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Therapeutic Benefits of Bariatric Surgery on Diabetes Translate into Significant Economic Benefits

Surgical Therapy Effective and less expensive than leaving obese patients with diabetes on standard therapy

San Diego, October 12, 2010 — New data presented today at Obesity 2010, the 28th annual scientific meeting of The Obesity Society, find that bariatric surgery is associated with reduced healthcare costs for diabetes patients who are morbidly obese. The study, conducted by Washington University School of Medicine in St. Louis, Université du Québec à Montréal (UQAM), and **Analysis Group, Inc.**, shows that costs associated with bariatric surgery are fully recovered in two to three years post-surgery, and a significant reduction in diabetes diagnostics claims and diabetes medication claims occurs post-surgery. The study, “Economic Impact of the Clinical Benefits of Bariatric Surgery in Diabetes Patients With BMI ≥ 35 kg/m²,” also was published in last month’s online edition of *Obesity*.

Diabetes mellitus is a major public health concern in the United States – and other parts of the world – because of its prevalence, considerable morbidity and mortality, and economic burden. Diabetes is associated with serious complications including coronary heart disease, kidney failure, neuropathy, blindness and amputation, and was the seventh leading cause of death in 2006, accounting for more than 72,000 deaths.¹

Type 2 diabetes accounts for 90 to 95 percent of all diagnosed cases.¹ Obesity is a major risk factor for Type 2 diabetes,² and the risk of diabetes increases directly with body mass index (BMI).³ Results of a 2004 meta-analysis of more than 20,000 patients who had bariatric surgery showed that diabetes was completely resolved in 76.8 percent of patients, and resolved or improved in 86 percent, following surgery.⁴

“Weight loss is an important therapeutic goal in obese patients with type 2 diabetes, because even moderate weight loss – 5 percent – improves hepatic insulin sensitivity and reduces glucose production by the liver,⁵” says Samuel Klein, M.D., director, Center for Human Nutrition, Washington University School of Medicine, St. Louis. “Bariatric surgery is the most effective available weight-loss therapy and has considerable beneficial effects on diabetes and other obesity-related comorbidities.”

Diabetes-related costs represent a disproportionate share of healthcare costs among the obese.⁶ The estimated yearly costs of managing a patient with diabetes (\$13,243) are more than five times that of a patient without diabetes (\$2,560), and this number is expected to reach \$350 billion total by 2025. With the addition of productivity lost, this number increases to \$2.6 trillion in the next 15 years.⁷

“The purpose of this study was to estimate the economic impact of the clinical benefits of bariatric surgery on medical costs and return on investment of the surgery in patients with diabetes who are morbidly obese (BMI ≥ 35 kg/m²),” says **Pierre Cremieux**, Ph.D., a health economics expert and Managing Principal at Analysis Group. “We identified obese patients with diabetes who were treated with bariatric surgery and compared their post-surgery healthcare costs, diabetes diagnosis claims, and diabetes medication claims with matched non-surgery control patients. (MORE)

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The data show surgical therapy to be clinically effective, and ultimately less expensive, than leaving these patients on standard therapy.”

Using an administrative claims database of privately insured patients covering 8.5 million lives 1999–2007 at 40 large nationwide companies, the researchers used Healthcare Common Procedure Coding System codes to identify obese patients with diabetes, 18 to 65 years old, who were treated with bariatric surgery. These patients were matched with non-surgery control patients on demographic factors, comorbidities, and healthcare costs. The overall return on investment associated with bariatric surgery was calculated using multivariate analysis, and surgery and control patients were compared post-index with respect to diagnostic claims for diabetes, diabetes medication claims, and adjusted diabetes medication and supply costs. Specific findings of the study include:

- At six months post-surgery, 28 percent of surgery patients had a diabetes diagnosis, compared to 74 percent of control patients ($P < 0.001$).
- At three months post-surgery, insulin use (among pre-index insulin users) dropped to 43 percent for surgery patients vs. 84 percent for controls ($P < 0.001$).
- At one month post-surgery, medication and supply costs were significantly lower for surgery patients ($P < 0.001$).

This research comes in the wake of Analysis Group’s 2008 research, [“A Study on the Economic Impact of Bariatric Surgery”](#) which also demonstrated that healthcare costs for morbidly obese patients receiving bariatric surgery dropped while costs for morbidly obese patients who did not have surgery continued to rise. That study also provided evidence that insurers recover their costs for bariatric surgery in two to four years, depending on the type of surgery performed.

The study was co-authored by Samuel Klein, M.D. (Wash. U), Pierre Cremieux, Ph.D. (UQAM and Analysis Group), [Arindam Ghosh](#), Ph.D., Sara Eapen, Ph.D., and Tamara J. McGavock (all of Analysis Group). The study was funded by Ethicon Endo-Surgery, Inc., a manufacturer of minimally invasive and traditional surgical devices and instruments for bariatric surgery.

Analysis Group provides economic, financial, and business strategy consulting to leading law firms, corporations, and government agencies. The firm has more than 500 professionals, with offices in Boston, Chicago, Dallas, Denver, Los Angeles, Menlo Park, New York, San Francisco, Washington and Montreal (www.analysisgroup.com).

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