Author's response to reviews

Title: Antenatal care and perinatal outcomes in Kwale district, Kenya

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Author's response to reviews: see over
The effect of antenatal care on perinatal outcomes in Kwale district, Kenya: cohort study  
Response to reviewers’ comments

Reviewer: Anna Maria van Eijk

1) We have added in details of the flow of participants into the results section as suggested. We have amended the section on ‘keeping track’ of pregnant mothers to make the method of data collection more explicit. There were no monetary incentives for pregnant women to attend for ANC. ANC cards were checked where available, but this was not always the case. The enumerators were trained to measure birthweight, which they did using a digital weighing scale.

2) We have added mothers’ age and whether the mother was a primigravidae to the background information and analyses. Neither of these variables was a statistically significant determinant of attendance for ANC, perinatal outcomes or birth weight. We can only dichotomise gravidity due to the nature of the data collected. We do not have information on gestational age and hence we are not able to include trimester of first ANC visit into the models. We acknowledge this limitation in the paper. ANC did include hematinic supplementation in the form of ferrous sulphate and folic acid tablets. This is included in the discussion.

3) We have compared women with a good pregnancy outcome with still births only. Women with a still birth are less likely to attend for ANC, but there is no statistically significant difference in the number of ANC visits by women in these two groups where at least one visit was recorded. We have included the results of this analysis in the discussion.

4) It is difficult to establish the incidence of malaria in each of the dispensary areas, as data are only available on the number of cases reported. It would be very rare for women to obtain ITMN or TT outside of ANC. We have noted these points in the discussion.

5) We have amended the conclusion in the abstract and main paper.

Other suggestions
- We have improved our reporting of our methods.
- We have amended our discussion and conclusion to ensure they are supported by the data.
- We have changed the title as suggested.
Reviewer: Jos van Roosmalen

Major Compulsory Revisions
1) We have changed the terms behavioural outcomes and behavioural variables to ‘behavioural decisions’ throughout the paper. We appreciate that TT/SP is a component of ANC, as is the distribution (but not necessarily use) of ITMNs. However we retain the term ‘behavioural decisions’.
We show the effect of attending ANC on place of delivery and the person assisting delivery in Figure 2. However we do not include further analysis of these decisions in the paper so as not to detract from our main message.

2) We have explained in our method that enumerators encouraged women to attend for ANC as it was considered unethical not to do so. However this was not considered an ‘intervention’ per se, although we have considered this in the discussion.

3) Dichotomising the data into doctor/nurse and ‘other’ makes the result clearer: the mean number of visits for the former group is 2.49 (sd = 0.99, n = 263) and for the latter group is 1.98 (sd = 0.88, n = 243). A t-test identifies a statistically significant difference between these means (t = 6.23, p<0.001). The ANOVA is therefore identifying this difference while including all the groups. We have retained the original format to avoid losing detail through dichotomisation.

4) We have removed this sentence from the results – it is already covered in the discussion.

5) Again we have removed this sentence from the results. We have changed birth weight to birthweight throughout.

6) We have changed the paper to refer to nurses as ‘nurse-midwives’ throughout.

7) We refer to qualitative research and maternity waiting homes in our discussion – thank you for the references.

8) We have provided more detail on how the babies were weighed.
We have no definite explanations for the relatively low proportion of low birthweight babies in the sample.

Minor Essential Revisions
1) We have provided full study dates in the method.
2) We have moved this sentence to the methods section.
3) We have omitted Figure 1.
4) See points 1) and 6) above. We have changed TT/SP injections to TT/SP doses.
5) We have completed Reference 18.
Reviewer: Franz Majoko

Thank you for the positive feedback.

Discretionary Revisions

1) We have revised the last sentence in the abstract.
Specific Comments
1) We have changed the title of the paper as suggested.

2) We have changed this sentence as requested.

3) Transitional countries are (generally) Eastern European countries that are undergoing transition to a market economy.

4) We have indicated that the design is a cohort survey.

5) The main reason for collecting data at 4-monthly intervals was pragmatic. We have noted how EDD was calculated in the Methods section. We have included more detail about enumerators’ background and training. The first paragraph under the sub-heading Data collection details how data were collected and this precedes the paragraph on data management.

6) Distance from dispensary was chosen as it has been shown to influence care-seeking behaviour (e.g. Stekelenburg et al., 2004). This is particularly important in Kwale District, where the infrastructure is poor and the population is sparsely distributed. We have included control variables for the five dispensary areas in our analysis. All households within these areas were included in the survey.

7) We define a ‘good’ pregnancy outcome and ‘healthy’ weight in the methods section.

8) We have decided to retain the figure, but include a table of the results as an additional data file. We have capitalised ANOVA. ITMNs are distributed through ANC and this is now mentioned in the discussion.

9) The data are again provided in tabular format as an additional data file. The SP and TT variables were perfectly correlated with each other and hence combined into one variable. The combined SP/TT variable was collinear with the ANC variable and hence one of these had to be dropped from the model to avoid the problems associated with multiple regression when collinearity is present (such as large standard errors). Using either the SP or TT variable would not have solved this problem. We note that SP and TT are part of the ANC package in the discussion. There were a few sets of twins and each birth was weighed separately. We acknowledge that this approach may affect the quality of the data in the discussion.

10) We have revised the discussion to take account of the reviewers’ suggestions.
11) We have noted some possible interventions to improve ANC in Kwale, such as the development of mobile clinics, as part of our conclusion.

12) All abbreviations are included in the text. However a separate list is retained as this is recommended by BMC.

13) We do not use the WHO cut-off point of 4 ANC visits as so few women (3.5%) had 4 or more visits.

14) ITMN – insecticide-treated mosquito net – we have now used this expression throughout the paper.
   We have included details about the classification of formal health facilities in Table 1.
   Trained and untrained TBAs are already included in Table 2.
   We have noted the difference between miscarriages and abortions in the text.

15) Both ANC and dispensaries are included in the model for LBW. There is no relationship between number of ANC visits and LBW percentage across the five dispensaries.