

Impact of Inpatient Addiction Consultation on Hospital Readmission



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INTRODUCTION

More than 20 million people in the USA have a substance use disorder (SUD).¹ Rising substance-related morbidity and mortality has resulted in increasing emergency department (ED) visits and hospitalizations for substance-related causes.^{2–4} Prior research has demonstrated the feasibility of utilizing specialized addiction consult teams during hospitalization.^{5, 6} However, implementation remains uncommon and whether addiction consultation reduces the likelihood of hospital readmission is not known. We sought to evaluate the impact of being seen by an inpatient addiction consult team on 30-day hospital readmission.

METHODS

In 2014, Massachusetts General Hospital (MGH) started an inpatient addiction consult team (ACT) consisting of a rotating group of addiction medicine and psychiatry physicians, advanced practice nurses, social workers, recovery coaches, and trainees. The team focuses on initiating pharmacotherapy, providing brief counseling, aftercare planning, and linking patients directly to SUD treatment following discharge.

For patients ever seen by ACT during a 5-year period (October 2014–2019), we calculated the frequencies of consults, diagnosis codes, and 30-day readmission rates. We separated SUD diagnosis codes for active SUD from those with modifiers noting the patient was in remission. A generalized estimating equation (GEE) analysis was used to compare readmission rates accounting for repeated measures. We determined that the 99th percentile for number of admissions for all patients admitted during the study period was 10. Given the risk that the high number of admissions in this small group could distort the results and that this group may have significant medical comorbidity that would not be modifiable by addiction consultation, we subsequently excluded patients with 10 or more admissions from some analyses.

This study was approved by the Partners Healthcare IRB.

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RESULTS

Since 2014, ACT completed consults on 4719 unique patients (Table 1). There were 7489 identifiable hospital admissions which included one or more ACT consults. Of these, 2405 patients were admitted 2 or more times and 217 were admitted 10 or more times. Alcohol and opioid use disorder were the most frequently seen diagnoses. The 30-day readmission rates

Table 1 Patient Characteristics

	All admissions		Admissions with ACT consult	
	N	Percent	N	Percent
Admissions	233,567		7489	
Patients				
Total	139,061		4719	
Patients admitted ≥ 2 times	39,631	28.5	2405	51.0
Patients admitted ≥ 10 times	943	0.7	217	4.6
Demographics (patient-level)				
Age (Mean (SD))	57.0 (19.2)		46.7 (13.4)	
Male	65,469	47.1	3313	70.2
Race				
White	107,979	77.6	3702	78.4
Black or African American	7889	5.7	339	7.2
Hispanic or Latino	7457	5.4	326	6.9
Asian	5913	4.3	43	0.9
Other	3335	2.4	114	2.4
Unknown	6488	4.7	195	4.1
Discharge disposition				
Home	179,374	76.8	5160	68.9
Transferred	44,691	19.1	1613	21.5
Left AMA	2209	0.9	642	8.6
Deceased	7174	3.1	70	0.9
Other	119	0.1	4	0.1
Active SUD diagnosis				
Alcohol	12,688	5.4	4432	59.2
Opioid	5812	2.5	2316	30.9
Cocaine	2574	1.1	1027	13.7
Stimulant	295	0.1	123	1.6
Sedative	520	0.2	207	2.8
Other/Poly	1758	0.8	668	8.9
Any SUD diagnosis	18,618	8.0	6441	86.0
Number of SUD diagnoses (median (IQR))	1 (1–1)		1 (1–2)	
Overdose				
Opioid	390	0.2	153	2.0
Other	129	0.1	64	0.9
30-day readmission* (rate (95% CI))				
All admissions	14.7 (14.6–14.9)		22.1 (21.4–22.8)	
Patients admitted < 10 times	12.7 (12.6–12.8)		16.1 (15.4–16.9)	

*Excludes deceased patients

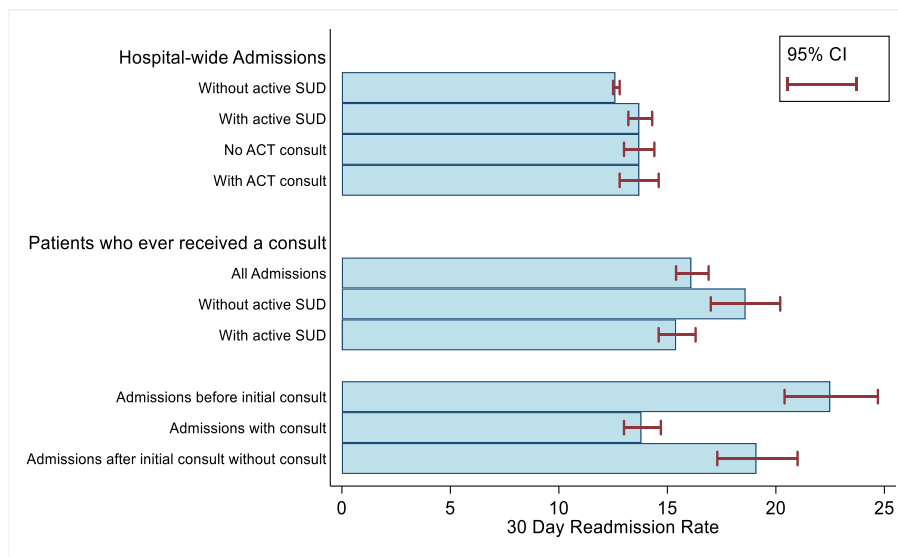


Fig. 1 30-day readmission rates.

among patients with active SUD were 22.5% for admissions with active SUD before the first ACT consult, 13.8% for admissions with an ACT consult, and 19.1% for admissions after first ACT consult that did not involve a consult during that current admission (Fig. 1). Among patients who ever received a consult, excluding those with 10 or more admissions, compared with admissions before the first ACT consult, readmission within 30 days was less likely for admissions with an ACT consult (OR 0.57, 95% CI 0.49–0.67) and for readmissions after the first ACT consult that did not include a current ACT consult (OR 0.55, 95% CI 0.46, 0.67). There were no differences in the likelihood of readmission by age, gender, or race/ethnicity.

DISCUSSION

In this evaluation of patients seen by an addiction consult team during hospitalization, we found a lower 30-day readmission rate associated with consultation. Compared with admissions before being seen by ACT, receiving an addiction consultation was associated with a reduced 30-day readmission rate. This impact on readmission persisted for subsequent admissions that did not involve ACT. This suggests that the benefits of engagement with ACT may persist; however, ongoing ACT involvement for patients who frequently touch the healthcare system may be beneficial. Reduced readmission may be due to ACT's facilitation of pharmacotherapy initiation, discharge planning, and linkage to ongoing addiction care which is often integrated with primary care. This is consistent with prior research showing patients with SUD who receive primary care in practices with embedded addiction treatment have lower ED utilization and inpatient hospital bed days than patients in practices without these resources.⁷

Implementing addiction consult teams does require new resources and funding. The association between consultation

and reduced readmission may allow institutions to make a case for the value of this care model in addition to the clinical benefit to individual patients in reducing addiction severity, as shown in previous research.⁵

There are limitations to this study. The absence of a control group limits comparison to patients who did not receive a consult. Also, our readmission data included only readmissions to our hospital. It is possible patients were readmitted to other hospitals during the study period.

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Compliance with Ethical Standards:

Conflict of Interest: Dr. Wakeman received salary support from Optum Labs during the study period.

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