Examining Post-Operative Opioid Prescribing Patterns Following Urologic Surgery Using an Enterprise-Wide Electronic Medical Record

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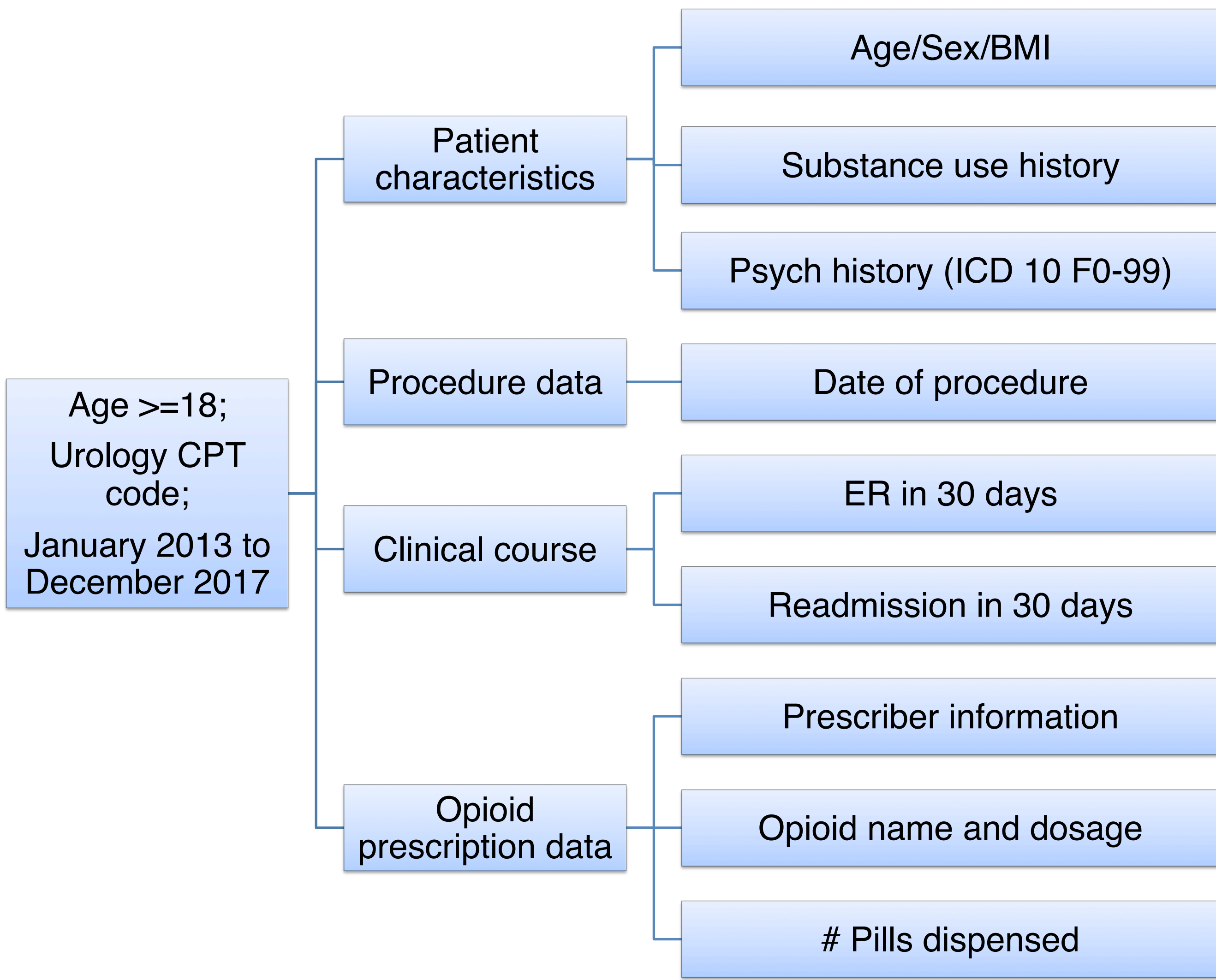[1]Department of Urology, Yale School of Medicine, New Haven, CT

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Introduction

- Opioid misuse and over prescription is a public health problem in the United States affecting over 3 million people in 2016
- In March 2016, the CDC developed guidelines to decrease opiate prescriptions
- Health information technology & electronic medical records have been used to curb opioid over prescription
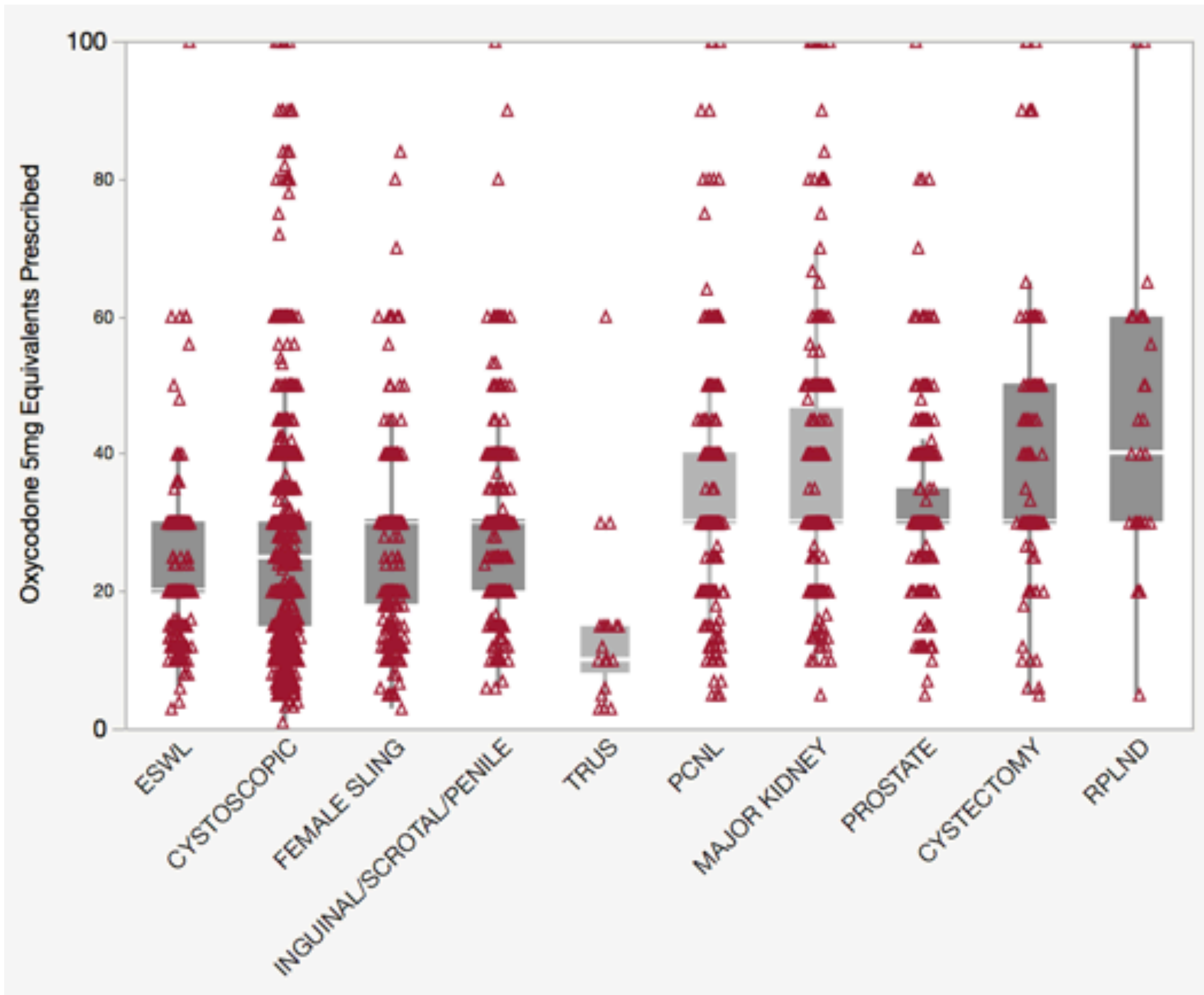
Materials & Methods

- Centralized Epic electronic medical record (EMR) used to identify 11,807 patients who underwent 8,238 urologic surgeries (Figure 1)
- Dispensed opioid doses converted to oxycodone 5mg equivalents
- Scripts stratified as high (>30 pills) vs low (≤30 pills) dose
- Multivariable logistic regression used to assess factors and outcomes associated with high dose therapy and receipt of opioids

Figure 1. Patient inclusion and EMR search criteria

Figure 2. Opioid prescriptions stratified by surgery

Table 1. Multivariable logistic regression of risk factors and outcomes for opioid receipt or high doses

	Opioid receipt			Opioid high dose		
	OR	95% CI	p-value	OR	95% CI	p-value
Age	0.976	0.973 0.979	<0.001*	0.99	0.985 0.996	<0.001*
Male	1.003	0.92 1.093	0.946	1.275	1.079 1.507	0.004*
BMI	1	1 1.001	0.458	0.997	0.985 1.008	0.575
YNHH	2.045	1.878 2.228	<0.001*	2.41	2 2.904	<0.001*
Major Surgery	6.25	5.44 7.18	<0.001*	3.561	3.021 4.197	<0.001*
Current smoker	1.09	0.956 1.243	0.196	1.316	1.058 1.636	0.014*
Alcohol use	1.161	1.066 1.264	<0.001*	0.951	0.811 1.114	0.534
Methadone/suboxone	0.788	0.563 1.104	0.166	1.759	1.05 2.945	0.032*
Psychiatric history	0.826	0.747 0.914	<0.001*	1.248	1.034 1.507	0.021*
ER 30 days	1.252	1.113 1.408	<0.001*	1.061	0.857 1.313	0.587
Readmission 30 days	0.975	0.89 0.107	0.593	1.206	1.015 1.431	0.033*
2016/2017	1.302	1.197 1.415	<0.001*	0.351	0.298 0.413	<0.001*

Figure 3. Trend in prescribing patterns by year

Results

- 44% (5,632) received opioids
- 16.6% (936) prescribed high doses
- Median prescribed dose: 30 (IQR 20-30)
- Range: 0-1440
- Significant variation seen in # opioid pills prescribed (Figure 2)
- High # opioid pills associated with younger age, male gender, major surgery, tobacco use, methadone use, psychiatric history, and increased likelihood of ER visit within 30 days (Table 1)
- Median # pills prescribed decreased to 20 (IQR 12-30) in 2017 from 30 in prior years (Figure 3)

Conclusion

- Many risk factors associated with higher doses of narcotics are associated with opioid abuse
- Decreasing opioids have been prescribed in recent years and may reflect increasing awareness of the opioid epidemic