Reviewer's report

Title: Access to GP services amongst underserved Australians: a microsimulation study

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Reviewer: Catherine M Joyce

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Review of manuscript for Human Resources for Health
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MS title: Access to GP services amongst underserved Australians: a microsimulation study

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Major Compulsory Revisions

There is a lack of distinction between the concepts of utilisation, supply and demand. For example, on page 5 in para 3 the authors refer to simulating “universal access to GPs” when in fact what they simulate is utilisation of GP services. On page 6 in para 4 the authors refer to “supply of services” when this should be “utilisation of services”. See also page 7 para 1; page 9 para 3 and especially para 4; page 10 para 2, 3; page 11 para 2. There is a lot of discussion about access, but access does not necessarily equate to workforce supply; and workforce supply does not equate to utilisation (i.e., just having more doctors in a particular region does not necessarily mean that disadvantaged groups within that region will use more services). Potential barriers to access must be considered if the authors wish to make conclusions about access rather than utilisation.

Background:

Page 5: The authors cite data on the distribution of GPs per capita in 1996 and 2001. There are much more recent data than these available (e.g., in Australian Institute of Health and Welfare medical labour force survey reports) and these should be used in preference.

Page 5: Para 3 states that the paper assesses the equity of the distribution of GP services but does not define what is meant by equity. Nor is the term “underserved” defined.

Methods:

There is a lack of detail about the measures being used. How were income, remoteness, employment status, and health status measured? What were the actual cut-off values for income terciles? Why were terciles used?

The reporting of analysis methods is not sufficiently clear. The last sentence in para 2 on page 7 is tautological and does not specify what test was used. This
information is provided in the Results section but should be here. The following para is also uninformative. More detail is required about the simulation modelling methods used. For example: What program was used to run these? Were they deterministic or stochastic models? What set values or assumptions were used for model parameters? How was the average number of visits used as the outcome variable for the simulation when the data source is categorical data?

Discussion:

Page 10: The discussion of Indigenous Australians needs to be expanded to explain the relative proportions of the population that are Indigenous in rural and urban areas.

The discussion of limitations does not include any mention of the limitations of the measures used for rurality, income, or GP services.

Conclusion:

The Conclusion states that “parity is an insufficient goal” – parity in what? Goal for what or whom? I do not think the conclusion as currently expressed is sufficiently justified by the findings.

Minor Essential Revisions

The format used for citing in-text references is not consistent. Mostly the numeric footnote (Vancouver) style is used but there are some instances of the author-date (Harvard) style.

Abstract

Page 2: The section labelled Background is incomplete. There is a reference to “inadequate access” in the Methods section which needs defining.

Background:

Page 5 para 2: indivertibly is not the correct word to use here.

Page 7 para 2: Why does it refer to “underserved areas mainly being in the remote and regional areas”? What other underserved areas were there? Where are these described? This relates back to the question of defining what is meant by “underserved”.

Discussion:

Page 9 para 4: “poverty” not “income poverty”

Page 9: Para 4 refers to 5.6 M additional visits, but para 3 on the same page refers to 5.7.

Page 10 para 3: The last sentence “The continuation to not meet...” is not expressed clearly and needs rewriting.

Why is the percentage increase associated with the simulated utilisation level in the lowest tercile lower than the percentage increase in the second tercile?

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests