PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (**http://bmjopen.bmj.com/site/about/resources/checklist.pdf**) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Systematic review of clinical practice guidelines to identify recommendations for rehabilitation after stroke and other acquired brain injuries
AUTHORS	Jolliffe, Laura; Lannin, Natasha; Cadilhac, Dominique; Hoffman, Tammy

VERSION 1 – REVIEW

REVIEWER	De Tanti Antonio Cardinal Ferrari Rehabilitation Centre, Fontanellato (PR)- Italy
REVIEW RETURNED	15-Aug-2017

GENERAL COMMENTS	The paper provides an important contribution, both from a methodological point of view and practical implications, to the definition of CPGs dedicated to adult rehabilitation with acquired brain inury (ABI). The evaluation tool used, AGRRE II, is considered to be absolutely adequate. After reading the paper I suggest the following observations: 1. Pag 4 line10 (def of acquired brain injury): the definition used seems to exclude different etiologies other than stoke and TBI: it is necessary to check whether the guidelines you have analyzed do not address other ABIs (anoxia, infectious forms such as meningoencephalitis, tumors Benign as meningiomas ...). This first definition seems to be partially contradictory to that reported at pag 5 rule 23 which is wider (and perhaps more correct). 2. Pag 5 line 32 you wrote "recommendations pertaining to mild stroke or brain injury were excluded" but at pag 8 line 3 you also included guidelines for transient ischemic attack 3. Pag 9 line 3 speaks of fifteen guidelines but then only 12 are quoted in references in parentheses. 4. Pag 9 line 39, ... (Medical Management) Maybe reading would be facilitated if reference numbers in the guidelines that produced recommendations for each category mentioned would be included in parentheses 5. Pag 9 rule 50: Check and correct the percentages reported (for example, for arousal and memory 10.5% and not 17%) 6. TAB 1: To improve the ease of reading the text, I suggest adding a progressive numbering (1-19) that is then returned to all the points in the text where they are quoted (the same numbering as in the appendix of TAB 3 7. TAB 1 Check and correct reference numbers (eg page 27 line 9, not 40.41 but 37.38 8. TAB 3 improve the editing by highlighting the 5 themes differently from the text.

REVIEWER	Tamaya Van Criekinge University of Antwerp
REVIEW RETURNED	26-Oct-2017

GENERAL COMMENTS	Thank you for inviting me to review this manuscript. The study is well written, good language. All steps for a systematic review have been undertaken. There are appropriate and clear criteria for the inclusion/exclusion of studies, it is probable that all relevant studies have been found. Evaluation with regard to quality assessment of the included studies and a comprehensive discussion were presented. A presentation of the most qualtative guidelines is a true gain for clinicians. However, there are a few comments which, I hope, the authors will consider. P4 line 20-21: The reference [nr. 7] explains the difficulty in translating guidelines in clinical practice. However, is not clear which documented gaps you are refering to concerning stroke and other health research. Maybe some clearification? It might also be interesting to know which components make the translation to clincial practice difficult. Since these will be important to judge the quality of the guidelines. P4 line 27-28: Although this is true, no further information is giving concerning this statement. P5 line 31-32: More information is needed how moderate and severe brain injuries are being defined and how they were distinguished from mild injuries P5 line 43: Only 2 databases? Specific reasons? P5 line 43: An update is necessary, last update was more than a year ago: May 2016. P5 line 56: Why was screening not executed by 2 seperate reviewers? General question: I did not find any information on timing. Are guidelines the same for sub-acute and chronic patients? Did you exclude a certain population? How does this affect your guidelines? I assume great difference in therapy in provided between, for example, sub-acute and chronic stroke survivors? How did you cope with this in your manuscript?

REVIEWER	Sharon Kramer The Florey Institute if Neuroscience and Mental Health, Melbourne, Australia
REVIEW RETURNED	27-Oct-2017

GENERAL COMMENTS	This review gives an overview of the quality of guidelines for acquired brain injury and the level of evidence for and consistency between the recommendations of different guidelines. The focus is on recommendation regarding rehabilitation practices for both stroke and traumatic brain injury. I do understand that comparing the quality of the guidelines and the evidence base of the guidelines is informative.

	However, the differences in guidelines between different countries are expected and in some cases in my view, are valid since it is important to take context around health care systems for example, into account when developing guidelines. I am not sure that using these differences as an argument to have universal guidelines is appropriate. Also, only guidelines that were published in English were included, which has implications for the scope and applicability/generalisability of the review (incl. high income countries does it apply to lower/middle income countries). I would suggest to clearly describing the scope of the review in the introduction. Based on the introduction and methods it seems that the main focus was on recommendations regarding rehabilitation and not so much recommendations regarding medical care. This makes sense since it is likely that medical management of stroke and traumatic brain injury is quite different. However the appendix does include the medical management domain. Also since it is an assumption that the recommendations are similar between the groups maybe this is something that should be part of the results and part of the discussion. Consider clearly identifying which guidelines were specific to stroke and which were specific to traumatic brain injury.(e.g. putting them in separate categories , but in the same table). I commend the authors for the amount of work that has gone into extracting and compiling the massive amounts of data from the guidelines. One of the main aims was to assess consistency of the recommendations. The methods, regarding the assessment of consistency, do not clearly describe the definition of consistency and how it was (what does consistency mean in the context of this review i.e. similar level of evidence, conflicting recommendation for the same intervention, etc.). The methods do not clearly describe what the in-and exclusion criteria are. The criteria reported in appendix 2 are not reported in the methods. In general the description of the methods needs to be more specific e.g. Page 5 line 50: professional rehabilitation society websites- which ones specify? Page 6 line 23: major discrepancies … ? Page 7 line 34: Authors compared…: who all authors or two, independently or discussion etc. The same applies to the results: Page 8 what do you mean by graded the evidence …explain Page 9: “recommended for use” … is this according to AGREE and if so describe this in the methods Additional questions/suggestions that might be considered: How and why were the five “best” guidelines chosen. Consider giving some more examples how domains and themes were identified. Clarify the definition of “consistency” how it was assessed Consider report the AGREE scores for each guideline with separate scores for each domain in a Table Page 14: are there any references you can add that show that following guidelines improve care? Page 14 line21 -25 this is overstating the effect of guidelines. Having good quality guidelines does not mean an improvement in care.

	Table 3 Instead of numbers, report the names of the guidelines in the first row of the table Page 14 line 52-53. What is the relevance of this point? And how does it relate to Page 15 line 17. Discuss the applicability of this review to non-English speaking countries, low/middle income countries.

REVIEWER	Anouk D. Kabboord Leiden University Medical Center (LUMC) the Netherlands
REVIEW RETURNED	31-Oct-2017

GENERAL COMMENTS	I believe the review is carried out properly and well-structured, the content is relevant, valuable and the review is also well written. I do have some comments, suggestions and/or questions: Minor revisions: 1) In the introduction you clearly explain that rehabilitation approaches for TBI and CVA are consistent in clinical practice, but that recommendations in CPGs are separate and inconsistent. Then you present the four aims. Furthermore, in the discussion, you write '…common recommendations across both vascular and trauma CPGs. …unique guidelines for each condition in the areas of medication and behaviour…'. Here I do read an (beautiful and relevant!) answer to a question, that I do not recognize in the aims. Wouldn't it be more suitable to formulate the aims +/- like this: - A) …quality, scope and consistency of CPG recommendations for acquired brain injury. - B) To compare the CPG recommendations across both diagnoses CVA and TBI. - C) Synthesize the recommendations… Because you introduce the dilemma of clinicians working with both patients in the introduction and in the discussion sections. And also because it is very interesting and relevant, so that it deserves a (separate) research question and place in results section. 2) In the analyses and tables both conditions are represented and recommendations are synthesized. However, in the tables it is difficult to distinguish the conditions. When reading the tables, the reader cannot overview which recommendations apply to CVA and which to TBI (or to both). Is it possible to include a column in one of the tables to make clear which paper represents what diagnosis group (or both)? Because, in the discussion you make statements about this: '…common recommendations across both vascular and trauma CPGs. …unique guidelines for each condition in the areas of medication and behaviour…' 3) A) The fourth aim is 'synthesized recommendations of the top five rated guidelines'. I can't easily find the answer to this. I do see the table 4, but in this table I find six papers and not five. Or does 'five' maybe apply to the five themes? Could you make this clear? B) Furthermore, on page 9 you write 'The primary recommendations from the highest rated guidelines [29, 31, 33, 39, 41] are synthesized in Supplemental Table 4'. In table 4 I see the references [36, 31, 30, 34, 28, 39]: are there 5 or 6 references rated as top guidelines? Could you please check the appropriateness of all references-numbers and the right number of top guidelines (5 or 6?)?

	4) It is fine that you found 20 papers with 19 guidelines. Could you maybe write one sentence about this: what was the reason that it was not excluded as a 'duplicate'? If it wasn't a duplicate, what was the difference between the two and what did you decide that it is one-and-the-same guideline? 5) In table 2 you mention the kappa's. Two papers had a kappa of 0.38 (Bayley et al. and RNAO). Could you write about what the possible reason for this lower kappa could be? Were the guidelines, in any particular way different or unclear, so that it was more difficult to consistently evaluate them? 6) One last suggestion: In the 'appraisal of guideline' you write explain how the domain scores and % were calculated. It is quite difficult for the reader to understand, but if one can see the table (example)+ formula (page 12: http://www.agreetrust.org/wp-content/uploads/2013/10/AGREE-II-Users-Manual-and-23-item-Instrument_2009_UPDATE_2013.pdf) then it is easily understood. Is it possible to simply present this table (example) + formula?

VERSION 1 – AUTHOR RESPONSE

Reviewer 1; De Tanti Antonio

1) COMMENT: Page 4 line10 (def of acquired brain injury): the definition used seems to exclude different etiologies other than stoke and TBI: it is necessary to check whether the guidelines you have analyzed do not address other ABIs (anoxia, infectious forms such as meningoencephalitis, tumors Benign as meningiomas ...). This first definition seems to be partially contradictory to that reported at page 5 rule 23 which is wider (and perhaps more correct).
Author Response: The intention of the introduction statement was to highlight that ABI is used as an umbrella term inclusive of both aetiologies (stroke and TBI), as often readers assume ABI refers to 'TBI'. We have now edited the sentence on p4,L10 to make this clearer.

2) COMMENT: Page 5 line 32 you wrote "recommendations pertaining to mild stroke or brain injury were excluded" but at Page 8 line 3 you also included guidelines for transient ischemic attack
Author Response: Many guidelines combine transient ischemic attack and stroke. In instances where guidelines combined these conditions, recommendations pertaining to TIA management were not include in this review. No TIA-specific guidelines have been included nor recommendations which only pertain to adults with TIA. We have now made this clearer in the method section by stating that recommendations related to transient ischaemic attack was also excluded from this review. On page 8, line 3, we have now removed that this guideline also refers to transient ischaemic attack.

3) COMMENT: Page 9 line 3 speaks of fifteen guidelines but then only 12 are quoted in references in parentheses.
Author Response: Apologies, we have now updated the references and referenced accordingly. References updated and corrected.

4) COMMENT: Page 9 line 39, ... (Medical Management) Maybe reading would be facilitated if reference numbers in the guidelines that produced recommendations for each category mentioned would be included in parentheses
Author Response: Thank you for this feedback, we have now updated accordingly. Have included references to specific guidelines in parenthesis.

5) COMMENT: Page 9 rule 50: Check and correct the percentages reported (for example, for arousal and memory 10.5% and not 17%)
Author Response: The percentages reported refer to the number of guidelines that made recommendations pertaining to 'memory' out of the 13 guidelines that made medical recommendations. i.e. 2 guidelines made recommendation related to arousal of the 13 guidelines that made medical recommendations (i.e. 15%). Have reworded in the paper to make this clearer.

6) COMMENT: TAB 1: To improve the ease of reading the text, I suggest adding a progressive numbering (1-19) that is then returned to all the points in the text where they are quoted (the same numbering as in the appendix of TAB 3
Author Response: Thank you for this feedback: we have conflicting advice from reviewers regarding the numbering of guidelines in tables for comparison. While Rev 1 preferred progressive numbering, others requested to include the guideline name in the table for ease of comparison. Given conflicting reviews, the authors will keep the names of the guidelines in the tables so that the reader can more quickly seek which guideline is referred to. In Tab3, for ease of comparison we have kept progressive numbering (1-20) so the table fits on one page and the reader can make direct comparisons (visually) between guideline scope. No change made to Table 1.

7) COMMENT: TAB 1 Check and correct reference numbers (eg page 27 line 9, not 40.41 but 37.38.
Author Response: Apologies, this is an error. All referencing numbers checked and corrected.

8) COMMENT: TAB 3 improve the editing by highlighting the 5 themes differently from the text.
Author Response: Thank you for this suggestion. We have now shaded the heading rows (5 themes). Five themes highlighted in a different colour (light grey) as are the sub themes (grey).

Reviewer: 2; Tamaya Van Criekinge

1) COMMENT: P4 line 20-21: The reference [nr. 7] explains the difficulty in translating guidelines in clinical practice. However, is not clear which documented gaps you are referring to concerning stroke and other health research. Maybe some clarification? It might also be interesting to know which components make the translation to clinical practice difficult. Since these will be important to judge the quality of the guidelines.
Author Response: Thank you for this feedback, we have now added in an example of a research/practice gap in the introduction. Determining which components make the translation of guidelines into practice more challenging was not within the scope of this systematic review. Within the broad literature of knowledge translation- authors such as Grol (2001) and Burgers et al (2003) have focused on these aspects of guidelines and guideline programs. Within the manuscript the guidelines were not rated for their applicability (including knowledge translation tools) under Domain 5 of the AGREE2 tool. This may be the focus of future work where quantitative (audit) data can be drawn from to explore which areas of these high quality recommendations have been poorly implemented. Example now provided in the manuscript of an evidence/practice gap.

2) COMMENT: P4 line 27-28: Although this is true, no further information is giving concerning this statement.
Author Response: We now raise this in the discussion. Discussion now includes: "As expected with the large number of guidelines, this study found inconsistencies across recommendations. And, despite its recent publication (2016), one guideline was not recommended for use[42] and contained multiple recommendation statements that were contradictory to the majority of the other guidelines."

3) COMMENT: P5 line 31-32: More information is needed how moderate and severe brain injuries are being defined and how they were distinguished from mild injuries
Author Response: In the manuscript we report the scope of each guideline (including population) and note that we use the original guideline definitions in the method. As population is defined in the original source (each guideline), we are not able to further classify within the manuscript. Each individual guideline too, may not well define severity, since they too are based on original sources (in this case, RCTs) which may not be well defined. While we appreciate the preference of Reviewer 2, this is not able to be undertaken in this manuscript. No changes made.

4) Comment: P5 line 43: Only 2 databases? Specific reasons?
Author Response: Standardised reporting for Clinical Practice Guidelines (e.g. AGREE trust; Shiffman, 2004; NHMRC) recommend guidelines are made available via organisation websites, government websites or government publications. As such, we did not anticipate finding many guidelines meeting our criteria through peer reviewed publication (Figure 1: results of our search strategy reflect this accurate assumption). Our comprehensive search of the two most prominent health databases plus the tailored search of all related organisational websites is thus warranted. No change required.

5) COMMENT: P5 line 43: An update is necessary, last update was more than a year ago: May 2016.
Author Response: We have now updated our search and results accordingly. Search through to November 2017. N=3 updates found, and n=1 new guideline published. These have now been rated and results presented within the manuscript.

6) COMMENT: P5 line 56: Why was screening not executed by 2 separate reviewers?
Author Response: Screening of title and abstract was conducted by one author. Screening of full text was conducted by two reviewers. This method is acceptable as per similar studies conducted (http://onlinelibrary.wiley.com/doi/10.1002/bjs5.17/epdf). No changes made.

7) COMMENT: General question: I did not find any information on timing. Are guidelines the same for sub-acute and chronic patients? Did you exclude a certain population? How does this affect your guidelines? I assume great difference in therapy in provided between, for example, sub-acute and chronic stroke survivors? How did you cope with this in your manuscript?
Author Response: Our paper presents a summary of best practice statements that have been published and pertain to the rehabilitation and community rehabilitation settings. As noted in the manuscript, we excluded acute management, as we sought to only include rehabilitation recommendations. Many guidelines publish practice recommendation that include all phases (hyper-acute through to community management). In instances where recommendations were combined into one guideline document, only the rehabilitation and community rehabilitation sections were appraised as noted in method and results sections. No changes made.

Reviewer 3; Sharon Kramer

1) COMMENT: I do understand that comparing the quality of the guidelines and the evidence base of the guidelines is informative. However, the differences in guidelines between different countries are expected and in some cases in my view, are valid since it is important to take context around health care systems for example, into account when developing guidelines. I am not sure that using these differences as an argument to have universal guidelines is appropriate. Also, only guidelines that were published in English were included, which has implications for the scope and applicability/generalisability of the review (incl. high income countries does it apply to lower/middle income countries). I would suggest to clearly describing the scope of the review in the introduction.
Author Response: Thank you for your comments.

We do not dispute the importance of context as you points out. However, the trend towards guideline development groups removing recommendations pertaining to structure of rehabilitation (arguably one of the most context dependent areas) perhaps belies your concern (i.e. Stroke Foundation (Australia) 2017). A lot of time and effort into judging the evidence and its quality is duplicated and we believed this is where our work may help to develop better and more efficient way of developing guidelines in this filed that will be relevant to all countries who can tailor how they might be implemented in their local context
In our study, those counties who produced multiple guidelines (for example, North America = 6) had the widest variation in quality of guidelines. Further, if the scientific community pooled resources, inclusion of low-middle income countries as well as multiple language source RCTs may be able to be included. We remain optimistic that this manuscript will generate discussion around the potential for pooled resources so that we can ensure high quality guidelines universally. In terms of knowledge use and translation, n=20 practice guidelines (with conflicting recommendations) will no doubt cause difficulties for clinicians when selecting one guideline to follow in their practice.
The following edits were made to the Introduction to improve clarity: “From clinicians’ perspectives, having multiple guidelines that are inconsistent based on differences in assessments of evidence or scope may be overwhelming and confusing.”

2) COMMENT: Based on the introduction and methods it seems that the main focus was on recommendations regarding rehabilitation and not so much recommendations regarding medical care. This makes sense since it is likely that medical management of stroke and traumatic brain injury is quite different. However the appendix does include the medical management domain. Also since it is an assumption that the recommendations are similar between the groups maybe this is something that should be part of the results and part of the discussion. Consider clearly identifying which guidelines were specific to stroke and which were specific to traumatic brain injury.(e.g. putting them in separate categories , but in the same table).
Author Response: The review sought to obtain guideline recommendations on both rehabilitation and medical management related to subacute management, with results (ie. numbers of each type of recommendation) dependent on the source guidelines. We agree that medication management between stoke and brain injury differs, and this is discussed in the original manuscript (page 13, line 52-57 and page 14, line 27-30). We have labelled and identified which guidelines pertain to conditions (vascular and traumatic) in both the results section, in table one and throughout the body of the original manuscript. No changes made

3) COMMENT: One of the main aims was to assess consistency of the recommendations. The methods, regarding the assessment of consistency, do not clearly describe the definition of consistency and how it was (what does consistency mean in the context of this review i.e. similar level of evidence, conflicting recommendation for the same intervention, etc.).
And:
Clarify the definition of “consistency” how it was assessed
Author Response: In the original manuscript, the term consistency referred to similar or conflicting recommendations/messaging. We sought to understand if the same messages are communicated to clinicians across guidelines. We have now clarified this in the paper. Clarified now in the method of the revised manuscript.

4) COMMENT: The methods do not clearly describe what the in-and exclusion criteria are. The criteria reported in appendix 2 are not reported in the methods.
Author Response: The inclusion and exclusion criteria are stated in Figure 1, on page 6, line 3 of the original manuscript. These are consistent with Appendix 2 of the original manuscript. No changes made.

5) COMMENT: In general the description of the methods needs to be more specific e.g. Page 5 line 50: professional rehabilitation society websites- which ones specify?
Author Response: The full search strategy has all 16 professional websites listed in full. The search strategy is available and labelled Appendix 1 (online supplement) of the original submission.

6) COMMENT: Page 6 line 23: major discrepancies … ?
Author Response: Major discrepancies were defined as scores that differed by more than 2 points between ratters on the AGREE-II tool. We have now clarified this in the manuscript. This has been updated for clarity and now reads: "Major discrepancies in the scores (where assigned scores differed by more than two points) were discussed…"

7) COMMENT: Page 7 line 34: Authors compared…: who all authors or two, independently or discussion etc.
Author Response: Two of the authors independently compared guidelines for consistency. We have now clarified this in the manuscript. Clarity provided in the method section of the manuscript.

8) COMMENT: Page 8 what do you mean by graded the evidence …explain
Author Response: 'Graded the evidence' in the context of page 7, refers to the classification level that the guideline development writing group assigned to included studies for their review as per the method outlined in our manuscript, i.e. Systematic review/RCT=level 1 evidence. We have updated the sentence for clarity, it now reads: Some guideline developers (n=7) graded the level of study evidence included for review, whilst most graded both the level of study evidence and strength of the recommendations (n=13).

9) COMMENT: Page 9: "recommended for use" … is this according to AGREE and if so describe this in the methods
Author Response: The AGREE-II tool has on 'overall score' section at the end of the tool. 'Recommended for use' is the AGREE-II language and we have explained this is the results section. We have now also specified this in the method section of the manuscript.

10) COMMENT: How and why were the five "best" guidelines chosen.
Response: The top five rated guidelines were selected according to AGREE-II mean domain scores as stated in the method and results sections of the original manuscript. As stated, we selected these to synthesis the recommendations, and ensure recommendations for a broad scope are available to readers (i.e. some areas of practice are not covered by just one guideline). No changes made.

11) COMMENT: Consider giving some more examples how domains and themes were identified.
Author Response: How domains and themes were identified is described in the method of the original manuscript. Given the current word length of this paper, we prefer not to provide examples. No changes made

12) COMMENT: Consider report the AGREE scores for each guideline with separate scores for each domain in a Table. Page 14: are there any references you can add that show that following guidelines improve care?
Author response: Table 2 of the original manuscript reports the mean AGREE-II score (percentages) for each guideline. The results section states which guidelines were recommended based on their overall score. References pertaining to the effect that practice guidelines have on quality of patient care are reported in the original manuscript (e.g. References 8,9,10,46). No changes made

13) COMMENT: Page 14 line21 -25 this is overstating the effect of guidelines. Having good quality guidelines does not mean an improvement in care.
Author Response: Given that research has demonstrated that adherence to CPG recommendations achieves these outcomes (see, for example, improvements of care achieved in Canada from adherence as noted by their improved performance in their Registry), we wish to retain this sentence in our discussion. To clarify our meaning the following edits were made: “Synthesizing recommendations of the highly rated guidelines, as in the present review may improve the future consistency of clinical rehabilitation guidelines and in turn influence the quality of care in this field”.

14) COMMENT: Table 3 Instead of numbers, report the names of the guidelines in the first row of the table
Author Response: We appreciate this feedback and do agree that having the names of the guidelines may increase readability, however, due to formatting, Table 3 would become 18 pages in length which we believe would limit readability more than the current numerical system. Reviewer 1 (item number 6) requested that table 1 have progressive formatting as in Table 3. For consistency and formatting reasons outlined above, we have amended in line with their feedback. No changes made

15) COMMENT: Page 14 line 52-53. What is the relevance of this point? And how does it relate to Page 15 line 17.
Author Response: NICE (2013) chose to only review studies of high level evidence (RCTs, systematic reviews), missing many well designed studies of clinical importance. This caused division within the development group (see http://www.bmj.com/content/346/bmj.f3615/rr/652847) and ultimately led to no recommendations being made in certain aspects of neurorehabilitation where evidence does exist. Despite the development group’s choice of methodology, the guideline rated well given the rating system as stated in the AGREE-II instructions. This is a limitation of our study, as the AGREE-II tool was the method of guidelines assessment we selected, however was not sensitive to capture methodological issues, i.e. lack of NICE guideline recommendations in some areas; non-transparent selection of included research.
Guideline reviewers, writing teams and researchers (who may want to develop a more sensitive tool to capture such methodological issues) should be aware of current limitations in the AGREE-II (such as we have highlighted). No changes made.
16) COMMENT: Discuss the applicability of this review to non-English speaking countries, low/middle income countries
Author Response: Given that high income countries produced 4 or more guidelines on the same topic (stroke rehabilitation) one may argue that the duplication and money (and time) spent on this duplication is wasted. If resources were pooled (nationally and internationally) then low-middle income countries could be included, have funding for involvement, and context specific modules created. These guidelines would then be streamlined and available to all countries. No changes made.

Reviewer: 4; Anouk D. Kabboord

1) COMMENT: In the introduction you clearly explain that rehabilitation approaches for TBI and CVA are consistent in clinical practice, but that recommendations in CPGs are separate and inconsistent. Then you present the four aims. Furthermore, in the discussion, you write ‘…common recommendations across both vascular and trauma CPGs. …unique guidelines for each condition in the areas of medication and behaviour…’. Here I do read an (beautiful and relevant!) answer to a question, that I do not recognize in the aims. Wouldn’t it be more suitable to formulate the aims +/- like this:
- A) …quality, scope and consistency of CPG recommendations for acquired brain injury.
- B) To compare the CPG recommendations across both diagnoses CVA and TBI.
- C) Synthesize the recommendations…

Because you introduce the dilemma of clinicians working with both patients in the introduction and in the discussion sections. And also because it is very interesting and relevant, so that it deserves a (separate) research question and place in results section.
Author Response: Thank you for this suggestion. We have now specified this aim clearly. Addition of aim in the introduction to include a comparison between vascular and traumatic guideline recommendations.

2) COMMENT: the analyses and tables both conditions are represented and recommendations are synthesized. However, in the tables it is difficult to distinguish the conditions. When reading the tables, the reader cannot overview which recommendations apply to CVA and which to TBI (or to both). Is it possible to include a column in one of the tables to make clear which paper represents what diagnosis group (or both)? Because, in the discussion you make statements about this: '…common recommendations across both vascular and traumaCPGs. …unique guidelines for each condition in the areas of medication and behaviour…'
Author Response: Thank you for the suggestion. We have added a column in table 4 that highlights where recommendations are shared between stroke and trauma management. Updated table 4 to highlight similar recommendations between aetiologies

3) COMMENT: The fourth aim is 'synthesized recommendations of the top five rated guidelines'. I can't easily find the answer to this. I do see the table 4, but in this table I find six papers and not five. Or does 'five' maybe apply to the five themes? Could you make this clear?
Author Response: Apologies, this has now been corrected and only the top 5 rated guidelines are presented. Top 5 rated guidelines are presented in table 4.

4) COMMENT: Furthermore, on page 9 you write 'The primary recommendations from the highest rated guidelines [29, 31, 33, 39, 41] are synthesized in Supplemental Table 4'. In table 4 I see the references [36, 31, 30, 34, 28, 39]: are there 5 or 6 references rated as top guidelines? Could you please check the appropriateness of all references-numbers and the right number of top guidelines (5 or 6?)?
Author Response: There are n=6 references for the top 5 guidelines. Some guidelines have released updates in 'modules' i.e. Canadian Stroke Best Practice released an updated guideline (2015) related to 'rehabilitation' and then in 2016 released an update on telehealth. It is the same organisation, however the guideline update occurred over two publications. For this reason, they are rated together (the methods, systems and processes are the same) however both publications are referenced. We have now made this clearer in the discussion of the paper, and have better explained this in the method.

5) COMMENT: It is fine that you found 20 papers with 19 guidelines. Could you maybe write one sentence about this: what was the reason that it was not excluded as a 'duplicate'? If it wasn't a duplicate, what was the difference between the two and what did you decide that it is one-and-the-same guideline?
Author Response: We have now included a statement to address this in the body of the paper. See above.

6) COMMENT: In table 2 you mention the kappa's. Two papers had a kappa of 0.38 (Bayley et al. and RNAO). Could you write about what the possible reason for this lower kappa could be? Were the guidelines, in any particular way different or unclear, so that it was more difficult to consistently evaluate them?
Author Response: There were some items of the AGREE-II tool where each of the raters were within 1 or 2 points of each other (and so overall ratings were 5 or 7). Ultimately, this did not change our recommendation of this guideline given that overall, each rater individually felt that the guideline was 'recommended for use', however the kappa scores did differ. No changes made.

7) COMMENT: One last suggestion: In the 'appraisal of guideline' you write explain how the domain scores and % were calculated. It is quite difficult for the reader to understand, but if one can see the table (example)+ formula (page 12: http://www.agreetrust.org/wpcontent/uploads/2013/10/AGREE-II-Users-Manual-and-23-item-Instrument_2009_UPDATE_2013.pdf) then it is easily understood. Is it possible to simply present this table (example) + formula?
Author Response: We apologise for the confusion and agree that it was possibly over-explained. We have removed majority of the explanation as it is unnecessary; we essentially followed the AGREE-II protocol whereby we summed item responses to generate the domain score, and took the mean score between raters and calculated a percentage for the domain. This has been changed in the method section.

VERSION 2 – REVIEW

REVIEWER	Tamaya Van Criekinge University of Antwerp, Belgium
REVIEW RETURNED	14-Dec-2017

GENERAL COMMENTS	I would like to thank the authors for providing clear and thoughtful responses. In my opinion the manuscript is much clearer and more focused.

REVIEWER	Sharon Kramer The Florey Institute of Neuroscience and Mental Health, Australia
REVIEW RETURNED	03-Dec-2017

GENERAL COMMENTS	I am satisfied with the responses to the reviewers of the manuscript. I do apologise for clearly missing some of the detail that were already provided in the original manuscript.

REVIEWER	Anouk Kabboord LUMC The Netherlands
REVIEW RETURNED	06-Dec-2017

GENERAL COMMENTS	I do believe that this systematic review is carried out properly. The update is now included in the review and the additions/revisions added relevant information. The work provides an overview of the best guidelines on CVA and TBI rehabilitation that can help clinicians in this field choose the most appropriate guidelines to make decisions.