Supplementary file I: Schedule for recording the content of case based (patient focused) therapy sessions

Purpose:
In the ** study, in addition to our wider objectives, we seek specifically to:

- *Identify and explore current [therapy] practice in a minimum of six stroke units;*
- *Explore the decision making of stroke unit professionals relating to therapy provision to stroke survivors;*
- *Describe the amount and content of therapy provided to individual patients.*

We are using the Sentinel Stroke National Audit Programme (SSNAP, 2014) **definition of therapy** which can be found at **Appendix A**.

This schedule is designed to be used alongside the broader ethnographic observations described in the observational framework. The focus of the recording of case based observations in this schedule is on:

1) Therapists' verbal reports of their decision making in terms of i) whether the patient is considered to require therapy, ii) whether the patient is able to tolerate therapy on a particular day and iii) what therapy will be/has been provided
2) The amount (time in minutes) and content (type) of therapy provided

NB: If it is decided by the therapist that a patient is:
i) not considered to require therapy or ii) not able to tolerate therapy on a particular day; please provide a briefly summary of the therapist's rationale for the decision made in Part A of the observed therapy session record.

Use of the record:

1) At the end of each observed session, the researcher will ask the therapist to identify main focus for the therapy and to identify the form or forms of therapy activity or intervention used. The schedule allows for the researcher to make additional notes for each session. We recommend that (normally) one main focus and up to two other areas of focus should be recorded.

The schedule uses two levels of description to capture the content of therapy, these are expressed at level 1 as an overall category for the main area of focus for therapy (for example: Posture and balance or personal activities of daily living (pADL) or functional communication) and at level 2, there is an option to indicate the specific form or forms of therapy activity or intervention utilised in the session observed (for example: Category= Posture and balance; Focus= weight transfer in standing or Category= pADL; Focus = facilitating independence in oral hygiene.

Therapy sessions may include more than one focus for therapy (e.g. a session may use pADL activities focused on washing the upper body and incorporate that alongside exercises in balance in sitting), the schedule provides for identification of the main focus for therapy and also to record additional element of therapy content included in sessions observed.

2) The amount of therapy should be recorded in minutes in the table provided.

Observed therapy session record Part A (summary)

Patient ID:	**Site ID:**	**Date:**
A.1 Session start time:	A.2 Session end time:	A3. Total minutes of therapy delivered:
Session type (circle): A4.1 PT A4.2 OT A4.3 SALT **See Note 1** re the recording of the content of group therapy sessions.	A5.1 Individual session A5.2 Group session	A6.1 Therapists present (list profession and grade only) A6.2 Include therapy or rehabilitation assistants (where conducting supervised therapy activity- see SSNAP definition of active therapy at **Appendix 1**)
The patient: A7.1 During the treatment the patient is mainly passive. A7.2 During the treatment the patient is mainly independent in practising or actively trying to move. A7.3The treatment time is an equal combination of A7.1 and A7.2	The therapist was (circle which applies): A8.1 Working alone with 1 patient for the majority of the treatment time A8.2 Working with assistance (of another therapist or a therapy/rehab assistant) for the majority of the treatment time A8.3 Half of the treatment time working alone and half of the treatment time working with assistance. A8.4 Providing supervision for a therapy/rehab assistant	A9.1 Lead therapist in this session (list profession and grade only):

Observed therapy session record Part B (content)

Therapy Categories	Therapy focus (circle where appropriate)	If specified record the intervention type(s)	Observer additional session notes:
B1 Mobilisation:	B1.1 Head B1.2 Arm B1.3 Hand B1.4 Trunk B1.5 Pelvis B1.6 Leg B1.7 Foot B1.8 Other (list as appropriate)	Includes manual joint mobilisation, soft tissue mobilisation, stretching, palpation, (including pain assessment), passive relaxation and massage. Includes weight bearing on the affected arm.	
B2 Selective movements:	B2.1 Head B2.2 Arm B2.3 Hand B2.4 Trunk B2.5 Pelvis B2.6 Leg B2.7 Foot B2.8 Treatment of face B2.9 Other (list as appropriate)	Includes co-ordination, strengthening exercises, and active relaxation. Includes practicing isolated movements of joints, limbs or body parts – as opposed to a functional activity.	
B3 Posture and balance:	B3.1 Lying or side lying B3.2 Sitting B3.3 Standing B3.4 Stepping (including weight transfer and single leg stance) B3.5 Gait B3.6 Other (list as appropriate)	Practicing the activity/activities and exercises identified, may be reported as repetitive task training, including: Practicing specific posture and alignment while undertaking balance activities, Obtaining and maintaining position (static, dynamic and automatic balance	

		activities including internal and external perturbations) Changing position (changing base of support and moving from one position to another)	
B4 Mobility:	B4.1 Rolling / moving around in bed B4.2 Siting to lying-lying to sitting / getting in and out of bed B4.3 Sitting to sitting/ transfers B4.4 Sit-to-stand B4.5 Walking with assistance and/ or an aid (e.g. stick, Ankle Foot Orthosis (AFO), other) B4.6 Walking indoors independently B4.7 Carrying items B4.8 Walking outdoors/ obstacles/ uneven ground B4.9 Stairs, with assistance/independently B4.10 Steps/kerbs/roads B4.11 Walking long distance/ endurance and/ or speed B4.12 Getting off the floor B4.13 Wheelchair mobility B4.14 Other (list as appropriate)	Practicing the activity/activities and exercises identified, may be reported as repetitive task training. Wheelchair mobility includes: Wheelchair handling including removing or replacing of cushions and repositioning of affected arm and leg, wheelchair driving by patient or pushed by therapist Picking things up from the floor Protective reactions to prevent falls	
B5 Personal activities of daily living (pADL): ****Indicate whether assisted by therapist (a) or independent (b)**	B5.1 Washing upper body B5.2 Washing lower body B5.3 Drying upper body B5.4 Drying lower body B5.5 Dressing upper body B5.6 Dressing lower body B5.7 Undressing upper body B5.8 Undressing lower body		

	B5.9 Toilet (WC) B5.10 Shaving or use of cosmetics B5.11 Brushing teeth/cleaning dentures B5.12 Combing hair B5.13 Drying hair B5.14 Feeding, eating/drinking B5.15 Other (list as appropriate)		
B6 Domestic activities of daily living	B6. 1 Preparing own drinks and/or meals B6.2 Doing light housework B6.3 Managing money B6.4 Shopping B6.5 Other (list as appropriate)		
B7 Leisure and work related activities:	B7.1 Leisure activities B7.2 Gardening activities B7.3 Craft or art work B7.4 Employment related activities including telephone/mobile telephone and computer or tablet use B7.5 Use of public transport B7.6 Other (list as appropriate)		
B8 Cognitive and emotional problems **(includes: perception, attention and memory)**	B8.1 Formal cognitive screening using the Montreal Cognitive Assessment (MOCA) tool or other standardised measure. B8.2 Attention and concentration training interventions. B8.3 Memory assessment using a standardised measure such as the Rivermead Behavioural Memory Test (RBMT) or informal assessment through functional tasks. B8.4 Memory deficit targeted interventions including compensatory techniques.	Interventions may be used in combination as many activities will draw on different elements of cognitive functioning. Record here any activities or interventions identified and used in observed sessions. Note any formal tools used in assessment where used.	

	B8.5 Spatial Awareness (e.g. neglect) assessment using standardised measures such as the Behavioural Inattention Test or informal assessment through functional tasks. B8.6 Spatial awareness/neglect targeted interventions including visual scanning training, limb activation, sensory stimulation, eye patching, prism wearing/prism adaptation training and compensatory techniques. B8.7 Perceptual assessment using standardised measures such as the Visual Object and Space Perception Battery or informal assessment through functional tasks. B8.8 Perceptual impairment targeted interventions including functional training, sensory stimulation, strategy training and task repetition. B8.9 Apraxia assessment using standardised measures such as the Test of Upper Limb Apraxia (TULIA) or informal assessment through functional tasks. B8.10 Apraxia targeted interventions or compensatory strategy training. B8.11 Executive functioning assessment using a standardised measure such as the Behavioural Assessment of the Dysexecutive Syndrome (BADS) or informal assessment through functional tasks (including planning, sequencing, problem-solving). B8.12 Dysexecutive syndrome targeted compensatory strategy training. B8.13 Assessment of mood or emotional function, including anxiety		

	B8.14 Psychological interventions aimed at improving mood, e.g. increased social interaction (e.g. through involvement in group work), cognitive behavioural therapy-based interventions, motivational interviewing B8.15 Other (list as appropriate)		
B9 Communication assessment	B9.1 Spoken understanding B9.2 Reading B9.3 Writing B9.4 Expressive language B9.5 Speech B9.6 Other (list as appropriate)		
B10 Impairment focused aphasia therapy	B10.1 Word finding B10.2 Spoken comprehension B10.3 Reading B10.4 Writing B10.5 Semantics B10.6 Auditory discrimination B10.7 Other (list as appropriate)	e.g. Computer mediated, Group therapy, Minimal pairs, thematic roles therapy.	
B11 Functional language use	B11.1 Conversation practice B11.2 Constraint induced aphasia therapy - required to use spoken communication alone within a game. Other communicative methods such as gesture are not permitted. B11.3 Singing B11.4 Other (list as appropriate)		
B12 Impairment focused dysarthria therapy to increase intelligibility	B12.1 Oromotor exercises B12.2 Rate control B12.3 Respiration control in speech B12.4 Volume control B12.5 Pitch	E.g. Computer mediated? Group therapy? Specify type of exercise	

	B12.6 Articulation precision B12.7 Resonance balance B12.8 LSVT (Lee Silverman Voice Therapy) B12.9 Other (list as appropriate)		
B13 Impairment focused dyspraxia therapy	B13.1 Mental imagery/rehearsal B13.2 Visual cueing B13.3 Accurate articulatory placement B13.4 Articulation drilling		
B14 Compensatory techniques aphasia/dyspraxia	B14.1 Picture charts B14.2 Drawing B14.3 Writing key words B14.4 Communication aids B14.5 Other (list as appropriate)		
B15 Compensatory techniques dysarthria	B15.1 Slow speech rate/use of pacing board B15.2 Alphabet chart B15.3 Writing key words B15.4 Communication aids B15.5 Other (list as appropriate)		
B16 Dysphagia assessment	B16.1 Assessment	Examples include: Bedside assessment Cervical auscultation Pulsoximetry Fibreoptic Endoscopic Evaluation of Swallowing (FEES) Video-fluoroscopy	
B17 Dysphagia compensatory techniques (for safe swallowing)	B17.1 Diet modification B17.2 Fluid modification B17.3 Postural strategies (e.g. positioning, chin tuck)	e.g. thickening drinks, type of postural strategy, type of swallow strategy	

	B17.4 Swallow strategies (e.g. double Swallow/Mendelsohn maneuver)		
B18 Impairment focused dysphagia therapy	B18.1 Oromotor exercises. B18.2 Laryngeal elevation exercises B18.3 Laryngeal/pharyngeal stimulation B18.4 Other (list as appropriate)	e.g. thermal stimulation, neuromuscular electrical stimulation	
B19 Miscellaneous techniques:	B19.1 use of assistive devices (e.g. robotics) B19.2 computer/game software (e.g. Wii or XBox exercises) B19.3 Other (list as appropriate) Communication types (between therapist and patients) 19.3.1 Instances of verbal instruction 19.3.2 Instances of explanation 19.3.3 Instances of verbal feedback 19.3.4 Instances of non-verbal feedback 19.3.5 Social communication		

The categories and intervention examples are adapted from work previously published by DeWit et al (2006), Legg et al (2006) and Brady et al (2012) and supplemented by work completed by Tyson & Selley (2004) and Palmer (2014). We acknowledged the work of these authors.

Capturing the nature of the communication and interaction between therapist(s) and patients in the observed therapy session.

What to record:

i) **Instances of verbal instruction**: includes telling *how* to do something, telling to *do* something, demonstrating *how* to do something (could include manual positioning/facilitation/or actual display of a movement or activity to be replicated by the patient), cueing (e.g. so where should the foot be placed? What is the next step? And what else do you need?)

ii) **Instances of explanation***:* includes stating what the problem (with vision/communication/mobility etc) is and/or how it might be addressed or overcome in therapy (this is the plan/we plan to); also includes reasons why a particular activity is required or should be practised; also instances of explanation why an activity might be considered inappropriate or unhelpful.

iii) **Instances of verbal feedback:** includes feedback on progress (since last session or overall, this may be quantified e.g. that is 5 more paces than yesterday), instances of patient feedback to the therapist (prompted or spontaneous) on progress, instances of simple motivational feedback including, good, well done, much better.

iv) **Instances of non-verbal feedback: i**ncludes tactile or manual feedback (can you feel my pressing here, I can feel movement in the fingers), also includes visual non-verbal feedback e.g. through use of a mirror.

v) **Instances of social communication**: did your daughter come again yesterday Mary? Did you see the photos of the poppies in the paper today Tom? You look very smart in those pyjamas today. It'll soon be Christmas won't it, I don't know where the time goes, do you?

How to record:

Note, either in the narrative account or in the app to record things in an observed session, the frequency of occurrence of each type of communication as far as possible (numbers or ticks could be used for example). These may overlap and may not be clear cut; the aim is to get a sense of the frequency of occurrence.

Developed October 2014 with input from Dr Sara Demain at the University of Southampton.

Supplementary file 1: SSNAP core dataset help notes 2.1.1 (2014) re defining what is counted as (active) therapy.

The therapy may be provided by qualified or non-registered therapy assistants, including rehabilitation assistants, under supervision. For speech and language therapy it includes dysphagia and communication therapy. For psychologists it includes activities including assessment and treatment of mood, higher cognitive function and non-cognitive behavioural problems by psychologists or assistant psychologist.

Therapy ***includes***:

- Assessment and goal-directed therapy (i.e. towards goals that have been set and agreed by the team)
- Either individual or group therapy
- Home visits where the patient is present
- Training patients and carers
- Speech and Language Therapy refers to communication therapy and swallowing therapy

In this definition therapy ***does not include***

- Time for the therapist to travel to and from the patient*
- Documentation
- Environmental visits
- Multidisciplinary team meetings
- Case conferences
- Case reviews

For more information please see Section 4 of the Stroke Dataset FAQ's.

Note 1: Group session or classes:
Sessions where patients receive or participate in therapy activity under the supervision of a registered therapist is included in what is considered to be active therapy (by SSNAP). Observations of patients recruited to the ReAcT study should include group sessions where patients are participating in such sessions and should use the same schedule.

Note 2: When does therapy begin:
We acknowledge that there is a difference between the time taken for the therapist to simply to travel (e.g. from their office or the gym) to the patient, prior to therapy or from the patient after therapy (which is not included in the SSNAP definition), and situations where therapist uses the first contact with the patient at the bedside to begin therapy e.g. by using the opportunity to practice transfers or standing from sitting, walking to the gym, or identifying items needed to participate in a pADL or in a communication practice session. In the latter examples, where there is clearly defined therapy intervention then record this as when the therapy session begins.

Supplementary file II*:* *Interview topic guide*

1. **Topic guide for the interview with stroke unit staff**

General opening questions: (possible prompts are noted under each topic area)

Please tell me a little bit about your experience of working in the stroke unit

- Profession and Length of time since qualification?
- How long working on this unit?
- Role on the unit in terms of providing therapy or directing the work of others to provide therapy?

Can you outline the principles which underpin your approach to providing therapy and rehabilitation?

- E.g. Bobath/neurophysiological, motor learning, or orthopaedic principles or a combination?
- Is one approach used more commonly or preferred on this unit?

In terms of providing therapy, how is the work of the unit structured?

- Is therapy timetabled for each patient?
- What are the normal working times and patterns of therapists?
- Does the locations in which therapy is provided have any influence on achieving the recommendations/standard?

The therapy standard/recommendations:

- Can you explain how you interpret the NICE/ISWP therapy guidelines or standard?
- What does it mean for patients?
- What is expected of you and your service?

Can you explain how you or the stroke team make decisions on whether a patient is suitable/unsuitable for therapy?

- Who decides?
- How is this communicated to the team?
- Is/when is the decision reviewed by you or the team?

What factors influence your selection of a particular therapy intervention?

- Patient presentation?
- Research evidence?
- Clinical experience?
- Training in using an intervention e.g. constraint induced movement therapy, specific communication approaches?
- Availability and suitability of equipment or technology to deliver an intervention
- Senior therapist decision?

What factors influence the amount of time spent providing particular therapy intervention for individual patients? Can these be divided up into:

- Patient based
- Professional
- Organisational
- Other relevant factors

Can you comment on how the amount of time a patient spends in receipt of therapy is captured and recorded?

- in MDT/therapy records ?
- for the SSNAP?
- How is the SSNAP performance data communicated to and used by the stroke team?

Can you explain or comment on group based therapy and whether or why this might be used instead of or alongside individual therapy?

- What kinds of intervention are or might be delivered in groups?
- Who delivers/would deliver group interventions
- If not covered in the previous questions, what factors help or hinder the use of group based therapy?

Involvement of others in meeting the therapy recommendations/standard
Are members of the stroke unit team, other than therapists and therapy assistants involved in providing interventions to meet the therapy recommendations/standard?

- Which members of staff (and how trained/prepared)?
- What kinds of activities do they support or provide?
- Is this 'counted' as therapy in meeting the therapy recommendation?

Can you comment on carer/family member involvement in therapy and rehabilitation?

- General support roles?
- Helping with practice?
- Contributing to recorded therapy time?

Contexts, barriers and facilitators
To what extent does the type of stroke unit impact on the ability of the unit team to provide therapy to meet the recommendations/target?

- Hyperacute/acute/integrated/rehabilitation units?
- Length of patient stay?
- Availability of stroke specialist or generic community rehabilitation services including early supported discharge services?

(Where these exist) Can you comment on how 6 or 7 day working/services operate and whether they impact on the ability of the unit team to provide therapy to meet the recommendations/target?

- Assessments made and therapy provided, or assessments only at weekends?
- Other members of staff continuing prescribed therapy programmes?

Please comment on how staffing levels influence or impact on provision of therapy to meet the recommendation/standard?

- How is the staffing establishment/level calculated?
- Are there particular issues which affect staffing and are these persistent or short term?
- Does location of staff have an impact e.g. on or off unit base for some staff?

Barriers and facilitators: (if not already identified- consider summarising what has been identified already)
What are the main barriers to providing therapy which meets the therapy recommendations/target?

- Organisational

- Professional
- Other

What are the main facilitators to providing therapy which meets the therapy recommendations/target?

- Organisational
- Professional
- Other

Closing questions
Is there anything else you think I need to know about providing therapy rehabilitation after stroke?
Do you have any questions for me?

Thank for participation