

Injury surveillance or trauma registry: Need of hour and time to start

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The Government of India is taking concerted measures to combat major communicable and non-communicable diseases and fulfill the commitment it has implemented many national programmes to reduce morbidity and mortality from these causes¹. According to the latest WHO World Health Report injuries, intentional and unintentional, accounted for 16 % of the global burden of disease in 1998. Globally, injuries are responsible for one in six years lived with disability². Road traffic accidents (RTA) are the biggest cause of ill-health and premature death affecting mainly young people and those in the productive age group with consequent economic implications world-wide¹⁻³.

India is passing through a major epidemiological transition, socio-demographic changes and technological revolution due to rapid industrialization, urbanization, economic liberalization and changing social, cultural and political situations. Accelerated urbanization and industrialization over the last three to four decades has led to an alarming increase in the rate of accidental injuries, crime, and violence, and ever-increasing terrorist activities over the last two decades have ushered in man-made mass-casualty disasters⁴. Means it is not only the RTAs but other injuries whether unintentional or intentional increasing becoming a major public health problem not only in our country but worldwide.

Although people from all economic groups suffer fatal injuries, but death rates due to injury tend to be higher in those in the lower income groups. The poor are also less likely to make a full recovery following an injury. We know that our country is a developing country where the country can be categorized in pockets as developing, developed and underdeveloped regions because of its vast size and socio-cultural peculiarities. Industrialized

cities, rural towns, and villages coexist, with an almost complete lack of organized trauma care.

India is making significant efforts to provide care for injured persons, more so in urban areas. Much of the emphasis has been on developing trauma care in urban areas and there is a great need to work towards prevention, rehabilitation, pre-hospital and emergency care and systems approach to address the emerging problem. Treatment of critically ill patients with multiple injuries requires expert, multidisciplinary, high-cost, coordinated and timely interventions. In view of the large numbers of cases of trauma today, and that it affects mainly young people and those in the productive age group with consequent economic implications there is an urgent need to develop similar programmes in trauma care¹.

INJURY SURVEILLANCE

State health agencies rely on injury surveillance to assess specific needs for injury prevention programs and policies and to monitor their effectiveness. Injury surveillance is the ongoing process of tracking and monitoring incidence rates, causes and circumstances resulting in fatal and non-fatal injuries. Analysis and dissemination of the data is utilized in injury prevention efforts. The ultimate goal of these recommendations is to improve state injury surveillance to support injury prevention programs and policies. By helping to standardize injury surveillance at the state level, the Working Group also hopes to further integrate injury prevention with traditional public health activities. In the interest of standardization, this report recommends a minimum set of state surveillance standards. However, these recommendations are not intended to limit individual states in setting and achieving their own specific objectives for injury surveillance⁵.

TRAUMA REGISTRY

A trauma registry must be subjected to continuous data validation if it is to reliably inform performance improvement, education, and research activities. The trauma diagnosis is a crucial registry data field that is

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frequently required for registry reports. Abbreviated Injury Scale (AIS) codes that are tied to the diagnosis are required for the generation of derivative metrics such as Injury Severity Score (ISS), Trauma Injury Severity Score (TRISS) and Survival Probability Score. If a significant number of registry records lack diagnoses and associated diagnosis codes, the resultant “data gap” may adversely affect the overall validity of the registry, and may also adversely impact upon the validity of any state or national database to which registry data is subsequently contributed⁵.

A trauma registry serves its purposes only to the extent that the data that it contains is complete, accurate, and adherent to case inclusion criteria and individual data field definitions. Periodic data audits are feasible and effective for maintaining data quality^{6,7}. One central component of this system is a population-based monitoring process that allows feedback of information on organisational and clinical issues. That regional trauma systems with integrated monitoring and quality improvement programs should now be regarded as the standard of care for health jurisdictions internationally⁸.

Good quality, reliable and representative information is very vital and is the foundation to formulate injury prevention programmes in India. The currently available data reveal only the number of deaths due to different causes of injuries in India and Bangalore. However, only number of deaths and injuries is not enough to formulate injury prevention programmes there is a need to study many other parameters including information who are the affected people, what are their characteristics, where are injuries occurring, how are injuries occurring, what are the causes, what types of injuries occurring and what policies, plans and programmes need to be developed. But lot information is available from many centers that have been used in many times in policy making. A major barrier for this is the availability of comprehensive information on injuries. Is it possible to break up the data and use them?

Injury surveillance is also the best way of monitoring changing trends, identifying new problems, selecting interventions and measuring the impact of interventions in a timely manner. By identifying what interventions work with such information, it is possible to design and apply appropriate scientific interventions and monitor the results along with assessing the impact of interventions.

Local, regional and national injury surveillance systems will provide data required for planning and delivering effective injury prevention programmes to communities and to the country at large. Although injury patterns are different whether we can link anything. Sharing experiences and lessons among the pilot countries facilitates the improvement of data collection and analysis methods and protocols. Whether the previous experiences are useful or not or it is necessary to do it again we need to understand. It may avoid the same exercise again and again. For example it is not necessary to study the safety of helmets all over India, again and again.

The highest rates of death and permanent disability due to injury are, however, currently found in the poorer nations; it is these countries therefore that have the most urgent need for prevention strategies that are appropriate, cost-efficient and effective. With these changes, a number of other factors like increasing migration, large scale housing and construction activities, economic reforms and technology import have resulted in an increase in changing lifestyles of the people and there has been an alarming rise in number of injuries due to accidents, crime and violence. Road traffic accidents have become a major public health problem in the last few years. Hospitals in low-income countries bear a substantial burden of childhood injuries, and systematic surveillance is required to identify the epidemiological distribution of such injuries and understand their risk factors. Methodological standardization for surveillance across countries makes it possible to draw international comparisons and identify common issues⁹.

It is emphasized that there is a need for good quality, reliable and sustainable information systems where we are able to identify precisely the agent, host and environment. The existing systems for trauma care are elementary in nature, predominantly restricted to cities and semi-urban areas, at an embryonic stage, predominantly supported by non-government and private agencies without integration of region or statewide systems. No such systems exist in rural and remote areas to offer prompt life-saving treatment and safe transfer to an appropriate facility¹⁰. The development of a nationwide computerized trauma registry has been suggested to bring out the risk factors, circumstances, chain of events leading to the accidents and to support the policy making and health management at the national level in India¹¹.

The growth and development of injury surveillance also presents important challenges. With more systems that can provide more data, there is a greater need for integration. Integration of information systems is a multidimensional issue encompassing data on risk factors, morbidity, and mortality for both intentional and unintentional injuries, involving local, state, national, and international levels, and including systems that are intended to serve not only public health but also clinical, administrative, and other functions. In addition, injury surveillance and public health surveillance in general face the challenge of integration during a time of increasing capacity for electronic access to and transmission of health-related information. The tools and systems at our disposal provide tremendous opportunity, but they also require responsible use, including the provision of data security and the protection of confidentiality¹².

Taking whole country in the same stream and dividing resources based on this concept will be a total injustice. The results of the research should be translated into the development of guidelines in trauma care with an ultimate goal to reduce the burden of injuries, disability, and save as many lives as possible while keeping in mind our sociopolitical and economic realities and professional constraints. Rather than excuse or our limitation we should take it as an advantage and our senior faculty members and larger institution can come ahead to help younger and underprivileged brothers.

Finally, a continuing challenge for injury surveillance is making effective use of the data. No matter how important the condition under surveillance, data collection is not an end in itself, as reflected in the observation by former CDC Director William H. Foege: “*The reason for collecting, analyzing, and disseminating information on a disease is to control that disease. Collection and analysis should not be allowed to consume resources if action does not follow*”¹². The question is how much data would be enough to develop a “minimum trauma care system” we need to work together to find a solution but the path is not easy.

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