Reviewer’s report

Title: The Impact of the Adoption of a Patient Rostering Model on Primary Care Access and Continuity of Care in Urban Family Practices in Ontario, Canada

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Reviewer: Gregory Garrison

Reviewer's report:

Review of FAMP-D-18-00373

The Impact of the Adoption of a Patient Rostering Model on Primary Care Access and Continuity of Care

The manuscript examines the adoption of a rostering enhanced fee-for-service model in Ontario, CA on continuity of care, referrals, and ED visits.

Strengths:

This is a very well written manuscript that accurately describes the intervention, setting, methodology, and statistics. It covers a topic of great interest to primary care physicians, administrators, and policy makers; how does rostering patients and changing to a team care model affect continuity, specialty referrals, and potentially avoidable ED visits? The hypothesis is clearly stated. Statistical methods are appropriate and consider clustering effects. Conclusions and the discussion are supported by the data. Overall, I recommend publication with some minor additions/clarifications.

Weaknesses:

Findings may not be generalizable to healthcare systems outside of the model discussed and implemented in Canada. Nevertheless, there are portions of the findings and discussion that I believe have universal interest.

Suggestions & Specific Comments:

While the study population is clearly and appropriately defined, the title/abstract should reflect that this was an urban sample (as rural practices were excluded).
I understand why the "virtual" attribution method was used. It is close to the definition of the usual physician in UPC continuity measure. Instead of the most frequently visited clinician, the authors are using the highest billing clinician. I would expect that these are similar in primary care. However, it would be nice to state the % agreement with the eFFS administrative rostering in CAPE.

I have some issues with excluding patients who failed to visit their primary care physician in a certain period of time. There are valid reasons this is done, not the least of which is an undefined division by zero problem with many existing continuity measures including UPC. Work within our practices demonstrates that approximately 50% of rostered patients do not visit their assigned primary care clinic in a given year (let alone their assigned physician). There are valid reasons for this, especially among younger/healthier patients where guidelines may suggest longer screening intervals. Nevertheless, excluding patients with zero (or <3) visits excludes an important segment of the population. I'm not suggesting the authors change their methodology, but they should acknowledge these issues in the discussion and/or provide rationale in the methodology sections. Please see the following references:

Garrison GM, Bania B. Visit Entropy: comparing a novel method to existing continuity of care measures. European Journal for Person Centered Healthcare. 2015;3(3):343-351. (this can be difficult to obtain full text - I'm happy to provide to the authors if interested)


Regarding the UPC measure… The authors touch on some of the issues with this measure in the methodology and discussion sections. Clustering is a problem as they identify. Undefined div/0 is another problem as detailed above and discussed in reference #1. Additionally, UPC is a poor measure of continuity in a team care environment (which eFFS essentially is). Continuity of Care (COC) index or Visit Entropy (VE) appear to be more valid measures. VE measures the "organization" or lack thereof of visits. Team care appropriately creates more organized care, sometimes at a cost of fewer primary care physician visits thus lowering UPC even though the "continuity" is actually better. We have shown this effect in a study on hospital readmission, and have as yet unpublished data showing better diabetes care with improved VE or organization of care. Acknowledging these limitations in the discussion section would be worthwhile.

I am very intrigued by the authors referral index (RI). Has this been published before? If not it might be worthy of additional study outside of this manuscript.

More information on the non-urgent emergency department visits is appropriate. What are the FPSCs? I know a reference is provided, but some brief examples and/or table listing conditions would be helpful to the reader.

As noted above, the linear regression can be affected by the highly skewed nature of the UPC measure. I'm not sure if thats the case here because a histogram of the UPC values was not provided. They may have improved this distribution by excluding those with <3 visits at a cost of excluding an important segment of the population. But typically, this is a highly skewed, zero-inflated variable. Again, acknowledgement of this fact would suffice.

I was surprised by the mean yrs-in-practice variable which seems quite "old" at 24.7yrs (SD=9.5). Also, the definition in the narrative differs slightly from the definition in Table 2. Was it yrs in practice after training, or yrs in practice since med school graduation? Please clarify and make them consistent.

The narrative results which state the 0.59% figure for post implementation UPC is a bit hard to follow. This is an additional decrease of -0.59% /year for UPC according to Table 3. I think that's what the authors were trying to convey in the narrative, but I didn't read it that way initially. The same issue exists in the abstract. Careful clarification in wording would help here.

Discussion Paragraph #2: The discussion of UPC could be expanded to include some of the issues detailed above (div/0, skewed, not reflective to team continuity). Other measures such as COC or Visit Entropy may be a better measure in team environments.

Discussion Paragraph #3: Regarding hospital readmission: Visit Entropy may be a better measure than UPC in team care environments and more organized care is associated with fewer readmissions.

There are also differences in preferences for continuity of care with a single physician. Multimorbidity patients seeking acute care are more likely to want UPC type continuity than healthy patients seeking acute care, who may be fine with seeing any available physician in the practice. You may wish to acknowledge this too - see reference below.


Similar to the author's discussion surrounding ED visits and the multitude of reasons patients choose the ED over primary care, we have shown that patients choosing to visit retail clinics
have lower continuity of care with their primary physicians. I don't know if this applies in Canada or not but may be worthy of inclusion.


Finally, I didn't see much addressing access to care in the paper. I would suggest deleting this from the title.

In summary, this is a very good paper that is worthy of publication.

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.

Yes

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 am able to assess the statistics

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