



Childhood drowning:

Stopping a silent epidemic

Drowning, particularly among children, is a largely invisible health crisis in low- and middle-income countries that has only recently begun to receive the attention it demands. Between 2016-20, researchers from The George Institute for Global Health examined the health burden stemming from drownings in parts of Bangladesh, India and Vietnam. The Institute's ground-breaking research across the three countries revealed critical insights, raised awareness and offered policy makers and local communities evidence-based tools to help stop the silent epidemic.

Every year, more than 160,000 drownings occur in Southeast Asia and the Western Pacific – 70 per cent of drownings globally. In low- and middle-income countries, drownings disproportionally impact the poor, in particular children, where normal life brings them close to water on a daily basis in the form of rivers and waterways, irrigation channels and dangerous floods that are often swiftly brought on by monsoons and other natural disasters.

Growing awareness of the drowning burden is linked to the realisation that the hard-fought communicable disease gains among children from vaccines and other interventions were being erased by high drowning rates.

"With the launch of the United Nations (UN) Millennium Development Goals, we saw a real change in the focus on infectious conditions and maternal and child death, towards injuries," said

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"Looking at the causes of death in Southeast Asia really highlighted the heavy burden of drowning in children. There was a clear shift - all the success and gains we were making from immunisation, we were losing to drowning for under five-year olds."



Images courtesy of RNLI Lifeboats





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Hiding in plain sight

For the poor and marginalised, the finality of child drowning deaths invariably lay outside the health system's record keeping because there is usually no hospital or doctor involved. Child deaths are also often not recorded as there are no legal or economic implications. In the Sundarban region of India, less than 1% of child drownings involve a death certificate, and less than 6% even involve a medical practitioner. Child drownings are a truly invisible epidemic that requires sustained focus by researchers to generate the evidence needed to spur governments and communities to act.

"Drowning is often referred to as a silent killer," said Jagnoor. "It lacks a voice on global platforms of health and development and that is silencing evolving child health needs."

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Towards real-world impact

A key focus for The George Institute is conducting research that can quickly lead to demonstrable impacts on people's health. Recognising childhood drowning was an important space that needed study and required impactful interventions, the Institute's researchers partnered with key stakeholders in the drowning prevention and public health space. The drowning research program was made possible in part by partners such as the Royal National Lifeboat Institution and the Centre for Injury Prevention and Research, Bangladesh.

"Bringing The George Institute to the field of drowning prevention research was hugely advantageous because it brought a new energy, a new skill set, and new perspectives," said Justin Scarr, Chair of the Drowning Prevention Commission at International Life Saving Federation, and contributor to the WHO 2014 Report on Drowning.

"The way we work with The George Institute is a partnership to ensure that the evidence can be translated into practical action, which can then ultimately save more lives," said Steve Wills, Head of International Programs at the Royal National Lifeboat Institution.

However, for any change to occur, perceptions must also change. Advocacy at the policy level is required, as well as efforts to link communities to any existing and new policies.

"There was a sense of hopelessness in the communities we engaged with – that drownings



were inevitable,” said Medhavi Gupta, a PhD student at The George Institute, whose research focuses on drowning prevention in Bangladesh. “For us then, this research was also about changing mindsets, to show that drownings are in fact preventable.”

The researchers designed their work around community engagement and listening and learning about local needs and priorities. This then informed how the research was conducted and which interventions could be implemented and evaluated with partners.

Bangladesh: Project Bhasa

In 2016, the Centre for Injury Prevention and Research, Bangladesh and the Royal National Lifeboat Institution were motivated by a shared commitment to drowning prevention and came together with The George Institute as a research partner to develop a comprehensive community-based child drowning prevention project. The intention of the Barisal Drowning Reduction Project (Project Bhasa) was to respond to the burden of drowning in rural Bangladesh, concentrated mainly in children, and add to the body of knowledge about what works to prevent drowning in a high-burden, low-resource setting. “Every year, more than 14,000 young lives are lost needlessly in Bangladesh,” said Shafkat Hossain, Intervention Manager at the Centre for Injury Prevention and Research, Bangladesh. “That means almost 40 young people die daily, which is about the size of a kindergarten class dying every day from drowning.”

The study involved a household survey of 400,000 people to establish a baseline of the



size and scale of the problem in terms of deaths, disability, and social impact. Alongside the survey, the project included a range of qualitative studies to better understand the context of the burden and barriers to implementing drowning reduction interventions.

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Shafkat Hossain, Intervention Manager at the Centre for Injury Prevention and Research, Bangladesh

Additionally, evidence-based interventions were implemented and evaluated, including:

- Anchal (crèche) - supervised day care sessions;
- SwimSafe - a program to teach swimming survival skills;
- embedding water safety in participating classrooms and schools; and
- first responder/rescue training for community volunteers.

“Project Bhasa was massive,” said Jagnoor, who worked on the project. “400 childcare centres were implemented for three years, providing active supervision to over 10,000 children one to five years old in one of the most remote areas of Bangladesh. The project also provided swimming survival skills to 30,000 children over three years for children six to 10 years old.”

Drowning in Bangladesh

- 14,438 people under 18 years old drown annually*
- Drowning is the leading cause of death in Bangladesh for children
- Two-thirds of childhood drowning occurs between 9am and 3pm, when children are often unsupervised

* *Bangladesh Health and Injury Survey 2016*



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India: Drowning in The Sundarbans

Sharing a border with Bangladesh is the West Bengal region of India, specifically the Sundarbans, a rural forested area with similar geography, culture and challenges. For India, drowning is the third-leading cause of unintentional injury mortality, with over one in three drowning deaths involving children under-five years. The Institute researchers were curious: was child drowning also a pressing issue in that region of India?

What the researchers initially found to their surprise in the Sundarbans was a broadly held view by community leaders that drowning was not a problem.

"So we decided to start small - let's just have a community discussion and see if it really is a problem," said Jagnoor. "Within the focus groups, the first reaction was, 'oh, not a problem'. But when we asked 'do you know anyone that has drowned in your family or community?', to our great surprise, everyone had not one but multiple stories."

Drowning in the Sundarbans, West Bengal

- Biggest killer of children aged 1-9 years old
- More than half of deaths among children 1-2 years old
- 3 children drown every day
- Children most often die within 50 metres of their homes

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Medhavi Gupta, PhD student at The George Institute

For the Sundarbans research in India, local qualitative surveys needed to be conducted that relied heavily on community buy-in.

"Officials in the Sundarbans care about these issues," said Medhavi. "As soon as we showed them the results of our research, they were shocked and wanted to work with us."

Researchers used a community-based survey to determine the drowning mortality rate for children aged one to four years, and five to nine years. Meetings were held with community residents and key stakeholders to identify drowning deaths in the population. Drowning deaths were verified by surveying the child's household and gathering information around the circumstances of the death. In addition to the Royal National Lifeboat Institution, a key Indian partner was the Child in Need Institute.

"Water is life and unsafe exposure to water is a drowning risk for the communities," said Sujoy Roy, Child in Need Institute Program Manager for West Bengal, India. "The survey helped with evidence and highlighted the need for action. It helped mobilise communities - every story of a child drowning death prevented is an inspiration, a recognition that these drowning deaths are in fact preventable."

5 action points to prevent child drowning

- Install home-based barriers and fencing to reduce children's access to water
- Ensure supervised childcare and safe spaces
- Train adults in safe resuscitation, rescue or first responder training
- Teach children swimming, water safety and rescue training
- Coordinate drowning prevention efforts with existing government programs

One innovative approach conducted in the community to raise awareness were 'Child Parliaments', where participants debated the pros and cons of drowning prevention policy.

"One of the child parliamentarians commented, 'Well you don't have a program for us. Do you know this is the leading cause of death in our population? Is that because we cannot vote? Well, we will be voters,'" said Jagnoor. "It was also interesting how they framed safe swim skills as a kind of 'vaccine' against drowning."

Community feedback and policy analysis from the Sundarbans showed that scaling up effective interventions to prevent drownings would best involve three existing social programs:

- the Integrated Child Development Scheme for improved childhood supervision;
- the accredited social health activist (ASHA) community health worker program for improved local first responder training; and
- the existing network of self-help groups (SHGs).

Impact: Saving lives, raising awareness

Project Bhasa drove a number of interconnected impacts at the community and national level.

"The scale of Project Bhasa alone raised so much awareness of drowning and helped change local approaches at the community level that we have seen around a 60-per cent reduction in drownings among the population pockets where we worked in Bangladesh," said Jagnoor.



Following constructive engagement by the Centre for Injury Prevention and Research and the Barisal community, and the increased awareness due to the study, a national drowning plan has been developed in Bangladesh.

India has yet to develop a national drowning prevention strategy. However, the Sundarbans research carried out by The George Institute and the resulting extensive media coverage helped raise national awareness of the crisis.

Female community workers involved in the study were empowered financially, and children who participated in the Child Parliaments were energised and many were inspired to stay in school.

"Another very gratifying aspect of the project was empowering some of the most marginalised groups within these populations," said Jagnoor.

The shocking findings also highlighted the pressing need to conduct more studies to

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Project Bhasa: Impact at a glance

- 60% reduction in drownings in project areas
- 30,000 children taught water safety over three years
- Over 2,800 community volunteers provided rescue training
- Supervised care for 10,000 children across 400 childcare centres (Anchals) over three years
- Drowning prevention awareness raised with extensive media coverage



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understand the issue and develop effective solutions. Further engagement with communities and policy makers is necessary for these interventions to be developed and implemented.

Global impact

The extensive research carried out by The George Institute and partners contributed much needed evidence to drive global advocacy that delivered a historic UN resolution on drowning prevention in April 2021. For the first time in its 75-year history, a clear call was made by the UN for countries around the world to recognise and take action to prevent hundreds of thousands of drowning deaths each year.

The resolution, an initiative by Bangladesh and Ireland that was co-sponsored by 79 countries, recognises that drowning is preventable, and that scalable, low-cost interventions exist that every country should implement. Calling for a coordinated UN approach to the issue, the resolution also led to the designation by the UN of the first World Drowning Prevention Day on July 25, 2021.

"The scale of the drowning crisis highlighted

by our work in Bangladesh and India helped stakeholders promote and advocate for the UN resolution," said Jagnoor. "The importance of the resolution lies in the far-reaching commitment of countries individually – and together – to share knowledge, experiences and best practices for reducing drowning deaths."

"It shines a light on drowning as a forgotten and avoidable epidemic and demonstrates how drowning prevention can enable progress on climate resilience, health equity and the Sustainable Development Goals."

Such multilateral recognition can be a key component in driving change.

"The work that The George Institute has done has allowed a wider community to look at drowning," said Steve Wills, Head of International Programs, the Royal National Lifeboat Institution. "The Institute's initial investment and interest in this area has helped generate a movement around this really important global issue. It's been a catalyst for action informing much better practice."

The George Institute's drowning prevention work has highlighted a largely unrecognised child killer and clearly establishes the need for further research, particularly around the most effective interventions and solutions to such a highly complex problem. Such research, coupled with effective advocacy at the community, national and global level, can support real change, drive sustained impact and save lives.



Vietnam: Evaluating drowning prevention success

In Vietnam, The George Institute's research focused on looking at the success of drowning prevention programs. Unlike Bangladesh and India, Vietnam has specific policy targets to reduce child drowning.

Researchers conducted two pilot level studies: a review of the previous decade's drowning statistics to help provide a baseline understanding of the problem; and a qualitative study at the grassroots level to identify which drowning prevention programs were being implemented.

The research found that while rates remained relatively high, the number of drownings is falling, providing key insights for researchers and policy makers regarding which interventions and approaches should be implemented to save lives. Vietnam's laudable drowning prevention commitment, challenges and re-alignment of its strategy, resources and efforts could provide valuable lessons for other countries grappling with drowning epidemics.

Key actions to accelerate global drowning prevention*

Building on evidence from the above research programs, and knowledge sharing with partners, The George Institute recommends the following key actions to accelerate global drowning prevention:

- **Local data for global advances:**

National and sub-national empirical data is needed to quantify burden, identify the diverse contexts of drowning, and inform the multi-sectoral response for implementing drowning prevention solutions to ensure an escalated reduction in global drowning deaths.

- **Co-developing sustainable solutions:**

Community acceptance, and the impact and sustainability of known and yet to be discovered drowning prevention interventions, policies and programs requires co-development with those most vulnerable to drowning.

- **Drowning within sustainable development:**

Mapping intersections with the UN Sustainable Development Goals, health, disaster and climate agendas may recognise synergies and targets that reinforce the contribution drowning prevention can make to advancing progress on these agendas and international

priorities, providing co-benefits and/or identify gaps for further research. Action on upstream social, economic and environmental determinants of drowning may provide undiscovered systemic opportunities for prevention.

- **Multi-sectoral action:**

The diversity of sectors and stakeholders with core or passing, accepted or unrecognised interests presents a scenario with equal parts challenge and opportunity. Harnessing this need for multisectoral action requires top-down advocacy and bottom-up pragmatism. Engaging those most willing and able to act is only a starting point.

- **Global Strategy, Global Partnership:**

To strengthen cohesion, advance the field and maximise impacts, a global strategy of objectives, actions and targets is needed. Uniting the field through a global platform requires a multi-stakeholder, multi-sectoral partnership of UN agencies, governments, donors, civil society groups and academic institutes.

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Projects:

Barisal Drowning Reduction Project (Project Bhasa), Drowning in the Sundarbans, Trends of drowning mortality in Vietnam

Research leads:

Dr. Jagnoor Jagnoor, Medhavi Gupta, Dr Soumyadeep Bhaumik, Margie Peden, Ranjan Panda, Sujoy Roy, Professor Anthony Zwi, Ha Nguyen, Professor Rebecca Ivers, Cuong Pham

Project cycle:

2016–2020

Funders:

Royal National Lifeboat Institution



Key Partners:

The Centre for Injury Prevention and Research, Bangladesh



Bangladesh Child in Need Institute, India



Partners

Ministry of Health and Family Welfare, Bangladesh
Bangladesh Fire Service and Civil Defence

About The George Institute for Global Health:

The George Institute for Global Health is focused on generating robust evidence to create better treatments, better care and healthier societies. This means not only generating evidence to determine what works, and doesn't work, but also which health service or treatment is value for money and where the cost of healthcare can be reduced. Paramount to our work is finding new ways to fund healthcare so health systems can become more sustainable, as well as operate more equitably.

About The PRISM Initiative:

Through interviews with investigators and research partners, project staff and peers in the research community, The Project & Research Impact Story Mapping (PRISM) Initiative examines key research milestones of The George Institute and explores the impact of its projects on health sectors and systems, government policies, communities and more. Join us as we explore key research achievements of the past 20 years, examine how conventional thinking was challenged, who benefitted and what led the research to be transformed into practice.

For more, visit

georgeinstitute.org/case-studies-and-examples

Images courtesy of Royal National Lifeboat Institution