

WHERE TO START? INJURY PREVENTION PRIORITY SCORES IN CANADA

Samuel Jessula, M Asbridge, R Romao, R. Green, Natalie L. Yanchar

GENERAL SURGERY

Background: Given limited resources, it is essential to determine which mechanisms of injury (MOI) should be prioritized for injury prevention. We developed objective, Injury Prevention Priority Scores (IPPS) for the Canadian population across four metrics: mortality, severity, resource utilization, and societal cost.

Methods: A retrospective cohort study was performed examining all Canadians with traumatic injuries from 2009-2014. For each MOI, an IPPS was calculated by balancing both the standardized relative frequency of the injury and a secondary metric: mortality rate; severity [ICD10-derived Injury Severity Score (ICISS)]; resource utilization (hospitalization costs); societal burden [Years of Potential Life Lost; (YPLL)].

Results: 694,535 injuries were identified. Injury frequency ranged from 304 (legal interventions) to 391,068 (falls), mean of 40,855(SD 92,418) over 5 years. Mortality rate ranged from 0.014 deaths per injury (cut/pierce) to 0.722 (intentional self-harm); mean of 0.175 (SD 0.224). Median ISS ranged from 0.006 (cut/pierce) to 0.148 (drowning); mean of 0.029 (SD 0.3786). Median cost per hospitalization ranged from \$3113 (drowning) to \$9511 (fire); mean of 5620 (SD 1833). Median YPLL ranged from 0 (falls/suffocation/overexertion) to 38 (assault/firearms); mean of 18.47 (SD 13.44).

The top three MOI for mortality were Falls (75), Intentional Self-Harm (67) and Drowning (66); for severity were Falls (77), Drowning (70) and Suffocation (61); for resource utilization were Falls (81), Fires (61) and Suffocation (60); and for societal cost were Falls (72), Assault (62) and Firearms (59).

Conclusion: Falls consistently demonstrates a high IPPS across all perspectives of injury prevention, and if prevented, would provide the most benefit to the largest population in Canada.