Reviewer's report

Title: Rural retention of physicians graduated from the collaborative project to increase rural doctors in Thailand: A cohort study

Date: 5 Sep 2014
Reviewer: Belinda O'Sullivan

1. Is the question posed by the authors new and well defined?
The question is new and important, particularly providing evidence within the context of a developing country, public sector and based on specific rural workforce interventions.

However, the aim is not as clear as it needs to be at the moment as the question about retention in the public sector is sort of combined with rural retention. It could possibly be better defined by breaking the aim into two parts 1) the effect of the CPIRD on rural retention compared with normal stream of training for public sector employed graduates. The other question seems to be about whether the CPIRD influences public sector retention (whether rural or not) compared with the normal stream, (given three year mandatory public sector placements have been in place since 1971).

The background, introduction, methods and results then need to follow the aims. This means providing background information for both questions, explaining the methods consecutively and discussing each finding in line with original hypotheses.

Along these lines, further background about the importance of public sector services in the context of Thailand might be useful. What hypothesis is being tested around how CPIRD might influence retention in the Ministry compared with normal streams of training? Given the article is about public sector services only, it would be useful to know the proportion of all graduates entering public sector practice overall.

It would also help to include all the background on the CPIRD intervention early in the introduction (currently scattered throughout the article): Include its aims, structure (students of rural background, rural medical training and re-placing rural stream graduates in the community of origin), its partners (why collaborative), how it favours graduate placement of the rural-origin physician, whether selection to the CPIRD stream is based on any specific number of years of rural background, and what it has cost (approximately). Are there any specific
consequences if physicians either leave the ministry or for the CPIRD stream, do not work in rural areas at graduation? Explain why the capacity of the program is 300-500 but the data shows maximum number was less than 300.

Whilst rural specialist training pathways are outlined in the introduction, it might be useful to provide background or discussion about approximately how many Thai physicians normally remain generalist doctors or whether there is growth in specialisation overall among the medical workforce? Further, is it normal that specialisation commences at 3 years post-graduation on average for Thai doctors?

It is recommended that in the introduction, the “rural” and “metropolitan” work settings are defined e.g. all public sector community hospitals (rural) or regional hospitals (metro). This includes defining working in the Ministry (public sectors services) whereby leaving the ministry implies working in private, not for profit sector, or unemployed, whether in a rural or metropolitan setting. Then re-use the term “rural” or “metro” in the abstract, tables and throughout the paper. Perhaps defining the Ministry as public sector services is the most useful description, as the term “Ministry” can imply administrative roles associated with central government in some countries.

A brief context is needed about what “rural” means in Thailand.

Define what “physicians” mean to global audience as the term means specialists in some countries.

2. Are the methods appropriate and well described and are sufficient details provided to replicate the work?

The researchers have made good use of an existing dataset and survival analysis is appropriate.

Perhaps methods could follow the aims of the paper.

Define all variables as outcome and predictors.

Perhaps there is another word for “failure” and “censored” which is more self-explanatory, such as “retained” or “not retained” and give the definitions.

3. Are the data sound and well controlled?

Yes but I am not an expert at survival analysis.

The researchers used workplace address – are there any physicians who might live in a rural area but work in city which might under-estimate rural retention?

There is no mention of ethics – having stated this is an administrative dataset which is probably identifiable, might be worth clearly stating any ethical clearances or they were not needed.

Did the date of analysis follow the annual update to data so as to improve data quality?

What statistical analysis package was used?

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
Yes but include time periods when reporting data and outline and report tables and figures consecutively as per the aims of the paper.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
Perhaps it might help to interpret each of the results consecutively (in order of the aims) to explain and show how supported. For example, start with the first part of the aim about rural retention. How do rural retention rates for this intervention compare with benchmarks from survival analyses done in other countries, e.g. see Russell, D et al “What is the reasonable length of employment for health workers in Australian rural and remote primary healthcare services?” Australian Health Review 2013, 37, 256-261.

When referencing the literature supporting retention based on the CPIRD there is a need to draw on 3 different components of the intervention (rural background, rural education and re-placement in town of origin). Then there is separate literature about public sector retention rates and the effect of mandatory employment.

In the discussion, could rural-background physicians potentially return to rural areas if they have rural background and rural training, even if they leave in their early career?

How do these findings relate to the capacity within rural specialisation pathways in Thailand?

Perhaps the main conclusions and recommendations could be more strongly linked to the current CPIRD and mandatory public service employment period, based on the results and need to tie back to the aim/s of the paper.

6. Do the title and abstract accurately convey what has been found?
I am not sure the title needs to include the intervention name (since it is not broadly recognisable to external readers). An alternative might be: “Do rural background, rural training and mandatory rural employment influence rural retention in Thai public services: A Cohort study”.

In the abstract to make it stand alone, the background might need to outline what the CPIRD intervention is.

The abstract could be strengthened in line with suggestions to re-define the aim and outline the methods and results in line with this. Definitions need to be consistent with the rest of the paper as “rural” is currently defined in a few different ways in the abstract.

The conclusion and recommendations should mirror the conclusion in the main text.

7. Is the writing acceptable?
The writing is good considering the authors may not use English as a first language. Once the article is re-formatted based on reviewer comments, it is worth specifically editing the sentence structure and terminology.
A few specific areas to correct are:

“This forced the new graduates” – perhaps rather than forced, the word “required” or “mandated” and then re-refer to the same term throughout the article.

Suggest change “Financial strategy implemented has been to increase the income of physicians posted to…” To “additionally, a financial strategy was implemented in 1975 and continues to supplement the income…”

Check sentence about difference in income – perhaps the meaning is: “the total difference varied according to geographic remoteness”.

“….increase the medical production”. Possibly this means increased the size of the physician workforce?

Perhaps re-phrase “student inputs” to “student intake” into the program.

For the text “fewer numbers” – re-phrase “fewer” which implies less.

“The CPIRD physicians were favoured over normal track physicians in workplace choice once graduation.” Fix grammar to…. “once graduated”.

8. Level of interest: An article of strong importance in its field and worth publishing to inform rural retention of medical staff at an international level.

9. Level of revision: These are minor essential revisions. I recommend acceptance of the manuscript for publication after minor essential revisions.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I have not competing interests