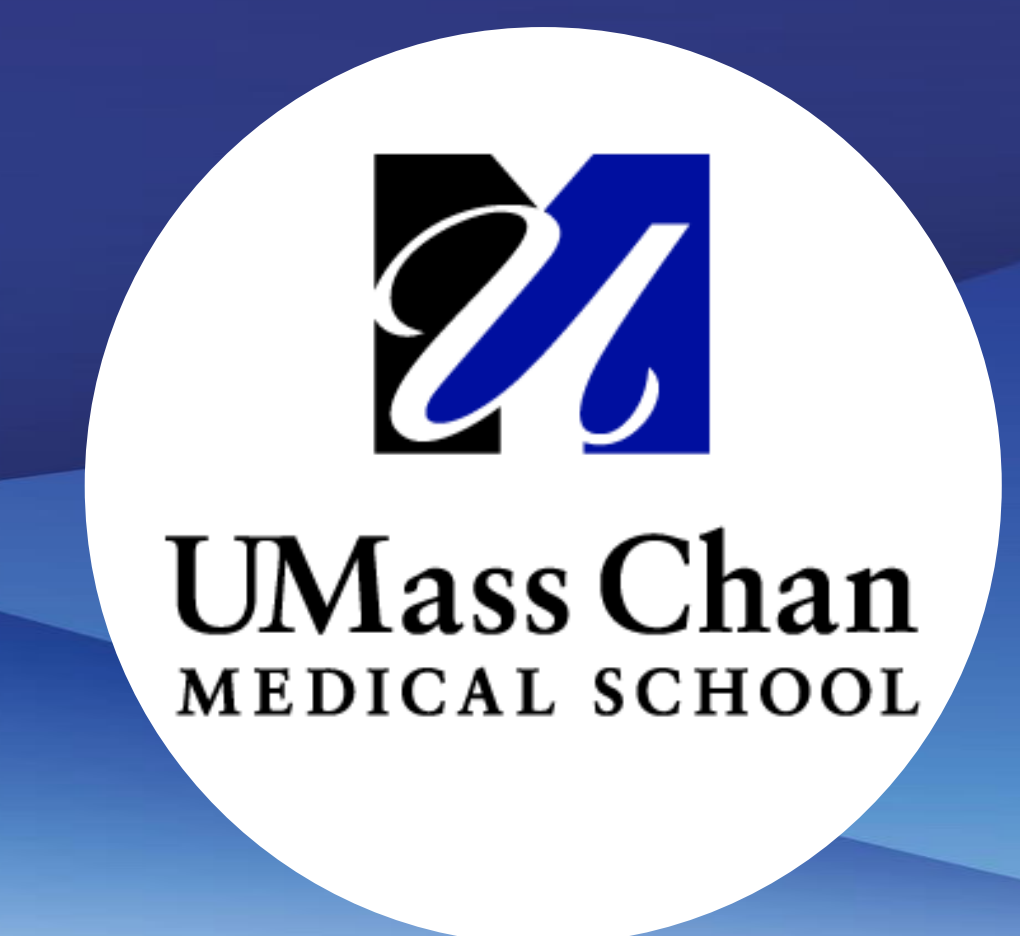


Annual Trends in Pediatric Metabolic and Bariatric Surgery



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Background

Obesity in adolescence leads to more severe comorbidities in adulthood and decreases overall lifespan. Metabolic and Bariatric Surgery (MBS) has been shown to be a safe and effective treatment for adolescent obesity that can outperform medical therapy alone, and may be more cost effective in the long term. There are nearly 5 million children eligible for MBS, but only approximately 2500 operations annually.

The American Academy of Pediatrics (AAP), American Society of Metabolic and Bariatric Surgery (ASMBS) and other societies have expanded guidelines and outreach to increase access to MBS through:

- 1) Addressing insurance approval criteria
- 2) Emphasizing education on benefits & safety
- 3) Lowering age limits

Our study aimed to evaluate the impact of these guidelines through an examination of the demographics and outcomes of those undergoing MBS.

Methods

A Retrospective review of patients < 18 years old in the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) database from 2017-2022. Summary chi squared and ANOVA testing was used to compare variables across years, and multivariate logistic regressions were used to evaluate outcomes.

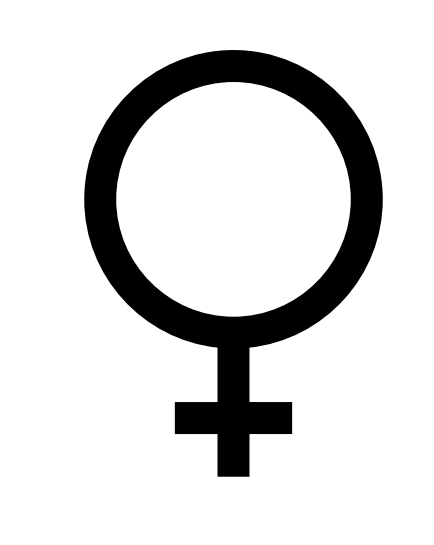
Key References:

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- Hampl SE, Hassink SG, Skinner AC, Armstrong SC, Barlow SE, Bolling CF, et al. Clinical Practice Guideline for the Evaluation and Treatment of Children and Adolescents With Obesity. *Pediatrics*. 2023 Jan 9;151(2):e2022060640
- Pratt JSA, Browne A, Browne NT, Bruzoni M, Cohen MJ, Desai A, et al. ASMBS pediatric metabolic and bariatric surgery guidelines, 2018. *Surg Obes Relat Dis*. 2018 Jul 1;14(7):882-901

Results:

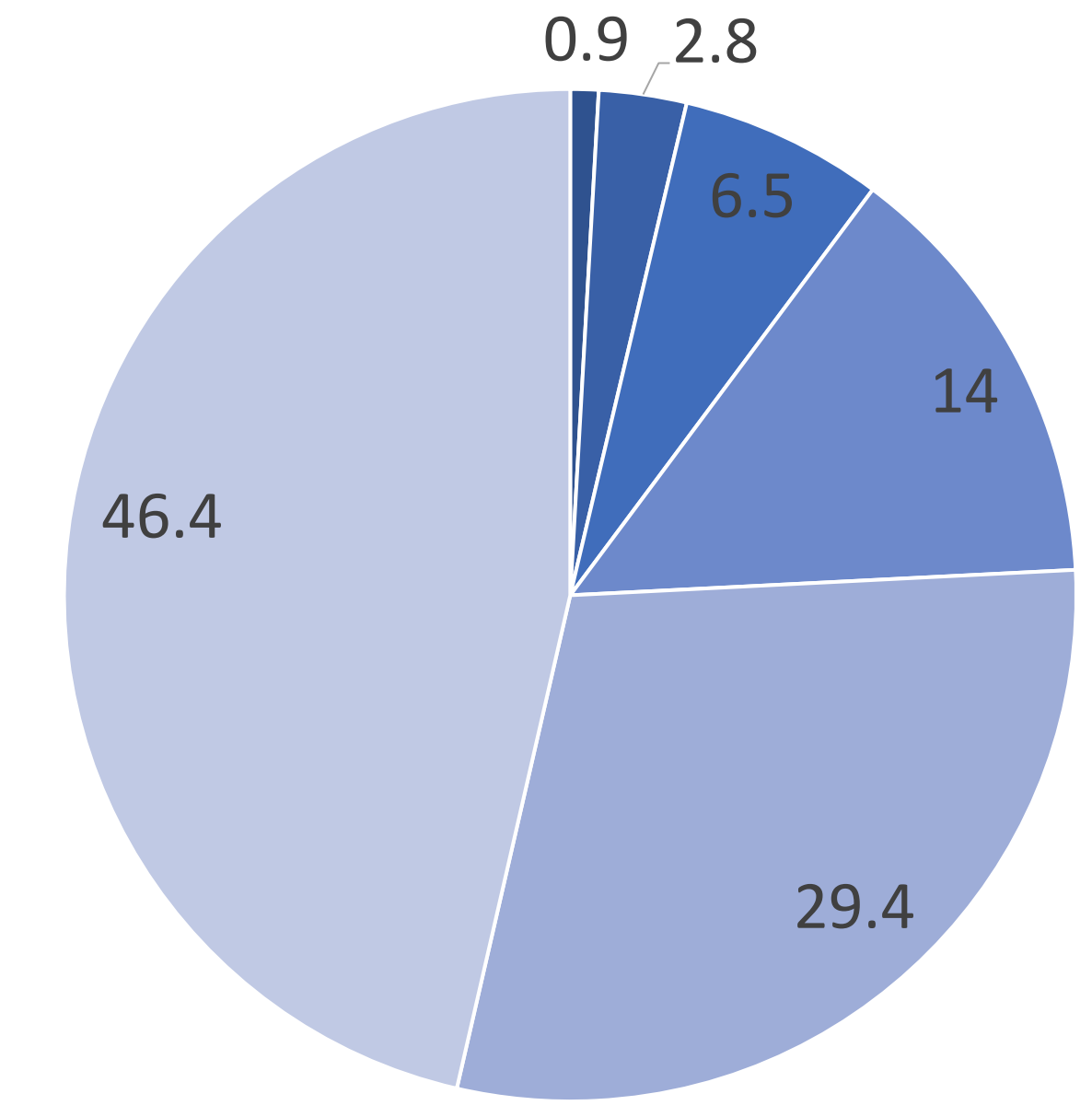


Mean BMI: 47.25



69% Female

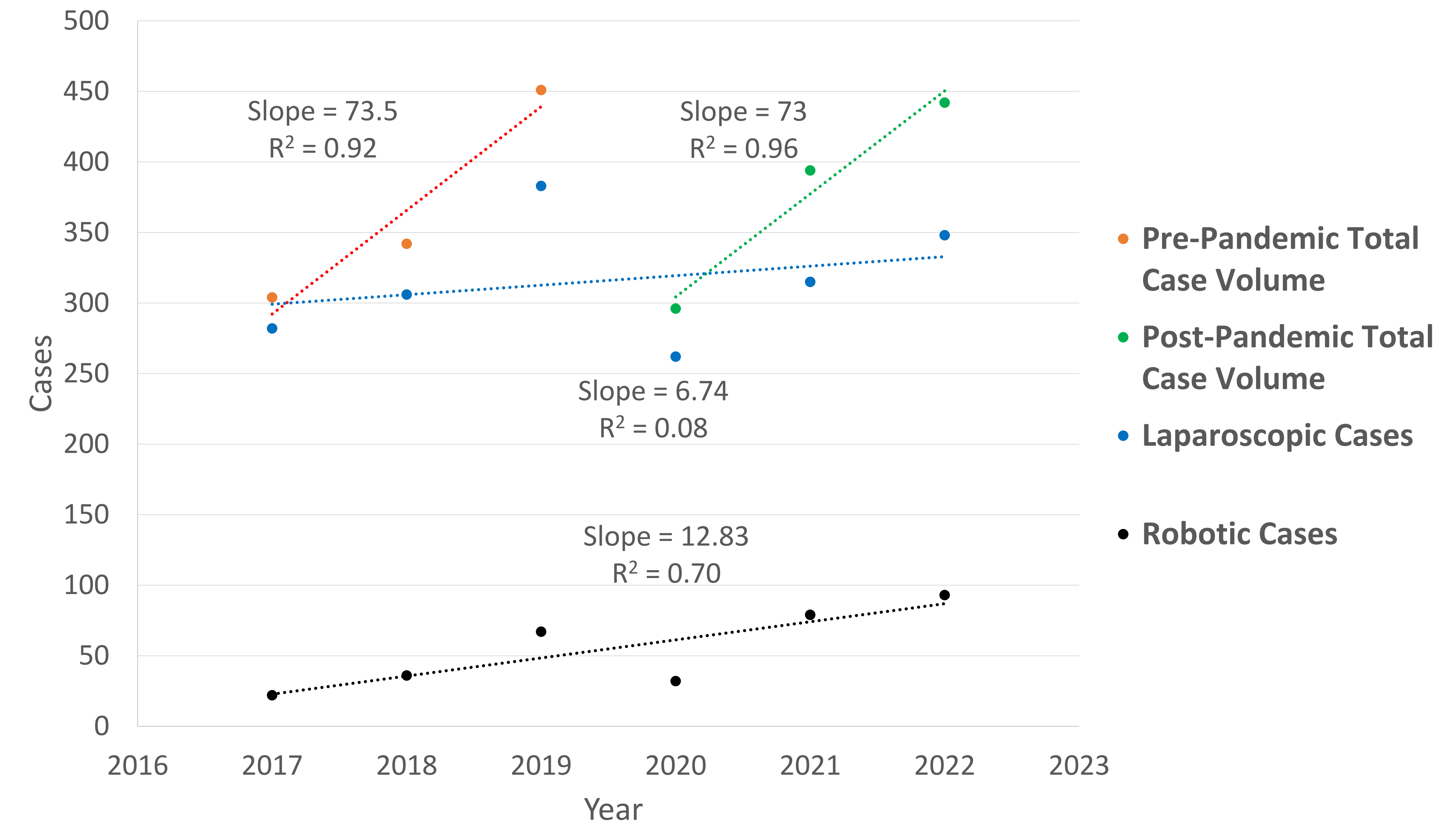
Patient Age (% of total)



- Female patients had lower BMI than male patients (46 vs 49)
- BMI did not vary with age

There were no significant changes in BMI, Sex, or Age distribution with year

Cases by Year: Stratified by Surgical Approach and Pre/Post Pandemic



Results (continued):

Pre-Operative Comorbidities:

- OSA highest in 13-year-olds
- Diabetes were highest in 14- and 15-year-olds

Surgical Details:

- Robotic surgery is increasing twice as fast as laparoscopic surgery (Figure)
- Sleeve Gastrectomy: 86% (2017) → 95% (2022)

Outcomes:

- No mortalities
- Low overall complication rate (2.9%).
 - Dehydration accounted for 66% of all complications.
 - Rates of readmission and reoperation rates were low (0.4% & 1%, respectively).
- There was no difference in any outcome by age or race, and complication rates did not vary significantly annually.

Multivariable Regressions:

The odds of any post-operative complication increased when a patient had pre-existing comorbidities (OR 1.7), and odds of an ED visit increased if female or black (OR 1.9, 2.0, respectively)

Conclusions:

Despite outreach efforts and policy changes, the ability of younger adolescents and adolescents with more comorbidities to attain MBS has not meaningfully changed between 2017 and 2022. Cases continue to increase annually. Meanwhile, robotic assisted surgery is rapidly increasing in the adolescent population. Complication rates remain low across multiple adolescent demographic groups

Future Work:

Expansion of access to MBS must remain a priority in order to help those groups most at risk, and most affected by severe obesity.