

3<sup>rd</sup> Annual Congress and Medicare Expo on

# TRAUMA & CRITICAL CARE

March 13-14, 2017 London, UK



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## Canadian benchmarks for acute injury care

**Statement of the Problem:** In response to evidence of variation in patient outcomes across providers and growing financial pressures, healthcare authorities in high-income countries have emphasized the urgent need to develop tools to monitor quality of care.

**Aim:** Aim of this study is to develop Canadian benchmarks to monitor mortality and hospital length of stay (LOS) for injury admissions.

**Method:** Benchmarks were derived from data of Canadian National Trauma Registry on patients with major trauma admitted to any level I or II trauma center in Canada and the following patient subgroups: isolated traumatic brain injury (TBI), isolated thoracoabdominal injury, multisystem blunt injury and aged  $\geq 65$  years. Predictive validity was assessed using measures of discrimination and calibration. Extensive sensitivity analyses were performed to assess the impact of replacing analytically complex methods (multiple imputation, shrinkage estimates and flexible modelling) with simple models that can be implemented locally.

**Results:** The mortality risk adjustment model had excellent discrimination and calibration (area under the receiver operating characteristic curve=0.883; Hosmer-Lemeshow=122). The LOS risk-adjustment model predicted 31% of the variation in LOS. Overall, observed-to-expected ratios of mortality and mean LOS generated by an analytically simple model were highly correlated to those generated by analytically complex models ( $r > 0.95$ ; kappa on outliers  $> 0.90$ ).

**Conclusion & Significance:** We propose Canadian benchmarks that can be used to monitor quality of care in Canadian trauma centers using a simple Excel program (provided) that can be implemented using local trauma registries. We observed significant variation in mortality and LOS across Canadian trauma centers indicating room for improvement in the quality of acute care for Canadian injury admissions.

## Biography

Lynne Moore is an Associate Professor of Epidemiology and Biostatistics in Department of Social and Preventative Medicine at Laval University in Québec City. She is recipient of a Research Career award and has published 140 peer-reviewed papers over her research career. Her research interests include "Improving the quality of acute injury care". She has led the development, validation, implementation and evaluation of a comprehensive quality tool assessment for acute injury care which has been implemented across Canada. She is Co-leader of International Injury Care Improvement Initiative.

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