Reviewer's report

Title: The Four Pillars Approach in managing pregnant women with anaemia in Yogyakarta, Indonesia

Version: 2 Date: 2 January 2014

Reviewer: Benn Sartorius

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Major Compulsory Revisions

Page 2 – Abstract/Methods – the primary sampling unit (‘cluster’) or level of intervention is the facility. The presentation of 64 nurse-midwives and 180 women needs to be better explained in terms of this. More detail as to the number of facilities in intervention and control areas would be helpful.

Page 4-5 - Background: little is presented with regards to other determinants of anaemia other than pregnancy e.g. malaria, helminth infestation, HIV etc. If malaria for example is present in Indonesia (e.g. Iqbal R.F. Elyazar, Simon I. Hay, and J. Kevin Baird. Malaria Distribution, Prevalence, Drug Resistance and Control in Indonesia. Adv Parasitol. 2011; 74: 41–175) this has implications for anaemia in pregnancy and is thus an important aspect in the background as well as in control (intervention design).

Page 6- Methods-Study design: I think this section needs to be clarified. Unless I’m mistaken the level of intervention is at the facility level. In a given facility in the intervention arm I presume all nurse-midwives were to be trained to avoid dilution of the effect? Where all facilities used or some randomly assigned to the two arms e.g. Setting - “Twenty four Public Health Centres with basic emergency obstetric care will be used as research field for the intervention group in Yogyakarta.” Are these all the “Public Health Centres with basic emergency obstetric care” in this province? The description of the control area (province) and selection of facilities needs to be similarly expanded.

Methods – were pregnant women checked for other confounding causes of anaemia at baseline e.g. malaria, worm infestation, HIV status? How are pregnant women with severe anaemia (Hb<7 g/dl) dealt with in the study?

Page 10 - Methods – data analysis: model building, diagnostics and fit assessment are not mentioned. Please include this in the analysis plan. Any plans to check for interaction between factors?

Page 10-11 – Sample size – The adjustment for intracluster correlation (i.e. within facilities) is correct but I think that the calculated sample size (required clusters) needs to be better aligned with the total number of eligible public health centres (i.e. how does “6 clusters of 24 patients in each group” align with the facilities and how this unit is chosen i.e. multistage sampling?) and if a subset of
facilities are used as clusters then how where they selected i.e. randomly we presume.

Minor Essential Revisions

The manuscript requires a language edit.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.