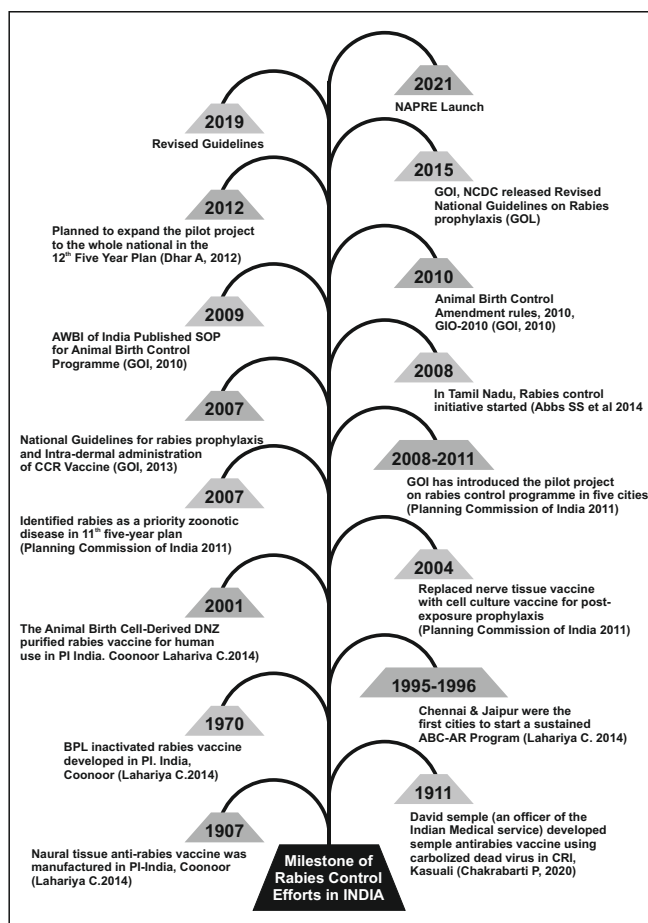
Recently, veterinary public health component is added in the “National Action Plan for dog mediated Rabies Elimination from India by 2030” (NAPRE).<sup>[3]</sup>

### Components of the NAPRE are;

1. Estimating the population of dogs,
2. Identification of Rabies risk zones for rabies,
3. Planning & implementing strategic mass dog vaccination programme,
4. Assessment of Post vaccination coverage
5. Dog Population Management (DPM)
6. To promote responsible dog ownership
7. Solid waste management (SWM)
8. Community involvement
9. Confinement and containment
10. Operational research

The endorsement of the NAPRE has been led by six ministers encompassing a diverse range of portfolios: Health and Family Welfare; Fisheries, Animal Husbandry, and Dairying; Environment, Forests, and Climate Change; Housing and Urban Affairs; Agriculture and Farmers Welfare; and Rural Development and Panchayati Raj. Despite the varied objectives and resource priorities of different ministries and departments, it is encouraging to see a

Figure 1: Milestones in Rabies Control in India<sup>[4]</sup>



broad political consensus and commitment towards the common goal.

Successful implementation of One Health Approach has led Goa to become the first Indian state to be declared a Rabies Controlled Area under the Prevention and Control of Infectious and Contagious Diseases in Animals Act, 2009, ensuring legislation to maintain rabies control activities and setting a precedent for other states.<sup>[5]</sup>

### SWOT analysis of Rabies control activities in India:

**Strengths:** Government of India has started the rabies control efforts with the national focus on rabies elimination by 2030 through initiatives like the National Rabies Control Programme (NRCP). The National Action Plan for Dog-Mediated Rabies Elimination incorporates strategies that emphasize intersectoral coordination to enhance rabies prevention activities. The uninterrupted availability

of post-exposure prophylaxis (PEP) in healthcare facilities further enhances the strength.

**Weaknesses:** It includes limited public awareness regarding rabies prevention and control, particularly in rural areas. Inadequate and poorly supervised implementation of stray animal population control measures<sup>[6]</sup> and dog vaccination programs may hinder the elimination goal. Quality checks pertaining to the stray animal population control activities by appropriate district/municipal health authorities are need of time. Additionally, the judicial system shall suggest necessary reforms, particularly in establishing norms for responsible pet ownership.

**Opportunities:** The awareness campaign can be reinforced through a complex web matrix of existing stakeholders of public-health, including healthcare professionals, grassroot-level workers and community health volunteers. Frontline workers, who have direct access to families and community leaders, can play a vital role in spreading awareness at household level. Even the opportunity can be grabbed while parents approach health-clinics for routine vaccination of under-five children. Coordinating with local NGOs, municipal authorities, community/media influencers and veterinary services, a cohesive message on rabies prevention can reach deeper into rural and urban communities.

**Threats:** Growing trend of pet ownership without necessary knowledge of animal vaccination and self-care, a large stray-dog population, and social customs including widespread feeding of stray animals poses a big threat for on-going program. The lack of strict enforcement/existence of animal control legislations further exacerbates the situation. Additionally, the emergence of rabies cases among vaccinated individuals in India is an impending threat that needs urgent attention.<sup>[7]</sup>

#### **Way Foreword:**

Eliminating rabies is not just a goal; it's an urgent necessity. With thousands of lives lost annually to this preventable disease, the time to act is

overdue. The urgency of the situation demands decisive action, concerted efforts, and unwavering commitment from all stakeholders. Innovations in technology and research offer promising avenues for augmenting rabies control efforts in India. Advances in surveillance techniques, including the use of geographic information systems (GIS) and smart phone applications for reporting and tracking rabies cases, can help identify hotspots and target interventions more effectively. Additionally, research into novel vaccine formulations, such as oral vaccines for wildlife and long-acting vaccines for dogs, holds the potential to revolutionize rabies control strategies. Collaboration between government agencies, NGOs, academia, and the private sector is essential for maximizing the impact of rabies control efforts. Every moment counts in this collective endeavour to rid the world of rabies and ensure a safer, healthier future for all.

#### **Declaration:**

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