Reviewer's report

Title: Predicting the cumulative risk of hospitalization - model development and validation

Version: 1 Date: 29 November 2013

Reviewer: Paulo Sousa

Reviewer's report:

i) This manuscript is about a very current and interesting theme and is written in a way that fits the expectation of the potential readers/audience of the journal.

ii) The methodology is consistent and adequate to the aims of the study and the data used.

iii) The discussion highlights the main issues of the study and focuses the limitations of it (namely the need to combine those models, based on administrative data, with clinical-based disease prognostic models). In my opinion authors could/should use other articles to support/compare/diverge from their results, in order to have a more widely and interesting discussion.

iv) This manuscript is “complex” but rigorous in a statistical point of view. The authors used logistic regression to develop prognostic models adjusted by risk to do comparisons within patients hospitalized. They also assess the performance and the “goodness” of the models they developed by using AUC – C statistic and, AIC Bayesian information criterion, respectively.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.