

Evidence-based Guidelines and Scripting to Support Acute Care Nurses in Sepsis Recognition, Reporting and Treatment

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INTRODUCTION

Severe sepsis is a significant problem; with an incidence ranging from 300 to greater than 1000 cases per 100,000 US population annually with associated mortality from 30% to 60%. The Institute for Healthcare Improvement (IHI) care bundles and the Surviving Sepsis Campaign (SSC): International Guidelines for Management of Severe Sepsis and Septic Shock: 2012 advocates use of evidence-based practice as a means to improve patient outcomes and decrease mortality. A review of MMC medical records over a nine-month period (July 2012-March 2013) at the project site revealed that sepsis was one of the top 10 diagnoses (N=492) in the hospital (Diagnosis-Related Groups [DRG] 870, 871, & 872). A chart audit also revealed that nurses were not consistently completing the sepsis screen in the electronic medical record (once per day recommended) and compliance with IHI's three and six hour bundles was inconsistent.

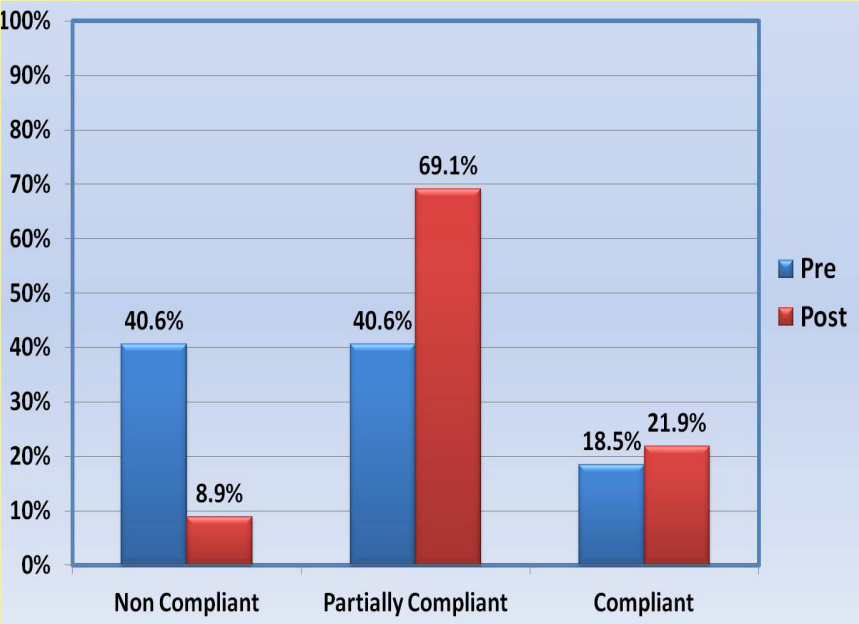
METHODS

Nurses (N=681) received an educational intervention on the IHI bundles and SSC guidelines during annual competency updates. An EHR tool was reintroduced which provided a platform for sepsis screening. Introduction, Situation, Background, Assessment, and Recommendation scripting was implemented to support nurses' report of positive findings.

RESULTS

Nurses rated themselves (Table 1) as significantly more knowledgeable about sepsis after the education, significantly more sure that the hospital has a consistent definition and treatment for sepsis, increased their belief that their peers were aware of the differences in sepsis states, and were more comfortable about their ability to recognize sepsis and report it to a provider (all $p < 0.0001$). Nurses' knowledge of sepsis demonstrated a statistically significant difference between the pre and post test (all $p < 0.001$). For 9 out of 10 questions, there was a statistically significant improvement (Table 2) in the percentage of nurses who answered the item correctly in the post test (the improvement ranges for scores increased by 7.28 to 63.5%). The number of patients who never received the recommended screening decreased from 40.6% pre to only 8.9% post, while the number who received at least some screening increased from 59% to 91%. Statistical significance was demonstrated (Graph) in improved incidence of sepsis screening post educational intervention ($p < .0001$).

Nursing Perceptions and Attitudes	Pre-test Mean \pm SD	Post-test Mean \pm SD	P value
How would you rate your awareness of sepsis (treatment and complications)? (0=not at all; 4 = very)	3.0 \pm 0.5	3.3 \pm 0.5	<0.0001
Do you believe that there is a consistent definition and treatment for sepsis at our hospital? (1=don't know; 5 = strongly agree)	3.6 \pm 1.0	4.1 \pm 0.8	<0.0001
Do you believe that your peers are aware of the differences between sepsis, severe sepsis, and septic shock? (1=don't know; 5 = strongly agree)	3.2 \pm 0.9	3.7 \pm 0.8	<0.0001
How comfortable are you with your ability to recognize a patient that may be developing sepsis? (1=very uncomfortable; 4=very comfortable)	2.9 \pm 0.6	3.2 \pm 0.6	<0.0001
How comfortable are you with your ability to report to a Physician or Licensed Independent Provided a patient that may be developing sepsis? (1=very uncomfortable; 4=very comfortable)	3.2 \pm 0.9	3.3 \pm 0.6	<0.0001



Sepsis and Systemic Inflammatory Response Syndrome (SIRS) Knowledge	Pre-Correct	Post-Correct	Change	P value
1. A lactate > than ___ mEq/L would warrant a critical value report?	31.1%	93.5%	+62.3%	$p < .0001$
2. Blood cultures should be obtained and the first antibiotics administered within how many hours of diagnosis of Sepsis?	50.9%	60.1%	+9.1%	$p < .0001$
3. How often should a patient be screened for sepsis?	44.6%	87.4%	+42.7%	$p < .0001$
4. Identification of SIRS or a sepsis state case study (severe sepsis).	19.1%	82.6%	+63.5%	$p < .0001$
5. Identification of the SIRS or a sepsis state case study (sepsis).	60.2%	93.8%	+33.5%	$p < .0001$
6. Identification of the SIRS or a sepsis state case study (SIRS).	47.8%	97.4%	+83.0%	$p < .0001$
7. What is the first step in the initial management of the patient with Sepsis?	54.1%	35.9%	-18.3%	$p < .0001$
8. Severe sepsis may be manifested as (circle all that applies).	38.7%	73.1%	+34.4%	$p < .0001$
9. The initial sepsis resuscitation bundle in the adult sepsis patient with hypotension calls for a bolus of which amount and kind of intravenous fluid?	39.8%	94.9%	+55.2%	$p < .0001$
10. Which of the vital signs are out of the normal range according to the SIRS criteria?	81.5%	88.7%	+7.3%	$p < .0001$

CONCLUSION

Having nurses at the point of care to implement the sepsis bundles is likely to result in less variability in the screening process and missed opportunities for early diagnosis and treatment. A nursing education intervention coupled with the use of an EHR sepsis screening tool promotes improved sepsis screening, recognition and report, and increased nurse knowledge and compliance with IHI bundle and SCC guideline adoption.