Author's response to reviews

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

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To BMC Health Services Research Journal
Reply to reviewer comments

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

Sue E Kirby, Sarah M Dennis, Upali W Jayasinghe and Mark F Harris

Please find our response to the reviewers’ comments with details of the revisions to the manuscript in the attachment and the revised manuscript.

Thank you for the opportunity to revise the manuscript in the light of the comments. I hope the revision meets the criteria for publication. Please do not hesitate to let me know if further action is required.

Yours sincerely

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Reviewer Benjamin Friedman
Major criticisms
1. **Clarify aims and contribution in the light of the robust published work on emergency overuse.** The amended manuscript shows that the unique contribution of this work is to apply the differences between frequent emergency presenters and frequently readmitted patients to developing solutions to emergency department overcrowding (see Abstract/Background page 2, Introduction paragraph one page 4, Introduction page 7 paragraph 3) and to exploring the implications for emergency department policy (see Discussion page 19 paragraph 2 and Conclusion page 20).

2. **If this research only provides only “part of the answer” why should it be accepted?** The revision has addressed this point by changing the emphasis in the Introduction (see last paragraph page 4 and first paragraph on page 5) and stating unambiguously the aim and contribution of the research (see also 1a. above). The gap in research in relation to patient perceptions is referred to in paragraph 3 on page 6 and the first paragraph on page 7 of the Introduction.

3. **Selection bias – only patients attending the emergency department are included in the analysis.** This point has now been included in the limitations to the study and the suggestion made that future work examining patient use of primary care services would provide a more complete basis for developing population based solutions. Linking primary care utilisation data with hospital data would provide a clearer picture of the reasons behind choice of emergency department services (see paragraph 2 page 19 of the Discussion). Unfortunately this option was outside the scope of this study.

**Minor criticisms**

1. **Conceptual understanding of the two patient groups.** Further discussion of the significance of the findings in both clinical and attitudinal terms is now included to address the issue raised (see Discussion pages 15 to 17).

2. **“Prevention” role of emergency department clarified in reference 1.** The reference has been updated with a link to the website of the Australasian College of Emergency Medicine. The following quote is relevant: “Emergency medicine is a field of practice based on the knowledge and skills required for the prevention, diagnosis and management of acute and urgent aspects of illness and injury affecting patients of all age groups with a full spectrum of undifferentiated physical and behavioural disorders. It further encompasses an understanding of the development of pre-hospital and in-hospital emergency medical systems and the skills necessary for this development.”

3. **Challenging the point that most research is quantitative.** This statement has now been omitted.
4. **Description and justification of variables.** More information is now provided on the independent variables, including definitions of “supplementary care”, “symptoms, signs and ill-defined conditions” and the locally used variables, including “unplanned return visit” (see Methods Data Analysis pages 9 and 10).

5. **Challenge 20% patients are admitted and 85% not admitted.** This has now been clarified by including numbers and percentages in Table 1. There is a slight variation in the ratio of admissions to presentations by year.

6. **Admitted to another hospital.** The description of the admissions variable has been adjusted as suggested (see Methods Data Analysis pages 8 to 10).

7. **The power issue with ten cases in each independent variable.** The statement that the categorical variables gender and country of birth have more than ten cases in each category has been included in the Methods section (see Data Analysis page 10). The issue does not apply to the other variables as they are covariates.

8. **Justification of the regression method.** It has now been specified in the Methods section that the “enter all” option was used to avoid the controversy about the interpretation of the results of stepwise or sequential logistic regression (see Methods Data Analysis page 10).

**Reviewer Judith Savageau**

**Major edits**

1. **The policy issues are not adequately addressed in the Discussion or the Conclusion.** Revision of the manuscript has addressed this omission by identifying the policy issue as the need to address emergency department overcrowding by preventing unnecessary representations and readmissions through diversion to other services or more effective treatment in emergency (see Abstract/Background page 2, Abstract/Conclusions page 3, Introduction page 7, Discussion page 17 paragraph 2 and page 18 paragraph 2, page 19 paragraph 1, Conclusion page 21).

2. **Abstract Results last sentence about the maximum number of admissions in a year.** This sentence has been deleted as suggested.

3. **Abstract last sentence of the conclusion – too general.** This has been revised in line with the suggestion to clarify the conclusion (see Abstract/Conclusions page 3 and Conclusion page 21).

4. **Introduction - the need for further studies in relation to health behaviours and attitudes and beliefs.** In the revised manuscript a statement is included
that there are still gaps in the research into the relationship between health
behaviours, attitudes and beliefs (see Introduction page 7 paragraph 1).

5. **Reason for cut-off points for the dependent variables.** In the revised
manuscript a justification is provided (see Abstract/Methods page 2 and
Introduction page 7 paragraph 2).

6. **Methods “the other years were checked for consistency” meaning not clear.**
This sentence has now been amended to the findings for the year 2008 were
confirmed by analysis of the data for the other years in the data series to meet
the criticism (see Methods page 10).

7. **Lack of clarity concerning “other clinical factors”.** The revised manuscript now
clarifies the variables fully as suggested (see Methods pages 8 and 9).

8. **Results lack of clarity about whether the information in the tables refers to
the year 2008.** The revised manuscript make it clear that the results in the
graph (Figure 1) refer to all years, but those in the other tables refer to the year
2008 (see Methods page 10).

9. **Lack of information on statistical differences in Table 1.** The statistical
differences have now been included and discussed in Table 1 as suggested (see
also Results page 11 paragraph 2 paragraph y and Discussion page 14
paragraph 2).

10. **Lack of clarity about the correlation between the variables.** This has been
deleted on the basis that it adds little to the discussion about the logistic
regression model development.

11. **Differences between the text and the results in the tables.** Now amended to
reflect the results accurately (see Results pages 11 and 12 and Tables 2 and 3).

12. **Discussion of results in relation to the clinical situation.** Now amended to
include discussion of the clinical significance of the findings (see Discussion
page 14 paragraph 2).

13. **Cut-off points for frequent presentations and frequent readmissions.** This
issue is now addressed more fully in the Abstract/Methods page 2 and
Introduction page 7 paragraph 2).

14. **Fuller discussion of findings in relation to time and date of presentation.**
This is now included in the Discussion as suggested (see pages 15 last
paragraph and 16 first paragraph).
15. **The limitations did not include a discussion of the wide confidence intervals reported.** The issue of the relatively wide confidence intervals is now included in the limitations as suggested (see page 20 of the Discussion).

16. **Limitation concerning generalization to other hospitals** – suggested that the reach be extended. This has now been included as suggested (see Discussion paragraph 2 page 19).

17. **Conclusion needs to be amended to indicate the policy implications.** This has now been amended (see Abstract/Conclusion page 3 and Conclusion page 21).