Reviewer's report

Title: Relationships between deprivation and duration of emergency admissions for common childhood acute illness in North West England: an analysis of hospital episode statistics

Version: 2 Date: 19 December 2011

Reviewer: Sonia Saxena

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S Saxena

The authors have made a number of improvements that have improved the clarity of this paper but I am afraid my main concern with this paper as in the previous review is that the conclusions are not supported by the analysis presented here.

My main comments on this revised draft are:

Major:

Concerns re Validity:

I still think that the claim that this paper examines common childhood conditions is not supported by what is presented. Common childhood illness is not encapsulated by the 3 selected ICD-10 codes of breathing difficulty, feverish illness and diarrhoea.

There are 2 options to address this. The title, abstract and manuscript could spell out that the focus is on 3 common conditions (or symptoms) ideally listing them. The background needs to say how common these are in relation to other reasons for emergency admission. Or the authors could in fact present more of the spectrum of childhood illness, but I gather this decision was made with clinicians at an early stage in the project so the data may no longer be available to the authors.

Does LOS have a relationship with deprivation?

The background outlines the problem of high admission rates very briefly but falls short of explaining why the authors think disadvantage might be associated with the rises in admissions or how or why deprivation might be related to hospital length of stay.

Similarly, there are so many measures that were explored and only LOS>4 days that came up as a positive association with deprivation measures. The authors acknowledge for instance in the discussion that their own work examining EARs did not previously find any association with deprivation in London. Their findings this time actually show that there is no relationship between deprivation measures and admission length for the vast majority of admissions. My concern is that this is what this paper really shows but that they are selectively reporting the only positive finding among multiple analyses.
Minor
Methods/ Results
The description of HES has improved and the measures of deprivation are described but need a reference. Later the authors present results on domains of CWI e.g environment, crime not described in methods. More description methods about what these domains measure
It is not clear to what extent these episodes overlapped- i.e the authors explain they did not censor the admissions as only having one of the conditions listed but I don’t think the last sentence in Methods para 4 that explains this point makes sense.

Discussion
The main findings stated in the beginning of this section do not provide a consistent pattern perhaps because there are so many sub analyses presented. The authors need to communicate in this section what deprivation means for children who have breathing difficulty, fever and diarrhoea AND are admitted to hospital for more than 4 days.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

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'