Reviewer's report

Title: The dynamics of nasopharyngeal streptococcus pneumoniae carriage among rural Gambian mother-infant pairs

Version: 1 Date: 27 January 2010

Reviewer: charles feldman

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This was a prospective study undertaken among 196 mother-infant pairs recruited at birth from six villages in West Kiang region of The Gambia. Nasopharyngeal swabs were taken from mother infant pairs at birth and at 2, 5, and 12 months and cultured using standard techniques for S. pneumoniae, which, if found, were serotyped. The main aim was to understand better the dynamics of pneumococcal transmission and carriage in order to inform control strategies. The main findings were that pneumococcal carriage was highly prevalent in these mother-infant pairs. Colonisation in the infants occurred very early and reached a plateau at 2 months. The colonization was rapid and highly dynamic. Immunity or inter-serotype competition appeared to play a role in the dynamics. While there was a strong association between maternal and infant serotype carriage, more than 90% of infant carriage appeared to be derived from sources other than the mother. It was therefore considered that reducing mother-infant transmission would have little impact on infant carriage. There were some marked differences in dynamics between vaccine and non-vaccine serotypes. The study adds interesting and important information to the understanding of pneumococcal nasopharyngeal colonisation.

Comments
1) There are a number of external factors that may impact on pneumococcal nasopharyngeal colonization, such as presence of HIV infection and cigarette smoking, among others. Were these taken into consideration in the current study?
2) The current investigation was a sub-study of a high dose vitamin A study conducted in the region. It is well recognized that vitamin A supplementation at birth may delay pneumococcal colonization. Could this have impacted on the findings of the current investigation?