

Appendix D: Review search strategy

D.1 Scoping search strategies

D.1.1 Scoping searches

Scoping searches were undertaken on the following websites and databases (listed in alphabetical order) in March/April 2014 to provide information for scope development and project planning. Browsing or simple search strategies were employed.

Guidelines/website	Systematic review/economic evaluations
Arthritis and Musculoskeletal Alliance	Cochrane Database of Systematic Reviews (CDSR)
Arthritis Care	Database of Abstracts of Reviews of Effects (DARE)
Arthritis Research UK	DUETS
British Society for Paediatric and Adolescent Rheumatology	Health Economic Evaluations Database (HEED)
Canadian Medical Association Infobase	Health Technology Assessment (HTA) Database
Centre for Adolescent Rheumatology	NHS Economic Evaluation Database (NHS EED)
Children's Chronic Arthritis Association	NIHR Health Technology Assessment Programme
COMET	NIHR Health Services and Delivery Research (HS&DR) Programme
Department of Health	PROSPERO
Guidelines International Network (GIN)	TRIP Database
Healthtalk Online	
Map of Medicine	
Ministry of Health NZ	
National Health and Medical Research Council (Australia)	
National Institute for Health and Care Excellence (NICE) - published & in development guidelines	
National Institute for Health and Care Excellence (NICE) - Topic Selection	
National Prescribing Centre	
NHS Choices	
NHS England	
NICE Clinical Knowledge Summaries	
NICE Evidence	
Patient UK	
Primary Care Rheumatology Society	
Royal Colleges	
Scottish Intercollegiate Guidelines Network (SIGN)	
Scottish Network for Arthritis in Children	
US National Guideline Clearinghouse	
YouthHealthTalk	

D.1.2 Main searches

Sources searched for the guideline

- AMED (HDAS)
- CINAHL (HDAS)
- Cochrane Database of Systematic Reviews – CDSR (Wiley)

- Cochrane Central Register of Controlled Trials – CENTRAL (Wiley)
- Database of Abstracts of Reviews of Effects – DARE (Wiley)
- Health Technology Assessment Database – HTA (Wiley)
- EMBASE (Ovid)
- MEDLINE (Ovid)
- MEDLINE In-Process (Ovid)

D.1.3 Identification of evidence for clinical questions

The searches were conducted between September 2014 and October 2015.

Cochrane databases (CDSR, CENTRAL, DARE HTA), AMED and CINAHL were searched at the start of the guideline using broad population terms in the RCT/Systematic review search questions (6, 14-28, 34-35) and again at the re-runs.

The re-run searches took place in March and June 2016 using population only terms. The aim of the searches was to identify evidence for each of the clinical questions being asked.

The MEDLINE search strategies are presented below. These were translated for use in all of the other databases.

D.2 Review question search strategies

D.2.1 Search strategy review questions 6, 14-28, 34-35

RQ6: What is the comparative effectiveness of different referral strategies in diagnosing spondyloarthritis?

RQ14: What is the effectiveness of manual therapies compared with standard care for managing spondyloarthritis?

RQ15: What is the effectiveness of structured exercise compared with standard care for managing spondyloarthritis?

RQ16: What is the effectiveness of hydrotherapy compared with standard care for managing spondyloarthritis?

RQ17: What is the effectiveness of acupuncture compared with sham acupuncture and standard care for managing spondyloarthritis?

RQ18: What is the effectiveness of physical aids (for example, braces) compared with standard care for managing spondyloarthritis?

RQ19: What is the effectiveness of long-term (4 weeks or longer) treatment with antibiotics for first-line management of reactive arthritis compared with standard treatment?

RQ20: What is the comparative effectiveness of the following pharmacological interventions for management of axial spondyloarthritis:

- corticosteroids
- non-steroidal anti-inflammatory drugs
- standard disease-modifying anti-rheumatic drugs.

RQ21: What is the comparative effectiveness of the following pharmacological interventions for management of peripheral spondyloarthritis:

- corticosteroids
- non-steroidal anti-inflammatory drugs

- standard disease-modifying anti-rheumatic drugs.

RQ22:

(a) How often should people receiving pharmacological interventions for managing spondyloarthritis be monitored?

(b) How often should people with spondyloarthritis be offered specialist review?

RQ23: When a first-line treatment has failed, what is the effectiveness of the following for managing spondyloarthritis:

- switching to a different pharmacological intervention?
- augmenting with a second pharmacological intervention?

RQ24: What is the effectiveness of systemic biological disease-modifying anti-rheumatic drugs for managing symptoms of enteropathic arthritis?

RQ25: What is the effectiveness of systemic biological disease-modifying anti-rheumatic drugs for managing symptoms of reactive arthritis?

RQ26: What is the effectiveness of systemic biological disease-modifying anti-rheumatic drugs for managing symptoms of undifferentiated spondyloarthritis, excluding non-radiographic ankylosing spondylitis?

RQ27: What information on treatment, long-term complications and self-management do young people and adults with spondyloarthritis find useful?

RQ28: What is the effectiveness of information and education in the management of flare episodes?

RQ34: What factors predict clinical improvement after spinal surgery (including osteotomy and fusion) in people with axial inflammation?

RQ35: What factors predict clinical improvement after joint replacement surgery?

Table 1: search strategy 6, 14-28. 34-35

Medline Strategy, searched 3rd September 2014 – 4th September 2014

Database: Ovid MEDLINE(R) <1946 to August Week 4 2014>

Search Strategy:

- 1 exp Spondylitis/
- 2 Arthritis, Juvenile/
- 3 exp Arthritis, Infectious/
- 4 (seronegative\$ or spondyl\$ or ankylos\$ or reiter\$).tw.
- 5 (bechterew\$ or struempel\$).tw.
- 6 ((reactiv\$ or enterop\$ or psori\$ or infect\$ or post-infect\$ or postinfect\$ or bacter\$ or juven\$ or enthesit\$ or spin\$) adj4 (arthr\$ or polyarthr\$ or poly-arthr\$ or oligoarthr\$)).tw.
- 7 still\$ disease\$.tw.
- 8 HLA-B27 Antigen/
- 9 (HLA-B27 or HLAB27 or "HLA B27").tw.
- 10 or/1-9
- 11 animals/ not humans/
- 12 10 not 11
- 13 limit 12 to english language

Note: In-house RCT and systematic review filters were appended

D.2.2 Search strategy review question 1, 2 and 12

RQ1: What signs and symptoms should prompt a healthcare professional to think of spondyloarthritis?

RQ2: What risk factors should increase suspicion of spondyloarthritis?

RQ12: What are the indications (signs, risk factors, test or scan findings) for referral for specialist advice at initial diagnosis?

Table 2: search strategy 1,2,12

Medline Strategy, searched 6th November 2015	
Database: Ovid MEDLINE(R) 1946 to October Week 5 2015	
Search Strategy:	
1	exp Spondylitis/
2	Arthritis, Juvenile/
3	exp Arthritis, Infectious/
4	(seronegative\$ or spondyl\$ or ankylos\$ or reiter\$).tw.
5	(bechterew\$ or struempel\$).tw.
6	((reactiv\$ or enterop\$ or psori\$ or infect\$ or post-infect\$ or postinfect\$ or bacter\$ or juven\$ or enthesit\$ or spin\$) adj4 (arthr\$ or polyarthr\$ or poly-arthr\$ or oligoarthr\$)).tw.
7	still\$ disease\$.tw.
8	HLA-B27 Antigen/
9	(HLA-B27 or HLAB27 or "HLA B27").tw.
10	or/1-9
11	Back Pain/
12	Low Back Pain/
13	backache*.tw.
14	((lumba* or lumbosacral or vertebrogenic) adj4 syndrome*).tw.
15	(lumbosacroiliac adj4 strain*).tw.
16	(lumba?go or lumbalgnesia or lumbalgia or lumbodynia).tw
17	Neck Pain/
18	(cervicalgia* or cervicodynia*).tw.
19	Sacroiliitis/
20	neckache*.tw.
21	((spin* or neck or cervical or back or sacroili* or buttock* or lumba* or lumbosacral or vertebrogenic) adj4 (pain* or ache* or discomfort or swell* or inflammat*)).tw.
22	((joint* or tendon* or axial or peripheral) adj4 (pain* or ache* or discomfort or swell* or inflammat*)).tw.
23	stiff*.tw.
24	Spinal Fusion/
25	((spin* or vertebral) adj4 fusion*).tw.
26	(vertebral adj4 condensation).tw.
27	(spondylosyndes* or spondylodes*).tw.
28	((mobility or movement*) adj4 (limited or restrict* or reduc* or decreas* or lower*)).tw.
29	Psoriasis/
30	psoriasis.tw.
31	(pustulosis adj4 (palm* or sole*)).tw.
32	(psoriasiform adj4 (dermat* or lesion* or rash*)).tw.
33	(psoriatic adj4 (epidermis or skin)).tw.
34	willan lepra.tw.
35	exp Inflammatory Bowel Diseases/
36	((bowel* or intestin*) adj4 inflam*).tw.
37	(colitis adj4 (gravis or ulcer* or mucosal)).tw.

Medline Strategy, searched 6th November 2015
Database: Ovid MEDLINE(R) 1946 to October Week 5 2015
Search Strategy:

- 38 idiopathic proctocolitis.tw.
- 39 ((crohn* or cleron) adj4 disease*).tw.
- 40 (morbus adj4 crohn*).tw.
- 41 ((granulomatous or crohn* or regional*) adj4 enteritis).tw.
- 42 (granulomatous adj4 colitis).tw.
- 43 (ileiti* adj4 (regional or terminal)).tw.
- 44 ileocolitis.tw.
- 45 exp Uveitis/
- 46 (uveitis or uveitides or panuveitis).tw.
- 47 (enthesitis or enthes?opathy).tw.
- 48 Fatigue/
- 49 (fatigue* or lassitude or tired*).tw.
- 50 exp radiography/
- 51 (x-ray* or x ray*).tw.
- 52 exp magnetic resonance imaging/
- 53 MRI.tw.
- 54 ((magnetic resonance or MR or NMR) adj2 (tomogra* or imag* or scan*)).tw.
- 55 exp ultrasonography/
- 56 (echogra* or radiogra* or radiolog* or echotomogra* or sonograph* or sonogram* or ultrasound or ultrasonogra*).tw.
- 57 (ultrasonic adj2 (tomogra* or imag* or diagnos* or scan*)).tw.
- 58 exp Tomography, X-Ray Computed/
- 59 ((CT or CAT) adj2 (imag* or scan* or diagnos*)).tw.
- 60 ((compute* or electron*) adj2 tomogra*).tw.
- 61 exp radionuclide imaging/
- 62 (scintigra* or scintiscan* or scintillation or radioscintigra* or scintiphotogra* or radioscan* or scanograph*).tw.
- 63 ((scinti* or radioisotope or radiation or isotope or radionuclide or gamma) adj4 (scan* or imag*)).tw.
- 64 exp Salmonella/
- 65 salmonella*.tw.
- 66 (bacillus adj4 (paratyph* or schottmuelleri)).tw.
- 67 exp Shigella/
- 68 shigella*.tw.
- 69 exp Yersinia/
- 70 yersinia*.tw.
- 71 exp Campylobacter/
- 72 campylobacter*.tw.
- 73 exp Chlamydia/
- 74 chlamydia*.tw.
- 75 syndesmophyte*.tw.
- 76 (bamboo adj4 spin*).tw.
- 77 (cup adj4 pencil adj4 deform*).tw.
- 78 (vertebr* adj4 bod* adj4 squar*).tw.
- 79 (asymmet* adj4 joint* adj4 involvement).tw.
- 80 Arthritis, Juvenile/
- 81 (juvenile* adj4 (idiopathic or psoriatic or enthesitis or systemic or chronic) adj4 arthritis).tw.
- 82 JIA.tw.
- 83 (juvenile adj4 oligoarthritis).tw.
- 84 dactylitis.tw.

Medline Strategy, searched 6th November 2015
Database: Ovid MEDLINE(R) 1946 to October Week 5 2015
Search Strategy:

- 85 sausage finger*.tw.
- 86 ((toe* or finger* or digi* or hand* or foot* or feet) adj4 (swell* or inflammat*)).tw.
- 87 Synovitis/
- 88 synoviti*.tw.
- 89 (nail adj4 (change* or involvement*)).tw.
- 90 Arthritis, Reactive/
- 91 ((reactive or post-infectious or post infectious) adj4 arthriti*).tw.
- 92 ReA.tw.
- 93 (reiter* adj4 (syndrome* or disease*)).tw.
- 94 Urethritis/
- 95 urethriti*.tw.
- 96 (urethra* adj4 (infection* or inflammat*)).tw.
- 97 (blennorrhagi* adj4 kerato*).tw.
- 98 exp Conjunctivitis/
- 99 (conjunctiviti* or subconjunctiviti* or keratoconjunctiviti*).tw.
- 100 exp Balanitis/
- 101 balaniti*.tw.
- 102 ((soft palate or mouth or oral) adj4 ulcer*).tw.
- 103 ((enteric or intestin* or genitourin*) adj4 infection*).tw.
- 104 (NSAID* adj4 (respons* or effective* or improve*)).tw.
- 105 ((non steroidal or non-steroidal or nonsteroidal or aspirin-like or aspirin like) adj4 (agent* or drug*) adj4 (respons* or effective* or improve*)).tw.
- 106 (analgesics adj4 (anti inflammatory or anti-inflammatory) adj4 (respons* or effective* or improve*)).tw.
- 107 ((ESR or CRP or hs-CRP) adj4 (elevat* or high or increase* or raise*)).tw.
- 108 (sed* adj4 (rate* or test* or blood* or erythrocyte* or level*) adj4 (elevat* or high or increase* or raise*)).tw.
- 109 (protein* adj4 (c-reacti* or c reacti* or c reactive) adj4 (elevat* or high or increase* or raise*)).tw.
- 110 HLA-B27 Antigen/
- 111 (HLA-B27 or HLAB27 or "HLA B27" or "HL A B27").tw.
- 112 (antigen* adj4 (B27 or B 27 or 27b or hl or "hl a" or hl-a or hla or leukocyte* or leucocyte or lymphocyte* or "white blood cell*" or histocompatibility)).tw.
- 113 exp Genetic predisposition to disease/
- 114 exp Medical history taking/
- 115 ((family or maternal or parental) adj4 histor*).tw.
- 116 (familial or inherit* or heredit* or predispos* or susceptib*).tw.
- 117 ((take* or taking) adj2 (history or histories)).tw.
- 118 age factors/ or "age of onset"/
- 119 age*.tw.
- 120 or/11-119
- 121 risk factors/
- 122 risk\$.tw.
- 123 "Signs and Symptoms"/
- 124 (sign* adj symptom*).tw.
- 125 or/121-124
- 126 incidence.sh. or exp mortality/ or follow-up studies.sh. or prognos:.tw. or predict:.tw. or course:.tw.
- 127 (sensitiv: or diagnos:).mp. or di.fs.
- 128 126 or 127

Medline Strategy, searched 6th November 2015
Database: Ovid MEDLINE(R) 1946 to October Week 5 2015
Search Strategy:

129 125 or 128
130 10 and 120 and 129
131 Observational Study as Topic/
132 Observational Study/
133 Epidemiologic Studies/
134 exp Case-Control Studies/
135 exp Cohort Studies/
136 Cross-Sectional Studies/
137 Controlled Before-After Studies/
138 Historically Controlled Study/
139 Interrupted Time Series Analysis/
140 Comparative Study.pt.
141 case control\$.tw.
142 case series.tw.
143 (cohort adj (study or studies)).tw.
144 cohort analy\$.tw.
145 (follow up adj (study or studies)).tw.
146 (observational adj (study or studies)).tw.
147 longitudinal.tw.
148 prospective.tw.
149 retrospective.tw.
150 cross sectional.tw.
151 or/131-150
152 130 and 151
153 animals/ not humans/
154 152 not 153
155 limit 154 to english language
156 "Signs and Symptoms"/
157 (sign* adj2 symptom*).tw.
158 or/156-157
159 10 and 158
160 animals/ not humans/
161 159 not 160
162 limit 161 to english language
163 162 not 155

Note: The in-house observational filter was used in part 1 of the search and then later removed using 'NOT' to broaden the search. The McMaster diagnosis filter (maximum sensitivity) and the prognosis filter (maximum sensitivity) was used.

D.2.3 Search strategy review questions 3

RQ3: What are the obstacles to a prompt diagnosis of spondyloarthritis?

Table 3: search strategy 3

Medline Strategy, searched 26th November 2015
Database: Ovid MEDLINE(R) <1946 to November Week 2 2015>
Search Strategy:

1 exp Spondylitis/
2 Arthritis, Juvenile/

Medline Strategy, searched 26th November 2015

Database: Ovid MEDLINE(R) <1946 to November Week 2 2015>

Search Strategy:

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3 exp Arthritis, Infectious/  
4 (seronegative$ or spondyl$ or ankylos$ or reiter$).tw.  
5 (bechterew$ or struempel$).tw.  
6 ((reactiv$ or enterop$ or psori$ or infect$ or post-infect$ or postinfect$ or bacter$ or juven$ or  
enthesit$ or spin$) adj4 (arthr$ or polyarthr$ or poly-arthr$ or oligoarthr$)).tw.  
7 still$ disease$.tw.  
8 HLA-B27 Antigen/  
9 (HLA-B27 or HLAB27 or "HLA B27").tw.  
10 or/1-9  
11 delayed Diagnosis/ or Early Diagnosis/ or exp Diagnostic Errors/ or diagnosis,differential/  
12 (diagnos* adj4 (accura* or inaccura* or error* or incorrect* or wrong* or mistake* or proper* or  
possibilit* or differential)).tw.  
13 misdiagnos?s.tw.  
14 ((earl* or late* or delay* or prompt* or barrier* or obstacle* or challeng* or difficult* or lack* or  
prevent* or optim* or suboptim* or nonoptim*) adj4 (detect* or diagnos*)).tw.  
15 or/11-14  
16 10 and 15  
17 animals/ not humans/  
18 16 not 17  
19 limit 18 to english language
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D.2.4 Search strategy review question 4

RQ4: What is the diagnostic utility of a risk assessment score for identifying spondyloarthritis?

Table 4: search strategy 4

Medline Strategy, searched 17th November 2015

Database: Ovid MEDLINE(R) 1946 to November Week 1 2015

Search Strategy:

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1 exp Spondylitis/  
2 Arthritis, Juvenile/  
3 exp Arthritis, Infectious/  
4 (seronegative$ or spondyl$ or ankylos$ or reiter$).tw.  
5 (bechterew$ or struempel$).tw.  
6 ((reactiv$ or enterop$ or psori$ or infect$ or post-infect$ or postinfect$ or bacter$ or juven$ or  
enthesit$ or spin$) adj4 (arthr$ or polyarthr$ or poly-arthr$ or oligoarthr$)).tw.  
7 still$ disease$.tw.  
8 HLA-B27 Antigen/  
9 (HLA-B27 or HLAB27 or "HLA B27").tw.  
10 or/1-9  
11 (diagnos* adj4 (accurac* or classification* or criteri* or model* or parameter* or reliability or  
utilit* or value* or yield*)).tw.  
12 ((classif* or clinical or set* or valid*) adj4 (criteri* or parameter*)).tw.  
13 (spin* adj4 score*).tw.  
14 (SASSS or mSASSS or m-SASSS or m SASSS or RASSS).tw.  
15 or/11-14  
16 Risk/ or Risk Assessment/  
17 (risk adj4 (analys* or assess* or apprais* or estimate* or predict*)).tw.  
18 Probability/
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Medline Strategy, searched 17th November 2015
Database: Ovid MEDLINE(R) 1946 to November Week 1 2015
Search Strategy:

19 exp "Sensitivity and Specificity"/
20 (sensitiv* or specif*).tw.
21 (probabilit* or predict*).tw.
22 (roc adj4 (curve* or analys* or plot*)).tw.
23 (receiver adj2 operating adj2 characteristic*).tw.
24 (HSROC or SROC).tw.
25 signal to noise.tw.
26 likelihood functions/
27 (likelihood adj4 (function* or estimate* or ratio*)).tw.
28 Prognosis/
29 prognos*.tw.
30 bayes theorem/
31 (bayes* adj4 (analysis or decision* or forecast* or predict* or method* or theorem*)).tw.
32 diagnosis, differential/ or early diagnosis/
33 (diagnos* adj4 (differential or possibilit* or accurac*)).tw.
34 (early adj4 (detect* or diagnos*)).tw.
35 Mass Screening/
36 screening*.tw.
37 or/16-36
38 (scor* or scale* or instrument* or rating* or tool* or test* or index or indices or measure*).tw.
39 10 and 37 and 38
40 Observational Study as Topic/
41 Observational Study/
42 Epidemiologic Studies/
43 exp Case-Control Studies/
44 exp Cohort Studies/
45 Cross-Sectional Studies/
46 Controlled Before-After Studies/
47 Historically Controlled Study/
48 Interrupted Time Series Analysis/
49 Comparative Study.pt.
50 case control\$.tw.
51 case series.tw.
52 (cohort adj (study or studies)).tw.
53 cohort analy\$.tw.
54 (follow up adj (study or studies)).tw.
55 (observational adj (study or studies)).tw.
56 longitudinal.tw.
57 prospective.tw.
58 retrospective.tw.
59 cross sectional.tw.
60 or/40-59
61 39 and 60
62 10 and 15
63 61 or 62
64 animals/ not humans/
65 63 not 64
66 limit 65 to english language

Note: The in-house observational filter was applied to part of the search strategy

D.2.5 Search strategy review question 5

RQ5: What is the usefulness of information gathering (for example family history, self-report questionnaires, and screening criteria) in improving early diagnosis of spondyloarthritis?

Table 5: search strategy 5

Medline Strategy, searched 26th November 2015	
Database: Ovid MEDLINE(R) 1946 to November Week 2 2015	
Search Strategy:	
1	exp Spondylitis/
2	Arthritis, Juvenile/
3	exp Arthritis, Infectious/
4	(seronegative\$ or spondyl\$ or ankylos\$ or reiter\$).tw.
5	(bechterew\$ or struempel\$).tw.
6	((reactiv\$ or enterop\$ or psori\$ or infect\$ or post-infect\$ or postinfect\$ or bacter\$ or juven\$ or enthesit\$ or spin\$) adj4 (arthr\$ or polyarthr\$ or poly-arthr\$ or oligoarthr\$)).tw.
7	still\$ disease\$.tw.
8	HLA-B27 Antigen/
9	(HLA-B27 or HLAB27 or "HLA B27").tw.
10	or/1-9
11	medical history taking/ or cornell medical index/
12	histor*.tw.
13	(cornell adj4 index).tw.
14	anamnesis.tw.
15	exp Medical Records/
16	((health or medical or hospital* or patient* or personal or electronic*) adj4 (record* or transcription*)).tw.
17	((patient* or personal or demograph*) adj4 data*).tw.
18	Qualitative Research/
19	Nursing Methodology Research/
20	Interviews as Topic/
21	exp Questionnaires/
22	(self adj4 report*).tw.
23	Narration/
24	Health Care Surveys/
25	(qualitative* or interview* or focus group* or questionnaire* or narrative* or narration* or survey* or diary or diaries).tw.
26	Mass Screening/
27	screen*.tw.
28	((information or data) adj4 (gather* or collect* or obtain* or seek* or retriev*)).tw.
29	or/11-28
30	di.fs.
31	sensitiv:.mp.
32	diagnos:.mp.
33	or/30-32
34	10 and 29 and 33
35	animals/ not humans/
36	34 not 35
37	limit 36 to english language

Note: The McMaster diagnosis filter (maximum sensitivity) was used.

D.2.6 Search strategy review question 7,8,9

RQ7: What is the diagnostic utility of a HLA B27 test for investigating suspected spondyloarthritis?

RQ8: What is the diagnostic utility of an erythrocyte sedimentation rate test for investigating suspected spondyloarthritis?

RQ9: What is the diagnostic utility of a C-reactive protein test for investigating suspected spondyloarthritis?

Table 6: search strategy 7,8,9

Medline Strategy, searched 24th October 2014	
Database: Ovid MEDLINE(R) 1946 to October Week 3 2014	
Search Strategy:	
1	exp Spondylitis/
2	Arthritis, Juvenile/
3	exp Arthritis, Infectious/
4	(seronegative\$ or spondyl\$ or ankylos\$ or reiter\$).tw.
5	(bechterew\$ or struempel\$).tw.
6	((reactiv\$ or enterop\$ or psori\$ or infect\$ or post-infect\$ or postinfect\$ or bacter\$ or juven\$ or enthesit\$ or spin\$) adj4 (arthr\$ or polyarthr\$ or poly-arthr\$ or oligoarthr\$)).tw.
7	still\$ disease\$.tw.
8	or/1-7
9	HLA-B Antigens/
10	HLA-B27 Antigen/
11	(HLA-B27 or HLAB27 or "HLA B27" or "HL A B27").tw.
12	(antigen* adj4 (B27 or B 27 or 27b or hl or "hl a" or hl-a or hla or leukocyte* or leucocyte or lymphocyte* or "white blood cell*" or histocompatibility)).tw.
13	Blood Sedimentation/
14	ESR.tw.
15	(sed* adj4 (rate* or test* or blood* or erythrocyte* or level* or high* or low* or increase* or decrease* or elevate*)).tw.
16	C-Reactive Protein/
17	(protein* adj4 (c-reacti* or "c reacti*")).tw.
18	creactive protein.tw.
19	(CRP or hs-CRP).tw.
20	Acute-Phase Proteins/
21	(acute phase adj4 (glycoprotein* or protein* or reactant* or globulin*)).tw.
22	Receptors, Interleukin/
23	Aminopeptidases/
24	IL23R.tw.
25	(receptor* adj4 (interleukin or IL-23)).tw.
26	ERAP1.tw.
27	"endoplasmic reticulum aminopeptidase* 1".tw.
28	or/9-27
29	8 and 28
30	Animals/ not Humans/
31	29 not 30
32	limit 31 to english language

Note: The McMaster diagnosis filter (optimal sensitivity) was used in Embase.

D.2.7 Search strategy review question 10

RQ10: What is the diagnostic utility of imaging (alone or in sequence) for investigating suspected spondyloarthritis?

Table 7: search strategy 10

Medline Strategy, searched 18th August 2015	
Database: Ovid MEDLINE(R) 1946 to August Week 1 2015	
Search Strategy:	
1	exp Spondylitis/
2	Arthritis, Juvenile/
3	exp Arthritis, Infectious/
4	(seronegative* or spondyl* or ankylos* or reiter*).tw.
5	(bechterew* or struempel*).tw.
6	((reactiv* or enterop* or psori* or infect* or post-infect* or postinfect* or bacter* or juven* or enthesit* or spin*) adj4 (arthr* or polyarthr* or poly-arthr* or oligoarthr*)).tw.
7	still* disease*.tw.
8	HLA-B27 Antigen/
9	(HLA-B27 or HLAB27 or "HLA B27").tw.
10	Sacroiliitis/
11	sacroiliiti*.tw.
12	((sacroiliac or SI joint* or SIJ) adj4 (inflam* or swell*)).tw.
13	(enthesitis or enthesopath*).tw.
14	(enthes?s adj4 (inflam* or swell* or path*)).tw.
15	Periostitis/
16	(periostitis or periostitides or periostalgia*).tw.
17	(periosteum adj4 (inflam* or swell*)).tw.
18	(dactyliti* or sausage digit*).tw.
19	((bone* or joint*) adj4 (subluxation* or proliferation*)).tw.
20	((soft tissue or fusiform) adj4 (inflam* or swell*)).tw.
21	or/1-20
22	exp Magnetic Resonance Imaging/
23	((diagnostic* or magnetic resonance or MR or NMR or chemical shift or magneti?ation transfer) adj4 (imag* or scan* or tomograph*)).tw.
24	(MRI* or fMRI* or NMRI* or MRT*).tw.
25	exp Radiography/
26	X-rays/
27	(x-ray* or x ray* or xray* or x-radiation* or x radiation*).tw.
28	exp Ultrasonography/
29	(ultrasound* or ultrasonograph* or echograph* or echotomograph* or sonograph* or sonogram* or radiological).tw.
30	((ultras* or radiograph*) adj4 (imag* or tomograph* or diagnos* or scan* or detect* or exam*)).tw.
31	(medic* adj4 (imag* or tomograph*)).tw.
32	exp Radionuclide Imaging/
33	((bone* or joint* or spine or spinal) adj4 (scan* or imag* or scinti* or radioscan*)).tw.
34	(scintigra* or scintiscan*).tw.
35	((isotope or radionuclide or radioisotope or nuclear medicine) adj4 (scan* or imag*)).tw.
36	exp Tomography, X-Ray Computed/
37	((CT or CAT) adj4 (imag* or tomograph* or diagnos* or scan* or detect* or exam*)).tw.
38	((compute* or electro*) adj4 tomograph*).tw.
39	(tomodensitometr* or cine-ct or cine ct).tw.
40	(PET adj1 CT).tw.

Medline Strategy, searched 18th August 2015
Database: Ovid MEDLINE(R) 1946 to August Week 1 2015
Search Strategy:

41 ((positron-emission or positron emission or PET or FDG or MR-PET) adj4 (scan* or tomograph* or imag*)).tw.
42 (PET adj1 (MRI or MR)).tw.
43 or/22-42
44 21 and 43
45 Animals/ not Humans/
46 44 not 45
47 limit 46 to english language

Note: The in-house observational filter was appended.

D.2.8 Search strategy review question 11

RQ11: What is the diagnostic utility of testing for infection such as salmonella, shigella, yersinia, campylobacter and chlamydia in cases of suspected reactive arthritis?

Table 8: search strategy 11

Medline Strategy, searched 30th October 2015
Database: Ovid MEDLINE(R) 1946 to October Week 4 2015
Search Strategy:

1 exp Spondylitis/
2 Arthritis, Juvenile/
3 exp Arthritis, Infectious/
4 (seronegative\$ or spondyl\$ or ankylos\$ or reiter\$).tw.
5 (bechterew\$ or struempel\$).tw.
6 ((reactiv\$ or enterop\$ or psori\$ or infect\$ or post-infect\$ or postinfect\$ or bacter\$ or juven\$ or enthesit\$ or spin\$) adj4 (arthr\$ or polyarthr\$ or poly-arthr\$ or oligoarthr\$)).tw.
7 still\$ disease\$.tw.
8 HLA-B27 Antigen/
9 (HLA-B27 or HLAB27 or "HLA B27").tw.
10 or/1-9
11 exp *Salmonella/
12 *Salmonella Infections/
13 salmonell*.tw.
14 (bacillus adj4 (paratyph* or schottmuelleri)).tw.
15 exp *Shigella/
16 shigell*.tw.
17 *Dysentery, Bacillary/
18 (dysenter* adj4 (bacill* or bacter* or basill)).tw.
19 exp *Yersinia/
20 *Yersinia Infections/
21 yersinia*.tw.
22 exp *Campylobacter/
23 *Campylobacter Infections/
24 campylobacter*.tw.
25 exp *Chlamydia/
26 *Chlamydia Infections/
27 chlamydia*.tw.
28 *Bacterial Infections/
29 *Bacteremia/
30 bacteremia*.tw.

Medline Strategy, searched 30th October 2015

Database: Ovid MEDLINE(R) 1946 to October Week 4 2015

Search Strategy:

31 *Urethritis/
32 urethriti*.tw.
33 *Reproductive Tract Infections/
34 alimentary canal infection*.tw.
35 *Gastroenteritis/
36 (gastroenteriti* or gastroduodenitis).tw.
37 (gastro adj4 enteritis).tw.
38 *Enteritis/
39 enteritis*.tw.
40 ((urethra* or genital* or reproductive or gut or bowel* or intestin* or enteric or enteral or enteropathy* or digestive or gastrointestinal* or GI or bacteri*) adj4 (infection* or inflamm*)).tw.
41 or/11-40
42 ((pathogen* or bacteri* or infect*) adj4 (test* or swab*)).tw.
43 (blood* adj4 (test* or culture*)).tw.
44 *Serologic Tests/
45 (serologic adj4 (test* or technique*)).tw.
46 serodiagnos*.tw.
47 *Agglutination Tests/
48 (agglutin* adj4 (test* or reaction*)).tw.
49 *Immunoenzyme Techniques/
50 ((techni* or method*) adj4 (immunoenzyme* or immunoperoxidase or peroxidase or enzyme*)).tw.
51 (immunoassay* adj4 enzyme*).tw.
52 *Fluorescent Antibody Technique/
53 (fluorescent adj4 (antibod* or antiglobulin or protein* or inhibition) adj4 (tracing* or techni* or test* or identif* or method*)).tw.
54 immunofluorescence.tw.
55 (coon* adj4 techni*).tw.
56 *Specimen Handling/
57 *Urine Specimen Collection/
58 *Urinalysis/
59 *Urine/
60 urin*.tw.
61 *Feces/
62 ((urin* or feces or fecal or faec* or poo* or stool*) adj4 (sample* or specimen*)).tw.
63 *Polymerase Chain Reaction/
64 PCR.tw.
65 polymerase chain reaction*.tw.
66 or/42-65
67 (sensitiv: or diagnos:).mp. or di.fs.
68 "Predictive Value of Tests"/
69 (predictive adj4 value*).tw.
70 or/67-69
71 41 or 66
72 10 and 71
73 70 and 72
74 Animals/ not Humans/
75 73 not 74
76 limit 75 to english language

Note: The McMaster diagnosis filter (maximum sensitivity) was used

D.2.9 Search strategy review question 13

RQ13: How should transition from specialist paediatric services to specialist adult rheumatology services be managed for young people between the ages of 16 and 18?

Note: No searches were carried out for this question. See Review Protocol for details

D.2.10 Search strategy review questions 29

RQ29: What is the usefulness of direct access to specialist care, compared with initial primary care access followed by specialist rheumatological care, in the management of flare episodes?

Table 9: search strategy 29

Medline Strategy, searched 12 th August 2015	
Database: Ovid MEDLINE(R) 1946 to July Week 5 2015	
Search Strategy:	
1	exp Spondylitis/
2	Arthritis, Juvenile/
3	exp Arthritis, Infectious/
4	(seronegative\$ or spondyl\$ or ankylos\$ or reiter\$).tw.
5	(bechterew\$ or struempel\$).tw.
6	((reactiv\$ or enterop\$ or psori\$ or infect\$ or post-infect\$ or postinfect\$ or bacter\$ or juven\$ or enthesit\$ or spin\$) adj4 (arthr\$ or polyarthr\$ or poly-arthr\$ or oligoarthr\$)).tw.
7	still\$ disease\$.tw.
8	HLA-B27 Antigen/
9	(HLA-B27 or HLAB27 or "HLA B27").tw.
10	or/1-9
11	Family Practice/
12	Physicians, Family/ or Physicians, Primary Care/
13	exp Primary Health Care/
14	General Practice/ or General Practitioner/
15	Community Health Services/
16	Community Health Nursing/
17	((general or family) adj (practice\$ or practitioner\$ or physician\$ or doctor\$)).tw.
18	(gp\$ adj3 (surger\$ or care or service\$ or centre\$ or center\$ or clinic\$ or facilit\$)).tw.
19	gp\$.tw.
20	((walk-in or "walk in" or walkin) adj3 (centre\$ or center\$ or clinic\$ or facilit\$)).tw.
21	(polyclinic\$ or poly-clinic\$ or poly clinic\$).tw.
22	((health or home\$ or house\$) adj4 (call\$ or visit\$)).tw.
23	(primary adj4 (care or health\$ or service\$ or center\$ or centre\$ or practice\$)).tw.
24	(community health adj3 (care or service\$ or centre\$ or center\$ or clinic\$ or facilit\$)).tw.
25	or/11-24
26	Specialization/
27	(speciali* or specialt*).tw.
28	Rheumatology/
29	rheumatologist*.tw.
30	Nurse Clinicians/
31	Nurse Practitioners/
32	nurse*.tw.
33	Pharmacists/
34	pharmacist*.tw.
35	Physical Therapy Modalities/

Medline Strategy, searched 12 th August 2015	
Database: Ovid MEDLINE(R) 1946 to July Week 5 2015	
Search Strategy:	
36	Physical Therapy Specialty/
37	Physical Therapists/
38	physio*.tw.
39	(physical adj4 therapist*).tw.
40	Hydrotherapy/
41	hydrotherap*.tw.
42	Gastroenterology/
43	gastroenterologist*.tw.
44	Ophthalmology/
45	ophthalmologist*.tw.
46	Dermatology/
47	dermatologist*.tw.
48	Surgeons/
49	surgeon*.tw.
50	Patient Care Team/
51	(team* adj4 (patient* or health* or medical or interdisciplinary or intraprofessional* or "intra professional*" or multidisciplinary or multiprofessional* or "multi professional*" or transdisciplinary)).tw.
52	or/26-51
53	25 or 52
54	flare*.tw.
55	((symptom* or disease* or condition*) adj4 (activit* or exacerbat* or worsen* or deteriorat* or aggravat* or recurr* or recrudescence* or periodic or fluctuat* or increase* or relaps* or remit* or remis*)).tw.
56	Recurrence/
57	or/54-56
58	10 and 53 and 57
59	Animals/ not Humans/
60	58 not 59
61	limit 60 to english language

D.2.11 Search strategy review question 30, 31

RQ30: What is the effectiveness of specialist-led long-term management of spondyloarthritis compared with primary-care-led long-term management?

RQ31: How should the cross-speciality care for people with spondyloarthritis be organised?

Table 10: search strategy 30 and 31

Medline Strategy, searched 18TH August 2015	
Database: Ovid MEDLINE(R) 1946 to August Week 1 2015	
Search Strategy:	
1	exp Spondylitis/
2	Arthritis, Juvenile/
3	exp Arthritis, Infectious/
4	(seronegative\$ or spondyl\$ or ankylos\$ or reiter\$).tw.
5	(bechterew\$ or struempel\$).tw.
6	((reactiv\$ or enterop\$ or psori\$ or infect\$ or post-infect\$ or postinfect\$ or bacter\$ or juven\$ or enthesit\$ or spin\$) adj4 (arthr\$ or polyarthr\$ or poly-arthr\$ or oligoarthr\$)).tw.
7	still\$ disease\$.tw.

Medline Strategy, searched 18TH August 2015
Database: Ovid MEDLINE(R) 1946 to August Week 1 2015
Search Strategy:

8 HLA-B27 Antigen/
9 (HLA-B27 or HLAB27 or "HLA B27").tw.
10 or/1-9
11 Ambulatory Care/ or ambulatory care facilities/
12 Physicians, Family/ or Physicians, Primary Care/
13 Primary Health Care/
14 exp General Practice/ or General Practitioner/
15 Community Health Services/
16 Community Health Nursing/
17 ((community or district) adj4 nursing).tw.
18 ((general or family) adj4 (practice* or practitioner* or physician* or doctor*)).tw.
19 gp*.tw.
20 ((primary or community or ambulatory) adj3 (care or service* or centre* or center* or clinic* or facility* or practice*)).tw.
21 ((walk-in or walk in or walkin) adj3 (care* or service* or centre* or center* or clinic* or facilit*)).tw.
22 ((health or home* or house*) adj4 (call* or visit*)).tw.
23 or/11-22
24 Specialization/
25 Consultants/
26 (speciali* or specialt* or consultant* or expert*).tw.
27 Rheumatology/
28 Nurse Clinicians/ or Nurse Practitioners/
29 Pharmacists/
30 Physical Therapy Modalities/ or Physical Therapy Specialty/ or Physical Therapists/
31 Hydrotherapy/
32 Gastroenterology/
33 Ophthalmology/
34 Dermatology/
35 Surgeons/
36 (rheumatologist* or nurse* or pharmacist* or physio* or hydrotherap* or gastroenterologist* or ophthalmologist* or dermatologist* or surgeon*).tw.
37 (physical adj4 therapist*).tw.
38 exp Hospitals/
39 exp Hospital Units/
40 exp Hospitalization/
41 hospital*.tw.
42 (tertiary-care or secondary-care).tw.
43 ((tertiary or secondary) adj3 (care or service* or center* or centre* or clinic* or facilit* or practice*)).tw.
44 Outpatients/
45 Outpatient Clinics, Hospital/
46 (outpatient* or out-patient*).tw.
47 Inpatients/
48 (inpatient* or in-patient*).tw.
49 or/24-48
50 Patient Care Management/
51 disease management/
52 Long-Term Care/
53 ((longterm or long-term or long term or continuous* or life or lifelong or chronic or plan* or

Medline Strategy, searched 18TH August 2015

Database: Ovid MEDLINE(R) 1946 to August Week 1 2015

Search Strategy:

pathway*) adj4 (manag* or care or caring or treat* or therap* or support*).tw.
54 or/50-53
55 Patient Care Team/
56 Professional Role/
57 Interprofessional Relations/
58 interdisciplinary communication/
59 "Delivery of Health Care, Integrated"/
60 "Continuity of Patient Care"/
61 Cooperative Behavior/
62 models,organizational/
63 models, theoretical/
64 program, development/
65 case management/
66 (multidisciplinary or multi-disciplinary or mdt or multipartner* or multi-partner* or multisector or multi-sector or multi-agenc* or multiagenc* or multiprofessional or multi-professional or intraprofessional or intra-professional or interprofessional or inter-professional or transdisciplinary or trans-disciplinary or interdisciplinary or inter-disciplinary or intradisciplinary or intra-disciplinary).tw.
67 (multiple adj1 disciplin*).tw.
68 ((patient* or health* or medical or care) adj4 team*).tw.
69 (cross-special* or cross special* or crosssector or cross-sector or across sector or intersector or inter-sector or inter-organi?ation* or cross organi?ation* or across organi?sation* or cross disciplin* or across disciplin*).tw.
70 (interagency or inter-agency).tw.
71 ((integrat* or combined or joint or collaborat*or continuity or coordinated or co-ordinated or multiple) adj2 (referral* or care* or treat* or manage* or team* or service* or network* or system* or clinic*).tw.
72 (partnership adj2 (work* or training)).tw.
73 ("whole system* approach*" or "whole system* working").tw.
74 ("managed clinical network*" or "one-stop shop" or "chain of care" or "whole health economy" or "case conferencing").tw.
75 ((organi?ation* or care or work*) adj2 model*).tw.
76 (polyclinic* or poly-clinic* or poly clinic* or policlinic*).tw.
77 medication errors/
78 Inappropriate prescribing/
79 Medication Adherence/
80 medication therapy management/
81 ((appropriate or optim* or inappropriat* or suboptim* or sub-optim* or unnecessary or incorrect* or in-correct* or excessive or multiple or concurrent* or adher* or compli* or dexter* or inadequate) adj2 (medicine* or medicat* or prescrip* or prescrip* or drug* or vaccin*).tw.
82 (underdos* or under-dos* or underprescrib* or underprescrip* or (under adj1 prescript*)).tw.
83 (overdos* or over-dos* or overprescrib* or overprescrip* or (over adj1 prescript*)).tw.
84 "medication appropriateness index".tw.
85 (quality adj2 (prescrib* or prescrip* or medicat*)).tw.
86 (improv* adj2 (prescrib* or prescrip* or pharmaco*)).tw.
87 Prescription drugs/
88 Drug therapy/
89 Community pharmacy services/
90 Pharmacy service, hospital/
91 Pharmacies/
92 Pharmaceutical services/
93 Pharmaceutical care/

Medline Strategy, searched 18TH August 2015
Database: Ovid MEDLINE(R) 1946 to August Week 1 2015
Search Strategy:

94 or/55-93
95 23 or 49
96 10 and 95 and 54
97 10 and 94
98 Observational Study as Topic/
99 Observational Study/
100 Epidemiologic Studies/
101 exp Case-Control Studies/
102 exp Cohort Studies/
103 Cross-Sectional Studies/
104 Controlled Before-After Studies/
105 Historically Controlled Study/
106 Interrupted Time Series Analysis/
107 Comparative Study.pt.
108 case control\$.tw.
109 case series.tw.
110 (cohort adj (study or studies)).tw.
111 cohort analy\$.tw.
112 (follow up adj (study or studies)).tw.
113 (observational adj (study or studies)).tw.
114 longitudinal.tw.
115 prospective.tw.
116 retrospective.tw.
117 cross sectional.tw.
118 or/98-117
119 97 and 118
120 96 or 119
121 Animals/ not Humans/
122 120 not 121
123 limit 122 to english language

Note: The in-house observational filter has been applied to RQ31 only.

D.2.12 Search strategy review question 32,33

RQ32: What are the complications associated with spondyloarthritis?

RQ33: What are the complications associated with the treatments for spondyloarthritis?

Table 11: search strategy 32 and 33

Medline Strategy, searched 25th November 2014
Database: Ovid MEDLINE(R) 1946 to November Week 2 2014
Search Strategy:

1 exp Spondylitis/
2 Arthritis, Juvenile/
3 exp Arthritis, Infectious/
4 (seronegative\$ or spondyl\$ or ankylos\$ or reiter\$).tw.
5 (bechterew\$ or struempel\$).tw.
6 ((reactiv\$ or enterop\$ or psori\$ or infect\$ or post-infect\$ or postinfect\$ or bacter\$ or juven\$ or enthesit\$ or spin\$) adj4 (arthr\$ or polyarthr\$ or poly-arthr\$ or oligoarthr\$)).tw.
7 still\$ disease\$.tw.

Medline Strategy, searched 25th November 2014

Database: Ovid MEDLINE(R) 1946 to November Week 2 2014

Search Strategy:

8 HLA-B27 Antigen/
9 (HLA-B27 or HLAB27 or "HLA B27").tw.
10 or/1-9
11 exp Osteoporosis/
12 (osteop* or (bone* adj4 loss*)).tw.
13 exp uveitis, anterior/
14 ((uve* adj4 inflam*) or iritis or iridocyclitis).tw.
15 Aortic valve/ or Aortic valve insufficiency/
16 ((aort* or heart*) adj4 valve* adj4 (inflam* or regurgit* or insufficien*)).tw.
17 arthritis psoriatic/
18 ((arthrit* or arthropath*) adj4 (psoriatic or psoriasis)).tw.
19 exp orthopedic procedures/
20 surgical procedures, elective/
21 exp inflammatory bowel disease/ or exp colitis/
22 ((bowel* or intestin*) adj4 inflam*).tw.
23 (crohn* or "colitis gravis" or ileocolitis or enteritis or ileitides or ileitis or (ulcer* adj4 col*)).tw.
24 spinal fractures/
25 ((spine* or spinal*) adj4 (fractur* or break*)).tw.
26 spinal cord injuries/
27 (spinal cord adj4 (injur* or trauma* or contusion* or lacerat* or transection*)).tw.
28 (trauma* adj4 myelopath*).tw.
29 Cauda Equina/
30 ((cauda* adj4 equina*) or terminal* filum*).tw.
31 exp Erectile Dysfunction/
32 ((erectile adj4 dysfunction*) or impoten*).tw.
33 exp Pulmonary Fibrosis/
34 ((pulmonary or alveoit* or lung*) adj4 (fibros* or disease* or restrict*)).tw.
35 hamman syndrom*.tw.
36 lung disease/ or lung/pp
37 ((chest adj4 expan*) or ((restrict* or confine* or constrain* or impede* or constrict*) adj4 (lung* or pulmonary))).tw.
38 exp Myocardial Ischemia/
39 (isch?emi* adj4 (myocardial or heart or cardiac)).tw.
40 exp stroke/
41 (stroke* or cva* or ((cerebrovascular or brain or apoplexy) adj4 (accident* or incident*))).tw.
42 prosthesis implantation/
43 exp arthroplasty replacement/
44 ((arthroplast* or joint* or ankle* or elbow* or finger* or hip* or knee* or shoulder*) adj4 (replace* or deform*)).tw.
45 (prothes?s adj4 implant*).tw.
46 exp Hyperlipidemias/
47 (hyperlipidemia* or lipidemia* or lipemia* or hyperlipemia* or hypercholesterolemia * or hypercholestolemia* or ((elevate* or raise*) adj4 cholesterol) or hyperlipoproteinemia* or hypertriglyceridemia).tw.
48 Metabolic syndrome x/
49 (syndrome* adj4 (metabolic or x or reaven)).tw.
50 (cardiovascular adj4 metabolic).tw.
51 Depression/
52 depress*.tw.
53 exp Alcoholism/
54 (alcoholi* or (alcohol adj4 (abuse* or addict* or dependen*))).tw.
55 exp Hospitalization/
56 (hospitali?ation* or (hospital* adj4 admi*)).tw.
57 exp Spinal Curvatures/
58 ((spin* adj4 (curv* or deform* or misshap* or mis shap* or mis -shap*)) or kyphos?s or sciolios?s or lordosis).tw.
59 comorbidity/

Medline Strategy, searched 25th November 2014

Database: Ovid MEDLINE(R) 1946 to November Week 2 2014

Search Strategy:

60 (co-morbid* or comorbid* or co-exist* or coexist* or co-occur* or cooccur* or multi-morbid* or multimorbid*).tw.
61 ((long-term or long term or chronic) adj4 (condition* or care* or complicat*)).tw.
62 or/11-61
63 exp Anti-Inflammatory Agents, Non-Steroidal/
64 (steroid* or non-steroid* or nonsteroid* or NSAID*).tw.
65 exp Adrenal Cortex Hormones/
66 (corticoid* or corticosteroid*).tw.
67 (adrenal* adj4 cortex* adj4 hormone*).tw.
68 exp Antirheumatic Agents/
69 dmard*.tw.
70 (disease* adj4 modif* adj4 rheumatic*).tw.
71 exp Biological Products/
72 (antirheumatic* or (anti adj1 rheumatic)).tw.
73 (biologics or ((biologic* or natural) adj4 product*)).tw.
74 exp Injections, Intra-articular/
75 (inject* adj4 (intraarticular or intra-articular or "soft tissue*")).tw.
76 or/63-75
77 62 or 76
78 10 and 77
79 animals/ not humans/
80 78 not 79
81 limit 80 to english language

D.3 Study Design Filters

The MEDLINE systematic reviews (SR), Randomized Controlled Trials (RCT) and Observational search filters were used where required for the review questions above and are presented below. They were translated for use in the MEDLINE In-Process and Embase databases.

In-house SR and RCT filters were appended to Review Questions: 6, 14-28, 34-35.

In-house observational filters were appended to Review Questions: 1, 2, 12 (part 1 of the search); 4 (part of the strategy), 10, 31, 32, 33

McMaster diagnosis and prognosis filters (maximum sensitivity) were appended to Review Questions, 1, 2, 12 (part 1 of the search) and the McMaster diagnosis filter (maximum sensitivity) to Review Questions 5, 7-9 (Embase only) and 11.

Table 12: study design filters

The MEDLINE SR, RCT and observational filters are presented below. They were translated for use in the MEDLINE In-Process and Embase databases.

Systematic Review

1. Meta-Analysis.pt.
2. Meta-Analysis as Topic/
3. Review.pt.
4. exp Review Literature as Topic/
5. (metaanaly\$ or metanaly\$ or (meta adj3 analy\$)).tw.
6. (review\$ or overview\$).ti.
7. (systematic\$ adj5 (review\$ or overview\$)).tw.
8. ((quantitative\$ or qualitative\$) adj5 (review\$ or overview\$)).tw.

The MEDLINE SR, RCT and observational filters are presented below. They were translated for use in the MEDLINE In-Process and Embase databases.

9. ((studies or trial\$) adj2 (review\$ or overview\$)).tw.
10. (integrat\$ adj3 (research or review\$ or literature)).tw.
11. (pool\$ adj2 (analy\$ or data)).tw.
12. (handsearch\$ or (hand adj3 search\$)).tw.
13. (manual\$ adj3 search\$).tw.
14. or/1-13
15. animals/ not humans/
16. 14 not 15

RCT

1. Randomized Controlled Trial.pt.
2. Controlled Clinical Trial.pt.
3. Clinical Trial.pt.
4. exp Clinical Trials as Topic/
5. Placebos/
6. Random Allocation/
7. Double-Blind Method/
8. Single-Blind Method/
9. Cross-Over Studies/
10. ((random\$ or control\$ or clinical\$) adj3 (trial\$ or stud\$)).tw.
11. (random\$ adj3 allocat\$).tw.
12. placebo\$.tw.
13. ((singl\$ or doubl\$ or trebl\$ or tripl\$) adj (blind\$ or mask\$)).tw.
14. (crossover\$ or (cross adj over\$)).tw.
15. or/1-14
16. animals/ not humans/
17. 15 not 16

Observational

1. Observational Study as Topic/
2. Observational Study/
3. Epidemiologic Studies/
4. exp Case-Control Studies/
5. exp Cohort Studies/
6. Cross-Sectional Studies/
7. Controlled Before-After Studies/
8. Historically Controlled Study/
9. Interrupted Time Series Analysis/
10. Comparative Study.pt.
11. case control\$.tw.
12. case series.tw.
13. (cohort adj (study or studies)).tw.
14. cohort analy\$.tw.
15. (follow up adj (study or studies)).tw.
16. (observational adj (study or studies)).tw.
17. longitudinal.tw.
18. prospective.tw.
19. retrospective.tw.
20. cross sectional.tw.
21. or/1-20

The MEDLINE SR, RCT and observational filters are presented below. They were translated for use in the MEDLINE In-Process and Embase databases.

McMaster Medline diagnosis filter (maximum sensitivity)

sensitiv:.mp. OR diagnos:.mp. OR di.fs.

McMaster Medline prognosis filter (maximum sensitivity)

incidence.sh. OR exp mortality OR follow-up studies.sh. OR prognos:.tw. OR predict:.tw. OR course:.tw.

McMaster Embase diagnosis filter (maximum sensitivity)

di.fs. OR predict:.tw. OR specificity.tw.

D.4 Health economics search strategy

D.4.1 Economic evaluations and quality of life data

Sources searched to identify economic evaluations

- NHS Economic Evaluation Database – NHS EED (Wiley)
- Health Economic Evaluations Database – HEED (Wiley)
- EconLit (Ovid)
- Embase (Ovid)
- MEDLINE (Ovid)
- MEDLINE In-Process (Ovid)

Search filters to retrieve economic evaluations and quality of life papers were appended to population search terms to identify relevant evidence between September 2014 and May 2016. The re-run searches took place in June 2016. EconLit (Ovid) was searched in May 2016 and June 2016 since NHS EED became a legacy database.

Table 13: health economics filters

The MEDLINE economic evaluations and quality of life search filters are presented below. They were translated for use in the MEDLINE In-Process and Embase databases.

Economic evaluations

1	Economics/
2	exp "Costs and Cost Analysis"/
3	Economics, Dental/
4	exp Economics, Hospital/
5	exp Economics, Medical/
6	Economics, Nursing/
7	Economics, Pharmaceutical/
8	Budgets/
9	exp Models, Economic/
10	Markov Chains/
11	Monte Carlo Method/
12	Decision Trees/
13	econom\$.tw.
14	cba.tw.
15	cea.tw.
16	cua.tw.
17	markov\$.tw.

The MEDLINE economic evaluations and quality of life search filters are presented below. They were translated for use in the MEDLINE In-Process and Embase databases.

Economic evaluations

- 18 (monte adj carlo).tw.
- 19 (decision adj2 (tree\$ or analys\$)).tw.
- 20 (cost or costs or costing\$ or costly or costed).tw.
- 21 (price\$ or pricing\$).tw.
- 22 budget\$.tw.
- 23 expenditure\$.tw.
- 24 (value adj2 (money or monetary)).tw.
- 25 (pharmacoeconomic\$ or (pharmaco adj economic\$)).tw.
- 26 or/1-25

Quality of life

- 1 "Quality of Life"/
- 2 quality of life.tw.
- 3 "Value of Life"/
- 4 Quality-Adjusted Life Years/
- 5 quality adjusted life.tw.
- 6 (qaly\$ or qald\$ or qale\$ or qtime\$).tw.
- 7 disability adjusted life.tw.
- 8 daly\$.tw.
- 9 Health Status Indicators/
- 10 (sf36 or sf 36 or short form 36 or shortform 36 or sf thirtysix or sf thirty six or shortform thirtysix or shortform thirty six or short form thirtysix or short form thirty six).tw.
- 11 (sf6 or sf 6 or short form 6 or shortform 6 or sf six or sfsix or shortform six or short form six).tw.
- 12 (sf12 or sf 12 or short form 12 or shortform 12 or sf twelve or sftwelve or shortform twelve or short form twelve).tw.
- 13 (sf16 or sf 16 or short form 16 or shortform 16 or sf sixteen or sfsixteen or shortform sixteen or short form sixteen).tw.
- 14 (sf20 or sf 20 or short form 20 or shortform 20 or sf twenty or sftwenty or shortform twenty or short form twenty).tw.
- 15 (euroqol or euro qol or eq5d or eq 5d).tw.
- 16 (qol or hql or hqol or hrqol).tw.
- 17 (hye or hyes).tw.
- 18 health\$ year\$ equivalent\$.tw.
- 19 utilit\$.tw.
- 20 (hui or hui1 or hui2 or hui3).tw.
- 21 disutili\$.tw.
- 22 rosser.tw.
- 23 quality of wellbeing.tw.
- 24 quality of well-being.tw.
- 25 qwb.tw.
- 26 willingness to pay.tw.
- 27 standard gamble\$.tw.
- 28 time trade off.tw.
- 29 time tradeoff.tw.
- 30 tto.tw.
- 31 or/1-30