**Reviewer’s report**

**Title:** The increasing importance of a continence nurse specialist to improve outcomes and save costs of urinary incontinence care: an analysis of future policy scenarios

**Version:** 1  **Date:** 29 Jul 2017

**Reviewer:** Carlos Wong

**Reviewer’s report:**

Thank you for opportunity to review the statistical and methodological aspect of this submission. This is a modelling study simulating the cost-effectiveness and budgetary impact of optimum continence service specification (OCSS), based on incidence, prevalence data, effectiveness data from multiple data sources, and previously adapted decision analytic modelling on the cost-effectiveness of including nurse specialist in primary care urinary continence services.

The effectiveness estimates of continence nurse specialist were sourced from parent publication (ref#18) which assessed the 'behavioral therapy group' in a RCT design over a study period of 6 weeks. The evidence from this RCT provided short-term efficacy data so the observed data beyond 6 weeks and long-term data after implementation seem unavailable. In predicting long-term benefit of continence nurse specialist, how did authors extrapolate the effectiveness estimate beyond 6 weeks up to three years which is the time frame of model? please specify the methodology of data extrapolation, if any.

As stated in statistical analyses and uncertainty analyses, quality-adjusted life-year (QALY) is the main outcome of this study, and is contributed by the estimates of health utility scores of patients with urinary incontinence. However, health utility scores of each health state simulated in model, and their corresponding data sources were uncertain. The possible health states in model were detected urinary incontinence, never detected urinary incontinence, incontinence after treatment, improvement after treatment, remission of incontinence after treatment. Were the health utility scores observed value from EQ-5D/SF-6D measures or estimated based on assumption? Without those information, the total QALYs shown in Table 3 were not convincing to readers.

In addition, the distributions assigned to each parameter in PSA were unclear. Authors used a range of +/- 20% of the mean value as lower and upper bound used in PSA. How come cost parameters were not assigned log-normal distribution? 'A uniform distribution was assumed for the remaining input parameters' - what are the remaining input parameters?

In table 5, authors showed the probability of new care being more effective, probability of new care being cost-saving, and probability of new care being dominant strategy. I realized that authors took the term 'cost-saving' to mean less costly. Terms of 'dominant' and 'cost-saving' are usually interchangeable in health economics literature. I would recommend authors to use 'less costly' instead of 'cost-saving' to avoid confusion.
Minor comments out of statistical scope:

P9 line 50 will authors explain the rationale of converting ICPC-2 diagnosis codes to ICPC-1 codes?

P9 line 58: Table 1 is mentioned in text "Table 1 shows the key characteristics of the patient population in the model" but the caption of table 1 is "Overview of the settings of the current situation and the scenarios for 2030" which caption describe Table 1?

P10 line 11. "The model captures the complete pathway of Dutch patients as identified by healthcare experts". which types of healthcare experts helped to identify treatment pathway?

Are the methods appropriate and well described?  
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?  
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?  
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?  
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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Needs some language corrections before being published

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