Reviewer's report

Title: A simple way to compare the efficiency of outreach chlamydia screening activities

Version: 2 Date: 28 October 2011

Reviewer: Rachel Sacks-Davis

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Bowden et al. present a set of simple and elegant measures of screening efficiency. The measures are introduced through a description of the scale-up phase of a novel chlamydia screening program which makes use of small cash incentives to increase participation rates. Both the screening program that was described and the measures of screening efficiency are of interest; however, the novelty of the measures of screening efficiency appears to be overstated. In addition, the double-focus of the paper (on both the measures of screening efficiency and the particular chlamydia screening program described) is difficult to follow and in the current execution, neither focus is adequately explored.

Major Compulsory Revisions:

1. The novelty of the screening efficiency concepts (event screening tempo, staff hour screening tempo, and chlamydia detection tempo) is a major claim in this paper (for example, see Background, paragraph 3, Discussion, final paragraph, and the Conclusion). However, although the names that are used to describe these concepts may indeed be novel, the measures themselves appear to have been used previously. For example, see:
   a. Table 2.2 in Weatherburn, Hickson, et al. Evaluation of the Department of Health funded fasTest HIV testing in the community pilot. Research by Sigma Research on behalf of Department of Health and Terrence Higgins Trust. The report is available online here:

   The claim that these concepts are novel should be revised, and previous uses of similar concepts cited both in the Introduction and Discussion section.

2. The focus of the paper is currently not as clear as it could be. For example, currently the majority of the Background section (paragraphs 1 & 2 of that section which include all of the references in that section to previous work) is focused on the background to the particular screening program whereas the summary of aims (paragraph 3 of the background section) and Conclusion section are focused on the methodological aspects (introducing screening efficiency measurements). The focus of the paper should be more tightly defined. If the
methodological aspects are to remain the focus of this paper, then a more thorough background to how they have been used previously should be included in the Background and the advantages, disadvantages and particular utility of each measure more clearly explored in the Results and Discussion sections. It may be useful to introduce an additional table to summarise these. Similarly, if the chlamydia screening program presented in the paper is to be the focus, the background should be explored in more detail with additional citations referring to other work. The aims and conclusions should also be reorientated to focus on this aim. The Discussion section could be a little more focused as well with respect to the chosen major aim.

3. The results are presented with very little detail. More detail around the variation in screening efficiency measures across the different programs should be described in the text of the Results section. It would be useful to categorise the events according to some potentially influential factors and present summary statistics for the screening efficiency measures by these factors.

4. It is not clear whether data from the first phase of the SOC program were included in this paper (prior to introducing cash incentives) and whether or to what extent the data presented overlap with the data presented in citation 3. This should be clarified.

5. Comparison with screening efficiency results from other studies should be added to the Discussion. Direct comparisons could be made with the paper cited in comment 1b above. It would be valuable to search for other studies with which comparisons could be made as well.

Discretionary revisions:

6. The authors may want to consider removing mathematical symbols from the main text of the paper and replacing with words. For example, Results, paragraph 2, line 2: x could be changed to ‘multiplied by’. In the Discussion section, male:female could be ‘male to female.’

7. It would be useful to define which events are being referred to when the terms ‘captive audience’ and ‘where males congregate’ are used in the Discussion section so that the results on the screening efficiency measures could easily be compared by the reader amongst the ‘captive’ and other group and ‘where males congregate’ and other group in the Table. (Discussion, paragraphs 2 & 4)

8. Discussion section, paragraph four, final line: there is also a typo – ‘ever’ should be ‘every.’ In addition, the authors may want to consider replacing ‘one test every 7.5 minutes’ with ‘8 tests per hour (equivalent to one test every 7.5 minutes) as it may be a little confusing for someone reading quickly to switch between measures here – particularly because 7.5 is close to 8.

9. The authors may want to consider writing out numbers under ten in words rather than numerals as this is a common convention.

10. Figure 1 may be more illustrative if the events were ordered according to one
of the measures. This would illustrate the lack of correlation between the two measures (in addition to showing the differences in range which are apparent simply from the summary statistics presented in the results section).

**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