Author’s response to reviews

Title: Vitamin A supplementation programmes are missing children from scheduled castes and scheduled tribes. New evidence from India

Authors:

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

Thank you for forwarding your feedback and that of the two reviewers to our paper: *Are vitamin A supplementation programmes reaching children from scheduled castes and scheduled tribes? New evidence from India* by Victor M. Aguayo, Nina Badgaiyan and Jee Rah.

We are pleased to see from the feedback received that the reviewers believe that the article and its findings are important to researchers, programme planners and policy makers. You will find below a point-by-point response to yours and the reviewers’ feedback.

Changes to the original manuscript are highlighted in red (below and in the revised manuscript). In addition, the written English has been reviewed to correct a few grammar errors and repetitions/typos. We hope that with this response and revisions you will find our manuscript suitable for publication in your journal.

With Kind regards, --Dr. Victor Aguayo

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**Editor**

§ Figures in MS: Please upload the figures as separate figure files using the "upload" form on the submission system only, and delete the figure from the manuscript file. The figure file should not include the title (e.g. Figure 1... etc.) or the figure number. The legend and title should be part of the manuscript file, given after the reference list.

*Authors:* Figure 1, has been uploaded as a separate file as per request and guidance above.

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**Referee 1**

§ It is not known whether the authors considered availability of NSSO data for these studied area. If not state the reasons for same to make the paper factual and also include a statement in the findings/discussions and conclusions part.

*Authors:* The National Sample Survey Office socio-economic surveys do not include health indicators. Therefore, in the context of our analysis it was more appropriate to use data from: a) the National Family Health Survey (NFHS-3; IPPS 2005-2006), which includes mortality, morbidity, malnutrition, SC/ST, and socio-economic data by state; b) the Office of the Registrar General and Census Commissioner. Sample Registration System Bulletin, 2011. Government of India, New Delhi, which provides demographic and socio-economic data for all states and districts; and c) Office of the Registrar General and Census Commissioner of India. Annual Health Survey 2011, which provides additional socio-economic and health data for selected states and their districts.

§ Authors need to elaborate how they claim the data to be “anonymously collected aggregated data”

*Authors:* The data used in our analysis are collected through the routine immunization programme (measles vaccination at ~9 months) and the bi-annual VAS rounds. Programme data
are collated at the district level using standardized bottom-up data collation procedures that do not involve the names of the children who benefitted from these programmes, only the number of children who received vitamin A supplements in each given calendar semester (semester 1: Jan 1-June 30; semester 2: Jul 1-Dec 31). Thus, the analysis involves anonymous data that cannot be linked to individual children, caregivers, or households. To make this point more explicit, the revised manuscript reads as follows: Ethical approval was not sought as we analyze anonymous data that cannot be linked to individual children, caregivers, or households.

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The terms lowest and highest are used in the paper and a look at the figures for these appear that there was no norm set to call what is high and what is low. The authors need to clearly state the range for each term like low, lower, lowest, high higher and highest, at the beginning and adhere to them while discussing or concluding.

Authors: In the revised manuscript we explain at the outset of the Results section that “the coverage and full coverage of the VAS programme was analyzed by SC/ST concentration quintile, dividing the 255 districts into five quintiles (~51 districts per quintile): the lowest quintile comprising the 20% districts with the lowest concentration of SC/ST households at one end and the highest quintile comprising the 20% districts with the highest concentration of SC/ST households at the other end (table 1)” and we adhere to this definition throughout the Results, Discussion and Conclusions sections.

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Authors have not touched or given reasons for improved coverage or failure for coverage. What are the methods used to make the programme effective during the administration needs to be stated in the Materials and Methods paras briefly.

Authors: The identification of the factors that improve VAS coverage in India is beyond the scope of our analysis and therefore is not reflected in the Methods section. However, the Discussion section in the final manuscript does address the reviewer’s concern and includes the following paragraph: “A recent review indicates that the critical success factors of the VAS programme in Bihar and Odisha – two of the seven states included in our analysis – have been: strong leadership by the state government, close coordination between the departments of Health and Family Welfare and Women and Child Development, effective district-level planning prior to each biannual VAS round, a stable procurement and distribution mechanism, appropriate training and supervision of staff, and intensive social mobilization and communication [31].”

Referee 2

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Title: Generally, title may not be given as a research question. Research question may be your objective.

Authors: In response to this concern by the reviewer we have changed the title to: Vitamin A supplementation programmes are missing children from scheduled castes and scheduled tribes. New evidence from India.

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Abstract: The first introductory sentence may be rewritten. 62% is a sub-clinical vitamin A deficiency (serum retinol levels <20ug/dl). There is no need to give number of children as well as percentages
(lines 22-24) (may be delete duplication). In the conclusion the word 'life protecting' may be deleted. Future programme needs... sub-district level... concentrations of SC/ST. The programme is already existing to give more attention on the SC/ST/OBC children even at village level. We need to say only strengthening of the existing programme

**Authors:** The word 'sub-clinical' has been included in the first sentence. In lines 22-24 we have kept percentages and deleted numbers. We have replaced 'life protection intervention' for 'child survival intervention'. Finally we have reframed the last sentence in the conclusion as 'India's national VAS programme needs to be strengthened in sub-district level units (i.e. blocks and villages) with higher concentrations of SC/ST children'.

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§ Introduction. The relevance of review may be improved. In the Introduction itself, supportive review to the present paper, rational should have been included. In the methodology, lot of introductory, rational paragraphs were included.

**Authors:** In response to the reviewer’s suggestion, we have expanded significantly the introduction – which now included 18 bibliographic references – and have reduced the length of the methodology section to avoid redundancies.

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§ The coverage of VAS increased over time. The authors attributed several reasons for increase, but they missed one important reason. GOI changed the policy of VAS beneficiaries. The VAS programme was started for 6-59 months children during 1970s, and subsequently, the beneficiaries age was reduced to only 9-35 months due to shortage of supplies, economies (financial limitations), as the younger age group is the priority one. Subsequently, the NNMB data has shown that the problem of vitamin deficiencies are higher even among 36-59 months. Based evidences and recommendations of National Institute of Nutrition, ICMR and several other Research agencies, the VAS programme was extended to 9-59 months again. This could be the main reason for increase in the number of children covered under VAS programme.

**Authors:** The reviewer is correct in signaling that there was a change in the national policy regarding the age group who should benefit by the national VAS programme. However, during the period reported in our paper (2006-2011) the national policy was to distribute vitamin A supplements to all children 6-59 months old. Therefore the increase in the number of children benefiting from the national VAS programme cannot be attributed to changes in national policy/age-group.

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§ Why you have grouped SC/ST child population/household concentration into five groups. There was not much difference between higher & highest and lower & lowest. They would have done 3 groups instead of five groups. There is no rational.

**Authors:** it is common practice to use quintiles (i.e. divide the population study into 5 mutually-exclusive 20% units) to assess how equitable is the distribution of variables. The Demographic Health Survey (DHS) programme and India’s National Family Health Survey use this approach. Moreover, a close look at our finding indicates significant differences between the lowest and lower quintiles; for example the full VAS coverage (2006-2011) in the lowest concentration quintile for tribal children was 31.3% while that in the lower quintile was 55.3%.
There are simple terms generally used for coverage of VAS like one dose and two doses in a given year. The author used the words VAS coverage (for one dose) and full coverage (two doses). Full coverage generally denoted that if the 60 months child received all 9 doses or not up to 60 months? This definition may confuse readers.

**Authors:** We use internationally agreed upon recommendations for the definition of VAS coverage and full VAS coverage. VAS coverage is defined as the proportion of eligible children who receive at least one VAS dose in a given calendar year while full VAS coverage refers to the proportion of eligible children who received two VAS doses in a given calendar year [30].

Line 79 mentions that wasting was 59%, which seems unrealistic, may be check again.

**Authors:** Line 79 mentions that the seven states included in the analysis “are home to 58% of the stunted children, 59% of the wasted children, 60% of the underweight children, 72% of the infant deaths and 74% of the underfive deaths in India”. Therefore it does not indicate that the prevalence of wasting is 59%, which would have been unrealistic, as the reviewer indicates.

In some of the sentences (112 & 208), repeat words and spell checks may be checked.

**Authors:** Repeated words and typos have been corrected.

It was concluded that there is a need of nationwide study to document the vitamin A deficiencies at sub-district level. It is not feasible to conduct that micro-level studies. An established reporting system is available in India through Integrated Child Development services (ICDS) coverage information is available from each village level. However, the accuracy and authenticity needs to be monitored and the importance of coverage have to be educated to the gross route level health and nutrition workers.

**Authors:** Our main conclusion focuses on the need to strengthen the national VAS programme, particularly among SC/ST children as they are likely to be the most vulnerable to VAD and its consequences and represent ~29% of the children 6-59 months old who are not fully covered by the VAS programme. We do not conclude that “there is a need of nationwide study to document the vitamin A deficiencies at sub-district level”; however we do acknowledge that there are researchers concerned with the relevance of a universal approach to VAS in India as they feel that the prevalence and severity VAD may have declined significantly. Thus we argue that it would be important to “re-assess the prevalence of clinical and sub-clinical VAD in pre-school age children (with appropriate geographic and socio-economic data disaggregation). This will address recent concerns about the extent and severity of VAD in India and the relevance of the national VAS programme [35-36] and will provide the evidence base to design India’s way forward post 2015.” The existing reporting system through India’s Integrated Child Development services (ICDS) programme provides coverage information and should continue to do so as this is vital information to improve the performance of the VAS programme.

There is no need to provide non-coverage information, once given the coverage in the results.

**Authors:** Non-coverage data would be equal to 100-coverage and therefore unnecessary information as mentioned by the reviewer; our Results section (table 5) provides information on the absolute number of children who belong to SC/ST households and are not covered by the
national VAS programme. This is important information as it gives the reader a better sense of the scale/magnitude of the coverage-gap that needs to be filled.

Discussion: May be improved with the more recent references for any reduction is there in the problem of vitamin A deficiency after increase in the coverage. Recommendation needs to include the strengthening and strict monitoring of the programme rather than new studies.

Authors: The Discussion and Conclusion section has been reviewed. The revised manuscript includes to the best of our knowledge the latest references to India’s VAS programme, including those of the DEVTA trial, questioning the relevance and impact of India’s national VAS programme (Lancet 2013). As mentioned above, our main conclusion focuses on the need to strengthen the national VAS programme, particularly among SC/ST children as they are likely to be the most vulnerable to VAD and its consequences and represent ~29% of the children 6-59 months old who are not fully covered by the VAS programme.

To acknowledge that there are researchers (Lancet 2013 mentioned before) concerned with the relevance of a universal approach to VAS in India as they feel that the prevalence and severity VAD may have declined significantly, we argue that it would be important to “re-assess the prevalence of clinical and sub-clinical VAD in pre-school age children (with appropriate geographic and socio-economic data disaggregation). This will address recent concerns about the extent and severity of VAD in India and the relevance of the national VAS programme [35-36] and will provide the evidence base to design India’s way forward post 2015.”

We have taken into account the Reviewer’s recommendation regarding strengthening programme monitoring mechanisms and have included the following paragraph in the Conclusions section: “To accelerate progress in equitable programme coverage, it will be important to strengthen monitoring and reporting mechanisms so that state-level programme planners and managers have access to real-time and accurate information on programme performance by village, block, and district.”