Reviewer's report

**Title:** Evaluating maternity care using national routine datasets: How are statistics affected by the quality of data on method of delivery?

**Version:** 2  **Date:** 24 March 2013

**Reviewer:** Lee Taylor

**Reviewer's report:**

Major compulsory Revisions

1. Figure 1 should be referenced in the text.
2. The Tables should be numbered in the order they appear in the text.
3. A description of the delmeth code should be included in paragraph 1 of the Methods. A formal reference would be very useful.
4. Figure 2: the information used to calculate the “English average” and the ‘Trust rate’ should and included in a footnote to the Figure. The information used to calculate the “English average” should be described in the Methods.
5. Figure 3: the two definitions used should be described in a footnote to the Figure, so the figure can stand alone.
6. Methods. These should include some information on how the information is collected for the HES. That is, are both the core and “maternity tail” data coded by the medical records departments or are the “maternity tail” data entered by clinicians? If there are different staff involved, then this may partly explain the differences: if the processes involve the same staff, then this has implications for future rectification.
7. Methods. Some references should be included that support the use of funnel plots for this purpose. My understanding is that control charts are generally used for monitoring changes over time rather than for cross-sectional analyses.
8. Results. The last paragraph states: “The results also demonstrate that, for most trusts, the differences arose from changes in hospital sample size due to incomplete maternity tail data rather than inconsistencies in coding.” This can be inferred from Figure 2 rather than Figure 3, which is the subject of this paragraph, and should be clarified.
9. Discussion. Some parts of this should be moved to the introduction/background part of the manuscript.
   a) Under the heading “Advantages and implications of the study”
   Sentence 2 of paragraph 2
   b) Under the heading “Implications for the publication of maternity statistics using HES”
   Paragraph 1.
10. Last paragraph: while it is true that external validation studies “can be time consuming, costly and technically challenging” and internal validation “is simpler to perform” the paragraph is written in such a way that it seems to suggest that validation of internal consistency might replace external validation studies. External validation provides a “gold standard” whereas internal validation does not. They are therefore complementary approaches and this should be acknowledged.

Minor Essential Revisions
1. Discussion: Paragraph 1: “the” should be inserted before “HES” in sentence 1.
2. Discussion. Paragraph 12, sentence 1: “routine data’ should be replaced by “administrative health data” here and elsewhere.
3. Remove headings from Discussion.
4. The last paragraph heading “Implications for validation and use of routine datasets” should be changed to “Implications” and given the same heading format as the Methods, Results and Discussion.

Discretionary Revisions
1. Results: The last paragraph states: “The results also demonstrate that, for most trusts, the differences arose from changes in hospital sample size due to incomplete maternity tail data rather than inconsistencies in coding.” The information could be demonstrated in Figure 3 if the size of the dots on the graphs reflected the hospital sample size. This would improve the readability of the manuscript.
2. The discussion focuses on the NHS trusts and the cross-sectional analysis. It would be useful to include some commentary on the implications for monitoring quality at both a trust and national level. For example, while some variation exists in the rates due to the definition used, if the same definition is used over time, then national trend patterns would still be able to be reported, though the limitations of the data and the definition would still be important for interpretation.

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 have no competing interests