

# Establishing a Trauma Registry in a High-Income Developing Country: Lessons Learned

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Trauma causes 10% of all deaths worldwide [1]. It is projected that road traffic deaths in developing countries will increase by 83% between 2000 and 2020 [2]. One factor for potentially preventing trauma is to monitor it through trauma registries and injury surveillance systems [3]. Trauma registries are databases that document trauma patients according to specific inclusion criteria [4]. They are designed to collect data on injured patients and improve quality of trauma care, outcomes, and prevention [5-7]. Trauma registries in developing countries are plausible and valuable tools for injury surveillance [3,5].

We think that hospitals treating multiple trauma patients should have a Trauma Registry with requirements to be fulfilled including appointing a fulltime Trauma Registry Officer for each 1,000 admitted patients. A Trauma Registry Committee should select the minimum dataset, process of data collection, assure confidentiality, define rules for using the data and methods of reporting, and supervise the information technology personnel during establishing and designing the registry. Regular progress reports are needed as feedback so as to develop the system.

When developing a trauma registry, one must first decide if the registry is going to be a single- or multi-center registry. In both cases, special attention should be given to the design of the data entry form both in terms of the number and scope of data fields as well as the interface design. Inclusion and exclusion criteria must also be chosen carefully. Selecting, training, and funding of key data entry personnel in each data collection center is of the utmost importance as well as having access to a Health Informatician to perform database design, interface design, and data analysis and reporting.

Identifying factors and obstacles involved in establishing a trauma registry is an important step towards the success of the registry. Many obstacles faced when conducting research in developing countries have been identified in the literature [8-9]. From our experience in developing several trauma registries in the United Arab Emirates, we have identified some common obstacles including lack of appreciation of the value of database registries, hardships in securing funds for this kind of research, hiring and training good data entry research assistants, lack of Health Informatics experts, lack of harmony between researchers in multiple disciplines, and lack of motivation for doctors to participate in such efforts [10].

Taking a public health approach in the design of trauma registries adds a level of completeness to the registry [10]. It is important to engage public health experts at the beginning of establishing a trauma registry so as to include data elements that have public health implications. Public health measures such as items related to occupational and road traffic injuries will add value to the preventative aspect of the registry [11,12].

It is important to keep the number of data elements at a minimum. This reduces the amount of time and cost of data collection. We were able to refine our data form overtime and reduce the total number of data elements collected, while adding data elements important for preventive medicine, from 300 clinical management variables to 100 variables important for both management and prevention [13].

Trauma registries provide large longitudinal databases for analysis

and policy improvement which will hopefully lead to the reduction, if not prevention, of trauma. We have proven that trauma registries in developing countries provide an excellent tool to understand the extent and pattern of injury, and priorities of prevention. This promoted higher public awareness of the impact of trauma on the people and infrastructure of our community and helped policy makers to make better informed decisions on injury prevention. The usefulness of our registry was apparent by the extent in which data were used by other departments to publish on trauma in the areas of pediatrics, geriatrics, psychiatry, health of women, occupational injuries, and road safety [11,12,14-16]. One of the key points leading to the success of our registry was that we shared the data with our colleagues. Nevertheless, having an academic background gives us the responsibility of assuring that the published data reflect reality.

We have learned overtime that establishing a trauma registry in a developing country is different from establishing it in a developed country. Many barriers and obstacles have to be overcome before reaching that goal. Nevertheless, we have proven that it is achievable. We hope that our experience will encourage colleagues from other developing countries to follow the same track. The benefits to our patients and communities are tremendous and a serious attempt at reaching that goal is worthy despite its difficulties.

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