

# Low-Dose Buprenorphine Induction Protocols for Co-Occurring Pain and Opioid Use Disorders

## INTRODUCTION

- In acute care trauma setting, high levels of pain medications are often necessary for symptomatic relief in patients with both an opioid use disorder and pain management needs. This is due to high tolerance secondary to long-standing substance use and the severe nature of the sustained physical injuries.
- For these patients, a medication such as buprenorphine is appropriate, and it is beneficial to start buprenorphine prior to discharge.
- Historically, perceived barriers such as waiting for the patient to be in severe withdrawal or waiting for any full opioid agonists to wash out inhibited the early introduction of buprenorphine.
- By initiating buprenorphine through small doses, known as a low-dose induction, withdrawal symptoms can be minimized, and patients are given the opportunity to receive appropriate treatment earlier during hospitalization.

## METHODS

IRB-approved retrospective cohort analysis of patients admitted to an inpatient acute care trauma service at a level 1 academic hospital between May 1, 2022 and January 31, 2023. All patients included in the analysis received IV buprenorphine during their admission.

### Outcomes evaluated included:

- Completion (or non-completion) of a buprenorphine low-dose induction (defined by a transition to oral Suboxone prior to hospital discharge)
- Induction duration (defined as the length of time from the first dose of IV buprenorphine to the first dose of oral Suboxone)
- Hospital length of stay (LOS)
- Dose of the buprenorphine prescribed at hospital discharge
- Opioid requirements (based on any full opioid agonist medications received). These were measured at 3 different time points:
  1. Prior to the induction
  2. At the conclusion of the induction
  3. At hospital discharge

## RESULTS

36 patients from the predetermined review period were included in the study. The majority were admitted due to a wound or soft tissue infection (36.1%), followed by blunt trauma (33.3%) and penetrating trauma (22.2%). 26 patients (72%) were not on any form of medication for opioid use disorder (MOUD) prior to admission.

29 patients (80.6%) completed the low-dose induction process and were transitioned from IV buprenorphine to oral Suboxone prior to hospital discharge. The median duration of the low-dose induction was 36 hours.

	All Participants (n=36)	Completed Induction (n=29)	Did Not Complete Induction (n=7)
<b>Admission Diagnosis</b>			
Gun Shot Wound	6	6	0
Stabbing	2	1	1
MVC/MCC	4	4	0
Scooter Collision	2	2	0
Pedestrian Struck	4	2	2
Soft Tissue Infection	6	3	3
Wound Infection	7	7	0
Assault	2	2	0
Other	3	2	1
Hospital LOS (Median, Days)	9	9	19

Among the 29 patients who successfully completed the low-dose induction process, the median opioid requirement prior to the induction, at the end of the induction, and at hospital discharge (in OME) were 117.5 mg, 87.5 mg and 50 mg respectively. 26 patients (72%) were discharged with a Suboxone prescription at a median dose of 16 mg total daily. 15 patients (41.7%) were discharged with a short supply of PRN opioid medication at a median dose of 50 mg daily.

Outcomes of Completed Induction	N=29
Baseline Opioid Requirement (OME, mg)	117.5
Opioid Requirement Upon Transition to PO Suboxone (OME, mg)	87.5
Opioid Requirement Upon Discharge (OME, mg)	50
Final Buprenorphine Dose (daily total, mg)	16
Prescribed Buprenorphine on Discharge (N)	26
Prescribed PRN Opioids at Discharge (N)	15

## CONCLUSION

The findings demonstrated that utilizing a low-dose buprenorphine induction protocol resulted in the successful transition to oral Suboxone as both a form of pain management and as a medication for the treatment of opioid use disorder within a trauma population. The protocol also allowed for lower doses of full opioid agonists, if any, to be prescribed at the time of hospital discharge.

### Limitations to consider:

- This study focused on patients admitted to an acute care trauma service, which led to a smaller sample size. More significant findings may be obtained by looking at all patients, regardless of admission service, who received IV buprenorphine as part of a low-dose induction protocol.
- This study did not look at outpatient follow-up. When considering the long-term benefits of Suboxone, it would be useful to observe how many patients continued taking the medication after discharge.

In summary, low-dose induction protocols present a great opportunity to increase the utilization of medications for opioid use disorder (MOUD) in high-risk populations by allowing patients to initiate treatment for their substance use diagnosis prior to hospital discharge, which helps to mitigate the risk of return to use.

## AUTHORS & DISCLOSURES

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