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Black, Finn

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Identifying missed opportunities for supporting patients who use opioids at UCSF
Parnassus Medical Center

by
Finn Black

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Approved:

DocuSigned by:



FB5A885C7DC445F...

Carol Dawson-Rose


Chair

DocuSigned by:



DocuSigned by:

Matt Tierney



449F538407A442E...

Sujatha Sankaran

Committee Members

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ABSTRACT

Identifying missed opportunities for supporting patients who use opioids at UCSF Parnassus Medical Center.

Finn Black.

Discharges against medical advice (AMA) are associated with higher rates of readmission and often considered a target for quality improvement. Non-prescription opioid use is a known risk factor for AMA discharge, but standards of care exist for managing withdrawal and drug cravings in the inpatient setting.

Question

This project assessed the reasons why patients with a history of opioid use disorder left the hospital during the calendar year 2021 and whether they had been assessed or treated for opioid use disorder during their stay, had post-discharge follow-up, or experienced an unplanned readmission within 30 days.

Method/Analysis

Chart abstraction was performed for all patients with a history of non-prescription opioid use who were discharged AMA from UCSF Parnassus in 2021 (n = 50). Demographics and data on discharge diagnoses, assessment and treatment of opioid use disorder, and referral to follow-up care were analyzed through frequency analysis. Chart notes describing reason for discharge were analyzed through thematic analysis.

Results

Compared with UCSF Parnassus' overall inpatient and emergency department population for the same period, the study population was more likely to be young (median age 43 vs. 53 for hospital overall), unhoused (46.7% vs. 7.7%), male (66.7% vs. 50.2%), and Black (17.8% vs.

11.1%). Only 26% of patients received follow-up care post-discharge and 30% of patients experienced an unplanned readmission to UCSF within 30 days of discharge. Only 26% of patients were assessed for opioid withdrawal during their admission and 70% of patients did not receive medication for treating opioid use disorder while in the hospital. The most common reasons for AMA discharge were anxiety and hospital regulations, followed by withdrawal and outside obligations. Overall, the study population was socially vulnerable and would likely benefit from expanded access to inpatient addiction medicine services and post-discharge follow-up care. Reforming hospital policies to be less punitive and restrictive towards patients who use drugs, along with a standard policy for the prompt identification and treatment of withdrawal, may support more patients in completing their hospital stays.

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ABBREVIATIONS

AMA	Against medical advice
MOUD	Medication for opioid use disorder
PWUD	People who use drugs

INTRODUCTION

Background

Discharges against medical advice (AMA), also known as self-discharges or self-directed discharges, occur when a provider disagrees with a patient's decision to discontinue an inpatient hospital stay (Alfandre et al., 2017). Discharges AMA occur for a variety of reasons, including financial and family obligations, psychological stressors in the hospital environment, and drug withdrawal (Stearns et al., 2017). The latter is likely an important factor in California, where 2.6% of hospital discharges are designated as AMA and patients with substance use disorders comprise 23% of these discharges vs. 5% of hospital discharges overall (California Department of Health Care Access and Information, 2022).

The hospital can be an inaccessible environment for people with substance use disorders due to stigma from hospital staff, security searches, inadequate pain and withdrawal management, isolation from social supports, and extended confinement (Pollini et al., 2021). This lack of accessibility prevents patients with substance use disorders from obtaining necessary inpatient care. For example, AMA rates up to 20% have been found for both injection drug-related infectious endocarditis (Kimmel et al., 2021) and injection-related skin and soft tissue infections (Hazen et al., 2021). Compared to conventionally discharged patients, patients who leave the hospital AMA are two to seven times likelier to experience an unplanned readmission within 15 days, suggesting their medical concerns were not adequately addressed prior to discharge (Alfandre, 2009; Kumar, 2019; Tan et al., 2017).

While rotating through UCSF Parnassus' 14 Long as a nursing student, I observed a number of seriously ill patients with opioid use disorder (OUD) who self-discharged due to

inadequate treatment of pain and withdrawal. These patients often missed out on necessary diagnostic procedures and discontinued treatments prematurely, but the symptoms that motivated their leaving the hospital could have been managed with opioid agonist or partial agonist therapy. As such, this thesis has three primary objectives:

1. To determine how many patients with a history of non-prescribed opioid use left UCSF Parnassus Medical Center against medical advice in 2021, and how the demographics of this population compare to UCSF Parnassus' overall patient population.
2. To identify the main reasons for these premature discharges.
3. To identify interventions that might have supported these patients in completing their hospital stays.

Research setting

UCSF Parnassus' Medical Center is a 785-bed research and teaching hospital located in the Parnassus Heights neighborhood of San Francisco (American Hospital Directory, 2022). The hospital lacks an addiction medicine service and its primary referral for patients who need linkage to substance use disorder treatment is Harbor Light, an abstinence-based Christian program run by the Salvation Army (Lopez, 2018). However, UCSF is home to a number of organizations specializing in substance use disorders. The university staffs the National Clinician Consultation Center, which provides nationwide advice on the management of substance use disorders (UCSF National Clinician Consultation Center, 2022). UCSF's Alliance Health Project provides training to providers on better serving people who use drugs (UCSF Alliance Health Project, 2022) and through its partnership with San Francisco General Hospital, the university provides inpatient substance use disorder management with its Addiction Care Team (UCSF

Addiction Care Team, 2022). The disconnect between the resources available at the hospital vs. the university as a whole may therefore represent an opportunity to improve the standard of inpatient OUD management at UCSF Parnassus Medical Center.

Aim, scope, and overview

Because of the apparent gap between UCSF's capacity to offer the standard of care for opioid use disorder and the actual resources available at UCSF Parnassus Medical Center, I designed this thesis from the perspective of quality improvement. Rather than testing a hypothesis, I will focus on describing a problem and suggesting potential solutions to that problem. Using a combination of in-depth chart review and a review of existing hospital protocols and policies, I attempted to address the following:

1. What are the demographics of the study population (e.g. race, age, housing status) and how do they compare to UCSF Parnassus Medical Center's overall patient population for 2021?
2. Among this study population, what is the breakdown of reason for hospital visit, discharge diagnosis, and hospital unit at discharge?
3. What were the main reasons patients in the study population left the hospital against medical advice?
4. What types of treatment for opioid use disorder did patients receive while in the hospital and were these treatments in line with the current standard of care? For patients who were already on medications for OUD, were they maintained on the same regimen while in the hospital?

5. How many patients prematurely discontinued parenteral antibiotic therapy upon discharge?
6. What interventions might have supported these patients in completing their hospital stays?

I am specifically focusing on opioid use disorder because there is an accepted standard of care for managing opioid cravings and withdrawal in the inpatient environment. I expect to find that unmanaged pain, withdrawal, and opioid cravings will be a major driver of self-discharges for patients with OUD and that there will be opportunities to improve the quality of care offered to patients with OUD at UCSF Parnassus.

Terminology

Discharging a patient “against medical advice” is a non-standardized practice that occurs at the discretion of individual providers (Holmes et al., 2021). The practice of designating self-directed discharges as “against medical advice”, often accompanied by having the patient sign paperwork acknowledging the risks associated with their decision, is meant to protect providers and hospitals from liability in the event of poor outcomes (Alfandre et al., 2017; Chin & McDougall, 2018). In recent years, a lack of evidence that the AMA designation provides hospitals and providers with any legal protection (Alfandre et al., 2017) along with the critique that AMA discharges perpetuate stigma has resulted in some physicians calling for the term to be retired (Alfandre et al., 2017; Ambasta et al., 2020; Chin & McDougall, 2018). At UCSF, some providers prefer to use the term “self-directed discharge” or “patient-directed discharge” when the provider disagrees with the patient’s decision to leave the hospital. However, these discharges still carry the disposition “against medical advice” in the electronic medical records

system. Additionally, the terms “self-discharge” and “patient-directed discharge” have been critiqued for blaming patients whose choice to leave the hospital was influenced by discrimination or other structural barriers (Kleinman & Morris, 2022). In such situations, “patient-directed discharge” becomes a euphemism for a failure of the healthcare system, and the more neutral and accurate term “before medically advised” has been suggested as an alternative (Kleinman & Morris, 2022). In this thesis I use the term “against medical advice” when referring to discharges specifically given that designation in a patient’s medical record. When speaking more generally about discharges that occur prematurely, I use the term “before medically advised” (BMA).

In conducting chart review for this project, I encountered a wide range of terminology used for describing patients’ substance use. In this thesis, I adhere to best practices for using non-stigmatizing, accurate language in discussing substance use, substance use disorders, and treatments for substance use disorders (Shatterproof, 2021). When discussing substance use, I use the terms “drug use” and “substance use” to refer to situations where someone is using a controlled substance in any way that was not prescribed by a medical provider. This includes street drugs such as heroin and methamphetamine and prescribed controlled substances that are not being used as directed. When discussing people who use drugs by any route, I use the term “people who use drugs” (PWUD). When discussing people who specifically use drugs through intravenous, intermuscular, or subcutaneous routes, I use the term “people who inject drugs” (PWID). I only use terms that describe specific medical diagnoses - such as “opioid use disorder” or “polysubstance use disorder” - if discussing someone who has been diagnosed with that condition by a medical provider. When discussing medications used in the treatment of opioid

use disorder, I use the term “medication for opioid use disorder” (MOUD), which includes partial opioid agonists like buprenorphine and long-acting opioid agonists like methadone.

There are several places in this thesis where I use the term “harm reduction”. Harm reduction as defined by the National Harm Reduction Coalition (2023) is a set of principles that prioritizes the health and well-being of people who use drugs over abstinence from drug use. When I use the term “harm reduction”, I am referring to any approach to substance use that centers the needs, goals, and well-being of people who use drugs, especially those approaches that minimize the risk associated with drug use, and rejects coercive, moralistic, or “zero tolerance” responses to drug use.

LITERATURE REVIEW

Introduction

For this literature review, I begin by discussing what we currently know about the population of patients who are discharged against medical advice in the United States, including the demographics of this population and potential risk factors for AMA discharge. In my review of research that investigates risk factors, I consider studies that address “risk” both in terms of patient level factors (e.g. insurance status) and hospital level factors (e.g. academic vs. for-profit). I then review the small body of qualitative literature that explores the reasons why patients leave the hospital before medically advised, with an emphasis on those papers that specifically focus on people who use drugs. Then, I review the literature addressing potential strategies for supporting people who use drugs in completing their inpatient treatment and finally, the current best practices for approaching before medically advised discharges from a patient-centered perspective.

Risk factors for AMA discharge

Nationally, the “against medical advice” discharge disposition is used for 1.7% of all hospital admissions (Agency for Healthcare Research and Quality, 2023) and 1.25% of all hospital emergency department visits (Kazimi et al., 2020). Although leaving the hospital before medically advised is a relatively common outcome, very few studies have characterized this patient population at the national level and analyses of recent data are lacking. One of the few nationwide studies was a five-year retrospective cohort analysis of all patients admitted to the Veterans Affairs hospital system from 2004-2008 (Glasgow et al., 2010). This study found an overall AMA rate of 1.7% (32,819 discharges); these discharges were more likely to comprise

patients who were Black, young, male, and low-income (Glasgow et al., 2010). Slightly more recent is a retrospective cross-sectional analysis of 338,000 AMA discharges from the Nationwide Inpatient Sample (Spooner et al., 2017). This study analyzed data from the years 2002-2011 inclusive and had similar findings to Glasgow et al., with an increased risk of AMA discharge among people who were Black, young, and low-income. Variables most strongly correlated with AMA discharge included lacking health insurance (odds ratio of 3.78) and male sex (odds ratio of 2.40) (Spooner et al., 2017).

Although few studies have aimed to describe the patient population impacted by AMA discharges at the national level, a number of studies have analyzed data from individual hospitals. A scoping review of these studies found that low income, public or no insurance, younger age, male gender, and substance use have been consistently associated with AMA discharge, though race has been an inconsistent predictor (Alfandre, 2009). It is important to note, however, that almost all of these studies have analyzed data from large, urban academic hospitals (Alfandre, 2009). This is significant because rates of AMA discharges are not consistent between hospitals and in the United States can range from 0-12.5% (Kumar, 2019). Facilities with higher rates of AMA discharges are more likely to be large, for-profit, non-teaching hospitals in major metropolitan areas (Kumar, 2019) but there are no studies characterizing the patients who are discharged AMA from such facilities or investigating why AMA rates might be higher.

There is some evidence that certain discharge diagnoses are correlated with an AMA discharge disposition. A cross sectional analysis of discharges at a large urban hospital in New York City for the period 2012-2013 found that 8.2% of people admitted for HIV complications and 5% of people admitted for sickle cell disease were discharged AMA, compared to an overall

AMA rate of 0.7% (Alfandre et al., 2017). This relationship remained after adjusting for race, age, gender, and insurance status. However, the investigators did not stratify their analysis by injection drug use, which could have potentially confounded the relationship between HIV and AMA discharge. Indeed, patients hospitalized for complications of injection drug use, especially when they require lengthy parenteral antibiotic therapy, are at especially high risk of leaving the hospital before medically advised. Kimmel et al. (2021) conducted a retrospective cohort study of patients hospitalized for infectious endocarditis from the National Inpatient Sample, of whom 7259 injected drugs and 23,633 did not inject drugs. The rate of AMA discharge was 14.2% among patients who injected drugs vs. 1.9% in patients who did not - about 7.5 times greater.

A case-control study of 8265 Philadelphia residents hospitalized for injection drug related skin and soft tissue infections between 2013-2018 compared patients who were and were not readmitted within 90 days of discharge (Hazen et al., 2021). An AMA discharge for the initial hospitalization was associated with a twofold greater risk of readmission but the overall AMA discharge rate was high in both groups - 23.4% of patients with a readmission and 13% of patients without a readmission had been discharged AMA.

Reasons for AMA discharge

The demographic data analyzed in large scale studies of AMA discharges suggest that patients from marginalized backgrounds are more likely to leave the hospital before medically advised, but these data don't tell us why specifically patients choose to leave. In recent years, a number of studies have used qualitative chart review and in-depth interviews with patients and providers to better understand why AMA discharges occur. Stearns et al. (2017) conducted a mixed-methods study of the 319 AMA discharges that occurred at Highland Hospital in Oakland,

CA for the year 2014 that consisted of in-depth chart review and provider surveys. Of the 319 patients who were discharged AMA, 113 had a reason for leaving documented in their chart. The most common reasons were leaving the hospital to use substances (35%), caregiving obligations (19%), dislike of the hospital environment (16%), and financial obligations such as work (15%).

Several studies have focused more specifically on why people who use drugs leave the hospital before medically advised. McNeil et al. seek to reframe the problem of AMA discharges as rooted in structural inequity rather than patient “non-compliance” and frame the hospital as an “environment of risk” that is actively hostile towards PWID. McNeil et al. (2014) conducted qualitative interviews with 30 people who inject drugs (PWID) who were discharged AMA from a hospital in Vancouver, Canada, examining elements of the hospital environment that contribute to before medically advised discharges. Participants most commonly cited leaving the hospital due to being profiled as “drug seekers”, experiencing inadequate pain and withdrawal management, and finding the hospital environment reminded them of incarceration.

Pollini et al. (2021) conducted a similar study in West Virginia, where they interviewed 20 PWID who had been discharged AMA after being hospitalized for injection related infections, Their findings were consistent with those of McNeil et al. (2014), with patients citing negative interactions with hospital security, inadequate pain and withdrawal management, and a feeling of confinement as reasons for leaving the hospital. Simon et al., (2019) conducted interviews with 15 PWID who had been discharged AMA from Massachusetts General Hospital in Boston, MA. They identified four main thematic categories for reason for discharge, including pain, withdrawal, hospital restrictions, and stigma.

One study focused on the perspectives of harm reduction “in-reach” workers involved in an inpatient program for PWID at Boston Medical Center (Khan et al., 2022). The workers

overwhelmingly expressed finding the hospital environment inherently at odds with the philosophy of harm reduction, citing power dynamics, hierarchy, drug-related stigma, and an emphasis on profits and efficiency over patient needs as aspects of the hospital culture that made it difficult to meet the needs of PWID.

Strategies for addressing AMA discharges

There is a small body of research evaluating methods for supporting people who use drugs (PWUD) in completing their hospital stays, largely focusing on the use of medication for opioid use disorder (MOUD) to reduce AMA discharges among people who use opioids. Wang et al. (2020) conducted a retrospective cohort study of people who use opioids at a community hospital in New Hampshire, comparing outcomes among patients who did and did not receive buprenorphine for withdrawal during their hospital stay. Patients who received buprenorphine had an AMA rate of 30% while 56% of patients who received only symptomatic care for withdrawal (e.g. antiemetics) were discharged AMA. Discharging patients on buprenorphine halved 30 day all-cause readmissions.

Because hospital stays for injection drug related infections such as endocarditis can be lengthy, several studies have focused specifically on the use of MOUD in patients with opioid use disorder hospitalized for severe infections. A retrospective cohort study of 262 patients with serious injection drug related infections found that initiating medication for opioid use disorder was associated with decreased risk of discharge AMA (OR 0.55) (Nolan et al., 2021). A larger retrospective cohort study of 1433 patients with opioid use disorder admitted for osteomyelitis or endocarditis, found that receiving MOUD increased adherence to the recommended length of hospital stay, with patients on MOUD completing a mean additional 5.7 days of IV antibiotic

therapy (Jo et al., 2021). This study also found that buprenorphine was underutilized: only 19% of the 1433 patients in the cohort received any form of medication for opioid use disorder while admitted and of the patients who did receive MOUD, 82% were given methadone.

Not all people who use opioids wish to stop during hospitalization and AMA discharge rates were high in the above studies, even among patients who received MOUD. Arguably, hospitalization for an acute illness or injury is not an appropriate time to try to get a patient to stop using drugs and treating withdrawal prompting allows the care team to focus on the patient's acute medical concerns (Clark et al., 2014; Holmes et al., 2021). However, there is scant U.S. based research into options for patients in this situation. In Canada, slow-release oral morphine for the inpatient treatment of opioid withdrawal has been used successfully in patients who decline buprenorphine and methadone (Brothers et al., 2022). A case report from Vancouver, CA describes an unhoused patient with opioid use disorder who wished to self-discharge but was successfully able to complete his hospital stay with the use of high doses of IV hydromorphone (McAdam et al., 2020). Upon discharge, the patient was linked to an outpatient program that provided diacetylmorphine for self-administered injection, a strategy known as injectable opioid agonist therapy that is available in Canada and Europe but not the United States (McAdam et al., 2020).

Some researchers have investigated the use of shorter parenteral antibiotic regimens followed by oral antibiotics as an alternative for patients who are unable to complete a lengthy hospital stay. Marks et al., (2020) conducted a single center retrospective cohort study of 293 PWID hospitalized for bacterial infections who had left the hospital AMA. They found that 90-day all cause readmission rates were highest for patients who did not complete parenteral antibiotic therapy and were not switched to an oral regimen at discharge (68.7%). Patients who

were switched to oral antibiotics at discharge were readmitted at a comparable rate (32.5%) to patients who completed inpatient IV antibiotics prior to discharge (31.5%). A case series of 9 PWID hospitalized for infectious endocarditis who were switched to oral antibiotics due to before medically advised discharge found that all patients survived to 90 days post-discharge (Miller et al., 2022).

There is a small body of recent literature exploring strategies for making the inpatient environment less hostile to people who use drugs. Sharma et al., (2017) conducted a review of current harm reduction based approaches to substance use and evidence of the efficacy of those interventions in the inpatient setting. They found strong evidence in support of inpatient addiction medicine services and education based programs for reducing stigmatizing attitudes among hospitalists and staff nurses. They also noted several interventions that have strong evidence in outpatient settings and could be beneficial in the inpatient setting, including prescription dilaudid for patients who use opioids, inpatient syringe services programs, and improved care coordination for patients who use drugs.

McNeil et al. (2014) emphasize how hospital policies intended to prevent drug use can expose PWID to health risks and advocate for a number of risk reduction policies, including evidence-based inpatient treatment of pain and withdrawal and more options for patients who wish to continue using drugs while hospitalized, such as supervised consumption. Notably, half of the participants in this study reported using drugs while hospitalized but were unable to practice harm reduction strategies due to hospital policies. These patients resorted to behaviors such as reusing syringes and using drugs in locked bathrooms in an effort to evade surveillance, potentially exposing them to more harm than if they used drugs openly.

Alternative approaches to before medically advised discharges

The practice of using the against medical advice discharge disposition itself has been questioned by a number of providers. In theory, the AMA discharge disposition was developed to protect providers from liability if a patient has a poor outcome related to premature termination of care (Alfandre et al., 2017; Levy and Iacovelli, 2012). A number of providers have thus criticized the conventional AMA process as centering provider concerns of liability over the needs and autonomy of patients (Ambasta et al., 2020; Chin & McDougall, 2018; Clark et al., 2014; Holmes et al., 2021). Ambasta et al., (2020) suggest that AMA discharges are used by physicians to distance themselves from responsibility for poor patient outcomes. Instead of viewing AMA discharges as problematic patient behavior, they reframe it as a failure of the medical system to provide equitable care and state that responsibility for premature discharge should be shared collectively by the healthcare system and team. Likewise, Chin and McDougall (2018) emphasize that providers have an ethical responsibility to provide follow-up care that is not addressed in an AMA form. As an alternative to current practices, Clark et al. (2014) suggest a “patient centered” approach to before medically advised discharges that focuses on helping patients make informed decisions and offering feasible alternatives to hospitalization. Holmes et al. (2021) suggest “universal precautions” to encourage patients to complete their hospital stays, including prompt treatment for withdrawal and pain, non-judgmental attitudes, and early utilization of psychiatric services before patients even voice wanting to leave.

In light of ethical concerns regarding AMA discharges, it is notable that the belief among providers that such discharges protect them from liability may be flawed. In the *Journal of Hospital Medicine*’s “Things We Do for No Reason” series, Alfandre et al. (2017) argue that the use of “against medical advice” as a discharge disposition is a low-value and non-evidence based

practice. They advocate for abandoning the practice on the argument that it perpetuates stigma and does not improve care, and suggest that, "...clinicians should maintain a single discharge process with clear, objective documentation including providing appropriate prescriptions and follow-up appointments regardless of whether the patient's choice is consistent with a physician's recommendation."

A review of case law found only four cases where providers were sued due to a poor outcome after a discharge against medical advice (Devitt et al., 2000). In all four instances, the medical providers won their cases, but what protected them was not the discharge disposition but thorough documentation in the medical record of the patient's decision making capacity and knowledge of risks (Devitt et al., 2000). Patients who have capacity to make their own medical decisions are not obligated to remain in the hospital against their will and appropriate documentation of the patient's informed choice and decision making capacity is what protects providers from liability (Alfandre, 2022; Levy & Iacovelli, 2012). The AMA designation itself neither provides additional legal protection nor does it exempt providers from their obligation to ensure a safe discharge and appropriate follow-up care for the patient (Alfandre, 2022).

Research gaps

Overall, the body of literature addressing AMA discharges among people who use opioids is small. Of the papers reviewed above, the majority of those specifically addressing the prevention of AMA discharges primarily focused on the use of medication for opioid use disorder (MOUD). There is a notable gap in research into options for patients with opioid use disorder who are not interested in MOUD, especially alternatives to zero-tolerance policies for patients using their own drugs. The publications on the use of slow release oral morphine

(Brothers et al., 2022) and intravenous opioid agonist therapy (McAdam et al., 2020) in preventing before medically advised discharges were both based in Canada; I was unable to find similar publications from the United States.

In their scoping review of hospital based harm reduction programs, Sharma et al. (2017) urged more research into inpatient supervised drug consumption sites, where patients can openly use their own drugs under medical supervision. This gap still exists today, and I was unable to find any information about inpatient supervised consumption in the United States. Similarly lacking were published best practices for managing parenteral antibiotic therapy in people who use drugs (PWUD) who wish to leave the hospital and best practices for discharging PWUD with central venous catheters.

THEORETICAL FRAMEWORK

In the previous chapter, I described two qualitative studies that explored why people who use drugs (PWUD) may leave the hospital before medically advised (McNeil et al., 2014; Pollini et al., 2021). In both of these studies, participants endorsed finding the hospital environment overly restrictive, citing surveillance, isolation, and negative interactions with security as reasons for leaving the hospital. McNeil et al. found that participants would often react to this environment of restriction and surveillance by engaging in higher risk drug use behaviors - such as using drugs in a locked bathroom and reusing syringes - in order to avoid being caught. McNeil et al. went on to assert that for PWUD, the hospital is itself a risky environment in which zero tolerance policies towards substance use encourage patients to hide their substance use and thus expose them to greater risk of harm.

This concept of a healthcare environment being a space of surveillance and control as well as a space of care is more explicitly laid out by human geographer Geoff DeVerteuil and his theory of spaces of abeyance, care, and survival (DeVerteuil, 2009). DeVerteuil developed this conceptual framework for understanding the landscape of community-based substance use treatment programs within the context of the neoliberal welfare state (DeVerteuil, 2009) and the landscape of homelessness services in United States cities (DeVerteuil, 2012). Central to his framework is the idea that spaces that provide needed services to marginalized groups often fill other, unstated roles, such as making members of those groups less visible or controlling their behavior (DeVerteuil, 2012). Additionally, service providers and clients may have different ideas about what a service or space is “for”: for example, a provider may have the goal of sobriety for a client whose own goal is avoiding withdrawal (DeVerteuil, 2009). DeVerteuil thus asserts that relationships between service providers and clients in different settings can be understood within

this framework of overlapping goals and that understanding where these goals come into conflict can provide important information about the structure of our substance use treatment system.

Here, I apply this same framework to the inpatient environment, conceptualizing the hospital as a space where patients' bodies are highly regulated and patients must submit to a degree of control in order to receive care. While part of my project examines whether the patients in my study population received the accepted standard of care for managing opioid use disorder, I also examine conflict between the goals and needs of the patient and those of the hospital and how that conflict might influence a patient's decision to leave. Ultimately, I am approaching AMA discharges not as a problem to be fixed, but as a symptom of discordance between the needs and wants of the patient and those of the hospital.

METHODOLOGY AND METHODS

Research design

I designed this study as a quality improvement project with the goals of describing the scope of a problem (AMA discharges among with people who use opioids at UCSF Parnassus) and suggesting potential solutions to the problem. I did not attempt to test hypotheses or establish causal relationships and thus focused on collecting data for descriptive analysis. I collected these data through in-depth chart review, a process described in more detail below.

Sample and sampling procedure

Patients' medical records were included in this project for review if they met the following criteria:

- The patient was discharged from UCSF Parnassus Medical Center with the disposition “against medical advice”
- The discharge occurred during the period 01/01/2021 – 12/31/2021
- The patient was age 18 years or older at the time of admission
- The patient had opioid use documented in their active problem list, admission note, and/or discharge note. Patients with a diagnosis of polysubstance use disorder were included in the analysis if there was documentation that they used opioids.

To obtain the sample, I submitted a query request to the UCSF Office of Population Health for the medical record numbers (MRNs) and basic demographics of patients who experienced an AMA discharge from the UCSF hospital system in 2021. From this query result, I excluded all patients who were younger than 18 upon admission and all patients who were admitted to a location other than UCSF Parnassus Medical Center.

To determine if patients met eligibility criteria, I conducted a brief chart review for each patient in the initial query result including the active problem list and the admission and discharge notes from the admission that resulted in an AMA discharge. If there was no mention of substance use of any kind, I excluded the patient from the sample. If there was any mention of non-prescribed opioid use, I included the patient in the sample. If I only found mention of polysubstance use, I reviewed any notes from social work, case management, psychiatry, and addiction medicine for more detailed documentation of which substances the patient was using. If I was unable to find any documentation of opioid use specifically, I excluded the patient from the sample. If patients had multiple discharges against medical advice during the study period, I reviewed each admission separately. If opioid use was only mentioned for one of the admissions, I included all of the patient's admissions in the analysis.

Data on UCSF's overall patient population were obtained from a query in the electronic medical record system with the assistance of the Office of Population Health.

Chart auditing procedure

Gender, race/ethnicity, age, insurance status, and unit at discharge were all collected automatically through the electronic medical records query. To determine the details of a patient's substance use, I reviewed admission and discharge notes and the patient's problem list. If the only substance use mentioned was opioids, I classified the patient as "opioid use only". If the patient met any of the following criteria, I considered them as having polysubstance use:

- The patient had a diagnosis of a non-opioid substance use disorder, such as alcohol use disorder or stimulant use disorder.
- The patient was specifically diagnosed with polysubstance use disorder.

- The medical notes mentioned the use of non-prescribed stimulants (e.g. cocaine, methamphetamine) or non-prescribed sedatives (e.g. benzodiazepines, barbiturates).

The remaining variables were collected through chart review as described in Table 1.

Table 1: Definition of variables abstracted from chart review

Variable	Definition
Discharge diagnosis	Obtained from the discharge note. If the patient’s diagnosis was undetermined due to premature discharge, I categorized their diagnosis as “not determined due to discharge”.
HIV status	Patients were classified as “not tested” if they did not have an HIV test in their medical record in the 12 months leading up to their admission. If the most recent test in the past 12 months was negative, the patient was classified as “negative”. For patients with a positive HIV test, I recorded whether the patient was currently receiving antiretroviral therapy per admission and discharge notes.
HCV status	Patients were classified as “not tested” if they did not have an HCV test in their medical record in the 12 months leading up to their admission. If the most recent antibody test in the past 12 months was negative, the patient was classified as “negative”. Patients with a positive HCV antibody test were classified as “active infection” if they had a detectable viral load, “cleared infection” if they had an undetectable viral load, and “not confirmed” if no viral load was performed.
Parenteral antibiotics at discharge	If the medication administration record indicated that the patient was receiving an IV antibiotic at the time of discharge or was scheduled for a dose of parenteral antibiotics after their discharge time, they were classified as “on parenteral antibiotics at discharge”.
On MOUD prior to admission	Patients were classified as being on medication for opioid use disorder prior to admission if the admission note stated the patient was currently taking buprenorphine or methadone. The medication administration record was reviewed to determine whether the medication was continued, not continued, or switched during the hospitalization.
MOUD initiated during admission	Patients were classified as having MOUD initiated during their admission if they were not documented as being on MOUD prior to admission and received methadone or buprenorphine while inpatient.
COWS score assessed	If the patient’s clinical opioid withdrawal score (COWS) was measured during their stay, they were recorded as having a COWS score assessed

Variable	Definition
Security flag	Patients were classified as having a security flag if a security alert pop-up appeared when first accessing the patient’s chart.
Housing status	Housing status was usually documented in admission or social work notes. I classified patients as “housed” if they had a stable place to live that was their own, such as an apartment or permanent supportive housing. I classified patients as “unhoused” if they did not have their own place to live. This category included people living on the street, in a vehicle, in a shelter, or temporarily “crashing” with other people.
Saw social worker	Patients were classified as having seen a social worker during their admission if there was a note from a social worker in the patient’s chart indicating that they had seen the patient. If the social worker was unable to see the patient (e.g. due to patient being asleep or out of the room) this did not count as having seen a social worker.
Reason for discharge	The discharge note and nursing notes were reviewed to determine if the patient’s reason for leaving was documented. If no reason was documented, reason for discharge was defined as “unknown”. Otherwise, the reason was transcribed as recorded in the medical record.
Follow up care arranged	If the discharge note described an arrangement for follow-up care (e.g. outpatient appointment), the type of follow-up care was recorded. Standard return precautions or advice to return to the hospital were not considered follow-up care.
30-day readmission to UCSF	If the patient had an unscheduled admission to a UCSF hospital within 30 days of their discharge they were classified as having an unplanned 30-day readmission.

Analytical plan

This project's main objectives are descriptive in nature and do not involve hypothesis testing or a comparison group. Demographic variables (e.g. age, race, insurance status) were analyzed at the level of the patient while admission-specific variables (e.g. discharge diagnosis, reason for leaving hospital) were analyzed at the level of hospital admission. Patient discharge

diagnoses were re-coded into broader categories by ICD-10 family (World Health Organization, 1993).

I conducted summary statistics on quantitative patient and admission level variables. The chart abstraction procedure resulted in two types of qualitative data: reason for patient discharge and content of patient security flags. For both of these data types, I manually coded the abstracted content and analyzed it for emergent themes using Braun and Clarke's method of thematic analysis (Braun & Clark, 2012).

Validity and reliability

This project is a single site analysis and can't necessarily be extrapolated to other inpatient facilities. It is also important to note that the data collection period (2021) coincided with the COVID-19 pandemic and it is possible that the data I collected for 2021 will look different from data in subsequent years. For example, stresses on hospital staff may have resulted in greater than normal delays in patients receiving treatment for withdrawal, or patients may have experienced the hospital environment as more stressful than usual and have been more likely to leave.

I included all patients who met eligibility criteria in my analysis rather than conducting a random sample. This minimizes potential sampling error, but potential inaccuracies in the medical records is a source of error inherent in any research involving chart review, and it is possible that not all patients' drug use, reason for leaving AMA, or other relevant information was accurately recorded.

Ethics review and data security

This project was granted exempt status by the UCSF Institutional Review Board. Medical records were accessed from a UCSF workstation. De-identified data were collected using a chart auditing tool consisting of a spreadsheet on a laptop with full disk encryption. Presentations and reports for this project will only use data in aggregate.

RESULTS

Patient level variables

In 2021, there were 192 discharges from UCSF Parnassus Medical Center with the disposition “against medical advice”. Of these 192 discharges, 50 involved patients with opioid use disorder documented in their problem list, admission note, or discharge note. These 50 discharges comprise 45 individual patients as three patients had multiple AMA discharges in 2021.

Table 2 summarizes the demographics of these 45 patients in comparison to UCSF’s overall inpatient and emergency room population. Patient ages ranged from 21-71 with a mean of 45 and a median of 43. Compared to UCSF Parnassus Medical Center’s overall patient population in 2021, this population was younger and more likely to be male, publicly insured, unhoused, and white or Black, with the difference in housing status especially striking.

Table 2: Demographics of study population compared to overall patient population

	Sample (n) %	UCSF* (n) %
Sex		
Male	(30) 66.7%	(16949) 50.2%
Female	(15) 33.3%	(16808) 49.7%
Non-binary	(0) 0%	(16) .047%
Unknown	(0) 0%	(23) .068%
Race/ethnicity		
Asian	(0) 0%	(6411) 19%

	Sample (n) %	UCSF* (n) %
Black	(8) 17.8%	(3766) 11.1%
Latinx	(4) 8.9%	(4961) 14.7%
Native American	(1) 2.2%	(214) .63%
Pacific Islander	(0) 0%	(440) 1.3%
White	(36) 80%	(15442) 45.7%
Other	(0) 0%	(1857) 5.49%
Unknown	(1) 2.2%	(705) 2.09%
Primary insurance		
Public	(43) 97.8%	(22061) 65.3%
Private	(1) 2.2%	(11735) 34.7%
Housing status		
Unhoused within last 30 days	(21) 46.7%	(2596) 7.7%
Housed	(24) 53.3%	(31200) 92.3%
Total	(45) 100%	(33796) 100%
* Data on UCSF's overall patient population includes all unique patients admitted to the emergency room and inpatient units during 2021.		

Table 3 summarizes additional patient-level variables. Only four out of the 45 patients were living with HIV and two out of the four were currently receiving care for their HIV infection. Notably, 12 patients did not have an HIV test in their medical record within the 12 month period leading up to their admission. Overall hepatitis C virus seropositivity was 47% with 28.9% (13 patients) having an active hepatitis C infection. None of the 13 patients with active HCV infection were linked to treatment and a third of the patients did not have a hepatitis C test in their medical record for the 12 months leading up to their admission.

Table 3: Additional patient-level variables in study population

	Sample (n) %
Type of substance use documented	
Opioids only	(8) 17.8%
Polysubstance use	(37) 82.2%
Security flag pop-up in medical chart	
Security flag in chart	(20) 40%
No flag in chart	(25) 60%
HIV status	
Not tested in past 12 months	(12) 26.7%
HIV positive, on antiretroviral therapy	(2) 4.4%
HIV positive, not on antiretroviral therapy	(2) 4.4%
HIV negative	(29) 64.4%

	Sample (n) %
HCV status	
Not tested in past 12 months	(15) 33.3%
Active HCV infection	(13) 28.9%
History of HCV infection	(7) 15.6%
HCV antibody positive, no confirmatory test	(1) 2.2%
HCV antibody negative	(9) 20%
Total	(50) 100%

Security flag pop-ups (Figure 1) were present in the charts of 20 patients. Of these 20 flags, only two warned that the patient had a history of violent behavior. The majority of flags informed staff of the client’s substance use history and/or history of leaving the hospital against medical advice, with some specifying restrictions (e.g. belongings search) for that patient’s future hospital visits. A smaller number of flags mentioned that the client had a history of homelessness or mental illness or had become upset and yelled at staff during their stay, and two security flags for suspected drug use instructed staff to “file charges for criminal behavior”.

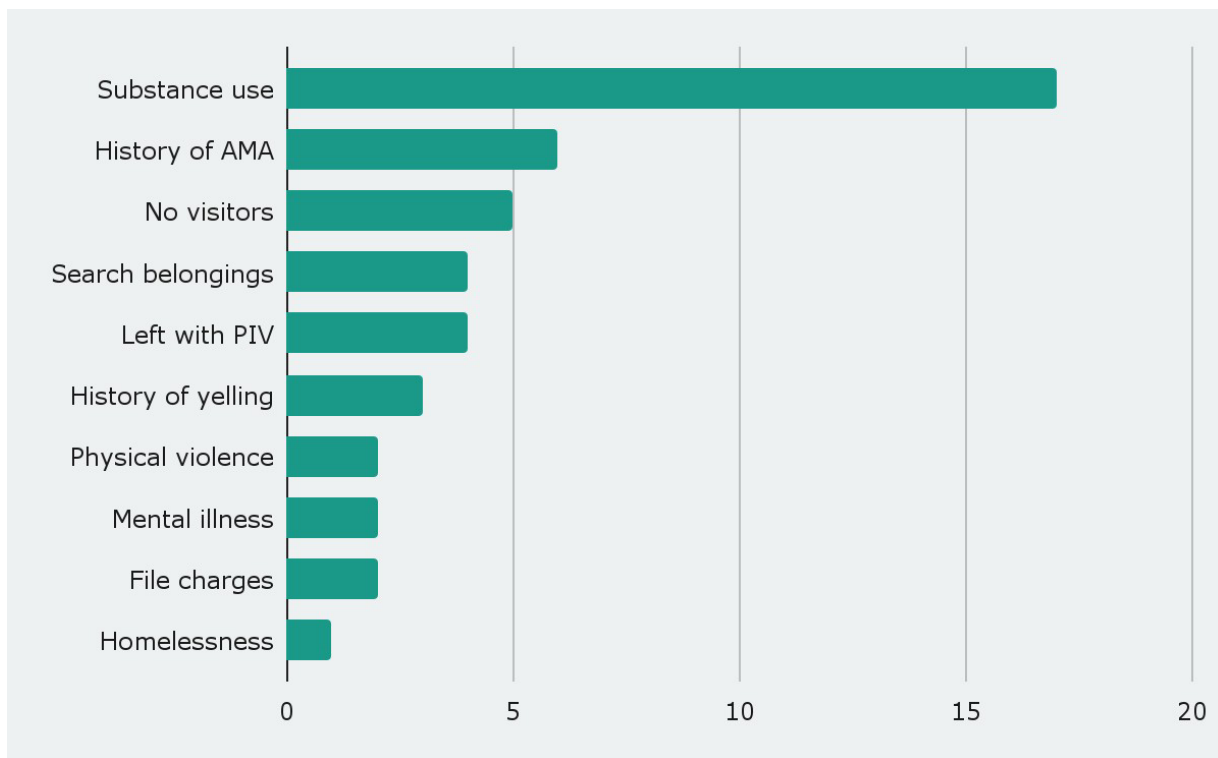


Figure 1: Content of security flag pop-ups

Characteristics of hospital encounters

Duration of hospital stay ranged from 1-35 days with a mean of 4.7 and a median of 2.5 days. Summary statistics of the 50 admissions in the analysis are listed in Table 4. Only 26% of patient encounters had documentation of clinical opioid withdrawal score (COWS) monitoring. In 58% of patient encounters, the patient was not on medication for opioid use disorder (MOUD) at admission and did not receive any form of MOUD while in the hospital. For those encounters in which the patient was on MOUD at the time of admission, only 60% of patients continued to receive their MOUD while in the hospital.

In 23 of the 50 encounters, the patient was receiving parenteral antibiotics at the time of discharge and only nine of these patients were successfully switched to an oral regimen. Of the 23 patients on parenteral antibiotics at discharge, 13 were on regimens that included vancomycin. Notably, although 48% of patient encounters included a visit from a social worker, only 26% of encounters included documentation of any form of follow-up care.

Table 4: Additional patient-level variables in study population

	Sample (n)%
30-day readmission to UCSF facility	
Readmitted	(15) 30%
Not readmitted	(35) 70%
Patient seen by social worker	
Yes	(24) 48%
No	(26) 52%
COWS measured during admission	
Yes	13 (26%)
No	37 (74%)
On medication for opioid use disorder?	
No, and MOUD not initiated in hospital	(29) 58%
No, but received MOUD during hospital stay	(7) 14%
Yes, and MOUD continued in hospital	(8) 16%

	Sample (n)%
Yes, and MOUD discontinued in hospital	(6) 12%
Parenteral antibiotics at discharge	
Yes, and all antibiotics discontinued	(14) 28%
Yes, with switch to oral regimen at discharge	(9) 18%
Not on parenteral antibiotics at discharge	(27) 54%
Follow-up care arranged	
Yes	(13) 26%
No	(37) 74%
Total	(45) 100%

The most common discharge diagnoses by ICD-10 family were infectious diseases and cardiovascular diseases (Figure 2), which accounted for 48% and 16% of discharges respectively. The most common infectious disease diagnosis was skin and soft tissue infection and the most common cardiovascular diagnosis was heart failure. Of the 50 admissions in the analysis, 7 (14%) were of patients who left the hospital before a medical workup could be completed, these patients had undiagnosed symptoms.

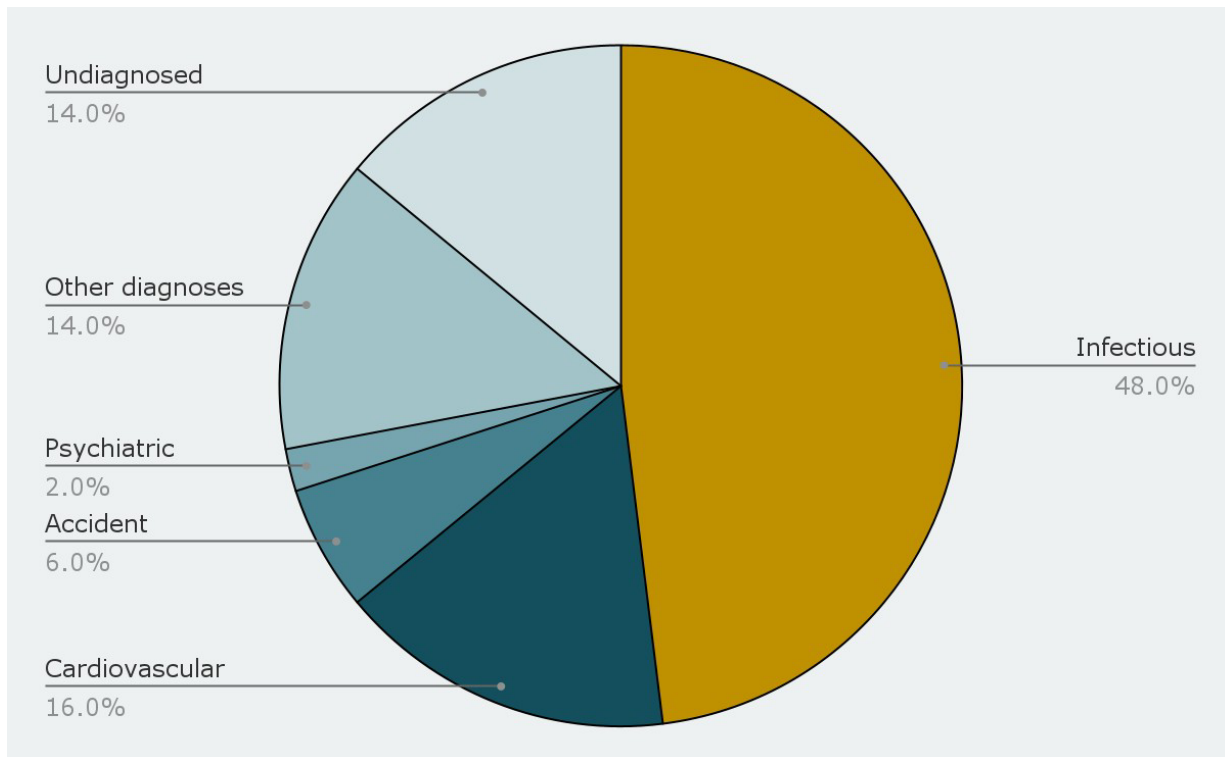


Figure 2: Discharge diagnosis by ICD-10 family

Unit at discharge is summarized in Figure 3. Of the 50 discharges in the analysis, five were from the emergency department and the remaining 45 were from inpatient nursing units. Consistent with the large number of patients with a discharge diagnosis of cardiovascular disease, the cardiology unit on 10-Long had the highest number of discharges.

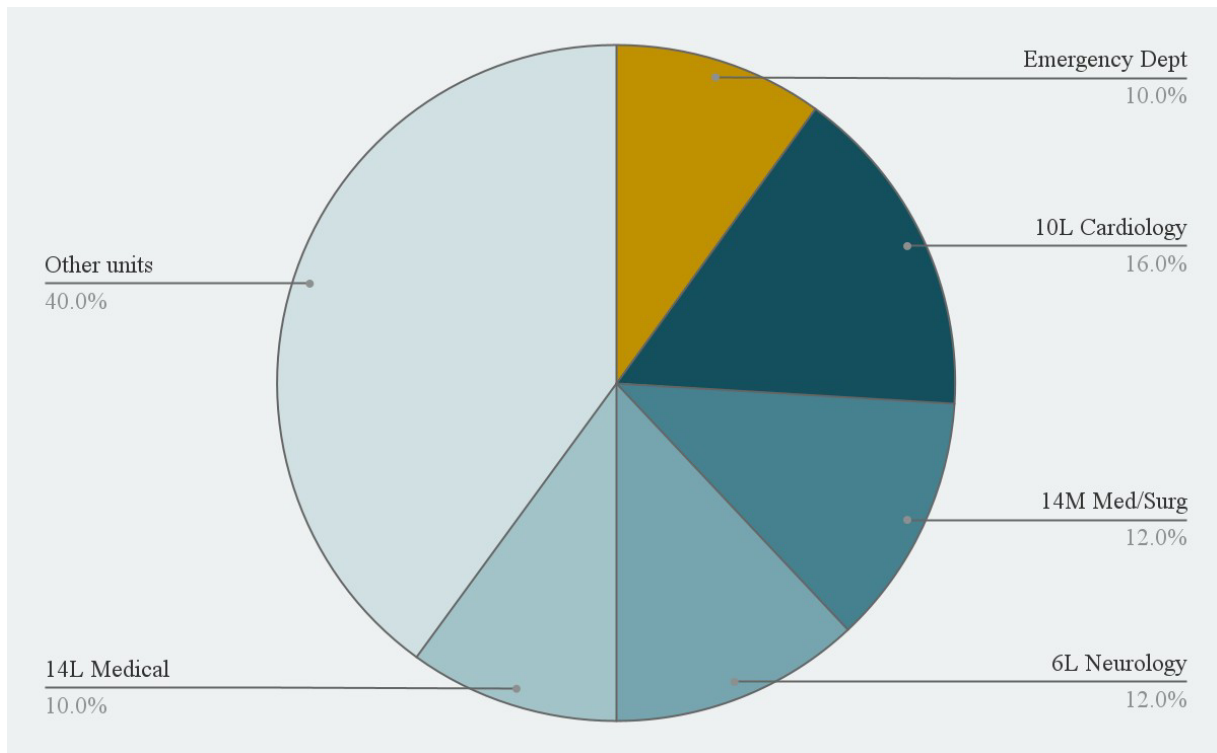


Figure 3: Unit at discharge

Reason for leaving the hospital was documented for 41 out of 50 encounters, usually in the last nursing note. Coding of these reasons revealed a number of interrelated themes, presented in Figure 4. Anxiety is difficult to assess from chart notes alone but I used this code in situations where a patient cited medical trauma, feeling confined, or needing to get “fresh air”. The code withdrawal was used if it was documented that the patient left either specifically due to withdrawal or if the medical chart used language such as “patient leaving AMA to use drugs”, “patient having drug cravings, left to ‘get well’”, etc. I used the code “outside obligations” for patients who left to attend to responsibilities such as pet care, child care, or work. “Disagreed with care plan” refers to situations where a patient disliked their care team’s suggested actions and could not find a suitable alternative. For three encounters, the patient’s reason was described

using vague language such as “patient left due to personal issues”; I coded these reasons as “non-specific”.

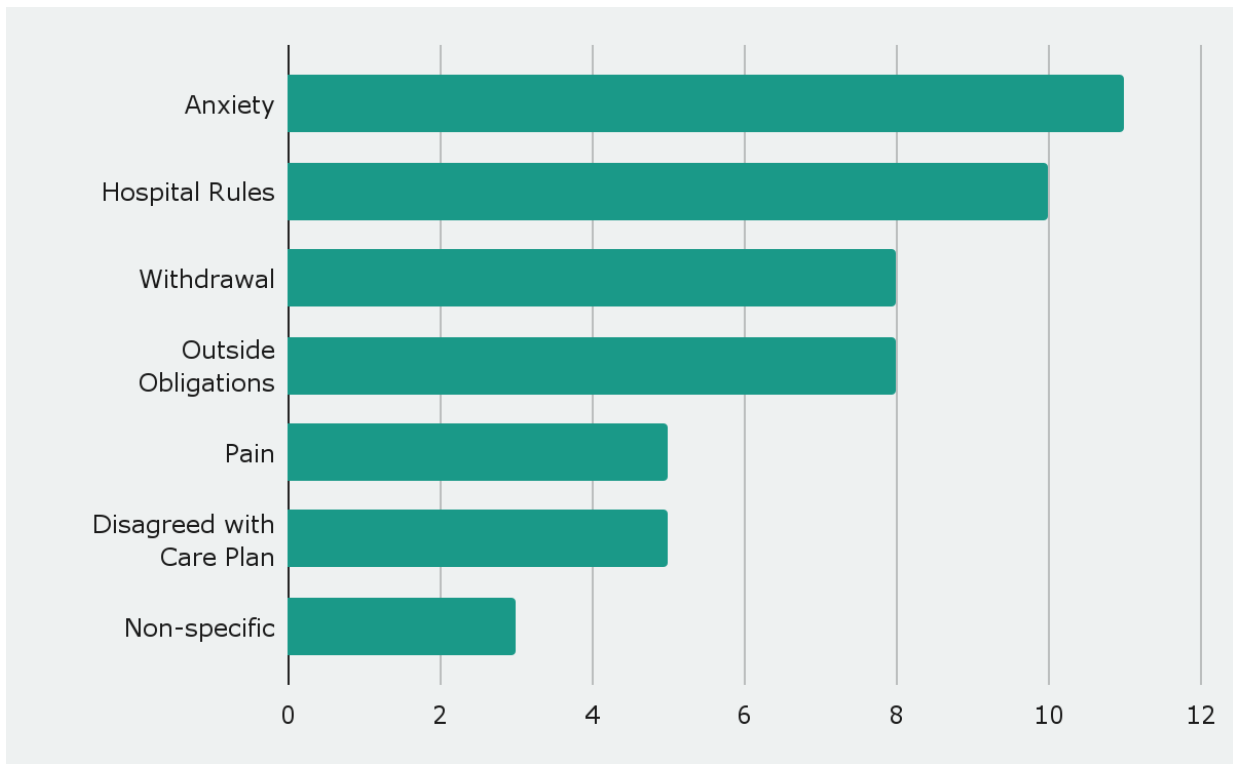


Figure 4: Documented reasons for discharging against medical advice

The most common documented reason for AMA discharge was anxiety, followed by hospital rules (e.g. visitor restrictions, not being allowed off unit), withdrawal, and outside obligations. These reasons are interrelated and a number of patients were coded for multiple reasons. For example, for one patient, the last nursing note for their admission said the patient was leaving due to, “sudden feeling of panic, has history of medical trauma, and intense feelings of withdrawal” (sic). I coded this patients’ reason for leaving as both “anxiety” and “withdrawal”. Discharges due to a combination of anxiety and hospital restrictions were common as many patients wanted to manage their anxiety by going outside or seeing a friend and self-discharged after being told they could not leave the unit or were on visitor restrictions.

Note that as anxiety is a symptom of withdrawal, there is likely more overlap between these categories than I was able to assess from chart review.

DISCUSSION

Overall, patients who left UCSF against medical advice in 2021 were socially vulnerable, with 46.7% of patients unhoused, compared to 7.7% of UCSF's overall inpatient population. The two most common reasons for AMA discharge were anxiety and hospital regulations, with withdrawal and outside obligations also important drivers of AMA discharges. Only 26% of patients received follow-up care post-discharge and 30% of patients experienced an unplanned readmission to UCSF within 30 days of discharge. The majority (70%) of patients did not receive medication for treating opioid use disorder while in the hospital, suggesting a pressing need for expanded access to inpatient addiction medicine services.

Vulnerability of patient population

The demographics of the study population were consistent with the findings of similar studies on AMA discharges, with an over-representation of patients who were young, Black, male, unhoused, and publicly insured (Alfandre, 2009; Glasgow et al., 2010; Spooner et al., 2017). The percentage of unhoused patients - 46.7% - was particularly striking.

In this study population, 30% of patients experienced an unplanned readmission to UCSF within 30 days of their AMA discharge, a figure that is likely an underestimate as some patients may have been readmitted at other hospital systems. This is more than twice UCSF's overall rate of 11.4% (UCSF Health, 2019) and is consistent with the findings of other studies, which have found that patients who leave the hospital AMA are two to seven times likelier than conventionally discharged patients to experience an unplanned readmission within 30 days (Alfandre, 2009; Kumar, 2019; Tan et al., 2017).

The high readmission rate was paired with a low rate of referral to outpatient follow-up care. Only 26% of patients received any form of follow-up care, such as an appointment or phone call to their primary care provider, after their discharge, and only 48% were seen by a social worker prior to discharge.

This low rate of follow-up care is consistent with the findings of other studies: a review of AMA discharges at Highland Hospital in Oakland, CA found that only 26% of patients who discharged AMA had follow-up care arranged (Stearns et al., 2017), while a cross-sectional analysis of AMA discharges at an unnamed urban academic medical center found that only 33% of patients received arrangements for follow up care (Tummalapalli et al., 2020).

Why premature discharges happen among people who use opioids

The main reason for discharge categories I identified - anxiety, withdrawal, pain, hospital restrictions, outside obligations - are largely consistent with the findings of similar studies (McNeil et al., 2014; Pollini et al., 2021; Simon et al., 2019; Stearns et al., 2017). A notable difference is that the three studies that conducted qualitative interviews with PWID all found that stigma was an important driver of AMA discharges (McNeil et al., 2014; Pollini et al., 2021; Simon et al., 2019), while stigma was not identified as a discharge category from the chart review conducted by Stearns et al. (2017) or in my own project. It seems reasonable to assume that stigma did contribute to some of the discharges in my analysis and that there is likely a discrepancy between how providers document a patient's reason for leaving and how patients would describe their reason.

Of the reason for discharge categories I identified, the most common were anxiety, withdrawal, hospital restrictions, and outside obligations. Outside obligations, such as pet care,

child care, and employment, have been found to be an important driver of premature discharges (Stearns et al., 2017). However, because anxiety, withdrawal, and hospital restrictions are things that the hospital can most realistically address, they will be the focus of this discussion.

Anxiety was the most common theme in patients' documented reasons for AMA discharge, and was likely interrelated with the other themes identified in the analysis. The cause of a patient's anxiety was not always mentioned in the description of why they were leaving, so it's possible that some patient's anxiety was related to withdrawal or a fear of withdrawal, concerns about pain management, or concerns about ability to fulfill caregiving duties or other outside obligations. Something that was frequently documented alongside a patient's anxiety, however, was hospital regulations. Certain policies at UCSF Medical Center, such as patients not being allowed off their nursing unit, seemed to exacerbate anxiety. There were several patients who expressed a desire for "fresh air" or a sense of claustrophobia and were stopped by security when trying to step outside the unit. These patients subsequently left the hospital when hospital regulations prevented them from self-managing their anxiety. Other patients were noted to have a history of medical trauma and/or incarceration and that the confining hospital environment provoked their anxiety and caused them to leave, or that visitor restrictions worsened their anxiety by preventing them from receiving emotional support.

Hospital regulations were the second most commonly identified theme in patient discharge reasons, either alone or in conjunction with anxiety. While some patients felt anxious due to being unable to leave the unit or see visitors, belongings searches also seemed to contribute to premature discharges. One patient in the sample left the hospital after being told he had to consent to security searching his belongings due to a positive urine drug screen. For this patient, the wording in the medical record implied that the patient was told he could not stay in

the hospital if he did not consent to the belongings search and was made to sign a discharge against medical advice form, even though the discharge was not apparently the patient's choice. This appears to have been in violation of UCSF's own policy on substances, 1.01.03 (UCSF Medical Center, 2023), which states that patients suspected of possessing drugs may decline having their belongings searched. As an alternative to the search, patients can opt to have their belongings stored on the unit and may have supervised access to their property when requested. However, this policy may not always be followed in practice and at least in the case described above, a more aggressive stance towards belongings searches appears to have led to the patient being told to leave the hospital.

UCSF's current policies on substance use result in patients who use drugs being subjected to a number of restrictions during their admission. UCSF has a checklist to be used by nursing staff when a patient is suspected of using non-prescribed substances, including tobacco and alcohol (UCSF Medical Center, 2023). This checklist specifies that when a patient is suspected of using non-prescribed substances or having a history of substance use, security should be called to search their belongings and room without the patient being notified and that the patient should be barred from receiving visitors or outside food. Any drugs or substance use supplies (e.g. needles, pipes) found by security are confiscated and turned over to the police. In practice, many patients found to have drugs have a "security flag" placed in their chart specifying belongings searches and visitor restrictions for all future admissions.

These strict policies around substance use place patients who use drugs - especially if they are unhoused - in a difficult dilemma. If a person who uses drugs does not have a secure place to store their belongings, they will likely arrive at the hospital with drugs in their possession. This possession then triggers a cascade of events, including security involvement, a ban on receiving

visitors, and property being confiscated. If a security flag is placed in the patient's chart, the next time that patient arrives at the hospital, the flag will be the first thing providers see in their chart, potentially perpetuating bias and a cycle of negative interactions with the medical system. As noted in the analysis of security flag text, some providers also encourage future care teams to "pursue criminal charges" against patients for drug use, potentially creating a hospital-to-jail pipeline and perpetuating patients' fears of receiving medical care.

Withdrawal/cravings and unmanaged pain were less common reasons for discharge than anxiety and hospital regulations, but as they are treatable they deserve special attention. Although all patients in the study population had non-prescription opioid use documented in their charts, only 26% of patients had a clinical opioid withdrawal score measured at least once during their hospital stay. Of the 14 patients who were on buprenorphine or methadone at the time of admission, 6 did not receive their medication while in the hospital. Patients on methadone who did continue to receive their medication during admission were generally restarted on the lowest dose and slowly titrated, even if their existing maintenance dose was high. For example, there was one patient whose usual methadone dose was 220mg but was only receiving 20mg in the hospital, which was being very slowly titrated upwards. This patient left AMA because he was in pain and could not tolerate having his methadone dose lowered.

Notably, 58% of patients were not on medication for opioid use disorder at admission and did not receive methadone or buprenorphine while in the hospital. In one case, a patient who was hospitalized following an opioid overdose had expressed to his social worker that he wanted to start buprenorphine. Although this patient had been hospitalized for opioid overdoses at UCSF three times in the past three months, he was not offered buprenorphine during the encounter and ultimately discharged AMA due to opioid withdrawal. This patient was hospitalized at UCSF

two months later for another opioid overdose. This was a clear missed opportunity to promptly treat withdrawal and possibly prevent future overdoses by providing buprenorphine.

In considering patient reasons for discharge, it's important to note that for the majority of these discharges, the patient's care team knew why they were leaving the hospital and there was often a clear problem (e.g. withdrawal, pain) that could have been better addressed. Although it is unclear from chart review how much advance notice teams had before a patient left, the fact that there is some awareness of why patients are leaving presents opportunities for intervention.

Opportunities for improving patient care

Inpatient management of opioid use disorder

As mentioned above, at UCSF there is currently a lack of consistency in how opioid withdrawal is monitored, whether patients are offered medication for opioid use disorder, and whether patients on MOUD continue to receive it during their admission. In the absence of specific policies, providers will often use their own beliefs and values about substance use to guide their response to a patient's drug use, leading to inconsistencies in the standard of care provided (Strike et al., 2020). More specific protocols on the inpatient management of opioid use disorder, including for withdrawal monitoring, methadone titration, buprenorphine induction, pain management, and appropriate referrals, would likely help address these inconsistencies.

Patients who are started on MOUD in the hospital and who lack a primary care provider will require linkage to outpatient services once they are discharged. As mentioned in the introduction, UCSF's emergency department maintains a partnership with the Salvation Army's Harbor Light residential treatment facility, a faith-based and abstinence-based program that allows patients to be on buprenorphine at entry but requires them to taper off during their stay

(Lopez, 2018). What the hospital currently lacks is partnerships with programs that provide evidence-based treatment for opioid use disorder. While it was common for a patient's discharge summary to include the phrase, "patient counseled to abstain from drugs", I did not find any documentation of referrals to outpatient treatment for substance use disorders.

Although this project focused on patients with opioid use disorders, it's important to emphasize that the majority (82.2%) of the study population was co-diagnosed with another substance use disorder, primarily alcohol and methamphetamine use disorders. There were an additional 62 AMA discharges in 2021 among patients who used stimulants and alcohol but did not have a history of opioid use. Fully serving this population requires providers who are comfortable with the management of all substance use disorders, not just opioid use disorder. While standard policies for monitoring and treating withdrawal along with more robust referrals to outpatient treatment are immediate needs, expanded access to inpatient addiction medicine consults should be a long-term goal. As of 2023, the UCSF Parnassus lacked an inpatient addiction medicine service, relying instead on a consultation phone line staffed by volunteers. Inpatient addiction medicine services have been associated with reduced rates of premature discharges (Lail et al., 2018; Thompson et al., 2020) and reduced 30-day readmissions (Weinstein et al., 2020) among people with substance use disorders. Additionally, they've been found to reduce post-discharge 90-day mortality (Wilson et al., 2022), increase engagement in substance use treatment (Englander et al., 2019), and increase post-discharge substance use (Wakeman et al., 2017).

Improving care for patients on parenteral antibiotics

Almost half of the admissions in the analysis were for bacterial infections, with 28% of patients discontinuing intravenous antibiotics at discharge without being switched to an oral regimen. Premature discontinuation of antibiotics is associated with readmissions for infection complications (Hazen et al., 2021), but remaining in the hospital to complete antimicrobial therapy can be challenging for patients who use drugs (Hazen et al., 2021; Kimmel et al., 2021). Finding a workable solution to this problem can be challenging: PWUD are often denied admission to skilled nursing facilities (Cohen et al., 2023), and both unhoused patients and PWUD are often excluded from outpatient antibiotic therapy programs (Beilier et al., 2020).

There are several potential options for addressing this problem. First, access to inpatient addiction medicine services has been associated with reduced rates of premature discharge and increased completion of antimicrobial therapy in PWUD hospitalized with severe bacterial infections (Marks et al., 2019; Spivack et al., 2020). Improving completion of antimicrobial therapy among PWUD is thus a multidisciplinary effort that should include expanded access to inpatient treatment of substance use disorders as discussed previously.

Second, patients who are unable to remain in the hospital to complete parenteral antibiotics should be evaluated for outpatient parenteral antibiotic therapy (OPAT) in a standardized way. One patient in the study population who needed long term parenteral antibiotics declined placement at a skilled nursing facility due to concerns about COVID. This patient had stable housing and lived with a supportive family, but her team decided she was not a candidate for home nursing due to having a history of opioid use disorder. The patient was discharged AMA on an oral antibiotic regimen on the assumption that it would not be safe for her to receive parenteral antibiotics in the community in case she tried to inject drugs through her

IV catheter. While anecdotally this seems to be a common concern among providers, it's not necessarily evidence-based. In a study of an inpatient supervised drug use facility in Edmonton, Alberta, only 5% of hospitalized patients using drugs did so through their intravenous catheters (Dong et al., 2020). Indeed, the one-piece insulin syringes commonly used for injection drug use are incompatible with the Luer Lock system used on intravenous catheters. Among patients discharged with vascular access devices, those who inject drugs do not have higher rates of complications than those who do not inject drugs (Appa and Barocas, 2022). One potential approach is to adopt the use of a standardized risk assessment tool to determine if OPAT is appropriate for a patient with a history of substance use - one hospital that adopted this strategy was able to decrease patients' lengths of stay without increasing unplanned readmissions (Rolfe et al., 2017). Unhoused patients may be able to complete OPAT at a medical respite, which may be a lower barrier than discharge to a skilled nursing facility (Beilier et al., 2017) while community-based OPAT may be preferable for PWUD than extended hospitalization (Jafari et al. 2014).

For patients who wish to leave the hospital and are not candidates for OPAT, a switch to oral antibiotics should be attempted whenever possible. Switching a patient to oral antibiotics at discharge reduces complications even for severe injection related infections such as infectious endocarditis, with readmission rates comparable to patients who completed intravenous therapy (Lewis et al., 2022; Marks et al., 2020; Miller et al., 2022). Additionally, the adoption of a standard decision making tool can guide early transitions to oral antibiotics, which could help decrease admission length and reduce the risk of patients discharging before medically advised (Harvey et al., 2023). Long-acting glyco-lipopeptide antibiotics such as dalbavancin may be another alternative to prolonged intravenous antibiotic therapy for patients who cannot tolerate a

long hospital stay, though existing data on their use in this population is limited (Ahiskali & Rhodes, 2020; Ajaka et al., 2020; Leuking et al., 2022; Milgrom, 2020).

Standardizing discharge procedures

The use of a separate discharge process for patients leaving the hospital before medically advised has been critiqued as low-value care that perpetuates stigma while distancing the provider from responsibility for the patient's well-being (Ambasta et al., 2020; Chin and McDougall, 2018; Clark et al., 2014; Holmes et al., 2021). An alternative to the traditional AMA discharge is to adopt a standard discharge process for all patients with decision making capacity that sets consistent expectations for discharge instructions, prescription medications, and appointments for follow-up care (Alfandre et al., 2017). Indeed, there is some evidence that the concept of leaving against medical advice may impact provider attitudes towards patient care. In a study of AMA discharges at Highland Hospital in Oakland, CA, 36% of registered nurses stated that patients who AMA should lose their right to receive follow-up care (Stearns et al., 2017), supporting the idea that such discharges perpetuate stigma.

Although assessing stigma was beyond the scope of this thesis, I did find some evidence that the use of AMA discharges may lead to patients being treated differently. As mentioned in the section on security flags, several patients had pop-ups in their charts warning that they were an "AMA risk" or had "eloped" from the hospital, potentially conferring biases to providers who care for that patient at future encounters. This bias may be exacerbated by the pop-up itself - a yellow window with the phrases "high risk" and "security alert" - which conveys the information about the patient's discharge history in threatening language. The terms "elopement" and "AWOL" (absent without leave) were often present in the charts of patients who had left the

hospital against medical advice without signing a liability waiver. While these patients were not being held against their will and were free to leave, this language portrays the discharge as transgressive behavior.

The lack of follow-up care provided to this population was especially concerning. Only 26% of patients received any form of follow up, only 10% received a referral for an outpatient appointment, and none of the 13 patients with active hepatitis C infections were referred for treatment. About half of the population was not on medication for opioid use disorder and did not receive any in the hospital, and none of these patients were referred for outpatient treatment for their opioid use disorder. Given the overall social vulnerability of this population, it is possible that acute care encounters are the main way in which this population engages with the medical system. Regardless of whether a patient discharges before their team thinks they're ready, their presence in the hospital is an opportunity to link them to outpatient services and expectations for post-discharge care should be consistent.

Creating a less punitive hospital environment

As mentioned previously, anxiety was the most common reason for AMA discharge documented in patients' charts, with some notes specifically citing a patient's history of medical trauma or incarceration. Chart review revealed a number of hospital and staff practices that seem to create a punitive environment for patients who use drugs and are applied inconsistently, including police and security involvement for non-violent situations, automatic belongings searches and visitor restrictions for people who use drugs, restrictions on patient movement, and use of security flags.

UCSF Medical Center's policy 1.01.03 on non-prescribed substances covers illegal drugs, alcohol, and tobacco and supplies like lighters, pipes, and needles (UCSF Medical Center, 2023). This policy stipulates that in cases of known or suspected substance use, a room search should be conducted without the patient's notification and any drugs and drug use supplies found should be confiscated and turned over to the UCSF Police Department (marijuana is exempt from this policy and can be given to a family member or friend for safe keeping). Additionally, the policy stipulates a number of additional restrictions to prevent substance use, including a ban on visitors and prohibition on receiving outside food. Finally, UCSF requires consulting with hospital risk management for all cases of suspected non-prescription drug use.

In addition to practices that are in place per hospital policy, chart review revealed a number of common practices that appear to be taken on the initiative of providers. For example, there were several cases where police or security were called on patients who left the hospital despite the absence of violent behavior. In two cases, patients were reported to the police for leaving the hospital with their peripheral IV still in place, and in one case security was called to escort a patient from the hospital after they expressed a wish to leave. It's unclear why a security escort was deemed necessary for this patient over others, and as a security escort for discharge is not part of hospital policy, it's likely this was based on a provider's individual choice.

The use of security flags was especially variable. Security flags are pop-up warnings that appear when first opening a patients' chart and were present for 44% of the study population. Although they appear designed to warn staff of safety issues, 90% of these flags in practice were used to notify care teams of a patient's past history of substance use or leaving the hospital AMA. As all patients in this study population had a history of those two behaviors, the flags were not used consistently. Of the 18 patients with flags notifying the team of the patient's

substance use, seven included instructions that the patient should be subject to a belongings search, visitor restrictions, or both, but it was unclear why these instructions are given for some patients but not others. Some flags additionally contained content that was not directly relevant to patient care or safety, such as “patient has a remote history of verbal abuse towards staff, demanding pain medication, spitting on the wall”. More concerning, two security flags (neither of which was for violent behavior) included the instructions “file charges for any criminal behavior” in the context of discussing the patient’s history of drug use. This language does not alert providers to immediate safety issues but may perpetuate negative biases, subject the patient to behavioral restrictions at future hospital visits, and encourage providers to respond to a patient’s substance use disorder by calling the police.

A model for reforming hospital policies on non-prescribed substances exists at nearby San Francisco General Hospital (SFGH), where a group of physicians and nurses revised the hospital’s older substance use policies - which were similar to UCSF’s current ones - to create an approach that was more supportive than punitive (Martin et al., 2022). For example, instead of calling the police to dispose of non-prescribed substances, SFGH now allows patients to choose to either have their drugs kept in a locked storage cabinet or disposed of as pharmaceutical/sharps waste, and patients are offered sterile injection supplies at discharge (Martin et al., 2022). The new policy also prompts early intervention to prevent and treat pain and withdrawal, requires patient consent for belongings searches, and specifies that security should be called only when there is an immediate safety threat. Similar reforms could be made to UCSF Medical Center’s policies, especially considering that three of the authors in Martin et al. (2022) who created the reforms at SFGH were from UCSF. It is important to note, however, that SFGH has an inpatient addiction medicine service. A substance use policy that emphasizes

treating substance use disorders over punishing them works best if providers are able and willing to provide treatment or can consult someone who is - ideally, hospital policy reform and the creation of an inpatient addiction medicine service would happen in tandem.

In addition to changing existing hospital policies on drug use, having more clear guidelines on the use of security flags may be beneficial. There is scant research on the role of security flags in perpetuating bias towards patients, although one study did find that Black and publicly insured patients are much more likely to be flagged (Agarwal et al., 2023). More research into the relationship between security flags, bias, and stigma would be useful, but in the meantime it seems prudent to have clear expectations regarding when to flag patients as a security risk, when to remove a security flag, and standards for appropriate language to use in security flags.

FURTHER RESEARCH AND CONCLUSION

This project focused on a subset of the AMA discharges that happened at UCSF Parnassus in 2021. Of the 192 AMA discharges that occurred, 50 involved patients with a history of opioid use, all of which were analyzed for this project. An additional 62 of those 192 discharges involved patients who did not use opioids but who did use other substances, primarily methamphetamine and alcohol. While the results of this project are informative, a larger sample size would allow for more statistically meaningful analyses, and research into the needs of patients with non-opioid substance use disorders is clearly needed. Finally, a case control study of patients with substance use disorders who did and did not complete their hospital stays - especially for patients requiring prolonged hospitalization for parenteral antibiotic therapy - may provide insight into the strategies that are most effective in supporting patients in completing their inpatient care.

Although this project focused on AMA discharges among patients with opioid use disorder, ultimately my goal was to improve the quality of inpatient care for patients who use drugs, regardless of whether they're discharged before medically advised. I chose to focus on AMA discharges on the assumption that patients leave the hospital for a reason and that those reasons might give us important information about how care could be improved. My decision to include only patients who use opioids was based on the existence of a clear standard of care for managing opioid cravings, which led me to hypothesize that AMA discharges among patients who use opioids might represent missed opportunities to treat opioid use disorder.

While undertreated withdrawal and pain did appear to be important drivers of AMA discharges among people who use opioids at UCSF, anxiety and hospital restrictions were more frequently cited by patients as their reason for discharge. While there are clearly opportunities

for improving the inpatient management of opioid use disorder at UCSF Parnassus, addressing punitive hospital policies and stigma towards people who use drugs are also critical.

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