Reviewer’s report

Title: Supply, distribution and characteristics of International Medical Graduates in Family Medicine in the United States: a cross-sectional study

Version: 0 Date: 05 Aug 2018

Reviewer: Larry A. Green

Reviewer's report:

1. This is an interesting cross-sectional descriptive niche physician workforce report focused on family physicians in the United States. It teases out the interaction of US citizenship and international medical education of family physicians. It makes an important contribution and can be improved.

Introduction:
1. The long term misalignment between numbers of USMG's and GME positions is useful context, but even more so is the narrowing difference, connected to the persistent disinterest in FM by USMGs--representing an evolving threat to having culturally proficient FPs. This part of the presented context seems to be the answer to why this paper is important and matters now. The "gap-filling and safety-net roles" of IMG's and differential preferences by graduates (IMG and US) in subspecialties all add up to make this paper relevant and draw readers in.
2. Couldn't the introduction be substantially shortened and just say why this paper matters and what questions the analysis is going to answer "to close a gap" in the literature about IMG's in FM?(the stated purpose)

Methods:--
1. Are the data in the linked data sets for 2016? This is not clear. And what data are from ECFMG and AMA Masterfile is not clarified. Workforce researchers will probably want to know a bit more of the specifics.
2. The exclusion of the residents in the DO residencies is not explained and is not a trivial number of bodies left out of the count. This is another weakness of the study, should be explained, and can be tolerated because the direction of the resulting bias is known to be toward an under-count.
3. The definition of actively practicing ("in patient care activities") appears to be dependent totally on self-report in ? both surveys. A bit more information is needed here to allow readers to understand what was counted and how. For example, it would be useful to state, if correct, that no adjustments were made for FTE--rather everything is a body count, there was not a requirement of at least 20 hours of time spent caring for patients to be counted as an active physician, a resident=a physician, without any adjustment for the nature/quantity of their work.
4. The inclusion of residents in the study might be included in the abstract methods section.
Results:
1. The tables are important and in my view this is not a paper to reduce the number of tables.
2. The labels for the tables can be improved, e.g. to indicate the year for which the numbers apply, more precise—it is the physician family medicine workforce, it is the medical school of graduation/citizenship at entry to med school/med school attended for IMGs in pt care activities in the US in x year. Table 4 might sum the percent of IMG's in US from the top 15 schools making the additional point (if understand the table) of these not providing a majority of the FPs reporting to be in patient care activities. Table 5 is hard to interpret starting with Top 10 states and ending with the parenthetical top 15—and it needs to announce what the numbers are about.
3. Is "the country of medical degree not a good proxy for, or indication of IMG nationality" a result (?) confirmation of prior work) tucked into discussion?

Discussion:
1. Might consider balancing the "brain drain" point of view with some acknowledgment that the US exploits medical schools in other countries to get residents to fill otherwise empty GME positions in the US?? What is the benefit to the country in which the med school exists derived from it being there?
2. The implications of increasing US medical school positions without increasing GME positions really are important—and can almost certainly be stated more clearly and emphatically.
3. The discussion might be easier to grasp if you used subheadings, e.g. What we found out about the FM IMG physician workforce, Implications for policy, Limitations.

Conclusions:
1. Think about revising the conclusions in the abstract. For example, the last sentence in the text (if modified to focus on the family physician workforce) is quite a conclusion that your data seem to support and is very important to present to a reader stopping at the abstract. Some of the state-based data might be emphasized in terms of dependency on IMG's.
2. The last sentence in the conclusions in abstract is probably an over-reach, as there are certainly other options to deal with the estimated shortage of FPs, e.g. like pay them more. Might want to attenuate the claim that it will require more IMG's.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.
No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

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