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Evaluation of adult tertiary and regional secondary trauma centres.

Trends in outcome indicators, 2013-2018.

English summary

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Direction des services de santé

Québec

Summary

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Introduction

The Trauma and Critical Care Evaluation Unit of the Institut national d'excellence en santé et en services sociaux (INESSS) is mandated with planning and coordinating the evaluation of Québec's 59 acute care facilities with a trauma care designation. These facilities are monitored through regular assessment cycles involving quality and performance reports that include a series of process and outcome indicators specific to each designated trauma facility. Since INESSS is currently updating the process indicators, it was agreed with the Ministère de la Santé et des Services sociaux (MSSS) to wait until the final selection of new process indicators before undertaking the next complete assessment cycle. In the meantime, an analysis of the latest available data was needed for trauma facilities at the adult tertiary and regional secondary levels, which admit a large number of patients and cases of major injury each year. The objective of this exercise is to assess the trends in outcome indicators for 2013 to 2018 for the eight adult tertiary and regional secondary trauma centres.

Methodology

Québec's trauma registry (SIRTQ) was used to identify trauma victims admitted between April 1, 2013 and March 31, 2018 to the eight adult tertiary or regional secondary trauma centres. Multilevel linear and logistic regression models were used to assess trends in four outcome indicators: in-hospital mortality, major complications, unplanned readmissions within 30 days of discharge from acute care, and the mean length of hospital stay. Statistical adjustments were made to take into account differences in patient characteristics between facilities and changes in clientele over the study period. Mortality, major complications, and unplanned readmissions within 30 days are presented as percentages (incidence proportions multiplied by 100), while length of stay is presented as geometric means (in days). Linkage to the Québec hospitalization database (MED-ÉCHO) was carried out to obtain information on patient comorbidities and on unplanned readmissions to a hospital outside the trauma care network.

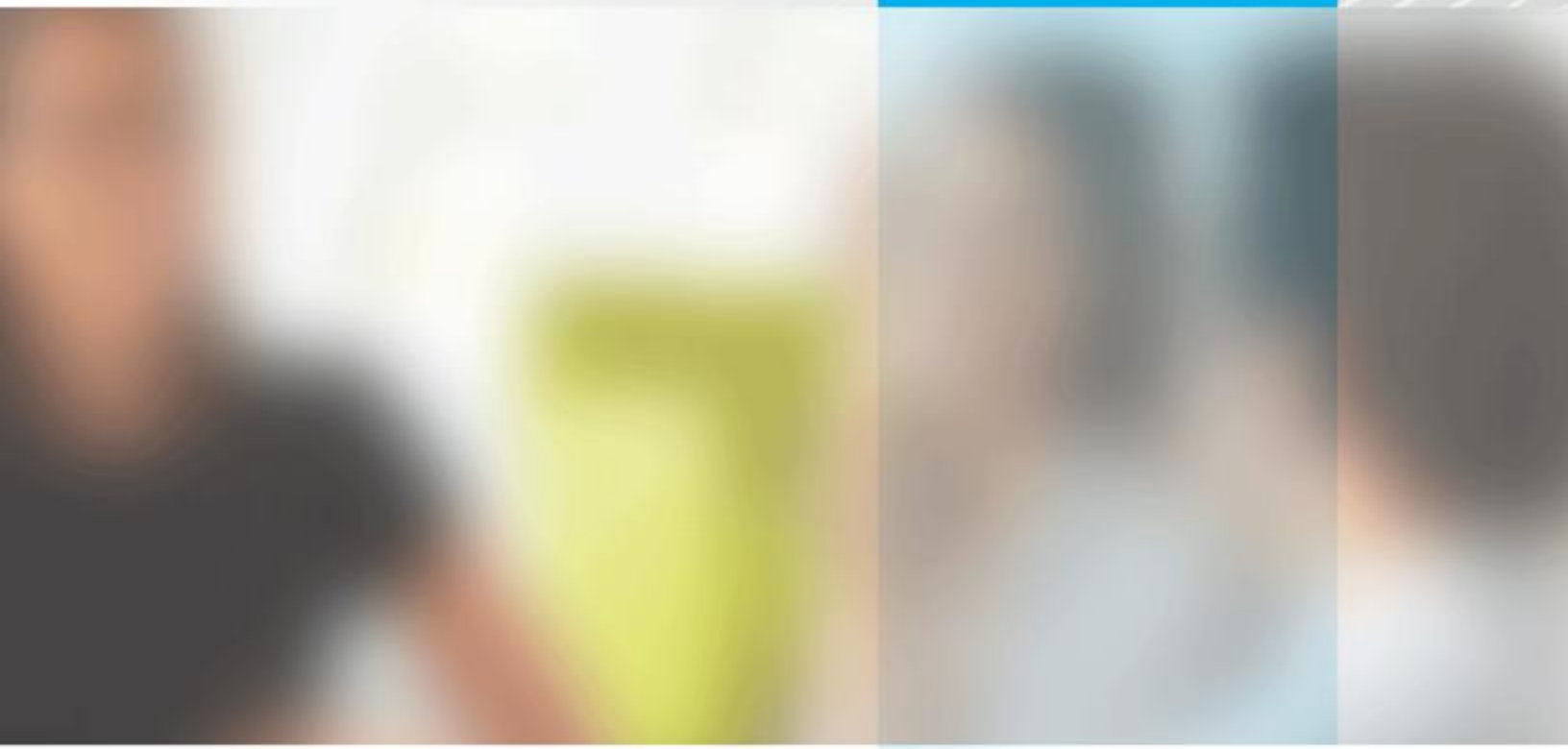
Results

Nearly half (45.4%) of the victims admitted to tertiary or regional secondary trauma centres between 2013 and 2018 were 65 years of age and older, with the proportion of admissions of such patients tending to increase each year. The number of falls from one's own height as a mechanism of injury among patients of all ages increased over the years and was the most common mechanism overall, at 37.9%. The annual proportion of female admissions increased each year between 2013 and 2018 ─ from 41.9% to 45.5%

— but overall, more males (56.2%) than females (43.8%) were admitted to a tertiary or regional secondary trauma centre. The proportion of cases with major injury (Injury Severity Score [ISS] >12) remained stable over the study period and accounted for about 30% of the total annual admissions. The adjusted mortality incidence proportions tended to decrease over time, declining from 7.4% in 2013 to 6.6% in 2018 ($p = 0.01$). The mean length of hospital stay for admitted patients decreased as well, from 9.7 days in 2013 to 8.9 days in 2018 ($p < 0.0001$). The incidence of major complications and unplanned readmissions remained stable during the study period.

Conclusion

The 2013-2018 trend analyses brought certain findings to light regarding the profile of trauma patients admitted to adult tertiary or regional secondary trauma centres and associated health outcomes. Over time, the patient population was older, the number of falls rose, and the proportion of women increased. Mortality incidence proportions and mean length of stay decreased over time. The next complete assessment cycle for all the trauma-designated acute care facilities will include the updated process indicators and will enable refining the outcome indicators to target specific patient subgroups, where possible. These various measures will help improve our understanding of different clinical and administrative processes pertaining to trauma patients and will also assist trauma centres in identifying concrete measures to be taken in their continuous improvement of care and services.



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