Disparities and Healthcare Utilization Among General Surgery Patients with Opioid use Disorders

Lakshika Tennakoon, MD MSc MPhil and Lisa Mary Knowlton, MD MPH FACS

Department of Surgery, Stanford University

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Background

- Opioid use disorder (OUD) is a major public health problem
- It is devastating among general surgery (GS) patients
- Use of opioid as an analgesic increased between 2001-2019
- The United States consume 80% of the global opioid supply
- Opioid-related overdoses account for higher rates of mortality

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Study Aims and Hypothesis

Study Aims:

- To understand the association between OUD among GS patients and their health outcomes
- To investigate the differences in mortality, costs, length of stay, and disposition among OUD and non-OUD in general surgery patients

Hypothesis:

- General surgery patients with OUD will be associated with higher rates of mortality and increased healthcare costs

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Methodology

Database: We queried the 2017 Nationwide Inpatient Sample (NIS)

- NIS is a part of the Healthcare Cost and Utilization Project (HCUP)
- The largest publicly available all-payer inpatient database in the United States
- NIS represents approximately 97 percent of the U.S. population
- It is a 20 percent stratified sample of discharges from U.S. community hospitals
- NIS data can be weighted to generate national estimates

Study design: A retrospective analysis

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Study Population

- Patients ≥18 years admitted for a general surgery (GS) operative procedure
- **Diagnosis of Opioid Use Disorder (OUD)** defined by ICD-10-CM diagnostic criteria. OUD was categorized as abuse, dependence, or poisoning
- **General surgery operative procedure (GS)** defined by ICD-10-CM procedure codes for general surgery conditions such as: appendicitis, diverticulitis, hernia, intestinal obstruction, pancreatitis, pelvic disease, surgical infections, traumatic injuries, abscess, and cholecystitis
- **Psychiatric diagnoses** defined by ICD-10-CM diagnostic criteria for depression, anxiety, stress, polysubstance abuse, and psychosis

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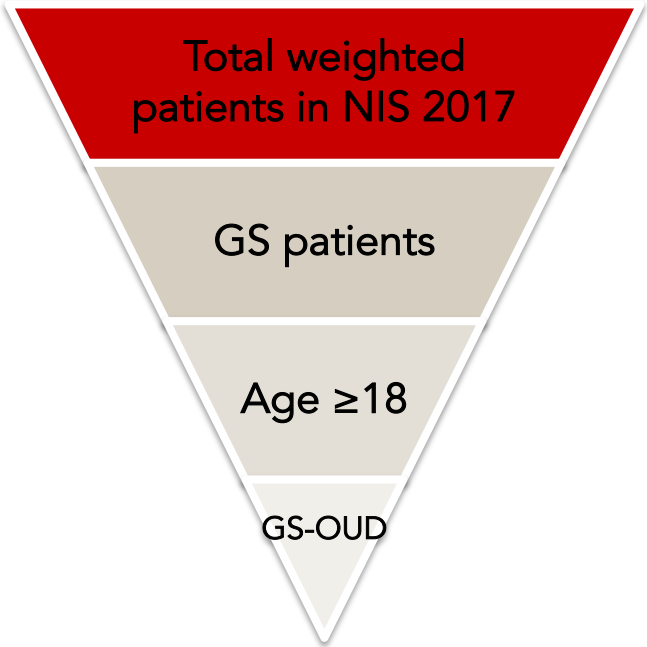
Methodology

Primary outcome: In- Hospital Mortality

Secondary outcomes:

- Discharge disposition
- Length of stay
- In-hospital costs



157, 816 inpatient visits related to GS-OUD (weighted)

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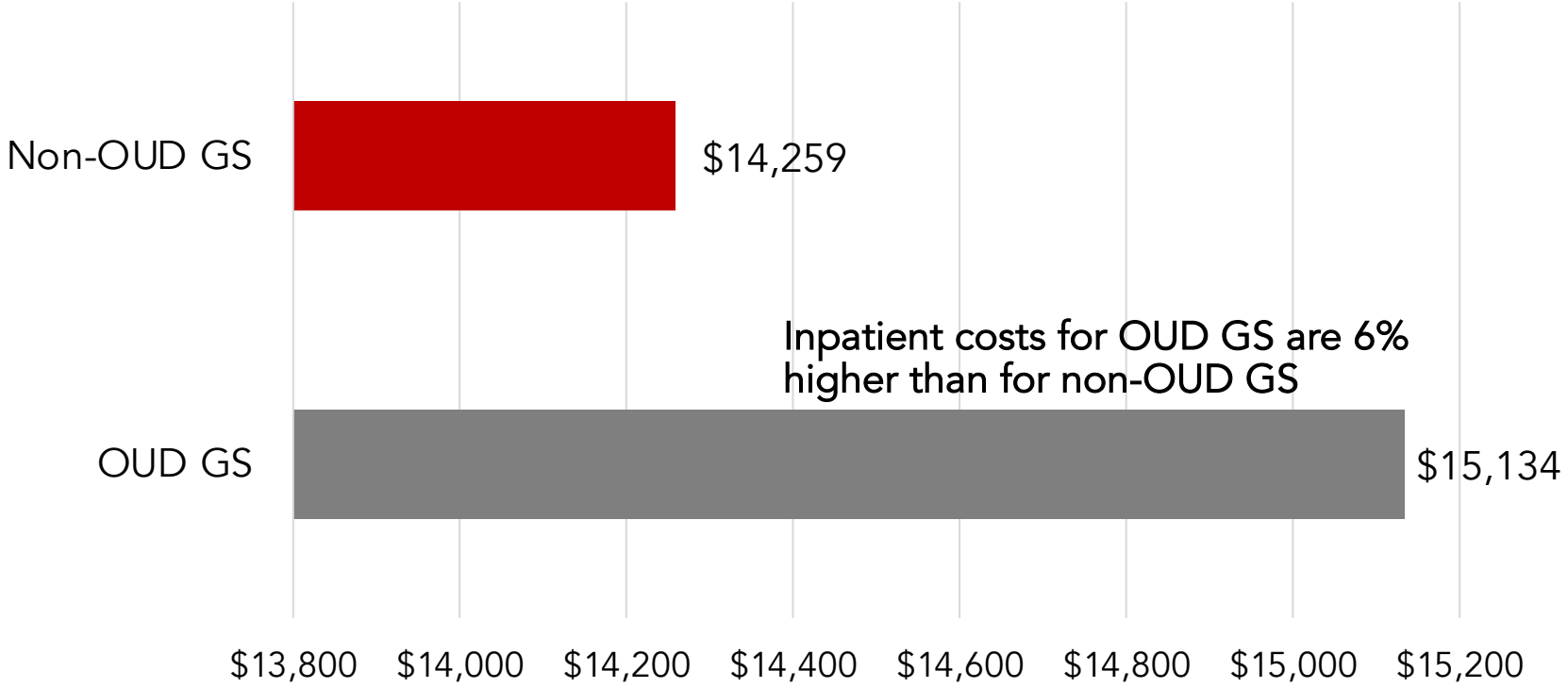
Characteristics of Patients

N = 4,445,518 (100%)	GS non-OUD 4,287,702 (96.4%)	GS-OUD 157,816 (3.6%)	p-value
Age	62 years	52.6 years	<0.001
Male	22.3%	50.4%	<0.001
Polysubstance abuse	23.8%	76.9%	<0.001
Medicare/Medicaid	66.0%	73.0%	<0.001
Inpatient Mortality, %	1.5%	2.5%	<0.001
Discharge Home	55.7%	51.8%	<0.001
Length of stay, days	5.0	6.5	<0.001
Transfer to a Teaching Hospital	71.5%	74.9%	<0.001

Inpatient Costs

p<0.001



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Logistic Regression

Among GS patients, OUD had 3.5 times higher odds of mortality (p<0.001)

GS-OUD Patients Only	odds ratio	p-value	95% CI
Age 50-59 years	2.32	<0.001	1.41-3.94
60-69 years	3.21	<0.001	1.91-5.53
70-79 years	3.57	<0.001	1.92-6.31
Non-teaching Hospital	2.11	<0.001	1.20-3.29

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Study Limitations

- Retrospective investigation
- Patient population derived from an administrative database
- Underutilization of ICD-10 coding in healthcare billing data
- Opioid related medication data are not available

Conclusion

General Surgery and Opioid use disorder patients are:

- Younger and more often males
- Higher rates of polysubstance abuse
- More likely to use Medicaid or Medicare
- Longer length of stay
- Mostly treated in the teaching hospitals
- GS-OUD patients are more costly and have 3.5 times higher odds of mortality

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What should we do Next?

- Recognize opioid use disorder as an ongoing public heath problem among general surgery patients
- Improve provider education regarding prescribing practices
- Design prospective studies among general surgery patients studying the implications of opioid use
- Increase funding for OUD-based research and interventions

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For questions regarding this presentation, please email:
lakshika@stanford.edu

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