Reviewer’s report

Title: Factors associated with postpartum hemorrhage maternal death in referral hospitals in Senegal and Mali: a cross-sectional epidemiological survey.

Version: 2
Date: 26 December 2014

Reviewer: Khady Diouf

Reviewer’s report:

- Major Compulsory Revisions

1) How did the authors decide which risk factors for PPH to assess?

- Active management of the third stage of labor (administration of oxytocin, placenta delivery, uterine massage) is a WHO-recommended guideline to avoid postpartum hemorrhage. It would be important to know if providers at the studied facilities are aware of this recommendation and whether or not it is implemented.

- Additionally, there is no mention of the initial steps for PPH management under their "components of PPH management" category of risk factors for PPH-related deaths. Uterine massage, use of a balloon catheter for uterine tamponade and use of uterotonics such as misoprostol should all be done before transfusion of blood products and hysterectomy can be considered. Assessing these factors would help us answer the question of whether when knowledge and performance of initial quick steps such as these would reduce deaths from PPH. For example, is misoprostol stocked and used in all facilities?

2) Can the authors offer an explanation as to the difference in PPH deaths found between the 2 countries, Mali and Senegal?

Apart from offering "underdiagnosis of PPH" as an explanation, there are no other reasons offered. Do they think it is a personnel training difference? It is a materials availability difference? Are the hospitals different in other characteristics?

3) I agree that the observed association between PPH deaths and receipt of blood transfusion is most likely due to indication bias. What would be better to know is what the average estimated blood loss was for the patients who received the transfusion compared to those who did. For example, receiving 1 unit of blood for a blood loss of 3L of blood will not correct coagulopathy and such patients will be more likely to die.

4) In the discussion section, the authors recommend to detect and treat chronic anemia, a risk factor for PPH-related death. In countries like Mali and Senegal, there is a high prevalence of sickle cell trait and disease and therefore baseline anemia is extremely common. Putting all patients on iron is certainly an option but will not correct the underlying pathology for certain anemias. Given a severely restricted blood bank capacity, transfusions have to be very selective,
therefore the effort should be put on improving the capacity of the blood banks and making blood quickly accessible when needed.

5) In table 1, can authors clarify the difference between intrapartum and antepartum caesarean? I would recommend using different, universally accepted terminology (is it scheduled c-section vs unscheduled c-section? Or c-section before or after the onset of labor). Not clear.

- Minor Essential Revisions

1) Under abstract: 2nd line of conclusion, remove "the" before anemia
2) Under background, 5th paragraph 1st line: instead of "the more precise knowlege of the factors, change to "better knowledge of the factors"; 3rd line, instead of the "timeliest manner possible", change to "a timely manner"
3) Under materials and methods, in the 4th paragraph, the authors mention that the participant hospitals cover 10% of all deliveries in both countries, they should also mention where the remaining 90% of deliveries are thought to occur
4) in the 2nd paragraph of materials and methods, mentionning that "blood supply is critically inadequate in SSA" should be moved to the introduction 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:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests