Reviewer's report

Title: Optimization approaches supporting an adaptive bed management

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Reviewer: Warren Hare

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Additional comments
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> 1. Is the question posed by the authors well defined?

The authors performed an interview survey to assess the strengths and weaknesses of bed management in a Germany Hospital. They then considered several computer based strategies to improve bed allocation.

This is a timely and valuable research area, and the paper provides some small contribution to the field (primarily showing that the research group is active and doing quality research).

> 2. Are the methods appropriate and well described?

On the whole the paper is poorly written. It reads like a collection of point form notes, and at times is hard to follow. The authors shun several common English conventions, for example starting sentences with citations: "[11] reports on a Decision Support System (DSS) based on a compartmental flow model. [12] gives an overview of the application of queuing theory approaches in the health care sector." (page 5, line 3-5)

> 3. Are the data sound?

Yes

> 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?

No. Although there purposed methods are shown to improve over the status quo in their simulation, the results raise some questions. Most notably, for a sample size of 110, the heuristic methods show better results than the exact solution. This clearly demonstrates that there exact solution model must be flawed. Until this is resolved, I do not see how anyone could consider this research complete.
A second problem is the lack of discuss of the validation of the simulation that was employed. This should be added to the paper.

> 6. Are limitations of the work clearly stated?

Yes.

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 Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?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

Yes

> 9. Is the writing acceptable?

No. See above.

**Level of interest:** An article of limited interest

**Quality of written English:** Needs some language corrections before being published

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

**Declaration of competing interests:**

- I have no competing interests.