

Editorial

United Against Venom: India's 'One Health' Blueprint for Snakebite Prevention

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Snakebite envenoming poses a serious public health challenge, especially in tropical and subtropical regions. The World Health Organization (WHO) estimates that approximately five million people are bitten by snakes annually, with 1.8 to 2.7 million experiencing envenoming.¹ Snakebite envenoming remains a significant, yet often neglected, public health crisis in India. Previous studies in India indicate that the country accounts for nearly half of the world's snakebite-related deaths, with approximately 58,000 fatalities annually from an estimated 3 to 4 million snakebites.²

Snakebites can lead to disabilities and significant psychological consequences, especially in developing regions. Underprivileged and rural communities often bear the brunt of these severe outcomes.³ This silent epidemic demands a comprehensive and coordinated response, and India's recently launched National Action Plan for Prevention and Control of Snakebite Envenoming (NAPSE) marks a pivotal moment in this critical fight. NAPSE provides a broad framework for states to develop their own action plan for management, prevention and control of snakebites.⁴

The Vision of the National Action Plan for Prevention and Control of Snakebite Envenoming (NAPSE) is to "prevent and control snakebite envenoming in order to halve the numbers of deaths and cases of disability that it causes by 2030." Complementing this vision, its Mission is to progressively reduce the morbidity, mortality, and associated complications in humans due to snakebite.³

At the heart of this ambitious initiative is the 'One Health' approach. Since long, attempts to prevent snakebite have been dispersed and mostly concentrated on post-event clinical management. However, the 'One Health' philosophy fundamentally shifts this paradigm. It acknowledges that human

health, animal health, and environmental health are deeply interconnected, especially in zoonotic diseases and environmental hazards like snakebite envenoming. This entails acknowledging that the existence of snakes, their habitats, interactions between humans and snakes, farming methods, and the accessibility of quality medical care are all components of a larger, intricate picture.

Under this blueprint, preventing snakebites is not solely the responsibility of the medical fraternity. It extends to veterinary services, environmental agencies, agricultural departments, and local communities. For example, better land-use planning and community awareness initiatives can be informed by knowledge of snake behaviour and habitats (environmental health). Encounters can be decreased by promoting safer agricultural practices for the health of animals and the environment (animal and environmental health). Ensuring access to effective anti-venom and prompt medical attention (human health) remains paramount, but it is now part of a larger, integrated strategy. Thus, the activities envisaged under human, wildlife, tribal and animal health component are being undertaken by concerned stakeholders at all levels through this 'One Health' approach.

The Plan's aspiration to halve snakebite deaths by 2030 is both bold and necessary. This target is not merely a statistical goal; it represents a commitment to saving countless lives, alleviating immense suffering, and protecting livelihoods. Achieving this will require a multi-pronged approach encompassing:

Enhanced Surveillance and Data Collection: Accurate data is crucial for understanding the true burden and geographical hotspots of snakebite. The declaration of snakebite as a disease that requires notification in India is a crucial step in this direction, bolstering surveillance and data gathering activities. Accurate case tracking, high-risk area identification,

and efficient resource allocation for prevention and treatment are all aided by it.⁵

Community Engagement and Education: Empowering communities with knowledge about snake identification, first aid, and preventive measures is vital. To bolster these efforts, an array of Information, Education, and Communication (IEC) materials were also launched. These invaluable tools include a booklet titled 'Snakebite - Let's put an end to snakebite deaths,' designed to raise general community awareness, along with informative posters detailing 'Do's and Don'ts' for the public. A comprehensive 7-minute video on snakebite awareness further reinforces these messages. Complementing these awareness tools, a Snakebite Helpline (15400) has been established. This vital resource provides immediate assistance, guidance, and support to individuals and communities affected by snakebite incidents, ensuring prompt access to medical care and information for the general public.⁴

Improved Access to Anti-venom and Healthcare: Strengthening primary healthcare facilities, ensuring the availability of quality anti-venom, and training healthcare providers in effective management protocols are fundamental. Further investment in research and development for better anti-venoms, diagnostics, and preventive tools is crucial.

Inter-sectoral Coordination: This is where 'One Health' truly come alive, fostering collaboration between all relevant government departments and stakeholders.

As medical professionals, our role in this national endeavor is indispensable. We are on the front lines, diagnosing and treating envenoming cases. Our expertise in clinical management, our ability to educate patients and communities, and our capacity to contribute to robust data collection are critical. Furthermore, we must champion the 'One Health' concept within our own practices and advocate for its broader implementation, understanding that a healthier environment and healthier animals contribute directly to healthier human populations.

The National Action Plan is more than just a document; it is a call to action. It is an opportunity to unify our efforts, leverage diverse expertise, and collectively work towards a future where snakebite envenoming is no longer a major cause of mortality and morbidity in India. By embracing the 'One Health' approach, we can move closer to our 2030 goal, ensuring that communities across the nation are truly united against venom.

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