# Increasing Buprenorphine Prescribing Capacity for Opioid Use Disorder in an Oregon Emergency Department: A Quality Improvement Project

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## Abstract

Opioid use disorder (OUD) is a national emergency in the United States due to increased prevalence and associated mortality seen over the last two decades. Although prescribing buprenorphine for patients with OUD presenting to the Emergency Department (ED) is an evidence-based practice, ED providers face barriers to prescribing this life-saving medication. This quality improvement project took place in an ED within an Oregon county that has had an Opioid Overdose Alert in place since 2019. In order to increase the prescribing capacity of buprenorphine, a survey was used to determine the barriers that ED providers face to obtaining the previously required buprenorphine X-waiver and to prescribing buprenorphine in the ED. The survey results indicated providers were lacking confidence in prescribing buprenorphine and were concerned about the limited local referral options for patients with OUD; these top barriers were addressed in an educational presentation delivered to the ED providers along with instructions to apply for the X-waiver. The aim to increase waivered providers in the ED from 19.4% to 50% of all ED providers was not met. Three additional providers obtained their waiver three months post-intervention for a total of 10 out of 36 waivered providers (27.7%). Of note, the X-waiver requirement ended within a few months of the completion of this project. Regardless, future work is needed to support the small but growing group of engaged ED providers to increase access to buprenorphine for patients presenting to the ED with OUD.

**Increasing Buprenorphine Prescribing Capacity for Opioid Use Disorder**

Opioid use disorder (OUD) was declared a national emergency by the Department of Health and Human Services in 2017 in response to the six-fold rise in opioid overdose deaths seen over the preceding two decades (Charnley, 2021). Although there were successful nationwide efforts at reducing rates of opioid prescriptions and misuse, it is projected that OUD will lead to 700,000 fatal opioid overdoses in the United States between 2016 and 2025 (Incze, Kelley & Gordon, 2021). Many prominent healthcare authorities and organizations including the Surgeon General, Substance Abuse and Mental Health Services Administration, and the American College of Emergency Physicians advocate for the initiation of medications for OUD (MOUD) at "any and all points of contact with the health care system" (Hawk et al., 2021). The recommendation is due to strong evidence of MOUD conferring reduction of all-cause mortality and improved quality of life for patients with OUD (Hawk et al., 2021; Pourmand et al., 2021). Despite strong evidence favoring the use of MOUD, only about one in five patients with OUD receive any MOUD (Incze et al., 2021; Klein, Geddes & Hartung, 2022). Although all three of the first-line MOUD are effective, buprenorphine is accessible to more patients with OUD due to its favorable drug safety profile and the policies supporting its use. Buprenorphine can be initiated in emergency departments (EDs), dispensed by pharmacies, and prescribed by primary care providers (Hawk et al, 2021; Charnley, 2021; HHS, 2021).

Resources for OUD are limited in the county where the ED resides and in the eight surrounding rural counties it serves. One advantage of buprenorphine is that it enables increased access for patients visiting EDs for OUD-related care in rural settings where MOUD-proficient providers and addiction treatment programs are limited (Charnley, 2021; Spelman et al., 2021; Edwards et al., 2020). In an interview with two ED providers, one significant challenge cited was

the uncertainty around whether patients with OUD will successfully link to outpatient OUD care after induction with just one dose of buprenorphine. During the time this project was conducted, ED providers were required to obtain a Drug Enforcement Agency (DEA)-issued X-waiver to write multi-day prescriptions. Therefore, increasing the number of waivered providers was identified as an important strategy to allow more patients access to uninterrupted, multi-day buprenorphine treatment in the critical window after an OUD-related ED visit.

**Available Knowledge**

Historically the role of the ED in OUD was to provide a referral to substance use treatment after treating overdose and withdrawal symptoms (Kaucher et al., 2020). However, overwhelming evidence supports the initiation of buprenorphine in the ED (Edwards et al., 2020). A review of 25 studies has captured outcomes across an uptick of EDs implementing buprenorphine protocols across the country (Cao et al., 2020). The results demonstrate increased post-discharge outpatient visit follow-up rates (63-83%) compared to 38% among control conditions. Patients were also more likely to be engaged with substance use treatment after 30 days, ranging from 47-78% compared to 7.6-37% of patients in control groups across studies. As opioid-related ED visits have doubled since 2010, evidence-based initiation of long-term buprenorphine treatment in addition to acute stabilization is imperative to address the worsening OUD epidemic (Cao et al., 2020; Pourmand et al., 2021).

Prior to the Consolidated Appropriations Act of 2023, a barrier to prescribing MOUD by ED providers was the regulatory requirement to obtain a DEA X-waiver (Milgram, 2023). Besides submitting the previously required application for the X-waiver, other barriers identified in the literature included insufficient provider education and lack of confidence (Cao et al., 2021; Im et al., 2020; Hawk et al., 2022; Pourmand et al., 2021; Sokol et al., 2021). Of 156 ED

providers surveyed, 78% believed that ED providers should offer buprenorphine, yet only 53-57% reported being comfortable initiating buprenorphine in the ED (Zuckerman et al., 2021). Qualitative data collected in interviews of ED providers in the United States revealed possible solutions to these knowledge and confidence gaps, such as institutional support for training focused on initiation and coordination of follow-up after ED induction (Im et al., 2020). Hawk et al. (2022) interviewed patients receiving care for OUD in the ED, many of whom identified stigma and lack of staff knowledge about OUD and MOUD as a barrier: "There are some doctors that still don't believe it's a disease. They believe it's a choice." Based on the literature, the strategy to address provider knowledge gaps with education was chosen to increase the number of waivered providers that are confident in prescribing buprenorphine.

The literature also suggested that the ability of providers to prescribe a multi-day supply to overcome any delays in linkage to outpatient treatment programs would save valuable time for patients and ED providers. Coordination of transportation was cited as a barrier to treatment for patients with OUD (Cao et al., 2020), and this was addressed in another study by the provision of take-home kits with three days of prescribed buprenorphine by a waivered ED provider (Krenz et al., 2022). This study demonstrated comparable efficacy to other ED-initiated treatment but did not assess whether the take-home kit method improved patient ability to bridge care relative to a single-dose induction method. Further studies are needed to clarify whether a provider's multi-day prescription confers superior outcomes relative to single doses of induction. Additionally, studies are needed to evaluate the influence of a variety of patient and community factors that determine how quickly a patient links to outpatient care after ED induction of buprenorphine.

**Rationale**

The Model for Improvement, developed by the Institute for Healthcare Improvement, is geared toward implementing quality improvement (QI) projects in healthcare settings (Institute for Healthcare Improvement [IHI], 2022). This model has been successfully used to accelerate improvement globally within and across hundreds of healthcare organizations. Initially, three focusing questions were used to guide the selection of specific aims, the markers by which improvement were measured, and the selection of interventions based on evidence and feasibility within the clinical setting (IHI, 2022). Next, the process of implementation occurred within Plan-Do-Study-Act (PDSA) cycles, which allowed for continuous reflection, refinement, and action toward optimal outcomes.

A root cause analysis was conducted, and factors influencing the use of MOUD in the ED were depicted in a cause-and-effect diagram (see Figure 1). The diagram revealed a need for data collection. There were unknown quantities of patients seen in the ED for OUD-related care, and of patients with successful connection to outpatient OUD care after the ED visit. Additionally, there were unidentified barriers to obtaining the X-waiver faced by providers in this ED. However, two ED providers—the director and assistant director—were motivated to improve buprenorphine prescribing capacity in the ED. They reported that five of 36 providers (not including themselves) were waivered at the outset of the project. They noted the pharmacy required that at least 50% of ED providers have the X-waiver to carry multi-day buprenorphine prescriptions in the formulary.

An extensive literature review of barriers and facilitators to the initiation of buprenorphine in the ED guided the identification of approaches anticipated to be useful in this ED setting. The PDSA cycles outlined in the Model for Improvement were used to optimize an approach that was tailored to the features of this ED and responsive to the needs of stakeholders.

Following the steps outlined in the Model for Improvement, an educational intervention was developed and delivered to providers. This addressed the survey-identified deficits in provider knowledge and confidence pertaining to the use of MOUD in the ED and the X-waiver application process.

### Specific Aim

By Tuesday, November 1st, 2022, at least 50% of the Emergency Department and Clinical Decision Unit providers were to have obtained the X-waiver to prescribe buprenorphine. This would have represented an increase from 7 out of 36 (19.4%) providers with their waiver to 18 out of 36.

## Methods

### Context

The ED setting is embedded within a larger healthcare organization that includes three hospitals and numerous outpatient clinics serving communities across nine counties in southern Oregon and northern California. The organization is governed by local volunteers and physicians who live and work within the communities served. The mission is to deliver high-quality healthcare services in a compassionate manner valued by the communities served.

Jackson County has had an Opioid Overdose Alert in place since 2019 due to a high incidence of opioid overdoses in the community (Jackson County Health & Human Services, 2022). Jackson and Josephine counties have rates higher than the national and state-wide averages of drug-induced mortality (Jefferson Regional Health Alliance, 2019). Addressing substance use was therefore a top priority identified in the 2019-2022 Community Health Improvement Plan for these counties.

There were 36 providers in the ED who were eligible to obtain their X-waiver to prescribe buprenorphine. At the outset of this project, seven of the 36 providers already had an X-waiver. Provider meetings were held virtually on the first Tuesday of each month for two hours during which there were opportunities for education and discussion related to ED workflow processes. While there was potential for resistance among ED providers to commit to practice changes around opioid use disorder, there was also a common interest in serving the identified needs of the community.

**Intervention**

The intervention targeted the barriers that impact the ability of this ED to prescribe multi-day prescriptions for buprenorphine. A Qualtrics survey (See Figure 2) was developed and sent to all ED providers to identify which barriers to address with an educational intervention. The survey was a brief 4-item questionnaire with an estimated completion time of five minutes designed to ascertain attitudes and barriers pertaining to OUD care, buprenorphine prescribing and X-waiver obtainment.

Survey responses were analyzed and used to develop a 30-minute educational presentation tailored to address the perceived barriers to prescribing buprenorphine and obtaining the X-waiver. I presented data collected from Epic (see Figure 4) around OUD care in this ED over the preceding year, and connected the benefits of becoming an X-waivered buprenorphine prescriber to those metrics. The presentation was given during the virtual staff meeting held on August 2nd, 2022. The presentation followed the format of SBAR, outlining the situation and background of the opioid epidemic and the assessment of the barriers and prescribing capacity in the ED. The recommendation portion of the SBAR was to obtain the X-waiver and commit to the evidence-based practice change of prescribing buprenorphine. In general, the presentation

reinforced the benefits of buprenorphine for patients with OUD as well as the protocol for prescribing buprenorphine and making referrals to link to outpatient care.

Immediately after this educational presentation, a post-survey was sent (see Figure 3) along with clear instructions to apply for the X-waiver. The survey was used to collect data on the measures, and the final page contained the link to the waiver application for those who had not yet applied. Data was collected on whether the provider intended to apply for the X-waiver or if they had obtained it prior to the educational presentation. Respondents were able to select from a menu of options or write in why this waiver felt important or unimportant to obtain. Changes pertaining to confidence in prescribing buprenorphine were assessed as well as the extent to which real or perceived logistical barriers remained a concern to the respondent.

**Study of the Interventions**

The impact of the intervention was assessed via provider responses to the pre- and post-intervention surveys. The study of the interventions also required the monitoring of other initiatives geared towards improving care for patients with OUD in this ED. For example, the two provider champions who helped facilitate this project had also been working to create protocols in Epic for treating patients with OUD. These updates shared during staff meetings provided an additional opportunity for leadership to encourage providers to obtain their X-waiver. Their work was factored into the study of the effects of this project's intervention on our aim to increase waivered providers. A comparison of the results of the pre- and post-survey was anticipated to capture the impact of this planned intervention tailored to the survey-identified barriers. The first aim of achieving successful X-waiver application submission among at least 50% of the providers was poorly captured in the post-survey due to a low response rate. The ED director shared the log of providers who had their waiver pre- and 3 months post-intervention. In

the post-survey, respondents also reported whether the intervention contributed to their decision to obtain the waiver. The log of waivered providers from the ED director is more accurate, however it does not capture the sole impact of this intervention on waiver application considering providers were briefly encouraged to obtain their waiver during other staff meetings.

**Measures**

The PDSA cycle was designed to capture multiple measures. In order to track the number of waivered providers for measuring the primary aim both pre- and post-intervention, a waiver count was obtained from the director of the ED. Pre- and post-survey response rates (n=15 and n=7, respectively) and provider attendance (n=16) for the presentation were process-related measures. No balance measures were assessed for this project.

**Analysis**

Analysis of outcomes data were compared pre- and post-intervention. A bar graph (see Figure 7) depicts the percentage of waivered providers at project outset and at completion. Pre- and post-survey response data was presented with horizontal bar graphs obtained from Qualtrics (see Figure 5 and Figure 6). Another bar graph depicts the number of patients seen in the ED for withdrawal, overdose, or opioid-related complaints in the year prior to the intervention (see Figure 4).

**Ethical Considerations**

The Institutional Review Board (IRB) determined that the proposed activity was not research involving human subjects. IRB review and approval was not required for STUDY00024542. The survey was expected to pose minimal emotional risk to the survey respondents. Based on survey analysis, the intervention emphasized education to increase knowledge of OUD in order to reduce stigma without shaming the holders of any stigmatized

views on OUD. Survey responses from providers were anonymous. Confidentiality was maintained per HIPAA while obtaining data from EPIC.

**Results**

Fifteen staff providers returned the pre-survey. Of these, 7 (46.6%) reported that they already had their waiver to prescribe buprenorphine. Two (13.3%) respondents were interested in obtaining their waiver, while another two respondents had not thought about getting their waiver. Four (26.6%) did not intend to obtain the waiver. Over half of the surveyed providers (n=8) did not feel there were significant barriers to obtaining the waiver, while three reported they didn't know the process of obtaining the waiver and three felt that applying for the waiver was inconvenient. One respondent wrote 'I think that it is inappropriate to manage opioid use disorder through the emergency department, while another wrote 'The whole issue of X-waivers seems like an unnecessary administrative pain whose burden shouldn't fall onto ED providers.' Regarding prescribing and administering buprenorphine in the ED, the top barriers respondents selected were a lack of confidence with ordering buprenorphine (n=10), and a lack of availability of referrals to substance use treatment services post-discharge (n=10).

Of the 16 providers in attendance for the intervention, seven completed the post-survey. Five reported that they already had their waiver or a pending application prior to the presentation, and two reported that they intend to submit their application at their earliest convenience. The most selected response (85.6%) as to why respondents felt obtaining the waiver was important was 'It is one concrete action I can take to increase life-saving medications and successful bridging to outpatient treatment amid the opioid crisis.'

At three months post-intervention, three additional waivered providers had been recorded per the Emergency Services Medical Director. Although this was a 42.8% increase from the

seven waivered providers prior to the intervention, the aim to achieve waivers among 18 (50%) of the 36 total ED providers was not met.

**Discussion**

Based on pre- and post-survey results, participation in the educational intervention and the surveys was high among providers who had already obtained their X-waiver. The results of the surveys were largely influenced by those who were already waivered, and thereby more likely interested in prescribing buprenorphine. Although those waivered represented less than half of the ED providers, their consistent participation in this project demonstrated commitment to increase buprenorphine prescribing capacity in the ED. The group of engaged providers represented a strength within the department for future progress that will now be unencumbered by the previous X waiver requirement. Since December 29, 2022 the Consolidated Appropriations Act of 2023 dictated that the X waiver is no longer required to prescribe buprenorphine. Two survey respondents selected 'I don't want to be one of the few prescribers in the department with a waiver,' a concern reported across clinical settings in the literature. The recent legislative change eliminating the X-waiver requirement means that every provider with a DEA registration number now has the ability to prescribe buprenorphine for patients with OUD. Future work could include leadership efforts to increase provider knowledge and confidence in prescribing buprenorphine so that providers may practice to the full extent of their scope, increasing access to MOUD. Educational efforts could address stigma towards patients with OUD, another barrier that the end of the waiver requirement alone may not address.

This study was limited by the extent of provider participation, both in pre- and post-survey completion and in attendance of the intervention. Although the intervention was held during a mandatory staff meeting, many were not in attendance due to being on shift or pre-

arranged absences. Additionally, the ED leadership noted that the capacity among providers for improvement projects has historically been difficult to capture. New approaches are needed to reach the large portion of ED providers that did not participate in this quality improvement project and who do not have experience prescribing MOUD.

**Conclusion**

This quality improvement project collected input from ED providers to better understand barriers to prescribing buprenorphine in the ED and obtaining the previously required X-waiver. From the survey, two barriers to prescribing buprenorphine emerged—a lack of provider confidence in initiating buprenorphine and minimal access to outpatient substance use disorder treatment. The intervention consisted of a presentation to address the identified barriers with the provision of resources guiding the initiation of buprenorphine as well as referral options. Most survey respondents (53.3%) felt there were no significant barriers to obtaining the X-waiver, which is notably no longer a requirement. The seven providers with waivers at the outset of this project represented a large portion of participants in this project, and the increase in waivered providers post-intervention was smaller than expected. To reach providers who did not participate in this project, new strategies and department policies are needed. Future interventions to increase buprenorphine prescribing capacity in this ED may be bolstered by the efforts of the growing group of MOUD prescribers who are engaged in their important role amid the opioid epidemic.

## References

Cao, S. S., Dunham, S. I., & Simpson, S. A.. (2020). Prescribing Buprenorphine for Opioid Use Disorders in the ED: A Review of Best Practices, Barriers, and Future Directions</p>. *Open Access Emergency Medicine*, *Volume 12*, 261–274. https://doi.org/10.2147/oaem.s267416

Charnley, C. (2021). *Assessment of Barriers and Facilitators to Buprenorphine Prescribing Among Nurse Practitioners in Rural Oregon*. Retrieved March 1, 2022, from https://scholararchive.ohsu.edu/concern/etds/m613mz348?locale=en

Department of Health & Human Services. (2021). Practice Guidelines for the Administration of Buprenorphine for Treating Opioid Use Disorder (86 FR 22439). https://www.federalregister.gov/documents/2021/04/28/2021-08961/practice-guidelines-for-the-administration-of-buprenorphine-for-treating-opioid-use-disorder#citation-1-p22440

Edwards, F. J., Wicelinski, R., Gallagher, N., Mckinzie, A., White, R., & Domingos, A.. (2020). Treating Opioid Withdrawal With Buprenorphine in a Community Hospital Emergency Department: An Outreach Program. *Annals of Emergency Medicine*, *75*(1), 49–56. https://doi.org/10.1016/j.annemergmed.2019.08.420

Hawk, K., Hoppe, J., Ketcham, E., Lapietra, A., Moulin, A., Nelson, L., Schwarz, E., Shahid, S., Stader, D., Wilson, M. P., & D'Onofrio, G.. (2021). Consensus Recommendations on the Treatment of Opioid Use Disorder in the Emergency Department. *Annals of Emergency Medicine*, *78*(3), 434–442. https://doi.org/10.1016/j.annemergmed.2021.04.023

Hawk, K., Mccormack, R., Edelman, E. J., Coupet, E., Toledo, N., Gauthier, P., Rotrosen, J., Chawarski, M., Martel, S., Owens, P., Pantalon, M. V., O'Connor, P., Whiteside, L. K., Cowan, E., Richardson, L. D., Lyons, M. S., Rothman, R., Marsch, L., Fiellin, D. A., & D'Onofrio, G.. (2022). Perspectives About Emergency Department Care Encounters Among Adults With Opioid Use Disorder. *JAMA Network Open*, *5*(1), e2144955. https://doi.org/10.1001/jamanetworkopen.2021.44955

Im, D. D., Chary, A., Condella, A. L., Vongsachang, H., Carlson, L. C., Vogel, L., Martin, A., Kunzler, N., Weiner, S. G., Samuels-Kalow, M. (2020). Emergency department clinicians' attitudes toward opioid use disorder and emergency department-initiated buprenorphine treatment: a mixed-methods study. The Western Journal of Emergency Medicine, 21, 261-271. https://dx.doi.org/10.5811/westjem.2019.11.44382

Incze, M. A., Kelley, A. T., & Gordon, A. J.. (2021). Improving Opioid Use Disorder Treatment through Quality Assessment. *Journal of General Internal Medicine*, *36*(9), 2820–2822. https://doi.org/10.1007/s11606-021-06614-x

Institute for Healthcare Improvement. (2022). *Science of improvement: How to improve.* http://www.ihi.org/resources/Pages/HowtoImprove/ScienceofImprovementHowtoImprove.aspx

Jackson County Health & Human Services. (n.d.). Retrieved March 14, 2022, from https://jacksoncountyor.org/hhs/Public-Health/Syringe-Exchange/Overdose-Prevention

Jefferson Regional Health Alliance. (2019, July). *Jackson and Josephine Counties Community Health Improvement Plan*. Jefferson Regional Health Alliance. Retrieved April 14, 2022,

from https://jeffersonregionalhealthalliance.org/wp-content/uploads/2019/07/Full-CHIP-FINAL.pdf

Kaucher, K. A., Caruso, E. H., Sungar, G., Gawenus, L., Hurlbut, K., Sanchez, D. C., & Broderick, K. (2020). Evaluation of an emergency department buprenorphine induction and medication-assisted treatment referral program. *The American journal of emergency medicine*, *38*(2), 300–304. https://doi.org/10.1016/j.ajem.2019.158373

Klein, T. A., Geddes, J., & Hartung, D.. (2022). The Geographic Impact of Buprenorphine Expansion to Nurse Practitioner Prescribers in Oregon. *The Journal of Rural Health*, *38*(1), 112–119. https://doi.org/10.1111/jrh.12538

Krenz, J. R., Hayes, B. D., Wakeman, S. E., Martin, A., Raja, A. S., White, B. A., & Koehl, J. L.. (2022). Continuation of outpatient buprenorphine therapy after dispensing Buprenorphine-Naloxone from the emergency department. *Clinical Toxicology*, *60*(4), 429–432. https://doi.org/10.1080/15563650.2021.1968421

Milgram, A. (2023, January 12). DEA announces important change to registration requirement. Springfield, Virginia; Drug Enforcement Agency.

Pourmand, A., Beisenova, K., Shukur, N., Tebo, C., Mortimer, N., & Mazer-Amirshahi, M. (2021). A practical review of buprenorphine utilization for the emergency physician in the era of decreased prescribing restrictions. *The American journal of emergency medicine*, *48*, 316–322. https://doi.org/10.1016/j.ajem.2021.06.065

Sokol, R., Tammaro, E., Kim, J. Y., & Stopka, T. J.. (2021). Linking MATTERS: Barriers and Facilitators to Implementing Emergency Department-Initiated Buprenorphine-Naloxone in Patients with Opioid Use Disorder and Linkage to Long-Term Care. *Substance Use & Misuse*, *56*(7), 1045–1053. https://doi.org/10.1080/10826084.2021.1906280

Spelman, J.. (2021). *A Facility-Wide Plan to Increase Access to Medication for Opioid Use Disorder in Primary Care and General Mental Health Settings*. *38 (10)*. https://doi.org/10.12788/fp.0186

Zuckerman, M., Kelly, T., Heard, K., Zosel, A., Marlin, M., & Hoppe, J.. (2021). Physician attitudes on buprenorphine induction in the emergency department: results from a multistate survey. *Clinical Toxicology*, *59*(4), 279–285. https://doi.org/10.1080/15563650.2020.1805461

**Figure 1.**

**Root Cause Analysis**

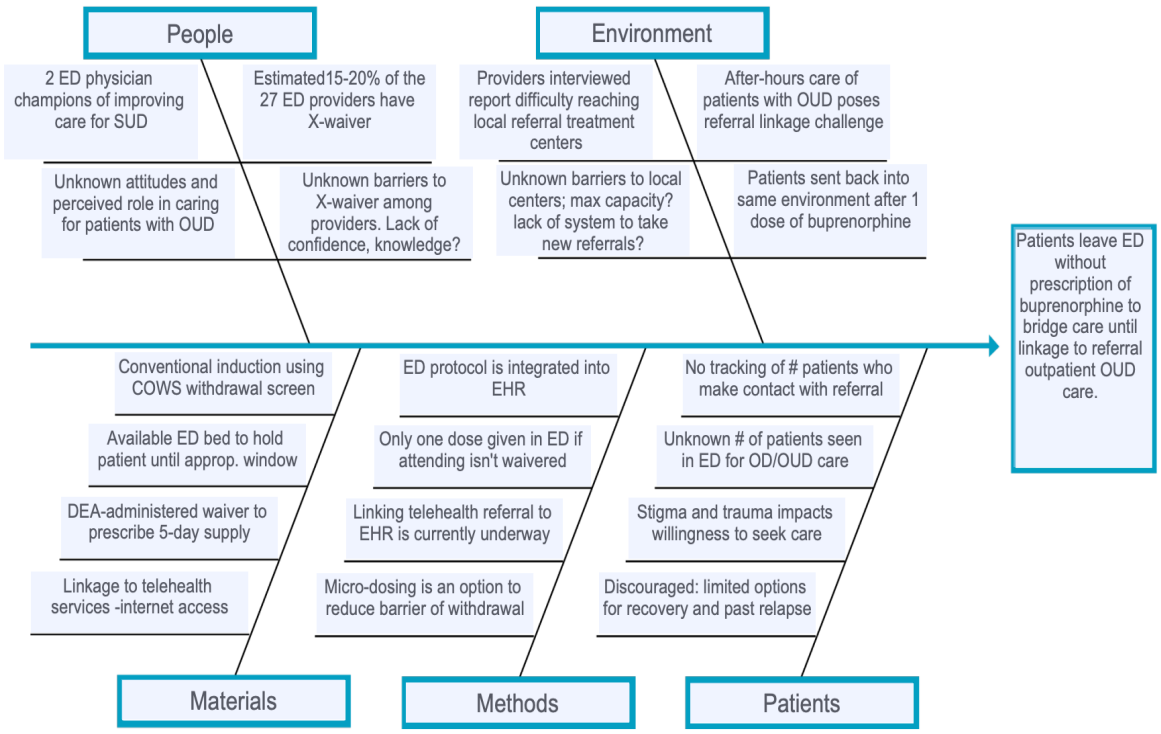


**Figure 2.** Pre-intervention Survey

**Select your interest in obtaining the X-waiver to prescribe buprenorphine:**

-I'm interested in getting the waiver
-I do not intend to get the waiver
-I've not thought about getting the waiver
-I've submitted the application and am waiting on my waiver
-I already have my waiver

**As you may know, in the ED providers can administer one dose of buprenorphine/day for up to three days without a waiver. The waiver is required to prescribe buprenorphine at discharge. Please indicate which of the following are barriers you face in obtaining a waiver to prescribe buprenorphine on discharge from the ED. Select all that apply.**

-I don't know the process of obtaining the waiver
-A waiver is not necessary for my practice
-I don't want to be one of the few prescribers in the department with a waiver
-I am not confident in my ability to treat patients with opioid use disorder
-I don't feel there are any significant barriers to obtaining the waiver

-Other. Please write in below:

**Regardless of your waiver status, please indicate which of the following are barriers to either administering or prescribing buprenorphine in the ED. Select all that apply.**

-Concern about medication safety or adverse effects
-Lack of confidence to counsel patients about buprenorphine
-Lack of confidence with ordering buprenorphine (timing, dosage, etc)
-Access to protocols for initiating buprenorphine
-Unsure if buprenorphine is effective treatment for OUD
-Access to expert physician consultation
-Regulatory concerns related to prescribing buprenorphine
-Availability of referrals to substance use treatment services after discharge
-Concern about diversion or misuse of buprenorphine
-Concern buprenorphine switches out one addiction for another
-Patient social barriers (ie homelessness, insurance, etc)
-I don't feel there are any significant barriers to administering or prescribing buprenorphine
-Other. Please write in below:

**Below is the final question. When you click next, you will be redirected to the SAMHSA Buprenorphine Waiver Notification page where you are encouraged to apply for your waiver if you have not already done so. Thank you for completing this survey and for taking this important step to improve outpatient treatment follow-up among patients with opioid use disorder!**

**What questions or concerns would you like addressed in an upcoming staff meeting related to opioid use disorder, buprenorphine, and X-waivers?**
(write-in response)

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Content from the above questions were based off of the survey used in the study below, with permission granted by Margaret Lowenstein, MD:

Lowenstein, M., Kilaru, A., Perrone, J., Hemmons, J., Abdel-Rahman, D., Meisel, Z. F., & Delgado, M. K. (2019). Barriers and facilitators for emergency department initiation of buprenorphine: A physician survey. *The American journal of emergency medicine*, *37*(9), 1787–1790. https://doi.org/10.1016/j.ajem.2019.02.025

**Figure 3.** Post-Survey

**Thank you for participating in this project to improve access to medications for OUD for patients presenting to the ED with opoid use disorder. Getting your waiver is one concrete**

**step we can take to increase linkage to outpatient treatment--and decrease return ED visits--after opioid-related ED visits. The information you share below will be stored securely and used only for the purpose of measuring the success of the primary aim for this project, which is to increase the number of X-waivers among ED/CDU providers. We are hoping to achieve waivered status among at least 50% of providers by early November. Achieving this 50% goal will allow multi-day, take-home suboxone kits to be available in the formulary for X-waivered providers to prescribe for patients on discharge.**

**Please select from the options below:**

-I already had my X-waiver or a pending waiver application prior to this presentation.
-I intend to submit my application for my waiver at my earliest convenience.
-I'm not sure I'll apply for my waiver at this time.
-I don't intend to apply for my waiver at this time.

**Please select the option that best fits why you feel obtaining your X-waiver is important:**

-It is one concrete action I can take to increase access to life-saving medications and successful bridging to outpatient treatment amid the opioid crisis.

-Although I may take more time to commit to this practice change of initiating suboxone in the ED and prescribing at discharge, I want to ensure my colleagues have suboxone available in the formulary to prescribe to patients who may benefit.

-At this time I don't think obtaining an X-waiver and increasing access to suboxone and treatment from the ED is important.

**From the initial survey, the top barriers to initiating treatment with suboxone in the ED were the availability of outpatient referrals and confidence in ordering buprenorphine. Please select from the options below regarding your perception of these barriers after the suboxone/X-waiver presentation:**

-These barriers will not hinder my ordering and prescribing of suboxone in the ED as a harm reduction strategy for patients with an OUD--I am sufficiently confident and have the resources to initiate suboxone, and believe there are sufficient referral options(local, telehealth) for this patient population.

-These barriers will not hinder my ordering and prescribing of suboxone in the ED as a harm reduction strategy for patients with an OUD--however I would like more education/and or knowledge of referral options as I am still not confident.

-I am confident and have the resources to initiate treatment with suboxone, but would like to learn of more referral options for outpatient treatment before initiating suboxone in the ED.

-I am confident that there are sufficient referral options for outpatient OUD care, but would like more guidance and education to increase my confidence before initiating suboxone in the ED.

-Until both these barriers are further addressed, they still feel prohibitive to initiating treatment with suboxone for patients in the ED.

**Last thing! Please write in your Last Name and DEA registration # so that I can use the SAMHSA buprenorphine look-up tool to track the number of X-waivered providers in the ED. This information will remain confidential and your name will not be linked to the above responses when I present the data I collect as part of my graduation requirement. After the final count of waivers in November 2022, this information that you share will be destroyed after having been securely stored on Qualtrics. I really appreciate your sharing this information so that I can measure the success of this project!**

**Note from the SAMHSA look-up tool: Each practitioner's DEA license gives two registration numbers. The search works with the first number, which generally starts with A, B, F or M.**

**When you submit you will be redirected to the SAMHSA waiver application page. Thank you so much!**

Last name:
DEA Registration #:

**Figure 4.**

Types of Opioid-related ED visits occurring in the year prior to project implementation. This data was obtained by the Assistant Director of the ED and shared with her permission.

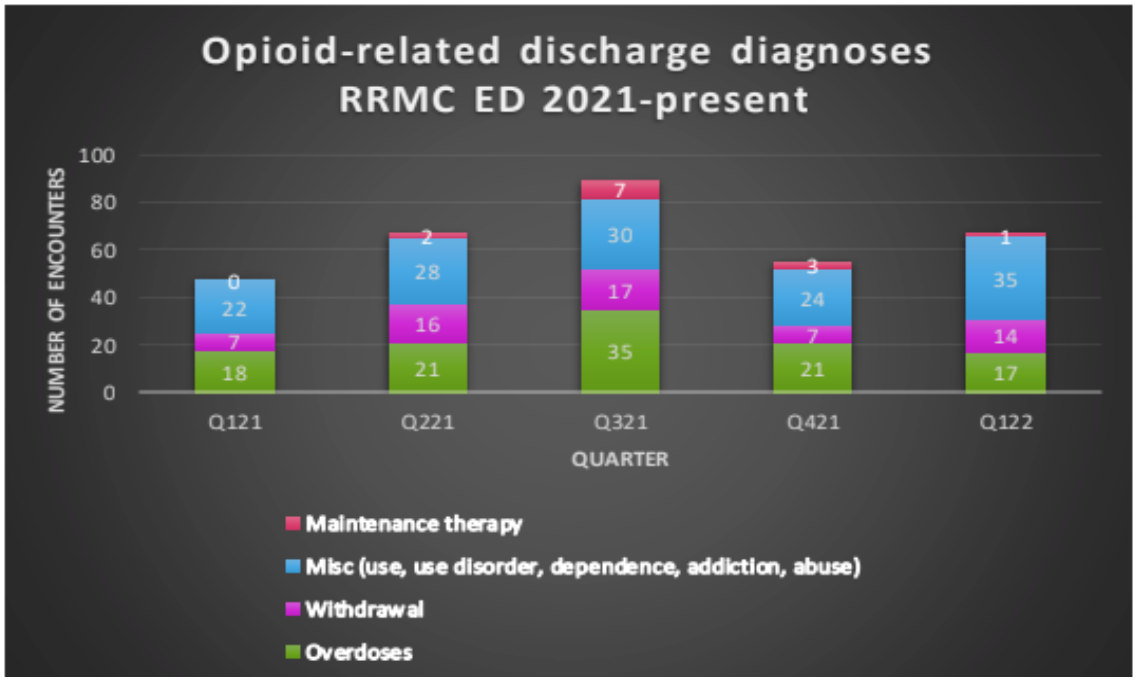
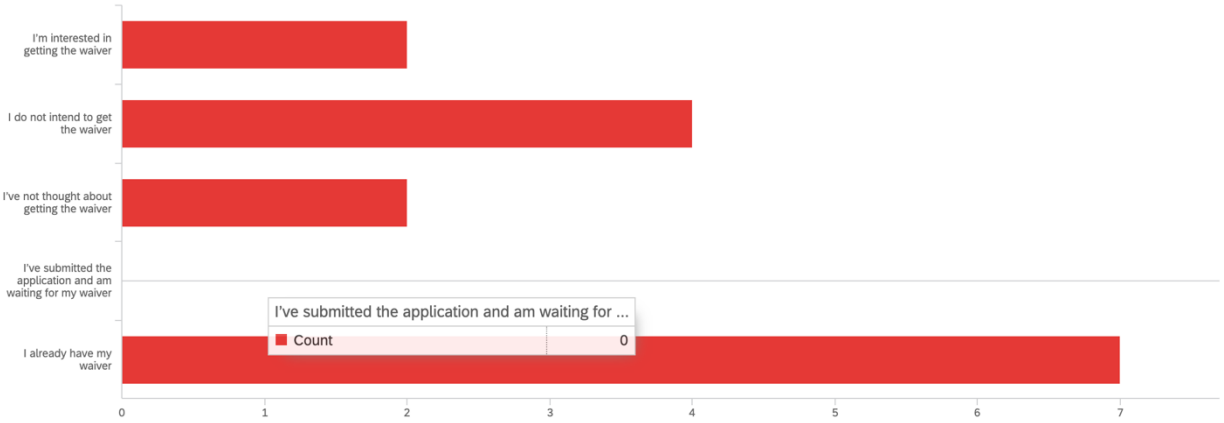
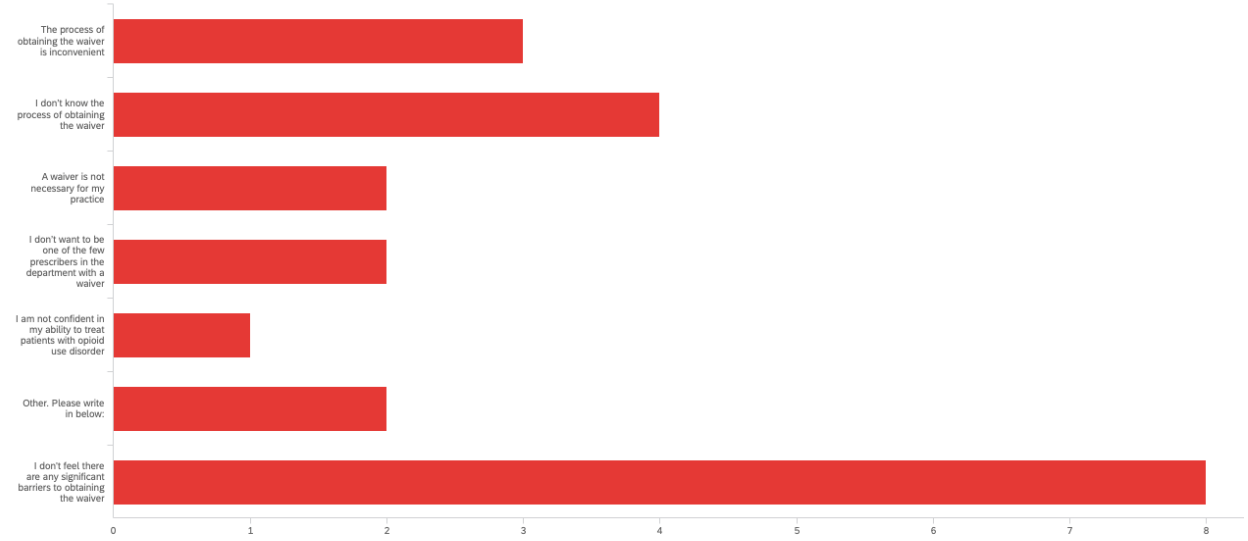


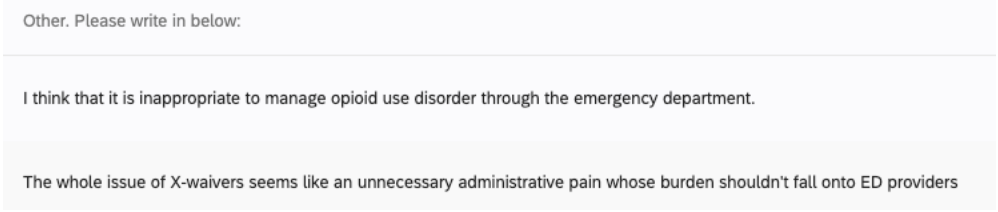
**Figure 5.**

Results from Pre-survey




As you may know, in the ED providers can administer one dose of buprenorphine/day for up to three days without a waiver. The waiver is required to prescribe buprenorphine at discharge. Please indicate which of the following are barriers you face in obtaining a waiver to prescribe buprenorphine on discharge from the ED. Select all that apply.




Q3 - Regardless of your waiver status, please indicate which of the following are barriers to either administering or prescribing buprenorphine in the ED. Select all that apply.

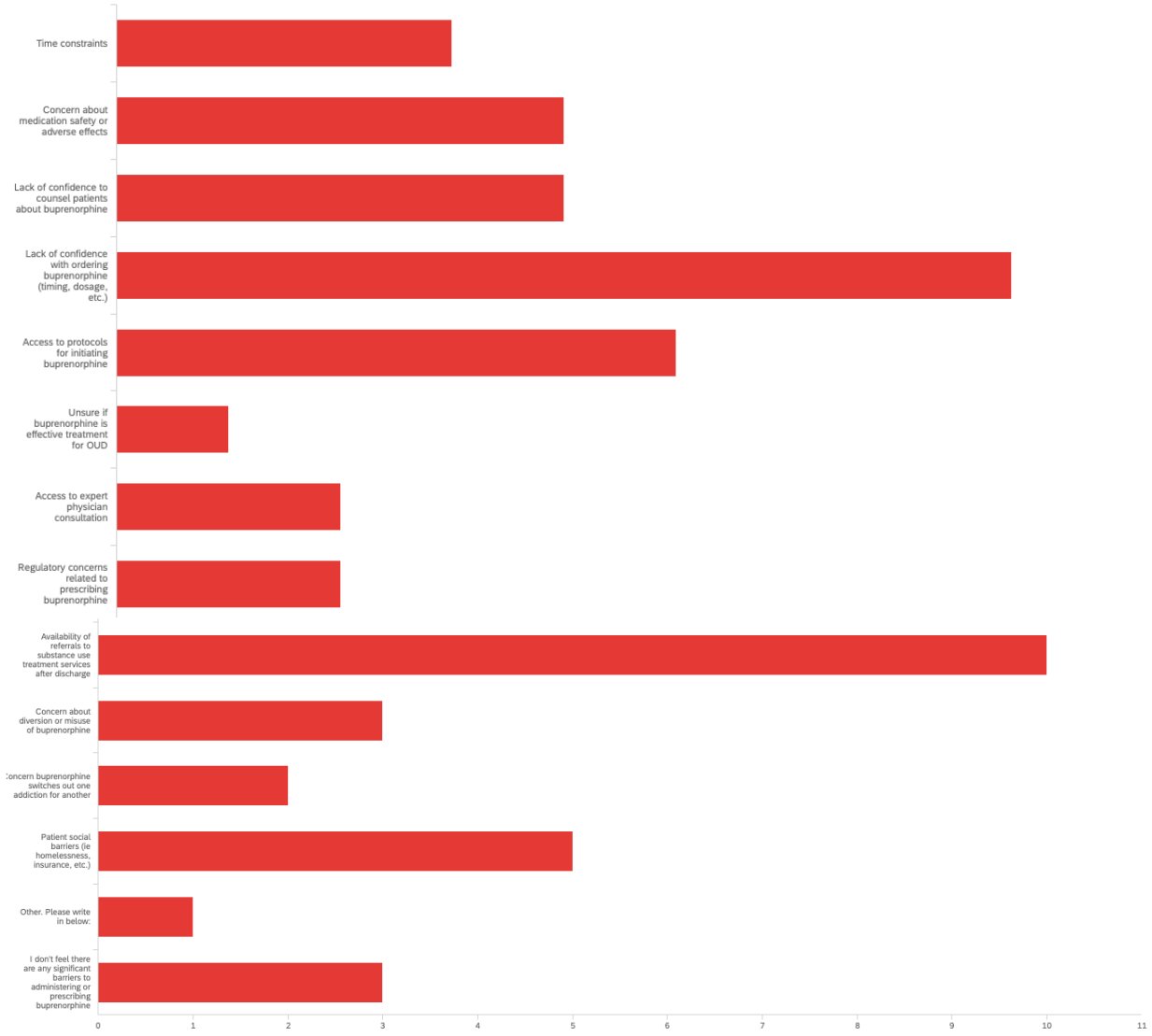
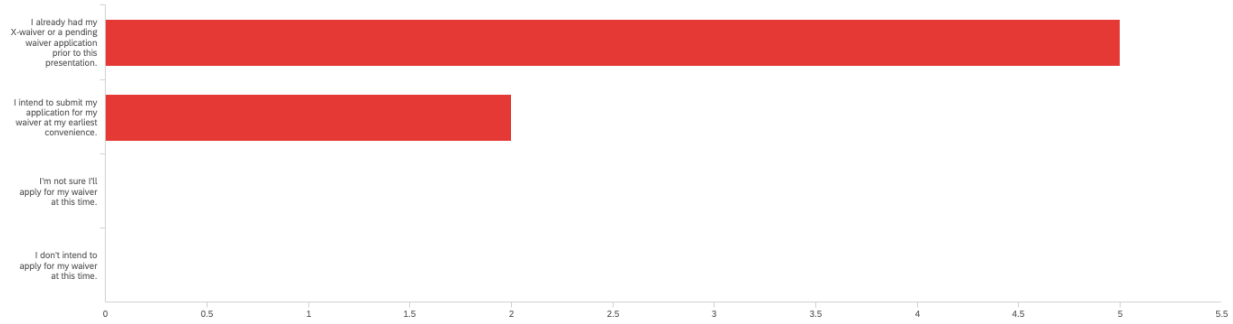



**Figure 6.**
Results from Post-survey, n=7




Q2 - Please select the option that best fits why you feel obtaining your X-waiver is important:

| | | | |
|---|---|---|---|
| 1 | It is one concrete action I can take to increase access to life-saving medications and successful bridging to outpatient treatment amid the opioid crisis | 85.71% | 6 |
| 2 | Although I may take more time to commit to this practice change of initiating suboxone in the ED and prescribing at discharge, I want to ensure my colleagues have suboxone available in the formulary to prescribe to patients who may benefit. | 0.00% | 0 |
| 3 | At this time I don't think obtaining an X-waiver and increasing access to suboxone and treatment from the ED is important. | 14.29% | 1 |
| | | | 7 |

Q3 - From the survey, the top barriers to initiating treatment with suboxone in the ED were the availability of outpatient referrals and confidence in ordering buprenorphine. Please select from the options below regarding your perception of these barriers after the suboxone/X-waiver presentation:

| | | | |
|---|---|---|---|
| 1 | These barriers will not hinder my ordering and prescribing of suboxone in the ED as a harm reduction strategy for patients with an OUD--I am sufficiently confident and have the resources to initiate suboxone, and believe there are sufficient referral options(local, telehealth) for this patient population. | 28.57% | 2 |
| 2 | I am confident and have the resources to initiate treatment with suboxone, but would like to learn of more referral options for outpatient treatment before initiating suboxone in the ED. | 0.00% | 0 |
| 4 | I am confident that there are sufficient referral options for outpatient OUD care, but would like more guidance and education to increase my confidence before initiating suboxone in the ED. | 0.00% | 0 |
| 5 | Until both these barriers are further addressed, they still feel prohibitive to initiating treatment with suboxone for patients in the ED. | 28.57% | 2 |
| 6 | These barriers will not hinder my ordering and prescribing of suboxone in the ED as a harm reduction strategy for patients with an OUD--however I would like more education/and or knowledge of referral options as I am still not confident. | 42.86% | 3 |
| | | | 7 |

Q4 - Below is the final question. When you click next, you will be redirected to the SAMHSA Buprenorphine Waiver Notification page where you are encouraged to apply for your waiver if you have not already done so. Thank you for completing this survey and for taking this important step to improve outpatient treatment follow-up among patients with opioid use disorder! What questions or concerns would you like addressed in an upcoming staff meeting related to opioid use disorder, buprenorphine, and X-waivers?

Below is the final question. When you click next, you will be redirected to...

I have tried to obtain xwaver in past with DEA and was not able is there something special about doing this.

Can we develop/adopt a treatment algorithm to help standardize the care we provide?

ED are already overwhelmed with patients. Adding another, non-emergent task, will be detrimental to the provision of emergency care. Part of the recovery process is for addicts to take responsibility for there actions, managing medications is one such responsibility.

I would like a 10 minute education session on bupe. I would also like to secure good follow up for these patients, and hope that these resources can be shared at a future staff meeting

Where to send patients after buprenorphine Rx is given and how to be sure they got there.

The biggest issue is referral to outpatient care: there seems to be constant turnover of our community partners who will take OUD patients. If I always knew who was the appropriate person to refer patients to it would be very easy to give them a dose and a 3-5 day script and discharge them.

We don't have a system in place to support ED prescribing of buprenorphine. Therefore, our doing so is putting the cart before the horse. Previous community efforts to offer follow-up care have repeatedly been short-lived and difficult to coordinate with ED care.

**Figure 7.**
Number of waivered providers pre- and post-intervention.

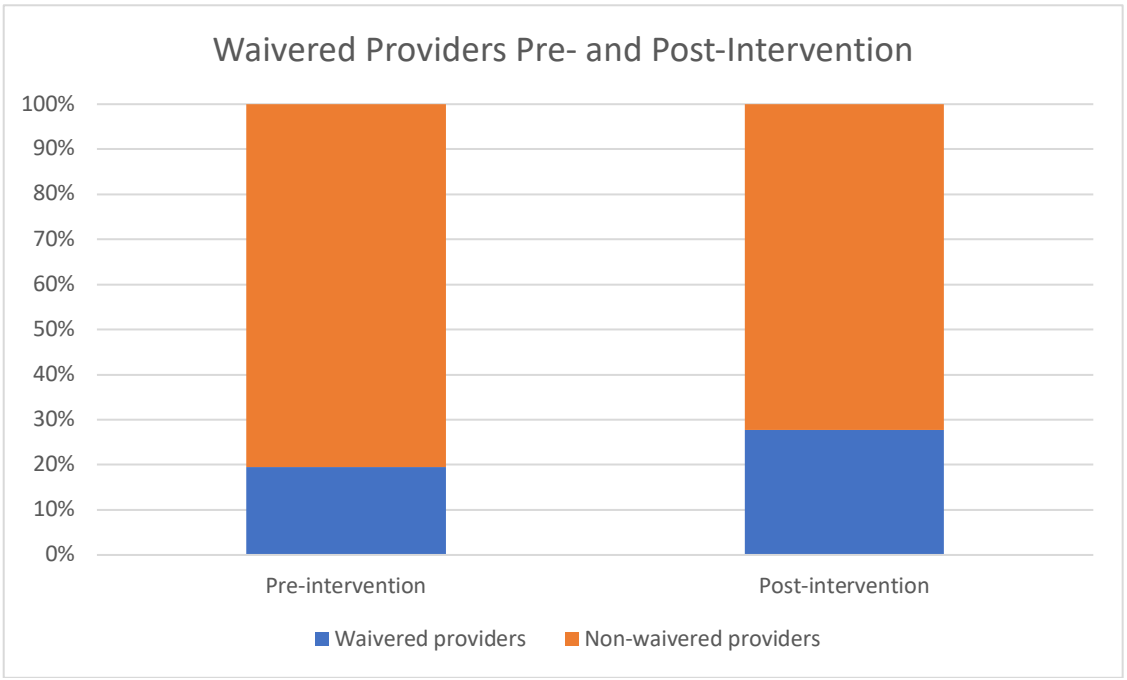
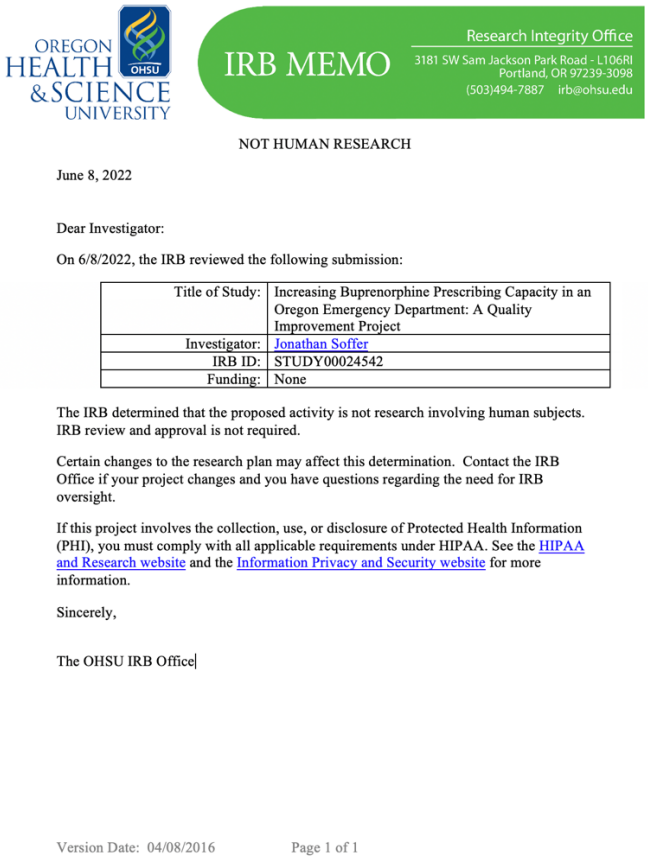


**Figure 8.**
Timeline

| | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec-Mar |
|---|---|---|---|---|---|---|---|---|
| Finalize project design and approach (703A) | X | | | | | | | |
| Complete IRB determination or approval (703A) | | X | | | | | | |
| PDSA Cycle 1 (703B) | | X | X | | | | | |
| PDSA Cycle 2 (703B) | | | | X | X | | | |
| Final data analysis (703B) | | | | | | | X | |
| Write sections 13-17 of final paper (703B) | | | | | | | X | |
| Prepare for project dissemination (703B) | | | | | | | | X |

**Figure 8.**
IRB Exemption Letter



OREGON HEALTH & SCIENCE UNIVERSITY

IRB MEMO

Research Integrity Office
3181 SW Sam Jackson Park Road - L106RI
Portland, OR 97239-3098
(503)494-7887 irb@ohsu.edu

NOT HUMAN RESEARCH

June 8, 2022

Dear Investigator:

On 6/8/2022, the IRB reviewed the following submission:

| | |
|---|---|
| Title of Study: | Increasing Buprenorphine Prescribing Capacity in an Oregon Emergency Department: A Quality Improvement Project |
| Investigator: | Jonathan Soffer |
| IRB ID: | STUDY00024542 |
| Funding: | None |

The IRB determined that the proposed activity is not research involving human subjects. IRB review and approval is not required.

Certain changes to the research plan may affect this determination. Contact the IRB Office if your project changes and you have questions regarding the need for IRB oversight.

If this project involves the collection, use, or disclosure of Protected Health Information (PHI), you must comply with all applicable requirements under HIPAA. See the HIPAA and Research website and the Information Privacy and Security website for more information.

Sincerely,

The OHSU IRB Office

Version Date: 04/08/2016 Page 1 of 1