Web table 1: List of Amendments

Substantial amendment number and date	Date of Approval	Summary of applications for amendment
No.1 May 2011	June 2011	**Application for amendment to Protocol** 1. At the moment, only 61% of follow up questionnaires are returned which is not sufficient to achieve the aims of this study. Qualitative data suggests the low follow up is because participants feel: a) the load of questionnaires participants is too high; b) confusion over receiving multiple questionnaires at 6 weeks, followed by reminders and then shortly afterwards questionnaires at 3 months; c) confusion over whether the follow up questionnaires are for SMILE or part of service evaluation (children not enrolled in the study receive questionnaires for clinical follow up and service evaluation). *2.* We need improved follow up rates to evaluate the feasibility study. *3.* We currently send one reminder by post to those not returning questionnaires within two weeks. This has a covering letter and we enclose a duplicate pack of questionnaires with this reminder. *4.* We would like to amend our procedure as follows: - Stop sending out the six week follow up questionnaire. - Continue to send out the follow up questionnaires at three months, six months and twelve months as per existing protocol. - If questionnaires not returned within two weeks, send a friendly reminder letter to encourage return of existing questionnaires. A reduced pack of questionnaires (comprising the physical function subscale of the SF36, Chalder Fatigue scale and school attendance inventory) will be included in case participants no longer have original copies or do not have time to complete originals. - After another two weeks, those not returning any questionnaires will be telephoned by a researcher who will make a gentle request for the respondent to either return the questionnaires or complete the reduced questionnaire set over the telephone. If the family would prefer to complete the reduced questionnaires over the phone, the researcher will talk the child/parents through the primary and secondary outcomes on the phone. This will include: school attendance (one item), Chalder Fatigue (11 items); physical function subscale of the SF36 (10 questions). **Ethical Issues.** The researcher will have to know the participants' identity in order to make the phone call. Until September 2011, this would not affect our policy regarding confidentiality and privacy, as the researcher will have met the participants at randomisation or for interviews. Any data resulting from the phone call will be recorded anonymously since questionnaires only have the study ID on them. To enable contacts to be made with participants after September 2011 by other members of the research team, we propose to amend the Consent to Study forms to allow for contact from a researcher by telephone if follow up questionnaires are not returned.

		We have considered that answers given over the phone may be different to answers given in written anonymous questionnaires returned by post but feel this is acceptable given the alternative which is a low response rate. In addition, families will be able to choose to return inventories by post or complete them on the phone. We have also considered that the PI, who is also the clinical lead, should not be the researcher making the phone call as this may alter the answers given by participants. **Amendment to Patient / Parent Information Sheets** 1. In accordance with the above proposed changes to the frequency of follow up questionnaires, references to the 6 week questionnaire have been removed from the Patient and Parent Information Sheets. 2. Some parents of children who have been randomised to the specialist medical care plus Lightning Process arm of the study have talked about the different approaches they encounter. In all cases they have resolved the issue and our qualitative interviews demonstrate that they are still pleased to have taken part in the study. We propose adding the following sentence to both the Patient and Parent Information Sheets: '*some parents of children who receive specialist medical care and the Lightning Process have told us that they find the two approaches and the language used is different. If this is a problem for you, we will talk about it with you and offer support.'* (page 4 'Are there any disadvantages of taking part in this study?). 3. A typing error on page 4 of the Patient Information Sheet has been corrected to remain consistent (96 changed to 90). **Amendment to GP Letter:** Problems: 1. Wording incorrect because not all participants are asked to be interviewed. 2. Copies of the consent form are filed in patients' notes, the originals are kept in locked filing cabinet in research office. Changes have been made to the GP letter to correct these inaccuracies.
No. 2 August 2012	September 2012	**Change SMILE from a feasibility study to full randomised controlled trial** The feasibility study has demonstrated that it is possible to do a randomised trial comparing specialist medical care with specialist medical care plus the lightning process however recruitment is slower than anticipated. Please see the enclosed draft paper describing the results from the feasibility study. The feasibility study enabled us to complete sample size calculations. We have calculated that the sample size required is 100. We would like to recruit 112 which assumes that we do not retain 12 patients in the study. We propose to continue recruitment but change the aim of SMILE from a feasibility study to a full randomised controlled trial. To do this, we need to make the following changes:

		a) Change all patient information sheets explaining that this is a full study. b) We will stop interviews about the study process (some children will still be interviewed about the intervention). c) We have completed the integrated study on Patient Reported Outcome Measures that we needed for the feasibility study. We will therefore stop this and remove reference to this from all study documentation. d) We would like to institute a data monitoring committee for the full study. This committee will independently review the outcomes when 50% of participants achieve their 6 months follow up. We propose that this data monitoring committee consists of the members of the external advisory group. e) Our Ethics advisor has suggested that we write to all participants who provided consent to take part in the feasibility study to check that they are happy that their data is used in the full study. Our qualitative interviews suggest that all participants would be happy but also that participants are experiencing a burden of form filling. We therefore propose that this letter is sent as an opt-out letter asking for participants to contact us if they do not want their data used in the final study. f) Feedback from participants and their parents, as well as the publication of the PACE trial, has informed a decision to use fatigue and SF36 as the primary outcomes from the full study. This is instead of school attendance (which we proposed may be the primary outcome in the feasibility study). School attendance will continue to be collected as a secondary outcome. The reason for this is that many of the participants are transitioning from GCSEs to A levels in this study and therefore % of school attendance does not necessarily reflect illness severity. For example, a teenager may have decided to take 2 A levels and be attending school for 2-3 hours a day. This would be recorded as 100% school attendance but this does not equate to 6.5 hours a day of normal school attendance. g) We have changed the protocol to reflect these changes. In addition, we wish to learn from the feasibility study and make the following changes: 1. We have simplified the Consent/assent forms to contact as these asked participants to sign that they had read the patient information sheet. This is the wrong time for this as they are not consented to the study at this stage, just to contact from a researcher to explain the study. We have therefore changed this to “I have received the patient information sheet and agree for the researcher to contact me”. 2. In addition, we have deleted the consent to be contacted by the researcher prior to consent to the study as this is no longer part of the study. 3. We have added “please initial the boxes” to all consent forms in line with best practice. 4. The Parents’ Consent to Contact form has been amended to include their child’s date of birth and the name and address of their GP in order to minimise the transfer of data between the RNHRD and the University of Bristol.

Web table 2 – Unit costs used for economic evaluation

Cost category	Resource	Unit cost (£)	Source of unit cost
Lightning Process	Trial course cost, mean contact hours: 13·42	567*	Phil Parker Lightning Process
	National course cost, mean contact hours: 13·42	620*	
	NHS course cost, mean contact hours: 12·34	444**	Unit costs of Health & Social Care[36], NHS Agenda for Change[43]
Standard Medical Care	Consultant, first	223	Department of Health (DH) reference costs[34]
	Consultant, follow-up	172	
	Consultant, telephone	115	
	Consultant psychologist, first	264	
	Consultant psychologist, follow-up	233	
	Consultant psychologist, telephone	15	
	Non-consultant psychologist, first	251	
	Non-consultant psychologist, follow-up	192	
	Non-consultant psychologist, telephone	34	
	Occupational therapist, first	76	
	Occupational therapist, follow-up	60	
	Occupational therapist, telephone	39	
	Physiotherapist, first	51	
	Physiotherapist, follow-up	39	
	Physiotherapist, telephone	30	
Hospital services	Hospital outpatient clinic	108	DH reference costs[34]
	A&E	115	
	Other hospital visits	By item	
Primary and community care	GP, consultation	45	Unit costs of health and social care[35]
	Nurse, consultation	17	
	GP, telephone	27	
	Nurse, telephone	10	
	GP, home visit	114	
	School counsellor	164	Hill et al[37]
	Walk-in-centre nurse	43	DH reference costs[34]
	NHS direct, telephone	29	Parliament publication[46]
	Other Primary & Community care	By item	
Prescribed medication		By item	Prescription Cost Analysis[36]
Personal costs	Additional spending on child	Self-report	
Productivity	Loss of earnings, past 3 months	Self-report	
	Loss of earnings, median hourly earnings	13·03	Office for National Statistics[47]

*Price charged for all (n=42) participants who attended at least 1 day of the course: 3 participants only attended 1 day.

**Mean estimated cost for all (n=46) participants who had any contact. We estimated the cost of NHS practitioners providing LP assuming they would be a mid-Band 7 with supervision from a mid-Band 8a. Standard unit costs (including overheads) for practitioner time[35] were applied and adjusted to reflect mid-Band 7 and mid-Band 8a salaries [45].

Web table 3: Baseline characteristics of those who found out more about the study but were not randomized compared to the randomized population

	Eligible but not randomized	N	Randomized	N
Demographic characteristics				
Mean age (SD)	14·9 (1·6)	31	14·6 (1·5)	100
Number female (%)	22 (71%)	31	76 (76%)	100
Median months from onset of illness to baseline assessment (25th percentile, 75th percentile)	12·0 (7·5, 17·0)	20	12·0 (8·0, 20·0)	98
Clinical characteristics				
Mean SF-36 physical function score[1] (SD)	58·2 (27·2)	30	54·5 (20·2)	99
Mean Chalder Fatigue score[2] (SD)	24·4 (5·1)	31	25·0 (4·2)	99
Mean pain VAS[2] (SD)	49·4 (33·1)	27	47·0 (29·2)	96
Mean SCAS[2] (SD)	25·7 (19·7)	29	35·0 (19·2)	97
Mean HADS Anxiety score[2] (SD)	8·0 (5·2)	28	9·6 (4·5)	99
Mean HADS Depression score[2] (SD)	6·1 (3·4)	28	7·8 (3·8)	98
Mean EQ-5D score[1] (SD)	0·34 (0·40)	22	0·33 (0·35)	100
School attendance in the previous week[1] N (%):				
None	7 (22%)	32	13 (13%)	99
0·5 day	2 (6%)	32	12 (12%)	99
1 day	1 (3%)	32	6 (6%)	99
2 days	4 (13%)	32	16 (16%)	99
3 days	5 (16%)	32	24 (24%)	99
4 days	10 (31%)	32	21 (21%)	99
5 days	2 (6%)	32	7 (7%)	99
N/A	1 (3%)	32	0 (0%)	99

HADS: Hospital Anxiety and Depression Scale; SCAS: Spence Children's Anxiety Scale; SD: Standard deviation; SF-36: The 36-item short-form health survey; VAS: Visual Analogue Scale. All results rounded to 1 d.p. or whole percentage points [1]Higher score=fewer symptoms, better function. [2]Higher score=more symptoms, poorer function.

Web Table 4: Baseline characteristics of the randomized population who completed or did not complete primary outcome at 6 months

	Completed SF-36 Physical Function	N	Did not complete SF-36 Physical Function	N
Demographic characteristics				
Mean age (SD)	14·6 (1·6)	82	14·4 (1·3)	18
Number female (%)	65 (79%)	82	11 (61%)	18
Median months from onset of illness to baseline assessment (25th percentile, 75th percentile)	12·0 (8·0, 21·0)	81	12·0 (8·0, 18·0)	17
Clinical characteristics				
Mean SF-36 physical function score[1] (SD)	54·0 (20·9)	81	56·9 (16·8)	18
Mean Chalder Fatigue score[2] (SD)	25·2 (4·3)	81	24·4 (3·9)	18
Mean pain VAS[2] (SD)	47·0 (29·5)	78	47·2 (28·7)	18
Mean SCAS[2] (SD)	35·3 (19·4)	81	33·4 (18·8)	16
Mean HADS Anxiety score[2] (SD)	9·7 (4·7)	81	9·3 (3·7)	18
Mean HADS Depression score[2] (SD)	7·7 (3·7)	80	8·4 (4·2)	18
Mean EQ-5D score[1] (SD)	0·33 (0·36)	82	0·29 (0·31)	18
School attendance in the previous week[1] N (%):				
None	11 (14%)	81	2 (11%)	18
0·5 day	8 (10%)	81	4 (22%)	18
1 day	3 (4%)	81	3 (17%)	18
2 days	14 (17%)	81	2 (11%)	18
3 days	22 (27%)	81	2 (11%)	18
4 days	17 (21%)	81	4 (22%)	18
5 days	6 (7%)	81	1 (6%)	18

HADS: Hospital Anxiety and Depression Scale; SCAS: Spence Children's Anxiety Scale; SD: Standard deviation; SF-36: The 36-item short-form health survey; VAS: Visual Analogue Scale. All results rounded to 1 d.p or whole percentage points. [1]Higher score=fewer symptoms, better function. [2]Higher score=more symptoms, poorer function.

Web table 5: Subgroup analysis of SF-36 physical function at 6 months

	SMC group		SMC + LP group		Difference in means [1] (95% CI)	N	Adjusted interaction [1 2] (95% CI)	N	P-value
	Mean	N	Mean	N					
Children <15 years	70·8	19	83·9	19	13·8 (2·1, 25·5)	38	-2·8 (-19·0, 13·4)	81	0·7
Children 15 to <18 years	69·6	18	80·0	26	11·0 (0·14, 21·9)	43			
Children male	67·5	8	86·7	9	26·6 (8·9, 44·3)	17	-17·6 (-37·3, 2·1)	81	0·08
Children female	70·9	29	80·4	36	9.0 (0.2, 17.8)	64			
Children no school/college attendance at baseline	67·4	5	85·0	6	23·3 (1·2, 45·5)	11	-12·0 (-35·9, 12·0)	80	0·3
Children some school/college attendance at baseline	70·6	32	82·1	38	11.4 (2.7, 20.0)	69			
Children without co-morbid anxiety (<12 HADS Anxiety) at baseline[3]	71·6	22	80·1	30	10·9 (0·6, 21·1)	52	4·8 (-12·5, 22·1)	80	0·6
Children with co-morbid anxiety (≥12 HADS Anxiety) at baseline[3]	69·4	14	84·7	15	15·7 (1·9, 29·5)	28			

Higher score=fewer symptoms, better function. [1]Interaction represents SMC plus LP minus SMC in subgroup 2 minus SMC plus LP minus SMC in subgroup 1. [2]Adjusted for age, gender and baseline outcome. [3]Not prespecified in the analyses plan (see appendix X).

Web table 6: Health care use at 3, 6 and 12 months in complete cases; by treatment group

	SMC					SMC + LP					Difference in mean cost (95% CI)		N	Adjusted difference in mean cost* (95% CI)		N
	Mean contacts	(SD)	Mean cost	(SD)	N	Mean contacts	(SD)	Mean cost	(SD)	N						
0 - 3 Months																
Lightning Process			12	(81)	49			211	(277)	51	200	(118, 282)	100			
Outpatient	3.1	(1.3)	412	(266)	49	3.1	(1.3)	449	(267)	51	36	(-70, 142)	100	21	(-96, 138)	89
Other Hospital**	0.2	(0.9)	27	(97)	23	0.3	(0.8)	32	(73)	34	5	(-40, 0)	57	6	(-37, 50)	53
Primary care***	3.2	(4.3)	126	(161)	25	3.3	(5.4)	113	(189)	34	-13	(-106, 81)	59	-32	(-120, 57)	54
Other Community****	0.3	(0.7)	13	(50)	25	0.8	(1.5)	26	(120)	34	13	(-38, 65)	59	-4	(-22, 13)	54
School counsellor	0.1	(0.4)	13	(66)	25	0.6	(1.8)	92	(303)	34	79	(-45, 202)	59	96	(-52, 244)	54
Prescribed medication			25	(57)	25			34	(69)	35	8	(-25, 42)	60	-10	(-35, 14)	56
Total cost including LP			590	(429)	23			949	(534)	33	358	(89, 628)	56	303	(133, 473)	51
4 - 6 Months																
Lightning Process			12	(81)	49			234	(282)	51	222	(139, 305)	100			
Outpatient	1.6	(1.2)	237	(225)	49	1.7	(1.4)	221	(189)	51	-15	(-98, 67)	100	-45	(-141, 50)	89
Other Hospital**	0.5	(1.6)	87	(340)	26	0.3	(0.7)	28	(84)	32	-59	(-184, 66)	58	16	(-20, 51)	54
Primary care***	1.6	(2.5)	61	(107)	25	1.3	(2.1)	44	(74)	32	-17	(-65, 31)	57	-28	(-72, 16)	52
Other Community****	0.2	(0.5)	33	(123)	25	0.3	(0.4)	4	(17)	32	-29	(-73, 15)	57	-27	(-81, 28)	52
School counsellor	0.3	(1.1)	52	(175)	25	0.2	(0.5)	26	(84)	32	-27	(-97, 44)	57	1	(-79, 80)	52
Prescribed medication			17	(41)	26			47	(114)	33	30	(-17, 77)	59	15	(-27, 56)	56
Total cost including LP			570	(599)	25			620	(476)	31	50	(-238, 338)	56	205	(-25, 435)	50
7 - 12 Months																
Lightning Process			12	(81)	49			22	(111)	51	11	(-28, 49)	100			
Outpatient	2.0	(1.6)	297	(336)	49	1.8	(2.1)	242	(338)	51	-56	(-189, 78)	100	-85	(-231, 61)	89
Other Hospital**	0.1	(0.3)	12	(43)	26	0.3	(0.9)	65	(214)	32	54	(-32, 139)	58	59	(-43, 162)	52
Primary care***	2.5	(3.8)	101	(154)	25	2.7	(4.1)	90	(140)	30	-10	(-90, 69)	55	-33	(-103, 37)	47
Other Community****	0.2	(0.4)	25	(115)	25	0.8	(1.7)	40	(210)	30	15	(-79, 110)	55	-10	(-62, 42)	47
School counsellor	0.2	(0.8)	39	(136)	25	0.0	(0.2)	27	(122)	30	-12	(-82, 58)	55	-2	(-92, 87)	47
Prescribed medication			18	(50)	26			32	(106)	32	14	(-32, 59)	58	0	(-39, 39)	52
Total cost including LP			617	(560)	25			464	(637)	30	-154	(-481, 174)	55	-302	(-482, -122)	47
Total 12 Month cost including LP			1388	(1039)	12			1802	(1045)	18	414	(-382, 1210)	30	445	(-148, 1038)	27

*adjusted for baseline difference, age sex, baseline SCAS and baseline VAS

** Other hospital includes A&E, CAMHs and other hospital visits

*** Primary care includes GP and Nurse appointments, calls and home visits, walk-in-care and calls to NHS direct

**** Other community includes school nurse, CAMHs, dietician, etc.

Web table 7: Sensitivity analyses: Variations of the cost of LP in multiple imputation dataset

	SMC (n=49) Mean (SE)		LP plus SMC (n=51) Mean (SE)		Incremental difference (95% CI)	
Imputed 12 Month - LP national cost**						
Adjusted total cost (£)	1615	(85)	2045	(67)	430	(228, 632)
Adjusted QALYs	0·533	(0·025)	0·628	(0·021)	0·095	(0·030, 0·160)
NMB at £20,000 per QALY	9039	(521)	10508	(427)	1468	(108, 2829)
Imputed 12 Month - LP NHS cost***						
Adjusted total cost (£)	1604	(84)	1935	(67)	331	(130, 531)
Adjusted QALYs	0·533	(0·025)	0·628	(0·021)	0·095	(0·030, 0·160)
NMB at £20,000 per QALY	9050	(521)	10618	(427)	1568	(207, 2929)

*All adjusted for baseline value, sex, age, baseline SCAS and baseline VAS

**National cost equals current average cost charged for LP

***NHS cost is estimated using LP contact time and relevant unit costs

Table: Summary of Substantial Amendment during the SMILE Trial

Web Appendix 1: Accreditation of Lightning Process Practitioners

Lightning Process practitioners have completed a Diploma through the Phil Parker Training Institute in Neurolinguistic Programming, Life Coaching and Clinical Hypnotherapy. This diploma is examined through written and practical exams and is accredited by the British Institute of Hypnotherapy and NLP. Following the Diploma, Lightning Process practitioners undertake a further course to learn the tools and delivery required for the Lightning Process after which they must pass both a practical and written exam. Practitioners undertake supervision and CPD in order to further develop their skills and knowledge. They are regulated by the Register of Lightning Process practitioners, adhere to a Code of Conduct, and there is a Professional Conduct Committee that oversees complaints and professional practice issues.

Web Appendix 2: Multiple imputation methods

Multiple imputation by chained equations (*ice* procedure[48] version 1.9.7 dated 25/10/2014) was used to impute missing data for 50 datasets. The imputation model included age, gender, SF-36-PFS, Chalder Fatigue score, VAS, SCAS, EQ-5D-Y, questionnaire costs and outpatient costs based on hospital records at all time points. Linear regression was used to impute SCAS and VAS whilst predictive mean matching was used to impute SF-36-PFS, Chalder Fatigue score, EQ-5D-Y and questionnaire costs due to non-normality of the data.