**Author’s response to reviews**

**Title:** What do we need to know? Data sources to support evidence-based decisions using health technology assessment in Ghana

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**Author’s response to reviews:**

We thank the reviewers for their insightful comments. Please find our responses in the table below. In order to make it clearer for the editor and reviewers to check our responses to the reviewer’s comments we have uploaded one version of the manuscript: one with a suffix ‘highlight’ has the new text highlighted. Please note that we have addressed the reviewers’ comments as indicted with yellow highlight. Additionally, we have made some minor changes to the text as indicated in blue highlight.

**REVIEWER 1**

1 This is a descriptive study of available data sources for evidence based decision-making in the health care system in Ghana with regard to approaching universal health care and the role, HTA may play in this development. The paper is considered to be a starting point for further analyses. The data sources are related to six domains, ranging from epidemiology to equity. This is derived from previous work and also refers to a health economic reference case published elsewhere (Wilkinson et al. 2016). The paper refers to the World Health Assembly resolution 67.23 of 2014, which stresses the role of HTA and "urges" member states to establish an HTA system in the context of
achieving universal coverage. Therefore, the concept appears to be appropriate in light of limited resources. This publication is part of a process to inform evidence-based priority setting in Ghana.

We thank the reviewer for an insightful summary.

2 p. 5: the Methods section is rather short; first, the reference to previous work of the group is related to India, which raises the questions of comparability (or transferability, respectively). While it is clear that the domains are taken from the above mentioned study, it is still desirable to describe to what extent any modifications might be necessary to account for the peculiarities of the Ghanaian health care system. It is also desirable to present more details on how the data sources were identified, e.g. in an appendix. It would be interesting to know, which information source contributed to what extent to the results.

We acknowledge the descriptions of the methods is concise and we have appropriately referenced a previous publication that had some more detail.

We did not modify any of the data source ‘domains’ for this Ghana study as we note that while health systems around the world certainly vary in myriad domains, the type of evidence required to undertake a health technology assessment (i.e. clinical efficacy, cost, quality of life, epidemiology, service use, and equity) remains constant . The authors were the first line ‘source’ to documents relevant data sources within each of the six domains. All data sources found have been noted and are considered important. No one individual or organization contributed disproportionately in providing information.

We have added some additional text:

We identified data sources based on our local experience, using the internet to search the literature, Ghana government and other websites (e.g. non-government organizations), and liaising with key informants for additional inputs.

3 p. 6: data sources for burden of disease are focused on their usefulness for economic evaluations; however, from a public health point of view, other aspects, such as geographic distribution, severity or surveillance of vaccine-preventable diseases are not explicitly addressed, but would in case of urgency need to be informed without economic evaluations.

We acknowledge that such data would be most useful in an urgent situation.

This paper is about identifying data for HTA processes.

4 p. 7, on clinical trials: although it is true that for some drugs race matters in terms of efficacy and safety, for most drugs it does obviously not; therefore, international registries, such as Clinicaltrials.gov, would also be valuable sources; trials conducted in a local, regional or national context, however, would be more relevant for complex
interventions which require implementation of services into the Ghanaian health care system

Noted re global repositories such as clinicaltrials.gov and published literature. We added text:

“The major sources for clinical efficacy estimates are usually available from randomised controlled trials as published in peer-reviewed health journals and trial repositories (e.g. clinicaltrials.gov).”

We note the reviewer’s astute comments about local applicability and implementation. We have added text:

“Evidence from clinical trials, particularly those with more complex interventions in high-income country settings, needs to be considered within the context of implementing such interventions within the Ghanaian health system.”

REVIEWER 2 Mouna JAMELEDDINE

The paper is innovative, very insightful and well written.

There is an increasing will to move towards an evidence-based decision-making and a growing interest in HTA and health economics in the Middle East and Africa, coupled to a political will to implement HTA mechanisms to inform investment decisions in many of these countries. Lack of good quality data is one of the major barriers to HTA implementation as reported in the literature. Dissecting, analysing this problem and identifying potential databases are important steps that will facilitate the work of the HTA doers.

We thank the reviewer for their insightful reflections.

Page 3 : Conclusion: "…It will be critical that an overarching strategic and mandatory approach to the collection and use of health information is developed for Ghana in parallel to - and informed by - the development of HTA approaches to support resource allocation decisions… ».

I would suggest the idea that efforts of HTA doers (and requestors) is bound to enhance availability and quality of data, especially if there is a proper infrastructure and a political will to move towards evidence based decision making. Private sector participation in producing HTA submission could be also a good incentive to better structure the data so that they can respond to a need that did not exist before. The lack of well-structured and usable data can be justified by the absence in the past of a real need to use them in decision-making in healthcare (and other sectors). Evolving towards a new process for decision-making will justify the need to improve their quality and structure them, particularly according to the needs of HTA doers. In all cases, there is a transitional period where technical capacities should be improved in parallel with the improvement of availability and quality of data.
We appreciate the reviewer’s comments that the need for reliable data for HTA will help to drive the supply of same.

We noted this in the discussion but have modified to text to read: “As the program of HTA matures in both the public and private sectors, and especially if its outputs can be used to identify research gaps ideally funded by a dedicated department within the Ministry of Health as a start and potentially a separate agency in the future, the information sources should improve in quality and constraints lessen over time.”

We acknowledge the requirement for technical capacities to be improved contemporaneously. Indeed, some of the team are working on skills capacity and training in Ghana.

Page 4: "…While specific methods and process vary according to context, HTA informs health spending decisions in almost all high income countries,[3] and increasingly in upper middle income countries, such as Thailand [4, 5] and South Africa,[6, 7]..." Tunisia and other Middle East and North African countries 2,3 can be also added if authors find this relevant.

We thank the reviewer for noting these relevant references. We have now included them in the introduction.

“While specific methods and process vary according to context, HTA informs health spending decisions in almost all high income countries,[3] and increasingly in middle income countries, such as Thailand,[4, 5] and South Africa [6, 7] and regions including the Middle East and North Africa.[8, 9]"

Page 12: « …we need to ask Ghanaian policy makers and researchers whether they want QALYs or not… » As you know, in general, there is a lack of awareness of QALYs and cost utility analysis in Middle East and African countries. Decision makers are rarely aware of the added value of QALYS. Therefore, accepting or/not QALYs will rely on a major awareness-raising effort before making a decision.

This is a valuable point and well noted. We have modified the text to:

With regard to preference-based health-related quality of life measures, Ghanaian policy makers will need to be aware of the implications of such data to inform the routine use of QALY measures in HTAs. For example, in the overwhelming majority of countries in sub-Saharan Africa, value sets are simply not available for the most commonly, and widely understood, generic health-related quality of life tool, the EuroQol-5D (five dimensions). The adoption of QALYs is feasible in SSA,[65] and awareness raising together with action and support for research efforts at developing value sets for Ghana through peer or South-South channels may be an important means of methods development.[7]

We have also noted recent evidence of EQ5D from Ethiopia and inserted new text in the results and discussion.
We have also inserted this citation at the end of the paragraph.


9 Fully aware of the authors' concern that reports should be based on the best available local data, I think it is still important to stress that the lack of good data should not be a barrier to the production of HTA. Providing alternative solutions is important ex:

* Utilities: In the absence of local health utility estimates, other measures of utility may be used, identified through a search of the scientific literature and other HTA agencies in similar contexts with justification and details of the source of the data should be provided

* Costs: Costs must preferably come from Ghanaian sources and data on resource use must represent the care pathway in Ghana. Failing this, the use of scientific literature and the opinion of clinical experts can be considered adequate methods. Cost data can also be derived from similar jurisdictions with adjustments.

We thank the reviewers for these relevant additions. We have modified the text accordingly:

“For example, if health utilities and QALYs are required, they could be sourced from the literature and reports from HTA agencies in similar contexts.[9] Likewise, costs should ideally be from Ghanaian sources considering local care pathways but can be supplemented by data from the literature, expert clinical opinion, and costs from similar jurisdictions with appropriate adjustment.”