Reviewer's report

Title: Frequent emergency department attenders and frequently readmitted patients: how the differences can shape policy.

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Reviewer: Benjamin Friedman

Reviewer's report:

Congratulations on a thoughtful and well-researched report.

My major critiques are as follows:

1) As the authors note and summarize, the literature on ED and hospital overuse is robust. It is not clear to me what this this study aims to add to that literature.

2) As the authors note in the introduction: "Looking for the reasons to explain frequent ED attendances and frequent re-admissions in clinical, service utiliation time and demographic patient charateristics available from hospital data obviously provides part of the answer. The full picture on service choices can only be obtained by exploring all other factors, including patient attitudes and beliefs." Why then should we accept the "part of the answer" provided by this study.

3) I am troubled by the problem of selection bias. How do these various populations compare to patients who don't use the ED at all. Isn't this the relevant question if population-based solutions are needed.

4) It seems to me that not enough attention is paid to a conceptual understanding of the various populations. Frequently re-admitted patients are usually patients with poorly controlled chronic high stakes conditions such as CHF, COPD and CAD. Therefore these patients should be older and probably have some, though not enough, access to care. Frequent ED presenters consist of this group, as well as patients with chronic pain conditions such as migraine, sickle cell ,and low back pain, as well as patients who truly have no access to primary care, and so come for cough, sore throat, etc. It seems like this potential heterogeneity in the frequent presenters need to be better addressed.

Minor critiques:

1) I would better define ED's aim as to diagnose and treat life or limb threatening processes. I'm not sure why "prevention" is considered part of this, unless this is part of a "safety net" mission. Also, Ref 1 is poorly referenced, so I could not access it.

2) I'm not sure that most research investigating frequent ED users is quantitative hospital data. There are quite a few population-based studies and patient interviews.

3) Methods: a) Clearly state independent variables and the rationale for each b) describe the diagnoses better--are they comprehensive, accurate, and unique (i.e
each patient gets one and only one). Define supplementary care here. Define signs and ill-defined conditions.  
c) Why is unplanned return visit an independent variable--isn't this part of the dependent variable (one visit+ one return visit and you're half way there) something that needs to be predicted.

4) If 20% of patients are admitted, how is it that 85% did not results in admission?

5) "Admitted to another hospital" is essentially missing data b/c you don't know what level of care they were admitted to. I would address this by not discriminating to where a patient was admitted. I dont think this is important for the study's goals

6) Power. Using the conventional 10 cases for each independent variable do you have sufficient power for the re-admission analysis

7) I assume you used step-wise regression? Defend not using an "enter all" model.

Figure 1.
Include # and (%) with each bar

Table 2
Include all independent variables

Tables 3+4.
Just need to report OR (95%CI), but include all ind. variables regardless of statistical significance

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

**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