

# Percutaneous Coronary Intervention in Ambulatory Surgery Centers

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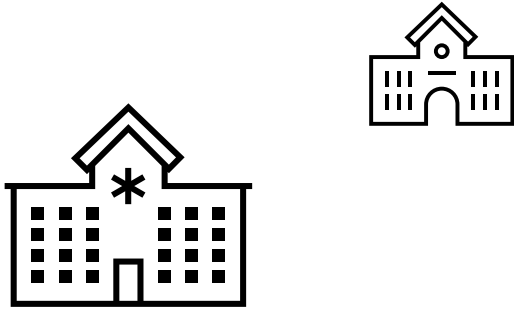
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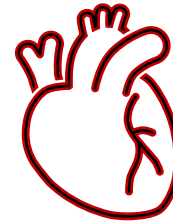


# What are Ambulatory Surgery Centers (ASCs)?

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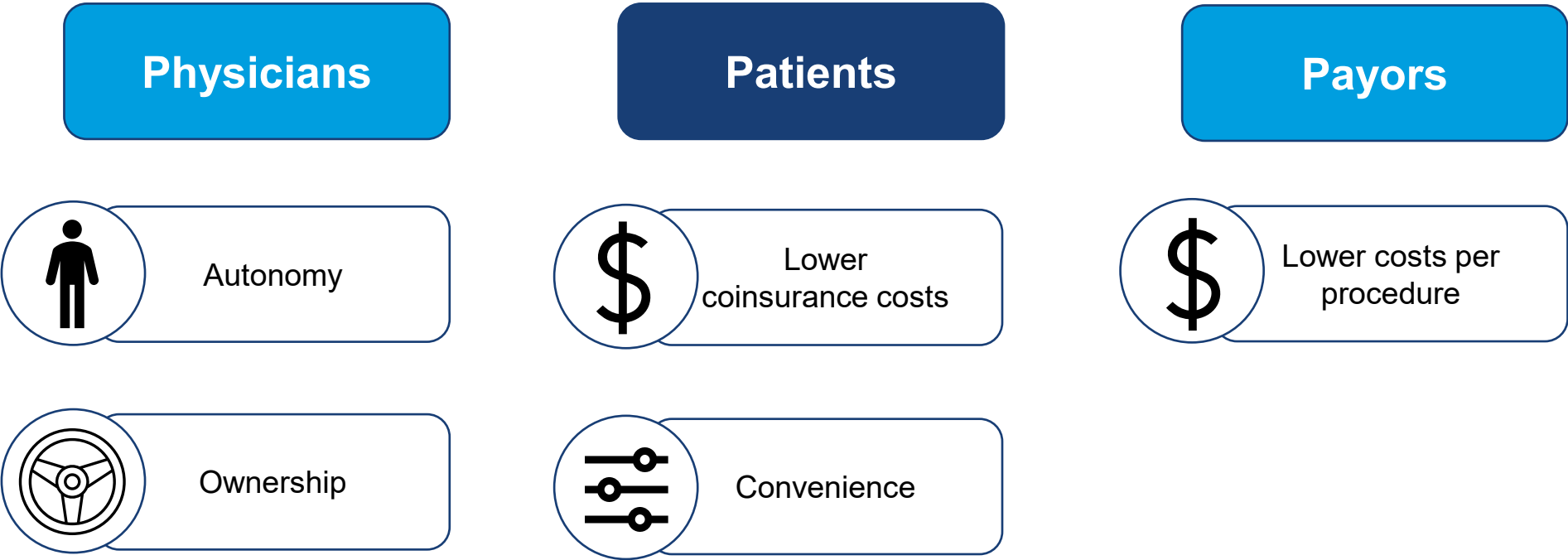
ASCs are free-standing centers providing outpatient procedural care with same-day discharge



The number of cardiovascular procedures in ASCs is growing

# The Value Proposition

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NEWS > Daily News

# CMS Finalizes Rule Allowing Reimbursement of PCI in Ambulatory Centers

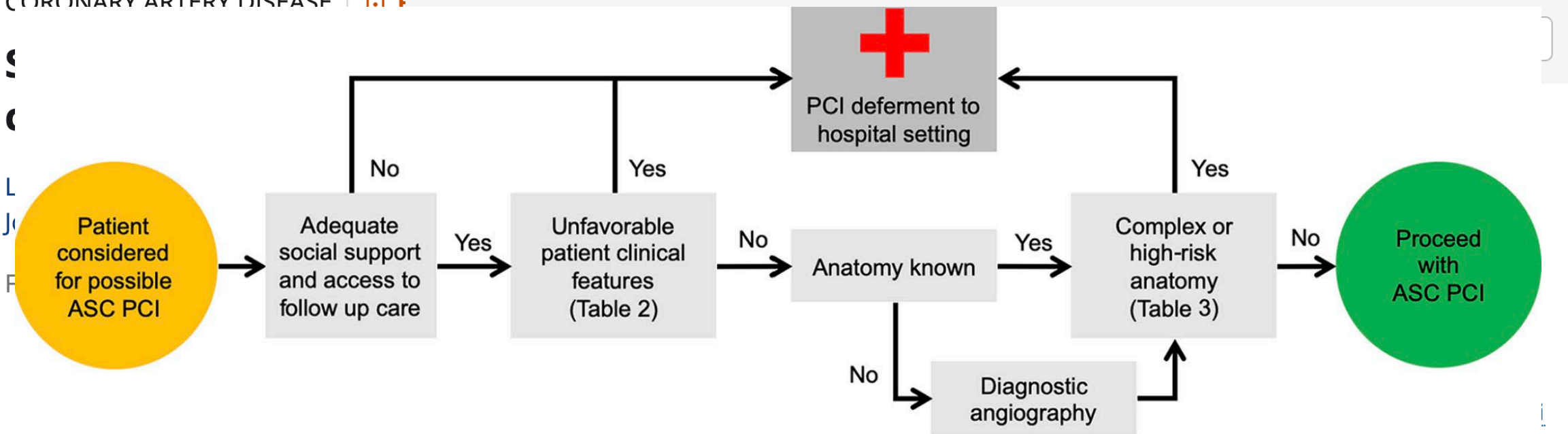
Seen as a possible way to save money, the rule, supported by the ACC and SCAI, will go into effect on January 1, 2020.

by [Todd Neale](#) | NOVEMBER 04, 2019

TABLE 1. APPROVED CPT CODES FOR PCI PROCEDURES IN THE ASC SETTING

CPT Code	Descriptor
92920	Percutaneous transluminal coronary angioplasty; single major coronary artery or branch
92921	Percutaneous transluminal coronary angioplasty; each additional branch of a major coronary artery (list separately in addition to code for primary procedure)
92928	Percutaneous transcatheter placement of intracoronary stent(s), with coronary angioplasty when performed; single major coronary artery or branch
92929	Percutaneous transcatheter placement of intracoronary stent(s), with coronary angioplasty when performed; each additional branch of a major coronary artery (list separately in addition to code for primary procedure)
C9600	Percutaneous placement of drug-eluting intracoronary stent(s), with coronary angioplasty when performed; single major coronary artery or branch
C9601	Percutaneous transcatheter placement of drug-eluting intracoronary stent(s), with coronary angioplasty when performed; each additional branch of a major coronary artery (list separately in addition to code for primary procedure)
Abbreviations: ASC, ambulatory surgery center; CPT, Current Procedural Terminology; PCI, percutaneous coronary intervention.	

Box et al Cath Cardiovasc Interv 2020, Grines et al JSCAI 2023



# Study Aims

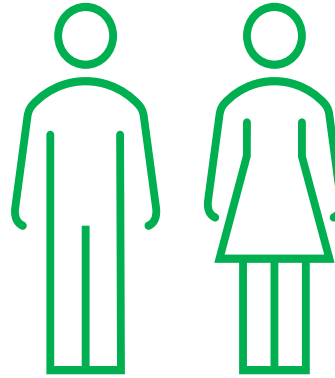
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## Outpatient PCI Procedural Volume Trends

HOPD vs. ASC

2018-2022



## Patient and Procedural Characteristics

HOPD vs. ASC

2020-2022



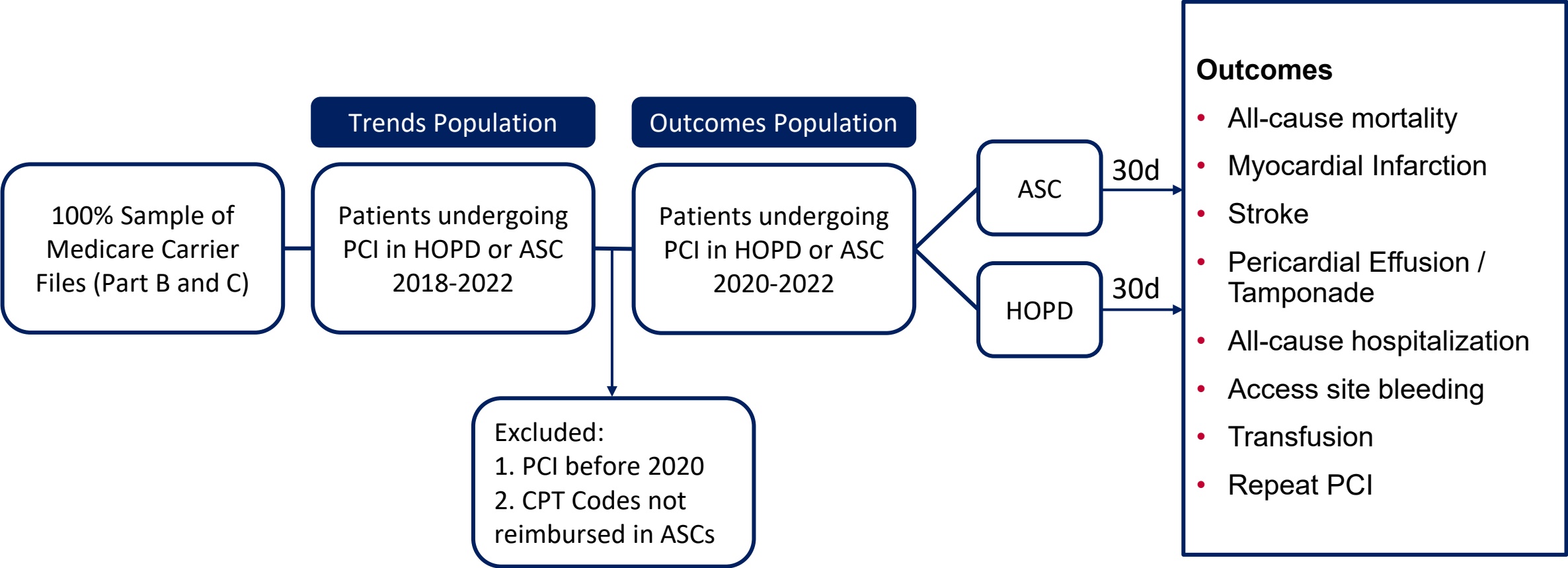
## 30-Day Outcomes

HOPD vs. ASC

2020-2022

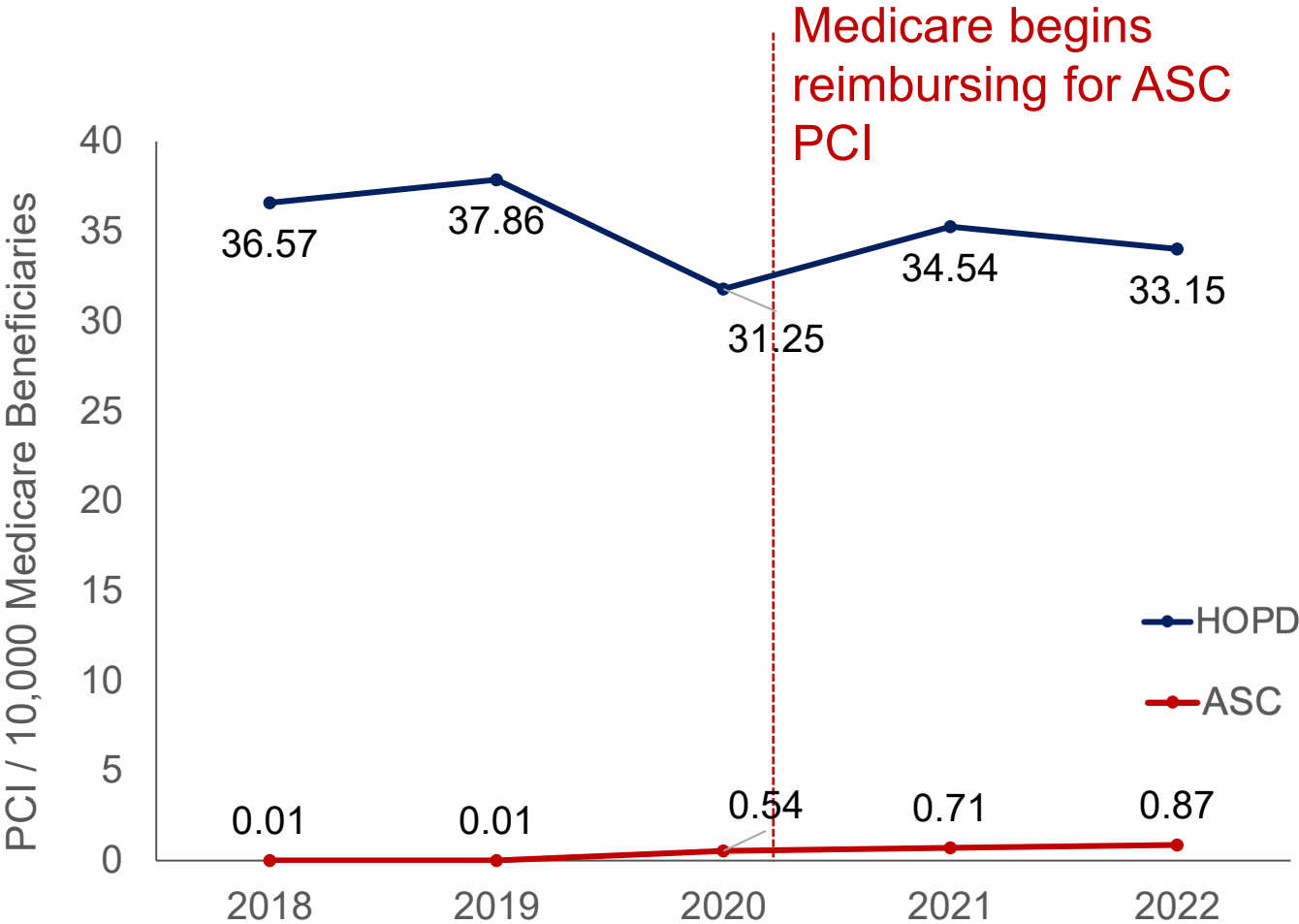
HOPD = Hospital Outpatient Department ASC = Ambulatory Surgery Center

# Methodology



HOPD = Hospital Outpatient Department ASC = Ambulatory Surgery Center

# Rate of Outpatient PCI in ASCs and Hospitals 2018-2022

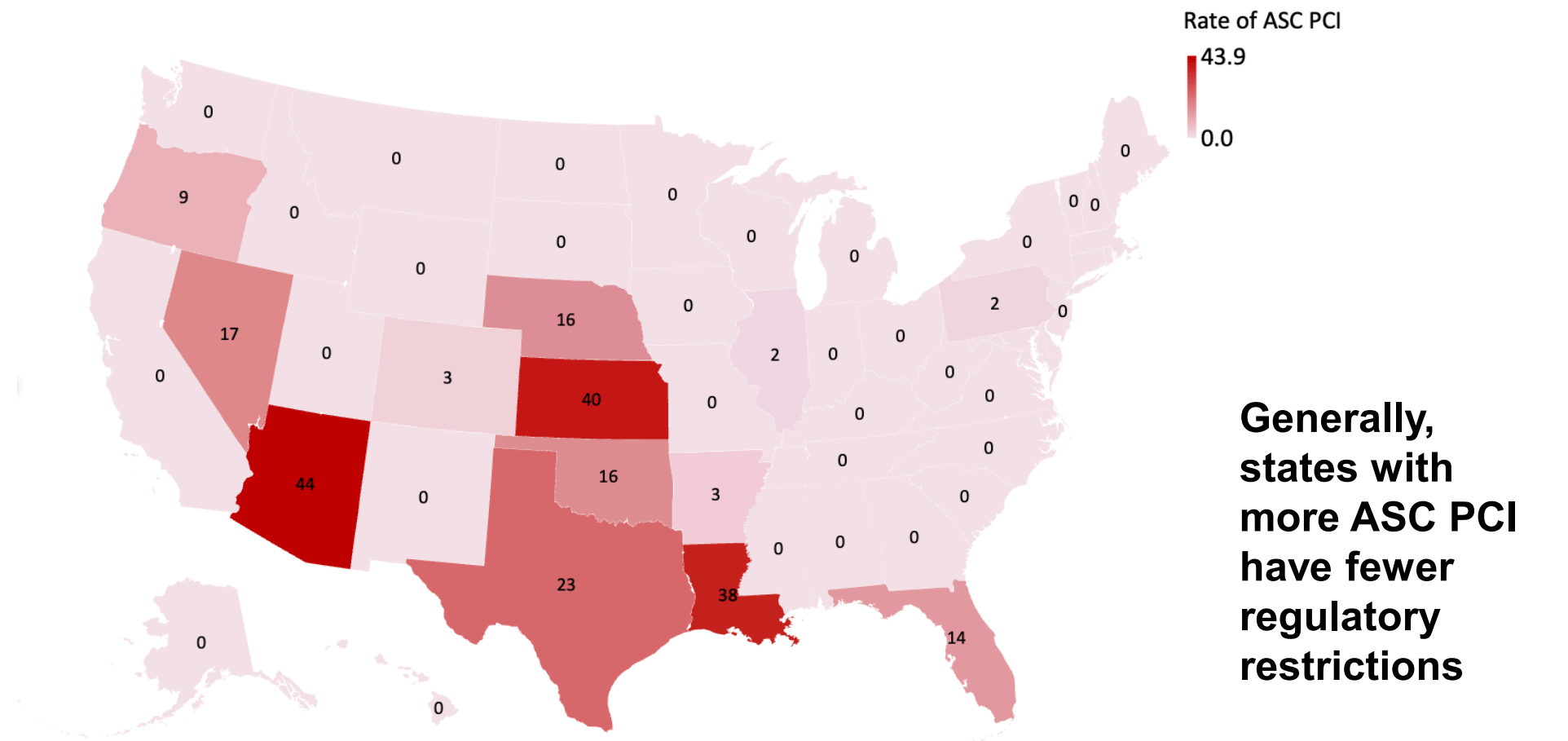


**7,494 (1.8%)**  
Outpatient PCIs  
were performed in  
ASCs from 2020-  
2022

HOPD = Hospital Outpatient Department ASC = Ambulatory Surgery Center



# Rate of ASC PCI / 100k Medicare Beneficiaries by U.S. State in 2022



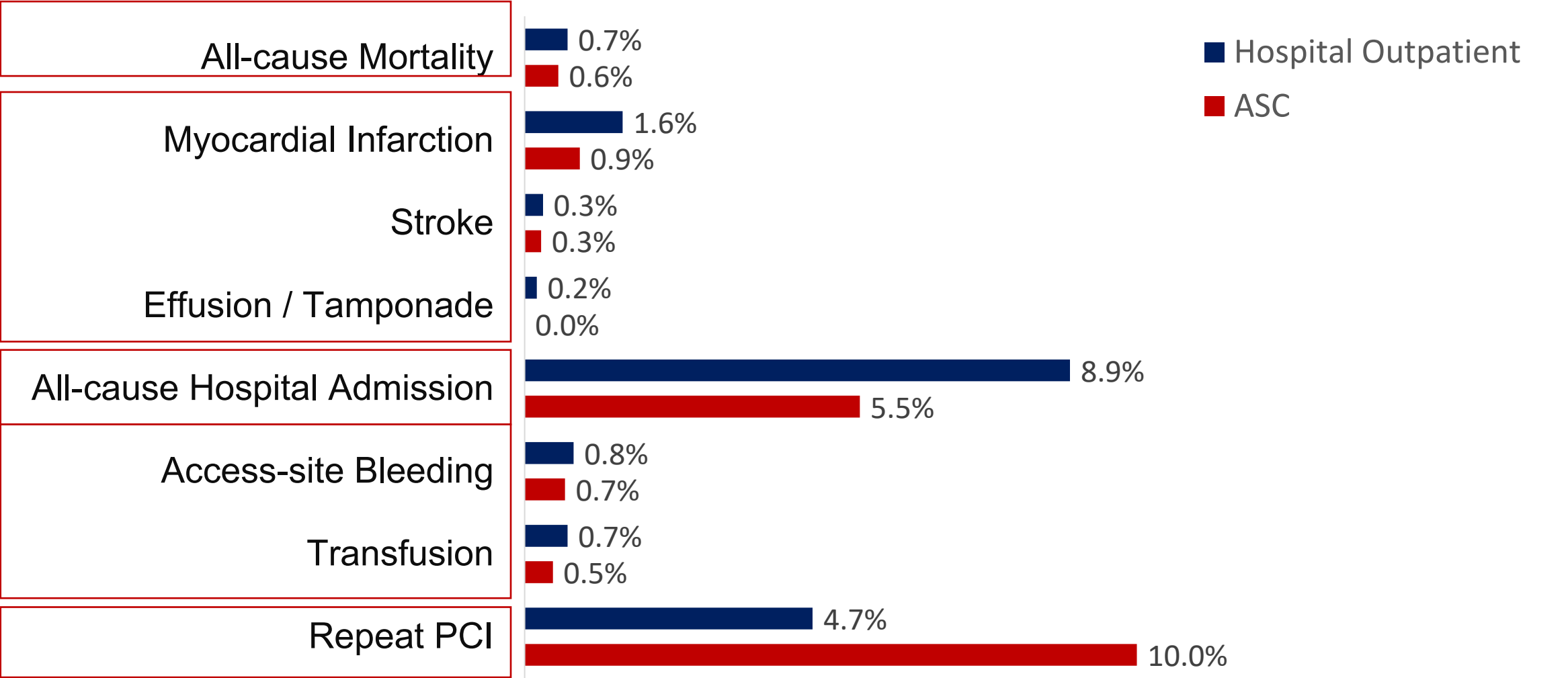
# Patient and Procedural Characteristics

	ASC N = 7494	Hospital Outpatient N = 400566	SMD ASC vs. HOPD
Age (yrs)			
Mean ± SD	75.4±6.1	75.6±6.3	-3.0
Male	63.6%	66.9%	-7.0
Race			
White	90.0%	89.2%	2.7
Black	5.5%	5.8%	-1.1
Other	4.4%	5.0%	-2.7
Region			
Northeast	1.9%	14.7%	-47.5
Midwest	12.1%	25.3%	-34.4
South	66.1%	44.5%	<b>44.5</b>
West	20.0%	15.6%	<b>11.5</b>
Social Vulnerability Index			
Most Vulnerable Quintile	36.6%	21.9%	<b>32.8</b>

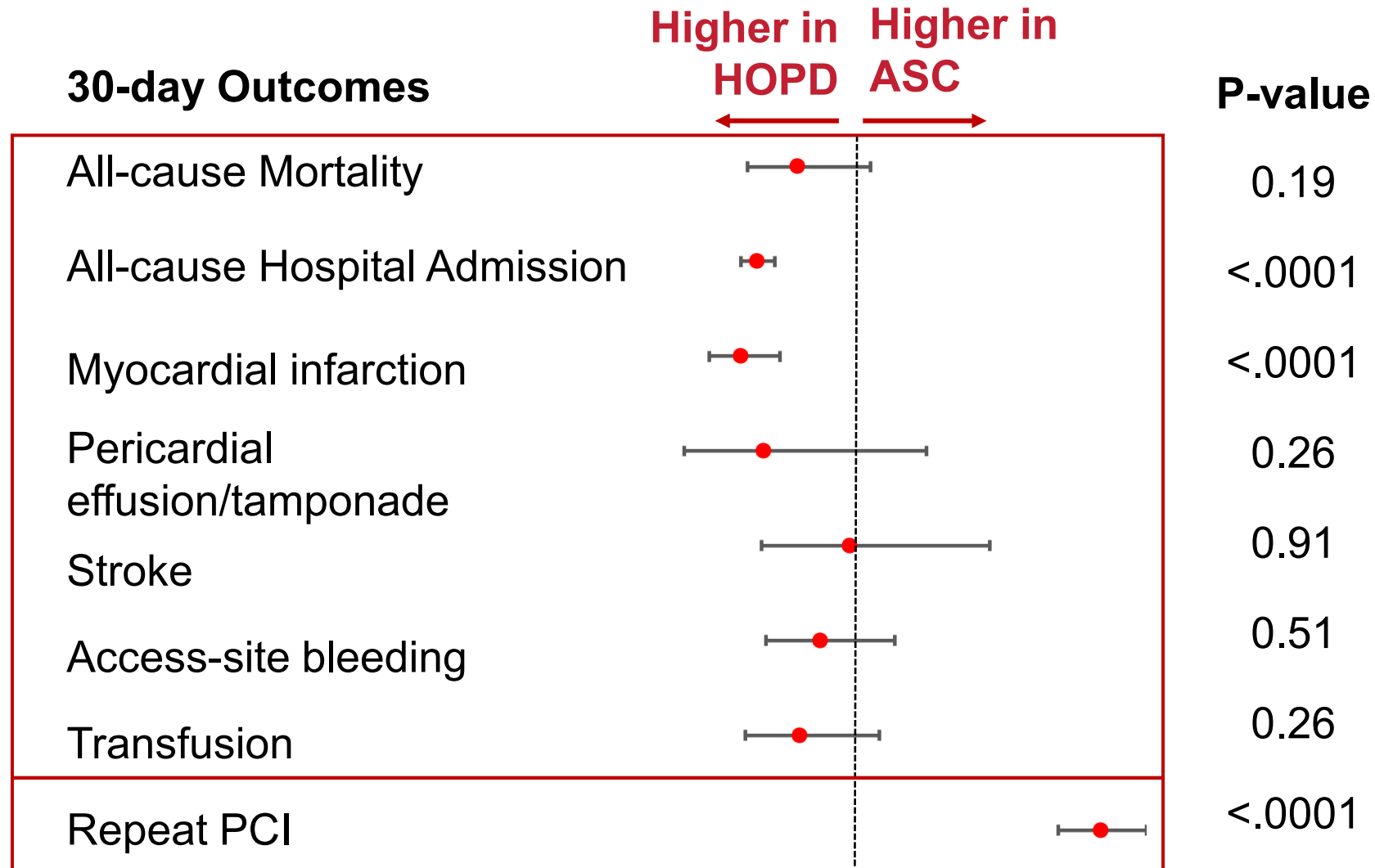
# Patient and Procedural Characteristics

	ASC N = 7494	Hospital Outpatient N = 400566	SMD ASC vs. HOPD
<b>Comorbidities</b>			
Prior AMI within 1 year	2.7%	6.0%	<b>-16.2</b>
Heart Failure	41.2%	42.4%	-2.3
Diabetes	50.7%	51.8%	-2.3
Stroke / Transient Ischemic Attack	17.1%	16.2%	2.4
Peripheral Vascular Disease	44.9%	38.8%	<b>12.4</b>
<b>Healthcare Utilization</b>			
Prior Inpatient Visit within 1 year	19.2%	23.5%	<b>-10.4</b>
<b>Procedure Characteristics</b>			
Angioplasty	8.2%	7.9%	1.1
Stent	88.8%	88.8%	-0.2
Atherectomy	2.4%	6.8%	<b>-21.0</b>
IVUS / FFR	12.8%	35.4%	<b>-54.8</b>

# 30-day Absolute Event Rates Following PCI in ASCs



# Adjusted Logistic Regression Models for 30-day Outcomes of PCI in ASCs



HOPD = Hospital Outpatient Department ASC = Ambulatory Surgery Center

# Limitations

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- In this benchmarking analysis, residual confounding due to unmeasured covariates is a significant possibility
- Unable to account for anatomical and angiographic risk factors
- Risk of misclassification error in claims
- The Medicare population excluded patients  $\leq 65$  and privately insured patients

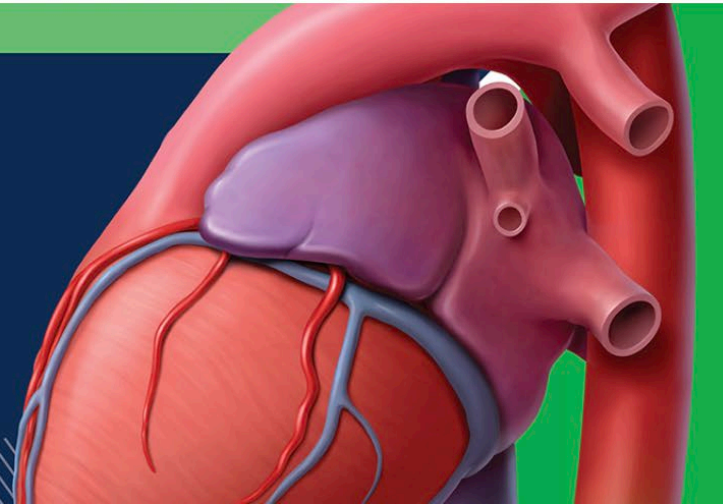
# Conclusions

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1. The rate of **PCI in ASCs increased from 2018-2022**, however, they represent a **small proportion of outpatient PCIs**
2. Patients in ASCs were more often from **socially vulnerable areas** and the **South**
3. PCI procedures in ASCs **less frequently involved the use of atherectomy and IVUS/FFR**
4. In this benchmarking analysis, there were **low absolute adverse event rates** following PCI at 30 days in both ASCs and HOPDs, which may suggest sound patient selection.
5. There was an **increased rate of repeat PCI in ASCs** compared with HOPDs



# CV ASC REGISTRY SUITE™





# Acknowledgements

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# Cost of Cardiovascular Procedures by Clinical Setting

