

Factors Associated with 30-Day ED Readmission Following Initial ED Discharge for Suspected Sepsis

BACKGROUND

- Sepsis is a dysregulated host response to infection leading to organ dysfunction¹
- Delayed recognition of sepsis is associated with increased mortality
- Systemic inflammatory response syndrome (SIRS) criteria is often used to diagnose sepsis, especially in the Emergency Department (ED)
- SIRS lacks specificity and may lead to over-diagnosis of infectious causes for ED admission and inappropriate antimicrobial prescribing²
- Furthermore, up to 80% of patients with suspected sepsis are discharged directly from the ED³

OBJECTIVES

- To describe outcomes and identify factors associated with ED readmission in those initially discharged directly from the ED who met suspected sepsis criteria (≥ 2 SIRS criteria plus intravenous [IV] broad-spectrum antibiotic)

METHODS

- Single-center, retrospective cohort study of patients seen in the ED at UTSW Medical Center from January - June 2018
- Suspected sepsis was defined as ≥ 2 SIRS criteria plus receipt of IV broad-spectrum antibiotics in the ED.
- Inclusion criteria: Aged ≥ 18 years, ≥ 2 SIRS criteria, ≥ 1 dose IV broad-spectrum antibiotic(s) in the ED, discharged home from ED
 - Broad-spectrum antibiotics: aztreonam, cefepime, ceftriaxone, ciprofloxacin, levofloxacin, meropenem, piperacillin/tazobactam, vancomycin
- Primary outcome: Percentage of patients readmitted to the ED within 30 days from initial ED presentation with suspected sepsis
- Statistical analysis was performed using a multivariable logistic regression
- Two-sided P value < 0.05 was considered significant

RESULTS

Table 1. Baseline Demographics of Patients readmitted to the ED within 30 days from initial ED presentation with Suspected Sepsis

	Readmitted to ED within 30 d (n = 44)	Not readmitted within 30 d (n = 135)	p-value
Age, years, median (IQR)	48 (30-59)	51 (36-65)	0.21
Male, n (%)	15 (34.1)	48 (35.6)	0.86
Race, n (%)			0.50
White	12 (27.3)	48 (35.6)	--
Black	19 (43.2)	47 (34.8)	--
Hispanic	9 (20.5)	33 (24.4)	--
Other	4 (9.1)	7 (5.2)	--
Chemotherapy within 30 d, n (%)	9 (20.5)	16 (11.9)	0.15
SOT or HCST transplant, n (%)	9 (20.5)	17 (12.6)	0.20
Immunosuppression, n (%)	1 (2.3)	6 (4.4)	0.52
SIRS criteria on initial ED admission, n (%)			0.46
2	28 (63.6)	94 (69.6)	--
3	13 (29.5)	48 (25.9)	--
4	3 (6.8)	6 (4.4)	--
Quick SOFA score on initial ED admission, n (%)			0.01
0	19 (43.2)	82 (60.7)	--
1	19 (43.2)	49 (36.3)	--
2	6 (13.6)	4 (2.9)	--
>2	0	0	--
Presence of bacterial infection at initial ED admission, n (%)			
Confirmed	7 (15.9)	28 (20.7)	0.48
Suspected	20 (45.5)	60 (44.4)	0.91
Absence	17 (38.6)	47 (34.8)	0.65
Length of total antibiotic therapy at initial ED admission, days, median (IQR)	6 (1-8)	8 (1-11)	0.03
Discharged on antibiotics at initial ED admission, n (%)	26 (59.1)	98 (72.6)	0.09

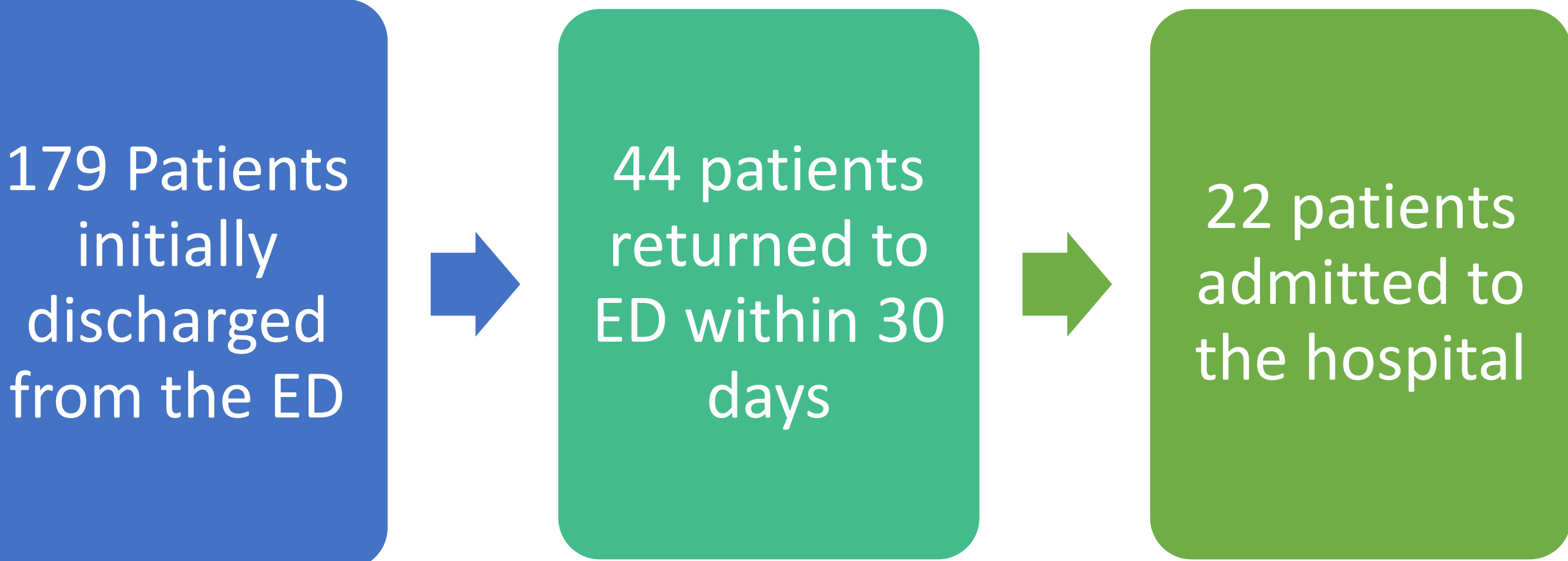


Table 2. Multivariable logistic regression of variables associated with readmission to ED

Quick SOFA score on initial ED admission		p-value
0	Reference	--
1	1.63 (0.78-3.46)	0.26
2	7.50 (1.85-30.39)	0.01
Discharged on antibiotics at initial ED admission	0.57 (0.27-1.19)	0.14
Chemotherapy within 30 days	2.05 (0.81-5.18)	0.13
SOT or HCST transplant	1.92 (0.75-4.88)	0.17

CONCLUSION

- Among patients who were treated for suspected sepsis and subsequently discharged from the ED, 25% returned to the ED within 30 days.
- In univariable analysis, duration of antibiotic treatment was associated with decreased risk of readmission at 30 days, though being discharged with antibiotics itself was not significant.
- A qSOFA ≥ 2 at the initial ED visit was associated with increased risk of readmission.
- While not its intended use, the qSOFA may function as a practical tool in the ED to triage patients more appropriate for admission.

REFERENCES

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