Reviewer's report

Title: Preventive medical care in remote Aboriginal communities in the Northern Territory: a follow-up study of the impact of clinical guidelines and computerised recall and reminder systems

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Reviewer: Marlies Hulscher

Level of interest: A paper of considerable general medical or scientific interest

Advice on publication: Unable to decide on acceptance or rejection until the authors have responded to the compulsory revisions

General comments:
This paper addresses the problem of the sustainability of effects of interventions. There is, indeed, little information available regarding the long-term effects of interventions that aimed at improving the provision of preventive services. With this paper, the authors add to our insight regarding this subject. In the discussion they report barriers that probably influenced sustainability. Maybe this information could be highlighted a little bit more, as it provides ways to improve sustainability.

My main comments concern the structure of the paper and, most important, the analysis of the data.

DISCRETIONARY REVISIONS:
1: Background
In the introduction I miss an overview of the preventive subjects of the guidelines. In my opinion, this information provides the reader with a clearer picture of the study. By introducing for example a box with explicit guidelines (maybe per age category?, e.g. 5 yearly pneumococcal vaccine among men and women of 50 and older) the tables 2-5 could also be made less complex and less difficult to read.

2: Background
To enhance readability I also think that the information regarding the comparability of and the differences between the two regions could better be included in the method section -and, similarly, in the results section- subhead 'study population'.
Instead, maybe the authors could elaborate more on the problem of sustainability.

3: Method
Similarly, to enhance readability, the authors' subhead 'sampling' could then follow the information on the study population, including table 1.

4: Method
The authors state that an audit was conducted 'shortly after trial commencement', providing baseline information. Could the authors please provide some information on how acceptable it is that these
data are not already influenced by the intervention? In other words, what intervention activities had already taken place?

5: Tables
I find the tables rather comprehensive and difficult to read. This is because they introduce the guidelines and because they present both percentages (could they please be rounded off?) and numerators/denominators. Maybe they can be adapted, for example 92.16: 92 (49/51) or even 92% (51)). In addition, maybe the 6-month information can be left out?

6: Discussion
I liked the section in which the interviews are described that were held to understand why effects were not sustained. Maybe the authors could stress their work and outcomes regarding this part of the study more throughout the paper? In my opinion this information is important as these outcomes provide us with tools to improve sustainability: the outcomes teach us about the background of the problem of sustainability.

COMPULSORY REVISIONS

1: Background
I think it is important that the authors explicitly include the already available information on follow up outcomes into their introduction and discussion (for example the papers of Dietrich (1994), Buntinx (1995) and Carney (1995)). In this manner their outcomes can be better put into perspective; for example: how unique is the authors' study population, i.e. remote communities, with regard to the research question on sustainability?.

2: Method
To better understand the project and to enhance replication of the project, information on the intervention and its time schedule (especially as fitted into the follow up measurements) would be of much help, for example by introducing the subhead 'intervention'.
With respect to this intervention: as feedback is an integrated part of the intervention, the description of the intervention (e.g. in the title) should also include 'feedback' (so: clinical guidelines, computerised recall and reminder system and feedback). As already mentioned, I really would like to read more information on the guidelines, the recall system, the reminder system and the feedback.

3: Variables to be analysed
I find the description of the analysis rather brief, providing little insight into the method chosen, especially when combined with the information presented in the tables. In addition, a clear analysis section is important for readers who want to replicate the analysis on their own, similar data.

First, I am confused about the proportion assessed and described in tables 2-5. I understand from what is stated in the analysis that a proportion of services is calculated: services delivered (numerator) divided by services scheduled (denominator), per individual, per service. When I look at the tables, it seems as if in the denominator the number of persons per age category is taken.
Maybe an example could clarify the calculation? For example: there were 51 children with ages varying between 0-3, that each have to weighted varying between 1 and 12 times between birth and 42 months. What was subsequently calculated and how was this calculated?

4: Variables to be analysed
In addition, I am confused about each 'total' in the tables: They seem to be an addition of all numerators and denominators. This is only allowed if the denominators in the above mentioned services included services, but as mentioned above I am not sure whether that was the case?
5: Variables to be analysed
Attendance is reported while the logic of this variable is not introduced in the method section. Why was the variable included?

6: Variables to be analysed
Similarly, prevalence of major health problems is described without the variable being introduced in the method section. The 'logic' for including this information is unclear to me.

7: Analysis
My major problem regarding the paper concerns the statistical analysis of the data to evaluate the intervention. The intervention is aimed at professionals (at least, I assume). Information on the provision of scheduled services is collected per individual, per service within each care plan group to measure guideline adherence. These service (or patient??) data are used to show whether there is a statistically significant effect of the intervention.
* This means that either data should be analysed at the service (or patient??) level (e.g. by means of multi level analysis), whilst accounting for the intracluster correlation, i.e. for the fact that services within one patient and patients within any one cluster/professional are often more likely to respond in a similar manner. (NB There is also the even 'higher' level of the health centre -professionals cluster within health centres- but that makes it even more complicated).
* If the above is not possible, maybe data can be analysed at the cluster level (i.e. the professional level) by calculating a summary measure for each cluster/professional. For example, patient data can be aggregated to the professional level by calculating, for each physician, the mean adherence.

8: Discussion
I do not quite understand why the authors state firmly that the outcomes are 'significantly higher than at baseline'. I did not conclude that myself by reading the tables. Maybe this can be, for some audit moments and for some care plan groups, concluded from the data table for figure 1, but if I remember correctly, this figure is only described in the discussion. In addition, I am not sure whether significance sustains after analysing the data as suggested.

Competing interests:
None declared.