Author’s response to reviews

Title: Outpatient Primary and Tertiary Healthcare Utilisation among Public Rental Housing Residents in Singapore

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Version: 1 Date: 09 Feb 2019

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9 Feb 2019

Prof Maria Elisabeth Johanna Zalm
Editor-in-Chief
BMC Health Services Research

Dear Prof Maria Elisabeth Johanna Zalm,

Re: Manuscript – BMC Health Services Research BHSR-D-18-01895 Outpatient Primary and Tertiary Healthcare Utilisation Among Public Rental Housing Residents

On the behalf of my co-authors, we would like to thank you and the reviewers for the effort and time spent on improving our manuscript. We have reviewed the comments carefully and have revised the manuscript accordingly. Our point by point responses to the comments are as follows.

Reviewer reports:

Amresh Hanchate, Ph.D. (Reviewer 1): This paper presents rates of utilization of healthcare services grouped by public rental housing status of patients in Singapore. Public rental housing in Singapore is subsidized and provided for those with lower income. The study is based on administrative data for one of the regional healthcare systems, SingHealth Regional Health System, covering the south-central region of Singapore. The System includes polyclinics (providing primary care services), tertiary clinics (providing specialist outpatient care services),
emergency departments and hospitals. Combining all the patients in the system in 2011 and 2012, the study reports the number of annual (2012) primary care visits, specialist visits, ED visits and hospitalizations per person grouped by public rental housing status. They report that adjusted for demographics and comorbidities, rate of likelihood of high-use of specialist outpatient care is lower and of emergency department and hospital care is higher among those with public rental housing. For improved clarity of the resulting discussion, more information on the following questions would be helpful.

Issues:

1) How representative is the patient population; there may be non-users of the System

The fact that the data represents users of the largest provider system in a region of Singapore is commendable. However, for the benefit of the readers, it would be helpful to better contextualize the underlying population examined. That is, to what extent is it representative of the overall population of south-central Singapore; in particular, how large is the excluded population?

Two issues seem relevant here but are largely unaddressed:

a) How large is the subpopulation of residents who do not use the SingHealth Regional Health System?

Authors’ reply

We would like to thank Prof Amresh for the suggestion. Unfortunately, we do not have the exact statistics of residents who do not use the SingHealth Regional Health System. Extrapolating data from the Ministry of Health, Singapore, it is likely the population reported in the study is representative of the general population as majority (70-80%) of overall healthcare needs in Singapore is addressed by public healthcare. As our dataset includes primary healthcare which has more frequent touch points with patients, we believe this extrapolation is reasonable. We recognize that this is a limitation of the study and have included it in the limitations section of the manuscript.

b) How large is the subpopulation of residents who use another health system? From your tabulation of included patients (Figure 1) you mention that out of 870k system users, 610k are (excluded) users of the SingHealth Regional Health System who resided in a region covered by another system; this suggests that there may be residents of south-central Singapore who may be receiving care in another system.

Authors’ reply

While the statistics of residents using another health system are unavailable, we do not expect a significant proportion of residents residing in the SingHealth Regional Health System to utilize facilities from another health system due to the ease of healthcare access geographically and the
comprehensive array of primary and tertiary facilities available within the regional health system. SingHealth is an Academic Medical Centre with established specialist centres unavailable in other regional health systems. It is a national tertiary care centre for many other smaller and secondary hospitals in the country. Of note, the SRHS comprises of 4 general hospitals, 5 specialty centres e.g. Singapore National Eye Centre, National Cancer centre, National Heart centre, National neuroscience institute and 3 community hospitals. Therefore, we have excluded users who reside in other areas besides in proximity around our Regional Health System. We hope this clarifies.

We recognize that this remains a potential limitation of the study and have included it in the limitations as follows: “Secondly, data pertaining to residents utilizing healthcare facilities in other regional health systems and non-users of the SRHS was unavailable, which may affect the representativeness of the reported population. However, it is expected that the proportion of residents utilizing facilities in other health systems to be small due to the geographical ease of access to the primary care facilities and specialist centres available in the SHRS.”

2) It appears that GPs are not part of the System

Given the wide variation across countries in healthcare systems, it will be helpful to provide the basic details of the system in Singapore. The manuscript mentions that GPs provide primary care, but it is not clear if GPs (some or all) are part of the SingHealth Regional Health System? What proportion of primary care is provided by GPs? If GPs are not part of the SingHealth System, then what proportion of primary care is captured in the SingHealth System and how does this affect the study discussion of differences in primary care services in SingHealth System by public rental housing status. Are there no co-pays for emergency department and hospital care? Does higher use of ED and hospital care among those with public rental housing indicate barriers to access for GPs and other outpatient care?

Authors’ reply

Across Singapore, majority (80%) of primary care is provided by GPs.1 However, 80% of chronic disease management is provided by government polyclinics because of the subventions system. GPs who are working in private clinics do not fall under the purview of the SingHealth Regional Health System. We have amended the introduction to read “While the majority (80%) of primary care provided by private GPs in the private sector, polyclinics in each regional health system play an important role in management and follow-up of 80% of patients with chronic diseases”.

We have added this as a limitation in the manuscript.

We have also added a section in the introduction which describes the healthcare financing situation in Singapore.

“Healthcare financing in Singapore primarily comprises of government subsidies and 3 flagship programmes which are namely Medisave, Medishield Life and Medifund.18,19 Every working
citizen contributes a proportion of their monthly salary to Medisave, a mandatory and government enforced medical savings account which pays for major healthcare expenditures. In contrast, Medishield Life is an automatically opt-in health insurance scheme which is used to subsidize high cost hospitalizations. Lastly, Medifund is a means-tested social welfare program which is designed as a safety net to fund the healthcare costs of poorest citizens in the country, of which a significant proportion reside in public rental housing.”

Overall, for most public rental housing residents, many of them will be on Medifund which provides heavily to fully subsided healthcare. As such, there is little to no co-pay for emergency department and hospital care for this select group of patients.

The higher use of ED and hospital care among public rental housing residents may suggest barriers pertaining to access to GPs and other outpatient care. We have added some suggested barriers as follows:

“Locally, barriers that public rental housing residents commonly face for subsidized specialist care include the need to obtain referral letters from primary care physicians in public healthcare facilities and long waiting time, which can span up to 6 months.”

References:


3) Need for more background information on access barriers

To help readers make better sense of differences in use of services by patients in public rental housing, please provide more information on: a) are there out-of-pocket costs for different healthcare services, and are these lower for those with public rental housing? b) are there other access barriers to different healthcare services (waiting time; need for referral for specialist services)?

Authors’ reply

We would like to thank the reviewer for his suggestion.

We have added the following paragraph in the introduction to discuss healthcare financing in Singapore and subsidies available for lower income families staying in public rental housing as mentioned above.

“Healthcare financing in Singapore primarily comprises of government subsidies and 3 flagship programmes which are namely Medisave, Medishield Life and Medifund. Every working citizen contributes a proportion of their monthly salary to Medisave, a mandatory and government enforced medical savings account which pays for major healthcare expenditures. In contrast, Medishield Life is an automatically opt-in health insurance scheme which is used to
subsidize high cost hospitalizations. Lastly, Medifund is a means-tested social welfare program which is designed as a safety net to fund the healthcare costs of poorest citizens in the country, of which a significant proportion reside in public rental housing. Therefore, out-of-pocket costs are expected to be minimal or nil for many residents in public rental housing. A review by Chan et al on health seeking behavior of public rental housing residents found that they had lower participation in health screening, and preferred alternative medicine practitioners to western-trained doctors for primary care. It is possible that many public rental housing residents may neglect health and primary healthcare due to conflicting life priorities, resulting in over-utilization of specialist and emergency care services at later disease states.”

A potential barrier to subsidized tertiary healthcare services for low-income families is the need for a referral from a primary care physician in the public sector.

We have amended the manuscript to highlight the barriers suggested in the discussion

“Locally, barriers that public rental housing residents commonly face include the need to obtain specialist referral letters from primary care physicians in public healthcare facilities and long waiting time for subsidized specialist care, which can span up to 3 to 6 months for some specialties.”

4) Limitations need to be elaborated

One limitation states, "Consequently, other measures of primary healthcare utilization could not be evaluated." What primary care utilization measures have not been captured? Needs to be better explained.

Authors’ reply

Thank you for the suggestion. We have amended the statement as follows: “Consequently, other measures of primary healthcare utilization such as healthcare related costs, health insurance claims and visits to private GP clinics could not be evaluated.”

5) Is staying at rental flats same as staying at public rental flats? Table 1 compares those in "rental flats" and those not in rental flats; but the main text using the words "public rental flats"; please be consistent.

Authors’ reply:

We have amended the table heading in Table 1 to public rental flats as suggested. Thank you.

Reviewer 2 (Reviewer 2): PEER REVIEWER ASSESSMENTS:

OBJECTIVE - Full research articles: is there a clear objective that addresses a testable research question(s) (brief or other article types: is there a clear objective)?
Yes - there is a clear objective

**DESIGN** - Is the current approach (including controls and analysis protocols) appropriate for the objective?

Yes - the approach is appropriate

**EXECUTION** - Are the experiments and analyses performed with technical rigor to allow confidence in the results?

Yes - experiments and analyses were performed appropriately

**Statistics** - Is the use of statistics in the manuscript appropriate?

Yes - appropriate statistical analyses have been used in the study

**INTERPRETATION** - Is the current interpretation/discussion of the results reasonable and not overstated?

Yes - the author's interpretation is reasonable

**OVERALL MANUSCRIPT POTENTIAL** - Is the current version of this work technically sound? If not, can revisions be made to make the work technically sound?

Probably - with minor revisions

**PEER REVIEWER COMMENTS:**

**GENERAL COMMENTS:** This is an interesting study that examines the relationship between living in public housing and several measures of health care utilization in a region of Singapore. There is definitely a need for work in this area, and this is a methodologically sound paper. I had only minor comments.

Authors’ reply: We would like to thank the reviewer for his/her comment.

**ADDITIONAL REQUESTS/SUGGESTIONS:**

The study is very well done. I had only a couple of minor comments. First, there are some places where it becomes clear that the paper would benefit from one more round of revision for
language / typos. I do not think the authors need an English language editing service. They just need to go back through carefully and fix a few things. One of these is saying "information" when "data" would be more appropriate. Also, it is a small point, but the period comes before the numeric superscripts for references.

Authors’ reply:

Thank you for the comment. We have corrected the language and typographical errors as suggested. Additionally, we have amended the sections where the term “information” is used to “data” as suggested. We have also corrected the referencing formatting in the manuscript as suggested.

The last point is that the selection of the number of visits for "frequent" users was not justified empirically. It would be nice to know how the authors settled on these thresholds.

Authors’ reply:

Thank you for the suggestion. We have added in the following paragraph to explain the rationale for the thresholds used in our methodology section.

“The cut-offs for frequent primary care outpatient clinic visits, outpatient specialist clinic visits and hospital admissions were determined by expert consensus across the three major health regional systems in Singapore. The threshold of ≥ 4 visits for emergency department visit as per a study performed by Locker et al who found that there is >99% of chance attenders who would presenting at the A&E on <4 occasions per year as compared to a true frequent attender.”

Thank you and we look forward to your favourable reviews.

Yours sincerely,

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