Author’s response to reviews

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

Authors:

Anssi Heino (anssi.heino@tyks.fi)
Timo Iirola (timo.iirola@tyks.fi)
Lasse Raatiniemi (lasse.raatiniemi@ppshp.fi)
Jouni Nurmi (jouni.nurmi@hus.fi)
Anna Olkinuora (anna.olkinuora@finnhems.fi)
Päivi Laukkanen-Nevala (pivi@finnhems.fi)
Ilkka Virkkunen (ilkka.virkkunen@finnhems.fi)
Miretta Tommila (miretta.tommila@tyks.fi)

Version: 2 Date: 12 Sep 2019

Author’s response to reviews:

Amelia De Salis, BSc
BMC Emergency Medicine

Reference EMMMD-D-19-00033R1

The reliability and accuracy of operational system data in a nationwide helicopter emergency medical services mission database Anssi Heino, M.D.; Timo Iirola; Lasse Raatiniemi; Jouni Nurmi; Anna Olkinuora; Päivi Laukkanen-Nevala; Ilkka Virkkunen; Miretta Tommila BMC Emergency Medicine
Dear Ms. De Salis,

Thank you for your comments concerning our manuscript “The reliability and accuracy of operational system data in a nationwide helicopter emergency medical services mission database”

Please, find below our detailed responses to the editors and reviewer’s comments. The revised manuscript has been uploaded to the Editorial Manager of the BMC Emergency Medicine.

Sincerely,

Anssi Heino

Department of Perioperative Services, Intensive Care Medicine and Pain Management, Turku University Hospital and University of Turku, Turku, Finland

e-mail: anssi.heino@tyks.fi

ASSESSORS' COMMENTS

Editor:

Dear Dr Heino,

Your manuscript "The reliability and accuracy of operational system data in a nationwide helicopter emergency medical services mission database" (EMMD-D-19-00033R1) has been assessed. I am pleased to inform you that it is potentially acceptable for publication in BMC Emergency Medicine, once you have carried out some essential revisions:

-- If ethics statements are already present within the main text/Methods section, please also copy/place it under the 'Ethics approval and consent to participate' sub-section.
OUR RESPONSE: Ethics approval and consent to participate was added as suggested, see sub-section “Ethics approval and consent to participate” lines 285-290: “By Finnish legislation, no ethical approval was needed for this study because no patients were involved. Permission for the study was acquired separately from each university hospital. The clinical scenarios were fictional, and no actual patient data was used. Study subjects were informed of the study with two separate e-mails that were sent before the data collection began. Subjects filled the database on voluntary basis, and their approval to take part in this study was achieved as subjects filled the FinnHEMS database with their given personal identification number.”

-- We notice that some authors are missing from the authors' contributions section. The individual contributions of all authors to the manuscript should be specified in the Authors’ Contributions section. Guidance and criteria for authorship can be found here:

OUR RESPONSE: Author’s contributions revised and following text added as suggested: “AH, TI and MT contributed to the conception and design of the study. AH, TI, MT, JN, LR, IV, AO and PL-N contributed to the acquisition of data and provided substantial contributions to the drafting and revision of the manuscript. AH and PL-N contributed to the analysis of the data. AH, TI, MT, JN, LR, IV, AO and PL-N read and approved the final manuscript. AH, TI, MT, JN, LR, IV, AO and PL-N have agreed both to be personally accountable for their own contributions and to ensure that questions related to the accuracy or integrity of any part of the work, even ones in which the author was not personally involved, are appropriately investigated, resolved, and the resolution documented in the literature.” See sub-section “Author’s contributions” lines 279-284

http://www.biomedcentral.com/submissions/editorial-policies#authorship

-- At this stage, please upload your manuscript as a single, final, clean version that does not contain any tracked changes, comments, highlights, strikethroughs or text in different colours. All relevant tables/figures/additional files should also be clean versions. Figures (and additional files) should remain uploaded as separate files.

****

Once you have made the necessary corrections, please submit a revised manuscript online at:

https://www.editorialmanager.com/emmd/

If you have forgotten your password, please use the 'Send Login Details' link on the login page at https://www.editorialmanager.com/emmd/. For security reasons, your password will be reset.
We request that a point-by-point response letter accompanies your revised manuscript. This letter must provide a detailed response to each reviewer/editorial point raised, describing what amendments have been made to the manuscript text and where these can be found (e.g. Methods section, line 12, page 5). If you disagree with any comments raised, please provide a detailed rebuttal to help explain and justify your decision.

Please also ensure that your revised manuscript conforms to the journal style, which can be found in the at the Submission Guidelines on the journal homepage.

A decision will be made once we have received your revised manuscript, which we expect by 13 Sep 2019.

Please note that you will not be able to add, remove, or change the order of authors once the editor has accepted your manuscript for publication. Any proposed changes to the authorship must be requested during peer-review, and adhere to our criteria for authorship as outlined in BioMed Central's policies. To request a change in authorship, please download the 'Request for change in authorship form' which can be found here - http://www.biomedcentral.com/about/editorialpolicies#authorship. Please note that incomplete forms will be rejected. Your request will be taken into consideration by the editor, and you will be advised whether any changes will be permitted. Please be aware that we may investigate, or ask your institute to investigate, any unauthorized attempts to change authorship or discrepancies in authorship between the submitted and revised versions of your manuscript.

We look forward to receiving your revised manuscript and please do not hesitate to contact us if you have any questions.

Best wishes,

Amelia De Salis

BMC Emergency Medicine

https://bmcemergmed.biomedcentral.com/
Reviewer 3:

Thank you for your thorough and thoughtful response to the original referees' comments. The revised submission is clear and informative.

Please see my comments below, which refer to your responses to the original referees.

Your responses to Referee 1's comments:

Results, lines 127-128 - Thanks for adding the locations of the respondents. Is the distribution of respondents among sites proportionate to the staff numbers at each site? Or are some sites disproportionately represented in the study? For example, Vantaa contributed the most participants; does Vantaa also have the largest staff? Oulu contributed the least; is its staff the smallest? This is important to know because, as stated elsewhere in the referee's comments, staff motivation to complete the study could affect the results. And staff at some sites (perhaps the home sites of the authors) could have a higher motivation to participate.

OUR RESPONSE: During the study and data collection period all FinnHEMS units operated 24 hours daily, seven days a week. Staff operated 8 hour day shifts on weekdays, added with 16 hour on call –shifts. During weekends and holidays they operated 24h shifts. On day shifts each unit had one to two physician working as operational, whereas on weekends, holidays and on-call hours there was only one operational person. In this context: “Operational” person stands for a possible study participant.

So because of the above described rotation, the number of staff is fairly similar on each FinnHEMS unit and base. As reviewer described, there is variance on distribution of responders on each base. However, this is the case on every volunteer-based study, and only people willing to take part will do it. This can be considered as a limitation for the study, but this is real-life on every volunteer based study. This being said, our study still had participants from each of the bases and participation rate was 71.2%, which can be considered fairly good. One of the authors (JN) is from Vantaa, two (IV and AO) from Tampere area, two from Oulu (LR and PL-N) and three from Turku (AH, MT and TI). This might have influenced on participation rate on different bases, but also authors are from different areas and cities, and number of participants does not correlate with number of authors on a base city (For example Vantaa vs. Oulu).

Multi-patient mission documentation, lines 173-174 - Thank you for providing this added text for clarification. You should also consider including this lack of guidelines as a limitation of the study (in that it limits the ability to interpret this part of the data).
OUR RESPONSE: The following text added on “Limitations” as suggested: “Especially on the multi-patient mission description, when no precise guideline was found during data collection period for multi-patient mission registrations.” See lines 245-247

Your responses to Referee 2's comments:

Results, "The text with the tables is reiterative..." - To fully respond to this comment, please consider revising the text that speaks about the tables. We agree that the tables need no changes, but the text may be shortened to only summarize the major findings, leaving the tables to provide further details.

OUR RESPONSE: Text removed and revised as suggested. Separate sub-sections on mission coding (Dispatcher coding, Transportation/Cancellation coding and Dispatcher coding) were removed, and only major findings of those variables are presented under a new Sub-section “Mission Coding” as followed: “In this study, dispatch coding had least inter-rater variability (Table 2.). Transportation or mission cancellation had most inter-rater variability based on free-marginal multi-rater kappa and the use of cancellation codes X-0 (technical barrier) and X-9 (mission cancellation) especially seemed to vary. Dispatcher for HEMS unit can be one of the national dispatch centers, another EMS unit requesting support or the HEMS unit itself attending a mission. A per cent agreement of 82% and free-marginal multi-rater kappa value of 0.73 for dispatcher coding was achieved.” Further details are presented only on table. See lines 134-139.

Discussion, lines 212-218 - To fully respond to this comment, please consider adding text that specifically states that definitions of variables were not included in the email. It seems from the text that the names of the variables to be collected were included, but not the definition of the variables.

OUR RESPONSE: Following text added as suggested on “Conclusions” paragraph: “The registration of time points may seem simple, but again the documentation is based on the interpretation of national guidelines for the usage of CQR, which may vary, and no definitions of variables were included in the e-mails or material sent to study participants.” See lines 209-211.

Reviewer 4:

Well written paper that examines questions of database reliability which need to be further explored in other studies as well.
OUR RESPONSE: We appreciate this comment!