Improving Early Recognition and Treatment of Sepsis in Paramedic Services and the Emergency Department: A Cross-Canada Survey

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Introduction
Most patients with sepsis present through emergency departments (EDs), many arriving via paramedics. Recognizing and managing sepsis is challenging, and failure of early recognition and treatment impacts mortality. Our objective is to identify and understand barriers and facilitators to the implementation of best practice (Surviving Sepsis Campaign (SSC) guidelines) among paramedics and ED nurses and physicians.

Methods
A survey was conducted as part of a mixed-methods study that includes a scoping literature review and interviews. The survey, reported here, was designed by our team for completion via an online platform, Opinio, using the Theoretical Domains Framework as its foundation. Open-ended and Likert-scale pre-populated questions asked about barriers and opportunities. Questions were scored for face and content validity and refined prior to distribution in French and English. Invitations were distributed by various professional organizations for paramedics, ED nurses and physicians, with two bi-weekly reminders and advertisement on social media.

Results
The survey was open from August 4– December 31, 2022. A total of 843 surveys were completed including 314 (37%) paramedics, 226 (27%) physicians, 168 (20%) registered nurses. Close to half of respondents (46%, n=339) had greater than 10 years of work experience. 41% identified as male, 47% female, 12% as undifferentiated/prefer not to answer. 65% (472) work in urban settings. Paramedic call volume varied, with 44% (n=143) responding to 10,000 or fewer calls per year, 48% (n=156) 200,000 – 500,000, and 27 (8%) over 500,000. At least 10 responses were received from each province/the Territories. Several items were scored as extreme or moderate barrier to optimal sepsis care: bed availability and/or offload delay (77%, n=389), patient/public recognition of seriousness of sepsis (n=360, n=72%), patient/public recognition of sepsis symptoms (n=351, 70%), and timely initiation of treatment (n= 256, 50%). Respondents strongly agreed or agreed that they have the skills to manage a septic patient (n=406, 90%), and note a high level of trust in the strength of evidence supporting the SSC (n=366, 81%). Prehospital antibiotics, pre-alerts, reinforcement strategies, and timely return of lab results emerge as promising; peer influence and awareness do not.

Conclusion
A survey of Canadian emergency healthcare providers identified barriers to optimal sepsis care including system-level issues and public education. There is trust in the guidelines, and opportunities for earlier intervention are identified. Barriers and enablers will be explored in greater depth in upcoming interviews.