Reviewer's report

Title: Geographic correlation between deprivation and risk of meningococcal disease: an ecological study

Version: 1 Date: 21 April 2004

Reviewer: Maria N Tsolia

Reviewer's report:

General

This is an interesting study that provides additional data about the influence of socioeconomic factors on the incidence of meningococcal disease and is worth publishing.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

There are, however, some questions about the methodology used:

1. The study was based on retrospective data collection and was not prospectively designed.

2. Did the «enhanced surveillance system» used include active surveillance? Has the system been validated for completeness of reporting? There may be missing cases especially from wards with low incidence (only 27% of the wards reported = 1 case in the two study years and there was a great variation in disease incidence between different wards)?

3. It is not mentioned at all in the study how many cases were probable and how many were confirmed cases of invasive meningococcal disease.

4. Complete information is lacking in a considerable number of cases (42%) and therefore potential bias due to incomplete data collection cannot be excluded.

5. The influence of race/ethnicity, serogroup and immunization (against serogroup C) on disease incidence was not examined.

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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. The last paragraph in the background (page 4): “The Eastern region of England is made up ….Peterborough and Luton” is better to be moved to The Methods after the first paragraph and before “Data sources”.

2. The Welsh study by Fone et al, 2003 is mentioned several times in the text and is not included in the reference list. It should be included there and numbered accordingly.

3. In the Results section, under Age distribution and deprivation: In which age groups was there a significant difference in the incidence of meningococcal disease (in addition to the under one and one to four age groups), i.e. the difference in the 15 to 19 year olds was significant?.
4. In the Discussion & Conclusions section, second paragraph, line reference [14] has to mentioned after Thames study.

5. In the Discussion & Conclusions section, page 14, last paragraph, last sentence: It is mentioned for the third time in the text and can be omitted that the rates quoted are 42% lower than the true incidences due to the loss of cases.

Discretionary Revisions (which the author can choose to ignore)

1. It is not clear if population density and overcrowding have been used interchangeably in the text. How was overcrowding evaluated (family size was taken into account?).

2. The comment is made that a high incidence was found in rural deprived areas. It would be useful to compare rural and urban in a regression model.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions