**Author’s response to reviews**

**Title:** Cost-utility analysis of bariatric surgery compared with conventional medical management in Germany: a decision analytic modeling

**Authors:**

Oleg Borisenko (oleg.borisenko@synergus.com)

Oliver Mann (omann@uke.de)

Anna Duprée (a.dupree@uke.de)

**Version:** 2  **Date:** 05 Jul 2017

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Editor

Comment 1: Before the manuscript can be published, we would suggest having the section on Sensitivity analysis (Comment 6) re-edited by a native English speaker. This passage is still difficult to understand.

Response: We agree with the suggestion, this section underwent additional proofreading and editing by a native English speaking scientific editor.

Action:

The section was rewritten in the following way:

The sensitivity of the model was assessed by determining how the output changed when input parameters were altered. This was performed using a one-way sensitivity analysis over the lifetime horizon. Variables were adjusted one at a time, within a predetermined range, while the remaining parameters were unaltered. The analysis was performed for a single cohort of 40.4-year-old males with a BMI of 48.8 kg/m2, with non-smoking and diabetes-free status. Specific conditions were applied to the binary input parameters (gender, smoking and diabetes status). For the “gender” parameter, “male gender” was considered as maximum input (value of 1), “female gender” as minimum input (value of 0). For diabetes and smoking, their presence was considered as maximum input (value of 1), their absence as minimum input (value of 0).
To examine the simultaneous uncertainty around all parameters in the cost-effectiveness analysis, multivariate probabilistic sensitivity analysis (PSA) was applied with 5,000 iterations for each estimation. Key input parameters in the deterministic analysis that were assumed to be random variables were baseline patient characteristics, costs, utility decrements, probabilities and relative risks.

When cost estimates were available only as single-point estimates, they were assumed to follow a $\gamma$ distribution. A $\beta$ distribution was assigned to the probabilities, utility decrements and a log-normal distribution to the relative risks. A normal distribution was assigned to the patient age and BMI, while SBP was assumed to follow a $\gamma$ distribution. Results from the PSA are presented through cost-effectiveness acceptability plane, which graphically assesses the boundaries of the incremental costs and clinical gains.