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# BMJ Open

## Outcomes of health-focused interventions in food pantries and food banks: protocol for a scoping review

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Manuscripts

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3 **Outcomes of health-focused interventions in food pantries and food banks: protocol for a**  
4 **scoping review**  
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## Abstract

**Introduction:** Food insecurity is a difficulty faced in many households. During periods of food insecurity, households often seek food supplied by food pantries and food banks. Food insecurity has been associated with increased risk for several health conditions. For this reason, food pantries and food banks may have great promise as intervention sites, and health researchers have begun targeting food pantries and food banks as sites for health-focused interventions. The aim of the scoping review is to examine health-focused interventions implemented in food pantries and food banks to improve the health of their patrons.

**Methods and Analysis:** Relevant electronic databases (e.g., MEDLINE, Cumulative Index to Nursing and Allied Health Literature-CINAHL Complete, Science Citation Index, Cochrane Database of Systematic Reviews, etc.) will be searched using Medical Subject Headings and key terms, including food aid, food banks, food pantries, food shelves, and concepts related to food insecurity. For each de-duplicated study record identified by the search strategy, two reviewers will independently assess whether the study meets eligibility criteria (e.g., related to intervention type, context, etc.). The reviewers will examine studies' titles, abstracts, and full-text, comparing eligibility decisions to address any discrepancies. For each eligible study, data extraction will be executed by two reviewers independently, comparing extracted data to address any discrepancies. Extracted data will be synthesized and reported in a narrative review assessing the coverage and gaps in existing literature related to health-focused interventions implemented in food pantries.

**Discussion and Dissemination:** The review's results will be useful to healthcare practitioners who work with food insecure populations, healthcare researchers, and food pantry or food bank personnel. The results of this scoping review will be submitted for publication to a peer-reviewed journal, and the authors will share the findings with food pantry and food bank stakeholder groups with whom they work.

**Keywords:** food insecurity, food pantry, food bank, scoping review

## Strengths and Limitations

- This is the first scoping review to address the literature on health-focused interventions conducted in food pantries and food banks.
- The review will provide a synthesis of existing studies that will be useful to healthcare practitioners who work with food insecure populations, healthcare researchers, and food pantry and food bank personnel.
- This scoping review is focused on assessment of the coverage and gaps in the existing literature, so quality assessments of individual studies will not be a primary emphasis.

## Outcomes of health-focused interventions in food pantries and food banks: protocol for a scoping review

### INTRODUCTION

Food insecurity, defined as lack of access to sufficient amounts of nutritious food,<sup>1</sup> is a difficulty faced in many households. During periods of food insecurity, households often seek food from food pantries, which are local emergency food organizations that provide aid via distribution of unprepared food for offsite consumption.<sup>2</sup> Typical food pantries are staffed mostly by volunteers, largely funded by local donations, and associated with faith-based organizations.<sup>2</sup>

In 2015, food insecurity affected approximately 12.7% of households in the United States (US),<sup>1</sup> and 5.2% of US households obtained food from food pantries.<sup>3</sup> Among food insecure households, 28.2% obtained food from food pantries.<sup>3</sup>

Food insecurity has been associated with increased risk for several health conditions, including obesity,<sup>4</sup> diabetes,<sup>5,6</sup> hypertension,<sup>7</sup> and hyperlipidemia.<sup>7</sup> In addition, food insecurity has been associated with inferior management of diabetes,<sup>6,8</sup> hypertension,<sup>8</sup> HIV,<sup>8</sup> and depression.<sup>8,9</sup> The risk for household food insecurity rises with the presence of an adult with one or more chronic physical or mental health conditions,<sup>10</sup> and food insecurity has been identified as a predictor of adults' healthcare utilization and costs.<sup>11</sup> Based on these associations, health researchers have begun targeting food pantries and food banks (i.e., organizations that exist to distribute food to food pantries and other local agencies who in turn distribute directly to individuals or households)<sup>2</sup> as sites for health-focused interventions.<sup>12-15</sup>

Food pantries and food banks may have great promise as intervention sites. For example, interventions targeting the kinds of food distributed from food pantries and food banks have opportunity to improve food pantry households' health. Recent reviews have shown that food

pantry patrons' diets often do not meet nutritional recommendations,<sup>16</sup> and the nutritional quality of food distributed from food pantries often is insufficient to support a healthy diet.<sup>17</sup>

Furthermore, potential difficulties reaching food insecure households at more typical sites for health interventions (e.g., clinics, schools, churches, etc.) provide an opportunity to reach these households through food pantries and food banks.<sup>18</sup> However, because food pantries and food banks are not typical sites for health-related interventions, much remains unknown, including: the range of outcomes targeted by these interventions, whether these interventions have been successful, and what barriers and facilitators may have negatively or positively affected these interventions' potential for success. The scoping review described below will highlight what has been learned by existing research on health-focused interventions in food pantries and food banks; at the same time, it will identify gaps in this literature that can be addressed by future studies.

### Objectives

The aim of the scoping review is to examine the health-focused interventions implemented in food pantries and food banks to improve the health of their patrons. The review will respond to the following questions:

1. What are the primary outcome variables of health-focused interventions implemented in food pantries and food banks, and for which outcome variables have these interventions shown success?
2. Has the success of these interventions varied as a function of sex, ethnicity, or other demographic characteristics of participants?
3. What barriers and facilitators to successful implementation of these interventions have been reported?

## METHODS

Where applicable, this protocol was designed according to the principles described in the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) statement.<sup>19,20</sup>

### Eligibility criteria

Studies will be selected according to the following criteria:

- Participant population: members of any racial/ethnic, sex, or age group who patronize a food pantry or food bank;
- Intervention type: all types of interventions focused on improving the health of food pantry or food bank patrons (e.g., with respect to chronic/infectious diseases, obesity, food security, selection of healthy foods);
- Comparator: no intervention, other intervention, or within-participant pre-intervention;
- Outcomes: studies measuring and reporting health-related outcomes (e.g., body mass index, blood pressure, self-reported food security);
- Context: interventions taking place in a food pantry or food bank or having a central component taking place in a food pantry or food bank;
- Study type: all types of studies (e.g., randomized controlled trials, pilot studies, case studies, etc.).

Included studies can be from any country or region. Included studies will have been published in English with a publication date of 1997 or later. Included studies will have been published as original research in peer-reviewed journals. For the purposes of determining study eligibility, *food pantry* will be defined as local emergency food organizations that provide aid via distribution of unprepared food for offsite consumption;<sup>2</sup> *food bank* will be defined as

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3 organizations that exist to distribute food to food pantries and other agencies who distribute  
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5 directly to individuals or households.<sup>2</sup>  
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8 Studies describing interventions focused solely on the quality of food offered in food pantries or  
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10 food banks will be excluded. Likewise, studies describing interventions focused solely on  
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12 accessing government food aid programs (e.g., the US Department of Agriculture's  
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14 Supplemental Nutrition Assistance Program; Women, Infants, and Children program; or National  
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16 School Lunch Program) or studies describing interventions based solely in clinical, school,  
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18 workplace, or home settings will be excluded.  
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### 22 **Information sources**

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24 The following electronic databases will be searched for eligible studies published in English  
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26 between 1997 and 2017: MEDLINE (OVID), MEDLINE In Process & Daily Updates (OVID),  
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28 Cumulative Index to Nursing and Allied Health Literature-CINAHL Complete (EBSCO), and  
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30 Science Citation Index and Social Sciences Citation Index (both via Web of Science). The search  
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32 of All EBM Reviews (OVID) will include: Cochrane Database of Systematic Reviews, ACP  
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34 Journal Club, Databases of Abstracts of Reviews of Effects, Cochrane Central Register of  
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36 Controlled Trials, Cochrane Methodology Register, Health Technology Assessment, and the  
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38 NHS Economic Evaluation Database. All references from included studies will be reviewed for  
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40 potential inclusion in the final result set. To ensure that all eligible studies are included, database  
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42 searches will be updated prior to completion of the analysis.  
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### 48 **Search strategy**

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50 The search strategy was developed by librarian co-author SS, in consultation with co-authors CL  
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52 and BR, all of whom identified key terms. Medical Subject Headings (MeSH) were used and  
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54 exploded where appropriate to incorporate more specific headings under the MeSH terms. To  
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3 provide a comprehensive yet focused set of results, MeSH terminology will be combined with  
4 advanced textword searching techniques including truncation and adjacency searching. MeSH  
5 headings chosen were: Food Assistance, Food, and Food Supply. Terminology and key phrases  
6 chosen were: food aid, food bags, food banks, food pantries, food shelves, soup kitchens, and  
7 concepts for food insecurity. The concept of emergency food will be searched, but will not  
8 include disaster-related food services. Terminology and the overall strategy will be adapted as  
9 needed for other databases and vendor platforms. These adapted strategies and terms may be  
10 requested from the corresponding author (CL). The search terms and strategy to be used for  
11 MEDLINE (via OVID) are presented in Appendix 1.  
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### 24 **Data management**

25 Search results will be exported, stored, and shared among co-authors using RefWorks (version  
26 2.0),<sup>21</sup> which is an Internet-based reference management service. Removal of duplicate records  
27 from search results will be accomplished using RefWorks' duplicate-check function with manual  
28 oversight prior to duplicate removal. For the study selection process (see below), de-duplicated  
29 records will be exported from RefWorks into a Microsoft Excel 2013 (version 15.0)<sup>22</sup>  
30 spreadsheet.  
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### 41 **Study selection process**

42 For each de-duplicated record identified by the search strategy, two reviewers will independently  
43 examine the study's title and abstract to evaluate whether the study meets all eligibility criteria  
44 and then compare the results of the study selection process. For each study judged by the  
45 reviewers to be eligible, the full text of the article will be used to verify eligibility. Similarly, for  
46 each study for which eligibility is judged to be uncertain after examining its title and abstract, the  
47 full text of the article will be used to assess eligibility. In cases of discrepancy between the  
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3 reviewers' determination of eligibility for a study, the full text of the article will be examined by  
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5 both reviewers; if discrepancy remains, a third reviewer will be consulted to make a final  
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7 determination.  
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10 If multiple publications of a single eligible study are identified, each of the multiple publications  
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12 will be included. However, where applicable during the data extraction and synthesis process,  
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14 care will be taken to avoid double-counting single studies.  
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### 17 **Data collection process**

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19 Data extraction will be carried out by two reviewers using a Microsoft Excel spreadsheet  
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21 developed for this review. Each reviewer will extract data independently from each eligible study  
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23 and will then compare the results of the extraction process. Discrepancies in extracted data will  
24  
25 be resolved through discussion and, if needed, consultation with a third reviewer.  
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29 If data extraction cannot be accomplished for an eligible study because aspects of the study are  
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31 inadequately described in the full text of its article, reviewers will contact the publication's  
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33 corresponding author via email (up to three attempts) in order to acquire the missing information.  
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37 If multiple publications of a single eligible study have been identified, data will be extracted  
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39 from each of the multiple publications. In these cases, extracted data will be compared across  
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41 publications for logical inconsistencies. If logical inconsistencies are identified, reviewers will  
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43 attempt to resolve the inconsistencies through discussion or through contacting the publications'  
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45 corresponding author via email (up to three attempts).  
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48 The reviewers will pilot the extraction spreadsheet on a small sample of eligible studies and will  
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50 adjust the data collection fields as necessary before final data extraction begins.  
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### 53 **Data items**

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55 The following data will be extracted from each eligible article:  
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- Participant population: Race/ethnicity, sex, age group, urban/rural, other participant characteristics used as an inclusion criterion;
- Intervention type: Stated health-related focus of intervention (e.g., chronic/infectious diseases, obesity, food security, selection of healthy foods), duration of intervention, and brief description of intervention;
- Comparator: Comparator type (e.g., no intervention, within-participant pre-intervention, other intervention, other comparator) and description;
- Outcomes: Primary and secondary health-related outcomes (e.g., body mass index, blood pressure, self-reported food security, etc.) and the extent to which each of these outcomes was affected by the intervention;
- Context: Whether the intervention took place in a food pantry or food bank and other notable characteristics of the food pantry or food bank. (e.g., did the pantry or bank follow a client-choice model of food distribution? Was the pantry or bank based in a religious organization, clinic, school, etc.);
- Study type: Type of study design used (e.g., randomized controlled trial, single-arm pilot study, single-subject design, etc.);
- Publication details: Authors, article title, journal title, year of publication, volume number, issue number, page numbers.

Because this scoping review's focus is to assess the coverage and gaps in existing literature on health-focused interventions in food pantries and food banks, quality assessment of individual eligible studies will not be a primary emphasis of the data extraction process.

### Data synthesis

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3 Data synthesis will include producing quantitative summaries of extracted data that incorporate  
4 frequencies and percentages for most extracted data fields. It will also include production of  
5 qualitative summaries resulting from inductive coding of the extracted data. These summaries  
6 will be used to assess the coverage and gaps in existing literature. In addition, these summaries  
7 will allow us to identify (1) primary outcome variables of health-focused interventions  
8 implemented in food pantries and food banks (and for which outcome variables these  
9 interventions have shown success); (2) the extent to which success of these interventions has  
10 varied as a function of sex, ethnicity, or other demographic characteristics of participants; and (3)  
11 barriers and facilitators to successful implementation of these interventions. The data synthesis  
12 summaries will also provide enough information to determine whether the existing literature in  
13 this area would support a systematic review.  
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## 29 **DISCUSSION AND DISSEMINATION**

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31 The purpose of this review is to examine interventions implemented in food pantries and/or food  
32 banks and intended to improve the health of people who obtain food from food pantries or food  
33 banks; it will also identify where there are gaps in the existing literature. This will be the first  
34 scoping review on this topic. For this reason, it will be useful to healthcare practitioners who  
35 work with food insecure populations, healthcare researchers who study topics related to food  
36 insecurity or intervention implementation, food pantry or food bank personnel who explore ways  
37 to improve the health of their patrons, and others. To facilitate dissemination to these groups, the  
38 results of this scoping review will be submitted for publication to a peer-reviewed journal, and  
39 the authors will share the findings with food pantry and food bank stakeholder groups with  
40 whom they work.  
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## Authors' Contributions

CL, BR, and PM designed the protocol, and SS developed the search strategy in consultation with CL and BR. CL and BR drafted the protocol, and SS and PM edited the protocol. All authors approved the current version of the protocol.

## Funding Statement

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## Competing Interests

The authors have no competing interests to declare.

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**Appendix 1.** MEDLINE search terms and strategy

#	Searches	Results	Type
1	exp Food Assistance/ and (aid or aide or assist* or bag* or bank* or box* or pantr* or shelf or shelves or secure or insecurity or insecure).ti,ab.	231	Advanced
2	exp Food/ and (food adj1 (aid or aide or assist* or bag* or bank* or box* or pantr* or shelf or shelves or secure or insecurity or insecure)).ti.	172	Advanced
3	exp *Food Supply/ and (food adj2 (aid or aide or assistance* or bag* or bank* or box* or pantr* or shelf or shelves)).ti,ab.	250	Advanced
4	exp Food Supply/ and (food adj2 (aid or aide or assistance* or bag* or bank* or box* or pantr* or shelf or shelves)).ti.	114	Advanced
5	(food adj2 (aid or aide or assist* or bag* or bank* or box* or pantr* or shelf or shelves or secure or insecurity or insecure or scarcity)).ti.	1010	Advanced
6	((emergency adj2 (food* or meal* or nutrition)) not (disaster* or tornado* or fire* or mudslide* or flood* or poisoning or spoil*)).mp.	126	Advanced
7	((charity or charitable) adj2 (food* or meal* or nutrition)) or (soup adj kitchen*) or ("free meal" or "free meals") or "food support").ti,ab.	253	Advanced
8	(community and ((food* or meal*) adj1 (aid or aide or assistance* or bag* or bank* or box* or pantr* or shelf or shelves or secure or insecurity or insecure or scarcity))).ti,ab.	482	Advanced
9	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8	1842	Advanced
10	limit 9 to English language	1767	Advanced
11	limit 10 to yr="1997 - 2017"	1590	Advanced

**PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol\***

Section and topic	Item No	Checklist item	Page Addressed
<b>ADMINISTRATIVE INFORMATION</b>			
Title:			
Identification	1a	Identify the report as a protocol of a systematic review	1
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	N/A
Registration	2	If registered, provide the name of the registry (such as PROSPERO) and registration number	N/A
Authors:			
Contact	3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	11
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	N/A
Support:			
Sources	5a	Indicate sources of financial or other support for the review	11
Sponsor	5b	Provide name for the review funder and/or sponsor	N/A
Role of sponsor or funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	N/A
<b>INTRODUCTION</b>			
Rationale	6	Describe the rationale for the review in the context of what is already known	3-4
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	4
<b>METHODS</b>			
Eligibility criteria	8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	5
Information sources	9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	6
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be	Appendix A



		repeated	
Study records:			
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	7
Selection process	11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	7-8
Data collection process	11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	8
Data items	12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	8-9
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	9
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	9-10
Data synthesis	15a	Describe criteria under which study data will be quantitatively synthesised	10
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as $I^2$ , Kendall's $\tau$ )	N/A
	15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	N/A
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	10
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	N/A
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	N/A

\*From: Shamseer L, Moher D, Clarke M, et al. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. BMJ. 2015;349:g7647.

# BMJ Open

## Outcomes of disease prevention and management interventions in food pantries and food banks: protocol for a scoping review

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2017-018022.R1
Article Type:	Protocol
Date Submitted by the Author:	11-Aug-2017
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<b>Primary Subject Heading</b>:	Public health
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3 **Outcomes of disease prevention and management interventions in food pantries and food**  
4 **banks: protocol for a scoping review**  
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## Abstract

**Introduction:** Food insecurity is a difficulty faced in many households. During periods of food insecurity, households often seek food supplied by food pantries and food banks. Food insecurity has been associated with increased risk for several health conditions. For this reason, food pantries and food banks may have great promise as intervention sites, and health researchers have begun targeting food pantries and food banks as sites for disease prevention or management interventions. The aim of the scoping review is to examine disease prevention or management interventions implemented in food pantries and food banks.

**Methods and analysis:** Relevant electronic databases (e.g., MEDLINE, Cumulative Index to Nursing and Allied Health Literature-CINAHL Complete, Science Citation Index, Cochrane Database of Systematic Reviews, etc.) will be searched for articles with a publication date of 1997 or later using Medical Subject Headings and key terms, including food aid, food banks, food pantries, food shelves, hunger, food insecurity, and related concepts. For each de-duplicated study record identified by the search strategy, two reviewers will independently assess whether the study meets eligibility criteria (e.g., related to intervention type, context, etc.). The reviewers will examine studies' titles, abstracts, and full-text, comparing eligibility decisions to address any discrepancies. For each eligible study, data extraction will be executed by two reviewers independently, comparing extracted data to address any discrepancies. Extracted data will be synthesized and reported in a narrative review assessing the coverage and gaps in existing literature related to disease prevention and management interventions implemented in food pantries.

**Ethics and dissemination:** The review's results will be useful to healthcare practitioners who work with food insecure populations, healthcare researchers, and food pantry or food bank personnel. The results of this scoping review will be submitted for publication to a peer-reviewed journal, and the authors will share the findings with food pantry and food bank stakeholder groups with whom they work.

**Keywords:** food insecurity, food pantry, food bank, scoping review, disease prevention, disease management

## Strengths and limitations

- This is the first scoping review to address the literature on disease prevention and management interventions conducted in food pantries and food banks.
- The review will provide a synthesis of existing studies that will be useful to healthcare practitioners who work with food insecure populations, healthcare researchers, and food pantry and food bank personnel.
- This scoping review is focused on assessment of the coverage and gaps in the existing literature, so quality assessments of individual studies will not be a primary emphasis.

## Outcomes of disease prevention and management interventions in food pantries and food banks: protocol for a scoping review

### INTRODUCTION

Food insecurity, defined as lack of access to sufficient amounts of nutritious food,<sup>1</sup> is a difficulty faced in many households. Periods of food insecurity may last for days, weeks, or years for some households. During these periods, households often seek food from food pantries, which are local emergency food organizations that provide aid via distribution of unprepared food for offsite consumption.<sup>2,3</sup> Typical food pantries are staffed mostly by volunteers, largely funded by local donations, and associated with faith-based organizations.<sup>2</sup> (To minimize confusion related to regional variations in terminology, this protocol uses terminology common to United States Department of Agriculture (USDA) reporting, where *food pantries* identifies local emergency food organizations that provide aid via distribution of unprepared food for offsite consumption,<sup>2,3</sup> and *food banks* identifies organizations that exist to distribute food to food pantries and other agencies who in turn distribute directly to individuals or households.<sup>2</sup>)

In 2015, food insecurity affected approximately 12.7% of households in the US,<sup>1</sup> and at least 5.2% of US households obtained food from food pantries.<sup>3</sup> Among food insecure households, 28.2% obtained food from food pantries.<sup>3</sup>

Food insecurity has been associated with increased risk for several health conditions, including obesity,<sup>4</sup> diabetes,<sup>5,6</sup> hypertension,<sup>7</sup> and hyperlipidemia.<sup>7</sup> In addition, food insecurity has been associated with inferior management of diabetes,<sup>6,8</sup> hypertension,<sup>8</sup> HIV,<sup>8</sup> and depression.<sup>8,9</sup> The risk for household food insecurity rises with the presence of an adult with one or more chronic physical or mental health conditions,<sup>10</sup> and food insecurity has been identified as a predictor of adults' healthcare utilization and costs.<sup>11</sup> Based on these associations, health researchers have

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2  
3 begun targeting food pantries and food banks as sites for interventions focused explicitly on  
4 preventing and managing disease.<sup>12-15</sup>  
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8 Food pantries and food banks may have great promise as intervention sites. For example,  
9 interventions targeting the kinds of food distributed from food pantries and food banks have  
10 opportunity to improve food pantry households' diet and health. Recent reviews have shown that  
11 food pantry patrons' diets often do not meet nutritional recommendations,<sup>16</sup> and the nutritional  
12 quality of food distributed from food pantries often is insufficient to support a healthy diet.<sup>17</sup>  
13  
14 Furthermore, potential difficulties reaching food insecure households at more typical sites for  
15 disease prevention and management interventions (e.g., clinics, schools, churches, etc.) provide  
16 an opportunity to reach these households through food pantries and food banks.<sup>18</sup> However,  
17 because food pantries and food banks are not typical sites for interventions explicitly targeting  
18 disease prevention and management, much remains unknown, including: the range of health  
19 indicators assessed as part of these interventions, whether these interventions have been  
20 successful, and what barriers and facilitators may have negatively or positively affected these  
21 interventions' potential for success. The scoping review described below will highlight what has  
22 been learned by existing research on disease prevention and management interventions in food  
23 pantries and food banks; at the same time, it will identify gaps in this literature that can be  
24 addressed by future studies. To better contextualize the results of this review within the wider  
25 literature of disease prevention and management interventions implemented in more typical sites,  
26 the scoping review will focus on food pantry intervention studies that include assessment of  
27 change in at least one biometric health indicator (e.g., body mass index, blood pressure, blood  
28 glucose).  
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## 54 55 **Objectives** 56 57 58 59 60

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3 The aim of the scoping review is to examine the disease prevention and management  
4 interventions implemented in food pantries and food banks. The review will respond to the  
5  
6 following questions:  
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11 1. What are the primary biometric indicators targeted by the disease prevention and  
12 management interventions implemented in food pantries and food banks, and for which  
13 biometric indicators have these interventions shown success?  
14  
15 2. Has the success of these interventions varied as a function of sex, ethnicity, or other  
16 demographic characteristics of participants?  
17  
18 3. What barriers and facilitators to successful implementation of these interventions have  
19 been reported?  
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## 27 **METHODS AND ANALYSIS**

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29 Where applicable, this protocol was designed according to the principles described in the  
30 Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P)  
31 statement.<sup>19,20</sup>  
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### 36 **Eligibility criteria**

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38 Studies will be selected according to the following criteria:  
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- 40  
41 • Participant population: members of any racial/ethnic, sex, or age group who patronize a  
42 food pantry or food bank;  
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44 • Intervention type: all types of interventions focused on disease prevention or  
45 management among food pantry or food bank patrons (e.g., with respect to diabetes,  
46 obesity, infectious diseases, etc.);  
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48 • Comparator: no intervention, other intervention, or within-participant pre-intervention;  
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- Outcomes: studies measuring and reporting at least one biometric indicator (e.g., body mass index, blood pressure, blood glucose, etc.) as an intervention outcome variable;
- Context: interventions taking place in a food pantry or food bank or having a central component taking place in a food pantry or food bank;
- Study type: all types of studies (e.g., randomized controlled trials, pilot studies, case studies, etc.).

Included studies can be from any country or region. Included studies will have been published in English with a publication date of 1997 or later. Included studies will have been published as original research in peer-reviewed journals.

Studies describing interventions focused solely on the quality of food offered in food pantries or food banks will be excluded. Likewise, as the focus of the review is on interventions in local emergency food organizations and their distributors, studies describing interventions focused solely on accessing government food aid programs (e.g., the USDA's Supplemental Nutrition Assistance Program; Women, Infants, and Children program; or National School Lunch Program) or studies describing interventions based solely in clinical, school, workplace, or home settings will be excluded.

### **Information sources**

The following electronic databases will be searched for eligible studies published in English between 1997 and 2017: MEDLINE (OVID), MEDLINE In Process & Daily Updates (OVID), Cumulative Index to Nursing and Allied Health Literature-CINAHL Complete (EBSCO), and Science Citation Index and Social Sciences Citation Index (both via Web of Science). The search of All EBM Reviews (OVID) will include: Cochrane Database of Systematic Reviews, ACP Journal Club, Databases of Abstracts of Reviews of Effects, Cochrane Central Register of



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3 Controlled Trials, Cochrane Methodology Register, Health Technology Assessment, and the  
4  
5 NHS Economic Evaluation Database. All references from included studies will be reviewed for  
6  
7 potential inclusion in the final result set. To ensure that all eligible studies are included, database  
8  
9 searches will be updated prior to completion of the analysis.  
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### 12 **Search strategy**

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14 The search strategy was developed by librarian co-author SS, in consultation with co-authors CL  
15  
16 and BR, all of whom identified key terms. Medical Subject Headings (MeSH) were used and  
17  
18 exploded where appropriate to incorporate more specific headings under the MeSH terms. To  
19  
20 provide a comprehensive yet focused set of results, MeSH terminology will be combined with  
21  
22 advanced textword searching techniques including truncation and adjacency searching. MeSH  
23  
24 headings chosen were: Food Assistance, Food, and Food Supply. Terminology and key phrases  
25  
26 chosen were: food aid, food bags, food banks, food pantries, food shelves, soup kitchens, hunger,  
27  
28 and concepts for food insecurity. The concept of emergency food will be searched, but will not  
29  
30 include disaster-related food services. Terminology and the overall strategy will be adapted as  
31  
32 needed for other databases and vendor platforms. These adapted strategies and terms may be  
33  
34 requested from the corresponding author (CL). The search terms and strategy to be used for  
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36 MEDLINE (via OVID) are presented in Appendix 1.  
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### 43 **Data management**

44  
45 Search results will be exported, stored, and shared among co-authors using RefWorks (version  
46  
47 2.0),<sup>21</sup> which is an Internet-based reference management service. Removal of duplicate records  
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49 from search results will be accomplished using RefWorks' duplicate-check function with manual  
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51 oversight prior to duplicate removal. For the study selection process (see below), de-duplicated  
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3 records will be exported from RefWorks into a Microsoft Excel 2013 (version 15.0)<sup>22</sup>  
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5 spreadsheet.  
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### 8 **Study selection process**

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10 For each de-duplicated record identified by the search strategy, two reviewers will independently  
11  
12 examine the study's title and abstract to evaluate whether the study meets all eligibility criteria  
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14 and then compare the results of the study selection process. For each study judged by the  
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16 reviewers to be eligible, the full text of the article will be used to verify eligibility. Similarly, for  
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18 each study for which eligibility is judged to be uncertain after examining its title and abstract, the  
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20 full text of the article will be used to assess eligibility. In cases of discrepancy between the  
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22 reviewers' determination of eligibility for a study, the full text of the article will be examined by  
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24 both reviewers; if discrepancy remains, a third reviewer will be consulted to make a final  
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26 determination.  
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31 If multiple publications of a single eligible study are identified, each of the multiple publications  
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33 will be included. However, where applicable during the data extraction and synthesis process,  
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35 care will be taken to avoid double-counting single studies.  
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### 39 **Data collection process**

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41 Data extraction will be carried out by two reviewers using a Microsoft Excel spreadsheet  
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43 developed for this review. Each reviewer will extract data independently from each eligible study  
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45 and will then compare the results of the extraction process. Discrepancies in extracted data will  
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47 be resolved through discussion and, if needed, consultation with a third reviewer.  
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50  
51 If data extraction cannot be accomplished for an eligible study because aspects of the study are  
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53 inadequately described in the full text of its article, reviewers will contact the publication's  
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55 corresponding author via email (up to three attempts) in order to acquire the missing information.  
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3 If multiple publications of a single eligible study have been identified, data will be extracted  
4 from each of the multiple publications. In these cases, extracted data will be compared across  
5 publications for logical inconsistencies. If logical inconsistencies are identified, reviewers will  
6 attempt to resolve the inconsistencies through discussion or through contacting the publications'  
7 corresponding author via email (up to three attempts).  
8  
9

10 The reviewers will pilot the extraction spreadsheet on a small sample of eligible studies and will  
11 adjust the data collection fields as necessary before final data extraction begins.  
12  
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### 14 **Data items**

15 The following data will be extracted from each eligible article:  
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- 18 • Participant population: Race/ethnicity, sex, age group, urban/rural, other participant  
19 characteristics used as an inclusion criterion;
- 20 • Intervention type: Stated disease focus of intervention (e.g., prevention or management of  
21 diabetes, obesity, infectious diseases, etc.), duration of intervention, and brief description  
22 of intervention;
- 23 • Comparator: Comparator type (e.g., no intervention, within-participant pre-intervention,  
24 other intervention, other comparator) and description;
- 25 • Outcomes: Primary and secondary biometric outcomes (e.g., body mass index, blood  
26 pressure, blood glucose, etc.), any other outcomes reported, and the extent to which each  
27 outcome was affected by the intervention;
- 28 • Context: Whether the intervention took place in a food pantry or food bank and other  
29 notable characteristics of the food pantry or food bank. (e.g., did the pantry or bank  
30 follow a client-choice model of food distribution? Was the pantry or bank based in a  
31 religious organization, clinic, school, etc.?);  
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- Barriers and facilitators of successful intervention implementation: Barriers or facilitators of intervention implementation noted by study authors, including factors related to the intervention characteristics, implementation setting, individuals involved (e.g., pantry staff, research team, participant population, etc.), and implementation process;<sup>23</sup>
- Study type: Type of study design used (e.g., randomized controlled trial, single-arm pilot study, single-subject design, etc.);
- Publication details: Authors, article title, journal title, year of publication, volume number, issue number, page numbers.

Because this scoping review's focus is to assess the coverage and gaps in existing literature on disease prevention and management interventions in food pantries and food banks, quality assessment of individual eligible studies will not be a primary emphasis of the data extraction process.

### **Data synthesis**

Data synthesis will include producing quantitative summaries of extracted data that incorporate frequencies and percentages for most extracted data fields. It will also include production of qualitative summaries resulting from inductive coding of the extracted data. These summaries will be used to assess the coverage and gaps in existing literature. In addition, these summaries will allow us to identify (1) primary outcome variables of disease prevention and management interventions implemented in food pantries and food banks (and for which outcome variables these interventions have shown success); (2) the extent to which success of these interventions has varied as a function of sex, ethnicity, or other demographic characteristics of participants; and (3) barriers and facilitators to successful implementation of these interventions. The data

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3 synthesis summaries will also provide enough information to determine whether the existing  
4 literature in this area would support a systematic review.  
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## 7 8 **ETHICS AND DISSEMINATION** 9

10 The purpose of this review is to examine interventions implemented in food pantries and/or food  
11 banks and intended to prevent or manage disease among people who obtain food from food  
12 pantries or food banks; it will also identify where there are gaps in the existing literature. This  
13 will be the first scoping review on this topic. For this reason, it will be useful to healthcare  
14 practitioners who work with food insecure populations, healthcare researchers who study topics  
15 related to food insecurity or intervention implementation, food pantry or food bank personnel  
16 who explore ways to improve the health of their patrons, and others. To facilitate dissemination  
17 to these groups, the results of this scoping review will be submitted for publication to a peer-  
18 reviewed journal, and the authors will share the findings with food pantry and food bank  
19 stakeholder groups with whom they work.  
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## 36 **Authors' Contributions** 37

38 CL, BR, and PM designed the protocol, and SS developed the search strategy in consultation  
39 with CL and BR. CL and BR drafted the protocol, and SS and PM edited the protocol. All  
40 authors approved the current version of the protocol.  
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48 This research received no specific grant from any funding agency in the public, commercial, or  
49 not-for-profit sectors.  
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## 53 **Competing Interests** 54

55 The authors have no competing interests to declare.  
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## Appendix 1. MEDLINE search terms and strategy

#	Searches
1	exp Food Assistance/ and (aid or aide or assist* or bag* or bank* or box* or pantr* or shelf or shelves or secure or insecurity or insecure).ti,ab.
2	exp Food/ and (food adj1 (aid or aide or assist* or bag* or bank* or box* or pantr* or shelf or shelves or secure or insecurity or insecure)).ti.
3	exp *Food Supply/ and (food adj2 (aid or aide or assistance* or bag* or bank* or box* or pantr* or shelf or shelves)).ti,ab.
4	exp Food Supply/ and (food adj2 (aid or aide or assistance* or bag* or bank* or box* or pantr* or shelf or shelves)).ti.
5	(food adj2 (aid or aide or assist* or bag* or bank* or box* or pantr* or shelf or shelves or secure or insecurity or insecure or scarcity)).ti.
6	((emergency adj2 (food* or meal* or nutrition)) not (disaster* or tornado* or fire* or mudslide* or flood* or poisoning or spoil*)).mp.
7	((charity or charitable) adj2 (food* or meal* or nutrition)) or (soup adj kitchen*) or ("free meal" or "free meals") or "food support").ti,ab.
8	(community and ((food* or meal*) adj1 (aid or aide or assistance* or bag* or bank* or box* or pantr* or shelf or shelves or secure or insecurity or insecure or scarcity))).ti,ab.
9	exp Hunger/ and (food adj2 (aid or aide or assist* or bag* or bank* or box* or pantr* or shelf or shelves or secure or insecurity or insecure)).ti.
10	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9
11	limit 10 to english language
12	limit 11 to yr="1997 - 2017"



**PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol\***

Section and topic	Item No	Checklist item	Page Addressed
<b>ADMINISTRATIVE INFORMATION</b>			
Title:			
Identification	1a	Identify the report as a protocol of a systematic review	1
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	N/A
Registration	2	If registered, provide the name of the registry (such as PROSPERO) and registration number	N/A
Authors:			
Contact	3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	11
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	N/A
Support:			
Sources	5a	Indicate sources of financial or other support for the review	11
Sponsor	5b	Provide name for the review funder and/or sponsor	N/A
Role of sponsor or funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	N/A
<b>INTRODUCTION</b>			
Rationale	6	Describe the rationale for the review in the context of what is already known	3-4
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	4
<b>METHODS</b>			
Eligibility criteria	8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	5
Information sources	9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	6
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits such that it could be	Appendix A

		repeated	
Study records:			
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	7
Selection process	11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	7-8
Data collection process	11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, or duplicate), any processes for obtaining and confirming data from investigators	8
Data items	12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	8-9
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	9
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	9-10
Data synthesis	15a	Describe criteria under which study data will be quantitatively synthesised	10
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as $I^2$ , Kendall's)	N/A
	15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	N/A
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	10
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	N/A
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	N/A

\*From: Shamseer L, Moher D, Clarke M, et al. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. *BMJ*. 2015;349:g7647.