Author’s response to reviews

Title: Facilitating action planning within audit and feedback interventions: A mixed-methods process evaluation of an action implementation toolbox in intensive care

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Author’s response to reviews:

Dear editor,

Thank you very much for considering our manuscript entitled ‘How to facilitate action planning within audit and feedback interventions? A mixed-methods process evaluation of an action implementation toolbox in intensive care. We would like to thank the four reviewers for their time and efforts to read our manuscript very well and their valuable comments. You requested us to attend to the comments and suggestions the reviewers made. We did so with pleasure. Please find below our point-by-point response.

Yours sincerely,

Wouter T. Gude, MSc

Reviewer #1:

Overall: a well-articulated study that provides information about how an action plan toolbox works to help translate information from A&F into action plans. However, the fact that the action plans were not implemented at any different rates was not discussed in detail, which for me
makes me wonder at the efficacy of the toolbox in general. But if the goal was to provide toolbox mechanisms of action, this study did that: perhaps better articulating this goal from the very beginning will help readers who may just be looking for efficacy data.

RESPONSE 1.1: Indeed this paper focuses on the mechanisms of action; the efficacy of the toolbox has been recently evaluated in an RCT and published elsewhere (Roos-Blom et al. BMJ Qual Saf. 2019. doi: 10.1136/bmjqs-2019-009588). To clarify we adapted the objective statement (page 2) and added to the end of the Introduction (page 3): “In this study we aimed to understand the mechanisms through which the A&F intervention in combination with the action implementation toolbox facilitated ICUs’ action planning processes to inform future A&F and toolbox research.”

Also could you describe what 'pain management performance' consists of?

RESPONSE 1.2: We have added a sentence to the Introduction to explain this: “In this context, optimal pain management means that pain is measured in every patient in each shift; pain scores are usually acceptable; and if they are not, appropriate treatment is given and pain measurement is repeated within 1h to evidence that the pain is normalised.”

Introduction: well done, although I notice theories introduced in the introduction and different ones used for the actual study, so that can be confusing.

Methods: So control theory was used to develop the toolbox, but CP-FIT was used to evaluate the toolbox and determine how the toolbox was used? Is there a reason?

RESPONSE 1.3a: Based on Control Theory we hypothesized that something was needed to increase the effectiveness of feedback by helping recipients to formulate and implement improvement actions. Control Theory itself did however not tell what that 'something' should be. CP-FIT was recently published in Implementation Science and builds on theories (including Control Theory) and qualitative evidence to describe these mechanisms. To avoid confusion we removed the name “Control Theory” (now just “theory”) in the Introduction.

The figure of the model is difficult to interpret related to the concepts of audit/feedback, pain management, and the modifier of action planning: does action planning interact with the feedback display?

RESPONSE 1.3b: The feedback/recipient/context factors are modifiers (such as feedback display or action planning) that positively (green) or negatively (red) impact particular steps of the feedback cycle proposed by CP-FIT; hence they do not interact with each other. We kept the figure as is, since this follows the original figure of CP-FIT as published in Implementation Science. We are very open to suggestions for improvement.
Also, were coders blind to the group that the excerpts/data came from? Otherwise methods were well described.

RESPONSE 1.3c: The coders were not blinded to the group to which an ICU was assigned; as they were the same as the researchers who conducted the interviews (also not blinded). We added to methods/analysis (page 5): Two researchers (WG and MRB; who also conducted the interviews) independently coded […].

Results: So pain management performance at START of trial was lower for intervention group, or after? The results were complete and descriptive without really helping to understand what the action plans were. Table 2 was very helpful in interpreting the text. How this all related back to the audit/feedback was not well specified.

RESPONSE 1.4a: Correct, baseline performance at the start was lower for the intervention group (Table 1). Action planning is an essential part of the feedback cycle and covers a series of processes (verification; acceptance intention; behaviour) that are influenced by the toolbox. To make this relationship more clear we changed the paragraph header (page 6) into: Experienced barriers and facilitators to action planning processes “in the feedback cycle”.

The barriers to action planning seemed sometimes to be more about barriers to pain management in general (ability to change pain medications); it would be helpful to better specify what result is related to what element of the study: pain management, audit and feedback as the strategy to implement pain management, and action planning as a modifier of audit and feedback.

RESPONSE 1.4b: The reviewer is correct that the “pain management”, i.e. the feedback goal, has significant impact on the success of feedback interventions. We now made explicit that pain management refers to the goal (see Figure 2), which is a feedback factor, by adding “the goal of the feedback, adequate pain management,” on page 7.

And are you stating that a study procedure (interview phone calls) was actively taken up as a factor promoting implementation actions (“the telephone interviews stimulated most ICUs to keep reviewing their feedback, reinforce actions that had stagnated, and update their action plans”)? If so I would like to see this addressed in the methods and limitations section.

RESPONSE 1.4c: The goal of the calls was to explore barriers and facilitators, while we also “verified whether action plans were up-to-date, and encouraged ICUs to update the action plan if this was not the case.” (Methods, page 6). The results revealed that the phone calls themselves were actually facilitating the feedback cycle processes; this was a secondary benefit. As the reviewer also indicates in their final comment (“I am glad you mentioned the interview calls as potentially limiting transferability of findings”) we have addressed this in the limitations (page 10): “Furthermore, telephone interviews often prompted ICUs to update their plans. As a result, the recorded number of days needed to complete actions is likely overestimated.”
Discussion: If I am interpreting correctly, audit and feedback does not have a stable effectiveness on its own, and action planning may be a tool to help translate the data from A&F into a plan for action. But your findings showed it did not help in putting the plan INTO action. And the context of the ICU was stated as a major factor, yet it is stated that "more efforts are needed to facilitate health professionals in this translation [of plan to action]" rather than changing contextual factors to make it easier for health professionals manage pain. Although you did mention this as a potential strategy in the very end: i.e. change RN authority to prescribe pain medication. You suggest this as an action plan, but isn't it more of a context change? I mean, it moves away from clinicians' scope of action to the organizations' scope of action in setting parameters for practice.

RESPONSE 1.5: The reviewer raises a good and fair point. One the one hand, potentially effective suggestions for practice/context change should be provided in the toolbox (e.g. change RN authority) to increase pain management performance. For A&F interventions in general, we learned there are some organisational/contextual prerequisites that should be addressed before intervention start (e.g. leadership; no competing priorities). Hence, in part this can be achieved by optimising feedback/toolbox; whereas a substantial part cannot be achieved by feedback and requires other co-interventions. We added to the Implications (page 10):” Some of the remaining barriers to action planning we identified (e.g. controllability) could be overcome by improving the toolbox contents, whereas others (particularly those relating to the organisational context) may require other co-interventions.”.

Implications: Thank you for mentioning the context change as an additional target for action. You did not discuss the self-determined actions: the fact that this happened in both groups mitigates the results described (i.e. toolbox is effective), or at least should be addressed in terms of the potential efficacy of the toolbox selected plans vs self-selected plans. For example, did the "low effort" activities represent self-selected plans?

RESPONSE 1.6: This is an interesting point. The self-defined actions were widely variable regarding both their content and completion rates (see Table 2). They were often more specific and tailored to the organisation’s own local needs. We explained in the Implications (page 9): “ICUs selected a wide variety of toolbox actions and added a range of self-defined actions that did not match any of the pre-defined toolbox actions. This confirms that different A&F recipients may have different quality improvement needs [34]. We recommend that in future A&F interventions with action toolbox should, similar to the toolbox in this study, enable recipients to further tailor the toolbox to local context by adding self-defined actions, and hide toolbox actions or amend their description in order to tailor the toolbox to their local context”.

Strengths: yes, this study did a good job articulating HOW a toolbox can be efficacious in the context of A&F. I am glad you mentioned the interview calls as potentially limiting transferability of findings.
Reviewer #2: Strengths

This is an interesting and informative study that contributes not only to the science of implementation but also the practical aspects of enhancing audit and feedback interventions to promote practice change. This work is well designed and well executed.

I have no major concerns but a few minor issues that would benefit from some additional clarification.

1) In the abstract, it was not immediately apparent to me that this was not a primary results paper but rather a secondary or corollary analysis. I realize that the last sentence of the background describes the primary results but rather than just stating "...increased the intervention's effectiveness..." it would be helpful to state "...increased the intervention's effectiveness in improving the primary outcome of pain management performance...". Then, in the objective statement it might be clearer to say that the purpose or objective of this study was: "To understand how the action implementation toolbox facilitated action planning by ICUs to increase A&F effectiveness." or something along those lines. This seems more consistent with the framing provided in the second bullet of the contributions to the literature section, which is what helped clarify for me the purpose of this specific study.

RESPONSE 2.1: We thank the reviewer for this comment and we changed the objective statement (page 2): To understand how the mechanisms through which A&F with action implementation toolbox facilitates action planning by ICUs to increase A&F effectiveness.

2) In the introduction section, paragraph 2, please provide a definition of overall pain management performance as it would be helpful to have some context as to what the percentages might reflect.

RESPONSE 2.2: To clarify we added a sentence that explains pain management in critical care; see also response 1.2: “In this context, optimal pain management means that pain is measured in every patient in each shift; pain scores are usually acceptable; and if they are not, appropriate treatment is given and pain measurement is repeated within 1h to evidence that the pain is normalised.”

3) In the results section and table 2 it was challenging to understand some of the measures and the differences between certain measures, thus the unique information being provided was not always clear. For example, total number of actions completed is reported in both the top and bottom sections of table 2 but neither is discussed. Also, the distinction between the median information and percentages, while noted in the footnote to table 2, would be helpful to include in the text as well.

RESPONSE 2.3: The reviewer is correct in his/her interpretation; the upper part of Table 2 represents all actions in the action plans; however, some actions did not represent actual intention or behaviour to change practice, but rather were actions to verify the data. We wanted
to exclude those because they would by definition have no effect on clinical performance; which is a subset of the lower part of Table 2. In the Methods/Theoretical framework (page 5) we explained this: “For the current study, we were interested in to what extent ICU teams confronted with feedback (Perception) react with planning (Intention) and completing (Behaviour) actions (Behaviour) aimed at actually improving practice. Following CP-FIT, ICUs may also plan actions that may not directly lead to clinical performance improvement, such as verifying the feedback’s underlying data (Verification; but no Acceptance) or exploring possible solutions to the problem (Acceptance; but no Intention).” To make the distinction more explicit in the results (page 7) we added a paragraph break and added “Considering only the subset of those actions reflecting Intention or Behaviour to change practice (lower part Table 2) […]”.

4) In the discussion, one of the items noted as never selected by ICUs involved increasing nurses' autonomy to prescribe pain medication. While Dutch nurses may have a different scope of practice, only advanced practice nurses in the U.S. have any sort of prescribing authority. So, this type of practice change, as currently described, could not occur because it is outside the licensure and scope of practice of nurses. As such, a more specific description of this recommended action as a potentially feasible strategy would be helpful.

RESPONSE 2.3: Indeed the opportunity to implement this recommendation varies between countries. In some countries, certain allied health professionals can be given (limited) prescribing authority but this is certainly not true everywhere. However there are sometimes other ways of achieving almost the same result, e.g. nurses can advise on prescribing though an electronic system after which an authorised professional carries out the prescription. We added to the limitations (page 11): “Finally, the contents of the toolbox was developed specifically for Dutch ICU setting, and the feasibility of the toolbox’ suggested actions may not be generalisable to other settings.”

Other issues

5) The phrasing of the first part of the title as a question is a bit confusing. This may be personal preference but a declarative statement (e.g., Facilitating action planning within audit and feedback interventions: A mixed-methods . . .) seems more appropriate.

RESPONSE 2.4: We thank the reviewer for this suggestion and adapted the title accordingly: Facilitating action planning within audit and feedback interventions: A mixed-methods process evaluation of an action implementation toolbox in intensive care

6) In the analysis section, I suspect this is just a typo or language translation issue, lines 25-26 "...understand which practice determinants ICUs had been targeted for change." does not make sense.

RESPONSE 2.5: Thank you; we removed “been”.