

# Has enhanced recovery after surgery (ERAS) changed opioid prescribing patterns in gynecologic surgery?



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## Introduction

- ERAS is a multimodal approach to perioperative care shown to improve patient outcomes by returning patients to baseline physiology rapidly after surgery.
- ERAS emphasizes the use of opioid-sparing analgesics to achieve post-operative pain management.
- Though it has been shown that ERAS implementation has successfully reduced inpatient opioid use, evidence in the reduction of post-discharge opioid prescribing patterns is lacking.

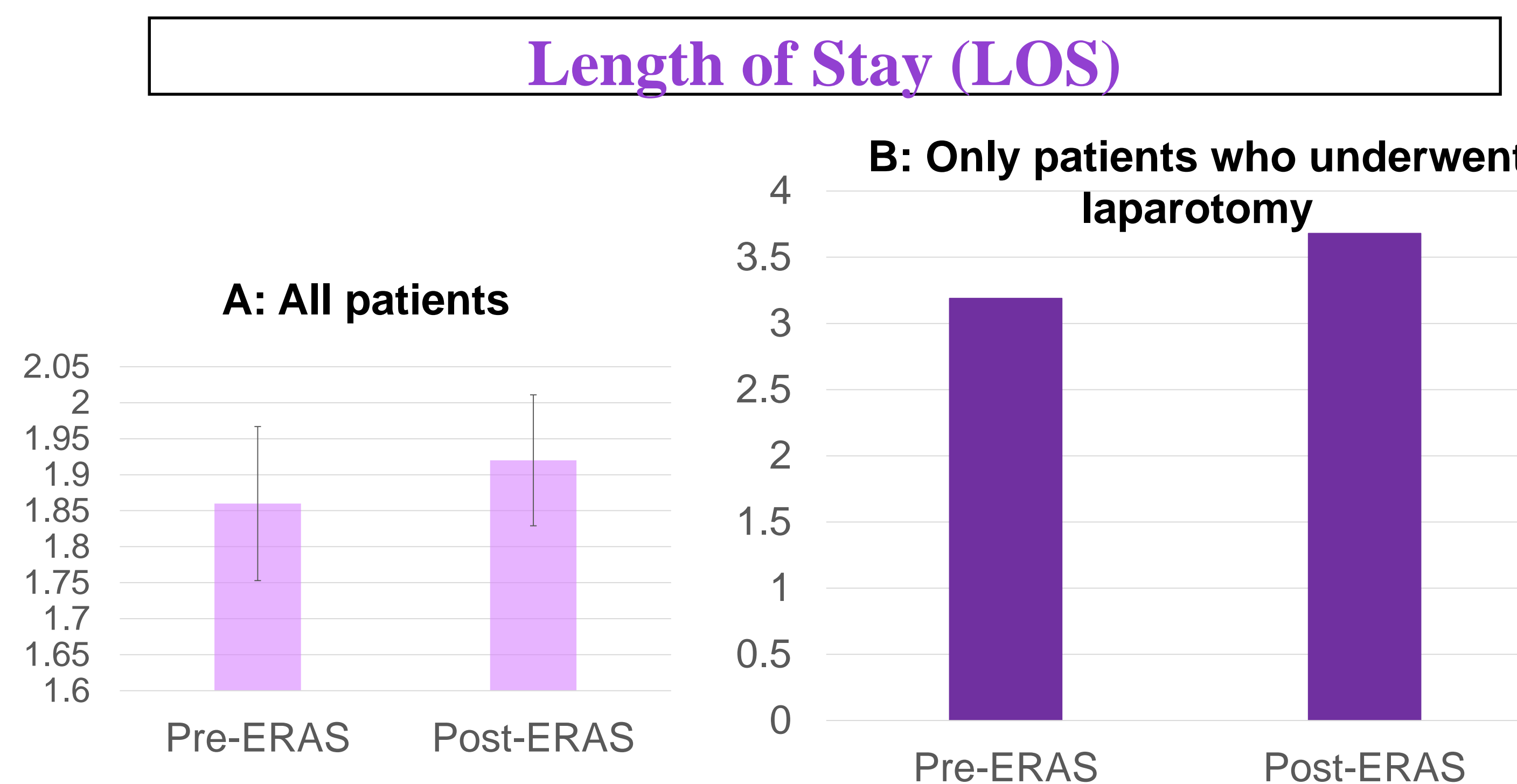
## Methods

- This study includes women undergoing gynecologic surgery at University Medical Center (UMC) both before and after the ERAS program was implemented in March 2019.
- Data was abstracted, and patients were grouped as pre (1/1/18-2/28/19) and post (3/1/19-8/31/21) ERAS implementation.
- Inpatient opioid use and post-discharge opioids prescribed are in the process of being abstracted in milligram morphine equivalents (MME).
- Length of hospital stay, readmission within 30 days, pain scores, and demographics were recorded.
- Minor procedures were excluded from this study.

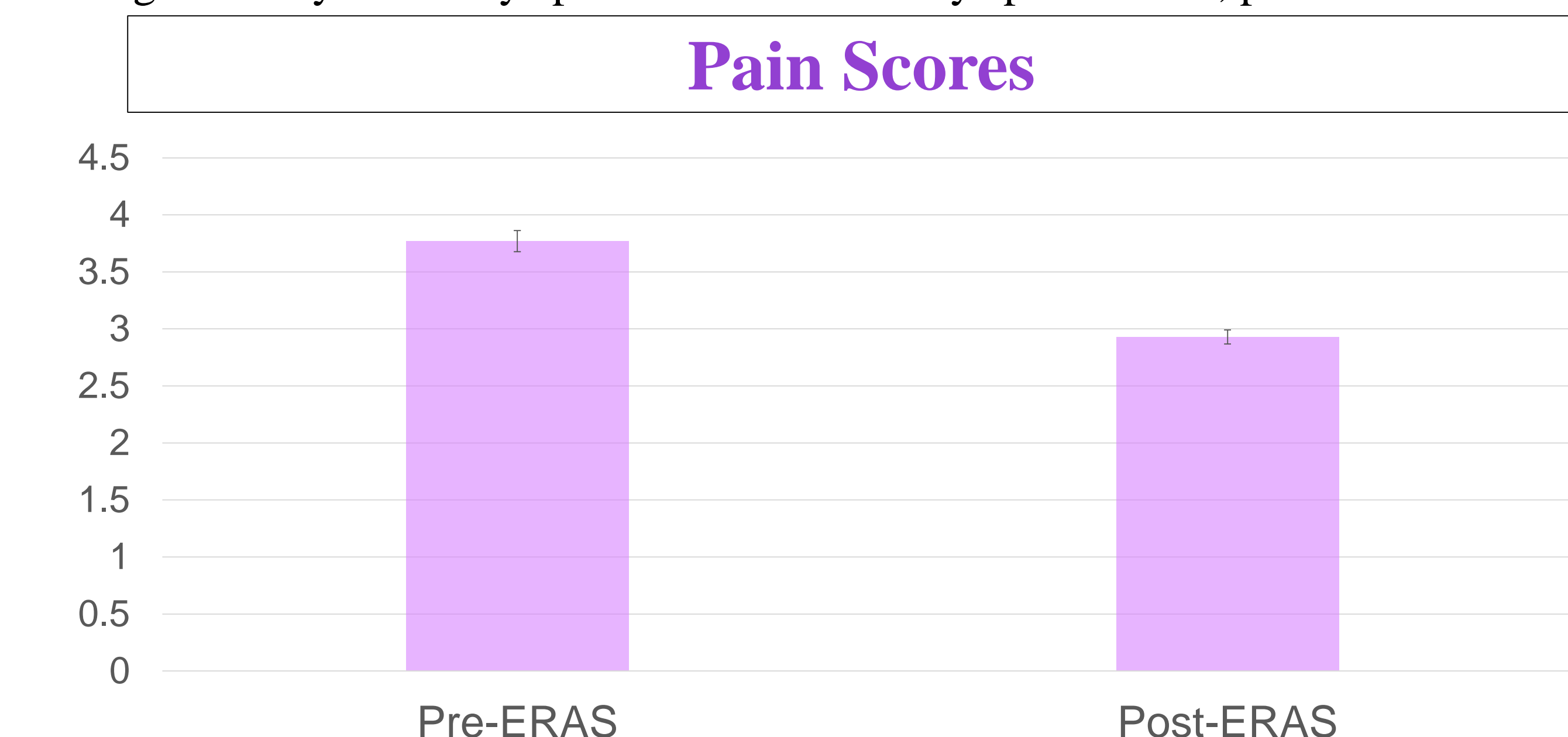
	Pre- ERAS (676)	Post-ERAS (1352)	p-value
White Race	56 (16.3)	159 (20.6)	0.087
Black Race	210 (61.2)	414 (53.6)	
Other Race	266 (77.6)	573 (74.1)	
Hispanic Ethnicity	71 (20.7)	185 (23.9)	0.268
Non Hispanic Ethnicity	272 (79.3)	588 (76.1)	
Private Insurance	64 (18.7)	153 (19.2)	0.719
Public Insurance	279 (81.3)	620 (80.2)	
Age	42.86 (10.23)	43.56 (11.64)	0.311

Table 1. Demographic breakdown of participants in this study.

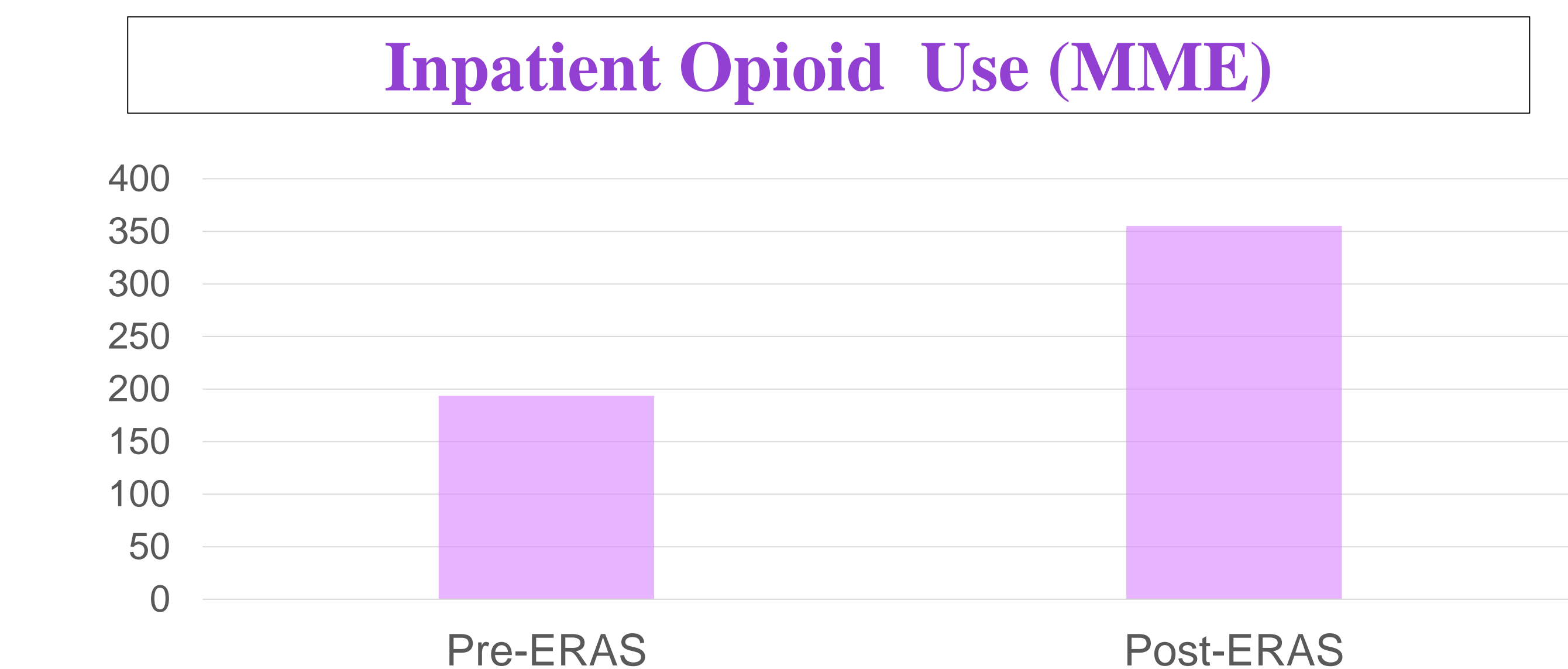
## Results



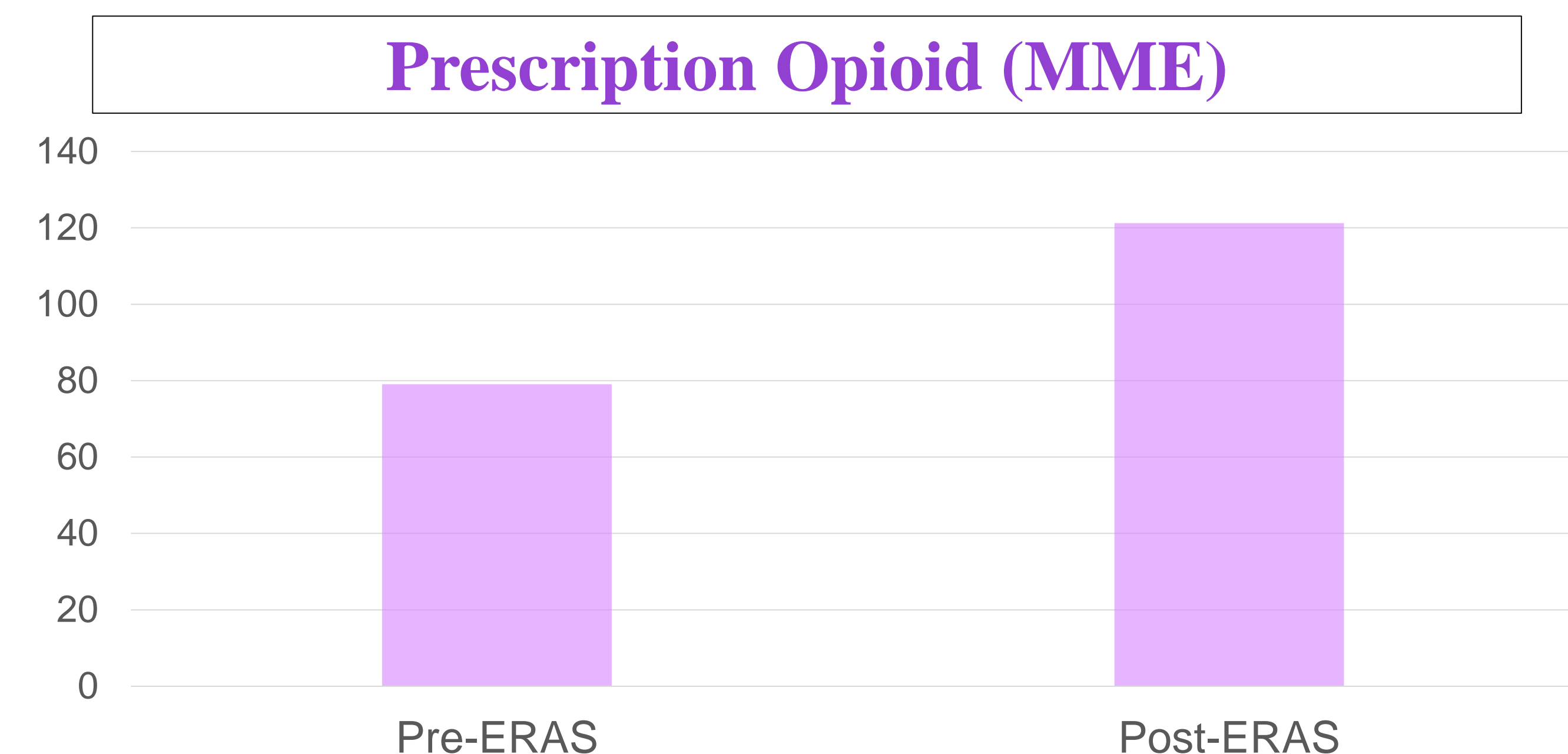
**Figure 1.** Length of stay before and after ERAS implementation. A: Among all patients LOS did not change significantly: 1.86 days pre-ERAS vs 1.92 days post-ERAS, p-value = 0.652 B: Among only patients that underwent a laparotomy, LOS did not change significantly: 3.19 days pre-ERAS vs 3.68 days post-ERAS, p-value = 0.172



**Figure 2.** Average inpatient pain scores before and after ERAS implementation. 3.77 pre-ERAS vs. 2.93 post-ERAS (P-value= <0.001).



**Figure 3.** Average inpatient opioid use before and after ERAS implementation. 193.59 MME pre-ERAS vs. 355.08 MME post-ERAS (P-value <0.001).



**Figure 4.** Average post-discharge opioids prescribed: 79.07 MME pre-ERAS vs. 121.26 MME post-ERAS (P-value= 0.002).

- There was no difference between the pre- and post-ERAS implementation groups in terms of age, race, and insurance type (Table 1).
- There was no significant difference in hospital LOS after ERAS implementation in all patients and also among those that underwent laparotomy (Figure 1).
- Average inpatient pain score significantly decreased from the pre-ERAS group 3.77 compared to post-ERAS 2.93 (P-value= <0.001) (Fig. 2).
- Contrary to expectation, we found that ERAS implementation significantly increased the amount of inpatient opioids used (193.59 MME pre-ERAS vs 355.08 MME post-ERAS, p-value <0.001) as well as the post-discharge opioids prescribed (79.07 MME pre-ERAS vs 121.26 MME post-ERAS, p-value= 0.002) (Fig. 3&4).

## Conclusions/ Future Directions

- Implementation of ERAS significantly reduced average inpatient pain scores in this patient population without change in hospital length of stay.
- Interestingly, we found that inpatient opioid use and post-discharge opioids prescribed increased since the implementation of ERAS. These results are not consistent with findings from similar studies.
- It is possible that due to the COVID-19 global pandemic, patients requiring surgery since March 2020 had more risk factors and or disease that had progressed due to delay in presentation. This may put them at risk for worse pain that would result in higher opioid use.
- We plan to break down the post-ERAS implementation groups into pre- and post- COVID-19 pandemic to evaluate for differences.