



**Northern Illinois  
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# **Implementation of Sepsis Education and Using the TRAP Criteria for First Responders**

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# 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.

# TRAP Criteria



- 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

**SEPSIS ALERT**  
**Stop! Is it a TRAP?**

Does your patient have an infection source and at least 3 of these symptoms?

Infection Source	Skin infection Respiratory infection Urinary infection Other source of infection
<b>T</b>	<b>Temperature</b> > 38 C/100.4 F - or - < 35 C/96.8 F
<b>R</b>	<b>Respirations</b> > 20 R/minute
<b>A</b>	<b>Altered Mental Status</b> GCS < 15
<b>P</b>	<b>Pulse</b> > 90 bpm

Infection source + 3 (TRAP) = CALL A "SEPSIS ALERT"  
Notify Emergency Communication RN & use the term "SEPSIS ALERT"!

Does your patient have risk factors?  
Child <1-year-old, Immunosuppression, Chronic Disease, Adults 65 or older

# 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

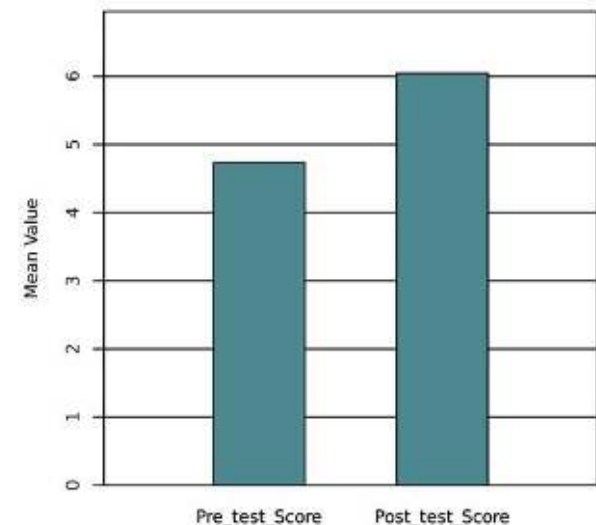


- Convenience sample of 109 first responders from one area fire department (*emergency room nursing staff also included for education—but not studied at this time*)
- Pre-test / Post-test design
  - Eight question quiz
  - Five point Likert-scale
- Development and roll out of “*Sepsis Alert*” for First 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

# Results



- 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”



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