

Supplementary material 1: Assessment of the intervention cost

The intervention cost was assessed based on the full financial accounts of the trial prospectively recorded by the hospital's Financial Department during the whole project and the Principal Investigator's Excel sheet of all committed expenditures. These two sources of accounting information were reviewed and discussions by the Principal Investigator, the project leader, and the health economist.

Each expenditure was categorised as costs related to the intervention or to the planning and conduct of the trial. The expenditures were grouped as: Staff time related to planning, training, patient recruitment and screening, data collection and analysis, and care provision. For some named individuals the salaries related to training or care provision, but for the majority of staff spent time on different tasks in the project. In this case, careful assessment was been made to apportion the time covered by each expenditure related to staff salaries into relevant categories. Staff expenditures prior to the date of the trial start were assumed to related to different forms of planning.

Training cost relates to the participating HCPs who were involved in providing the intervention care. The formal staff training included one full-day of initial training and two half-days subsequent training. The training programme was planned and delivered by a trainer recruited specifically for this part of the programme. The fees paid to the trainer included both the actual training and preparation and development of teaching material. The cost of the training was included as the paid fee. Additional costs were included for the training facilities and provisions (coffee and lunch) to the participants (assumed at €30 per participant per day).

The time cost of the HCPs was included as average gross-salary paid to a mid-range nurse or physiotherapist assuming that the monthly salary of €5,500 covers 22 full-time work days of 7.4 hours per day (i.e. 163 work hours per month) of which 94h are expected to relate to direct patient contacts. The hourly cost thus equates to €59 per hour. The staff cost of the two-day training event

therefore equates to ~€500 per staff. This cost could be considered as a sunk cost, although if the programme is to be implemented in routine care there will be a need for ongoing training of new staff.

Central to the intervention is a system to send encouraging text messages to patients several times per week during the intervention period. This system has been developed by developers who have been paid an agreed fee for their service. The cost of the system development included the paid expenditures. This cost is included in the planning cost and can be considered as a sunk cost. In addition to the system development, tailor made text messages have been sent to participants. A realistic assumption has been made to the time use for submitting a daily batch of text message to participants. As the system is automated, the marginal cost per addition patient will be negligible within a maximum defined group size.

The recruitment of participants is assumed to relate to the conduct of the clinical trial. Most of the recruitment has been done by the healthcare professionals within the project. It has included a written invite sent to patients routinely attending the outpatient clinic. A personal conversation to inform patients about the trial has been held by the healthcare providers and is assumed to last about 15 min. The actual number of contacted patients has been recorded and the recruitment cost thus consist of postage of written material and staff time.

The intervention included an initial consultation of 1.5 hours duration and two subsequent consultations of 1-hour duration provided by the healthcare providers i.e. 3.5 hours.

The mean intervention staff cost was thus assumed at $3.5\text{h} \times \text{€}58.50 \text{ per h} = \text{€}204.75 \text{ per patient} + 40\% \text{ overhead (€}82) \text{ in total €}205$.

The text messaging is assumed to take an hour per patient during the whole intervention. The assumed hourly cost is assumed at €80 per patient.

Monitoring and data collection related to patients' progress has been through telephone. The data collectors (primarily the project leader) contacted patients three times during the project.

The calls are assumed to last an hour including preparation, non-response call, and data entry. The number of interviews is the main driver of costs related to data collection.

Mean intervention cost per participant:

Staff costs related to consultations:	€205	
Staff overheads (40%)		€82
Administration of text messages		€80
Contribution to fixed cost – staff and text system	€20	
Total cost per participant	€387	

Supplementary material 2: Descriptive analysis of raw data about resource use, cost and effect data

Table S2.1. Utilization of services by randomization group and observation time (mean, (sd), n)

	Intervention group n=75	Control group n=75	t-test (p-value)
General practice			
90 days prior	6.9 (11.2)	7.4 (11.4)	0.773
0-120 days	9.3 (13.7)	6.7 (8.2)	0.160
121-304 days	9.8 (14.9)	13.1 (16.0)	0.198
305-547 days	15.2 (16.6)	16.0 (18.9)	0.766
Physiotherapy			
90 days prior	7.9 (14.7)	6.1 (12.6)	0.404
0-120 days	12.0 (24.7)	9.8 (20.5)	0.544
121-304 days	13.8 (26.4)	13.5 (28.8)	0.951
305-547 days	19.2 (34.0)	15.3 (30.8)	0.458
Medical specialists			
90 days prior	1.5 (3.3)	1.1 (2.1)	0.426
0-120 days	2.0 (5.5)	1.2 (2.5)	0.264
121-304 days	2.8 (6.1)	2.0 (3.3)	0.338
305-547 days	3.1 (6.3)	3.1 (5.5)	0.956
Dentists			
90 days prior	1.1 (2.0)	1.3 (2.0)	0.463
0-120 days	1.2 (1.6)	1.6 (2.4)	0.209
121-304 days	3.3 (4.8)	2.7 (3.0)	0.320
305-547 days	3.5 (3.6)	4.6 (5.1)	0.107
Other primary care			
90 days prior	0.5 (1.1)	0.4 (1.0)	0.639
0-120 days	0.7 (1.7)	0.5 (1.2)	0.405
121-304 days	0.9 (2.2)	0.9 (1.8)	0.836
305-547 days	1.3 (2.9)	1.3 (2.6)	1.000
Outpatient visits			
90 days prior	1.1 (4.6)	1.7 (4.7)	0.430
0-120 days	1.5 (3.6)	0.8 (1.8)	0.107
121-304 days	3.8 (5.3)	3.7 (6.6)	0.924
305-547 days	8.5 (7.9)	10.1 (9.9)	0.282
Inpatient admissions			
90 days prior	0.2 (0.5)	0.1 (0.6)	0.765
0-120 days	0.1 (0.3)	0.1 (0.4)	0.455
121-304 days	0.2 (0.9)	0.3 (1.1)	0.468
305-547 days	0.2 (0.7)	0.3 (0.9)	0.264
Inpatient bed days			
90 days prior	0.2 (0.5)	0.5 (2.8)	0.259
0-120 days	0.1 (0.6)	0.1 (0.7)	0.901
121-304 days	0.8 (4.5)	0.7 (3.4)	0.951
305-547 days	0.3 (1.3)	1.2 (4.6)	0.103

Table S2.2. Cost of services (2020-Euro) by randomization group and observation time (mean, (sd))

	Intervention group n=75	Control group n=75	t-test (p-value)
General practice			
90 days prior	51 (60)	57 (65)	0.546
0-120 days	75 (90)	75 (80)	0.982
121-304 days	89 (95)	120 (122)	0.090
305-547 days	136 (139)	151 (160)	0.541
Physiotherapy			
90 days prior	134 (260)	84 (180)	0.169
0-120 days	195 (352)	139 (299)	0.298
121-304 days	234 (443)	191 (418)	0.544
305-547 days	347 (614)	243 (505)	0.255
Medical specialists			
90 days prior	75 (202)	36 (65)	0.108
0-120 days	82 (185)	43 (98)	0.105
121-304 days	87 (179)	77 (136)	0.728
305-547 days	120 (196)	123 (201)	0.907
Dentists			
90 days prior	14 (22)	17 (25)	0.426
0-120 days	15 (23)	23 (38)	0.097
121-304 days	39 (56)	34 (41)	0.546
305-547 days	41 (42)	56 (62)	0.073
Other primary care			
90 days prior	15 (45)	8 (19)	0.251
0-120 days	20 (60)	12 (29)	0.309
121-304 days	22 (60)	18 (39)	0.604
305-547 days	35 (104)	26 (53)	0.506
Outpatient visits			
90 days prior	1022 (7226)	503 (1443)	0.543
0-120 days	358 (954)	223 (547)	0.290
121-304 days	1267 (3718)	1147 (2514)	0.817
305-547 days	3050 (6966)	3193 (4875)	0.885
Inpatient admissions			
90 days prior	585 (2493)	546 (2440)	0.922
0-120 days	267 (1294)	534 (2901)	0.468
121-304 days	1363 (5480)	1306 (4319)	0.943
305-547 days	596 (2109)	2255 (7926)	0.082
Total healthcare cost			
90 days prior	1896 (7630)	1250 (3039)	0.497
0-120 days	1012 (1821)	1050 (3203)	0.929
121-304 days	3101 (6754)	2893 (5403)	0.835
305-547 days	4325 (7202)	6047 (10223)	0.235

Table S2.3. Effect measures by randomization group and observation time (mean, (sd), n)

	Intervention group	Control group	t-test (p-value)
Daily sitting time (hours)			
t=1	9.9 (1.9) n=75	8.8 (1.7) n=75	0.001
t=2	7.9 (2.0) n=73	9.6 (1.5) n=71	<0.001
t=3	8.2 (1.9) n=69	9.7 (1.7) n=68	<0.001
t=4	8.4 (1.7) n=71	10.3 (2.2) n=65	<0.001
Daily interruptions (n)			
t=1	52.8 (14.2) n=75	55.6 (16.9) n=75	0.277
t=2	53.6 (14.5) n=73	52.6 (14.0) n=71	0.654
t=3	55.7 (12.3) n=69	51.6 (11.6) n=68	0.046
t=4	50.2 (12.6) n=42	53.0 (13.9) n=34	0.363
Daily stepping time (hours)			
t=1	1.6 (0.7) n=75	1.9 (0.7) n=75	0.034
t=2	2.1 (0.6) n=73	1.7 (0.6) n=71	<0.001
t=3	2.0 (0.7) n=69	1.6 (0.6) n=68	<0.001
t=4	1.8 (0.7) n=71	1.6 (0.7) n=65	0.039
Daily work sitting time (min)			
t=1	255.9 (140.0) n=33	256.1 (148.1) n=34	0.997
t=2	183.3 (102.6) n=32	257.5 (135.3) n=30	0.018
t=3	175.5 (118.6) n=33	254.1 (132.9) n=32	0.014
t=4	241.4 (211.5) n=32	276.4 (146.4) n=28	0.465
HAQ score (0-3)			
t=1	0.9 (0.6) n=75	0.6 (0.6) n=75	0.003
t=2	0.6 (0.5) n=74	0.8 (0.6) n=73	0.007
t=3	0.6 (0.5) n=71	0.8 (0.5) n=69	0.016
t=4	0.6 (0.5) n=71	0.8 (0.6) n=64	0.046
EQ-5D score (1-0)			
t=1	0.793 (0.187) n=75	0.822 (0.179) n=75	0.329
t=2	0.886 (0.099) n=74	0.785 (0.198) n=73	<0.001
t=3	0.835 (0.182) n=72	0.784 (0.201) n=70	0.115
t=4	0.846 (0.135) n=69	0.749 (0.236) n=63	0.004
EQ-VAS score (100-0)			
t=1	62.9 (20.1) n=75	68.5 (18.6) n=75	0.075
t=2	74.7 (15.5) n=74	61.7 (18.1) n=73	<0.001
t=3	73.0 (16.8) n=72	64.2 (19.7) n=70	0.005
t=4	66.7 (19.9) n=69	61.0 (20.1) n=63	0.103

Note: t=1: inclusion; t=2: 16-week follow-up; t=3: 10-month follow-up; t=4: 22-month follow-up

Supplementary material 3: Regression analysis of resource use, cost and effect data

Table S3.1. Use of Healthcare Services (Poisson regression - estimate/p-value)

Variable	Med.Spec.	Dental	Physio	GP	Other	Outpatient	IP admit	Bed days
Intervention	-0.1 0.649	0.3 0.633	0.3 0.280	-0.2 0.361	0.2 0.750	-0.4 0.034	0.2 0.754	-1.1 0.098
Period								
p=1	-0.1 0.104	0.5 0.000	0.1 0.542	0.2 0.202	0.3 0.240	-0.8 0.000	-0.3 0.493	-1.6 0.000
p=2	0.6 0.000	0.8 0.000	0.6 0.000	0.7 0.000	0.7 0.001	0.8 0.000	0.8 0.023	0.3 0.129
p=3	0.8 0.000	0.9 0.000	1.0 0.000	1.2 0.000	1.2 0.000	1.8 0.000	0.9 0.017	0.8 0.000
Dif-in-dif								
p=1	0.4 0.000	-0.1 0.446	0.2 0.268	-0.1 0.577	0.1 0.672	1.1 0.000	-0.6 0.364	1.3 0.029
p=2	-0.2 0.007	-0.2 0.001	0.0 0.816	0.4 0.018	-0.1 0.730	0.4 0.006	-0.6 0.238	1.2 0.001
p=3	0.0 0.797	0.0 0.599	-0.3 0.123	-0.1 0.589	-0.2 0.531	0.3 0.088	-0.7 0.170	-0.4 0.359
Constant	2.0 0.000	1.8 0.000	0.1 0.639	0.3 0.045	-0.9 0.025	0.6 0.000	-1.9 0.000	-0.6 0.192
/lnalpha	-0.1 0.200	2.5 0.000	0.6 0.000	-0.1 0.480	2.2 0.000	-0.3 0.037	1.5 0.000	2.7 0.000
Statistics								
N	600	600	600	600	600	600	600	600
ll	-2756	-1766	-1321	-1238	-450	-1820	-276	-407
aic	5531	3551	2661	2494	918	3657	571	832
bic	5570	3590	2700	2534	958	3697	610	872

Table S3.2. Cost of Healthcare Services (2020-Euro) Random-effect Regression (estimate/p-value)

Variable	Med.Spec.	Dental	Physio	GP	Other	Outpatient	Inpatient	Total cost
Intervention	-6.1 0.725	50.5 0.446	39.6 0.142	-3.1 0.648	6.6 0.478	518.6 0.460	39.6 0.954	645.7 0.527
Period								
p=1	18.6 0.142	55.6 0.094	6.9 0.771	6.3 0.273	4.4 0.464	-280.2 0.674	-11.9 0.985	-200.2 0.829
p=2	63.0 0.000	107.1 0.001	41.7 0.079	17.4 0.002	10.1 0.095	643.8 0.333	759.8 0.220	1642.9 0.076
p=3	94.2 0.000	158.9 0.000	87.7 0.000	39.5 0.000	18.3 0.002	2689.7 0.000	1708.9 0.006	4797.2 0.000
Dif-in-dif								
p=1	5.8 0.744	5.2 0.911	-0.1 0.997	-5.4 0.505	1.3 0.882	-383.8 0.683	-306.7 0.727	-683.7 0.601
p=2	-24.4 0.172	-7.8 0.869	-30.6 0.363	7.9 0.330	-2.2 0.793	-398.5 0.672	18.2 0.983	-437.4 0.738
p=3	-8.9 0.621	54.3 0.247	-43.4 0.196	-12.5 0.123	2.4 0.777	-661.5 0.482	-1698.6 0.053	- 2368.1 0.070
Constant	56.8 0.000	83.7 0.074	35.8 0.061	16.9 0.000	8.1 0.217	502.9 0.311	545.8 0.255	1249.9 0.083
n	600	600	600	600	600	600	600	600
R-squared	0.097	0.034	0.031	0.109	0.020	0.061	0.022	0.068

Table S3.3. Effect measures Random-effect Regression (estimate/p-value)

Variable	Sitting time	Work sitting time	Walk time	Interruptions	HAQ	EQ-5D index	EQ-VAS
Intervention	1.039 0.000	-1.105 0.975	-0.241 0.026	-2.790 0.220	0.280 0.002	-0.029 0.326	-5.680 0.062
Period							
p=1	0.844 0.000	2.819 0.919	-0.180 0.035	-3.119 0.085	0.193 0.000	-0.038 0.084	-6.801 0.004
p=2	0.965 0.000	1.746 0.949	-0.276 0.002	-3.720 0.043	0.190 0.000	-0.042 0.062	-4.360 0.067
p=3	1.564 0.000	21.446 0.452	-0.260 0.003	-1.078 0.646	0.223 0.000	-0.078 0.001	-8.005 0.001
Diff-in-diff							
p=1	-2.745 0.000	-72.285 0.062	0.690 0.000	3.836 0.133	-0.517 0.000	0.132 0.000	18.766 0.000
p=2	-2.631 0.000	-80.033 0.038	0.665 0.000	6.421 0.013	-0.495 0.000	0.083 0.008	14.343 0.000
p=3	-2.971 0.000	-28.184 0.477	0.482 0.000	-0.462 0.885	-0.492 0.000	0.128 0.000	11.926 0.001
Constant	8.830 0.000	252.417 0.000	1.852 0.000	55.616 0.000	0.618 0.000	0.822 0.000	68.547 0.000
n	567	254	567	507	572	571	571
R-squared	0.168	0.056	0.077	0.014	0.047	0.047	0.064