Author’s response to reviews

Title: Quality in perinatal care: applying performance measurement using Joint Commission on Accreditation of Healthcare Organizations indicators in Italy

Authors:
Claudia Pileggi (claudiapileggi@unicz.it)
Lorena Squillace (lorenasquillace@gmail.com)
Mariavalentina Giordano (mariavalentina.giordano@hotmail.it)
Rosa Papadopoli (rosypapadopoli84@gmail.com)
Aida Bianco (a.bianco@unicz.it)
Maria Pavia (pavia@unicz.it)

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Professor Antonia Jelicic Kadic
Editor-in-Chief
BMC Medical Research Methodology

RE: Manuscript BMRM-D-18-00576: Quality in perinatal care: applying performance measurement using Joint Commission on Accreditation of Healthcare Organizations indicators in Italy.

Dear Professor Jelicic Kadic,

thank you for having reviewed the manuscript “Quality in perinatal care: applying performance measurement using Joint Commission on Accreditation of Healthcare Organizations indicators in Italy” to be published on BMC Medical Research Methodology.

We have accordingly attached a copy of the revised version of the paper. All requests made have been taken into account.

Joseph Restuccia (Reviewer 1):
In their conclusion the authors correctly point out that lack of reliability among quality measures between institutions and countries is a barrier to comparison of quality performance. They further state:

However, to ensure the improvement of hospital performance it is essential to increase efforts to implement evaluation processes that reflect the healthcare quality current evidence and related practice guidelines.

It would be useful to provide specific ways that these efforts could be implemented. For example, despite the difficulty of comparing performance with other institutions an institution can ensure that performance metrics are measured reliability within that institution thus enabling comparison of performance over time. Moreover, the utility of the study would be enhanced if this were done after a quality improvement intervention so that the research design were a pre/post treatment study.

In response to this point, we agree with the reviewer that the use of these indicators may enable comparison of performance over time within an institution, thus measuring also the effectiveness of improvement interventions. Indeed, the use of the JCAHO perinatal core indicators in the institution was made as an attempt to measure the feasibility of these performance indicators in our context and to have a “pre” measure before the implementation of a quality improvement intervention. To clarify this point, we have now specified this in the objectives of the study and we have rephrased the conclusions as follows: “In conclusion, our findings revealed significant deficiencies in the adherence to recommended processes of perinatal care and, consistently with previous studies conducted by some of us to estimate the adherence to evidence-based processes of care in several settings,[7,44,45] suggest that it is essential to increase efforts to implement evaluation processes that reflect the healthcare quality current evidence and related practice guidelines. The application of the JCAHO PC indicators has demonstrated to be feasible, intuitive and useful to measure perinatal hospital performance, and, although the poor comparability among multiple available quality measures represents a barrier, these performance metrics can be at least reliably used within and institution, thus enabling comparisons of performance over time, particularly after the implementation of quality improvement interventions.”

In the introduction the authors state there are sparse and often non-standardized data for perinatal indicators in Italy. They would know this better than I would, but I am a bit surprised at this statement given the work of Sabina Nuti and colleagues for the past several years developing performance indicators across many medical conditions including maternal and child health.

As suggested, we have included reference on perinatal indicators in Italy (Nuti S, Bonini A, Murante AM, Vainieri M. Performance assessment in the maternity pathway in Tuscany region. Health Serv Manage Res. 2009;22:115–121).

The following statement is not clearly written: Moreover, as reported by Clark et al.[16] the calculation of this indicator is prone to errors related to data extraction, carelessness in clinical records documentation, such as presence of indication for delivery, but with ICD9CM code not
approved on the JC exclusion list, or presence of valid indication for early term delivery which do not have an assigned ICD9CM code.

As suggested, this statement has been reviewed and, as well as the following statements, have undergone editing by a native English language speaker (Acknowledgment section).

This statement also is not clearly written. Do the authors mean to say "limitations" rather than "criticisms"?

The significantly lower adherence to PC-05 of <2500 g birth weight newborns as well as in women with previous cesarean section, AROM and, as previous mentioned, with cesarean delivery, are important criticisms of our results. These findings suggest the involvement of several non-clinical factor that would seem to be attributable to the overly cautious attitude of the physician concerning patients' management, suggesting the need of healthcare professionals training improvement.

In response to this point, we meant “concerns” and we have now modified the word.

Charlotte Wool (Reviewer 2):

This study examines if the JCAHO perinatal core indicators were met in a hospital in Italy. The authors state that the JCAHO indicators are a proxy for quality care. The sample size is robust and the authors examined medical records of 1943 women and 1974 newborns born in 2016. The authors are to be commended for their efforts. Suggest a more linear approach to the writing that may be achieved with assistance from an editor.

As suggested, the manuscript has undergone substantial editing by a native English language speaker (Acknowledgment section).

File 1 is a helpful table.

Line 22: Abstract: Please clarify the aims of this study. Aim 1: to report the frequencies of the five JCAHO perinatal core measures and compare results to xx measures (Healthy People 2020?). Aim 2: To examine differences among variables of participant characteristics for each core measure. Aim 3. To run predictor models…..

As suggested, the aims have been clarified. Also, in the Methods section of the abstract, we have described predictor models used in the study to explore the association between some PC indicators (elective delivery, caesarian section and exclusive breastfeeding) and several maternal, pregnancy care and neonatal characteristics.

Line 25: Abstract: Methods/results. Please provide an overview of the statistics that were used. The reader is led to believe that frequencies will be reported but in the body of the manuscript regression models are used. This is confusing.
As suggested, statistical methods have been described more thoroughly.

Line 28: Sentence "indicators were calculated…" is unclear

As suggested, this sentence has been clarified.

Line 45: A paragraph must be longer than one sentence.

As suggested, the paragraph has been lengthened.

Line 68: A paragraph must be longer than one sentence; this sentence is unclear. What do you mean to "assess the adaptability of these quality indicators"?

As suggested, the paragraph has been lengthened and clarified.

Line 88: It is unclear why Healthy People 2010 is being referenced since the 2016 data were analyzed. Suggest comparisons to Healthy People 2020 only.

As suggested, Healthy People 2010 goals have been eliminated and, comparisons have now been referred to Healthy People 2020 and to National Quality Forum (NQF) goals.

Line 101: Paragraph length

As suggested, we have completely rephrased the paragraph.

Line 104: Frequencies; Univariate analysis; Logistic regression models" Please step your reader through your statistical analysis. Frequencies are understood. The regression models are not well delineated. Were regressions run in order to predict outcomes? If so, this needs more clarification and an introduction for the reader.

As suggested, statistical methods have been more thoroughly described.

Line 160: remove the word "substantially"

As suggested, the word "substantially" has been removed.

Line 205-207: Please fix the grammar in this sentence.

As suggested, the grammar has been fixed.

Line 220-226: Grammar needs to be addressed. These sentences are unclear

As suggested, the grammar has been fixed.

Line 231-233: please clarify ….suggesting that these conditions may be associated with complications in the intrapartum setting.
The sentence has been clarified as of your suggestion.

Line 234: what is "this practice" referring to?

As suggested, we have specified that the practice we were referring was cesarean section although, as of you suggestion, this part of the Discussion has been completely rephrased.

Line 238: Please cite "one of the main reasons is that cesarean sections receive higher...." While it is clear that c/s get higher reimbursement how do you know for sure that this is the reason providers are performing them? Is this assertion anecdotal or is there evidence to support it? Your data suggest there may be medical complications and factors that lead to increased c/s rates.

As suggested, we have completely rephrased the paragraph and reasons for high caesarian sections frequencies. Also, we have included references supporting these reasons.

Line 242-245: Please make this paragraph more than one sentence and clarify the statements.

As suggested, we have completely rephrased the paragraph.

Line 246-248: This paragraph is important but does not coherently flow in your discussion. The assertion that c/s is linked to [the lack of] breastfeeding success is in the literature and should be explored more in this paragraph and cited. It is, in this reviewers opinion, a critical reason to avoid c/s when not medically indicated.

As suggested, this part of the discussion has been more thoroughly explored and references have been added to support the need to avoid c/s as related to lower breastfeeding.

Line 249-255: Suggest clarifying grammar in this paragraph and addressing (and citing) evidence-based interventions to increase breastfeeding outcomes.

As suggested, we have clarified the paragraph and have addressed, with references, the evidence-based interventions to improve breastfeeding outcomes.

Line 257: "this practice" - what practice? Please clarify. Please clarify this entire paragraph. Are you saying good prenatal care is associated with better breastfeeding outcomes? Are you suggesting specific educational activities? If so where? In the clinic, community, public, etc.

As suggested, we have clarified the practice we were referring to, as well as the entire paragraph. Also, we have more thoroughly described evidence based interventions to improve breastfeeding outcomes.

Line 267: Please clarify this sentence. It is unclear.

As suggested, we have clarified the sentence.
My colleagues and I are most grateful for the reviewer comments that significantly improved the manuscript.

We hope that these changes fully address the concerns raised therein and that have now brought the paper publishable in BMC Medical Research Methodology

Yours sincerely,

Maria Pavia MD, MPH

Professor of Public Health