Author’s response to reviews

Title: The introduction of "No jab, No school" policy and the refinement of measles immunisation strategies in high-income countries

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Author’s response to reviews:

Dear Editor,

Please find enclosed the revised version of the manuscript “The introduction of "No jab, No school" policy and the refinement of measles immunisation strategies in high-income countries” (BMED-D-18-01492R1).

We thank you and the editorial board for the general appreciation of our work, the useful feedback on the revised version of the manuscript. We have done our best to address the two comments raised by Prof. Felicity Cutts (reviewer #2); changes we have done are highlighted in the manuscript.

Please note that the new version of the manuscript now also adheres to the stylistic guidelines of the journal and we dare to hope that it is now suitable for publication in BMC Medicine.

Sincerely yours,

Filippo Trentini
The paper is much improved. I have one minor comment as I still find the description of school entry vaccination a little unclear.

The authors replied to my previous comment that they had clarified the paper by specifying in the Methods section that both the school entry vaccination and the catch up campaign among 1-15 yo are administered to individuals who were NOT VACCINATED during routine programs.

When I look at the WHO website on vaccination schedules, I see that in Italy MMR or MMRV is recommended in the 2nd year of life and at school entry. That is, children are supposed to receive TWO doses of vaccine. The authors state that in the model, only children who were UNVACCINATED were considered eligible for school-entry vaccination. As far as I know, that is not current practice in industrialized countries - if a child has only had ONE previous dose of vaccine, they are given another dose at school entry. If a child has never been vaccinated against measles, they are given 2 doses at school.

I'd suggest, therefore, stating clearly (if this is the case) that children who had already had ONE dose of measles-containing vaccine were NOT considered eligible for school-entry vaccination (or for the catch-up campaign) in this model. Alternatively, if children who had only had 1 previous dose of vaccine were eligible, then state that children who had received ZERO OR ONE previous dose were considered eligible...

Following the reviewer's suggestion, we modified the text to clearly state that, in our model, children who had already had one dose of measles-containing vaccine were not considered eligible for school-entry vaccination. Although - in principle – children who had only had one previous dose of vaccine may be also targeted by vaccination at school entry and two doses of vaccines may be administered to individuals who have never been vaccinated, the assumption we
made may apply to a broader set of countries and epidemiological conditions, highlighting the potential impact of school entry vaccination under a more conservative scenario.

We modified accordingly the manuscript by adding the following paragraphs in the Methods section:

"In particular, in the model, individuals who had already had one dose of measles-containing vaccine were not considered eligible for school-entry vaccination."

and in the Discussion section:

"Finally, in our model, children who had already had one dose of measles-containing vaccine were not considered eligible for school-entry vaccination. Although - in principle – children who had only had one previous dose of vaccine may be also targeted by vaccination at school entry and two doses of vaccines may be administered to individuals who have never been vaccinated, the assumption we made may apply to a broader set of countries and epidemiological conditions, highlighting the potential impact of school entry vaccination under a more conservative scenario."

On a related note, it would also be helpful to define what they mean by "coverage" of each strategy. Does 40% "coverage" of school entry vaccination mean that, of children who had not been vaccinated prior to school entry, the strategy vaccinated 40%?

Likewise, does e.g. 30% coverage of the catch-up campaign mean that 30% of the children who had not previously been vaccinated were vaccinated during the campaign? It is important to specify this clearly because WHO reports "coverage" according to the entire target population of a catch-up campaign which is the entire population in the relevant age group - most campaigns are unselective, that is they offer vaccine to all children irrespective of how many doses they have had before.

Thanks for the useful suggestion. Please note that, in the new version of the manuscript, in order to specify this important point a remark on this was added in the Methods as follows:
"The considered coverage levels of school entry vaccination and catch-up campaign should be therefore interpreted as the proportion of vaccinated individuals among those who has never been vaccinated prior school entry or before the catch-up campaign."