Reviewer's report

Title: Geographic variation in cesarean delivery in the United States

Version: 2 Date: 18 June 2014

Reviewer: Gillian Hanley

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Major revisions
1. It's not clear to me whether the CBSA is based on where the mother lived or where she delivered? This has important implications in terms of interpreting the results and should be made clear in the paper.

2. The authors discuss that there was more variation in the Medicaid population but they don't actually provide any numbers to back up that assertion. What about rates of variation? How do they differ between between Medicaid and private insurance?

3. When you say that the differences can be partially explained by the differing relationships between population and market characteristics, can you provide the numbers that back up that assertion as well?

4. This paragraph in the methods section reads “We calculated unadjusted and risk-adjusted CBSA cesarean delivery rates by payer. Risk-adjusted rates were calculated as observed cesarean delivery rate divided by expected cesarean delivery rate, multiplied by the overall CBSA average cesarean delivery rate. The expected delivery rate was estimated using a discharge-level logistic model using cesarean delivery as the outcome, adjusting for maternal and neonatal characteristics associated with an increased risk of cesarean delivery.” But then I never see any expected or risk-adjusted rates reported in the paper.

5. The results section on Geographic regions is only two sentences long and really doesn't say anything concrete about regional variation. Can you provide some stats that are variation-specific? Rates of variation, etc?

6. I'm unclear about what this study adds to the literature. It seems like it is probably the comparison between cesarean section by private insurers and Medicaid that is novel and original but that doesn't really come through in the paper. Can the authors add some text that puts these findings in context of what we already know about cesarean section? We already know there is regional variation, we already know that obs and GPs have higher rates than midwives. We already know what is predictive of increased CS. The authors need to communicate what addition to the literature their study has made.

7. What do we already know about differences in CS between Medicaid and private insurance? Can the authors provide a paragraph in the discussion placing their study in the context of this broader literature?
Minor essential revisions
1. It seems to me that this paper spends considerably more time discussing predictors across payers and examining whether risk factors are associated differently with cesarean section among Medicaid and privately insured populations. It seems rather less focused on regional variations in cesarean section. Thus, I find that the title is misleading. I would recommend revising it to reflect the focus on the comparison between the payers.

Discretionary revisions
1. Is it possible to provide information about validity and reliability of data sources? I did find myself wondering about data quality and a few references to some studies that have the validated the datasets in use would be an easy way to avoid this.

**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