Reviewer's report

Title: Cost-outcome description of clinical pharmacist interventions in a university teaching hospital

Version: 1 Date: 7 January 2014

Reviewer: Jonathan Silcock

Reviewer's report:

Part A: Major compulsory revisions

1. It is clear (paragraph 4, page 2) that the authors do not approach the question posed from a neutral perspective. Cost-effectiveness data is required to use public resources efficiently, not to vindicate the role of any particular healthcare worker.

2. The question posed is itself unclear in relation to the existing literature. The authors attempt to make a distinction between costs saving and cost avoidance, but with no clarity or support from previous published work or economic theory. (paragraph 5, page 2)

3. The calculation of input costs appears flawed (see detail in points 4, 5 and 6).

4. Only the time to conduct an intervention appears to have been measured. However, to conduct interventions problems must be found and this ‘screening’ or ‘case finding’ activity takes time. Pharmacists also conduct essential legal checks and ensure appropriate medicines supply. However, it seems likely that the time allocated to intervention is under-estimated, especially when the associated administration tasks are taken into account. There may also be costs involved when doctors and nurses respond to the suggested intervention.

5. An hourly rate for the valuation of pharmacist time fails to account for on costs (employers’ costs) and training costs etc. The methodology for valuation of health workers’ time has been well-developed by the University of Kent, and their guidelines should perhaps be consulted.

6. The pharmacy department must have some identifiable running costs.

7. The cost-benefit terminology (paragraph 1, page 5) appears to be both confusing and misused. All costs contained within the health service are ‘direct’ costs. The only ‘outcome’ measure is the count and classification of ADEs.

8. The decision not to discount may need to be reviewed when the distinction between avoidance and savings (point 2 above) has been clarified.

9. The number of interventions (paragraph 4, page 6, line 1) is confusing. I presume ‘outcome’ is this context means acceptance of a recommendation by a doctor. Has it simply been assumed that all recommendations were accepted?

10. The discussion draws strong conclusions that are not justified by the data and should be more tentative.
11. An element of method concerning purchasing power parity, inflation and the choice of base year is presented in the discussion.

12. The discussion highlights that previous studies have based major costs on pharmacists’ full salaries. I suspect there is a happy medium between this and the authors’ own approach (see point 4 above).

13. As the discussion draws on (paragraph 2, page 11), issues are incorporated that have no direct bearing on the authors’ own results. It is tempting but inappropriate to extend the background and scope of the study at this point.

Part B: Minor essential revisions
1. In paragraph 5, page 6, line 1 ‘prospective’ should read ‘perspective’.

**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.