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# Do psychosocial conditions contribute to hospital readmission in patients with sepsis?

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## Introduction

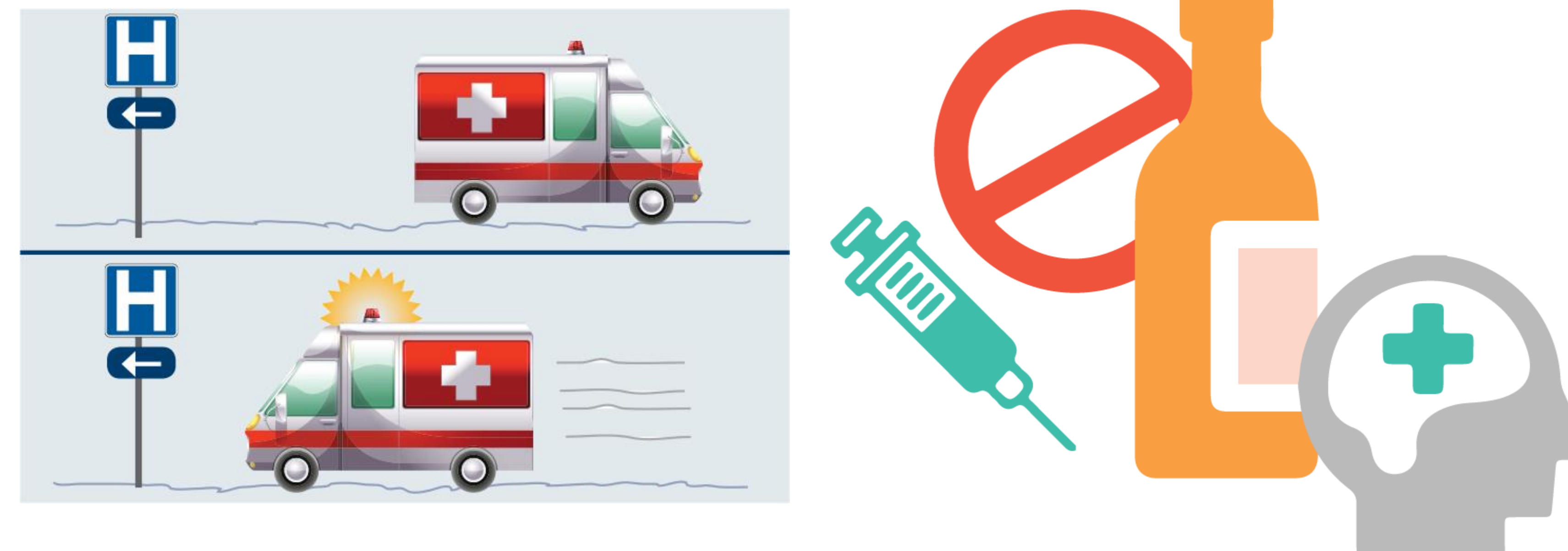
- Sepsis is the most expensive condition in hospitalized patients, recently reported to cost more than \$23.7 billion per year (1).
- Despite a decrease in mortality, the number of severe sepsis/septic shock (sepsis) cases have increased (2).
- Sepsis survivors are at risk for unplanned readmissions, which are associated with increased mortality and discharge to hospice (2).
- Psychiatric and social disorders have been associated with increased readmission rates in patients with heart failure, myocardial infarction, and pneumonia (3).
- Ascertaining variables associated with sepsis readmissions may aid in identification of risk factors and opportunities for improvement (4, 5).
- The purpose of this study is to evaluate if psychosocial conditions may be correlated with increased risk for readmission after a sepsis hospitalization.

## Hypothesis

Severe sepsis patient readmissions are associated with identifiable psychosocial patient characteristics during the index hospitalization.

## Methods

A single center retrospective cohort study of adult patients admitted to an urban tertiary care hospital between 4/1/2016 - 6/30/2016. Hospital survivors with an ICD-9 code for severe sepsis (995.52) or septic shock (785.52) were included. Index hospitalization data included patient demographics, origin on admission, discharge disposition, preexisting psychiatric conditions (depressive or other mood disorder, psychoses), substance use disorder, and homelessness. Readmission was defined as re-hospitalization at the same center within 180 days after index hospital discharge. Patients were compared based on readmission status. Statistical analysis was completed using Chi-square test.



## Results

Characteristic	No Readmission N = 100	Readmission N = 110	P Value
<b>Index Admission, n (%)</b>			
Substance Use Disorder	12 (12.0%)	26 (23.6%)	0.029
Psychiatric Disorder (Combined)	20 (20.0%)	38 (34.5%)	0.019
Depressive Disorder	14 (14.0%)	33 (30.0%)	0.005
Lack of Housing	8 (8.0%)	10 (9.1%)	0.778
Substance Use Disorder or Psychiatric Disorder	27 (27.0%)	52 (47.3%)	0.002
<b>Preexisting*, n (%)</b>			
Substance Use Disorder	10 (10%)	20 (18.2%)	0.091
Psychiatric Disorder (Combined)	18 (18.0%)	29 (26.4%)	0.146
Depressive Disorder	12 (12.0%)	26 (23.6%)	0.029
Lack of Housing	2 (2.0%)	5 (4.5%)	0.305
Substance Use Disorder Or Psychiatric Disorder	23 (23.0%)	39 (35.5%)	0.048

\*Documented as present twice within one year prior to and including index admission

## Results

- Analysis included 210 sepsis survivors of which 110 (52.4%) were readmitted.
- Readmitted and non-readmitted patients were similar for age, gender, race, marital status, and origin on index admission.
- Non-readmitted patients were more likely to be discharged home (p = 0.012).
- Patients with a diagnosis of depression were more likely to be readmitted after an index admission with sepsis (p = 0.005).
- Patients with any type of drug use (p = 0.029), psychiatric diagnosis (p = 0.019), or either substance or psychiatric disorder (p = 0.002) had increased readmission rates.

## Conclusion

In this cohort, patients with any type of substance use disorder or psychiatric disorder were at increased risk for readmission. Patients with a diagnosis of depression also displayed higher readmission rates after index hospitalization with sepsis or septic shock

Findings from this study should alert providers to closely monitor sepsis patients after hospital discharge and to consider increased follow up psychiatric and social care of patients after hospitalization with sepsis.

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