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**Establishing the evidence base for unplanned emergency general surgery: A synthesis of systematic reviews**

**Additional file: Appendices**

## Appendix 1: Search Strategy

Search Strategies for Centre for Reviews and Dissemination (CRD) databases

### Appendicitis

- 1 MeSH DESCRIPTOR Appendicitis EXPLODE ALL TREES
- 2 MeSH DESCRIPTOR Appendix EXPLODE ALL TREES
- 3 MeSH DESCRIPTOR Appendectomy EXPLODE ALL TREES
- 4 (appendicitis)
- 5 (appendectomy)
- 6 (Appendicectomy)
- 7 ((appendix) AND (rupture\* or perforat\*))
- 8 #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7

### Abscess

- 1 MeSH DESCRIPTOR Anus Diseases EXPLODE ALL TREES
- 2 MeSH DESCRIPTOR Anal Canal EXPLODE ALL TREES
- 3 #1 OR #2
- 4 MeSH DESCRIPTOR Abscess EXPLODE ALL TREES
- 5 MeSH DESCRIPTOR fistula
- 6 MeSH DESCRIPTOR Suppuration
- 7 MeSH DESCRIPTOR Sepsis
- 8 #4 OR #5 OR #6 OR #7
- 9 #3 AND #8
- 10 fistula-in -ano
- 11 (anus or anal or perianal\* or peri-anal\* or perirectal\* or peri-rectal\* or anoperineal\* ) OR (anorectal\* or ano-rectal\*)
- 12 (abscess\* or fistula\* or sepsis\*)
- 13 #11 AND #12
- 14 #9 OR #10 OR #13

### Gallbladder

- 1 MeSH DESCRIPTOR Biliary Tract Surgical Procedures EXPLODE ALL TREES
- 2 MeSH DESCRIPTOR Biliary Tract EXPLODE ALL TREES
- 3 MeSH DESCRIPTOR Biliary Tract Diseases EXPLODE ALL TREES
- 4 MeSH DESCRIPTOR Pancreatitis EXPLODE ALL TREES
- 5 #1 OR #2 OR #3 OR #4
- 6 (Cholecystectom\*)
- 7 (Cholecystostom\*)
- 8 (Cholecystolithiasis)
- 9 (Choledocholithiasis)
- 10 (Cholecystitis)
- 11 (Cholelithiasis)
- 12 (pancreatitis)
- 13 (gallstone\*)
- 14 (gall stone\*)
- 15 (biliary colic)
- 16 #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15
- 17 #5 OR #16

## Hernia and bowel

- 1 MeSH DESCRIPTOR Hernia, Abdominal EXPLODE ALL TREES
- 2 MeSH DESCRIPTOR Hernia, Obturator
- 3 MeSH DESCRIPTOR Herniorrhaphy
- 4 #1 OR #2 OR #3
- 5 (herni\*) AND ((inguinal\* or femoral\* or ventral\* or obturator\* or umbilical\*))
  
- 6 (herniorrhaphy)
- 7 #5 OR #6
- 8 #4 OR #7

- 1 MeSH DESCRIPTOR Colonic Diseases EXPLODE ALL TREES
- 2 MeSH DESCRIPTOR Intestinal Obstruction EXPLODE ALL TREES
- 3 MeSH DESCRIPTOR Abdomen, Acute
- 4 MeSH DESCRIPTOR Digestive System Surgical Procedures
- 5 MeSH DESCRIPTOR Colectomy EXPLODE ALL TREES
- 6 MeSH DESCRIPTOR Enterostomy EXPLODE ALL TREES
- 7 MeSH DESCRIPTOR Intestinal Perforation
- 8 MeSH DESCRIPTOR Colonoscopy EXPLODE ALL TREES
- 9 MeSH DESCRIPTOR Surgical Stomas
- 10 MeSH DESCRIPTOR Rectal Diseases EXPLODE ALL TREES
- 11 MeSH DESCRIPTOR Cecal Diseases
- 12 MeSH DESCRIPTOR Cecal Neoplasms
- 13 #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12
- 14 (acute abdomen)
- 15 (colostomy)
- 16 (ileostomy)
- 17 (diverticulitis)
- 18 (enterostomy)
- 19 (colonoscopy)
- 20 (colon or rectum or rectal or intestine or intestinal or duodenum or duodenal or

## bowel or diverticular):TI

- 21 (colectomy)
- 22 (crohn's or crohns)
- 23 (colorectal):TI
- 24 #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23
- 25 #13 OR #24

## Stomach and duodenum

- 1 MeSH DESCRIPTOR Peptic Ulcer EXPLODE ALL TREES
- 2 MeSH DESCRIPTOR Gastrointestinal Hemorrhage EXPLODE ALL TREES
- 3 MeSH DESCRIPTOR Digestive System Surgical Procedures
- 4 MeSH DESCRIPTOR Gastrectomy
- 5 #1 OR #2 OR #3 OR #4
- 6 (gastric ulcer\*)
- 7 (peptic ulcer\*)
- 8 (duodenal ulcer\*)
- 9 (stomach ulcer\*)
- 10 (gastrectomy)

- 11 (gastric or stomach or duoden\* or gastrointestinal):TI AND (haemorrhag\* or hemorrhag\* or bleed\*)
- 12 #6 OR #7 OR #8 OR #9 OR #10 OR #11
- 13 #5 OR #12

## Appendix 2: Study selection form

### Overview of systematic reviews in emergency surgery Paper inclusion/exclusion form

#### Citation details

First author ..... Publication year.....

Citation ID [essential] .....

Assessor name ..... Date ..... / ..... /.....

#### Study selection criteria

[Please circle Yes or No. If the paper is not in English circle "Non-English paper" below – no need to assess Q 1 to 5.]

1. Is this paper a systematic review and/or economic evaluation? Yes No Unsure

2. Does the paper report on patients with emergency conditions? Yes No Unsure

Yes if review includes data on both elective and emergency patients, but data for emergency patients available separately.

3. Does the paper report on relevant condition/disease sites? Yes No Unsure

Gallbladder, appendix, bowel, stomach/duodenum, perianal abscess, hernia

4. Does the paper report on interventions or diagnostics? Yes No Unsure

Intervention may include drugs, surgery, devices, radiology, physiotherapy etc., but not organization of care.

5. Does the paper include adult patients? Yes No Unsure

Yes if it includes adults only, or mixture of adults, adolescents / children. No if paediatric only (& tick box below).

#### Status of study [Please circle]

*If the answer to all 5 questions are 'yes', include the study.*

**Excluded** / **Included** / **Pending** / **Non-English paper**

If excluded, main reason for excluding: .....

Enter **number** of the first question you answered No to, e.g. if the study did not report on treatments or diagnostic enter 4.

This paper reports on the following condition(s): [Tick all that apply]

Abscess  Appendix  Bowel   
Gallbladder  Stomach/duodenum  Hernia

This paper reports on: [Tick all that apply]

Interventions/treatments  Paediatric patients   
Diagnostic tests   
Economic evaluations  **Decision entered in database**

### Appendix 3: Data extraction form

## Evidence in non-trauma emergency surgery: A systematic review of systematic reviews of interventions A Unified Data Extraction Form for Multiple Topics

Review ID No..... First author..... Year.....

Journal.....

#### 0.1 In which one of the six overview topics/sites is this intervention review paper included?

[Tick only one. If the paper reports on more than one of the 6 topics, then complete a separate extraction form for each topic. If this is not possible contact JS, JMB and NB to discuss a possible protocol revision.]

Abscess	<input type="checkbox"/>	Appendix	<input type="checkbox"/>	Bowel	<input type="checkbox"/>
Gallbladder	<input type="checkbox"/>	Stomach/duodenum	<input type="checkbox"/>	Hernia	<input type="checkbox"/>

0.2 Extracted by ..... 0.3 Date extracted .....

0.4 Checked by..... 0.5 Date checked .....

Discrepancies resolved and ready to enter?  [To be ticked by person who checked]

### Part A: General characteristics of the review and types of included studies

A1 Start date of the search..... A2 End date of the search.....  
[month and year. If the start date differs for each database, state the oldest for start date.]

Publication year of the:

A3 Oldest included study ..... A4 Most recent study.....

A5 Did the authors search the following databases? [Tick all that apply]

<sup>a</sup> MEDLINE	<input type="checkbox"/>	<sup>c</sup> ISI Web of Science	<input type="checkbox"/>
<sup>b</sup> EMBASE	<input type="checkbox"/>	<sup>d</sup> Cochrane CENTRAL/CCTR	<input type="checkbox"/>
<sup>e</sup> Others	<input type="checkbox"/>		

<sup>f</sup>Specify if others.....

**A6 Did the authors use any supplementary sources to identify relevant studies?** [Tick all that apply]

- |   |                          |                                      |                          |
|---|--------------------------|--------------------------------------|--------------------------|
| <sup>a</sup> Conference proceedings                 | <input type="checkbox"/> | <sup>e</sup> Contacted manufacturers | <input type="checkbox"/> |
| <sup>b</sup> Consulted reviews                      | <input type="checkbox"/> | <sup>f</sup> Theses/dissertations    | <input type="checkbox"/> |
| <sup>c</sup> Consulted experts                      | <input type="checkbox"/> | <sup>g</sup> Other grey literature   | <input type="checkbox"/> |
| <sup>d</sup> Checked references of included studies | <input type="checkbox"/> | <sup>h</sup> Other sources           | <input type="checkbox"/> |

<sup>i</sup>Specify if other sources.....

**A7 Did the review authors restrict the inclusion of eligible studies by study design?**

[E.g.: they only included RCTs; only RCTs, CCTs and cohorts; they only included studies in which 2 interventions were compared; or they included all study types except case-series, or similar descriptions. Look for evidence of this in the methods section, eligible studies section (if available), or in exclusion and inclusion criteria.]

Yes  No  Unsure/unclear

**A7a** Explanation/comment (if needed):.....

**A8-A11 Types of included study and number of each**

[Tick all that apply and state the number of studies and patients for each type]

		No of studies:	No of patients:
<sup>A8</sup> RCT	<input type="checkbox"/> <sup>a</sup>	..... <sup>b</sup>	..... <sup>c</sup>
<sup>A9</sup> Cohort study	<input type="checkbox"/> <sup>a</sup>	..... <sup>b</sup>	..... <sup>c</sup>
<sup>A10</sup> Case-series	<input type="checkbox"/> <sup>a</sup>	..... <sup>b</sup>	..... <sup>c</sup>
<sup>A11</sup> Other	<input type="checkbox"/> <sup>a</sup>	..... <sup>b</sup>	..... <sup>c</sup>

<sup>A11d</sup> Specify if other.....

**A12 Does the review include at least one meta-analysis?**

[By meta-analysis we mean any numerically pooled data, it does not have to have forest plots.]

Yes  No  Unsure

**A13 Conclusions of the review (from the abstract) to be pasted directly into the database.**

[No extraction on paper is required for this item. Data abstractor should highlight the conclusion in the abstract clearly with the highlighter pen, so that the person doing data entry knows what to paste from the pdf – data enterer may be a non-expert.]



## Part B: Participants

**B1 In terms of the age of the included patients, which category best describes patients included in the review?** [Tick one box]

- |                               |                          |   |                          |
|-------------------------------|--------------------------|---|--------------------------|
| Adults only                   | <input type="checkbox"/> | Adults and children (incl. adolescents) | <input type="checkbox"/> |
| Adults and adolescents        | <input type="checkbox"/> | Not stated                              | <input type="checkbox"/> |
| Adolescents and/or children * | <input type="checkbox"/> | Other                                   | <input type="checkbox"/> |

<sup>B1a</sup> If other, specify.....

[\* The review should not have been included if it did not include any adults]

**B2 Did the review authors clearly define the characteristics of patients (and especially patients' medical conditions) that are eligible for inclusion in the review?**

Yes  No  Unsure/unclear

<sup>B2a</sup> Explanation/comment (if needed):.....

.....

**B3 List the inclusion criteria relating to patients and their conditions defined in this review:**

.....  
.....  
.....  
.....  
.....

**B4 List the exclusion criteria relation to patients and their conditions defined in this review:**

.....  
.....  
.....  
.....  
.....

## Part C: Interventions

**C1 Did the review authors clearly state which interventions are eligible for inclusion in the review?**

Yes  No  Unsure/unclear

Explanation/comment (if needed):.....  
.....

**C2 What is the nature of the primary intervention(s) of interest in this review?**

[If review is assessing a variety of interventions and isn't clear which is the intervention of primary interest for the review, can the interventions be described as a group of interventions (e.g. all surgical vs non-surgical)? If still unclear, then we will arbitrarily describe here the first intervention mentioned in the title or abstract of the review. Tick one box only.]

Surgical	<input type="checkbox"/>	Radiological	<input type="checkbox"/>
Endoscopic	<input type="checkbox"/>	Pharmacological	<input type="checkbox"/>
Expectant management	<input type="checkbox"/>	Combination of 2 or more types	<input type="checkbox"/>
Other	<input type="checkbox"/>	Not stated	<input type="checkbox"/>

C.2a If other, specify.....  
.....

**C3 Brief description/name of the primary intervention(s) of interest in this review:**

[Keep it brief, database allows 255 characters only for this field, enter more details below]

.....  
.....  
.....

**C4 Please provide a more detailed description of the intervention, if available.**

[No extraction on paper is required for this item. Data abstractor should highlight the details of the intervention in the text clearly with a highlighter pen, so that the person doing data entry knows what to paste from the pdf – data enterer may be a non-expert.]

No further description provided

**C5 What is the nature of the comparative intervention(s) assessed in this review?**

[Comparative interventions are those that review authors have chosen to compare against their primary intervention of interest, often these will be the more standard interventions, older interventions or usual care, but not always, sometimes it can be a bit arbitrary. Tick one box only.]

- |                      |                          |                                |                          |
|----------------------|--------------------------|--------------------------------|--------------------------|
| Surgical             | <input type="checkbox"/> | Radiological                   | <input type="checkbox"/> |
| Endoscopic           | <input type="checkbox"/> | Pharmacological                | <input type="checkbox"/> |
| Expectant management | <input type="checkbox"/> | Combination of 2 or more types | <input type="checkbox"/> |
| Other                | <input type="checkbox"/> | Not stated                     | <input type="checkbox"/> |

C.5a If other, specify.....

.....

**C6 Brief description/name of the comparative intervention(s):**

[Keep it brief, database allows 255 characters only for this field, enter more details below]

.....

.....

.....

**C7 Please provide a more detailed description of the comparative intervention, if available.**

[No extraction on paper is required for this item. Data abstractor should highlight the details of the intervention in the text clearly with a highlighter pen, so that the person doing data entry knows what to paste from the pdf – data enterer may be a non-expert.]

No further description provided

## Part D: Outcomes

### D1 Were the outcomes of interest for the systematic review defined *a priori*?

Yes  No  Unsure/unclear

<sup>D1a</sup> Explanation/comment (if needed):.....  
 .....

### D2 Did the review authors clearly state the primary outcome(s) of the review?

Yes  No  Unsure/unclear

<sup>D2a</sup> Explanation/comment (if needed):.....  
 .....

### Descriptions and codes for outcome domains

[Choose the appropriate code for each outcome and enter it in the appropriate box in the next table]

Domain code	Outcome domain	Definition
1	Mortality	Outcomes related to short and long-term survival/death rates and cause of death
2	Complications	Forms of short and long-term postoperative morbidity
3	Peri-operative technical outcomes	Outcomes recorded directly in the operating theatre (e.g. operation time, blood loss)
4	Treatment pathway outcomes	Outcomes related to the flow of patients through the healthcare system (e.g. hospital stay, readmission)
5	Patient-reported outcomes	Outcomes reported by patients themselves
6	Symptoms / function	Outcomes assessed by an observer (usually a clinician)
7	Pathology / histology / laboratory findings	Histopathology, microbiology findings or results of laboratory tests carried out by assessor not otherwise involved in study participant care (e.g. blood or urine tests, biochemistry, microbiology etc.)
8 8a 8b	Cost / resources: Cost of intervention Cost of other resource use	Any measures of resource use expressed in monetary terms (e.g. cost of equipment). These can be the cost of the intervention itself or cost for the associated use of other resources.
9	Composite outcomes	An outcome that is a combination of outcomes analysed together, (e.g. death <b>or</b> disability)
10	Other outcomes	Outcome type that don't fit any of the above categories

### Descriptions and codes for study designs (of studies included in reviews) [Applicable to part 5 - Results table]

1= RCTs only, 2=Comparative NRS only, 3=RCTs and comparative NRS pooled together, 4=Non-comparative studies (e.g. case series).

**Important:** Always extract separate results for RCTs and NRS if they are available. You don't need to extract both separate and combined if separate is available. Extract combined if that's the only result available.

**Reported outcomes and their definitions** [List all outcomes reported in the review for which there is an extractable result. Print and attach additional sheets of paper if needed]

\* Was a meta-analysis performed for this outcome?

Outcome number D3 [assign each outcome unique No]	Outcome name <sup>D4</sup> [verbatim as in the review]	Domain code <sup>D5</sup> [choose from table above]	Meta-analysis? D7 *	Defined? D8 [Yes / No / Partially]	If defined, please write definition verbatim <sup>D10</sup> . [as reported in the review, not in each included study. If the review states that outcomes were as described in individual studies, then write that.]	Primary or secondary outcome of review? <sup>D11</sup> [circle or cross-out]
						Primary Secondary Not stated
						Primary Secondary Not stated
						Primary Secondary Not stated
						Primary Secondary Not stated
						Primary Secondary Not stated
						Primary Secondary Not stated

**Patient-reported outcomes – additional details** [Please list all PROs available in the review for which there is an extractable result. Print and attach another page if needed.]

List the measured PROs and any ad-hoc questions. Write ad hoc questions verbatim:

Outcome number <sup>D3</sup> [same as in table above]	Outcome name <sup>D4</sup> [must be the same as in above table for all outcomes in domain 5, verbatim]	What instrument was used? <sup>D12</sup> [if a well know Q-re, e.g. SF36]	Validated? <sup>D13</sup> Y/N/unclear	If not a well known instrument, describe verbatim how it was measured. <sup>D14</sup> Write verbatim any <i>ad hoc</i> questions used.

## Part F: Results (with integrated Part E: Comparison)

**Results for dichotomous outcomes** [e.g. death, reoperation, or any other events that either occurred or not] These outcomes are expressed as number of events per group. Print and attach additional sheets of paper if there are more outcomes, and for each new comparison of different interventions [e.g. some reviews may compare multiple interventions, such as one antibiotics vs another antibiotic as well as “any antibiotic vs any surgery”]. If an outcome is measured at several time-points enter each separately in a new row. If there are multiple result pages please enter: **Page ..... of .....**

Intervention (intervention 1): <sup>E1</sup>							Comparison intervention (Intervention 2): <sup>E2</sup>							
<p><b>Abbreviations:</b> OR odds ratio, RR risk ratio/relative risk, RD risk difference, HR hazard ratio, CI confidence interval, RCT randomised controlled trial, NRS non-randomised (observational) study. If more than one heterogeneity statistic is available record only one of them in this order of preference: I<sup>2</sup>, tau<sup>2</sup>, Q, others. Record multi-arm trials in the same way as the review authors did for their meta-analysis.</p> <p><b>Legend:</b> *1= RCTs only, 2=Comparative NRS only, 3=1+2 pooled, 4=Non-comparative studies. **Across all studies pooled together. † If an outcome is measured at several time-points enter each separately in a new row. ††If the effect estimate is &gt;1 does this mean the intervention or the comparison was a better treatment? [e.g. Does the OR or RR of 1.25 mean that intervention is better, or the comparison is better? This should be clear either from the forest plot or how the result is described in the result section.]</p>														
Outcome No. <sup>D3</sup>	Study types pooled <sup>F1</sup> [enter relevant code *]	Number of Included studies <sup>F2</sup>	Total Number of patients <sup>** F3</sup>	Time point outcome measured † [e.g. 6 months] <sup>F9</sup>	Meta-Analysis method [fixed/random] <sup>F10</sup>	Type of pooled effect measure [OR, RR, RD, HR] <sup>F11</sup>	Larger effect size favours Intervention or Comparison? <sup>F4</sup> (see notes) ††	Pooled estimate <sup>**</sup> [enter number only] <sup>F12</sup>	Lower end of the CI [enter numeric value] <sup>F13</sup>	Upper end of the CI [enter numeric value] <sup>F14</sup>	Heterogeneity statistics			Location of these results in paper [e.g. T1, Fig 2, p312]
											Statistic used [I <sup>2</sup> , tau <sup>2</sup> , Q] <sup>F15</sup>	Enter numerical value <sup>F16</sup>	p-value <sup>F17</sup>	

**Results for continuous outcomes** [e.g. length of hospital stay, duration of operation, pain] These outcomes are usually expressed with a mean score per group, or mean difference between groups. Print and attach additional sheets of paper if there are more outcomes, and for each new comparison of different interventions. If an outcome is measured at several time-points enter each separately in a new row. If there are multiple result pages please enter: **Page .....** of .....

Intervention (Intervention 1): <sup>E1</sup>							Comparison intervention (Intervention 2): <sup>E2</sup>							
<p><b>Abbreviations:</b> SD standard deviation, MD mean difference, SMD standardised mean difference, MR mean ratio/ratio of means (rarely used), WMD weighted mean difference, CI confidence interval, NRS non-randomised (observational) study. If more than one heterogeneity statistic is available record only one of them in this order of preference: I<sup>2</sup>, tau<sup>2</sup>, Q, others. Record multi-arm trials in the same way as the review authors did for their meta-analysis.</p> <p><b>Legend:</b> *1= RCTs only, 2=Comparative NRS only, 3=1+2 pooled, 4=Non-comparative studies. **Across all studies pooled together. † If an outcome is measured at several time-points enter each separately in a new row. ††Does the effect estimate larger than 0 favour the intervention or the comparison? [e.g. Does the mean difference of + 2 mean that intervention is better, or the comparison is better? This should be clear either from the forest plot or how the result is described in the result section.]</p>														
Out-come No. <sup>D3</sup>	Study types pooled [enter relevant code *] <sup>F1</sup>	Number of studies <sup>F2</sup>	Total Number of patients ** <sup>F3</sup>	Time point outcome measured † <sup>F9</sup>	Meta-analysis method [fixed/random] <sup>F10</sup>	Type of pooled effect measure [MD,SMD, WMD, MR] <sup>F11</sup>	Larger effect size favours Intervention or Comparison? <sup>F4 ††</sup>	Pooled estimate ** [enter number only] <sup>F12</sup>	Lower CI [enter value] <sup>F13</sup>	Upper CI [enter value] <sup>F14</sup>	Heterogeneity statistics			Location of these results in paper [e.g.T1, Fig1, p112]
											Statistic used [I <sup>2</sup> / tau <sup>2</sup> /Q etc.] <sup>F15</sup>	Enter numerical value <sup>F16</sup>	p-value <sup>F17</sup>	



## Part G: Critical appraisal

### **Modified AMSTAR Checklist**

#### **G1 Was an 'a priori' design provided?**

The research question and inclusion criteria should be established before the conduct of the review.  Yes

No

*Note: It may be difficult to judge this without referring to a protocol, ethics approval, or pre-determined/a priori published research objectives to score a "yes." However, look for clues in the text that state they used pre-determined criteria, predefined data-extraction*  Can't answer

*form or similar. It's fine to tick "can't answer" if you can't tell.*  Not applicable

---

#### **G2 Was there duplicate study selection and data extraction?**

There should be at least two independent data extractors and a consensus procedure for disagreements should be in place.  Yes

No

Can't answer

*Note: 2 people do study selection, 2 people do data extraction, consensus process or one person checks the other's work.*  Not applicable

---

#### **G3 Was a comprehensive literature search performed? \***

At least two electronic sources should be searched. The report must include years and databases used (e.g., Central, EMBASE, and MEDLINE). Key words and/or MESH terms must be stated and where feasible the search strategy should be provided. All searches should be supplemented by consulting current contents, reviews, textbooks, specialized registers, or experts in the particular field of study, and by reviewing the references in the studies found.  Yes

No

Can't answer

Not applicable

*Note: If at least 2 sources + one supplementary strategy used, select "yes" (Cochrane register/Central counts as 2 sources; a grey literature search counts as supplementary).*

---

#### **G4 Was the status of publication (i.e. grey literature) used as an inclusion criterion?**

The authors should state that they searched for reports regardless of their publication type. The authors should state whether or not they excluded any reports (from the systematic review), based on their publication status, language etc.  Yes

No

Can't answer

*Note: If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." SIGLE database, dissertations, conference proceedings, and trial registries are all considered grey for this purpose. If searching a source that contains both grey and non-grey, must specify that they were searching for grey/unpublished lit.*  Not applicable

---

**G5 Was a list of studies (included and excluded) provided?**

A list of included and excluded studies should be provided.

*Note: Acceptable if the excluded studies are referenced. If there is an electronic link to the list but the link is dead, select "no."*

- Yes
  - No
  - Can't answer
  - Not applicable
- 

**G6 Were the characteristics of the included studies provided?**

In an aggregated form such as a table, data from the original studies should be provided on the participants, interventions and outcomes. The ranges of characteristics in all the studies analyzed e.g., age, race, sex, relevant socioeconomic data, disease status, duration, severity, or other diseases should be reported.

*Note: Acceptable if not in table format as long as they are described as above.*

- Yes
  - No
  - Can't answer
  - Not applicable
- 

**G7 Was the scientific quality of the included studies assessed and documented? \***

'A priori' methods of assessment should be provided (e.g., for effectiveness studies if the author(s) chose to include only randomized, double-blind, placebo controlled studies, or allocation concealment as inclusion criteria); for other types of studies alternative items will be relevant.

*Note: Can include use of a quality scoring tool or checklist, e.g., Jadad scale, risk of bias, sensitivity analysis, etc., or a description of quality items, with some kind of result for EACH study ("low" or "high" is fine, as long as it is clear which studies scored "low" and which scored "high"; a summary score/range for all studies is not acceptable).*

- Yes
  - No
  - Can't answer
  - Not applicable
- 

**G8 Was the scientific quality of the included studies used appropriately in formulating conclusions? \***

The results of the methodological rigor and scientific quality should be considered in the analysis and the conclusions of the review, and explicitly stated in formulating recommendations.

*Note: Might say something such as "the results should be interpreted with caution due to poor quality of included studies." Cannot score "yes" for this question if scored "no" for question 7.*

- Yes
  - No
  - Can't answer
  - Not applicable
- 

**G9 Were the methods used to combine the findings of studies appropriate? \***

For the pooled results, a test should be done to ensure the studies were combinable, to assess their homogeneity (i.e., Chi-squared test for homogeneity, I<sup>2</sup>). If heterogeneity exists a random effects model should be used and/or the clinical appropriateness of combining should be taken into consideration (i.e., is it sensible to combine?).

*Note: Indicate "yes" if they mention or describe heterogeneity, i.e., if they explain that they cannot pool because of heterogeneity/variability between interventions.*

- Yes
  - No
  - Can't answer
  - Not applicable
-

**G10 Was the likelihood of publication bias assessed?**

An assessment of publication bias should include a combination of graphical aids (e.g., funnel plot, other available tests) and/or statistical tests (e.g., Egger regression test, Hedges-Olken).

- Yes
- No
- Can't answer
- Not applicable

*Note: If no test values or funnel plot included, score "no". Score "yes" if mentions that publication bias could not be assessed because there were fewer than 10 included studies.*

**G11 Was the conflict of interest included?**

Potential sources of support should be clearly acknowledged in both the systematic review and the included studies.

- Yes
- No
- Can't answer
- Not applicable

*Note: To get a "yes," must indicate source of funding or support for the systematic review AND for each of the included studies.*

Adapted from Shea *et al. BMC Medical Research Methodology* 2007 7:10 doi:10.1186/1471-2288-7-10

**G12 Are the conclusions of the review consistent with the presented results?** [Additional non-AMSTAR item]

Yes  No  Unsure/Unclear/Can't answer

6.12a Explanation/comment (if needed):.....

.....

**G13 Overall risk of bias judgment for the review \***

You need to have answered 'yes' or 'not applicable' to all 4 AMSTAR domains above marked with an asterisk \*(items 3, 7, 8, and 9) to pass a 'low risk of bias' judgement. A single 'No' answer is sufficient to judge High risk. Any 'Can't answer' answers would yield the unclear risk judgment, unless the answer to any of the questions is No (high risk).

**Low risk**

**Unclear risk**

**High risk**

**A14 Data extractor's comments** [about anything in the form]

.....

.....

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.....

**Additional potentially eligible papers identified in this paper**

Please read the Introduction and Discussion sections carefully to identify additional papers that could be eligible for inclusion in our review. Authors will usually refer to previous systematic reviews of the same condition / interventions / diagnostic tests / economic evaluations and these may qualify for screening for our review. **Please circle such potentially relevant references in the References section of the paper you are extracting and hand the annotated paper back with this form.**

## Appendix 4: List of excluded studies with reasons

### Unobtainable reports

- (2000). Identifying optimal diagnostic strategies algorithms with multiple tests. Ancillary study of Optimisation of diagnostic imaging use in patients with acute abdominal pain: cost-effectiveness analysis of imaging strategies (OPTIMA study). The Netherlands Organisation for Health Research and Development (ZonMw).
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### **Publication withdrawn or retracted**

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