Reviewer’s report

Title: Patterns of HIV Portuguese hospitalizations: a hierarchical survival model

Version: 1 Date: 24 March 2009

Reviewer: Ole Søgaard

Reviewer’s report:

1. Is the question posed by the authors well defined?

Not really. In the abstract (background section) the authors write: “This study aims to estimate the intrahospital mortality attributable to the variation in hospitals performance, after adjusting for measurable risk factors.”

But in the last paragraph of the background section they write: “The aim of this paper is to describe patterns and factors associated with intra-hospital mortality attributed to HIV infectious disease.”

Neither statement appear to be completely accurate, as they study risk factors for death at an individual level in their first analysis and hospital-associated factors in their second analysis. (Major Compulsory Revision)

2. Are the methods appropriate and well described?

I do not feel adequately qualified to assess the statistics but the idea of a hierarchial model approach to investigate hospital-specific characteristics makes good sense.

3. Are the data sound?

I have no reason to assume that data are not sound

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?

Yes

5. Are the discussion and conclusions well balanced and adequately supported by the data?

The authors completely fail to account for multiple testing when the look at hospital-associated predictors for death. They tested 43 hospitals, 1 hospital of the 43 was below the standard and 1 was above the standard. With a significance level of 5% this is exactly the outcome you would expect if the data was generated randomly. (Minor Essential Revisions)

There are several serious flaws in the discussion. To mention a few examples the authors state that (page 12 2nd last para) “tuberculosis was also a protective
predictor of intra-hospital mortality, reducing the risk of death by 22%. This is because HAART significantly reduces the risk of developing active tuberculosis among HIV infected people [28].” This argument makes very little sense and do not explain why TB was associated with a lower risk of death. (Minor Essential Revisions)

In the previous paragraph where they discuss the increased risk of death associated with pneumonia diagnosis, the authors make no distinction between PCP, recurrent bacterial pneumonia and non-AIDS defining pneumonia. This is further illustrated by their choice of references. (Minor Essential Revisions)

6. Are limitations of the work clearly stated?

They authors do not report in which direction potential limitation may bias their estimates. They do not report that they miss data on socio-economic status, important HIV-related conditions such hepatitis B and C coinfection and use of HAART which may bias the patient uptake among hospitals. (Major Compulsory Revision)

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?

Yes

8. Do the title and abstract accurately convey what has been found?

No. The title should be rephrased to better reflect the contents of the manuscript, i.e. “Predictors of mortality in HIV-associated hospitalizations in Portugal: a hierarchial survival model” (Minor Essential Revisions)

The structure of the abstract is not very stringent and several conclusions are drawn without presentation in the aim, method or result section. (Major Compulsory Revision)

9. Is the writing acceptable?

The writing is far from perfect and the manuscript would greatly benefit from a thorough language revision. Many sentences are extremely hard to read due to inadequate writing and some make no sense. (Major Compulsory Revision)

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**
I declare that I have no competing interests