

Why Centre wants states to make snakebites notifiable disease

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NEW DELHI, DECEMBER 10

THE UNION Health Ministry has urged states to make snakebites a notifiable disease — a disease that is legally required to be reported to the government by both private and public hospitals.

Snakebites are a major public health challenge in the country. Some three to four million cases of snakebites are reported every year, and an estimated 58,000 persons die because of them annually, according to the 2020 Indian Million Death Study, a largescale study that examined the causes of premature death in India.

Earlier this year, the government launched the National Action Plan for Prevention and Control of Snakebite Envenoming (NAPSE) with the aim of halving snakebite deaths by 2030. NAPSE recommended that snakebites should be made a notifiable disease.

Which types of diseases are considered notifiable?

Usually, infections that are likely to cause an outbreak, lead to deaths, and those that need to be investigated quickly to take appropriate public health measures, are declared as notifiable diseases.

While the list of notifiable diseases differs from state to state — state governments are responsible for bringing out the notification — most of them consider infections such as tuberculosis, HIV, cholera, malaria, dengue, and hepatitis among others to be notifiable.

Why is snakebite considered a 'disease'?

Snakebites can lead to acute medical emergencies that require immediate care. They can cause severe paralysis that can prevent breathing, can lead to a fatal haemorrhage, and damage different tissues.

Snakebites need to be treated with antivenoms to prevent death and severe symptoms.

The bites of which snakes can be fatal?

There are more than 310 species of snakes in India — 66 of them are venomous and 42 are mildly venomous. Twenty-three snake species are considered to be of medical importance as their venom can kill. However, almost 90% of snakebites in the country are caused by the 'Big Four' — the Indian cobra, common krait, Russell's viper, and saw-scaled viper.

The commercially available polyvalent antivenom contains venom from all four species, and is effective against 80% of snakebites.

Why does the Centre want snakebites to be made notifiable?

Making snakebites notifiable is expected to lead to proper surveillance, and to help determine the precise numbers of snakebite cases and deaths across India. The government can then use this information to effectively manage, prevent, and control cases of snakebites. Adequate antivenoms can be

provided to various regions, and proper training can be imparted in areas where snakebites are frequent.

In a letter to all state health secretaries, Union Health Secretary Punya Salia wrote: "A mandatory notification of all snakebite cases and deaths is required to strengthen snakebite surveillance. It will help stakeholders gauge accurate burden, high-risk areas, factors responsible for deaths of snakebite victims etc resulting in improved clinical management."

Most snakebites happen in densely populated, low-altitude, agricultural areas in states including Bihar, Jharkhand, Madhya Pradesh, Odisha, Uttar Pradesh, Andhra Pradesh, Telangana, Rajasthan, and Gujarat, according to NAPSE.

What are the challenges of treating snakebites?

The challenges are mainly on three fronts. **Treatment:** Snakebite victims either do

not reach a healthcare centre in time or do not go there at all — and many reach out to faith-based healers instead.

In many cases, staff at healthcare centres are not adequately trained in treating snakebites. Tests for confirming snakebites are also not available.

Antivenoms: Almost all the venom that is used to develop the antivenom in the country comes from snakes caught by the Irula tribe, who live in the states of Tamil Nadu, Karnataka, and Kerala. This is a major challenge, as the biochemical constituents and the effect of the venom from the same snake species may differ based on geography.

"These differences result in the commercial ASV (anti-snake venom) prepared against the venom samples from a particular geographical location of the country showing poor immune cross-neutralisation and toxicity neutralisation," according to a 2020 paper published in the Indian Journal of Medical Research (IJMR).

Studies also show that the venom po-

tency changes with age. For instance, the venom of Russell's viper neonates is far more toxic for mammals and reptiles than that of the adult ones, according to a 2024 study.

Besides, antivenoms themselves cause various reactions.

There are also local snake species — such as the banded krait, monocled cobra, and green pit viper in the Northeast — against which the commercially available antivenom does not work.

Due to these limitations of antivenoms, researchers are now developing artificially produced antibodies that can help neutralise the toxins across various snake species. They are also looking at artificially designed peptides to fight the toxin.

Venom collection: Experts have suggested setting up zonal venom collection banks across the country to develop antivenoms that can cover the regional differences. However, The Wild Life (Protection) Act, 1972, limits access to snakes, making it difficult to set up such banks.

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