Author's response to reviews

Title: Age-appropriate Vaccination Against Measles and DPT-3 in India - Closing the Gaps

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Author's response to reviews:

Perth, 2 April 2013.
The Editors,
BMC Public Health.

Dear Editors,
RE: MS 1317731185852654. Age-appropriate Vaccination Against Measles and DPT-3 in India - Closing the Gaps

Thanks for providing us with an opportunity to respond to the very constructive comments of all three referees of our manuscript. We have attempted to revise our manuscript in line with their comments. We respond to the referees’ comments as follows:

Referee 1:

Comment 2: We focussed on children with vaccination cards because data on the timing of the vaccination was only available for children with vaccination cards. The self-reported maternal recall data was limited to recall of whether or not children were vaccinated against measles and DPT-3. Thus we do not have the evidence base to generalise our findings to children in the data set who were unable to present vaccination cards.

Comment 5.1: in India, the EZ strain of measles vaccine has been used in place of the Schwarz strain measles vaccine since the 1980s. Both have comparable efficacies.1 We agree with the reviewer’s point regarding the four listed major causes of measles outbreaks, in addition to premature measles vaccination. These points have now been included in the discussion section. As our study is focused on the adverse impacts of age-inappropriate vaccination on vaccine efficacy, we have included, in our revised manuscript, a study which ascertained vaccine efficacy by estimating relative risk associated with measles vaccination (irrespective of timing), and found that; “[measles] vaccine efficacy was 84% (95% confidence interval [CI], 74%–91%) in Himachal Pradesh. In West Bengal, it was 66% (95% CI, 44%–80%) in 2005 and 81% (95% CI, 67%–89%) in 2006”.2 The study estimated single dose measles vaccine efficacy in India of
85%. Age-inappropriate vaccination is likely to reduce the expected vaccine efficacy. We regard age-inappropriate vaccination as being “a” constraint, not “the” major constraint in optimising measles and DPT vaccination outcomes in India.

Comment 5.2: while we agree with the reviewer’s point that making the MDG indicator on measles vaccination more specific might result in increased compliance and monitoring costs, it still needs to be stated that the current wording of MDG measles indicator does not adequately direct the attention of measles vaccination program managers to addressing the issue of premature measles vaccination. In the post 2015 MDG era, such a refinement might be appropriate. Similar observations related to inadequate specificity have been made in the literature regarding MDG target 7c, which is related to water quality.3

Comment 5.3: We have recast the opening sentence of the conclusion section as suggested by the reviewer.

Comment 6: We have included a paragraph which clearly states the limitations of the study, including issues of sample size and the extent to which our results may be generalised.

Reviewer 2:
Comment 1. We agree with the Reviewer that the exclusion of children who have been vaccinated but are unable to show vaccination cards may lead to biased results. However, information on the timing of vaccination is only available for those children with vaccination cards. Self-reported data based on maternal recall only contained information on whether or not the child was vaccinated, with no information on the age of vaccination. We have included this point as a limitation of the study.

Comment 2: We agree that the inclusion of data investigating other socio-economic or equity determinants is appropriate. We however feel that the focus of our study is on the role of service factors, and while we acknowledge the importance of structural factors we believe that their inclusion would deviate from the key point that we wish to present in this paper. We have acknowledged the non-inclusion of socio-cultural determinants of measles and DPT-3 vaccination as a limitation of our study.

Comment 3: Based on the WHO 2006 World Health Report, measles is estimated to contribute to 4% of total under-five mortality. While under-five mortality may be reliably measured, monitoring the contribution of measles vaccination to under-five mortality in MDG 4.3 is indirect.4 Some analysts have criticised the measles MDG as being exclusively focussed on coverage, and for not including efficacy indicators, and for overlooking inequality and specific vulnerable population groups. It is also argued that the one-size fits all approach for measles immunization coverage has set the bar too high for fragile nations like Afghanistan (62% coverage in 2011) & Somalia (46% coverage in 2011): http://apps.who.int/gho/data/node.main.527. A recent change to Australia’s immunisation program provides authorisation for children to be vaccinated with one dose of measles vaccine at 18 months of age from 1 July 2013: http://www.news.com.au/lifestyle/health-fitness/new-free-combination-vaccine-to-immunise-aus
We have expanded on this point in the revised manuscript.


Comment 5: We agree with the need to expand our findings on DPT-3 vaccination in the discussion section. We believe that it is important to retain data on DPT-3 in the manuscript as this supports our argument that age inappropriate vaccination in India’s vaccination program is not limited to measles vaccination only. Furthermore, DPT-3 is a commonly used indicator for global monitoring of vaccination quality.

Comment 6: The data utilised for this study is de-identified and publicly available. There is no way users will be able to identify the children and mothers participating in the study.

Comment 7: We have changed the link and reworded the section concerned.

Comment 8: we have addressed this point in the revised manuscript

Comment 9: We have addressed this point.

Comment 10: We have revised the manuscript to minimise passive statements.

Comment 11: We have revised to referencing styles to conform with BMC Public Health guidelines.

Comment 12: We have revised the use of commas in the manuscript to ensure consistency.

Comment 13: While rounding of vaccination coverage to the nearest whole number is appropriate, we have decided to retain the rounding of data in the Tables to two decimal places, to preserve accuracy.

Comment 14: We have revised the results section to exclude statements that are better suited to the discussion section. We have also expanded the discussion section

Referee 3:

Comment 1: Findings on comparative accuracy maternal recall of childhood vaccination is mixed. Some researchers “recommend against using maternal recall for Expanded Program on Immunisation monitoring”, having found that mothers tended to immunisation records for children aged six months or less, and maternal recall error was greater than two doses 14% of the time.5 In our study, we were unable to consider maternal recall as the maternal recall data in the DLHS-3 was restricted to whether or not the child was immunisation, with no data on the timing of the measles vaccination. We have included this point as a limitation of the study.

Comment 2: Further analysis of data revealed that ICDS, Pulse Polio and Sub-health centres were responsible for delivering age-appropriate measles
vaccines to 55% of children, although they were responsible for 77% of all vaccinations and 82% of all premature vaccinations. We have incorporated this additional data into the revised manuscript.

References


