Reviewer's report

Title: Maternal near miss and quality of maternal health care in Iraq

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Reviewer: Matthias Borchert

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This is an original, relevant and well written paper, which I read with much interest - particularly because it uses the new WHO approach on potentially life-threatening vs. near-miss conditions.

• Major Compulsory Revisions

1. Methods: “Cases were defined according to certain potentially life threatening conditions including severe postpartum hemorrhage, eclampsia, sepsis and ruptured uterus, whereas organ or system failure depending on certain clinical or laboratory criteria were used to identify the near miss cases”. The results will depend to a large extent on the criteria used to diagnose severe postpartum haemorrhage (how exactly is “severe” defined?), severe pre-eclampsia, sepsis etc., as well as on the “clinical and laboratory criteria” used to diagnose organ or system failure, e.g. uterine dysfunction (what exactly is that?). So these “certain criteria” need to be provided – for instance as additional online material - or at least they need to be referenced.

2. Many indicators are used, and not all of them are sufficiently explained. This could confuse the uninitiated. Particularly the less well known indicators like the maternal near miss mortality ratio and the mortality index should be introduced and their interpretation briefly explained in the methods section – including them in the list of indicators (Table 1) is not sufficient. The SMO12 indicators are apparently meant to be indicators for the accessibility of hospital care, not for the quality of care – these are not even listed in the list of indicators, but appear for the first time in the results section – they too need to be presented and explained in the methods section and in table 1. The intra-hospital care indicators are missing in the methods section, are missing in table 1 and the fact that they relate to the period after 12 hours hospital stay is not mentioned in Table 5 – they need to be properly introduced in the methods section and table 1.

• Minor Essential Revisions

3. Introduction: Replace “damage to the country infrastructure” by “damage to the country’s infrastructure”

4. Introduction: “Intermediary estimates are compatible with this trend” – provide figures and references or omit.

5. Introduction: Replace “numbers of women … is progressively decreasing” by “number of women … is progressively decreasing”
6. Introduction: Replace “while those with life threatening complications who are treated and discharged home exceeds those who die” by “while the number of those with life threatening complications who are treated and discharged home exceeds the number of those who die”

7. Materials and methods: the formulation “The hospitals were chosen on the basis of annual deliveries; they had to have more than one thousand deliveries per year” could mean that this delivery rate is a criterion for eligibility, and some of such eligible hospitals were selected – in this case it would be necessary to describe the sampling procedure. Or it could mean that ALL hospitals with >1000 deliveries per year were selected – in this case the sentence should be rephrased to “All hospitals with more than thousand deliveries per year … were selected.”

8. Materials and methods: omit “the” in “treat women with the post-operative”.

9. Materials and methods: are “hospital coordinators” the same as “study coordinators”? If so, use the same term consistently.

10. Materials and methods: Replace “data was collected” by “data were collected”. Likewise: data were sent, data were entered etc.

11. Materials and methods: Replace “ethical committee” by “ethics committee”.

12. Results: change to “whereas the ICU admission rate among women with severe maternal outcomes was 37.2%, and the proportion of maternal deaths without ICU admission was 50% (Table 6).” Authors may wish to rephrase this in a way that the proportion of maternal deaths WITH ICU admission is specified, to be consistent with the statement before and facilitate the understanding.

13. Table 1: replace “fm accidental” by “from accidental”.

14. Table 2: explain what “interventional radiology” is in the context of obstetric care

15. Table 2: what does the “/” in “Uterine dysfunction/hysterectomy” represent? Uterine dysfunction including hysterectomy (thus also including other forms of uterine dysfunction)? Uterine dysfunction leading to hysterectomy? If the latter, then why is hysterectomy not listed under “critical interventions” instead of “organ dysfunction”?

16. Table 3: I do not understand the term “other locally specified” in “other locally specified contributory causes / associated conditions”. Please explain or change the wording.

17. Table 4: Insert the line with the Ns (ref. Table 3).

18. Table 4: There should not be a line “Other/unknown” and a line “Unknown”, since these two categories are not mutually exclusive – they overlap. Either have one line “Other or unknown”, or have two lines “Other” and “Unknown”, respectively.

19. Table 7: Explain – e.g. in a footnote - the asterisk * following “oxytocin” and “Magnesium sulfate”

20. Discussion: “This is in contrast to other studies where SMO is relatively
higher among referred women [10].” The authors mention studies – plural – but reference only one. Please bring in line.

21. Discussion “The low ICU admission rates observed in this study”. The authors should explain which rates they would have considered adequate, or which rates have been observed elsewhere – the qualification “low” needs to be justified.

22. Discussion: there is something wrong in “in those hospitals. e, which can”

• Discretionary Revisions

23. Introduction: Consider replacing “A target in the MDGs, reduction of maternal mortality” by “One of the MDGs, the reduction of maternal mortality (MDG 5)”

24. Introduction: the term “near-miss” should be defined earlier on. For example “During the past two decades the number of women dying from complications of pregnancy and childbirth has been progressively decreasing in many countries, and the number of those with life threatening complications who are treated and discharged home exceeds the number of those who die. Therefore, studying those women who nearly died but survived, the so-called near-miss cases, would …”

25. Introduction: insert “based on the near-miss concept” after “tool for evaluating the quality of maternal health care”

26. Materials and methods: shorten to “units to monitor … post-delivery complications, run by specialized obstetricians”

27. Results: “whereas the ICU admission rate among women with severe maternal outcomes was 37.2%, …” Would it be relevant to also specify the ICU admission rate among women with potentially life threatening conditions?

28. Results, Table 6: is it appropriate to say that deaths have been “assisted”? Women have been assisted, or deliveries have been assisted, and in this process women have died. Consider using the word “occurred” instead.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests