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)	Improving care standards for patients with spinal trauma combining a modified e-Delphi Process and stakeholder interviews: A study protocol
AUTHORS	Sharwood, Lisa; Stanford, Ralph; Middleton, James; Burns, Brian; Joseph, Anthony; Flower, Oliver; Rigby, Oran; Ball, Jonathon; Dhaliwal, Shelly

VERSION 1 - REVIEW

REVIEWER	Dr Susan Slade Monash University and Cabrini Institute, Australia
REVIEW RETURNED	20-May-2016

GENERAL COMMENTS	Thank you to the authors for outlining an interesting study that has potential for clinical application. I have some suggestions that will be necessary to address to have this ready for publication: the overall aim seems to be "bigger picture" and beyond the scope of the delphi study - it seems ro describe the end result of processes after the delphi study. It seems that aims 2 and 3 will be informed by the delphi study(page 5 lines 35-51) The rapid review would be best informed by Cochrane methods and reported according to the PRISMA statement. Page 6 lines 42-49 - why not use the AGREE instrument to evaluate guidelines Page 6 lines 49-60 - it would be preferebale to use established levels of evidence e.g. NHMRC http://www.nhmrc.gov.au/_files_nhmrc/file/guidelines/stage_2_consultation_levels_and_grades.pdf https://www.health.qld.gov.au/healthpact/docs/gen-docs/lvl-of-evidence Will there be any free text in the survey and will this be qualitatively analysed The methods need more explicit description: Page 9 - the interviews are summarised in descriptive text - the explicit steps need to be reported and be replicable. Page 9 lines 52-53 - need more references for the qualitative study and analysis

	How was the interview schedule generated. will a Likert scale be used in the survey interview process is a separate qualitative study – how informed consent will be obtained, assurance that participants can give opinions freely, all method steps should be replicable, provide a defence for using content analysis over thematic analysis , preovide a theoretical framework, report that there is more than one researcher analysing data, provide participant-linked data i.e. supporting quotes, what is the derivation of interview schedule, report that researcher bias is considered and acknowledged Page 11 lines 27-40 - this seems to be recruitment and belongs in an earlier section. How many people are on the steering committee - is it too large to be manageable. Page 11 lines 32-33 - how will the inpatients be approached - to minimise coercion to participate Page 11 lines 43-50 - does not make sense to me The disemmination section is not well presented and needs re-consideration e.g. publications, presentations etc

REVIEWER	Kristina Schildmeijer Institution for Health- and Caring Sciences Linnaeus University Sweden
REVIEW RETURNED	19-Jul-2016

GENERAL COMMENTS	P4, line 39 Remove one of your "such as" You are going to use content analysis;according to whom? Can you see other limitations with your study? Your study will be a useful contribution to the field. I am looking forward to read your prospective result (guideline). Good Luck!

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Thank you to the authors for outlining an interesting study that has potential for clinical application.

I have some suggestions that will be necessary to address to have this ready for publication:

The overall aim seems to be "bigger picture" and beyond the scope of the delphi study - it seems to describe the end result of processes after the delphi study. It seems that aims 2 and 3 will be informed by the delphi study (page 5 lines 35-51)

Thank you for suggesting this refinement. It is correct to say that the ‘Delphi study’ is part of a larger program of work; this manuscript is solely the protocol for the Delphi study component so we have reformed the written explanation of this here at page 5 for clarification.

The rapid review would be best informed by Cochrane methods and reported according to the PRISMA statement.

The rapid review has already been conducted during the time between protocol writing, submission and review, and the Delphi questions developed accordingly. We have however, reported according to the PRISMA statement, where this applies given it is not a systematic review or a meta-analysis (for example this cannot be stated in the title). This is documented on line 7. Thank you for this recommendation. The PRISMA checklist will be submitted with the revised manuscript.

Page 6 lines 42-49 - why not use the AGREE instrument to evaluate guidelines

As per above. We believe this approach is replicable.

Page 6 lines 49-60 - it would be preferable to use established levels of evidence e.g. NHMRC http://www.nhmrc.gov.au/_files_nhmrc/file/guidelines/stage_2_consultation_levels_and_grades.pdf https://www.health.qld.gov.au/healthpact/docs/gen-docs/lvl-of-evidence

The Guidelines referenced were developed using a strict evidence based process that we have replicated. Quoting the reference (Walter et al 2013) – "The methodology chosen for this Guideline is evidence-based and follows the recommendations of the Institute of Medicine (IOM) Committee to Advise the Public Health Service on Clinical Practice Guidelines"

As such we believe this to be a replicable and internationally recognised method of guideline review.

Will there be any free text in the survey and will this be qualitatively analysed.

There will not be free text in the survey.

The methods need more explicit description:

The Methods section has been described more explicitly as requested, page.

Page 9 - the interviews are summarised in descriptive text - the explicit steps need to be reported and be replicable.

This is difficult for open ended interviews… however some clearer explanation has been added to p. 10.

Page 9 lines 52-53 - need more references for the qualitative study and analysis.

Further references have been added.

How was the interview schedule generated?

Now described in the manuscript. For face to face interviews these will be conducted at the convenience of the researcher and the respondent.

Will a Likert scale be used in the survey?

No.

Interview process is a separate qualitative study – how informed consent will be obtained, assurance that participants can give opinions freely, all method steps should be replicable, provide a defence for using content analysis over thematic analysis , provide a theoretical framework, report that there is more than one researcher analysing data, provide participant-linked data i.e. supporting quotes, what is the derivation of interview schedule, report that researcher bias is considered and acknowledged.

Further information has been added to the qualitative analysis section (p.11).

Page 11 lines 27-40 - this seems to be recruitment and belongs in an earlier section.

Thank you this error has been addressed.

How many people are on the steering committee - is it too large to be manageable.

There are 8 people on the Steering Committee, now noted in the Manuscript, p.10. This has been manageable, and importantly members contribute content knowledge and experience from each of the practice areas covered in the Delphi survey.

Page 11 lines 32-33 - how will the inpatients be approached - to minimise coercion to participate

The inpatients will be approached after speaking with the senior nurse in charge of the unit on which the patients are admitted to ensure that they perceive the patient to be appropriate for the study. Once this is determined the research officer will introduce herself to the patient, explain the study and invite their participation should they be willing to provide their consent. This is confirmed on page 9 of the manuscript.

Page 11 lines 43-50 - does not make sense to me

The dissemination section is not well presented and needs re-consideration e.g. publications, presentations etc

Further explanation has been added to this section on p. 11.

Reviewer: 2
Please leave your comments for the authors below P4, line 39 Remove one of your "such as"
Thank you this has been removed.
You are going to use content analysis; according to whom?
References have been added. Content analysis will follow the approach described by Zhang and Wildemuth.
Can you see other limitations with your study?
The perceived limitations are documented in the manuscript. There may be others identified throughout the study process; these will be reported in study findings.
Your study will be a useful contribution to the field. I am looking forward to read your prospective result (guideline).
Good Luck!

VERSION 2 – REVIEW

REVIEWER	Dr Susan Slade Monash University, Australia
REVIEW RETURNED	11-Sep-2016

GENERAL COMMENTS	Thank you to the authors for their extra work and responses. However it appears that there are 2 processes occurring - a Delphi study and a qualitative interview study - this is not reflected in the title. I have a remaining concern that has not been adequately addressed regarding evaluation of clinical guidelines (Page 6). The internationally accepted standard for evaluation is the AGREE instrument and the Walters reference (17) does not equate to this instrument. For the Delphi online survey it is usual and preferable to state that completion and return of the survey will be taken as consent. The Delphi data analysis would benefit from more detail. My original comments about the qualitative study have not been fully addressed and require attention. Recruitment needs description of sampling (purposive, snowballing etc) and selection (how it will be ensured that participants are selected who can answer the items of interest). It remains unclear why content analysis was selected rather than thematic analysis (reference is made to themes in the method) and the theoretical framework should be described. There is no description for how the independent analysts will reach consensus and how the supporting quotes will be selected (to control for "cherry picking"). Please provide some discussion about data saturation and how sample size will be determined. The COREQ checklist needs to be used for the qualitative study.

VERSION 2 – AUTHOR RESPONSE

Reviewer: 1
Thank you to the authors for their extra work and responses. However it appears that there are 2 processes occurring - a Delphi study and a qualitative interview study - this is not reflected in the title.
Thank you for drawing this to our attention, we have amended the title.
I have a remaining concern that has not been adequately addressed regarding evaluation of clinical guidelines (Page 6). The internationally accepted standard for evaluation is the AGREE instrument

and the Walters reference (17) does not equate to this instrument.
Thank you for your expertise in this area. Having reviewed this recommendation, we would like to confirm that the references on p.6 are specific to the appraisal of the identified literature, not a review of the previously identified guidelines, and for methodological coherence we maintain it is important to use the same criteria for determining the strength of evidence as was used in the recent guideline development. However, in considering this recommendation of the AGREE instrument, we believe this an excellent contribution to this work, for the resultant guidelines we wish to develop. Therefore we propose to use the AGREE instrument to assess our findings (referenced pp.7 and 12), in addition to assessment of the previously published guidelines where we seek to amend these. We hope this satisfies your concerns and again, appreciate this input.
For the Delphi online survey it is usual and preferable to state that completion and return of the survey will be taken as consent. The Delphi data analysis would benefit from more detail.
The above statement regarding consent has been added on page 7. We have looked to the reviewers own publication of a Delphi Protocol, and tried to add additional detail to the analysis in keeping with the level of detail she has herself published. This is added on page 9.
My original comments about the qualitative study have not been fully addressed and require attention. Recruitment needs description of sampling (purposive, snowballing etc) and selection (how it will be ensured that participants are selected who can answer the items of interest). It remains unclear why content analysis was selected rather than thematic analysis (reference is made to themes in the method) and the theoretical framework should be described. There is no description for how the independent analysts will reach consensus and how the supporting quotes will be selected (to control for "cherry picking"). Please provide some discussion about data saturation and how sample size will be determined. The COREQ checklist needs to be used for the qualitative study.
The sampling frame has been further described on page 10, specifying the constraints of participant selection. The word ‘theme’ is supported by the following quote from Mayring (2014),
“Qualitative content analysis has been defined as:
• “a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns” (Hsieh & Shannon, 2005, p.1278).”
The qualitative content analysis has been further defined and we have clarified that the COREQ checklist will be used in the reporting of this qualitative content analysis.
We have added references to support our decision to undertake content analysis, which is essentially because of its goal of external validity. Content analysis focusses on human communication, and as such offers practical applicability and relevance for research such as this which involves the practice and education of healthcare professionals. Finally, we have clarified the intended and ethically approved sample size for the interviews (p. 10).

VERSION 3 – REVIEW

REVIEWER	Dr Susan Slade Monash University Australia
REVIEW RETURNED	24-Nov-2016

GENERAL COMMENTS	Thank you to the authors for responding positively to the comments and suggestions. They are to be congratulated for the improvements made to this manuscript.