



Models for Implementing Emergency Department–Initiated Buprenorphine With Referral for Ongoing Medication Treatment at Emergency Department Discharge in Diverse Academic Centers

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There has been a substantial rise in the number of publications and training opportunities on the care and treatment of emergency department (ED) patients with opioid use disorder over the past several years. The American College of Emergency Physicians recently published recommendations for providing buprenorphine to patients with opioid use disorder, but barriers to implementing this clinical practice remain. We describe the models for implementing ED-initiated buprenorphine at 4 diverse urban, academic medical centers across the country as part of a federally funded effort termed “Project ED Health.” These 4 sites successfully implemented unique ED-initiated buprenorphine programs as part of a comparison of implementation facilitation to traditional educational dissemination on the uptake of ED-initiated buprenorphine. Each site describes the elements central to the ED process, including screening, treatment initiation, referral, and follow-up, while harnessing organizational characteristics, including ED culture. Finally, we discuss common facilitators to program success, including information technology and electronic medical record integration, hospital-level support, strong connections with outpatient partners, and quality improvement processes. [Ann Emerg Med. 2022;80:410-419.]

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INTRODUCTION

Morbidity and mortality from opioid use disorder and opioid overdoses continue to rise.^{1,2} People with opioid use disorder who receive medications for opioid use disorder have decreased mortality, overdose rates, and emergency department (ED) visits compared to those who do not receive medications for opioid use disorder.³⁻⁹ Buprenorphine, a partial opioid agonist, can be administered in the ED for patients in acute opioid withdrawal and administered and prescribed for patients with opioid use disorder.¹⁰⁻¹⁴ The initiation of buprenorphine can be directly observed (eg, administered to a patient while they are in the ED) or unobserved (which includes a prescription to be started at a later time). There is improved 30-day treatment retention and fewer days of illicit opioid use for patients discharged from the ED who receive ED-initiated buprenorphine compared to those who receive standard referrals.¹⁵⁻¹⁸ Several barriers to implementing buprenorphine initiation in the ED, including a lack of training and experience, concerns about

linkage to care, and competing ED priorities, have been described.¹⁹⁻²¹ Facilitators to ED-initiated buprenorphine include the development of local protocols and pathways, providing patient feedback to clinicians, quality improvement, and education and training.¹⁹ While prior work on ED-initiated buprenorphine has described retrospective quantitative outcomes, attention to program specifics is lacking.²²⁻²⁶

Recently, the American College of Emergency Physicians (ACEP) published consensus guidelines, recommending that emergency physicians offer buprenorphine initiation with linkage to ongoing medications for opioid use disorder for outpatients.²⁷ Our aim is to provide 4 specific examples of ED-initiated buprenorphine programs (Table 1) developed as part of the National Institute on Drug Abuse Clinical Trials Network study “Project ED Health.”²⁸ Four urban, academic, geographically disparate EDs in the United States were provided implementation facilitation as an implementation strategy to develop ED-initiated buprenorphine

Table 1. Site characteristics and ED-buprenorphine program details.

Characteristic	Site A	Site B	Site C	Site D
City, state	Baltimore, MD	New York, NY	Cincinnati, OH	Seattle, WA
Approximate annual ED census	>70,000	>90,000	>75,000	66,000
Program launch date	April 1, 2018	July 1, 2018	October 1, 2018	January 1, 2019
Protocol for ED-initiated buprenorphine in place?	Yes	Yes	Yes	Yes
Buprenorphine in automated medication dispensing system in the ED for rapid dispensing?	Yes	Yes	Yes	Yes
Outpatient pharmacy on site that can fill buprenorphine	Yes	No, but several pharmacies close by that routinely fill medications from the ED	Yes	Yes
Clinical champion	Yes, medical director	Yes, physician	Yes, physician	Yes, physician
electronic medical record supports	electronic medical record screening, physician referral to care manager and peer recovery coach through electronic medical record	electronic medical record screening by triage nurse, clinical protocol on Epic, specific trackboard for the health educator	Automated query assists with patient identification and notification of ancillary staff and opioid use disorder order set integrated into electronic medical record	None
Screening question(s) in electronic medical record	Bedside nurse asks about "current drug use," and if patient answers "yes," they are asked to name the drug and frequency of use/week	Triage nurse asks, "How many times in the past year have you used an illegal drug or used a prescription medication for nonmedical reasons?" A nonzero response moves patient information to health educator track board for engagement	Triage nurse prompted to ask about "nonmedical use of opioids"	None
Pharmacist in the ED	Yes	Yes	Yes	Yes
ED social work involved in program	Yes	No	Yes, in ED to assist with care coordination	Yes, social work assists with care coordination
Peer navigator in the ED	Yes	No	Yes	No
Other allied health professionals (eg, health advocates, recovery coaches)	Care manager	Health educator	Health promotion advocate, addiction Counselors	No
Funding for peer navigators or other allied health professionals	Program grant and hospital	Program grant and hospital	Program grant and hospital	n/a
electronic medical record instructions for unobserved treatment initiation	Yes	Yes	Printed and available, not in electronic medical record	Printed and available, not in the electronic medical record

Table 1. Continued.

Characteristic	Site A	Site B	Site C	Site D
What is the usual referral process for outpatient care	Care manager or peer recovery coach work with patient and tailor outpatient referral to patient needs	Health educator evaluates patient, provides brief intervention, communicates with provider, and coordinates outpatient care	Health promotion advocate, peer, addiction counselor, or provider can refer to several walk-in clinics for next-day care	Referred to clinic with opioid use disorder care integrated into primary care on hospital campus. Able to make appointment from the ED 24/7
Average turnaround time for follow-up appointment	1-4 days	1-4 days	1-4 days	1-4 days
Quality improvement process in the ED	Dashboard used to show metrics (eg, screens, referrals, etc.) Patient outcomes tracked by peer recovery coaches	Monthly report of ICD-10 codes for opioid use disorder and overdose and systematic chart review to give providers feedback	Monthly email with department metrics diagnoses of opioid use disorder, buprenorphine dispensed, prescriptions, and 1-2 good cases	Monthly email from clinical champion with department metrics on buprenorphine dispensed, prescriptions, and 1-2 good cases
Quality improvement process from referral site	Monthly opioid steering committee meeting with CM, PRCs, and other stakeholders to discuss logistics and operations	Frequent and ongoing email and phone conversations about referral process with each referral site	Monitoring of linkage success on individual basis with continuous case by case troubleshooting	Monthly meeting with top referral site to discuss issues and operations.

CM, Care Manager; PRC, Peer Recovery Coach.

programs.²⁹ All sites were provided with an example program (Appendix E1, available at <http://www.annemergmed.com>), and, based on the local context and resources, each site developed a unique and successful ED-initiated buprenorphine clinical process with a referral to outpatient opioid use disorder treatment. We describe elements central to the ED-initiated buprenorphine process at each site, including screening, treatment initiation, referral, and follow-up, while harnessing the organizational characteristics of hospital support, identification of clinical champions, and ED culture. Common facilitators to clinical program success are also discussed.

FOUR DIVERSE ED-INITIATED BUPRENORPHINE PROGRAMS

Site A

ED process. All patients are screened for opioid use disorder, using standard questions for drug use, by a nurse in the ED. Additionally, ED providers may identify opioid use disorder by history. When opioid use disorder is suspected or identified, an order is placed in the electronic medical record for a substance use consultation with a care coordination team that includes trained peer recovery coaches, case managers, and social workers.³⁰ Peer recovery coaches are members of the community with lived experiences with substance use disorders who are familiar with the evolving network of local community opioid use disorder resources. The successful integration of peer recovery coaches requires attentive training that includes a robust understanding and philosophical alignment with medications for opioid use disorder, regardless of an individual's specific treatment history. Buprenorphine is routinely dispensed in this ED as a treatment for patients in acute opioid withdrawal with Clinical Opioid Withdrawal Scale (COWS) scores of more than 7 in conjunction with a consideration of the last opioid use.^{10,31} The care coordination team identifies a referral site based on the patient's clinical circumstances, needs, and preferences, with attention to streamlining clinical workup, appointment scheduling, and, often, immediate transportation. Buprenorphine prescriptions are provided by ED clinicians. Four frequently used referral sites from the ED include a hospital-based after-care clinic with embedded addiction care expertise in a primary care setting, a university-based office-based opioid treatment program, a community-based office-based opioid treatment program, and a federally regulated opioid treatment program.

Organizational characteristics. A detailed clinical pathway for opioid use disorder management, including buprenorphine administration and prescription, was

integrated into the electronic medical record, which aids with all phases of opioid use disorder treatment, from identification to referral. Site A stakeholders attribute the peer recovery coaches as key to the program's success. They are employed by the hospital through a contract mechanism with a nationally recognized community-based organization that provides services associated with substance use disorders with oversight by both the organization and the ED medical director.³⁰ After ED care, peer recovery coaches contact the referral sites to see if the patients have followed up for treatment.

The medical director is a key clinical champion who works closely with the peer recovery coaches as well as the emergency medicine faculty, advanced practice providers, residents, and nurses to provide regular education, opportunities for training, and data on key metrics. The clinical champion provides a variety of formal educational sessions for emergency medicine residents regarding opioid use disorder. A variety of standing educational sessions (eg, daily medical minutes for clinical staff, nursing sessions/meetings) were utilized to provide education and commentary on the best practices for the use of buprenorphine for a variety of clinical staff. Additionally, the clinical champion provides operational direction and directs the monthly ED Opioid Steering Committee, which reviews data and provides guidelines for evidence-based opioid dispensing and prescribing. These efforts changed the culture of opioid use disorder care in the ED, resulting in increased buprenorphine dispensing and prescribing.

At the time of the study, site A had core group of attending physicians in the ED who had received Drug Addiction Treatment Act of 2000 waivers (ie, X-waivers).²⁸ Initially, 3 members of this group were available to assist with prescriptions during most hours of most days if no waived physician was on site. The group of waived providers has steadily grown since the implementation of the protocol. While many referrals from the ED for patients with opioid use disorder are for appointments on the same day or the next day, clinical leadership encourages the prescription of sufficient buprenorphine to ensure an appropriate supply and eliminate known patient-level barriers to medication access.^{32,33}

Site B

ED process. All patients seen in the ED are screened for substance use by triage nurses, using single-question screens for alcohol and drug use.^{34,35} A positive screen moves the patient's ED visit information to a separate electronic medical record dashboard that is visible to health educators

embedded in the ED who work with the clinicians to improve patient health and wellness. They are knowledgeable about community resources and local health care access. After positive screens for drugs, patients are administered the 10-item Drug Abuse Screening Test for opioids.³⁶ Patients with scores consistent with moderate or severe opioid use disorder receive brief interventions using motivational interviewing techniques to assess the patients' readiness for treatment.³⁷

The health educator, ED clinical team, and/or site opioid use disorder clinical champion collaboratively provides buprenorphine when appropriate. If indicated, the health educator or clinician performs a COWS assessment to quantify the amount of opioid withdrawal, and buprenorphine is administered in the ED using an algorithm.^{10,31} Patients receive prescriptions for buprenorphine at discharge, and those without substantial withdrawal (as determined by low COWS scores) receive instructions for unobserved treatment initiation at discharge. The opioid use disorder clinical champion provides technical assistance for clinicians who need help prescribing buprenorphine in real time and is available by phone if they are not working clinically.

The health educator works with patients and clinicians to identify the most appropriate of 3 commonly used referral clinics. One referral site is a hospital-affiliated clinic with addiction care embedded within primary care and is the primary referral site for patients with complex comorbidities, such as underlying pain or hepatitis C virus (HCV). Additional referral sites include a comprehensive addiction medicine center run by addiction psychiatry and an outpatient primary care clinic utilizing a nurse care management model for patients receiving buprenorphine.³⁸

Organizational characteristics. At site B, a clinical pathway was adapted from public resources, with the support of the ED and hospital pharmacy.³⁹ Pharmacists ensured the hospital-level buy-in of this work through the hospital Pharmacy and Therapeutics Committee, and buprenorphine was subsequently stored in the automated medication dispensing machine (eg, Pyxis) to facilitate rapid medication access. The pre-existing, universal, electronic medical record-based screening for drug use allowed for the natural electronic medical record integration of the ED-initiated buprenorphine pathway utilizing clinician decision support.³⁴

The health educators are grant funded, with an overall public health mission that integrates the care and treatment of patients with substance use disorders into comprehensive services, including HIV and HCV testing, sexual health education, pre-exposure prophylaxis, postexposure

prophylaxis, and naloxone education and distribution.⁴⁰ Oversight is provided by the ED clinical champion, who conducts research and quality improvement on substance use and related topics from the ED in addition to performing clinical work. Prior to the pathway development, the opioid use disorder clinical champion developed relationships with all 3 referral sites to understand the clinic treatments' infrastructures, capacities, and associated services. Ongoing communication is important to facilitate the discussion of specific cases, share success stories, and address systems issues. Health educators review daily reports from the electronic medical record on buprenorphine administration and prescriptions and monthly reports that include International Classification of Diseases, 10th Revision (ICD-10) codes on opioid-related diagnoses to perform program quality improvement. Input and buy-in from ED leadership and administration were critical for enhancing the buprenorphine prescribing capacity. The ED medical director was one of the first X-waivered providers and, in the beginning, provided technical assistance to the other providers on shift. Currently, the chair of the Department of Emergency Medicine at site B requires X-waivers for all full-time academic faculties.

Site C

ED process. At site C, patients with opioid use disorder are identified through a variety of parallel processes. A single question about nonmedical opioid use is integrated into the electronic medical record triage nurse assessment, while an automated electronic medical record query, based on prior diagnoses and medications, displays a banner to visually alert providers of possible opioid use disorder. Alternatively, providers often make this diagnosis after obtaining a history and physical examination; they then have the option to engage ancillary staff, including health promotion advocates, certified addiction counselors, and peer support specialists, based on the staffing and patient characteristics. Health promotion advocates are based in the ED and focus on patient engagement, follow-up for a variety of public health needs (including HIV and HCV screening), and longitudinal assistance with linkage to care. The peer support specialists come from the local community and have lived substance use disorder experiences. They initially engage patients in the ED but also extend into the hospital or community to assist with care linkage. Separately from the decision to engage ancillary staff, the provider works with the patients to determine the appropriateness of buprenorphine treatment. The ED-initiated buprenorphine pathway provides guidance for buprenorphine administration in the ED as well as prescriptions for unobserved treatment initiations.

Site C has a robust substance use treatment network that has been in place for several years. The major referral sites include a university-affiliated addiction psychiatry clinic, a branch of a large outpatient treatment center, and a publicly funded treatment center, and many offer walk-in or next-day follow-ups.

Organizational characteristics. This ED harnessed a long-standing commitment to and partnership with local public health experts developed through the ED-based HIV and HCV screening "Early Intervention Program."⁴¹⁻⁴³ Additionally, site C had recently initiated a substance use disorder screening and linkage-to-care program, which is staffed by publicly funded health promotion advocates. The pathway for ED-initiated buprenorphine was developed in partnership with Department of Emergency Medicine researchers and the Vice Chair of Operations. The presence of the health promotion advocates working in the Early Intervention Program allowed for the integration of ED-initiated buprenorphine and opioid use disorder program priorities into the usual care systems. This created a culture of substance use care in the ED, where support staff worked closely with clinicians to encourage treatment initiation, including buprenorphine administration for acute opioid withdrawal and opioid use disorder treatment.

Clinical champions at site C have strong relationships with the university-affiliated addiction treatment unit, which operates a hospital-affiliated opioid treatment program that provides buprenorphine and methadone, with a comprehensive substance use treatment intake available within 24 hours. Initially, there was a small cadre of attending physicians with X-waivers to provide prescriptions for patients being cared for by nonwaivered providers. Emergency medicine residents were extremely interested in incorporating buprenorphine into their clinical practices and sought out waivered providers if they did not have X-waivers themselves.

Site D

ED process. Patients in the ED with opioid use disorder at site D are identified by the treating clinician, who also initiates treatment with buprenorphine as appropriate. The ED social worker performs additional screening as well as brief interventions using motivational interviewing for substance use.⁴⁴ Social workers get involved early in the visits to allow for simultaneous medical care from the clinical team so they can address substance use and other social determinants of health. On weekdays, during the day shift, the ED social worker contacts the hospital-based office-based opioid treatment team, which is funded through state grants and consists of a program manager and peer support specialist. A member of this team

immediately comes to the ED to meet the patient at the bedside, describe the program, and discuss the patient's priorities and experience with treatment. After hours and on weekends, the ED social work staff take on these tasks.

Buprenorphine is routinely provided to ED patients with acute opioid withdrawal based on clinical diagnoses as part of an observed initiation of buprenorphine.¹⁰ Patients who are not in moderate or severe withdrawal receive prescriptions for buprenorphine, instructions for unobserved initiation, and appointments for follow-up. Due to the strong connection between the ED and the office-based opioid treatment team, most outpatient referrals are made to the on-site after-care clinic, a hospital-based transitional primary care clinic designed to provide easy and rapid access to short-term follow-up for ED patients with a wide variety of conditions; it can serve as a transition between the ED and primary care and/or specialty care, including addiction treatment.⁴⁵ Thus, this clinic has the expertise and organizational structure to provide rapid, low-barrier follow-ups for ED patients receiving buprenorphine. Clinic appointments can be scheduled by the office-based opioid treatment staff or ED registration staff during the ED visit, within 1 to 3 days, with nurse practitioners experienced with buprenorphine and addiction care.

Organizational characteristics. The ED-initiated buprenorphine pathway at site D was developed with multidisciplinary input from emergency physicians, pharmacists, ED social workers, ED nurses, and primary care addiction providers. Therefore, the document and pathway provide a shared mental model for the treatment of opioid use disorder in the ED, including linkage and the transition to outpatient care. The document is published in a peer-reviewed repository for hospital clinical guidelines that is accessible to all hospital employees. The protocol was adapted from existing resources for the local environment.^{39,46} Within site D, the office-based opioid treatment team has a strong presence in the outpatient clinics and uses a nurse care manager model to improve the reach and decrease barriers to treatment with buprenorphine in the outpatient settings.⁴⁷

The clinical champion at site D works clinically in the ED and is also a substance use researcher with an interest in care linkage and implementation science. Through research, the connection with the office-based opioid treatment team was strengthened and the ED-initiated buprenorphine program was developed. Monthly reports of the numbers of patients administered and prescribed buprenorphine are reviewed, and specific cases are discussed to highlight success stories or improve care. These

cases are often shared with the treating providers to provide feedback and improve practice. Monthly emails with updates on the program, including the number of patients administered and prescribed buprenorphine, are sent to all providers in the ED. This provides the opportunity to share success stories to encourage practice change. Educational opportunities are provided to all ED clinicians to improve knowledge around evidence-based treatment for opioid use disorder. Initially, formal presentations were made to physicians, ED social workers, and nurses, and clinical champions were identified within each group (eg, nursing, social work, resident) so that information about opioid use disorder and buprenorphine could be tailored.

Input and buy-in from clinical leadership at all levels improved the buprenorphine prescribing capacity. The ED medical director, department chair, residency director, and lead advanced practice providers were among the first to receive X-waivers. At the beginning, these faculty with X-waivers were available on shift to provide buprenorphine for patients. Additionally, emergency medicine residents were active in getting X-waivered, which created a push for faculty to improve knowledge and get waived. The advanced practice providers group was also active in obtaining X-waivers, which was key for seeing patients in the "fast-track" area, which generally sees low-acuity complaints, including skin and soft-tissue infections and patients requesting substance use treatment. After the launch of the program, X-waivers became required for clinical work in the ED for full-time academic faculty. It is now expected that all new full-time faculty will have X-waivers on starting clinical work. Similarly, all residents are provided with resources to apply for X-waivers prior to graduation.

KEY COMMON FACILITATORS

Information Technology and Electronic Medical Record Integration

Leveraging the electronic medical record to assist with case finding, workflow, and clinician support was common to 3 sites. Minimizing barriers to prescribing buprenorphine by integrating clinical decision support, information technology pathways, and order sets into the electronic medical record has been previously identified as an effective strategy for enhancing providers' prescription of buprenorphine.^{48,49} Site A used clinical pathways to enhance evidence-based care for a variety of common ED problems and developed a clinical pathway for the use of buprenorphine in the ED. This pathway included templated order sets, prescriptions, naloxone distribution, referral information, and discharge instructions. Site C

used machine learning methods integrated into the electronic medical record to improve case finding using historical ICD-10 codes and medication lists to identify patients with possible opioid use disorder at the beginning of the visits.

Clinical Champions and ED Culture

Every site noted the importance of an emergency physician “clinical champion” who had a strong and frequent clinical presence and could disseminate program information to residents, nurses, and other clinical staff. At several sites, these clinical champions were individuals who could provide consultation for clinicians seeing patients and provide just-in-time education on the pathways as well as assist with dispensing and prescribing buprenorphine. Department chairs at all 4 sites were supportive of this work and made time for the discussion of the clinical process at department meetings. Sites leveraged support of the chair and/or the medical director to develop a culture in which obtaining an X-waiver is viewed as important. Having a cadre of waived emergency providers eliminates the need for non-ED clinicians or consultants, who may be unfamiliar with ED workflow and/or unavailable after hours or on weekends, and gives the ED autonomy. At many sites, emergency medicine residents were eager to incorporate opioid use disorder care, including buprenorphine prescription, into their practices. Similar to the broad dissemination of point-of-care ultrasound in EDs, resident enthusiasm and education alongside a few local champions propelled culture and practice change for faculty. Several sites noted that waived advanced practice providers took leadership roles in caring for this population. Advanced practice providers noted that patients with opioid use disorder who were seeking treatment were easily cared for in the fast-track or urgent-care areas of the ED, as they did not require intravenous access and could usually be dispositioned quickly. Additionally, nursing buy-in was key for sites that leveraged electronic medical record-based screening at triage. A culture of screening and treatment for public health issues, including interpersonal violence, suicide, and alcohol use, is important scaffolding for incorporating screening for drug use that can be done universally. This culture also elevated efforts at site D, which did not utilize any electronic medical record-based screening tools but leveraged a culture of public health efforts within the ED.

Importantly, at every site, there was tension between a desire for a perfect process and “protocol” prior to the official roll-out and a reasonable roadmap or pathway that could be iteratively refined as time progressed and needs

became more apparent or changed. This tension was often navigated by the clinical champion, who was an early adopter of ED-initiated buprenorphine. Early-adopter activities included buprenorphine prescribing, working with colleagues to carve out paths for follow-up, and bringing data and personal stories back to leadership to showcase need. The combination of local early adopters, ongoing increases in opioid-related fatalities, and support from ACEP and American College of Clinical Toxicology on the use of buprenorphine in the ED nurtured the growth and development of these programs.^{27,50}

Hospital-Level Support

Every one of the 4 sites noted significant support from hospital administration and leadership for the program, financial support, and support within existing job roles within the ED. At site B, screening and referral for substance use disorders is mandated by law⁵¹; thus, the health system has dedicated substantial resources to this process. All sites had different roles performing care coordination tasks, which offloaded tasks from ED clinicians and served an important role in improving engagement and assisting with logistics. Several ED clinical champions had significant roles in the hospital or health system opioid response committees. Many sites noted the importance of collaboration with the pharmacies. ED pharmacists were key partners for working with hospital pharmacy and therapeutics committees to ensure that the hospital guidelines and processes acknowledged the ED as a place that could administer and prescribe buprenorphine. The ED chair, at many sites, was helpful in understanding how the support of the program could improve operations. Several sites had online repositories of clinical guidelines, where site-specific processes related to ED-initiated buprenorphine were published for internal reference. All of these activities required time and effort, and all sites were committed to improving care across a wide range of job roles.

Strong Connection to an Active Outpatient Partner for Follow-up

All sites noted the importance of an engaged and proximal outpatient partner (or partners) who were available to see patients at follow-up visits for ongoing addiction treatment after the ED visits. The types of outpatient partners at each site varied and included substance use treatment centers, addiction psychiatry, and primary care clinics that provided addiction care. Each clinical champion noted the importance of visiting outpatient sites to understand the workflow and process

and facilitate close collaboration. Clinics with walk-in hours and/or on-demand availability were important. Clinics associated with the hospital took advantage of a shared workforce between the clinic and the ED. At sites B and D, staff from the clinic routinely met patients in the ED for “warm hand-offs.”¹³

Quality Improvement Process

Quality improvement processes have been recognized as a critical component to program development, as they highlight opportunities to improve the quality of care, identify missed opportunities, and highlight clinical successes at the individual and group levels.⁵² Uncertainty about whether a patient will be able to access and reliably attend follow-up appointments was a common clinician concern before the implementation of the program, and clinicians noted that receiving feedback about successful follow-up appointments for patients who experienced ED-initiated buprenorphine enhanced practice change.^{19,21}

Quality improvement processes varied across sites and, in general, were performed by local champions rather than as part of the regular departmental quality improvement processes. Across all sites, success stories of patients who were successfully linked to outpatient treatment after receiving buprenorphine in the ED were shared.

IMPLICATIONS FOR FUTURE PRACTICE

Opioid overdoses and ED visits related to substance use continue to rise across the country.^{7,53,54} The ED is a critical health care location for continued in-person treatment, including initiating buprenorphine for patients with opioid use disorder. We acknowledge that the sites included were urban, academic EDs with emergency medicine residencies. Clinical champions utilized nonclinical time and effort as academic emergency physicians to grow the program. Given the urban environments, linkage to care was proximal to all sites, but the facilitators described, including ED culture and hospital-level support, are generalizable to any site interested in improving or initiating processes for ED-initiated buprenorphine. Improved access to treatment is especially important in the midst of the COVID-19 pandemic for patients experiencing homelessness, with limited phone access, or with limited prior interactions with health care.⁵⁵ All sites noted that simultaneously addressing the COVID-19 pandemic and the needs of patients with opioid use disorder required workflow adaptations and longer buprenorphine prescriptions to allow for variable follow-up access. Initially, support staff who conducted screenings, brief interventions, and care

coordination were limited in their abilities to come to the EDs in person. However, all sites have reported that support staff are now back in the EDs and currently working with patients in person now that vaccines are available, and they have received appropriate training in personal protective equipment. Recent ACEP recommendations state that ED clinicians should treat opioid withdrawal and provide buprenorphine with direct linkages to ongoing treatment with medications.²⁷ New Department of Health and Human Services guidelines have functionally eliminated the X-waiver training requirement for ED clinicians, who are extremely unlikely to prescribe buprenorphine to 30 or more patients at one time during routine ED care.⁵⁶ Optimizing training for administration and prescribing buprenorphine specifically for emergency providers has been done. Medical directors should consider the local context and follow-up networks as part of the education process. Nonpharmaceutical fentanyl use is on the rise, which contributes heavily to fatal opioid overdoses.² All EDs can respond to this epidemic by understanding the local trends and providing treatment for opioid use disorder. Novel buprenorphine administration practices from the ED may expand treatment options.⁵⁷⁻⁵⁹ These programs provide a framework that will allow EDs to adopt new evidence for opioid use disorder treatment into practice.

SUMMARY AND CONCLUSIONS

Overall, the implementation of ED-initiated buprenorphine is possible, and the models at these 4 EDs have showcased the variations in process and implementation. Each site used different local resources; however, there were several common facilitators to implementation success. Importantly, all sites described ED cultures that were passionate about improving public health and the care of patients with substance use disorders. Physician champions within the EDs cultivated relationships with existing clinics for transition of care and quality improvement efforts that helped to highlight site accomplishments, showcase successful stories, and track important implementation metrics that supported the practice uptake. Finally, these programs highlight the successful multidisciplinary nature of this work.

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