Discharge on MOUD Reduces Relapse in Trauma Patients with Prior Opioid Dependence

Introduction

- Opioid use disorder (OUD) is a common comorbidity in trauma patients, present in ~1% of operative trauma cases (reflecting around 15,000 patients annually in the US)
- Inpatient admission provides an opportunity to engage patients with OUD and initiate addiction treatment
- Post-operative pain management in OUD patients is challenging
  - Concerns of ensuring appropriate analgesia
  - Fear of worsening addiction in those with active OUD or causing relapse in those with OUD in remission
  - Patients may already be on a medication for opioid use disorder (MOUD), typically either buprenorphine-naloxone (bup-nx) or methadone
- It has been established that addiction consult services (ACS) and the initiation of MOUD before discharge for hospitalized patients with OUD lead to improved outcomes
- No study has examined the impact of these interventions on one-year relapse status in surgical trauma patients with OUD

Methods

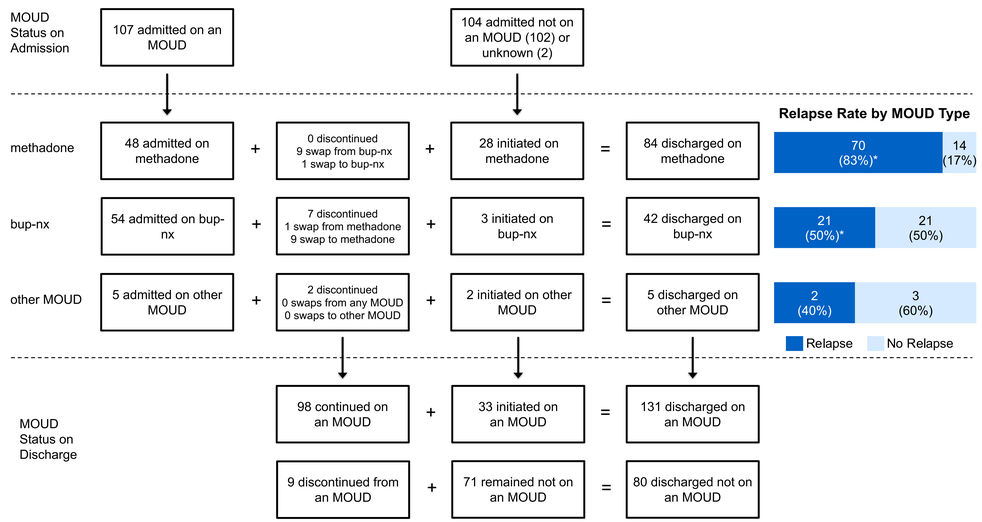
- Retrospective cohort study identified all adult (ages 18+) patients with documented prior diagnosis of OUD admitted to the trauma surgery service at an urban level-one trauma center from 1/1/2017 to 12/31/2022
- Stratified patients by one-year post-discharge relapse status, with relapse defined as any non-prescribed (illegal and/or non-prescribed prescription) opioid use in the year following discharge
- MOUD status at admission as well as initiation, continuation, or discontinuation of MOUD prior to discharge were characterized
- Last use of non-prescribed opioids prior to hospitalization (either less than or greater than 12 months) was used as a proxy to measure OUD as being active or in sustained remission
- Two modified Poisson models were used to estimate relative risk and 95% confidence intervals of relapse within one year with one model including impact of MOUD at discharge and the other MOUD on admission

Results

- Among 211 patients meeting inclusion criteria, the incidence of relapse in the study cohort at one-year was 61% (n=128)
- Patients were largely male, White, and government insured
- Those who relapsed tended to be younger (p=0.022), were more likely to be injured via violent intent (p=0.004), and had a shorter hospital length of stay (LOS) (p=0.012)

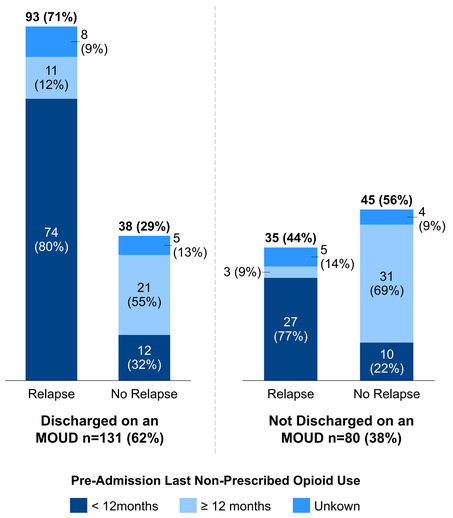
Results

Figure 1: MOUD status on admission and inpatient OUD management, including MOUD continuation, discontinuation, and initiation with associated one-year relapse rates by MOUD type (n=211).



* Denotes significance on analysis of relapse rates between methadone and bup-nx (p<0.0001)

Figure 2: Distribution of last use of non-prescribed opioids prior to admission by time period among MOUD discharge status subgroups by relapse status at one year.



Model 1: Adjusted analysis of relapse at one year for the presence of any MOUD upon discharge and addiction consultation services

Variable	Relative Risk of Relapse	Confidence Interval	p-value
Discharged on an MOUD			
Yes	0.66	0.50 - 0.89	**0.005**
No	ref.	ref.	
Addiction Consult Service			
Yes	0.89	0.70 - 1.12	0.317
No	ref.	ref.	

Note: Model adjusted for last non-prescription opioid use less than 12 months prior to admission (RR=3.54, 95% CI [2.22 - 5.66], p<0.0001), violent intent of injury (RR=1.09, 95% CI [0.90 - 1.31], p=0.368), age (RR=1.00, 95% CI [0.99 - 1.00], p=0.391), ISS (RR=0.99, 95% CI [0.98 - 1.01], p=0.210), and LOS (RR=1.00, 95% CI [0.99 - 1.01], p=0.855).

Model 2: Adjusted analysis of relapse at one year for the presence of any MOUD upon admission and addiction consultation services

Variable	Relative Risk of Relapse	Confidence Interval	p-value
Admitted on an MOUD			
Yes	1.10	0.91 - 1.34	0.331
No	ref.	ref.	
Addiction Consult Service			
Yes	1.04	0.83 - 1.30	0.753
No	ref.	ref.	

Note: Model adjusted for last non-prescription opioid use less than 12 months prior to admission (RR=3.92, 95% CI [2.34 - 6.56], p<0.0001), violent intent of injury (RR=1.10, 95% CI [0.89 - 1.35], p=0.373), age (RR=1.00, 95% CI [0.99 - 1.01], p=0.365), ISS (RR=0.99, 95% CI [0.99 - 1.01], p=0.779), and LOS (RR=1.00, 95% CI [0.99 - 1.00], p=0.477).

Conclusions

- Discharge on an MOUD of any kind was associated with a 34% lower rate of relapse in the year following hospitalization, suggesting MOUD to be a protective factor against relapse
- Conversely, being admitted on an MOUD was not protective against relapse, suggesting focus should be placed on ensuring an MOUD is continued or initiated during hospitalization
- There was no significant reduction in relapse with the ACS; however, this might reflect provider bias, where high-risk patients were preferentially consulted, rather than its lack of effectiveness
- Given prior studies have shown the ACS to be effective among hospitalized OUD patients, and since the ACS is typically needed for MOUD initiation, the ACS intervention remains important
- New MOUD users were more likely to be initiated on methadone and existing MOUD users were more likely to have their bup-nx swapped to methadone, yet relapse rates were 33% higher among those discharged on methadone compared to bup-nx
- Important limitations of this study include having about one-third of the potential study cohort excluded due to missing relapse data and the study definition of relapse potentially overestimating relapse among those without ample time to truly be abstinent
- Further research should
  - Explore efficacy of discharge on MOUD in reducing relapse rates
  - Assess benefits of procedures to screen all trauma patients at admission for OUD to fully capture the extent of addiction history, allowing for most appropriate treatment
  - Determine if bup-nx is a superior MOUD for trauma patients with OUD

Authors and Disclosures

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