Reviewer’s report

Title: Interaction of Social and Behavioural Factors in Non-Suspicious Unexpected Death in Infancy; Experience from Metropolitan Police Project Indigo investigation

Version: Date: 22 May 2015

Reviewer: Amanda R Highet

Reviewer’s report:

Thank you for inviting me to review this manuscript. An interesting study is presented in which data from police investigations is utilised to look at social and behavioural factors associated with unexpected infant deaths. I have made some suggestions below which I think could improve the manuscript.

Major Compulsory Revisions

The manuscript could be improved by adding some further information about the data that were collected. Especially since this unique dataset is the main focus of the paper. The introduction states that the dataset contained 140 fields, yet we are not told what all these data cover or where the information comes from (police interviews or linked data from other sources?). The reference given for the Project INDIGO protocol (#4) is a web address which I was not able to access. It appears to have been removed from the website. Were all 140 fields of data applicable to this study? Or was it that vast data were collected by the police department, and a subset of it was used for this study? All the variables considered should be described in the methods, or if there are a large number of variables, a large table could be included, or a supplementary file could be made available with the manuscript. The authors also should state how the data were collected. For example, birth data for the infants- was this collected from hospital records, or self-reported by the parents? The large amount of missing cases for gestational age suggests that it was self-reported.

The results section seems quite brief for a study which collected much information. Presumably there were also some non-significant findings from this study also. These should also be reported.

Interactions between co-sleeping and deprivation level, and co-sleeping and unexplained death are analysed, but interactions are not analysed between the behavioural and social factors and unexplained death.

For figure 4, I am not from the UK so not familiar with Boroughs. It would help if these regions were named on the figure (or numbered with a key below the figure).

Figure 5a: I am a bit confused by this graph. Why is both co-sleeping at time of death and not co-sleeping at time of death both shown? Shouldn’t these two factors be inversely related, so that only one needs to be shown? Could this be more easily shown as % co-sleeping for each deprivation category?
Minor Essential Revisions
In the abstract: Should Indigo be INDIGO? (capitals, as in the introduction). Correct grammar in the sentence “We investigate such data provide a contemporary account…”
In the introduction, the word ‘data’ is plural so grammar should be corrected to reflect this (data were, rather than data was).
In the methods: The statistics section needs more detail and descriptions of the tests used. You examined differences between groups using “comparison of proportion or chi-squared tests”. What test did you use for comparison of proportion? What software was used for calculations?
In the discussion, 5th line, please provide a reference for the previously reported seasonal variation.

Discretionary Revisions
-none-

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests