British Columbia Sepsis Network (BCSN) Return on Investment

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BACKGROUND

- Sepsis is a clinical syndrome that occurs as a complication of an infection.
- It is a leading cause of mortality and is linked to increased hospital resource utilization and prolonged stays in intensive care.
- The BC Patient Safety and Quality Council (BCPSQC) created the BC Sepsis Network (BCSN) in 2012 to connect clinicians, quality improvement leads and operational staff who could champion sepsis improvement.
- There are three components of the BCSN:
  - Clinical and quality improvement (QI) resources
  - Expert teaching and coaching
  - Fostering province-wide awareness and engagement

AIM

- This storyboard showcases the return on investment - ROI (i.e., value for money) of the BCSN. These results provide robust evidence to inform decisions on resource allocation about QI initiative(s) in the province and to propagate a similar model of care for Canada and beyond.

METHODS

Epidemiological Rates

- Aggregate data on in-hospital sepsis rates and sepsis mortality in all Canadian provinces were obtained from the Canadian Institute for Health Information (CIHI).
- Annual background mortality rates for BC and Canada were extracted from the Statistics Canada.

Costs / Assumptions

- The average cost of sepsis-related hospitalization was calculated from CIHI’s Patient Cost Estimator.
- The average cost of in-hospital death and burial costs to the family were identified from the grey literature.
- The cost of BCSN implementation were extracted from financial reports.
- Health system and health authority costs related to improving sepsis care were not included in this analysis.
- A discount rate of 3.5% was applied, and all costs are reported in Canadian dollars.

Analysis

- Calculated financial savings from averted cases and mortality for the fiscal period from April 2011 to March 2012 (baseline), and April 2012 to March 2018 (post-BCSN initiation).

RESULTS

- Since the launch of BCSN and targeted efforts to improve sepsis care in the province, there has been a substantial reduction in sepsis cases and mortality in the BC compared to other provinces in Canada.

- A total of 918 sepsis cases and 161 deaths were averted in BC during the post-BCSN period. In 2017, approximately 323 sepsis cases were averted in BC compared to the other provinces, where on average only 24 cases were averted.

- Of $499,388 invested in the BCSN, nearly 70% funds were utilized for clinical leadership and 25% on staffing.

- The ROI translates into approximately $14 million in cumulative savings from averted sepsis cases, $25 million in savings from averted sepsis cases, and $2 million in savings from death averted; altogether generating a return of $41 million.

- In 2018/19, BC contributed nearly 31% to the overall societal cost avoided in Canada.

LESSONS LEARNED AND NEXT STEPS

- Implementing the BCSN required a minimal financial investment in Sepsis care.
- Our work demonstrates a positive ROI for the BCSN and strengthens the policy argument for similar QI initiative(s) in the province.
- Next steps are to calculate a difference in the natural reduction of sepsis cases in Canada and BC, and to estimate future cost savings (a 10-year forecast).