GEO-TBI

- In Reply: Consensus-Based Development of a Global Registry for Traumatic Brain Injury: Establishment, Protocol, and Implementation
- An international, prospective observational study on traumatic brain injury epidemiology study protocol: GEO-TBI: Incidence
- Consensus-Based Development of a Global Registry for Traumatic Brain Injury: Establishment, Protocol, and Implementation

---

The traumatic brain injury epidemiology is unclear - it is estimated to affect 27-69 million individuals yearly with the bulk of the TBI burden in low-to-middle-income countries (LMICs). Traumatic brain injury research has highlighted significant between-hospital variability in traumatic brain injury outcomes following emergency surgery, but the overall incidence and epidemiology of TBI remain unclear. To address this need, Joannides et al. established the Global Epidemiology and Outcomes following Traumatic Brain Injury (GEO-TBI) registry, enabling the recording of all TBI cases requiring admission irrespective of surgical treatment.

Design: Multi-centre, international, registry-based, prospective cohort study.

Subjects: Any unit managing TBI and participating in the GEO-TBI registry will be eligible to join the study. Each unit will select a 90-day study period. All TBI patients meeting the registry inclusion criteria (neurosurgical/ICU admission or neurosurgical operation) during the selected study period will be included in the GEO-TBI: Incidence.

All units will form a study team, that will gain local approval, identify eligible patients, and input data. Data will be collected via the secure registry platform and validated after collection. Identifiers may be collected if required for local utility by the GEO-TBI protocol.

Data related to the initial presentation, interventions, and short-term outcomes will be collected in line with the GEO-TBI core dataset, developed following consensus from an iterative survey and feedback process. Patient demographics, injury details, timing and nature of interventions, and post-injury care will be collected alongside associated complications. The primary outcome measures for the study will be the Glasgow Outcome at Discharge Scale (GODS) and 14-day mortality. Secondary outcome measures will be mortality and extended Glasgow Outcome Scale (GOSE) at the most recent follow-up timepoint [1)].

A panel of neurotrauma professionals developed the registry in an iterative consensus-based manner. Proposed registry objectives, structure, and data points were established in 2 international multidisciplinary neurotrauma meetings, after which a survey consisting of the same data points was circulated within the global neurotrauma community. The survey results were disseminated in a final meeting to reach a consensus on the most pertinent registry variables.

Results: 156 professionals from 53 countries, including both high-income countries and low- and middle-income countries, responded to the survey. The final consensus-based registry includes patients with TBI who require neurosurgical admission, a neurosurgical procedure, or a critical care admission. The data set comprised clinically pertinent information on demographics, injury

characteristics, imaging, treatments, and short-term outcomes. The Global Epidemiology and Outcomes following Traumatic Brain Injury (GEO-TBI) registry was established based on the consensus.

The GEO-TBI registry will enable high-quality data collection, clinical auditing, and research activity, and it is supported by the World Federation of Neurosurgical Societies and the National Institute of Health Research Global Health Program. The GEO-TBI registry (https://geotbi.org) is now open for participant site recruitment. Any center involved in TBI management is welcome to join the collaboration to access the registry [2].

1)
Joannides A, Korhonen TK, Clark D, Gnanakumar S, Venturini S, Mohan M, Bashford T, Baticulon R, Bhagavatula ID, Esene I, Fernández-Méndez R, Figaji A, Gupta D, Khan T, Laeke T, Martin M, Menon D, Paiva W, Park KB, Pattisapu JV, Rubiano AM, Sekhar V, Shabani H, Sichizya K, Solla D, Tirsit A, Tripathi M, Turner C, Depreitere B, Iaccarino C, Lippa L, Reisner A, Rosseau G, Servadei F, Trivedi R, Waran V, Kolias A, Hutchinson P; NIHR Global Health Research Group on Acquired Brain and Spine Injury; GEO-TBI Collaborative. An international, prospective observational study on traumatic brain injury epidemiology study protocol: GEO-TBI: Incidence. NIHR Open Res. 2024 May 3;3:34. doi: 10.3310/nihropenres.13377.1. PMID: 37881453; PMCID: PMC10593326.
2)
Joannides AJ, Korhonen TK, Clark D, Gnanakumar S, Venturini S, Mohan M, Bashford T, Baticulon R, Bhagavatula ID, Esene I, Fernández-Méndez R, Figaji A, Gupta D, Khan T, Laeke T, Martin M, Menon D, Paiva W, Park KB, Pattisapu JV, Rubiano AM, Sekhar V, Shabani HK, Sichizya K, Solla D, Tirsit A, Tripathi M, Turner C, Depreitere B, Iaccarino C, Lippa L, Reisner A, Rosseau G, Servadei F, Trivedi RA, Waran V, Kolias A, Hutchinson P; GEO-TBI collaborative and the NIHR Global Health Research Group on Acquired Brain and Spine Injury. Consensus-Based Development of a Global Registry for Traumatic Brain Injury: Establishment, Protocol, and Implementation. Neurosurgery. 2024 Feb 1;94(2):278-288. doi: 10.1227/neu.0000000000002661. Epub 2023 Sep 25. PMID: 37747225.