

Anisha Singh, Kathryn Wall, Apeksha Shenoy, Ian Weimer

Boston Strategic Partners, Inc.

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BACKGROUND

- Coronary artery disease is one of the leading causes of death, and PCIs are one of its most common procedures, such that 900,000 percutaneous coronary interventions (PCIs) are performed each year in the US^{1,2}
- Extensive research has been conducted regarding how BMI is known to affect mortality and morbidity of PCI patients, with overweight individuals having better outcomes compared to normal individuals, a phenomenon known as the obesity paradox^{3,4}
- However, there exists limited data regarding how BMI affects post-PCI length of stay (LOS) and costs^{3,4}

OBJECTIVES

Our study aimed to analyze whether the obesity paradox translates over to costs and LOS within adult PCI populations

METHODS

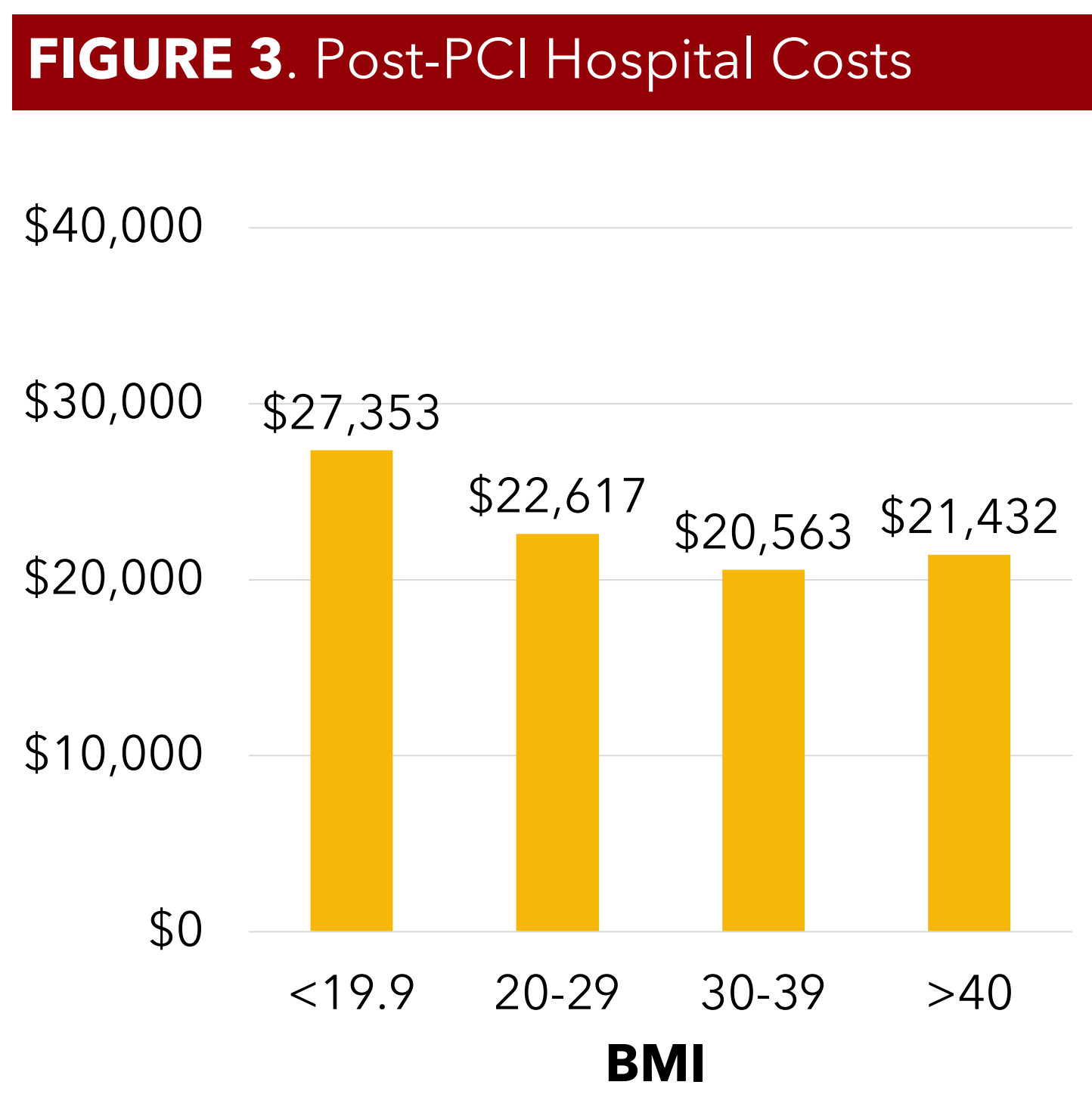
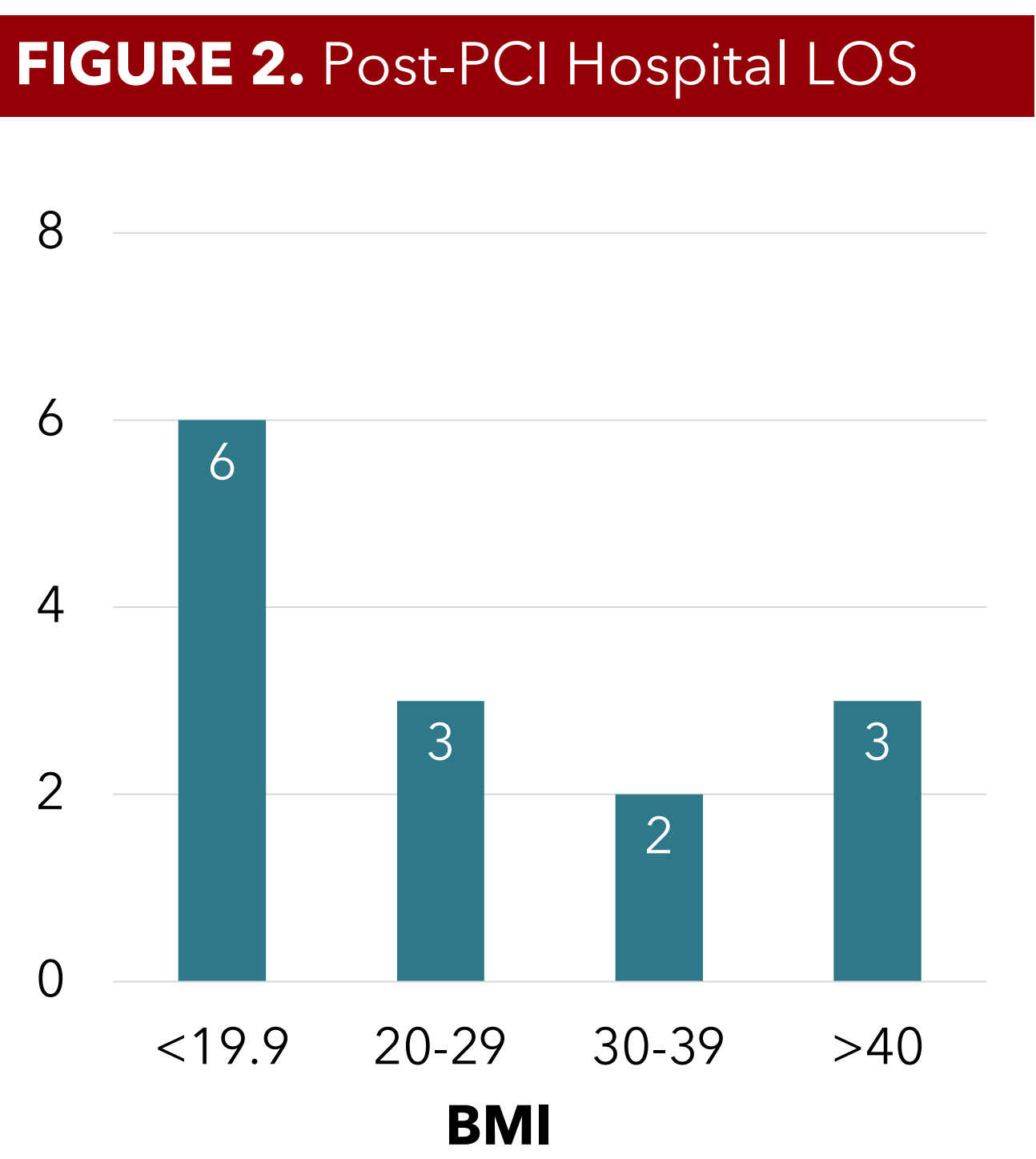
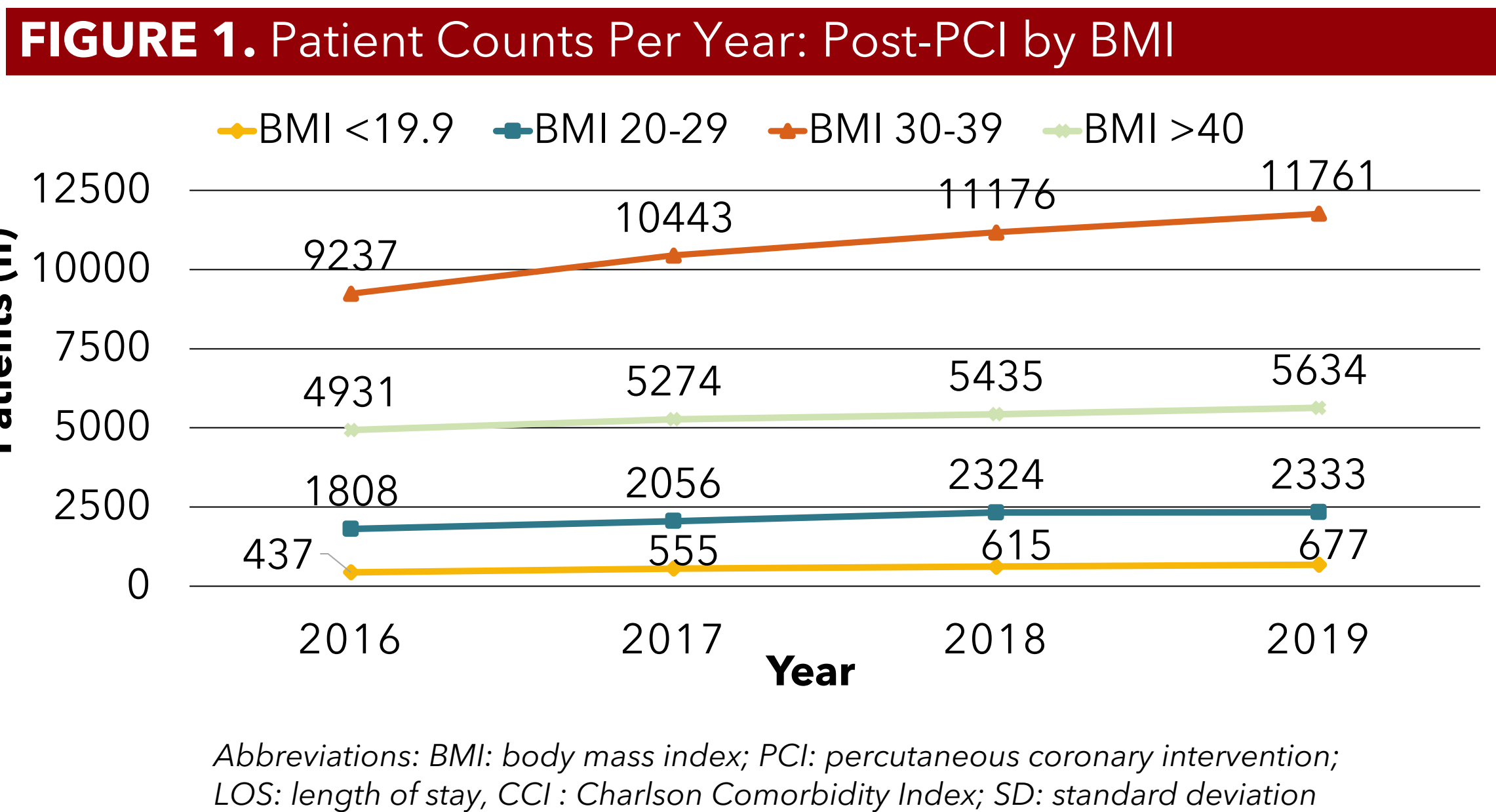
- Adult patients (≥18 years old) with an inpatient encounter who underwent a PCI procedure from 2016-2019 were selected from The Healthcare Cost and Utilization Project (HCUP) national database
- Patients were divided into 4 groups: BMI ≤19.9, BMI 20-29, BMI 30-39, and BMI ≥40
- Outcomes of interest were LOS and the patient's charges and costs for their inpatient procedure and stay

RESULTS

- A total of 74,696 patients fulfilled all inclusion and exclusion criteria; the distribution was similar to and representative of the BMI distribution in the United States (**Table 1**)
- Among the total population, the average age was highest among the underweight group and the lowest among the obese group
- The average percentage of female patients was highest in the underweight group and the lowest in the overweight group
- Patients with underweight BMIs (≤19.9) had the longest average LOS, whilst patients with overweight BMIs (30-39) had the shortest LOS (**Figure 2**)
- Hospital costs and comorbidity indices followed similar trends to LOS: patients with underweight BMIs (≤19.9) reported the highest costs and comorbidity indices, whereas patients with overweight BMIs (30-39) reported the lowest costs and comorbidity indexes (**Table 1 and Figure 3**)

TABLE 1. Patient Demographics by BMI

BMI	≤19.9	20-29	30-39	≥ 40
n	2,284	8,521	42,617	21,274
Age, mean (SD)	71.05 (11.2)	66.4 (12.2)	62.2 (11.6)	59.9 (11.4)
Female, %	50.7%	33.6%	33.3%	47.1%
CCI, mean (SD)	3.4 (2.1)	2.7 (1.8)	2.5 (1.7)	2.9 (1.7)



CONCLUSIONS

- The number of patients receiving PCIs increased from 2016 to 2019
- Overall, lower BMI was associated with the highest costs and longest average LOS; there was a positive effect of overweight BMI with lower costs and shorter LOS
- Our results align with the growing body of evidence on the obesity paradox in patients with coronary artery disease. This suggests that patients with a higher BMI may have a reduced risk of adverse outcomes

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