Reviewer's report

Title: Increased Prevalence of Methicillin-Resistant Staphylococcus aureus Nasal Colonization in Household Contacts of Children with Community Acquired Disease

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Reviewer: James McKinnell

Reviewer's report:

I congratulate the authors on an interesting report on MRSA colonization in household contacts. These data are a welcome contribution to the literature and will likely be helpful to other investigators in the field.

I would suggest some minor essential revisions and discretionary revisions.

1) The authors have used the term "Colonization rate" throughout the manuscript. I believe they are trying to describe the "prevalence of colonization" as I do not see data on colonization/time. Essential

Abstract:

2) Within the results section, I would clarify the units. For example in line 14, it should be 18/77 household contacts of patients with MRSA and 3/77 household contacts of control patients. Essential

3) The authors choice to start the results section with data on colonization due to SA is somewhat confusing. As the objective of the study was to examine MRSA colonization, the reader is expecting to read about MRSA, not all SA isolates. Consider presenting the MRSA data first. Discretionary

Introduction:

4) One line 12, the authors write, "colonization with MRSA precedes infection". While I believe this to be true, the data would suggest that, colonization with MRSA often or usually precedes infection. Discretionary

Methods:

5) The authors should comment on how they chose the household contacts. Did they test everyone in the household? What do they mean by available? Just those who visited in the hospital or did the investigators do home visits? This is not a "make or break" distinction, but it should be specified. Essential

6) On page 7, the authors explicitly state their power calculations. This may explain the selection process from question 5. If it was used to define the sample size, it should be moved to the data collection section. Essential
7) "using cotton swabs" --- please be more specific. Moistened or dry cotton swabs. What product was used -- copan, other? Were both nares tested or only one? Essential

Results

8) The authors use of the terms participants and individuals are unclear. Do they mean index versus control patients or are they talking about household contacts? Please be more specific. Essential

9) As above, the transitions from all SA and MRSA are confusing. They authors have focused their investigation on MRSA -- perhaps these results can be shared first. discretionary

10) The authors state that they collected data on anitbiotic use in household contacts. These data could be used to create an interesting multivariable logistic regression for colonization in household contacts. Discretionary

Discussion

11) the statement on lines 19 and 20, "CA-MRSA strains may replace MSSA strains" should be more clearly explained. This is not necessarily the conclusion that I would have made using your data. There is clearly a difference between the two groups, but how do can you conclude that MRSA has "replaced" MSSA. Consider deleting or stating more clearly. Compulsory.

12) Page 13, line 8 and line 9. The discussion of airborne transmission seems out of place. There are no data on airborne transmission in this paper.

Finally:

I briefly commented on a multivariable logistic regression analysis of household contact colonization. The authors have collected some interesting data including antibiotic utilization in household contacts and pulsefield typing. It would be really interesting to investigate the impact of pulsefield type on likelihood of nasal colonization in contacts. Discretionary.

The authors reference other investigations that have shown that patients who are colonized with MRSA often develop skin and soft tissue infection. As an additional outcome, it would be interesting to see how many of the household contacts, case patients, and control patients in the current investigation were re-admitted to the hospital for MRSA or developed SSTIs. Discretionary

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare the I have no competing interests