Author's response to reviews

Title: Emerging pneumococcal carriage serotypes in a high-risk population receiving universal 7-valent pneumococcal conjugate vaccine since 2001.

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We thank the reviewers for their comments. In response we have made the following changes.

Reviewer Eugene Leibovitz

1. Rationale for choice of schedule.

The schedule recommended for Australian children is provided by the Australian National Health and Medical Research Council and the Department of Health and Ageing. Recommendations for use of a 3 dose primary course followed by a booster dose of 23PPV at 18 months of age was made for the Northern Territory, South Australia, Queensland and Western Australia but not the Australian Capital Territory, New South Wales, Victoria or Tasmania. This decision was not in the hands of the authors. We have published a paper on the immunogenicity of this schedule1

2. The colonisation rate for 7PCV serotypes was low in all regions in both 2003 and 2005. We believe that low carriage of 7PCV types was due to 7PCV. Widespread surveillance was not undertaken in the pre-7PCV years. However, 7PCV carriage in three of the communities surveyed in the pre-7PCV years was 60%. This is mentioned in paragraph one of the Background.

3. Discussion of IPD

We are often criticised for not making a link between IPD and carriage, and that such a link is required to justify carriage surveillance. This section of the discussion is therefore dedicated to addressing this perceived deficiency. The
section has been shortened by removing detailed data from the cited publications.

Reviewer Bill Hausdorff

Age
There was a significant difference in mean age between the two survey years. We have therefore added paired comparisons for other narrow age ranges (Table 2), as suggested by reviewer. We have changed the comparisons of 23PPV vaccinated and non-vaccinated to children over 18 months of age.

6C
We have completed PCR analysis to identify all 6Cs in this study, and re-analysed the data to show serotype 6C and 6A separately in Table 2 and Table 3.

Minor revisions
Overall positivity difference in Table 2 are likely due to one region in particular. This demonstrates the importance of regional differences in pneumococcal epidemiology and warns against generalisations, at the species and serotype level.

We have changed penicillin resistant to penicillin non-susceptible.
Recommendations for 23PPV booster in South Australia have been clarified.
The use of 7PCV in the non-Indigenous populations is the topic of another paper we have in preparation. Because 7PCV was not funded for non-Indigenous children until early 2005 (compared to 2001), and because risk and exposure are so different, our data from this population warrants separate paper.
Two bars are provided for antibiotic non-susceptibility in Figures 2a and 2b.