Author's response to reviews

Title: Projecting Thailand physician supplies between 2012 and 2030: application of cohort approaches

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Version: 4 Date: 8 October 2012

Author's response to reviews: see over
Dear Editors and Reviewers

We truly appreciate your valuable comments and suggestions on our manuscript. Learning from your comments is a good opportunity to build up over capacity. Having consulted with all co-authors, we would like to address your comments as follows:

**Editor’s comments**

- The manuscript also needs extensive English revision, including checking the tables where there are inconsistencies.
  - The manuscript has already had an extensive English edition by a native English speaking editor. Inconsistencies of figures in the tables and texts were corrected.
- Additionally, we suggest to develop further the paragraph on limitations, if only to say that the manuscript did not take into account what happens to other occupations, e.g. nurses, and that you did not break down for specialty or at least groups of specialty.
  - A paragraph addressing this comment has been added. Please see the 8th paragraph under ‘Discussion section’ on page 13; “It should be noted that the result of this study...”.

**Reviewer’s comments**

- Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term). A full edit is required to correct various English language limitations and grammatical inaccuracies.
  - Labels on the figures were added.
  - Extensive English edition was done by a native English speaking editor.
- Abstract, and related point in text- the 1% annual loss rate- how accurate can this be in the future- what about ageing of the workforce, potential for out migration increasing the figure appears low and requires as much justification as can be provided by the authors
  - We admit that the 1% annual loss rate may not be accurate in the future. Interpreting this loss rate should be made along side with holding into account other contextual environment factors, such as, the growth of economic demand, changing of physicians demographics. We already addressed this issue in the 4th paragraph under ‘Discussion section’ on page 12; “The assumption that the cohort-specific...”
- p 3 Background "how many workforces" requires correction e.g. "how many physicians."
  - Done; please see the 1st paragraph under ‘Background section’ on page 4.
- p 3 Background- private sector- rapid increase in demand 1992-97- has this now ended? Is private sector employment fully captured in assessing the workforce- is there a risk of dual practice/ double counting?
  - The economic growth ceased during the economic crisis in Asia between 1998 and 2000, then, significantly recovered after 2000. The concern of outward migration of physicians in light of the increasing labor market demand was addressed in the 4th paragraph under ‘Discussion section’ on page 12.
  - In conducting this study, we used the aggregate figures of medical registry from the Thai Medical Council. These figures captured physicians in both private and public sector, and are unique to each physician. Thus double counting can be addressed. However we always realize the limitations of using this dataset as they count all physicians regardless of the extent of activeness in clinical practice. A few sentences addressing this concern
were added in the 1st paragraph under sub-section, ‘Stock of existing physicians and annual loss rate’ on page 8.

- p 4 first line reads better as "The following approaches were utilised."
  o Already changed; please see the 2nd paragraph under ‘Material and Method’ section on page 5.

- p 4 first paragraph below Fig 1 - is there another source of supply- from those returning to employment after a career break in the country?
  o At this moment, there has not been any reliable information on returning to employment after career break. This is one of key reasons that we support an establishment of doctor cohort study in Thailand. Lack of information in re-employment would inevitably affect the accuracy of the finding. We also addressed this issue in the 6th paragraph under ‘Discussion’ section on page 12-13.

- p4 second paragraph below Fig 1. There is no mention of gender ratio- is there a feminization of the physician workforce- and if so does, this have implications for future career patterns and availability of physician hours?
  o We agree that feminization of workforce should take into consideration when conducting this study. Unfortunately, the aggregate dataset, from the Thai Medical Council, used in this study, was not tailored by gender. We further explored other studies that displayed a significant enlargement in female doctor’s population; please see the 5th paragraph on page 12.

- p 4 second paragraph below Fig 1 - who were the "experts" that were consulted?
  o They were two senior officers in the Ministry of Public health and the director of Health Systems Research Institute. We already confirmed this information by contacting Dr Suwit Wibulpolprasert, the co-author of the article cited in this study (Suwannakij et.al 1996). Please see the 4th paragraph under ‘Material and Method’ section on page 6.

- p4 bottom/ p 5 top- it would be helpful to have more detail on opening of new medical schools- any more planned- are they private sector?
  o At present, there have no formal or explicit information on the opening of new public or private medical schools. The number of schools used in the projection was thus fixed at 19. Please see 1st paragraph under ‘Graduates who pass the licensing examination’ on page 7.

- p 5 paragraph beginning "The Medical Council...." fourth line should read "..modify this information, the only that is available..."
  o Already done. Please see the 2nd paragraph under ‘Stocks of existing physicians and annual loss rate’ sub-section on page 8.

- Discussion p 7 sentence beginning "The key factor." requires a re- write for clarification.
  o Already re-written and clarified in more detail. Please see the 2nd paragraph under ‘Discussion’ section on page 11-12.

- p 7 sentence beginning "First the assumption" requires correction, 2nd line - "in the long run."
  o The English correction was done on the entire document as stated above.

- p8 is there a reference or link for the nurse cohort study?
  o Already added a weblink (No.26) for the Thai Nurse Cohort Study.

In summary, we are grateful to BMC in providing platform for researchers to share their knowledge and learn from each other. We do hope that the clarifications shown above respond to your comments adequately, and are looking forward to hearing from you soon.

Best Regards

Rapeepong/Thunthita/Noppakun/Viroj