

Rabies Elimination by 2030: A Global and National Perspective

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Introduction

Rabies is one of the oldest and deadliest zoonotic diseases known to humankind, with historical references tracing back over 4,000 years. Despite being entirely preventable, rabies continues to harm thousands of lives annually, predominantly in low- and middle-income countries. The WHO (World Health Organization) estimates that nearly 59,000 human deaths occur globally each year due to rabies, with 95% of cases reported from Africa and Asia. Most tragically, nearly 40% of victims are children under 15 years, highlighting the urgent need for sustained global and national action.

Global Burden and Distribution of Rabies

Rabies remains an endemic disease in more than 150 countries and territories. It is estimated that 99% of human rabies cases are transmitted through bites from infected dogs, with other reservoirs including cats, jackals, monkeys, and mongooses. The disease disproportionately affects rural, resource-limited areas where access to PEP (Post-Exposure Prophylaxis) and public awareness campaigns is inadequate.

Globally, rabies remains a significant public health concern, with Asia and Africa

bearing the highest burden of the disease. Asia records an estimated approximately 36,000 deaths annually, with India alone accounting for about 60% of these fatalities. Africa follows with approximately 22,000 deaths, marking the highest mortality rate worldwide. Central Asia and the Middle East report around 1,900 and 250 deaths, respectively, while Latin America has reduced its annual estimated death to fewer than 300 deaths through extensive vaccination and control programs. Encouragingly, dog-mediated rabies has been successfully eliminated in several parts of the world, including Western Europe, North America, Japan, South Korea, and regions of Latin America. Nonetheless, the occurrence of imported cases and the necessity for continuous surveillance emphasize the importance of maintaining vigilance even in areas declared rabies-free.

The ‘Zero by 30’ Global Initiative

Recognizing the preventable nature of rabies, four major international organizations i.e., WHO (World Health Organization), FAO (Food and Agriculture Organization), WOAH (World Organisation for Animal Health), and GARC (Global Alliance for Rabies Control) launched the “Zero by 30”

initiative. It is a collaborative strategy aiming for zero human deaths from dog-mediated rabies by 2030. The global elimination strategy is built on three key pillars:

1. Mass dog vaccination to achieve at least 70% coverage
2. Timely and accessible PEP (Post-Exposure Prophylaxis) for bite victims
3. Public education and community engagement

Global initiatives such as the SARE (Stepwise Approach towards Rabies Elimination) and GARC's (Global Alliance for Rabies Control) educational platforms have strengthened national capacities, supported surveillance, and advanced the cost-effective vaccination strategies. Community-led programs, including the CAR (Communities against Rabies) initiative launched in 2023, are now critical in reaching the "last mile" of rabies elimination.

Evolution of the National Rabies Control Programme (NRCP)

India, which bears the highest global burden of rabies, initiated organized control efforts through a Pilot Project for the Control of Human Rabies in the 11th five-year plan (2007–2012) under the Ministry of Health and Family Welfare. This Project was implemented in five major cities Delhi, Ahmedabad, Pune, Bangalore and Madurai the project focused on public awareness, diagnostic capacity, trained manpower, and surveillance. Animal birth control and stray dog vaccination were also mentioned in the project for the first time.

Building on the pilot's success, the National Rabies Control Programme (NRCP) was launched during the 12th Five-Year Plan

for nationwide implementation. The objectives of the NRCP are to ensure prompt and effective management of animal bite cases, including the timely administration of appropriate PEP. The program aims to train healthcare personnel in bite management and PEP protocols, strengthen

surveillance and diagnostic networks, and enhance public awareness while encouraging active community participation. This initiative not only prevents diseases resulting from animal bites but also strengthens public health safety and fosters community engagement.

National Action Plan for Dog-Mediated Rabies Elimination (NAPRE)

In alignment with the global "Zero by 30" target, India developed the NAPRE, officially unveiled on 28th September 2023. It was developed through a "One Health" approach, as it brings together key ministries, veterinary and medical professionals, and stakeholders from multiple sectors.

The objectives of NAPRE are centered on eliminating human rabies caused by dog bites and ensuring continuous access to safe, high-quality rabies vaccines. The program seeks to strengthen the capacities of public health, veterinary services, and local governance, while supporting mass dog vaccination drives and awareness campaigns. It also emphasizes enhanced coordination across all sectors, sustained political commitment at every level, and active community involvement in rabies prevention and reporting. Together, these measures aim to create a comprehensive and sustainable approach to rabies control, safeguarding public health and promoting a safe community.

Challenges

Despite the progress in rabies control, several challenges continue to hinder the goal of its elimination. Vaccination coverage among stray dog populations remains low, and post-exposure prophylaxis is often incomplete or delayed. Inadequate surveillance leads to underreporting of cases, while awareness about rabies prevention remains limited, particularly in rural communities. Additionally, insufficient coordination between public health, veterinary, and local governance sectors further complicates the efforts. These challenges require comprehensive strategies, including improved vaccination campaigns, strengthened surveillance systems, enhanced community awareness, and better cross-sector collaboration to ensure a sustainable path toward rabies elimination.

Through robust surveillance, sustained vaccination campaigns, strong political commitment, and coordinated one health strategies, the global vision of a rabies-free world by 2030 is within reach. Veterinary professionals, public health authorities, and communities all have a crucial role to play in making “Zero by 30” a reality.

The Way Forward

One Health approach integrating human, animal, and environmental health is essential for achieving the goal “Zero by 30”. The Key strategies include:

- Expanding mass dog vaccination campaigns
- Ensuring free and timely access to PEP
- Strengthening diagnostic and surveillance infrastructure
- Enhancing public awareness through education and media outreach
- Promoting responsible pet ownership and community engagement

Conclusion

Rabies is a 100% preventable disease. Yet, it continues to claim thousands of lives each year due to inadequate access to preventive measures and lack of awareness.