Author’s response to reviews

Title: Predicting patient use of general practice services in Australia: Models developed using national cross-sectional survey data.

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Reviewer reports:

We wish to thank both reviewers for their generosity in reviewing our manuscript.

Jennifer Reath (Reviewer 1):

Minor amendments:

Health Care Homes comments on p3 currently in the future tense need to be re-phrased as this trial has now commenced.

Response: The manuscript has now been edited to reflect the fact that the trial has commenced. The additional text and changes to the original are in red font in the manuscript.

The third paragraph of the background now reads

“Australian GPs are paid on a fee-for-service basis, covered (fully or in part) by a universal health insurance scheme called Medicare. GP remuneration is primarily based on the number of times they see patients. The Australian Federal Government is trialling ‘Health Care Homes’ in which GPs receive capitation payments for managing the chronic conditions (but not non-chronic conditions) of enrolled patients.[6] The trial commenced on 1st October 2017 and will conclude on 30th November 2019. Ideally, the capitation payment should at least reflect the amount the GP would have earned through fee-for-service for managing that patient. Each patient is assigned
to one of three tiers of “complexity and need” with higher GP remuneration for care of those in higher tiers ($591 tier 1, $1,267 tier 2 and $1,795 tier 3).[6] However, there is concern that the planned tier assignment tools may not accurately reflect patient demand for GP care.[7] If it does not, GPs may choose not to enrol in the program, or those who do may only enrol patients with relatively low demand for services. The trial has experienced lower than expected uptake by patients and a substantial number of practices have withdrawn from the trial (REFs). An accurate measure of patient demand would provide a structure on which an appropriate reimbursement for GPs could be calculated.”

We have also changed the second last line of the conclusion to

“The results of this study will assist with workforce planning and capitation payment trial for GP care of diagnosed chronic conditions in patients enrolled in the Health Care Home trial.”

Formatting of Box 1 in the row describing Model 4A needs correction

Response: The formatting of Table S1 has now been corrected

P 14 Barriers to access for Indigenous patients needs to be explained for an international audience and mention should be made of likely under-reporting of Indigenous status

Response: We have added the following (red) text to the relevant paragraph in the discussion.

“For similar reasons no model should pay less for the care provided to Indigenous patients even though Indigenous status was a significant predictor of fewer GP visits in Model 4B. It is known that Indigenous patients face additional barriers to care to those facing non-Indigenous patients.[23]”

More substantial edits required:

Explanation of "Active patients" on page 7 (later referenced at many points) requires further detail/ clarification. The weighting of the encounters described does not appear to influence the number of patients under consideration (and thereby designated "active patients").

Response: We did not reduce the number of patients in our sample, we simply weighted them. To be in our sample, the patient must have seen a GP and thus was an “active patient” by most definitions. The issue we were trying to address was the over-representation of high attenders at encounters. Individual patients were given more or less weighting depending on whether they were a low or high attender. This gave an estimate of the outcomes based on if we had simply sampled patients who had seen a GP at least once from the enter pool, without any bias.
We believe the paragraph at the top of page 4 describes this method and reasoning appropriately.

p15 The model proposed is stated to predict number of General practice visits in Health Care Home model however it doesn't take into account the possibility that there will be higher numbers of visits to Allied Health Care Providers compared to current GP visits i.e. numbers of visits to general practices in total may be higher.

Response: We do acknowledge that there may be some transfer of services away from the GP under the Health Care Home model in the second last paragraph of the discussion. However, it is not known whether in these cases it would increase or decrease the number of visits (as patients may visit multiple allied health care providers during the same visit to the practice).

Additionally there are two key limitations to the predictive value of this model that require further consideration:

1. The model predicts revealed demand rather than potential demand i.e. if there is greater availability of GP consultations (or allied health consultations) the demand may be higher than that described by the proposed model

Response: We did acknowledge that restricted access to GPs in rural areas was likely reducing the number of visits by patients in these areas. To make the above point more explicit we have added the following sentences.

“It is likely that if the barriers to GP services were removed for both rural and Indigenous patients they would attend as often as their metropolitan and Non-Indigenous peers.”

We have also added an additional paragraph after the above paragraph

“This raises the possibility that changes to the relative number of GPs providing services may affect the number of times patients visit a GP in the future. However, we believe it is appropriate to use the number of services provided with the number of GPs over the study period to inform the Health Care Home remuneration and to act as a baseline for workforce planning.”

2. The model has not accounted for those who did not attend a GP within the previous 12 months i.e. the denominator population is likely to be an underestimate of the total population requiring general practice health care
Response: We have claimed that the modelling in this paper will help with two major areas. 1) Health Care Home remuneration and 2) workforce planning.

For the purposes of the Health Care Home modelling, all patients enrolled under the current model will have at least one chronic condition, and more likely multiple, under management. These patients are not those who do not see a GP over the year.

In terms of workforce planning, our model measures current use of GP services over a 12-month period by those who use it. In any application of this data for workforce planning, the data could be weighted to take into account those patients who will not visit a GP during the year.

Dimity Pond (Reviewer 2):

This is a very interesting manuscript on predictors of GP use, of particular relevance given the current funding environment in which healthcare homes are being explored, as the manuscript explains.

Some comments:

The Government funded healthcare homes trial is now further advanced, and indeed some of the possible outcomes flagged in this paper appear to have come to pass (in particular, poor enrolment, although the reasons are not yet clear). Should the authors be asked to update their comments on these issues? This is probably an editorial decision.

Response: We have updated our references to the Health Care Home trial and outlined them above in our Response to Reviewer 1. This includes the following sentence on the current issue the trial is facing

“The trial has experienced lower than expected uptake by patients and a substantial number of practices have withdrawn from the trial”

A number of diagnoses were considered, and in fact none specifically remained in the final model. GPs have repeatedly been found to miss some diagnoses (eg dementia), and confuse others (eg COPD and asthma). The authors have a great deal of experience with this dataset. Could they comment on whether this might have affected the final model (in the absence of gold standard diagnostic testing) eg might specific diseases have been more likely to have contributed statistically to visits if more accurately recorded.
Response: Quite a few specific chronic conditions stayed in the model. However, while these were statistically significant, we have argued that they were not clinically significant. That said we do not believe the issue of incorrect diagnoses would explain the lack of clinical significance. For instance, while GPs may have issues with correctly diagnosing COPD and asthma, blurring any real difference between the two in terms of visits, it does not explain why there is no clinically significant difference between hypertension and COPD.

Also while it is true that GPs do miss diagnoses like dementia, if they have not diagnosed it, it is then unlikely that they are managing it. It also doesn’t explain why there was no clinically significant difference between those patients that did have dementia diagnosed, and those diagnosed with any other chronic condition.

I note that the authors have appropriately commented on issues around uncertainty of number of GP visits, and flagged future work in this area. They have also drawn attention to the fact that number of visits related to rural and indigenous status might be low because of poor GP accessibility. Do the authors have access to any data which might quantify this shortfall?

Response: The short answer is unfortunately no.

The paper we quoted goes into the complexity of measuring the maldistribution of the Australian GP workforce. We know that there are on average lower numbers of GPs compared to the clinical demand of patients in these rural areas, however, we also know that GPs in these areas often work longer clinical hours than their peers in Major cities.

I look forward to reading a subsequent article about complexity of care and GP visits.

Response: Thank you.