Author’s response to reviews

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

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Version: 1 Date: 28 Oct 2018

Author’s response to reviews:

Dear dr. Tovah Honor Aronin,

Thanks very much for the opportunity to revise our manuscript. The reviewer comments were quite helpful in improving the content and structure of our manuscript. Please find below our response to the comments and suggestions from the reviewers.

We believe that we have addressed their major concerns and that our paper can now make a substantive contribution to the literature.

On behalf of all authors, kind regards

Robbert Duvivier

Comment

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 "gapfilling and safetynet 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.
Response: Thank you for these comments. No action required.

Comment
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)

Response: We have shortened the introduction to focus on the stated purpose.

Comment
Methods:
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.

Response: we have added the following on page 8:

“Data from the AMA Masterfile includes demographic information such as gender and birthplace, as well as information on physician’s developing training and career, such as medical school attended, year of graduation, practice specialty, geographical location of practice, type of practice, and present employment. “

Comment
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 undercount.

Response:  we have included both MDs and DOs in our analysis, as is explained on p8 ‘analysis’. The text in the ‘Results’ section also mentions both MDs and DOs, where appropriate. The statement on p6 refers to osteopathic residencies only, which we excluded because IMGs are not eligible to attend AOA-approved residency training programs. We have added the following for clarification: ‘..as they are administered differently, require different medical licensing examinations and as a result are not open for IMGs’. (p6)

Comment
The definition of actively practicing ("in patient care activities") appears to be dependent totally on selfreport 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.

Response: On page 8, we have added emphasis to the definitions used. No adjustments were made for FTE, although we did exclude individuals whose self-designated major professional activity was research, administration, medical teaching or inactive. There may be a number of academics (e.g., researchers) who provide some patient care. We had no way of identifying these individuals. If we assume that, proportionately, the different groups (e.g., IMGs, US-MGs) have the same numbers of these part-time practitioners, then the population-based comparisons are still valid.
Comment
The inclusion of residents in the study might be included in the abstract methods section.

Response: this information is included in the ‘results’ section of the abstract.

Comment
The tables are important and in my view this is not a paper to reduce the number of tables.

Response: none required.

Comment
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.

Response: we have added additional information to the labels for tables 1-5, provided a sum of the percentage of IMGs in table 4, and clarified table 5.

Comment
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?

Response: the finding that 40.5% of IMGs held US citizenship is placed on p12; we have merely added emphasis, interpretation and clarification in the discussion.

Comment
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?

Response: we have some additional discussion around these issues on p15. Many of the medical school in the Caribbean are “for profit”.

Comment
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.

Response: we have provided additional explanation about how the increase in US medical school positions without an increase in GME positions could impact the IMG workforce.

Comment
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.

Response: We do not think that subheadings are appropriate in the discussion. However, we have started each paragraph in the discussion with a sentence about the issue to be discussed.

Comment
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.

Response: we have revised the conclusions in the abstract.

Comment
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.

Response: we have revised the conclusions in the abstract.

Comment
There is little consideration for the fact that IMGs end up in FM because they could not get into other specialties. This is not intended as a slight toward the FM specialty. Rather, the best FM physicians have often self-selected into the specialty, choosing to work as primary care generalists, often out of a sense of idealism or community service, and in underserved areas. In addition to the issue that FM residencies are relying upon IMGs (including possibly lower-quality US-IMGs), which may affect quality, the authors need to address, at least in discussion, the effects of IMGs who do not actually want to be in FM, but winding up there as an only-option, is truly beneficial. There seems to be an underlying assumption that FM needs IMGs to sustain itself and rising population needs for the physician workforce to be more reasonably distributed.

However, an alternative solution would be to advocate for improving the attractiveness of FM to all graduates, through payment reform, practice and lifestyle improvement for primary care physicians, increasing dedicated GME slots for true primary care, and addressing medical school issues such as selection of matriculants, specialty bashing, hidden-curriculum issues, and exposure to primary care. Additionally IMGs may be partially exhibiting the behavior observed in other sectors of the US economy - that immigrants take jobs, out of necessity, that US citizens tend not to want. This leads to abhorrent conditions in other sectors (e.g. agriculture, service industries, etc.), and is probably not at all a desirable trend for the US primary care workforce. In short, the authors need to consider whether a new approach is needed to recruitment and retention of medical graduates, both US and IMG, into primary care, so that those most suited to primary care end up in primary care.

Response: the reviewer raises an important point, which we have now addressed (partly) in the discussion. We did, however, not seek to answer how to improve the attractiveness of family medicine as a specialty choice for US and IMGs alike. This is clearly beyond the scope of this study. We elected not to expand on that particular suggestion, although we acknowledge there are several strategies that could help with recruitment and retention of family medicine physicians.

Comment
Although the authors maintain that inferential statistics were not calculated because all FM was included, it would have been possible - and interesting - to examine the comparative odds or likelihood of primary care or FM practice from the entire dataset. Other inferential analyses could have been conducted, but I won't list everything that comes to mind, as I'd leave it to those with the data in hand to consider other ways to enhance the current analysis, or to follow up. Regardless, I would recommend the authors consider my comments in Comment #1, and think about how inferences could be drawn regarding hypotheses of self vs. forced selection into FM.

Response: The reviewer proposes an interesting follow-up study, which we will consider for future work. The current paper addresses a different question than self vs forced selection into family medicine. We believe that this is beyond the scope of this study. As noted in the manuscript, we are dealing with the population of physicians in the U.S. Inferential statistics, based on sampling, are not appropriate when dealing with the population.

Comment
I also think the authors walk up to the line of calling out for-profit vs. not-for-profit medical education. This is perhaps the more important driver of observed differences in quality-related outcomes. I leave it to the authors to take this point further, both in the discussion, and in the analysis (i.e. proportions of those trained at for-profit institutions, etc.).

Response: We have addressed the issue of (mostly Caribbean) medical schools and their business model in the discussion, and do not think that is appropriate, at least in this manuscript, to pursue this point any further. Future studies could look specifically at the relationships between the quality of medical education (for IMGs) and future performance in practice.

Comment
I think it is important to also recognize that US-IMGs are not just pre-acculturated to the US healthcare system; the for-profit Caribbean schools often contract with US hospitals to take their students for clerkship rotations. These students essentially do only their pre-clinical work "offshore," and do much of their clinical training (MS3-4) in the US. The authors are correct in observing that US-IMGs generally have no intention of practicing outside of the US. I don't think this current manuscript goes far enough, however, in truly separating US-IMGs from "true" IMGs. I would posit that the US-IMG is substantively different in many ways from a nonUS-IMG from, say, India, in a variety of ways. The common point that both received (some of) their medical education outside of the US is superficial. I would urge the authors to think long and deeply about this point - more so than they have already done.

Response: We do acknowledge that there are substantive differences between US-IMGs and ‘true’ IMGs, hence the sub-analyses according to the different groups we identified. The difficulty with addressing the issues the reviewer talks about is that our data does not provide sufficient information on other aspects of these individuals’ personal and professional journeys. It does not, for instance, provide information on where they have done their clinical rotations. To make such inferences would require access to data such as medical school curricula for the years these individual students were enrolled.

We would be open to specific suggestions on how to improve the manuscript with regards to the separation of US-IMGs and ‘true’ IMGs.

Comment
I finally noticed a few spelling errors (e.g. "enrolment" on page 14). A quick copy-edit is in order. However, I think there is a fair amount of additional writing and analysis I have proposed, so the copy-
edit would naturally follow major revisions.

Response: we have where appropriate changed British-English spelling to American-English spelling.

Reviewer 3

REQUESTED REVISIONS:
This study seeks to fill that gap by describing, based on current data, the characteristics of IMGs in family medicine who provide patient care in the U.S.

I am looking at this from a UK perspective and family physicians, but in the UK, DO (osteopathic physician) are not specifically viewed as part of the family physician / GP (general practitioner) workforce, so should this be further discussed and the relevant figures produced for an international readership and so expanding on table 1 or providing some more background? In the UK there is a differentiation family physician (GP) and the primary care workforce and osteopathic physicians would be part of the primary care workforce but usually working privately and not in the public National Health Service (NHS) which in the UK is an important differentiation.

Response: we have added supporting information in the text about the role of DOs in the US health care system.

Comment
At the end of the paper it is detailed that the prevalence of US-IMGs in family medicine leads to considerations for the quality of primary care and goes to say that there is a growing body of literature suggesting that the quality of care provided by USIMGs may be inferior to that of US-MGs and indeed other IMGs. This needs further elaboration and a further evidence base.

Response: we have added further references to substantiate this statement.

Comment
In the UK, IMGs make up a large proportion of the family physician workforce and this is not the situation. Again this needs to be written for an international readership and perhaps information as to the IMGs that don't join the family physician workforce in the USA but go to other countries and if there are any issues in relation to quality.

Response: the issues relating to quality pertain mostly to US citizens who go abroad for their medical training, ie US-MGs. This is a very different set of circumstances when compared to other countries with large numbers of IMGs, such as the UK, Canada or Australia. Unfortunately, we have no way of knowing where IMGs go if they do not succeed in getting a residency position in the U.S.

Comment
Also the comment of those who graduated from medical schools in the Caribbean and the stated "considerable variability in performance of graduates in medical schools located there". References 43 and 50-55 need a detailed critical appraisal to justify this which is providing information over and above the original descriptive statistics provided for the basis of this paper which are interesting in themselves.

Response: In our opinion, the reviewer’s suggestion to critically appraise the reasons why there is
variability in performance of graduates from Caribbean schools merits a different paper, as it falls outside the scope of the current study. We will definitely keep this in mind for future research.

Comment
The title of the paper should also perhaps be revised bearing this in mind and using a word other than "contribution" eg percentage / numbers.

Response: we have changed the title to “Supply, distribution and characteristics of International Medical Graduates in Family Medicine in the United States: a cross-sectional study”.