Reviewer's report

Title: Reducing errors in health care: cost-effectiveness of multidisciplinary team training in obstetric emergencies: the TOSTI-trial

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Reviewer: Carl J Lombard

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Background
The background provided for the manuscript/protocol is reasonable. Given the drive for simulators to be used one wonders how the control sites will be prevented from doing this especially control hospitals in the teaching stratum. The general background training activities in standard hospitals are not discussed in much detail. Are there regular workshop to which 'team' members can go to as individuals?

What are the standard quality control measures for monitoring and action taken on reported errors in the hospitals? Can special training be order for the team members involved in an incident.

Methods
Inclusion criteria
1) for sites - what is meant by frequent multidisciplinary team training - is a once a year or more frequent than that?
2) inclusion criteria for team members and non team members in control sites?
3) inclusion criteria for an obstetric case to become part of the study irrespective of outcome. No inclusion criteria is specified at the moment which makes the approach pragmatic - all obstetric cases within a site for a period of time will be included(?)

I am not sure to what is meant by the second paragraph of the method/design section.

The trial is being designed to see if the intervention is effective. Why develope special indicators? You may be thinking about measuring the level of teamwork?

Questions to be answered.
1) the question about the reduction in the number errors cannot be answered directly from the trial - it can only be inferred indirectly. All obstetric complications reported will have to be independently reviewed to ascertain whether an error in care was made. This is not going to be done.

Intervention
For the intervention a team is constructed in each site. Is it realistic to expect that
this team will be operating intact for the whole of the year. I would expect a more fluid situation where a team is constructed for a case from the available staff complement at that moment. This will mean the staff complement have to received the training of how to operate in a team environment. This will again be the pragmatic approach. Will there be multiple teams in the intervention sites?

Outcome: the outcome for the study is obstetric complication. This relates to any event in any of the listed fields.

Statistical measure: The number of complication is tauted as the statistical measure of comparison. Does this include multiple events within the same mother/baby pair? The time period for counting these events are one year. Some rate will have to be considered if the number of cases for the same period is not identical across all hospitals.

Sample size
A sample size of 1000 per hospital has been proposed. A sample size of 200 per hospital will still have 80% power to detect the expected intervention effect. Why is such an oversampling proposed? Will the ‘smaller’ hospitals deliver a 1000 babies in year given the comment in introduction that birth rates are low?

Stratification
A stratified analysis by hospital type is proposed. Will this be a design feature in the trial - at randomisation? What is the distribution of hospitals between the strata and why is this stratification important?

Bootstrap analysis
From the description it is not clear how the randomisation at cluster level will be taken into account for the analysis at the case level. Bachman & Fairall 2007 have written a paper on this.

A number of elements standard to protocols are not discussed.
Should deaths be monitored as an adverse events?
Interim monitoring?
Process of randomisation?

Final comment
From reading the protocol a more pragmatic approach will suite this trial.

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

**Quality of written English:** Acceptable

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

'I declare that I have no competing interests'