Reviewer's report

Title: Use of antenatal care services in Kassala, eastern Sudan

Version: 1 Date: 21 April 2010

Reviewer: Helen de Pinho

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Major Compulsory Revisions

In reviewing this manuscript, this reviewer is of the opinion that the entire paper needs major revisions before it can be considered for publication. I have attempted to highlight some of the key areas that need strengthening or even fundamental revision, and trust that these comments will be viewed constructively.

1. Is the question posed by the authors well defined?
No – the authors have not clearly articulated the research question – and ultimately the question has to be inferred rather than explicitly stated. The paper requires a more comprehensive literature review that builds into the rationale for the study.

I think that it is important that the authors review the first sentence and opening argument of their paper that: “Antenatal care is one of the most effective ways of reducing maternal mortality and morbidity, and its under-usage has been repeatedly associated with adverse maternal outcomes”. This is not backed up by existing literature. Studies have shown that while antenatal care is associated with reduced mortality amongst newborns, the literature does not provide existing evidence to show that the same holds for reducing maternal mortality. The two references that are quoted to back up the authors claims regarding antenatal care are somewhat misleading as neither reference directly supports their claim. The first reference WHO – 1999 is very dated, and the second reference Haggaz et al - is in fact a brief communication that makes no reference at all to antenatal care. The third reference quoted in this section: Myers et al – has been misinterpreted and does not in fact support the claim that antenatal care is the one of the most effective ways of reducing maternal mortality.

2. Are the methods appropriate and well described?
No. The authors will require major revisions to the methods section. In particular the following is currently not included in their brief discussion of methods and requires the following major revisions:
• A clear description of the catchment area and target population
• Details of their sampling strategy
• Details regarding non-respondents
• An outline of their survey instrument – what was this based on? How was it
tested and validated? how was it administered
• Clearly identified outcome measures. In the absence of study objectives, it is not possible to assess the results as no outcome measures were clearly articulated.

3. Are the data sound?
This is extremely difficult to assess, as the methods are not sufficiently documented or described making any comment on the data very difficult. The data are presented in tables that are not clearly labeled.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
No – the manuscript fails to adhere to such standards.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
No, while the question posed related to barriers to antenatal care, it is not clear which barriers were actually assessed – and so the only outcomes measured and discussed related to age, parity and education. In such a paper – one would expect to have a better understanding of some of the other socio-economic and political barriers more commonly associated with barriers (both demand and supply side) to utilization of a service. E.g. distance, money, quality of care, staff attitudes. There was no indication in the methods, results or discussion if there were assessed?

6. Are limitations of the work clearly stated?
There is no discussion of limitations included in this paper.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
There is a single reference to earlier published work – although on review of this earlier publication – it was a brief communication describing maternal deaths in Sudan.

8. Do the title and abstract accurately convey what has been found?
The title and abstract do not adequately convey what was found in the paper.

9. Is the writing acceptable?
Aside from the substantive issues outlined above, this paper would also require significant editing before publication could be considered.

**Level of interest:** An article of limited interest

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** No, the manuscript does not need to be seen by a
Declaration of competing interests:

I declare that I have no competing interests