Author’s response to reviews

Title: A model for a drug distribution system in rural Australia as a social determinant of health using Event Structure Analysis

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Author’s response to reviews:

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The Editor

BMC Health Services Research

Dear Editor:

Re: Revised Manuscript "A model for a drug distribution system in Outback Australia as a social determinant of health using Event Structure Analysis" (BHSR-D-17-00770)

Thank you to the two peer reviewers and yourself for your thoughtful review of our manuscript noted above. We are pleased to have incorporated the reviewers’ suggestions and will address each of them in order below.

Reviewer #1

1. Please consider rewriting the sentence and not repeating "remote and very remote:" "Over 60% of the remote and very remote Australian population is Aboriginal or Torres Strait Islander people. More than 20% of indigenous Australians live in remote or very remote locations."

Lines 102-115 (pp 5-6) in the revised manuscript have been changed to reflect this recommendation.
2. Please consider adding a few references for demographic and health care spending information (lines 101-112)

An additional reference has been added to lines 102-115 (pp 5-6). Reference 4 (new) provides some definitions on how rural/remote are used in Australia. Reference 5 is now cited twice to clarify the information source. It is the source for all quantitative information in that section.

3. Some more detail may be added to background about strengths of ESA such as, how ESA is an inductive process through which an actual course or operation is analyzed to uncover a series of events that may lead to a particular or desired outcome. The focus here is on the derived model and how ESA may guide a researcher to a particular outcome through preceding events.

Lines 210-223 (pp 10-11) have been revised to discuss ESA in more depth and why it was an attractive qualitative method for this study.

4. If the primary language was not English: Please describe in which language questionnaire was developed, translated to, and back translated. If English was not the primary language of interview: how translations were handled.

Interviews were conducted in English. See line 250 (pg 12).

5. May add how supply process differs from similar remote areas of New Zealand and UK.

We considered this carefully, but ultimately decided such information was unlikely to be helpful to readers. The population density of Australia (3 per km2) is so much lower than that of New Zealand (18 per km2) or the UK (271 per km2) that it is unlikely that there are significant pockets of patients living in such isolation that special distribution systems must be established.

(http://data.worldbank.org/indicator/EN.POP.DNST)

6. May comment on some suggestions on improving supplies and access to health care using modern technology: automation; telemonitoring; can pharmacies be decoupled to a certain extent from the dispensing and supply process?; can medication could be directly delivered to the patients with stable chronic conditions?; minimizing mal-distribution across rural areas etc.

Lines 580-587 (pg 25) have been added to address the reviewer’s suggestion.
7. Any recommendations for Opioid distribution such as naloxone? 

We did not collect any information that would specifically allow us to respond to this recommendation. However, informal conversation with interviewees and others while in Australia suggested that the most common drugs of abuse were alcohol and cannabis. We thank the reviewer for the suggestion, but are unable to provide any recommendations with confidence.

Reviewer #2

1. While ESA is briefly introduced, it might be instructive to elaborate further on the implications of selecting this approach, as opposed to other possible approaches. Were there other reasons for this methodological approach being used? 

See response to reviewer #1 comment 3.

2. Is this approach to purposefully design a system which is a social determinant of health? (as the title suggests 'A model for a drug distribution system in Outback Australia as a social determinant of health using Event Structure Analysis', or is the core purpose of this work to describe an existing health service in such terms? (and thereby proposing that the drug distribution system be recognised as a social determinant of health, thereby changing how this might be viewed by practitioners, health policy makers et al. The premise that the drug distribution system is a social determination of health has important consequences, if this is new.

Our hope was to make the argument that designing and operating a well-functioning drug distribution system is: (i) one of the social determinants of health; (ii) consistent with a pharmacist’s responsibilities. We have made several changes in the manuscript to try and make these points more convincingly. Lines 91-94 (pg 5) and 528-546 (pg 23-24) have been revised to do so.

3. For an international audience, terms such as 'outback Australia' might be defined to better distinguish 'rural and remote' terminology. For the purpose of publication is this a lay language, descriptive term or a formal geographic identity

See response 2 to reviewer #1. The term outback has been removed from the title as well as the body of the paper, and the terms rural and/or remote are used instead. Reference 4 has been added and provides some definitional background for the terms.
4. The data quoted for pharmacists’ distribution among the population (97 pharmacists per 100,000 population in major cities, compared to 60 per cent per 100,000 in remote areas) is an important note, but does not appear to be referenced.

See response 2 to reviewer #1. The data quoted are from reference 5. We have included the citation twice to clarify to readers where the information is from.

5. Who is the audience for this paper? There is mention of pharmacy schools- is there an implicit invitation/opportunity for pharmacy schools to be engaged in this area of practice training and development? Is this paper written to health professionals' organisations (pharmacy medical and other health professions), as well as policy makers? Are others likely to be able to be better informed based on this work. It might be possible to draw out the utility of these findings in the discussion/conclusions of this manuscript.

We have added material to suggest that policy makers and health professions faculty who lead medical mission trips may find this study useful. See lines 143-144 (p 7), 414-415 (pg 19), 429-430 (pg 20), 451-453 (pg 20), 508-512 (pg 22), 518 (pg 22), 522-526 (pg 23), 604-617 (pg 26), 646-662 (pg 28). We believe the study will be of interest to health systems designers and managers, health policy makers, and health professions faculty and/or student trip leaders who are responsible for planning the drug distribution system to employed during a mission trip. We trust we have addressed all of these stakeholders in sufficient detail to address the reviewer’s query.

We hope that our responses to the reviewers’ suggestions have adequately answered their questions and addressed their concerns. And so we are optimistic that the paper is now suitable to be accepted for publication.

Again, thank you for considering our paper and thank you to the reviewers for their valuable suggestions. We look forward to hearing your editorial decision in the near future.

Sincerely,

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c.c. Michelle Mages