Author’s response to reviews

Title: Neonatal Near-Misses in Ghana: A Prospective, Observational, Multi-Center Study

Authors:
Ashura Bakari (abakari@yahoo.com)
April Bell (apriljbell@gmail.com)
Samuel Oppong (wak72@yahoo.com)
Yemah Bockarie (yemahbockarie@yahoo.com)
Priscilla Wobil (prischealth@yahoo.co.uk)
Gyikua Plange-Rhule (gprhule@gmail.com)
Bamenla Goka (bamenla@gmail.com)
Cyril Engmann (cengmann@uw.edu)
Richard Adanu (rmadanu@yahoo.com)
Cheryl Moyer (camoyer@umich.edu)

Version: 2 Date: 02 Dec 2019

Author’s response to reviews:

Responses to Reviewers:

Thank you for your careful review of our revised manuscript. We genuinely appreciate the time and attention that has been paid to improving this manuscript.

We have addressed the reviewers’ comments as follows:

Reviewer 1: The authors made a good revision of the manuscript. I think that it should be more clear why they are using predictive values to discuss the validity of the NNMT. There are some minor issues to correct.

Response: Thank you for this – we have taken your suggestion and made revisions in several places in the manuscript
Reviewer 1:

1) About the validity of NNMAT

The validity of NNMAT (gold standard: neonatal death = maximum of the severity); The components of the validity of screening tests are the sensitivity and specificity. The false positives are cases of near miss neonatal (survivors at 28 incomplete days of life). Then, to assessing the validity of NNMAT screening is necessary to calculate the sensitivity and specificity.

What was done:

NNMAT positive = 341: 67 deaths (true positive) and 274 survivors (false positive) and the positive predictive value is 19.6%.

NNMAT negative = 53: 1 death (false negative) and 52 survivors (true negative) and the negative predictive value is 98.1%.

Calculating sensitivity and specificity.

Deaths positive = 68: 67 (true positive), so the sensibility is 67/68 = 98.5% Deaths negative = 326: 52 (true negative), so the specificity is close to 16%.

The frequency of death is 68 deaths among 394 screening tests, so 17.2% (high value). The specificity is low, and the frequency of death is high so, the positive predictive value is reflecting more the frequency of death than the specificity of the NNMAT. Thus, the screening test is more productive and efficient if it directed to a high-risk target population.

I suggested that the authors included the validity of NNMT to recognize severity (neonatal death) besides the calculation and discussion of predictive values, important to recognize near miss cases (NNMT false positives).

Response: Thank you for these comments. As a result we have included the sensitivity and specificity calculations, and expanded the discussion of these findings. See Pages 7, 8, 10, 11.

Reviewer 1:

2) Corrections:

a) Page 4, Line 45: Two tertiary care hospitals (not three)

Response: This was corrected, thank you.

b) Page 6, Lines 12 and 13: Apgar scores < 7 at 5th minute (not 1 minute)
Response: This was corrected, thank you.

c) Page 6, Line 56: only the reference 5 (Silva et al, 2014) use the complete neonatal period (0-27 complete days of life).

Response: This was corrected, thank you.

d) Page 7, Lines 38 and 39: validity of NNMT to recognize maximum of the gravity (death) and predictive values, to recognize case of near miss.

Response: This was reworded, thank you.

Reviewer 2: The authors have addressed my comments satisfactorily. I have only two minor comments:

Reviewer 2, comment 1. Please correct the number of hospitals from three to two on Pg 4, line 45

Response: This was corrected, thank you.

Reviewer 2, Comment 2. Suggest using births and giving birth in place of deliveries and women delivering.

Response: Thank you for this suggestion! We changed the language throughout the manuscript.