INESSS
LE SAVOIR PREND FORME

FEBRUARY 2018

State of practice in pediatric trauma care: Patients admitted to the designated facilities of the trauma care network between 2010 and 2015

English summary

Québec

This is the English summary of the guidance entitled Traumatologie pédiatrique - Clientèle admise dans les installations désignées du réseau de traumatologie entre 2010 et 2015 - published in February 2018.

The complete version of this guidance (in French) is available on the website of INESSS in the Publications section.

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SUMMARY

Structure of the care system

Children and adolescent victims of traumas in Québec receive the care and services they require at one of the 59 trauma care-designated facilities. The levels of care, the resources available and the trajectories differ according to the severity and nature of the injury. The facilities are designated according to a four-tier hierarchical structure, as recommended by the American College of Surgeons Committee on Trauma (ACSCOT).

Between 2010 and 2015, 10,898 pediatric trauma victims aged 16 years and under were admitted to one of the trauma care-designated facilities for a period of at least 24 hours. Of them, 42% (n = 4553) were admitted to one of the three tertiary care centres mandated for pediatric services, 14% (n = 1532) to a regional secondary care centre, 37% (n = 4024) to a secondary care centre, 6% (n = 699) to a primary care centre and 1% (n = 90) to an adult tertiary care centre. There was a 14% decrease in the overall volume of admissions for at least 24 hours of pediatric trauma patients between the beginning and end of the period analyzed.

Characteristics of the pediatric trauma victims admitted to the trauma-care designated facilities

For the network's trauma care-designated facilities as a whole, between 2010 and 2015:

- Most (92%) of the pediatric trauma victims admitted had minor injuries (n = 10,040);
- Sixty-eight percent of the major trauma victims (n = 585) were treated at one of the three tertiary care centres mandated for pediatric services (the Centre hospitalier universitaire [CHU] de Québec - Université Laval's Hôpital de l'Enfant-Jésus [HEJ], the Centre hospitalier universitaire Sainte-Justine [CHU SJ] and the McGill University Health Centre [MUHC]'s Montreal Children's Hospital [MCH]);
- There was a significant decrease (38%) in the volume of major trauma admissions;
- Only the centres in Montréal consistently met the admission volume requirements established by the American College of Surgeons (ACS) for the provision of highly specialized pediatric services;
- Traumatic brain injuries, all levels of severity combined, accounted for slightly more than one-fourth (28%; n = 3288) of the injuries, as did simple orthopedic injuries (29%; n = 3423) and serious orthopedic injuries (22%; n = 2555). Burns (n = 220) and spinal cord injuries (n = 35) were less common;
- The mean age of the admitted patients in the 16-years-and-under population was 8 years;
- A small number of deaths is observed (n = 82), 37% of which occurred in the emergency department and 63% during hospitalization.

As regards the three pediatric-designated tertiary care centres, between 2010 and 2015:

- The CHU SJ accounted for 60% of the admissions (n = 2722), the MCH 34% (n = 1558) and the HEJ 6% (n = 273);
- The mean age of the admitted patients was 7 years, with slightly higher representation of under-5-year-olds (37%) and boys (64%);
- A small number of deaths were reported (n = 37), with 31 of these cases involving major trauma;
- Falls were the leading mechanism of injury among the major trauma victims under 5 years of age, while accidents due to a motor vehicle were the cause of a larger proportion of injuries in the children over-5-year of age;
- There was a 33% decrease in the number of admissions for moderate to severe traumatic brain injury (MSTBI) between 2010 and 2015.

Service trajectories

Across the trauma care network, we observe the following:

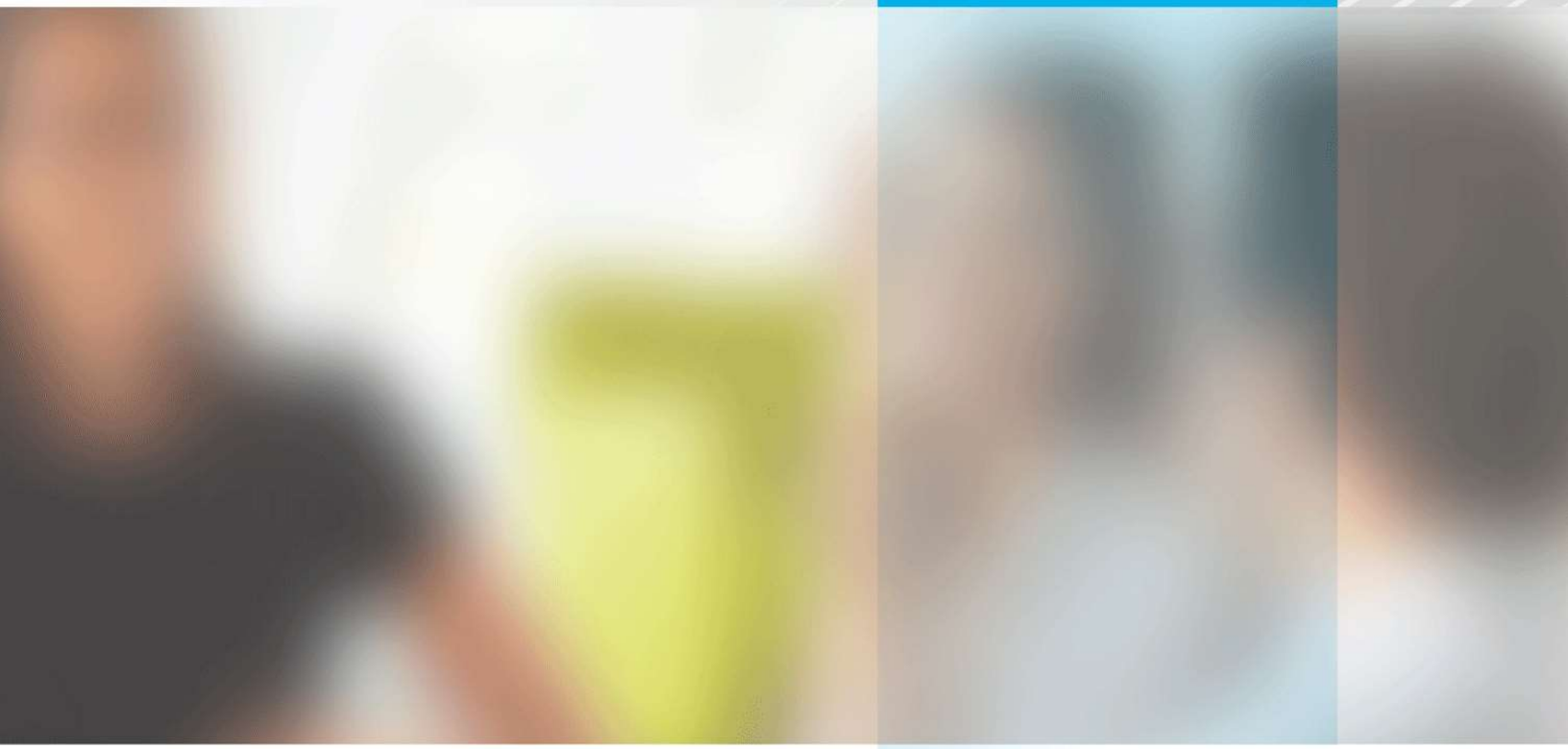
- The most severely injured trauma victims are referred to higher-level centres, which confirms compliance with the principle of hierarchizing care;
- Differences in the patients trajectory according to their age and diagnosis;
- Thirty-one percent of pediatric patients are transferred from one or more facilities before arriving at the final destination centre;
- A change in the HEJ's offer of services following the departure of pediatricians in 2010, which led to changes in the service trajectories and in service complementarity between the facilities in the Capitale-Nationale region;
- A median transfer time of 4.5 hours to the three tertiary care centres, except for transfers from facilities in the eastern portion of the province to the CHU SJ, which take nearly twice this amount of time;
- Atypical trajectories and delayed transfers between certain trauma care-designated facilities, most involving major trauma victims;
- A large majority (90%) of pediatric patients treated at the CHU SJ and the MCH return home with a post-discharge follow-up at an outpatient clinic. For those treated at the HEJ, this proportion is 67%;
- An increase in the number of transfers to the CHU SJ and a considerable decrease in the number of transfers to the HEJ after the application of the ministerial directive, adopted in 2011, regarding severe trauma victims under 14 years of age.

Conclusion

The portrait of pediatric trauma patients aged 16 years and under is limited to those admitted for at least 24 hours within the trauma care network, but it nonetheless shows the small number of admissions and the decrease in admission volumes, which has been more pronounced in the past few years. The current organization of care at certain facilities does not permit optimal compliance with the established admission volume requirements and should, perhaps, be revised to reflect Québec demographics.

Certain weaknesses are noted in the service trajectories, where differences in the age criteria make the orientation of patients more complex. In addition, the absence of clear corridors for certain regions and for specific groups of patients (spinal cord injuries, severe burns, etc.) as well as the retention of major trauma victims in a few lower-level facilities point to the need to review certain trajectories for pediatric trauma patients.

The data presented in this report provide a basis for considering different measures for optimizing the overall organization of services and continuity between the network partners, and for improving the capture of pediatric data in the available databases and follow-up mechanisms. This portrait could also help point to the prevention-related topics to be developed and guide the tailoring of the services designed specifically for the young trauma patients in our province.



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