Reviewer's report

Title: Computerized prediction of intensive care unit discharge after cardiac surgery: development and validation of a Gaussian processes model

Version: 2 Date: 29 August 2011

Reviewer: Thomas Higgins

Reviewer's report:

Thank you for the opportunity to re-review this paper. The authors have successfully addressed issues raised in the prior review. In particular, I was happy to see the percentage of missing data addressed (5 or 6 percent is acceptable) and clarity on how missing data was handled. Imputing normal values is probably the safest course, despite the danger of regression to the mean. With a 5% missing data rate, this should not affect the findings.

I am attaching a .pdf of the Clinical Intensive Care paper, but there is no need to cite it in the article. Unfortunately, that journal ceased publication a few years ago and it is difficult to find electronic copies online.

Minor point; page 4, Methods>Patients: was "thromboembolectomy" or "thromboendarterectomy" intended (versus thrombendarterectomy)

I think the paper is much improved with minor editing, the inclusion of the histogram for ICU length of stay, and the addition of primary source references in place of a single review citation. Thank you.

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

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.

I previously disclosed that I hold 100 shares of Cerner stock (Cerner markets APACHE) but do not feel that Cerner will gain or lose financially as a result of this paper.