Author’s response to reviews

Title: Hospital-based interventions: a systematic review of staff-reported barriers and facilitators to implementation processes.

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Author’s response to reviews:

Reviewer 1: I thank the authors for the additional information they have provided in response to my comments regarding their study selection and agreement. The additional information provided by the authors regarding the inclusion criteria for the study has raised more questions than answers for me, and I remain surprised by the number of studies excluded/small final number of included studies. I suggest that at the minimum the authors provide a list of excluded studies with a rationale for each exclusion, more justification of the inclusion/exclusion criteria (or indeed consider revising these) and more detail of why papers were excluded. I'm particularly unsure how the 'no formal implementation data' criterion was evaluated.

Author response: We thank the reviewer for their additional feedback regarding inclusion/exclusion criteria. We have made a number of additions to the revised manuscript to address these concerns, which we believe has significantly strengthened the paper and provides a more in-depth understanding of the process we undertook.

A key reason for the high number of exclusions was that we focused solely on data related to the implementation of interventions, rather than to the efficacy of the intervention itself. The need to separate implementation strategies and processes from intervention has been highlighted in recent papers such as the Standards for Reporting Implementation Studies [1], which note that this distinction is crucial for allowing researchers to identify the key components that lead to effective translation of evidence into practice. As such, we focused our search specifically on those papers that directly assessed implementation processes. The stringent application of this criterion meant that all papers (both pilot and full papers) on feasibility or effectiveness of the interventions were not included, as these papers did not document the implementation process. It
was often the case that title indicated exploration or discussion of implementation, but on review of the full text it was clear that these papers only included data relating to outcomes of the intervention, such as change in practice or patient outcomes, rather than evaluating the implementation process in any way.

In accordance with PRISMA standards, we included only studies that had a high quality of evidence regarding implementation factors. This meant we included studies that had collected formal, objective qualitative or quantitative data from hospital staff, about their experiences of the implementation (in terms of the process of implementation, the barriers faced and the facilitators that could be leveraged). For qualitative studies, this included interviews, or focus groups with staff, while for quantitative studies it included survey data and questionnaires. Objective data was defined as any data that directly reflected staff experiences, rather than the point of view of the authors or research team. For this reason, the data needed to be in the results section, not the discussion, and any paper that only provided commentary or description was not included. This led to further exclusion of studies, as it was often the case that discussions of the implementation process were simply anecdotal. While there has been a proliferation of studies focused on quality improvement initiatives and the introduction of new interventions in recent years, we found that on review, the majority of these papers address the implementation process only superficially or anecdotally. This finding in itself is significant, and we have taken care to highlight this point in the discussion section of the revised manuscript on p25.

Papers that did not adopt any formal assessment of their implementation process often took the form of ‘lessons learned’ reports, wherein barriers were reported descriptively as they were experienced by the researchers. While these papers can provide useful insights, they are also likely to be subject to reporting bias, as they are reflecting the personal experiences of the team, rather than that of the staff who are directly experiencing the implementation. Awareness of individual study bias is a key criteria to be considered in line with PRISMA standards, and it was awareness of issues of reflexivity and interpretation that caused us to make the decision to only include formally reported data. While such data may still be subject to bias in reporting, this can be reduced by researchers providing commentary on issues of reflexivity (i.e. how the context of participants, and their relationship with study staff may have impacted results). Our quality review indicated that even in the included studies using formal data, this issue of bias was frequently not addressed, highlighting a further important point for the discipline. Where it was unclear where data was sourced from, or what methodologies were used, every effort was made to contact the corresponding authors for clarity, and this process did result in one further study being included [2].
We recognize that these are complicated decisions, and note that they were made in consultation with a specialist Academic liaison librarian and all four authors during a series of iterative discussions. In order to make these decisions clear to the readership, we have considered a range of potential additions which would more clearly illustrate our decision process including, as suggested by Reviewer 1, a list of all excluded studies and the rationale for their exclusion. However, given that this list would include 3771 papers, many of which were excluded for simple reasons, such as because they were a conference poster or commentary, we decided that this would be unwieldy and not informative about the more detailed decision process applied to full text papers. Therefore instead, we have included as an Additional file, a detailed series of example papers that did not meet inclusion criteria for each criterion point (see Additional file 2 of the revised manuscript). While this list does include examples of simple exclusions (such as book chapters) its focus is on papers considered borderline for inclusion. We believe that this exemplar list is more succinct and more informative to the readership, while at the same time addressing the concerns of Reviewer 1.

Reviewer 1: For example, what sorts of pre-implementation data were considered suitable for inclusion? Were all studies with pilot trial data (e.g. if this was published as a separate paper, or if a pilot paper was published) really included?

Author response: We considered all studies with pilot trial data, and indeed several of the included papers report on a pilot or small scale project. However, we applied the same criteria to pilot papers as to other papers, in that they had to collect formal data from staff about the implementation. Many pilot trials did not have the capacity for this, and the data on the implementation process was more in the form of ‘lessons learned’ by the research team, rather than any direct report of staff experiences.

Many of the pilot papers excluded focused on describing the intervention, or on exploring intervention outcomes or processes, but not on the implementation. Therefore, these papers were not included. Examples of excluded studies are provided in Additional File 2.

Pre-implementation data were considered eligible for inclusion where they collected data about anticipated barriers and facilitators to the implementation of a proposed intervention – this type of anticipatory barrier analysis is becoming more common, as Implementation Science Frameworks increasingly recognize the importance of assessing contextual and organizational factors that may impact on implementation[3]. Therefore we included these papers, as they provided information consistent with the key question guiding the systematic review, which was the identification of barriers and facilitators to the implementation of patient-focused interventions in the hospital system. Again, papers were only eligible if their assessment of
anticipated barriers was in the form of a formal data collection process, involving a survey or qualitative interview.

Reviewer 1: Other aspects which confuse me are the rationale for including IT managers but excluding community health workers, or, what the authors mean by 'staff communication strategies' and why is this considered to be patient-focused whereas 'staff-focused interventions' are not?

Author response: We thank this reviewer for suggesting clarification on these points and have provided more detail in the methodology section of our revised manuscript (p6) and in Table 2 (p32-33) explain our rationale. As our focus was specifically on barriers and facilitators related to hospital staff experiences, we included any and all hospital staff who were surveyed, regardless of their hospital role. If studies took place outside of the hospital setting, they did not meet inclusion criteria. However, if community health workers were working within the hospital setting, they would be eligible for inclusion – we have clarified this criterion in the revised manuscript in Table 2 (p32-33).

We have also provided further detail in Table 2 on the intervention type criterion, with explanation of how patient-focused was defined. Patient-focused meant that the outcome of the intervention was expected to have an impact on patient outcomes, and not only staff or system outcomes. Therefore, communication strategies to improve staff dialogue were included in cases where this intervention directly linked the dialogue change to improved patient care. In contrast, interventions with outcomes focused solely on staff well-being (such as reduced stress and burnout), or on system efficiency (such as new electronic record or computer systems) were not included. While these may ultimately impact on patient care, the intervention focus was not on the patient, and therefore it did not fall into patient focused interventions.

Reviewer 1: A very cursory search of google scholar provides additional studies that appear to meet the authors’ criteria which are not included or where it is not clear from the reasons given why they would be included, which makes me doubt the completeness of the strategy used e.g.


Author response: We recognize that the papers suggested by the reviewer indicate relevance by their titles and focus topics, however, a review of the full text demonstrated that they would not have been accepted in our review, due to their lack of focus on implementation processes. We acknowledge that assessing for formal data requires full text review, and as indicated in our PRISMA flow chart, many papers required full text analysis to determine whether they actually assessed for implementation outcomes, with 207 studies progressing to full text review. Where this was the case, these papers were reviewed thoroughly by all four authors, and were subject to in-depth discussion, which led to further refinement of the inclusion/exclusion criteria. Of the four papers suggested, all would have been excluded based on lack of formal implementation-focused data.

The four papers proposed by the reviewer are noted below with brief reasons for exclusion:

   This is an effectiveness study, although the title uses the word implementation, there are no implementation data.

   In this study, hospital staff collected data about their own compliance to elements of the intervention, but did not collect any data about their experience of the implementation process.

   This paper describes a Quality Improvement project with a focus on how effective the project was, based on outcomes of change in practice, rather than staff experiences of the QI implementation process.

This paper has a primary data focus on acceptability and feasibility of the shared decision making tool, rather than implementation process experiences or expectations.

References

