Reviewer’s report

Title: Are in-hospital acute myocardial infarction case-fatality rates useful as a quality indicator? An evaluative study.

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Reviewer: Elizabeth R DeLong

Reviewer’s report:

This manuscript has several purposes, mostly relating to the quality of hospital discharge records for use in hospital profiling. This area of study is topical and the goals of this particular project are worthwhile. The availability of matching clinical and administrative data as a platform for comparison is a particular advantage.

However, as currently written, the manuscript lacks sufficient detail and some of the presentation is confusing at times. For example, the MONICA study is referenced as a registry, and diagnostic criteria are given, but there is no description regarding the richness of the database. It would have been good for the authors to indicate briefly how well actual baseline covariates are captured in the MONICA registry. One might have expected the authors to approach the issue of confounding through a statistical model that adjusts for the covariates in the MONICA database and then comparing to the results obtained from the discharge database. However, it is not clear whether sufficient detail is included in the MONICA registry.

Although this reviewer may be misinterpreting the methods, which need more specific explanation, it appears that the authors are arbitrarily designating an interval around 1.0 for a risk “departure” (the calculation of RR is referenced in a medical journal but not explained) that should not be interpreted and otherwise simply using the significance of a crude risk ratio as strong, moderate, or weak, evidence of superior or inferior quality. The rationale for this interval is unclear.

Additionally, the aim to assess the completeness and accuracy of discharge records seems to be relatively superficially approached. There appears to be no patient-specific matching of data, or even of numbers of patients recorded by the two datasets for each hospital.

Minor comments:

p. 5, bottom of page and p. 6, top of page: The text here implies that the distinction between STEMI and non-STEMI was not available during the period of this study, but the manuscript includes these in Table 1. This paragraph is confusing.
p. 7: This paragraph claims that the study will assess the completeness and accuracy of discharge records, but hasn’t yet introduced the other dataset against which the comparison will be made leaving the reader to wonder how this task will be accomplished.

p. 10: The calculation of the RR might have been briefly described, rather than referencing a journal article.

p. 10: Presumably part of this effort is to promote quality improvement; excluding transfers out from analyses would seem to defeat the purpose, as it would encourage hospitals to transfer out patients about to die.

Results section: It is not clear which dataset is being referenced in much of what appears in this section.

P. 13, reference to Table 2: This reviewer could not find the “54 out of the 190” cases in the Monica registry.

Table 1: The table lists case fatality rates for males and for those with shock; for completeness, these rates for females and non-shock patients should be given. Also, hospital volumes are not mentioned, while CCI and LOS don’t present much information and could be relegated to the te