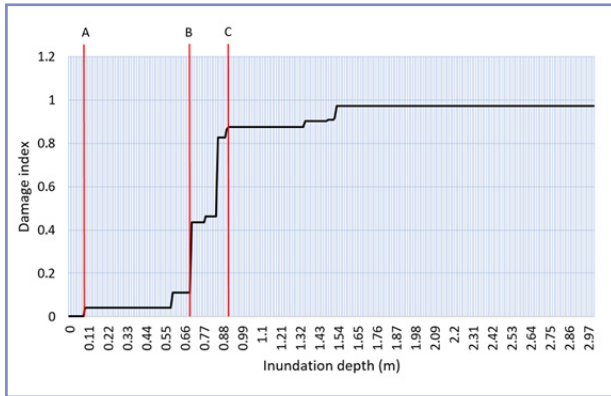


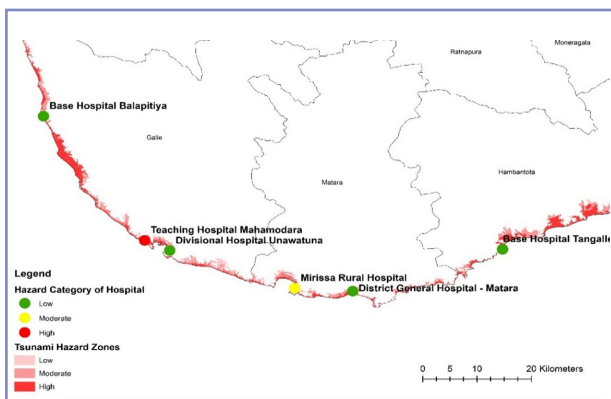
Ensuring the Safety of Sri Lankan Hospitals: Adaptation of the WHO “Safe Hospital” Initiative to Sri Lanka

As critical infrastructure, hospitals play a pivotal role in the health and well-being of a community. Specially during a disaster, hospitals are expected to treat victims while continuing their day-to-day functions. At the same time, a hospital has to withstand the impacts of the disaster itself while safeguarding patients, staff, and visitors. Therefore, 'Making hospitals safer' emerged as a major concern that is included in global disaster reduction frameworks. The Sendai Framework for Disaster Risk Reduction (SFDRR) 2030 emphasizes the need for strengthening disaster resilience of critical infrastructures such as hospitals. Sustainable Development Goals (SDGs) for 2030 also prioritize the concept of safe hospitals under the goals, Good health & well-being; and Industry, innovation, and infrastructure.

World Health Organization (WHO) initiated the 'Safe Hospitals' programme to enhance the disaster resilience of hospitals. Later, WHO introduced an evaluation tool called the 'Hospital Safety Index' most commonly known as the HSI to evaluate hospital safety. This tool was initially developed for the Latin American Region where earthquakes and hurricanes are predominant hazards. Since WHO provides provisions to other countries for adaptations in this tool if necessary, countries worldwide started adapting the framework into their contexts. In Sri Lanka, the Disaster Preparedness and Response Division (DPRD) of the Ministry of Health prioritized the adaptation of the Safe Hospital initiative to the Sri Lankan context as one of the key strategic areas. In collaboration with the DPRD, a research team from the Department of Civil Engineering, University of Moratuwa conducted a set of pilot studies to evaluate the perception of a 'Safe Hospital' for Sri Lanka and the applicability of the HSI in the Sri Lankan context. Pilot studies highlighted the need for alterations in HSI before applying it in Sri Lanka, thus the research team proposed several adaptations to this tool.



▲ Figure 1: DDF for Premature Baby Unit in District General Hospital Chilaw [9]



▲ Figure 2: Locations of the hospitals selected for the case study to apply SSH-SL toolkit

▼ Figure 3: Pictures captured during the rapid visual inspections in hospitals



“ In Sri Lanka, the Disaster Preparedness and Response Division (DPRD) of the Ministry of Health prioritized the adaption of the Safe Hospital initiative to the Sri Lankan context as one of the key strategic areas ”

The initial step was to develop a framework for Multi-Hazard maps to identify the natural hazards which affect the safety of Sri Lankan Hospitals [1]. Taking a step ahead, a research collaboration named 'HEART-SL' was formed by the Department of Civil Engineering, University of Moratuwa, and University College London (UCL) to strengthen the 'Safe Hospitals' project in Sri Lanka. Multi-Hazard Structural Safety Toolkit (SSH-SL) which can be used to assess the structural vulnerability of Sri Lankan hospitals for natural hazards, is one of the outputs of this research collaboration. It was developed based on a pilot study that was carried out for evaluating the applicability of the PPATHOMA Tsunami Vulnerability Assessment (PTVA)-4 model in Sri Lankan hospitals [2]. Currently, SSH-SL has been validated as more suitable to be utilized in Sri Lanka compared to the PTVA-4 model [3]. The Tsunami Relative Risk Index (TRRI) that quantifies the impact of tsunamis on critical units in hospitals is another outcome of the HEART-SL project [4].

'Safe Hospitals' research team has attempted to address the risk of fires in Sri Lankan hospitals by developing a comprehensive Fire Risk Management Framework for hospitals [5]. In addition to that, the research team has developed a flood vulnerability assessment framework for Sri Lankan hospitals since floods have caused severe damages to healthcare facilities. This framework consists of vulnerability curves that were developed for critical care units in two selected Sri Lankan hospitals. These developed curves consist of three zones named, alert zone [O-A], action zone [A-B], and damage zone [B-C] which can be incorporated in evacuation plans for particular units (Figure 1) [6]. Currently, with the impacts of the COVID-19 pandemic, the research team has focused on cascading impacts and dynamic behavior inside a hospital system during an emergency. As the next step, DPRD, Ministry of Health, and Department of Civil Engineering, University of Moratuwa expect to conduct more assessments in Sri Lanka hospitals to validate the developed safety assessment toolkits. Since hospitals are considered complex systems the research team expects to improve the previously developed safety/resilience assessment frameworks incorporating systems thinking and characteristics of hospitals as an adaptive system.

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