Author's response to reviews

Title: Too little but not too late: Results of a literature review to improve routine immunization programs in developing countries

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Author's response to reviews: see over
Dear Reviewers:

Thank you for taking the time to conduct a thorough review of our paper, “Too little but not too late: Results of a literature review to improve routine immunization programs in developing countries”. We have carefully reviewed your comments and believe we have adequately addressed them. Please find attached detailed responses for each comment along with the revised manuscript. Changes to the manuscript are highlighted in yellow.

Thank you for your review of this manuscript.

Respectively submitted,
Tove Ryman

Referee 1:
Title: Too little but not too late: Results of a literature review to improve routine immunization coverage in developing countries
Version: 1
Date: 18 September 2007
Reviewer: Jon Kim Andrus

Reviewer’s report:
The paper has very relevant information for immunization program managers in developing countries that should be widely disseminated. It frames the issue well at the onset.

I recommend that the paper be accepted provided the following points are addressed:

The abstract should highlight a few of the key positive findings. The authors state much was learned but do not state specific lessons. The abstract deserves to have a list or examples of these lessons.

RESPONSE: This is a good point and we have included positive key findings as suggested by the reviewer.

The exact number of papers identified (~9000) should be stated in the text.

RESPONSE: We have changed the sentence to say “identified”, rather than “collected” to prevent any misunderstanding.

In the methods, the authors should explain for observational studies why only one reviewer was used, but for the other studies two reviewers were used.

RESPONSE: We agree that this is an important point. Thus, we have added a sentence to explain why we proceeded as such. “The same rating was applied to all paper types, however only one reviewer was used for observational studies as many of the criteria we used in the assessment were not applicable for
observational studies (e.g. methods for obtaining controls, sample size calculations, accounting for confounders, etc)."

The authors should explain why studies which focused on strategies to improve overall health systems were excluded. Actually, there is a strong primary care argument to justify including these studies.

**RESPONSE:** Although important, strategies to improve overall health systems were excluded since this was not within the scope of the paper. We focused on specific programmatic changes within immunization programs and changes in management. Furthermore, an assessment of the impact on immunization programs of improving overall health systems would have numerous confounders, making it difficult to determine what strategy actually impacted the routine immunization program, i.e., the actual focus of our study.

When citing examples of finding of studies in the text, the authors should consistently cite the date or year of the study. They do this for a few but not for all.

**RESPONSE:** The year of the study has been added to all examples in the findings section.

The authors should describe challenges, if any, of grouping the 25 selected articles into the four categories that they chose. I imagine there was some overlap. Going house-to-house or outreach may be applicable to more than one category. It would help if this was specifically explained.

**RESPONSE:** To address this comment, we have added a section on the rationale for the choice of categories. “There were numerous groupings which could have been used to organize the findings, and some papers inevitably overlap. Ultimately, we chose categories that we felt would be most beneficial and the most “user-friendly” for national and sub-national program managers to identify strategies.”

Contracting out services, as was done in Cambodia to NGOs, may be a temporary fix that does not necessarily contribute to sustainability. I would like to see more discussion about this point, and perhaps other specific strategies, in the sustainability paragraph of the discussion.

**RESPONSE:** Obviously an important point. Accordingly, we have included additional discussion regarding sustainability and the lack of information on this topic in the reviewed papers.

The Additional Research and Conclusions sections could be combined into one section with crisper ending.

**RESPONSE:** The research agenda was a major focus of the paper, as such we feel that the research agenda and conclusions should be separate sections. However, if the editorial committee feels that a combined section would improve the paper we are willing to make this change.
Referee 2:
Title: Too little but not too late: Results of a literature review to improve routine immunization coverage in developing countries
Version: 1
Date: 15 January 2008
Reviewer: Damian Walker

Reviewer's report:
Major Compulsory Revisions
This is a well-written paper, regarding an important topic; how can vaccination coverage rates in developing countries be increased? I only have one major concern and that relates to the paper's originality. I need to be convinced that this review is warranted in light of the papers by Pegurri et al. (2005) and Batt et al. (2004)


It is surprising that no mention is made of these reviews until pages 14-15 in the Discussion, where it is inferred that these papers focused exclusively on issues of costs and cost-effectiveness; both papers reviewed the published and grey literature respectively on the effectiveness of strategies to improve immunization coverage (in addition to the literature on the cost and cost-effectiveness). So what is the added-value of this review?

RESPONSE: At the conception of this project (2004) we corresponded with one of the author of both papers, Dr. Julia Fox-Rushby, to discuss our proposed project. After these discussions and email exchanges we came to the realization that our work had added-value to the work that was previously published. The target audiences for our work are immunization managers at the national and/or sub-national level. We were interested in reviewing the literature to provide possible strategies for managers which they could use to improve routine immunization program functioning. Importantly, and as opposed to the other articles, our literature review focus specifically on the delivery of immunizations through the routine program and excluded campaigns, as opposed to the two mentioned articles. To make this point clear, we have added a section in the introduction describing these points. Furthermore, and as the reviewer mentions below, of the 25 papers that we reviewed, 10 of these were not reviewed in either of the 2 papers mentioned/cited above. Thus, we feel that are our work
complements the previous 2 publications since our focus is different and since we identified studies that were not included in work mentioned by the reviewer.

It is noteworthy that this paper and the other two articles have not reviewed exactly the same literature. While references 4, 6-10, 13-15, 20, 22 (report version of this reviewed by Batt et al. 2004) 24-25 and 28 are common between the reviews (and 26 is outside of Pegurri et al.'s time period), that still leaves references 5, 11-12, 16-19, 21, 23 and 27 that were not included in Pegurri et al.'s paper and similarly, there are many articles that this review has not considered as well. The authors should examine why the discrepancy between what appear to be two high quality reviews. Perhaps the 'missing' papers are among the 35 excluded papers. Could the authors include a list of them with their reasons for exclusion?

**RESPONSE:** Many of the papers included in Pegurri et al.'s paper, which were not included in our paper, focused on campaigns. As stated above, articles that focused on immunization campaigns were excluded from our review. This is an important difference between our papers and an issue which highlights why we believe our paper complements or extends the previously published work. We have added a sentence to the methods explicitly stating the exclusion of campaign papers to address the reviewer’s concerns.

I would question to what extent the authors have systematically reviewed the gray literature - again, compare and contrast their results with those of Batt et al.

**RESPONSE:** As mentioned on page 6, none of the grey literature papers were included in this review. “All of the nine gray literature papers were excluded; most of these papers lacked detailed information or methodology details and so received too low a score to be included.”

If an intervention is shown to be effective in one setting does that ensure that it will be effective if applied elsewhere, and importantly vice versa? Would it be possible for the authors to include their search histories? This would ensure full replicability of the review. The checklist for assessing the quality of the studies should be included. Also, surely some of the assessment elements are more important than others – was this reflected in the scores?

**RESPONSE:** We have included the checklist for assessing the quality of studies. In our review we did not weight particular assessment elements.

Why did only one reviewer take a look at the observational studies?

**RESPONSE:** We agree that this is an important point. Thus, we have added a sentence to explain why we proceeded as such. “The same rating was applied to all paper types, however only one reviewer was used for observational studies as many of the criteria we used in the assessment were not applicable for observational studies (e.g. methods for obtaining controls, sample size calculations, accounting for confounders, etc).”

Minor Essential Revisions
GAVI is now the GAVI Alliance (abstract and elsewhere)  
**RESPONSE**: Corrected

I assume the authors 'identified' rather than 'collected' 9,000 papers ... although I could be wrong (abstract and elsewhere)  
**RESPONSE**: Identified is correct, changes made.

Haemophilus influenzae should be italicised (page 3)  
**RESPONSE**: Corrected

Do the authors really mean 'disabilities' or rather illness episodes? (page 3)  
**RESPONSE**: We have updated the data such that this is no longer relevant (see below comment).

Could the authors use more recent data than 2002 (for burden data) and 2005 (for coverage data)? (page 3)  
**RESPONSE**: We have updated to include 2006 data.

How is 'developing' defined? (page 3 and elsewhere)  
**RESPONSE**: To address this we have added a definition of developing. "Developing countries and economies in transition per UN World Economic & Social Survey, 2006 classification."

The section starting "All of the nine grey ... management practices (n=7." should be moved to the Results section  
**RESPONSE**: We agree and have moved it accordingly.

Are 'non-health workers' community health workers? (page 8)  
**RESPONSE**: The paper does not make this comparison, the cadre of staff providing home referrals are only called ‘non-health workers’ as opposed to the health workers that conduct follow-up visits if children are not brought to the clinic.

Suggest that an increase in coverage from 5% to 58% is impressive: re-phrase as the word 'only' downplays the achievements of the control district (page 9).  
**RESPONSE**: We have omitted 'only'.

Same paragraph, did reference 9 have a comparison area? If not, see above point about the quality assessment. Similar point regarding reference 15 (page 10)  
**RESPONSE**: We have added a sentence about the comparison areas.

Please re-phrase the sentence as it seems contradictory - surely through increasing demand additional services will be provided: "These strategies increase demand for vaccination without providing additional services" (page 9)
RESPONSE: Changed statement to say, “These strategies increase demand for vaccination without changing the service delivery.”

The terms ‘timeliness’, ‘dropout’ and ‘missed opportunities’ should be defined (page 10)
RESPONSE: We have added definitions.

How can attendance increase to 102% Was there a problem with the denominator? (page 12)
RESPONSE: The answer to this question is, yes. In the paper’s discussion the authors describe census errors as being the most likely cause of coverage >100%. A sentence was added to this effect. “The coverage >100% was described as most likely occurring because of census errors, as mechanisms were put in place to reduce the opportunity for ineligible children to receive the food incentive.”

Table 2: for reference provided for Nigeria is incorrect
RESPONSE: This has been corrected.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Needs some language corrections before being published
Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests: I declare that I have no competing interests