Data analysis using R of a Trauma Registry at 14 hospitals in Buenos Aires, Argentina.

Background: The emerging field of population health data science provides an integrative, dynamic approach to “data-driven decision making” that applies to community and health care systems. (1) Trauma is a leading cause of mortality and constitutes an important cause of functional limitations among young populations worldwide. (2) A trauma registry is an integral component of modern comprehensive trauma care systems. Nevertheless, trauma registries have not been established in most developing countries. (3)

Objective: To describe the process of data analysis using R of a trauma program that includes trauma registry (TR) at tertiary-care hospitals from Buenos Aires, Argentina

Methods: This was a cohort study in 14 hospitals between January 2010 and December 2017 using data from the Trauma registry from Fundación Trauma. Admitted patients who met WHO’s injury definition and who remained at the hospital for more than 23 hours were included. Trauma patients were categorized into age groups. Data on patients' demographics, trauma mechanism and severity, treatments and in-hospital mortality were analyzed between the groups. A descriptive analysis is presented. Data were analyzed using R version 3.5.1 (2018-07-02) and RStudio version 1.1.463.

Results: There were 29970 trauma cases during the study period. Median age was 23 (RIC 12, 39). Male injuries (70.7%) were more frequent. Transport-related injuries were the leading cause of trauma (30.8%) and head (33.2%) was the most frequently involved body area. Two-thirds of RTIs were motorcycle-related. Overall in-hospital mortality was 6.1%. Self-harm in male adults and burns in female adults had the highest mortality rates (17.6% and 17.9% respectively).

Conclusions: A trauma program based on a public-private collaborative model in developing settings is plausible for implementation. The hospital-based trauma registry could be used as a tool for injury surveillance, using R for data analysis. The successfulness of the trauma registry is resource- and setting-specific in design and has the potentiality to improve trauma care and patient outcomes and to develop prevention programs.

References:

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