Reviewer’s report

Title: Inclusion of a care bundle for fever, hyperglycaemia, and swallow management in a National Audit for acute stroke: evidence of upscale and spread

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Reviewer: Amanda Buttery

Reviewer's report:

This article investigates the national uptake of an evidence-based stroke care bundle in Australia, comparing units involved in the original trials versus all other stroke units/services in the country (Australia). Evidence for this care bundle (intervention) was established through an RCT, and a subsequent implementation study, which occurred in one region of Australia.

Although the findings and analyses of this article are generally well conducted and interesting, this manuscript would benefit from further critical discussion about the systematic implementation of the care bundle into the national clinical audit programme. Currently the authors conclude that there was no systematic roll-out of the care bundle. However, it appears that the care bundle, and specific patient outcomes related to the care bundle, were included in the national stroke audit programme since 2013, following publication of the main trial. It is likely that this "active" national scale-up strategy, implemented through an established clinical audit programme, is a key driver to the study findings. More consideration around definitions of active and passive roll-out are needed in this study.

Further comments on sections:

Title: could better reflect study.

Abstract

Please consider using the term "retrospective" in the methods section.

Conclusion: Please remove the first sentence as this sentence does not relate specifically study findings. Please remove the term "despite no national systematic roll-out" (the inclusion of the care bundle measures in the national audit is an example of a systematic national roll-out and the active implementation of evidence into practice).
Introduction

Reducing the description of the QASC and QASCIP into one paragraph would allow for the inclusion of more studies using similar designs to be presented in the introduction.

The introduction section would benefit from more comparison with literature specific to the implementation of care bundles e.g. COPD, ITU, catheter-acquired infections, central line-associated bloodstream infections, delerium, dementia etc. Particularly those care bundles that have had successful implementation through inclusion in national audit programmes.

Please specify the dates of the QASCIP study, versus the inclusion of the FeSS Protocols in the national audit.

Methods

Data collection (Additional File 1- Table 1 would be better placed within the main article. This comparison of indicators included in the trails and the national audit is highly relevant to the study methods and could be combined with the current Table 1 to indicate the composite outcome measure e.g. through a table footnote).

Please discuss the rationale for only selecting the audit period post-publication of the QASC in this study. Improvements may have occurred prior and during QASC. This important contextual information needs to be included in the background to this study. If no relevant measures related to the care bundle were included in the national audit data-set before 2013, then this should be clearly stated.

Further justification of using the composite measure versus individual component measures is needed. Why was this approach preferred?

Table 3. Please replace drug name with generic name.

Statistics analysis

More clarity related to the statistical methods are needed, particularly around techniques investigated repeated measures to look for differences between groups of patients. Was ANOVA used? It appears that most of the gains in the audit data occur in the period between 2013 to 2015 and not 2015 to 2017? How were differences in these time points analysed, particularly for adherence over time to protocols?

There are few non-stroke units in this study. How are the analyses comparing SU’s and non-SU’s valid given the small sample of non-SU’s? How confident are you these are true findings?
Comments around comparing the study findings to the QASC and QASCIP results should not be included in the statistical methods section.

The final paragraph, particularly the final sentence in this section, needs further explanation and referencing to support this statistical approach.

Results

Please consider including Figure 1 in the Methods section, not the results. Please include previous stroke audit dates on this timeline and put all QASC studies on the bottom row of the timeline.

Pg. 10 line 10-17. Please described the "reduction in the severity of stroke over time" rather than "variation".

Discussion

The discussion needs to relate more to the findings of this specific study, rather than repeating findings from the original QASC studies. (e.g. as described on page 15 line 1-17).

The first paragraph of the discussion would be better incorporated into the introduction.

More critical discussion around the use of national clinical audit programmes to drive national scale-up and spread of evidence-based practice is needed (as introduced in the 3rd paragraph of the discussion). Greater comparisons with the literature around care bundle implementation is needed.

Pg. 13 line 54. The sentence beginning "This result was unexpected" …. should be removed given the evidence from the Cochrane review (Reference 26).


Pg. 14 line 58-59. Please review this sentence describing that processes in non-SU units are "encouraging". It is important to consider this statement in the context of the international stroke care literature. Including a statement about why people with strokes are still treated on non-SU's in Australia would help explain this finding in an international context.

Pg. 15 line 32 sentence re: To our knowledge....Please consider other international literature more fully. An example of an international audit e.g. UK SSNAP data includes "Patients with acute stroke should have their swallowing screened, using a validated screening, tool, by a trained healthcare professional within four hours of arrival at hospital and before being given any oral food, fluid or medication".
Limitations

Further explanation of changing FeSS monitoring process in the national audit would be useful.

Statistical limitations, particularly around the use of a composite measure, need considered.

Conclusion

Needs to better reflect the study findings. Comparisons to other countries would be better placed in discussion, not conclusion.

Level of interest

Please indicate how interesting you found the manuscript:

An article whose findings are important to those with closely related research interests

Quality of written English

Please indicate the quality of language in the manuscript:

Acceptable

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