

## PROCEEDINGS

# Case Station for Avoidable Snakebite Deaths (CaSA) Launch Event



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**Date Published:** 25 October 2023

**Suggested citation:** Ray-Bennett, N.S. MacLeod, L. Skinner, A. (2023) *Proceedings: Case Station for Avoidable Snakebite Deaths Launch Event*. UK and Japan: Avoidable Deaths Network Publication.

### **About:**

**Avoidable Deaths Network (ADN):** ADN is a diverse, dynamic, inclusive, and innovative global-local membership network dedicated to reducing disaster deaths that are avoidable in low- and middle-income countries. ADN is a member of the [Sendai Framework's Voluntary Commitment Platform](#).

The **ADN India Hub** was inaugurated on 18 December 2019 and is led by the Orissa State Volunteers and Social Workers Association (OSVSWA). The Hub focuses on research and public engagement activities related to reducing avoidable snakebite deaths.

**ADN's Global Campaign [International Awareness Day for Avoidable Deaths \(IAD4AD\)](#)** was launched on 12 March 2023 to raise the visibility of indirect disaster deaths and missing persons and to understand the causes and circumstances that lead to avoidable disaster deaths.

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## Acknowledgements

We are extremely grateful to the Honourable Ms. Latika Pradhan, Member of Legislative Assembly - for inaugurating the Case Station for Avoidable Snakebite Deaths in Burujhari village.

We would like to extend our special thanks to Mr. Maheswar Barada, for sourcing a case station location and for bringing 130 people from Burujhari village together for this event.

We would like to thank everyone who participated in and attended the Case Station for Avoidable Snakebite Deaths Launch Event in Burujhari village. Most importantly, we would like to thank Mr. Dillip Pattanaik (Avoidable Deaths Network India Hub) for hosting this event.

Thanks are also due to the Chairs, Dr. Amarendra Mohapatra (Indian Council of Medical Research) and Ms. Basanti Sarangi for guiding the speakers and conveying the virtual speakers messages concisely.

We are grateful for the support and guidance from Mr. Sunil Mishra (Disaster and Vulnerability Specialist), Dr. Madhulika Sahoo (Editorial Manager, Avoidable Deaths Network), Dr. Shakuntala Pratihari Nanda (Steering and Management Committee Member, Avoidable Deaths Network India Hub); and Dr. Ambika Prasad Nanda, Mr. Mihir Bhatt, Dr. Stephen Samuel and Dr. R.K. Soni (Advisory Board Members, Avoidable Deaths Network).

Final thanks are due to our collaborators and gatekeepers on the project entitled '[Identifying Gaps in Drowning Data Collection in Low-and Middle-Income Countries and the Actors Addressing Them](#)' which laid the foundations for this case station, and Alex Skinner for proofreading this report.

## Context: Avoidable Snakebite Deaths

A particularly pressing area of opportunity for reducing avoidable deaths is *snakebite deaths in India*. Snakebite is a neglected tropical disease (NTD) that results from the injection of venom, a specialised toxic secretion, into humans by the bite of a venomous snake. According to the World Health Organisation (2023), about 5.4 million snakebites occur each year, resulting in 1.8 to 2.7 million cases of envenoming. India accounts for approximately half of all global snakebite deaths reported through traditional surveillance systems, and about 2.97 million snakebite incidences occur each year (Gutiérrez *et al.*, 2017). Around 58,000 snakebite deaths and a further 140,000 incidents leading to various disabilities, including limb injuries and amputations, occur annually in India (Gutiérrez *et al.*, 2017).

The states of Bihar, Jharkhand, Madhya Pradesh, Odisha, Uttar Pradesh, Andhra Pradesh, Gujarat and Rajasthan carry the highest burden of snakebite deaths in India (*aka* eight high-burden states). About 75% of deaths in India occur before reaching hospitals due to mechanical, cultural, and economic hurdles (Mohapatra *et al.*, 2011). Additional barriers include antivenom-resistant snakebites due to regional-, inter- and intra-species proteomic differences, unavailability of healthcare in time of need, and the influence of traditional healers. These are **avoidable deaths**.

A more recent study in India found that most snakebite deaths occur in rural areas (94%) and at home; and half of all deaths occurred from June - September during the Southwest monsoon season (Suraweera *et al.*, 2020). This season is notorious for flooding in the South Asian sub-continent. This finding is consistent with another study in Bangladesh, which found snakebite was the second largest cause of death in the 2007 floods (Paul, 2021). These deaths are considered **indirect disaster deaths**.

Another study conducted by Ray-Bennett (2009) in the village of Tarasahi in Odisha, found that snakes appear everywhere during floods, dwelling in dry places and on roofs and doors because flood water has entered their snake holes. Floods, therefore, increase the likelihood of snake-human encounters and the risk of snakebites. According to Paul (2021, p.92), “snakebite is a more common cause of flood deaths in developing countries, while it is rare in developed countries”. Reducing snakebite deaths, therefore, warrants investigating the **causes and circumstances** of disaster deaths under the ambit of the disaster risk reduction framework.

In 2015, Odisha became the first state in the country to declare snakebite death as a state-specific disaster. As per the Government of Odisha’s two latest Annual Reports of Natural Calamities 2021-2022 and 2020-2021, 1,888 people died of snakebites across 30 districts of Odisha (with Ganjam district bearing one of the highest numbers of snakebite deaths) as compared to other disaster deaths i.e. lightning, drowning, floods and cyclones.



**Figure 1: Speakers from Ganjam district participating in the Avoidable Snakebite Deaths project**

Through the Leicester Institute for Advanced Studies and Institute for Environmental Futures-funded project [\*Exploring the Feasibility and Value of Pioneering Partnerships to Reduce Avoidable Snakebite Deaths in India\*](#), the ADN India Hub identified that the village of Burujhari in the Kodala Tehsil of Ganjam district, is home to the highest number of snakebites in Odisha due to its proximity to coastal jungles, the warm and humid climate and high population density.

Agricultural workers are most at risk of snakebites from poisonous snakes such as the Indian Cobra (Naga Sapa), Monocled Cobra (Tampa Sapa), Common Krait, Russell's Viper and the Indian Rock Python. With limited knowledge about snakes, their behaviour, and appropriate preventive measures, villagers are at risk of fatalities. Their risk increases due to being located 2km from the nearest medical facility in an area where there is an inadequate availability of and accessibility to anti-venom through stock and distribution.

## Case Station for Avoidable Snakebite Deaths

On 19 September 2023, the Avoidable Deaths Network's India Hub launched the **Case Station for Avoidable Snakebite Deaths (CaSA)** in Burujhari village of Ganjam District in order to work with high-risk groups to find context-specific solutions to reduce avoidable snakebite deaths, especially during the monsoon season.

The aim of CaSA is to promote a **Social Learning laboratory (SoLe)** at the village level; foster village-level communities of practice (*aka Local-level Action Network (LAN)*) to find solutions; and develop the capacity of primary and secondary responders to reduce avoidable snakebite deaths.

Avoidable snakebite deaths are premature deaths, which can be reduced through tailored preventative, amenable/timely and disaster risk governance measures.

**Social Learning Laboratory (SoLe):** We will collaborate with at/high risk communities, researchers and policy institutions to form 'communities of practice' and initiate innovative experiments on local problems related to avoidable snakebite deaths. These local problems will be identified by the people of Burujhari village living with or at risk of snakebites. The unique feature of SoLe will be a constant experiment to find solutions and translate them into services for the greater good of the society.

**Communities of Practice:** We will experiment with a local-level action network (LAN) for learning in Burujhari village. This model is designed to engage with high-risk groups. LAN will provide a platform where local problems are identified by the communities of practice and solutions are identified, trialled, and tested [before scaling] at SoLe.

**Capacity Building:** We will work with primary, secondary, and tertiary level health and disaster responders to develop their capacities informed by our context-specific research and solutions. Capacity building may include (although not limited to): public awareness, periodic medical education, timely intervention education, mass education, curriculum innovation, workshops and disaster risk governance awareness.



**Figure 2: The future CaSA in Burujhari village**

We anticipate that CaSa's activities will help policymakers, practitioners and communities living with/ at high risk of snakebites make better decisions to save lives and avoid injuries, for sustainable development.



## Highlights of the Launch Event

The launching of CaSA took place at Rajiv Gandhi Seva Kendra in Burujhari village, Ganjam district at 15:00 on 19 June 2023. The launch day for CaSA was carefully planned to mark **International Snakebite Awareness Day**, 19 June.

The event was attended by 130 local participants consisting of 49% women and 51% men. The event was attended virtually by the ADN Founding Presidents, Dr. Nibedita Ray-Bennett and Dr. Hideyuki Shiroshita, Advisors and Technical Experts on snakebites, Dr. Stephen Samuel and Dr. R.K. Soni and 11 Operation Members of ADN. The event has been featured by two news outlets<sup>1</sup> and is available to watch on [YouTube](#).



**Figure 3: Participants from Burujhari village**

Prior to the inauguration, participants celebrated the local festival of Ganesh Puja and read the Oriya poster display of information and education (IEC) materials on the prevention of avoidable snakebite deaths.



**Figure 4: Participants reading the IEC material**

<sup>1</sup> [Odisha Mobile TV](#); [Bijaya Kumar Nayak](#)

The inauguration featured five esteemed speakers: Mr. Dillip Pattanaik (ADN India Hub Lead), Mr. Maheswar Barada (Social Worker of Ganjam District), the Honourable Ms. Latika Pradhan (Member of Legislative Assembly of Kavisuryanagar constituency), Ms. Renu Gauda (Chairperson of Beguniapada block) and Mr. Binod Chandra Jena (Sarapanch of Burujhari Gram Panchayat).

The event was chaired by Dr. Amarendra Mohapatra (Head of Epidemiology, Indian Council of Medical Research – Regional Medical Research Centre) and Ms. Basanti Sarangi (Programme Officer, Orissa State Volunteers and Social Workers Association).



**Figure 5: Panel of speakers**

*Highlights from these speakers are:*

- **Mr. Dillip Pattanaik** explained the aims and objectives of the event, which were to spread awareness of avoidable snakebite deaths in Burujhari village and seek cooperation of local people for the establishment and success of CaSA. Furthermore, Dillip enlightened the audience that International Snakebite Awareness Day is observed worldwide annually on 19 September and that Burujhari was selected for CaSA's location as the village was found to have a high number of snakebite cases.
- **Mr. Maheswar Barada** expressed his excitement that CaSA will be led by two esteemed Universities of Leicester and Kansai, in collaboration with Indian scientists from the Indian Council of Medical Research.

- **Honourable Ms. Latika Pradhan** emphasised that primary health care facilities should stock anti-snakebite venom (ASV). She also emphasised the importance of CaSA and its potential for saving lives from snakebites. She pledged to advocate for ASV at community health centres by making it her manifesto in the upcoming election.
- **Ms. Renu Gauda** highlighted that the community deserves and demands an improvement in health facilities, through the availability and accessibility of ASV. She also noted how well the people of Burujhari have accepted the launch of CaSA.
- **Mr. Binod Chandra Jena** emphasised that CaSA is a very good initiative. Mr Jena told the audience that villagers have been bitten by snakes and eaten by tigers and bears, but have never been the recipients of awareness programmes until now.
- **Dr. Amarendra Mohapatra** identified that the involvement of the local community was essential for the success of CaSA. He shared how many species of snakes exist locally and explained that not all snakes are poisonous. Despite this, he instructed the audience to rush to hospital in any instance of snakebite.

Moreover, Dr. Mohapatra appealed to Ms. Latika Pradhan to dispense funds for the development of CaSa for the greater good of society.

Finally, he congratulated Dr. Nibedita Ray-Bennett, Dr. Hideyuki Shiroshita and Dr. Stephen Samuel for launching CaSA at village-level.

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## Annexes

### Annex 1: Agenda

**Date:** 19 September 2023

**Venue:** Rajiv Gandhi Seva Kendra, Burujhari Village, Ganjam District, Odisha

|   |               |
|---|---------------|
| <b>Part One: Cultural Event and Poster Display</b>  | 15:00 – 16:00 |
| <b>Part Two: Inauguration</b>   | 16:00 – 17:00 |
| <b>Mr. Dillip Pattanaik</b><br>Regional Coordinator and Lead, Avoidable Deaths Network india Hub                      |               |
| <b>Mr. Maheswar Barada</b><br>Social Worker, Ganjam District, Odisha  |               |
| <b>Ms. Latika Pradhan</b><br>Honourable Member of Legislative Assembly (MLA), Kavisuryanagar, Ganjam District, Odisha |               |
| <b>Ms. Renu Gauda</b><br>Chairperson, Beguniapada Block, Ganjam District, Odisha                                      |               |
| <b>Mr. Binod Chandra Jena</b><br>Sarapanch, Burujhari Gram Panchayat, Ganjam District, Odisha                         |               |
| <b>Dr. Amarendra Mohapatra</b><br>Advisory Board Member, Avoidable Deaths Network India Hub                           |               |
| <b>Dr. Nibedita S. Ray-Bennett *</b><br>Convenor and President, Avoidable Deaths Network                              |               |
| <b>Dr. Hideyuki Shiroshta *</b><br>President, Avoidable Deaths Network  |               |
| <b>Dr. Stephen Samuel *</b><br>Advisory Board Member, Avoidable Deaths Network  |               |

\* Due to technical difficulties caused by a thunderstorm, three virtual speakers were unable to present. However their messages were conveyed by Dr. Amarendra Mohapatra.

## Annex 2: List of Presenters and Chairs

### Speakers' Profiles

**Mr. Dillip Pattanaik** – Regional Coordinator and Lead, Avoidable Deaths Network India Hub; Executive Director, Orissa State Volunteers and Social Workers Association, Odisha; Vice President, Women in Science and Engineering India; and Member, Board of Directors, International Network of Women Engineers and Scientists - Education and Research Institute.

**Mr. Maheswar Barada** – Social Worker, Ganjam District, Odisha

**Ms. Latika Pradhan** – Honourable Member of Legislative Assembly (MLA), Kavisuryanagar, Ganjam District, Odisha

**Ms. Renu Gauda** – Chairperson, Beguniapada Block, Ganjam District, Odisha

**Mr. Binod Chandra Jena** – Sarapanch, Burujhari Gram Panchayat, Ganjam District, Odisha

### Chairs' Profiles

**Dr. Amarendra Mohapatra** – Head Epidemiologist, Regional Medical Research Centre, Indian Council of Medical Research, Bhubaneswar, Odisha.

**Ms. Basanti Sarangi** – Project Officer, Orissa State Volunteers and Social Workers Association, Odisha.

### Virtual Presenters' Profiles

**Dr. Nibedita S. Ray-Bennett** – Associate Professor, Risk Management, School of Business; Programme Director, MSc in Risk, Crises and Disaster Management, School of Business; and Leader, Research Challenge, Climate Risk and Disaster Risk Reduction, Institute for Environmental Futures, University of Leicester. Founding President and Convenor, Avoidable Deaths Network.

**Dr. Hideyuki Shiroshta** – Associate Professor, Disaster Mitigation and Safety Education, Graduate School and Faculty of Societal Safety Sciences, Kansai University; Founding President of Avoidable Deaths Network; and Chairperson, Osaka Prefectural Committee for Promoting Safety and Disaster Education.

**Dr. Stephen Samuel** – Vice President, Clinical Affairs, Ophirex, Inc., CA, USA; and Visiting Physician Scientist, TCR Multispecialty Hospital, Krishnagiri, Tamil Nadu.