Reviewer’s report

Title: Development of a percutaneous coronary intervention patient level composite measure for a clinical quality registry

Version: 0 Date: 11 Jan 2019

Reviewer: Susan Brandis

Reviewer's report:

Many thanks for the opportunity to review this paper that considers the development of a percutaneous coronary intervention patient level composite measure for a clinical quality registry

I have read and re read this paper and provide the following to assist with any future submissions.

As a general comment this paper is well written in high quality English. The structure of the paper needs improving and the tables and figures are out of place. The paper uses a mixed methods approach however lacks methodological rigor. For example the methods section is difficult to follow and this study would be hard to reproduce because detail is lacking. My main concern with this paper it while it makes comment of the predominantly clinical perspective of patient outcomes, with little emphasis on the patient perspective; the approach taken misses the opportunity to include an authentic patient perspective in the method. The absence of any involvement in the Delphi groups of the relative importance of specific outcomes is a huge shortcoming.

I will go through the paper sequentially with dot points referenced to lines in the paper.

72 - The purpose of the registers needs some explanation. Do these indicators relate to the National Safety and Quality standards? Are they important in hospital accreditation? Please elaborate for an International audience. Who will be using these indicators and for what purpose (funding, accreditation, performance monitoring etc). Introducing these issues early in the paper would then allow the authors to refer back to these in the discussion and application to practice. The Australian government is mad keen on payment for quality, reduction of adverse events and the significance of consumer engagement highlighted in the most recent National Safety and hospital accreditation standards. I believe you have missed a really significant impact of the role of KPIs and understate the importance of composite measures and what you are trying to achieve.

76 - unclear what is meant here "recovery following PCI" - do you mean patient function at a particular point in time? There is copious literature on patient experience / patient centred goals which could add to the introduction. The PCI PROM tool needs much more explanation

87 Methods - needs much more explanation. Eg What defines a clinical expert? A broader group (that included social workers and rehabilitation physicians for example) may have yielded a difference ranking. Overall I found the methods section very hard to follow which limits reproduction elsewhere. The Delphi technique is a good one for projects such as these, however the membership of the group needs to be carefully considered

99 - figure 1 is actually a table and requires much greater explanation. Is this validated, how was it
developed and to what extent were patients involved in the development?

106 - how was patient consent obtained and by who?

128 - Component 2 why were clinical experts only involved?

141 - the importance of clinical outcomes to a group of clinicians may be very different to what is important to the patient.

211 - Results. Is the sample consistent with any other PCI registers/epidemiological data?

235 - I am not expert on factor analysis however this is a good approach. The quantitative sections method is more robust than the qualitative.

278 - the other endpoints suggested are interesting, were these considered and if not why? There are also a plethora of other functional outcome measures such as FIM, ADLs, Goal attainment scales and so on. A major limitation is that the participants are from a very narrow and potentially biased and blinkered group. The drop off rate to 7 is a limitation, particularly given the limited diversity in the group.

347 - you refer to the low ranking of the PROM which may be an artifact of the bias in your participant group.

360 - limitations and implications lack depth.

Overall, what you are trying to do has merit, but the paper needs to be strengthened in a number of areas to be publishable. I am not sure how you can correct the underlying flaws in your Delphi groups, but I think is is worth considering. If you tried and were unsuccessful in engaging patients, then this is itself is an interesting story to share. I trust my comments will be taken in the constructive way they are intended. All the best with your future research.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

No

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

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If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.
I recommend additional statistical review

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