

Reduction in Healthcare Utilization and Overdose after Skin and Soft Tissue Infections For Injection Drug Users through Addiction Medicine Consultations



Catherine G. Bielick, Ryan D. Knodle, Shana Burrowes, Tamar F. Barlam
Boston University Medical Center, Department of Infectious Disease



Background

People with to Intravenous Drug Use (IDU) and opioid use disorder (OUD) are at higher risk for readmission in the year following an initial presentation for IDU-related Infective Endocarditis: a Sentinel Event. We investigated whether initial presentation for an IDU-related Skin and Soft Tissue Infection also served as a Sentinel Event and whether obtaining an Addiction Service Consultation at that time would change a person's total health care utilization or number of overdoses in the following year compared with one year prior.

Terms

- ASC: Addiction Service Consult, a team specialized in addiction medicine, including medical doctors who have completed an addiction fellowship and social workers
- OUD: Opioid Use Disorder; OD: Overdose
- IDU: Injection Drug Use
- PWID: People/person Who Inject(s) Drugs
- SSTI: Skin and Soft-Tissue Infection
- MOUD: Medications for Opioid Use Disorder

Methods

- Design: retrospective cohort chart review at an urban safety net hospital
- Electronic Medical Record query for IDU-related SSTI's with concurrent OUD
- n=305 with IDU-related SSTI's 10/1/2015-6/1/2019
- We collected data on the following demographic factors: homelessness, age, sex, health insurance type, type of SSTI, and treatment with or type of MOUD.
- **Categorized to:** 1) **high utilizer** if ≥ 3 encounters with the health care system within one year, or 2) **low utilizer** if < 3 encounters within one year
- Chi square tests were used to examine change in utilization category one year before/after sentinel event
- Of those with available data, Wilcoxon signed rank test was used to asses change in the number overdoses before and after the sentinel event and whether or not an ASC was obtained.

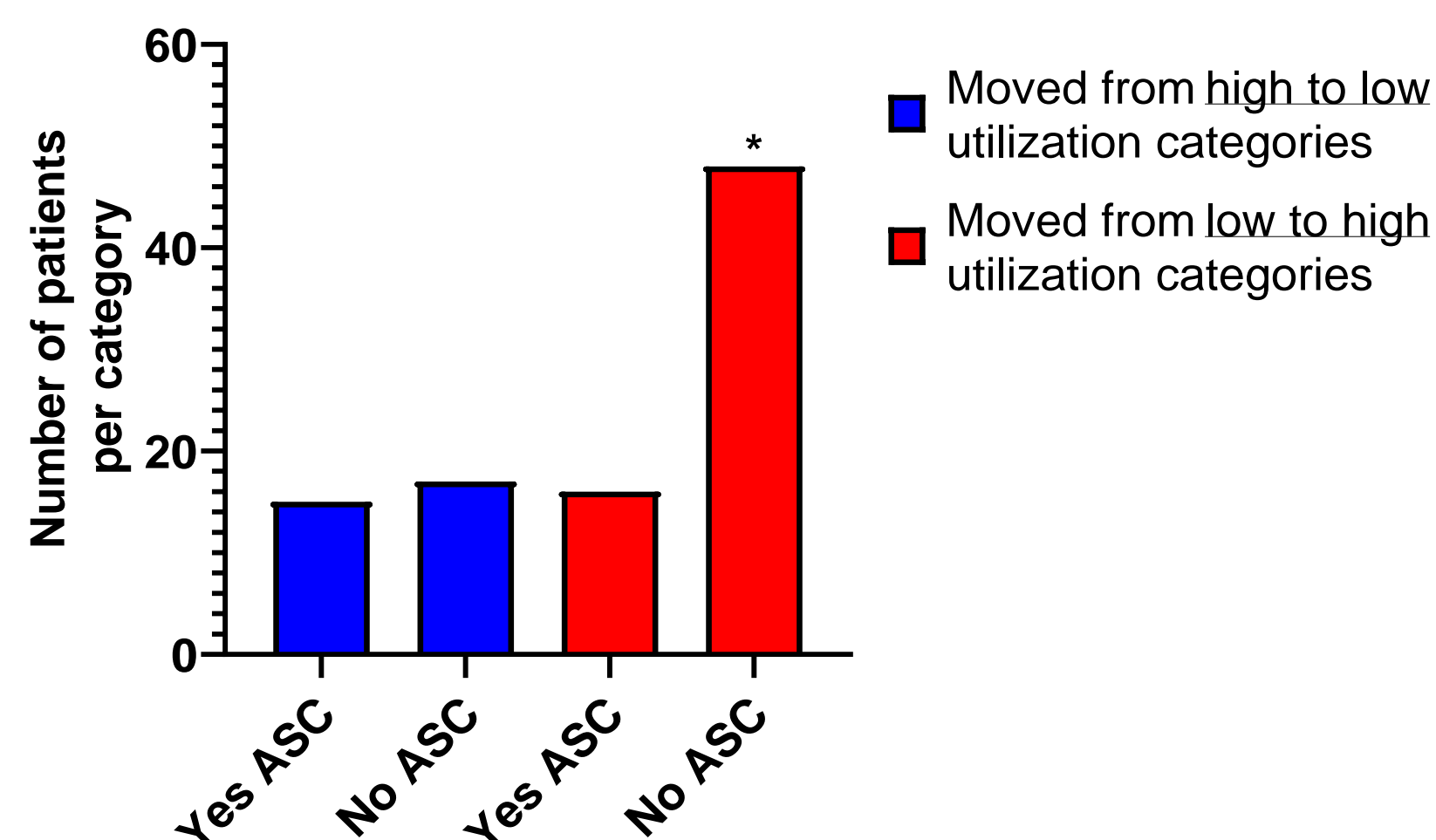
Results: Demographics

- High and low utilizers were of comparable age at sentinel event, primarily male and on public insurance. There was no association between utilization category and type of SSTI (abscess or cellulitis) or MOUD (suboxone or methadone)
- High utilizers at baseline were more likely to receive MOUD compared to low utilizers (48% vs. 35% p=0.02)

Results: Healthcare Utilization

- **Low utilizers at baseline** (n=131): 67 stayed low utilizer (51.2%), 64 moved to high utilization (48.9)
 - Patients who were homeless were more likely to transition to high utilizers; **p=0.01**
- **High utilizers at baseline** (n=174): 32 moved to low utilization (18.4%), 142 stayed high utilizers (81%)
 - High utilizers at baseline were more likely to stay high utilizers at follow-up than change to low utilizers; **p<0.001**
- **Patients that changed utilization categories**
 - The group transitioning from **low to high utilization was less likely to have an ASC**, 15 (25%), compared to those who transitioned from high to low (48) **p=0.03**

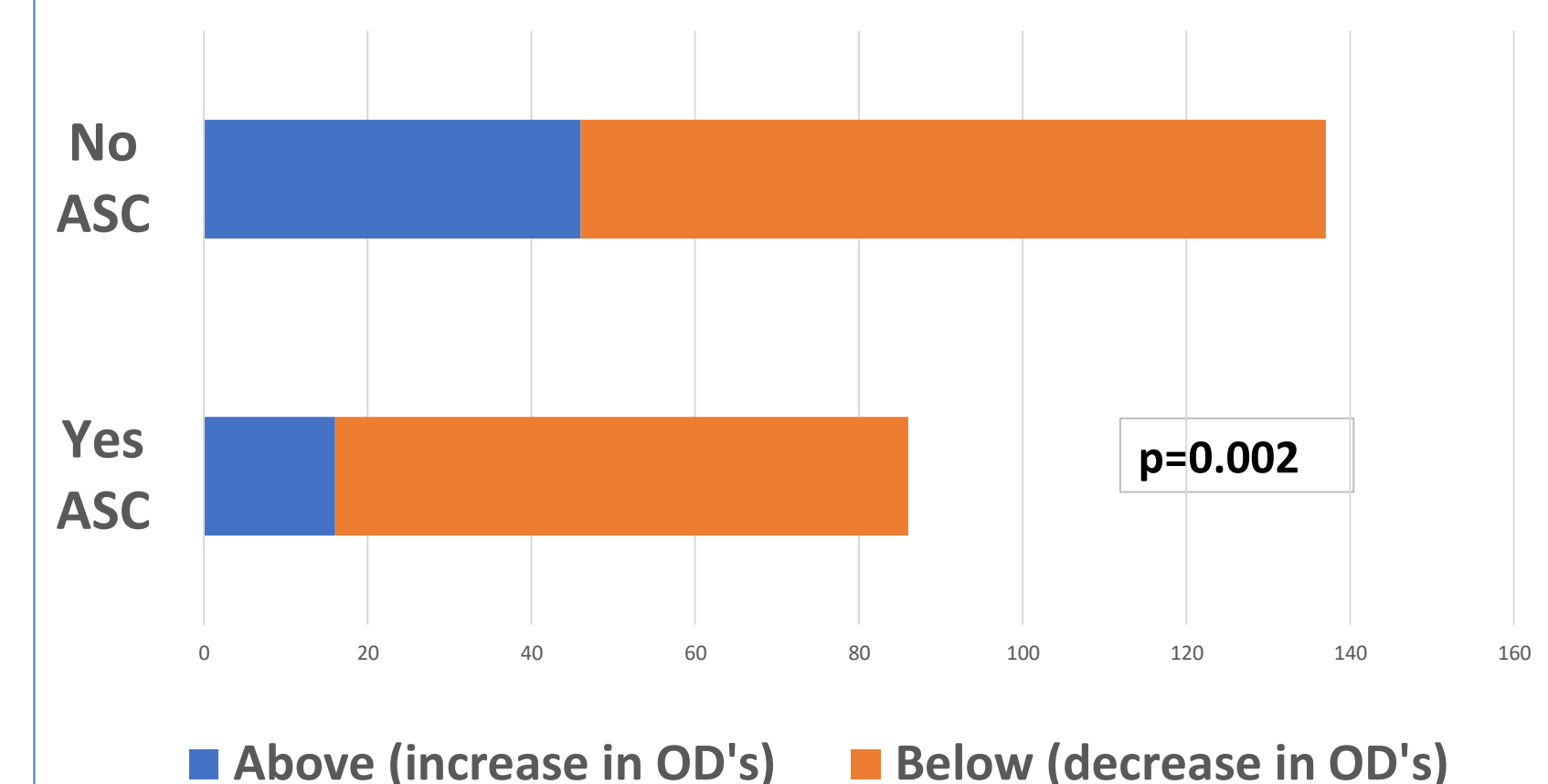
Change in Utilization Categories with or without Addiction Service Constulation (ASC)



Results: Overdoses

- The group without an ASC had significantly more people with an **increase in the number of overdoses** compared to the group with an ASC; **p=0.002**
 - With ASC: **16 (18.6%) had an increase** in number of OD's; **70 (81.4%) had a decrease**
 - Without ASC: **46 (33.6%) had an increase** in number of OD's ; **91 (66.4%) had a decrease**

Distribution of patients above and below the median difference in number of overdoses



Conclusions

- Addiction service consultation may prevent IV drug users with Opioid Use Disorder from crossing from low to high health care system utilization categories after presentation for an SSTI.
- Inclusion of an Addiction Service Consultation can significantly reduce chances of overdose in the following year after presentation for an SSTI. Benefits include connection with MOUD, social support, and coordination of care after discharge from the hospital.
- Homelessness is a risk factor for transitioning from low health care utilization to high.
- Patients who are high utilizers of the hospital system often have complex social and economic backgrounds. Further investigation is needed into what measures are advantageous to this population in reducing utilization.