Implementing the Hour-1 Bundle Using a Multiprofessional Approach

Implementation Toolkit
Society of Critical Care Medicine
Diagnostic Excellence Program

Background

Patients with sepsis are susceptible to severe morbidity or death within hours of onset. The Hour-1 Bundle, based on the Surviving Sepsis Campaign 2021 Adult Guidelines, encourages clinicians to act as quickly as possible when sepsis is recognized.[1,2]

Surviving Sepsis Campaign Hour-1 Bundle elements:

1. Measure lactate level.*
2. Obtain blood cultures before administering antibiotics.
3. Administer broad-spectrum antibiotics.
4. Begin rapid administration of 30mL/kg crystalloid for hypotension or lactate level $\geq$ 4 mmol/L.
5. Apply vasopressors if hypotensive during or after fluid resuscitation to maintain mean arterial pressure $\geq$ 65 mm Hg.

*Remeasure lactate if initial lactate is elevated (> 2 mmol/L).

This toolkit is designed to:
- Explain how champions and multiprofessional teams can support implementation of the Hour-1 Bundle
- Provide tools and resources for implementing the Hour-1 Bundle using a multiprofessional approach

How Champions and Multiprofessional Teams Support Implementation of the Hour-1 Bundle

Champions are those who are highly committed to promoting and implementing evidence-based practices. They may address lack of interest or aversion to change in their organizations.[3]

Multiprofessional teams are formal workgroups whose members are clinicians from different professional backgrounds, such as physicians, nurses, and pharmacists, who meet to exchange ideas and facilitate learning.[3]

- **Studies on improving implementation of the Surviving Sepsis Campaign have examined the effects of both champions and multiprofessional teams.[4]**

- **Nurse champions are key team players in the recognition of sepsis.**

  - **Nurses are often the first to detect signs and symptoms of sepsis.**

  - **Nurses are often in a strategic position to drive sepsis protocols.**

- **Often, multiprofessional teams work together to develop, evaluate, and revise sepsis protocols.**

Implementation Strategies

Here are some resources recommended by Society of Critical Care Medicine (SCCM) subject matter experts. These resources might help you prepare champions and organize multiprofessional teams to improve implementation of the Hour-1 Bundle in your ICU.

Implementation Guide

Surviving Sepsis Campaign: Early Identification of Sepsis on the Hospital Floors: Insights for Implementation of the Hour-1 Bundle

Tools

Surviving Sepsis Campaign Hour-1 Bundle Pocket Card and Infographic

Surviving Sepsis Campaign Screening Tool

Surviving Sepsis Campaign App
Available on iTunes and Google Play

Literature

- Kleinpell R. Promoting early identification of sepsis in hospitalized patients with nurse-led protocols. *Crit Care*. 2017;21:10. Table 1.

- Schinkel M, Nanayakkara PWB, Wiersinga WJ. Sepsis performance improvement programs: from evidence toward clinical implementation. *Crit Care*. 2022 Mar 22;26(1):77.

- Schinkel M, Holleman F, Vleghels R, et al. The impact of a sepsis performance improvement program in the emergency department: a before-after intervention study. *Infection*. 2022 Nov 17;1-10.

- Tromp M, Hulscher M, Bleeker-Rovers CP, et al. The role of nurses in the recognition and treatment of patients with sepsis in the emergency department: a prospective before-and-after intervention study. *Int J Nurs Stud*. 2010 Dec;47(12):1464-1473.

Learning

SCCM webcast: Implementing the Hour-1 Bundle

Surviving Sepsis Campaign video: The Hour-1 Bundle: Functional or Fantasy

Surviving Sepsis Campaign Hour-1 Bundle Teaching Slides

Learn More

SCCM Diagnostic Excellence Program Using Education and Technology for Accurate and Rapid-cycle Sepsis Diagnoses

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References

1. Evans L, Rhodes A, Alhazzani W, et al. Surviving Sepsis Campaign: international guidelines for management of sepsis and septic shock: 2021. *Crit Care Med*. 2021 Nov 1;49(11):e1063-e1143.
2. Levy MM, Evans LE, Rhodes. The Surviving Sepsis Campaign Bundle: 2018 update. *Crit Care Med*. 2018 Jun;46(6):997-1000.
3. Powell BJ, Waltz TJ, Chinman MJ, et al. A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project. *Implement Sci*. 2015 Feb 12;10:21.
4. Gilhooly D, Green SA, McCann C, Black N, Moonesinghe SR. Barriers and facilitators to the successful development, implementation and evaluation of care bundles in acute care in hospital: a scoping review. *Implement Sci*. 2019 May 6;14(1):47.

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