Reviewer’s report:

This is an interesting and useful study that contributes to our knowledge and understanding of the cost-effectiveness (and, to a certain extent, the clinical outcomes) associated with a CHW-led model of care for Polynesian patients with T2DM. The paper seems to relate strongly to the US health system and previous experience in US health care settings; T2DM and poor clinical outcomes contribute disproportionately to health care costs in other Pacific Island countries (PIC) (Ref Anderson et al. The costs and affordability of drug treatments for type 2 diabetes and hypertension in Vanuatu. Pacific Health Dialog Volume 19: Number 2: 1). This paper will potentially of great interest to health decision-makers in those settings, who are looking at ways of reducing the cost burden of care for patients with NCDs; it would therefore be helpful if the overall messages could be contextualised to address Pacific health systems and population health settings more directly.

The ABSTRACT does not stand alone as a summary of the paper as it does not accurately capture all of the most relevant findings and lessons from the study - it probably needs to be re-written. For example, in the Background, CHW interventions CAN improve T2DM care but are not guaranteed to. It is incompletely demonstrated that the DCAS study 'improved clinical outcomes' as the study has not been designed to quantify risk and rate of progression towards specific clinical outcomes like ischaemic heart disease, cerebrovascular disease, chronic renal insufficiency requiring peritoneal or haemodialysis, retinal pathology or peripheral vascular disease and neuropathy requiring amputation; it is also not clear how directly the CHW-managed interventions addressed progression towards these end points (noting also that the period of intervention may be too short to influence these outcomes to a measurably significant degree). The subjects were '269 American Samoans DIAGNOSED WITH T2DM', and it is not clear what 'clinical utilization ... data' and the ICER 'from a societal perspective' mean as these terms are very general. If using 2012 USD, it is important to include the dates of the study (enrolment, process, measurement of outcomes), and it is not clear why a willingness-to-pay threshold of USD 50,000 per QALY gained has been selected for comparison.

Some of these comments flow through to the main body of the paper, although some of the information missing from the Abstract is generally available there.

In the INTRODUCTION, a stronger orientation towards similar PIC contexts (as noted above) would be relevant and helpful. The issue is not only that the populations are 'medically-underserved' but that a healthy diet is now more difficult to maintain than in more 'traditional' times when high fat, high salt imported foods and sugar-sweetened beverages were not such a
prominent part of the diet, and patterns of physical activity have also changed. It would also be useful to describe what is meant by 'usual care'. 'Task shifting' may not be 'critical' for low-resource communities but it is almost certainly an important strategy for reducing HR costs (the reasoning and a reference might be added). The Introduction should note that, due to already established pathology and end-organ disease, there will inevitably be physician and clinical care costs for patients that the CHWs are not able to keep out of hospital and this may be expected to erode the outcome measures due to the relatively short time frame of the intervention (as noted in the Discussion). It would be useful to provide some background information on health service utilisation among T2DM and/or NCD patients as poor compliance with care is a major contributor towards poor clinical outcomes and the need for more costly tertiary interventions in many PICs. The Introduction should also include some background on the American Samoa health system and health financing, including the cost burden associated with diabetes and other NCDs - some of this may be brought up from paragraph 1 of the Methods.

The METHODS could provide a little more information about 'co-pays' and the 'wait-listed standard care arm'. As noted above (Abstract), the willingness-to-pay threshold of USD 50,000 per QALY gained is plausible but needs some more detail about how and why it was selected (if possible). Otherwise, the description of the methods is comprehensive and quite clear. It should be noted that pregnancy settings create a more complex relationship with and challenges to diabetes control - it is correct to exclude obstetric patients from the study, but it is not true to say that their situation is 'unrelated'.

Subject to some further referee advice on the way the economic outcome measures are presented, the RESULTS are relatively straightforward and will be of interest to health managers, including in other PICs and other resource-limited settings with a high prevalence of diabetes. To say 'the samples were balanced at baselines' is an unusual expression; this should be stated more clearly (e.g. there was no significant difference in demographic or risk factor characteristics between the intervention and control populations, other than cigarette smoking which was higher in the intervention arm ... something like that).

The DISCUSSION builds sensibly on the Results. I would suggest changing the emphasis within the three reasons why the 'mod3eled cost-utility results are conservative'. The first and third reasons are likely to be true but the second is likely to erode cost-effectiveness with the passing of time (as noted above, particularly in the presence of established end-organ disease and the aim to defer rather than avoid negative outcomes because of the difficulty establishing a true remission in T2DM). It is difficult to know how to interpret the information about medical officer attendance times in the absence of measures of clinical severity (which was not the point of this study anyway). The paragraph describing the LIMITATIONS of the study could also pick up some of the observations made in this review.

The CONCLUSIONS could be focused more strongly on recommendations that can be addressed to health decision makers (including in relation to models of care in other PICs).

Level of interest
Please indicate how interesting you found the manuscript:
An article of importance in its field

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organisation that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal