

# PREVENTING & TREATING SNAKEBITE ENVENOMING



Photo: Global Snakebite Initiative

## A MATTER OF LIFE & DEATH

Every year, hundreds of thousands of people lose their lives, limbs, and any viable future from snakebite envenoming, a neglected tropical disease that can be prevented and treated. Solutions are within reach.

## PREVENTING SNAKEBITES

### Snakebites can be prevented by:

- Using snake-proof footwear and bed nets
- Making homes unattractive for snakes (e.g., closing holes, removing waste, storing food and water in containers, keeping livestock outside).

### Barriers to snakebite prevention measures:

- Rural people often lead barefoot lives. Even if footwear is available, it is not always worn. Years of going shoeless cause feet to widen, making mass-produced footwear uncomfortable. Mycetoma also prevents some people from wearing shoes or boots.

- Uptake of measures to prevent snakes from entering dwellings/beds is often lacking and, even when known, difficult to implement in poor housing conditions.

## A MAJOR, BUT TREATABLE, HEALTH THREAT

- **One cure:** Antivenoms remain the only specific and viable treatment for snakebite envenoming and are included on the World Health Organization's (WHO) Model List of Essential Medicines. They prevent or reverse most snakebite envenoming effects and are critical for minimising morbidity and mortality.
- **Mono- vs. polyvalent antivenoms:** Snake venoms are snake-specific. Mono-specific antivenoms treat illness caused by one snake species. Polyvalent antivenoms are used to treat a number of regional snake species in a single antivenom cocktail.

- **Additional therapy to treat envenoming:** In addition to antivenom, medical treatment, including adrenalin, antinecrotics, artificial respiration, kidney dialysis, wound care, reconstructive surgery, prostheses, and comprehensive rehabilitation services, are needed to effectively treat snakebite patients.
- **Diagnostic tests:** Rapid diagnostic tests are being developed to quickly identify the species of snake that envenomed a victim and plan appropriate treatment.

## LONG DISTANCES, LOW STOCKS, HIGH COSTS: TREATMENT CHALLENGES

- **Logistical challenges:** Long distances between the place where venomous snakebites occur and appropriately equipped health facilities, along with a lack of transportation, hinder fast and effective medical assistance.
- **Professional challenges:** Healthcare staff are often not trained to treat snakebite. Antivenom must be administered in the right dose to be effective. Ineffective use leads to poor outcomes, which reinforces doubts about antivenom effectiveness.
- **Accessibility challenges:** Appropriate, quality-assured antivenoms and other essential commodities and supplies, such as artificial respiration or dialysis machines, are mostly unavailable or difficult to access.
- **Product challenges:** Antivenom must be snake-specific; otherwise it is clinically ineffective. Yet, the market is flooded with antivenoms of poor quality and low potency.
- **Trust challenges:** Poor quality or ineffective, non-snake-specific products can erode confidence in antivenom treatment, leading victims to fall back on cultural practices that are unhelpful, cause greater injury, or lead to death. A common form of self- and traditional treatment is ‘tying off’ the affected limb with a tight bandage in an attempt to stop blood circulation. This practice can lead to death.
- **Treatment cost challenges:** Antivenom and snakebite treatments are unaffordable to those who are the likely victims—the poorest of the poor in low-income

countries. This is compounded by delays in seeking treatment, which is associated with higher costs of care.

## UNDERESTIMATION RESULTING IN FATAL CONSEQUENCES: WHY SAFE, EFFECTIVE & AFFORDABLE ANTIVENOM IS RARELY AVAILABLE IN AFRICA

Despite the high snakebite burden in Africa, antivenom production, and confidence in antivenom, has declined over the past decade due to:

- **Underestimation of the snakebite burden:** Poor data on snakebite results in an underestimation of antivenom needs by national health authorities. This leads to low demand for manufacturers to produce antivenom products and inappropriate procurement and distribution strategies in countries.
- **Market failure:** Effective and safe antivenoms are available, but often the market is dominated by cheap, poor quality, and ineffective antivenoms because they are cheaper. The WHO is now working to test the quality of antivenoms, which will help reshape the market and provide guidance for the purchase of effective antivenoms.
- **Exclusion:** Antivenoms can be unaffordable for those who need them most. By scaling up production of quality-assured antivenoms recommended by WHO, the price will fall.

## WHO WE ARE

- **Health Action International (HAI)** is an independent non-profit organisation. Using research and advocacy, we advance policies that enable access to medicines and rational medicine use.
- **Global Snakebite Initiative (GSI)** is a non-profit organisation of experts that gives voice to the forgotten victims of snakebite.

## FOR MORE INFORMATION

Ben Waldmann  
Snakebite Programme Manager  
Health Action International  
ben@haiweb.org | +31 20 412 4523 | haiweb.org