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The development and implementation of a "B-Team" (buprenorphine team) to treat hospitalized patients with opioid use disorder

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ABSTRACT

Implementation insights:

- Hospitalization is a reachable moment to address opioid and other substance use disorders. This includes initiation of pharmacotherapy such as buprenorphine, which is the standard of care but not frequently offered.
- Initiating pharmacotherapy for interested patients with opioid use disorder (OUD) during hospitalization does not require a formal addiction consultation service and can be accomplished by any in-hospital prescriber, aided by interprofessional and multidisciplinary teams with support from senior leadership.
- Barriers to widespread adoption include lack of education; stigma towards people with substance use disorders; inadequate outpatient capacity to address OUD; regulatory requirements; and challenges to modifying electronic health record algorithms, clinical workflows, and institutional policies.

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1. Background

The drug epidemic in the United States (U.S.) continues to worsen: over 90,000 people in the U.S. died of drug overdoses in the 12-month period ending November 2020, the largest annual increase ever recorded, and the majority related to opioids.[1] Hospitalizations related to opioid use disorder (OUD) have been steadily increasing, representing as many as 6% of admissions in parts of the U.S.[2] Evidence-based and FDA-approved medications for OUD, including buprenorphine, have been shown to save lives, yet the majority of patients with OUD admitted to hospitals are not offered treatment.[3]

Hospitalization is a reachable moment. Patients with OUD may not have existing relationships with public health programs prior to hospitalization and are often admitted for several days to several weeks for sequelae of OUD such as endocarditis or spinal abscesses, offering an

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ideal time to provide access to OUD-related resources.[4,5] Patients with OUD started on buprenorphine during hospitalization are more likely to enter outpatient treatment, stay in treatment longer, and have more drug-free days compared to those offered only a referral.[6,7] However, most hospitals lack the training, structures, and support to provide appropriate care for patients with OUD.

In this paper, we use a single-embedded case study approach to examine the development and implementation of an interprofessional program called the "B-Team" (Buprenorphine Team) to evaluate and initiate appropriate patients on buprenorphine therapy during hospitalization, offer counseling and support, implement harm reduction strategies, provide linkage to outpatient treatment programs, deliver widespread education about the hospital's role in addressing SUD, and reduce institutional stigma related to unhealthy drug use. The primary data source was in-person informant interviews of key program stakeholders that aimed to understand stakeholders' perspectives on the decision-making process and program challenges **(Table 1)**. Secondary data documents including meeting minutes, policies, and emails were used to support interview findings and provide additional details on the programmatic activities and processes. This study was approved as exempt by The University of Texas at Austin Institutional Review Board.

2. Organizational context

The B-Team program was created at a 220-bed urban academic medical center in Texas, which serves as the primary safety-net hospital for adult patients in the region. Texas is a non-Medicaid expansion state and has the highest uninsured rate in the nation, nearly one-in-five people.[8] The hospital cares for approximately 33% uninsured, 27% Medicare, and 11% Medicaid patients annually.

Similar to many hospitals in the United States, our institution lacked the training and support to provide appropriate care for patients with OUD. Such barriers have historically included the regulatory requirement for hospital-based prescribers to have a Drug Enforcement Agency-issued "x-waiver" to prescribe the medication at discharge.[9] Further, up to 30% of patients with SUD self-discharge from the hospital because of stigma, inadequate control of cravings and withdrawal, and fear of mistreatment.[10] Patients with SUD are also more likely to be readmitted within 30 days of discharge.[11]

Our hospital does not have dedicated addition consultation services or resources. Prior to the start of the B-Team, there was no structure in place to facilitate initiation of buprenorphine during hospitalization or linkage to treatment post-discharge, and no hospitalists or other providers, including consult-liaison psychiatrists, had the x-waiver to prescribe buprenorphine.

3. Problem

The primary identified problems were 1) a high prevalence of hospitalized patients with OUD, 2) a lack of dedicated or available services to facilitate treatment, harm reduction, and recovery during hospitalization or at discharge, and 3) limited awareness among stakeholders of potential solutions such as initiating buprenorphine as part of acute hospitalization.

Table 1
Characteristics of stakeholder interviewees.

Discipline	Years in Healthcare	Professional Degree
Internal Medicine	11	MD
Internal Medicine	7	MD
Internal Medicine	11	MD
Internal Medicine/Palliative Care	30	MD
Internal Medicine	7	MD, MBA
Psychiatry	11	MD
Social Work	3	LCSW
Palliative Care	39	MA
Nursing	5	BSN
Chaplain	3	MA
Administration	40	MD

3.1. Scoping and prioritizing the problems

An initial analysis of hospitalized patients showed that from October 2016 through September 2017 at least 270 admitted patients carried a diagnosis of OUD. A hospitalist submitted a written request to the Chief Medical Officer (CMO) to launch a formal quality improvement program to initiate buprenorphine for any hospitalized patient and the CMO agreed to support the effort. An initial meeting of inpatient and outpatient stakeholders was held in September 2017. Attendees included a hospitalist, chief of psychiatry, social work program leader, chief quality officer, CMO, director of the hospital-based community pharmacy, and clinical and administrative leadership from the local unaffiliated office-based opioid treatment (OBOT) clinic. The group agreed on problem, intervention, and mission statements **(Fig. 1)** as well as a set of milestones to measure progress (Fig. 2). Stakeholders prioritized obtaining executive support, and engaging an interprofessional team to develop and legitimize the program while also garnering buy-in (see comments in Table 2).

An additional challenge was ensuring care coordination for patients with OUD at hospital discharge (Table 2). The hospital-based B-Team sought to partner with a non-hospital-affiliated OBOT program that was created in 2017 as a partnership between a Federally Qualified Health Center (FQHC) primary care practice and the county-funded mental health authority. The OBOT program had launched at roughly the same time as the B-Team program and there was clear potential for a mutually beneficial relationship: the hospital needed an outpatient clinical partner in an FQHC environment, and the new OBOT clinic, which was designed for underinsured patients, needed referrals to grow their program. Solidifying this relationship was also prioritized by the stakeholder group. Access to outpatient methadone and extended-release naltrexone, two additional FDA-approved medications for the treatment of OUD, is challenging in the region and were therefore not included as part of the hospital-to-outpatient bridge program.

4. Solution

In November 2017, the B-Team was launched (Fig. 3). A call for volunteers went out to various clinical disciplines and was met with enthusiasm. The interprofessional team included registered nurses, advanced practice nurses, social workers, pharmacists, physicians, and PAs. Disciplines represented included internal medicine, psychiatry, and palliative care. Uniquely, the team also included a staff chaplain who gathered patient narratives, provided psycho-social-spiritual support at the bedside, and worked to build trust with patients by honoring their story and life experience. Our approach was informed by California Bridge, a program of the Public Health Institute working to transform addiction treatment by ensuring hospitals in California support access to evidence-based addiction treatment through technical assistance, education, research and outreach.[12]

While the B-Team is a pseudo consultation service, it was established by passionate volunteers primarily as a grassroots effort fitted into existing workflows to develop hospital wide competency about OUD treatment, harm reduction, recovery resources, and eliminating stigma. A large part of obtaining long-term and ongoing buy-in was instilling and building on a sense of volunteerism driven by passion and team building. When staff and clinicians saw the dedication of the volunteer team, such observations further encouraged curiosity. This led to adoption of OUD treatment during hospitalization as a new standard of care. Although volunteerism was a cornerstone of the program, it was also seen as a potential weakness; volunteers who are otherwise busy members of clinical care teams may have limited time to spend on extra clinical work **(Table 2)**.

Problem Statement

During the past 10 months, 270 patients at our hospital were evaluated by the behavioral health social workers and documented to carry a diagnosis of OUD. Some of these patients would have benefited from initiation of buprenorphine therapy while in the inpatient setting.

Intervention Statement

Pilot an interprofessional and multidisciplinary buprenorphine initiation program with the goal of initiating treatment and facilitating community follow-up for at least 50 patients in a twelve-month period.

Mission Statement

To be an interprofessional and multidisciplinary group that works to screen appropriate patients for buprenorphine initiation, assists in the starting of this treatment while patients are hospitalized, facilitates linkage with an outpatient maintenance clinic, and provides institutional education in an effort to reduce stigma and raise awareness about OUD.

Fig. 1. Problem, intervention, and mission statements for hospital-based buprenorphine at inception.

Awareness Milestone

- Develop and distribute digital and print awareness campaign for distribution to all Internal Medicine and Family Medicine attending and resident physicians, in addition to acute care registered nurses.

Training Milestone

- A minimum of 10 Internal Medicine and Family Medicine attending or resident physicians to complete x-waiver training.

Clinical Milestones

- Complete 100 patient screens for the diagnosis of OUD, conducting 10 within the first month and increasing by 20% monthly thereafter.
- Provide buprenorphine counseling to at least 75% of affirmatively screened patients.
- Administer buprenorphine therapy to at least 50% of eligible patients.

Care Coordination Milestones

- Greater than 50% of the patients who have been provided buprenorphine therapy will attend their first maintenance therapy follow-up appointment.
- Greater than 30% of the patients who have been provided buprenorphine therapy in the hospital continue to follow-up with maintenance therapy after six months.

Fig. 2. Working milestones for hospital-based buprenorphine at inception.

4.1. Consultative service model

Initially, the leadership group agreed that the ideal approach to buprenorphine initiation in the hospital was to establish the B-Team as subject matter experts that could be consulted by primary teams. Once consulted, the B-Team would provide education to bedside providers, initiate buprenorphine, write discharge bridge buprenorphine prescriptions, and ensure linkage to outpatient treatment. The team also recognized that this intervention could ultimately be accomplished by a majority of practitioners in the hospital given appropriate training, although bridge prescriptions at discharge would still need to be prescribed by an x-waivered provider. There are important disadvantages to highlight in using this model, including the challenge of 24/7 coverage, which is particularly important if a patient is experiencing active opioid withdrawal during the evening hours. Also, having a consultation service may work against the goal of expanding clinicians' comfort and proficiency with managing buprenorphine. (Table 2).

4.2. Fee-for-service billing

Early on, the B-Team members ordering buprenorphine included an internal medicine PA, palliative care advanced practice nurse, and the psychiatry attending physician. The team advocated for the principle that initiating buprenorphine for patients with OUD should be a routine and standard component of care in the hospital. The often-used example was that a patient with severe diabetes would consistently be provided with counseling and education during hospitalization and a discharge prescription for insulin. Since buprenorphine is a similarly evidence-based medication, the team promoted a similar evidence-based approach to caring for hospitalized patients with OUD. Under these circumstances, separate billing for buprenorphine-specific services would not be required since they would be provided by the primary team as part of the overall hospitalization. However, in the early "ramp up" phase of the program, some of the B-Team members, including psychiatry, billed for their time in a traditional fee-for-service consultation model while others such as the hospital medicine PA volunteered clinical time.

4.3. Initiation algorithm

The team created an institution-specific buprenorphine initiation algorithm (see Supplemental Materials). After careful discussion with nursing leadership, it was agreed that nurses would administer the widely used and validated Clinical Opioid Withdrawal Scale (COWS) every two hours for three to four cycles on the day of buprenorphine initiation.[13]

4.4. Electronic health record order sets

The creation of electronic health record (EHR) order sets requires

Table 2
Individual interview themes and insights.

Key Component	Illustrative Comments
Obtaining Executive Support	*While the volunteer spirit is amazing, I think things like that can lose momentum without some institutional willpower and support behind it.* -Prescriber
	It was important to find key stakeholders in different parts of the hospital, most importantly in the C suite. And not just identifying them, but developing good relationships with them and making sure they fully understand the scope of what we were trying to accomplish. -Prescriber
	I think some of my managers have hoped that maybe [my department] would get more recognition for this at times for their contributions … The line of communication was very open to begin with, but maybe wasn't maintained as well as administration would have liked. -Clinical Team Member
Interprofessionalism	*Having an interprofessional team where we are engaging social workers, case managers, the chaplain, pharmacy - multiple provider groups. We're able to disseminate a larger message of what this practice change could look like in the hospital. And be able to continue pushing that forward, that message.*
	I think that's absolutely necessary … It's huge. If you really want to disseminate an idea, you really have to hit the hospital from multiple angles. We have trusted individuals from each profession that then have colleagues that look at that person for information. People trust those who are their peers -Prescriber
	I think each of us has brought a new perspective to the table. Those sort of conversations into our core group has been really helpful and really enlightening … people coming from different backgrounds. That has been crucial to making this program a success. -Clinical Team Member
Collaboration to Ensure Care Coordination	*It's really important to start conversations with an outpatient treatment facility early on. Because really, we may be doing patients a disservice if we start them on buprenorphine in the hospital without having a place for them to go to continue their prescription.* -Prescriber
	We set them up with outpatient services, so we don't just take care of them in the hospital. We try to get them to the next step where they can have continued sobriety. -Clinical Team Member
Volunteerism and Team-Building	*I think one of the biggest things that helps with buy-in is seeing the drive of the people that are on the team. I think it's obviously a volunteer driven program at the moment, but I also think that really speaks volumes to the type of program that it is.* -Prescriber
	I think with any program that is made up 100% of full-time workers who are volunteering for this job, it's difficult to always ensure someone from the team is available and able to help patients that need help. -Prescriber
	Having enough providers was a barrier at one point. We were getting a lot of consults and [our providers] were oftentimes busy with their own services. -Clinical Team Member
Consultative Service Model	*Just ping [the program] and then we'll take it from there and work with the primary team on if the patient needs us or not. That's been an integral part of making it successful and easy to accept consults and keeps us fast on our feet so we can go see people quickly when they're struggling with withdrawal. I think the takeaway for other hospitals systems is you actually don't need that many people. It's helpful to have some anchoring members who have some comfort in it, some expertise.* -Prescriber
	If you're so used to just calling someone to get your answer or calling the social worker or calling [the program] or whoever, then you don't have much motivation to learn yourself unless you really care about the patients also. But if you think someone else is handling it, then why would you do extra work? -Clinical Team Member
	We're not always here every single day of the week. So that's been kind of a gap in service. We're not available 24/7. We have gotten consults in the middle of the night, there's not necessarily someone to just jump in and see somebody. -Prescriber
Revenue Cycle	*I think it's important to keep billing in mind unless you have doctors that are just straight salary and their RVUs (relative value units) don't matter. I think it benefits them. Instead of it being just completely, sort of, pro bono, it adds an incentive where you're seeing these patients and it's counting for all the work that you do in general. When they pay attention to your numbers and being able to count these "as your part of your numbers," the work that you do and the way you benefit the hospital, it's helpful. Whether it's billing or some other way probably wouldn't make that much of a difference.* -Prescriber
	I've never heard anybody voicing a concern that this program is not paying for itself. I don't think it's the kind of thing you'd necessarily expect it to pay for itself. I think it's one of those things that falls in the category of it's just the right thing to do. If you could help people get off a habituating drug, particularly when there's so many people that have this issue, then I think it's just the right thing to do. I guess in a purely for-profit situation, there could theoretically be some concerns about it. I would think in a for-profit institution that had to answer its shareholders there might be less enthusiasm for a program like this than there is at our safety net hospital. But, you know, fortunately I've never had to test that. -Leadership
Education and Stigma Reduction	*We did a lot of word of mouth and organized a lot of small education groups within different aspects of the hospital with administration, the social work team, the pharmacy team, and the new residents every year. We slowly built awareness. And then as patients came in we showed and educated.* -Clinical Team Member
	I think at the end of the day that was really helpful to be in person instead of rather than just sending out an email to overcome those misconceptions and stigma. So we got out of there and performed our presentation in front of so many groups and tried to answer questions. -Clinical Team Member
	The educational efforts included going to different departments and telling them what we were doing, working with administration, having some successes, and reaching out to the community - particularly engaging people in the recovery treatment community was really helpful. -Prescriber
	I did the primary assessment for a patient down in the [observation unit] who ended up being a candidate for buprenorphine and the nurse practitioners down in the unit, I remember that they said some things that were a little, I guess made my hairs stand a little bit, like talking about how "I don't know if there's anything we can do for this guy." "He's been here X amount of times and yeah, he's an addict and I don't know if he's ready for help." I remember spending a lot of time talking with those providers and kinda telling them more about what buprenorphine is and they had never heard of the drug. They had heard of the B-Team, but that was the only reason why they had heard of it. And so talking them through the pharmacodynamics of the medicine and that it's safe, it seems like that really opened the door for them to think differently about these patients. And the patient ended up being started on buprenorphine later that day. -Prescriber
	I think our biggest impact was changing attitudes about these patients. A big part of stigma reduction has been role modeling. Being enthusiastic about treating these patients and treating them with respect. I think that has been really, really important in changing behavior and attitudes. -Prescriber
Witnessing Efficacy	*Seeing the efficacy of treatment had a huge impact on people. It's like "Oh, this isn't hopeless. I've always thought this is hopeless, but this isn't hopeless. There is treatment for this and it actually works." And I think when people see it work, it makes a big impact.* -Prescriber
Perceived Patient Response	*I think patients are really happy to have someone respect where they're at and understand that this is not easy. Being in the hospital is not easy. They're scared of the unknown. But, I think they feel really welcomed. They feel trusting of people who are understanding of what they're going through and able to direct them in a path. It's probably going to set them up for success more than other interactions with providers or hospitals that they've had before. I think patients seem really future-oriented.* - Clinical Team Member
	I was just blown away with how surprised a patient was that a program like ours exists and his feelings of gratitude were just immense. The fact that he even said that people on the streets, people using drugs now know about our program because it's made such an impact on his life and the lives of other friends that he had had. I just find that for lack of better words, I'm left in awe, that just the simplicity of offering patients' treatment in the hospital setting could have such a profound ripple effect as that. And could give people hope in a disease process that otherwise is mainly full of despair and anxiety and a lack of self-confidence. -Prescriber
	Patients who have been involved in the program are nothing short of thankful for even being given the opportunity and for not being treated how they have been treated in the past at other hospitals. They aren't judged. They are spoken to in a manner that we understand this addiction and that we want to help them. We're not here to judge them. We want to offer them the opportunity to take the next step. -Clinical Team Member
Perceived Impact on Organizational Culture	*Find cases you know, people that came in that were really having a hard time, ones that are willing to tell their testimonial, just have some vignettes that would talk about somebody's life that you turned around in their own words. I wasn't really a believer that docs and nurses needed that. But, I'm seeing it really does seem to influence people. They need sometimes to see an actual human face on a program like this.* -Leadership

(*continued on next page*)

Table 2 (*continued*)

Key Component	Illustrative Comments
	Our cultural change really depended upon telling patient stories, mainly because people don't really connect with numbers, but the stories just tend to resonate … That was a huge tool that we used to leverage that cultural change. That opened the doors for us to enter different service lines and also just get the support of our nurses and doctors in the hospital … Time and time again, we hear these incredible stories and honestly that's where the power is in this program. -Prescriber *I think there's more of an understanding that this disease isn't just someone's moral failing and that it's not just their decision to continue to use, that there's a lot more at play socially and biochemically. This medicine helps patients stabilize their brains so that they can get the help they need and make the changes in life that they want to make.* -Prescriber

hospital approval at regional and national levels, a process often requiring many months. To bypass this time-consuming process, the team developed a work-around by creating a list of orders within a publicly available folder. This was available to staff members with access to the EHR but required over a dozen additional clicks for providers to access it compared to a traditional order set.

4.5. Education and stigma reduction

Providing widespread education to address stigma was viewed as crucial to institutional change (Table 2). This was accomplished through patient stories, word of mouth, department meetings, and one-on-one "just-in-time" trainings. Such education was also recognized to improve empathy (Table 2), which may reduce perceived burnout.[14] An intranet page was created with educational materials including reference guides for nurses and pharmacists (see **Supplemental Materials**). The local peer recovery support network was also engaged for advice on how to message OUD treatment, recovery, and harm reduction to hospital-based practitioners. As a result, naloxone was distributed for patients with OUD regardless of whether buprenorphine was initiated.

4.6. Continuous improvement

The group met on an ongoing basis to assess the program's roll-out. These meetings were performed following the Institute for Healthcare Improvement's Plan-Do-Study-Act (PDSA) model of continuous improvement.[15] In the first two months, the group had standing weekly meetings to evaluate progress on items identified the week before. Standing meetings were then spaced to once monthly, with an additional meeting per month if needed.

Several enhancements were made to the program as a result of this improvement model. For example, the process of receiving consultation requests was transformed within the first several weeks. Initially, attending physicians, resident physicians, or advanced practice providers could request assistance from the B-Team. However, the team soon appreciated that nurses and social workers were often recognizing OUD more quickly than prescribers. Through the improvement cycles, a new process was developed whereby nurses or social workers could directly request services of the B-Team. Another change was adjusting the exclusion criteria for patient participation. Originally, patients with an anticipated length of stay less than 72 hours were excluded from buprenorphine initiation, as the team felt that longer time spent in the hospital would yield more effective initiations. This criterion was later found to be unnecessary, and any patient who could benefit from buprenorphine therapy was eligible for B-Team evaluation. Ultimately, the only criteria for B-Team consultation were that patients must have been age 18 or older and have OUD.

4.7. Inpatient/outpatient pharmacy needs and bridge prescriptions

An important part of this program was the ability of patients to continue receiving buprenorphine from the time of hospital discharge until the time of their outpatient follow-up appointment. Therefore, patients would require a bridge prescription of buprenorphine. The hospital has a community pharmacy located in the main lobby and the team confirmed that local community pharmacies stocked the medication. Due to numerous restrictions on buprenorphine dispensing for otherwise unfunded patients participating in the county's indigent coverage program, the most pragmatic solution was for the hospital to pay for discharge bridge buprenorphine through the hospital-based community pharmacy, which at the time of program launch cost $7.93 for each buprenorphine 8 mg sublingual film. A funding request was granted assuming a maximum early daily dose of 24 mg for up to 10 days, or a maximum of $237.90 per patient. Most prescriptions were expected to be lower, as the OBOT appointment would be made prior to discharge so only the exact amount of medication needed would be prescribed and dispensed, and most patients would likely not require 24 mg daily at the time of discharge. Considering that patients engaged in buprenorphine therapy have a greater-than 50% reduction in 30-day readmissions for reasons related to OUD,[7] the justification for the funding request was that bridge buprenorphine would likely cost less than a readmission to the hospital.

4.8. Early results and outcomes

As previously published, nearly two-thirds of patients initiated on buprenorphine for OUD at our hospital continue outpatient treatment after discharge, which is similar to other published studies of hospitals with formal addiction consultation services.[16] As a result of the program, patients reported feeling supported and respected in the hospital setting, which may differ from experiences they had in other institutions (Table 2). Overall, initiating buprenorphine as part of acute hospitalization was associated with a perceived improvement of organizational culture around OUD treatment and stigma of SUDs (Table 2). The group achieved all but two of the working milestones outlined in Fig. 2; the number of screened patients varied widely from month to month but did generally increase over the first two years of the program, and the six-month follow-up rate was slightly below the 30% target.

5. Lessons for the field and unresolved questions

Treating OUD during hospitalization with buprenorphine has been well described in the literature.[6,17–20] This case study describes a unique program managed by a team of interprofessional volunteers already present within the hospital. The development of a volunteer-based program to treat hospitalized patients with OUD with buprenorphine while reducing stigma is feasible, even with constraints including the absence of a formal addiction consultation service and the lack of Medicaid expansion. Factors identified as facilitators and barriers to the successful creation and implementation of the program are discussed below.

5.1. In-hospital OUD treatment

Recognizing hospitalization as a reachable moment for patients to begin or continue their self-defined recovery journey is a critical component of this work. Where many hospitals may view SUD as a diagnosis strictly managed in the outpatient setting, this program intentionally addresses in-hospital OUD treatment in parallel to medical treatment with positive outcomes. Such work is likely to improve hospital-based metrics such as mortality, readmissions, patient experience, and staff satisfaction. Further research is needed to improve long-

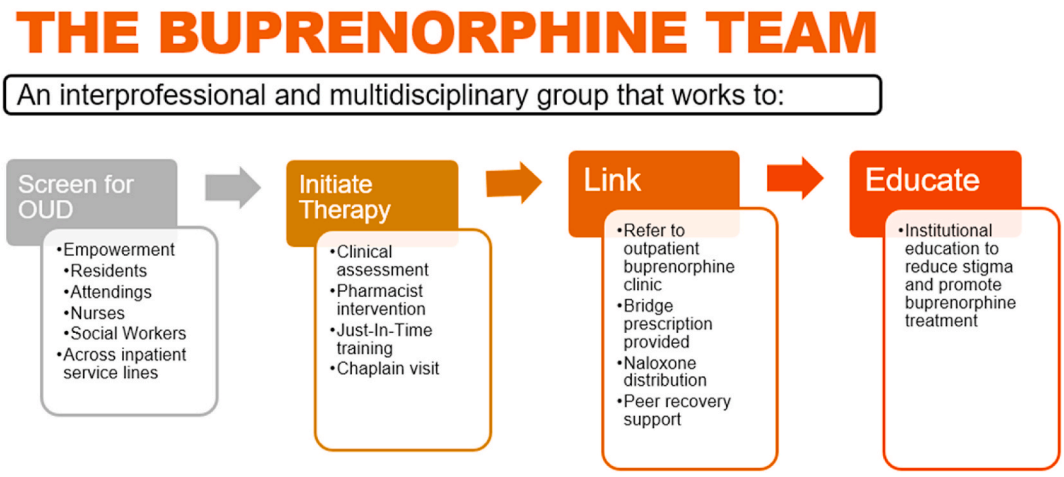

Fig. 3. B-team process summary.

term engagement in SUD treatment after hospital discharge.

5.2. Interprofessionalism

No one discipline is singularly capable of impacting the many facets surrounding SUD. Volunteerism may facilitate and accelerate this work early on through mutual interest, intrinsic motivation, and teamwork. However, over time, relying on volunteers to conduct clinical work in addition to their regular daily responsibilities presents challenges, particularly during overnight hours and weekends.

Similarly, establishing an interprofessional consultation service model may facilitate adoption of OUD treatment and harm reduction but presents challenges later on. A consultation service raises awareness while providing minimal to moderate education for non-team members. While this may achieve the goal of increasing buprenorphine utilization and appears to reduce stigma, it is important to develop explicit approaches to ensure that non-team members also learn to manage buprenorphine independently. Having an accessible outpatient clinical partner facilitates stakeholder engagement. An in-hospital community pharmacy may facilitate launch of a program since patients can obtain buprenorphine bridge prescriptions before leaving the hospital and the inpatient team has familiarity with the pharmacists to strength collaboration, especially early on.

5.3. Leadership buy-in and momentum

Essential to the success of the program was buy-in from executive and department leadership. Momentum was built as care teams in the hospital began to observe the efficacy of buprenorphine therapy during hospitalization, and stories of initial success spread. Ensuring numerous touchpoints for staff members to ask questions and gain insight was important. In addition, discussing the clinical application of buprenorphine created a venue for conversations not previously undertaken among leaders and clinicians about providing optimal care for hospitalized people with SUDs (Table 2).

5.4. Technical assistance and regulatory environment

In the initial stages of such a program, volunteers may have a steep learning curve for understanding clinical and systems-based practice. Access to an external network of content and addiction experts who may provide technical assistance in the early phases of such a program is critical. Importantly, a potential barrier to replicating this work at other hospitals was recently removed. While physicians, PAs, and APNs still need to complete a brief application to obtain an x-waiver, the burdensome eight hours and 24 hours training requirements have been removed.[21] This applies to prescribing buprenorphine for OUD treatment for up to 30 concurrent patients, a number well within the realm of most hospital-based providers. Of note, an x-waiver is not required to order buprenorphine during acute hospitalization – only to prescribe it at the time of discharge.

Our team is currently working on disseminating this model of care to other hospitals in Texas and the United States. Further evaluation is needed for multi-site best practices in implementing improved models of care for people with OUD during hospitalization, and how similar models of empowering already-existing hospital-based personnel may apply to additional SUD care such as alcohol and stimulant use disorders.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.hjdsi.2021.100579.

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