Reviewer's report

Title: Targeting research for the evaluation of emerging and "immature" technologies - the example of the da Vinci robot

Version: 1 Date: 24 March 2010

Reviewer: Craig Ramsay

Reviewer's report:

Thank you for the opportunity to review this paper. This paper by Ballini et al proposes a process for assessing immature technologies with a view to developing a research strategy for the technology.

This is an important and difficult area. The evidence base for these technologies is invariably sparse and often the technology is targeting a number of conditions as it tries to find its position in clinical practice. All health systems grapple with this problem.

I like the approach the paper takes - the methods are generally well described and should lead to a decision which is relatively well understood - and have no substantive concerns. Some major comments are below.

1. p13 2nd paragraph. Who determines the uncertainty profile in step 2? The paragraph suggests that it was done external to the panel and that the panel were presented with Figure 2. If that were true, then there is a concern that the non-panel members would have considerable influence on stage 3 (determining maximum acceptable risk). Needs clarified in text.

2. p10 – steps 3 and 4. I find the acceptable maximum risk an interesting concept in step 3 but wonder how it can be devolved from the step 4 process. Taking the gastrectomy example – the evidence base was extremely sparse for that procedure so there could not be plausible stable results and so the procedure is not carried forward to step 4. If however all the local expertise were on gastrectomy then that may be exactly where research funds should be allocated. Perhaps that would in fact be better addressed as a prioritisation method. Add to discussion section?

3. As a comment to 2 above – in the UK a NICE research recommendation for an interventional procedure would be made if amongst various other reasons it was thought to be feasible to undertake the research. Feasibility would be step 4 in this papers model.

4. p12 2nd para. Radical prostatectomy outcomes were described in the text but were not included as an example in Figure 2. It would be good to add them to figure 2 perhaps as a replacement for fundoplication which shows a similar message to colectomy?

5. Step 5 p14. Were the regional surgeons those that originally acquired the two da Vinci machines? Were they on the expert panel? If so some mention should
be made about “advocates” for the technology on the expert group and how that should be addressed.

6. Discussion p14 2nd para. Does this approach really put the technology into “probation”? It is stated earlier that the robots were acquired from non-profit organizations. That is likely to continue.

7. Discussion. Some comment on how this approach is better and worse than existing methods should be given (eg value of information approach)

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

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I have a non-financial competing interest. The lead and final authors are editors on the EPOC Cochrane group as am I.