Dartmouth Health

There's no place like home: A multidisciplinary approach to holistically manage addiction and intravenous drug use related infections requiring intravenous antibiotics

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INTRODUCTION

The opioid epidemic has resulted in increasing intravenous drug use (IVDU) related infections often requiring prolonged intravenous (IV) antibiotic therapy.

Patients who inject substances intravenously have traditionally been excluded from outpatient IV antibiotic therapy (OPAT) programs due to theoretical concerns of overdose and additional infection risks associated with misuse of long-term venous access catheters needed in the outpatient setting. However, these patients are typically young, most often aged 20-40,[1,2] and have work and/or childcare commitments that make prolonged hospitalizations difficult. In addition, they have high rates of comorbid psychiatric conditions[3], receive inadequate addiction treatment during hospitalization, and face stigmatization[4,5] which often leads to disruptive behaviors. This combination has led to high rates of against-medical-advice (AMA) discharges and readmissions.[1] Opportunities to address these patients' underlying substance use disorder are often missed during hospitalization. Patients often discharge without appropriate outpatient addition treatment increasing the risk of relapse, infection, and death.

Here we present the outcomes after the implementation of a multidisciplinary team at Dartmouth-Hitchcock Medical Center (DHMC) that integrates infectious disease and addiction care for all patients admitted with IVDU-related infections requiring long-term IV antibiotic therapy.

METHODS

Using a multidisciplinary approach, we implemented early in-hospital medications for patients with opioid use disorder (MOUD) with outpatient addiction care on discharge and identified patients who could be safely discharged on OPAT with close outpatient follow-up.

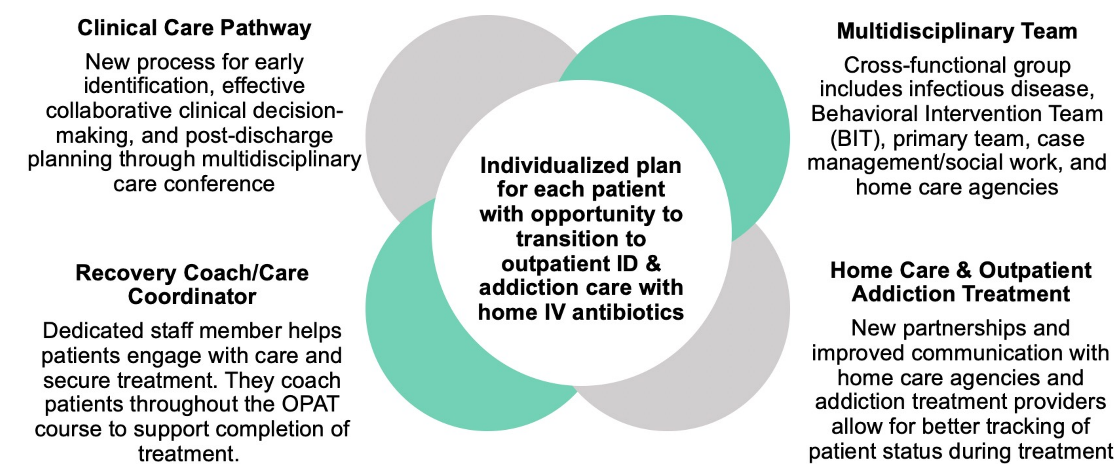
While medically or surgically admitted for treatment of infectious or other complications of IVDU, patients were assessed by a proactive psychiatric consultative service who engaged with patients around motivational interventions, induction of MOUD, and outpatient treatment planning. A "tumor board" style case review incorporated team member feedback to arrive at a shared treatment plan for each patient.

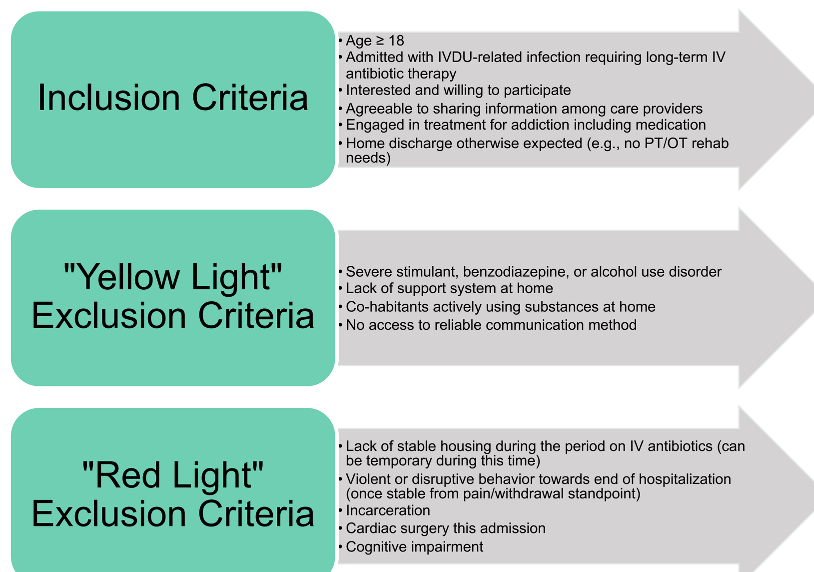
Look to the right for a more detailed overview of the various components of our multidisciplinary intervention. Specific inclusion and exclusion criteria are also displayed to the right. "Yellow Light" exclusion criteria refers to relative contraindications while "Red Light" exclusion criteria refers to strict contraindications.

RESULTS

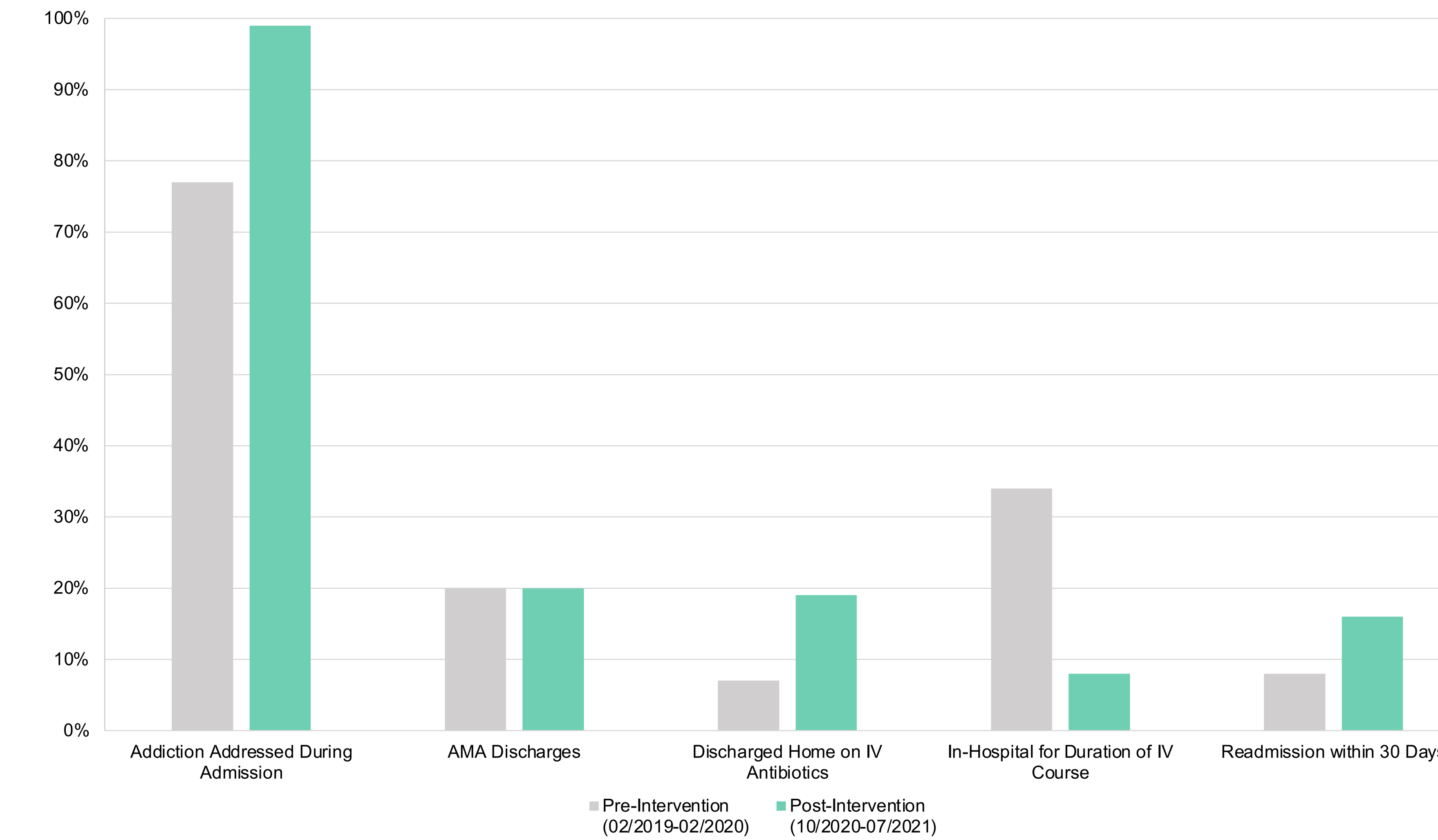
Prior to our multidisciplinary intervention, from February 2019 to February 2020, there were 64 admissions and 57 individual patients with IVDU-related infections. After our multidisciplinary intervention, from October 2020 to July 2021, there were 80 admissions and 64 individual patients. We compared our outcomes of interest between these two groups of patients using descriptive statistics.

Addiction was addressed in 77% (49/64) of admissions pre-intervention and in 99% (79/80) of admissions post-intervention. The rate of AMA discharges was 20% both pre- and post-intervention. Seven percent (4/57) of patients were discharged home on IV antibiotics pre-intervention versus 19% (12/64) post-intervention. The average length of stay was 21 days pre-intervention versus 12 days post-intervention. The readmission rate within 30 days was 8% pre-intervention versus 16% post-intervention. Notably, there were no substance use related complications among patients discharged on OPAT. These results are also summarized in the following graphs to the right.

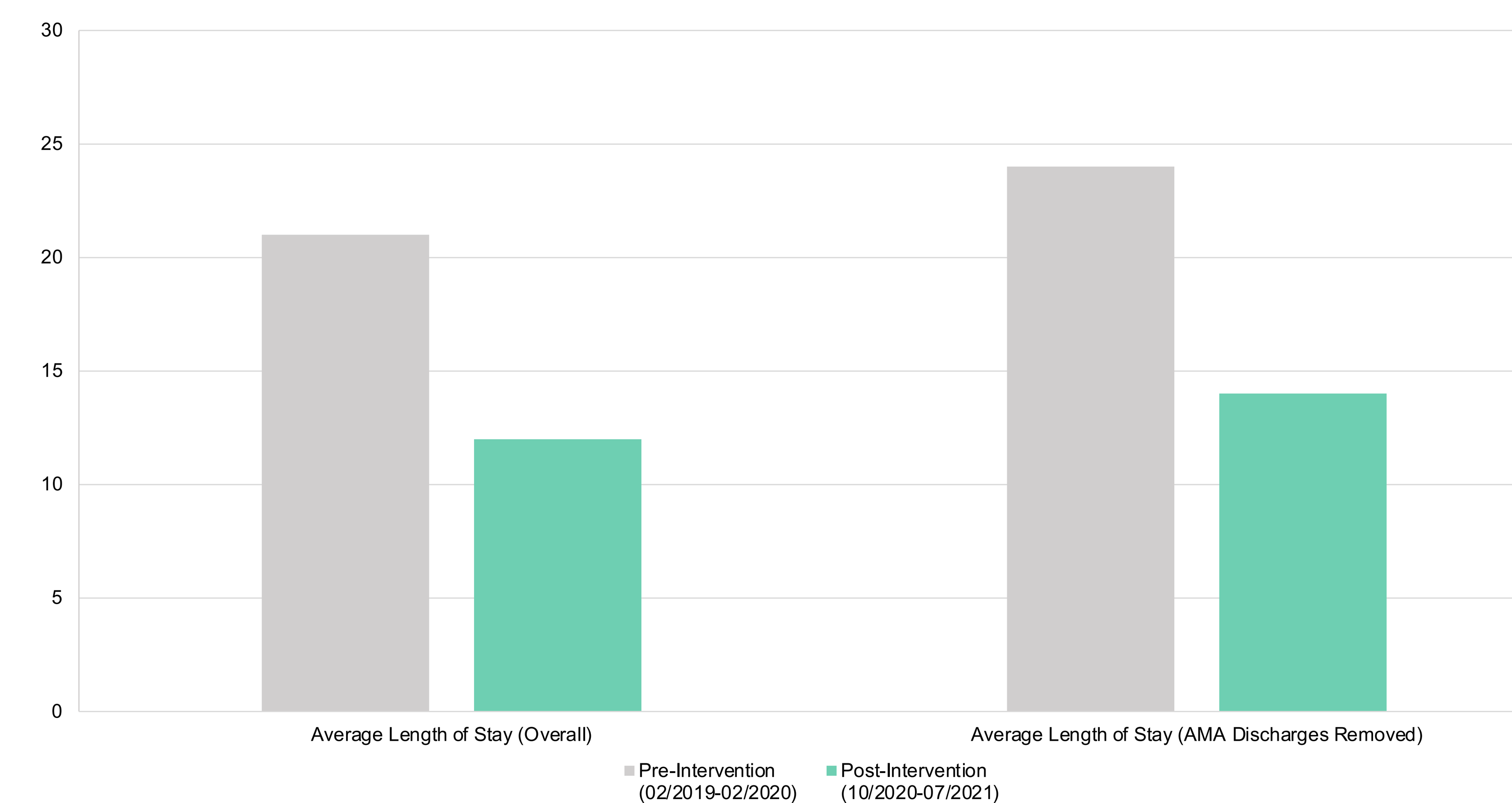




Comparison of Outcomes Before and After the Implementation of a Multidisciplinary Approach to Care for Patients Admitted with IVDU-Related Infections



Average Length of Stay in Days Pre and Post Multidisciplinary Intervention



CONCLUSIONS

- Addiction was addressed in a higher percentage of admissions after our multidisciplinary intervention was implemented.
- There was no difference in AMA discharge rates and an increase in readmission rates post-intervention though more patients were discharged on outpatient IV antibiotic therapy with an overall decrease in average length of stay.
- Findings are promising given that we know starting buprenorphine in-hospital and linking patients to outpatient MOUD is more effective at retaining patients in treatment than compared to detoxification and referral.[6]
- A clear clinical pathway, an established multidisciplinary team, and new partnerships with home care agencies as well as a recovery coach/care coordinator to smooth the transition from inpatient to outpatient care were key components in the positive outcomes of our intervention.
- Identifying patients earlier in their hospital course with appropriate team members involved from the start and improving ease of communication with patients after discharge are two areas we hope to improve upon.
- By safely increasing access to OPAT for patients with IVDU, we can decrease lengths of hospital stay and, in turn, allow patients to return to their lives, reducing both institutional and patient costs.
- Previously held concerns that OPAT could increase substance use related complications may be more myth than fact.

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