

## 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

<b>TITLE (PROVISIONAL)</b>	A systematic review to identify and assess the effectiveness of alternatives for people over the age of 65 who are at risk of potentially avoidable hospital admission.
<b>AUTHORS</b>	Huntley, Alyson; Chalder, Melanie; Shaw, Ali; Hollingworth, William; Metcalfe, Chris; Bengler, Jonathan; Purdy, Sarah

### VERSION 1 - REVIEW

<b>REVIEWER</b>	Philip Clissett Lecturer in Adult Nursing University of Nottingham UK
<b>REVIEW RETURNED</b>	23-Feb-2017

<b>GENERAL COMMENTS</b>	<p>This is an extremely clear and well written systematic review into a topic that, while it has been important for years, has taken on added significance with the publication of the proposed sustainability and transformation plans in England: evaluating alternatives to acute hospital admission for older people for whom a decision to admit is a borderline choice.</p> <p>The methodology is clearly explained and consistent with that outlined in the protocol. The findings are presented in the form of a narrative synthesis structured around the different types of alternatives to acute hospital admission and, in the case of hospital at home, the different illnesses that were the focus of these services. My one criticism of this aspect of the work is that, having read through the narrative synthesis, I struggled to recall the key features that I had read. I think that it would be really useful to end the section with a summary (perhaps in tabular form) of the interventions clarifying whether, for each intervention, there are statistically significant results to support the effectiveness of the intervention (possibly clarifying how 'effectiveness' is defined) and some indication of the quality of the research. My only other comment is that there appears to be a word missing in the sentence on page 20 line 25.</p>
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<b>REVIEWER</b>	Emma Wallace RCSI Ireland
<b>REVIEW RETURNED</b>	21-Mar-2017

<b>GENERAL COMMENTS</b>	This is a very well-written and carefully conducted systematic review addressing an important research question that will be of broad interest. The authors have adhered to high methodological standards in the conduct of this review.
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	<p><b>Major comment</b>  What is confusing for a reader, however, is the inclusion of an overview of existing systematic review evidence as well as a new systematic review conducted for the purposes of this study. This is particularly problematic in areas where the authors' present meta-analysis findings from previous systematic reviews e.g. heat failure hospital at home. It needs to be more clearly delineated in the results, ideally by subheadings, what is existing overview of systematic reviews content and what is new systematic review content.  It also needs to be clearly highlighted where there is overlap (if any) between existing systematic review content and primary studies retrieved as part of the new systematic review.</p> <p><b>Minor comments</b>  Suggest include some international context in the introductory paragraph in addition to UK data.  Suggest best to use current recommended Cochrane terminology re controlled observational studies (COS) which is non-randomised controlled trials. With the advent of the core outcome sets for RCTs the abbreviation COS may prove confusing for readers.  Suggest include the PICO format for the research question under eligibility criteria  Suggest present overall numbers of RCTs and non-randomised controlled trials in the descriptive statistics section. Also suggest giving an overall comment on methodological quality for the systematic review.  Meta-analysis was planned in the protocol for the new systematic review and could not be undertaken. This should be commented on.  Suggest refer readers to Appendix 4 for definitions of community hospital in the relevant section it is referred to in the main results section.  Suggest expanding the discussion and structuring as follows:  Summary of principal findings, comparison with previous literature, clinical and research implications and strengths and limitations of this review. This will improve clarity.</p>
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### VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Reviewer Name: Philip Clissett

Institution and Country: Lecturer in Adult Nursing, University of Nottingham, UK

Please state any competing interests or state 'None declared': None declared

Please leave your comments for the authors below

This is an extremely clear and well written systematic review into a topic that, while it has been important for years, has taken on added significance with the publication of the proposed sustainability and transformation plans in England: evaluating alternatives to acute hospital admission for older people for whom a decision to admit is a borderline choice.

The methodology is clearly explained and consistent with that outlined in the protocol. The findings are presented in the form of a narrative synthesis structured around the different types of alternatives to acute hospital admission and, in the case of hospital at home, the different illnesses that were the focus of these services. My one criticism of this aspect of the work is that, having read through the narrative synthesis, I struggled to recall the key features that I had read. I think that it would be really useful to end the section with a summary (perhaps in tabular form) of the interventions clarifying

whether, for each intervention, there are statistically significant results to support the effectiveness of the intervention (possibly clarifying how 'effectiveness' is defined) and some indication of the quality of the research. My only other comment is that there appears to be a word missing in the sentence on page 20 line 25.

Response

We have produced a summary table of the overall results from both primary studies and systematic reviews which we think helps both with Reviewers one's point and the lack of clarity that Reviewer 2 felt around distinguishing between these data.

In methods under our eligibility criteria we have modified the outcomes sentence to clarify that effectiveness of intervention means reduction in subsequent ED attendance and hospital readmissions.

The section around page 20 line 25 has been edited generally and so text is corrected

Reviewer: 2

Reviewer Name: Emma Wallace

Institution and Country: RCSI Ireland

Please state any competing interests or state 'None declared': None declared

Please leave your comments for the authors below

This is a very well-written and carefully conducted systematic review addressing an important research question that will be of broad interest. The authors have adhered to high methodological standards in the conduct of this review.

Major comment

What is confusing for a reader, however, is the inclusion of an overview of existing systematic review evidence as well as a new systematic review conducted for the purposes of this study. This is particularly problematic in areas where the authors' present meta-analysis findings from previous systematic reviews e.g. heart failure hospital at home. It needs to be more clearly delineated in the results, ideally by subheadings, what is existing overview of systematic reviews content and what is new systematic review content.

It also needs to be clearly highlighted where there is overlap (if any) between existing systematic review content and primary studies retrieved as part of the new systematic review.

Response

We agree and have edited the text to delineate between primary and systematic review data. These edits in addition to the summary table we feel helps distinguish between these two data. We have not used subheadings as this only affects HaH sections on heart failure and COPD and we felt it would look inconsistent

Minor comments

Suggest include some international context in the introductory paragraph in addition to UK data.

Suggest best to use current recommended Cochrane terminology re controlled observational studies (COS) which is non-randomised controlled trials. With the advent of the core outcome sets for RCTs the abbreviation COS may prove confusing for readers.

Response

We have corrected this as suggested.

Suggest include the PICO format for the research question under eligibility criteria

Response

We have edited this section as suggested as well as clarifying our outcomes as per reviewer one's comments.

Suggest present overall numbers of RCTs and non-randomised controlled trials in the descriptive statistics section.

Response

We have done this. This information is now also in the summary table

Also suggest giving an overall comment on methodological quality for the systematic review.

Response

We have added an extra section on an overall view of both risk of bias and AMSTAR in the descriptive statistics section to complement more detail further down

Meta-analysis was planned in the protocol for the new systematic review and could not be undertaken. This should be commented on.

Response

This is now described in the discussion- thank you.

Suggest refer readers to Appendix 4 for definitions of community hospital in the relevant section it is referred to in the main results section.

Response

We have done this for the intervention types – thank you for this suggestion

Suggest expanding the discussion and structuring as follows: Summary of principal findings, comparison with previous literature, clinical and research implications and strengths and limitations of this review. This will improve clarity.

Response

We have done this- thank you

#### **VERSION 2 – REVIEW**

<b>REVIEWER</b>	Emma Wallace RCSI Ireland
<b>REVIEW RETURNED</b>	04-May-2017

<b>GENERAL COMMENTS</b>	My comments have been addressed-thank you. The new summary table is very helpful. I have no further comments.
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