Article details: 2016-0042	
Title	The effect of the Ontario Bariatric Network on postoperative health services utilization: a retrospective cohort study
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Reviewer 1	Dan Birch
Institution	Department of Surgery, Royal Alexandra Hospital, Edmonton, Alta.
Reviewer comments and author responses	Congratulations to the authors for completing and submitting this research. I have only a few comments and suggestions that I hope may add to or strengthen this manuscript. The authors have chosen to determine whether a provincial program of Bariatric Surgery has improved outcomes for patients in comparison to a process whereby patients travel out of country (specifically to US centers) for surgery. 1. If we assume that the US-based centers where the surgery is performed are providing high quality care, then we can further assume early peri-operative outcomes following RYGB (OOC vs. OBN) should be comparable. Therefore, the authors are comparing bariatric surgery outcomes with and without a coordinated, structured process for follow-up care. The authors may wish to comment on this, as this differs from medical tourism where the patient travels outside of the US and surgical care is potentially more variable. a. See page 13 lines 12-27. 2. Do the authors have any data to determine whether patients in the OOC cohort did not require bariatric surgery? a. This data was not available to us. However, National Institute of Health guidelines for bariatric surgery eligibility has not changed since 1991. 3. Was there any process in preparing OOC patients for surgery, such as psych assessments or sleep studies? a. There was no formal preoperative evaluation for out-of-country patients in Ontario. Preoperative assessments were completed at the US bariatric centre. 4. In the authors' opinion, what is the ideal measure of success of a Bariatric Program? Is this an early vs. long term measure? In their opinion, were they able to capture high quality measures? a. The ideal measure of a successful bariatric program would include both early and long-term parameters. Safety of the program should be measured using early surgical complication rates, while effectiveness should be measured using weight loss results. 5. Do the authors have any measure of nutritional status of their patient cohorts? Are there indirect measures of compliance with vitamin and supplements by patients? What percent of patients had individual assessments by dieticians pre-op and post op for each of the cohorts? What is the ideal? a. We do not have specific data on the nutritional status of patients. In the Ontario Bariatric Network, dieticians are heavily involved in the pre-op and post-op care of all patients. 6. Are the authors surprised that there are not more differences between the cohorts? Why are so many of the parameters measured equivalent? Is this a basis to simplify/modify a complex provincial process of bariatric care? a. We believe that many parameters are equivalent because there is not much disparity in the early postoperative care between Canadian and American surgeons. The majority of bariatric patients have uncomplicated surgeries. The differences tend to arise when complications occur and the time it takes to diagnose and treat these complications. 7. Can the authors explain why only 1/3 of patients in the OBN had an assessment by a physician within one year after a RYGB? Have 2/3 truly not followed up even once with their GP? a. Although the OBN mandated close medical follow-up, the majority of follow-up care is administered by a dedicated bariatric nurse practitioner. Physician assessments were conducted only if the NP deemed it necessary. 8. Reference 4 is repeated as reference 9.

	a. The reference list has been corrected. Overall, this is an excellent study and I enjoyed the opportunity to review and comment on this manuscript. I would encourage the authors to do the economic analysis for these data.
Reviewer 2	Adam Diamant
	Schulich School of Business, York University, Toronto, Ont.
	This is an excellent study analyzing how the establishment of the Ontario Bariatric Network (OBN) has affected how these patients interact with the health care system. The statistical analysis is rigorous and the results are compelling. However, I would suggest rewriting several sections for clarity as well as to maximize the papers impact. Ultimately, I think with the recommended enhancements, this manuscript will have a meaningful impact on bariatric care in Canada. Thank you for the opportunity to comment on this interesting study and I look forward to reading the revision. Introduction In this paper, almost all of the statistics related to obesity and bariatric services are Canadian although the first two sentences discuss the world wide obesity epidemic. 9. Can you include Canadian and specifically Ontario statistics regarding the obesity epidemic? a. The opening background paragraph has been revised to include Canadian specific statistics. 10. Is the sentence starting "The lack of follow-up care could have" …your opinion or do you have a reference for this? Are there previous studies that suggest this may be the case? a. There is no specific reference to this statement but this was the reality of the situation prior to introduction of a dedicated multidisciplinary bariatric program. b. See page 4 lines 5-13. 11. Define what health utilization is. Are you studying access to care regardless of what provider they visit or are you comparing the cohorts with respect to access to emergency services only? Are you making a distinction? Make sure this is clearly defined as it affects the interpretation of your results. a. The definition of each study outcome has been clarified. b. See page 7 lines 47-57. 12. Define each data source once (i.e., remove the list of sources in the first sentence of the paragraph). a. This paragraph has been revised accordingly. b. See page 6 lines 7-28. 13. You do not discuss how the OBN has changed how care is administered. I understand that OOC patients now undergo surgery in Ontario, but what is crucial for this paper is how the quality of care changed after OBN was established. Was the pre-surgical phase different? What about the post-surgical phase? Were patients required to spend more time with health care practitioners after implementation? Were they now required to attend follow-up appointments with different health care providers whereas in the old system, they did not? What operational levers did the OBN put in place to standardize care? a. Details of the preoperative and postoperative care were mandated by the Ontario Bariatric Network. b. See page 6 lines 40-56 and page 7 lines 3-8. 14. Your paper indicates that the OBN standardized the way in which post-surgical bariatric patients were cared for. Specifically, after the OBN, patients were required to attend follow-up appointments whereas in the old system, they did not necessarily get them (Page 13, second paragraph). If the OBN specifies that patients should get follow-up appointments, isn't it obvious that overall healthcare utilization will increase? The OBN is mandating that it does (you show this in the results). To me, this is not necessarily a major finding. You should make it clear that your analysis confirms adherence to the mandate and that healthcare utilization as a whole, for this cohort of patients, did indeed increase as per the OBN recommendations. What I believe is most important about this study, and

	what I believe you also care about, is the increase in non-emergency utilization (i.e., follow-up appointments as specified by the OBN) is associated with a decrease in the use of emergency services among bariatric patients. This is a significant finding and needs to be made clearer. The distinction is extremely important because the results of your paper suggest that for bariatric surgery, it is the standardization of care (specifically post-surgery) that is associated with a decrease in adverse outcomes (visits to emergency services, etc.). That is, the decrease in emergency service utilization among bariatric patients is associated with the standardization of bariatric services in Ontario stemming from the OBN. This is not necessarily an outsourcing issue as you claim on page 14. a. The increase in utilization of outpatient health services after program implementation was expected given the mandate of the program. b. See page 11 lines 8-18. 15. Did you make sure to exclude billing codes completely unrelated to obesity? For example, a patient who (in the 365 days post-surgery) goes to the ER because they broke their wrist should not be included in your study since an orthopedic issue is not really related to complications from bariatric surgery. a. We were not able to exclude visits based on the reason for the visit. We hoped to capture the overall health services utilization of the study population. Since outcomes in both cohorts were captured the same way, we did not introduce any bias. 16. What sensitivity analysis did you perform? Be specific about the tests and why. a. No sensitivity analyses were performed. However, a subgroup analysis was performed using only surgeries at in-province hospitals outside the OBN. b. See page 12 lines 50-55. 17. On Page 12 line 23: Didn't the OBN mandate this? On Page 13 line 19: Again, isn't this because of the mandate? a. Although the OBN mandated close medical follow-up, the majority of follow-up care as mentioned earlier was administered by a dedicated bariatric nurse practitioner. Physician assessments were conducted if the NP deems it necessary. b. See page 6 lines 40-56 and page 7 lines 3-8. 18. The final paragraph of your discussion addresses medical tourism. Isn't this paper more related to standardization of health services and the associated adverse outcomes? Can you not relate the results to other studies in which patient care was standardized? a. The study addresses both issues. Ontario's situation was unique in that the implementation of a structured and standardized program coincided with the Ministry of Health decision to stop outsourcing surgical services. 19. Please change the abstract to reflect the comments above. Specifically, the background needs to be more specific regarding what you are actually studying (i.e., how the standardization of care for bariatric surgery has had an impact on the health care system as a whole). a. The abstract has been revised to convey the new cohort selection and analysis. b. See page 3 lines 10-14 and lines 18-23.
Reviewer 3	Geoffrey Kohn
	Department of Surgery, Monash University, Australia
	This retrospective study of various databases looked at hospital utilization rates for bariatric surgery complications during the three years before introduction of the OBN, as compared to 3 years after introduction. There was a statistical difference in the type of bariatric operation performed in each period but results were pooled. Though the results will actually be reflecting the different complication rates of the different procedures (RYGB vs. sleeve), the results were in fact proposed to be reflecting differences resulting from the OBN. The renders the data somewhat unreliable. Subgroup analysis of RYGB pre vs. post OBN and SG pre vs. post OBN is required. Also, the methods and statistical analysis are quite confusing and should be clarified. Specific points: 6:48 - what were these 3-year periods, how were they selected? 7:50 - I am confused.

	My major concern is the statistical difference in the number of RYGB pre- and post- OBN. The findings could be interpreted as comparing RYGB and sleeve outcomes, albeit with the confounding factor of temporal trends. I would like to see results of subgroup analyses to see if hospital utilization rates differed for RYGB in the pre and postOBN period. 20. It appears from page 5 that OOC bariatric surgery was funded as a result of the appeal in 2005? In fact, much of the timeline is confusing to a non-Ontario physician. I would suggest a flowchart clarifying this. a. A flowchart has been added to clarify the timeline. b. See page 7 lines 24-41 and new Figure 1. 21. The follow-up period for each patient....." contradicts the subsequent "The follow-up period for OOC patients therefore started at the time of return to Ontario..." a. This sentence was reworded to avoid confusion. b. See page 7 lines 24-41. 22. Am I reading the table correctly? You mention that the groups were generally comparable, but there appear to be statistically significant differences ($p<0.05$) in 5 of 7 characteristics. a. Although most characteristics were statistically significant, the high sample size of our study population increased the chance of statistical significance. From a clinically perspective, the differences we found did not appear relevant. b. See page 9 lines 22-27. 23. My major concern is the statistical difference in the number of RYGB pre and post OBN. Your findings could be interpreted as comparing RYGB and sleeve outcomes, albeit with the confounding factor of temporal trends. I would like to see results of subgroup analyses to see if hospital utilization rates differed for RYGB pre and post OBN a. Procedure type was a variable used to adjust our analysis.