Author's response to reviews

Title: Applying the Quality Improvement Collaborative methodology to process redesign: a multiple case study

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Dear Dr. Wensing,

Thank you for reviewing our paper “Factors for success and failure of the Quality Improvement Collaborative methodology for process redesign: a multiple case study”. We are very glad you gave us the opportunity to react to the issues raised by the reviewer 1 and to improve our paper. In this letter we explain which adjustments we made in response to your comments.

Reaction to issues raised by Stephen S.L. Walston (reviewer 1):
- **Issue 1.** Many of the concepts discussed are very vague. Even the central concept, QIC, is described as a concept that includes multiple PDSA cycles, has external change agent support, peer stimulus, and the use of the model for improvement. All of these subcomponents also seem rather vaguely defined and hard to quantify. This lack of specificity creates difficulty later in demonstrating causal effect.

  We clarified all subcomponents of the QIC methodology and illustrated the model for improvement with an example (figure 2). However, we chose to make only minor adjustments in the definitions of the subcomponents, as we wanted to stick close to the descriptions used in articles that are written by the developers of the most known QIC methodology, the breakthrough method.

- **Issue 3.** In the Methods section the authors state that there were 24 hospitals, but only 18 project teams from 8 hospitals joined the collaborative. What happened to the other 16 hospitals? Is there possible selection bias here?

  Twenty-four hospitals participated in the “Sneller Beter” improvement programme in three groups of eight hospitals. Each group of hospitals joined the programme for two years (2004-2006; 2005-2007; 2006-2008). For each group of hospitals every year a QIC for process redesign collaborative started. This evaluation concerns the QIC that started in 2006 for the third groups of eight hospitals. So, no selection bias occurred. All projects that started within the eight hospitals that participated in the studied process redesign QIC were included.

  This issue is clarified in the method section of the article (page 6).

- **Issue 4.** On page 7 the data collection method is explained. There is one minor spelling error in the middle of the page. “Form” should be “from.” Also the questionnaires to evaluate the outcomes of the projects were sent one year after the start of the projects. Instead of sending the questionnaire a set time from the commencement of the project, they should have evaluated a time after the implementation of the project. It would have been good to have quantified the questionnaires and presented numerical results.
The minor spelling error on page 7 is corrected.

The suggestion of the reviewer to send questionnaires after the implementation of a project is correct when you want to evaluate the success and the sustainability of the project. However, we aimed to explore whether the QIC methodology was applicable for process redesign. The questionnaires were used to evaluate whether the project teams were capable to apply the subcomponents of the QIC methodology. Evaluation after implementation would require that the project leaders and hospital staff members had to recall their experiences with the QIC method with the risk of recall bias and memory failure. Besides, due to changes of staff there is a risk that the process could not be evaluated anymore.

- **Issue 2.** The diversity of the teams’ goals appears to make the measurement more difficult. It seems that some had goals that were widely diverse and some much more difficult than others.
- **Issue 5.** On page 8 under Results the author(s) indicate that the projects were even more diverse with some involving one medical department and others up to eight. Again, this wide variation makes measurement much more difficult.
- **Issue 6.** Again, the variation causes many potential programs. Page 9 states that only 6 of the 17 teams even completed all the three preconditions and half did not have adequate organizational change agent support.
- **Issue 7.** In the evaluation section it is interesting that only 5 groups “confirmed that their project team used or was going to use the PDSA cycle.” It would that by the article’s own definition, most of the groups were not using QIC, and therefore, it would be impossible to measure its use. Half did not have external change agent support and only 5 of 17 used the PDSA cycle. No wonder they have difficulty to evaluate the outcomes. As stated in Step 7, “it is unknown whether they [the collaborative groups] reached the collaborative goals.”
- **Issue 8.** Because of the messy construction, it would be impossible to understand the causal relationship between the QIC and outcomes. Only 3 project teams implemented their process redesign in the year. These teams did not use the PDSA cycle. Consistently, on page 13 when discussing the other 14 teams, there is little clarity of the relationship.

Issues 2, 5, 6, 7 and 8 are consequences of a lack of clarity of the aim and focus in the original text of our article. From the reviewer’s comments (see also issue 1) it seems that reviewer 1 thinks we aimed to demonstrate a causal effect between the use of the QIC methodology and the results of the project teams. However, this was not our purpose. Instead, we aimed to assess whether the QIC methodology is applicable to process redesign. To clarify this, we changed the title of the article in: “Applying the Quality Improvement Collaborative methodology to process redesign: a multiple case study”.

Moreover, we made some adjustments in the introduction part of the article, and end the introduction with our study aim: “Therefore, we explored in this study whether the QIC methodology is applicable for complex process redesign projects by evaluating a process redesign collaborative in the Netherlands”.

In addition, we made adjustments in the discussion and conclusion. In the discussion we made a distinction between explanations for the experienced difficulties that stem from a non-optimal fit between the QIC methodology and process redesign, difficulties that result from non-optimal application of the QIC methodology and difficulties due to non-optimal
conditions for using the QIC methodology. Further, we emphasized in the conclusion that as a result of the selection process by the external change agent conditions for peer stimulus were non-optimal and that project teams perceived a lack of organisational and external change agent support. This prevented us from drawing conclusions about the applicability of the QIC methodology for process redesign.

Issue 9. The Discussion section comments that “a lot of the project teams had to cope with the lack of fit between the principles of the QIC methodology and process redesign.” Is QIC too standardized to not be able to adapt? Or was the problem in the lack of external facilitators and motivation of the participants?

The QIC methodology tries to serve as many teams as possible at the same time to accelerate the diffusion of innovations, which require standardisation of change ideas. Although the provided change ideas within the QIC can be adapted to different contexts, that is not the underlying idea of the QIC methodology. For example, in a QIC for pressure ulcers an external change agent can provide concrete best practices from pressure ulcer guidelines to perfect the elements of care, such as “minimise skin pressure through the use of a positioning schedule for clients with an identified risk for pressure ulcer development”. This best practice can then be tested and, if it works, be implemented directly in every setting. Process redesign, however, calls for tailor-made solutions because project teams need to handle context-specific causes of waiting times and delays in care processes determined by interaction patterns between hospital departments in their hospital. As a consequence, project teams cannot just apply the innovation without tailoring it to their own context. This requires time and impedes the testing of the change ideas within a short time frame in their own organisation. We adjusted discussion about this issue to clarify this for the readers.

The lack of external change agent support and motivation of participants may have influenced the results but does not influence the applicability in itself for process redesign.

Because of the lack of construct validity in the groups, I would suggest the author(s) revise the paper to discuss the difficulties of applying QIC and methods that can better encourage success.

As stated above this was our original purpose of the article. We hope the adjustments made are satisfactory.

We look forward to your reaction, on behalf of all authors,

Yours sincerely,

Leti Vos