

Lives and money: Understanding the true cost of sepsis in Canada

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Kali Barrett, Victoria Chechulina, and Fatima Sheikh discuss the economic burden of sepsis in Canada and the economic rationale for implementing coordinated, national strategies to combat this often-overlooked disease

Sepsis is a global health threat, responsible for a significant burden of deaths and disability in all economies. In Canada, this challenge is being addressed in part by Sepsis Canada, a National Research Network funded by the Canadian Institutes of Health Research (CIHR). The network was established to build the research infrastructure needed to enhance our understanding of sepsis, identify effective interventions, and implement strategies to reduce the illness and death it causes. Previously, members of Sepsis Canada have underscored how robust research infrastructure is critical for driving innovation and supporting high-quality scientific studies. These efforts are also central to developing a cohesive National Action Plan against sepsis, an essential step for coordinating research, clinical care, and public health initiatives. ⁽¹⁾

The long-term impacts of sepsis

The consequences of sepsis extend far beyond acute hospitalization. While sepsis can be immediately life-threatening – indeed, it remains one of the leading causes of in-hospital death – survivors frequently face long-term challenges. In the short term, mortality rates remain high, with many patients not surviving the initial illness or succumbing to complications soon after. Long-term complications of sepsis include an increased risk of serious chronic conditions such as cardiovascular disease, kidney failure, and diabetes. Many will suffer from cognitive impairment and mental health challenges. For those who experienced the most severe form of septic shock, tissue death in the digits or limbs may require amputation.

These health complications can profoundly affect an individual's quality of life, limiting their ability to return to work and placing a strain on families and support networks. Economically, the toll is substantial: long-term disability leads to lost productivity, increased reliance on social services, and higher healthcare costs for rehabilitation, medications, and ongoing medical support. As a result, sepsis represents not only a human tragedy but also a serious economic concern, as fewer people can contribute to the workforce, and more resources are redirected to managing its aftermath.

Understanding the economic burden of sepsis in Canada

Sepsis imposes substantial costs on healthcare systems, beginning with hospitalization. A systematic review evaluating hospital-related sepsis costs reported that the median of the mean hospital cost per sepsis patient was USD 32,421. ⁽²⁾ These expenses reflect the complexity of sepsis management, which often requires intensive care, specialized diagnostics, multiple treatments, and extended hospital stays. However, the financial burden does not end at discharge; many survivors accrue ongoing expenses long after they leave the hospital. An emerging systematic review, currently underway by our research group, indicates that post-discharge healthcare costs for sepsis survivors are high and exceed those of patients hospitalized for other reasons. In Ontario, a cohort study found that severe sepsis survivors had incremental healthcare costs of CAD 29,238 at one year compared to similar individuals without sepsis. ⁽³⁾ Sepsis survivors are also more likely to become high-cost users of the healthcare system over time. Ontario data demonstrated that individuals with a history of sepsis were more likely to be in the top 5%

of healthcare spenders post-discharge compared to those who had a non-sepsis hospitalization (OR 2.24; 95% CI: 2.04-2.46). ⁽⁴⁾ These findings underscore the lasting and expensive implications of sepsis for patients, families, and the health system.

Coordinated interventions to prevent sepsis and improve early recognition and treatment can significantly reduce its clinical and economic impact. Evidence from British Columbia illustrates the potential for cost savings through structured sepsis protocols. In that province, implementing a sepsis care bundle comprised of early identification, rapid administration of antibiotics, and aggressive fluid resuscitation was associated with both a reduction in cases of sepsis and reduced healthcare costs. An economic analysis of this program indicated a return on investment of \$112.50 for every \$1.00 spent on preventative measures. ⁽⁵⁾

Investing in sepsis prevention

Efforts to prevent sepsis will reduce the need for hospital services and will reduce healthcare costs. Moreover, the downstream costs related to long-term disability, repeated hospital visits, and complications can be substantially lowered when effective early interventions are put in place. Investing in robust screening tools, staff training, and follow-up care for sepsis survivors are all strategies that can lead to both improved patient well-being and cost savings. These measures align with the broader health system goal of enhancing efficiency while maintaining high-quality care.

Sepsis remains a pressing public health issue in Canada, with immediate life-threatening implications and long-lasting consequences for survivors, families, and the healthcare system. The economic case for a coordinated national approach is compelling: reducing the incidence and severity of sepsis can free up vital healthcare resources, reduce long-term disability, and mitigate productivity losses. Building on the research infrastructure established by Sepsis Canada, policymakers have the opportunity to champion a National Action Plan that addresses sepsis from prevention and early detection to survivor rehabilitation. By doing so, Canada would save lives and realize significant economic benefits, reinforcing the imperative that sepsis is a crisis too costly – in both human and financial terms – to ignore.

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