Reviewer's report

Title: Invasive meningococcal disease epidemiology and control measures: a framework for evaluation

Version: 1 Date: 25 September 2006

Reviewer: Thomas Clark

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General
The authors present a well-written, clear and concise description of their model of the effect of meningococcal vaccination on invasive meningococcal disease. I believe the references and inputs used are appropriate, and the assumptions made are valid, but this should probably be reviewed by a mathematical statistician or expert in decision analysis.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
1. Page 11, first paragraph under "Efficacy/Direct effects. I believe the authors are referring to reference 11 in the first sentence (Trotter et al. Lancet 2004;364:365-367.
2. Same paragraph. The description of extrapolating waning efficacy is not clear. The reference above only includes two data points, efficacy at less than one year and at greater than one year. Are these the data from which the authors extrapolate? Did they receive additional data from the authors? If possible, a curve could be included, so that the reader could at least be intuitively convinced that the exponential function is an appropriate one. This is not necessarily intuitive in the data, or accepted as a function of waning efficacy, so additional information or a reference would help. This has implications in how long the model is iterated. Over time, it may be quite susceptible to variations in waning immunity, which I believe the authors should also address.
2. Similarly, the authors discuss that the results of the model can be presented over any time horizon, but I do not see in the paper the time horizon of the results presented.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
1. Last paragraph on page 3, as written, "...does not prevent carriage of the disease..." should be "does not prevent carriage of the bacteria..."
2. Similarly, in the next sentence, "conjugate vaccine are available that may (or "are expected") offer better effectiveness.
3. Next sentence, "...may also protect against carriage of meningococci,"
4. Page 10, second paragraph, the authors describe the "resulting risks" of infection during high incidence periods, including "87.5 for serogroup B." Is this a relative risk, or 87.5 times the baseline risk? Please clarify.

What next?: Accept after minor essential revisions
Level of interest: An article of importance in its field
Quality of written English: Acceptable
Statistical review: Yes
Declaration of competing interests:
I declare that I have no competing interests.