Reviewer's report

Title: Effectiveness of an integrated approach to reduce perinatal mortality: Recent experiences from Matlab, Bangladesh

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Reviewer: Sennen HOUNTON

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Effectiveness of an integrated approach to reduce perinatal mortality: Recent experiences from Matlab, Bangladesh” by Rahman A. et al
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1. Study site.

The areas of study are next to each other which raise the issue of ‘contamination’. To what extend the non-intervention area is not contaminated partially by the intervention? It is likely that some level of diffusion would have taken place. To address this, it will be suitable to look at change in indicators tracked in neighboring Upazilas (districts) to the intervention area.

2 - Study design.

The study is referred to as quasi-experimental. In order to use the term ‘quasi-experimental’ we will need to ensure we have enough comparability of settings at baseline, especially with regards to end points indicators. This is not the case with this study where we have serious differences at baseline between intervention and non-interventions areas with regards antenatal care, institutional delivery, and access and uptake of comprehensive emergency obstetric care (c-sections). We recognize human populations are not laboratories and thus comparability will always be difficult to achieved; however, just like a factor that will be studied cannot be used during randomization, it would not rigorous to compare two settings using indicators for which both are significantly different at baseline. In this study the intervention area is disproportionately better off compared to the non-intervention area: 37% had more than 3 ANC visits compared to 13.4% (nearly threefold); 54.7% deliver in facility compared to 13.4% (more than threefold); cesarean rates is 7.8% compared to 5.3% (nearly 50% increase); This suggest that other conditions and context specific factors are already contributing to maternal and newborn outcomes regardless of any new intervention.

3 - Analysis method.

We suggest authors use an ecological design (with upazilas or sub-upazilas as unit of analysis) with multiple comparison areas, historical change, and difference of difference to assess any added value of the intervention. Alternatively, the authors will need to consider more complex analysis such as propensity score adjustment, propensity score matching, instrument variable etc. to adjust for the significant differences at baseline. Without either of the suggested way forward
analysis performed cannot accurately support the conclusion reported.

4- Indicators

It is very surprising that there is no reference to maternal deaths (absent from the list of outcomes) given maternal and perinatal mortality are interlinked, and given community health workers would enquire about authors outcome of the pregnancy, the newborn, and nothing on whether or not the woman was alive or not. No maternal mortality is expected for comparison purposes, but given this is a demographic surveillance system area, and given the intervention is using community health workers, we should be able to indicate over the observation period the number of maternal deaths in intervention and non-intervention areas. This is important to build the case of the likelihood of success attributable to the intervention. In order words, without a proper design and comparable settings we need a compelling story about outcomes about the mothers and babies.

5- Results

One can see clearly from Figure 2 that perinatal mortality started to decrease significantly before the intervention in 2007 (nearly 20% decrease from 2006 to 2007) and continue throughout 2009. The discussions need to explain this initial important decrease even before the intervention package. Also, it is only in the discussion section that we have details about demand –side financing initiated in 2008 in government SA only, and lump sum for c-section performed. It is important to map out all interventions in both intervention and non-intervention areas at baseline so that we can disentangle added value of components.

5- Limitations


4- Ethical issues

Stating that the study design ensures ‘equity in service coverage’ is not accurate and should be removed from the manuscript. The intervention area did not receive a single service for which we did not know the effectiveness in advance. Even what is referred to as ‘package’ is what is desired for all women worldwide, and thus it is not surprising to have a better outcome when we provide to populations all required services from a continuum of care point of view. We recommend authors just mentioned ‘the study was approved by…..’. In another hand, there may be an ethical issue if the lower fees for intervention area (icddr,b) only apply to patients from that area, as women in their pursuit of quality and affordable care will travel longer distance to seek care where affordable and of quality. We recommend authors address this in the ethical session of the manuscript.

Conclusion

The paper will need significant revisions with regards to description of interventions (in intervention and non-intervention area), design (include other
areas and compare before and after indicators) analysis (to address unbalances at baselines), before consideration for publication. There is no added value in basically saying when we have a complete package of interventions we will have success, always this will be the case. The added value may be to convincingly demonstrate effectiveness of an intervention using appropriate design or to discuss issues of sustainability and scaling up, etc.

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

**Quality of written English:** Acceptable

**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' below. If your reply is yes to any, please give details below.