

SUSTAIN DP

Sustainable Solutions for Drowning Prevention



 The George Institute
for Global Health
WHO Collaborating Centre for
Injury Prevention and Trauma Care 

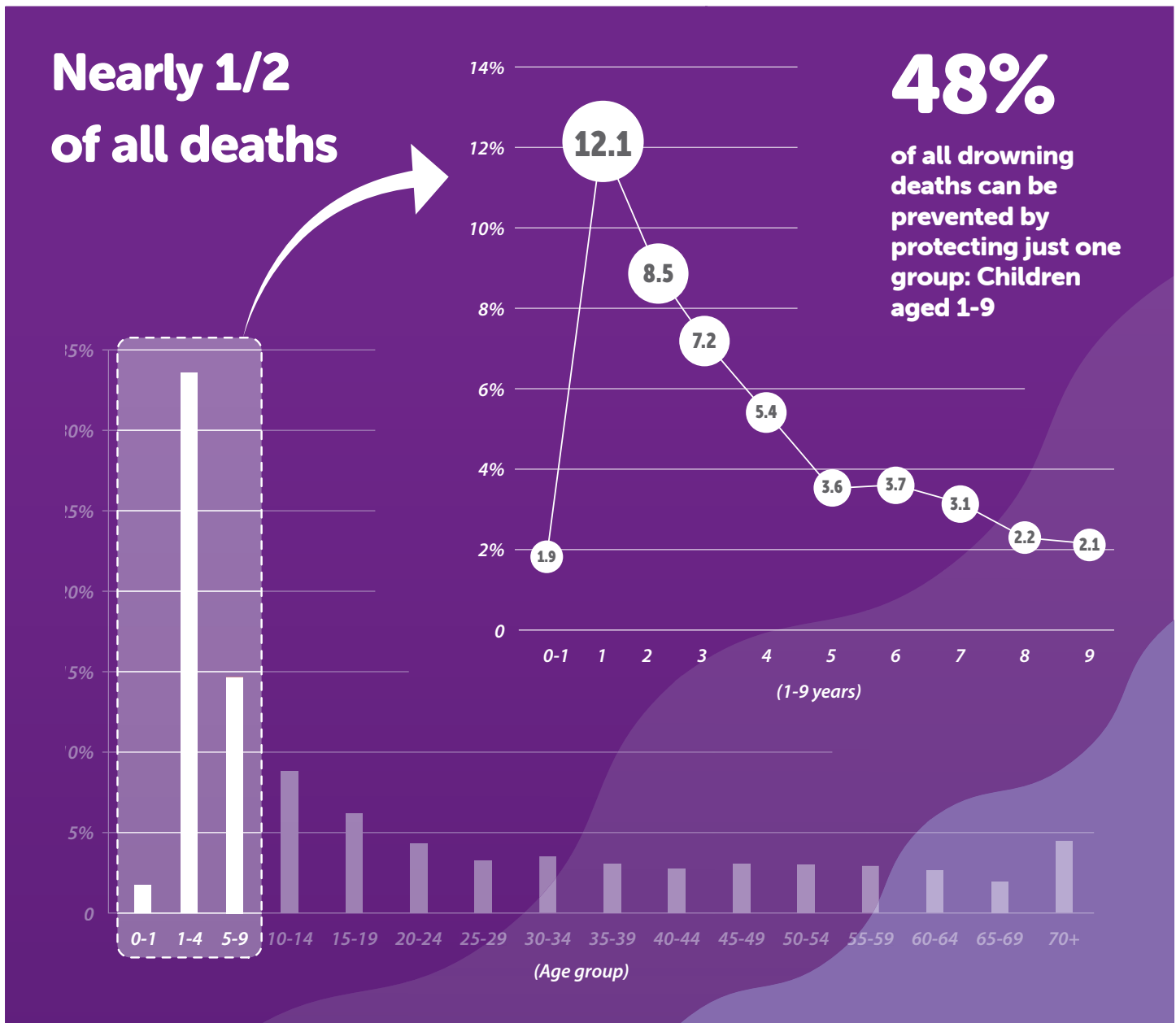


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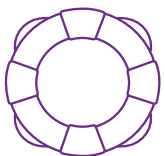
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STUDY FINDINGS

All Ages Mortality Rate



9.17 per 100,000 population

Age Group Vulnerability



Children Aged 1-4
Fatal: **60.18** per 100,000

Children Aged 5-9
Fatal: **19.20** per 100,000

Global Burden of Disease
2021 estimates for drowning rates in India are at

3.86 / 100,000

Rural vs. Urban Divide



Rural
Fatal: **12.52** per 100,000



Urban
Fatal: **1.19** per 100,000

Gender Disparities



Males
Fatal: **11.82** per 100,000



Females
Fatal: **6.33** per 100,000

Drowning in West Bengal

2.5x is more prevalent and is a major cause of death

Drowning is a major cause of death and disability around the world

with an estimated
300,000 deaths per year

Of these,
18% are estimated to occur in India alone

As the prevalence and impacts of drowning are becoming clearer, worldwide efforts are prioritising this issue. In the past 5 years, two global resolutions addressing drowning have been passed. The UN General Assembly has passed a historic resolution calling for global drowning prevention and proclaiming July 25 as World Drowning Prevention Day. This resolution has now been followed by the first ever World Health Assembly resolution on drowning. India is a signatory to both of these commitments.

INDIA'S MISSION TO ADDRESS UNINTENTIONAL INJURIES

The Ministry of Health & Family Welfare launched the National Strategy for prevention of Unintentional Injury in 2024, and drowning was identified as one of four key areas of importance. It emphasises a multi-sectoral approach, involving government, healthcare systems, and communities to implement targeted action plans and strengthen injury prevention efforts.

Interventions noted in the strategy include

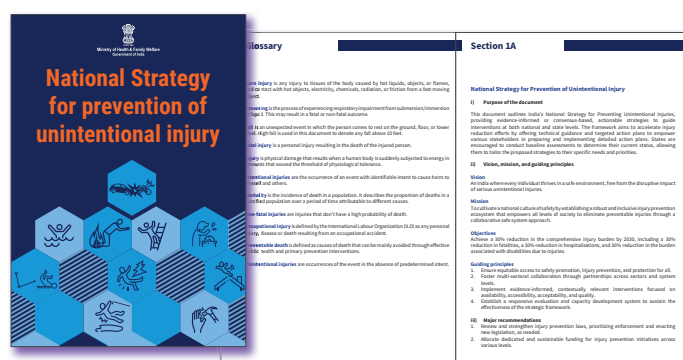
- (a) Creating safe and accessible environments,
- (b) inclusion of survival swimming and rescue training in the school curriculum, and
- (c) Strengthening health systems and communities to respond appropriately to drowning events.

These reflect the Ministry of Health and Family Welfare's **Strategic Framework for Drowning Prevention** which was launched in 2023.



EVERY DAY IN WEST BENGAL

25 people die from Drowning **12** of them are children



DROWNING VULNERABILITIES IN WEST BENGAL

West Bengal is home to a high rural population living in riverine, deltaic and coastal regions. The environment in much of the state is high-risk for drowning.

Our previous survey in the Sundarbans found some of the **highest child drowning rates globally**

DROWNING SURVEY IN WEST BENGAL

To address drowning events across the state and implement effective solutions, we need to understand WHO drowns, HOW MANY drown, and WHERE they drown.

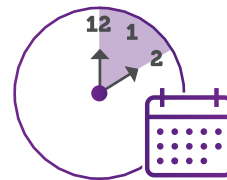
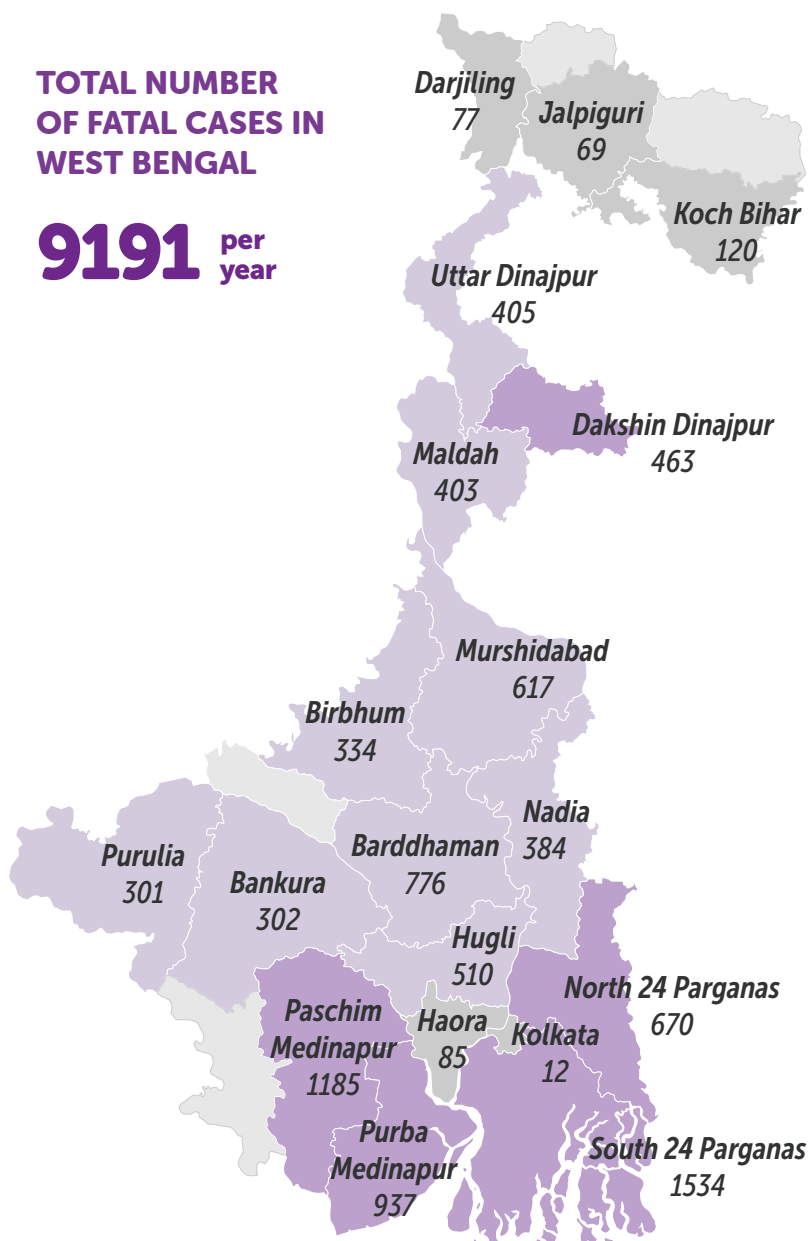
The George Institute for Global Health and the Child In Need Institute conducted a state-wide survey of drowning events covering a population of 18 million people between March and December 2024. This project was funded by Bloomberg Philanthropies.

121 / 100,000 children aged 1-9 years old



TOTAL NUMBER OF FATAL CASES IN WEST BENGAL

9191 per
year



- Drowning peaks 12-2pm
- Most events July to August



- >90% rescued by family/neighbour
- 93% of children had no adult present



- Only 18% deaths issued a death certificate
- 56% of death certificated mentioned drowning as a cause/contributor



- 44% used vomiting induction and 39% used spinning - ineffective methods prevalent
- Only 10% victims received CPR
- Only 12% sought medical help



HOW CAN WE ADDRESS DROWNING IN WEST BENGAL?

The most vulnerable groups to drowning are **rural populations, children aged 1-9 years old, and males.**

The World Health Organization has recommended four evidence-based interventions that address drowning risk in high-risk populations and regions.



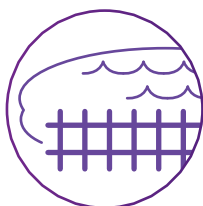
Swim and rescue training

Swimming skills and rescue training in children aged 5-12 years old can be up to 92% protective against drowning. Portable pools and local ponds can be leveraged to providing these lessons as part of the school curriculum under the School Education Department, or under Gram Panchayat leadership in remote regions.



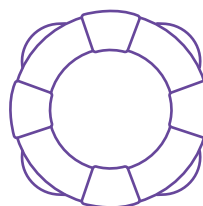
Supervised child-creches

Parental supervision is inadequate during the day due to conflicting duties. Children aged 2-6 years old can be up to 85% protected through supervised group classes. This also provides an opportunity to address early childhood care and education needs in children. Government programs such as ICDS can be expanded and supported to increase supervision.



Physical barriers against water

Previous research has found that fencing water bodies such as ponds and rivers near households prevents access of children aged 1-3 years old. Such interventions can be implemented by Gram Panchayats and Rural Development initiatives.



Rescue and resuscitation training

>90% of rescues are done by members of the community, so community members must be empowered in safe rescue and resuscitation. The National Disaster Management Authority (NDMA) program to train communities in First Aid may be leveraged.



SUCCESSFUL INTERVENTIONS FROM OTHER COUNTRIES

Drowning prevention IS possible, even in rural contexts which face a range of challenges for implementation

Case study 1: Bangladesh

Bangladesh is a highly deltaic and rural country where drowning is one of the top causes of mortality across the country. As estimated 19,000 people drown each year. The Government of Bangladesh approved a \$32 million, three-year program to reduce drowning among children. The program includes increasing the number of government-run supervised creches to 8,000 to provide supervision to 200,000 children aged 1-5 years old. The program also provides funds for survival swim lessons for 360,000 children 6-10 years old.



Case study 2: Vietnam

Like in India and Bangladesh, Vietnam experiences high rates of child drowning at approximately 2,000 deaths per year. Drowning in Vietnam is The Government of Vietnam approved a 10-Year National Program on child injury prevention, aiming to reduce drowning deaths by 10% by 2025 and 20% by 2030

INTERVENTION PILOTS IN WEST BENGAL

2024: CINI and The George Institute for Global Health implemented an ICMR-funded project aiming to pilot child drowning interventions in the Sundarbans for feasibility and acceptability in the community

1. Pond fencing

100 fences were build around ponds close to households with children aged 1–2 years old across the Sundarbans over a period of one year

Characteristics:

- Communities selected ponds near vulnerable households
- Households provided most local material and labour, with some amount subsidized at ~Rs10,000 (\$US113) per fence to build

What worked



- Provided 24/7 protection for children
- Considered more appropriate for children aged under 3 years old
- Low-cost approach due to use of local materials and resources
- High Community acceptability and ownership
- These only need to be semi-permanent structures

Challenges to address in a larger trial



- **Maintenance and repair:** challenges for low-income families, especially during monsoon season
- **Engagement:** Of remote communities and ostracized groups
- **Design:** Gate designs needs to be revisited to ensure automatic closure
- **Unintentional consequences:** For example, animals' access to water bodies gets limited'

2. Supervised childcare centers

Two Kavach (childcare) centers in the Sundarbans were piloted for a period of 1 year

Characteristics:

- Children aged 6 months to 5 years attended
- Centres were run Monday to Saturday, 8 AM to 2 PM
- Self-help group (SHG) members were recruited and trained in in Early Childhood Care & Education (ECCE) and provided supervision

What worked



- Community ownership: 3 Gram Panchayats have adopted the model within their own budgets
- High parental demand: Strong interest and uptake among families
- Feasible delivery platform: SHG workforce for implementation

Challenges to address in a larger trial



- **Younger age group engagement:** Strategies to increase participation of children under 2.5 years
- **Hardware:** Identifying spacious and safe places for delivery of childcare
- **Sustainability:** Retaining trained teachers and consistent child attendance over time
- **Operational optimization:** Ideal days and duration of centre operations

NEXT STEPS

Drowning prevention will require multisectoral collaboration between multiple departments including:

- Health & Family Welfare
- Women & Child Development
- Panchayat & Rural Development
- Education

The George Institute for Global Health and CINI will work with local government stakeholders to develop larger-scale trials to understand:

- The effectiveness of these interventions in reducing drowning
- Cost of implementing the interventions
- Delivery mechanisms that are suitable for the West Bengal context
- Integration of interventions with existing government activities programs



**TOGETHER, WE CAN END DROWNING
ACROSS WEST BENGAL**



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