

Longitudinal study of patients' health-related quality of life using EQ-5D-3L in 11 Swedish National Quality Registers

Fitsum Sebsibe Teni^{1*}, Ola Rolfson^{1,2,3}, Nancy Devlin^{4,5}, David Parkin^{5,6}, Emma Nauclér³, Kristina Burström^{1,7,8}, The Swedish Quality Register (SWEQR) Study Group

Authors' affiliations

¹ Health Outcomes and Economic Evaluation Research Group, Stockholm Centre for Healthcare Ethics, Department of Learning, Informatics, Management and Ethics, Karolinska Institutet, Stockholm, Sweden.

² Department of Orthopaedics, Institute of Clinical Sciences, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden.

³ Swedish Hip Arthroplasty Register, Gothenburg, Sweden.

⁴ Centre for Health Policy, University of Melbourne, Melbourne, Australia.

⁵ Office of Health Economics, London, United Kingdom.

⁶ City University of London, London, United Kingdom.

⁷ Equity and Health Policy Research Group, Department of Global Public Health, Karolinska Institutet, Stockholm; Sweden.

⁸ Health Care Services, Region Stockholm, Stockholm, Sweden

*Corresponding author

Email: fitsum.teni@ki.se

Table S1: Sampling procedure followed in combining the data sets from each of the 11 National Quality Registers (NQRs), baseline to 1-year follow-up and the general population data

Category	Patient groups in NQRs	A	B	C	D	E
		n (%)				
Intervention-based registers	Spine	53,418 (15.8)	53,015 (15.9)	51,047 (15.7)	48,960 (15.5)	44,196 (17.6)
	Hip	95,887 (28.3)	93,684 (28.0)	90,669 (27.9)	90,660 (28.7)	90,658 (36.1)
	Knee	17,600 (5.2)	16,324 (4.9)	16,324 (5.0)	16,324 (5.2)	16,324 (6.5)
	Ankle	794 (0.2)	789 (0.2)	725 (0.2)	700 (0.2)	668 (0.3)
	Cruciate ligament	10,532 (3.1)	10,532 (3.2)	10,465 (3.2)	8,430 (2.7)	8,155 (3.2)
	Osteoarthritis (BOA)	15,238 (4.5)	14,877 (4.5)	13,965 (4.3)	13,647 (4.3)	6,690 (2.7)
Diagnosis-based registers	Fracture	55,459 (16.4)	55,428 (16.6)	54,108 (16.6)	50,892 (16.1)	40,787 (16.2)
	Heart failure	1,789 (0.5)	1,746 (0.5)	1,691 (0.5)	1,436 (0.5)	1,044 (0.4)
	Respiratory failure	1,287 (0.4)	1,063 (0.3)	1,050 (0.3)	1,050 (0.3)	725 (0.3)
	Psoriasis	3,041 (0.9)	2,878 (0.9)	2,789 (0.9)	2,680 (0.8)	-
	Rheumatology	34,036 (10.1)	33,686 (10.1)	32,565 (10.0)	31,462 (10.0)	-
NQRs (total, count)		289,081 (85.4)	284,022 (85.0)	275,398 (84.6)	266,241 (84.4)	209,247 (83.4)
General population data		49,499 (14.6)	49,999 (15.0)	49,999 (15.4)	49,169 (15.6)	41,761 (16.6)
Total		338,580 (100.0)	334,021 (100.0)	325,397 (100.0)	315,410 (100.0)	251,008 (100.0)

A= Data on baseline and 1-year follow-up

B= After selection of data with information on diagnosis and intervention

C= After de-duplication of records occurring in more than one patient group (duplicate records taken out keeping one record)

D= Included in the analyses after exclusion of missing values on age at baseline, or on any of the EQ-5D dimensions

E= Included in the analyses of EQ VAS values

BOA=Better management of osteoarthritis register, referred to as BOA in whole manuscript

Proportions rounded off to one decimal using MS Excel

Table S2: Demographic characteristics of patients across diagnoses in the 11 National Quality Registers (NQRs)

Patient group in NQRs	Diagnosis	Age (years) Mean (SD)	Age group							Sex			
			<30		30-39		40-49		50-59		60-69	70-79	80+
			n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)		
Intervention-based registers	Spine	Disc hernia (n=12,582)	46.1 (13.5)	1,216 (9.7)	3,089 (24.6)	3,708 (29.5)	2,312 (18.4)	1,519 (12.1)	624 (5.0)	114 (0.9)	5,784 (46.0)		
		Other spinal conditions (n=1,431)	58.2 (13.1)	32 (2.2)	98 (6.8)	207 (14.5)	382 (26.7)	411 (28.7)	260 (18.2)	41 (2.9)	891 (62.3)		
		Segmental instability (n=4,290)	45.6 (10.2)	245 (5.7)	932 (21.7)	1,674 (39.0)	1,034 (24.1)	345 (8.0)	59 (1.4)	1 (0.0)	2,326 (54.2)		
		Spinal stenosis (n=28,194)	67.2 (10.5)	56 (0.2)	245 (0.9)	1,390 (4.9)	4,518 (16.0)	9,101 (32.3)	9,914 (35.2)	2,970 (10.5)	15,046 (53.4)		
		Spondylolysis (n=2,463)	50.9 (12.5)	125 (5.1)	288 (11.7)	716 (29.1)	718 (29.2)	459 (18.6)	142 (5.8)	15 (0.6)	1,281 (52.0)		
	Hip	Avascular necrosis (n=1,594)	66.0 (13.6)	13 (0.8)	68 (4.3)	127 (8.0)	228 (14.3)	444 (27.9)	458 (28.7)	256 (16.1)	935 (58.7)		
		Childhood hip disorder (n=1,846)	54.5 (12.4)	23 (1.2)	169 (9.2)	492 (26.7)	533 (28.9)	390 (21.1)	199 (10.8)	40 (2.2)	1,139 (61.7)		
		Hip osteoarthritis (n=86,023)	68.9 (9.9)	61 (0.1)	348 (0.4)	2,706 (3.1)	10,814 (12.6)	29,020 (33.7)	30,868 (35.9)	12,206 (14.2)	48,329 (56.2)		
		Inflammatory joint disorder (n=1,197)	64.5 (12.5)	25 (2.1)	40 (3.3)	69 (5.8)	191 (16.0)	431 (36.0)	344 (28.7)	97 (8.1)	860 (71.8)		
	Knee	Knee osteoarthritis (n=16,020)	69.0 (8.7)	0 (0.0)	9 (0.1)	262 (1.6)	2085 (13.0)	5,695 (35.5)	6,203 (38.7)	1,766 (11.0)	9,173 (57.3)		
		Knee rheumatoid arthritis (n=304)	66.2 (10.2)	1 (0.3)	1 (0.3)	16 (5.3)	51 (16.8)	119 (39.1)	93 (30.6)	23 (7.6)	219 (72.0)		
	Ankle	Others (n=85)	57.7 (12.6)	1 (1.2)	7 (8.2)	14 (16.5)	22 (25.9)	26 (30.6)	14 (16.5)	1 (1.2)	31 (36.5)		
		Posttraumatic OA (n=308)	62.0 (12.1)	7 (2.3)	10 (3.2)	24 (7.8)	76 (24.7)	98 (31.8)	83 (26.9)	10 (3.2)	134 (43.5)		
		Primary OA (n=234)	67.1 (8.9)	0 (0.0)	1 (0.4)	6 (2.6)	37 (15.8)	85 (36.3)	92 (39.3)	13 (5.6)	86 (36.8)		
		Rheumatoid arthritis (n=73)	62.1 (13.4)	2 (2.7)	3 (4.1)	8 (11.0)	10 (13.7)	24 (32.9)	26 (35.6)	0 (0.0)	60 (82.2)		
	Cruciate ligament	Cruciate ligament injury (n=8,430)	29.8 (10.0)	4,964 (58.9)	1,797 (21.3)	1,299 (15.4)	347 (4.1)	22 (0.3)	1 (0.0)	0 (0.0)	3,772 (44.7)		
	BOA	BOA hip (n=3,440)	65.9 (9.2)	1 (0.0)	27 (0.8)	158 (4.6)	552 (16.0)	1,484 (43.1)	1,043 (30.3)	175 (5.1)	2474 (71.9)		
		BOA knee (n=10,207)	65.4 (9.1)	5 (0.0)	49 (0.5)	466 (4.6)	1,985 (19.4)	4,365 (42.8)	2,793 (27.4)	544 (5.3)	7370 (72.2)		
	Fracture	Ankle and foot (n=3,728)	51.7 (17.4)	530 (14.3)	424 (11.4)	605 (16.3)	819 (22.0)	738 (19.8)	439 (11.8)	163 (4.4)	2,208 (59.4)		
		Elbow and forearm (n=13,996)	61.6 (15.9)	794 (5.7)	708 (5.1)	1,189 (8.5)	2,678 (19.1)	4,071 (29.1)	2,999 (21.4)	1,557 (11.1)	10942 (78.2)		
		Hip and femur (n=8,378)	77.2 (12.0)	51 (0.6)	58 (0.7)	116 (1.4)	377 (4.5)	1,233 (14.7)	2,442 (29.1)	4,101 (48.9)	5655 (67.5)		
		Knee and lower leg (n=10,866)	57.4 (17.0)	960 (8.8)	804 (7.4)	1,377 (12.7)	2,180 (20.1)	2,774 (25.5)	1,962 (18.1)	809 (7.4)	6714 (61.8)		
		Lumbar, spine and pelvis (n=1,128)	72.2 (16.8)	36 (3.2)	31 (2.7)	44 (3.9)	111 (9.8)	153 (13.6)	299 (26.5)	454 (40.2)	780 (69.1)		
		Shoulder and upper arm (n=7,835)	63.6 (16.6)	464 (5.9)	317 (4.0)	621 (7.9)	1,195 (15.3)	2,064 (26.3)	1,946 (24.8)	1,228 (15.7)	5,291 (67.5)		
		Unspecified part of trunk, extremities or other body region (n=749)	61.3 (19.2)	76 (10.1)	43 (5.7)	74 (9.9)	106 (14.2)	142 (19.0)	189 (25.2)	119 (15.9)	327 (43.7)		
		Wrist and hand (n=4,222)	49.9 (19.2)	882 (20.9)	485 (11.5)	625 (14.8)	750 (17.8)	743 (17.6)	523 (12.4)	214 (5.1)	1,864 (44.1)		

Diagnosis-based registers	Heart failure	Heart failure (n=1,436)	72.8 (11.1)	2 (0.5)	7 (2.6)	37 (9.5)	137 (20.5)	294 (35.7)	512 (31.1)	447 (0.5)	507 (35.3)
	Respiratory failure	COPD (n=900)	73.3 (7.6)	0 (0.0)	0 (0.0)	1 (0.1)	39 (4.3)	237 (26.3)	425 (47.2)	198 (22.0)	555 (61.7)
		Lung fibrosis (n=150)	75.9 (7.7)	0 (0.7)	1 (1.3)	(0.0)	2 (18.7)	28 (46.0)	69 (33.3)	50 (0.7)	68 (45.3)
	Psoriasis	Psoriasis vulgaris (n=1,704)	49.4 (15.2)	191 (11.2)	273 (16.0)	370 (21.7)	374 (21.9)	346 (20.3)	123 (7.2)	27 (1.6)	576 (33.8)
		Psoriasis vulgaris + anthropathic (n=537)	51.8 (13.2)	21 (3.9)	82 (15.3)	131 (24.4)	132 (24.6)	127 (23.6)	37 (6.9)	7 (1.3)	237 (44.1)
		Psoriasis unspecified (n=439)	51.6 (14.9)	39 (8.9)	67 (15.3)	80 (18.2)	110 (25.1)	95 (21.6)	41 (9.3)	7 (1.6)	181 (41.2)
	Rheumatology	Rheumatoid arthritis (n=17,870)	59.2 (13.9)	585 (3.3)	1,233 (6.9)	2,362 (13.2)	3,846 (21.5)	5,604 (31.4)	3,430 (19.2)	810 (4.5)	12,954 (72.5)
		Spondyloarthropathy (n=8,782)	47.6 (13.9)	1,009 (11.5)	1,596 (18.2)	2,228 (25.4)	2,058 (23.4)	1,380 (15.7)	448 (5.1)	63 (0.7)	4,271 (48.6)
		Inflammatory systemic disorder (n=1,614)	51.9 (15.8)	155 (9.6)	243 (15.1)	295 (18.3)	337 (20.9)	349 (21.6)	206 (12.8)	29 (1.8)	1,249 (77.4)
		Juvenile rheumatoid diseases (n=1,088)	29.7 (12.8)	676 (62.1)	186 (17.1)	134 (12.3)	43 (4.5)	33 (3.0)	9 (0.8)	1 (0.1)	865 (79.5)
		Vasculitis (n=410)	60.0 (14.0)	22 (5.4)	18 (4.4)	40 (9.8)	66 (16.1)	149 (36.3)	105 (25.6)	10 (2.4)	234 (57.1)
		Other arthritis (n=1,698)	54.0 (15.9)	146 (8.6)	207 (12.2)	294 (17.3)	365 (21.5)	378 (22.3)	250 (14.7)	58 (3.4)	1,095 (64.5)

*Percent based on non-missing values;

Proportions rounded off to one decimal using MS Excel

Table S3: Prevalence of reported problems on EQ-5D-3L by diagnosis, at baseline and 1-year follow-up in the 11 National Quality Registers (NQRs) and in the general population

Patient group in NQRs	Diagnosis	Severity level	Baseline EQ-5D-3L dimension					1-year follow-up EQ-5D-3L dimension				
			Mobility	Self-care	Usual activities	Pain/discomfort	Anxiety/depression	Mobility	Self-care	Usual activities	Pain/discomfort	Anxiety/Depression
			n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Intervention-based registers	Spine	Disc hernia (n=12,582)	Level 1 1,996 (15.9)	8,535 (67.8)	2,353 (18.7)	89 (0.7)	4,603 (36.6)	9,258 (73.6)	11,659 (92.7)	9,015 (71.6)	3,596 (28.6)	8,144 (64.7)
		Level 2 9,931 (78.9)	3,788 (30.1)	6,373 (50.7)	5,470 (43.5)	6,954 (55.3)	3,293 (26.2)	864 (6.9)	3,154 (25.1)	7,799 (62.0)	3,903 (31.0)	
		Level 3 655 (5.2)	259 (2.1)	3,856 (30.6)	7,023 (55.8)	1,025 (8.1)	31 (0.2)	59 (0.5)	413 (3.3)	1,187 (9.4)	535 (4.3)	
	Other spinal conditions (n=1,431)	Level 1 279 (19.5)	1,144 (79.9)	414 (28.9)	14 (1.0)	586 (41.0)	813 (56.8)	1,311 (91.6)	905 (63.2)	328 (22.9)	893 (62.4)	
		Level 2 1,113 (77.8)	272 (19.0)	689 (48.1)	610 (42.6)	742 (51.9)	612 (42.8)	111 (7.8)	451 (31.5)	869 (60.7)	472 (33.0)	
		Level 3 39 (2.7)	15 (1.0)	328 (22.9)	807 (56.4)	103 (7.2)	6 (0.4)	9 (0.6)	75 (5.2)	234 (16.4)	66 (4.6)	
	Segmental instability (n=4,290)	Level 1 1,419 (33.1)	3,277 (76.4)	900 (21.0)	21 (0.5)	1,514 (35.3)	3,084 (71.9)	3,902 (91.0)	2,641 (61.6)	977 (22.8)	2,525 (58.9)	
		Level 2 2,843 (66.3)	984 (22.9)	2,463 (57.4)	2,160 (50.3)	2,462 (57.4)	1,192 (27.8)	371 (8.6)	1,364 (31.8)	2,663 (62.1)	1,537 (35.8)	
		Level 3 28 (0.7)	29 (0.7)	927 (21.6)	2,109 (49.2)	314 (7.3)	14 (0.3)	17 (0.4)	285 (6.6)	650 (15.2)	228 (5.3)	
	Spinal stenosis (n=28,194)	Level 1 3,028 (10.7)	24,047 (85.3)	9321 (33.1)	162 (0.6)	12,977 (46.0)	13,069 (46.4)	25,673 (91.1)	17,978 (63.8)	5,697 (20.2)	17,464 (61.9)	
		Level 2 24,966 (88.6)	3,877 (13.8)	15,161 (53.8)	14,520 (51.5)	13,874 (49.2)	15,049 (53.4)	2,330 (8.3)	8,926 (31.7)	18,071 (64.1)	9,650 (34.2)	
		Level 3 200 (0.7)	270 (1.0)	3,712 (13.2)	13,512 (47.9)	1,343 (4.8)	76 (0.3)	191 (0.7)	1,290 (4.6)	4426 (15.7)	1,080 (3.8)	
	Spondylolysis (n=2,463)	Level 1 675 (27.4)	2,120 (86.1)	703 (28.5)	16 (0.6)	980 (39.8)	1,657 (67.3)	2,274 (92.3)	1,601 (65.0)	581 (23.6)	1,513 (61.4)	
		Level 2 1,769 (71.8)	330 (13.4)	1,373 (55.7)	1,316 (53.4)	1,319 (53.6)	804 (32.6)	181 (7.3)	742 (30.1)	1,552 (63.0)	815 (33.1)	
		Level 3 19 (0.8)	13 (0.5)	387 (15.7)	1,131 (45.9)	164 (6.7)	2 (0.1)	8 (0.3)	120 (4.9)	330 (13.4)	135 (5.5)	
General population	Hip	Avascular necrosis (n=594)	Level 1 79 (5.0)	985 (61.8)	358 (22.5)	30 (1.9)	741 (46.5)	857 (53.8)	1,383 (86.8)	1,085 (68.1)	624 (39.1)	1,076 (67.5)
		Level 2 1,476 (92.6)	570 (35.8)	838 (52.6)	592 (37.1)	716 (44.9)	732 (45.9)	198 (12.4)	434 (27.2)	869 (54.5)	477 (29.9)	
		Level 3 39 (2.4)	39 (2.4)	398 (25.0)	972 (61.0)	137 (8.6)	5 (0.3)	13 (0.8)	75 (4.7)	101 (6.3)	41 (2.6)	
	Childhood hip disorder (n=1,846)	Level 1 127 (6.9)	1,390 (75.3)	653 (35.4)	22 (1.2)	1,014 (54.9)	1,278 (69.2)	1,672 (90.6)	1,449 (78.5)	989 (53.6)	1,463 (79.3)	
		Level 2 1,707 (92.5)	438 (23.7)	976 (52.9)	998 (54.1)	758 (41.1)	568 (30.8)	162 (8.8)	348 (18.9)	781 (42.3)	345 (18.7)	
		Level 3 12 (0.7)	18 (1.0)	217 (11.8)	826 (44.7)	74 (4.0)	0 (0.0)	12 (0.7)	49 (2.7)	76 (4.1)	38 (2.1)	
	Hip osteoarthritis (n=86,023)	Level 1 7,079 (8.2)	67,411 (78.4)	35,009 (40.7)	1,335 (1.6)	51,727 (60.1)	53,290 (61.9)	79,823 (92.8)	67,451 (78.4)	39,300 (45.7)	67,755 (78.8)	
		Level 2 78,719 (91.5)	17,838 (20.7)	42,897 (49.9)	50,371 (58.6)	31,621 (36.8)	32,620 (37.9)	5,719 (6.6)	16,947 (19.7)	43,037 (50.0)	17,003 (19.8)	
		Level 3 225 (0.3)	774 (0.9)	8,117 (9.4)	34,317 (39.9)	2,675 (3.1)	113 (0.1)	481 (0.6)	1,625 (1.9)	3,686 (4.3)	1,265 (1.5)	
	Inflammatory joint disorder (n=1,197)	Level 1 55 (4.6)	697 (58.2)	344 (28.7)	13 (1.1)	638 (53.3)	545 (45.5)	922 (77.0)	698 (58.3)	357 (29.8)	808 (67.5)	
		Level 2 1,124 (93.9)	461 (38.5)	660 (55.1)	558 (46.6)	502 (41.9)	645 (53.9)	240 (20.1)	432 (36.1)	735 (61.4)	363 (30.3)	
		Level 3 18 (1.5)	39 (3.3)	193 (16.1)	626 (52.3)	57 (4.8)	7 (0.6)	35 (2.9)	67 (5.6)	105 (8.8)	26 (2.2)	
General population	Knee	Knee osteoarthritis (n=16,020)	Level 1 1,884 (11.8)	15,010 (93.7)	8,605 (53.7)	290 (1.8)	10,484 (65.4)	10,127 (63.2)	15,275 (95.3)	12,513 (78.1)	5,818 (36.3)	12,620 (78.8)
		Level 2 14,097 (88.0)	869 (5.4)	6,585 (41.1)	10,139 (63.3)	5,155 (32.2)	5,867 (36.6)	661 (4.1)	3,246 (20.3)	9,380 (58.6)	3,133 (19.6)	
		Level 3 39 (0.2)	141 (0.9)	830 (5.2)	5,591 (34.9)	381 (2.4)	26 (0.2)	84 (0.5)	261 (1.6)	822 (5.1)	267 (1.7)	
	Knee rheumatoid arthritis (n=304)	Level 1 11 (3.6)	231 (76.0)	114 (37.5)	0 (0.0)	185 (60.9)	122 (40.1)	247 (81.3)	183 (60.2)	66 (21.7)	210 (69.1)	
		Level 2 291 (95.7)	69 (22.7)	157 (51.6)	189 (62.2)	106 (34.9)	181 (59.5)	49 (16.1)	108 (35.5)	208 (68.4)	89 (29.3)	
		Level 3 2 (0.7)	4 (1.3)	33 (10.9)	115 (37.8)	13 (4.3)	1 (0.3)	8 (2.6)	13 (4.3)	30 (9.9)	5 (1.6)	

		Intervention-based registers											
		Intervention-based registers											
		Intervention-based registers											
Ankle	Other (n=85)	Level 1	6 (7.1)	73 (85.9)	31 (36.5)	2 (2.4)	46 (54.1)	27 (31.8)	75 (88.2)	47 (55.3)	22 (25.9)	56 (65.9)	
Posttraumatic osteoarthritis (n=308)	Level 2	77 (90.6)	11 (12.9)	39 (45.9)	42 (49.4)	36 (42.4)	57 (67.1)	9 (10.6)	33 (38.8)	56 (65.9)	29 (34.1)		
	Level 3	2 (2.4)	1 (1.2)	15 (17.6)	41 (48.2)	3 (3.5)	1 (1.2)	1 (1.2)	5 (5.9)	7 (8.2)	0 (0.0)		
	Level 1	16 (5.2)	285 (92.5)	125 (40.6)	4 (1.3)	166 (53.9)	109 (35.4)	290 (94.2)	200 (64.9)	68 (22.1)	217 (70.5)		
Primary osteoarthritis (n=234)	Level 2	288 (93.5)	20 (6.5)	147 (47.7)	168 (54.5)	123 (39.9)	198 (64.3)	15 (4.9)	93 (30.2)	211 (68.5)	76 (24.7)		
	Level 3	4 (1.3)	3 (1.0)	36 (11.7)	136 (44.2)	19 (6.2)	1 (0.3)	3 (1.0)	15 (4.9)	29 (9.4)	15 (4.9)		
	Level 1	7 (3.0)	214 (91.5)	91 (38.9)	2 (0.9)	152 (65.0)	97 (41.5)	219 (93.6)	165 (70.5)	70 (29.9)	182 (77.8)		
Rheumatoid arthritis (n=73)	Level 2	224 (95.7)	18 (7.7)	118 (50.4)	78 (33.3)	136 (58.1)	13 (5.6)	65 (27.8)	137 (58.5)	51 (21.8)			
	Level 3	3 (1.3)	2 (0.9)	25 (10.7)	114 (48.7)	4 (1.7)	1 (0.4)	2 (0.9)	4 (1.7)	27 (11.5)	1 (0.4)		
	Level 1	70 (0.0)	45 (61.6)	17 (23.3)	0 (0.0)	40 (54.8)	20 (27.4)	57 (78.1)	36 (49.3)	10 (13.7)	48 (65.8)		
Cruciate ligament injury (n=8,430)	Level 2	3 (95.9)	27 (37.0)	42 (57.5)	23 (31.5)	29 (39.7)	52 (71.2)	14 (19.2)	32 (43.8)	55 (75.3)	24 (32.9)		
	Level 3	6 (4.1)	1 (1.4)	14 (19.2)	50 (68.5)	4 (5.5)	1 (1.4)	2 (2.7)	5 (6.8)	8 (11.0)	1 (1.4)		
	Level 1	5,645 (67.0)	8,209 (97.4)	4,503 (53.4)	1,294 (15.3)	4,190 (49.7)	7,308 (86.7)	8,337 (98.9)	6,663 (79.0)	2,943 (34.9)	5,501 (65.3)		
BOA	BOA hip (n=3,440)	Level 2	2,762 (32.8)	178 (2.1)	3,172 (37.6)	6,658 (79.0)	3,779 (44.8)	1,117 (13.3)	69 (0.8)	1,636 (19.4)	5,223 (62.0)	2,649 (31.4)	
	Level 3	23 (0.3)	43 (0.5)	755 (9.0)	478 (5.7)	461 (5.5)	5 (0.1)	24 (0.3)	131 (1.6)	264 (3.1)	280 (3.3)		
	Level 1	1,499 (43.6)	3,234 (94.0)	2,600 (75.6)	61 (1.8)	2,230 (64.8)	1,708 (49.7)	3,209 (93.3)	2,662 (77.4)	261 (7.6)	2,305 (67.0)		
BOA knee (n=10,207)	Level 2	1,938 (56.3)	195 (5.7)	799 (23.2)	3,014 (87.6)	1,159 (33.7)	1,729 (50.3)	218 (6.3)	741 (21.5)	2,874 (83.5)	1,096 (31.9)		
	Level 3	3 (0.1)	11 (0.3)	41 (1.2)	365 (10.6)	51 (1.5)	3 (0.1)	13 (0.4)	37 (1.1)	305 (8.9)	39 (1.1)		
	Level 1	4,282 (42.0)	9,886 (96.9)	7,674 (75.2)	290 (2.8)	6,751 (66.1)	5,388 (52.8)	9,884 (96.8)	8,218 (80.5)	1,003 (9.8)	7,248 (71.0)		
Fracture	BOA knee (n=10,207)	Level 2	5,916 (58.0)	275 (2.7)	2,401 (23.5)	8,741 (85.6)	3,314 (32.5)	4,813 (47.2)	276 (2.7)	1,905 (18.7)	8,404 (82.3)	2,834 (27.8)	
	Level 3	9 (0.1)	46 (0.5)	132 (1.3)	1,176 (11.5)	142 (1.4)	6 (0.1)	47 (0.5)	84 (0.8)	800 (7.8)	125 (1.2)		
	Level 1	3,048 (82.0)	3,570 (96.0)	3,265 (87.8)	2,549 (68.6)	3,095 (83.2)	2,717 (73.1)	3,578 (96.2)	3,112 (83.7)	1,832 (49.3)	3,005 (80.8)		
Ankle and foot (n=3,718)	Level 2	655 (17.6)	126 (3.4)	322 (8.7)	1,058 (28.5)	556 (15.0)	991 (26.7)	106 (2.9)	537 (14.4)	1,733 (46.6)	645 (17.3)		
	Level 3	15 (0.4)	22 (0.6)	131 (3.5)	111 (3.0)	67 (1.8)	10 (0.3)	34 (0.9)	69 (1.9)	153 (4.1)	68 (1.8)		
	Level 1	12,548 (89.7)	12,981 (92.7)	12,304 (87.9)	9,502 (67.9)	11,699 (83.6)	12,104 (86.5)	13,107 (93.6)	11,649 (83.2)	6,686 (47.8)	11,390 (81.4)		
Elbow and forearm (n=13,996)	Level 2	1,434 (10.2)	885 (6.3)	1,189 (8.5)	4,161 (29.7)	2,127 (15.2)	1,848 (13.2)	748 (5.3)	2,026 (14.5)	6,924 (49.5)	2,406 (17.2)		
	Level 3	14 (0.1)	130 (0.9)	503 (3.6)	333 (2.4)	170 (1.2)	44 (0.3)	141 (1.0)	321 (2.3)	386 (2.8)	200 (1.4)		
	Level 1	4,490 (53.6)	6,379 (76.1)	5,444 (65.0)	3,740 (44.6)	5,486 (65.5)	2,419 (28.9)	5,679 (67.8)	4,243 (50.6)	2,286 (27.3)	4,818 (57.5)		
Hip and femur (n=8,378)	Level 2	3,746 (44.7)	1,526 (18.2)	1,846 (22.0)	4,092 (48.8)	2,570 (30.7)	5,584 (66.7)	1,879 (22.4)	2,636 (31.5)	5,458 (65.1)	3,205 (38.3)		
	Level 3	142 (1.7)	473 (5.6)	1,088 (13.0)	546 (6.5)	322 (3.8)	375 (4.5)	820 (9.8)	1,499 (17.9)	634 (7.6)	355 (4.2)		
	Level 1	9,117 (83.9)	10,177 (93.7)	9,499 (87.4)	7,736 (71.2)	9,029 (83.1)	7,023 (64.6)	10,228 (94.1)	8,584 (79.0)	4,212 (38.8)	8,354 (76.9)		
Knee and lower leg (n=10,866)	Level 2	1,661 (15.3)	570 (5.2)	871 (8.0)	2,835 (26.1)	1,657 (15.2)	3,762 (34.6)	471 (4.3)	1,939 (17.8)	6,208 (57.1)	2,286 (21.0)		
	Level 3	88 (0.8)	119 (1.1)	496 (4.6)	295 (2.7)	180 (1.7)	81 (0.7)	167 (1.5)	343 (3.2)	446 (4.1)	226 (2.1)		
	Level 1	708 (62.8)	902 (80.0)	775 (68.7)	547 (48.5)	790 (70.0)	548 (48.6)	77.5 (77.5)	682 (60.5)	412 (36.5)	741 (65.7)		
Lumbar spine and pelvis (n=1,128)	Level 2	400 (35.5)	179 (15.9)	236 (20.9)	478 (42.4)	293 (26.0)	561 (49.7)	16.1 (16.1)	296 (26.2)	621 (55.1)	348 (30.9)		
	Level 3	20 (1.8)	47 (4.2)	117 (10.4)	103 (9.1)	45 (4.0)	19 (1.7)	6.4 (6.4)	150 (13.3)	95 (8.4)	39 (3.5)		
	Level 1	6,615 (84.4)	6,926 (88.4)	6,547 (83.6)	4,891 (62.4)	6,248 (79.7)	6,237 (79.6)	6,721 (85.8)	5,877 (75.0)	2,912 (37.2)	5,876 (75.0)		
Shoulder and upper arm (n=7,835)	Level 2	1,189 (15.2)	743 (9.5)	863 (11.0)	2,607 (33.3)	1,447 (18.5)	1,548 (19.8)	940 (12.0)	1,616 (20.6)	4,573 (58.4)	1,794 (22.9)		
	Level 3	31 (0.4)	166 (2.1)	425 (5.4)	337 (4.3)	140 (1.8)	50 (0.6)	174 (2.2)	342 (4.4)	350 (4.5)	165 (2.1)		
	Level 1	569 (76.0)	655 (87.4)	583 (77.8)	448 (59.8)	577 (77.0)	463 (61.8)	641 (85.6)	470 (62.8)	172 (23.0)	492 (65.7)		
Unspecified part of trunk, extremities or other body region (n=749)	Level 2	171 (22.8)	78 (10.4)	99 (13.2)	249 (33.2)	147 (19.6)	273 (36.4)	86 (11.5)	211 (28.2)	494 (66.0)	224 (29.9)		
	Level 3	9 (1.2)	16 (2.1)	67 (8.9)	52 (6.9)	25 (3.3)	13 (1.7)	22 (2.9)	68 (9.1)	83 (11.1)	33 (4.4)		
	Level 1	3,927 (93.0)	3,922 (92.9)	3,656 (86.6)	2,950 (69.9)	3,538 (83.8)	3,803 (90.1)	4,024 (95.3)	3,544 (83.9)	2,046 (48.5)	3,505 (83.0)		
Wrist and hand (n=4,222)	Level 2	286 (6.8)	266 (6.3)	389 (9.2)	1,178 (27.9)	622 (14.7)	403 (9.5)	163 (3.9)	603 (14.3)	2,048 (48.5)	658 (15.6)		
	Level 3	9 (0.2)	34 (0.8)	177 (4.2)	94 (2.2)	62 (1.5)	16 (0.4)	35 (0.8)	75 (1.8)	128 (3.0)	59 (1.4)		

Diagnosis-based registers	Heart failure (n=1,436)	Level 1	866 (60.3)	1,315 (91.6)	1,041 (72.5)	689 (48.0)	865 (60.2)	837 (58.3)	1,298 (90.4)	1,025 (71.4)	685 (47.7)	896 (62.4)	
		Level 2	567 (39.5)	116 (8.1)	355 (24.7)	679 (47.3)	521 (36.3)	593 (41.3)	126 (8.8)	371 (25.8)	655 (45.6)	499 (34.7)	
		Level 3	3 (0.2)	5 (0.3)	40 (2.8)	68 (4.7)	50 (3.5)	6 (0.4)	12 (0.8)	40 (2.8)	96 (6.7)	41 (2.9)	
	Respiratory failure	Level 1	199 (22.1)	551 (61.2)	215 (23.9)	250 (27.8)	357 (39.7)	162 (18.0)	479 (53.2)	179 (19.9)	212 (23.6)	320 (35.6)	
		Level 2	683 (75.9)	296 (32.9)	492 (54.7)	517 (57.4)	463 (51.4)	696 (77.3)	343 (38.1)	465 (51.7)	541 (60.1)	489 (54.3)	
		Level 3	18 (2.0)	53 (5.9)	193 (21.4)	133 (14.8)	80 (8.9)	42 (4.7)	78 (8.7)	256 (28.4)	147 (16.3)	91 (10.1)	
		Lung fibrosis (n=150)	44 (29.3)	99 (66.0)	57 (38.0)	55 (36.7)	75 (50.0)	25 (16.7)	72 (48.0)	32 (21.3)	44 (29.3)	67 (44.7)	
		Level 2	103 (68.7)	47 (31.3)	65 (43.3)	83 (55.3)	69 (46.0)	118 (78.7)	66 (44.0)	61 (40.7)	86 (57.3)	70 (46.7)	
		Level 3	3 (2.0)	4 (2.7)	28 (18.7)	12 (8.0)	6 (4.0)	7 (4.7)	12 (8.0)	57 (38.0)	20 (13.3)	13 (8.7)	
	Psoriasis	Psoriasis vulgaris (n=1,704)	Level 1	1,425 (83.6)	1,645 (96.5)	1,469 (86.2)	666 (39.1)	881 (51.7)	1,444 (84.7)	1,659 (97.4)	1,525 (89.5)	884 (51.9)	1,113 (65.3)
		Level 2	279 (16.4)	54 (3.2)	214 (12.6)	914 (53.6)	719 (42.2)	258 (15.1)	41 (2.4)	161 (9.4)	755 (44.3)	529 (31.0)	
		Level 3	0 (0.0)	5 (0.3)	21 (1.2)	124 (7.3)	104 (6.1)	2 (0.1)	4 (0.2)	18 (1.1)	65 (3.8)	62 (3.6)	
		Psoriasis vulgaris + anthropathic (n=537)	Level 1	311 (57.9)	484 (90.1)	368 (68.5)	91 (16.9)	234 (43.6)	356 (66.3)	494 (92.0)	422 (78.6)	141 (26.3)	314 (58.5)
		Level 2	226 (42.1)	50 (9.3)	154 (28.7)	359 (66.9)	262 (48.8)	180 (33.5)	41 (7.6)	101 (18.8)	342 (63.7)	194 (36.1)	
		Level 3	0 (0.0)	3 (0.6)	15 (2.8)	87 (16.2)	41 (7.6)	1 (0.2)	2 (0.4)	14 (2.6)	54 (10.1)	29 (5.4)	
		Psoriasis unspecified (n=439)	Level 1	328 (74.7)	425 (96.8)	346 (78.8)	128 (29.2)	203 (46.2)	351 (80.0)	425 (96.8)	382 (87.0)	206 (46.9)	298 (67.9)
		Level 2	110 (25.1)	11 (2.5)	86 (19.6)	263 (59.9)	204 (46.5)	88 (20.0)	13 (3.0)	50 (11.4)	210 (47.8)	124 (28.2)	
		Level 3	1 (0.2)	3 (0.7)	7 (1.6)	48 (10.9)	32 (7.3)	0 (0.0)	1 (0.2)	7 (1.6)	23 (5.2)	17 (3.9)	
	Rheumatology	Rheumatoid arthritis (n=17,870)	Level 1	8,758 (49.0)	14,099 (78.9)	10,564 (59.1)	2,203 (12.3)	10,107 (56.6)	9,741 (54.5)	14,912 (83.4)	11,825 (66.2)	3,173 (17.8)	10,970 (61.4)
		Level 2	9,065 (50.7)	3,539 (19.8)	6,519 (36.5)	13,138 (73.5)	7,046 (39.4)	8,060 (45.1)	2,727 (15.3)	5,447 (30.5)	12,734 (71.3)	6,196 (34.7)	
		Level 3	47 (0.3)	232 (1.3)	787 (4.4)	2,529 (14.2)	717 (4.0)	69 (0.4)	231 (1.3)	598 (3.3)	1,963 (11.0)	704 (3.9)	
		Spondyloarthropathy (n=8,782)	Level 1	4,548 (51.8)	7,292 (83.0)	4,929 (56.1)	955 (10.9)	4,316 (49.1)	5,051 (57.5)	7,470 (85.1)	5,502 (62.7)	1,263 (14.4)	4,733 (53.9)
		Level 2	4,225 (48.1)	1,422 (16.2)	3,392 (38.6)	6,154 (70.1)	3,900 (44.4)	3,714 (42.3)	1,245 (14.2)	2,925 (33.3)	6,189 (70.5)	3,489 (39.7)	
		Level 3	9 (0.1)	68 (0.8)	461 (5.2)	1,673 (19.1)	566 (6.4)	17 (0.2)	67 (0.8)	355 (4.0)	1,330 (15.1)	560 (6.4)	
		Inflammatory systemic disorder (n=1,614)	Level 1	920 (57.0)	1,355 (84.0)	942 (58.4)	302 (18.7)	792 (49.1)	969 (60.0)	1,393 (86.3)	1,009 (62.5)	341 (21.1)	834 (51.7)
		Level 2	686 (42.5)	245 (15.2)	563 (34.9)	1,103 (68.3)	730 (45.2)	639 (39.6)	207 (12.8)	521 (32.3)	1,084 (67.2)	683 (42.3)	
		Level 3	8 (0.5)	14 (0.9)	109 (6.8)	209 (12.9)	92 (5.7)	6 (0.4)	14 (0.9)	84 (5.2)	189 (11.7)	97 (6.0)	
		Juvenile rheumatoid diseases (n=1,088)	Level 1	552 (50.7)	866 (79.6)	611 (56.2)	158 (14.5)	545 (50.1)	593 (54.5)	879 (80.8)	660 (60.7)	198 (18.2)	571 (52.5)
		Level 2	532 (48.9)	205 (18.8)	425 (39.1)	755 (69.4)	482 (44.3)	490 (45.0)	193 (17.7)	377 (34.7)	731 (67.2)	458 (42.1)	
		Level 3	4 (0.4)	17 (1.6)	52 (4.8)	175 (16.1)	61 (5.6)	5 (0.5)	16 (1.5)	51 (4.7)	159 (14.6)	59 (5.4)	
	Vasculitis (n=410)	Level 1	249 (60.7)	368 (89.8)	276 (67.3)	91 (22.2)	227 (55.4)	239 (58.3)	374 (91.2)	279 (68.0)	96 (23.4)	241 (58.8)	
		Level 2	161 (39.3)	34 (8.3)	117 (28.5)	285 (69.5)	169 (41.2)	170 (41.5)	29 (7.1)	123 (30.0)	275 (67.1)	154 (37.6)	
		Level 3	0 (0.0)	8 (2.0)	17 (4.1)	34 (8.3)	14 (3.4)	1 (0.2)	7 (1.7)	8 (2.0)	39 (9.5)	15 (3.7)	
		Other arthritis (n=1698)	Level 1	856 (50.4)	1,414 (83.3)	982 (57.8)	182 (10.7)	930 (54.8)	992 (58.4)	1,495 (88.0)	1,168 (68.8)	302 (17.8)	1,059 (62.4)
		Level 2	837 (49.3)	273 (16.1)	629 (37.0)	1,268 (74.7)	687 (40.5)	703 (41.4)	190 (11.2)	480 (28.3)	1,193 (70.3)	573 (33.7)	
		Level 3	5 (0.3)	11 (0.6)	87 (5.1)	248 (14.6)	81 (4.8)	3 (0.2)	13 (0.8)	50 (2.9)	203 (12.0)	66 (3.9)	
	General population data (n=49,169)	Level 1	44,279 (90.1)	48,371 (98.4)	44,848 (91.2)	24,946 (50.8)	32,721 (66.5)	-	-	-	-	-	
		Level 2	4,840 (9.8)	600 (1.2)	3,785 (7.7)	22,185 (45.1)	15,126 (30.8)	-	-	-	-	-	
		Level 3	50 (0.1)	198 (0.4)	536 (1.1)	2,038 (4.1)	1,322 (2.7)	-	-	-	-	-	

The highest proportion in bold; Level 1: No problems; Level 2: Some/moderate problems; Level 3: confined to bed/unable to/extreme problems; Proportions rounded off to one decimal using MS Excel

Table S4: Median (IQR) EQ VAS value at baseline, 1-year follow-up and the change in the 9 National Quality Registers (NQRs) and in the general population

Time	Variable	Median EQ VAS value (IQR)									General population	
		Intervention-based registers						Diagnosis-based registers				
		Spine	Hip	Knee	Ankle	Cruciate ligament	BOA	Fracture	Heart failure	Respiratory failure		
Baseline	Overall	50.0 (35.0)	58.0 (35.0)	70.0 (30.0)	57.5 (30.0)	68.0 (32.0)	70.0 (23.0)	90.0 (20.0)	70.0 (30.0)	50.0 (25.0)	85.0 (15.0)	
	Sex											
	Men	50.0 (40.0)	60.0 (30.0)	71.0 (32.0)	60.0 (35.0)	70.0 (30.0)	75.0 (25.0)	90.0 (20.0)	70.0 (25.0)	50.0 (25.0)	85.0 (15.0)	
	Women	45.0 (30.0)	50.0 (31.0)	65.0 (30.0)	50.0 (32.5)	66.0 (34.0)	70.0 (25.0)	90.0 (21.0)	60.0 (25.0)	50.0 (28.0)	84.0 (20.0)	
	Age group											
	<30	45.0 (35.0)	43.0 (40.8)	-	52.5 (23.8)	69.0 (31.0)	70.0 (1.3)	95.0 (15.0)	-	-	85.0 (15.0)	
	30-39	41.0 (30.0)	50.0 (35.0)	60.5 (36.8)	48.0 (26.3)	68.0 (30.0)	65.0 (30.0)	93.0 (15.0)	70.0 (30.0)	-	85.0 (15.0)	
	40-49	45.0 (32.0)	55.0 (35.0)	59.5 (40.0)	47.5 (30.0)	65.0 (36.0)	70.0 (30.0)	92.0 (15.0)	67.5 (20.0)	-	85.0 (15.0)	
	50-59	50.0 (35.0)	55.0 (34.0)	62.0 (39.0)	55.0 (35.0)	66.0 (34.0)	70.0 (30.0)	92.0 (20.0)	62.0 (25.0)	50.0 (45.0)	84.0 (20.0)	
	60-69	50.0 (36.5)	60.0 (35.0)	70.0 (30.0)	55.0 (35.0)	69.0 (40.0)	70.0 (27.0)	91.0 (20.0)	70.0 (20.0)	50.0 (29.0)	83.0 (20.0)	
	70-79	50.0 (40.0)	60.0 (35.0)	70.0 (31.0)	65.0 (30.8)	-	70.0 (20.3)	90.0 (24.0)	70.0 (30.0)	50.0 (25.0)	80.0 (20.0)	
	80+	50.0 (36.0)	52.0 (30.0)	70.0 (30.0)	50.0 (30.0)	-	70.0 (27.0)	75.0 (35.0)	60.0 (25.0)	50.0 (30.0)	80.0 (40.0)	
	BMI (Kg/m²)											
	Under-weight	40.0 (34.8)	50.0 (30.0)	70.0 (25.3)	27.0 (27.5)	76.5 (30.0)	67.5 (20.0)	-	-	50.0 (26.3)	80.0 (20.0)	
	Normal	50.0 (35.0)	60.0 (35.0)	70.0 (33.0)	60.0 (31.2)	70.0 (31.0)	75.0 (25.0)	-	-	50.0 (30.0)	85.0 (15.0)	
	Over-weight	50.0 (36.0)	60.0 (35.0)	70.0 (31.0)	60.0 (32.0)	70.0 (31.0)	70.0 (20.0)	-	-	50.0 (25.0)	80.0 (20.0)	
	Obesity class I	50.0 (35.0)	53.0 (30.0)	65.0 (30.0)	55.0 (30.0)	62.0 (38.0)	69.0 (30.0)	-	-	50.0 (29.0)	80.0 (30.0)	
	Obesity class II	40.0 (33.0)	50.0 (37.0)	60.0 (38.0)	50.0 (25.0)	62.0 (37.5)	65.0 (29.0)	-	-	50.0 (25.0)	75.0 (35.0)	
	Obesity class III	40.0 (30.0)	50.0 (40.0)	60.0 (32.3)	42.0 (22.5)	64.5 (16.5)	58.0 (30.0)	-	-	60.0 (20.5)	70.0 (35.0)	
1-year follow-up	Overall	70.0 (35.0)	80.0 (23.0)	80.0 (20.0)	75.0 (22.0)	80.0 (24.0)	75.0 (25.0)	80.0 (23.0)	70.0 (20.3)	50.0 (28.0)	-	
	Sex											
	Men	75.0 (28.0)	81.0 (23.0)	80.0 (20.0)	75.0 (20.0)	80.0 (23.0)	75.0 (25.0)	84.0 (24.0)	70.0 (20.0)	50.0 (25.0)	-	
	Women	70.0 (35.0)	80.0 (30.0)	80.0 (25.0)	70.0 (26.5)	78.0 (24.0)	74.0 (25.0)	80.0 (23.0)	70.0 (30.0)	50.0 (25.0)	-	
	Age group											
	<30	80.0 (25.0)	80.0 (23.8)	-	67.5 (42.3)	80.0 (24.0)	76.5 (26.0)	88.0 (20.0)	-	-	-	
	30-39	75.0 (29.0)	80.0 (20.0)	82.5 (10.0)	70.0 (25.5)	80.0 (25.0)	78.0 (15.0)	88.0 (20.0)	90.0 (30.0)	-	-	
	40-49	75.0 (30.0)	85.0 (23.0)	75.0 (28.0)	70.0 (27.5)	80.0 (23.0)	70.0 (23.0)	85.0 (20.0)	73.0 (20.0)	-	-	
	50-59	75.0 (36.0)	83.0 (24.0)	80.0 (28.0)	75.0 (20.0)	78.0 (24.0)	73.0 (25.0)	85.0 (25.0)	70.0 (24.0)	40.0 (35.0)	-	
	60-69	73.0 (34.0)	85.0 (25.0)	80.0 (20.0)	75.0 (20.8)	84.0 (22.0)	74.0 (25.0)	86.0 (21.0)	75.0 (24.3)	50.0 (25.0)	-	
	70-79	70.0 (30.0)	80.0 (25.0)	80.0 (20.0)	75.0 (25.0)	-	75.0 (26.0)	80.0 (25.0)	70.0 (25.0)	50.0 (27.3)	-	
	80+	60.0 (29.0)	75.0 (34.0)	78.0 (30.0)	60.0 (30.0)	-	71.0 (30.0)	65.0 (30.0)	65.0 (30.0)	50.0 (23.8)	-	
	BMI											
	Underweight	70.0 (38.5)	76.0 (30.0)	70.0 (18.8)	45.0 (15.0)	78.5 (25.5)	74.5 (17.8)	-	-	42.5 (26.3)	-	
	Normal weight	75.0 (30.0)	85.0 (25.0)	80.0 (20.0)	75.0 (20.0)	80.0 (23.0)	78.0 (24.0)	-	-	50.0 (25.0)	-	
	Over-weight	75.0 (31.0)	80.0 (21.0)	80.0 (20.0)	75.0 (10.0)	80.0 (25.0)	75.0 (25.0)	-	-	50.0 (23.0)	-	
	Obesity class I	70.0 (30.0)	80.0 (30.0)	80.0 (25.0)	70.0 (23.5)	75.0 (25.0)	70.0 (29.0)	-	-	50.0 (29.5)	-	
	Obesity class II	65.0 (40.0)	75.0 (30.0)	75.0 (30.0)	75.0 (37.5)	75.0 (32.0)	70.0 (28.0)	-	-	50.0 (23.8)	-	
	Obesity class III	66.0 (36.3)	70.0 (37.8)	70.0 (34.0)	35.0 (21.3)	68.0 (34.8)	60.0 (35.0)	-	-	50.0 (15.0)	-	

Change	Overall	20.0 (40.0)	20.0 (35.0)	10.0 (26.0)	11.5 (30.0)	10.0 (30.0)	0.0 (19.0)	-5.0 (15.0)	0.0 (20.0)	0.0 (28.0)	-
	Sex										
	Men	17.0 (36.0)	18.0 (32.0)	8.0 (22.0)	10.0 (30.0)	10.0 (29.0)	0.0 (20.0)	-5.0 (15.0)	0.0 (16.0)	0.0 (25.0)	-
	Women	20.0 (38.0)	20.0 (35.0)	10.0 (31.0)	15.0 (35.0)	10.0 (30.0)	2.0 (21.0)	-5.0 (15.0)	0.0 (22.0)	0.0 (30.0)	-
	Age group										
	<30	25.0 (35.0)	30.0 (40.0)	-	12.5 (45.3)	9.0 (30.0)	4.0 (22.3)	-5.0 (15.0)	-	-	-
	30-39	25.0 (37.0)	24.0 (31.0)	14.5 (35.3)	17.5 (22.3)	10.0 (29.0)	10.0 (21.0)	-5.0 (15.0)	0.0 (0.0)	-	-
	40-49	25.0 (40.0)	24.0 (35.0)	15.0 (35.0)	20.0 (27.5)	13.0 (32.0)	5.0 (20.0)	-5.0 (15.0)	7.5 (14.0)	-	-
	50-59	20.0 (36.0)	20.0 (34.0)	10.0 (31.0)	15.0 (30.0)	10.0 (27.0)	4.0 (20.0)	-5.0 (15.0)	9.0 (20.0)	-10.0 (25.0)	-
	60-69	20.0 (38.0)	20.0 (35.0)	10.0 (29.0)	15.0 (32.0)	7.0 (41.0)	1.0 (18.0)	-5.0 (13.0)	0.0 (15.0)	0.0 (28.3)	-
	70-79	13.0 (30.0)	18.0 (35.0)	9.0 (25.0)	10.0 (25.0)	-	0.0 (20.0)	-5.0 (15.0)	0.0 (20.0)	0.0 (29.5)	-
	80+	10.0 (33.0)	15.0 (31.0)	7.0 (25.0)	10.0 (27.0)	-	0.0 (21.0)	-8.0 (22.0)	0.0 (20.0)	0.0 (28.3)	-
	BMI										
	Underweight	20.0 (36.5)	20.0 (30.0)	9.5 (27.5)	18.0 (12.5)	1.5 (22.3)	-0.5 (21.5)	-	-	-5.0 (28.5)	-
	Normal weight	20.0 (35.0)	20.0 (34.0)	10.0 (26.0)	10.0 (30.0)	9.0 (30.0)	1.0 (15.0)	-	-	0.0 (30.0)	-
	Over-weight	20.0 (39.0)	20.0 (32.0)	10.0 (26.0)	12.5 (30.0)	9.0 (30.0)	0.0 (19.0)	-	-	0.0 (22.8)	-
	Obesity class I	16.0 (35.0)	20.0 (39.0)	10.0 (30.0)	13.0 (30.0)	11.0 (35.0)	0.0 (23.0)	-	-	0.0 (33.0)	-
	Obesity class II	15.0 (35.0)	20.0 (39.0)	10.0 (32.0)	25.0 (42.5)	18.0 (35.5)	3.0 (25.0)	-	-	-2.5 (30.0)	-
	Obesity class III	15.0 (40.0)	20.0 (40.0)	10.0 (38.0)	0.0 (13.8)	-4.0 (27.5)	4.0 (20.0)	-	-	0.0 (20.0)	-

BMI categories: Underweight: <18.5; Normal weight: 18.5–24.9; Overweight: 25.0–29.9; Obesity class I: 30.0–34.9; Obesity class II: 35.0–39.9; Obesity class III: ≥40

Table S5: Two-level random intercept model of predictive effect of diagnoses on EQ VAS score at baseline and at 1-year follow-up, adjusted for sex and age

Category	Variable		Baseline		1-year follow-up	
	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	83.58	0.1894	82.01	0.1822		
Spine, disc hernia	-34.61	0.2170	-7.52	0.2087		
Spine, other spinal conditions	-33.03	0.5872	-11.57	0.5647		
Spine, segmental instability	-32.85	0.3414	-11.07	0.3283		
Spine, spinal stenosis	-29.91	0.1816	-11.77	0.1746		
Spine, spondylolysis	-30.49	0.4469	-10.18	0.4298		
Hip, avascular necrosis	-29.65	0.5306	-4.84	0.5104		
Hip, childhood hip disorder	-23.21	0.4920	0.80	0.4731		
Hip, hip osteoarthritis	-22.37	0.1474	-0.30	0.1418		
Hip, inflammatory joint disorder	-30.74	0.6082	-9.12	0.5850		
Knee osteoarthritis	-14.22	0.2088	-0.91	0.2008		
Knee rheumatoid arthritis	-22.56	1.1891	-9.71	1.1436		
Ankle, others	-21.57	2.2660	-10.41	2.1790		
Ankle, posttraumatic OA	-23.77	1.2164	-8.54	1.1698		
Ankle, primary OA	-21.97	1.3805	-4.64	1.3277		
Ankle, rheumatoid arthritis	-32.78	2.4670	-15.98	2.3726		
Cruciate ligament injury	-18.18	0.2627	-6.08	0.2527		
BOA hip	-10.97	0.5088	-9.42	0.4893		
BOA knee	-9.88	0.3193	-6.55	0.3071		
Fracture, ankle and foot	7.98	0.3836	2.46	0.3689		
Fracture, elbow and forearm	9.33	0.2245	4.25	0.2159		
Fracture, hip and femur	-3.47	0.3032	-9.98	0.2916		
Fracture, knee and lower leg	7.88	0.2427	0.37	0.2334		
Fracture, lumbar, spine and pelvis	-0.83	0.7293	-5.84	0.7014		
Fracture, shoulder and upper arm	6.16	0.2855	0.40	0.2746		
Fracture, unspecified part of trunk, extremities or other body region	3.98	0.8303	-7.40	0.7986		
Fracture, wrist and hand	8.06	0.3601	3.97	0.3463		
Heart failure	-14.14	0.6524	-9.14	0.6274		
Respiratory failure, COPD	-27.81	0.8386	-27.11	0.8065		
Respiratory failure, pulmonary fibrosis	-25.88	2.0265	-27.06	1.9490		
n		251,008		251,008		
AIC		2,231,535		2,211,956		
BIC		2,231,942		2,212,363		

AIC: Akaike information criterion; AIC: Bayesian information criterion; SE: Standard error; reference group: General population

Table S6: Prevalence of reported problems on EQ-5D-3L by diagnosis and mean EQ VAS, and EQ-5D indices (TTO, VAS) among patients with complete data at baseline regardless of follow-up status and in the general population

	Patient group in NQRs	Diagnosis	Severity level	Mobility	Self-care	Usual activities	Pain/discomfort	Anxiety/depression	Mean (SD)		
				n (%)	EQ VAS*	EQ-5D index (TTO) **	EQ-5D index (VAS) **				
Intervention-based registers	Spine	Disc hernia (n=19,214)	Level 1	2,925 (15.2)	12,853 (66.9)	3,464 (18.0)	135 (0.7)	6,634 (34.5)	45.0 (22.5)	0.66 (0.13)	45.2 (15.9)
			Level 2	15,295 (79.6)	5,958 (31.0)	9,815 (51.1)	8,181 (42.6)	10,811 (56.3)			
			Level 3	994 (5.2)	403 (2.1)	5,935 (30.9)	10,898 (56.7)	1,769 (9.2)			
		Other spinal conditions (n=2,209)	Level 1	435 (19.7)	1,746 (79.0)	615 (27.8)	21 (1.0)	876 (39.7)	45.8 (22.9)	0.69 (0.13)	47.9 (16.8)
			Level 2	1,714 (77.6)	435 (19.7)	1,085 (49.1)	922 (41.7)	1,150 (52.1)			
			Level 3	60 (2.7)	28 (1.3)	509 (23.0)	1,266 (57.3)	183 (8.3)			
		Segmental instability (n=5,892)	Level 1	1,851 (31.4)	4,473 (75.9)	1,184 (20.1)	28 (0.5)	1,965 (33.4)	45.8 (20.9)	0.69 (0.12)	48.3 (16.3)
			Level 2	4,000 (67.9)	1,374 (23.3)	3,402 (57.7)	2,852 (48.4)	3,442 (58.4)			
			Level 3	41 (0.7)	45 (0.8)	1,306 (22.2)	3,012 (51.1)	485 (8.2)			
		Spinal stenosis (n=38,449)	Level 1	3,985 (10.4)	32,361 (84.2)	12,289 (32.0)	237 (0.6)	17,157 (44.6)	48.6 (22.2)	0.71 (0.12)	50.0 (15.8)
			Level 2	34,146 (88.8)	5,703 (14.8)	20,734 (53.9)	19,231 (50.0)	19,155 (49.8)			
			Level 3	318 (0.8)	385 (1.0)	5,426 (14.1)	18,981 (49.4)	2,137 (5.6)			
		Spondylolysis (n=3,362)	Level 1	887 (26.4)	2,859 (85.0)	928 (27.6)	21 (0.6)	1,271 (37.8)	48.1 (21.8)	0.71 (0.13)	50.1 (16.7)
			Level 2	2,449 (72.8)	482 (14.3)	1,877 (55.8)	1,723 (51.2)	1,847 (54.9)			
			Level 3	26 (0.8)	21 (0.6)	557 (16.6)	1,618 (48.1)	244 (7.3)			
	Hip	Avascular necrosis (n=2,070)	Level 1	106 (5.1)	1,252 (60.5)	455 (22.0)	40 (1.9)	930 (44.9)	49.0 (24.0)	0.66 (0.13)	45.4 (15.8)
			Level 2	1,908 (92.2)	761 (36.8)	1,065 (51.4)	748 (36.1)	958 (46.3)			
			Level 3	56 (2.7)	57 (2.8)	550 (26.6)	1,282 (61.9)	182 (8.8)			
		Childhood hip disorder (n=2,294)	Level 1	165 (7.2)	1,698 (74.0)	776 (33.8)	26 (1.1)	1,226 (53.4)	55.2 (22.8)	0.71 (0.12)	51.4 (15.8)
			Level 2	2,110 (92.0)	567 (24.7)	1,227 (53.5)	1,210 (52.7)	963 (42.0)			
			Level 3	19 (0.8)	29 (1.3)	291 (12.7)	1,058 (46.1)	105 (4.6)			
		Hip osteoarthritis (n=103,286)	Level 1	8,320 (8.1)	80,304 (77.7)	41,136 (39.8)	1,562 (1.5)	61,196 (59.2)	56.3 (22.2)	0.73 (0.11)	54.0 (15.4)
			Level 2	94,660 (91.6)	21,997 (21.3)	51,946 (50.3)	59,506 (57.6)	38,663 (37.4)			
			Level 3	306 (0.3)	985 (1.0)	10,204 (9.9)	42,218 (40.9)	3,427 (3.3)			
	Knee	Inflammatory joint disorder (n=1,377)	Level 1	64 (4.6)	795 (57.7)	388 (28.2)	15 (1.1)	723 (52.5)	47.6 (22.6)	0.69 (0.12)	49.0 (15.2)
			Level 2	1,292 (93.8)	538 (39.1)	762 (55.3)	634 (46.0)	586 (42.6)			
			Level 3	21 (1.5)	44 (3.2)	227 (16.5)	728 (52.9)	68 (4.9)			
		Knee osteoarthritis (n=22,612)	Level 1	2,511 (11.1)	20,989 (92.8)	11,596 (51.3)	404 (1.8)	14,393 (63.7)	63.9 (22.4)	0.76 (0.11)	57.3 (15.3)
			Level 2	20,047 (88.7)	1,408 (6.2)	9,705 (42.9)	14,073 (62.2)	7,604 (33.6)			
			Level 3	54 (0.2)	215 (1.0)	1,311 (5.8)	8,135 (36.0)	615 (2.7)			
		Knee rheumatoid arthritis (n=450)	Level 1	14 (3.1)	330 (73.3)	160 (35.6)	2 (0.4)	261 (58.0)	53.8 (22.2)	0.72 (0.11)	52.3 (15.3)
			Level 2	433 (96.2)	116 (25.8)	241 (53.6)	256 (56.9)	171 (38.0)			
			Level 3	3 (0.7)	4 (0.9)	49 (10.9)	192 (42.7)	18 (4.0)			

Intervention-based registers	Ankle	Other (n=147)	Level 1	7 (4.8)	120 (81.6)	43 (29.3)	8 (2.4)	73 (49.7)	56.3 (22.5)	0.70 (0.12)	49.4 (16.6)
			Level 2	133 (90.5)	23 (15.6)	71 (48.3)	72 (49.4)	64 (43.5)			
			Level 3	7 (4.8)	4 (2.7)	33 (22.4)	67 (48.2)	10 (6.8)			
		Posttraumatic osteoarthritis (n=517)	Level 1	26 (5.0)	476 (92.1)	194 (37.5)	4 (1.3)	273 (52.8)	56.9 (20.9)	0.72 (0.12)	51.5 (15.5)
			Level 2	487 (94.2)	36 (7.0)	260 (50.3)	276 (54.5)	214 (41.4)			
			Level 3	4 (0.8)	5 (1.0)	63 (12.2)	237 (44.2)	30 (5.8)			
		Primary osteoarthritis (n=374)	Level 1	9 (2.4)	339 (90.6)	141 (37.7)	4 (0.9)	236 (63.1)	57.5 (22.0)	0.73 (0.11)	52.7 (14.8)
			Level 2	360 (96.3)	32 (8.6)	193 (51.6)	196 (50.4)	127 (34.0)			
			Level 3	5 (1.3)	3 (0.8)	40 (10.7)	174 (48.7)	11 (2.9)			
		Rheumatoid arthritis (n=94)	Level 1	0 (0.0)	60 (63.8)	22 (23.4)	0 (0.0)	52 (55.3)	47.9 (22.4)	0.68 (0.11)	46.6 (14.2)
			Level 2	91 (96.8)	32 (34.0)	57 (60.6)	33 (31.5)	37 (39.4)			
			Level 3	3 (3.2)	2 (2.1)	15 (16.0)	61 (68.5)	5 (5.3)			
	Cruciate ligament	Cruciate ligament injury (n=18,530)	Level 1	12,195 (65.8)	17,997 (97.1)	9,878 (53.3)	2,851 (15.4)	9,046 (48.8)	62.4 (22.8)	0.82 (0.12)	65.6 (16.4)
			Level 2	6,285 (33.9)	423 (2.3)	6,846 (36.9)	14,599 (78.8)	8,359 (45.1)			
			Level 3	50 (0.3)	110 (0.6)	1,806 (9.7)	1,080 (5.8)	1,125 (6.1)			
	BOA	BOA hip (n=8,044)	Level 1	3,271 (40.7)	7,509 (93.3)	5,886 (73.2)	183 (2.3)	5,040 (62.7)	65.8 (19.1)	0.83 (0.10)	66.7 (14.4)
			Level 2	4,769 (59.3)	503 (6.3)	2,036 (25.3)	6,778 (84.3)	2,864 (35.6)			
			Level 3	4 (0.0)	32 (0.4)	122 (1.5)	1,083 (13.5)	140 (1.7)			
		BOA knee (n=24,846)	Level 1	9,557 (38.5)	23,888 (96.1)	17,812 (71.7)	713 (2.9)	15,824 (63.7)	66.6 (19.4)	0.83 (0.11)	66.2 (14.9)
			Level 2	15,270 (61.5)	837 (3.4)	6,582 (26.5)	20,510 (82.5)	8,505 (34.2)			
			Level 3	19 (0.1)	121 (0.5)	452 (1.8)	3,623 (14.6)	517 (2.1)			
	Fracture	Ankle and foot (n=6,918)	Level 1	5,522 (79.8)	6,567 (94.9)	5,916 (85.5)	4,639 (67.1)	5,590 (80.8)	86.2 (17.3)	0.91 (0.11)	79.4 (15.1)
			Level 2	1,352 (19.5)	290 (4.2)	711 (10.3)	2,034 (29.4)	1,196 (17.3)			
			Level 3	44 (0.6)	61 (0.9)	291 (4.2)	245 (3.5)	132 (1.9)			
		Elbow and forearm (n=25,061)	Level 1	22,079 (88.1)	22,724 (90.7)	21,352 (85.2)	16,414 (65.5)	20,355 (81.2)	86.2 (17.2)	0.91 (0.10)	80.1 (14.1)
			Level 2	2,938 (11.7)	1972 (7.9)	2,512 (10.0)	7,885 (31.5)	4,321 (17.2)			
			Level 3	44 (0.2)	365 (1.5)	1,197 (4.8)	762 (3.0)	385 (1.5)			
		Hip and femur (n=1,609)	Level 1	7,769 (46.0)	11,190 (66.2)	9,314 (55.1)	6,756 (40.0)	9,865 (58.4)	68.9 (24.5)	0.80 (0.16)	64.9 (21.0)
			Level 2	8,535 (50.5)	3,982 (23.6)	4,078 (24.1)	8,738 (51.7)	6,023 (35.6)			
			Level 3	600 (3.5)	1,732 (10.2)	3,512 (20.8)	1,410 (8.3)	1,016 (6.0)			
		Knee and lower leg (n=18,872)	Level 1	15,311 (81.1)	17,313 (91.7)	15,987 (84.7)	13,022 (69.0)	15,195 (80.5)	85.7 (17.9)	0.91 (0.12)	79.3 (15.9)
			Level 2	3,283 (17.4)	1,182 (6.3)	1,736 (9.2)	5,229 (27.7)	3,283 (17.4)			
			Level 3	278 (1.5)	377 (2.0)	1,149 (6.1)	621 (3.3)	394 (2.1)			
		Lumbar, spine and pelvis (n=2,405)	Level 1	1,298 (54.0)	1,735 (72.1)	1,444 (60.0)	1,049 (43.6)	1,507 (62.7)	73.0 (24.3)	0.82 (0.16)	67.5 (21.3)
			Level 2	1,058 (44.0)	501 (20.8)	550 (22.9)	1,115 (46.4)	765 (31.8)			
			Level 3	49 (2.0)	169 (7.0)	411 (17.1)	241 (10.0)	133 (5.5)			
		Shoulder and upper arm (n=14,240)	Level 1	11,546 (81.1)	12,159 (85.4)	11,323 (79.5)	8,519 (59.8)	10,806 (75.9)	82.8 (20.0)	0.89 (0.12)	77.1 (16.9)
			Level 2	2,606 (18.3)	1,624 (11.4)	1,841 (12.9)	4,995 (35.1)	3,103 (21.8)			
			Level 3	88 (0.6)	457 (3.2)	1,076 (7.6)	726 (5.1)	331 (2.3)			
		Unspecified part of trunk, extremities or other body region (n=1,698)	Level 1	1,202 (70.8)	1,431 (84.3)	1,253 (73.8)	947 (55.8)	1,207 (71.1)	80.6 (22.0)	0.87 (0.15)	73.7 (19.9)
			Level 2	474 (27.9)	213 (12.5)	263 (15.5)	610 (35.9)	430 (25.3)			
			Level 3	22 (1.3)	54 (3.2)	182 (10.7)	141 (8.3)	61 (3.6)			
	Wrist and hand (n=8,215)	Level 1	7,533 (91.7)	7,522 (91.6)	6,947 (84.6)	5,617 (68.4)	6,783 (82.6)	87.6 (16.1)	0.92 (0.10)	80.7 (13.6)	
		Level 2	661 (8.0)	596 (7.3)	847 (10.3)	2,386 (29.0)	1,288 (15.7)				
		Level 3	21 (0.3)	97 (1.2)	421 (5.1)	212 (2.6)	144 (1.8)				

Diagnosis-based registers	Heart failure (n=20,771)	Level 1	12,331 (59.4)	18,741 (90.2)	14,424 (69.4)	10,754 (51.8)	12,213 (58.8)	64.6 (19.2)	0.85 (0.12)	71.5 (16.5)	
		Level 2	8,334 (40.1)	1,817 (8.7)	5,548 (26.7)	8,920 (42.9)	7,748 (37.3)				
		Level 3	106 (0.5)	213 (1.0)	799 (3.8)	1,097 (5.3)	810 (3.9)				
	Respiratory failure	COPD (n=3,407)	Level 1	688 (20.2)	1,819 (53.4)	830 (24.4)	980 (28.8)	1,267 (37.2)	47.8 (21.6)	0.72 (0.13)	53.9 (17.4)
			Level 2	2,583 (75.8)	1,334 (39.2)	1,724 (50.6)	1,941 (57.0)	1,830 (53.7)			
			Level 3	136 (4.0)	254 (7.5)	853 (25.0)	486 (14.3)	310 (9.1)			
		Lung fibrosis (n=892)	Level 1	206 (23.1)	536 (60.1)	257 (28.8)	298 (33.4)	405 (45.4)	48.1 (22.0)	0.74 (0.14)	56.6 (17.7)
			Level 2	655 (73.4)	300 (33.6)	413 (46.3)	484 (54.3)	427 (47.9)			
			Level 3	31 (3.5)	56 (6.3)	222 (24.9)	110 (12.3)	60 (6.7)			
	Psoriasis	Psoriasis vulgaris (n=3,943)	Level 1	3,242 (82.2)	3,774 (95.7)	3,359 (85.2)	1,492 (37.8)	2,000 (50.7)	-	0.87 (0.11)	73.3 (15.7)
			Level 2	698 (17.7)	148 (3.8)	522 (13.2)	2,140 (54.3)	1,682 (42.7)			
			Level 3	3 (0.1)	21 (0.5)	62 (1.6)	311 (7.9)	261 (6.6)			
		Psoriasis vulgaris + anthropathic (n=1,128)	Level 1	667 (59.1)	1,018 (90.2)	773 (68.5)	173 (15.3)	526 (46.6)	-	0.82 (0.14)	65.7 (18.2)
			Level 2	459 (40.7)	101 (9.0)	321 (28.5)	780 (69.1)	515 (45.7)			
			Level 3	2 (0.2)	9 (0.8)	34 (3.0)	175 (15.5)	87 (7.7)			
		Psoriasis unspecified (n=1,090)	Level 1	810 (74.3)	1,017 (93.3)	842 (77.2)	345 (31.7)	539 (49.4)	-	0.85 (0.13)	70.3 (17.8)
			Level 2	278 (25.5)	64 (5.9)	216 (19.8)	627 (57.5)	469 (43.0)			
			Level 3	2 (0.2)	9 (0.8)	32 (2.9)	118 (10.8)	82 (7.5)			
	Rheumatology	Rheumatoid arthritis (n=29,015)	Level 1	14,345 (49.4)	22,963 (79.1)	17,249 (59.4)	3,709 (12.8)	16,449 (56.7)	-	0.81 (0.13)	65.1 (17.7)
			Level 2	14,588 (50.3)	5,674 (19.6)	10,483 (36.1)	21,165 (72.9)	11,327 (39.0)			
			Level 3	82 (0.3)	378 (1.3)	1,283 (4.4)	4,141 (14.3)	1,239 (4.3)			
		Spondyloarthropathy (n=15,175)	Level 1	7,892 (52.0)	12,697 (83.7)	8,672 (57.1)	1,622 (10.7)	7,504 (49.4)	-	0.80 (0.14)	63.1 (18.9)
			Level 2	7,257 (47.8)	2,382 (15.7)	5,735 (37.8)	10,680 (70.4)	6,645 (43.8)			
			Level 3	26 (0.2)	96 (0.6)	768 (5.1)	2,873 (18.9)	1,026 (6.8)			
		Inflammatory systemic disorder (n=2,733)	Level 1	1,597 (58.4)	2,308 (84.4)	1,635 (59.8)	524 (19.2)	1,361 (49.8)	-	0.81 (0.14)	65.6 (18.3)
			Level 2	1,121 (41.0)	392 (14.3)	924 (33.8)	1,850 (67.7)	1,218 (44.6)			
			Level 3	15 (0.5)	33 (1.2)	174 (6.4)	359 (13.1)	154 (5.6)			
		Juvenile rheumatoid diseases (n=1,872)	Level 1	982 (52.5)	1,513 (80.8)	1,067 (57.0)	287 (15.3)	961 (51.3)	-	0.80 (0.14)	64.3 (18.6)
			Level 2	880 (47.0)	324 (17.3)	715 (38.2)	1,281 (68.4)	814 (43.5)			
			Level 3	10 (0.5)	35 (1.9)	90 (4.8)	304 (16.2)	97 (5.2)			
	Vasculitis (n=754)	Level 1	456 (60.5)	675 (89.5)	503 (66.7)	179 (23.7)	402 (53.3)	-	0.84 (0.12)	68.4 (19.7)	
			Level 2	297 (39.4)	68 (9.0)	219 (29.0)	508 (67.4)	326 (43.2)			
			Level 3	1 (0.1)	11 (1.5)	32 (4.2)	67 (8.9)	26 (3.4)			
	Other arthritis (n=2,996)	Level 1	1,498 (50.0)	2,497 (83.3)	1,752 (58.5)	322 (10.7)	1,637 (54.6)	-	0.81 (0.13)	64.5 (17.5)	
			Level 2	1,487 (49.6)	481 (16.1)	1,111 (37.1)	2,245 (74.9)	1,198 (40.0)			
			Level 3	11 (0.4)	18 (0.6)	133 (4.4)	429 (14.3)	161 (5.4)			
General population data (n=49,169)		Level 1	44,279 (90.1)	48,371 (98.4)	44,848 (91.2)	24,946 (50.8)	32,721 (66.5)	79.5 (18.3)	0.91 (0.09)	78.6 (12.9)	
		Level 2	4,840 (9.8)	600 (1.2)	3,785 (7.7)	22,185 (45.1)	15,126 (30.8)				
		Level 3	50 (0.1)	198 (0.4)	536 (1.1)	2,038 (4.1)	1,322 (2.7)				

*EQ VAS calculated based on a subset of the data set with complete data on EQ VAS; Proportions rounded off to one decimal using MS Excel

** The value sets used to calculate EQ-5D index are based on the EQ-5D-3L TTO and VAS value sets (Burström K, Sun S, Gerdtham U-G, et al. Swedish experience-based value sets for EQ-5D health states. *Qual Life Res* 2014;23:431–42.)

Table S7: Prevalence of reported problems on EQ-5D-3L by diagnosis and mean EQ VAS, and EQ-5D indices (TTO, VAS) among patients with complete data at 1-year follow-up regardless of baseline status and in the general population

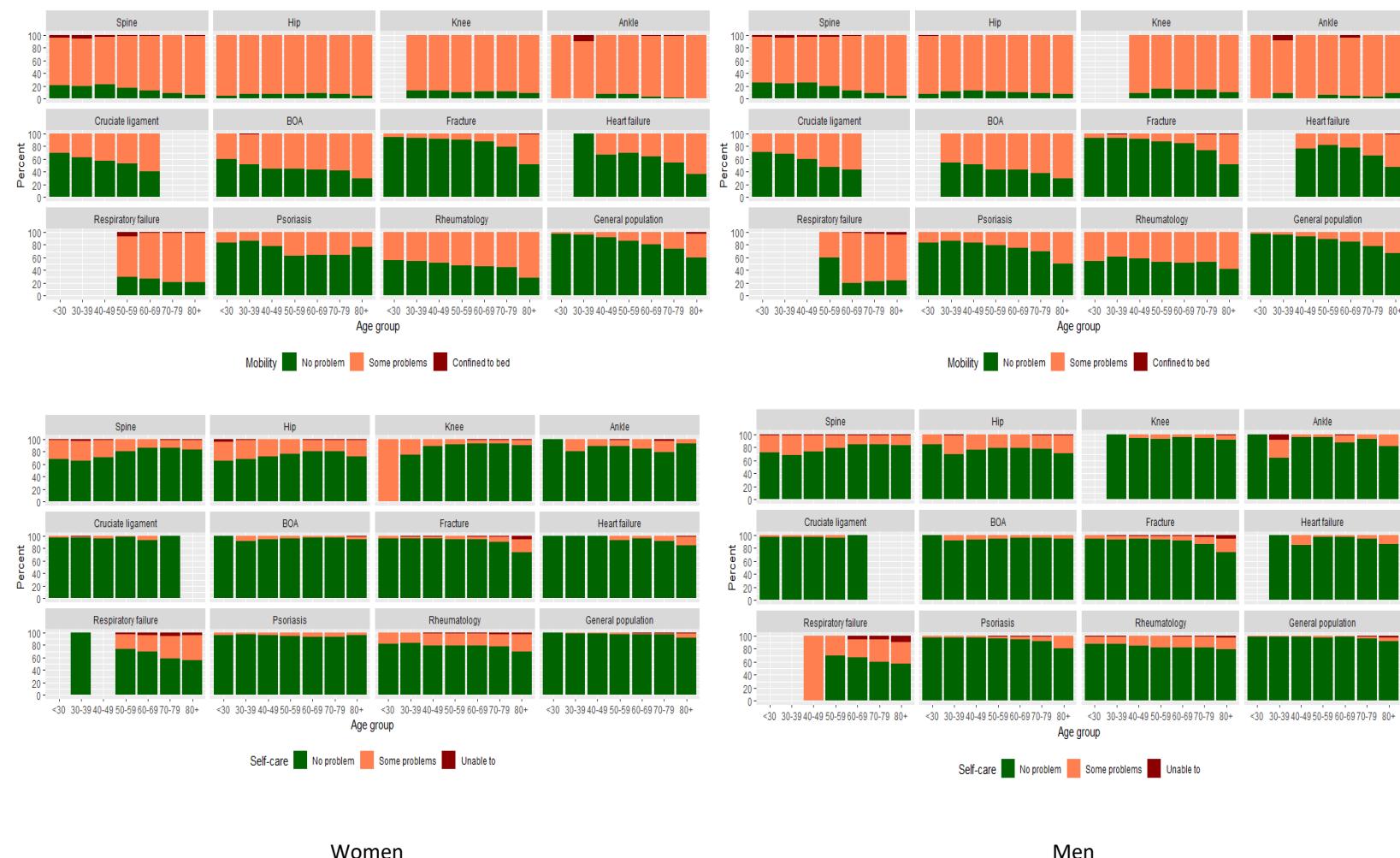
	Patient group in NQRs	Diagnosis	Severity level	Mobility	Self-care	Usual activities	Pain/discomfort	Anxiety/depression	Mean (SD)		
				n (%)	n (%)	n (%)	n (%)	n (%)	EQ VAS*	EQ-5D index (TTO)**	EQ-5D index (VAS)**
Intervention-based registers	Spine	Disc hernia (n=16,196)	Level 1	11,627 (71.8)	14,915 (92.1)	11,399 (70.4)	4,476 (27.6)	10,272 (63.4)	71.5 (21.5)	0.85 (0.13)	71.0 (18.3)
			Level 2	4,514 (27.9)	1189 (7.3)	4223 (26.1)	10,091 (62.3)	5,137 (31.7)			
			Level 3	55 (0.3)	92 (0.6)	574 (3.5)	1,629 (10.1)	787 (4.9)			
		Other spinal conditions (n=1,828)	Level 1	1,004 (54.9)	1,641 (89.8)	1,119 (61.2)	392 (21.4)	1,087 (59.5)	66.0 (23.3)	0.82 (0.14)	66.0 (19.7)
			Level 2	816 (44.6)	172 (9.4)	599 (32.8)	1,114 (60.9)	639 (35.0)			
			Level 3	8 (0.4)	15 (0.8)	110 (6.0)	322 (17.6)	102 (5.6)			
		Segmental instability (n=4,670)	Level 1	3,323 (71.2)	4,222 (90.4)	2,845 (60.9)	1,049 (22.5)	2,734 (58.5)	68.1 (23.3)	0.83 (0.14)	67.8 (19.7)
			Level 2	1,331 (28.5)	429 (9.2)	1,505 (32.2)	2,889 (61.9)	1,666 (35.7)			
			Level 3	16 (0.3)	19 (0.4)	320 (6.9)	732 (15.7)	270 (5.8)			
		Spinal stenosis (n=32,840)	Level 1	14,943 (45.5)	29,720 (90.5)	20,679 (63.0)	6,529 (19.9)	20,126 (61.3)	65.3 (22.8)	0.82 (0.14)	66.0 (18.8)
			Level 2	17,793 (54.2)	2,845 (8.7)	10,533 (32.1)	21,040 (64.1)	11,360 (34.6)			
			Level 3	104 (0.3)	275 (0.8)	1,628 (5.0)	5,271 (16.1)	1,354 (4.1)			
		Spondylolysis (n=2,763)	Level 1	1,851 (67.0)	2,558 (92.6)	1,783 (64.5)	640 (23.2)	1,690 (61.2)	68.9 (22.5)	0.84 (0.14)	68.6 (19.1)
			Level 2	909 (32.9)	197 (7.1)	852 (30.8)	1,740 (63.0)	921 (33.3)			
			Level 3	3 (0.1)	8 (0.3)	128 (4.6)	383 (13.9)	152 (5.5)			
	Hip	Avascular necrosis (n=2,149)	Level 1	1,069 (49.7)	1,811 (84.3)	1,394 (64.9)	789 (36.7)	1,415 (65.8)	71.0 (22.7)	0.84 (0.13)	69.5 (18.0)
			Level 2	1,071 (49.8)	303 (14.1)	621 (28.9)	1,211 (56.4)	676 (31.5)			
			Level 3	9 (0.4)	35 (1.6)	134 (6.2)	149 (6.9)	58 (2.7)			
		Childhood hip disorder (n=2,236)	Level 1	1,522 (68.1)	2,021 (90.4)	1,726 (77.2)	1,174 (52.5)	1,742 (77.9)	78.9 (19.5)	0.88 (0.12)	75.9 (16.5)
			Level 2	712 (31.8)	198 (8.9)	442 (19.8)	965 (43.2)	444 (19.9)			
			Level 3	2 (0.1)	17 (0.8)	68 (3.0)	97 (4.3)	50 (2.2)			
		Hip osteoarthritis (n=101,136)	Level 1	61,928 (61.2)	93,392 (92.3)	78,639 (77.8)	45,889 (45.4)	79,190 (78.3)	76.5 (20.1)	0.88 (0.11)	75.1 (15.6)
			Level 2	39,045 (38.6)	7,113 (7.0)	20,384 (20.2)	50,826 (50.3)	20,409 (20.2)			
			Level 3	163 (0.2)	631 (0.6)	2,113 (2.1)	4,421 (4.4)	1,537 (1.5)			
	Knee	Inflammatory joint disorder (n=1,540)	Level 1	666 (43.2)	1,157 (75.1)	866 (56.2)	440 (28.6)	1,035 (67.2)	67.8 (22.1)	0.82 (0.13)	67.1 (17.8)
			Level 2	865 (56.2)	335 (21.8)	583 (37.9)	956 (62.1)	468 (30.4)			
			Level 3	9 (0.6)	48 (3.1)	91 (5.9)	144 (9.4)	37 (2.4)			
		Knee osteoarthritis (n=18,231)	Level 1	11,460 (62.9)	17,338 (95.1)	14,143 (77.6)	6,610 (36.3)	14,276 (78.3)	76.1 (19.5)	0.88 (0.11)	74.5 (15.4)
			Level 2	6,740 (37.0)	788 (4.3)	3,768 (20.7)	10,668 (58.5)	3,639 (20.0)			
			Level 3	31 (0.2)	105 (0.6)	320 (1.8)	953 (5.2)	316 (1.7)			
		Knee rheumatoid arthritis (n=372)	Level 1	140 (37.6)	303 (81.5)	208 (55.9)	79 (21.2)	245 (65.9)	67.1 (21.0)	0.81 (0.13)	65.8 (17.4)
			Level 2	230 (61.8)	60 (16.1)	146 (39.2)	254 (68.3)	118 (31.7)			
			Level 3	2 (0.5)	9 (2.4)	18 (4.8)	39 (10.5)	9 (2.4)			

Intervention-based registers	Ankle Other (n=152) Level 1 41 (27.0) Level 2 108 (71.1) Level 3 3 (2.0)	41 (27.0)	130 (85.5)	82 (53.9)	37 (24.3)	92 (60.5)	65.0 (21.6)	0.80 (0.13)	64.1 (17.9)
		108 (71.1)	21 (13.8)	64 (42.1)	98 (64.5)	55 (36.2)			
		3 (2.0)	1 (0.7)	6 (3.9)	17 (11.2)	5 (3.3)			
	Posttraumatic osteoarthritis (n=510)	178 (34.9)	472 (92.5)	314 (61.6)	120 (23.5)	338 (66.3)	68.6 (21.3)	0.81 (0.14)	65.8 (19.1)
		329 (64.5)	34 (6.7)	165 (32.4)	328 (64.3)	140 (27.5)			
		3 (0.6)	4 (0.8)	31 (6.1)	62 (12.2)	32 (6.3)			
	Primary osteoarthritis (n=388)	166 (42.8)	364 (93.8)	277 (71.4)	121 (31.2)	302 (77.8)	72.4 (18.6)	0.85 (0.12)	70.3 (17.6)
		221 (57.0)	22 (5.7)	95 (24.5)	222 (57.2)	80 (20.6)			
		1 (0.3)	2 (0.5)	16 (4.1)	45 (11.6)	6 (1.5)			
	Rheumatoid arthritis (n=117)	32 (27.4)	94 (80.3)	60 (51.3)	25 (21.4)	73 (62.4)	64.3 (19.9)	0.80 (0.13)	63.7 (17.4)
		83 (70.9)	21 (17.9)	51 (43.6)	78 (66.7)	40 (34.2)			
		2 (1.7)	2 (1.7)	6 (5.1)	14 (12.0)	4 (3.4)			
	Cruciate ligament Cruciate ligament injury (n=15,731)	13,492 (85.8)	15,534 (98.7)	12,269 (78.0)	5,356 (34.0)	10,105 (64.2)	74.2 (20.1)	0.88 (0.11)	75.2 (15.0)
		2,230 (14.2)	142 (0.9)	3,207 (20.4)	9,812 (62.4)	5,085 (32.3)			
		9 (0.1)	55 (0.3)	255 (1.6)	563 (3.6)	541 (3.4)			
	BOA BOA hip (n=3,437) BOA knee (n=10,248)	1,726 (50.2)	3,212 (93.5)	2,659 (77.4)	258 (7.5)	2,301 (66.9)	68.0 (18.8)	0.85 (0.10)	69.8 (14.4)
		1,708 (49.7)	214 (6.2)	742 (21.6)	2,887 (84.0)	1,093 (31.8)			
		3 (0.1)	11 (0.3)	36 (1.0)	292 (8.5)	43 (1.3)			
		5,418 (52.9)	9,926 (96.9)	8,258 (80.6)	1,015 (9.9)	7,297 (71.2)	70.7 (18.6)	0.86 (0.10)	71.2 (14.0)
		4,824 (47.1)	272 (2.7)	1,906 (18.6)	8,437 (82.3)	2,830 (27.6)			
		6 (0.1)	50 (0.5)	84 (0.8)	796 (7.8)	121 (1.2)			
	Fracture Ankle and foot (n=3,898) Elbow and forearm (n=14,576) Hip and femur (n=8,858) Knee and lower leg (n=11,360) Lumbar, spine and pelvis (n=1,232) Shoulder and upper arm (n=8,273) Unspecified part of trunk, extremities or other body region (n=860) Wrist and hand (n=4,532)	2,832 (72.7)	3,740 (95.9)	3,248 (83.3)	1,917 (49.2)	3,139 (80.5)	81.0 (19.0)	0.90 (0.11)	77.3 (15.3)
		1,055 (27.1)	124 (3.2)	569 (14.6)	1,820 (46.7)	684 (17.5)			
		11 (0.3)	34 (0.9)	81 (2.1)	161 (4.1)	75 (1.9)			
		12,585 (86.3)	13,594 (93.3)	12,045 (82.6)	6,886 (47.2)	11,816 (81.1)	81.3 (18.5)	0.90 (0.10)	78.7 (13.6)
		1,944 (13.3)	828 (5.7)	2,155 (14.8)	7,270 (49.9)	2,547 (17.5)			
		47 (0.3)	154 (1.1)	376 (2.6)	420 (2.9)	213 (1.5)			
		2,521 (28.5)	5,926 (66.9)	4,424 (49.9)	2,403 (27.1)	5,072 (57.3)	64.0 (23.5)	0.78 (0.14)	62.2 (18.8)
		5,914 (66.8)	2,027 (22.9)	2,791 (31.5)	5,770 (65.1)	3,407 (38.5)			
		423 (4.8)	905 (10.2)	1,643 (18.5)	685 (7.7)	379 (4.3)			
		7,279 (64.1)	10,644 (93.7)	8,896 (78.3)	4,384 (38.6)	8,690 (76.5)	78.2 (19.4)	0.88 (0.12)	74.5 (16.1)
		3,981 (35.0)	527 (4.6)	2,055 (18.1)	6,507 (57.3)	2,424 (21.3)			
		100 (0.9)	189 (1.7)	409 (3.6)	469 (4.1)	246 (2.2)			
		583 (47.3)	945 (76.7)	731 (59.3)	434 (35.2)	794 (64.4)	68.7 (23.4)	0.82 (0.15)	67.1 (19.7)
		626 (50.8)	208 (16.9)	332 (26.9)	696 (56.5)	390 (31.7)			
		23 (1.9)	79 (6.4)	169 (13.7)	102 (8.3)	48 (3.9)			
		6,566 (79.4)	7,041 (85.1)	6,141 (74.2)	3,055 (36.9)	6,162 (74.5)	77.0 (20.3)	0.88 (0.12)	74.9 (15.9)
		1,652 (20.0)	1,035 (12.5)	1,727 (20.9)	4,834 (58.4)	1,925 (23.3)			
		55 (0.7)	197 (2.4)	405 (4.9)	384 (4.6)	186 (2.2)			
	Unspecified part of trunk, extremities or other body region (n=860)	513 (59.7)	719 (83.6)	526 (61.2)	190 (22.1)	552 (64.2)	69.9 (22.0)	0.83 (0.15)	67.6 (19.6)
		329 (38.3)	111 (12.9)	248 (28.8)	565 (65.7)	270 (31.4)			
		18 (2.1)	30 (3.5)	86 (10.0)	105 (12.2)	38 (4.4)			
	Wrist and hand (n=4,532)	4,069 (89.8)	4,301 (94.9)	3,775 (83.3)	2,171 (47.9)	3,745 (82.6)	82.9 (17.7)	0.91 (0.09)	79.4 (13.2)
		445 (9.8)	189 (4.2)	667 (14.7)	2,225 (49.1)	722 (15.9)			
		18 (0.4)	42 (0.9)	90 (2.0)	136 (3.0)	65 (1.4)			

Diagnosis-based registers	Heart failure	Heart failure (n=1,849)	Level 1	1,094 (59.2)	1,680 (90.9)	1,338 (72.4)	911 (49.3)	1,157 (62.6)	66.7 (19.5)	0.86 (0.12)	72.3 (16.3)	
			Level 2	748 (40.5)	153 (8.3)	458 (24.8)	819 (44.3)	645 (34.9)				
			Level 3	7 (0.4)	16 (0.9)	53 (2.9)	119 (6.4)	47 (2.5)				
	Respiratory failure	COPD (n=895)	Level 1	160 (17.9)	472 (52.7)	175 (19.6)	208 (23.2)	315 (35.2)	48.1 (20.4)	0.70 (0.14)	51.7 (17.5)	
			Level 2	693 (77.4)	344 (38.4)	460 (51.4)	541 (60.4)	488 (54.5)				
			Level 3	42 (4.7)	79 (8.8)	260 (29.1)	146 (16.3)	92 (10.3)				
		Lung fibrosis (n=149)	Level 1	25 (16.8)	72 (48.3)	32 (21.5)	43 (28.9)	68 (45.6)	48.5 (19.7)	0.71 (0.14)	53.1 (18.2)	
			Level 2	118 (79.2)	66 (44.3)	61 (40.9)	86 (57.7)	68 (45.6)				
			Level 3	6 (4.0)	11 (7.4)	56 (37.6)	20 (13.4)	13 (8.7)				
	Psoriasis	Psoriasis vulgaris (n=1,880)	Level 1	1,612 (85.7)	1,829 (97.3)	1,687 (89.7)	1,004 (53.4)	1,236 (65.7)	-	0.90 (0.10)	78.0 (13.9)	
			Level 2	267 (14.2)	48 (2.6)	172 (9.1)	806 (42.9)	573 (30.5)				
			Level 3	1 (0.1)	3 (0.2)	21 (1.1)	70 (3.7)	71 (3.8)				
		Psoriasis vulgaris + anthropathic (n=663)	Level 1	406 (64.3)	584 (92.6)	497 (78.8)	161 (25.5)	358 (56.7)	-	0.85 (0.12)	70.3 (17.1)	
			Level 2	223 (35.3)	41 (6.5)	118 (18.7)	405 (64.2)	236 (37.4)				
			Level 3	2 (0.3)	6 (1.0)	16 (2.5)	65 (10.3)	37 (5.9)				
		Psoriasis unspecified (n=363)	Level 1	283 (78.0)	351 (96.7)	316 (87.1)	160 (44.1)	244 (67.2)	-	0.89 (0.11)	76.1 (14.9)	
			Level 2	80 (22.0)	11 (3.0)	45 (12.4)	183 (50.4)	104 (28.7)				
			Level 3	1,612 (0.0)	1 (0.3)	2 (0.6)	20 (5.5)	15 (4.1)				
	Rheumatology	Rheumatoid arthritis (n=18,141)	Level 1	9,904 (54.6)	15,143 (83.5)	12,032 (66.3)	3,199 (17.6)	11,123 (61.3)	-	0.83 (0.13)	67.9 (17.4)	
			Level 2	8,165 (45.0)	2,763 (15.2)	5,506 (30.4)	12,974 (71.5)	6,294 (34.7)				
			Level 3	72 (0.4)	235 (1.3)	603 (3.3)	1,968 (10.8)	724 (4.0)				
		Spondyloarthropathy (n=8,916)	Level 1	5,142 (57.7)	7,578 (85.0)	5,582 (62.6)	1,293 (14.5)	4,813 (54.0)	-	0.82 (0.14)	65.7 (18.8)	
			Level 2	3,757 (42.1)	1,270 (14.2)	2,973 (33.3)	6,277 (70.4)	3,533 (39.6)				
			Level 3	17 (0.2)	68 (0.8)	361 (4.0)	1,346 (15.1)	570 (6.4)				
		Inflammatory systemic disorder (n=1,654)	Level 1	984 (59.5)	1,425 (86.2)	1,029 (62.2)	350 (21.2)	849 (51.3)	-	0.82 (0.13)	66.4 (18.2)	
			Level 2	664 (40.1)	214 (12.9)	540 (32.6)	1,109 (67.0)	705 (42.6)				
			Level 3	6 (0.4)	15 (0.9)	85 (5.1)	195 (11.8)	100 (6.0)				
		Juvenile rheumatoid diseases (n=1,112)	Level 1	605 (54.4)	894 (80.4)	670 (60.3)	204 (18.3)	580 (52.2)	-	0.81 (0.14)	65.3 (18.9)	
			Level 2	502 (45.1)	202 (18.2)	387 (34.8)	747 (67.2)	470 (42.3)				
			Level 3	5 (0.4)	16 (1.4)	55 (4.9)	161 (14.5)	62 (5.6)				
		Vasculitis (n=413)	Level 1	242 (58.6)	375 (90.8)	278 (67.3)	92 (22.3)	242 (58.6)	-	0.84 (0.12)	68.7 (16.6)	
			Level 2	170 (41.2)	31 (7.5)	125 (30.3)	281 (68.0)	156 (37.8)				
			Level 3	1 (0.2)	7 (1.7)	10 (2.4)	40 (9.7)	15 (3.6)				
		Other arthritis (n=1,728)	Level 1	1,004 (58.1)	1,521 (88.0)	1,185 (68.6)	303 (17.5)	1,066 (61.7)	-	0.84 (0.13)	68.4 (17.4)	
			Level 2	721 (41.7)	193 (11.2)	493 (28.5)	1,212 (70.1)	595 (34.4)				
			Level 3	3 (0.2)	14 (0.8)	50 (2.9)	213 (12.3)	67 (3.9)				
	General population data (n=49,169)		Level 1	44,279 (90.1)	48,371 (98.4)	44,848 (91.2)	24,946 (50.8)	32,721 (66.5)	79.5 (18.3)	0.91 (0.09)	78.6 (12.9)	
			Level 2	4,840 (9.8)	600 (1.2)	3,785 (7.7)	22,185 (45.1)	15,126 (30.8)				
			Level 3	50 (0.1)	198 (0.4)	536 (1.1)	2,038 (4.1)	1,322 (2.7) <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th>				

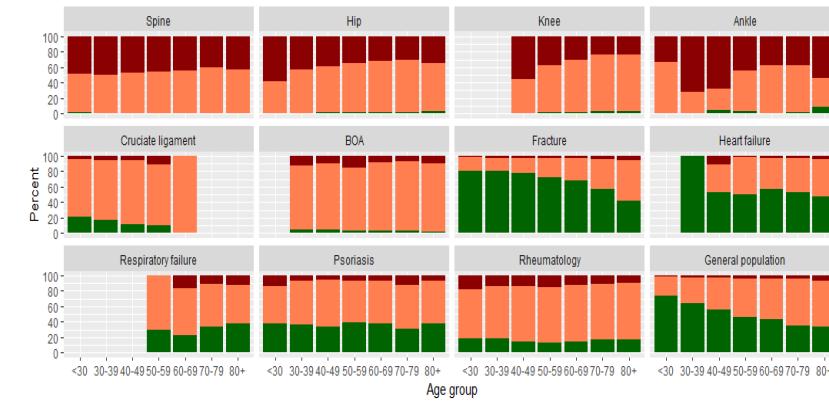
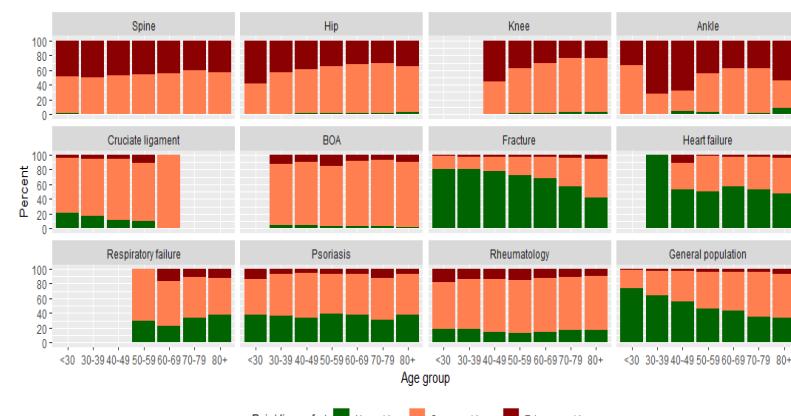
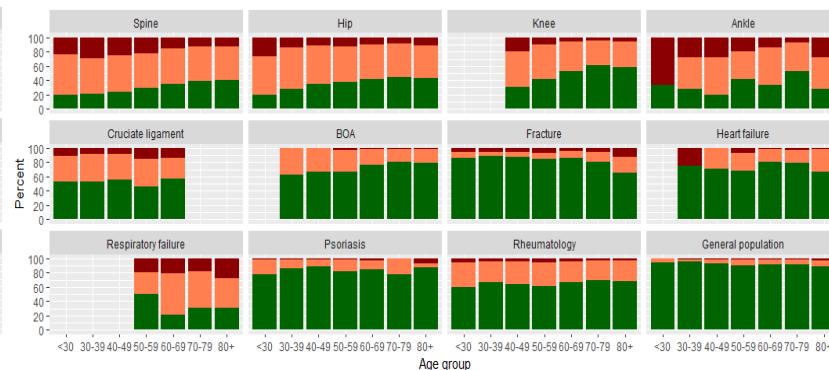
*EQ VAS calculated based on a subset of the data set with complete data on EQ VAS; Proportions rounded off to one decimal using MS Excel

** The value sets used to calculate EQ-5D index are based on the EQ-5D-3L TTO and VAS value sets (Burström K, Sun S, Gerdtham U-G, et al. Swedish experience-based value sets for EQ-5D health states. *Qual Life Res* 2014;23:431–42.)



Women

Men



Women

Men

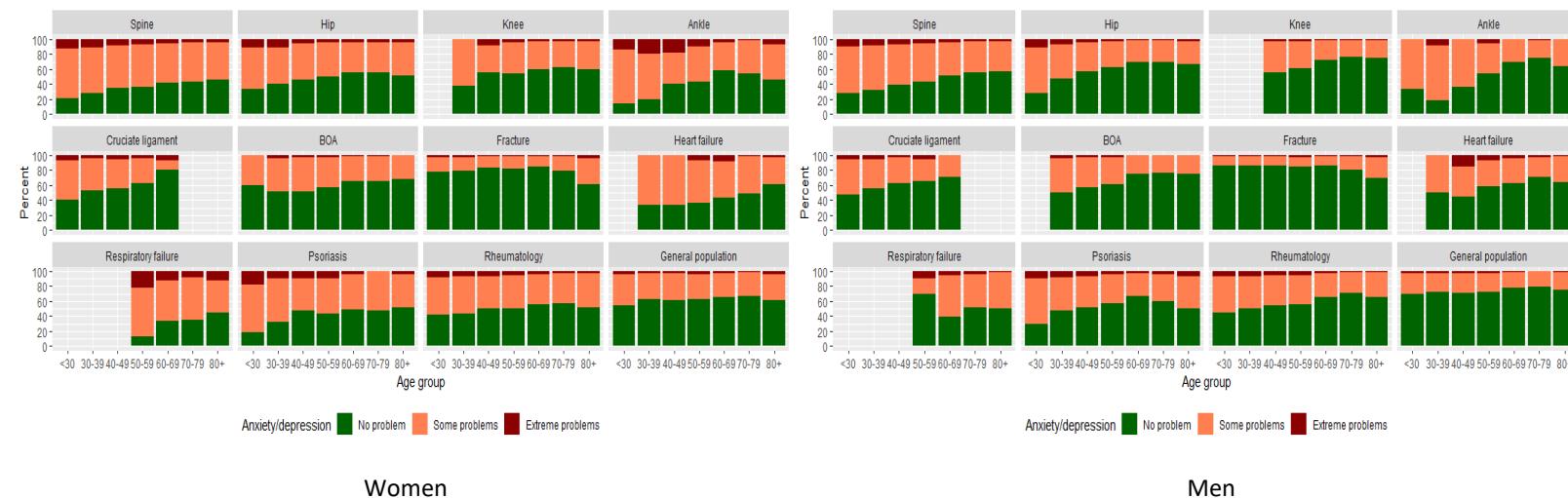
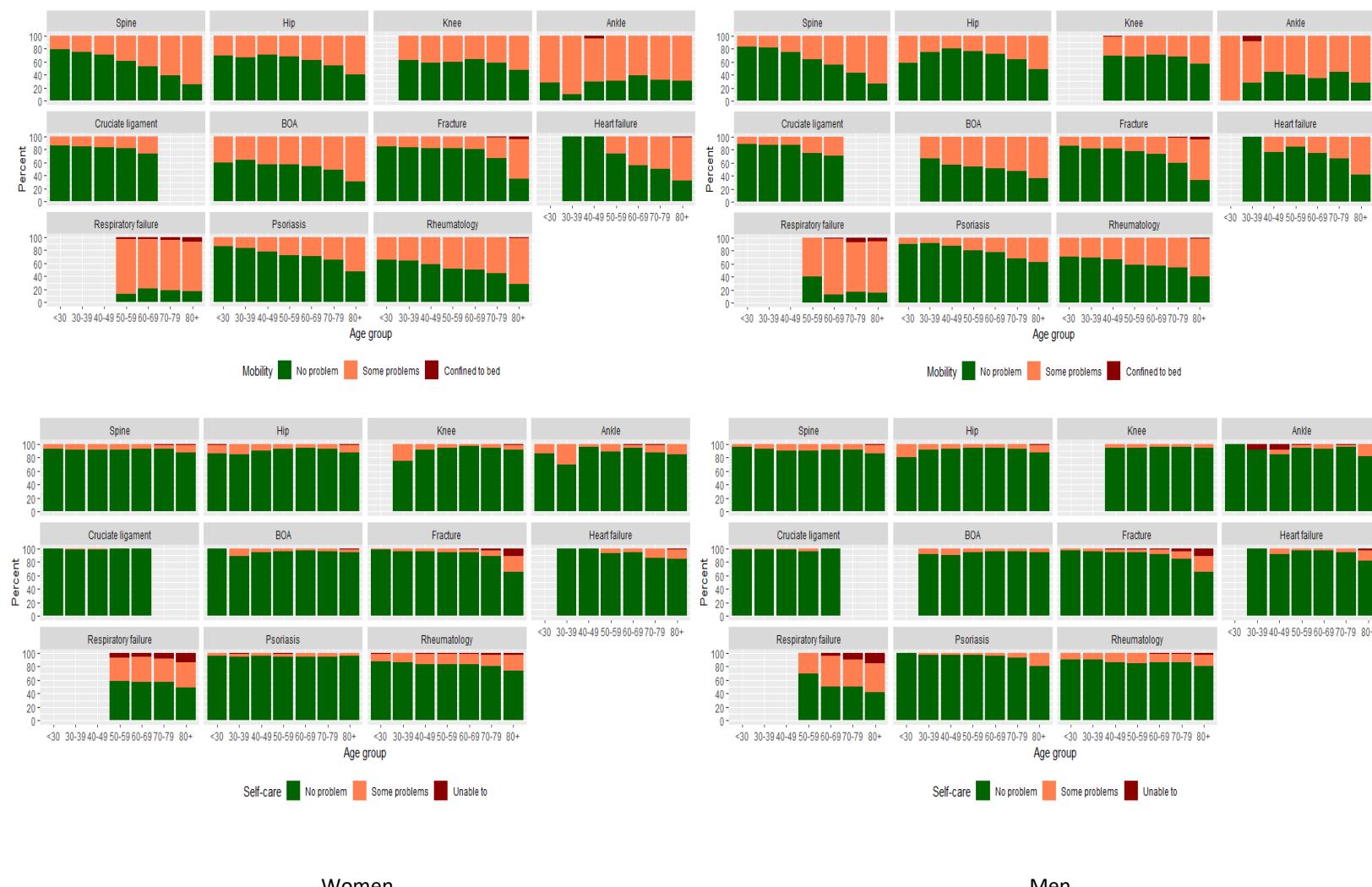
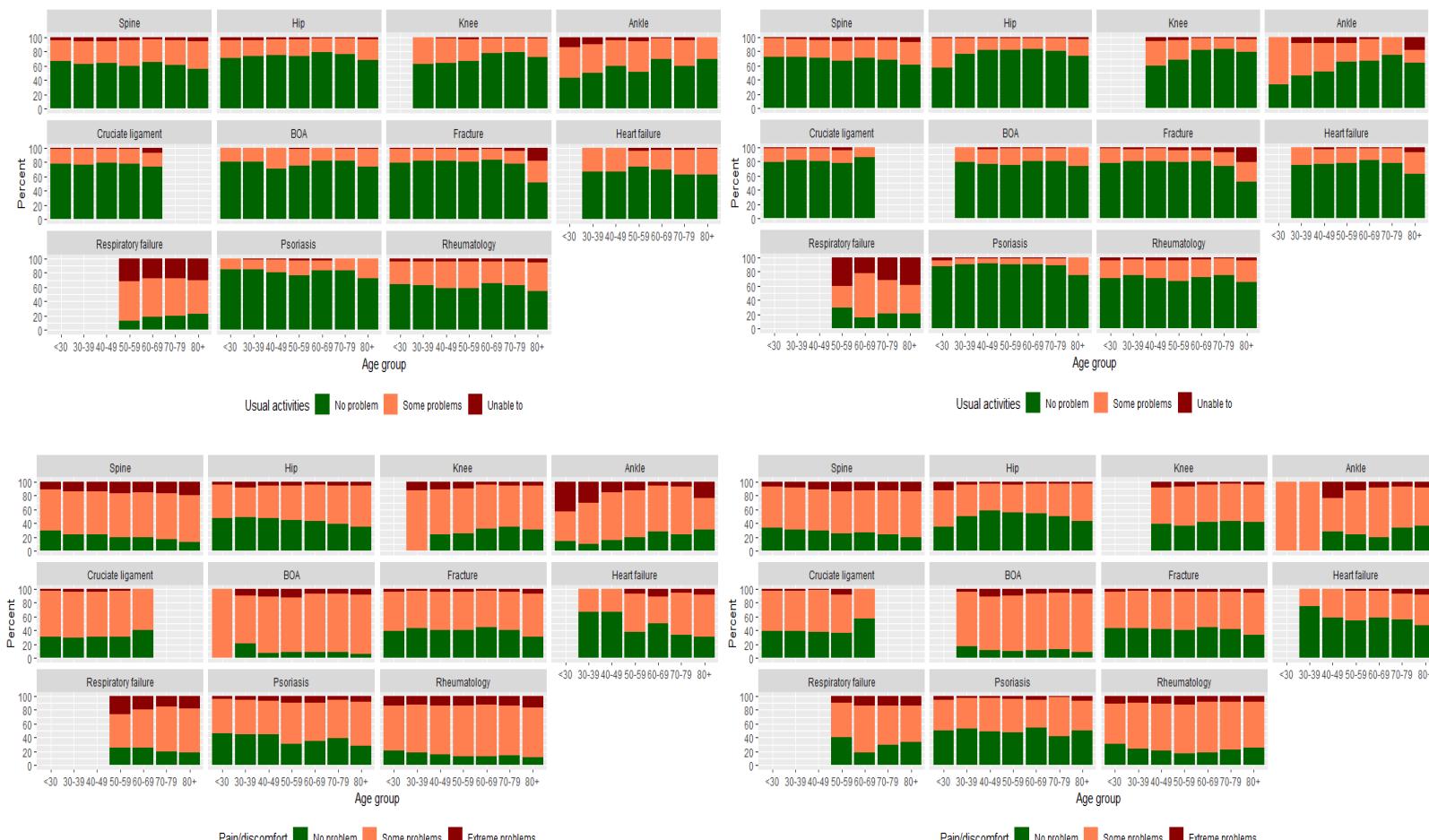


Figure S1: Problems reported on the EQ-5D-3L dimensions among patients in the different registers at baseline and the general population by age group and sex



Women

Men



Women

Men

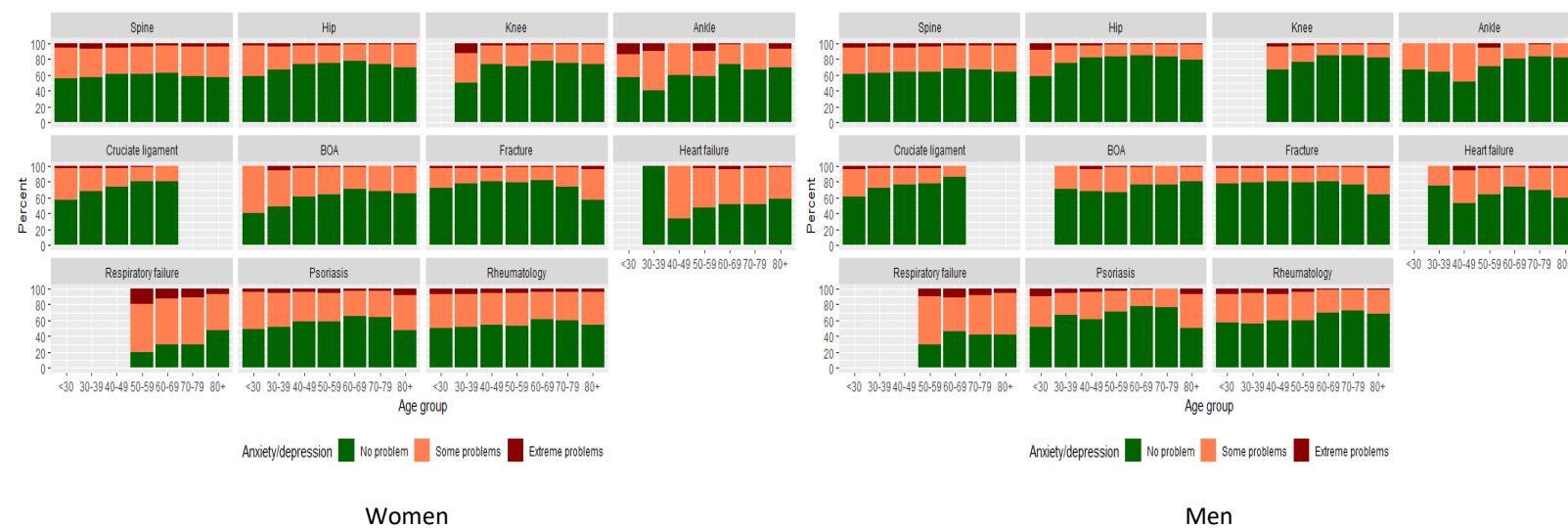


Figure S2: Problems reported on the EQ-5D-3L dimensions among patients in the different registers at 1-year follow-up by age group and sex