

BMI ≥ 60 and ≥ 70 Associated with Decreased Access to Oncologic Surgical Care: NSQIP Analysis (2005-2022)

John M. Gunaldo BS¹, Michael Kachmar DO^{1,2,4}, Jake E. Doiron PhD¹, Florina Corpodean MD^{1,2}, Carlos Galvani MD^{1,3}, Michael W. Cook MD^{1,3}, Mohammad Al Efishat MD^{1,4}, John M Lyons MD^{1,4}, Philip R. Schauer MD^{1,2,4}, Vance L. Albaugh MD, PhD^{1,2,4,5}

Introduction

- The BMI ≥ 60 population has increased more than 200% from 2001 – 2023 yet remains underrepresented in clinical research.¹
- Obesity is associated with an increased risk of developing many cancers.²
- Uterine: RR 7.1
- Esophageal Adenocarcinoma: RR 4.8
- Liver: RR 1.8
- Kidney: 1.8
- Obese patients experience worse cancer outcomes, including:
 - A 5 kg/m² increase in BMI associated with 15% higher risk of mortality for prostate cancer patients³
 - Female breast cancer patients with obesity experience up to 11% decrease in overall survival⁴
- Surgery is often critical for cancer treatment, but surgical access is frequently limited for patients with extreme obesity.⁵

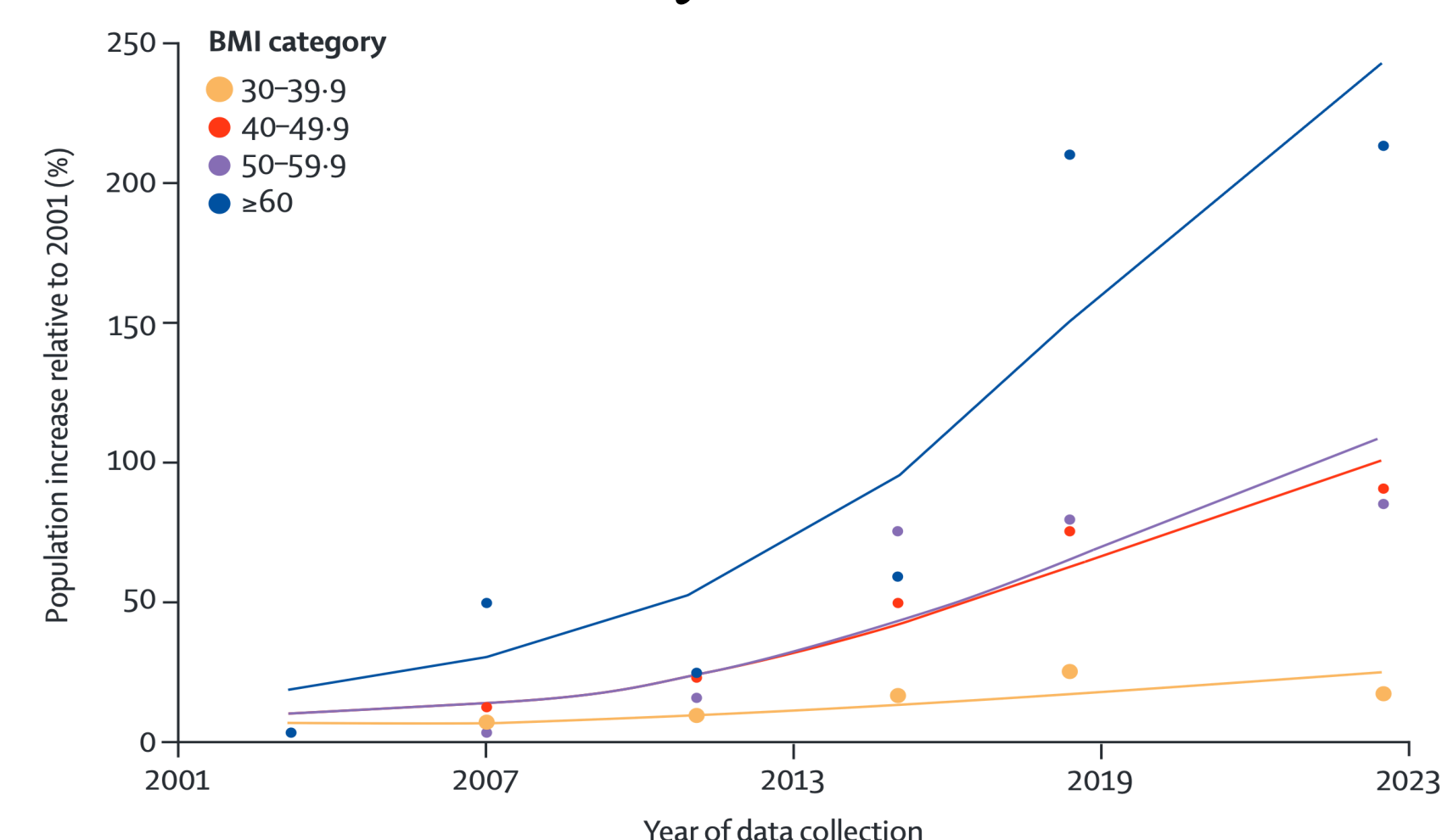


Figure 1. Disproportionate Increase in BMI >60 population relative to other BMI thresholds.¹

Methods

- Retrospective cross-sectional study using NSQIP data (2005–2022)
- CPT codes screened for oncologic relevance using keywords and diagnosis fields
- Compared oncologic surgical rates in patients with BMI ≥ 60 vs 2,055,241 oncologic procedures
- Compared general surgical rates in patients with BMI ≥ 70 vs 11,634,075 common oncologic surgical procedures
- Statistical methods include relative risk (RR) calculation, two-sided tests of proportion, and paired t-tests

Results

- 31/52 oncologic operations performed significantly less for patients with BMI ≥ 60
- 23/52 surgical operations performed significantly less for patients with BMI ≥ 70
- Relative reduction in colectomies, prostatectomies, mastectomies, and pancreatectomies for patients with a BMI ≥ 60

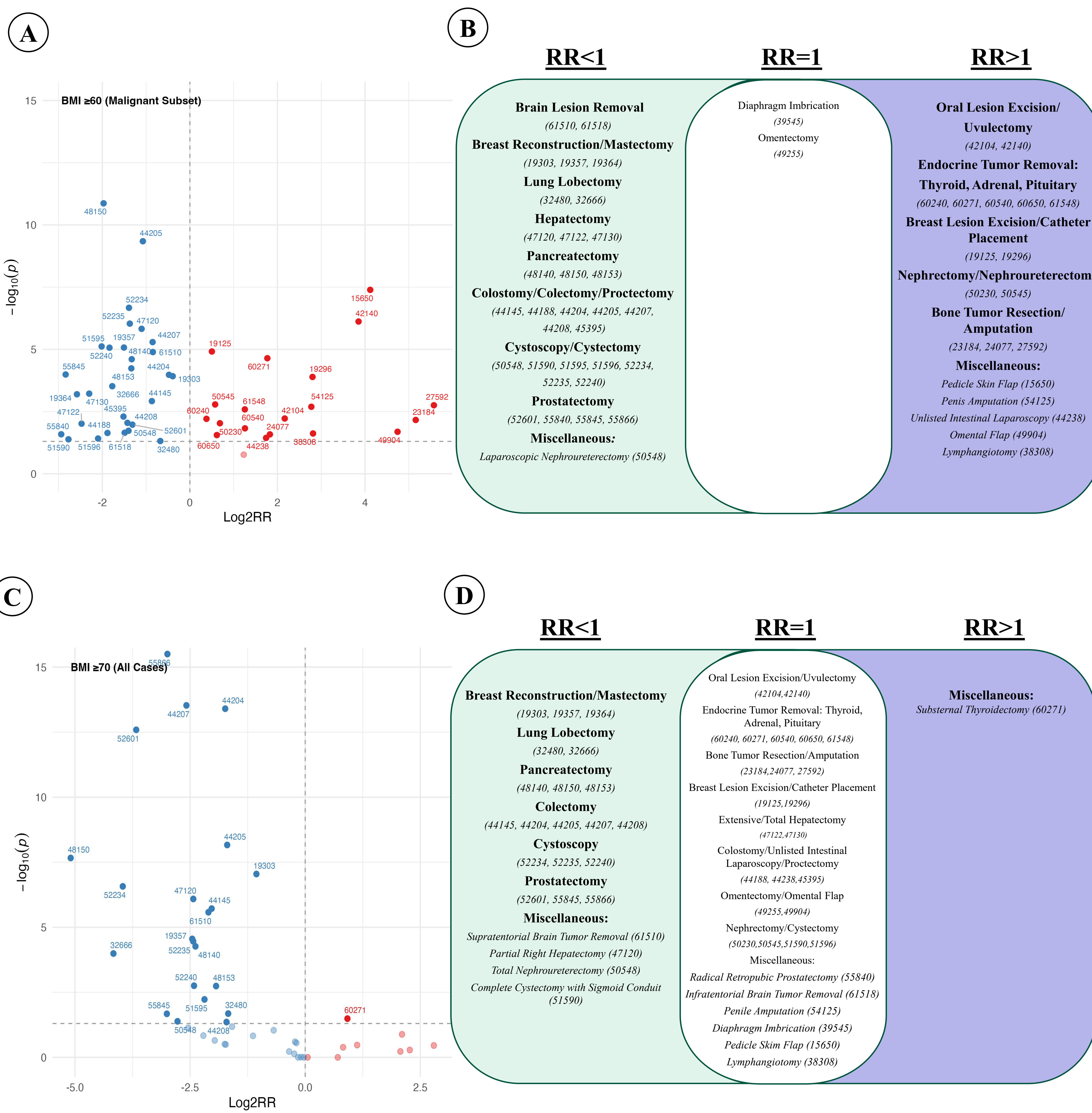


Figure 2. Surgical CPT Codes for BMI ≥ 60 and ≥ 70 Versus General NSQIP Database. Volcano plots and Venn diagrams illustrating oncologic procedural CPT code distribution for BMI ≥ 60 (A, B) and unspecified procedural CPT codes for BMI ≥ 70 (C, D). CPT codes plotted according to respective log₂(RR) and $-\log_{10}(p\text{-value})$. Dashed Y-axis line designates $p<0.05$.

Conclusions

- Patients with BMI ≥ 60 and ≥ 70 are underrepresented in numerous oncologic procedures
- Most significant reductions for BMI ≥ 60
 - Partial pancreatectomies (48150)
 - Laparoscopic colectomies with partial ileum removal (44205)
 - Cystoscopy for small tumor removal (52234)
- Patients with a BMI >60 received 38.6% less oncologic procedures
- Patients with a BMI >70 received 64.2% less common oncologic procedures

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- Both BMI ≥ 60 and ≥ 70 analyses showed reductions in highly invasive procedures requiring gastrointestinal restructuring
- Future efforts should prioritize anthropometric data collection to better quantify surgical disparities and outcomes

References

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Institutions

- ¹Department of Surgery, Louisiana State University Health Sciences Center, New Orleans, LA, USA
- ²Metamor Institute, Pennington Biomedical Research Center at Louisiana State University, Baton Rouge, LA, USA
- ³University Medical Center, New Orleans, LA, USA
- ⁴Our Lady of the Lake Regional Medical Center, Baton Rouge, LA, USA
- ⁵Baton Rouge General Hospital, Baton Rouge, LA, USA