Reviewer's report

Title: Local problems; local solutions: An innovative approach to investigating and addressing causes of maternal deaths in Zambia's Copperbelt.

Version: 2 Date: 17 March 2011

Reviewer: Stacie Geller

Reviewer's report:

This manuscript describes a pilot program to investigate and address the causes of maternal deaths in one district of Zambia. This area of inquiry is important because maternal mortality remains high in Zambia despite international goals for reducing maternal deaths. Prior to this pilot, medical staff reviewed reported deaths internally but systematic data were not collected and recommendations for action were not documented or monitored. The Investigate Maternal Deaths and Act (IMDA) approach has four components: identification of maternal deaths, investigation of the factors which contributed to the death, recommendations for action and monitoring outcomes.

Fifty-six maternal deaths were identified and investigated during the IMDA pilot. This manuscript presents the factors contributing to these maternal deaths grouped into major themes—poor communication, existing risk factors, lack of resources and issues related to case management. The authors note that multiple factors were identified in the majority of cases, however, they do not provide any quantification of their findings or analysis of factors to determine whether some factors tend to happen together more often than others. Even if the focus of this article is to provide qualitative illustration of these factors grouped into thematic areas, basic frequencies should be presented.

Although this manuscript is richly descriptive, without rigorous reporting and analysis it offers limited usefulness to the field outside of the immediate context. We recommend revising this paper to (1) present quantitative data from analysis of factors contributing to maternal deaths and (2) present evaluation data regarding the implementation of the pilot program (such as described in the monitoring and sustainability paragraph of the methods section).

Major compulsory revisions:

1. Results: Please provide some basic data for the 56 maternal death cases which were identified—mean age, gestational age, parity/gravidity, etc. It helps the reader understand more about the women who died. If any comparative data are available on women who gave birth (in the region or country) but did not die, it would be very helpful to see this in the table as well.

2. Results: While the examples provided to support each theme identified as common factors contributing to maternal deaths are informative, this text needs to be supported with data showing the frequency of each theme. This data could be added to figure 1 or presented in a table format. As it is clear that more than
one factor was present for most maternal death cases, it would be very interesting to see if some themes tend to occur together. Perhaps it would be helpful to consult a statistician to determine how best to present this data and to conduct additional data analysis. The authors may need to edit some of the descriptive summaries in order to present the additional information, but the results section will be much stronger with both quantitative and qualitative data.

3. The methods section states that monitoring and sustainability of the approach was evaluated by measuring (% recommendations implemented / % recommendations drawn up during maternal audit). Do you mean that a single percentage was calculated using the numbers, or are there two percentages? Please clarify what was calculated and present the data in the results section.

This information would give the reader some data to evaluate the success of the implementation of the pilot program.

Minor essential revisions:

1. The abstract state that the MMR was 729 per 100,000 live births in 2006, but this ratio is attributed to 2001/2 survey data in the background section, paragraph 4. Please clarify.

2. Background, 5th paragraph states that routinely collected data accounted for 10% of maternal deaths according to the ICD 10 definition of maternal deaths. Please provide a rationale or citation for that estimate.

3. Background, 9th paragraph. Is the IMDA approach novel to this project in Zambia or is it used elsewhere? If it is an evidence-based approach, please provide a citation for it. If it was developed for this project, it would be appropriate to describe how it was developed.

4. Methods section: It would be helpful to know how many live births took place in the catchment area during the calendar year under investigation.

5. Results section: the heading “A.” is used for both Communication and Existing Risk-Factors. The four themes should be labeled A. through D. without duplication.

6. Figures and tables need titles.

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

**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.