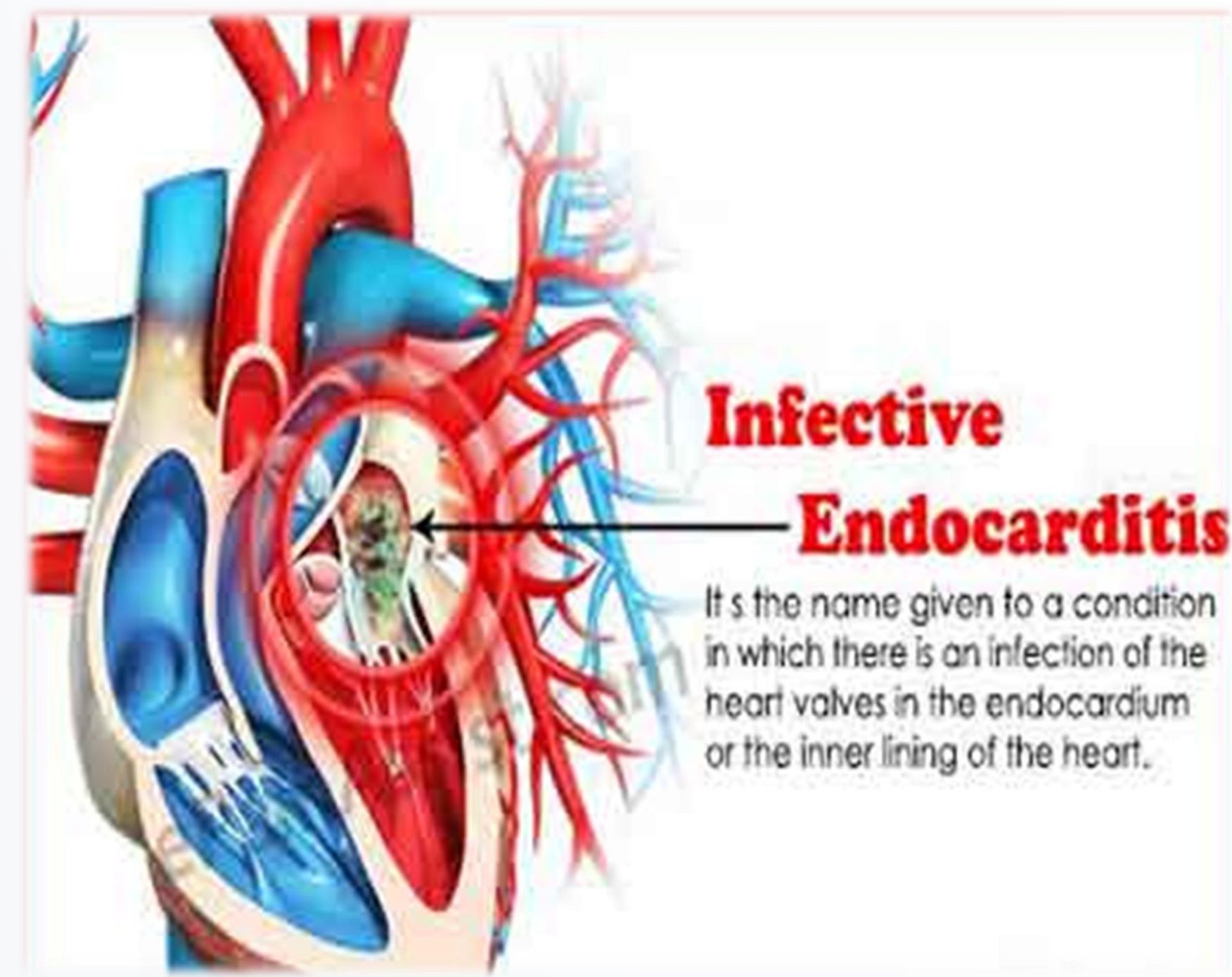


2016-2018 Retrospective Chart Review: Patients with Substance Use Disorder and Endocarditis

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<https://specialty.medicaldialogues.in/cardiology-update-infective-endocarditis-surgical-intervention-or-medical-management/>

Background

According to the Substance Abuse and Mental Health Services Administration (SAMHSA), an estimated 312,000 people in Oregon are diagnosed with Substance Use Disorder (SUD)(2019a, line 28). "Substance use disorders occur when the recurrent use of alcohol and/or drugs causes clinically significant impairment, including health problems, disability, and failure to meet major responsibilities at work, school, or home" (SAMHSA, 2019b, para. 4). People with SUD are at a higher risk for infections from unsafe injection practices.

Infective endocarditis (IE) is one such life-threatening infection resulting from IV drug use. People with SUD and IE require hospitalization and long-term antibiotics. There are limited publications about the care of hospitalized patients with both SUD and IE.

Two studies from research hospitals located in Massachusetts and Oregon support a need for a systematic team-based care model (Rosenthal, et al., 2016; and Englander, et al., 2017). Both of these studies recommend medication-assisted treatment (MAT) for the patient while hospitalized to decrease the drug dependence and continue the MAT at the time of discharge. Medications used include buprenorphine/ naloxone and methadone. In addition to the use of medications, a Trauma Informed Care (TIC) model is advised in caring for this patient population. U.S. Department of Health and Human Services, SAMHSA defines trauma as: "Individual trauma results from an event, series of events, or set of circumstances this is experienced by and individual as physically or emotionally harmful or life threatening and that has lasting adverse effects on the individual's functioning and mental, physical, social, emotional, or spiritual well-being"(2014, p. 7).

Purpose

The purpose of this study is to perform a retrospective chart review, first to better understand the hospital care provided to SUD with IE patients at Providence St. Vincent Medical Center (PSVMC), a 523-bed tertiary care facility with a cardiac center of excellence, and then identify improvement opportunities.

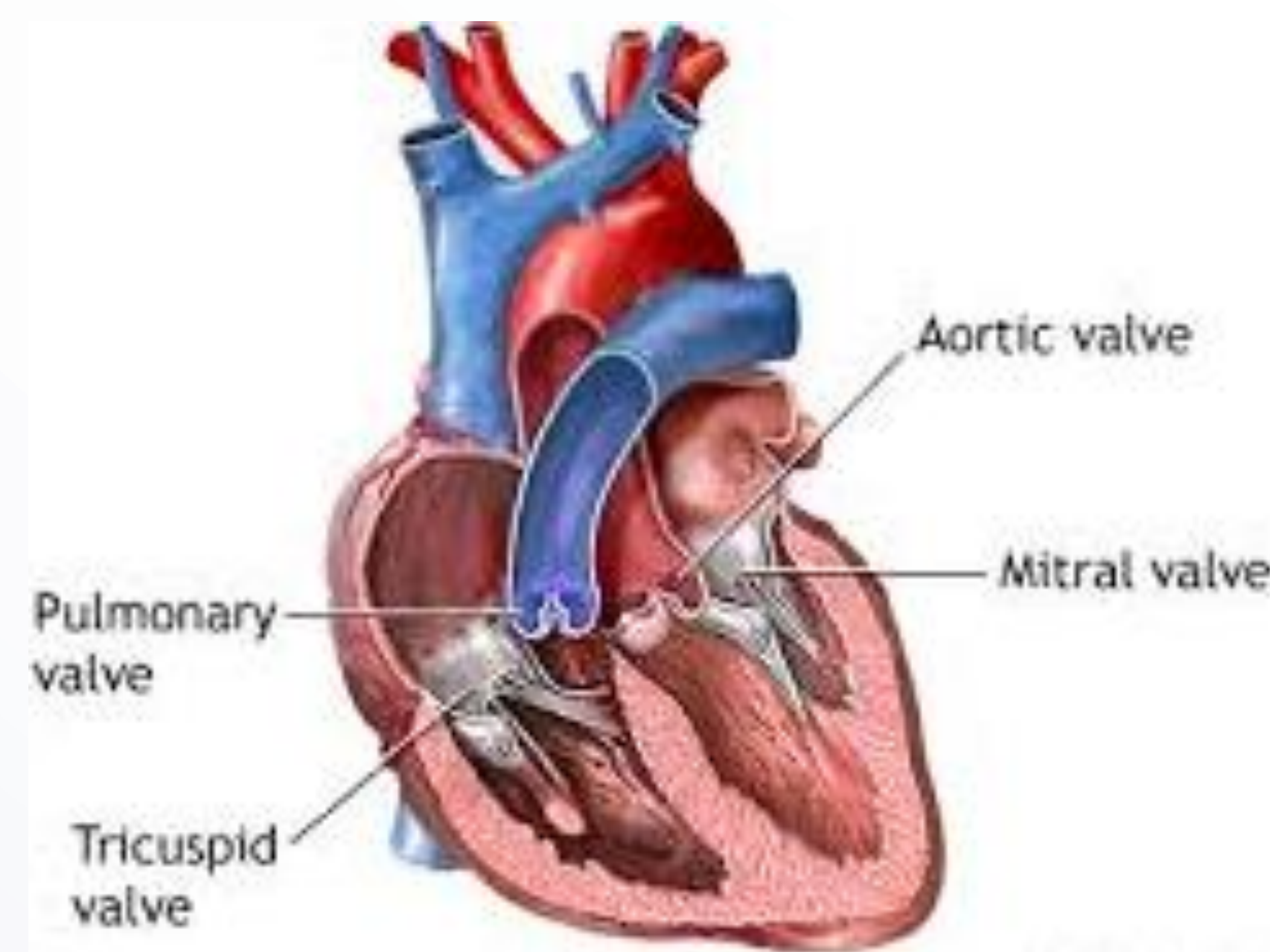
Methods

This Institutional Review Board (IRB) approved study is a retrospective chart review of adult SUD patients with infective endocarditis discharged from either of the two cardiology units at PSVMC from January 1, 2016 to December 31, 2018. A list generated from the electronic medical record identified patients with ICD-10 codes for both SUD and IE.

Results

A total of 29 patients met inclusion criteria. Of those 29 patients, 16 (55%) were male, 13 (45%) were female, and had a mean age of 34.4 ± 10.4 years. Seventeen (59%) patients were reported as homeless on admission. The average length of stay was $17.03 \text{ days} \pm 20.1 \text{ days}$ with a minimum of 2 and a maximum of 93 days.

"IE is an infection caused by bacteria that enter the bloodstream and settle in the heart lining, a heart valve or blood vessel." (American Heart Association, 2019). Of the valves affected, 4 (14%) had the aortic valve affected, 18 (62%) had the tricuspid valve, 0 (0%) had the pulmonary valve, 3 (10%) mitral valve, and 4 (14%) had more than one valve affected. Methicillin-Susceptible Staphylococcus Aureus was the predominant organism identified, accounting for 6 (35%) of patients. No Organisms 6 (21%). Multiple organisms, 6 (21%). Streptococcus 2 (7%). Candida parasilosis 2 (7%). Methicillin-resistant Staphylococcus Aureus 1(3%). Enterococcus faecalis 1 (3%). Serratia marcescens 1 (3%). Of these patients, 15 (52%) received valve replacement and/or repair, and 7 (24%) had more than one surgery.



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A total of 25 patients (86%) had a urine toxicology screen on admission. None of the patients in the study received services from addictions provider or addiction-specific team while at PSVMC. Only 8 (28%) of patients were discharged on MAT with Suboxone or methadone. Additionally, 0 (0%) of the sample size went to inpatient substance abuse rehabilitation centers.

Fourteen patients (48%) discharged home, which included personal home, friend or family home, or shelter; 7 (24%) were discharged to Skilled Nursing Facilities, 6 (21%) were unhoused, 2 (7%) died. Of the 29 patients, 5 (21%) left against medical advice regardless of discharge location.

Readmission was defined as a readmit to any Providence facility within a six-month window following the discharge. Fourteen (48%) patients readmitted.

Discussion/Conclusions

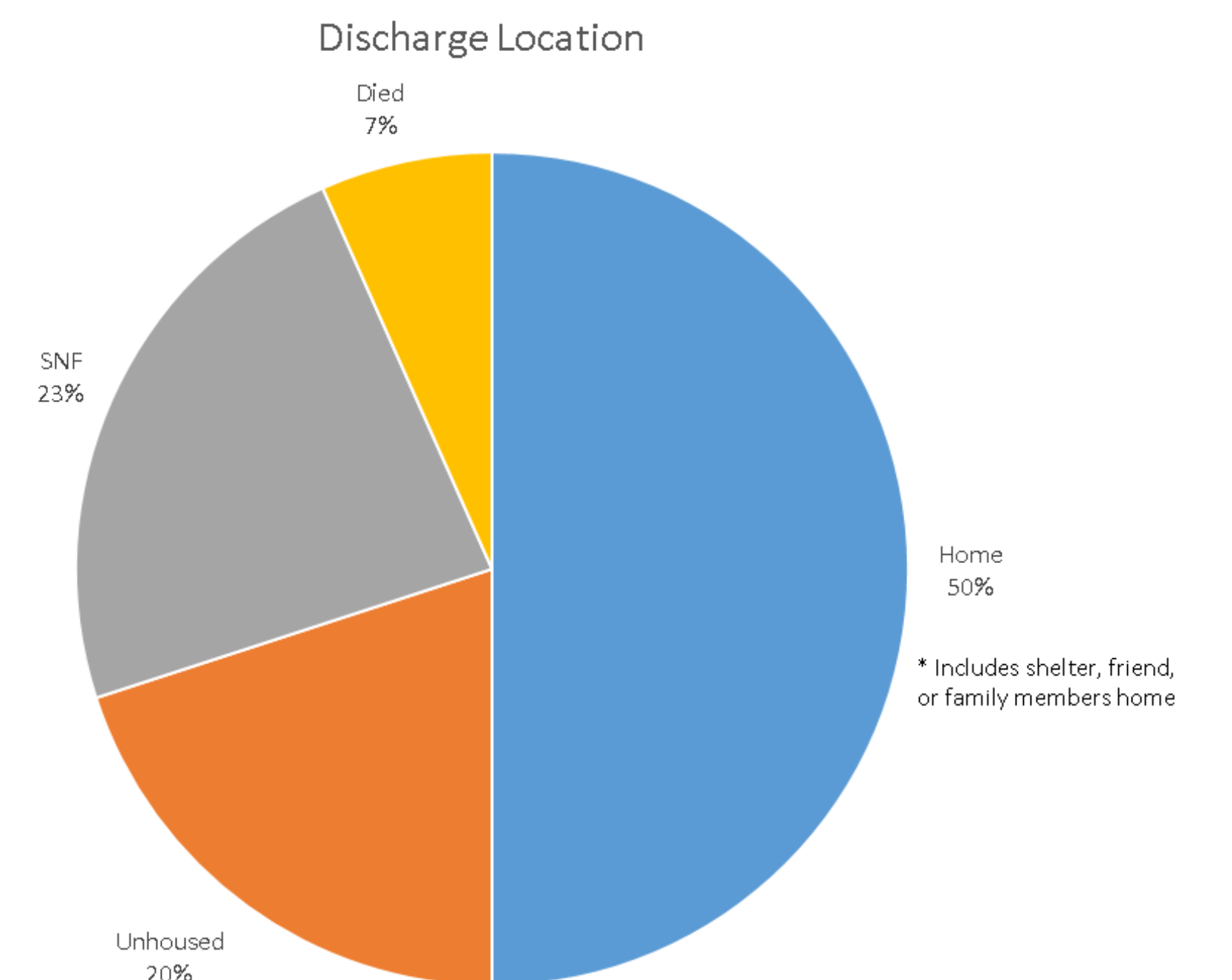
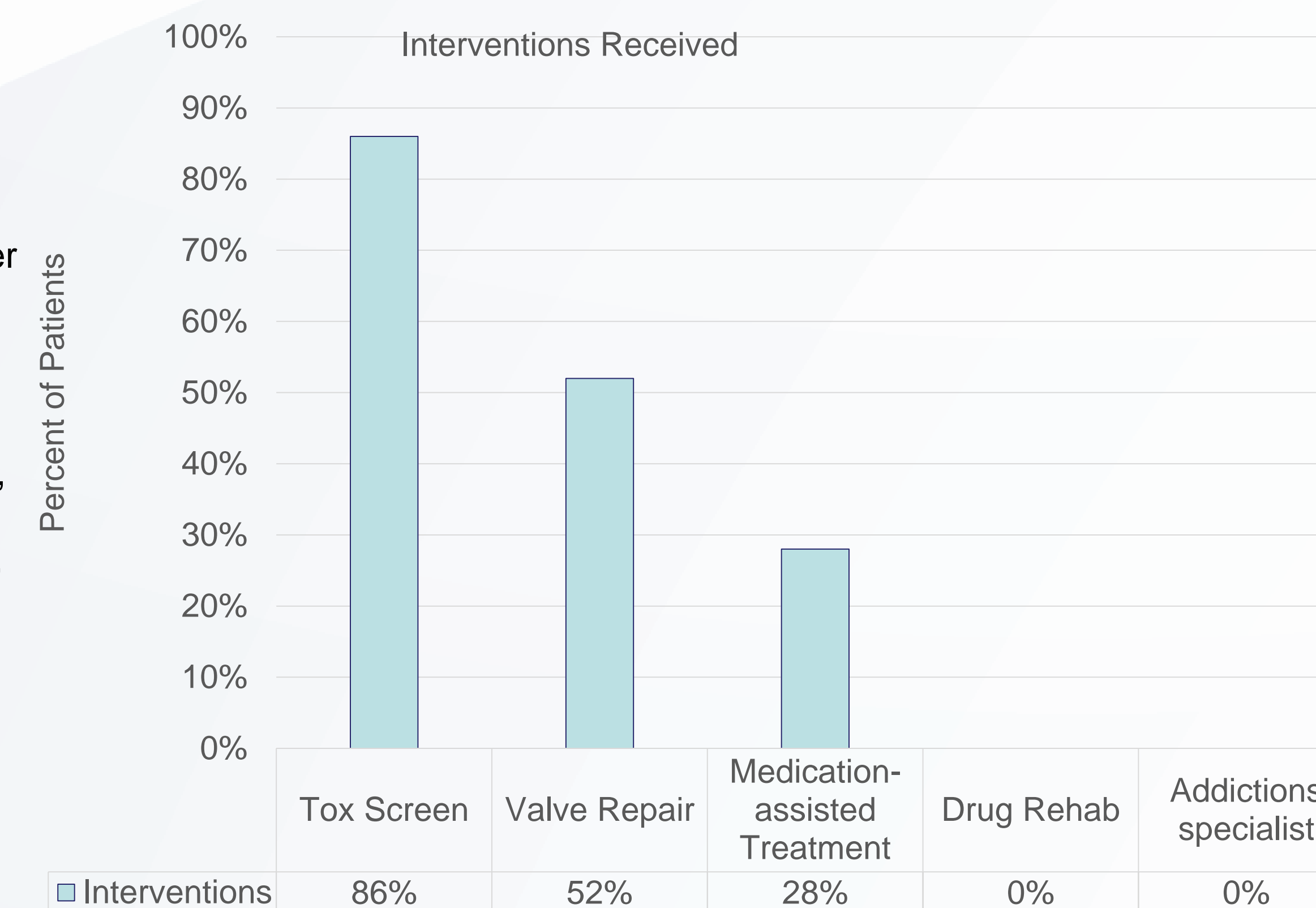
This study identifies gaps in admission screening, in-hospital treatment for drug use, and discharge planning related to SUD patients admitted with IE.

Not every patient had a urine toxicology screen on admit. In addition, no current screening tool, risk assessment, or model of care existed for this population. During their stay no pathway bundle existed. No substance use physician was available to prescribe a medicated assisted treatment (MAT) or facilitate a treatment plan upon discharge. Gaps in discharge also included no patients discharging to an in-patient drug rehab center.

This study supports the need to improve care for this vulnerable population by developing a systematic team-based care model. Recommendations to improve care would be to collaborate with our interdisciplinary team to create a care pathway bundle for patients diagnosed with SUD and IE. This pathway bundle will include standard care practices written into policy that will use a screening tool for identifying these patients, TIC education for caregivers, a patient agreement upon admission, urine toxicology screen upon admission, consultation with a substance abuse physician, and close follow up with social work.

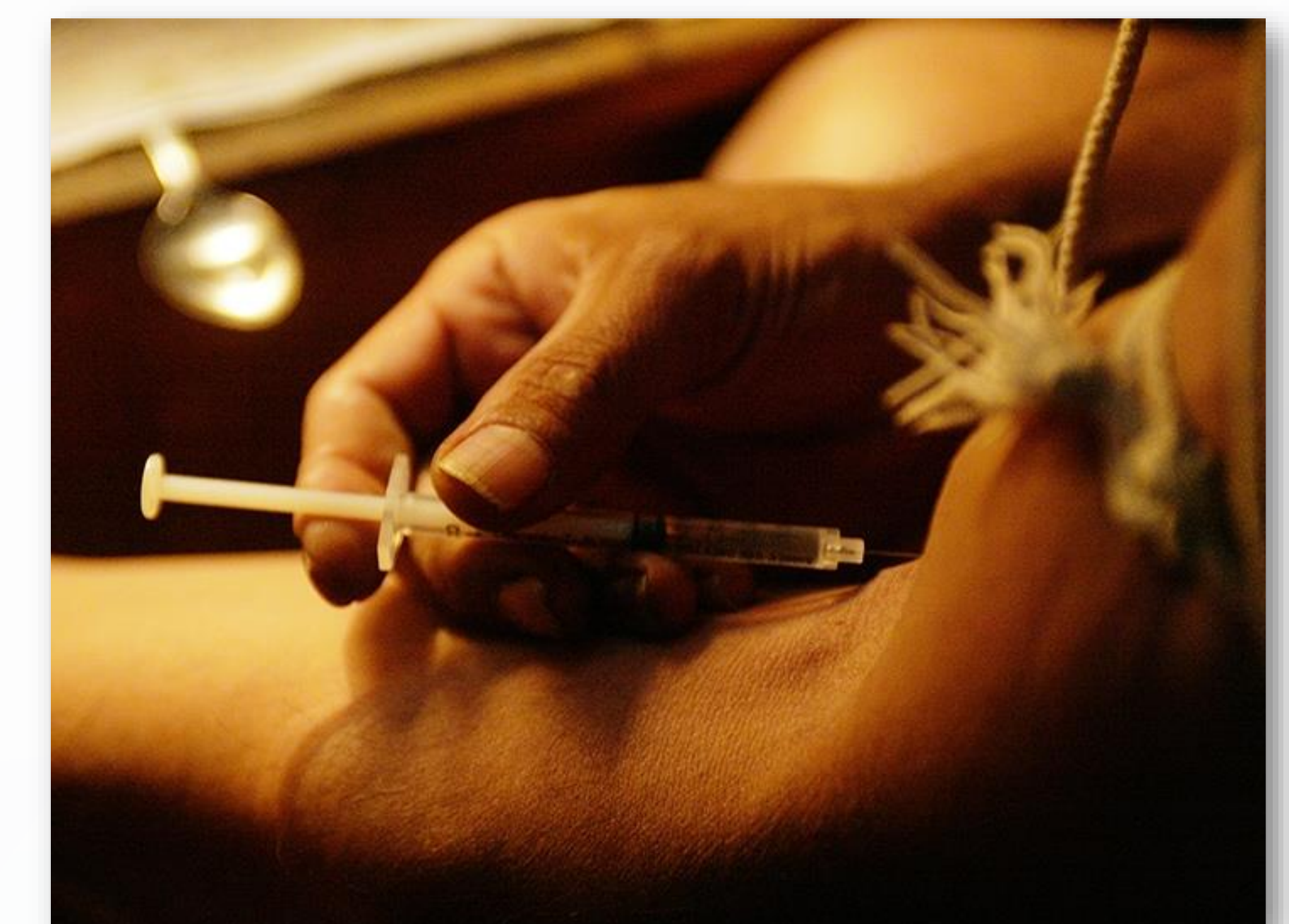
Limitations for this study include a small sample size of 29 patients and the chart review process. The study population was found using ICD 10 Codes in the electronic medical record. As a result the study population may underrepresent the number of patients with SUD and IE. Missed opportunities include the inability to include social work in reviewing the study population and lack of post-hospital follow-up data. We were also unable to collaborate follow-up care, as many patients did not have strong follow-up care documentation. The study only followed our patients for 6 months post discharge. Despite the limitations this study does provide information that can be used for initiating interventions for this population.

Further research will need to be done once a Standard of Care is implemented. The research and data would suggest that a best practice standardized approach with an addictions team is warranted, and that addicted patients be treated by this team.



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