Reviewer's report

Title: A typhoid fever outbreak in a slum area of South Dum Dum, West Bengal, India, 2007: Evidence for food borne and water borne transmission

Version: 2 Date: 7 September 2008

Reviewer: Buddha Basnyat

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Review for the paper entitled

A typhoid fever outbreak in a slum, South Dum Dum, West Bengal, India, 2007: Evidence for food borne and water borne transmission

General comments:

Enteric fever is a major problem especially in the area of study and constitutes serious public health interventions. The paper is well written and I think that the authors have tried to be thorough in their epidemiological description, but I feel that there are severe limitations in the study regarding the case definition, methods, and interpretation.

Specific comments:

1) The methods:

The case definition: I feel that fever of one ore more weeks with general signs of malaise, headache, anorexia, cough, constipation, diarrhoea, and rashes are not enough to definitively identify as typhoid fever. There is a huge overlap of typhoid symptoms with commonly occurring diseases in this area, for example typhus leptospirosis, malaria and dengue for starters.

The laboratory investigations: I think that there has been over reliance on confirmation of diagnosis with the Widal test whose sensitivity is very low. This test is dismissed by experts as being not reliable. Blood culture is a gold standard method of enteric fever diagnosis, but its sensitivity is also low.

Case control study design: How was the “area of outbreak” defined? Were surrounding areas looked at for fever cases?

2) The results:

The descriptive epidemiology and laboratory investigations: How were the 103 cases identified? 65 were Widal positive, one was culture positive, what about the remaining 37?

For the environmental samples, was Salmonella isolated from either water samples or food products from the sweet shop?

Causative agent: In the discussion it is stated that Salmonella Typhi was the
causative agent of this outbreak (Pg 9; 2nd paragraph). I do not think that this inference can be made. First the area of outbreak is not clear. There was only one Salmonella Typhi in the blood culture. Results of Widal cannot be relied on to conclusively implicate the organism. Though coliforms were isolated from water, and food products from the sweet shop, Salmonella spp was not identified. I think that all these reasons make the implication of Salmonella Typhi as the causative agent circumstantial.

The end of the outbreak of fever after intervention with chlorine was a positive sign. However, this still does not rule out the fact that there could have been other reasons apart from Salmonella Typhi for the fever outbreak

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

'I declare that I have no competing interests' below.