Supplementary file

Table S1: Unit costs for different types of health and social care resource items

Resource item	Unit costs (2010 £'s)	Source of cost data	Basis of estimate
GP	£36.00	PSSRU	GP appt / surgery; based on costing at 11.7 mins
Practice Nurse	£11.00	PSSRU	Appt /surgery/per consultation
Health Visitor	£42.00	PSSRU	Per consultation/home visit
Neurologist (appt)	£140.00	NHS Ref costs	Per consultation (code 400)
Urologist (appt)	£88.00	NHS Ref costs	Per consultation (code 101)
Ophthalmologist (appt)	£73.00	NHS Ref costs	Per consultation (code 130)
Psychiatrist	£161.00	NHS Ref costs	Per consultation (code MHOPFUA2)
Psychologist	£81.00	PSSRU	Per hour client contact
Occupational Therapist	£42.00	PSSRU	Cost per hour of client contact (assumed 1 hr)
Physiotherapist	£42.00	PSSRU	Cost per hour of client contact (assumed 1 hr)
Speech Therapist	£37.00	NHS Ref costs	Cost per hour of client contact (assumed 1 hr)
Dietician	£34.00	PSSRU	Cost per hr of client contact (assume 1 hr as average contact)
Podiatrist/Chiropodist	£30.00	NHS Ref costs	Podiatry visit / consultation (code 653)
- Pod/Chirop; Private	£11.00	PSSRU	Per clinic visit
Chiropractor/Osteopath, NHS cost	£42.00	PSSRU	NHS cost, assuming cost per hour of community physiotherapist
Chiropractor/Osteopath (private)	£32.24	Wonderling et al (2004)	Mean cost of private visit - Wonderling et al 2004 (uprated**).
Reflexologist	£42.00	PSSRU	Assuming NHS cost, cost per hour of community physiotherapist
Acupuncture (NHS)	£42.00	PSSRU	Based on 1 hour of community physiotherapist/OT, (as assumption used by Wonderling et al 2004).
Acupuncture (private)	£43.19	Ratcliffe et al 2006	Based on treatment costs for NHS Trust (trial data, 2002-03 prices, uprated**)
Counsellor	£71.00	PSSRU	Per surgery/clinic based consultation
A&E	£103.00	NHS Ref costs	Attendance not leading to admission
Hospital admission (day)	£145.79	PSSRU 2008**	Day care attendance for older adult
Hospital stay	£231.72	PSSRU	Acute bed day / Based on 2007 data, uprated**

Unit costs at 2010 prices/costs, where appropriate** uprated to 2010 prices using HCHS index reported in PSSRU Unit Costs of Health Care 2010.

Source Refs

Curtis L. Unit costs of health and social care. Personal Social Services Research Unit, University of Kent, 2010

Department of Health (2011) *NHS Reference Costs 2009-2010,*

www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_123459

Wonderling, D., Vickers, A.J., Grieve R, et al. Cost effectiveness analysis of a randomised controlled trial of acupuncture for chronic headache in primary care. *BMJ* 2004; **328**: 747.

Ratcliffe J, Thomas KJ, Macpherson H, et al. A randomised trial of acupuncture care for persistent low back pain: cost effectiveness analysis. *BMJ* 2006;**333**: 626 doi: 10.1136/bmj.38932.806134.7C.

Table S2a: Percentage of sample attending each session

	Session					
	1	**2**	**3**	**4**	**5**	**6**
All participants in FACETS arm (n=84)	68/84 (81%)	65/84 (77%)	68/84 (81%)	62/84 (74%)	59/84 (70%)	66/84 (79%)
Those attending 4 or more sessions (per protocol sample) (n=72)	68/72 (94%)	65/72 (90%)	68/72 (94%)	62/72 (86%)	59/72 (82%)	66/72 (92%)

Table S2b: Distribution of number of sessions attended

	No. of sessions attended						
	0	1	2	3	4	5	6
No. of participants	10 (12%)	2 (2%)	-	-	10 (12%)	26 (31%)	36 (43%)

Table S3: Descriptive statistics and treatment effects for the secondary outcome measures

Outcome measure	Baseline (n=159)	Follow-up 1 (n=146)	Follow-up 2 (n=144)
Fatigue Assessment Instrument - Situation Specificity subscale *(potential range 1-7, high scores indicate more specificity)*			
FACETS mean (SD)	4.64 (1.08)	4.91 (1.10)	4.63 (1.11)
CLP mean (SD)	4.31 (1.05)	4.43 (1.09)	4.24 (1.13)
Mean diff in change from baseline [95% CI]*	-	0.23 (-0.08 to 0.54)	0.06 (-0.21 to 0.34)
p-value	-	0.14	0.65
Std effect size	-	0.05	0.06
Fatigue Assessment Instrument - Fatigue Consequences *(potential range 1-7, high scores indicate worse consequences)*			
FACETS mean (SD)	5.61 (1.26)	5.45 (1.30)	5.40 (1.30)
CLP mean (SD)	5.32 (1.35)	5.22 (1.34)	5.22 (1.37)
Mean diff in change from baseline [95% CI]*	-	-0.04 (-0.39 to 0.30)	-0.29 (-0.70 to 0.12)
p-value	-	0.81	0.16
Std effect size	-	-0.03	-0.22
Fatigue Assessment Instrument - Responsiveness to rest and sleep subscale *(potential range 1 to 7, high scores indicate more responsiveness)*			
FACETS mean (SD)	5.11 (1.58)	4.97 (1.51)	4.90 (1.36)
CLP mean (SD)	5.31 (1.47)	5.19 (1.38)	5.13 (1.61)
Mean diff in change from baseline [95% CI]*	-	0.04 (-0.46 to 0.54)	0.02 (-0.54 to 0.58)
p-value	-	0.87	0.96
Std effect size	-	0.03	0.01
Multiple Sclerosis Impact Scale - Physical subscale *(potential range 0 to100, high scores indicate more impact)*			
FACETS mean (SD)	51.38 (21.35)	48.83 (19.72)	47.03 (21.25)
CLP mean (SD)	46.62 (20.30)	44.89 (20.47)	46.46 (19.75)
Mean diff in change from baseline [95% CI]*	-	1.39 (-2.87 to 5.65)	-0.81 (-5.91 to 4.28)
p-value	-	0.52	0.75
Std effect size	-	0.07	-0.04
Multiple Sclerosis Impact Scale - Psychological subscale *(potential range 0 to 100, high scores indicate more impact)*			
FACETS mean (SD)	45.40 (20.92)	44.05 (23.33)	40.40 (21.73)
CLP mean (SD)	37.72 (20.47)	36.10 (19.99)	35.68 (19.88)
Mean diff in change from baseline [95% CI]*	-	1.74 (-3.28 to 6.75)	-2.95 (-8.86 to 2.95)
p-value	-	0.49	0.32
Std effect size	-	0.08	-0.15
SF-36 - Role emotional *(potential range 0 to 100, high scores indicate higher quality of life)*			
FACETS mean (SD)	64.1 (31.4)	64.6 (30.5)	70.9 (28.0)
CLP mean (SD)	75.1 (26.3)	71.4 (28.0)	75.8 (21.8)
Mean diff in change from baseline [95% CI]*	-	2.65 (-5.36 to 10.66)	6.03 (-2.97 to 15.03)
p-value	-	0.52	0.19
Std effect size	-	0.09	0.21
SF-36 - Role physical *(potential range 0 to 100, high scores indicate higher quality of life)*			
FACETS mean (SD)	38.6 (23.2)	39.3 (25.3)	47.8 (26.2)
CLP mean (SD)	43.6 (26.7)	39.6 (25.4)	44.0 (24.7)
Mean diff in change from baseline [95% CI]*	-	3.26 (-4.17 to 10.69)	6.52 (-1.28 to 14.32)
p-value	-	0.39	0.10
Std effect size	-	0.13	0.27
SF-36 - Bodily pain *(potential range 0 to 100, high scores indicate higher quality of life)*			
FACETS mean (SD)	50.8 (23.6)	52.06 (26.3)	54.6 (24.3)
CLP mean (SD)	60.0 (24.7)	60.56 (25.0)	62.8 (24.5)
Mean diff in change from baseline [95% CI]*	-	0.88 (-5.87 to 7.63)	-1.45 (-8.20 to 5.29)
p-value	-	0.80	0.67
Std effect size	-	0.04	-0.06
SF-36 -Vitality *(potential range 0 to 100, high scores indicate higher quality of life)*			
FACETS mean (SD)	32.0 (16.8)	35.6 (19.4)	37.4 (20.3)
CLP mean (SD)	35.1 (19.7)	33.4 (16.8)	34.4 (17.3)

Mean diff in change from baseline [95% CI]*	-	4.42 (-1.22 to 10.06)	6.38 (0.45 to 12.32)
p-value	-	0.12	0.04
Std effect size	-	0.24	0.35

SF-36 - General Health *(potential range 0 to 100, high scores indicate higher quality of life)*

FACETS mean (SD)	40.6 (22.9)	41.8 (21.7)	42.9 (23.0)
CLP mean (SD)	46.4 (19.1)	48.0 (21.0)	47.0 (21.7)
Mean diff in change from baseline [95% CI]*	-	-1.29 (-6.85 to 4.27)	-0.18 (-6.26 to 5.90)
p-value	-	0.65	0.95
Std effect size	-	-0.06	-0.01

SF-36 - Social Functioning *(potential range 0 to100, high scores indicate higher quality of life)*

FACETS mean (SD)	54.9 (24.7)	55.5 (24.4)	55.8 (26.7)
CLP mean (SD)	55.3 (23.9)	57.2 (24.9)	59.5 (22.7)
Mean diff in change from baseline [95% CI]*	-	-1.68 (-8.98 to 5.63)	-2.45 (-10.22 to 5.32)
p-value	-	0.65	0.54
Std effect size	-	-0.07	-0.11

SF-36 - Physical functioning *(potential range 0 to 100, high scores indicate higher quality of life)*

FACETS mean (SD)	36.2 (25.3)	35.6 (24.7)	39.1 (26.6)
CLP mean (SD)	40.0 (23.6)	38.7 (24.8)	37.5 (24.3)
Mean diff in change from baseline [95% CI]*	-	-0.05 (-4.17 to 4.08)	2.31 (-2.11 to 6.74)
p-value	-	0.98	0.30
Std effect size	-	-0.02	0.10

SF-36 - Mental Health *(potential range 0 to 100, high scores indicate higher quality of life)*

FACETS mean (SD)	61.0 (18.1)	63.2 (18.8)	63.9 (20.3)
CLP mean (SD)	70.3 (17.4)	69.3 (18.2)	69.3 (17.5)
Mean diff in change from baseline [95% CI]*	-	2.67 (-1.98 to 7.33)	5.13 (-0.70 to 10.97)
p-value	-	0.26	0.08
Std effect size	-	0.15	0.30

Hospital Anxiety and Depression Scale (HADS) - Depression subscale *(potential range 0 to 21, high scores indicate more anxiety)*

FACETS mean (SD)	7.18 (3.31)	7.06 (3.55)	6.57 (3.26)
CLP mean (SD)	6.30 (3.69)	6.35 (3.27)	6.07 (2.94)
Mean diff in change from baseline [95% CI]*	-	-0.02 (-0.12 to 0.09)	-0.05 (-0.18 to 0.07)
p-value	-	0.77	0.43
Std effect size	-	-0.04	-0.10

Hospital Anxiety and Depression Scale (HADS) - Anxiety subscale *(potential range 0 to 21, high scores indicate more anxiety)*

FACETS mean (SD)	8.30 (4.01)	7.90 (4.00)	7.73 (3.97)
CLP mean (SD)	7.18 (3.31)	7.20 (3.70)	7.07 (4.04)
Mean diff in change from baseline [95% CI]*	-	-0.05 (-0.19 to 0.09)	-0.10 (-0.26 to 0.06)
p-value	-	0.50	0.22
Std effect size	-	-0.09	-0.18

Fatigue Symptom Inventory (FSI) - Most fatigue *(potential range 0 to 10, high scores indicate more fatigue)*

FACETS mean (SD)	7.69 (1.65)	7.55 (1.80)	7.31 (1.90)
CLP mean (SD)	7.62 (1.54)	7.57 (1.59)	7.46 (1.71)
Mean diff in change from baseline [95% CI]*	-	-0.09 (-0.62 to 0.45)	-0.15 (-0.78 to 0.48)
p-value	-	0.75	0.64
Std effect size	-	-0.06	-0.09

Fatigue Symptom Inventory (FSI) - Least fatigue *(potential range 0 to 10, high scores indicate more fatigue)*

FACETS mean (SD)	3.69 (2.13)	3.49 (1.98)	3.40 (1.89)
CLP mean (SD)	3.65 (1.98)	3.76 (2.00)	3.70 (1.99)
Mean diff in change from baseline [95% CI]*	-	-0.36 (-1.02 to 0.30)	-0.15 (-0.81 to 0.51)
p-value	-	0.28	0.65
Std effect size	-	-0.17	-0.08

Fatigue Symptom Inventory (FSI) - Average fatigue *(potential range 0 to 10, high scores indicate more fatigue)*

FACETS mean (SD)	5.83 (1.88)	5.32 (1.78)	5.21 (1.78)
CLP mean (SD)	5.31 (1.48)	5.62 (1.63)	5.54 (1.69)
Mean diff in change from baseline [95% CI]*	-	-0.71 (-1.28 to -0.15)	-0.66 (-1.24 to -0.08)
p-value	-	0.01	0.03
Std effect size	-	-0.41	-0.40

Fatigue Symptom Inventory (FSI) - Fatigue now *(potential range 0 to 10, high scores indicate more fatigue)*

FACETS mean (SD)	5.59 (2.60)	4.80 (2.38)	4.97 (2.66)
CLP mean (SD)	4.60 (2.48)	4.91 (2.45)	4.69 (2.43)
Mean diff in change from baseline [95% CI]*	-	-0.99 (-1.85 to -0.12)	-0.52 (-1.41 to 0.37)
p-value	-	0.03	0.25
Std effect size	-	-0.39	-0.21

Fatigue Symptom Inventory (FSI) - Interference subscale *(potential range 0 to 10, high scores indicate more interference)*

FACETS mean (SD)	5.41 (2.06)	4.97 (2.05)	4.74 (2.24)
CLP mean (SD)	4.92 (1.77)	5.00 (1.95)	5.06 (1.95)
Mean diff in change from baseline [95% CI]*	-	-0.33 (-0.89 to 0.24)	-0.55 (-1.20 to 0.10)
p-value	-	0.26	0.10
Std effect size	-	-0.17	-0.29

EQ-5D derived single index *(potential range -0.594 to 1.00 with high scores indicating better health)*

FACETS mean (SD)	0.56 (0.24)	0.56 (0.28)	0.54 (0.28)
CLP mean (SD)	0.66 (0.19)	0.67 (0.18)	0.67 (0.19)
Mean diff in change from baseline [95% CI]*	-	0.00 (-0.07 to 0.07)	-0.02 (-0.09 to 0.05)
p-value	-	0.93	0.58
Std effect size	-	0.01	-0.09

SF-6D derived health state value *(potential range -0.296 to 1.00 with high scores indicating better health)*

FACETS mean (SD)	0.59 (0.09)	0.60 (0.09)	0.61 (0.10)
CLP mean (SD)	0.62 (0.08)	0.62 (0.08)	0.62 (0.08)
Mean diff in change from baseline [95% CI]*	-	-0.00 (-0.02 to 0.03)	0.01 (-0.01 to 0.04)
p-value	-	0.77	0.33
Std effect size	-	-0.05	0.15

QALY derived from EQ-5D *(maximum possible QALY equals 0.46, assuming full health over 24 weeks)*

FACETS mean (SD)	-	-	0.26 (0.11)
CLP mean (SD)	-	-	0.31 (0.08)
Mean diff in change from baseline [95% CI]*	-	-	-0.02 (-0.05 to 0.02)
p-value	-	-	0.31
Std effect size	-	-	-0.18

QALY derived from SF-6D *(maximum possible QALY equals 0.46, assuming full health over 24 weeks)*

FACETS mean (SD)	-	-	0.28 (0.04)
CLP mean (SD)	-	-	0.29 (0.03)
Mean diff in change from baseline [95% CI]*	-	-	-0.00 (-0.01 to 0.01)
p-value	-	-	0.54
Std effect size	-	-	-0.07

ActivPAL™ - Total METS[a] over a 48 hour period

FACETS mean (SD)	65.22 (3.31)	64.94 (3.02)	64.87 (2.94)
CLP mean (SD)	65.50 (2.76)	65.38 (2.79)	65.24 (2.74)
Mean diff in change from baseline [95% CI]*	-	-0.10 (-0.73, 0.52)	-0.41 (-1.15, 0.33)
p-value	-	0.75	0.27
Std effect size	-	-0.03	-0.13

ActivPAL™ - METS sitting/lying over a 48 hour period

FACETS mean (SD)	48.16 (5.50)	48.12 (5.72)	48.20 (5.02)
CLP mean (SD)	46.51 (4.97)	46.52 (5.08)	46.98 (5.17)
Mean diff in change from baseline [95% CI]*	-	-0.34 (-1.55, 0.86)	-0.21 (-1.57, 1.16)
p-value	-	0.57	0.77
Std effect size	-	-0.06	-0.04

ActivPAL™ - METS standing over 48 hour period

FACETS mean (SD)	9.86 (4.57)	10.11 (5.12)	10.11 (4.34)
CLP mean (SD)	11.61 (4.46)	11.71 (4.55)	11.27 (4.72)
Mean diff in change from baseline [95% CI]*	-	0.46 (-0.66, 1.58)	0.56 (-0.66, 1.79)
p-value	-	0.42	0.37
Std effect size	-	0.10	0.12

ActivPAL™ - METS stepping over a 48 hour period

FACETS mean (SD)	7.19 (4.86)	6.71 (4.48)	6.57 (4.33)
CLP mean (SD)	7.38 (4.10)	7.16 (4.18)	7.00 (4.00)
Mean diff in change from baseline [95% CI]*	-	-0.21 (-1.16, 0.73)	-0.75 (-1.86, 0.35)
p-value	-	0.66	0.18
Std effect size	-	-0.05	-0.16

ActivPAL™ - Total step count over a 48 hour period

FACETS mean (SD)	10527 (7619)	9821 (7098)	9563 (6842)
CLP mean (SD)	10778 (6420)	10429 (6506)	10218 (6390)
Mean diff in change from baseline [95% CI]*	-	-330 (-1789, 1129)	-1233 (-2945, 479)
_p_-value	-	0.65	0.16
Std effect size	-	-0.05	-0.17

[a] *Metabolic Equivalent (METs) expresses energy expenditure as a multiple of resting metabolic rate. One MET is defined as 1kcal/kg/hr and is the energy expended during 1 hour of quiet sitting. The minimum energy expenditure measurable using the monitor, for someone sitting or lying for the whole 48 hour monitoring period is 60 METs.*

*Mean difference at follow-up can be thought of as mean in FACETS arm – mean in CLP arm (after subtracting any baseline differences). Analysis only includes participants with both baseline and follow-up data).

Figure S1: Mean differences and 95% confidence intervals on the primary outcomes at baseline, follow-up 1 (1 month post-intervention) and follow-up 2 (4 months post-intervention)
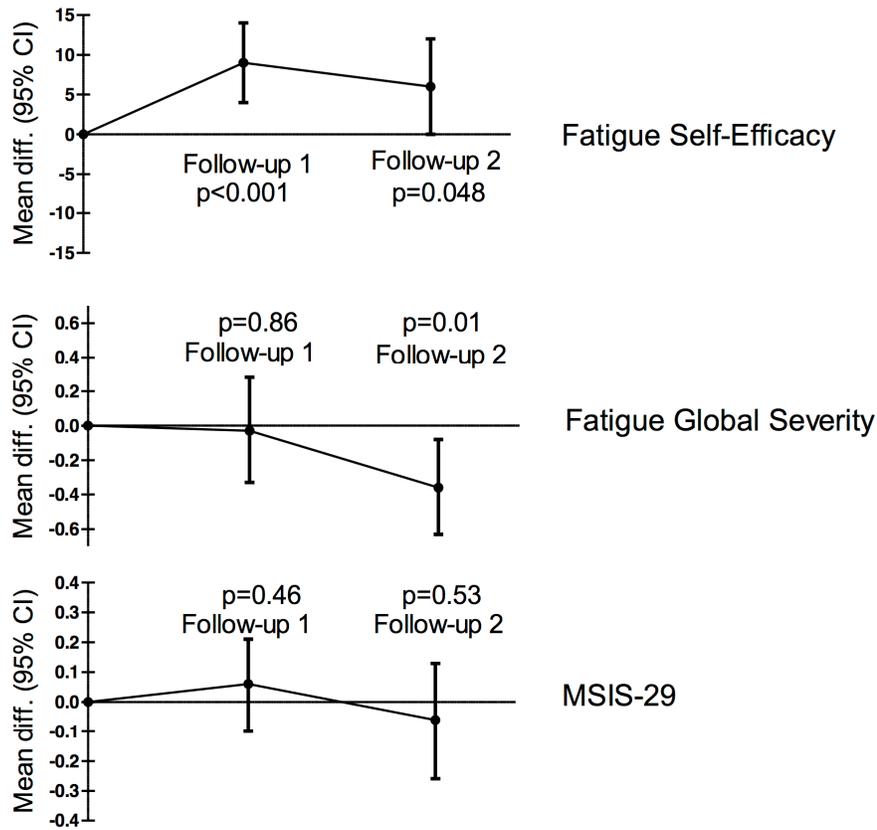
Table S4: Evaluation of individual sessions

FACETS Session	No. of questionnaires completed	No. who attended	$\bar{x}$ (S.D.)				
			Duration 1= too short; 5 = too long	**Pace** 1 = too slow; 5 = too fast	**Content** 1 = not very relevant; 5 = very relevant	**Format** 1 = did not work at all; 5 = worked well	**Usefulness** 1 = not at all useful; 5 = very useful
1 †	37	41	3.1 (0.7)	3.4 (0.7)	4.7 (0.5)	4.5 (0.6)	4.8 (0.4)
1	68	68	3.2 (0.7)	3.3 (0.7)	4.7 (0.5)	4.6 (0.6)	4.6 (0.6)
2	64	65	3.1 (0.6)	3.3 (0.6)	4.6 (0.6)	4.4 (0.7)	4.6 (0.7)
3	68	68	3.3 (0.6)	3.4 (0.8)	4.6 (0.6)	4.5 (0.6)	4.5 (0.7)
4	59	62	2.9 (0.6)	3.2 (0.5)	4.7 (0.6)	4.4 (0.8)	4.6 (0.7)
5	53	59	3.0 (0.6)	3.3 (0.6)	4.5 (0.7)	4.3 (0.8)	4.5 (0.8)
6	66	66	3.1 (0.5)	3.2 (0.5)	4.7 (0.6)	4.6 (0.6)	4.7 (0.6)
Total	378	-	3.1 (0.6)	3.3 (0.6)	4.6 (0.6)	4.5 (0.7)	4.6 (0.7)

† Supportive others' ratings

Table S5: Estimated total cost and cost per participant of delivering FACETS (per iteration, with 6 sessions per iteration, assuming 8 participants per iteration)

	Mean units per iteration	Mean unit cost [source]	Total cost
Set up costs[a]			
Training,	-	-	£245
Equipment (laptop, data projector, flipchart)	-	-	£228
Session facilitators (Two therapists, AfC Band 7 salary scale) [b]	56.63 hrs [c]	£36/ hour [PSSRU] [1]	£2,039
Venue hire (4 hour timeslot) (Commercial/hotel setting hotel)	6	£100 / session	£600
Consumable (e.g. refreshments printed materials)	-	-	£120
Administrative support (AfC Band 2 salary scale)[b]	10 hrs	£15/ hour [ref PSSRU][2]	£150
Psychology support	3 hrs	£81 / hour [ref PSSRU][3]	£243
	Total cost per iteration =		£3,625
	Mean cost per attendee =		£453

[a] Set-up costs are estimated and spread over 5 iterations of FACETS

[b] AfC = Agenda for Change, NHS National Payscale (www.nhscareers.nhs.uk/explore-by-career/allied-health-professions/pay-and-benefits-for-ahp-staff/)

[c] Time estimated based on within trial data (includes preparation time, set up time, session time, travel time and administration time), collected using work sampling questionnaire.

2010 unit costs applied PSSRU: Curtis L. Unit costs of health and social care. Personal Social Services Research Unit, University of Kent, 2010: [1] PSSRU 2010, Table 9.5 (for AfC Band 5 Staff see Table 9.2). [2] Costs assumed to be equivalent to those of a Clinical Support Worker, PSSRU 2010, Table 8.5. [3] PSSRU 2010, Table 10.5

Table S6: Estimated costs for NHS and Private health and social care (over 3-month time period), assessed at 4-month follow-up

Resource use/cost by type	Mean Cost	Mean Cost	Mean cost difference (GLM model, no covariates/adj) (95% CIs)	Mean cost difference (GLM model, with covariates for baseline severity)* (95% CIs)
	Control	FACETS		
Health Professionals/ NHS	£181.26	£211.88	£30.62 (-52.55 to 124.12)	£35.09 (-46.40 to 137.51)
Private	£27.66	£39.93	£12.27 (-20.47 to 45.86)	N/A
NHS Hospital Bedday Cost	£9.11	£13.48	£4.37 (N/A)	N/A
Total NHS Cost	£190.37	£225.36	£34.99 (-59.63 to 137.53)	£35.70 (-59.92 to 141.10)
Total Cost (NHS plus Private Costs)	£218.03	£265.29	£47.26 (-64.16 to 171.30)	£50.49 (-61.97 to 173.10)

Comparison is for health and social care services over a 3 month time period (the 3 months prior to 4-mth follow-up)

2010 unit costs applied.

CIs derived using nonparametric bootstrap methods

* covariates used are time since diagnosis, baseline APPDS, baseline EQ5D score

N/A Not available, for example, because of small number of events