

# Patient-directed discharges are associated with poor health outcomes in opioid use disorder



## INTRODUCTION

- People with opioid use disorder (OUD) frequently leave the hospital before their treatment course is complete.
- There is a wide range in reported incidence of patient-directed discharge (PDD) amongst patients with OUD (4.8%- 49%<sup>1,2,3</sup>), and there are inconsistently reported adverse health outcomes associated with PDD<sup>4,5</sup>.
- Overall, these findings make it challenging to assess the scope and clinical significance of PDD in patients with OUD.
- This study will describe the rate of PDD among patients with OUD and its relationship to significant medical outcomes including 30-day re-hospitalization, ICU stays and mortality at a large urban hospital system in North Philadelphia.

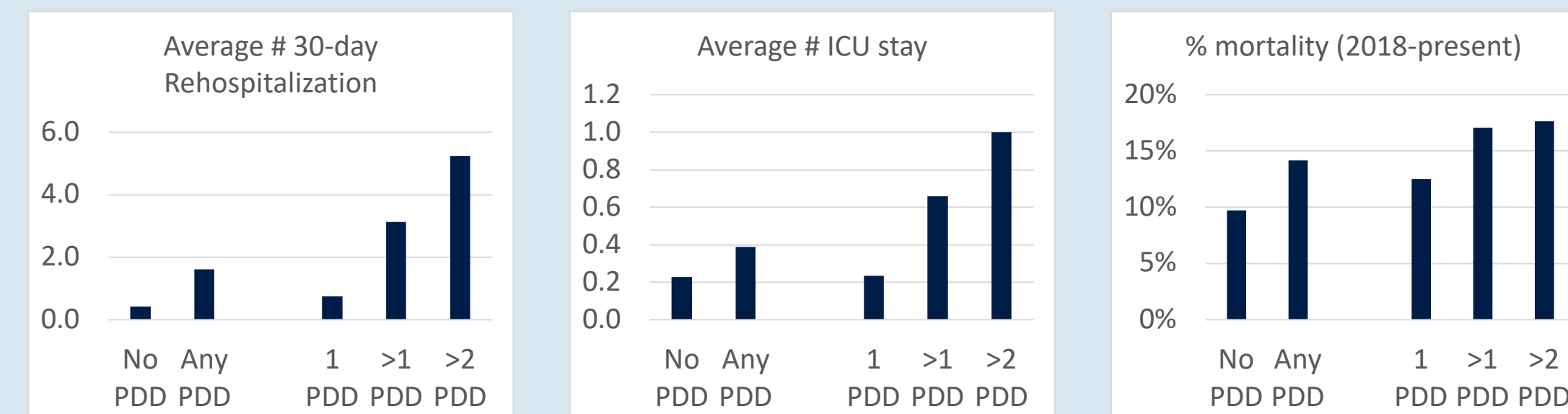
## METHODS

- A patient list was generated by searching the electronic health record (EHR) for patients with OUD-related diagnoses that were hospitalized between 2018 and 2020. Patients confirmed to have OUD and an unplanned hospitalization were included in the study.
- Charts were manually reviewed to determine incidence of PDD, re-hospitalization, ICU stays and mortality as well as to collect demographic and comorbidity data.
- Odds Ratios were calculated to assess the impact of PDD on 30-day re-hospitalization, ICU admission and mortality. Negative binomial regression and multiple logistic regression were used as appropriate. Sex, housing insecurity and Charlson comorbidity index were used to account for potential sources of confounding.
- Preliminary death information was provided by EHR, though final determination will include records from the Pennsylvania Department of Health.
- Power analysis using anticipated mortality endpoints and PDD rates indicate a need for a sample size of 2800 patients. Our present results are a preliminary assessment of 462 patients.

## RESULTS

	No PDD (%)	Any PDD (%)	1 PDD (%)	> 1 PDD (%)	> 2 PDD (%)
Total patients	349 (76%)	113 (24%)	72 (16%)	41 (9%)	17 (4%)
Percent of patients with housing insecurity	38%	61%	53%	73%	59%
Average age	48.85	45.68	46.56	44.15	44.53
Average CCI	2.67	2.64	2.68	2.56	2.88
Average number of hospitalizations	2.20	3.96	2.72	6.12	9.71
Average number of 30-day re-hospitalizations	0.42	1.61	0.75	3.12	5.24
Average number of ICU stays	0.23	0.39	0.24	0.66	1.00
Number of deaths (2018 to present)	34 (10%)	16 (14%)	9 (13%)	7 (17%)	3 (18%)

**Table 1. Age, CCI, housing insecurity and primary endpoints stratified by patient-directed discharge**



**Graph 1 a, b and c. Unadjusted primary endpoints**

No PDD vs.	Any PDD	1 PDD	>1 PDD	>2 PDD
<b>30-Day Re-hospitalization</b>	6.5 (4.1-10.3)	2.7 (1.5-4.6)	178 (24-1319)	154 (9.1-2609)
<b>ICU Stays</b>	1.5 (0.9-2.4)	0.9 (0.46-1.67)	3.2 (1.6-6.1)	4.1 (1.5-11.0)
<b>Mortality</b>	1.5 (0.8-2.9)	1.3 (0.6-2.9)	1.9 (0.8-4.6)	2 (0.5-7.3)

**Table 2. Unadjusted odds ratios for primary endpoints**

Negative Binomial Regression (Effect of PDD)		
<b>30-Day Re-hospitalization</b>	$\beta = 1.6$ (1.4-1.7)	$p < 0.001$
<b>ICU stays</b>	$\beta = 1.2$ (1.1-1.4)	$p < 0.001$

**Table 3. Multivariate regression for effect of PDD on primary outcomes with age, CCI, housing insecurity and sex as possible confounders**

## CONCLUSION

- Patients with OUD have a high rate of PDD (24%).
- Patients with OUD who leave via PDD are at higher risk for 30-day re-hospitalization and ICU stay.
- Some patients with OUD leave via PDD repeatedly, and these patients have worse outcomes.
- Though not powered to see an effect of PDD on mortality, our preliminary data are consistent with prior evidence that suggest increased mortality rates for patients with OUD who leave via PDD.
- Our results suggest that PDD may represent a bona fide risk factor for patients with OUD that could be targeted to improve health outcomes in hospitalized patients with OUD.
- Studies that define reasons for PDD among patients with OUD<sup>6</sup> including inadequate withdrawal or pain management, stigma, discrimination, and hospital restrictions will be valuable for designing targeted interventions to reduce PDD in OUD.

## AUTHORS & DISCLOSURES

Gordon Hill<sup>1,A</sup>, Alyssa Lombardi<sup>2,A</sup>, Lauren Gaffaney<sup>1,A</sup>, Hannah Hill<sup>1,A</sup>, Julie Gutekunst<sup>1,A</sup>, Hugh Davis<sup>1,A</sup>, Stephen Woloszynek<sup>3,A</sup>, and Sam Stern<sup>1,A</sup>  
 1. Department of Medicine, Lewis Katz School of Medicine, Temple University Hospital; 2. Department of Emergency medicine, Temple University Hospital; 3. Department of Anesthesiology, Perioperative and Pain Medicine, Brigham and Women's Hospital  
 A. Nothing to disclose

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