Title: Children with pertussis inform the investigation of other pertussis cases among contacts

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Author's response to reviews: see over
Dear Reviewers

re: Children with pertussis inform the investigation of other pertussis cases among contacts

We have revised the article as suggested and written some paragraphs. The list of comments and changes are below. Please do not hesitate to contact us should you require any additional information.

Yours sincerely

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Reviewer: Daniel Floret

The justification of the cut off age 11y1/2 as explained by the authors should appear in the comments (ie. vaccine coverage and age at vaccination in Brazil)

Reply from the authors:

Background

Paragraph 3

Line 1

In Brazil until 2004, pertussis whole cell vaccine was given at 2, 4 and 6 months of age and a booster dose was given between 15 and 18 months of age. In the study area,
pertussis vaccine coverage for 3 doses among children younger than one year of age was higher than 96%.

Reviewer: Alberto E Tozzi

I would suggest to make additional changes to help the reader to correctly interpret the results. The major problem is obviously the low sensitivity of culture for confirming microbiologically contacts of the index case. Maybe the author may add in the discussion a word of caution not only for the low sensitivity of diagnosis test but also for the potential of misclassification for individuals with cough.

Reply from the authors:

Discussion

Paragraph 1

Line 1

In this study, nasopharyngeal culture was the only laboratory test used to confirm the diagnosis. It is likely that more cases would have been confirmed if serology and polymerase chain reaction assays were available. Finally, it is possible that some individuals in which the pertussis was confirmed using the “household outbreak criteria” (cough lasting at least 14 days, in a household with two or more pertussis cases, where there was one culture confirmed case) may have had another respiratory disease and have been misclassified.

The authors may add in the background some information on immunization schedule and coverage in the area where the work was done. Also some epidemiological information such as age distribution of endemic cases, and frequency of outbreaks would be useful.
Reply from the authors:

**Background**

Paragraph 3

Line 1

In Brazil until 2004, pertussis whole cell vaccine was given at 2, 4 and 6 months of age and a booster dose was given between 15 and 18 months of age. In the study area, pertussis vaccine coverage for 3 doses among children younger than one year of age was higher than 96%.

**Comparison of cases by immunization status was made by chi square test. Authors may consider to calculate a relative risk which would underline the risk of being a case when not vaccinated**

Reply from the authors

**Background**

Paragraph 3

Line 4

The study of vaccine effectiveness in contacts revealed a low vaccine effectiveness against clinical disease, 12.5% (compared to children who received one dose only). On the other hand, vaccine effectiveness in reducing the transmissibility of a vaccinated primary case aged 7 months to 5 years old was 61.6%. This may have a significant effect in reducing circulation of *B. pertussis* in the studied population.⁸

**There is no information on case management after investigating secondary cases. Did the author feel that case tracing was helpful in controlling the spread of the**
disease? Adding a comment on this may reinforce the take home message that every index case should be investigated for secondary cases.

Reply from the authors:

Results

Paragraph 7

Line 1

Everyone who have had contact with the index case and did not have cough when examined received chemoprophylaxis. The index cases and secondary cases received treatment to pertussis as indicated by the Brazilian Health Ministry.

The authors should be cautious in the conclusions since microbiological confirmation of cases is lacking in most contacts.

Reply from the authors:

Paragraph 6

Line 3

Ideally, in addition to nasopharyngeal culture for *B. pertussis*, a more sensitive diagnosis test like PCR should be introduced to optimize the identification of new cases.