Leading Article

Injuries in developing countries: policy response needed now

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How important are injuries?

The World Health Organization (WHO) predicts that injuries will be responsible for more deaths, morbidity and disability combined than communicable diseases by the year 2020. Injuries currently account for one in 7 healthy life years lost world-wide; by 2020 they will account for one in 5, with low and middle income countries bearing the brunt of this increase (WHO Ad Hoc Committee on Health Research, 1996, forthcoming report). World-wide, intentional injuries (suicide, homicide and war) account for almost the same number of disability-adjusted life years (dalys) lost as either sexually transmitted diseases and human immunodeficiency virus (HIV) infection combined or tuberculosis. Unintentional injuries cause as many dalys lost as diarrhoea, and more than those lost from cardiovascular disease, malignant neoplasms, or vaccine-preventable childhood infections (MICHAUD & MURRAY, 1994). In developing regions of the world, in 1990, injuries in males aged 15–44 years led to 55 million dalys lost, over one-third of those lost from all causes in this sex and age group (MURRAY *et al.*, 1994).

In Mexico, homicide has recently been shown to be the leading cause of dalys lost (LOZANO *et al.*, 1995). In Zimbabwe, the number of reported traffic crashes has increased from 19 558 in 1985 to 30 248 in 1994 (54·6% increase). Traffic-related injuries increased by 59% over this period, and traffic-related fatalities by 41·5%. Almost wherever one looks in the developing world, injuries, both intentional and unintentional, are increasing dramatically.

Despite this immense burden, international recognition and assistance for injury control efforts are well below the level of those directed at other health problems. In 1990, the value of external assistance provided worldwide was over US$50 per daly for leprosy and onchocerciasis, $6.90 for blinding conditions, $4.00 for HIV and other sexually transmitted diseases combined, $0.15 for acute respiratory infections, and only $0.01 for unintentional injuries (MICHAUD & MURRAY, 1994). Such neglect demands a response.

If the problem is so large, why is it neglected?

Communities, governments and donors frequently perceive injuries to be 'accidents', not amenable to public health interventions. There is little recognition of the injury-associated health and economic burden, and limited appreciation that injuries can be prevented through organized efforts by society. Vested interests may oppose safety in certain settings: promoting safety in the workplace may be perceived as cutting into profits, already under pressure as a result of enhanced competition and the globalization of the world economy.

Limited research on causes, risk factors, perceptions and attitudes to risk, has not helped. Imprecise methods of surveillance, poor agreement on case definitions and outcome measures, and limited attention to examining the cost-effectiveness of injury interventions are additional gaps. Recognition that the response to injuries must be multisectoral presents further barriers to responding.

What can be done?

Interventions of proven effectiveness elsewhere can be adapted to low and middle income countries (FORJUOH, 1996; ZWI, 1996).

Primary prevention requires pre-event action: such as installing safety devices on dangerous machines and tools, improving the road environment and vehicle conditions to avoid traffic crashes, ensuring child-proof caps are used for pesticide, medicine and kerosene containers to avoid poisoning, raising or enclosing cooking areas to prevent burns and scalds to children, using fire-resistant fabrics, controlling the availability of firearms, and banning the use of land-mines.

Secondary prevention aims to reduce the impact of an event that may result in injury: using child seats, airbags, seat-belts, side-impact bars and reinforced metal roofs in vehicles, promoting motorcycle and bicycle helmet use.

Tertiary prevention highlights the post-event care of injuries, through improving ambulance, casualty and rehabilitation services.

Upstream interventions need to identify and respond to those factors which heighten injury risk, such as poverty and inequity, overcrowding, environmental decline, gender inequalities and substance abuse. Lessons can be learned from examining the features of a number of injury problems.

Preventing violence against women requires an understanding of the context in which different forms of violence occur. Upstream population-wide approaches to reducing gender discrimination and violence necessitate changes in how boys and girls are socialized, how the media portray relationships, how conflicts are resolved within the household, and what messages society conveys regarding the social acceptability of physical, sexual and psychological abuse (HEISE *et al.*, 1994). The focus should be not only on the affected individual but on the entire population in an attempt to change behaviours and practices (ROSE, 1992). These approaches are complex and long term, and need to be combined with other concurrent interventions. Increasing awareness and facilitating the documentation and quantification of violence against women is crucial to provoking a social policy and health sector response. Health workers can assist in early identification of those at risk, providing sensitive care for those affected, referral to appropriate support agencies and continuing advocacy. Enhancing the health sector response requires the mobilization of resources, training, and continuing audit, all of which have to be fought for in these times of increasingly constrained resources.

The response to other injuries, such as those occurring on the roads or at work, may appear more technical. In all cases, however, introducing appropriate policies and ensuring their implementation remains complex.

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Educational, engineering, environmental, fiscal, legislative and enforcement interventions are all required to promote safety. Traffic-related mortality and morbidity will increase dramatically as low and middle income countries develop. Factors contributing to the unsafe road environment in low and middle income countries include the large ratio of pedestrians to vehicles (BERGER & MOHAN, 1996), the mixture of pedestrians, non-motorized and motorized transport on the roads, inadequate and overloaded public transport networks, poor standards of vehicle maintenance, inadequate illumination and signposting, poor maintenance and development of roads, and the presence of roadside hazards such as trees, ditches and steep banks.

A wide range of common-sense and effective road safety interventions exists: improved road design (e.g., not building a large road with a school and shops on one side and residential areas on the other), promulgation and enforcement of drinking and driving legislation, investigation and response to clusters of fatal road crashes ('black spots'), reducing and monitoring vehicle speeds, introducing traffic calming measures in built-up environments, and educating road users to utilize seat-belts, child seats, motor cycle and bicycle helmets. Particular attention to improving safe use of motor cycles, buses, trucks, and public transport vehicles is especially important in low and middle income countries. A road safety plan that is context-specific, formulated through a consultative process involving key stake-holders, and has access to expertise in a range of fields, is a valuable means of developing an appropriate and co-ordinated multisectoral response.

Occupational injuries may erroneously be assumed to be less of a problem in poor countries because of lower levels of industrialization. However, many hazards exist and injury rates are especially high in the mining, construction, agriculture and transport industries (BAKER *et al.*, 1992). Relatively little is known about safety conditions in the burgeoning informal sector of many economies. Poor working conditions reflect unsafe design and maintenance of local and imported machines, long working hours and lack of emergency care services. These problems are compounded by low literacy levels, weak trades unions and the increasingly competitive global market, and demand the mobilization of support from the state, trades union and employer for the institution of effective context-specific interventions.

Injury control experience from Zimbabwe

Experience of tackling this range of problems is limited in low and middle income countries. In 1986 the Ministry of Health and Child Welfare (MOHCW) in Zimbabwe identified injury control as a priority: injuries were the leading cause of death in young adults and among the top 5 reasons for out-patient hospital attendances, and they imposed a significant load on in-patient and rehabilitation services. Over the last 5 years, in collaboration with the London School of Hygiene and Tropical Medicine and with the support of a UK Overseas Development Administration research grant, the MOHCW has sought systematically to identify and respond to key injury problems (Table). A detailed situation analysis brought together all secondary sources of information (ZWI *et al.*, 1993; unpublished report*). Routine data showed marked increases in recent years from traffic-related injuries and fatalities, violence, and rape. The burden of injuries and associated costs on the health services were considerable. Data from government, voluntary and private sector participants engaged in injury-related activities were assembled to understand current activities and priorities and to assist in developing policies and strategies likely to win widespread support.

A necessary element was the employment of a 'lead' person within the MOHCW with a mandate to co-ordinate activities. The MOHCW established an Intersectoral Injury Control Committee, bringing together MOHCW personnel (disease control, nursing, health education, health information), researchers, clinicians, local government, police, transport, private sector and non-governmental organizations. Two key workshops with strong participation by these and other stakeholders within and outside the health services were held; research on a number of topics was initiated or supported*. A task force was established, following a series of bus disasters in which numerous fatalities occurred, to develop a national road safety plan. Much more needs to be done, but a start has been made. Increasingly, recognition must be given to supporting local initiatives within local government, the health services and communities. Local decision-makers and service providers could be more active in improving care, evaluating the effectiveness, efficiency, cost and equity of interventions, and developing more sustained injury control activities. The quality of care for those injured needs to be improved through the establishment of effective accident and emergency services (D. Sethi *et al.*, 1995: unpublished report*).

Regional solutions may be helpful and links between comparable countries are desirable. Participants from Zimbabwe, Kenya, Ghana and South Africa recently highlighted injuries as a pressing public health concern (S. N. Forjuoh *et al.*, 1996: unpublished report*); identifying funding to take forward collaborative work remains difficult, however. Investment by multilateral organizations, such as WHO, UNDP and the World Bank, bilateral donors, and international non-governmental organizations would significantly boost the search for context-appropriate interventions. Such support would greatly assist in mobilizing governmental and non-governmental public and private sector activity to harness local energies, identify the injury burden, institute carefully adapted interventions, and evaluate them to ensure that those which result in more benefit than harm, which are most cost-effective and equitable, and which are politically and economically feasible to introduce, are instituted more widely.

Table. The Zimbabwean approach to responding to injuries

Recognize that injuries are predictable
Undertake detailed situation analyses
Improve epidemiological surveillance
Identify 'lead' person
Establish intersectoral committees
Map out key stake-holders
Develop inclusive process of consultation
Determine competing priorities
Agree priorities
Stimulate research
Institute interventions at a variety of levels
Evaluate interventions rigorously
Mobilize additional funds
Seek continuing state and non-governmental organization commitment

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