PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Key factors of case management interventions for frequent users of healthcare services: a thematic analysis review
AUTHORS	Hudon, Catherine; Chouinard, Maud-Christine; Lambert, Mireille; Diadiou, Fatoumata; Bouliane, Danielle; Beaudin, Jérémie

VERSION 1 – REVIEW

REVIEWER	Sue Lukersmith University of Sydney, Australia
REVIEW RETURNED	10-Jun-2017

GENERAL COMMENTS	The topic of case management is an important and indeed complex one. The paper lacks information on the case management provided in the 6 papers, the description of inputs (service) factors of the case management (e.g. inpatient/outpatient, mobile, high intensity) versus the throughputs. The inputs are the resources to provide case management services. The throughputs of case management are the process, what is done by the case manager, the actions, activities or interventions. In table 1 the case management was clearly different e.g. team based care planning occurred in 4 papers , versus the case manager undertaking the planning in 2 papers. So the analysis considered both integrated care system structures across teams/care coordination (see Pim Valentijn Rainbow model) versus case management provided by a single CM (see Lukersmith Case management taxonomy). The critical difference between care coordination and case management is that the latter always involves a partnership and collaboration between the case manager and the patient. If there was inadequate description of the case management in the studies, then I question whether the study method is valid. Table 2 suggests there is very limited information and descriptors in each study. Poor descriptions (as the authors have identified) is THE problem with case management. Until there are better descriptions and a common language - knowing the efficacious components of CM will not be possible. So my concern is that the authors are admirably trying to achieve something that is not possible because of the limited descriptions in the 6 studies. The method is poorly described. The reasons for choosing the Chaudoir framework was not justified and particularly as it is a framework for implementation of an intervention, rather than frameworks for analysing the intervention components . This is particularly relevant as the outcomes measured in all the studies related to service not patient outcomes (reduction in service use and cost).

	The analysis is not clearly described which left me wondering why some components were placed in a particular Chaudior's factor e.g why was health navigation or patient education in the program level rather than the practitioner level (see Table 2 Rinke and Tadros studies)?. The coordination target for what was done is different in the studies (See International Classification of health interventions - ICHI). The authors have not defined each characteristic and there are different concepts linked together e.g. competency of a case managers as a 'good motivator' is that referring to the personality or the specific action of motivational interviewing?. Is not collaboration part of the action of coordination? is the conclusion self-management support referring to the support provided by peers in which case it is another intervention or is it that the case manager has provided support for the patient to develop skills to manage their own care?

REVIEWER	Fiona Clement University of Calgary Calgary, Alberta Canada
REVIEW RETURNED	30-Jun-2017

GENERAL COMMENTS	The paper addresses an important question : what are the elements of a successful case manager intervention for frequent users of the healthcare system. Unfortunately, as designed currently, I don't think the body of work can address this research question. I elaborate on my major concerns below: 1. The work builds off a previous systematic review completed in Dec 2015 that documented case manager interventions for frequent users. . The authors then selected only the positive studies and list the elements of the intervention. The authors use words like "important to", "associated with", etc in relation to the elements of the interventions and positive outcomes. I am unsure how the authors could understand what elements are associated with positive outcomes when only positive studies are included? The authors did not assess the other 5 studies that they identified in their initial systematic review (presumably to get from the original 11 to 6 positive studies, the other 5 reported null or negative findings). Perhaps the same elements are found in the interventions that were not successful? I do not think the question of what elements contribute to success can be answered without also analysing the negative studies and comparing across both groups. 2. the study does very little synthesis. Currently, this reads as a paper that simply reports the interventions. What are the common elements? This also links to comment 1 - what is different between a study that succeeds and no that does not? 3. The initial systematic review is not described in this paper and given that it forms the basis of the entire research it should be summarized in a paragraph so the reader understands where the studies came from and how they were selected. 4. The initial search ended in Dec 2015 and is now out of date. It should be updated for this work.

VERSION 1 – AUTHOR RESPONSE

REVIEWER 1
Luckersmith, Sue
University of Sydney, Australia

Comment: The topic of case management is an important and indeed complex one. The paper lacks information on the case management provided in the 6 papers, the description of inputs (service) factors of the case management (e.g. inpatient/outpatient, mobile, high intensity) versus the throughputs. The inputs are the resources to provide case management services. The throughputs of case management are the process, what is done by the case manager, the actions, activities or interventions.

Response: The case management provided in the articles included was described in our scoping review (Hudon C, Chouinard MC, Lambert M et al. (2016) BMJ Open 2016; 6), in the manuscript, tables and supplementary file. To avoid duplication, we referred to our scoping review for more information on the inputs as well as the outputs of the case management interventions (p. 6).

Comment: In table 1 the case management was clearly different e.g. team based care planning occurred in 4 papers, versus the case manager undertaking the planning in 2 papers. So the analysis considered both integrated care system structures across teams/care coordination (see Pim Valentijn Rainbow model) versus case management provided by a single CM (see Lukersmith Case management taxonomy). The critical difference between care coordination and case management is that the latter always involves a partnership and collaboration between the case manager and the patient.

Response: Thank you for this relevant comment. We agree that the analysis considered both integrated care system structures across teams/care coordination versus case management provided by a single CM. In response to this comment, we added this information in Tables 1, 2 and 3. After careful evaluation of the influence of this aspect (team versus case manager planning), we did not find a conclusive trend on the success of the intervention. Among 8 studies on a multidisciplinary CM intervention, half of them observed positives outcomes while the other half reported no benefit. Among the 5 studies including a CM intervention provided by a single case manager, 3 studies observed positive outcomes whereas 2 reported no benefit.

Comment: If there was inadequate description of the case management in the studies, then I question whether the study method is valid. Table 2 suggests there is very limited information and descriptors in each study. Poor descriptions (as the authors have identified) is THE problem with case management. Until there are better descriptions and a common language - knowing the efficacious components of CM will not be possible. So my concern is that the authors are admirably trying to achieve something that is not possible because of the limited descriptions in the 6 studies.

Response: As mentioned, the case management provided in the articles included was described in our scoping review. However, we agree with the reviewer that description of case management was often a limit of the studies so we added this as a limit to our study also (p. 12).

Comment: The method is poorly described. The reasons for choosing the Chaudoir framework was not justified and particularly as it is a framework for implementation of an intervention, rather than frameworks for analysing the intervention components. This is particularly relevant as the outcomes measured in all the studies related to service not patient outcomes (reduction in service use and cost).

Response: We agree with the reviewer's comment and indicated the reason why we chose the implementation framework by Chaudoir (p. 6).

Comment: The analysis is not clearly described which left me wondering why some components were placed in a particular Chaudoir's factor e.g why was health navigation or patient education in the program level rather than the practitioner level (see Table 2 Rinke and Tadros studies)?

Response: Chaudoir et al.'s framework was developed to reflect factors that are hypothesized to impact outcomes. It was used to capture the characteristics of CM interventions and allow for comparisons among the studies included. We provided more detail on the Chaudoir framework and further explained each of the factors to improve comprehension (p. 6-7).

Comment: The coordination target for what was done is different in the studies (See International Classification of health interventions - ICHI).

Response: We agree with the reviewer's comment and added this fact in the limits section (p. 12).

Comment: The authors have not defined each characteristic and there are different concepts linked together e.g. competency of a case managers as a 'good motivator' is that referring to the personality or the specific action of motivational interviewing?

Response: Thank you for bringing this to our attention. We modified the conclusion (p. 12) so this comment no longer applies.

Comment: Is not collaboration part of the action of coordination?

Response: We recognized that the concepts of collaboration and coordination are related, but distinct.

Comment: Is the conclusion self-management support referring to the support provided by peers in which case it is another intervention or is it that the case manager has provided support for the patient to develop skills to manage their own care?

Response: To reflect the change that we made to our manuscript, we reformulated our conclusion and removed this information (p. 13). However, thorough the manuscript, we referred to self-management support provided by the case manager.

Reviewer: 2
Fiona Clement
University of Calgary, Calgary, Alberta Canada

The paper addresses an important question: what are the elements of a successful case manager intervention for frequent users of the healthcare system. Unfortunately, as designed currently, I don't think the body of work can address this research question. I elaborate on my major concerns below:

Comment: The work builds off a previous systematic review completed in Dec 2015 that documented case manager interventions for frequent users. The authors then selected only the positive studies and list the elements of the intervention. The authors use words like "important to", "associated with", etc in relation to the elements of the interventions and positive outcomes. I am unsure how the authors could understand what elements are associated with positive outcomes when only positive studies are included?

The authors did not assess the other 5 studies that they identified in their initial systematic review (presumably to get from the original 11 to 6 positive studies, the other 5 reported null or negative findings). Perhaps the same elements are found in the interventions that were not successful? I do not think the question of what elements contribute to success can be answered without also analysing the negative studies and comparing across both groups.

Response: We agree with the reviewer's comment and included in our analysis the other 5 studies identified in our scoping review, that reported no impact.

Comment: The study does very little synthesis. Currently, this reads as a paper that simply reports the interventions. What are the common elements? This also links to comment 1 - what is different between a study that succeeds and no that does not?

Response: We agree with the reviewer's comment and modified the results section for a deeper synthesis.

Comment: The initial systematic review is not described in this paper and given that it forms the basis of the entire research it should be summarized in a paragraph so the reader understands where the studies came from and how they were selected.

Response: We agree with the reviewer's comment and included a brief summary of our scoping review in the methods section (p. 6).

Comment: The initial search ended in Dec 2015 and is now out of date. It should be updated for this work.

Response: We updated the search to July 2017 and included two additional studies, for a total of 13 (p. 6). Figure 1 was provided as a flow chart of our search results.

We hope this detailed response to the reviewers' comments addresses all concerns and questions and that you will consider this version of our manuscript suitable for publication.

VERSION 2 – REVIEW

REVIEWER	Sue Lukersmith University of Sydney, Lukersmith & Associates
REVIEW RETURNED	05-Sep-2017

GENERAL COMMENTS	There has been a major improvements to the paper. There are some comments and queries in the attached document. My remaining concern is the different terms used. I suggest the authors use the term 'factors' (as per the framework) and carefully check throughout the document, rather than the current mixture of aspects, characteristics etc. The term intervention should remain, where it was used as a descriptor in the reviewed article. I do not consider it necessary to review this article again. The reviewer also provided a marked copy with additional comments. Please contact the publisher for full details.

REVIEWER	Dr. Fiona Clement University of Calgary CANADA
REVIEW RETURNED	01-Sep-2017

GENERAL COMMENTS	The authors have appropriately addressed my concerns and the paper is now a novel contribution to the field.

VERSION 2 – AUTHOR RESPONSE

REVIEWER 1
Luckersmith, Sue
University of Sydney, Australia

Comment: There has been a major improvement to the paper.

Response: Thanks for your positive feedback.

Comment: There are some comments and queries in the attached document.

Comments and quieries in the attached document
Comment: Provide examples of frequent users or the purpose of them seeking healthcare.

Response: We indicated the purpose of the frequent users to seek healthcare (p.4).

Comment: Explain what you mean by healthcare visits – presumably emergency department attendance.

Response: We indicated that it is emergency department attendance (p.4).

Comment: Implemented where ? Please explain there are many contexts where CM is implemented? Is it the acute hospital setting?

Response: We indicated that CM is the most frequently implemented intervention in any type of healthcare setting (emergency department, hospital, emergency medical service, etc.) (p.4).

Comment: Please explain the topic of the systematic reviews.

Response: We indicated that the review by Kumar et al. was on the effectiveness of CM interventions among frequent emergency department users (p.4). The topic of the systematic review of Oeseburg was already been identified.

Comment: Again is this in the ED setting so follow up post discharge?

Response: No, it's the frequency of the follow-up visits in the intervention (p.4).

Comment: If the group were not frequent users, why is this article being used here? The model or approach to CM for frail elderly will not be the same as CM in emergency.

Response: The systematic review by Oeseburg et al. was on the effects of CM for frail older people. Even if the population differ, the approach to CM for frail elderly is very similar to CM in ED.

Comment: The list preceding is a mixture of skills and actions/interventions - mixed concepts. a characteristic or feature is a quality or feature of a person, place or physical entity Are you talking about personal characteristics of the case manager or what the case manager does (the actions or interventions) or the standards (the quality of their actions) or HOW they do it (the means) – all very different concepts.

Response: Thanks for the clarification; we specified that it is the skills of the case manager (p.5).

Comment: So here you refer to interventions (see my previous comment) which are not characteristics of case management. There needs to be clarity about what you are referring to, and ensure that there are not mixed concepts.

Response: We removed the term intervention (p.6).

Comment: If this is the term that is used in the Chaudoir framework then I would replace characteristics throughout with factors – that would remove the difficulties with mixing different concepts. (interventions, standards, skill etc). A factor is a more generalised concept that contributes to the result.

Response: We agree with the reviewer's comment and used the term 'factors' throughout the document.

Comment: The addition of the explanation of the framework is great and assists the reader.

Response: Thanks for the positive feedback.

Comment: If referring to ED earlier in the text (in intro ?) , please spell it out followed by the abbreviation if this is used subsequently – see next sentence.

Response: We referred to emergency department in the introduction and indicated the abbreviation. We then used ED throughout the document (p.4).

Comment: This new term is now being used.

Response: As suggested, we used the term 'factors' throughout the document.

Comment: Explain this term and how it might differ from planning (referred to in next sentence).

Response: We indicated that it is assistance to navigate in the healthcare system (p.10).

Comment: Another term.

Response: As suggested, we used the term 'factors' throughout the document.

Comment: Factors?

Response: As suggested, we used the term 'factors' throughout the document.

Comment: Characteristics of CM or contextual factors?

Response: We indicated that these are contextual factors.

Comment: References.

Response: We have indicated the reference at the end of the sentence, but we put it right after 'International Classification of Health Interventions (ICHI) ' for more clarity (p.12).

Comment: My remaining concern is the different terms used. I suggest the authors use the term 'factors' (as per the framework) and carefully check throughout the document, rather than the current mixture of aspects, characteristics etc.

Response: As suggested, we used the term 'factors' throughout the document.

Comment: The term intervention should remain, where it was used as a descriptor in the reviewed article.

Response: We removed the term intervention where not indicated.

Comment: I do not consider it necessary to review this article again.

Reviewer: 2
Fiona Clement
University of Calgary, Calgary, Alberta Canada

Comment: The authors have appropriately addressed my concerns and the paper is now a novel contribution to the field.

Response: Thanks for acknowledging our contribution.

We hope this detailed response to the reviewers' comments addresses all concerns and questions and that you will consider this version of our manuscript suitable for publication.