Reviewer's report

Title: Blood Culture collection Technique and pneumococcal surveillance in Malawi.

Version: 1 Date: 25 June 2008

Reviewer: Orin Levine

Reviewer's report:

Blood Culture collection Technique and pneumococcal surveillance in Malawi

This is an important and interesting article on a timely issue. The results of the research, particularly the decrease in the proportion of contaminated blood cultures from 19.6% to 5% and the increased pneumococcal recovery are of public health significance. This type of information from developing countries is rarely available and yet has major implications for interpretation of surveillance data and the conduct of future studies.

1. Is the question posed by the authors well defined?
   Yes.

2. Are the methods appropriate and well described?
   Overall, the methods are appropriate and well described. It would be useful to consult a statistical reviewer for a final decision but it is our view that a poisson regression may be a more appropriate analysis method than logistic regression for this type of data. Also, an ‘interrupted time series’ may be a more appropriate way to separate comparison periods. The statistical expert reviewer may have more insight into this matter.

3. Are the data sound?
   The data are sound and appear to have been systematically collected.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
   Yes.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
   Yes the authors draw conclusions that are appropriate to the data.

6. Are limitations of the work clearly stated?
   Limitations are clearly stated.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
   The paper is referenced well.
8. Do the title and abstract accurately convey what has been found?
The title could be a little more specific by including the years of surveillance., 2003-2006.

9. Is the writing acceptable?
This is a well written manuscript.

Discretionary revisions
• Last sentence of page 6. The sentence is unclear in regards to what is being measured or evaluated. Potential change: “Temporal changes in isolate recovery were evaluated by comparing recovery rates in the pre-blood culture nurse service years 2003/4 to the post-blood culture service years 2005/6.” The table provides annual analyses but the text pools years in 2 year categories. This makes it a bit difficult to understand. It would be easier if the table and the text were more aligned.
• Page 7, 2nd paragraph, 4th sentence. In which table can these results be found in?
• In the discussion you could mention that the study took place over a small period of time in a single hospital, thus inferences are limited by this short time span and single location.

Minor essential revisions
• Please provide information on “losses to follow-up.” If there were no losses to follow-up please confirm that the total number of blood cultures taken were equivalent to the total number of blood cultures analyzed
• Please provide a little more detail on the sequence and timing of the interventions, i.e. please provide the months the specific interventions took place.
• Page 6, 2nd paragraph, sentence 6. In the discussion you say these blood volume was randomly assessed in 500 bottles from 2003 and 250 bottles from 2005. Can you describe how bottles were randomly chosen? What sampling method was used?
• The authors state that there was “no change in contamination and isolation rates” during the ongoing staff education in 2004. Would the same results have been achieved if you compared the 2003 values with the 2005-6 values. Does it make sense to compare the 2003 data with the 2005/6 data and thus perform an interrupted time series analysis?
• Table 2, are these results adjusted for year of recovery? If so, please state in footnote to table
• Page 10, 2nd paragraph, sentence 5. You state that “staff should be educated” however, your results show no improvements in isolation or contamination rates with the education alone that occurred in 2003. Please address this point.

Major compulsory revisions
• None
Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests.