

# Return on Investment for Bariatric Surgery

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**I**n this issue of the *Journal*, Crémieux and colleagues<sup>1</sup> report on an analysis of the return on investment for bariatric surgery. The authors used health insurance claims data for more than 3600 patients who underwent a bariatric procedure and for a matched control group to estimate the length of time required before the procedure breaks even (return on investment period) from the insurer's perspective. The authors find that procedure-related costs are fully recovered after 53 months. For laparoscopic procedures, the estimated return on investment is reduced to 25 months. This article makes a nice contribution to the still sparse literature on the economics of bariatric surgery. However, 2 important and subtle points require further discussion.

First, the return on investment estimates are driven primarily by rising costs in their matched control group rather than by a reduction in costs from the bariatric sample. When the authors refer to "savings," they are actually referring to the difference in costs between the surgery and control groups in the postsurgery period. Consider the savings that the authors report for month 19 and beyond. These are forecast to be \$545 per month for the overall bariatric population and \$926 per month for the laparoscopic-only sample. But in Table 1 of their article, the authors report costs for 5 months before surgery of \$2443, or roughly \$489 per month. Because the monthly savings figures exceed the presurgery mean costs, and dramatically so for the laparoscopic sample, the return on investment estimates seem to result from substantially higher cost increases in the control group relative to the surgery group in the postsurgery period.

Second, because of data limitations, the authors' return on investment estimates are based on the assumption that the differential in costs between the 2 groups (ie, the savings) is constant after month 19 for the overall sample and after month 13 for the laparoscopic sample. Whether or not this assumption holds in reality will only be answered once additional follow-up data become available. If this assumption is not met or if another control group has a

different cost profile, then the return on investment could be substantially increased.

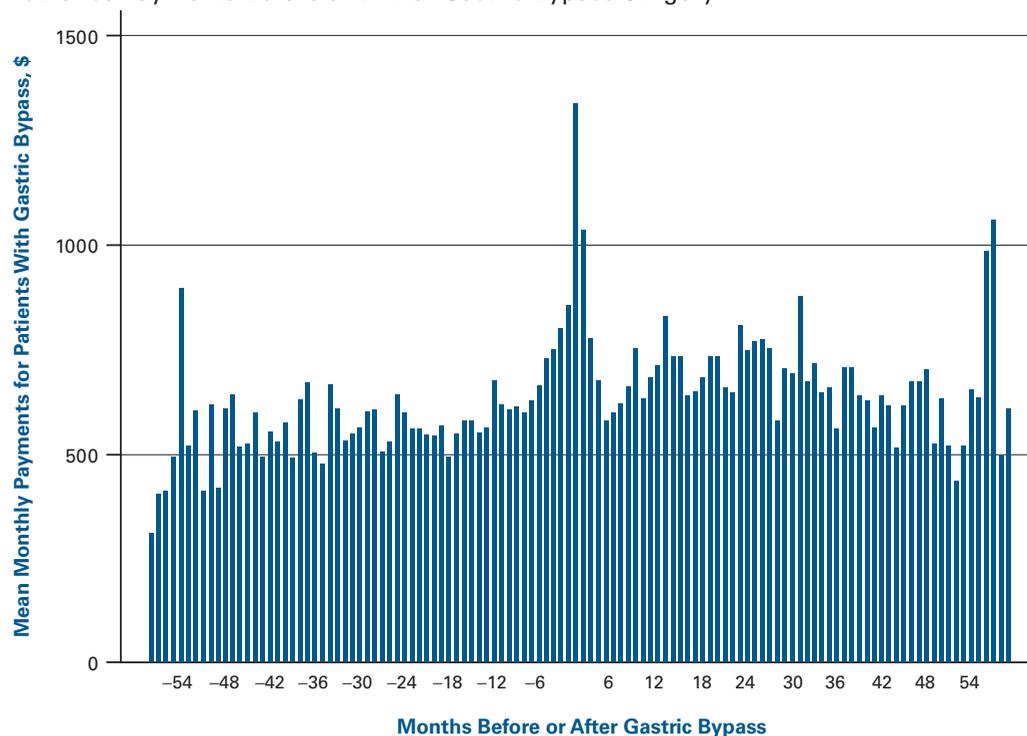
To further highlight these points, the **Figure** herein (based on claims data from Medstat's proprietary MarketScan database; Thomson Reuters, Ann Arbor, Michigan) provides a graphical depiction of the cost implications of bariatric surgery. The Figure shows insurance payments before and after gastric bypass surgery (payments for the month of surgery are removed because they make it more difficult to see the trends).

In the roughly 54 months after the procedure takes place (the duration that the data provide reliable estimates for), the Figure confirms that costs in the postsurgery period seem to be no less than those in the presurgery period. Although gastric bypass has been shown to reduce weight and to improve comorbidities, there are several reasons why costs are not reduced. First, we found that a few individuals experienced severe adverse events that required lengthy and expensive readmissions (EAF and DSB, unpublished data, 2008). Second, other recipients had high costs because the procedure was so successful. In several cases, individuals lost so much weight that they required subsequent surgical procedures to have excess skin removed. There was even evidence of hip and knee replacements that likely resulted from formerly obese individuals' becoming active and realizing that the damage their excess weight caused on their joints could only be fixed through additional surgical procedures, operations that would not have been required if not for the successful weight loss resulting from the procedure. The Figure also reveals substantial variability in the monthly cost estimates, suggesting that the assumption of constant savings after month 19 (or month 13) is unlikely to hold in reality. It would be interesting to see a similar figure of the data by Crémieux et al showing monthly costs for the surgery and control samples to confirm that rising costs in the control sample are generating their return on investment estimates.

As a parting note, we would like to add some caution for insurers and other payers. If coverage decisions are predicated on achieving returns on investment as short as those presented by Crémieux et al—and an internal ex post analysis produces results that are not as favorable because a within-

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■ **Figure.** Insurance Payments Before and After Gastric Bypass Surgery



Payments for the month of surgery are removed because they make it more difficult to see the trends. Based on claims data from Medstat's proprietary MarketScan database (Thomson Reuters, Ann Arbor, Michigan).

sample analysis akin to that in the Figure is conducted or because some of the assumptions in the study by Crémieux and colleagues do not materialize—then it is likely that the decision to cover the procedure will be reversed. As a result, those who could truly benefit from the procedure would not be able to do so without paying 100% of the costs out-of-pocket. For this reason, we have counseled bariatric device manufacturers, insurers, employers, and others against focusing on return on investment as a means for making coverage decisions for bariatric procedures.

Bariatric procedures should not be held to a different standard than other medical or surgical interventions, regardless of what the return on investment might actually be. For example, no one asks to see a positive return on investment for treatment of cancer, heart disease, or diabetes mellitus, yet treatments for these conditions are covered in almost every health plan. The coverage decision should be based on whether or not the intervention can improve the condition in a cost-effective manner compared with other potential treatments. Making this determination requires information on efficacy and cost-effectiveness relative to other treatment options, but cost savings are not part of the calculus, nor should they be. To this point, when we presented the Figure herein to the chief medical officer of a private health plan, he responded

that the results were as expected but that he would continue to cover bariatric procedures (although only at “Centers of Excellence”) because they represent the best available alternative for treating individuals with morbid obesity (oral communication, September 2006). We would encourage others to make a similar assessment to determine whether or not coverage is appropriate for their population, regardless of what the return on investment might actually be.

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## REFERENCE

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