Reviewer's report

**Title:** An economic evaluation of nurse led versus lay educators support for those with asthma in primary care

**Version:** 1  **Date:** 14 December 2011

**Reviewer:** Ed Wilson

**Reviewer's report:**

Major compulsory revisions

1. Overall, this paper could be a useful contribution to the literature. However, I feel it needs reworking somewhat before publication. My major issue is with the measure of effectiveness (frequency of unscheduled healthcare use). This is itself a measure of resource use, not effect. This risks double counting costs and there is no measure of patient benefit included. It therefore cannot be considered an economic evaluation but a cost analysis. I'd recommend changing the title and rewording it as a cost comparison, pointing out (perhaps in the discussion) that there is no measure of patient benefit, therefore a full economic evaluation is not possible, and something that could be considered for future research. Similarly, all references to one intervention being more effective or efficient than the other should be removed (e.g. discussion p16, first sentence and abstract final sentence). Finally, I was also unsure how the per patient costs in Table 4 were calculated as my own calculations resulted in very different means (see below).

2. Please state price year of the analysis

3. Abstract, final sentence: As stated above, given that there is not really an outcome measure in this analysis, I don't think it's possible to claim lay-trainers would increase efficiency. I'd also suggest rewording the final sentence to say something along the lines that contracting lay-trainers would *on average* reduce costs, but there is a high degree of uncertainty around this.

4. Training, P7: would nurses have reclaimed accommodation costs from the NHS? If so, this should be included in the training costs.

5. Delivery, P7: '...many did not claim for the time they spent'. I'd recommend two analyses here - one assuming all costs were claimed as incurred, and another based on only those claimed. Note that there is still an opportunity cost of the lay educators' time as they could have been doing other paid work, or were foregoing leisure time. However, the analysis is restricted to the perspective of the NHS, so arguably these unclaimed costs should not be included.

6. Effectiveness outcome, P8, final paragraph: please state the time horizon of the analysis here.

7. Results, training, P11: How often would lay trainers and nurses require re-training? As the training is a fixed cost, the cost per patient is heavily
dependent on the number of patients seen and the frequency of retraining. Staff turnover will have an impact on this too. This needs discussing.

8. Results, delivery, P11, Final sentence: Table 2 does not report any tests for statistical significance.

9. Table 4: Please verify how costs of hospital admission were calculated. I estimate 88*932/205 = £400 per patient in the practice nurse arm and 109*932/213 = £477 in the lay educators arm. Please also verify how other summary costs were calculated too.

10. Results: effectiveness outcome, P12: How come hospital admissions were higher in the lay arm yet costs were lower?

11. Appendix: please add reference for PSSRU

12. There are one or two typos that need checking throughout the manuscript.

Discretionary revisions

12. Sensitivity analyses, P9. I'm not sure how useful some of the scenarios are (in particular scenario 1) in the absence of any outcomes data (i.e. measure of patient benefit). As per my comment on Delivery P7 above, I'd recommend restricting the scenarios to a costing based on actual activity and costs incurred where possible (i.e. number of visits actually completed and costs reimbursed to lay trainers), and one assuming all activity and costs were incurred and reimbursed as per the study protocol (i.e. analogous to PP and ITT).

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 declare that I have no competing interests.