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Dustin Voss
University of North Dakota

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Early Intervention: Addressing Opioid Use Disorder with Emergency Department Initiated Buprenorphine Therapy

Dustin Voss PA-S, Contributing Author Professor Julie Solberg MPAS

Department of Physician Assistant Studies, University of North Dakota School of Medicine & Health Sciences

Grand Forks, ND 58202-9037

Abstract

- An evaluation of opioid use disorder (OUD) as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) diagnostic criteria.
- The use of buprenorphine in the process of induction, its efficacy for the management of OUD, and barriers to its initiation.
- Outcomes of the initiation of office-based buprenorphine treatment are compared to emergency department-initiated buprenorphine treatment for the management of OUD.
- Results revealed that buprenorphine is effective in treating OUD when appropriate induction and maintenance doses are implemented. However, there continue to be barriers in prescribing that have limited access to the medication.
- Office-based buprenorphine treatment of OUD shows decreased engagement in treatment in the first 30 days.
- Emergency department-initiated buprenorphine treatment reveals increased participation in treatment within the first 30 and 60 days, a decrease in opioid use, and a decrease in adverse opioid-related events.
- The treatment outcome data reveals that at the 6- and 12-month time frames, retention in buprenorphine therapy is essentially the same when comparing both treatment modalities.

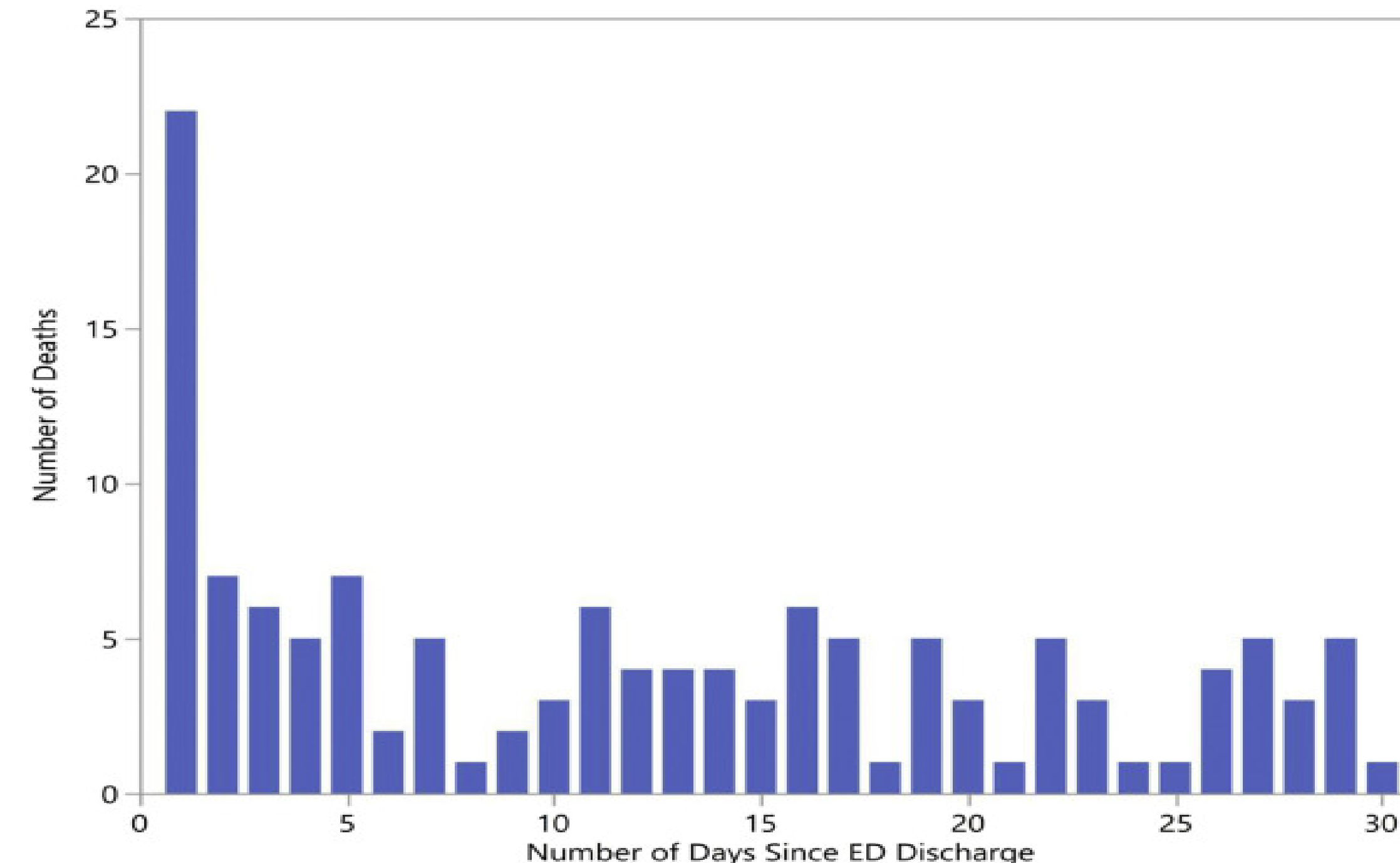
Introduction

- Opioids are deemed the deadliest drug in American history as opioid deaths are currently the leading cause of mortality in Americans under the age of 50 (Katz, 2017).
- There were more than 70,200 drug overdose deaths in the United States in 2017, more than four times the rate of death from overdose since 1999 (NIDA, 2018)
- "Overdoses killed more Americans in 2017 than guns (37,400), car accidents (38,000), or breast cancer (40,000)" (Salmond & Allread, 2019).
- Historically, the use of opioid agonist medications, which include methadone and buprenorphine, have been the mainstays of treatment for opioid abuse. These opioid agonist medications are typically initiated and managed in an outpatient treatment setting.

Statement of the Problem

- Opioid use disorder (OUD) places patients at a higher risk for acute adverse events which often prompts a referral to outpatient treatment.
- The time frame between an adverse event and the initiation of treatment leaves the patient vulnerable to possible re-current opioid-related adverse events.
- For most patients, the course of their addiction frequently involves acute intervention delivered in an emergency room setting.
- In this context, the manifestation of the disease is often evident and provides a unique opportunity for emergency room clinicians to intervene.
- The first month, and particularly the first 2 days after overdose, is the highest-risk period" (Weiner, Baker, Bernson, Schuur, 2019).

Number of deaths after ED treatment for nonfatal overdose by number of days after discharge in the first month, by day (n=130)



Weiner, S., Baker, O., Bernson, D., and Schuur, J. (2019). One-year mortality of patients after emergency department treatment for nonfatal opioid overdose. *Annals of emergency medicine*, 71, 13-17. <http://dx.doi.org/10.1016/j.annemergmed.2019.04.020>

Research Question

- In patients with opioid use disorder with acute adverse health events, does the initiation of buprenorphine treatment from the emergency department compared to the initiation of buprenorphine treatment from an outpatient setting decrease the incidence of acute adverse health events and long-term opioid use/misuse.

Literature Review

Defining the Diagnosis and Addressing the Problem: Opioid Use Disorder

- The American Psychiatric Association (APA) defines opioid use disorder (OUD) in the DSM-5 as, "A problematic pattern of opioid use leading to clinically significant impairment or distress" (American Psychiatric Association, 2013).
- 91.8 million people used prescription opioids in 2016, 11.5 million people misused them, and 1.9 million people had a use disorder (Han et al., 2017).
- Non-Hispanic whites aged between 45-54 experienced the highest rates of mortality, according to the National Center for Health Statistics (Stoicesa et al., 2019).

Initiation and the Efficacy of Buprenorphine in the Treatment of Opioid Use Disorder

- Buprenorphine is a partial mu receptor agonist with a half-life of 37 hours with an affinity for the mu receptor of more than 1,000 times that of morphine. It has been used in the treatment of opioid dependence in the United States since 2002.
- The Clinical Opiate Withdrawal Scale (COWS) is utilized to reference the level of opioid withdrawal in the initiation of treatment (Toce, Chai, Burns, & Boyer, 2018).
- Higher doses of buprenorphine, >16 mg, within the first 30 days of treatment increases retention within the first 30 days (Jacobs et al., 2015).

Literature Review Continued...

Barriers in The Use of Buprenorphine Therapy

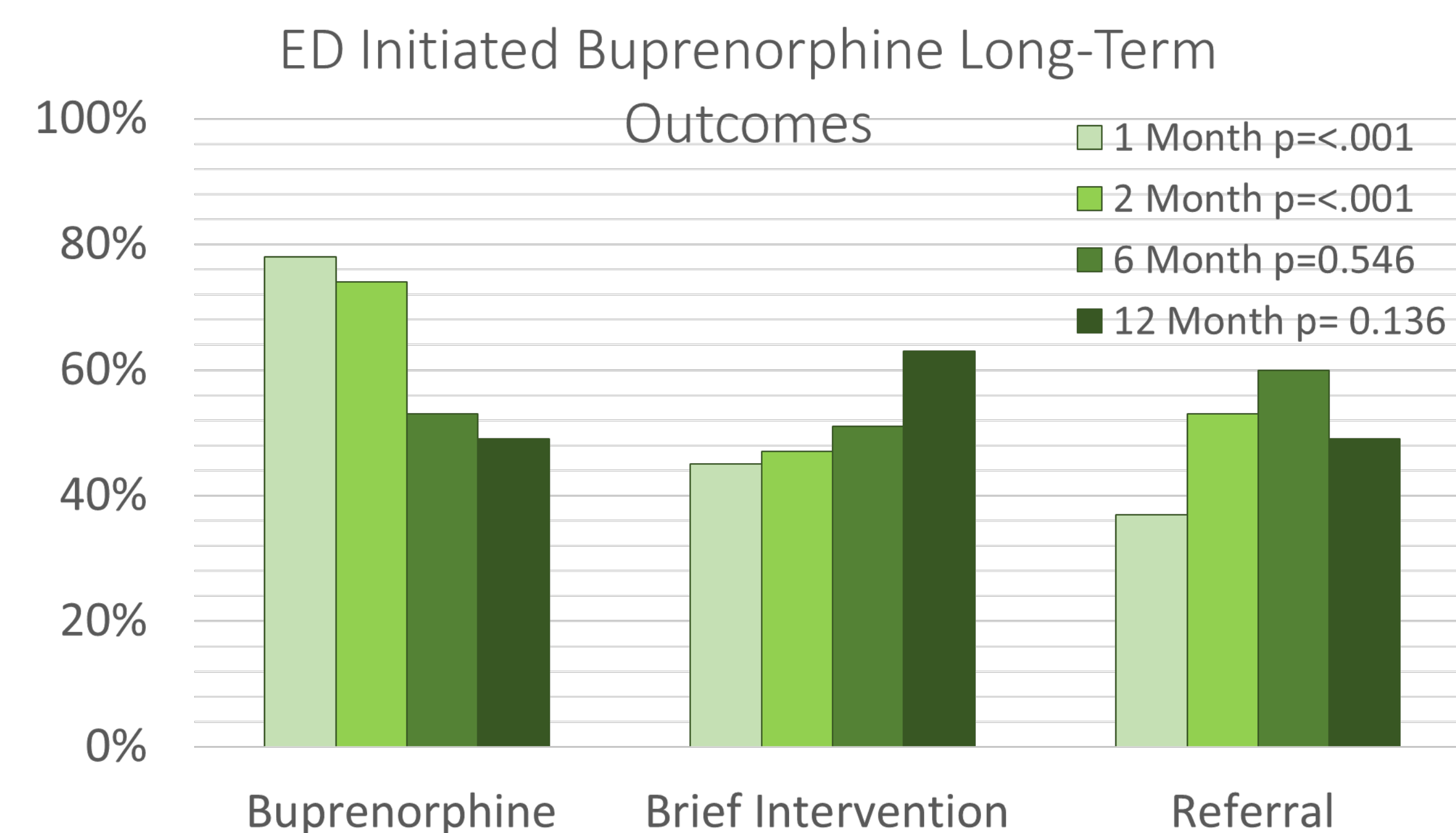
- A lack of formal training in medical school education and the advancement of their practices (Barry et al., 2008).
- Viewing the addicted population as "difficult patients" and the prevailing stigmas surrounding addiction. (Andraka-Christous & Capote, 2018)
- Misconceptions about Medication Assisted Treatment (MAT) in using opioid agonists as "just another drug" to replace the addiction (Andraka-Christous & Capote, 2018).

Evaluation of The Outcomes: Office-Based Treatment of Opioid Use Disorder with Buprenorphine

- 60% patients failed to reach the induction period within 90 days, with 32% dropping out after the initial steps of establishing contact with a treatment facility (Simon et al., 2017)
- The variables associated with early dropout included younger age, unemployment, the absence of chronic pain, the absence of prior suicide attempts, the first-time receiving opioid agonist treatment, and opioid use in one month (Marcovitz et al., 2016).
- Relapse was the reason for disengagement among all treatment periods (32.6%), and relapse was less common among treatment periods greater than one year compared to those less than one year (23.3% vs. 40.1%, $p < 0.0001$) (Weinstein et al., 2016)

Evaluation of Outcomes: Emergency Department Initiated Treatment of Opioid Use Disorder with Buprenorphine

- The patients who received buprenorphine in the ED had a higher likelihood of keeping their follow-up appointments, 86.7% (Edwards et al., 2019).
- MAT intake and retention at 30 days following ED induction were 74% in buprenorphine group versus 49.3% in referral group, respectively (Kaucher et al, 2019).
- Outcome data revealed that patients in the buprenorphine group were receiving addiction treatment at a higher rate at 2-months, (74% 95% CI 65-83) compared to those in the referral (53%, 95% CI 42-64) or brief intervention groups (47% 95% CI 36-58; $p < 0.001$) (D'Onofrio et al., 2017).
- However, the differences were not present at 6 months (53% 95% CI 43-64); (60% 95% CI 48-72); (51% 95% CI 40-63) or at 12 months (49% 95% CI 38-60); (49% 95% CI 38-61); (63% 95% CI 52-74); $p = 0.546$ and $p = 0.136$ (D'Onofrio et al., 2017).



D'Onofrio, G., Chawarski, M., O'Connor, P., Pantalon, M., Busch, S., Owens, P., ... Fiellin, D. (2017). Emergency department-initiated buprenorphine for opioid dependence with continuation in primary care: Outcomes during and after intervention. *Journal of General Internal Medicine*, 6, 660-666. <http://dx.doi.org/10.1007/s11606-017-3993-2>

Discussion

- 60% of referred patients failed to reach the induction of buprenorphine within 90 days. These patients were lost to follow-up in that time frame and did not receive treatment for OUD.
- The patients with a lack of initial treatment response and/or illicit opioid use within the first month were 4.5 times more likely to drop out of treatment.
- The initiation of buprenorphine in the ED is effective in treating OUD in the first 30 days and is successful in engaging patients in outpatient treatment.
- It also provides an opportunity to decrease adverse opioid-related events within the first 30 days and decreases illicit opioid use.
- ED initiated buprenorphine therapy also bridges the gap to outpatient treatment where patients may be lost to follow-up.
- The differences in treatment modalities were eliminated at the 6- and 12-month period where data among all groups approached 50% engagement.

Applicability to Clinical Practice

- Identifying barriers in treating addiction with my own practice.
- Understanding the clinical features that may lead to the diagnosis of OUD.
- Establishing competency with COWS scoring to assess a patient's level of withdrawal and appropriate treatment.
- Earning X-Wavier training education through the DEA to increase access to buprenorphine therapy.
- Identifying and modifying treatment in the "vulnerable" periods such as the first 30 days and 6-month time frames to maintain engagement in treatment.

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