



Sepsis Education in Critical Care Transport

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Problem & Significance

Problem Statement:

Sepsis has a high rate of mortality and is the fourth most common diagnosis encountered by MedFlight clinicians. MedFlight's sepsis quality metric compliance 66% in 2018 with goal to improve compliance $\geq 95\%$.

Purpose:

The purpose of this DNP project was to explore the effect of sepsis education on clinical quality metrics.

PICOT:

Among MedFlight critical care transport RNs and paramedics (P) what effect does an online education activity on caring for adults with sepsis (I) have on achieving compliance at $\geq 95\%$ with MedFlight's sepsis quality metrics (O) in the eight weeks following the intervention compared to eight weeks before the intervention (T)?

Literature Review

Sepsis:

- Defined as organ dysfunction that develops due to a dysregulated response to infection (Rhodes et al., 2017; Singer et al., 2016)
- Leading cause of death (Benedict, 2015; Singer et al., 2016)
- Treatment is time-dependent (Rhodes et al., 2017)
- Exists on a continuum and is difficult to detect early when it is most treatable (Singer et al., 2017)
- No diagnostic test (Singer et al., 2016)

Sepsis Education:

- Improves patient outcomes (Berg et al., 2013; Delaney, Friedman, Dolansky, & Fitzpatrick, 2015)
- Increases RN self-perceived confidence and competence (Olson, 2015)
- Strategy used most to comply with sepsis bundles (Borgert, Goossens, & Dongelmans, 2015)
- Ties to performance measures (Kleinpell & Schorr, 2014) and performance improvement is associated with improved outcomes (Rhodes et al., 2017)

Outcomes

Results:

- 85 of 110 (77%) of eligible persons participated including RNs (42%) and Paramedics (58%)
 - 76%: >10 years in discipline
 - 51%: >10 years in critical care transport
 - 67%: Full-time at MedFlight
- Pre- and Post Education Intervention:
 - Pre-test average score 90%
 - Post-test average score 97%

Pre- and Post Test Questions	<i>p</i>
Efforts Aimed at Performance Improvement	.107
According to MedFlight Internal Data, Sepsis	< .001
Sepsis Is	.005
Effective Management of Sepsis Depends On	1.00
Sepsis is a Challenge to Recognize Because	1.00
The Sepsis Metrics MedFlight Measures as Part of an Overall Quality Plan Include	.054
Identifying Sepsis Relies on an Astute Clinician Observing Signs and Symptoms in a Patient with Suspected Infection	.609
Sepsis is a Time-Dependent Condition	.609
Mortality Increases for Each Hour's Delay in Administering Appropriate Antibiotics	1.00
In ePCR There is a Sepsis Intervention to Record Sepsis Metrics	.013

$p < .05$ statistically significant

Fisher's Exact Test used to evaluate statistical significance

Compliance Sepsis Metrics			
	Pre-Education	Post-Education	<i>p</i>
Compliant	13	5	.362
Not Compliant	3	3	
Compliance (Percent)	81%	63%	

Conclusions

Participants:

- Believed education was appropriate to their practice
- Felt education was valuable
- Thought they would manage persons with sepsis better
- Ranked their sepsis knowledge higher after education
- Test scores were higher after receiving education
- Single education intervention not effective to achieve compliance $\geq 95\%$ with sepsis metrics
- Findings consistent with literature showing limited utility of sepsis education
- Adds to knowledge because it addresses critical care transport
- Strategies beyond just education are necessary to help clinicians understand, identify, and treat sepsis

Recommendations

- Incorporate additional tactics besides education
- Continue to study sepsis metrics
- Recommend further studies:
 - Repeat in other geographic areas
 - Outcomes of patients who are transported by air medical helicopter compared with ground mobile intensive care unit
 - Effects of patients with sepsis who receive advanced life support compared with critical care life support during interfacility medical transportation
 - Outcomes of patients with sepsis who receive care during medical transportation by critical care transport teams comprised of various healthcare disciplines