Reviewers report

Title: Costs of vaginal and caesarian section delivery at a public sector hospital in a major city of Pakistan

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Reviewer: Stavros Petrou

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Re: 'Costs of vaginal and caesarian section delivery at a public sector hospital in a major city of Pakistan'
Authors: Attia Khan and Shakila Zaman

Increases in instrumental vaginal delivery and caesarean section rates worldwide have generated questions about the economic implications of alternative modes of delivery. A relatively small number of published studies have revealed that instrumental and operative deliveries cost the health services substantially more than spontaneous vaginal deliveries. The additional costs are largely attributable to the additional staff inputs during the delivery itself and an extended inpatient stay. Fewer studies have estimated out of pocket expenditures associated with alternative modes of delivery by women and their families/carers. Such assessments could inform the planning of hospital and community health services, as well as provide a basis for assessing competing strategies for research and prevention. The objective of this paper was to estimate the costs of alternative modes of delivery in a Pakistani teaching hospital.

Major Compulsory Revisions

1. In several places, the paper implies that the cost data it generates can inform the efficient allocation of resources in this area of health care. This is incorrect. It is information on both incremental costs and incremental health gains associated with specific health care interventions that can inform issues of allocative and technical efficiency. The authors should state how the data from their study could and should be used. Statements such as ‘determining the cost of vaginal delivery and caesarean section …will provide clinical as well as public health advantage for improving maternal health in Pakistan’ (page 4) should be qualified and substantiated.

2. The authors should provide information on the risk profiles of the study groups and discuss the generalisability of their results to other maternity contexts.

3. Page 5, final paragraph: The authors should state at what stage the women were interviewed. Was this after the women were discharged from hospital? Were the interviews conducted in the women’s homes? Were there any concerns about patient recall of resource use or clinical events?

4. Having read the paper several times, I was left a little confused about the top
down costing methodology that was employed. I think this requires a lot more
detail. For example, how were medical and nursing staffing inputs in each ward
 accounted for? If you are applying the principle of opportunity costs to direct
non-medical costs, then why not also apply it to direct medical costs and account
for variable occupancy rates and alternative uses of staff time?

5. The analytic strategy employed by the authors is weak. It is imperative that the
authors perform the following: (i) clarify how they dealt with missing data; (ii)
identify the covariates they included in the multiple regression model (table 7);
(iii) tabulate the results of their multiple regression model; (iv) use a technique
such as non-parametric bootstrapping to handle the skewed nature of their cost
data; (v) perform a statistical test such as an independent samples t-test to
compare the cost estimates of the two comparison groups; and (vi) perform a
sensitivity analysis that varies the values of parameters over which there was a
degree of uncertainty.

6. The paper would benefit from a far more extensive discussion of the study
limitations. A number of important issues are either glossed over or completely
ignored. For example, I would like to see some discussion of the limited time
frame upon which the economic study is based. We know that caesarean
sections may contribute to higher rates of maternal postpartum depression and
post-traumatic stress reactions, placenta praevia, abruptio placenta, subsequent
miscarriage, repeat operative delivery and decreased fertility rates. It is plausible
that these adverse sequelae result in economic costs not captured by a study
with a short term time horizon. By excluding these costs, it is possible that the
analysis has underestimated the cost differential between spontaneous vaginal
delivery and caesarean section.

7. The authors should provide a clear explanation for why instrumental vaginal
deliveries were excluded.

Minor Essential Revisions

1. The term ‘unit cost’, which is used throughout the paper, is usually applied to a
specific resource item rather than a clinical event, such as spontaneous vaginal
delivery. Consistent parlance with the broader health economics literature is
required.

2. Page 2, 2nd sentence of the ‘methods’ sub-section: Please specify the groups
the 65 and 68 women were allocated to.

3. The abstract (and indeed the discussion) would benefit from translating the
cost estimates into a widely used currency (such as US dollars or Euros) using
purchasing power parities. This would be in addition to presenting the costs in
Pakistani rupees.

4. Page 3, final sentence of fourth paragraph: References should be given for the
two costing studies that are referred to.

5. Page 5, line 4: The exact dates of the study should be stated.

6: Page 5, line 7: The hospital and city in which the study was conducted should
be named.
7. Page 8: The representativeness of the study population should be described.

Discretionary Revisions

The spelling and grammar is poor in several places. I quite understand if the authors are not native English speakers, but in order for the paper to be published in a creditable journal it should be radically proof read and re-written in accordance with the language requirements of BMC Pregnancy and Childbirth. There are several examples of this on each page of the manuscript. For example, the title of the manuscript “costs of vaginal and caesarian section…” should be changed to “costs of vaginal delivery and caesarean section…”

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

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.