

## Letter to the Editor

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## Invitation to the GNS-I Study; a Global Evaluation of Traumatic Brain Injury in Low-, Middle-, and High- income Countries

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### To the Editor,

The need to improve surgical care in low and middle income countries (LMICs) has been advocated recently (1, 2). The Global Neurosurg (GNS) collaborative is an international network that aims to advance neurosurgical practice worldwide, to highlight the variations in the current neurosurgical practice, and to address the gap in neurosurgical outcomes between high-income countries (HICs) vs. LMICs. GNS research activities are coordinated by the Neurological Surgery Department of Oregon Health and Science University, the USA.

Participation in the GNS projects has many benefits for collaborators: 1) all collaborators get PubMed citable ID as “non-author contributors” to the publications that arise from GNS studies; 2) collaborators can publish secondary analyses from the original datasets; and 3) collaborators can use the opportunity of the GNS to form local and national networks to facilitate further research activity.

The first international study of the GNS aims to determine the global outcomes of traumatic brain injury (TBI) worldwide (3). The literature showed that mortality rates following TBI are higher in LMICs compared to HICs. The CRASH trial was a randomized controlled trial of corticosteroid after significant head injury performed in 239 hospitals in 49 countries (4). A secondary analysis of 8927 patient data from the CRASH trial showed that TBI patients in LMICs have twice the odds of dying

following severe TBI compared to patients in HICs (OR 2.23, 95% CI 1.51-3.30) (5). Data from four urban trauma centres in India showed that a third delay (> 10 minutes) was significantly associated with early mortality in TBI patients (6). In Uganda, the odds of dying from an injury is more than four times higher than in HICs (7). Factors associated with the high TBI mortality rate in Uganda were lack of patient access to the proper neurosurgical management when needed, the presence of more than one intracranial bleed, high dependency unit admission, ventilator support outside of surgery, and hospital arrival delayed by more than 4 hours (8). The considerable gap in TBI outcomes between HICs and LMICs could be explained by the variations in management as well as the lack of patient access to proper surgery and the delays in providing the proper care in some LMICs regions.

We invite worldwide neurosurgeons, trauma surgeons, emergency medicine physicians, anaesthesiologists, and trainees to join the GNS team. Any worldwide hospital that receives and manages TBI patients is eligible for participation in the study. Collaborators can register through the official GNS website available here:

<https://www.globalneurosurg.org/>

There are several ways in which collaborators can participate in the GNS team, these roles can be found on the GNS website here:

<https://www.globalneurosurg.org/collaborator-roles/>

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