

## Supplementary material 1. Electronic literature search.

<b>Ovid MEDLINE(R) Epub Ahead of Print, In-Process &amp; Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) &lt;1946 to Present&gt;. Search date: 17 June 2019</b>		
#	Searches	
1	exp orthopedic procedures/	287,935
2	((((knee? or hip or cox?) adj3 (implantation? or prosthes* or surgery or replacement? or arthroplast*)) or ((spine or spinal or orthop?edic*) adj2 surger*)).ab,kf,ti.	96,617
3	(knee? or hip or cox? or orthop?edic* or spine or spinal).ab,kf,ti. and surgery.fs.	162,769
4	or/1-3 [Orthopedic surgery]	399,621
5	exp work/ or exp employment/ or exp sports/	304,816
6	(workplace or work capacity or work disability or workers or occupation* or outdoor work* or vocational rehabilitation or (return adj3 work) or employment status or work status).ab,kf,ti.	315,353
7	(athlete? or sport? or sporting).ab,jw,kf,ti.	149,789
8	((physical or recreational or daily living or work or working or high) adj3 activit*).ab,kf,ti.	206,239
9	or/5-8 [working or sporting]	837,402
10	"recovery of function"/	47,650
11	follow up studies/ or retrospective studies/ or rehabilitation.fs. or (follow up or followup or retrospective or prospective or rehabilitation or prognos* or predict* or course*).ab,kf,ti.	4300,137
12	("return to" or "returned to" or function* disabilit* or (continue? adj2 participation) or restore or restoring).ab,kf,ti.	295,193
13	or/10-12 [functional recovery]	4,524,400
14	9 and 13 [Return to work or sports]	212,646
15	exp telemedicine/	25,047
16	(telemedicine or tele medicine or personal health record? or telehealth or tele health or ehealth or e health or computer tailor* or telecare or tele care or telemonitoring or tele monitoring or informatics or online self management or web based).ab,kf,ti.	59,129
17	(mobile app* or app? or mobile device? or handheld device? or handheld computer? or mobile phone? or cell phone? or tablet).ab,kf,ti.	67,439
18	or/15-17 [e-health]	135,392
19	((referral or consultation or counseling or management) adj3 (active or perioperative* or postoperative* or post operative*)).ab,hw,kf,ti.	22,696
20	((referral or consultation or counseling) and (occupational physician? or occupational therapist? or physical therapist? or nurse?)).ab,hw,kf,ti.	15,492
21	(manage? adj2 (occupational physician? or occupational therapist? or physical therapist? or nurse?)).ab,kf,ti.	2,440
22	(integrated care or stepped care or multidisciplinary care or multi disciplinary care).ab,kf,ti.	8,121
23	or/19-22 [active referral: stepped care]	48,362
24	case management/	9,819
25	((((care or case) adj3 (management or manager?)) or managed care or care coordination or care coordinator or patient navigat* or ((clinical or nurse) adj3 coordinat*)).ab,kf,ti.	61,523
26	(case management or care management).jw.	8,761
27	or/24-26 [active referral: case management]	71,734
28	23 or 27 [active referral]	117,237
29	goal attainment.ab,kf,ti.	1,692
30	((((encourage or stimulate or motivate) adj3 (activit* or objective? or compliance or functional restoration)) or rehabilitation orient*).ab,kf,ti.	6,755
31	(goal adj3 set*).ab,kf,ti. and rehabilitation.ab,fs,hw,jw,kf,ti.	807
32	or/29-31 [Goal attainment]	9,165
33	Economics/ or exp "costs and cost analysis"/ or Economics, Dental/ or exp economics, hospital/ or Economics, Medical/ or Economics, Nursing/ or Economics, Pharmaceutical/	272,872
34	(economic\$ or cost or costs or costly or costing or price or prices or pricing or pharmacoeconomic\$ or (expenditure\$ not energy) or "value for money" or	752,371

	budget\$.ab,ti.	
35	33 or 34	870,360
36	((energy or oxygen) adj cost) or (metabolic adj cost) or ((energy or oxygen) adj expenditure)).ti,ab.	27,772
37	35 not 36	863,964
38	(letter or editorial or historical article).pt.	1,854,901
39	37 not 38	829,425
40	exp animals/ not humans/	4,586,077
41	39 not 40	777,146
42	(bmj or "cochrane database of systematic reviews" or "health technology assessment winchester england").jn.	92,206
43	41 not 42 [NHS-EED filter Medline]	771,152
44	and/4,18	796
45	4 and (9 or 13) and 28	2,208
46	and/4,32	82
47	and/4,14,43	653
48	(NCT01079572 or ISRCTN66285945 or ACTRN12606000346572 or NCT00969020 or ISRCTN38381590 or NTR5251).ab,kf,ti.	2
49	action trial.ab,kf,ti. and (18 or 28 or 32 or 43)	6
50	or/44-49	3,690
51	remove duplicates from 50	3,688

Ovid Embase Classic+Embase <1947 to 2019 June 17>. Search date: 17 June 2019		
#	Searches	
1	exp *orthopedic surgery/	238,963
2	(((knee? or hip or cox?) adj3 (implantation? or prosthes* or surgery or replacement? or arthroplast*)) or ((spine or spinal or orthop?edic*) adj2 surger*)).ab,hw,kw,ti.	187,767
3	(knee? or hip or cox? or orthop?edic* or spine or spinal).ab,kw,ti. and surgery.fs.	172,267
4	or/1-3 [Orthopedic surgery]	452,784
5	exp *work/ or *work disability/ or exp *occupational health/ or exp *sport/	283,836
6	(workplace or work capacity or work disability or workers or occupation* or outdoor work* or vocational rehabilitation or (return adj3 work) or employment status or work status).ab,kw,ti.	414,677
7	(athlete? or sport? or sporting).ab,jx,kw,ti.	184,089
8	((physical or recreational or daily living or work or working or high) adj3 activit*).ab,kw,ti.	283,943
9	or/5-8 [working or sporting]	1,008,811
10	*convalescence/	6,429
11	follow up studies/ or retrospective studies/ or rehabilitation.fs. or (follow up or followup or retrospective or prospective or rehabilitation or prognos* or predict* or course*).ab,kw,ti.	5,848,468
12	("return to" or "returned to" or function* disabilit* or (continue? adj2 participation) or restore or restoring).ab,kw,ti.	420,514
13	or/10-12 [functional recovery]	6,145,002
14	9 and 13 [Return to work or sports]	254,880
15	exp *telemedicine/	18,594
16	(telemedicine or tele medicine or personal health record? or telehealth or tele health or ehealth or e health or computer tailor* or telecare or tele care or telemonitoring or tele monitoring or informatics or online self management or web based).ab,kw,ti.	80,697
17	(mobile app* or app? or mobile device? or handheld device? or handheld computer? or mobile phone? or cell phone? or tablet).ab,kw,ti.	100,563
18	or/15-17 [e-health]	185,192
19	((referral or consultation or counseling or management) adj3 (active or perioperative* or postoperative* or post operative*)).ab,hw,kw,ti.	32,819
20	((referral or consultation or counseling) and (occupational physician? or occupational therapist? or physical therapist? or nurse?)).ab,hw,kw,ti.	30,392
21	(manage? adj2 (occupational physician? or occupational therapist? or physical therapist? or nurse?)).ab,kw,ti.	3,060
22	(integrated care or stepped care or multidisciplinary care or multi disciplinary care).ab,kw,ti.	11,864
23	or/19-22 [active referral: stepped care]	77,283
24	*case management/ or (exp "organization and management"/ and coordination/)	6,896
25	(((care or case) adj3 (management or manager?)) or managed care or care coordination or care coordinator or patient navigat* or ((clinical or nurse) adj3 coordinat*)).ab,kw,ti.	85,147
26	(case management or care management).jx.	8,930
27	or/24-26 [active referral: case management]	94,186
28	23 or 27 [active referral]	166,724
29	goal attainment.ab,kw,sh,ti.	5,076
30	(((encourage or stimulate or motivate) adj3 (activit* or objective? or compliance or functional restoration)) or rehabilitation orient*).ab,kw,ti.	8,219
31	(goal adj3 set*).ab,kw,ti. and rehabilitation.ab,fs,hw,jx,kw,ti.	1,222
32	or/29-31 [Goal attainment]	14,328
33	Health Economics/ or exp Economic Evaluation/ or exp Health Care Cost/ or pharmacoeconomics/	515,097
34	(econom\$ or cost or costs or costly or costing or price or prices or pricing or pharmacoeconomic\$ or (expenditure\$ not energy) or (value adj2 money) or budget\$).ab,ti.	1,024,464
35	33 or 34	1,245,406
36	(letter or editorial or note).pt.	2,427,001
37	35 not 36	1,147,994
38	((metabolic adj cost) or ((energy or oxygen) adj cost) or ((energy or oxygen) adj	35,172

	expenditure)).ti,ab.	
39	37 not 38	1,140,649
40	animal/ or exp animal experiment/ or nonhuman/	8,064,108
41	(rat or rats or mouse or mice or hamster or hamsters or animal or animals or dog or dogs or cat or cats or bovine or sheep).ti,ab,sh.	6,327,988
42	40 or 41	9,309,867
43	exp human/ or human experiment/	21,045,085
44	42 not (42 and 43)	6,973,863
45	39 not 44	1,038,487
46	(0959-8146 or 1469-493X or 1366-5278).is.	83,571
47	1756-1833.en.	29,275
48	46 or 47	103,430
49	45 not 48	1,031,736
50	conference abstract.pt.	3,425,531
51	49 not 50 [NHS-EED filter Embase]	852,439
52	and/4,18	1,078
53	4 and (9 or 13) and 28	2,791
54	and/4,32	131
55	and/4,14,51	648
56	(NCT01079572 or ISRCTN66285945 or ACTRN12606000346572 or NCT00969020 or ISRCTN38381590 or NTR5251).ab,cn,kw,ti.	5
57	action trial.ab,kw,ti. and (18 or 28 or 32 or 43)	141
58	or/52-57	4,727
59	remove duplicates from 58	4,617

CINAHL plus Full Text, ebscohost interface. Search date: 17 June 2019		
#	Query	
S36	s35	1,528
S35	S30 OR S31 OR S34	4,701
S34	S33 AND (S8 OR S15 OR S20 OR S23)	122
S33	AB (action trial) OR TI (action trial) OR SU (action trial)	504
S32	AB (NCT01079572 or ISRCTN66285945 or ACTRN12606000346572 or NCT00969020 or ISRCTN38381590 or NTR5251) OR TI (NCT01079572 or ISRCTN66285945 or ACTRN12606000346572 or NCT00969020 or ISRCTN38381590 or NTR5251) OR SU (NCT01079572 or ISRCTN66285945 or ACTRN12606000346572 or NCT00969020 or ISRCTN38381590 or NTR5251)	1
S31	S4 AND S23 AND S29	1,354
S30	S4 AND (S8 OR S15 OR S20)	3,299
S29	S24 OR S25 OR S26 OR S27 OR S28	459,286
S28	AB ((physical or recreational or daily living or work or working or high) N2 activit*) OR TI ((physical or recreational or daily living or work or working or high) N2 activit*) OR SU ((physical or recreational or daily living or work or working or high) N2 activit*)	105,634
S27	AB (athlete? or sport? or sporting) OR TI (athlete? or sport? or sporting) OR SU (athlete? or sport? or sporting)	45,009
S26	(MH "Sports+") OR (MH "Athletes+")	78,909
S25	AB (workplace or work capacity or work disability or workers or occupation* or outdoor work* or vocational rehabilitation or (return N2 work) or employment status or work status) OR TI (workplace or work capacity or work disability or workers or occupation* or outdoor work* or vocational rehabilitation or (return N2 work) or employment status or work status) OR SU (workplace or work capacity or work disability or workers or occupation* or outdoor work* or vocational rehabilitation or (return N2 work) or employment status or work status)	248,700
S24	(MH "Work") OR (MH "Employment+")	48,149
S23	S21 OR S22	915,522
S22	AB (economic* or cost or costs or costly or costing or price or prices or pricing or pharmacoeconomic* or (expenditure* not energy) or "value for money" or budget*) OR TI (economic* or cost or costs or costly or costing or price or prices or pricing or pharmacoeconomic* or (expenditure* not energy) or "value for money" or budget*) OR SU (economic* or cost or costs or costly or costing or price or prices or pricing or pharmacoeconomic* or (expenditure* not energy) or "value for money" or budget*)	359,352
S21	(MH "Economics+")	750,979
S20	S16 OR S17 OR S18 OR S19	9,172
S19	AB ((goal N2 set*) and (rehabilitation)) OR TI ((goal N2 set*) and (rehabilitation)) OR SU ((goal N2 set*) and (rehabilitation))	1,183
S18	AB ((encourage or stimulate or motivate) N2 (activit* or objective? or compliance or functional restoration) or rehabilitation orient*) OR TI ((encourage or stimulate or motivate) N2 (activit* or objective? or compliance or functional restoration) or rehabilitation orient*) OR SU ((encourage or stimulate or motivate) N2 (activit* or objective? or compliance or functional restoration) or rehabilitation orient*)	1,390
S17	AB (goal attainment) OR TI (goal attainment) OR SU (goal attainment)	2,707
S16	(MH "Goal Attainment") OR (MH "Goal-Setting") OR (MH "Mutual Goal Setting (Iowa NIC)")	6,427
S15	S9 OR S10 OR S11 OR S12 OR S13 OR S14	124,928
S14	AB (((care or case) N2 (management or manager?)) or managed care or care coordination or care coordinator or patient navigat* or ((clinical or nurse) N2 coordinat*)) OR TI (((care or case) N2 (management or manager?)) or managed care or care coordination or care coordinator or patient navigat* or ((clinical or nurse) adj3 coordinat*)) OR SU (((care or case) N2 (management or manager?)) or managed care or care coordination or care coordinator or patient navigat* or ((clinical or nurse) N2 coordinat*))	57,413
S13	(MH "Case Management") OR (MH "Case Managers")	17,940
S12	AB (integrated care or stepped care or multidisciplinary care or multi disciplinary care) OR TI (integrated care or stepped care or multidisciplinary care or multi disciplinary care) OR SU	56,584

	(integrated care or stepped care or multidisciplinary care or multi disciplinary care)	
S11	AB (manage? N1 (occupational physician? or occupational therapist? or physical therapist? or nurse?)) OR TI (manage? N1 (occupational physician? or occupational therapist? or physical therapist? or nurse?)) OR SU (manage? N1 (occupational physician? or occupational therapist? or physical therapist? or nurse?))	395
S10	AB ((referral or consultation or counseling) AND (occupational physician? or occupational therapist? or physical therapist? or nurse?)) OR TI ((referral or consultation or counseling) AND (occupational physician? or occupational therapist? or physical therapist? or nurse?)) OR SU ((referral or consultation or counseling) AND (occupational physician? or occupational therapist? or physical therapist? or nurse?))	10,140
S9	AB ((referral or consultation or counseling or management) N2 (active or perioperative* or postoperative* or post operative*)) OR TI ((referral or consultation or counseling or management) N2 (active or perioperative* or postoperative* or post operative*)) OR SU ((referral or consultation or counseling or management) N2 (active or perioperative* or postoperative* or post operative*))	6,022
S8	S5 OR S6 OR S7	69,561
S7	AB (mobile app* or app? or mobile device? or handheld device? or handheld computer? or mobile phone? or cell phone? or tablet) OR TI (mobile app* or app? or mobile device? or handheld device? or handheld computer? or mobile phone? or cell phone? or tablet) OR SU (mobile app* or app? or mobile device? or handheld device? or handheld computer? or mobile phone? or cell phone? or tablet)	21,168
S6	AB (telemedicine or tele medicine or personal health record? or telehealth or tele health or ehealth or e health or computer tailor* or telecare or tele care or telemonitoring or tele monitoring or informatics or online self management or web based) OR TI (telemedicine or tele medicine or personal health record? or telehealth or tele health or ehealth or e health or computer tailor* or telecare or tele care or telemonitoring or tele monitoring or informatics or online self management or web based) OR SU (telemedicine or tele medicine or personal health record? or telehealth or tele health or ehealth or e health or computer tailor* or telecare or tele care or telemonitoring or tele monitoring or informatics or online self management or web based)	47,769
S5	(MH "Telehealth+")	18,942
S4	S1 OR S2 OR S3	130,163
S3	AB ((knee? or hip or cox? or orthop?edic* or spine or spinal) AND surgery) OR TI ((knee? or hip or cox? or orthop?edic* or spine or spinal) AND surgery) OR SU ((knee? or hip or cox? or orthop?edic* or spine or spinal) AND surgery)	69,631
S2	AB (((knee? or hip or cox?) N2 (implantation? or prosthes* or surgery or replacement? or arthroplast*)) or ((spine or spinal or orthop?edic*) N1 surger*)) OR TI (((knee? or hip or cox?) N2 (implantation? or prosthes* or surgery or replacement? or arthroplast*)) or ((spine or spinal or orthop?edic*) N1 surger*)) OR SU (((knee? or hip or cox?) N2 (implantation? or prosthes* or surgery or replacement? or arthroplast*)) or ((spine or spinal or orthop?edic*) N1 surger*))	58,542
S1	(MH "Orthopedic Surgery+")	96,681