**Author's response to reviews**

**Title:** Assessment of the Direct Medical Costs of Diabetes Mellitus and its Complications in the United Arab Emirates

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Response to reviewer comments

Title: Assessment of the Direct Medical Costs of Diabetes Mellitus and its Complications in the United Arab Emirates

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Reviewer: Nigel Unwin

We are very grateful to the editor and reviewers for their valuable input.

Reviewer’s report:

- I am grateful to the authors for their clear description of how they have responded to the reviewers’ comments. I will focus on their responses to the comments in my initial review. I note that more detail has been added into the methods section, particularly on the structure of and access to health care for people with diabetes in UAE, and on how the sample was taken. The methods section would benefit from subheadings and a re-ordering of some of the paragraphs. Obvious subheadings and their order would be: Setting, under which is described the health care system; Study design and selection of participants, under which is described sampling procedure; Data collection and definitions, under which is described how data were collected, and descriptions given as to how type 1 and type 2 diabetes and respective complications were defined; and finally Statistical Analysis. 

  Agreed and thank you for your valuable advice, now the subheadings and re-ordering of paragraphs are done.

- The paper would still benefit in my view from a little more detail (in the methods section) and reflection (in the discussion and interpretation). Choice of clinics and sampling of participants Explicit consideration needs to be given to the fact that patients for the costing study were selected from the hospital clinics only. It is clear from the description of the sampling that much diabetes care (the vast majority?) also takes place in primary health care clinics. By selecting from patients attending the hospital clinics it seems likely that they were selecting patients at greater risk of having complications than the average patient in Al Ain. This may mean that the study overestimates the treatment costs of DM in this part of UAE. NB Although it seems clear, based on the description of the study design and first paragraph in the results section, that the patients are from hospital clinics, it is confusing in tables 2 and 3 to see primary care referred to – please clarify why this is. Does it mean, for example, that patients were recruited through the hospital clinics, but some of them received their main diabetes care in primary health care clinics?
The methods section is expanded for clarification and now more details are added regarding the choice of clinics and the participants.

- The approach to sampling may also have tended to overestimate costs. Sampling from clinic appointments will tend to oversample more frequent attenders, who presumably are more likely to have more serious disease.

  We add this point as limitation However, by sampling from patients attending clinics; we may have oversampled frequent attendees. Although we tried to compensate for this using appropriate statistical technique such as re-weighting, we cannot be absolutely sure that this yields exactly the same results as a truly random sample. Thus, our estimates should be treated with caution.

- Definitions of diabetes and complications
  This has not yet been adequately addressed, although I note that more detail has been given in the methods section of what was included under micro and macro vascular complications. As a minimum it needs to be stated clearly what definitions of type 1 and type 2 diabetes are being used. In the results section it seems to suggest (2nd paragraph) that any one treated with insulin was considered type 1 diabetes (this was 43%) with the remainder (57%) being labelled as type 2. If this is the case, please make this explicit in the methods section. If this is the case, it is of course inadequate, as many patients with type 2 diabetes are treated with insulin. If it is not possible to clearly distinguish between type 1 and type 2 diabetes it would be better to acknowledge this, and simply refer to “insulin treated” diabetes, and “non-insulin treated”.

  Agreed regarding the classification of diabetes, regarding the various chronic complications of DM this was based on diagnosis obtained from medical records.