Reviewer’s report

Title: Forecasting imbalances of human resources for health in the Thailand health service system: application of a health demand method

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Reviewer: Adam Ahmat

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Section Introduction:

1. This section is written as a background rather than an introduction. It offers a summary of the evidence / current knowledge about the topic. The introduction should address what the study will entail, what you are planning / intending to do; the rationale where you argue for the importance of the topic - why should this research be undertaken where we can find clearly a research question, aim or statement that outlines the specific issue you plan to address

2. Please add reference to the following sentences: "Approximately 55% of Thai population… 88.8% of all districts" lines 4 to 9

Section Methods

3. Having a technical working group comprising representatives from 7 professionals, and representatives from the three levels of care, is critical for such approach. As this group play a sensitive role to set some critical standards (identification of services and allowances, workload distribution, timing of the services,...), it could be important to provide more details on this group, at least the size and the methodology of their work: how they have defined these standards? How many representatives for each professional category involved in this technical working group? And how many from each level of care?

4. Proportions of workload distribution and workload allowance proportions to each staff categories (table 1) were not evidence based, they have been set by the technical working group. These important settings are keys in the calculation of the staff requirements. In this regard, this should be supported by evidence or at least be discussed further the implications on the results including the assumptions behind these figures. Indeed, workload distribution of each professional and time spent on each service should vary not only across urban-rural gradient of services and public/private sectors but also across levels of care. This supposed to provide range of proportions of workload distribution to perform various scenarios rather one. This forecasting model should produce different
estimations along different service delivery settings or sectors of employment. Limitations should be highlighted and discussed.

5. Regarding the hour spent per service, certain services may require different approach to set the timing. For example, it is not clear for the service hour per case of doctors which was 0.33 hours for inpatient. Is it service "inpatient-day" or something else? I have the same question for the ICU care service of the staff categories dealing with inpatients such as nurses. Please clarify.

6. The following sentences need to be clarified or reviewed to be consistent with the FTE terms used. "Surgery service carried out at secondary and tertiary services required 1.5 doctors and 2.5 nurses per case. Normal delivery service required 2 nurses and abnormal delivery required 2.5 nurses for each case." Do you mean: 1.5 FTE doctors and 2.5 FTE nurses per case? Please clarify

7. Table 5: Why the in and out migration were not considered in the supply projection as the Thailand has one of the high rates of out migration of health professionals.

8. Is it the FTE (1,680 working hours per year) same for all cadres? What is the rationale behind that? Why 7 working hours a day instead of 8? And why 240 working days rather than 260 (5 days a week x 52 weeks)? What have been deducted from the FTE? Please clarify

9. If you add the annual leave (which is included in the allowance), the FTE will decrease by about 8%. But I saw that you considered it in the total allowance set at 15%. This means that more than 50% of the allowances are covered by the leaves. These figures seem to underestimate the allowances you set and overestimate the FTE.

Section Results

10. Why the model provided forecasting imbalances of HRH for 2026 only? It might be interesting to have imbalances of HRH in 2021 and 2026 to better understand the future trend. Can you provide justification of that?

Discussion

11. Some important limitations of the study should be highlighted in the discussion such the setting of crucial figures by a Technical group.

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