

## Background

- Obesity is a known risk factor for *Clostridioides difficile* infection (CDI).
- Bariatric surgery is widely used to manage obesity in a certain patient population.
- Bariatric surgery significantly reduces stomach acid production. Gastric acid suppression has been deemed to be another risk factor for CDI.
- However, there is little data on the outcomes of CDI in patients who had bariatric surgery.
- Thus, we aim to assess the outcomes of CDI in patients with a history of bariatric surgery.

## Methods

- Patients hospitalized with CDI from the National Inpatient Sample (NIS) database 2014 were selected.
- Diagnoses were identified by using ICD-9 CM codes.
- Patient demographics and outcomes of CDI were compared between the groups with and without a history of bariatric surgery.
- The outcomes of interest were inpatient mortality, length of stay, total hospital charge, hypotension/shock, acute renal failure, ileus, megacolon, and colectomy.

- Chi-squared tests and independent t-tests were used to compare proportions and means, respectively. Multivariate logistic regression analysis was performed to determine if bariatric surgery is an independent predictor of the outcomes, adjusting for age, sex, race, Charlson Comorbidity Index, and a history of obesity.

## Results

Patient Demographics and Characteristics			
	Bariatric surgery	Without bariatric surgery	P-value
N = 29,549	331	29,218	
Patient age, mean (SD)	52.5 (13.2)	66.4 (18.0)	<0.05
Sex, N (%)			<0.05
Female	280 (84.6)	18675 (63.9)	
Male	51 (15.4)	10540 (36.1)	
Race, N (%)			0.14
White	244 (77.0)	21795 (78.1)	
Black	39 (12.3)	2920 (10.5)	
Hispanic	20 (6.3)	2056 (7.4)	
Asian or Pacific Islander	*	435 (1.6)	
Native American	*	148 (0.5)	
Other	11 (3.5)	549 (2.0)	
Length of stay, in days (SD)	5.9 (4.9)	6.2 (6.5)	0.34
Total hospital charges, \$ (SD)	40643.4 (43574.2)	41260.0 (61924.1)	0.86
Mortality (%)	*	521 (1.8)	0.43
Charlson comorbidity index (SD)	2.0 (1.8)	4.2 (2.7)	<0.05
Obesity (%)	121 (36.6)	2757 (9.4)	<0.05

\*Omitted due to small sample sizes

Multivariate Regression Analysis of Outcomes			
Outcomes	Adjusted Odds Ratio*	Confidence Interval	P-value
Megacolon	3.17	0.42-24.09	0.27
Acute renal failure	0.89	0.62-1.28	0.53
Hypotension/shock	1.46	0.96-2.23	0.08
Ileus	1.06	0.54-2.08	0.87
Colectomy	0.52	0.07-3.75	0.51
In-patient mortality	1.66	0.52-5.29	0.39

\*Adjusted for age, sex, race, Charlson Comorbidity Index, and a history of obesity

- There were no statistically significant differences in length of stay, total hospital charge, and inpatient mortality between the groups.
- After adjusting for age, sex, race, Charlson Comorbidity Index, and a history of obesity, there were no statistically significant differences in outcomes of interest, including hypotension/shock, acute renal failure, ileus, megacolon, and colectomy.

## Conclusion

- Our study indicates that a history of bariatric surgery has **no significant impact** on the outcomes of CDI among hospitalized patients despite potential physiologic changes with bariatric surgery that may increase the risk for CDI.