Reviewer's report

Title: NEWHINTS cluster randomised trial to evaluate the impact on neonatal mortality in rural Ghana of routine home visits to provide a package of essential newborn care interventions in the third trimester of pregnancy and the 1st week of life: Trial Protocol

Version: 3 Date: 30 March 2010

Reviewer: Gordon Doig

Reviewer's report:

Congratulations on this undertaking. It is an outstanding trial with potentially important findings.

Please consider the following issues:

1. Consider including a 'sensitivity analysis' to assess the impact of breaking allocation concealment by including the 4 Pilot Zones in the Intervention arm.

2. Please provide additional details regarding your analytical plan.

Please explicitly report all variables that will be assessed for baseline balance.

Please report the decision threshold (p-value or other) that will be used to decide whether a variable is in imbalance.

Please provide appropriate references to the cRCT literature to specify exactly how tests will be adjusted for clustering. For example, your intended use of a t-test with 96 dfs on the cluster averages should be referenced. All other intended tests should be referenced to the appropriate cRCT literature. In this way your protocol will serve as a guide for others.

3. Please specify how it will be determined that logistic regression estimates are 'unreliable' (Page 15, first sentence).

4. Per protocol analysis. More detail and appropriate references are needed.

5. Your sample size estimate was not based on the assumption that cluster means would be analyzed using a t-test. It is possible that your shift from a sample size calculation based on number of livebirths, adjusted for clustering, to number of clusters may reduce anticipated statistical power. Would it be more appropriate to base your primary analysis on a technique that is based on the number of livebirths adjusted for cluster in a less conservative way? Please Discuss.