**Author’s response to reviews**

**Title:** Strategies for Successful Trauma Registry Implementation in Low- and Middle-Income Countries - Protocol for a Systematic Review

**Authors:**

Tiffany Paradis (tiffany.paradis@mail.mcgill.ca)
Etienne St-Louis (etienne.st-louis@mail.mcgill.ca)
Tara Landry (tara.landry@muhc.mcgill.ca)
Dan Poenaru (dpoenaru@gmail.com)

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**COVER LETTER**

Dear Porjai Pattanittum and the Editorial Committee of Systematic Reviews,

Thank you for taking the time to review this submission for publication and for sharing the reviewer’s comments with us. On behalf of all authors, I sincerely appreciate the opportunity to make major revisions to this submission and I hope you will agree that we have fully addressed the reviewer’s concerns and fulfilled the recommendations that were presented to us. We recognize that Additional File 1, containing the entire search strategy, is exhaustive; we suggest it not be published in print but rather be made available as supplementary online material. An alternative would be to publish only one of the search strategies (Medline). We are grateful for your kind consideration of this revised submission, and we look forward to hearing from you with your decision.
Best regards,

Etienne St-Louis (corresponding author)

RESPONSE TO REVIEWERS

Please include a point-by-point response within the 'Response to Reviewers' box in the submission system and highlight (with 'tracked changes'/coloured/underlines/highlighted text) all changes made when revising the manuscript.

The reviewer’s comments have been addressed point-by-point and corresponding changes in the manuscript have been highlighted using the tracked-changes system.

Please ensure you describe additional experiments that were carried out and include a detailed rebuttal of any criticisms or requested revisions that you disagreed with. Please also ensure that your revised manuscript conforms to the journal style, which can be found in the Submission Guidelines on the journal homepage.

We have made necessary changes to ensure the revised manuscript conforms to the journal style, in accordance to the Submission Guidelines on the journal homepage.

Reviewer reports:

Reviewer #1: General comments

1. The quality of the writing should be thoroughly improved. Authors should pay particular attention to grammar, tense harmony, punctuation etc.
Thank you for the comment. Improvements have been made throughout.

2. Replace 'sparsity' with 'scarcity' on p.6

The change has been made (see p. 10)

3. Some sentences should be reformulated to make them clearer e.g. lines 7-12 in the abstract's discussion on p.4; lines 33-38 on p.8

The sentences were reformulated, as per the reviewer’s request (see p. 7 and p. 14).

4. The introduction should be revised to present a stronger justification for the study

See revised introduction (p. 9).

5. The word 'guarantee' on line 25 on p.7 is too strong.

The word ‘guarantee’ was removed (p. 12)

Introduction and Abstract

6. More information should be provided on what are trauma registries, what are their benefits, their limitations. How have they improved policy or health care delivery in western countries as well as in some developing countries such as South Africa or Nigeria where such registries exist or have been documented?
The introduction has been revised to include the information requested. (p. 9)

7. What are the steps involved in implementing a trauma registry?

The steps involved in trauma registry implementation have been outlined in the introduction (p. 9).

8. The figure five million injury-related deaths in LMICs (p. 5 line 54) is not a rate. What are the rates per 100,000 population and how do they compare with HICs?

Thank you for raising this concern. This section has been updated (p. 9). Unfortunately, rates of death/100,000 population are not readily available for LMICs given the absence of reliable census or other population-type data. However, as presented below, the Institute for Health Metrics Evaluation has data on percent of total deaths, derived from the Global Burden of Disease study.

9. The abstract should be revised to include the knowledge gap that justifies why the systematic review is being conducted.

See revised abstract (p. 7).

10. It is not necessary to identify the independent reviewers in the abstract.

Noted, thank you. The identifiers have been removed from the abstract.
Methods

11. The databases are relevant and comprehensive. The search strategy is well documented.

Thank you. No change has been made.

12. The definition of LMICs should be provided. The World Bank income classification group is widely used. Low- and middle-income countries, as used in the paper, should be distinguished from lower middle income countries. From the list of countries in the search strategy, upper middle income countries have clearly been excluded.

The definition of LMIC was provided based on the World Bank income classification and an explanatory table has been added (p. 13).

13. It is not clear why in Africa, only the countries in western Africa have been grouped as a sub-region, whereas those in the other sub-regions (northern, southern, central and eastern) have been listed individually.

We also had a sub-group for Eastern Africa (line 11 of the Medline strategy). As to why they were sub-grouped together, it was really a question of convenience. We were able to group them together because all of the countries in those regions were on the LMIC list in December 2016, whereas that was not the case for northern or southern Africa.

Africa, Eastern: includes Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Tanzania, Uganda. All countries were on the LMIC list in December 2016.

Africa, Western: includes Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo. All countries except Cape Verde and Cote d'Ivoire were on the LMIC list in December 2016.
Africa, Northern: includes Algeria, Egypt, Libya, Morocco and Tunisia. Algeria and Libya were not on the list of LMIC countries in December 2016.

Africa, Southern: includes Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, Zimbabwe. Angola, Botswana, Namibia and South Africa were not on the list of LMIC countries in December 2016.

14. The list of cities in the selected countries in some of the search strategies (PubMed Medline) is restricted and so its added value is questionable.

The only way to test the value would be to see what they added to the search that was unique. It's possible they added nothing, but when designing the search we felt that, in the interest of comprehensiveness and in order to make sure that the evidence-base on which this review rests was solid, the names of the capital cities for each country on our LMIC list should be included in the search.

15. The key words employed in the search in other systematic reviews on trauma registry' include "trauma databank\^\text{	extasciitilde}", "injury registry", "injury registries", "injury database\^\text{	extasciitilde}", and "injury databank\^\text{	extasciitilde}" (O'Reilly et al 2013) - terms that are not covered by the current search strategy

Line 8 of the Medline strategy picks up trauma registry and trauma database. We didn't include any of the additional terms suggested here because we thought those terms would likely be sufficient to pick up the relevant articles on this topic. We ran a quick test in Medline to see what would be picked up with the additional terms suggested here (trauma databank, injury registr\^\text{	extasciitilde}, injury database, injury databank). The new terms picked up 45 unique references, none of which were relevant. Therefore, we decided to not modify the search strategy.
16. Since the number of articles yielded by the search at each step has been provided, it is imperative to provide the date those searches were done so that they can be replicated.

The dates of the searches are provided in Additional File 1. Additional details were provided in the methodology section.

17. The protocol should be re-organized. The inclusion and exclusion criteria could be presented using the PICOS framework.

Thank you for this suggestion. See revised eligibility criteria (p. 12)

18. The current formulation of the inclusion criteria implies that studies on barriers to the implementation of trauma registries in LMICs will be excluded.

See revised eligibility criteria (p. 12)

19. Only one exclusion criterion is listed - studies conducted in HICs. As earlier mentioned, studies in UMICs have also been excluded.

See revised eligibility criteria (p. 12)

20. Much of the paper - the search strategy, inclusion criteria and the discussion - is oriented towards a quantitative approach. Qualitative approach is only briefly mentioned in the analysis. Authors should therefore justify their inclusion of qualitative studies.

Additional justification has been provided in the analysis section (p. 13)
21. The protocol focusses almost exclusively on the guidelines and "recommendations" for "successful trauma registry implementation". It is gratifying to note that these terms are not included in the search strategy. One would expect to know about the characteristics of the trauma registry - e.g. age of registry, scope of cases covered, number of centres, how maintained, cost, funding, management etc. it is out of the analysis of these characteristics, that the success factors and inhibitors could be identified.

Indeed, we expect that the results from a quantitative analysis of reports from successful trauma registries in LMICs combined with the qualitative experience of implementers will provide the most insight into the success factors and inhibitors. (p.13)

22. The paper should report on what data will be extracted from the qualitative and quantitative studies. How will they be extracted, analysed and synthesized?

Thank you for this comment. The data extraction, analysis and synthesis explanations have been expanded in the methodology. (p.12)

23. How will the quality of the papers included in the review be assessed?

The risk-of-bias assessment methodology was added to the methodology section (p. 13).

24. The authors should pay more attention to the sequence of the systematic review. They should review their placement of the role of independent reviewers and arbitration in the event of discordance. The role of independent reviewers is typically in the selection of studies from the full-text review and in the evaluation of study quality.
Thank you, this has been clarified in the methodology section (p. 12)

Discussion

25. The paper ends somewhat abruptly. There could be a conclusion.

The discussion has been revised and a conclusion was added (p. 14)

References

26. Some statements are presented as facts without supporting references (e.g. lines 48-51 on p.5; lines 25-28 p.6)

Appropriate references have been added. (p. 17)

27. The reference with superscript 45 in the text on p.6 line 7 should be revised to 4,5. A reference manager would be helpful

Thank you for pointing this out. The appropriate correction has been made. (p. 17)

28. The format of the references in the bibliography should be consistent e.g. abbreviated or full journal names, italicised or regular journal names, journal issue numbers, etc.

The references have been fully revised and formatted uniformly. (p. 17)

29. In reference 3 in the bibliography, the start and end pages of the quoted reference is the same

Thank you. The correction has been made. (p. 17)