Strengthening Trauma Systems: a new Australia-India research partnership

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I declare I have no commercial conflicts of interest
Mortality rates among seriously injured adults in three cities representing high-, middle-, and low-income countries


If we could eliminate these disparities ...

2 million of the 5 million injured who die each year could be saved.
Goals of the Victorian State Trauma System

1. To deliver the patient to the right hospital in the shortest time

2. To best match Victorian resources with patients’ needs ensuring the delivery of optimal care

Odds of in-hospital death of major trauma patients since introduction of the Victorian State Trauma System

Adjusted for injury severity, age and head injury

Source: Victorian State Trauma Registry
Victorian State Trauma System

- Designated levels of trauma care
  - 3 major trauma centers
  - 9 metropolitan trauma services
  - 50 urgent care services
  - 61 primary injury services

- Preprogrammed response
- Rapid transfer to a Major Trauma Service
The WHO Global Alliance for Care of the Injured

- A network of governmental, intergovernmental and nongovernmental organizations

- Works internationally, to provide guidance and support to governments to significantly improve care of the injured in a sustainable and affordable manner through systematic provision of essential trauma services

- These services should be available to every injured person in any location without regard to their personal characteristics or ability to pay.
The WHO Global Alliance for Care of the Injured

Essential trauma services
*are those that provide*

• Life saving care at the scene
• Timely treatment of injuries
• Restoration of function and independence

The WHO Global Alliance for Care of the Injured

Working Groups

• Advocacy
• Trauma System Development
• Education & Capacity Building
• Evidence & Research
• Trauma Registries & Data
Strengthening care for the injured:
Success stories and lessons learned from around the world
Trauma Quality Improvement in Low and Middle Income Countries of the Asia-Pacific Region: A Mixed Methods Study

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Abstract

Background  Quality Improvement (QI) programs have been shown to be a valuable tool to strengthen care of severely injured patients, but little is known about them in low and middle income countries (LMIC). We sought to explore opportunities to improve trauma QI activities in LMIC, focusing on the Asia-Pacific region.

Methods  We performed a mixed methods research study using both inductive thematic analysis of a meeting convened at the Royal Australasian College of Surgeons, Melbourne, Australia, November 21–22, 2010 and a pre-post meeting survey to explore experiences with trauma QI activities in LMIC. Purposive sampling was employed to invite participants with demonstrated leadership in trauma care to provide diverse representation of organizations and countries within Asia-Pacific.

Results  A total of 22 experts participated in the meeting and reported that trauma QI activities varied between countries and organizations: morbidity and mortality conferences (56 %), monitoring complications (33 %), preventable death studies (25 %), audit filters (19 %), and statistical methods for analyzing morbidity and mortality (6 %). Participants identified QI gaps to include paucity of reliable/valid injury data, lack of integrated trauma QI activities, absence of standards of care, lack of training in QI methods, and varying cultures of quality and safety. The group highlighted barriers to QI: limited engagement of leaders, organizational diversity, limited resources, heavy clinical workload, and medico-legal concerns. Participants proposed establishing the Asia-Pacific Trauma Quality Improvement Network (APFQIN) as a tool to facilitate training and dissemination of QI methods, injury data management, development of pilot QI projects, and advocacy for quality trauma care.

Conclusions  Our study provides the first description of trauma QI practices, gaps in existing practices, and barriers to QI in LMIC of the Asia-Pacific region. In this study we identified opportunities for addressing these challenges, and that work will be supported by APFQIN.
The Grand Challenge Fund

To support collaborative projects of significant scale and ambition that will deliver practical solutions to some of the key challenges shared by both countries

Reducing the burden of injury in India and Australia through development and piloting of improved systems of care
Aims

• To lay the foundations of nationally-relevant trauma systems for the benefit of injured people in India
  – Data Registry development
  – Training of clinicians, managers & policy-makers
  – Development of Trauma Quality Improvement Programs.
• To evaluate 4 trauma system interventions in the ‘living laboratory’ of high volume trauma centres in India
• To strengthen trauma systems in Australia through partnerships, sharing of experiences, and benchmarking using a new national trauma registry
The 4 low-cost ‘best-buy’ trauma system interventions were chosen on the basis that:

• they are underdeveloped in India and Australia,
• they span pre-hospital, hospital and post-hospital care,
• they could be separately implemented without extensive health system change,
• they capitalise on new technologies where relevant, and
• their effects could be evaluated.

1. Prehospital Notification
2. Real-time telemedicine remote resuscitation advice
3. Institutional quality improvement programs
4. Rehabilitation prescription

Underpinned by standardised trauma registry & minimum dataset
The Research Targets

Anticipated Outcomes

- To have **tested the feasibility and effectiveness** in India of four ‘best buy’ system interventions
- To have **built capacity** in India and Australia for initiating and maintaining better trauma systems, and improving the quality of existing services
- To have **enhanced knowledge about the practical issues** in undertaking system-level change in Indian health care settings
- To have laid the **foundations of a trauma system and trauma registry** in key centres in India
- To have created a **network of like-minded clinicians**, managers and researchers in Australia and India
Partners – India

• Apex Trauma Center, All India Institute of Medical Sciences
• Other Leading Hospitals (with trauma care centres) in Delhi, Mumbai and Ahmedabad
• Major pre-hospital and emergency services
  – CATS Ambulance & Police PCR’s for Delhi
  – 108 Ambulance service in other cities
• Academy of Traumatology

Partners – Australia

• National Trauma Research Institute
• Australian Trauma Quality Improvement Program
• The Alfred
• Monash University
• Victorian State Trauma System
• Ambulance Victoria
• The George Institute for Global Health
• Australia-India Institute
Partners – International

- WHO Global Alliance for Care of the Injured
- International Association for Trauma Surgery and Intensive Care (IATSIC)
- International Federation for Emergency Medicine (IFEM)
- Former NHS National Clinical Director for Trauma Care, England