Implementation of Sepsis Education and Using the TRAP Criteria for First Responders

Katherine J. Coulter, DNP APRN, FNP-BC
Mary F. Hintzsche, DNP, APN, FNP-C, AGACNP-BC
August 2021
Objectives

• By the end of this presentation the participant will be able to identify the steps necessary for development of an interdisciplinary educational program.

• By the end of this presentation the participant will be able to describe the process for educating first responders about the TRAP criteria.

• By the end of this presentation the participant will be able to describe the process for evaluation of an education program.
• Retrospective study conducted by the investigators applying a modified SIRS criteria demonstrated success in identification of sepsis risk
  – 300 charts were selected from January 1, 2017-June 30, 2018
  – Patients who had an ER diagnosis of sepsis (ICD10); Adults (18 years of age or older); Arrived by ambulance
• A SIRS and qSOFA score assigned to each of the the cases to determine how many patients may have screened positive for sepsis in the pre-hospital setting
  – A rechecked score with SIRS + mental status and SIRS + blood pressure

**TRAP CRITERIA**
temperature, respiratory rate, altered mental status, and pulse
Literature Review

• Literature review to identify current methods in place for pre-hospital sepsis screening by first responders
  – Articles selected from 2010 through 2018 via CINAHL database
  – Keywords: sepsis, pre-hospital sepsis screening, early sepsis identification, qSOFA, SIRS

• There is not a valid tool for pre-hospital screening of sepsis
  – A review looked at five different pre-hospital sepsis screening tools
  – Bas 90-30-90, Guerra, PRESEP, PRESS, and Robson tools have overlapping screening protocol similarities;
  – PRESS score is a promising tool with an 86% sensitivity score, but needs to be validated;
  – The Robson screening tool, which was adapted from the Surviving Sepsis Campaign diagnostic criteria, uses a modified system inflammatory response syndrome (SIRS) criterion (Coulter & Hintzsche, 2021)
Methods

• Convenience sample of 109 first responders from one area fire department (emergency room nursing staff also included for education— but not studied at this time)

• Pre-test / Post-test design
  – Eight question quiz
  – Five point Likert-scale

• Development and roll out of “Sepsis Alert” for First Responders: Implementing the TRAP Criteria training module
  – Education founded on the literature and the proposed TRAP criteria
  – Program included self-assessment
  – Provided learning resources for the first responders
  – Three case studies
  – 1 CEU awarded
• 213 first responders and emergency room nurses participated in the sepsis education program between December 1, 2019, and February 29, 2020
  – 147 completed the program in its entirety
    • 86 participants were first responders
    • 19 were emergency room nurses
    • 42 did not provide their professional role
• Pre-test (first responders)
  – 66% reported they were not comfortable identifying a patient at risk for sepsis
  – 68% percent of respondents were not aware of the available sepsis screening tools
  – 48% of first responders noted that they were comfortable identifying abnormalities (e.g., hypotension, tachypnea, tachycardia) in vital signs.
• Post-test (first responders)
  – 66% of first responders scored 60% or higher on the post test than the pre-test
  – The majority of first responders reported agreeing or strongly agreeing with comfort implementing the TRAP criteria, feeling prepared with sepsis identification, high quality, and ease of the educational program
  – More than half of the participants felt the content presented prepared them to identify sepsis
Conclusion

- There is a minimal literature evaluating pre-hospital sepsis screening by first responders
- Pre-education, the majority of first responders were not comfortable identifying sepsis in the pre-hospital setting
- After implementation of the educational program, scores improved suggesting benefit of education for first responders on identification of sepsis
- Participants felt prepared to implement the TRAP criteria
Recommendations

• Further study of the TRAP criteria on a large scale across multiple organizations
• Continued identification of the knowledge gap in the pre-hospital setting among first responders across multiple organizations
• Continued formal Sepsis Education Program for first responders  
  – Education would also need to include emergency room nursing and providers
• Compliance monitoring of the TRAP criteria and study of pre-and post hospital data
• Evaluating the impact of sepsis screening in the prehospital setting
• Development and implementation of a standardized communication technique between first responders and the emergency room through a “Sepsis Alert”
References


