Reviewer's report

Title: Determinants of cesarean delivery: a classification tree analysis.

Version: 1 Date: 27 March 2014

Reviewer: Brooke Kinniburgh

Reviewer's report:

Major Compulsory Revisions

Given that several of your decision points relate to factors already used in the TGCS (previous scar, malpresentation, and parity), can you provide more information on how your classification tree analysis is an improvement over assessing indications for CD within specific TGCS groups?

In the model excluding fetal distress/dystocia, fetal weight at delivery was included at a determinant of CD; however, fetal weight is not accurately known until after delivery. Can you address the practical implications of using a variable that cannot be collected prospectively in your decision tree?

It would be helpful to readers if you can provide any information on the reliability and validity with which diagnoses are coded in your dataset, or any changes in documentation and coding practices and standards during the study period, especially re: fetal distress and dystocia. You provide references in the discussion that in other contexts these indications may be present on medical charts as justifications after the fact, or that the necessity for cesarean for select diagnoses offers questionable benefit (p 10 paragraph 2) but the extent to which this may be relevant in your context is not discussed. This may also have implications re: whether diagnostic codes of fetal distress alone comprise the optimal definition to be used in your classification tree (rather than a combination of diagnostic codes and other maternal or newborn/fetal information that may be available from your administrative data).

Discretionary Revisions

Page 3, lines 70-71, change text to “Italy has one of the highest CD rates in the world.”

Page 10 line 244: You note that ICD codes may be more likely to be omitted in the vaginal delivery group, but do not discuss the inverse possibility: diagnoses may be more likely to be documented and subsequently ICD coded in the group with CD. Are there implications associated with this for your study?

Minor Essential Revisions

Line 239, replace ] with )

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

**Declaration of competing interests:**

I declare that I have no competing interests.