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## Editorial

# A global overview of burns research highlights the need for forming networks with the developing world

'You must be the change you want to see in the world.'  
Mahatma Gandhi (1869–1948)

According to the WHO, 90% of burns occur in developing or underdeveloped nations and 70% of these are in children. The majority are mild or moderate. Burns of >90% TBSA regularly [1] survive in the worlds best centres now, which is in stark contrast to the mortality for burns of >40% TBSA in most developing or un-developed countries which approaches 100%. An analysis of all 1321 original articles published in 'Burns'<sup>1</sup> [2] from 1996 to 2006, accessed via the MEDLINE database, show that 73.2% ( $n = 967$ ) were from developed<sup>2</sup> nations, 29.5% ( $n = 342$ ) from developing nations and 0.5% ( $n = 7$ ) from undeveloped nations. In total, 44.7% ( $n = 591$ ) included data from the paediatric population (age < 18) [3]. The USA, with 15.1% ( $n = 200$ ), and the UK, with 13.9% ( $n = 184$ ) contributed the most articles. Turkey, a developing nation, ranked 3rd, contributing 7.3% ( $n = 96$ ) of the articles, and Zimbabwe, with 0.4% ( $n = 4$ ) of the articles, the most active undeveloped nation.

The discrepancy between the amount of research being published originating from low and middle income countries (LMIC) compared to high income countries is not surprising. There are numerous contributing factors to this, with the overall result being a research agenda driven by high tech and expensive projects, many of which cannot be translated to the LMIC environment. In some ways this mirrors the classic 90–10 divide that is often seen in poorer countries, where the vast majority of the available income for health care is spent on sophisticated centres in urban areas that serve a minority of the population.

Research at the cutting edge of burn care should clearly not be discouraged, as without this we would not have

the astonishing survival rates that can now be expected in the worlds best centres. However, perhaps the most significant change in burn care over the last 30 years has not been increased survival, but the significant fall in the number of burns in developed nations. This has been as a result of legislation, public awareness, prevention campaigns, and health and safety directives. The results of this have been a decrease in both the incidence of burns (primary prevention) the severity of burns (secondary prevention) and the complications of burns (tertiary prevention). Unfortunately this decreasing trend has yet to be reflected in LMIC.

## 1. What are the possible reasons for the paucity of papers on burns and particularly paediatric burns from LMIC?

### 1.1. Resources

LMIC struggle to finance even very limited health services and as such treatment usually comes at the top of the list followed somehow behind by prevention and research. It is difficult to encourage research to be undertaken when there are not the available resources to deal with the everyday practicalities of burn care.

### 1.2. Infrastructure

Burn care in most LMIC's is not centralised and often takes place at district hospitals and outlying health posts and clinics. Outside of the main urban areas patients may be

<sup>1</sup> 'Burns' was chosen due to the fact that it has the highest impact factor of all contemporary journals dedicated solely to burn care research, with an ISI impact factor of 1.1599\* in 2005. The ISI impact factor is one of the evaluation tools provided by the Institute for Scientific Information<sup>®</sup>'s (ISI<sup>®</sup>'s) Journal Citation Reports<sup>®</sup> (JCR<sup>®</sup>).

<sup>2</sup> Based on the UN's Human Development Index, which is a comparative measure of life expectancy, literacy, education, and standard of living for countries worldwide, we classified papers into those from developed (HDI score >0.8), developing (0.5–0.8) and undeveloped countries (>0.5).

scattered over a vast geographical region. Even in large cities there may be no burn centre and patients may be cared for in a number of different facilities.

### 1.3. Ability

Research is often not high on the agenda in the training of medical graduates and allied healthcare professionals in LMIC's and most will have had no formal education in how to undertake such activities. As a result of this, whilst there may be an understanding of what needs to be investigated the mechanisms of how to undertake these investigations are not known.

### 1.4. Language

Most of the burns journals currently available are in the English language which for the vast majority of people living in LMIC's is not their first language. For this reason when papers are submitted they may well be rejected because of poorly written English.

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## 2. What should the research agenda be for burns in the 21st century?

We suggest a utilitarian approach that provides the most benefit to the most people. By this we mean research addressing effective low cost care for mild and moderate burns with particular relevance to the available resources in LMIC's. In practical terms this is likely to be research into prevention activities and their effectiveness. Epidemiological research to ascertain the local etiology and incidence of burns will help not only in prevention but also allocation of resources. Clinical research should be aimed at the effectiveness of treatment for mild and moderate burns and steps made towards trying to standardise outcomes from injury, rather than treatments.

As Lao Tsu said in the Art of War "One must leave no flank uncovered"; whilst addressing the needs of the majority we should not forget the minority, i.e. patients with large total body surface area burns and the far smaller although still significant number of burns in high income countries. Here the resources are available to undertake cutting edge research in basic sciences such as immunology, wound healing, microbiology and pharmacology.

Future developments in areas such as critical care and complex reconstructive surgery, whilst currently not relevant to many parts of the world, set an example of what can be achieved when resources (physical, financial and human) are available.

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## 3. How can an organisation such as Interburns (International Network for Training, Education and Research in Burns) help with research endeavour and burn care in developing countries?

Interburns was set up a year ago with the aim of addressing the disparity in global burn care between high income and

lower middle income countries. It currently consists of a network of burn professionals in Wales, India and Pakistan. The aim of the network is to enhance global burn care through education, training and research alongside promotion of prevention activities and increasing public awareness to the global burden of disease caused by burns. Thus, far our activities have constituted principally developing the essential burn care course (EBC—Interburns; Supported by the Royal College of Surgeons of Edinburgh) which is a practical and flexible course aimed at personnel treating burns in LMIC's who have had little or no training. It concentrates on mild to moderate burns and practical solutions to local problems to aid this. Each course begins with a 'local burn care perspective' presented by the local representative.

The Interburns website ([www.interburns.org](http://www.interburns.org)), which is still in its infancy and in production, contains educational material including a distance-based learning package on classification and assessment of burns and we are currently adding a number of short powerpoint lectures on topics related to burns. To date, various exchange fellowships have been undertaken and we have recently produced bilingual (English and Urdu) educational material on DVD. Activities planned for the next 6 months include further EBC courses in India, Pakistan & Africa, and undertaking a large community survey to ascertain epidemiological information and knowledge, attitudes and practices data. To encourage future generations of burn care workers, we have also provided a medical student fellowship and this year three medical students from Swansea have visited India and Pakistan and produced several professional quality short films concerning burn prevention and patient advocacy. In the near future, we hope to provide data to show that the Interburns system of forming networks with the developing world works in practice, and that the education of the local population and number of scientific publications from LMIC has increased. This article attempts to put into perspective the global problem of burn injuries and hopefully will help set the future agenda for research in burns to facilitate a more equitable distribution of burn care worldwide.

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## REFERENCES

- [1] The injury chartbook: A graphical overview of the global burden of injuries. Geneva: World Health Organization; 2002. <http://whqlibdoc.who.int/publications/924156220X.pdf>.
- [2] Liu EH, Khatri B, Shakya YM, Richard BM. A 3 year prospective audit of burns patients treated at the Western Regional Hospital of Nepal. *Burns* 1998;24(2): 129-33.
- [3] [http://www.nationmaster.com/graph/eco\\_hum\\_dev\\_ind-economy-human-development-index](http://www.nationmaster.com/graph/eco_hum_dev_ind-economy-human-development-index).

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