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: 13 Aug 2017

Reviewer: Julia Crilly

Reviewer’s report:

Overall comments:

Thank you for the opportunity to review this interesting manuscript profiling ED presentations most likely to breach the ED four-hour wait time target over a 6 year time period. This manuscript presents some insightful details that add to the current body of evidence regarding 4 hour breaches for ED attendees.

Specific comments:

Background:

To assist international readers - please briefly define what type 1 ED patients are.

To provide broader context - I suggest also including a mention (and reference) to other countries where 4hr (Australia) or 6hr (New Zealand) ED targets are now also used. There is some literature indicating outcomes from the 4 hour rule from both of these countries (see Sullivan et al The National Emergency Target (NEAT) and the 4-hour rule: time to review the target. Med J Aust 2016; 204(9)354; Jones et al Impact of a national time target for ED length of stay on patient outcomes. The New Zealand Medical Journal 2017 (may): 15-34)

Methods:

I suggest explicitly stating study design at beginning of methods section.

Data collected regarding investigations performed in the ED value adds to this manuscript. I note however that several key potential predictors were not collected / used for this study: sex and triage score. Are these routinely collected data? Perhaps note reason(s) why not included and add sex to limitations section where other uncollected data point are noted.

I suggest describing data cleaning / checking process. (was data reliable? What were reasons for the 4414 with incomplete data?)
Please clarify why specific cut points were used (e.g. age: < 4 or older than 4 and season: 7 months vs 5 months?)

Results:

The % of patient exceeding the 4hr target is noted in the results as 8.3% but 9.2% in Table 2. Please clarify/correct as necessary.

Consider presenting the % of patients breaching the 4-hour target over time in graphical form.

Page 5 line 7 - results of multivariate logistic regression - reference is made to Table 2, is this supposed to be Table 3? Please correct as necessary.

Discussion:

Page 5 - line 47. Please correct spelling of 'assess' (currently reads 'asses')

Tables:

Table 2 - please check superscripts for b and c in the left hand column against number of investigations (b?) and no investigations ordered (c?) as these don't seem to align with the corresponding legends.

Table 3 - please clarify - are results presented in this table adjusted OR or unadjusted OR?

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.

Unable to assess

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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