



Global Injury:  
**THE FACTS**

**The Primary Trauma Care Foundation**

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## Summary

Injuries kill nearly 6 million people every year – more than HIV/AIDS, malaria and TB combined.<sup>1</sup> They also lead to a staggering 40 million<sup>2</sup> disabilities per year and cause significant economic loss.

Over 90% of injury-related deaths and disabilities occur in low-and middle-income countries<sup>3</sup> (LMICs) due to a perverse combination of the high incidence of traumatic injuries and limited access to competent medical care. Most victims are children and young adults.

Much of this burden can be reduced with improvements in care for the injured (trauma care).<sup>4</sup> Here, we argue that efforts to improve medical skills in LMICs, and more specifically trauma management training for front-line health workers, plays a vital role in tackling this ever-growing public health problem.

The Primary Trauma Care Foundation (PTCF) provides such training and, since 1996, has promoted affordable and sustainable improvements in emergency medical care and teaching practices for health workers. It has developed an effective methodology to manage severe injury with limited resources and a low-cost model for training using volunteers.<sup>5</sup> Sustainability is enhanced by a well-developed system of training of trainers, especially of course instructors.

In this way the PTCF uses the power of education to save lives and limbs in more than 70 countries of Africa, Asia, Latin America, the South Pacific and the Middle East. Its work supports the broader sustainable development goals of ending preventable deaths of children, halving traffic-related deaths and achieving universal access to safe surgery and trauma care.

*“Traumatic injuries are a neglected epidemic in developing countries”*<sup>6</sup>

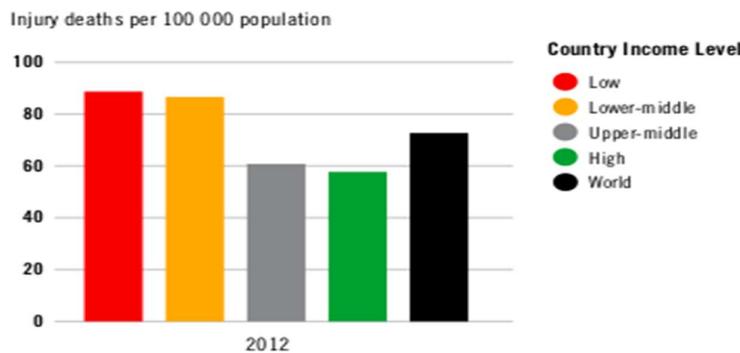
The magnitude of the global trauma burden is staggering. As many as 10% of the world’s deaths are caused by traumatic injuries from road and industrial accidents, natural disasters, wars and civil violence<sup>7</sup>. Many survivors suffer lifelong disabilities such as amputations, which put them along the most vulnerable people in the world since they lose their ability to work and are condemned to a life of financial dependency and often begging. The Institute for Global Orthopaedics and Traumatology (IGOT) estimates that traumatic injuries lead to 40 million disabilities every year.<sup>8</sup>

The World Health Organisation (WHO) and IGOT believe trauma is now a leading cause of death for children over 5 and young adults, particularly in the main income-generating age group between 20 to 30 years of age in Africa, for whom road traffic accidents are the main killer.<sup>9</sup>

Over 90% of the 6 million people who sustain fatal injuries worldwide lose their lives in LMICs, where people live, work, travel and go to school in unsafe environments. In addition to being exposed to higher risks, people with life-threatening but survivable injuries are six times more likely to die in a low-income setting (36% mortality) than in a high-income setting (6% mortality).<sup>10</sup>

### **Poorer countries are worst affected by injuries and violence**

Injury death rates by country income level, 2012



Source: *Injury and Violence: The Facts (2014) WHO*

### **Limited access to competent medical care**

Five billion people will not have access to safe and skilled medical care in their communities if they sustain injuries.<sup>11</sup> Concerted action to prevent injuries is very important, but improving access and quality of trauma care can significantly reduce mortality rates.

***“We can save 2 million lives each year. What is needed is the strengthening of trauma care systems”*** The WHO’s *Global Alliance for Care of the Injured* (GACI)<sup>12</sup>

Marginalised populations in the poorest countries continue to suffer due to a lack of trained healthcare providers, inadequate infrastructure and poor provision of medical equipment and medicines. We help improve medical practice in pre-hospital care, emergency departments and district hospital-based care. Our collaborative projects include visits and direct support to countries and the sharing of information, experiences and expertise in trauma care for low-resource settings. Our protocols are designed to enable life-saving interventions, such as chest drains and tracheotomy with minimal equipment.

Despite having the highest incidence of traumatic injuries, developing countries have not widely adopted formal training in trauma management.<sup>13</sup> Many frontline health-workers in sub-Saharan countries treat patients with multiple injuries with minimal formal training in trauma care and often work with limited medical resources.<sup>14</sup> Insufficient provision of training for key competencies result in millions of preventable death and amputations. The PTC initiative was created in 1996 to address this problem.

## **Insufficient provision of training**

Protocols for treating people with severe injuries have not been as widely adopted in LMICs as in Western Europe and North America for three main reasons. Firstly, standard training programmes on trauma care are expensive. Secondly, they are not adapted to resource-poor contexts, relying on technologies that are usually unavailable in developing countries.<sup>15</sup> Thirdly, traditional efforts to extend trauma care use a model that requires equipment and facilities rarely available in the LMICs.

The PTC course was developed with these challenges in mind. It aims to train doctors, nurses, paramedics and other clinical personnel free of charge in order to treat life-threatening injuries with only the basic equipment and facilities available to them. The PTC programme also teaches realistic protocols to deliver care effectively at the District Hospital level, where resources and manpower are limited.

The PTC approach recognises that health professionals in developing countries work hard against considerable difficulties to create innovative solutions and make progress to improve trauma care in their own communities. They need a training methodology that reflects their realities.

## **PTC and the Development Agenda**

Given the extent of the problem, the management of trauma is now high on the international development agenda. In 2015, a new Global Alliance (G4A) to promote access to safe surgical, obstetrics, trauma and anaesthesia care in LMICs was launched; the PTC Foundation is a member. During the 2015 World Health Assembly, which created the G4A, health ministers signed a resolution calling for this to become a policy priority.

## **Why PTC is best placed to respond**

The PTCF believes that an effective way to widen access to trauma care is to build the capacity of local professionals and their healthcare services by addressing gaps in training. These were identified when Dr Douglas Wilkinson, an intensive care specialist from Oxford University, conducted a review of trauma management in developing countries for the WHO in 1995. He and others including Dr Marcus Skinner, Director of Anaesthesia and perioperative Medicine at the Royal Hobart Hospital in Australia, went on to create the PTC initiative in 1996 to address these gaps.<sup>16</sup>

Its founders developed an effective system of trauma management and training for front-line staff that is aimed at the specific needs of healthcare practitioners in the developing world, taking into account and making the most of the locally available resources. Our approach to trauma care is based on straightforward clinical practice and on the expertise of leading practitioners and academics from Oxford, London and other universities, but, unlike other trauma management programmes, it does not require access to high-tech facilities and is offered free of charge.<sup>17</sup>

Our training manuals are available from our website free of charge and have been translated into 14 languages. In 2015, a PTC App for mobile devices was developed to enable emergency teams to access the information from our manuals at any time in remote areas in digital format.

## **A sustainable and self-replicating model**

The first training series in a new country are delivered by visiting instructors from our core team of international volunteers. Since sustainability of outcomes is a major concern, during our initial country visits we identify, together with our hosts, key local trainees to become PTC ambassadors and instructors to roll out the training programme after the visiting team leaves.

We encourage those we train to form self-sufficient PTC country teams and to pass on their new skills to colleagues across their national territory so that the benefits are multiplied and the most needy patients and remote areas are reached. Once well-established, and with support from the Oxford staff, local PTC teams are able to promote trauma services,

campaign for injury prevention strategies and form regional networks of trauma care services and key stakeholders.

## **A global learning community**

In addition to organising the initial training visits, at minimal cost, and supporting local teams, the Oxford staff promote and coordinate an ever-expanding global network of practitioners, academics and partner organisations to promote the sharing of knowledge, improve practice, conduct research and expand the coverage of trauma care worldwide.

## **How PTC makes a real difference**

- **It reduces the mortality and incidence of disability caused by trauma** in areas where a comprehensive approach to trauma management was not previously available due to an inadequate provision of training.
- **It strengthens the capacity of local healthcare organisations** to assess their own needs and enable them to train their own staff in a way they feel is appropriate.
- It encourages country authorities to adopt a fresh approach to **trauma prevention strategies and legislation** through our advocacy work.
- It helps to develop responsive **national trauma care systems**.

## **How we measure and evaluate outcomes**

- We test the knowledge of each medic we train before and after the training sessions to assess how much was learned and how confidence was improved.
- We conduct periodic interviews with a sample of trainees to ascertain whether they had put into practice what was taught in their clinical work or had run any PTC courses.
- We ask PTC country groups to produce activity reports with information on areas reached and numbers of trainees. A selection of these reports can be found on our website.

## **Concluding remarks**

Injury is a significant public health problem and the biggest killer of children over 5 and young adults in developing countries. To lower this unacceptable burden, a range of actions are needed, including programmes to build the capacity of health professionals and services so that they can offer competent medical care in their communities and meet their own training needs locally.

Efforts to improve medical skills in LMICs, and specifically trauma management training of front-line health workers, play a vital role in tackling the ever-growing burden of trauma. Yet initiatives like PTC that promote real improvements in emergency care and support health workers caring for injured people are seriously underfunded.

Our trauma care model and training addresses gaps in key competencies of front line staff caring for injured people in the most adverse conditions. The right skills and protocols in trauma care can save lives now, even in the existing general conditions as they help mitigate the consequences of missing equipment and poor facilities. And in most cases these initiatives continue year after year with an ever-expanding network of competent instructors. Our method is already effective in more than 70 countries and, with investment, can be scaled up in a way that will make a significant contribution to reducing the global burden of suffering.

## References

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- <sup>1</sup> World Health Organizations (2014) *Injuries and Violence: The Facts*, Switzerland, WHO
- <sup>2</sup> Institute for Global Orthopaedics & Traumatology (2017) IGOT's Official Website [online] Available at <http://www.igotglobal.org> [Accessed 20 July 2017]
- <sup>3</sup> WHO (2009) *Guidelines for trauma quality improvement programmes*, Malta, WHO
- <sup>4</sup> Mock, C. et al (2004) *Guidelines for essential trauma care*, Geneva, WHO
- <sup>5</sup> Nogaro, M.; Pandit, H. Peter, N.; Le, G.; Oloruntoba, D.; Muguty, G.; Lavy, C. (2015) *How useful are Primary Trauma Care courses in sub-Saharan Africa?* Injury Journal, Vol 46 (issue 7) pages1293-1298. Available at [http://www.injuryjournal.com/article/S0020-1383\(15\)00206-5/fulltext](http://www.injuryjournal.com/article/S0020-1383(15)00206-5/fulltext)
- <sup>6</sup> Peter, N. A.; Pandit, H.; Le, G.; Nduhiu, M.; Moro, E.; Lavy, C. (2016) *Delivering a sustainable trauma management training programme tailored for low-resource settings in East, Central and Southern Africa Countries using a cascading course model*, Injury Journal, Volume 47 (issue 5), pages 1128-1134. Available at [http://www.injuryjournal.com/article/S0020-1383\(15\)00765-2/fulltext](http://www.injuryjournal.com/article/S0020-1383(15)00765-2/fulltext)
- <sup>7</sup> World Health Organizations (2014) *Injuries and Violence: The Facts*, Switzerland, WHO
- <sup>8</sup> Institute for Global Orthopaedics & Traumatology (2017) IGOT's Official Website [online] Available at: <http://www.igotglobal.org> [Accessed 18 June 2017]
- <sup>9</sup> World Health Organizations (2014) *Injuries and Violence: The Facts*, Switzerland, WHO
- <sup>10</sup> WHO Global Alliance for Care of the Injured GACI flyer [online] Available at [http://www.who.int/entity/emergencycare/gaci/gaci\\_flyer\\_web.pdf?ua=1](http://www.who.int/entity/emergencycare/gaci/gaci_flyer_web.pdf?ua=1) [Accessed 20 July 2017]
- <sup>11</sup> G4 Alliance (2016) *Annual Report 2015-16*
- <sup>12</sup> Ibid
- <sup>13</sup> Nogaro, M.; Pandit, H. Peter, N.; Le, G.; Oloruntoba, D.; Muguty, G.; Lavy, C. (2015) *How useful are Primary Trauma Care courses in sub-Saharan Africa?* Injury Journal, Vol 46 (issue 7) pages1293-1298. Available at [http://www.injuryjournal.com/article/S0020-1383\(15\)00206-5/fulltext](http://www.injuryjournal.com/article/S0020-1383(15)00206-5/fulltext)
- <sup>14</sup> Peter, N. A.; Pandit, H.; Le, G.; Nduhiu, M.; Moro, E.; Lavy, C. (2016) *Delivering a sustainable trauma management training programme tailored for low-resource settings in East, Central and Southern Africa Countries using a cascading course model*, Injury Journal, Volume 47 (issue 5), pages 1128-1134. Available at [http://www.injuryjournal.com/article/S0020-1383\(15\)00765-2/fulltext](http://www.injuryjournal.com/article/S0020-1383(15)00765-2/fulltext)
- <sup>15</sup> Ibid
- <sup>16</sup> Wilkinson, D., McDougal, R. (2007) *Primary Trauma Care*, Anaesthesia Journal, Volume 62 (issue s1) pages 61-64
- <sup>17</sup> Ibid