

## **Correspondence**

**Title:** Traumatic brain injury – global collaboration for a global challenge

**Authors:** Angelos G. Kolias PhD<sup>1,2</sup>, Andres M. Rubiano PhD<sup>2,3</sup>, Anthony Figaji PhD<sup>2,4</sup>, Franco Servadei MD<sup>5</sup>, Peter J. Hutchinson FMedSci<sup>1,2</sup>

### **Institutions:**

1. Division of Neurosurgery, Department of Clinical Neurosciences, Addenbrooke's Hospital & University of Cambridge, Cambridge, UK
2. NIHR Global Health Research Group on Neurotrauma, University of Cambridge, Cambridge, UK
3. Neuroscience Institute, INUB-MEDITECH Research Group, El Bosque University, Bogotá, Colombia
4. Division of Neurosurgery and Neuroscience Institute, University of Cape Town, Cape Town, South Africa
5. Department of Neurosurgery, Humanitas University and Research Hospital, Milan, Italy

### **Corresponding author:**

Angelos G. Kolias  
Clinical Lecturer in Neurosurgery  
Division of Neurosurgery  
Box 167  
University of Cambridge  
Cambridge Biomedical Campus  
Cambridge  
CB2 0QQ  
UK

Email address: [ak721@cam.ac.uk](mailto:ak721@cam.ac.uk)

Even though, low- and middle-income countries (LMICs) are facing a far greater traumatic brain injury (TBI) burden compared to high-income countries (HICs), agency funding and multi-centre research efforts have had a disproportionately greater focus on HICs.<sup>1</sup> Initiatives, such as InTBIR,<sup>2</sup> are advancing TBI care in HICs but the participation of LMICs has been very limited. Additionally, multi-centre trials in TBI, with very few exceptions, have predominantly focused on HIC populations.

The concern is that the setting of a study also determines whether its findings can be generalised and influence the day-to-day practice of clinicians working in different settings. As an example, one of the main interventions in the field of TBI is a decompressive craniectomy, where a large piece of skull is removed, in order to accommodate severe brain swelling. The two randomised trials that attempted to define the role of decompressive craniectomy in TBI, exclusively enrolled patients who were managed in intensive care units with monitoring of intracranial pressure (ICP).<sup>3</sup> Nevertheless, the majority of TBI patients in LMICs do not have access to intensive care units and ICP monitoring is also not routinely available.

This is a reality that we cannot continue to ignore. Despite the often extremely limited resources (infrastructure, equipment, healthcare professionals), patients in LMICs require and receive care for TBI. It might not be care that clinicians in HICs would recognise as gold-standard but it is often the best that can be offered in a resource-limited setting. In such settings, the volume of unmet needs for essential neurosurgical care for TBI is estimated at more than 2 million cases per year.<sup>4</sup> We believe that clinicians and researchers in HICs have a moral obligation to work together with clinicians and researchers from LMICs in order to facilitate the development of high-quality TBI research in LMICs. Policy makers, funding agencies and University leaders have a responsibility to create an environment for such collaborations to flourish by recognising the role of HICs in advancing care for patients in LMICs, directing the appropriate funds, and overcoming organisational barriers, respectively.

In 2017, the UK Department of Health funded the establishment of several such multi-country groups and units with a total of £162 million in order to stimulate healthcare research that will directly benefit patients in LMICs. Nearly, £1.8 million were awarded for the establishment of a group focused on TBI. The NIHR Global Health Research Group on Neurotrauma, as the group is known, brings together clinicians and researchers from 11 LMICs and 3 HICs.<sup>5</sup> The Group's research programme is organised around 4 themes. The first theme has just launched the first prospective observational study of patients undergoing emergency surgery after a TBI worldwide ([globalneurotrauma.com](http://globalneurotrauma.com)) and will subsequently launch a global TBI registry. The second theme is using a systems engineering approach to develop an in-depth understanding of the challenges associated with improving TBI care. The third theme is focusing on the evaluation of interventions tailored for use in LMICs and the fourth theme aims to map and nurture the TBI research capacity in LMICs. We are optimistic that the Group will build a robust collaborative platform for pursuing a long-term neurotrauma programme focused on LMICs. Hence, we extend an invitation to clinicians and researchers wishing to collaborate to contact us via [www.neurotrauma.world](http://www.neurotrauma.world).

### **Conflict of interests**

Dr. Koliass has nothing to disclose. Dr. Rubiano has nothing to disclose. Dr. Figaji has nothing to disclose. Dr. Servadei reports personal fees from Takeda Pharmaceutical Company Ltd, grants and personal fees from Integra LifeSciences, grants and personal fees from Fincermica S.p.A., all outside the submitted work. Dr. Hutchinson has nothing to disclose.

## Authors' contributions

All authors contributed to writing and revising the manuscript.

## Role of funding source and acknowledgments

The NIHR Global Health Research Group on Neurotrauma was commissioned by the NIHR using Official Development Assistance (ODA) funding (project 16/137/105). The views expressed in this publication are those of the author(s) and not necessarily those of the NHS, National Institute for Health Research or the Department of Health.

We would like to thank the existing members of the NIHR Global Health Research Group on Neurotrauma: Amos Adeleye, Alex Alamri, Abdul Hafid Bajamal, Tom Bashford, Hagos Biluts, Mita Brahmhatt, Carol Brayne, Evelyn Brealey, Natalia Budohoska, Karol Budohoski, Rowan Burnstein, David Clark, John Clarkson, Indira Devi, Barbara Gregson, Dylan Griswold, Deepak Gupta, Corrado Iaccarino, Alexis Joannides, Mathew Joseph, Ahsan Khan, Tariq Khan, Tsegazeab Laeke, Paul May, David Menon, Kee Park, Dhupal Patel, James Piercy, Zaw Wai Soe, Hamisi Shabani, Kachinga Sichizya, Tamara Tajsic, Manoj Tewari, Abenezzer Tirsit, Manjul Tripathi, Rikin Trivedi, Carole Turner, Chris Uff, Sara Venturini, Vicknes Waran, Mark Wilson.

## Ethics committee approval

Not required for this type of manuscript.

## References

- 1 Dewan MC, Rattani A, Gupta S, *et al.* Estimating the global incidence of traumatic brain injury. *J Neurosurg* 2018; : 1–18.
- 2 Maas AIR, Menon DK, Adelson PD, *et al.* Traumatic brain injury: integrated approaches to improve prevention, clinical care, and research. *Lancet Neurol* 2017; **16**. DOI:10.1016/S1474-4422(17)30371-X.
- 3 Kolia AG, Viaroli E, Rubiano AM, *et al.* The Current Status of Decompressive Craniectomy in Traumatic Brain Injury. *Curr Trauma Reports* 2018; : 1–7.
- 4 Dewan MC, Rattani A, Fieggen G, *et al.* Global neurosurgery: the current capacity and deficit in the provision of essential neurosurgical care. Executive Summary of the Global Neurosurgery Initiative at the Program in Global Surgery and Social Change. *J Neurosurg* 2018; : 1–10.
- 5 [www.neurotrauma.world](http://www.neurotrauma.world), official website of NIHR Global Health Research Group on Neurotrauma (accessed 31/10/18)