Reviewer's report

Title: Quantifying the reduction in general practitioner referral rates from participation in joint teleconsultations: a discrete choice experiment.

Version: 3 Date: 2 December 2014

Reviewer: Gail Todd

Reviewer's report:

Overall the article is well written and has very few grammatical errors.

Major Compulsory Revisions

1. There is no definition of teleconsultations. How were they delivered and standardised? What types of consultations were involved? How often were they undertaken and who shared in the teleconsultation process? What conditions were discussed during the teleconsultations and who ran them? How many teleconsultations resulted in learning/behaviour altering outcomes? How were GPs advised to interpret teleconsultations or were they left to decide for themselves? Were the teleconsultations real time or store and forward? Did teleconsultations involve the GPs own patients or were they simulated cases or other GP referrals? The questions are endless around the teleconsultation process and definition. These need to be addressed in some way before publication.

2. There is significant bias in the results which I do not see has been accounted for or excluded. It could well be that those GPs using teleconsultations are in fact dedicated to improving patient care and use a variety of other educational tools and programs other than teleconsultations. Lower referral rates may be an associated finding of a group of doctors who seek a second opinion of any sort and are thus more informed and confident in patient care. Inferring that they have learnt something and that it is due to teleconsultation use is not proven or justifiable from the current results presentation.

3. What were the percentages of GPs with an interest in dermatology amongst teleconsultation users? How did an interest in dermatology affect referral patterns? Doctors who have an interest in dermatology would be more likely to feel comfortable treating patients with skin disease especially non serious ones, with significant impact on referral patterns. This would also be evident in the assessment of clinical need, melanoma constituting an emergency referral because they are now recognised, increasing the referral rate. The negative effect of a reduction in referrals of serious conditions, hinted at in the discussion, which should be referred should to be discussed.

4. The specialities associated with teleconsultations use could likewise impact results. If all 11 GPs who used it did so primarily for dermatology then the results are understandable and not unexpected. If the teleconsultations referred to any
speciality then it is difficult to see why they would have impacted on referral patterns for dermatology considering how poorly taught dermatology is in most general medical curricula.

5. How were the need variables chosen from the GP referral data base and on what was the choice based? In other words were conditions chosen that referral patterns might be expected to change provided GPs had access to therapeutic measures and that were likely to receive re-imbursement if treated by the GP? Was re-imbursement considered as a variable?

6. How were the non-clinical attributes chosen? There is no discussion or referencing on this.

7. How did GP age and years of experience affect referral rates? The supplementary data suggests age affected referrals in a non-linear way – did the older or younger GP refer more?

8. How did years of experience affect referrals- did the younger GP refer more often?

9. There are no references for 25, 26, and 27 as quoted in the article. This implies poor referencing management and a laxness to detail. I have thus not checked references for their accuracy or correct use and referencing in the text. This must be done and acknowledged by the authors personally before the article can be considered for publication.

10. I found the discussion a summary of the results with little added academic discourse relative to published data.

I would suggest that the authors review the article not simply as a proof of concept of the survey tool by giving more clinical validity to the statistical analysis.

Discretionary Revisions

1. I believe the supplementary data where the effects of need variables, non-clinical attributes and physician demographics are discussed should be part of the article giving it more clinical relevance.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**
I was co-author on one of the referenced articles in the paper.