Author's response to reviews

Title: Support for Immunization Registries Among Parents of Vaccinated and Unvaccinated School-Aged Children: A Case Control Study

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Author's response to reviews: see over
We would like to thank the reviewers for the helpful comments. Please find below the comments from the reviewers and point-by-point responses.

**Reviewer:** Sarah J Clark  
**Reviewer's report:**

**General**
This is an interesting topic and a well-written manuscript.

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**Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)**

Comment 1) The authors should consider carefully the extent to which their study conclusions are supported by their data. Given low level of parent awareness, possibly inaccurate knowledge of current participation, and general support for registries (even among parents of exempt children), do parents really have a strong impact on registry participation rates? Or could it be that this study actually supports a policy of opt-out from registries, in that parents are generally supportive, particularly if the option for non-participation exists? This policy angle might be quite helpful to states who are struggling with the question of whether opt-out will satisfy parental concerns.

Response: We have made the suggested changes. Specifically, we have made the point in our discussion section (lines 247-250) that parental support for immunization registries may not be a strong predictor in registry participation. We also suggest that our study findings may support opt-in rather than opt-out registries.

Comment 2) The authors should carefully consider their conclusion increased provider-to-parent education about vaccine risks and benefits will work to improve registry participation rate. It is not clear from these data that parent attitudes about vaccine risks and benefits are linked to opt-out (or failure to opt-in) of registries. Rather, it may be the case that providers decisions about their own practice needs and potential benefits related to registries have a stronger effect on participation.

Response: We agree with the reviewers’ point that providers decisions about their own practice needs and potential benefits related to registries have an important impact on participation. We have now included a paragraph (lines 279-290) making this point by reviewing other literature related to provider participation in registries, including perceived advantages and barriers to participation. We have also limited our discussion of parents’ attitudes towards immunizations to state that improved vaccine risk communication may impact parental attitudes toward registries. Our data show a strong association between parental support for vaccine registries and perceived disease susceptibility, disease severity, vaccine safety and vaccine efficacy. We have deleted the discussion of educating parents for the purpose of improving registry participation.

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**Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)**
Comment 3) Please add Ns to all tables. Clarify the statistical tests shown on Table 2.

Response: We have added N’s to all tables. We have clarified the statistical test shown on Table 2 by providing a footnote with an explanation of the Fishers Exact Test.

Comment 4) The authors might consider commenting on the accuracy of parental responses regarding enrollment of children in the registry. Does this translate to refusal to opt-in/active opt-out of a state registry? Why or why not?

Response: We recognize that parental response regarding enrollment in the registry may suffer from information bias as parents may have had their children enrolled in a registry but were not aware of this. We now mention this potential bias in the limitations section (lines 268-270).

Comment 5) The authors might consider focusing data presentation and discussion on the difference in parental responses between the opt-out states and the opt-in state. These represent different paradigms for immunization registry, likely based on perceived concerns about parent willingness to participate. Are those concerns evident in the data?

Response: Only 1 of our 4 study states (Massachusetts) has opt-in registries whereas the other 3 states operate opt-out registries (Table 1). We provide a stratified analysis of parental responses by state in Table 2, allowing the reader to make comparisons between states. It is noticeable that Massachusetts, the state with opt-in, had the lowest percentage of parents aware of the registry. We now make this point on line 202.

Discretionary Revisions (which the author can choose to ignore)

Comment 6) A clearer description of the selection of study states might be helpful.

Response: We have improved the clarity of this statement (lines 123-124).

Reviewer: Mary Patricia Nowalk
Reviewer's report:

General
This is in general, a clearly written report on an emerging topic. There are some modifications which I believe would improve the paper.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Comment 1) Methods: Although this is a substudy of another, I would like some demographic information about the parents. This would help put the responses into a context.
Response: We have included a brief paragraph describing the demographics of the study population, lines 195-199.

Comment 2) Methods: Last para, 2nd sentence is confusing, as written. Do you mean, "The lowest quartile of mean scores was compared with the remaining quartiles for regression analyses?"

Response: Yes, the lowest quartile of mean scores was compared with the remaining quartiles in regression analysis to determine if these constructs were associated with support for immunization registries. We have re-written these sentences (lines 175-182) to improve clarity.

Comment 3) Methods: Why were these four states selected? Were the selected schools in Colorado and Massachusetts within the regions with the IRs?

Response: These four states were selected based on exemption rates and to be geographically distributed throughout the United States (lines 123-124). Schools were not selected in Colorado and Massachusetts within the regions with the IRs. This is now included as a limitation (lines 270-271).

Comment 4) Results: I would like to know which of these registries notifies parents about immunizations that are due for their children. This might have an impact on their views of IRs.

Response: Registries in all four states report the ability to send out reminders and recalls, but this does necessary mean that these registries actually use this capability. The frequency of use of reminders and recalls within these states are not available.

Comment 5) Discussion: There is very little comparison with any related previous work.

Response: We have substantially expanded our discussion section relating our findings to previously published research, particularly in the area of provider participation in registries (lines 279-290). We are not aware of studies examining parental attitudes towards registries and particular parents who do not vaccinate their children. This is a unique contribution of our study to the literature.

Comment 6) Discussion: It is unclear whether those who reported support of IRs received information on the survey about them, or whether only those aware of IRs were asked if they supported them.

Response: We provided a brief description of immunization registries in the survey instrument. This information is included on line 133.

Comment 7) Discussion: A limitation that is not mentioned is the fact that so few parents were aware of IRs.
Response: This limitation is now mentioned on lines 267-268.

Comment 8: Discussion: Why do you use a published citation for "anectodal information?"

Response: While this information was published, the source is a convenience sample using focus groups. Thus, it is important for us to point out that this statement is not derived from a random sample or measured through quantitative instruments.

Comment 9: Tables 2 and 3: These tables would be much more illuminating if Ns were included as well as %s.

Response: We have added the Ns to tables 2 and 3.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Comment 10: Abstract: Methods, 1st sentence, suggest exempt from rather than exempt to, next sentence, eliminate comma after Surveys.

Response: We changed “exempt to” to “exempt from” (line 42) and deleted the comma after “Surveys” (line 44).

Comment 11: Abstract: 2nd sentence of the conclusions should be in the Results section.

Response: We have moved the 2nd sentence of the conclusions to the results section, now lines 51-52.

Comment 12: Background: page 6, Suggest reversing paragraphs 2 and 3 to be consistent with the format of the results.

Response: As suggested, we have reversed paragraphs 2 and 3 in the background section (page 6).

Comment 13: Comment Results: Would like a P value on the response rate.

Response: The reviewer seems to have misunderstood what we are reporting. The response rate is the proportion of respondents who completed the survey. It is not possible to calculate a p value for the response rate as there is no variance.

Comment 14: Results: Para 3, Should be communities not community and Respondents not Respondent.

Response: “Community” was revised to “communities” (line 201) and “respondent” was revised to “respondents” (line 202).
Comment 15: Discussion: para 2, Change finding to findings.

Response: This portion of the discussion has been deleted (see comment 2 from reviewer 1).

Comment 16: Discussion: Para 3, 4th sentence. Suggest a citation for statement regarding Health care providers, change impact (a noun) to affect (a verb).

Response: We have provided a reference for the statement regarding health care providers (reference # 15) and changed “impact” to “affect” (line 280).

Comment 17: Table 1 could be less wordy.

Response: We have revised Table 1 to make is less wordy.

Comment 18: Tables 3 and 4: Suggest using the term "Number of Antigen Exceptions" instead of "number of antigens exempt for."

Response: The term “exempt” is used in nearly every state law and throughout the medical and public health literature to refer to parents who have an “exemption” to school immunization requirements. We have used this term consistently throughout the paper. Using the term “exception” rather than “exempt” would likely confuse the reader as it is not consistent with other published papers on this topic.

Comment 19: Table 6 could be eliminated and put into text.

Response: We have eliminated Table 6 and put these findings in the text (lines 229-232).

Comment 20: Tables 4 and 5 are not really improved by adding the total rows.

Response: We have deleted the total rows in Tables 4 and 5 but included the N’s for all cells.