Innovative Approach to Improve Recognition and Management of Pediatric Sepsis in the Acute Care Inpatient Setting

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**Background**

**Significance**

Sepsis is the leading cause of childhood mortality and morbidity across the world. Approximately 18 children die from sepsis per day in the United States.

**Problem**

Despite existing system level processes, delayed recognition of sepsis occurs.

40% of nurses are new to the hospital.

**Gap**

“QI programs that improve care can be identified as include: bedside for identification of resuscitation, use of standardized order sets, skilled clinicians to prepare and administer medications in a quick and timely fashion and lastly, a robust educational curriculum supporting and reinforcing each of these interventions, processes, and best practices.”

**Aims**

- Increase knowledge of pediatric sepsis in the inpatient setting.
- Assess gaps in the learner’s knowledge.
- Increase utilization of Sepsis Bundle Adherence.

**Methods**

- **Design**: Pre-Post
  - Knowledge Analysis: Number of interventions
  - Knowledge Analysis: Percentage of learners.
  - Knowledge Analysis: Total # of patients.

- **Setting**: Pediatric Academic Tertiary, Inpatient setting
  - (Pediatric Care Area)

- **Sample**: 588 nurses
  - Acute Care

- **Sample size**: 100%

- **Ethical Review Approval Plan**: PERC

**Getting with the Guidelines**

**Initial Resuscitation Algorithm for Children**

**Surviving Sepsis Campaign**

**Systematic Screening for Sepsis in Children**

**Discussion**

**Knowledge Aim**

- **Module Results**
  - T-Test, p value 0.135
  - No statistical significance
  - Clinical significance suggesting clinical experience is not a factor in knowledge of pediatric sepsis

- **Sample**: All Inpatient units (Acute Care)

- **T-test, p value 0.640, normal distribution not met**

- **Wilcoxon signed ranks, z-score 0.70, p value 0.484**

- **No statistical significance**

- **Clinical significance with decreased time to antibiotic administration, implying improved clinical application of knowledge.**

  - Pre-intervention: 106.4 minutes.
  - Post-intervention: 97.47 minutes

**Outcome Aim**

- **Sample**: All Inpatient units (Acute Care)

- **Results**

  - Module Results
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    - Clinical significance suggesting clinical experience is not a factor in knowledge of pediatric sepsis

  - Sample: All Inpatient units (Acute Care)

  - **T-test, p value 0.640, normal distribution not met**

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**Conclusion**

This project showed that the baseline knowledge was around 73% across 588 nurses & all ultimately obtained 100% accuracy, reflecting an increase in knowledge. Additionally, since this learning platform highlighted confoundingly-held misinformation, we also gained valuable insight into where nurses believe are misguided, uncovering threats to the system where a delay in care or mismanagement of sepsis in the inpatient setting is potentially deadly.

The utilization of misinformation data obtained from this education module can point educators to an opportunity for expansion of other forms of QI learning methods, such as more applied simulation-based modules, to help combat these beliefs and reinforce behavior change to align to evidence-based guidelines in order to prevent severe sepsis in the inpatient setting.

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**References**