Reviewer’s report

Title: Who breaches the four-hour emergency department wait time target? A retrospective analysis of 374,000 emergency department attendances between 2008 and 2013 at a type 1 emergency department in England.

Version: 0 Date: 26 Jul 2017

Reviewer: Jennifer Wiler

Reviewer's report:

The four hour overall LOS for ED patients is used as a surrogate marker for quality in the U.K. This is the first study to evaluate the demographic factors, at the hospital, which are associated with failure to successfully meet the metric. This is a retrospective cohort study of 378,873 visits to a large type 1 Emergency department at an NHS teaching hospital in Oxford, England. The authors report that hour of arrival to the ED (evening), day of the week (Monday), season (October to February), patient age (older), ED referral source, and "sicker" patients (surrogate marker testing) and not self-referred were more like to have a LOS > 4 hours. The paper is well written and has a very robust sample size. However, interestingly the authors did not look at other possible confounding variables including demand: supply match (eg overall ED census to staffing), door to provider, inpatient flow (eg boarding), staff training levels (junior vs non junior physicians), etc. which have been previously shown to effect ED flow. Although the variables identified are helpful, it calls into questions the author's interpretation and subsequent recommendations (ie. senior clinicians with expertise in medicine of older people to provide an early assessment for patients with complex presenting syndromes). Therefore, the results are narrow and less helpful to policymakers.

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

No

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.

No

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 am able to assess the statistics

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

Acceptable

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