

However, the newly elected government is rightly taking this broad view of health by appointing, for the first time, a Minister for Public Health, and one of her first actions has been to appoint Sir Donald Acheson, who chaired the inequalities in health seminar in 1993, to examine how and to what extent the Black report can be implemented. Evidence relating to the socioeconomic background to children's accidents has already been presented to Acheson's group by Ian Roberts and by Carol Sherriff, the Director of the Child Accident Prevention Trust. If the inequalities can indeed be reduced, we should see a major reduction in the child injury rate—an achievement equivalent in lives saved to the discovery of polio vaccine.

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## ISCAIP report

# Injuries in less industrialised countries: what do we know?

One of the serious problems faced by most of the researchers in the less industrialised countries (LICs) is the non-availability of reliable injury and health statistics. Priorities for injury control have to be based on intelligent assessments of official statistics and on specific epidemiological studies conducted by researchers in hospitals and research institutions. In this context we welcomed the publication of *The Global Burden of Disease*.<sup>1</sup> This publication, and the accompanying volume *Global Health Statistics*,<sup>2</sup> are the result of a worldwide collaboration of over a 100 researchers, sponsored by the World Bank and the World Health Organisation and based at the Harvard School of Public Health. These publications quantify the burdens of 483 sequelae of 109 major causes of death and disability (including injury) disaggregated by eight geographic regions and 10 age sex groups. Because such information is not available locally, I decided to base this column on data from these two sources.

A distribution of deaths as a percentage of the regional total is given in table 1.<sup>1</sup> These data indicate that injuries as a cause of death have the lowest proportion in the highly industrialised countries (HICs). These countries are designated as established market economies in the table. The proportions of estimated deaths due to injuries in sub-Saharan countries, Latin American, and China are almost double that in countries with established market economies. What surprised me is that the rate in India (8.6) is relatively much lower than those in the other LICs. Therefore, I decided to compare the years of life lost due to injuries for different age groups. Table 2 has been adapted from data contained in *Global Health Statistics*.<sup>2</sup> These statistics indicate that the proportion of years of life lost due to injuries for all ages in India (11) is almost half that in China (20) and that the statistics for countries with established market economies lies between the two. When we look at estimates for the proportion of years of life lost due to injuries in the age group 15–59 years, we find that India has the lowest proportion and the rest of the regions are quite similar.

None of these statistics made sense to me. Why should India be so different? Why should these estimates make the

Chinese rates look so high? I had no theoretical answers to these questions. So I decided to look at the sources of data and the methodology used to arrive at these estimates. This was not easy as the details of all sources are not given and data for all countries, except China and India, are clubbed into regions. However, the estimates for road accident fatalities for India and China provided the answer: the methods used to arrive at these estimates are based on highly questionable procedures.

Tables 210c and 210d in *Global Health Statistics* show that in 1990 India and China had 174 000 and 135 000 road traffic accident fatalities, respectively. But official statistics report 54 058 fatalities in India and 49 243 in

Table 1 Distribution of deaths as a percentage of regional total<sup>1</sup>

	Group I	Group II	Group III
Established market economies	6.4	87.4	6.3
Formerly socialist economies of Europe	5.6	84.1	10.3
India	50.9	40.4	8.6
China	15.8	72.7	11.5
Other Asia and islands	39.6	50.3	10.1
Sub-Saharan Africa	64.8	22.7	12.5
Latin America and Caribbean	31.3	55.7	12.9
Middle Eastern crescent	42.7	47.4	9.9
World	34.2	55.8	10.1
Developed	6.1	86.2	7.6
Developing	41.9	47.4	10.7

Notes: group I: communicable, maternal, perinatal, and nutritional conditions; group II: non-communicable diseases; group III: injuries.

Table 2 Percentage of total years of life lost due to injuries in different regions, 1990<sup>2</sup>

	15–59 years	All ages
Established market economies	29	16
Formerly socialist economies of Europe	36	23
India	23	11
China	31	20
Other Asia and islands	27	14
Sub-Saharan Africa	33	14
Latin America and Caribbean	34	19
Middle Eastern crescent	31	13

China in 1990!<sup>3 4</sup> The authors of *Global Health Statistics* have chosen not to use these official statistics. Instead, they have used epidemiological data from one region of the country to extrapolate for the whole country and thus arrive at these exaggerated estimates. The official statistics in India and China are based on road accident fatality cases reported to the police. It is difficult to hide a fatality case in these countries because of the presence of a large number of pedestrians, bicyclists, and street vendors on most roads. Therefore, the official statistics are probably much closer to the truth than the *Global Health Statistics* estimate. This makes its data suspect for LICs and the whole exercise worthless, at any rate for LICs. As far as the LICs are concerned, the information and estimates contained in *Global Health Statistics* and *The Global Burden of Disease* may as well be trashed.

The problems we have encountered with the data from these two publications demonstrate the obstacles researchers face in dealing with aggregate injury data from LICs. Sometimes these data are incomplete, at times they are unreliable, and at others based on extrapolations. Unless the researchers involved know the details of how these data have been collected and presented, serious mistakes can be made.

Injury data in LICs are usually quite reliable for road traffic fatalities but not for non-fatal injuries. For occupational injuries, the official statistics reflect the injuries reported by workplaces in the formal sector. Here also, only the fatality data are reliable as many injuries do not get reported. However, the more serious issue is that in many LICs a majority of the workers are employed in farming activities and by the informal sector not covered by industrial regulations. As a result, most of the occupational injuries are not reflected in the official statistics. The situation is worse for domestic and leisure injuries. Therefore, it is important that priorities and countermeasures for injury control in LICs be set by trained professionals who have a scientific understanding of the local issues and conditions.

Lack of availability of nationwide or aggregate data should not deter us from undertaking injury control activities in LICs. First order priorities can be determined locally by an intelligent analysis of available information from national statistics, police departments, hospitals, medical schools, newspapers, and a host of non-government organisations. People are getting hurt and killed in large numbers in every activity. Any effort in any sector to institute well thought out practical countermeasures suited to local conditions is worthwhile. One does not have to wait for nationwide statistics or for the institution of comprehensive surveillance systems to do so.

Safety research in the HICs has involved a large number of gifted professionals from a variety of disciplines over the last four decades. Some innovative work has resulted in a theoretical understanding of 'accidents' as a part of a complex interaction of sociological, psychological, physical, and technological phenomena. The results could be exchanged and solutions transferred from one HIC to another because the conditions in these countries were roughly similar. This understanding has helped us design safer vehicles, roads, and traffic management systems, safer work places, and consumer products. A similar effort at research, development, and innovation is needed in LICs. A much larger group of committed professionals needs to be involved in this work for new ideas to emerge. Roving 'experts' cannot do the job adequately.

Knowing the principles of epidemiology is more important for understanding issues than merely the availability of more data. Like all other developments in science and technology, safety measures in the HICs developed at certain historical junctures. They have an imprint of the prevailing socioeconomic situation embedded in them. When HIC policies and designs are transferred to societies that have much lower per capita incomes, large parts of these policies and designs are not successful. However, the attempt at introducing these measures in LICs also sets up a demand for instituting systems and technologies that imitate those in HICs. Because this is not always possible at low levels of income, these projects either become status symbols without much functional value, or remain as demonstration projects. Although a few small LICs can experience high growth rates for some periods, most of the other countries will continue to function as LICs for some time to come.

International cooperation in the area of injury control should focus on exchange of scientific principles, experiences of successes and failures, and in scientific training of a large number of professionals in the LICs.

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