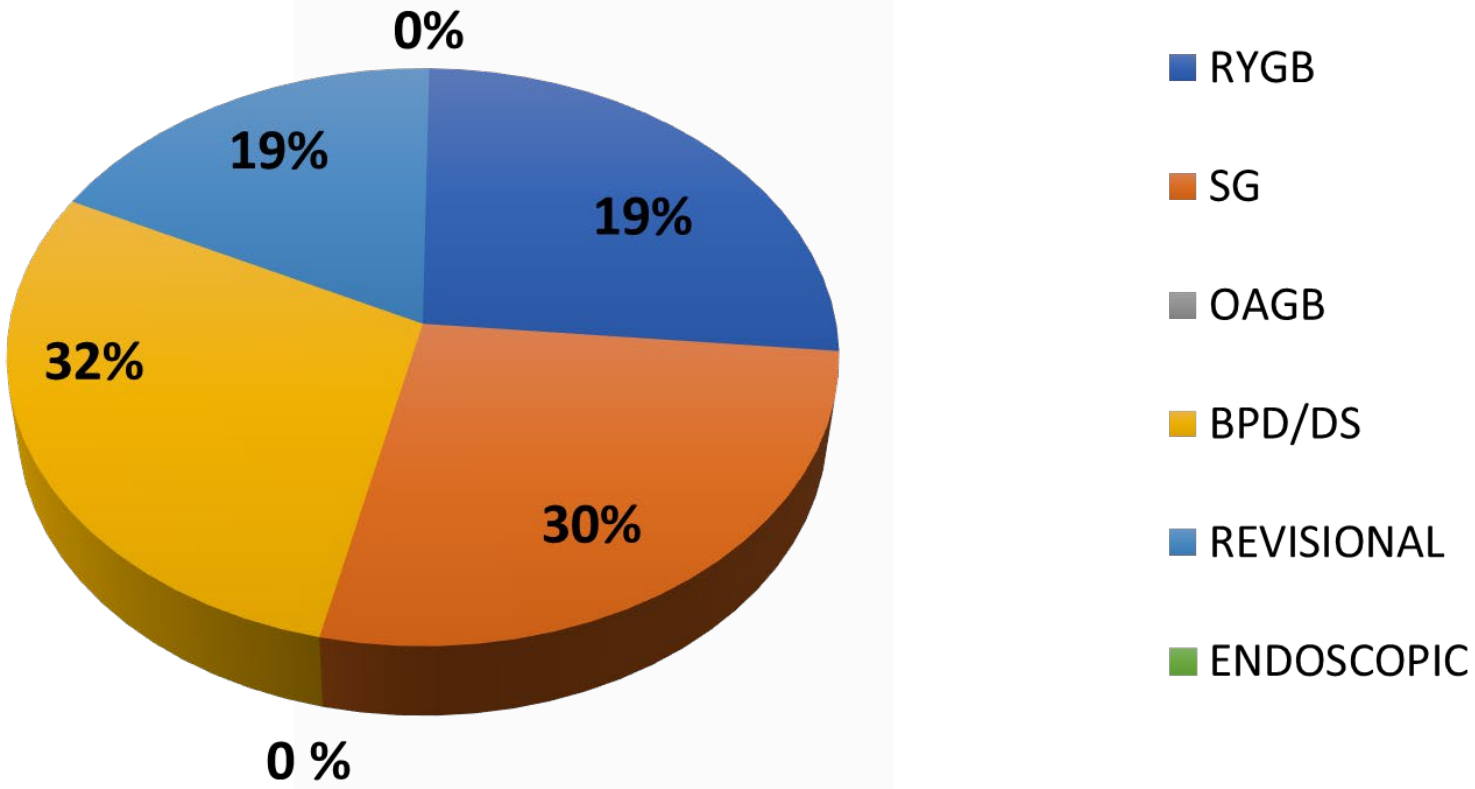
Economic sustainability of a long-term dual agonist GLP1/GIP RA treatment Surgery or drugs?

FRANCESCO SAVERIO PAPADIA, MD, FACS, FEBS (SURGONC)

DEPARTMENT OF SURGICAL SCIENCES AND INTEGRATED DIAGNOSTICS DISC

UNIVERSITY OF GENOA, ITALY

Case mix disclosure



No financial conflict of interest to disclose

News

JP Morgan 2025: Intuitive Surgical continues to battle GLP-1RA pressures

Despite constraints exerted by GLP-1RAs on bariatric surgery volumes, shares in Intuitive Surgical surged following a positive 2024.

Robert Barrie | January 16, 2025

"**GLP-1s' impact on total bariatric surgery was a headwind** in the year. We made gains relative to other forms of surgery, **but weight loss surgery as a whole has been de-prioritised**,"

The number of bariatric procedures... has been declining in recent years....

Multiple studies of **privately insured patients** have found a **significant increase in patients being prescribed GLP-1RAs** while those undergoing **bariatric surgery have decreased.**

JAMA Network Open

Research Letter | Surgery

Metabolic Bariatric Surgery in the Era of GLP-1 Receptor Agonists for Obesity Management

Kevin Lin, BA; Ateev Mehrotra, MD, MPH; Thomas C. Tsai, MD, MPH

Table. Patient Characteristics

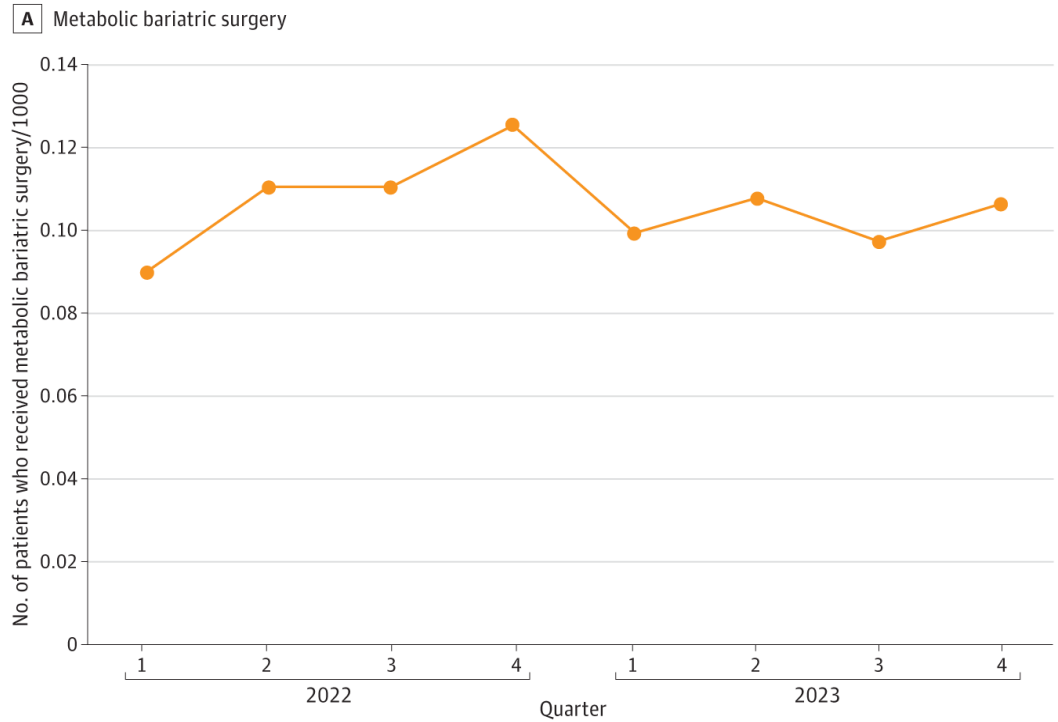
Characteristic	Patients, No. (%) (N = 1 633 439)[a]			P value
	Metabolic bariatric surgery (n = 5173 [0.3%])	GLP-1 RA prescription (n = 81 092 [5.0%])	Neither treatment (n = 1 547 174 [94.7%])[b]	
Age, y				
18-35	907 (17.5)	7753 (9.6)	224 540 (14.5)	<.001
36-50	1803 (34.9)	20 249 (25.0)	341 600 (22.1)	
51-65	1361 (26.3)	24 689 (30.4)	388 160 (25.1)	
≥66	1102 (21.3)	28 401 (35.0)	592 880 (38.3)	
Sex[c]				
Female	4096 (79.2)	59 724 (73.6)	926 540 (59.9)	<.001
Male	1073 (20.7)	21 314 (26.3)	619 740 (40.1)	
Unknown	4 (0.1)	54 (0.1)	900 (0.1)	
Comorbidities, No.				
0	504 (9.7)	25 440 (31.4)	404 400 (26.1)	<.001
1	1274 (24.6)	25 004 (30.8)	519 460 (33.6)	
2-3	2424 (46.9)	23 962 (29.5)	451 280 (29.2)	
≥4	971 (18.8)	6686 (8.2)	172 040 (11.1)	

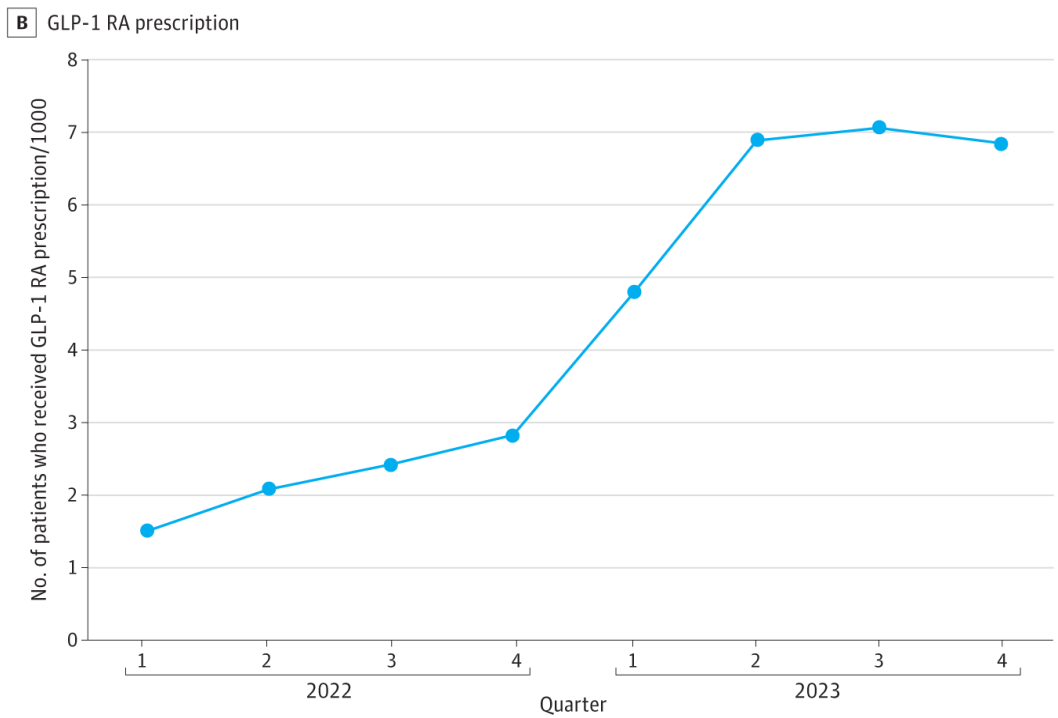
Abbreviation: GLP-1 RA, glucagon-like peptide-1 receptor agonist.

[a] Adult patients without diabetes and with obesity and medical and pharmaceutical coverage in 2023 were included. A total of 205 individuals were excluded who received both a GLP-1 RA and metabolic bariatric surgery in 2023 to prevent duplication across groups. (Numbers in the table reflect values after these 205 individuals were excluded.)

[b] Subgroups within the neither treatment category do not sum to the provided n value due to rounding. The true number of enrollees who received neither treatment is given, but for space and processing efficiency considerations, subgroup analysis was conducted on a 5% sample, then multiplied by 20, estimating numbers for each subgroup. Similarly, the unknown sex N is estimated to be 900, when the true number of enrollees with unknown sex was 45.

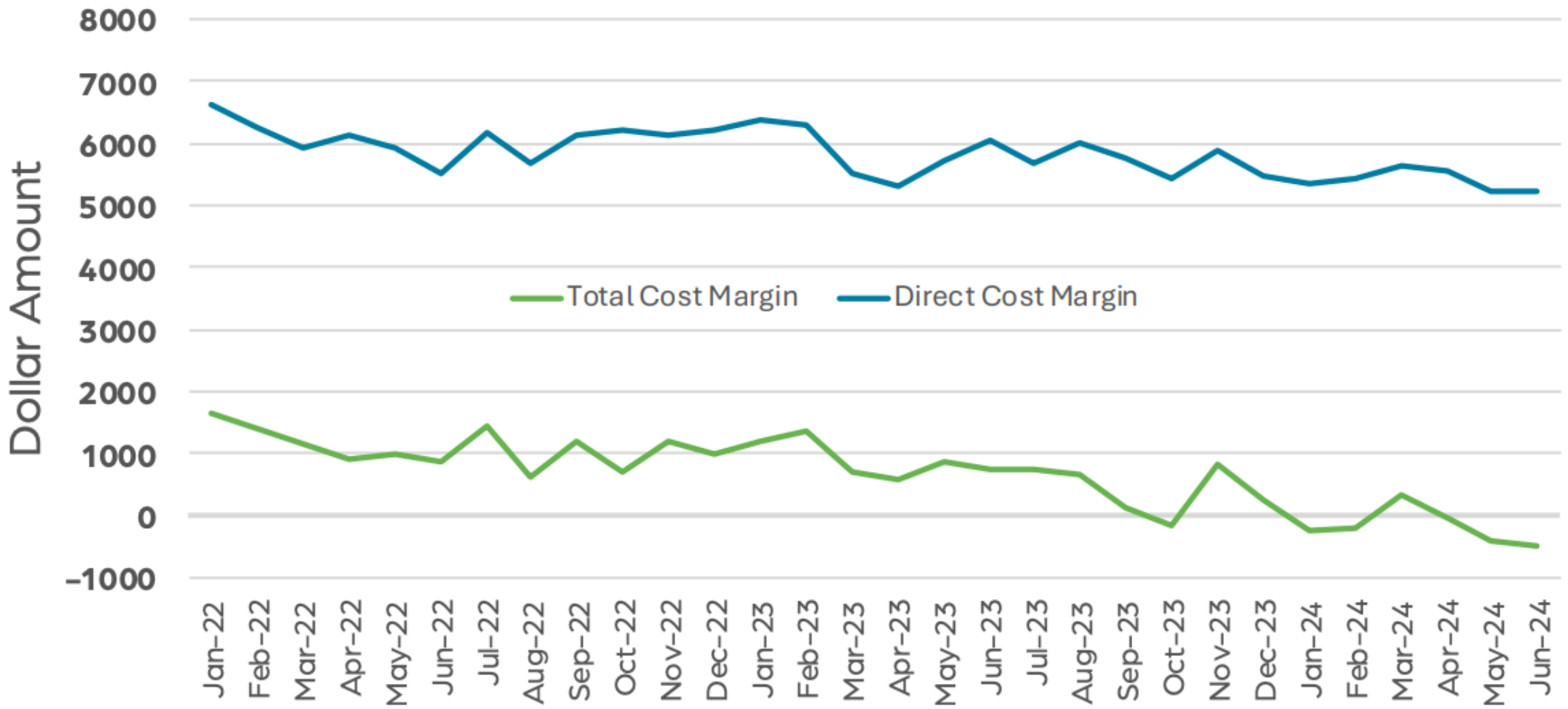
[c] Across all 3 groups, 103 individuals had an unknown sex (ie, were not labeled male or female).


A
Metabolic bariatric surgery
No. of patients who received metabolic bariatric surgery/1000
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0
1
2
3
4
1
2
3
4
2022
2023
Quarter


B
GLP-1 RA prescription
No. of patients who received GLP-1 RA prescription/1000
8
7
6
5
4
3
2
1
0
1
2
3
4
1
2
3
4
2022
2023
Quarter

Margins for Inpatient Bariatric Surgeries Declining

Hospitals Nationally — Jan. 2022 to June 2024



Source: StrataSphere® Data

Inpatient Bariatric Surgeries as a Proportion of Inpatient Surgeries

Hospitals Nationally — April 2022 to Aug. 2024

Source: StrataSphere® Data

Cimetidine Versus Surgery for Recurrent Ulcer After Gastric Surgery

JARLEY KOO, M.D., S. K. LAM, M.D., G. B. ONG, D.Sc.

The efficacy of cimetidine vs. surgery in the treatment of recurrent ulcers after definitive surgery for chronic duodenal ulcer was evaluated in two comparable groups (23 each) of patients. Cimetidine 1 g daily healed 79% and 91.6% of recurrent ulcers, as assessed endoscopically, after 6 and 12 weeks respectively. At the end of one year, maintenance treatment with cimetidine (400 mg nocte) prevented relapse in 89.5% of the healed ulcers, while surgery was successful in 94.4% ($p > 0.1$). The cimetidine group experienced significantly ($p < 0.05$) less side effects than the surgical group, with respectively 10% and 50% of patients having Visick grade II and above. After one year of maintenance treatment, cimetidine was withdrawn, and ulcer recurred in 71.4% within six months. The relapse rates between the two groups were significantly different by life-table analysis ($p < 0.01$). We conclude that cimetidine was as effective as surgery in preventing relapse of postsurgical recurrent ulcers and had fewer side effects, but indefinitely prolonged therapy appeared necessary.

From the Combined Gastrointestinal Unit, Departments of Medicine and Surgery, University of Hong Kong, Queen Mary Hospital, Hong Kong

recurrence of these ulcers after they have been healed, and (c) the relative merits of cimetidine and surgery in the treatment of recurrent ulcers.

Methods

Patients

Forty-six Chinese patients (39 males, mean age 50.4 ± SD 16.1 years; 7 females, mean age 55.0 ± SD 10.6 years) were entered into the study between January

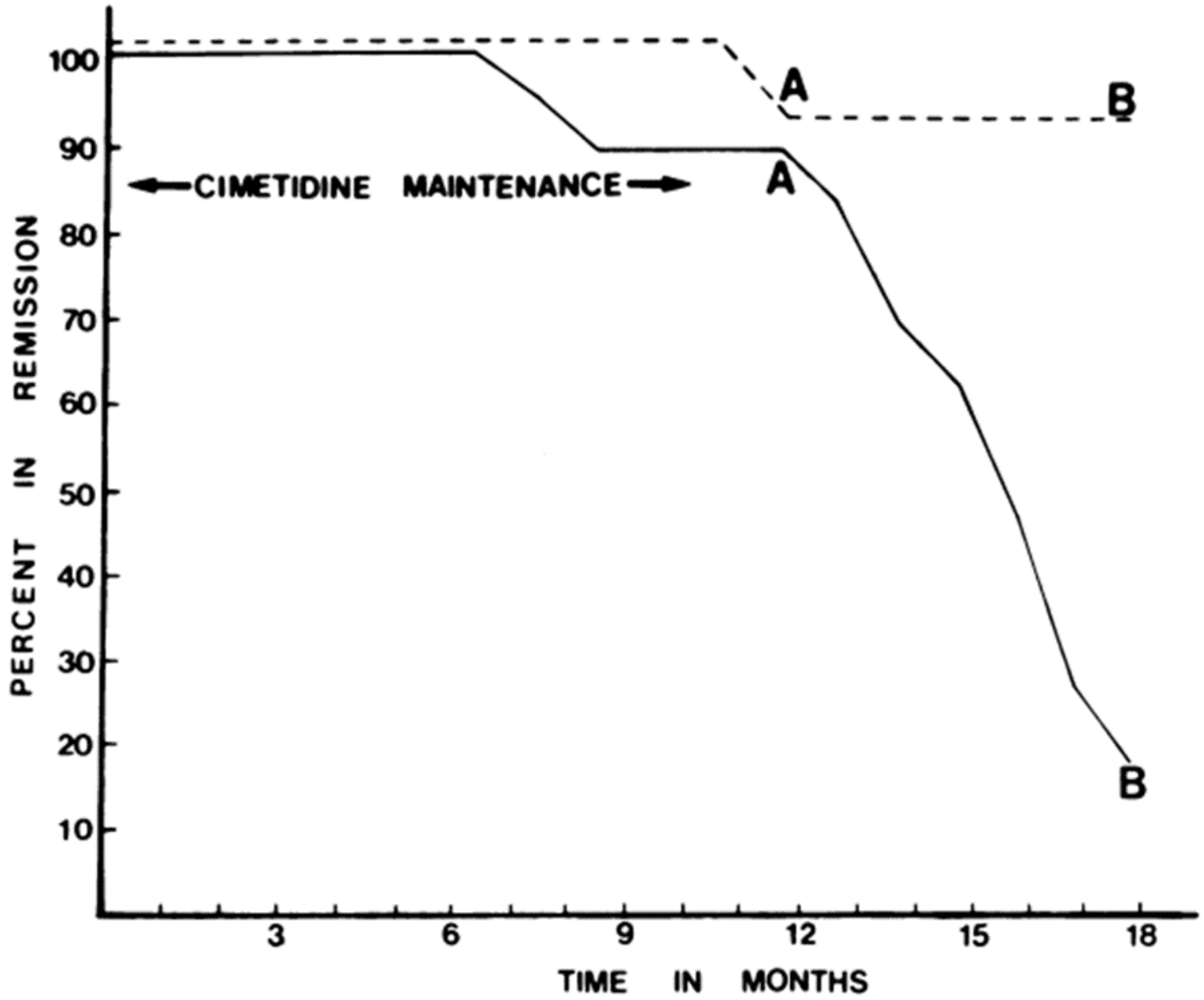


FIG. 1. Life Table analysis according to method of Peto et al.[16] showing per cent of remission during and after cimetidine maintenance for one year (solid line) and after surgery (broken line). The numbers of patients in cimetidine group not in relapse at entry and after 3, 6, 9, 12, 15, and 18 months were respectively 23, 22, 20, 17, 17, 10, and 4. Corresponding numbers in surgical group were 23, 23, 22, 19, 17, 12 and 10. A at end of one year: $z = 0.9836$ $p > 0.5$; B six months after cimetidine withdrawal: $z = 2.6407$ $p < 0.001$. Statistics by Generalised Wilcoxon Test.[17]


GLP-1 RA
Bariatric surgery

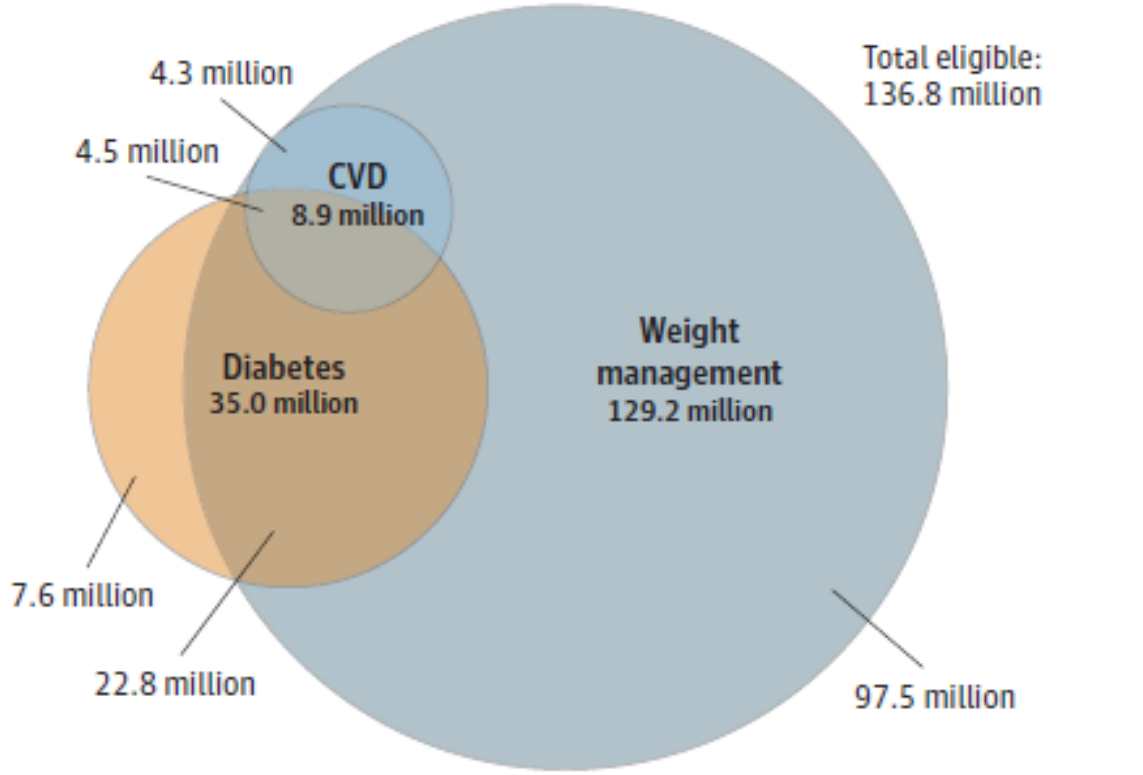
Letters

RESEARCH LETTER

Semaglutide Eligibility Across All Current Indications for US Adults

Rapidly increasing uptake of semaglutide made it the top-selling drug in the US in 2023, with net sales of $13.8 billion.[1,2] Quantifying the number of US adults eligible for semaglutide may guide future policies for this high-cost therapy and clarify potential implications for pharmaceutical spending.

Figure. Semaglutide Eligibility mong US Adults



VIEWPOINT

Discontinuation of Glucagon-Like Peptide-1 Receptor Agonists

Sadiya S. Khan, MD, MSc; Chiadi E. Ndumele, MD, PhD, MHS; Dhruv S. Kazi, MD, MS

Even though GLP-1 RAs—paired with lifestyle changes such as a healthy diet and increased physical activity—are intended for long-term management of the chronic conditions of obesity and diabetes, **many individuals who initiate GLP-1RAs discontinue therapy**

Nearly 30% of individuals discontinued semaglutide in the SELECT trial, with **real-world estimates** for GLP-1 RA **discontinuation in the range of 50% to 75%** at 12months

While treatment with GLP-1 RAs leads to many health benefits, **trials of discontinuation demonstrated rapid regain of weight and worsening of cardiometabolic parameters** after stopping semaglutide or tirzepatide--> ***there may be no return for the investment!***

MORE FROM BEING HUMAN

Bird Flu Is a National Embarrassment
KATHERINE J. WU

Americans With Dementia Are Grieving Social Media
TALIA BARRINGTON

Thermometers Are Hot Garbage
DANIEL ENGBER

Invisible Habits Are Driving Your Life
SHAYLA LOVE

BEING HUMAN

The Ozempic Flip-Flop

West Virginia gave obesity drugs to teachers and state employees—then took them away.

By Sarah Zhang
Photographs by Kristian Thacker

"My insurance set me up for failure," says Hilaria Ireland Swisher. (Kristian Thacker for The Atlantic)

DECEMBER 12, 2024

SHARE SAVE

Game theory- the "One-dollar auction"

Because lost weight is commonly regained after the drug is discontinued, **the major initial investment for therapy may be unwarranted if most patients eventually stop taking the drug and simply regain weight**--> once started, treatment *must* be continued

Access to GLP-1 agents remains inequitable by race and ethnicity, income

Comparison with different high-cost treatments: direct-acting antiviral medications

The introduction of direct-acting antiviral (DAA) medications **revolutionized hepatitis C treatment, offering high cure rates** with shorter therapy durations.

However, these advancements came with substantial initial costs.

Initial Pricing:

- **Sovaldi (Sofosbuvir):** Approved in 2013, Sovaldi was priced at approximately $84,000 for a standard 12-week course, equating to $1,000 per pill.
- **Harvoni (Sofosbuvir/Ledipasvir):** Introduced in 2014, Harvoni's 12-week regimen was priced around $94,500.

Price Evolution:

Over time, **several factors contributed to a decline in the prices** of these medications:

1. **Market Competition:** The approval of additional DAAs **increased competition**, exerting downward pressure on prices.
2. **Negotiated Discounts:** Pharmacy benefit managers and **government programs secured significant discounts**. By 2015, average discounts for Sovaldi reached approximately 46%, reducing the treatment cost to about $40,000.

3. **Generic Versions:** In various countries, the introduction of **generic DAAs** further reduced prices, enhancing accessibility.

Global Perspective:

In low- and middle-income countries, licensing agreements and generic manufacturing have led to even more significant price reductions. **For instance, in India, the cost of a generic version of sofosbuvir has been reported as low as $4 per pill.**

But: hepatis C does not relapse after drug withdrawal, obesity does!

Production of peptides is inherently expensive (not so small molecules.....)

Surgical Endoscopy (2024) 38:6560–6565
https://doi.org/10.1007/s00464-024-11191-1

A cost comparison of GLP-1 receptor agonists and bariatric surgery: what is the break even point?

Salvatore Docimo Jr.[2] · Jay Shah[1] · Gus Warren[1] · Samer Ganam[1,2] · Joseph Sujka[2] · Christopher DuCoin[2]

Received: 13 May 2024 / Accepted: 17 August 2024 / Published online: 16 September 2024

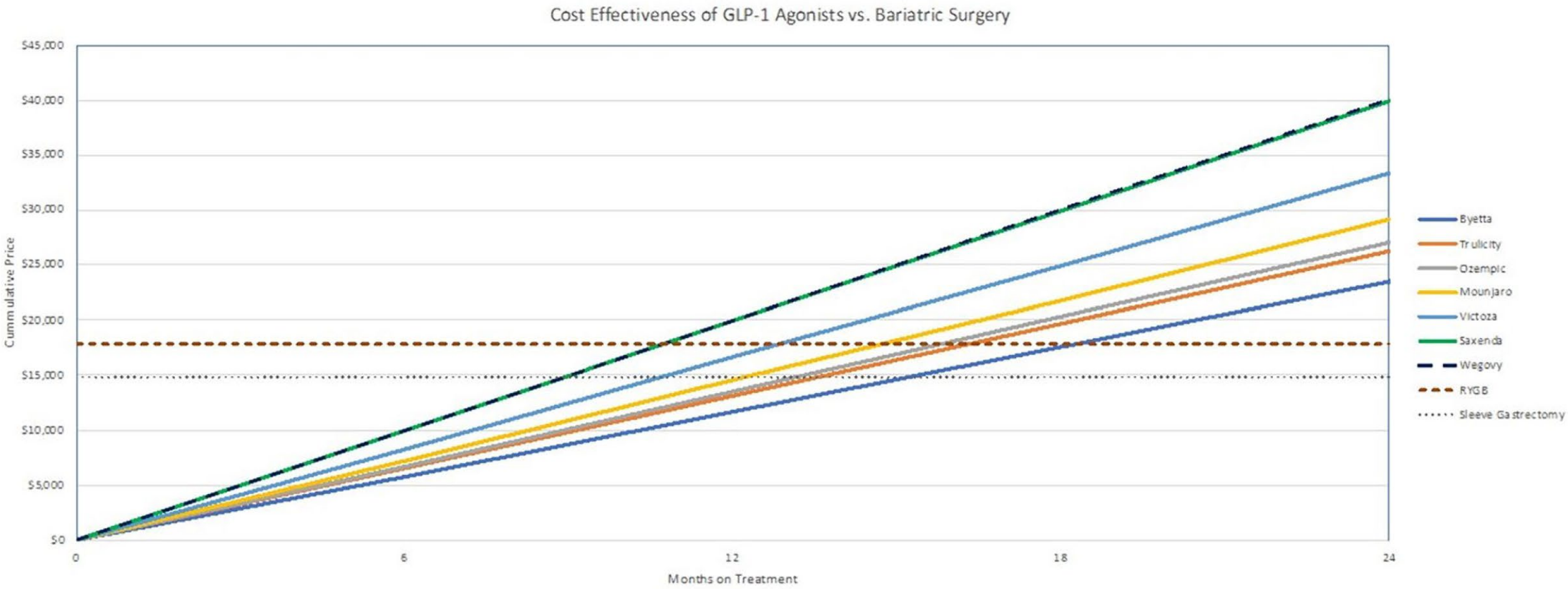
Abstract

Background With the prevalence of obesity rising in the US, medical management is of increasing importance. Two popular options for the treatment of obesity are bariatric surgery (e.g. sleeve gastrectomy and Roux-en-Y gastric bypass) and the increasingly popular GLP-1 Receptor Agonists (GLP-1 s). This study examines the initial and long-term costs of GLP-1 s compared to bariatric surgery.

Study design We compared average 2023 national retail prices for GLP-1 s to surgical cost estimates from 2015 adjusted for inflation. We then plotted the cumulative medication cost over time against the flat cost of each surgery, thus calculating "break-even points" (when medication costs equal surgery costs). The findings revealed a crucial insight, for some GLP-1 s like Saxenda and Wegovy, the high cost of ongoing use surpasses the cost of RYGB in less than a year and sleeve gastrectomy within nine months. Even the most affordable option, Byetta, becomes costlier than surgery after around 1.5 years.

Results This highlights the importance of looking beyond the initial financial investment when considering cost-effectiveness. Additionally, while not directly assessed, this study acknowledges that GLP-1 s take time to reach full effectiveness, potentially delaying weight loss while accumulating costs. Concerns also exist about weight regain after discontinuing the medication.

Conclusion This study is limited by the real-world variation for individual treatment costs (e.g. insurance), a limited evaluation of long-term costs associated with either treatment modality and their co-morbidities, and the reality of patient preference providing subjective value to either modality. Overall, the study offers insights into the financial trade-offs between GLP-1 s and bariatric surgery.


Cost Effectiveness of GLP-1 Agonists vs. Bariatric Surgery
$45,000
$40,000
$35,000
$30,000
$25,000
$20,000
$15,000
$10,000
$5,000
$0
Cummulative Price
0
6
12
18
24
Months on Treatment
Byetta
Trulicity
Ozempic
Mounjaro
Victoza
Saxenda
Wegovy
RYGB
Sleeve Gastrectomy

OPEN ACCESS Freely available online

PLOS ONE

The Business Case for Bariatric Surgery Revisited: A Non-Randomized Case-Control Study

Eric A. Finkelstein[1,2*], Benjamin T. Allaire[3], Denise Globe[4], John B. Dixon[5,6]

1 Health Services and Systems Research, Duke-NUS Graduate Medical School, Singapore, Singapore, **2** Global Health Institute, Duke University, Durham, North Carolina, United States of America, **3** RTI International, Durham, North Carolina, United States of America, **4** Global Health Outcomes Strategy and Research, Allergan Inc., Irvine, California, United States of America, **5** Department of General Practice, School of Primary Health Care, Monash University, Melbourne, Australia, **6** Human Neurotransmitters Laboratory, Vascular and Hypertension Unit, The Baker-IDI Heart and Diabetes Institute, Melbourne, Australia

Abstract

Background and Aim: Prior studies reporting that bariatric surgery (including laparoscopic adjustable gastric band (LAGB) and [laparoscopic Roux-en-Y] Gastric Bypass (LRYGB)) is cost-saving relied on a comparison sample of those with a morbid obesity (MO) diagnosis code, a high cost group who may not be reflective of those who opt for the procedures. We re-estimate net costs and time to breakeven using an alternative sample that does not rely on this code.

Materials and Methods: Non-randomized case-control study using medical claims data from a commercial database in the USA. LAGB and LRYGB claimants were propensity score matched to two control samples: one restricted to those with a MO diagnosis code and one without this restriction.

Results: When using the MO sample, costs for LAGB and LRYGB are recovered in 1.5 (Confidence Interval [CI]: 1.45 to 1.55) and 2.25 years (CI: 2.07 to 2.43), and 5 year savings are $78,980 (CI: 62,320 to 100,550) for LAGB and $61,420 (CI: 44,710 to 82,870) for LRYGB. Without the MO requirement, time to breakeven for LAGB increases to 5.25 (CI: 4.25 to 10+) years with a 5 year net cost of $690 (CI: 6,800 to 8.400). For LRYGB, time to breakeven exceeds 10 years and 5 year net costs are $18,940 (CI: 10,390 to 26,740).

Conclusions: The net costs and time to breakeven resulting from bariatric surgery are likely less favorable than has been reported in prior studies, and especially for LRYGB, with a time to breakeven of more than twice the 5.25 year estimate for LAGB.

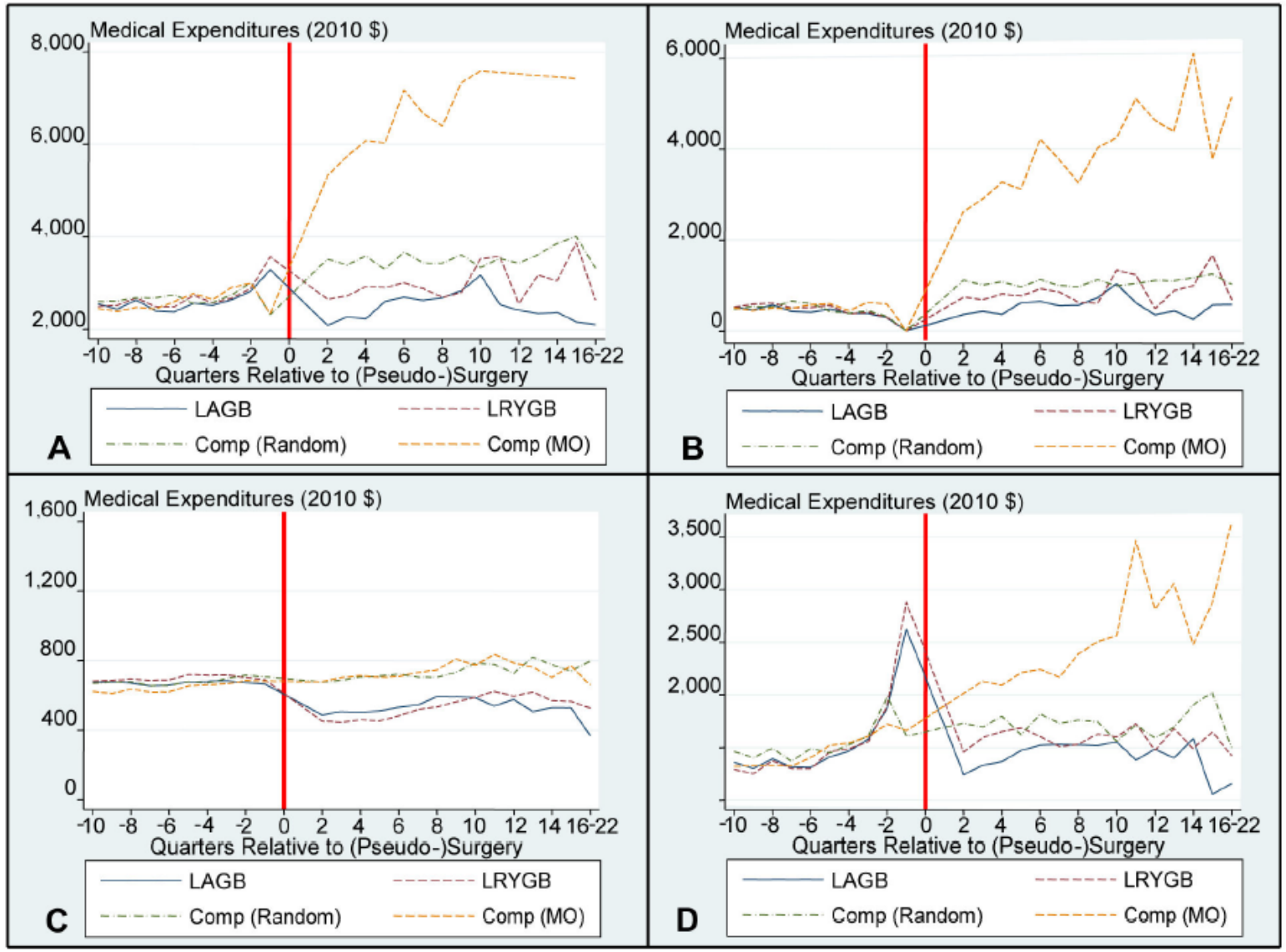


Figure 1. Full Sample – Mean Medical Expenditures By Quarter. Panel A illustrates Mean Total Payments after matching in the Full Sample. Panel B illustrates Mean Inpatients Payments after matching in the Full Sample. Panel C illustrates Mean Outpatient Payments after matching in the Full Sample. Panel D illustrates Mean Pharmaceutical Payments after matching in the Full Sample. For scaling purposes, Q1 costs have not been included in the graph. The surgical date has been replaced with a red line. Comp is short for comparison sample; MO is short for morbid obesity.

doi: 10.1371/journal.pone.0074935.g001

Research

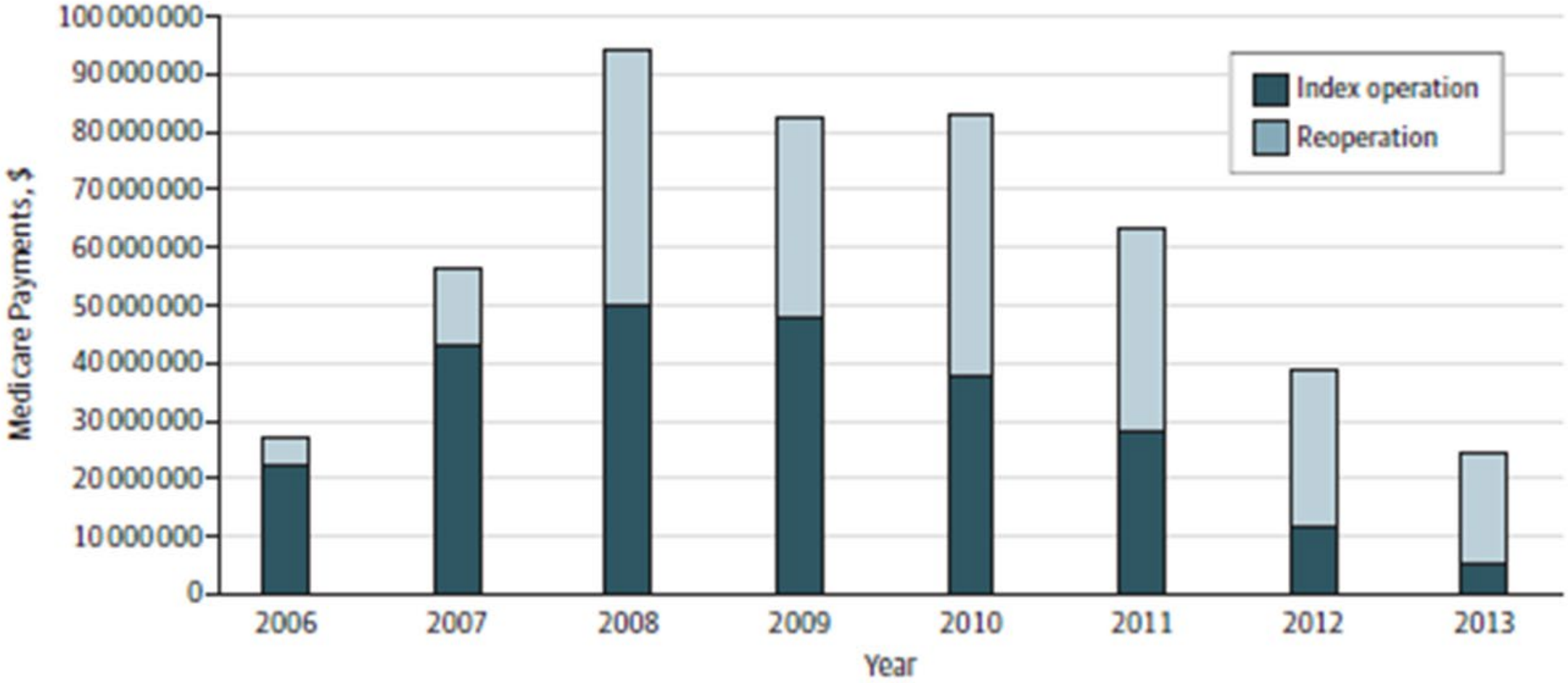
JAMA Surgery | Original Investigation

Reoperation and Medicare Expenditures After Laparoscopic Gastric Band Surgery

Andrew M. Ibrahim, MD, MSc; Jyothi R. Thumma, MPH; Justin B. Dimick, MD, MPH

RESULTS Of the 25 042 patients who underwent gastric band placement, 20 687 (82.61%) were white, 18 143 (72.45%) were women, and the mean age was 57.56 years. Patients (mean age, 57.5; 76.2% women) requiring reoperation had lower rates of hypertension (64.9% vs 73.4%; $P < .001$) and diabetes (40.4% vs 44.6%; $P < .001$) and were more likely to have their index operation at a for-profit hospital (34.6% vs 22.0%; $P < .001$). With an average of 4.5-year follow-up, 4636 patients (18.5%) underwent 17 539 reoperations (an average of 3.8 procedures/patient). Hospital referral regions demonstrated a 2.9-fold variation in risk- and reliability-adjusted rates of reoperation (lower quartile average, 13.3%; upper quartile average, 39.1%). During the study period, Medicare paid $470 million for laparoscopic gastric band associated procedures, of which $224 million (47.6%) of the payments were for reoperations. From 2006 to 2013, the proportion of payments from Medicare for reoperations increased from 16.4% to 77.3% of their annual spending on the gastric band device.

Figure 2. Annual Medicare Spending on Gastric Band Procedures



	2006	2007	2008	2009	2010	2011	2012	2013
Reoperation	4424990	13466180	44567582	34669983	45463800	35027950	27534175	18998759
Index operation	22573077	43128201	49882214	47712709	37812492	28385757	11433436	5571338
All	26998067	56594381	94449796	82382693	83276292	63413707	38967611	24570097

Obesity Surgery (2024) 34:4413–4424
https://doi.org/10.1007/s11695-024-07491-z

ORIGINAL CONTRIBUTIONS

Economic Impact of Bariatric Surgery in Australia: 16-Year Results from the 45 and Up Study with Linked Health Data

Qing Xia[1,2] · Julie A. Campbell[2] · Alex Kitsos[2] · Petr Otahal[2] · Michelle Kilpatrick[2] · Alison Venn[2] · David Preen[3] · Barbara de Graaff[2] · Lei Si[4,5] · Amanda L. Neil[2] · Alexandr Kuzminov[2] · Andrew J. Palmer[2]

Received: 31 January 2024 / Revised: 24 August 2024 / Accepted: 27 August 2024 / Published online: 21 November 2024

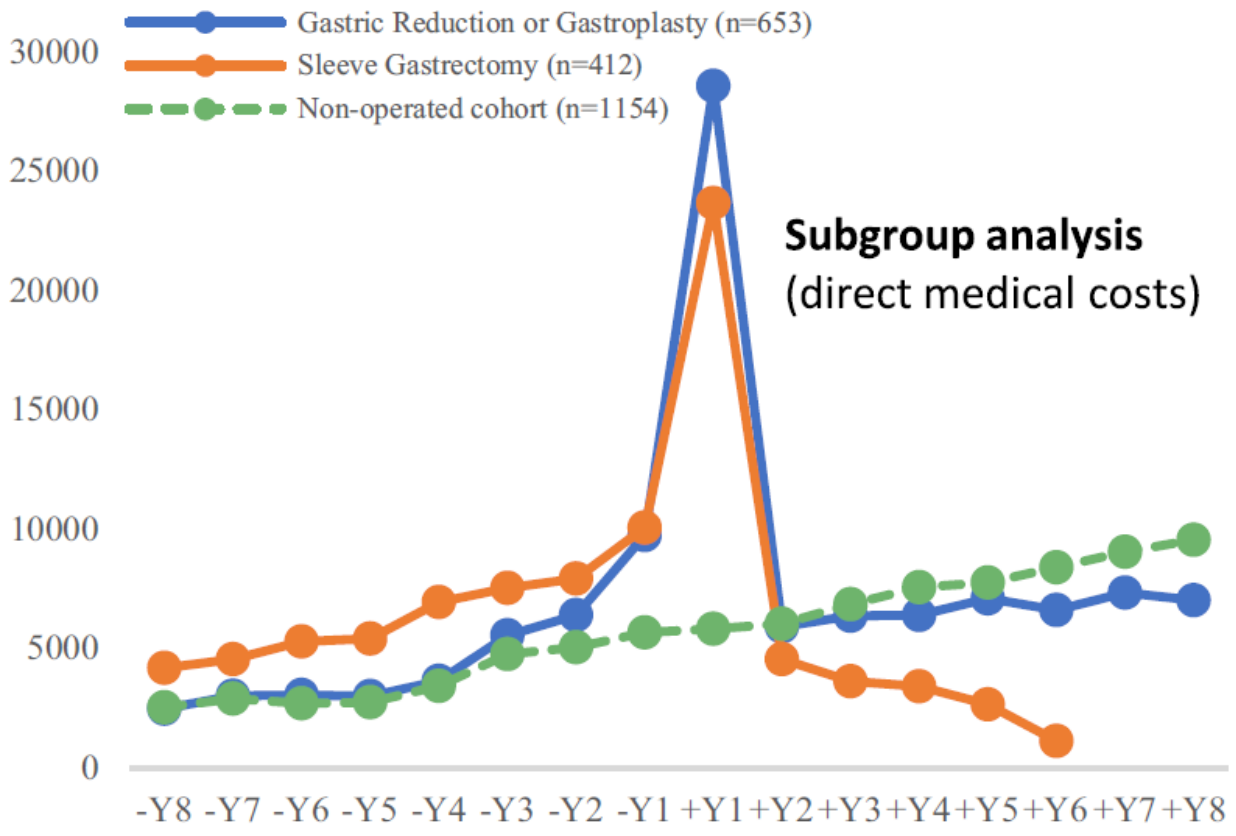
Abstract

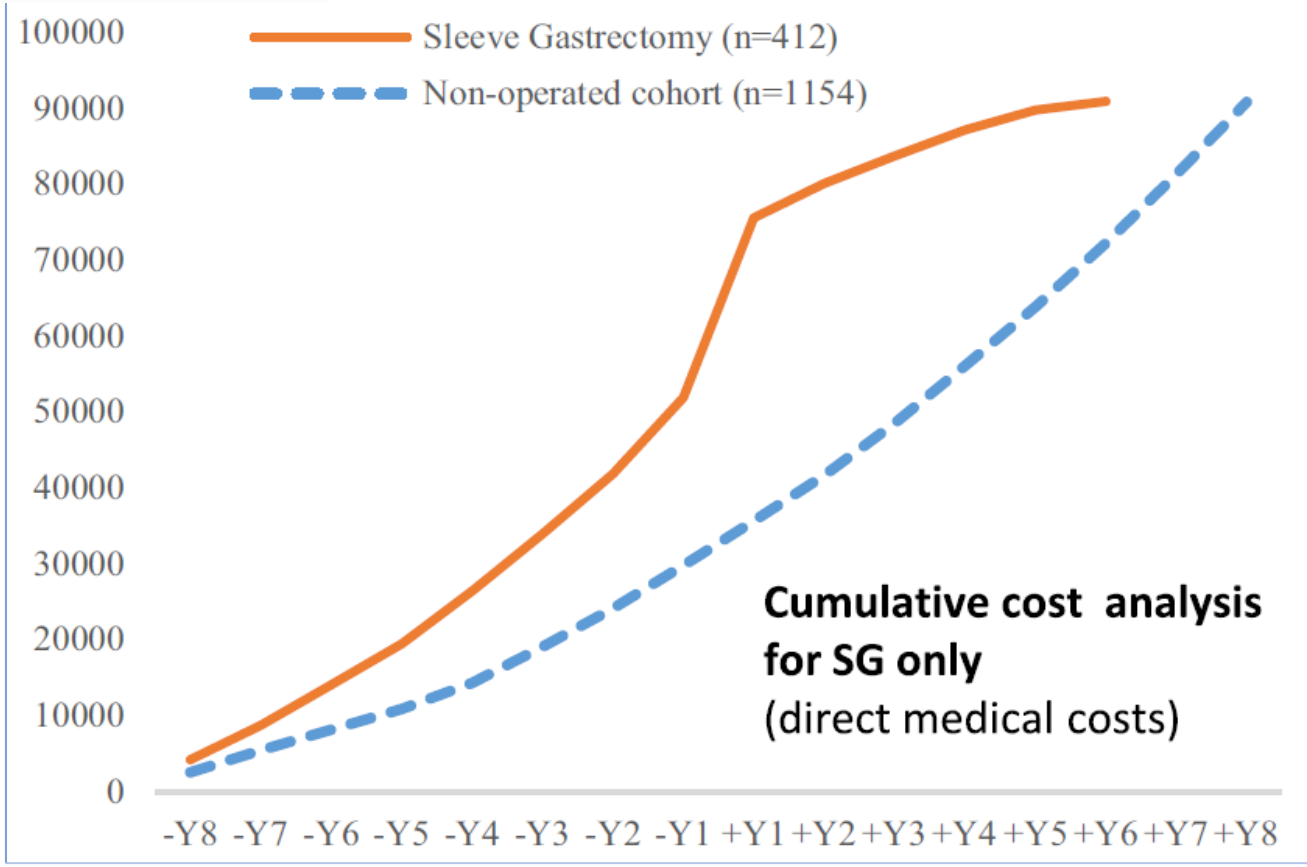
Background Bariatric surgery is the most effective long-term therapy for severe obesity; however, empirical investigation of its economic impacts has been based on limited samples, short-term costs, and a narrow range of cost categories. This study aimed to evaluate the economic impacts of bariatric surgery in a large cohort of Australians aged ≥ 45 years.

Methods $N = 1157$ operated (surgery) and 1157 non-operated participants were selected from the *45 and Up Study*. Data sources included the baseline and follow-up surveys along with linked state and national administrative health datasets. Linear mixed-effects regression predicted the cost trajectory 8 years pre- and post-bariatric surgery, and the difference-in-differences approach evaluated its economic impact. Sensitivity analyses included an approximation of indirect costs and subgroup analysis by surgery type.

Results The matched cohort composed 77% female, had an average age of 58.1 ± 5.8 years. Direct healthcare costs increased over time in both groups. Costs for the operated group peaked ($15,884) during the surgery year and became up to 23.8% lower than those for the non-operated group from the second year post-surgery when including indirect costs. Surgery's economic benefits increased over longer horizons, with a maximum annual cost-saving of $3196 per person in the eighth post-surgery year. However, even after accounting for indirect costs, cumulative cost-savings were not achieved. Subgroup analysis revealed sleeve gastrectomy as the least costly surgical option.

Conclusion Higher short-term costs in the surgery year primarily drove inter-group cost differences. The economic value of bariatric surgery lies in the long-term benefits, particularly when considering indirect costs.


Gastric Reduction or Gastroplasty (n=653)
Sleeve Gastrectomy (n=412)
Non-operated cohort (n=1154)
30000
25000
20000
15000
10000
5000
0
-Y8 -Y7 -Y6 -Y5 -Y4 -Y3 -Y2 -Y1 +Y1 +Y2 +Y3 +Y4 +Y5 +Y6 +Y7 +Y8
Subgroup analysis
(direct medical costs)


Sleeve Gastrectomy (n=412)
Non-operated cohort (n=1154)
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
-Y8 -Y7 -Y6 -Y5 -Y4 -Y3 -Y2 -Y1 +Y1 +Y2 +Y3 +Y4 +Y5 +Y6 +Y7 +Y8
Cumulative cost analysis
for SG only
(direct medical costs)

Health Expenditures After Bariatric Surgery
A Retrospective Cohort Study

Valerie A. Smith, DrPH,†‡§ Lindsay Zepel, MS,† Aniket A. Kawatkar, PhD,‖ David E. Arterburn, MD, MPH,¶# Aileen Baecker, PhD,‖ Mary K. Theis, MA, MS,¶ Caroline Sloan, MD, MPH,*‡ Amy G. Clark, PhD,† Shireesh Saurabh, MD,** Karen J. Coleman, PhD,‖†† and Matthew L. Maciejewski, PhD*†‡✉*

Objective: To compare expenditures between surgical and matched nonsurgical patients in a retrospective cohort study.

Background: Bariatric surgery leads to substantial improvements in weight and weight-related conditions, but prior literature on post-surgical health expenditures is equivocal.

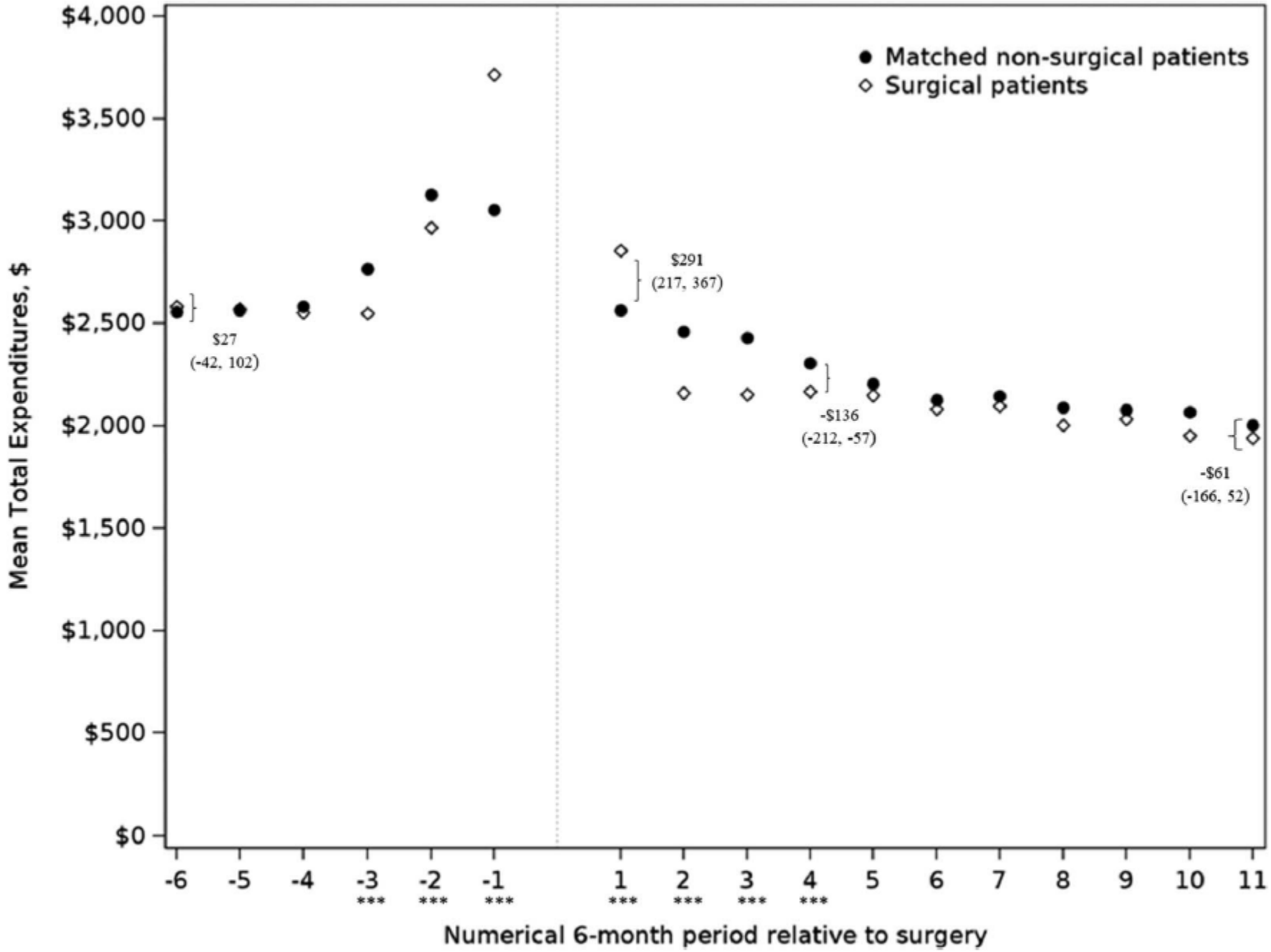
Methods: In a retrospective study, total outpatient, inpatient, and medication expenditures 3 years before and 5.5 years after surgery were compared between 22,698 bariatric surgery [n = 7127 Roux-en-Y gastric bypass (RYGB), 15,571 sleeve gastrectomy (SG)] patients from 2012 to 2019 and 66,769 matched nonsurgical patients, using generalized estimating equations. We also compared expenditures between patients receiving the 2 leading surgical procedures in weighted analyses.

Results: Surgical and nonsurgical cohorts were well matched, 80% to 81% females, with mean body mass index of 44 and mean age of 47 (RYGB) and 44 (SG) years. Estimated total expenditures were similar between surgical and nonsurgical groups 3 years before surgery ($27 difference, 95% CI: −42, 102), increased 6 months before surgery for surgical patients, and decreased below preperiod levels for both groups after 3 to 5.5 years to become similar (difference at 5.5 years = -$61, 95% CI: −166, 52). Long-term outpatient expenditures were similar between groups. Surgical patients' lower long-term medication expenditures ($314 lower at 5.5 years, 95% CI: −419, −208) were offset by a higher risk of hospitalization. Total expenditures were similar between patients undergoing RYGB and SG 3.5 to 5.5 years after surgery.

Conclusions: Bariatric surgery translated into lower medication expenditures than matched controls, but not lower overall long-term expenditures. Expenditure trends appear similar for the two leading bariatric operations.

Key Words: bariatric, expenditures, gastric bypass, matching, obesity, sleeve gastrectomy, surgery

(*Ann Surg* 2024;280:e8–e16)


Matched non-surgical patients
Surgical patients
Mean Total Expenditures, $
$4,000
$3,500
$3,000
$2,500
$2,000
$1,500
$1,000
$500
$0
$27
(-42, 102)
$291
(217, 367)
-$136
(-212, -57)
-$61
(-166, 52)
-6 -5 -4 -3 -2 -1 1 2 3 4 5 6 7 8 9 10 11
*** *** *** *** *** *** ***
Numerical 6-month period relative to surgery

ORIGINAL ARTICLE

Health Expenditures Among High-Risk Patients After Gastric Bypass and Matched Controls

Matthew L. Maciejewski, PhD; Edward H. Livingston, MD, MS; Valerie A. Smith, MS; Leila C. Kahwati, MD, MPH; William G. Henderson, MPH, PhD; David E. Arterburn, MD, MPH

Objective: To determine whether bariatric surgery is associated with reduced health care expenditures in a multisite cohort of predominantly older male patients with a substantial disease burden.

Design: Retrospective cohort study of bariatric surgery. Outpatient, inpatient, and overall health care expenditures within Department of Veterans Affairs (VA) medical centers were examined via generalized estimating equations in the propensity-matched cohorts.

Setting: Bariatric surgery programs in VA medical centers.

Participants: Eight hundred forty-seven veterans who were propensity matched to 847 nonsurgical control subjects from the same 12 VA medical centers.

Intervention: Bariatric surgical procedures.

Main Outcome Measure: Health expenditures through December 2006.

Results: Outpatient, inpatient, and total expenditures trended higher for bariatric surgical cases in the 3 years leading up to the procedure and then converged back to the lower expenditure levels of nonsurgical controls in the 3 years after the procedure.

Conclusions: Based on analyses of a cohort of predominantly older men, bariatric surgery does not appear to be associated with reduced health care expenditures 3 years after the procedure.

Arch Surg. 2012;147(7):633-640

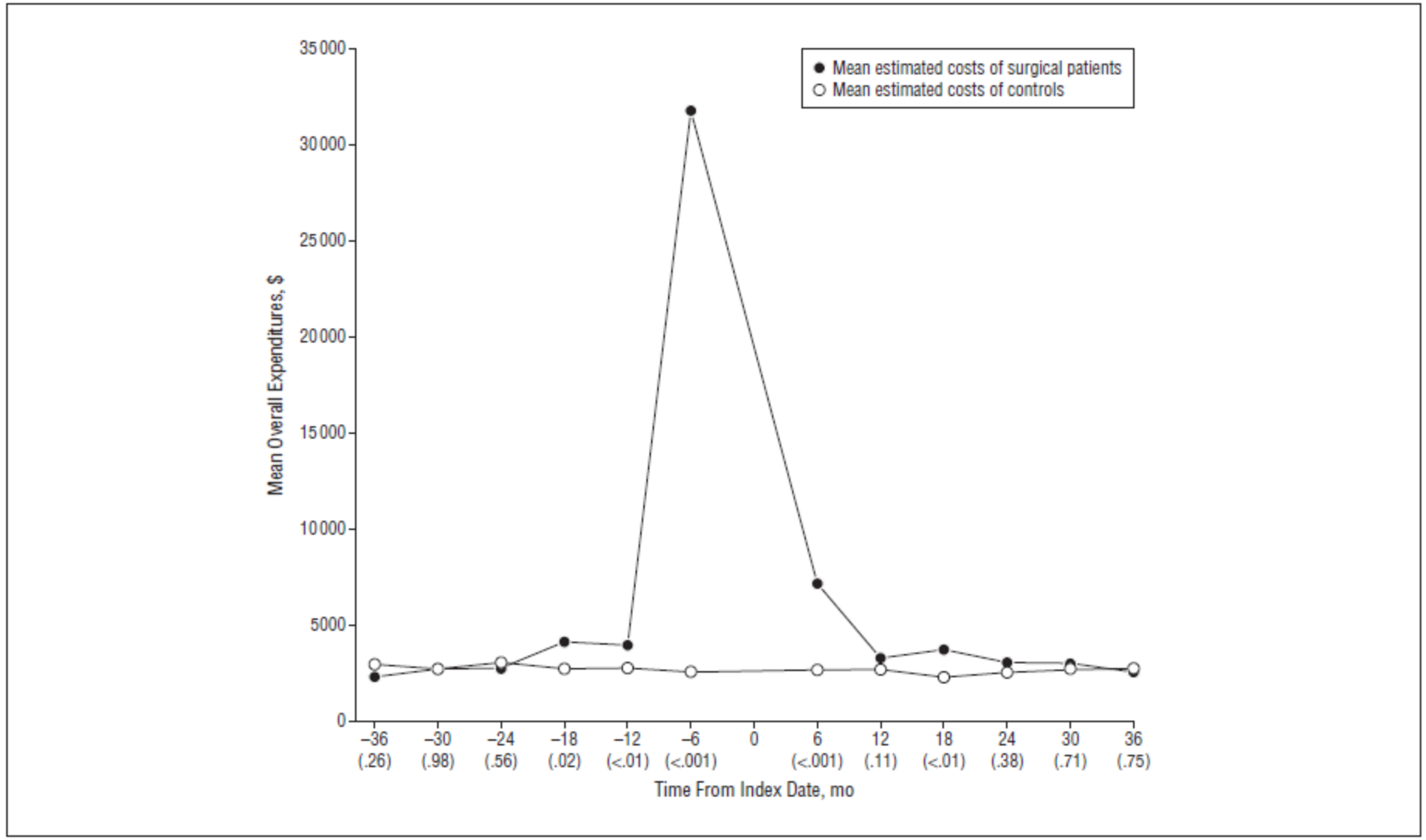


Figure 3. Trends in predicted overall US Department of Veterans Affairs expenditures for surgical patients and nonsurgical control subjects. *P* values are given below each measurement of time from the index date.

ORIGINAL ARTICLE

Impact of Bariatric Surgery on Health Care Costs of Obese Persons

A 6-Year Follow-up of Surgical and Comparison Cohorts Using Health Plan Data

Jonathan P. Weiner, DrPH; Suzanne M. Goodwin, PhD; Hsien-Yen Chang, PhD, MHS; Shari D. Bolen, MD, MPH; Thomas M. Richards, MSEE; Roger A. Johns, MD, MHS; Soyal R. Momin, MS, MBA; Jeanne M. Clark, MD, MPH

Importance: Bariatric surgery is a well-documented treatment for obesity, but there are uncertainties about the degree to which such surgery is associated with health care cost reductions that are sustained over time.

Objective: To provide a comprehensive, multiyear analysis of health care costs by type of procedure within a large cohort of privately insured persons who underwent bariatric surgery compared with a matched nonsurgical cohort.

Design: Longitudinal analysis of 2002-2008 claims data comparing a bariatric surgery cohort with a matched nonsurgical cohort.

Setting: Seven BlueCross BlueShield health insurance plans with a total enrollment of more than 18 million persons.

Participants: A total of 29 820 plan members who underwent bariatric surgery between January 1, 2002, and December 31, 2008, and a 1:1 matched comparison group of persons not undergoing surgery but with diagnoses closely associated with obesity.

Main Outcome Measures: Standardized costs (overall and by type of care) and adjusted ratios of the surgical group's costs relative to those of the comparison group.

Results: Total costs were greater in the bariatric surgery group during the second and third years following surgery but were similar in the later years. However, the bariatric group's prescription and office visit costs were lower and their inpatient costs were higher. Those undergoing laparoscopic surgery had lower costs in the first few years after surgery, but these differences did not persist.

Conclusions and Relevance: Bariatric surgery does not reduce overall health care costs in the long term. Also, there is no evidence that any one type of surgery is more likely to reduce long-term health care costs. To assess the value of bariatric surgery, future studies should focus on the potential benefit of improved health and well-being of persons undergoing the procedure rather than on cost savings.

JAMA Surg. 2013;148(6):555-562. Published online February 20, 2013. doi:10.1001/jamasurg.2013.1504

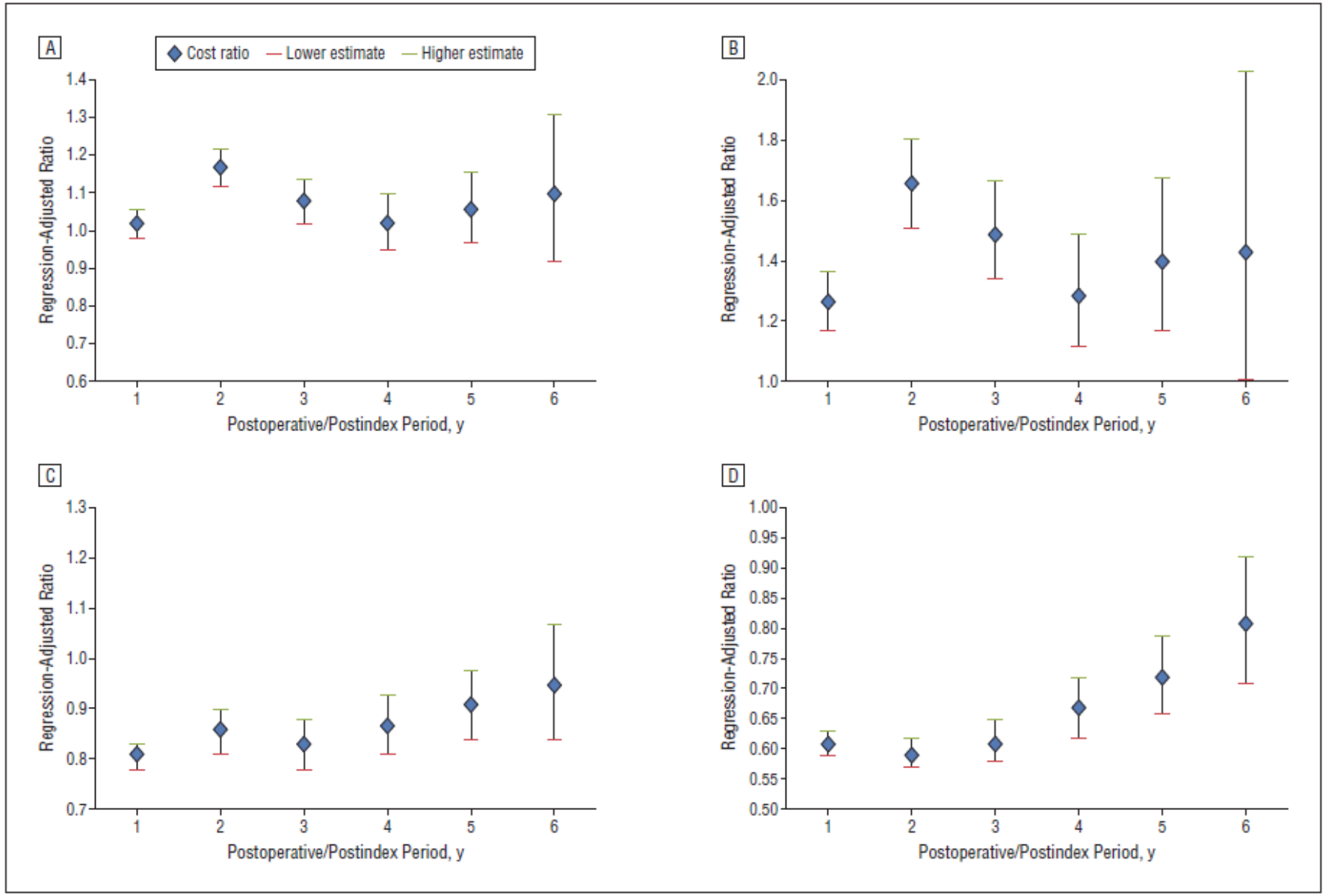


Figure. Regression-adjusted ratios of surgery group costs to comparison group costs by time and expenditure category, including total cost (A), inpatient cost (B), professional office cost (C), and pharmacy cost (D). Ratios higher than 1.00 indicate that the annual costs are greater among the surgical cohort compared with the comparison group for that period. Ratios in which the 95% CI does not cross 1.00 are statistically significant at the $P = .05$ level. This analysis adjusted for the matching design of the study and the following covariates: person's baseline cost in the preoperative/preindex period, age, obesity propensity score during the preoperative/preindex period, and 32 morbidity groups (aggregated diagnosis groups) based on all diagnoses found in the claims during the preoperative/preindex year. Total cost includes inpatient, professional office, outpatient/other, and pharmacy costs.

Conclusions

- With the **current prevalence of obesity**, and the **current prices of GLP1 RA**, long-term drug treatment is **unsustainable**
- **Drug withdrawal** is associated with **weight regain**--> **"one-dollar-auction paradox"** for the pharma treatment
- Comparison with different high-cost treatments is misleading
- Contrary to popular belief, **there is no proof that bariatric surgery is associated with long-term savings** (at least up to 8-10 years)
- **Small molecules** instead of peptides might alter the scenario

Thank you for your attention!

Francesco.papadia@unige.it