Review title and timescale

1. Review title
   Give the working title of the review. This must be in English. Ideally it should state succinctly the interventions or exposures being reviewed and the associated health or social problem being addressed in the review.
   **The prevalence, diagnosis and outcomes of frailty in elderly cancer patients**

2. Original language title
   For reviews in languages other than English, this field should be used to enter the title in the language of the review. This will be displayed together with the English language title.

3. Anticipated or actual start date
   Give the date when the systematic review commenced, or is expected to commence.
   16/12/2013

4. Anticipated completion date
   Give the date by which the review is expected to be completed.
   28/03/2014

5. Stage of review at time of this submission
   Indicate the stage of progress of the review by ticking the relevant boxes. Reviews that have progressed beyond the point of completing data extraction at the time of initial registration are not eligible for inclusion in PROSPERO. This field should be updated when any amendments are made to a published record.
   - The review has not yet started ✗

<table>
<thead>
<tr>
<th>Review stage</th>
<th>Started</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary searches</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Piloting of the study selection process</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Formal screening of search results against eligibility criteria</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Data extraction</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Risk of bias (quality) assessment</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Data analysis</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Provide any other relevant information about the stage of the review here.

Review team details

6. Named contact
   The named contact acts as the guarantor for the accuracy of the information presented in the register record.
   **Catherine Handforth**

7. Named contact email
   Enter the electronic mail address of the named contact.
   cathandforth@gmail.com

8. Named contact address
   Enter the full postal address for the named contact.
   **St James' institute of oncology Level 4 Bexley wing SJUH Beckett Street Leeds LS9 7TF**

9. Named contact phone number
   Enter the telephone number for the named contact, including international dialing code.
   +44 (0)447870280110

10. Organisational affiliation of the review
    Full title of the organisational affiliations for this review, and website address if available. This field may be completed as "None" if the review is not affiliated to any organisation.
    **University of Leeds**
Review team members and their organisational affiliations
Give the title, first name and last name of all members of the team working directly on the review. Give the organisational affiliations of each member of the review team.

<table>
<thead>
<tr>
<th>Title</th>
<th>First name</th>
<th>Last name</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr</td>
<td>Catherine</td>
<td>Handforth</td>
<td>Leeds Teaching Hospitals</td>
</tr>
<tr>
<td>Dr</td>
<td>Andrew</td>
<td>Clegg</td>
<td>Bradford Teaching Hospitals</td>
</tr>
<tr>
<td>Dr</td>
<td>Caroline</td>
<td>Young</td>
<td>Leeds Teaching Hospitals</td>
</tr>
</tbody>
</table>

Funding sources/sponsors
Give details of the individuals, organizations, groups or other legal entities who take responsibility for initiating, managing, sponsoring and/or financing the review. Any unique identification numbers assigned to the review by the individuals or bodies listed should be included.
Not applicable.

Conflicts of interest
List any conditions that could lead to actual or perceived undue influence on judgements concerning the main topic investigated in the review.
Are there any actual or potential conflicts of interest?
None known

Collaborators
Give the name, affiliation and role of any individuals or organisations who are working on the review but who are not listed as review team members.

Review methods

Review question(s)
State the question(s) to be addressed / review objectives. Please complete a separate box for each question.

What are the outcomes of frailty in elderly cancer patients?

Searches
Give details of the sources to be searched, and any restrictions (e.g. language or publication period). The full search strategy is not required, but may be supplied as a link or attachment.
MEDLINE, CINAHL, Cochrane Library, EMBASE, Web of Science, Allied and complementary medicine, PsycINFO, and Proquest

URL to search strategy
If you have one, give the link to your search strategy here. Alternatively you can e-mail this to PROSPERO and we will store and link to it.

I give permission for this file to be made publicly available
Yes

Condition or domain being studied
Give a short description of the disease, condition or healthcare domain being studied. This could include health and wellbeing outcomes.
Frailty is common in elderly cancer patients. It presents a challenge to clinicians treating these patients, and may have significant impact on the treatments offered to frail patients with cancer.

Participants/population
Give summary criteria for the participants or populations being studied by the review. The preferred format includes details of both inclusion and exclusion criteria.
Patients with a mean age of greater than 70, and with a diagnosis of a solid or haematological malignancy will be included. The reference standard used for frailty must be either comprehensive geriatric assessment, the cumulative deficit model, or the phenotype model. Studies that do not use one of these three will be excluded. Studies must clearly state how frailty is defined on the basis of the results of assessments.

20 Intervention(s), exposure(s)
Give full and clear descriptions of the nature of the interventions or the exposures to be reviewed.
Frail patients will be identified through the use of one of the three reference standard tests.

21 Comparator(s)/control
Where relevant, give details of the alternatives against which the main subject/topic of the review will be compared (e.g. another intervention or a non-exposed control group).
The control group will be considered to be not frail, as defined by one of the reference standards.

22 Types of study to be included
Give details of the study designs to be included in the review. If there are no restrictions on the types of study design eligible for inclusion, this should be stated.
Prospective cohort studies, case control studies and cross sectional studies will be considered for inclusion.
Randomised controlled trials and cluster randomised controlled trials will only be considered if the inclusion/exclusion criteria identify study participants who are representative of a general population of frail older people.

23 Context
Give summary details of the setting and other relevant characteristics which help define the inclusion or exclusion criteria.
Studies may be conducted in either a community or hospital setting.

24 Primary outcome(s)
Give the most important outcomes.
Prevalence of frailty in elderly cancer patients.
Give information on timing and effect measures, as appropriate.

25 Secondary outcomes
List any additional outcomes that will be addressed. If there are no secondary outcomes enter None.
Treatment related side effects, hospitalisation for treatment related effects, morbidity, mortality, overall survival.
Give information on timing and effect measures, as appropriate.

26 Data extraction (selection and coding)
Give the procedure for selecting studies for the review and extracting data, including the number of researchers involved and how discrepancies will be resolved. List the data to be extracted.
Two independent reviewers will assess all titles and abstracts to identify all potentially eligible studies, with any disagreements being resolved by consensus. Two independent reviewers will then assess all full text articles for inclusion, with disagreements being resolved by consensus. A piloted data extraction form will be used. Two independent reviewers will extract all data. Baseline data will include age, gender, comorbidities, functional status, cancer diagnosis, cancer stage and cancer treatment history. For prevalence and outcome studies, the reference standard frailty model, including cut-points for diagnosis of frailty, will be recorded. For diagnostic test accuracy studies, the reference standard frailty model and index tests, including cut-points for diagnosis, will be recorded. Where data are missing or unclear, original study investigators will be contacted to obtain further details.

27 Risk of bias (quality) assessment
State whether and how risk of bias will be assessed, how the quality of individual studies will be assessed, and whether and how this will influence the planned synthesis.
Quality assessment will be carried out using the Newcastle Ottawa checklist for prevalence and outcome studies, and the QUADAS tool for diagnostic test accuracy studies. Quality assessment will be interdependently carried out by two assessors.

28 Strategy for data synthesis
Give the planned general approach to be used, for example whether the data to be used will be aggregate or at the level of individual participants, and whether a quantitative or narrative (descriptive) synthesis is planned.
appropriate a brief outline of analytic approach should be given.
Baseline frailty prevalence data will be extracted and presented as percentages. If repeat prevalence measurements of frailty are reported these will be extracted and presented to assess trend patterns of frailty progression in elderly cancer patients. Sensitivity and specificity, with 95% confidence intervals, will be calculated for each index test by extracting and analysing primary data on sensitivity, specificity, positive and negative predictive values will be extracted from included studies using RevMan 5.2 software. Where possible, 2x2 tables will be constructed using primary reported data on true positive, true negative, false positive and false negative rates. Meta-analysis of primary data will only be performed if the reported cut points for diagnosis of frailty using reference tests and index tests are consistent across studies by applying bivariate modelling using Stata 12 software if the reported cut points for diagnosis of frailty using reference tests and index tests are consistent across studies. If different cut-points are used for diagnosis of frailty we will construct summary receiver operating characteristic (SROC) curves for each index test and assess for statistically significant differences across tests. For all dichotomous outcomes, adjusted risk ratios (RRs), odds ratios (ORs) and hazard ratios (HRs) with associated 95% confidence intervals, controlled for at least two of the important confounding variables of age, comorbidity and cancer stage will be preferred. If these are not presented, primary data will be extracted to enable calculation of unadjusted risk ratios with Mantel-Haenszel random effects modelling using RevMan 5.2 software. Meta-analysis of adjusted risk estimates will be by inverse variance random effects modelling using RevMan 5.2 software. For continuous outcomes, primary data with 95% confidence intervals will be extracted. Meta-analysis of adjusted risk estimates will be by inverse variance random effects modelling using RevMan 5.2 software for continuous outcomes that have been adjusted on the basis of the identified important confounding variables.

29 Analysis of subgroups or subsets
Give any planned exploration of subgroups or subsets within the review. 'None planned' is a valid response if no subgroup analyses are planned.
None planned.

Review general information

30 Type and method of review
Select the type of review and the review method from the drop down list.
Diagnostic, Epidemiologic, Prognostic

31 Language
Select the language(s) in which the review is being written and will be made available, from the drop down list. Use the control key to select more than one language.
English

Will a summary/abstract be made available in English?
Yes

32 Country
Select the country in which the review is being carried out from the drop down list. For multi-national collaborations select all the countries involved. Use the control key to select more than one country.
England

33 Other registration details
Give the name of any organisation where the systematic review title or protocol is registered together with any unique identification number assigned. If extracted data will be stored and made available through a repository such as the Systematic Review Data Repository (SRDR), details and a link should be included here.

34 Reference and/or URL for published protocol
Give the citation for the published protocol, if there is one.
Give the link to the published protocol, if there is one. This may be to an external site or to a protocol deposited with CRD in pdf format.

I give permission for this file to be made publicly available
Yes
35 Dissemination plans
Give brief details of plans for communicating essential messages from the review to the appropriate audiences.
Presentation at national conference. Publication in a high impact journal.
Do you intend to publish the review on completion?
Yes

36 Keywords
Give words or phrases that best describe the review. (One word per box, create a new box for each term)
Frailty
Elderly
Oncology

37 Details of any existing review of the same topic by the same authors
Give details of earlier versions of the systematic review if an update of an existing review is being registered, including full bibliographic reference if possible.

38 Current review status
Review status should be updated when the review is completed and when it is published.
Completed but not published

01/05/2014

39 Any additional information
Provide any further information the review team consider relevant to the registration of the review.

40 Details of final report/publication(s)
This field should be left empty until details of the completed review are available.
Give the full citation for the final report or publication of the systematic review.
Give the URL where available.