Factors Associated with Detoxification Completion in an Urban Substance Use Treatment Unit

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SUBMISSION DETAILS

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Summary This project was a retrospective chart review examining factors associated with completion of inpatient detoxification at an urban substance use treatment unit (Mount Sinai Behavioral Health Center) between January and March 2024. The study included 139 patients admitted for medically supervised withdrawal (detoxification), primarily for alcohol, opioids, and benzodiazepines. The primary outcome was successful completion of detoxification, defined as remaining in treatment through the planned course.

The sample was predominantly male (80.6%), publicly insured, and had long-standing substance use histories (mean ≈28 years). Overall, 72.7% of patients completed detoxification. We analyzed demographic, clinical, and treatment-related variables using bivariate analyses and multivariable logistic regression.

The most significant finding was that receipt of psychiatric treatment during the inpatient stay, defined as initiation or continuation of psychotropic medication for a psychiatric diagnosis, was strongly associated with detoxification completion. Patients receiving psychiatric treatment had approximately three times greater odds of completing detox. Older age was also independently associated with higher completion rates. Other variables, such as housing status, primary substance, and psychiatric history, showed associations in unadjusted analyses but were not significant in the final model.

The findings support consideration of integrating psychiatric and addiction care during detoxification. Early psychiatric assessment and initiation of appropriate treatment may improve patient engagement and retention in detoxification. The findings also highlight younger patients as

a higher-risk group for non-completion, suggesting a need for targeted engagement strategies. While detoxification is not recognized as substance use treatment, it provides an opportunity to connect patients to rehabilitation or outpatient substance use treatment. Education around the role of psychiatric comorbidity in treatment adherence may improve clinician responsiveness and patient outcomes.

This project had several limitations including its retrospective design and relatively small sample size, therefore findings should be interpreted cautiously. Future studies might consider a prospective design and should more precisely define and measure psychiatric interventions (including type, timing, and intensity) and evaluate whether specific approaches improve completion rates. Future studies should also examine the proportion of patients who transition from detoxification into rehabilitation or further substance use treatment.

The questions following the above will ask you to breakdown your summary.

Background Substance use disorders (SUDs) are highly prevalent, undertreated, and a significant source of morbidity and mortality. The 2024 National Survey on Drug Use and Health reported that 46.3 million adults in the United States had met criteria for a past-year substance use disorder within the past year. Among those with SUDs, 21.2 million also met criteria for a mental illness diagnosis. Despite this, only 17.7% of people with an SUD received substance use treatment, highlighting a substantial treatment gap.

Medically supervised withdrawal (detoxification) centers often present as a first connection to SUD treatment, and it is recognized that longer duration of substance use treatment and completion of various phases of treatment predict better SUD. Identifying predictors of detoxification completion is therefore important for recognizing high-risk patients and facilitating transition to ongoing care. Previous research has demonstrated that detoxification completion rates vary widely, ranging from 45-95%, with patient, program, and system-level factors influencing outcomes. According to the 2023 Treatment Episode Data Set (TEDS), the overall detoxification completion rate was 62.1%.

Past studies have found that patient-level demographic factors associated with higher rates of detoxification completion include older age, housing stability, being married, having children, maintaining employment, being on probation, and higher educational attainment. Clinical factors associated with increased rates of completion include older age of substance use onset, use of a single substance, alcohol as the primary substance of use, and fewer prior treatment dropouts.

Research examining substance use treatment in patients with co-occurring psychiatric conditions has been heterogeneous. One study that reviewed the Treatment Episode Dataset-Discharges (TEDS-D) from 2009-2011, included 856,385 substance use treatment episodes and found that 42% of patients with psychiatric comorbidity dropped out of treatment. This was 28% higher than patients without psychiatric comorbidity. Patients with psychiatric comorbidity were also found to have earlier attrition compared to those without psychiatric diagnoses. Another study used the 2015-2017 TEDS-D data to look at treatment discontinuation in patients with comorbid psychiatric illness and opioid use disorder. They found that patients with comorbid psychiatric illness had lower

rates of treatment dropout, but increased odds of MOUD discontinuation due to administrative discharge.

The objective of this study was to expand on prior research and examine clinical and non-clinical factors to identify independent predictors of detoxification completion. This study was unique in that it was conducted on a detoxification unit situated within a freestanding behavioral health center, that is staffed by both an addiction medicine and addiction psychiatry attending. Given the presence of addiction psychiatry services on the unit, we were particularly interested in whether receipt of psychiatric treatment during detoxification was associated with completion.

Information from this project might enhance a clinician's practice by highlighting clinical and non-clinical factors associated with detoxification completion. This information could be used to inform interventions on the unit to improve patient engagement and retention.

Educational Learning Objectives

Learning Objective 1 Identify key clinical and non-clinical factors associated with completion of inpatient detoxification.

Learning Objective 2 Evaluate the implications of integrating psychiatric care into detoxification settings, while recognizing study limitations.

Learning Objective 3 Apply findings to identify high-risk populations for non-completion of detoxification and inform targeted engagement strategies in clinical practice.

Methods This retrospective chart review examined 139 patients admitted to an inpatient detoxification unit at Mount Sinai Behavioral Health Center between January and March 2024 for alcohol, benzodiazepine, or opioid withdrawal. Data were extracted from the electronic medical record, including sociodemographic characteristics, substance use history, psychiatric diagnoses, and receipt of psychiatric treatment during admission, defined as initiation or continuation of psychotropic medication for a documented condition. Bivariate analyses, including chi-square tests and t-tests, were conducted to compare completers and non-completers. Variables that were significant in unadjusted analyses were entered into a multivariable logistic regression model with backward elimination to identify independent predictors of detoxification completion.

Results Detoxification was completed by 101 of 139 patients (72.7%). Patients who completed detoxification were older on average and had a longer length of stay (3.9 vs 2.5 days). In bivariate analyses, completion was associated with receipt of psychiatric treatment, alcohol as the primary substance, undomiciled status, and history of psychotic disorder, though effect sizes were small. No significant differences were observed by sex, race, insurance status, employment, or relationship status. In multivariable logistic regression, only older age (OR 1.03 per year) and receipt of psychiatric treatment during admission (OR 3.01) remained independent predictors of completion. Other variables were not retained after backward elimination.

Conclusion Findings from this project support consideration of integrating psychiatric evaluation and treatment into inpatient detoxification, as this may improve completion rates, possibly through

enhanced patient engagement. Younger patients may benefit from targeted retention strategies, given lower detoxification completion rates. Training clinicians to recognize and address co-occurring psychiatric conditions during detoxification may improve outcomes. From a policy perspective, these findings support consideration of integrating addiction and mental health services within detoxification settings to optimize treatment retention and continuity of care.

Scientific Significance This study contributes to the limited literature on predictors of detoxification completion by identifying both a modifiable factor (receipt of psychiatric treatment) and a non-modifiable factor (age) associated with completion. The findings support the growing emphasis on integrated care models in substance use treatment, suggesting that addressing co-occurring psychiatric conditions during detoxification may enhance engagement and retention. Additionally, the identification of younger age as a risk factor for non-completion highlights an understudied population requiring targeted interventions. These results provide a foundation for future prospective studies aimed at clarifying causal mechanisms and developing targeted, evidence-based interventions to improve detoxification outcomes and facilitate entry into substance use treatment.

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