# Financial costs and patients' perceptions of medical tourism in bariatric surgery

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**SUMMARY**

Many Canadians pursue surgical treatment for severe obesity outside of their province or country — so-called "medical tourism." We have managed many complications related to this evolving phenomenon. The costs associated with this care seem substantial but have not been previously quantified. We surveyed Alberta general surgeons and postoperative medical tourists to estimate costs of treating complications related to medical tourism in bariatric surgery and to understand patients' motivations for pursuing medical tourism. Our analysis suggests more than $560 000 was spent treating 59 bariatric medical tourists by 25 surgeons between 2012 and 2013. Responses from medical tourists suggest that they believe their surgeries were successful despite some having postoperative complications and lacking support from medical or surgical teams. We believe that the financial cost of treating complications related to medical tourism in Alberta is substantial and impacts existing limited resources.

Obesity is a worldwide epidemic and affects 1 in 5 Canadian adults.[1] Many strategies, such as diet, weight loss programs and medical therapy, failed to show long-term weight reduction. Bariatric surgery is a cost-effective intervention providing long-term weight loss and can effectively treat comorbid conditions, including diabetes.

Unfortunately, only 1% of eligible patients are offered bariatric surgery owing to limited Canadian health care resources. Extensive wait lists, which average 5 years across Canada,[2] have led many patients to travel to another province or country for bariatric surgery; they are often assisted by medical travel companies — a process known as medical tourism. However, most bariatric medical tourists (BMTs) do not receive coordinated, long-term postoperative care from foreign health care services. Consequently, Canadian physicians and surgeons treat them when complications arise. This care is entirely funded by the Canadian health care system.

There is currently no method for tracking BMTs, which leads to challenges estimating short- or long-term costs of medical tourism. Furthermore, qualitative studies on postoperative patients' perspectives of medical tourism for bariatric surgery are lacking. Although there are ethical implications of medical tourism, such as unequal health care access, our focus is on short-term costs and patients' perceptions of medical tourism. We used the experience of general surgeons in Alberta to estimate the short-term costs of medical tourism and explore postoperative BMTs' perceptions of medical tourism.

We sent 2 separate anonymous electronic SurveyMonkey questionnaires to Alberta general surgeons via the Alberta Medical Association and to postoperative BMTs. Further questionnaires were posted on 2 web-based forums (Obesityhelp.ca and Lapbandtalk.com), selecting for BMTs who were Albertans and asking about perspectives of their surgeries.

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Costs for medical interventions were estimated and modelled based on our institution costs (Royal Alexandra Hospital [RAH] and Alberta Health Services [AHS]). These costs are listed in Appendix 1 (available at canjsurg.ca): stomach and duodenum imaging series (S&D), gastroscopy, computed tomography (CT), endoscopically inserted stent, revisional surgeries for laparoscopic adjustable gastric band (LAGB), laparoscopic sleeve gastrectomy (LSG) and laparoscopic Roux-en-Y gastric bypass (LRYGB); complications (including surgeon billing costs), and length of stay in the intensive care unit (ICU). Costing was not exhaustive, as some costs were not included (e.g., length of hospital stay, medications, radiography) owing to difficulties of recalling them on questionnaires. We determined cost by first adding the number of interventions administered by surgeons (based on survey responses) × the corresponding costs listed in Appendix 1. Then we added the average consultation fee × number of surgeons to the previous sum to calculate the total treatment cost.

Out of 144 general surgeons, 25 completed questionnaires (17.4%). An average surgeon appears to consult on 2.4 BMTs annually in Alberta. These 25 surgeons saw 59 BMTs in 2012–2013. The procedures involved in these consultations were LSG ($n$ = 25), LAGB ($n$ = 22) and LRYGB ($n$ = 16). The most common complication from LAGB was band slippage ($n$ = 10), whereas gastric leak and abscess were most frequent with LSG and LRYGB ($n$ = 13 and $n$ = 7, respectively).

Using our conservative cost estimates, treatment costs for LABG, LSG and LRYGB complications were $36 923.49, $300 891.17 and $202 884.31, respectively. Total treatment cost was $563 235.16 (median $2766.04 per surgeon, range $0–$275 477.76 per surgeon; Table 1).

Fourteen Albertan BMTs completed the questionnaire. Common reasons for seeking bariatric surgery via medical tourism included long wait lists ($n$ = 11) and presumed ineligibility for surgery ($n$ = 6) in Alberta. Thirteen respondents believed their bariatric surgeries were successful despite some of them ($n$ = 3) experiencing postoperative complications. Common destinations for BMT were Mexico ($n$ = 9) and the United States ($n$ = 3).

**Table 1: Total intervention costs initiated by 25 surgeons for 59 medical tourists for LAGB, LSG, LRYGB and other bariatric surgery postoperative complications**

| Medical intervention | Cost, $ |
|---|---|
| S&D | 20 350.74 |
| Gastroscopy | 7 322.24 |
| CT | 34 150.00 |
| Endoscopy with stent | 17 481.52 |
| Revisional surgery | 135 353.06 |
| ICU stay | 335 279.00 |
| Consultation fee | 13 298.60 |
| Total | 563 235.16 |

CT = computed tomography; ICU = intensive care unit; LAGB = laparoscopic adjustable gastric banding; LSG = laparoscopic sleeve gastrectomy; LRYGB = laparoscopic Roux-en-Y gastric bypass; S&D = stomach and duodenum imaging series.

We estimate a minimum cost of CAN$560 000 annually on management of early complications for BMTs in Alberta. This is an extremely conservative estimate, as it did not account for all costs incurred (i.e., health care providers [nurses, dietitians, psychiatrists] and health care costs [total hospital stay, imaging, blood work]). Moreover, no registry exists to identify all BMTs requiring investigations and treatment within Alberta, and we can only surmise that we captured a reasonable sample of BMTs. Our estimated average cost of treating complications was $9546.36 per medical tourist. In comparison, the average cost of bariatric surgery performed at our institution (2009–2012) was $13 778.20 ± $3129.05.[3] Alberta does not seem to save much money by limiting the annual volume of bariatric surgeries.

Our program offers bariatric surgery, including LAGB, LSG and LRYGB performed by skilled surgeons, providing long-term effectiveness. However, our wait list includes 2632 patients (2014–2015), and the average wait time is 2.3 years from date of referral to surgery. Consequently, many patients turn to medical tourism despite potentially severe complications. A retrospective chart review with summation of costs at our institution (2009–2012) showed a BMT complication rate of 42.2%–56.1% ($37 000 per patient), whereas the local complication rate was 12.3% ($412 per patient).[3]

Medical tourism is further promoted by websites marketing bariatric surgery, luring patients with perioperative vacation opportunities and affordable prices in tourist countries, such as Mexico. Based on electronic forums, people underestimate the incidence of complications from bariatric medical tourism. A surprising finding was that postoperative medical tourists viewed their surgeries as successful, regardless of complications developing, as long as weight loss occurred.

Our survey had a low response rate, which is common for physician surveys;[4] nevertheless, their feedback provided considerable insights into the cost and patient perception of medical tourism. In addition, our focus on acute complicated medical tourists also underestimated the overall denominator and cost of bariatric medical tourism.

Medical tourism for bariatric surgery is a growing phenomenon. A recent physician survey suggested bariatric surgery accounts for a substantial proportion (16%; $n$ = 12 800) of Canadian medical tourism.[5] The cost of treating postoperative complications in BMTs is substantial. Nevertheless, patients view medical tourism in a positive light despite complications. Research is being undertaken at our institution to track medical tourism

and to establish the cost-effectiveness of medical tourism versus bariatric surgery completed in Alberta.

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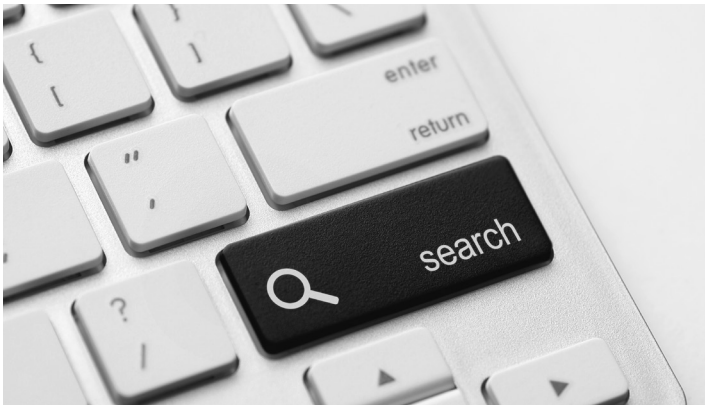


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