Reviewer’s report

Title: Workforce requirements for comprehensive ischaemic stroke care in a developing country: the case of Saudi Arabia

Version: 1 Date: 19 Jul 2019

Reviewer: Adrian MacKenzie

Reviewer's report:

I appreciate the authors' response to my initial comments. I have some further, minor suggestions below that I am confident the authors can easily address to further strengthen the paper.

Like HRH planning, demographic and epidemiologic projection are scientific disciplines unto themselves. Appreciating that a comprehensive set of modeling scenarios related to these parameters is outside the scope of this study, it would be worth acknowledging that the scenario the authors have identified as predictive of expected future stroke numbers represents one possible future. A few additional sentences providing more detail on exactly how the historical demographic and stroke data were converted into future projections (e.g. trend analysis) would also strengthen the paper. For example, am I correct in interpreting that the authors have assumed that the age-specific stroke incidence rates will remain constant, and that the increased numbers of strokes they project are due to growth in the Kingdom's older population?

Related to this point, the future scenario the authors have used nicely illustrates how the combination of increased population need for stroke care and a changed care delivery model will, other things equal, require substantially more personnel to deliver that model to all those in need. This holds true despite the fact that the specific numbers predicted are likely - simply because the future cannot be predicted with precision - to turn out to be at least somewhat inaccurate. To be clear, I am suggesting the authors adjust the language with which they characterize their projection - I take no issue with the projection methods or results themselves.

It seems to me that the reference the authors have added to estimating future staff requirements under the heading "Current stroke workforce in Saudi Arabia" on page 7 belongs instead under the corresponding heading on page 10.

I am not sufficiently familiar with Saudi Arabia's context to comment on whether the author's assumptions of 1) additional nurses being sufficiently available through reorganization of staff and services and 2) additional beds and units being obtainable by repurposing existing infrastructure are valid for the country. It seems to me that neither of these assumptions is necessary - the authors could simply indicate that these factors were outside the scope of their study. The latter assumption causes me to wonder whether demand for other types of health care associated with heart disease, chronic respiratory illnesses, dementias, and other age-related illnesses can be expected to increase similarly to the demand for stroke care.
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