Reviewer's report

Title: Measles vaccination coverage estimates from surveys, clinic records, and immune markers in oral fluid and blood: A Population-based cross-sectional study

Version: 2 Date: 13 March 2013

Reviewer: Niyi Awofeso

Reviewer's report:

Reviewer's report: Major compulsory revisions:

Title & Abstract: The authors were measuring both coverage and seroconversion of measles. As with serum assays, oral fluids IEA for measles measure serum based measles specific IgM. This should be made clear in the title, since cold chain problems and undernutrition can, among other factors, cause a mismatch between measles vaccination coverage and measles vaccination seroconversion.

Study origins: This study is based on Kyla Hayford's's 2012 Dissertation: http://gradworks.umi.com/35/24/3524826.html and should be stated as such in the manuscript's text or acknowledgment.

Methods and Results: A major deficiency of this study is that it does not stratify Oral Fluid (OF) testing samples by age of vaccination against measles. It is well known that oral fluid testing is time dependent, with highest positive predictive value within the first month of vaccination. Since children with prior history of measles vaccination studied in this cohort were 12 - 16 months old, it is very likely that they had been vaccinated against measles several months earlier. http://www.ncbi.nlm.nih.gov/pubmed/10694156 I cannot recommend this study for publication if the authors are unable to revise their methods to highlight time of vaccination and provide results based on time of OF test following first dose of measles vaccination as a separate table. Given that it is already well known that the positive predictive value of OF testing for measles IgM wanes one month or later following measles vaccination, this study has not advanced our knowledge of the usefulness & limitations of the test.

OF testing is known to have a high negative predictive value: http://jid.oxfordjournals.org/content/187/Supplement_1/S283.long this attribute was not tested in the authors’ study, for the 10% - 15% that were documented as negative using cards and self-report by mothers.

Results should report on positive and negative predictive value of OF at various months following receipt of MCV1.

Minor Essential Revisions

Introduction: Some information on measles epidemiology globally and in Bangladesh is important. Also pertinent is description of Bangladesh’s measles vaccination schedule.
Discretionary revisions
Since the main point of the authors relates to OF validity, it is important to include more pertinent references on OF sensitivity and predictive value in the results section, and list appropriate references.

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'