Reviewer’s report

Title: The Sydney Triage to Admission Risk Tool (START) to improve patient flow in an Emergency Department: A model of care implementation pilot study

Version: 0 Date: 15 Oct 2019

Reviewer: John David Halamka

Reviewer's report:

1. I did not find the START algorithm included in the manuscript - will it be an appendix?

2. It's easy to create an algorithm to makes triage decisions, it's harder to create an algorithm that makes appropriate triage decisions. The article needs to be revised to include comparative outcomes - did the START admitted patients have a similar inpatient length of stay as controls i.e. maybe the START algorithm admitted patients that could have been sent home. Did any patients triaged with START return to the ED within 48 hours i.e. the START algorithm did not admit patients that should have been.

   The validity of the algorithm is a function of its positive predictive value for admission and not so much the reduction in ED length of stay

3. Have you considered using machine learning models to predict admission?

   A trivial point - The authors make the comment that this is the first automated triage scoring system that enhances ED throughput. Since I wrote papers in the 1990's about automated triage systems to enhance throughput, that's probably not a reasonable claim.

   Are the methods appropriate and well described?
   If not, please specify what is required in your comments to the authors.

   Yes

   Does the work include the necessary controls?
   If not, please specify which controls are required in your comments to the authors.

   Yes

   Are the conclusions drawn adequately supported by the data shown?
   If not, please explain in your comments to the authors.

   Yes

   Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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None

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