Reviewer’s report

Title: The reliability and accuracy of operational system data in a nationwide helicopter emergency medical services mission database.

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Reviewer: Fernando Rosell-Ortiz

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The reliability and accuracy of operational system data in a nationwide helicopter emergency medical services mission database

The quality control of the data is critical for clinical registries that can be used in research on health outcomes. In this sense, the article by Heino A.et al. is a laudable effort to evaluate the reliability of the data and the information provided by your registry.

The methodology used is somewhat contrived. Validating the reliability of the data using fictional clinical scenarios does not avoid a possible bias. As authors write in limitations, the behaviour, the compliance and the accuracy of professionals may not be the same that when they are with a real patient.

In this sense, being a relatively small group, commitment and motivation can play an important role. On the other hand, even if the participants are anonymous, as the bases are not, it can be easy to identify the participants.

Leaving aside this basic concern, there are some issues that should be clarified.

Methods

- Table 1 should be placed in results (where it is cited).

- What kind of information was sent by email? It is an important aspect since it can condition the response of the participants.

- The "data collection" section must include a description and classification of the variables collected, as well as the way in which they are collected For example, are the operational variables automatically included?

- lines 115-120. The chosen statistical test should be described, even why of your choice, but not to explain why another type of analysis is not used . This explanation must be removed from methods.
Results

The text with the tables is reiterative. It is suggested to summarize the tables, including in one all the operational variables and in another the clinical variables.

Discussion

- lines 183-187 are dispensable. The discussion should start in the next paragraph (line 188)

- line 190. Saying "good" is enough, especially when basic problems are later recognized, such as differentiating the reasons why a mission is cancelled (a very basic issue, there is or not patient).

- line 209. It is surprising that the emergency call has a low accuracy. Usually, the entry of a call in a system leaves an automatic trace, very easy to identify. This problem is not well understood. Perhaps, when describing the variables and how they are collected, this and other aspects could be clarified.

- lines 212-218. It is assumed that the definitions of the variables, including the time points, should be part of the documentation sent by email. This argument is not well understood.

- line 219. Usually the most complicated data are those collected in the field, specially clinical variables, unless they have the possibility of being recorded from various devices, (for example, vital signs or ECG measurements performed with defibrillator monitors). Depending on the conditions, an accuracy clinical record can be difficult.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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Acceptable

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