IBRN

International Blast Injury Research Network

THE IBRN

The International Blast Injury Research Network (IBRN) conducts multidisciplinary and cross-sectoral research to improve the understanding of the consequences of explosive violence on civilians. We aim to improve the protection and treatment of those injured by explosive violence, to inform risk reduction strategies and minimise harm and suffering of affected populations.

Pillars of IBRN activity

1. Research
2. Challenge-focussed & state-of-the-science events
3. Collaboration & engagement
4. Policy & impact

IBRN thematic areas

1. Blast engineering
2. Systems approaches to preparedness & resilience
3. Health systems response & interventions
4. Forensic research
5. Monitoring & reporting

Our Story

The IBRN was launched by the University of Southampton at the start of 2019 in collaboration with the University of Cape Town. Four years ago, we identified that leading blast research was primarily focussed on military, not civilian, situations and perspectives. Addressing this gap, we brought together the multidisciplinary IBRN team to improve research within the civilian context and at a holistic level.

What we do

As a pro-active network, we:

• Produce & publish **high-quality research**
• Organise annual **international forums**
• Run challenge-focussed **workshops**
• Hold regular online **research seminars**
• Support student projects in blast research
• Contribute to **explosion protection policy**
• Present and participate at UN events and conferences

Who we are

We are **a unique global network** of prestigious, **research-intensive universities and experts in the blast engineering and injury fields** working with partners in humanitarian and defence sectors.

Our High-Quality Research

The IBRN has an active portfolio of innovative research, including:

• **Impacts of IEDs** - research into the harm, effects, and impacts of IEDs.
• **Urban Blast Effects** – blast experiments and computational modelling.
• **Experimental Guidelines** - blast engineering approaches to determine appropriate parameters for injury experiments.
• **Systems Modelling & Simulation** - integrated modelling and simulation approaches for urban blast scenarios and health system optimisation.
• **Health Needs in Ukraine** - consequences of explosive violence on Ukrainian civilians.
• **The Beirut Blast** - The contextual and spatial factors that influence blast injury patterns.
• **Clinical Guidelines** - optimising and harmonising clinical approaches to treat blast injuries.
• **Explosive Violence Monitor** - monitoring global explosive violence by AOAV.
• **Research funding analysis** - exploring the funding landscape of blast injury-related research.

Contributing to the UN SDGs

The IBRN's activities **respond to the global challenges of terrorism and explosive violence** and supports international agendas tackling the use of Explosive Weapons in Populated Areas (EWIPA). The UN Institute for Disarmament Research has shown that the use of EWIPA directly impacts 8 out of the 17 SDGs and the International Committee of the Red Cross has designated EWIPA as a key priority.

While advocacy is critical, it must be substantiated by methodologically rigorous research to inform practical solutions that mitigate harm and nurture sustainable improvements.

SRI LANKA WORKSHOP 2nd-3rd July 2024

Strengthening Resilience to Urban Explosive Violence

SYNOPSIS/AIMS

Explosive violence increasingly occurs in populated settings due to the shifting nature of conflict and the increasing threat and incidence of terrorism using explosive weaponry. Such incidents are complex emergencies, placing significant stress on health systems and emergency services. Resulting blast injuries have devastating consequences for individuals health outcomes and welfare. There is a clear need for improved blast protection, emergency responses, data collection, and potential new interventions to enhance resilience and preparedness to explosive violence.

This workshop aims to gain understanding of Sri Lanka's health system and emergency response strengths and challenges faced in relation to the 2019 Easter Sunday bombings. Alongside this, we will explore the rebuilding in Colombo and lessons learnt across the last 5 years. Through this we will identify potential research and policy opportunities for further strengthening response and preparedness in Sri Lanka and elsewhere. The event will focus on two main themes: the **response** to the 2019 Sri Lanka Easter Bombings and the **rebuilding** following the devastating event, covering the following topics:

- Explosive violence data collection & casualty reporting
- Communication & decision making
- Patterns of blast injuries
- Opportunities to strengthen emergency response
- Reverberating effects
- Mitigating blast injury threats
- Blast-resilient design in urban settings
- Sharing best practice

STRUCTURE & LOCATION

- The workshop will take place over two days
- Involve presentations, group discussions, and interactive activities
- The workshop will be facilitated by members of the IBRN team
- The workshop will be held at the Shangri-La, Columbo
- Dates: 2nd-3rd July 2024

POTENTIAL OUTPUTS

Outputs of this workshop will include establishing a Sri Lankan consortium interested in blast injuries, stakeholder-defined research questions and priorities to drive a long-term, global programme of work to improve resilience to increasingly urbanised explosive violence.

RESEARCH

OPPORTUNITIES

- Utilise Sri Lanka health care data on injuries from the Easter Bombings to explore spatial and contextual factors that contribute to blast injuries.
- Contribute to the development of sheltering guidelines for civilians exposed to explosive violence
- Be involved in cutting-edge research that contributes to UN SDGs

CURRENT RESEARCH - BEIRUT

The IBRN has undertaken a first-of-kind forensic study of the 2020 Beirut port explosion that aims to investigate the relationship between victims' blast injury patterns and predicted blast exposure based on their location.

On 4th August 2020, approximately 2750 tonnes of Ammonium Nitrate stored in the port of Beirut ignited, causing a huge explosion that damaged large parts of the city, causing more than 200 deaths and over 7,000 injuries.

This study collected new data on the victims of the 2020 Beirut Blast to investigate how **spatial** (distance) and **contextual** (urban environment) factors contributed to the blast injury patterns and severity.
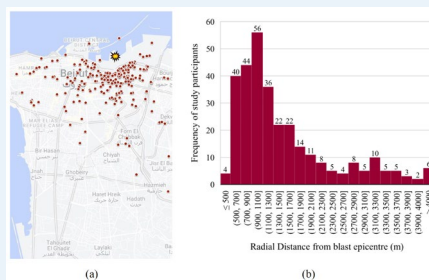

Figure 2: a) Study cohort (N=310) locations in Beirut at the time of the explosion and b) radial distance of participants from the Beirut blast epicentre.

SUMMARY OF FINDINGS

While the Beirut Blast was a very unique explosive event, investigation of injury patterns & severity vs. distance and other spatial/contextual factors provides new understanding, helpful for predicting injuries or informing protective measures.

- Injuries are more serious (higher ISS) closer to the blast epicentre and for those injured in outside spaces
- Proximity to glazing, room aspect, and posture found to significantly influence some injury types
- Some observations/findings may be unique to long-duration type blasts where injuries were highly driven by strong blast winds

Reference - https://engrxiv.org/preprint/view/3492/version/4861

CONTACT US

IBRN@soton.ac.uk

www.blastinjurynetwork.com