Reviewer’s report

**Title:** Structured on-the-job training to improve retention of newborn resuscitation skills: a national cohort Helping Babies Breathe study in Tanzania

**Version:** 0  **Date:** 14 Sep 2018

**Reviewer:** Beena Kamath-Rayne

**Reviewer's report:**

Properly performed neonatal resuscitation is a key intervention that can save newborn lives. Therefore, understanding how birth attendants acquire and retain resuscitation skills so that these life-saving skills can be performed in the appropriate moments is a topic of utmost importance and worthy of study. It is well known that after an initial training, learners lose their skills without ongoing practice, and this was an important lesson learned in the first 5 years after the first edition of HBB was released in 2009-2010. For that reason, the second edition of Helping Babies Breathe (HBB), released in 2016, specifically recommends that a system of ongoing practice should be put into place after an initial training, although no specific recommendations on the frequency of practice are able to be given due to a lack of consensus in the literature. In the initial era after HBB implementation and dissemination, the authors noted that resuscitation skills performed in simulation declined when assessed 4-6 weeks after an initial training and onsite inspection revealed that there was limited self-initiated practice, verbal rather than hands-on facilitation of the HBB content, and no formal ongoing practice. For the reason, the on the job (OJT) intervention was developed to facilitate self-learning and continuous peer-to-peer learning. This OJT provided a more structured format where learners would review 4 key concepts after an initial training, so that these concepts could be reinforced.

Because HBB 2nd edition does not make recommendations on the exact structure for a system of ongoing practice, having more detailed on exactly what was recommended in OJT would be important so that other sites could replicate this intervention. There have been studies on other methods of ongoing practice, such as low-dose, high-frequency practice (Mduma et al., 2015; KC et al., 2017; Rule et al., 2017; Tabangin et al.,2018) which provide some detail on other methods of ongoing practice, including a bag-mask ventilation checklist, oversight with a master trainer, and peer-to-peer learning. Certain types of ongoing learning may suit different types of workers better than others.

The manuscript also illustrates an even more important point--that a plan for ongoing practice needs to be put into place before the initial workshop is over--and that champions on the ground, in conjunction with supportive supervision from their facilitators and local health leaders--need to continue the efforts to integrate HBB into the local health care system before the enthusiasm, momentum and energy from the initial workshop wear off. The time period directly after the workshop is one in which this ongoing support is critical, before the newly acquired skills disappear.
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.

Yes

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.

I recommend additional statistical review

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?
6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal