

Addiction Consult Service and Inpatient Outcomes Among Patients with Alcohol Use Disorder

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BACKGROUND

- Alcohol use disorder (AUD) is the most prevalent substance use disorder
 - Most patients with AUD do not receive evidence-based medications for AUD (MAUD), including naltrexone or acamprosate.
 - Inpatient addiction consult services (ACS) have been increasing in recent years
- Objective:** to determine the association between an ACS consultation and provision of MAUD, and post-discharge outcomes.

METHODS

- Intervention:** ACS consultation
 - Multidisciplinary team: board-certified addiction medicine attending physician, an addiction medicine fellow, and peer advocate.
- Design:** retrospective propensity score-matched historical control
- Inclusion Criteria:**
 - Admission within study period
 - Primary or secondary diagnosis of AUD
- Primary Outcomes:**
 - Inpatient provision of MAUD
 - MAUD given at discharge
- Secondary Outcomes:**
 - Patient-directed discharge
 - 30-day readmission (all-cause)
 - 30-day post-discharge ER visit (all-cause)
- Analysis**
 - Matching: patient receiving ACS consult with historical control
 - Non-parsimonious (30-variable) propensity score used for caliper matching protocol
 - Matching variables included: demographic and clinical characteristics (diagnoses, lab values, previous admissions/ER visits)
 - Univariable and multivariable logistic and cox proportional hazards models were used to adjust for variables that remained imbalanced after matching (p-value <0.2 in bivariate analysis)

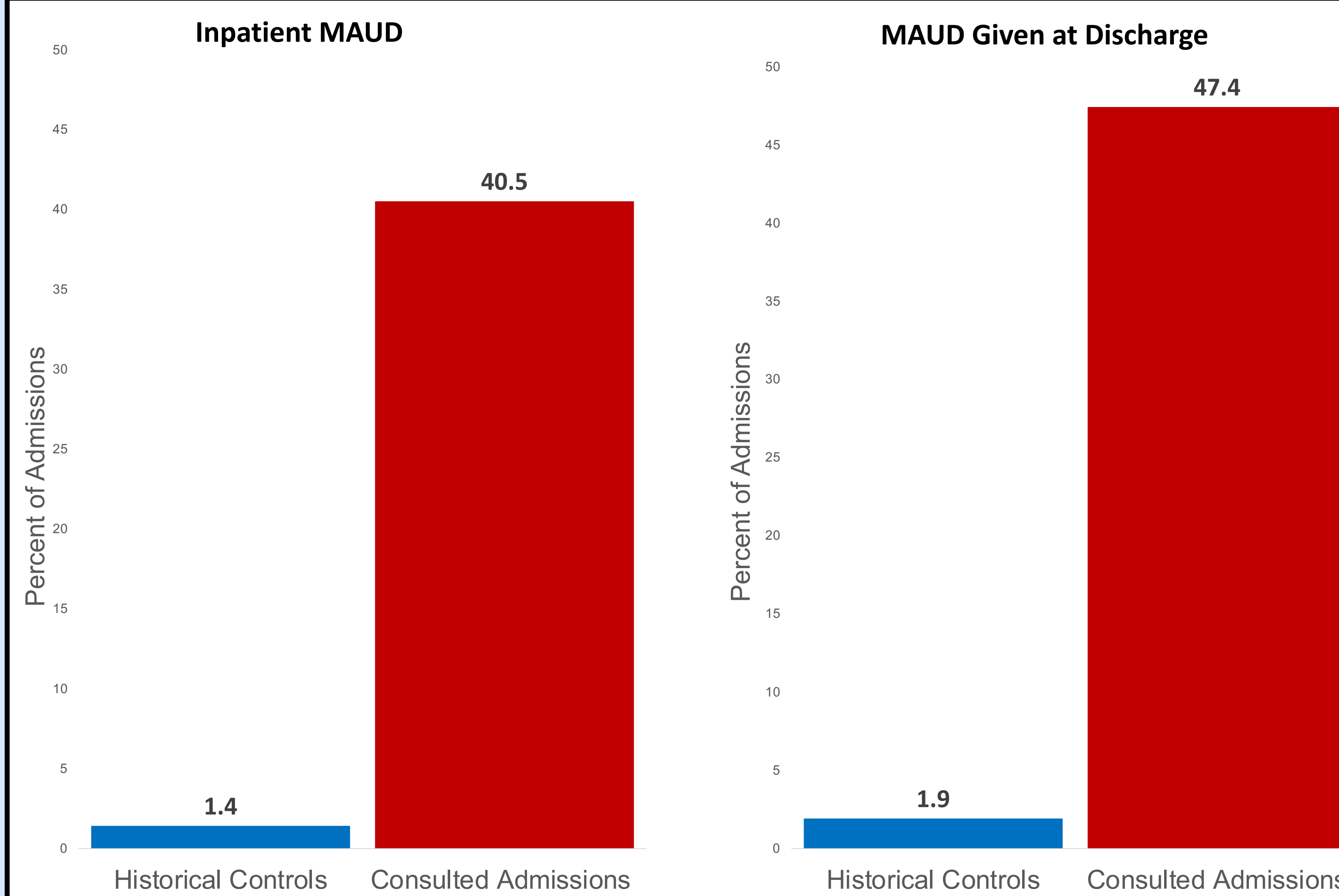
TABLE 1

Baseline Characteristics of Propensity Score Matched Populations							
Characteristic	Historical Controls (n=215)	Consulted Admissions (n=215)	p-value	Characteristic	Historical Controls (n=215)	Consulted Admissions (n=215)	p-value
Age, mean (SD)	52.1 (11.9)	52.5 (11.9)	0.77	Alanine Transaminase Level, % [§]	174 (80.9%)	166 (77.2%)	0.62
Male Sex, %	158 (73.5%)	149 (69.3%)	0.34	0-72 U/l (<2x ULN)	73-144 U/l (>2x ULN, ≤4x ULN)	24 (11.2%)	30 (14.0%)
Race/Ethnicity, %			0.02	>144 U/l (>4x ULN)	17 (7.9%)	19 (8.8%)	
Black/African American	57 (26.5%)	61 (28.4%)		Creatinine, % [§]			0.18
White (non-Hispanic)	34 (15.8%)	20 (9.3%)		<1.3mg/dL	186 (86.5%)	173 (80.5%)	
Hispanic/Spanish/Latinx	107 (49.8%)	91 (42.3%)		1.3-2.0mg/dL	18 (8.4%)	22 (10.2%)	
Other Race/Unavailable*	17 (7.9%)	23 (10.7%)		>2mg/dL	11 (5.1%)	20 (9.3%)	
Insurance Type, %			0.98	Previous Admissions in the Last Year, %			0.29
Private	15 (7.0%)	17 (7.9%)		None	101 (47.0%)	84 (39.1%)	
Medicaid	144 (67.0%)	144 (67.0%)		1-4 Admissions	77 (35.8%)	94 (43.7%)	
Medicare	55 (25.6%)	53 (24.7%)		5-9 Admissions	25 (11.6%)	22 (10.2%)	
Other	1 (0.5%)	1 (0.5%)		≥10 Admissions	12 (5.6%)	15 (7.0%)	
ICD-10 Diagnosis, % [†]			0.60	Previous ER Visits in the Last Year, %			0.79
Alcohol Dependence, uncomplicated (inc. intoxication)	65 (30.2%)	64 (29.8%)		None	50 (23.3%)	44 (20.5%)	
Alcohol Dependence w/ Withdrawal	136 (63.3%)	135 (62.8%)		1-4 Visits	94 (43.7%)	104 (48.4%)	
Alcohol Dependence w/ Long-term	13 (6.1%)	12 (5.6%)		5-9 Visits	37 (17.2%)	34 (15.8%)	
Complications				≥10 Visits	34 (15.8%)	33 (15.4%)	
Alcohol Dependence in Remission	1 (0.5%)	4 (1.9%)		Discharged from Medicine Service, %	11 (5.2%)	19 (8.8%)	0.13
Opioid Use Disorder, % [‡]	30 (14.0%)	28 (13.0%)	0.78				
Other Substance Use Disorder, % [‡]	32 (14.9%)	40 (18.6%)	0.30				
Liver Disease, % [‡]	112 (52.1%)	108 (50.2%)	0.70				
Charlson Comorbidity Index ≥2	122 (56.7%)	120 (55.8%)	0.85				
Elevated Blood Alcohol Concentration, % [§]	70 (32.6%)	55 (25.6%)	0.11				
Aspartate Aminotransferase Level, % [§]	128 (59.5%)	122 (56.7%)	0.13				
0-66 U/l (<2x ULN, ≤4x ULN)	36 (16.7%)	52 (24.2%)					
67-132 U/l (>2x ULN, ≤4x ULN)	31 (14.4%)	31 (14.4%)					
>132 U/l (>4x ULN)	51 (23.7%)	41 (19.1%)					

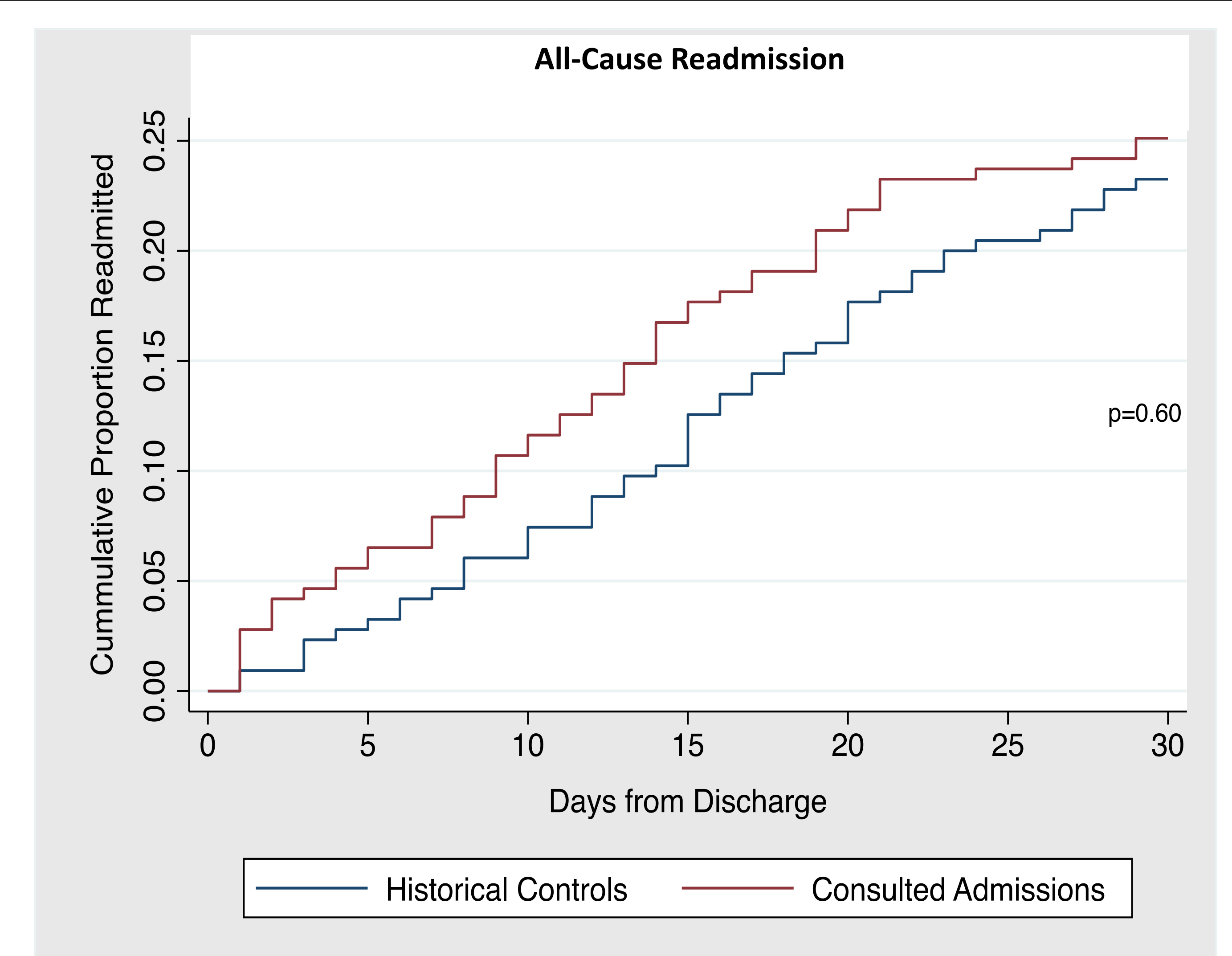
Characteristics with a p-value <0.2 were adjusted for in the regression models: race/ethnicity, elevated blood alcohol concentration, aspartate aminotransferase level, creatinine, ICU admission

RESULTS

Primary Outcomes



Secondary Outcomes



MAIN FINDINGS

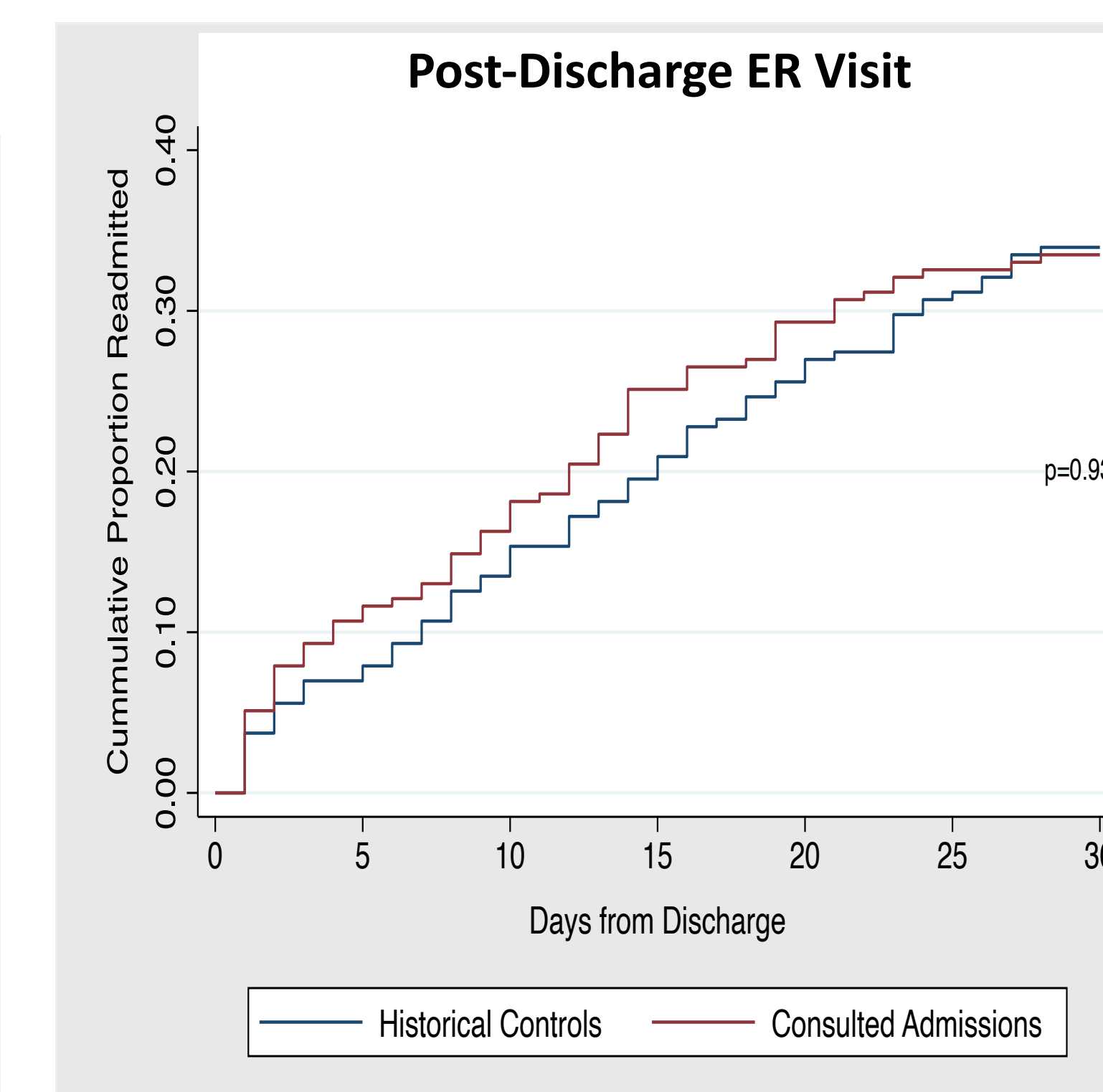
215 admissions with consultation matched with 215 historical controls
Study groups similar with respect to demographic & clinical characteristics
ACS consultation associated with marked increase in Inpatient MAUD and MAUD given at discharge
There were no statistically significant changes in patient directed discharge, 7-day and 30-day all-cause readmission or 7-day and 30-day post-discharge ER visit between admissions who received an ACS consult and those who did not

DISCUSSION

- This is among the first studies to examine AUD outcomes of ACS consultation
- Limitations
 - Single center observational study
 - Proximal health care delivery outcomes related to hospitalization
- Future Directions
 - Examine association of ACS with linkage to outpatient care, long-term MAUD continuation, alcohol use outcomes, mortality

CONCLUSIONS

- Addiction Medicine Consultation was associated with a large increase in inpatient provision of MAUD and MAUD given at discharge when compared to propensity-matched historical controls.
- Prior to ACS implementation, few inpatients received evidenced-based MAUD
- These findings provide compelling evidence for the benefit of an ACS in hospitals which have a high prevalence of patients with AUD.



Patient Directed Discharge

