Disparities in Emergency Department Sepsis Care Due to Language Differences

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Purpose/Need

- Sepsis is the leading cause of in-hospital mortality
- Early goal directed therapy in ED significantly decrease mortality
- Disparities in the incidence and outcomes of sepsis have been documented in observational studies
- Little is known about the occurrence of disparities within the evidence-based processes of care that have been shown to improve survival in sepsis

Purpose/Need

Aim: To determine if disparities exist within the process of care of emergent sepsis management due to language differences

Hypothesis: We hypothesize that non-English speaking patients (NESP) are more likely to experience delays within the process of care compared to English speaking patients (ESP)

Methodology

- Retrospective chart review of ESP and NESP, presenting to an academic, urban, level 1 trauma center from June 2015 to July 2016.

- Patients with severe sepsis/septic shock were identified by ICD10 codes. We excluded patients transferred from other institutions.

- Language was obtained from ED registration demographics, "Preferred language"

- We used CMS severe sepsis definition of "time zero"

- Four elements of the 3 hour sepsis bundle were extracted: lactic acid, blood cultures, broad spectrum antibiotics, administration of 30mg/kg of NS (2L)

- Chart abstractions were completed by a trained research assistant. Random double data abstraction to ensure interrater reliability was performed.

- We used descriptive statistics, equality of proportions test, and t-test.

Results

- 66 severe sepsis/septic shock charts met inclusion criteria

- 68% were ESP and 32% were NESP (18% Spanish, 5% Cantonese, 3% Arabic, 1.5% Albanian, 1.5% Creole, 1.5% Greek,1.5% Russian)
- The median age for both groups was 64, 60% were male

- The 3-hour bundle was completed in 38% of all cases

- The 3-hour bundle completion: 40% ESP and 33% NESP (p=0.60)

- The average time to complete the 3-hour bundle: 101.8 minutes ESP and 119.0 minutes NESP (p=0.47)

- The average time to complete the 3-hour bundle during their entire ED stay: 134.2 minutes ESP and 186.3 minutes NESP (p=0.15)

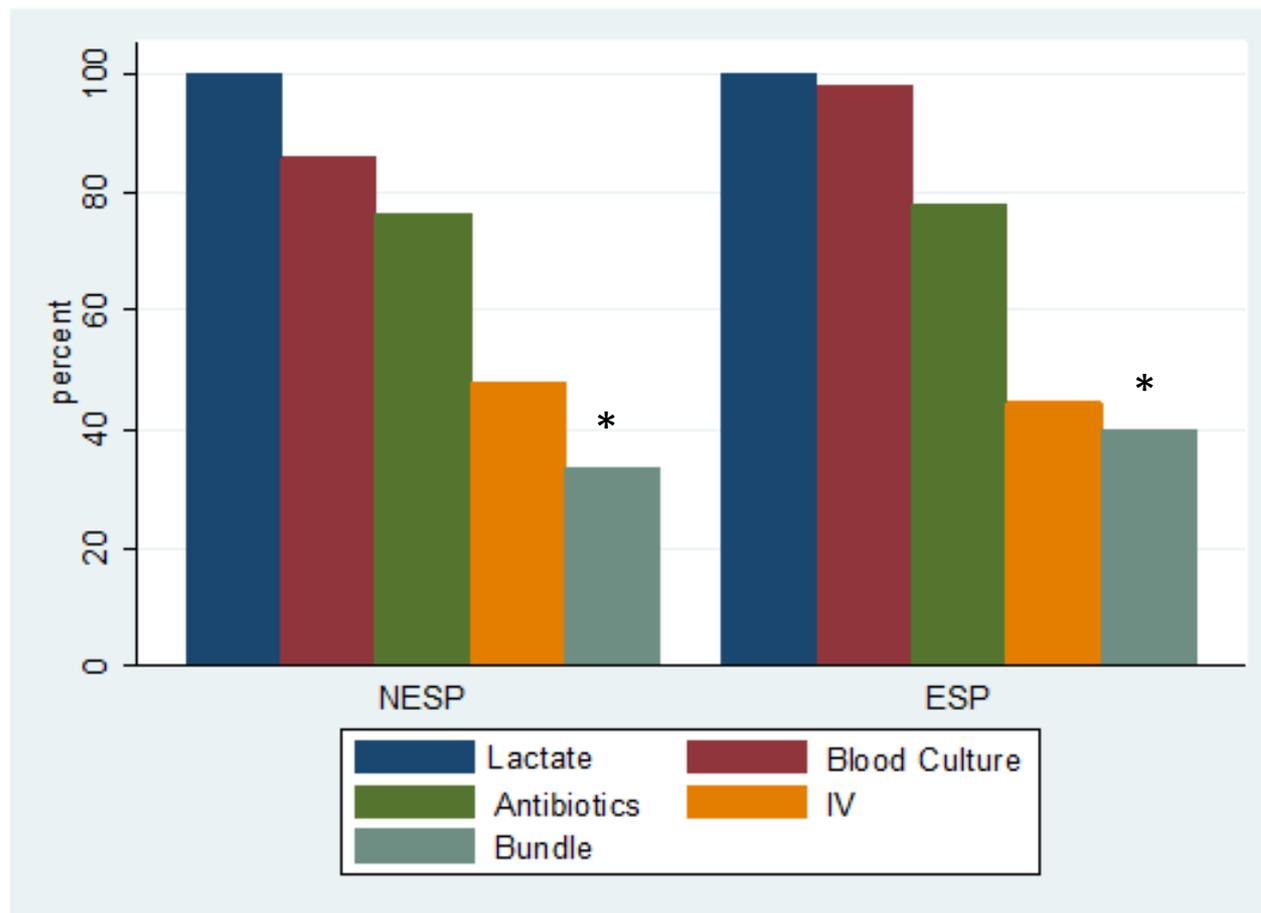- Inadequate IVF was the most frequent deficiency

Results

Figure 1: Percent of 3-hour sepsis bundle completion (*) and bundle elements completion for Non-English speaking patients (NESP) and English speaking patients (ESP). NESP n = 21; ESP n = 45

Results

	ESP	NESP	p-value
Lactate	23.7 (N=45)	13.7 (N=21)	0.09
Blood Culture	35.8 (N=44)	23.1 (N=18)	0.19
Broad Spectrum Antibiotics	55.1 (N=35)	53.8 (N=16)	0.92
Intravenous Fluids	101.2 (N=20)	105.1 (N=10)	0.85
3-Hour Bundle Completion	101.8 (N=18)	119.0 (N=7)	0.47

	ESP	NESP	p-value
Lactate	23.7 (N=45)	13.7 (N=21)	0.09
Blood Culture	35.8 (N=44)	47.3 (N=19)	0.53
Broad Spectrum Antibiotics	64.9 (N=37)	83.9 (N=18)	0.40
Intravenous Fluids	131.1 (N=25)	148.2 (N=14)	0.54
3-Hour Bundle Completion	134.2 (N=23)	186.3 (N=11)	0.15

Table 1.   Average time in minutes to 3-hour sepsis bundle completion for ESP and NESP who successfully completed the bundle within 3 hours.

Table 2. Average time in minutes to 3-hour sepsis bundle completion for ESP and NESP during their ED stay.

Conclusion

- Non English language did not affect completion of 3-hour sepsis bundle

- Overall low 3-hour sepsis bundle completion for all groups (38%)

- Sepsis bundle completion increased during stay in ED (51%); 187 min

- Inadequate IVFs is the most common reason for failing to complete the 3 hour sepsis bundle

- Limitations: Small sample size, single center study

Thank you