

# Improving Recovery Engagement for Patients with Substance Use Disorder in the Emergency Department

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**Abstract—** The overdose crisis our communities are experiencing is a profound and multifactorial challenge to public health. Political headwinds have placed increased scrutiny and support in finding solutions. Emergency departments (ED) play an essential role in the care for patients with substance use disorders (SUD). Peer support, using those with lived experience to assist in recovery, is an emerging tool in hospitals. Combining medical and behavioral health interventions may result in improved outcomes. In a retrospective analysis, an ED based peer support program in five hospitals in Philadelphia engaged 5821 individuals over 25 months. The program has resulted in an increase in direct referral to recovery services from 3% before the program to 20.5%. Peer support is a valuable tool in recovery engagement, further study is required to determine other benefits of peer support and long-term outcomes.

**Keywords-** Public Health; Substance Use Disorder; Opioid Use Disorder; Emergency Medicine; Addiction; Recovery; Peer Support

## I. INTRODUCTION

The United States is experiencing a nearly unprecedented epidemic that transcends social strata and bears no easy answers - the overdose crisis. What grew as a sequela of the dramatic increase in prescription opioids in the early 21<sup>st</sup> century, this crisis has now entrapped countless individuals in a cycle of addiction [1]. The infiltration of fentanyl and veterinary tranquilizer (xylazine) into the heroin supply and now into the supplies of other drugs has led to a dramatic rise in polysubstance use and the inevitable increase in deaths when individuals mix drugs [2]. We are witnessing an era where overdose deaths greatly exceed those of violent crime [3]. Substance use disorders (SUD) represent a public health emergency that requires novel solutions to these exceptional problems.

Emergency Departments are legally required to see all patients who arrive for evaluation [4]. The risk of overdose, on top of other medical complications of SUD, including skin, spinal and heart valve infections as well as complex wounds [5], lead many patients to visit emergency departments for care [6]. Emergency departments are manifestly focused on discovering and treating conditions that threaten the immediate health of their patients, leaving advocacy for chronic conditions, such as SUD, an afterthought. National data show fewer than 2% of patients with SUD received treatment within the past year [7].

Peer support is an emerging trend in recovery services [8]. Utilizing individuals in mature phases of recovery to

engage and advocate for recovery is important for a number of reasons. Primarily, individuals who have not experienced SUD often have difficulty understanding and empathizing with those currently suffering. Secondly, even if engaged by an empathetic and caring provider, many individuals have experienced traumatic healthcare experiences or believe recovery to be impossible, limiting their engagement. Peers have immediate credibility in these situations and can act as experiential interpreters for these patients and their caregivers. Lastly, navigating the recovery ecosystem is a time consuming and often byzantine journey, one that does not mesh well with the fast paced, constantly task switching environment of the ED. Peers can be tasked with this as their primary work, freeing others to provide care while their recovery is still addressed.

Given the above, it is unsurprising peers are entering the hospital environment [9]. Peers have been shown to improve uptake of buprenorphine, a medication for opioid use disorder (MOUD) [10]. They also have been shown to improve rates of discharge with naloxone, a medication that can reverse the effects of overdose [11]. They are relevant to visits both related to overdose and other reasons for hospitalization [12]. They are also able to address other social determinants of health (SDOH), another emerging and related topic in social medicine [13]. Their overall impact on referral to recovery services, especially for non-opioid use disorders, is still being defined.

This study aims to evaluate a public health initiative placing peer support specialists in a series of urban emergency departments. We describe the demographics of patients who are engaged by peers, their primary drugs of choice, and their recovery outcomes. Additional data discussed includes rates of referral to SDOH resources. Lastly, we discuss the impact of CRS in the ED and wider hospital-based healthcare ecosystem.

## II. METHODS

This represents the collected data from the first 25 months of an emerging public health intervention. Left unstated are the dedicated contributions of many in the development, deployment and continued function of this program.

### A. Study Population

The program represents a collaborative partnership between Jefferson Health and the City of Philadelphia Department of Health and began in December 2020. Five emergency departments were included: two urban academic hospitals, two urban community hospitals and one suburban community hospital.

Certified recovery specialist (CRS) is the term given by the Commonwealth of Pennsylvania for these peers. CRS are individuals in long term recovery, who partake in didactic and practical classes to improve their skills in engaging patients about recovery services, supporting individuals in early recovery and navigating the recovery system. CRS placed in the ED are able to meet with patients who are admitted to the hospital with serious medical conditions as well as those being discharged after their ED visit. Importantly, while the focus of the program was engaging patients with opioid use disorders, CRS are able to assist patients regardless of primary substance. They work collaboratively with providers, nurses and social workers to help improve patient care.

Referrals to the CRS are low barrier, akin to pastoral care and social work consultations and occur both through the electronic health record and via role cellphone. They can be provided by any staff member who interacts with a patient who may benefit from a CRS visit, as long as the patient is able to consent to meeting with one. Patients both in the ED and on the inpatient units were engaged by CRS, providing a robust and diverse patient cohort.

### B. Study Design

This project is a retrospective analysis of a cohort of patients seen in the Jefferson Health emergency departments in the greater Philadelphia, PA area. Data was collected via two separate sources. The electronic health records of the patient, EPIC (EPIC Systems, Madison, WI) as well as a separate encrypted record system that organized data requested by the city, LAURIS (LAURIS Online, Roanoke, VA). CRS met with patients, speaking on a variety of topics, including the challenges of being in the hospital, the different options for MOUD and other recovery support services including group and solo therapy and family outreach. They are also able to assist with other SDOH, such as lack of identification documents, housing instability, food insecurity and employment services.

Data is collected by the CRS if the patient verbally consents to the encounter. Patient demographics (age, gender, race), primary drugs of choice, results of their recovery engagement and referrals for SDOH services are the primary variables measured. Data included in this study track from the onset of the program in December 2020 through January 2023. This study has been reviewed by the relevant IRB and deemed exempt.

## III. RESULTS

461910 ED visits occurred from December 2020 to January 2023 in the five hospital sites. Of these, 23766 received behavioral health diagnoses (5.1%). During the study period, a total of 5821 patients were engaged at least once by a CRS (24.5%) (Table 1). The mean age of the patients was 42 years (SD = 11.4) and 4015 (69.0%) identified as male (30.8% female, 0.2% transgender or other). 3379 (58.0%) reported their primary drug of choice were opioids (27.0% alcohol, 10% stimulants, 5.0% others).

TABLE I. PATIENT DEMOGRAPHICS

Patient Demographics	
Age (Mean)	42
Engagements	5,821
<b>Hospital</b>	
TJUH	2583 (44.0)
Frankford	1824 (31.0)
Torresdale	793 (14.0)
Methodist	451 (8.0)
Bucks	170 (3.0)
<b>Gender</b>	
Male	4015 (69.0)
Female	1796 (30.8)
Transgender	10 (.2)
<b>Drug of Choice</b>	
Opioids	3379 (58.0)
Alcohol	1567 (27.0)
Stimulants	600 (10.0)
Other	275 (5.0)
<b>Patient Disposition</b>	
Referred to Tx	1,195 (20.5)
Incomplete	993 (17.0)
Refused Tx	3,633 (62.5)
<b>SDOH Referrals</b>	1,486 (25.0)

Internal data from 2019 showed that 3% of identified patients with SUD were referred for recovery services from the hospital emergency department. During the study period, 1195 patients were referred directly to recovery services (20.5%), 3633 patients refused referral (62.5%) to recovery

services, and 993 were interested but were without referral at the time of their hospital disposition (17.0%). An additional 1495 patients received referrals to services that address SDOH in addition to their recovery conversations. Of the 5821 patients engaged by a CRS, 3376, a majority were seen in an academic hospital emergency department (58.0%). The largest cohort seen in a community hospital was at the hospital located closest to the epicenter of the overdose crisis in Philadelphia (31.0%) and the smallest cohort engaged was present at the suburban community hospital (3.0%).

#### IV. DISCUSSION

Many patients with chaotic substance use and SUD actively avoid hospitals until they have grave health consequences. Matching medical and behavioral treatment in a multidisciplinary fashion is becoming more common as hospitals try to treat patients holistically, rather than in a problem-based fashion. By engaging patients when they are experiencing severe sequelae of their use, health systems may better be able to engage patients. A framework of this strategy is shown in Figure 1. In this retrospective, multicenter cohort evaluation, a large number of patients receiving ‘acute unplanned care’ were able to get concomitant medical and behavioral health services in the emergency department and hospital setting. The cohort’s demographics largely matches national studies of patients with substance use disorder: white, male and young-middle aged [14]. It is important to note that many minority populations receive disparate medical and behavioral health care [15]. Assuring that these programs are able to engage and assist all eligible patients is imperative to reducing these disparities.

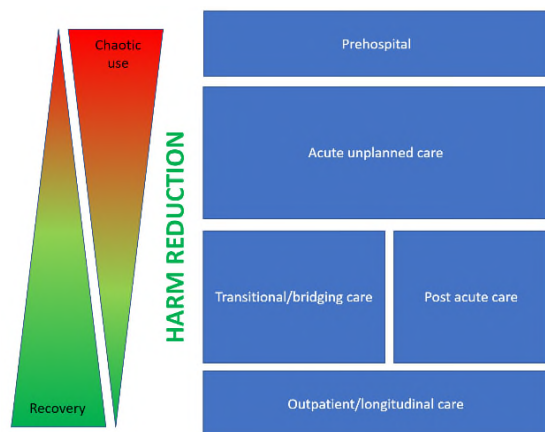


Figure I. Medical/Behavioral Engagement Framework

Much of the focus on SUD related care comes from the increased awareness and scrutiny that surrounds the care of patients with opioid use disorders. The reasons for this are numerous, but include the excess mortality related to OUD as compared other substances, the insidious and questionable

practices of pharmaceutical companies that led to opioids being prescribed for acute and chronic pain and the infiltration of fentanyl and other synthetic opioids into other drug supplies. While the program was officially developed as a response to the opioid overdose crisis, it is also important to note that almost half of the patients engaged by the CRS had a non-opioid primary drug of choice.

Successfully connecting patients to recovery services is a well-documented challenge. As previously stated, less than 2% of patients nationally with SUD receive any recovery services and previous programs prior to this intervention referred a total of 3% of identified patients. By utilizing CRS, referrals to recovery services increased almost seven-fold. This represents a crucial success, especially sustaining that level of improvement over two full years. Saying that, nearly two thirds of patients refused recovery services and an almost equal number to those successfully referred were unable to be connected, due to lack of availability or other logistical barriers. While CRS add clear value, there are many patients who an alternate approach may be appropriate [16].

It is sadly common that patients with multiple SDOH issues frequently visit the ED, regardless of concomitant SUD [17]. Whether afflicted with homelessness, food insecurity or lack of access to primary care, many challenges associated with SUD also bring patients to the ED. The ability to engage patients with other social services acts as a force multiplier for the CRS. Addressing addiction is a critical feature of recovery but must be met with a holistic system that addresses the cycles of trauma and other barriers to long term recovery. By actively addressing these SDOH, patient behavior is reinforced and the process to get appropriate individuals integrated into the public health system is supported.

There are several limitations to this study. First, the data reported is retrospective, limiting the variables that can be studied. The trial is also uncontrolled, meaning it is possible that the impact witnessed was related to another, unrelated aspect of our care. Third, the city’s system mandated patients provide a single ‘primary drug of choice’, despite many of our patients explicitly being polysubstance users. While it appears the majority of our patients used opioids primarily, it is possible they are also using other drugs. Recognition of polysubstance use is increasingly important and impacts both the withdrawal symptoms the patients encounter and the complexity of their recovery support. Lastly, the definition of referral was made by the city and relates to services the patients goes to directly from the hospital. A fair number of the patients in the ‘incomplete’ row received recovery services subsequent to their hospitalization as a result of the CRS engagement. It is highly likely the cited figure underrepresents the number of patient referrals.

Despite the limitations, we believe the study provided much needed insights to all of the stakeholders involved. By actively encouraging involvement in the implementation

strategies, we ensured widespread buy-in and increased the odds of making an impact on the community health. The support of hospital leadership was essential for securing funding and resources to implement desired strategies. Externally, engaging the local / city health administration, and reinforcing and strengthening the relationship was essential as hospitals moved from the assessment phase to developing and implementing strategies to address identified community health priorities.

The Collective Impact Framework indicates that no single entity or department alone can address the society's most complex and challenging problems [18]. The health needs identified in the conducted study were indeed the result of complex social, economic, as well as environmental factors, making Collective Impact Framework (Fig. 1) an appropriate model to apply. Widespread collaboration among community stakeholders around shared health challenges could reinforce positive changes in the community. While these engagements and referrals play an important initial role in recovery, it will require a more longitudinal study to determine the ultimate outcomes of an intervention like the one described.

## V. CONCLUSION

Peer support is an emerging tool to improve patient engagement for recovery services in a hospital setting. The challenges involved in connecting patients to services from the hospital are myriad for patients and healthcare workers. Peers are able to engage with a variety of individuals with varied SUD and provide both in-hospital recovery support as well as referrals to a variety of services. In this retrospective cohort study, there are positive signals indicating that peers improve connection to recovery and social services. By matching medical and behavioral therapies, patients' needs will be better serviced. Future studies should evaluate harm reduction strategies for CRS in patients who refuse recovery support, patient attitudes towards peer support, and barriers to recovery referral.

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