

BRIDGING GAPS IN RABIES PREVENTION: ALL FOR 1, ONE HEALTH FOR ALL

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INTRODUCTION

Rabies has haunted human kind for centuries, earning the title of the “most feared zoonosis.” Despite the availability of effective vaccines and preventive strategies, rabies continues to claim one human life every nine minutes globally. The tragedy lies not only in its lethality—rabies is 100% fatal once symptoms appear—but also in its preventability. Every single rabies death represents a gap: in awareness, in access to vaccines, in animal health programs, or in policy implementation.

The theme “All for 1, One Health for All” beautifully captures the essence of rabies prevention in today’s world. To eliminate rabies, we must unite across sectors (human, animal, and environmental health), across nations, and across communities. This is where the One Health approach plays a central role: bridging the existing gaps and ensuring no child, no family, and no community suffers from this preventable disease again.

RABIES: A PREVENTABLE YET PERSISTING THREAT

- **Cause & Transmission:** Rabies is caused by the *Rabies virus* (*Lyssa virus genus*) and spreads mainly through bites or scratches from rabid animals.
- **Epidemiology:** More than 59,000 human deaths occur annually, with India alone contributing to about 36% of global rabies

deaths. Children under 15 years are the most vulnerable group.

- **Economic Burden:** Beyond human suffering, rabies leads to an annual economic loss of \$8.6 billion worldwide, due to livestock deaths, healthcare costs, and loss of productivity.
- **The Paradox:** While rabies is 100% fatal, it is also 100% preventable—a paradox that highlights the urgency of bridging the gaps in prevention.

BRIDGING THE GAPS IN RABIES PREVENTION

1. The Awareness Gap

Many rural families are unaware that rabies can be prevented through immediate wound washing and timely vaccination.

- **Bridging Strategy:** Community education campaigns, school-based awareness, and use of social media for bite-prevention messages.

2. The Access Gap

Rabies vaccines and immunoglobulins are often unavailable or unaffordable in remote areas.

- **Bridging Strategy:** Decentralized vaccine distribution, government-subsidized programs, and ensuring vaccine stock in primary health centers.

3. The Animal Health Gap

Dogs are responsible for >95% of human rabies cases, yet mass dog vaccination campaigns are irregular or insufficient.

- **Bridging Strategy:** Annual vaccination of at least 70% of the dog population, dog population management through sterilization, and collaboration with animal welfare organizations.

4. The Policy and Coordination Gap

Rabies is often neglected in health agendas, and human and animal health sectors work in silos.

- **Bridging Strategy:** Adoption of the One Health framework, where veterinarians, doctors, environmentalists, NGOs, and policymakers collaborate for integrated rabies control.

PREVENTION: THE CORNERSTONE OF RABIES ELIMINATION

1. Animal Vaccination Schedule

- **Dogs & Cats:**
 - First vaccination: **3 months of age.**
 - Booster: **1 year later.**
 - Revaccination: **Annually** thereafter.
- **Livestock (in endemic areas):** Annual vaccination for cattle, buffaloes, horses, and other valuable animals.

2. Human Vaccination

Pre-Exposure Prophylaxis (PrEP)

- Recommended for veterinarians, animal handlers, laboratory staff, and travelers to endemic regions.
- **Schedule (Intradermal or Intramuscular):**
 - Day 0 and Day 7 (two doses)
- **Booster:** Every 3 years or when antibody titers fall

Post-Exposure Prophylaxis (PEP)

For any bite, scratch, or lick on broken skin from a suspected rabid animal:

1. **Immediate First Aid:** Wash the wound with soap and running water for at least 15 minutes; apply antiseptic.

2. Vaccination (PEP schedule):

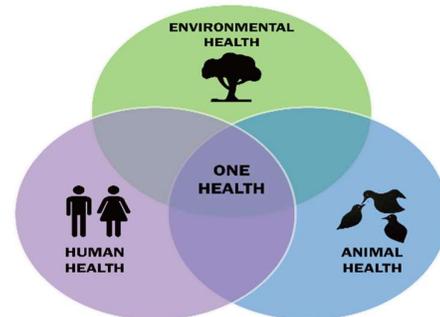
- **Intradermal (Thai Red Cross schedule):** 2-site I/D injections on Days 0, 3, 7, 28
- **Intramuscular (Essen schedule):** Single-site I/M injections on Days 0, 3, 7, 14, 28

3. Rabies Immunoglobulin (RIG):

Essential for Category III exposures (deep wounds, multiple bites, mucosal contamination). It should be infiltrated directly into the wound.

3. Community Involvement

- **Schools:** Teaching bite prevention and responsible pet ownership.
- **Villages & Cities:** Organizing mass dog vaccination drives.



- **Media:** Using radio, television, and digital platforms to spread awareness.

ONE HEALTH: ALL FOR 1, ONE HEALTH FOR ALL

The One Health approach emphasizes that rabies control is not the responsibility of a single sector but a shared duty of all. Success requires coordinated action:

- **Human Health Sector:** Ensuring timely availability of post-exposure prophylaxis (PEP), training healthcare workers to handle bite cases effectively, establishing rapid reporting systems, and strengthening diagnostic laboratories.
- **Animal Health Sector:** Conducting mass dog vaccination campaigns, surveillance of rabies in domestic and wild animals, implementing dog population management through sterilization

- programs, and promoting responsible pet ownership.
- **Environmental Sector:** Improving solid waste management to reduce stray dog populations, monitoring wildlife reservoirs, and preventing human-animal conflict in expanding urban areas.
 - **Policy Makers & Government Authorities:** Allocating sustainable funding, creating and enforcing rabies control legislation, supporting cross-border cooperation, and integrating rabies into national One Health action plans.
 - **Communities:** Promptly reporting bite cases, vaccinating and sterilizing pets, discouraging dog abandonment, and participating actively in awareness and vaccination campaigns.
 - **Educational Institutions & Schools:** Including rabies awareness in school health programs, teaching children safe interactions with animals and training the next generation of veterinarians, doctors and researchers.
 - **Media & Technology:** Using television, radio, and digital platforms to spread awareness, fight misinformation, and promote early reporting of animal bites. Digital apps for bite reporting and vaccination tracking can enhance coordination.
 - **International Organizations (WHO, OIE, FAO, GARC):** Guiding global strategies like “Zero by 30”, providing technical support, ensuring vaccine access in low-resource regions, and promoting collaborative research.
 - **Non-Governmental Organizations (NGOs):** Assisting with community education, organizing vaccination camps, and supporting rescue, rehabilitation, and sterilization of stray animals.
- Together, these stakeholders can bridge gaps in awareness, access, and action, transforming rabies elimination from a distant goal into an achievable reality



CONCLUSION

Rabies is not just a disease—it is a mirror reflecting inequalities in health systems, awareness, and access to care. Every rabies death today is a preventable tragedy. The theme “All for 1, One Health for All” calls for solidarity: humans, animals, and the environment united against a common enemy.

By bridging gaps in awareness, access, vaccination, and coordination, the global community can transform rabies from a “disease of neglect” to a “disease of history.” Together, we can ensure that by 2030, rabies exists only in textbooks—not in our villages, families, or children’s lives.

REFERENCES

World Health Organization (WHO). (2023). *Rabies Fact Sheet*.

- FAO, OIE, WHO, GARC. (2018). *Zero by 30: Global Strategic Plan to End Human Deaths from Dog-Mediated Rabies by 2030*.
- Hampson, K. et al. (2015). *Estimating the Global Burden of Endemic Canine Rabies*. PLoS Neglected Tropical Diseases.
- Centers for Disease Control and Prevention (CDC). (2024). *Rabies and Prevention Guidelines*.
- Lankester, F. et al. (2022). *One Health in Action: Rabies Elimination in Africa and Asia*. The Lancet Global Health.

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