Reviewer's report

Title: Evaluating implementation of methicillin-resistant Staphylococcus aureus (MRSA) prevention guidelines in spinal cord injury centers using the PARIHS framework: a mixed-methods study

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Reviewer: Eleanor Murray

Reviewer's report:

This paper addresses an important issue in healthcare: the barriers and facilitators relating to the early implementation of clinical guidelines. From a methodological perspective, it serves as a test case for using the PARiHS framework as an evaluation tool in this setting. The design of the study is a mixed methods analysis, using a quantitative survey across all 23 centres supported by focused qualitative interviews.

Major compulsory revisions

A strength of this paper was the mixed methods approach. However, the qualitative themes were developed predominately at the 'elements' level of the PARiHS framework (context, evidence and facilitation). Detailed exploration at the 'sub-element' level was lacking therefore the qualitative interview findings are not substantially different from the survey results. The qualitative interviews should have provided opportunities for exploring the sub-elements in detail, to enable a more comprehensive evaluation of guideline implementation. For example, in the second paragraph of the Discussion section, contextual and facilitation-related factors drawn from the interviews are described as, 'variations in familiarity or awareness of guidelines, provider training and local leadership support of implementation.' The PARiHS framework offers the scope to evaluate why these variations existed: did the culture of the organisation or teams encourage guideline awareness; what was the approach to training (enabling/empowering or didactic); and how did the leadership style (traditional or transformational) in the unit impact on the adoption of guidelines? Exploring and evaluating these sub-elements in detail would improve the originality and relevance of the paper for the audience.

1. Is the question posed by the authors new and well defined?

The question posed by the authors is new, in so far as the type of guidelines and setting is concerned. The elements of the PARiHS framework quoted in this paper (context, evidence and facilitation) have been developed in a more recent paper using an updated definition, 'a planned facilitated process involving an interplay between individuals, evidence, and context to promote evidence-informed practice.' (1) The authors might consider the implications of this definition for their question and results.
The title does not reflect the authors’ reference to ‘early implementation’ throughout the paper. The term ‘early’ would benefit from a clear definition and rationale. Given that the survey was carried out in August 2010, two years after the guidelines were available for implementation, it is questionable whether the implementation was ‘early’, if providers were asked to comment on their perceptions at the time of the survey.

2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work?

The use of a mixed methods study is appropriate but the methods section would benefit from a clearer explanation of how the PARiHS framework was used to evaluate the implementation. A mapping table relating the survey questions/semi-structured interview questions to the elements and sub-elements of the PARiHS framework would be a useful appendix. Similarly an explanation of how the emerging themes from the qualitative study were mapped to the PARiHS framework would be helpful.

Reaching an understanding of the methods is complicated by the need to refer to a related study of MRSA-related provider training and patient education for ‘further details on the study design and data collection efforts.’ A minor inconsistency between the papers was noted with 24 Centres described in the Hill et al paper and 23 Centres in this paper.

The rationale for removing MRSA Prevention Coordinators (MPCs) from the original sample of providers surveyed is not given. This contrasts with the decision to include MPCs in the semi-structured interviews ‘to ensure adequate representation from leadership.’ This methodological inconsistency needs better explanation. One concern with the semi-structured interviews is that the purposive sample of 3-4 interviewees per Centre recruited through SCI/D Chiefs (which is acknowledged as a potential study bias) comprises at least 50% leadership positions, which may compromise reporting on the front-line staff perspective.

3. Are the data sound and well controlled?

There are three issues to note: firstly neither the headline figure (in the abstract results section) that 36% of SCI/D staff members surveyed ‘had not seen, did not remember seeing or had never heard of the MRSA SCI/D guidelines’ nor was the opposing statement that approximately 64% of SCI/D staff were aware of the guidelines (in the context section of Qualitative themes) was evident in the results tables; secondly the numerical data in Table 2 is difficult to interpret as the second group (e.g. ‘not agree’, ‘not seen’) for each question is omitted, which requires the reader to calculate the count (first group count/percentage) in order to reach n=228; and thirdly conducting a Chi square test on a sample of survey questions in Table 1 identified an apparent anomaly in the question ‘type of SCI/D unit setting worked in primarily’ of a different p-value to the stated 0.035. For this reason, review by a statistician is recommended.

4. Do the figures appear to be genuine, i.e. without evidence of manipulation?
Not applicable as no figures.

5. Does the manuscript adhere to the relevant standards for reporting and data deposition?
Yes.

6. Are the discussion and conclusions well balanced and adequately supported by the data?
The discussion and conclusions are well balanced and supported by the data but as discussed above, a more in-depth analysis of qualitative data against the PARiHS framework sub-elements would make the findings more useful for the audience.

7. Do the title and abstract accurately convey what has been found?
Yes

8. Is the writing acceptable?
The writing is acceptable.

Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)
The use of consistent terminology throughout the paper of either 'staff' or 'provider.'
The discrepancy between the physician response rate and the sampling frame could be examined in the context of the literature.(2;3)

Reference List

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable
Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests