Author's response to reviews

Title: Neonatal seizures in a rural Kenyan District Hospital: Aetiology, Incidence, and outcome of hospitalisation.

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Author's response to reviews: see over
Dear Editor,

Re: Resubmission cover letter

We are grateful for the reception of this manuscript and the favourable review thereof. In this revised manuscript we have respondent to each one of the issues raised by the reviewers below.

Yours faithfully

Dr. Michael Mwaniki
On behalf of the authors

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Response to reviewers

Reviewer 1

1. Can the authors provide some insights into the diagnoses or reason for admission of the 1,430 non-incident seizure cases?

The 1430 babies are incident admissions but WITHOUT SEIZURES. We have made this clear in the figure 1. In table 2 we have also provided details of the diagnoses for admission for both the incident 142 neonates with seizures and the 1430 without seizures.

2. Can they provide etiology of seizure stratified by age at presentation?

This is now provided. We have grouped the neonates with seizures by age of presentation to hospital into three categories:- i) those presenting within the first 48 hours, ii) presentation on days 3-7 and, iii) the rest of the neonatal period after the first week of life in under clinical presentation on page 11 and in the last paragraph under diagnosis on page 14.

3. Some conjecture or discussion regarding the differential prevalence of seizure by birth weight is warranted. Might this be presentation bias? Survival bias?

This has been addressed on page 17 under the heading ‘Diagnoses, inpatient outcome & implications for public health’.

4. Neonates with seizures were older at presentation...might this be ascertainment bias with seizures being simply easier to recognize in the older neonate?

As a group, seizures are more difficult to detect in neonates than in older children. Despite this observation, the above finding is unlikely to be due to a bias in ascertainment since low birth weight and in particular prematurity was one of the commonest reasons for admissions without seizures. Such babies were often brought to hospital soon after delivery. The earlier admission may explain the younger postnatal age on presentation.

5. On page 13, paragraph 1: “In addition, an infectious agent was more likely to be isolated in CSF in the neonates presenting with seizures (9/142) compared to 36/1,460 of those without seizures.” The proper comparison group here would not be the 1,460 but only those neonates who had CSF analysis. You have no idea as to the presence or absence of infectious agents in neonates who were not tapped.

We agree with this suggestion and have corrected the said paragraph.
6. In the author's contributions, you note "MK", but none of the authors have these initials.

   Noted and revised on the said page (19/20) on authors' contributions. This should be MM (the first author)

7. The clinical diagnoses presented in Table 2 are extremely important. While you do define them in the methods section, it takes a bit of digging to see this. Can you present this more clearly--perhaps as bullet points or in some other more visually clear fashion so the interested reader doesn't have to wade through so much text to figure out your criteria?

   We have added a table (now table 1) on diagnoses for ease of reading.
Reviewer 2

1. The authors do not address the effect of gestational age on prevalence of neonatal seizures and on severity of outcome. Not sure whether logistics make this unfeasible but should at least be mentioned.

   The majority of births in this area occur at home. Other than the admission weight, data on gestational age was often missing. Thus, we are unable to provide this information. The admission weight to some extend does give an idea of the gestational age though this may not be accurate and we explored its effect on prevalence and outcome. We have acknowledged this limitation in our discussion (last paragraph pg 18).

2. Spelling error: Fischer exact test (p 9)

   This has been noted and corrected.