Reviewer’s report

Title: Addressing malnutrition among children in routine care: How is the Integrated Management of Childhood Illnesses strategy implemented at health centre level in Burundi?

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Reviewer: Harold Alderman

Reviewer's report:

Comments for authors of Addressing malnutrition among children in routine care: How is the Integrated Management of Childhood Illnesses strategy implemented at health centre level in Burundi?

There is a Society for Implementation Science in Nutrition. The results here seem to be the type of work that the society calls for. It is very practical; it points to steps that can lead to improved implementation such as better contracting and in-service training (although this can be developed in more detail). As mentioned below, the results may be biased towards better performance; there is little that the research teams can do about this but when the limitations are mentioned the authors might indicate the direction of this bias more explicitly.

Line 95 claims that there are few studies on the topic but references of a number of studies [20-23] that are deemed to be similar are cited. It would be of interest to include a brief discussion of what the current studies adds to the body of evidence. Is it merely a replication? Or does it provide additional insights?

The authors are a bit imprecise regarding the Hawthorne effect. While it is the case that the study has to consider the possible effects on behavior from the fact that the service providers are being observed, this is a particular risk that is somewhat different than the global effect for this term is applied. The effect is named for factory workers who performed better regarding of what treatment they received not because they were trying to influence the results in a certain direction (as potentially with the service providers here) but because they were pleased to be recognized. This is a minor point but maybe you can get by discussing potential bias without mentioned Hawthorne.

Still, I fail to see why explaining the object of the study [line 151] would minimize the risk. Indeed, it might magnify the risk, as the HW would be primed [reminded] to consider applying the list and be more mindful even if they were not trying to manipulate the results. There is a large literature in psychology regarding the ease by which behavior is modified by such priming.

Regarding the results in table 6 [discussed around line 239]: why were some HWs responsible for management of acute malnutrition and not all? This already implies a departure from a strict IMCI protocol (in the sense that there is an apparent specialization or at least prioritization). It is not surprising that individuals who have this as an explicit responsibility would undertake this
task more often. The contextual results seem to imply that staff adapt their use of IMCI to the circumstances.

But this also brings up the possibility that other workers do not focus on acute malnutrition because the population they serve is at lower risk. More general, while you cannot undertake a causal analysis, it would be of interest to see how the stunting / SAM rates differ by performance of HWs. High malnutrition rates with poor IMCI performance might - but only might - reflect neglect on the part of HW staff. Conversely, low rates in the context of what is deemed poor performance might reflect a different path: staff do not take the time to focus on SAM because it is relatively rare in their experience. As mentioned, the study cannot be definitive on this, but some exploration might be illustrative.

Other [minor] points: why report global acute malnutrition when elsewhere SAM and MAM are reported? GAM adds little over the other two somewhat more precise categories.

Line 140/1: 'for instance' not needed in the clause that begins with 'such as'.

Line 253. I'd like to have this contract explained a bit more. This and in-service training seem to be entry points for improved implementation but I could not find a description of the terms of the contracts in the paper.

Line 353: I fail to see what this study has to do with performance based finance. IMCI protocols have little to do with performance based financing and, indeed, the two may have diverging incentives.

Line 392: While the World Bank may have funded an impact evaluation the current paper is not an impact evaluation. Alternative working might be sought here.

Finally, while I do not expect a direct application of the techniques that Jishnu Das and Jeff Hammer used to study physicians' behavior, the authors might find their articles of interest.

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

Yes

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

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes
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.

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